

Panorama Handbook

Panorama Handbook (Version 6.0)
Copyright © 2010, ProVUE Development,
All Rights Reserved

ProVUE Development
18685-A Main Street PMB 356
Huntington Beach, CA 92648
USA

www.provue.com



Table of Contents



— Click on any entry to jump to the page —

Table of Contents 3

Welcome to Panorama! 23

What is a Database?	23
A Brief History of Database Technology	24
What is Panorama?	26
Super Fast Searching and Sorting.....	26
Phonetic Searching.....	26
Easy Set-Up.....	26
Crosstabs.....	26
Data Outlines	27
Data Entry Shortcuts.....	27
Smart Dates™	27
Smart Program Recorder.....	27
Formulas.....	27
Compact Storage.....	27
Charts	28
Relational Links	28
Internet Content.....	28
Map, Phone, Email and VCard Support.....	29
Sending Email.....	29
Recent Database Wizard.....	29
Advanced Graphic Tools	30
Mail Merge and Labels	30
Database Publishing.....	30
View-As-List Forms.....	30
Elastic Forms	31
Matrix Display	32
Images and Movies.....	33
High Speed Import.....	34
Flexible Text Export (including HTML).....	34

Data Transformation	34
Select/Remove Duplicates.....	34
Wizards.....	34
Panorama Enterprise Server	35
RAM Based Server.	35
RAM Based Client.....	35
Offline Roaming.	35
Web Database Publishing.....	35
Managing Web Content.	36
“Cloned” Web Sites.	36
Easy Server Administration.....	36
Industrial Strength.	36
Connect and Synchronize Mode.....	36
Built-in Backup.	36
Remote Server Administration.	36
Complete Programming Language and Development Tools.....	36
Custom Menus, Buttons, and Dialogs	36
Seamless Cross Platform Operation	37
Videos & Screencasts.....	37
Files and Memory.....	39
Files, Icons and the Desktop.....	39
Launching Panorama.....	40
Changing the Default Launch Action	41
Opening a Database	42
Databases and RAM.....	43
The Wizard Menu.....	43
The Recent Databases Wizard	44
The Favorites Menu	45
Advanced Database Opening Techniques	47
Opening a Database With Incorrect Type/Creator Information	47
Opening a Database Without Normal Initialization	48
Opening a Database with No Windows.....	48
Opening with Multiple Copies of Panorama on Your System.....	48
Creating a New Database.....	50
Using the New Database Wizard.....	50
Creating a Database with the Wizard.....	51
Creating Numeric and Date Fields	53
Money	54
Default Values	54
Automatic Capitalization	55
Clairvoyance®.....	55
Rearranging Fields.....	56
Field Name Warnings and Errors	56
Favorites.....	58
Creating a Database from a Text File	59
New Database Options (Font, Windows, Save As).....	61
Creating a New Database with the Open File dialog.....	61
Closing Panorama	62
Saving a Database.....	63
Saving Window Positions	64
Obsolete Save Options.....	65
Auto-Save.....	65

Pitfalls of Auto-Save	65
Backup Files	65
Opening Backup Files	65
Total Recall (Auto-Save/Crash Recovery)	66
Setting the Total Recall Save Frequency	66
Rolling Back Database Changes	67
Revert to Saved	67
Time Lapse	67
Time Lapse Preferences	71
On the Importance of Backing Up.....	71
Finding a Database on the Hard Disk	72
Viewing and Modifying Database Metadata.....	73
Working with Multiple Databases.....	74
Opening Multiple Files	74
File Sets.....	75
The AutoLoad File Set.....	77
Saving Multiple Files.....	78
Appending One Database to Another.....	78
Appending an Open Database	79
Appending Imported Data	79
Replacing Obsolete Data.....	80
Importing and Exporting Data	81
Working with Text Files.....	81
Importing a Text File	82
Importing into an Existing Database.....	86
Importing HTML Tables	87
Importing OverVUE Files.....	93
Re-Arranging Imported Data	93
Using the Text Import Wizard.....	94
Common Import Formulas.....	99
More Import Configuration Techniques	100
Tab Width.....	100
Configuration Context Menus.....	101
Rearranging and Deleting Import Columns.....	102
Starting Over	102
Choosing a Database to Import Into	102
Importing into a New Database.....	102
Converting an Import Configuration into a Procedure.....	102
Saving the Import Configuration for Later	103
ALL IMPORT COLUMNS.....	104
Importing Financial Data (QIF, OFX, QFX).....	104
Importing VCard Data.....	104
Exporting a Text File.....	105
Exporting with the Text Export Wizard	109
Customizing the Export Field Arrangement.....	113
Preview Tab Width	114
Customizing Export Column Properties	115
Export Templates	116
Choosing a Database to Export From	117
Exporting HTML Tables.....	118
Using the Generated HTML Page	119
Customizing HTML Table Appearance	119
Web Page Title.....	120

Table Header Form	120
Table Margins	120
Table Border	121
Cell Spacing	121
Cell Padding	122
Table Font	123
Text Size	124
Text and Background Colors	125
Color Selection Techniques	125
Main Text Color	128
Page Background Color	129
Title Color	129
Title Background Color	130
Table Data Color	130
Row Background Color	131
Multiple Background Colors	131
HTML Table Column Widths and Alignment	133
Inserting Links in an HTML Table	134
Customizing the table HTML (advanced)	136
Exporting VCard Data	137
Monitoring Memory Usage	137
Memory Usage Details	138
Multiple Memory Statistic Windows	139
Adjusting Panorama's Memory Allocation	140
Windows	141
Window Components	141
Tool Palette	142
Scrolling the Tool Palette	143
Close Box	143
Drag Bar	143
Title	143
Zoom Box (Maximize)	143
Grow Box	144
Scroll Bars	144
Instant Jump to any Scroll Bar Position	144
Note: Most Mac OS X applications support this behaviour, including Safari, Preview, GarageBand, etc.	144
Horizontal Scrollwheel Scrolling with Shift Key	144
Mighty Mouse and Trackpad Scrolling Support	144
Splitting a Window	145
Info Palette	146
Bringing a Window to the Front	147
Hiding Windows	147
Zooming Into a Box	148
Saving Window Positions	148
Saving with No Windows	149
Turning Window Components On and Off (Window Tweak Wizard)	150
Measuring a Window (Window Size Wizard)	152
Setting Exact Window Dimensions	153
Arranging All Open Windows at Once (Tiling and Stacking)	156
Saving and Restoring Window Positions	159
Choosing Tile Configurations	159

Bringing Windows to the Front	162
Views.....	163
Types of Panorama Views	163
Data Sheet and Form Views	164
Other Views	165
Switching Between Views	168
Opening More Than One Window Per Database	169
Window Options	172
The View Wizard.....	173
View Wizard Window Size and Options	177
Searching All Procedures	178
Form Modes: Data Access vs. Graphic Design	180
Form Operation: Individual Pages vs. View-As-List.....	181
Creating a New Form, Crosstab or Procedure.....	182
Renaming a Form, Crosstab or Procedure	183
Deleting a Form, Crosstab or Procedure	183
Changing the Order of Forms, Crosstabs or Procedures	183
The Privilege Dialog.....	184
User Levels vs. Save Window Positions	185
Hiding Sensitive Data	185
Records.....	187
Data Organization	187
Tables vs. Individual Pages	188
Special Records.....	188
Data Records.....	188
Summary Records.....	189
Invisible Records	190
Fields.....	193
The Fields Menu	194
Modifying the Properties of an Existing Field.....	195
Adding New Fields.....	198
Deleting a Field.....	198
Changing the Width of a Field	199
Automatically Setting the Field Width	199
Re Arranging the Field Order.....	200
Duplicating a Field	201
Splitting a Field	201
Controlling the Split Location.....	202
Stripping Extra Spaces and Punctuation	204
Partial Splits	205
Splitting Non-Text Fields	206
Merging Adjacent Fields	207
Merge Field Options	208
Hiding and Showing Fields	209
The Design Sheet	212
Database "Generations"	212
Typical Design Sheet Operation	213
Field Properties.....	215
Adding New Fields Using the Design Sheet.....	216

Removing Fields Using the Design Sheet	217
Making a Copy of a Field	217
Re-Arranging Fields	219
Rules for Field Names	220
Multiple Line Field Names	220
Repeating Fields (Line Items)	222
Creating Line Item Fields	223
Modifying Line Item Fields	225
Adding More Line Item Fields	228
Learn More About Line Items	229
“Generic” Fields	230
Standard Generic Fields	230
Adding Generic Fields to an Existing Database	231
Setting up Generic Fields with the Field Properties Dialog	232
Using the Generic Fields Preferences	233
Assigning Multiple Database Fields to a Generic Field	234
Configuring Generic Phone Number Fields	234
Using Generic Fields with the VCard Wizard	237
Dragging Data to Other Applications or Databases	238
Dragging Data from other Applications or Databases	240
Displaying a Map	242
Sending an Email	242
Dialing the Phone	242
Exporting a Batch of VCards	243
Importing a Batch of VCards	244
Data Types	245
Data Types and Memory Usage	246
Setting Up a Field’s Data Type	246
Data Type Conversion Problems	247
Numeric Data	249
Money	250
Numeric Output Patterns	250
Fixed Decimal Point Patterns	252
Numbers with Commas, Punctuation, and Measurement Units	252
Scientific Notation	253
Special Patterns for Negative Numbers	253
Leading Zeros	253
Numbers with Multiple Components	254
Phone Numbers	254
Plural Suffixes	254
Displaying Numbers as Words	254
Dates	255
Entering Dates	255
Default Year and Century	255
Date Output Patterns	255
Date Pattern Components	257
Common Date Output Patterns	258
Choices	259
Choice Data Entry (Choice Palette)	259
Creating the List of Choices	260
Exceptions	261
Generating a List of Choices Automatically	262

Updating the Choice List.....	262
Using Math Operations with Choices.....	262
Sorting Choices	263
Data Entry & Editing.....	265
Editing Records.....	265
Moving From Record to Record.....	265
Moving from Field to Field	267
Adding a New Record.....	268
Inserting a New Record	268
Deleting a Record.....	269
Deleting Multiple Records.....	270
Delete All	270
Duplicating a Record	271
The Clipboard Window	271
Moving a Record.....	271
Editing Data Within a Cell	272
The Input Box	272
Expanding the Input Box.....	273
Expanding a Right Justified Input Box.....	274
Editing Cells Within a Form	275
Tabbing from Cell to Cell	276
Tab Down	277
Tab Order in Forms	277
Tabbing with the Space Bar.....	279
Data Entry Accelerators.....	281
Automatic Capitalization	281
Changing Capitalization of Existing Data	282
Checking for Duplicate Data	283
Checking for Duplicates in Existing Data	284
Clairvoyance®	284
How Clairvoyance® Works.....	284
Turning Clairvoyance® On or Off	285
Clairvoyance® Helps Insure Data Consistency.....	285
Using Clairvoyance® With Dates	286
Clairvoyance® Across Multiple Files	286
Clairrows.....	290
Input Patterns	291
Entering Data with an Input Pattern	292
Using Input Patterns with Dates	292
Restricting Character Types	293
Custom Character Restrictions	295
Default Values	296
Default to Today's Date	297
"Ditto" Defaults Based on the Previous Record.....	298
Automatically Incrementing Defaults (1, 2, 3, ...) Based on the Previous Record	299
Creating a Unique Record Number	300
Manually Changing the Record Number Counter	301
Automatic Time/Date Stamping.....	301
Automatic Calculations	303
Spreadsheet Mode Calculations	303
Procedure Mode Calculations	311
Automatically Triggering a Procedure	314

Pros and Cons of Spreadsheet vs. Procedure Mode	315
The Run Automatic Calculations Wizard	316
The Choice Palette	317
Changing the Shape of the Choice Palette	317
Creating the List of Choices	317
Exceptions	318
The Choice Palette vs. the Choices Data Type.....	319
Editing Tools within a Data Cell	319
Searching for Text Within the Input Box	319
Replacing Words or Phrases Within a Cell.....	321
Using the Spelling Checker within a Cell	322
Sorting.....	323
Basic Sorting.....	323
Sorting By More Than One Field	324
Sorting By Color.....	327
Undo Sorting.....	328
Sorting Numbers and Dates	328
Sorting Right Justified Text.....	329
Sorting Selected Data.....	329
Sorting Within Groups.....	329
Sorting Choices	329
Searching and Selecting	331
Finding vs. Selecting.....	331
Selecting with the Context Menu	333
Select Same	333
Select Larger/Smaller	334
Select Before/After.....	334
Select Next/Previous/First/Last.....	334
Quick Subtotals.....	335
The Find/Select Dialog.....	336
Selecting a Subset	338
Find and Find Next.....	338
Creating Specific Search Criteria.....	339
Searching a Specific Field	339
Compound Searches	340
Compound Search with AND/OR	342
Search Options (Text).....	343
Search Options (Numbers).....	346
Search Options (Dates)	347
Query Errors	349
Search Options (Entire Records).....	349
Search Options (Formula)	351
Combining Formulas with Other Search Options	353
Help with Creating Formulas	353
Managing Queries	355
Live Preview	357
Revising a Previous Selection	357
Select Reverse	359
Undo Select	359
Customizing the Find/Select Dialog	360
Using the “Classic” Find/Select Dialog	360

Permanently Removing Unselected Data	360
The Select Summaries Command	361
Select Duplicates	362
Select Duplicates Using a Formula.....	363
Summaries and Outlines.....	365
3-Step Summarizing	365
The Summarize & Analyze Dialog	371
Multi-Level Summaries	373
Expanding and Collapsing the Summary Outline	376
Expanding and Collapsing the Overall Summary Outline	380
Getting Rid of Summary Records.....	382
Getting Rid of Detail Records	382
Ranking Summaries	383
Additional Calculation Options.....	386
Hiding Non-Analyzed Fields	387
Previewing Subtotals	390
Managing Analyses	392
Generating Summaries Manually.....	394
STEP 1 - GROUP	394
Subgroups	394
Grand Total.....	394
The Group Command.....	395
Grouping by Week, Month, Quarter, or Year	395
Group by Color	396
Propagating Data into Summary Records	396
Manually Creating and Removing Summary Records.....	396
STEP 2 - CALCULATE	398
Total.....	398
Count	398
Average	398
Minimum	398
Maximum	399
Recalculating Summaries	399
Running Total	399
Using Running Total to Balance a Checkbook	399
Running Difference	402
Using Running Difference to Calculate Gas Mileage	403
STEP 3 - OUTLINE.....	406
Sorting by Summary Value.....	406
Sorting Within Groups.....	410
Printing Reports with Summary Information	410
The Mini Statistics Wizard.....	410
Saving a Statistical Snapshot	413
Renaming and Deleting Snapshots	414
Printing a Statistical Analysis.....	414
Crosstabs	415
Category and Tabulation Fields	417
Creating and Setting Up a New Crosstab View	418
Crosstabs by Day, Month, Quarter or Year	422
Changing the Crosstab Design.....	422
Re-Calculating a Crosstab.....	423

Adjusting Crosstab Column Widths	423
Crosstab Font and Size	423
Selecting Original Data	423
Crosstabs Based On Selected Data	427
Crosstabs Containing Outlines	427
Sorting a Crosstab	429
Removing and Renaming Crosstab Tables	430
Exporting a Crosstab Table	430
Data Processing.....	433
Transforming Selected Data	433
The Manipulate Data Dialog	434
Specifying the Data Source	434
Start with Field	435
Start with a Fixed Value (Text/Number/Date)	436
Starting with a Sequence	438
Sequencing a Date Field	438
Starting with a Formula	439
Manipulating the Data	440
Manipulating Text	442
Add Prefix/Suffix	442
Sandwich Prefix/Suffix	443
Add Field to End	443
Add Field to Start	445
Modify Capitalization	445
Strip Surrounding Blanks	445
Strip Surrounding Punctuation	446
Eliminate Repeating Blanks	446
Keep Alphabetic Characters	447
Keep Numeric Characters	447
Keep Custom Characters	447
Keep First	448
Keep Last	450
Remove First	450
Remove Last	450
Keep Text Before	451
Keep Text After	452
Replace	453
Insert Text at Spot	453
Extract Between	454
Strip Tags	455
Count	455
Add Sequence to End	456
Formula	456
Manipulating Numbers	457
Add Number	458
Multiply by Number	458
Multiply by Percentage	458
Add Field	459
Subtract Field	459
Multiply by Field	459
Divide by Field	459
Formula	459

Manipulating Dates	460
Add/Subtract Days	460
Add/Subtract Months	460
Add/Subtract Years	460
Formula	461
Managing Manipulations.....	461
The <i>Modify Empty Cells Only</i> Option.....	463
Live Preview	463
Customizing the Manipulate Data Dialog.....	464
Using the “Classic” Manipulation Dialogs	464
Vertical Data Tabulation.....	465
Propagate	466
UnPropagate.....	469
Using UnPropagate to Eliminate Duplicates.....	470
Change (Find and Replace).....	472
Changing with the Replace(Function.....	473
Data Style and Color.....	474
Displaying Data Style and Color in Forms.....	479
Accessing Style and Color in a Formula.....	479
Introduction to Forms	481
Opening a Form.....	482
Opening A Form in a New Window.....	483
Form Modes: Data Access vs. Graphic Design	485
Form Operation: Individual Pages vs.View-As-List.....	486
Creating a New Form.....	487
Renaming a Form	488
Deleting a Form	488
Browsing the Database With a Form	488
Browsing the Database With a View-As-List Form	489
Graphic Design	491
Graphic Objects	491
Types of Graphic Objects	491
Creating a Graphic Object	494
Creating Perfect Squares, Circles and Lines.....	496
Customizing the Tool Palette	497
Using the Keyboard to Select Common Tools.....	500
SuperObjects	501
Modifying Objects	501
Selecting a Single Object.....	501
Selecting Multiple Objects at Once.....	502
The Graphic Control Strip	505
Rulers.....	506
Moving a Single Object	508
Nudging an Object (or Objects)	509
Nudge “Auto Guides”	510
Viewing and Setting Exact Object Dimensions.....	512
Changing the Size of a Single Object	513
Nudging the Size of an Object.....	513
Nudge Size “Auto Guides”	514
Nudging to the Crosshair Cursor	515
Percentage Scaling.....	516

Resizing Without Handles.....	516
Changing the Radius of Round Corners.....	518
Removing Objects.....	519
Modifying Object Attributes	519
Solid, Outline and Hollow Objects	520
Fill Pattern.....	521
Line Pattern	523
Line Width.....	525
Color	526
Copying and Pasting Colors	528
Font.....	529
Maintaining Fonts across Multiple Computers and Platforms	529
Universal Fonts	530
Text Size.....	531
Text Style.....	532
Object Type/Object Name	533
The Object Properties Dialog.....	534
Working With Multiple Objects	536
Grouping Objects Together	536
Moving Multiple Objects.....	538
Fast Drag.....	538
Resizing Multiple Objects	540
Cluster Resize	541
Cluster Resize Troubleshooting	550
Setting Exact Dimensions of Multiple Objects	550
Aligning Objects.....	553
Adjusting Spacing Between Multiple Objects	556
Duplicating Objects.....	560
Duplicate	561
Drag Duplicating.....	561
Step and Repeat	562
Cut, Copy, and Paste.....	566
Copying Objects Between Forms.....	566
Copying Objects Between Files	566
Copying an Entire Form	566
Overlapping Objects	568
Changing the Stacking Order	569
Selecting a Completely Hidden Object.....	570
Making a Drop Shadow	573
Locked Objects	575
Ignoring Locked Objects.....	577
Alignment Grid	577
Magnification and Reduction.....	579
A Note About Measurement Accuracy.....	581
Form Background Colors	582
Using the Form Explorer Wizard.....	583
Displaying and Editing Text	587
Displaying Text	587
Fixed Text Objects.....	587
Editing Fixed Text.....	590
Moving and Resizing Fixed Text Objects	590
Text Font, Size and Style.....	593

Creating Reverse Type (White on Black)	593
Text Alignment.....	594
Displaying Data in Auto-Wrap Text.....	595
Data Merge Pop-Up Menu	596
Using Data Merge to Create Address Labels.....	597
Displaying Formulas in Auto-Wrap Text.....	602
The Build Formula Dialog.....	604
Text Display SuperObjects™	608
Creating and Modifying Text Display SuperObjects.....	608
Text Display Options	611
Controlling Text Display Color and Style on the Fly	619
Using Formulas to Display Text.....	621
Combining Multiple Text Items Into One	621
Creating a Smart Formula	624
Eliminating Unnecessary Punctuation and Blank Areas With the Sandwich Function.....	625
Combining Numbers with Text	627
Displaying Dates	629
Merging Images Into Text.....	630
Editing Text.....	632
Types of Data Editing Objects	632
Working with Data Cell Objects	635
Data Cell Custom Output Patterns	638
Text Editor SuperObject	639
Creating and Modifying Text Editor SuperObjects	639
Text Editor Options.....	643
Converting Data Cells into a Text Editor SuperObjects	661
Automatically Creating Rows or Columns of Data Cells or Text Editor SuperObjects	662
Automatic Layout Options	663
Line Items in a Form.....	669
Tab Order in Forms	670
Tab Order for Variables	671
Field Setup in Graphics Mode	671
Word Processor SuperObject	673
Creating and Working With Word Processor SuperObjects.....	673
Using the Word Processor.....	677
The Ruler.....	680
Margins (Indents)	682
Tab Stops	685
Alignment	690
Line Spacing.....	691
Styles.....	692
Selecting Text.....	694
Configuring the Word Processor.....	696
Word Processor Document Storage Strategies	696
Storing a Collection of Documents	698
Searching for Text Within a Collection of Documents	701
Setting up Storage for a Template Document	702
Setting up Storage for Multiple Template Documents.....	703
Merging Data into Word Processing Documents	707
Forcing Merge Data to Update When Moving From Record to Record	714
Word Processor Options	716
Default Font and Text Size for New Documents	718
Printing Word Processor Documents.....	719

Printing Multiple Page Documents	724
Using the Mini Correspondence Wizard	727
Creating a New Letter	727
Printing a Letter	730
Printing a Mail Merge Letter	732
Viewing a List of Letters	734
Changing the Default Greeting, Closing and Signature	735
Correspondence Templates	735
Merging Data into the Body of a Letter.....	738
Images & Movies	741
Fixed Images	741
Displaying and Printing EPS Images	743
Tracing a Scanned Form	745
Flash Art™	750
Creating Super Flash Art Objects	751
Using Flash Art to Display a Fixed Image	756
Using Flash Art to Display a Smart Background	757
Using Flash Art to Display a Color	761
The Flash Art Scrapbook (Gallery)	764
Adding a New Image to the Scrapbook.....	765
Locating an Image in the Flash Art Scrapbook	766
Removing an Image from the Flash Art Scrapbook	767
Renaming an Image	767
Re-Arranging the Image Order	768
Printing the Flash Art ScrapBook	768
Importing PICT Files into the Flash Art Scrapbook	768
Transferring the Flash Art Scrapbook to Another Database	769
Displaying Images Directly From Disk Files	769
Displaying Images in a Different Folder (Directory).....	771
Displaying Non PICT Images (Enhanced Image Pack).....	775
Image File Extensions in a Cross Platform Environment (MacOS and Windows)	777
Flash Art Image Drag and Drop.....	779
The Image Drops Example Database	779
Adding Drag and Drop Images to a Database	781
DropImagesFromFinder Options	784
Super Flash Art™ Options.....	786
Formula	786
Formula in a Variable	786
Default	787
Alt File	788
Include Pictures on Disk.....	789
Display Group of Pictures.....	789
Border.....	796
Drop Shadow.....	796
Overflow	797
Scroll Bars	797
Align	797
Displaying Images from Resource Files	802
Displaying Icons from Resource Files	808
Displaying Form Preview Pictures	808
Elastic Pictures	809
Using the Elastic Picture Workshop	810

Saving the Elastic Picture.....	813
Using the Elastic Picture	814
“Classic” Flash Art Objects	815
Storing Images in a Field.....	816
Displaying Movies in a Form.....	819
Buttons & Widgets	823
Push Buttons.....	823
Super Object Push Button	823
Push Button Styles	826
Button Title	828
Title Positioning.....	828
Standard Font/Size.....	828
3D Title	828
Hide Title	828
Click/Release	829
Color Options	829
“Classic” Push Buttons	830
Transparent Push Buttons.....	832
Flash Art™ Push Button SuperObjects™	833
Data Buttons	837
Data Button SuperObjects™	838
Creating a Group of Radio Buttons	841
Multiple Value Button Groups.....	845
Super Data Button Options.....	849
Data.....	849
Title.....	849
Value	850
Allow Multiple Values	850
Value Separator	850
"Radio" button.....	851
Procedure.....	851
Sample	851
Flash Art Data Button SuperObjects™	852
Sticky Push Button SuperObjects™	855
“Classic” Checkbox and Radio Buttons	856
Pop-Up Menus.....	860
Pop-Up Menu SuperObjects™	860
The Pop-Up Menu Formula	863
Dividing Lines in the Menu	864
“Live” Pop-Up Menu Formulas.....	864
Pop Up Submenus	865
Pop-Up Menu Options	866
Data.....	867
Menu Formula	867
Menu Type	867
Display Options	869
Color.....	870
Procedure.....	870
Pop-Up Menu Font, Size and Dimensions	870
“Classic” Pop-Up Buttons	871
Creating a Pop-Up Menu with a Procedure	874
Where Will the Pop-Up Menu Appear?	874

The PopUp Statement.....	874
The PopUpButton Statement	875
The PopUpClick Statement	875
The PopUpFieldChoices Statement.....	876
The PopUpDoubleFieldChoices Statement.....	876
The PopUpByNumber Statement.....	877
The PopUpStyle Statement.....	878
“Live” Pop-Up Menu Formulas	878
List SuperObjects.....	879
Creating List SuperObjects™	879
List Options.....	883
Data.....	883
Sep	885
Database	888
Sort Up	890
No Duplicates	891
Formula	891
Click Action.....	892
Grow Box.....	893
Thin Scroll Bars	894
Procedure.....	894
Click/Release	894
Building the List	894
“Hiding” Part of a List Item.....	897
Maximum List Size	898
Form Goodies	899
View-As-List Forms.....	899
How View-As-List Forms Work.....	900
Creating a View-As-List Form.....	902
Working with Tiles	908
Adding a View-As-List Header	909
Editable View-As-List Forms	913
View-As-List Background Colors.....	919
Buttons on a View-As-List Form.....	921
Elastic Forms	922
Theory of Elastic Forms.....	923
Building an Elastic Form	925
Defining the Quadrants	925
Maximum Window Size	929
Removing the Window’s Scroll Bars	930
The Window Tweak Wizard.....	931
Opening Windows with a Procedure	933
Modifying an Elastic Form	933
Non-Rectangular Quadrants	934
Expanding Multiple Objects Proportionally	936
Elastic View-As-List Forms.....	937
Super Matrix Objects	939
The Matrix Template (and Frame Object).....	940
Creating Super Matrix Objects.....	942
Linking with the Matrix Frame	944
Matrix Cell Borders & Background	945
Matrix Order	946

Matrix Rows and Columns	947
Designing a Matrix Template	949
Adjustable Size Templates	949
Tips for Adjustable Size Templates	952
Matrix Co-Ordinates and Data	953
Matrix Co-Ordinates (What cell is this?)	953
Co-Ordinates and Scroll Bars	954
Using a Matrix to Display an Array	954
Using the Matrix as a Button	955
What Cell Was Clicked?	955
Buttons Within Matrix Cells	956
Updating the Matrix Display	957
A Trick for Updating the Matrix Display Automatically	958
Super Matrix Case Studies	958
Displaying Music Tracks	958
Displaying Olympic Results	963
Television Station Guide	967
Building a Calendar	971
Scroll Bars	979
Scroll Bar "Theory"	979
Creating Scroll Bar SuperObjects™	980
Scroll Bar Options	983
Data	984
Min	984
Max	984
Page Up/Down	984
16 Pixel	984
Procedure	984
Balloon Help	985
Creating Balloon Help Objects	986
Balloon Help Options	991
Changing the Cursor Shape Over Different Areas	991
Displaying Balloon Help Text Directly on the Form	992
Charts	993
Chart Data	993
Creating a New Chart	994
Setting Up Legend and Value Fields	998
Setting Up Additional Value Fields	999
Chart Types	1000
Bar Charts	1001
Line Charts	1003
Area Charts	1003
Pie Charts	1004
Scatter Diagrams	1005
Preparing the Database for Drawing a Chart	1006
Ranking (Sorting) the Chart Values	1009
Charts with "Other"	1011
Restoring the Original Data	1013
Maximum Number of Chart Points	1014
Dressing Up Chart Appearance	1014
Chart Font, Size, and Style	1014
Vertical Legends	1015

Output Patterns.....	1016
Graphic Attribute Icons	1017
Grid	1025
Non-Zero Axis OK.....	1026
Tick Mark Spacing	1027
Chart Preview	1028
Copying a Chart to Another Application.....	1029
Graphic Embellishments (Titles, Legends, Drop Shadows, etc.).....	1030
Chart Flash Art.....	1032
Using Flash Art for Color or Blends	1036
Scatter Diagram Flash Art	1038
Connect Dots.....	1042
Printing a Chart.....	1043
Printing Basics	1047
Printing Different Views.....	1047
Printing the Data Sheet.....	1047
Printing Data Sheet Headers & Footers	1048
Printing a Form	1051
Preparing Data For Printing	1052
The Page Setup Dialog.....	1053
Fractional Fonts.....	1054
The Print Dialog	1055
Print Preview.....	1056
Print One Record	1058
Setting up Default Printers	1059
Zap Page Setup Wizard.....	1060
Custom Reports	1061
Working with Tiles.....	1062
Creating Additional Tiles.....	1069
Creating A New Tile By Duplicating.....	1071
Tiles In Action	1076
Data Tiles.....	1076
Margins	1085
Top Margin Tile	1085
Left Margin Tile	1087
Right Margin Tile.....	1090
Bottom Margin	1090
Headers and Footers	1091
Header Tile	1091
Creating a Header Tile by Duplicating the Data Tile	1094
Footer Tile.....	1099
Page Numbers.....	1100
Printing the Current Date and Time	1103
First Page Header Tile.....	1105
BackDrop Tile	1107
Designing Headers and Footers For Changing Page Sizes	1109
The QuickReport Dialog.....	1111
Printing Multiple Page Records.....	1114
Selectively Printing Multiple Pages per Record	1115
Printing Data that Overflows a Page.....	1116
Variable Height Records	1123

Stacking Variable Height Objects	1129
The Expand/Shrink Option.....	1130
Mixing Variable Height Objects With Other Graphics.....	1131
Printing Multiple Column Reports	1132
Across or Down?	1134
Table Header and Table Footer Tiles	1135
Controlling the Number of Columns.....	1139
Spacer Tile	1140
Printing Summary Information	1141
Summary Tiles.....	1143
Printing Summaries Without Data.....	1147
Printing Data Grouped by Month, Quarter or Year	1148
Group Headers	1151
Group Sidebars.....	1155
Keeping a Group Together on a Column or Page	1160
Starting a Group on a New Column or Page	1163
Even and Odd Page Layout.....	1164
Special Paper Options	1166
Labels	1169
Label Fundamentals	1169
The QuickLabel Dialog.....	1169
Printing Labels on Sheets.....	1172
Printing 3 by 10 1" Labels (Avery 5160)	1173
Aligning Labels on the Sheet.....	1173
Printer Inaccuracy and Vertical Creep.....	1173
Printing Roll Labels.....	1173
Printing on 1-up 1" Roll Labels	1173
Printing Non 1" 1-up Labels	1174
Using Custom Page Size to Print Labels	1174
Using Standard Page Sizes to Print Labels	1174
2, 3, and 4-Up Roll Labels.....	1174
4-Up Cheshire Labels.....	1175
Selecting Font and Print Quality.....	1175

Welcome to Panorama!

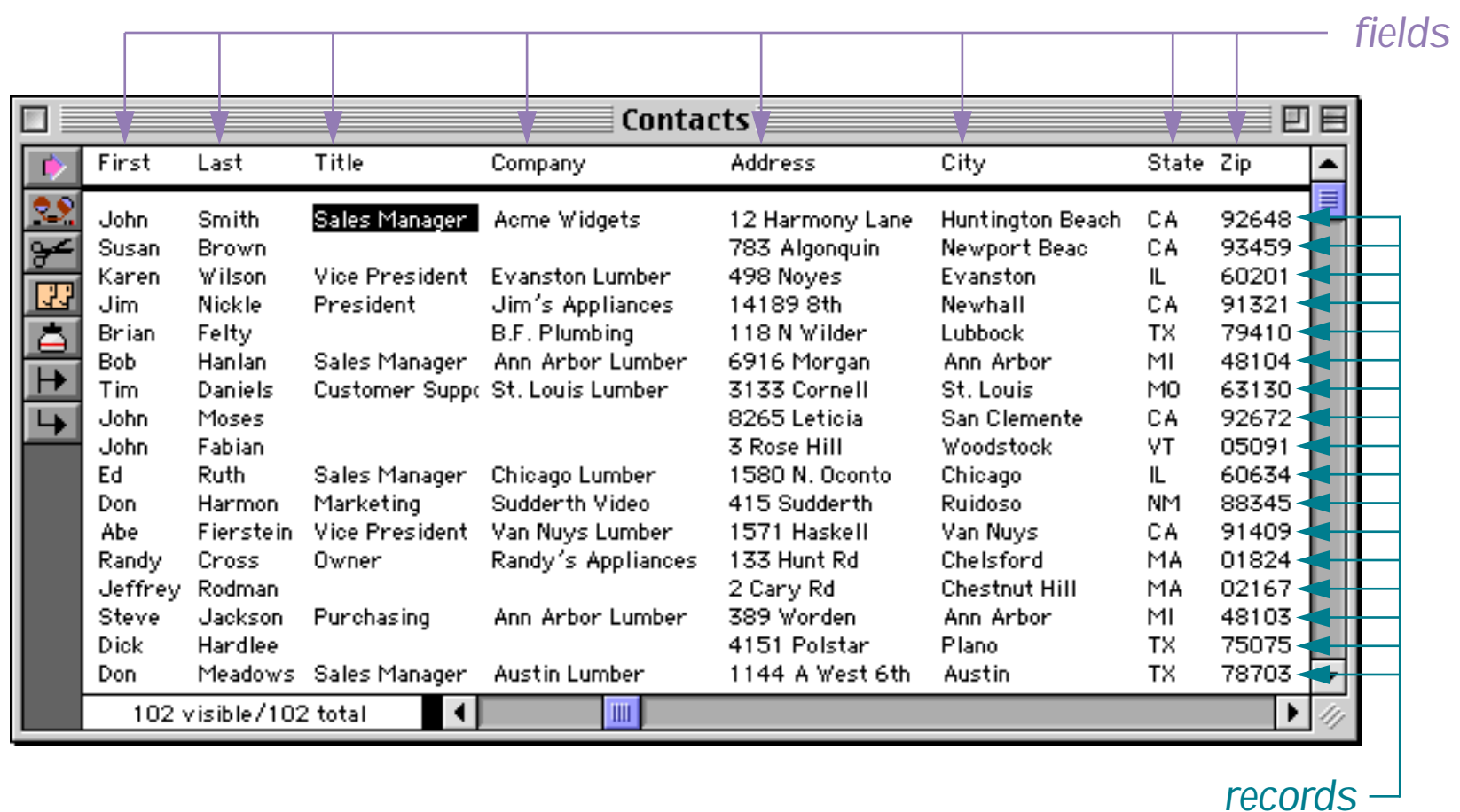


Congratulations! You are about to get acquainted with Panorama, a powerful tool for organizing and understanding information. With Panorama you can store, retrieve, categorize, summarize, chart, merge and print your information.

This book explains how to use Panorama. It assumes that you are already familiar with the basics of operating your computer. You should be familiar with pointing, clicking and dragging with the mouse, copying files, choosing commands from pull down menus, using scroll bars and editing text. If you are not familiar with these topics please review the training material that came with your computer.

What is a Database?

The right knowledge at the right time can advance a career, a company, a civilization. Obtaining the right information at the right time is not often an easy task, especially when you are confronted with large amounts of data. Data that is arranged randomly (for example a pile of receipts) won't do you much good. When a collection of data is organized it is called a **database**. A computer program for entering and manipulating the information in a database is called a database program or a database management program.



First	Last	Title	Company	Address	City	State	Zip
John	Smith	Sales Manager	Acme Widgets	12 Harmony Lane	Huntington Beach	CA	92648
Susan	Brown			783 Algonquin	Newport Beac	CA	93459
Karen	Wilson	Vice President	Evanston Lumber	498 Noyes	Evanston	IL	60201
Jim	Nickle	President	Jim's Appliances	14189 8th	Newhall	CA	91321
Brian	Felty		B.F. Plumbing	118 N Wilder	Lubbock	TX	79410
Bob	Hanlan	Sales Manager	Ann Arbor Lumber	6916 Morgan	Ann Arbor	MI	48104
Tim	Daniels	Customer Supp	St. Louis Lumber	3133 Cornell	St. Louis	MO	63130
John	Moses			8265 Leticia	San Clemente	CA	92672
John	Fabian			3 Rose Hill	Woodstock	VT	05091
Ed	Ruth	Sales Manager	Chicago Lumber	1580 N. Oconto	Chicago	IL	60634
Don	Harmon	Marketing	Sudderth Video	415 Sudderth	Ruidoso	NM	88345
Abe	Fierstein	Vice President	Van Nuys Lumber	1571 Haskell	Van Nuys	CA	91409
Randy	Cross	Owner	Randy's Appliances	133 Hunt Rd	Chelsford	MA	01824
Jeffrey	Rodman			2 Cary Rd	Chestnut Hill	MA	02167
Steve	Jackson	Purchasing	Ann Arbor Lumber	389 Worden	Ann Arbor	MI	48103
Dick	Hardlee			4151 Polstar	Plano	TX	75075
Don	Meadows	Sales Manager	Austin Lumber	1144 A West 6th	Austin	TX	78703

Every database— whether on paper or in a computer — is composed of records. A **record** contains a collection of information about a particular person, company or entity. For example, each record in a mailing list database would contain the name and address of a particular person, while each record in an invoice database would contain all of the information collected for a single order. To learn more about records see “[Records](#)” on page 187.

Each record is divided into fields. A **field** contains a single piece of information about the subject of the record, for example a name, a street address, a phone number, etc. Fields are what make a database more than a hodgepodge of random information. Each field appears in the same place within every record in the database. To learn more about fields see “[Fields](#)” on page 193.

A database program like Panorama helps you design, manage and use data that is structured into records and fields. Before you begin you must tell the database program how you want the fields to be set up. As you enter new data Panorama helps make sure that everything goes in the right place and the structure remains intact. Once data is entered, Panorama can quickly scan the data to find the information you need, or categorize and summarize the information you need for a report. Panorama can also re-organize the data (for example, sorting) or even change the database field structure as your needs change — without having to start over from scratch. Virtually any job that can be done manually with a filing cabinet, card file or paper list can be done faster and more efficiently with a computerized database program like Panorama.

A Brief History of Database Technology

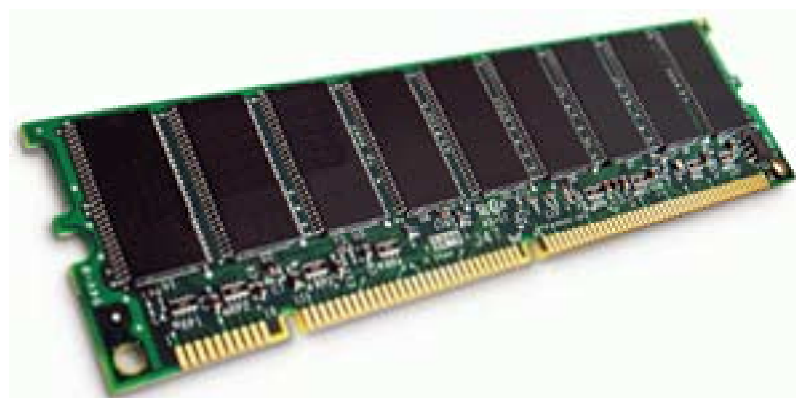
The need for data organization goes back long before computers. Before computers data was usually organized with paper forms and filing cabinets. Unfortunately, the information in a row of filing cabinets is hardly at your fingertips — at best an item might be located in a minute or two, while at worst a misfiled item might never be found at all.



In the 1960's and 1970's disk based database systems revolutionized the collection and storage of data. Instead of storing the data in a filing cabinet it is stored on a spinning magnetic disk (hard drive). Depending on how the information is filed an item can be located in as little as a second. Today's popular database programs, including Access and FileMaker, are based on this hard drive technology that was originally developed 30 to 40 years ago.



Storing information on a spinning disk is a fantastic improvement over filing cabinets, but it still relies on a mechanical system. Although disk drives have become faster and faster over the years, the speed of rotation and the movement of the head over the disk platter are still a bottleneck, just as feet, hands and fingers were a bottleneck when accessing data in a filing cabinet. Fortunately, there is an alternative. Besides the hard drive, your computer contains a large internal electronic memory bank (RAM) that allows the computer to work with large quantities of information at pure electronic speeds. In the past this electronic memory was too small for large databases, but today's computers have enough RAM for all but the largest database tasks.



As you have probably guessed by now, Panorama is designed to leapfrog existing disk based database software by using your computers electronic memory for ultra fast operation, making Panorama faster, easier to use, and more powerful than any other database software previously available. Panorama uses the hard drive only for permanent data storage. Searching, sorting, summarizing and other data processing tasks are performed entirely in RAM.

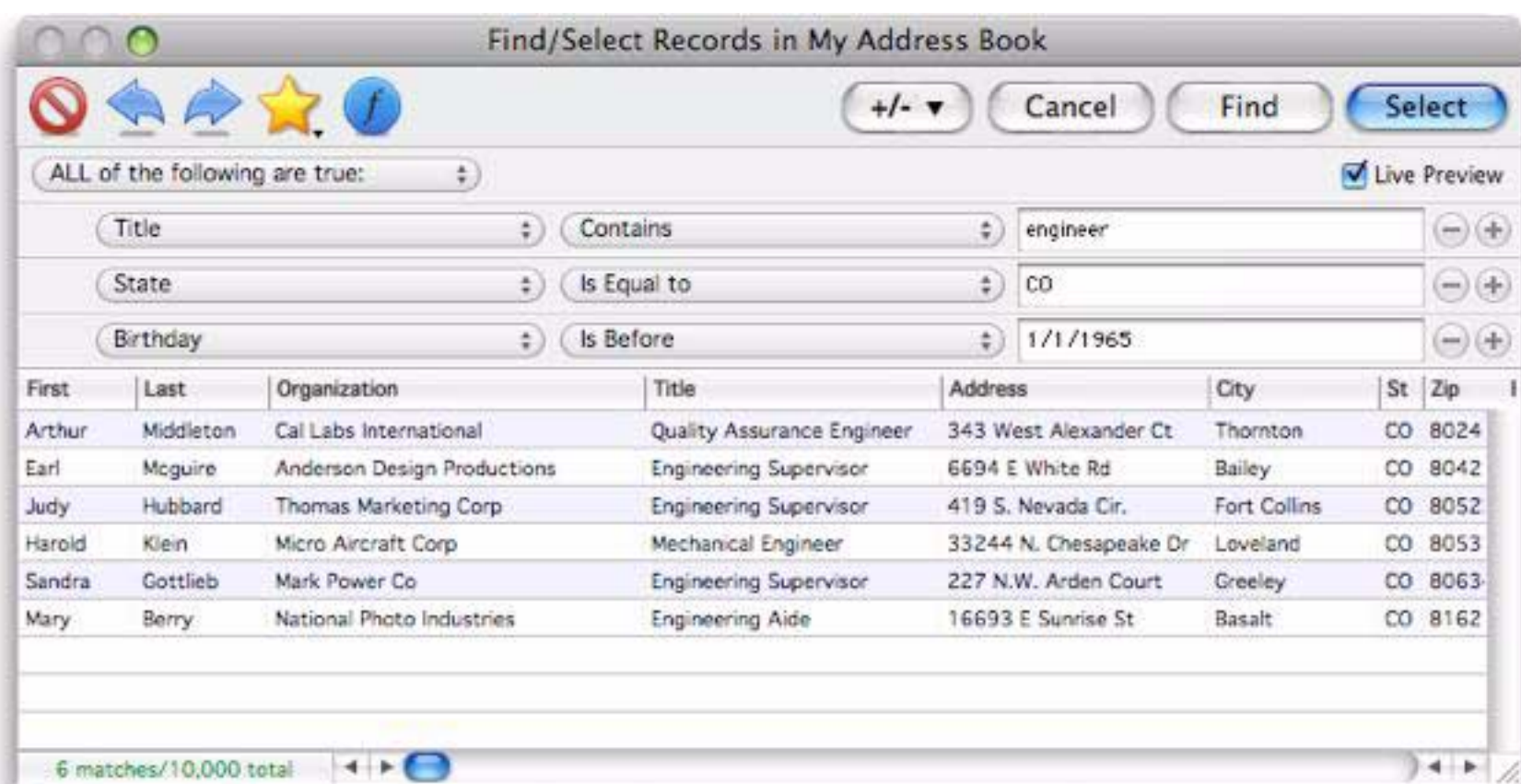
If you're worried about the safety of a RAM based database, Panorama's unique *Total Recall* feature has you covered. Total Recall allows Panorama to fully recover after a crash -- whether due to a power outage, hardware problem, system crash, or Panorama bug (never!). When Panorama is relaunched after a crash it gives you the option to automatically restore everything just as you left it -- all open files, open windows, etc. Only the last few seconds of work will be lost. It's almost as if nothing has happened at all — you can just continue with your work as if nothing had happened. See [“Total Recall \(Auto-Save/Crash Recovery\)”](#) on page 66 to learn more.

What is Panorama?

In addition to its blazing RAM based speed, Panorama includes a number of unique capabilities that set it apart from other database programs. Panorama is easy to learn and use, is blazingly fast, has powerful tools for analyzing financial data, and is powerful enough for even the most demanding database jobs.

Super Fast Searching and Sorting

Panorama's RAM based speed makes searching and sorting faster and more flexible than ever before (see "[Sorting](#)" on page 323 and "[Searching and Selecting](#)" on page 331). Searching is not limited to full word or begins with matches — you can search for data that contains a word or phrase or even perform formula based searches (for example "find all names longer than 12 characters" or "find all invoices where shipping is more than 10% of the order total". The search results are updated "live" as you type, allowing you to quickly focus on just the information you are looking for.



Phonetic Searching

Panorama's "sounds like" option allows you to search for data phonetically (see "[The Find/Select Dialog](#)" on page 336). For example a search for "sounds like Alan" will turn up anyone named **Alan**, **Allan**, or **Allen**.

Easy Set-Up

Simple step-by-step dialogs make it easy to define database fields (see "[Adding New Fields](#)" on page 198), print mailing labels (see "[Labels](#)" on page 1169), and print custom reports (see "[Custom Reports](#)" on page 1061).

Crosstabs

Panorama's crosstab feature allows it to quickly and automatically convert raw data into a tabular summary; for instance turning raw checkbook data into a monthly budget. Crosstabs are one of the most powerful tools yet for analyzing financial data (see "[Crosstabs](#)" on page 415).

Data Outlines

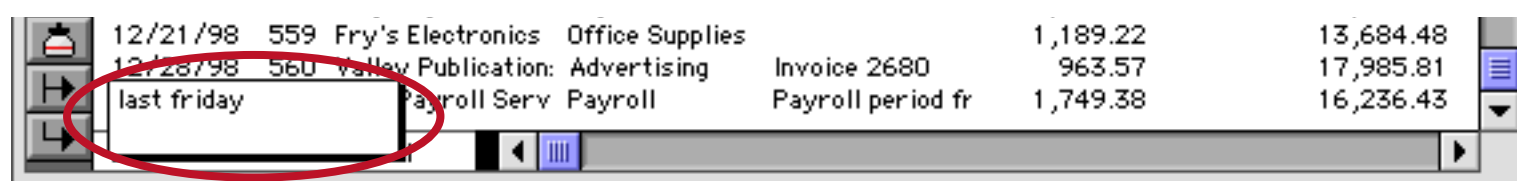
Panorama's outlining feature is another powerful tool for analyzing financial data, and goes much further than ordinary subtotal calculations (see "[Summaries and Outlines](#)" on page 365). You can hide and reveal different levels of subtotals, identify problems or opportunities and then zoom in on specific details. You can also perform further operations or calculations on subtotals as if they were data.

Data Entry Shortcuts

Panorama's data entry shortcuts reduce keying errors and data entry errors (see "[Data Entry & Editing](#)" on page 265). Panorama's unique Clairvoyance® feature automatically finishes typing for you (see "[Clairvoyance®](#)" on page 284). Auto-capitalization, data entry buttons, smart defaults, and optional spelling checker and zip code lookup save even more time.

Smart Dates™

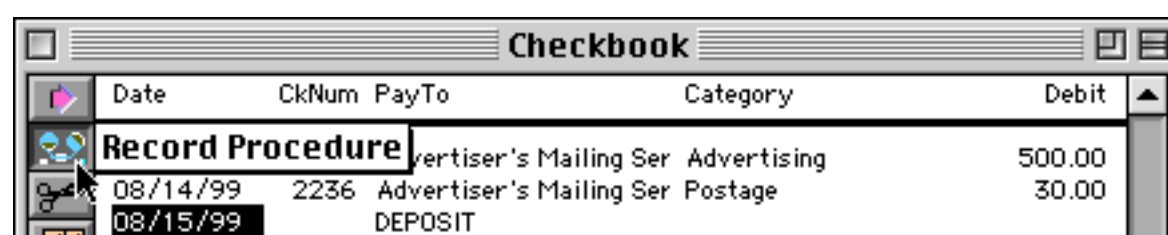
Panorama understands dates the way you do—as part of weeks, months, quarters, or years (see "[Entering Dates](#)" on page 255). You can easily locate or summarize information by any of these date periods.



12/21/98	559	Fry's Electronics	Office Supplies		1,189.22	13,684.48
12/28/98	560	Valley Publication:	Advertising	Invoice 2680	963.57	17,985.81
last friday		Payroll Serv	Payroll	Payroll period fr	1,749.38	16,236.43

Smart Program Recorder

Panorama's program recorder allows you to record multi-step operations and play them back later with a single click or keystroke. It's as easy to use as a cassette recorder—just start the recorder then do your work (see "[Creating a Procedure with the Recorder](#)" on page 212). The recorder doesn't just record mouse clicks and keystrokes as is, but automatically converts them into simple English-like commands that can be edited later if necessary.



Date	CkNum	PayTo	Category	Debit
Record Procedure		vertiser's Mailing Ser	Advertising	500.00
08/14/99	2236	Advertiser's Mailing Ser	Postage	30.00
08/15/99		DEPOSIT		

Formulas

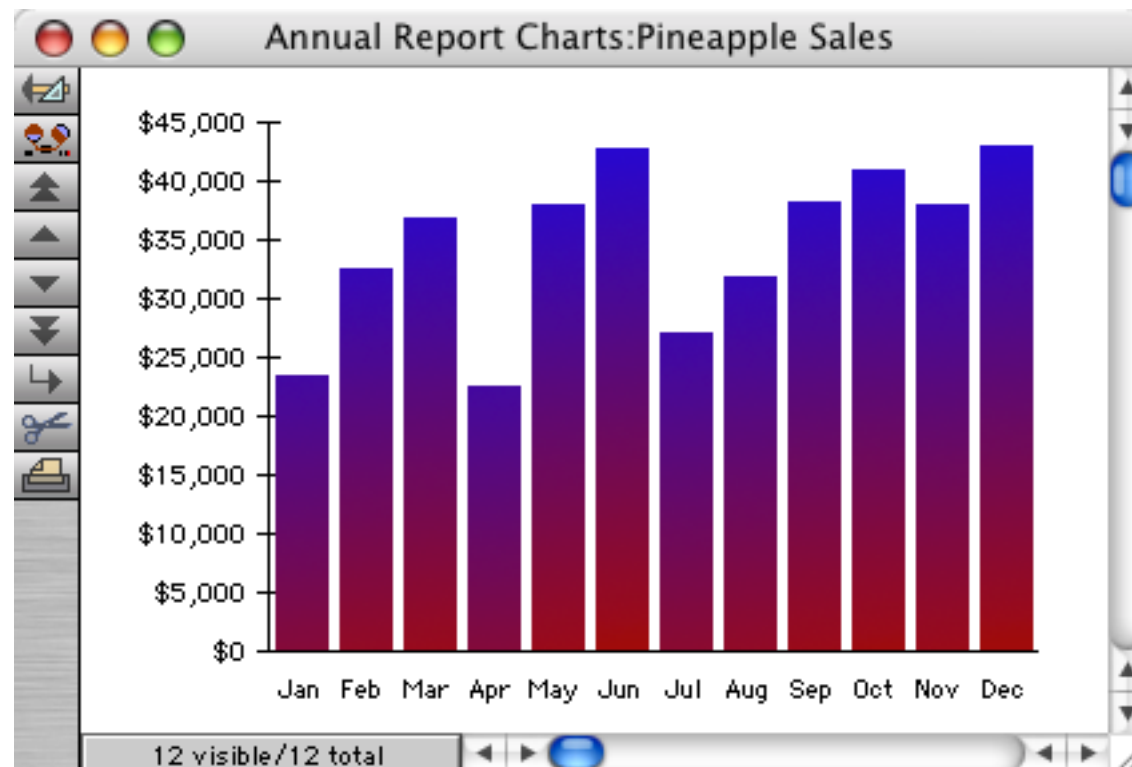
Panorama can perform simple and complex calculations on numbers, text, and dates, and includes a wizard to help you build and test formulas (see "[Formulas](#)" on page 19).

Compact Storage

Panorama uses up to 85% less disk space than other database programs for the same data.

Charts

Panorama's built in charts (bar, line, area, pie, and scatter) can visually reveal trends and relationships that are often hidden in a conventional report (see "[Charts](#)" on page 993).



Relational Links

Panorama can relate the information in two or more databases, insuring consistency and simplifying complex tasks like order entry, billing, payroll, sales lead tracking, and more (see "[Linking With Another Database](#)" on page 131).

Vendors:Detail

Organization: Valley Publications
 Address: 48582 N.E. Caillifomia Place
 Fontana CA 92336
 Phone: (714) 539-1824
 E-Mail: mplant55@acadia.net

Corporate Checkbook:Check

Date: 12/28/1998 Number: 560 Category: Advertising
 Pay To: Valley Publications \$ 963.57
 48582 N.E. Caillifomia Place
 Fontana, CA 92336
 Nine hundred sixty three dollars and 57 cents

recent checks...

Ck #	Date	Amount	Memo
560	12/28/1998	963.57	Invoice 2680
546	12/14/1998	1,022.45	Invoice 2638
514	11/23/1998	1,081.34	Invoice 2542
478	10/19/1998	1,008.13	Invoice 2434
471	10/12/1998	876.14	

Internet Content

Panorama includes built-in access to web content, including maps, phone and zip code information, fedex tracking and more. If data is on the web, you can access it with Panorama. See "[White Pages](#)" on page 73, "[Address Info](#)" on page 65, "[Fedex Tracking](#)" on page 70 and "[Basic Web Access](#)" on page 607.

Map, Phone, Email and VCard Support

Based on information in your databases Panorama can automatically display maps, dial the phone, send e-mail and drag and drop between Panorama and any other VCard enabled application (like Address Book).

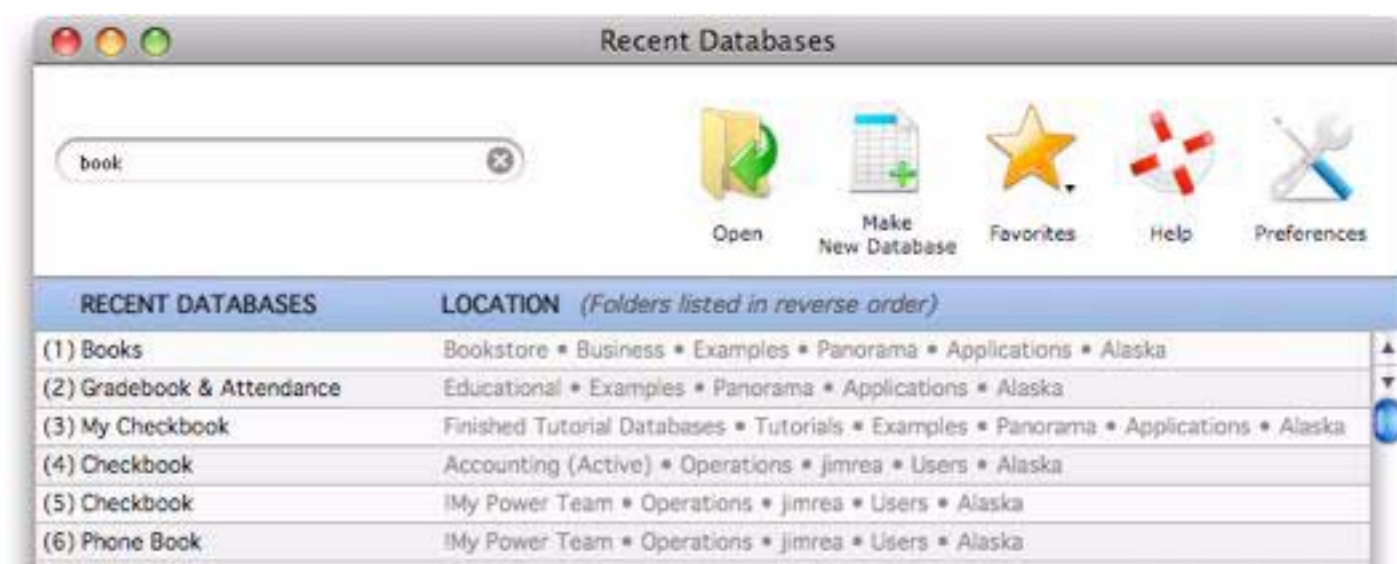


Sending Email

Panorama can send e-mail to individual or bulk recipients. You can program e-mail transmission into your own database (for example setting up an invoice database to automatically e-mail a copy of each invoice) or use the **Bulk Email** wizard. This wizard makes it easy to send and keep track of bulk emails. It keeps all of the previous e-mails you've sent organized, and can automatically extract e-mail addresses from one or more other databases. The wizard has two primary windows. The Bulk Email window displays a single e-mail message, and allows you to configure and modify that message. The History window displays a list of the previous e-mails. For more details about this wizard see "[Bulk Email](#)" on page 68.

Recent Database Wizard

The Recent Database Wizard makes it easy to keep all of your databases at your fingertips (see "[The Recent Databases Wizard](#)" on page 44).



Advanced Graphic Tools

Panorama's graphic capabilities build on standard Macintosh drawing features and add special tools and dialogs that are designed specifically for creating and modifying tables within forms and reports (see "[Graphic Design](#)" on page 491).

HobbyShopSales: Aqua Order Form (100%)

PIX 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480

SEARCH DATA ADD DELETE PRINT VCARD DIA EMAIL SYNC

Contact Information (Jan 1, 1998) Invoice 1000

Name: Derrick Ramsey
 Address: 35081 W. Birch Rd.
 Walnut Creek CA 94596
 Country: [Dropdown]
 Phone: (925) 639-7244
 Fax: [Field]
 E-Mail: [Field]

Payment Information

Card Type: Visa
 Card Number: 4062-9297-0143-2585
 Expires (mm/yy): 07/03
 Name On Card: [Field]
 Non-Taxable

Qty	Description	Price	Total
1	C&NW 40' Stock Car	4.99	\$ 4.99
1	Chessle U30B	28.99	\$ 28.99
1	UP 40' Single Dome Tank Car	4.49	\$ 4.49
1	ATSF Coach	8.49	\$ 8.49
Subtotal:			\$ 146.94

Super Matrix

Mail Merge and Labels

Panorama's built-in mail merge can produce all the components of a direct mailing—including custom form letters, mailing labels, and postcards or envelopes (see "[Labels](#)" on page 1169 and "[Custom Reports](#)" on page 1061). Panorama includes a built-in word processing program, reducing both the complexity and time required to put together a direct mailing (see "[Word Processor SuperObject](#)" on page 673).

Database Publishing

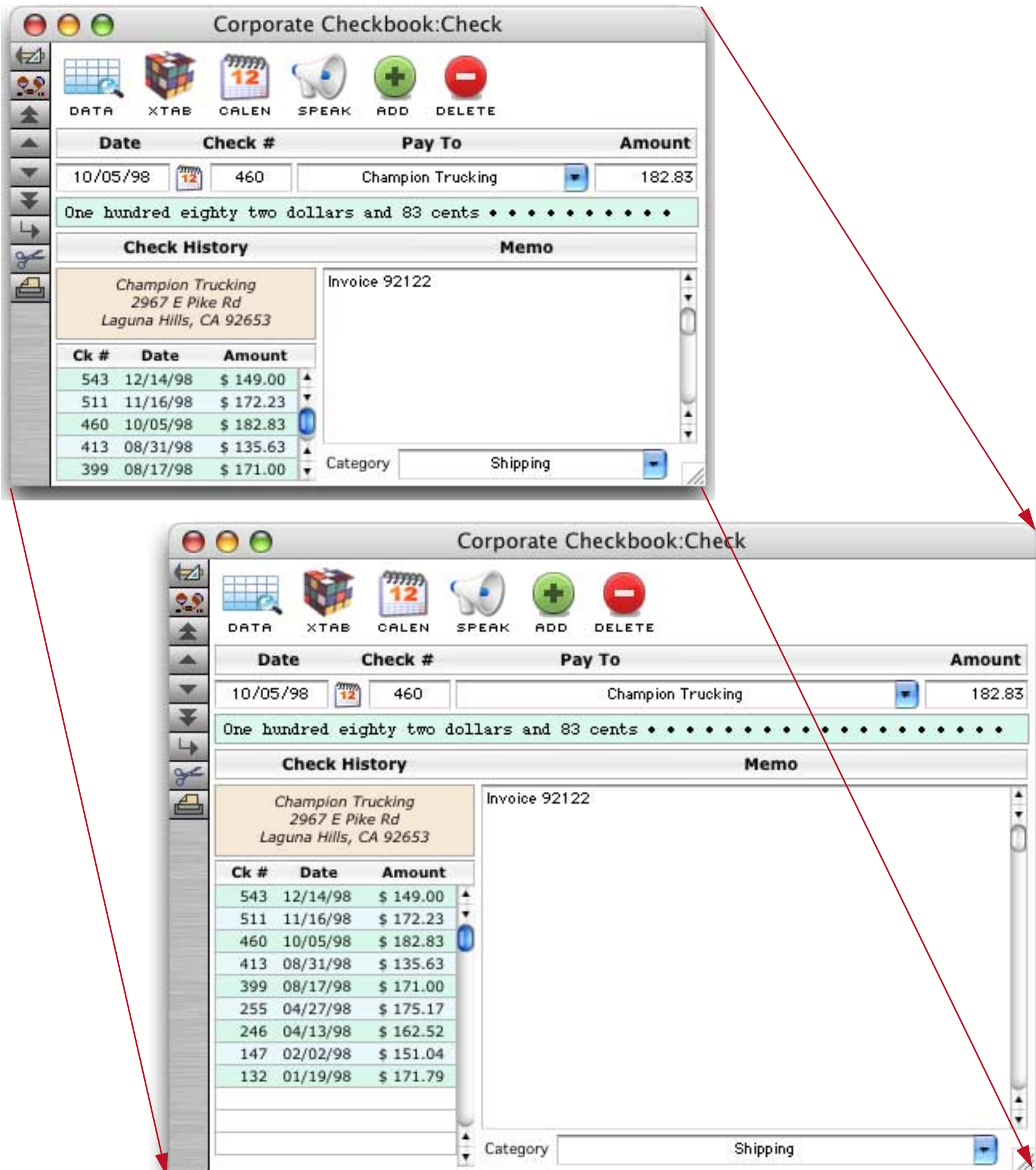
Panorama can automatically create complex database reports including catalogs, directories, bibliographies, and more. Reports can include both fixed and variable height elements (including images), and Panorama can automatically control page and column breaks to eliminate widows and orphans (see "[Custom Reports](#)" on page 1061).

View-As-List Forms

Panorama allows you to display forms as separate pages, or as a continuous sheet (see "[View-As-List Forms](#)" on page 899).

Elastic Forms

Elastic forms adjust intelligently when the window containing the form is resized or zoomed. When the form is designed, you decide how the individual elements will expand or shift as the form changes size (see “[Elastic Forms](#)” on page 922).



Matrix Display

Panorama matrix object makes it easy to create repeating grids including calendars, catalogs and invoices (see "[Super Matrix Objects](#)" on page 939).

Checkbook Calendar -- October 1998						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1	2	3
				13 checks \$3,576.36		
4	5	6	7	8	9	10
	8 checks \$3,623.55					
11	12	13	14	15	16	17
	5 checks \$3,016.49					
18	19	20	21	22	23	24
	6 checks \$3,613.49					
25	26	27	28	29	30	31
	7 checks \$5,161.69					
						Total
						39 checks \$18,991.58

Ck #	Pay To	Amount
460	Champion Trucking	\$182.83
461	Cool Creek Studio	\$573.42
462	Airborne	\$87.84
463	Post Office	\$258.32
464	Precision Plastics	\$493.02
465	Kinko's	\$135.46
466	Poly Payroll Services	\$1,687.25
467	Clark Supply	\$205.41

1997	jan	feb	mar
1998	apr	may	jun
1999	jul	aug	sep
2000	oct	nov	dec
2001			
2002			

Images and Movies

A Panorama form can display images and movies from a wide variety of sources (see “[Images & Movies](#)” on page 741). An image may be fixed (for example a logo or background) or variable (changing from record to record - for example personnel photos or maps associated with individual records). Variable images may be included in the database or (more commonly) displayed directly from files on the disk. With the optional enhanced image pack Panorama can display nearly two dozen different image formats, including JPEG, TIFF, PNG, PCX and TARGA.



High Speed Import

Panorama can import data at rates approaching 1000 records per second. Importing data from mainframe or minicomputer systems is fast and convenient (see “[Importing a Text File](#)” on page 82).

Flexible Text Export (including HTML)

Panorama can export text files in tab separated, comma separated or HTML table formats. When exporting HTML you can choose fonts, colors, column widths and titles (see “[Exporting a Text File](#)” on page 105).

Data Transformation

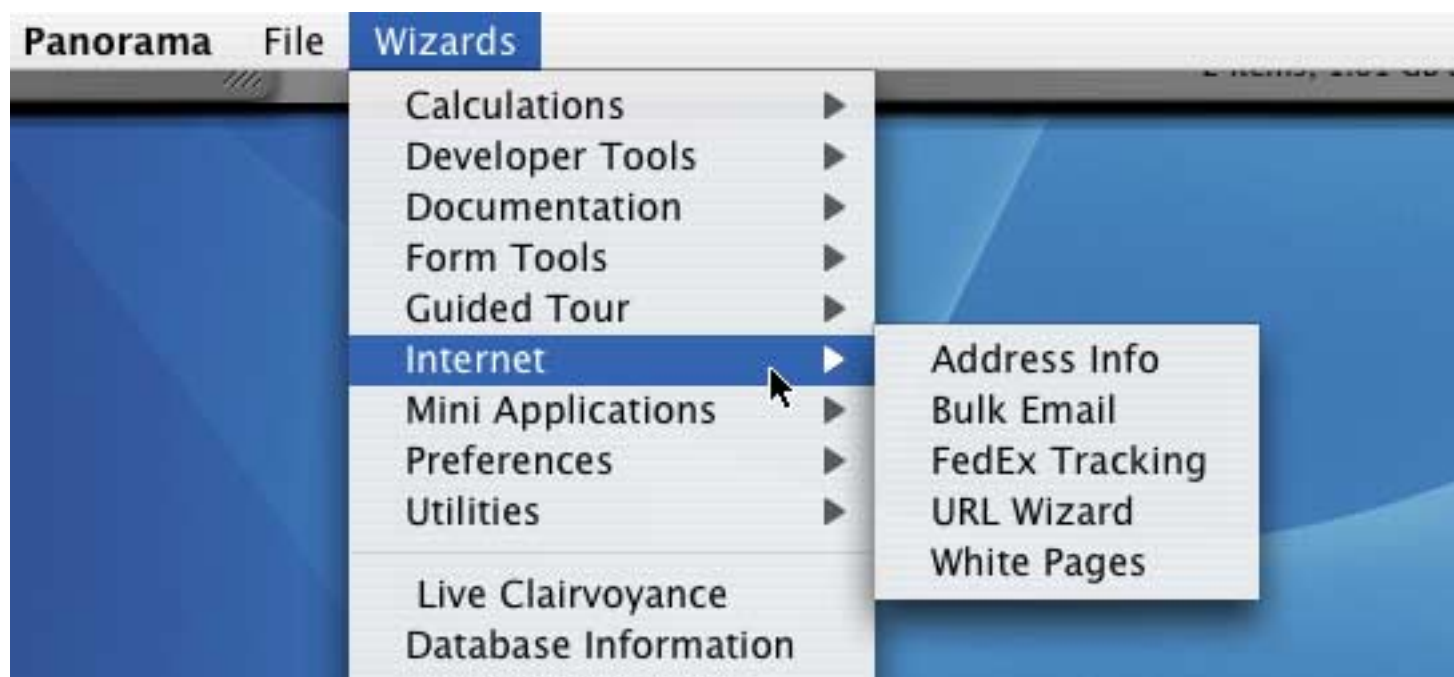
Panorama can quickly transform large amounts of data. Examples include re-arranging characters or words, capitalizing, and transformations based on patterns in the data (see “[Transforming Selected Data](#)” on page 433).

Select/Remove Duplicates

Scan even the largest databases for duplicate information with the **Select Duplicates** command (see “[Select Duplicates](#)” on page 362). Duplicates can also be removed automatically based on rules set up in advance (see “[Using UnPropagate to Eliminate Duplicates](#)” on page 470).

Wizards

Panorama’s **Wizard** menu contains pre-built databases for automating common tasks and enhancing productivity when using Panorama (see the separate **Wizards & Demos** PDF file). General productivity wizards include databases for organizing your contacts, calendar, correspondence and tracking your time. Panorama also includes wizards for importing and exporting data, arranging windows, locating favorite files, creating new databases and much more.



Panorama Enterprise Server

The **Panorama Enterprise Server** introduces a revolutionary new system for sharing database information. Unlike traditional client/server databases that sequester all of the data on a central server, the Panorama Enterprise system distributes complete copies of shared databases across all clients. Essentially each client caches the entire database for better performance, and lower network and server load. The Panorama Enterprise server acts like a traffic cop, managing record locking and updating clients as necessary.



RAM Based Server. The Panorama Enterprise Server is RAM based for blazing speed, but it also keeps a disk based transaction journal for full data recovery after any kind of system interruption (power failure, etc.). The journal is a simple sequential file with minimal impact on performance.

RAM Based Client. Each client keeps a full copy of each open database in RAM for fast searching, sorting, reports, etc. The server only gets involved when data is modified, managing record locking and updating clients as necessary. This increases performance two ways:

- Sorting, searching, summaries and reports are done locally in the client's RAM. You'll feel like your databases have broken the sound barrier!



- Network traffic and server load are dramatically reduced. Panorama clients don't access the network at all when browsing, sorting, etc.

Offline Roaming. Traditional client/server systems are completely inoperable without a network connection. Panorama gives you the option of roaming off-line while still retaining access to your databases for browsing, reports and even modification and updates. In other words, users can view and edit databases even when they don't have a network connection -- ideal for road warriors. Offline changes are automatically synchronized with the server when the client re-connects to the network. Because both client and server are RAM based this synchronization is extremely fast. If there are any synchronization conflicts (same record edited both offline and by another user) they can be resolved automatically or manually on a field-by-field basis.



Web Database Publishing. Panorama's WYSIWYG form design tools can automatically build HTML/CSS forms for database web access and upload them to the server. Many common web database applications can be built with no

programming at all. For fully customized applications, Panorama provides a comprehensive programming language that includes rich text and tag manipulation capabilities. Server side programs are automatically uploaded to the server and a built in simulator/debugger allows developers to debug programs on their development machine before they are uploaded.



Managing Web Content. Database changes made on any client (for example price list changes) immediately show up on the web server, while changes made via the web (for example incoming shopping cart orders) automatically show up on client desktops. No extra programming for database maintenance is required — authorized users work with Panorama's intuitive user interface to edit web published databases just as if they were on their local computers.

“Cloned” Web Sites. The Panorama Enterprise Server makes it easy to manage "cloned" web sites with identical design and programming. A typical example of this feature is managing identical test and production servers. When tests on a new feature are complete the live production server is automatically updated with the changes made on the test server (while keeping the data completely separate).



Easy Server Administration. All Panorama Server configuration and maintenance is managed remotely from the Panorama client software. Built in server backup automatically backs up "live" databases without shutting down the server. The server can be configured to automatically send an e-mail to the server administrator if any problems occur.

Industrial Strength. When publishing database content on the web the Panorama Server works as a back end to the built-in industrial strength Apache server included with OS X and OS X Server. No modifications to the Apache configuration files are required. (You can also use any other UNIX web server that supports Apache style CGI's.)



Connect and Synchronize Mode. Panorama Enterprise databases can be configured to operate primarily offline. This is similar to the way e-mail works - users perform data entry offline, then press "Submit" or "Connect" to submit their data and receive updates. The connection lasts only long enough to transfer the data. Before Panorama Enterprise, applications that worked like this had to be built from scratch, but the Panorama Enterprise server allows this type of operation with little or no custom programming.



Built-in Backup. The Panorama Enterprise Server's built-in backup system provides automatic daily backup of "live" databases without shutting down or interrupting the server.



Remote Server Administration. All server configuration and maintenance can be managed remotely from any Panorama client — once the server is installed you'll never need to touch it again.

This system is documented in the separate Panorama Enterprise Handbook.

Complete Programming Language and Development Tools

If Panorama doesn't have a feature already, you can add it yourself with Panorama's built in programming language (see "[Writing a Procedure from Scratch](#)" on page 216). Panorama includes powerful programming features like variables (both local and global), if-then-else, case switching, loops, subroutines and a built in interactive debugger. You can even extend Panorama's programming language with your own custom statements and functions or embed programs written in Perl, Ruby, Python or PHP (see "[Working With Alternate Programming Languages](#)" on page 745).

Custom Menus, Buttons, and Dialogs

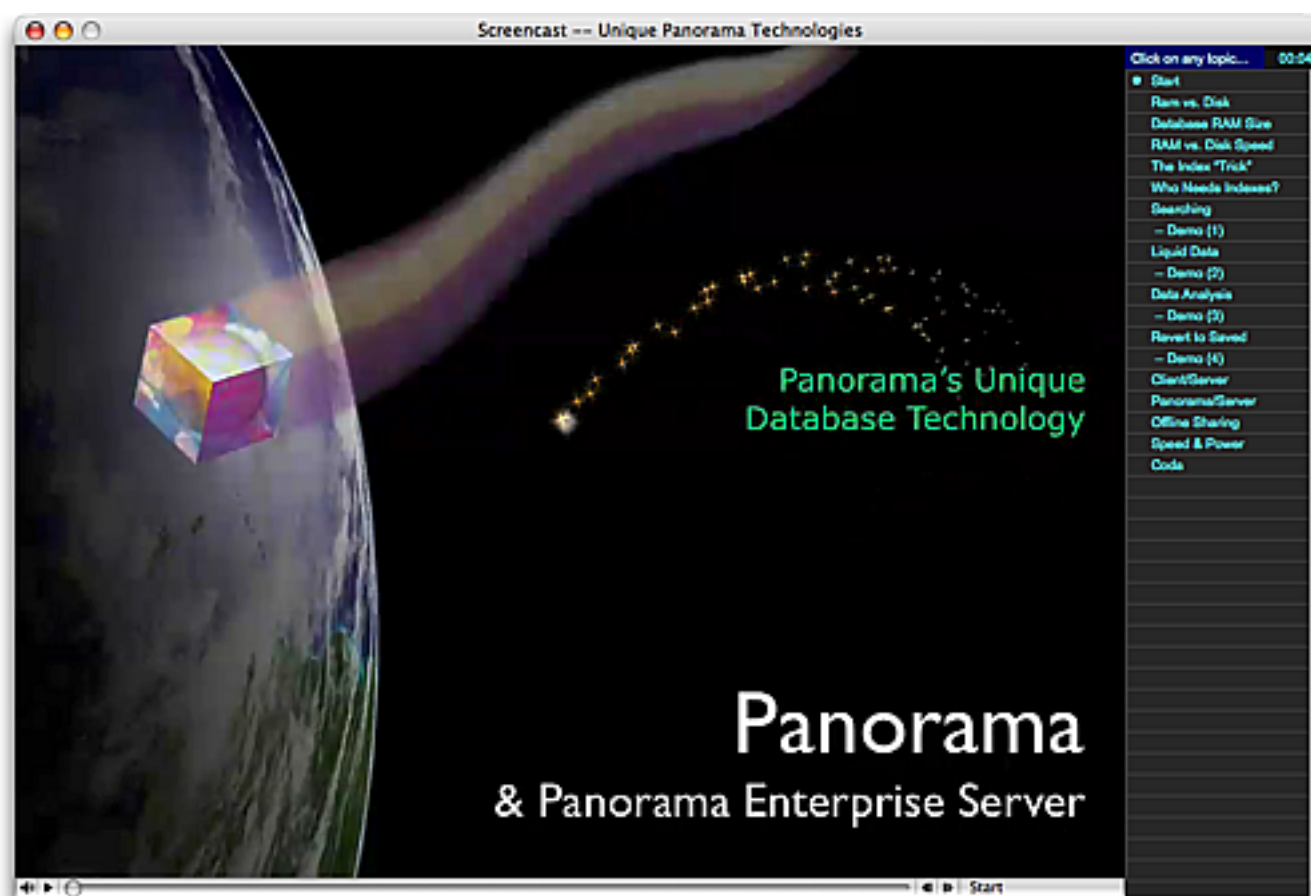
Panorama gives you the capability to create your own custom menus (see "[The Action Menu](#)" on page 355 and "[Live Menus](#)" on page 362), buttons (see "[Buttons & Widgets](#)" on page 823) and dialogs (see "[Dialogs](#)" on page 480), making professional quality custom applications possible.

Seamless Cross Platform Operation

Panorama databases are 100% compatible with both the Windows or MacOS platforms and may be transferred back and forth freely between the two platforms. You can even share databases on a single server across a cross platform network.

Videos & Screencasts

If you are just getting acquainted with Panorama, be sure to check out the guided tour screencasts (movies) included on the CD (or if you downloaded Panorama you can watch the screencasts directly from the www.provue.com web site). Just sit back and relax while we show you Panorama's unique tools for organizing information. All of the movies are recorded digitally and allow you to pause, back up, or skip ahead to the topics that most interest you (see "[Screencasts](#)" on page 49 of the [Wizards & Demos](#) PDF file).



For more videos see <http://youtube.com/provedevelopment>



Be sure to subscribe or check back often as we frequently add new videos to this site.

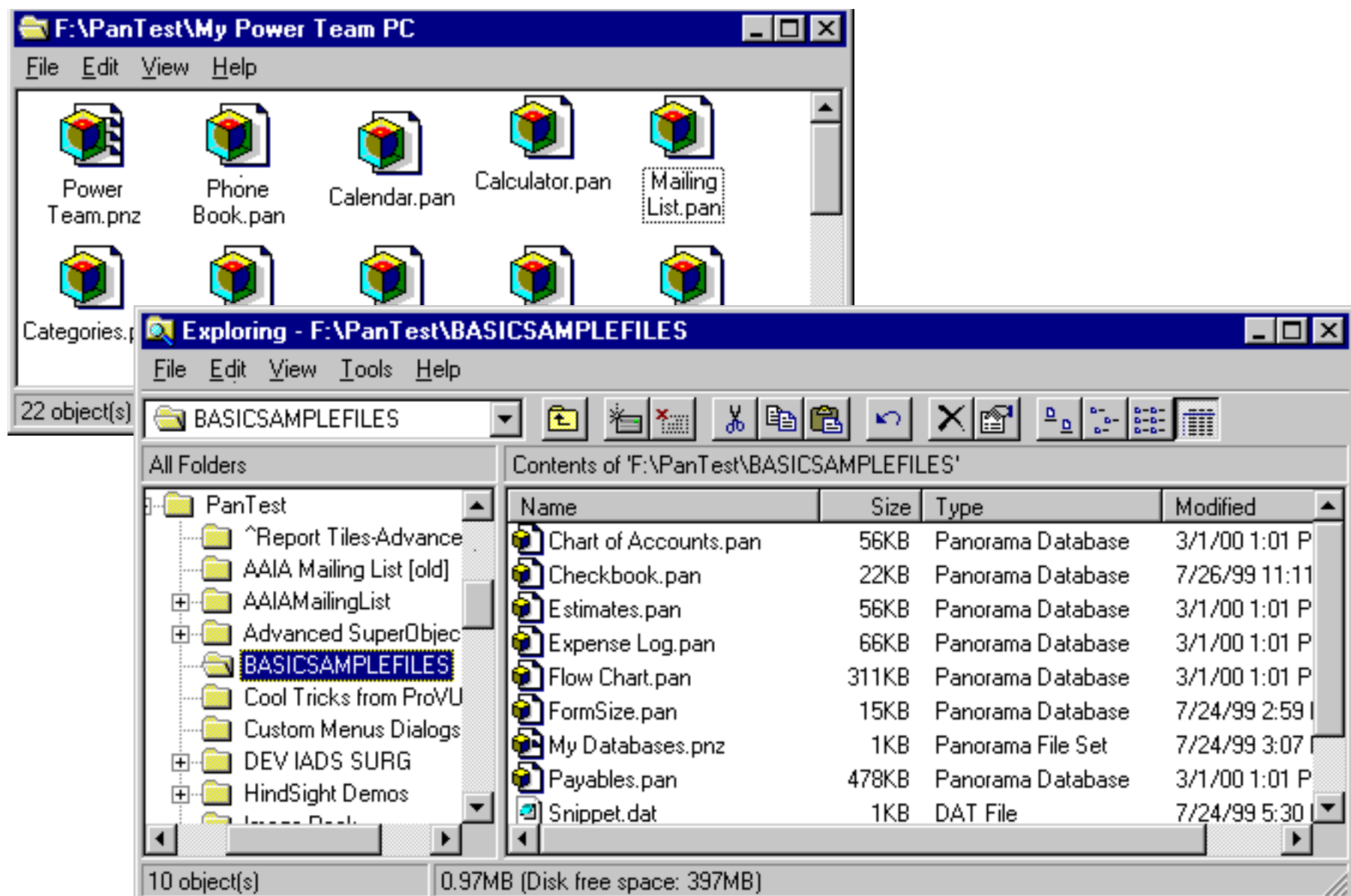
Chapter 1: Files and Memory






Panorama databases are permanently stored in files on a disk drive. (In fact, you'll often find that the words **database** and **file** are used interchangeably.) Each Panorama file contains all the components needed to use the database.

Files, Icons and the Desktop

Before you begin to use Panorama you should be familiar with the basic operation of your computer. Whether you are using a Macintosh or a Windows based computer, files appear in a “desktop” environment that allows them to be located, moved, copied and opened. On the Macintosh this desktop environment is called the **Finder**. On Windows computers this is simply called the desktop, which you can view with **My Computer** or using the **Windows Explorer**. Here are two typical views of folders full of files on the desktop.



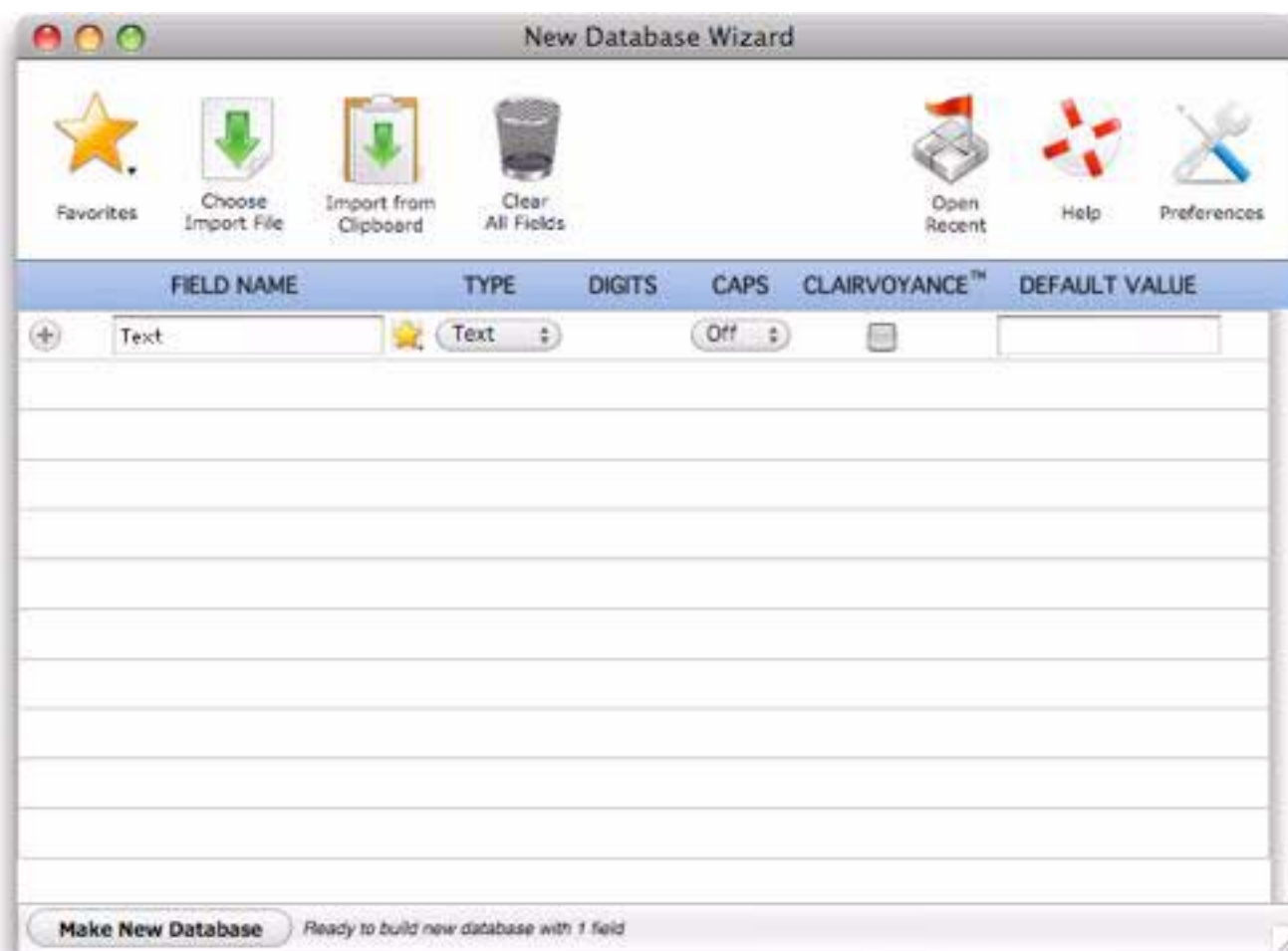
There are three different kinds of Panorama icons: **databases**, **file sets**, and the Panorama application itself.

	<p>This is the icon for a single Panorama database. On Windows machines, these files have the extension .pan. Double click on this icon to open the database.</p>
	<p>This is the icon for a set of Panorama databases (called a file set). On Windows machines, these files have the extension .pnz. Double click on this icon to open the entire set of databases at once.</p>
	<p>This is the icon for the Panorama application itself, which is usually called Panorama (Mac) or Panorama.exe (Windows). You can double click this application when you want to create a new database without opening an existing database first.</p>




You can manipulate these icons on the desktop any way you like, just like any other files. (However, you should avoid moving or copying the Panorama application itself. Although your disk may contain many database files for different tasks, there should only be one copy of the Panorama program itself.)

Launching Panorama

To launch Panorama you can either double click on the Panorama application itself or double click on the icon for any Panorama database or file set. If you double click on the Panorama application itself the New Database wizard will appear.

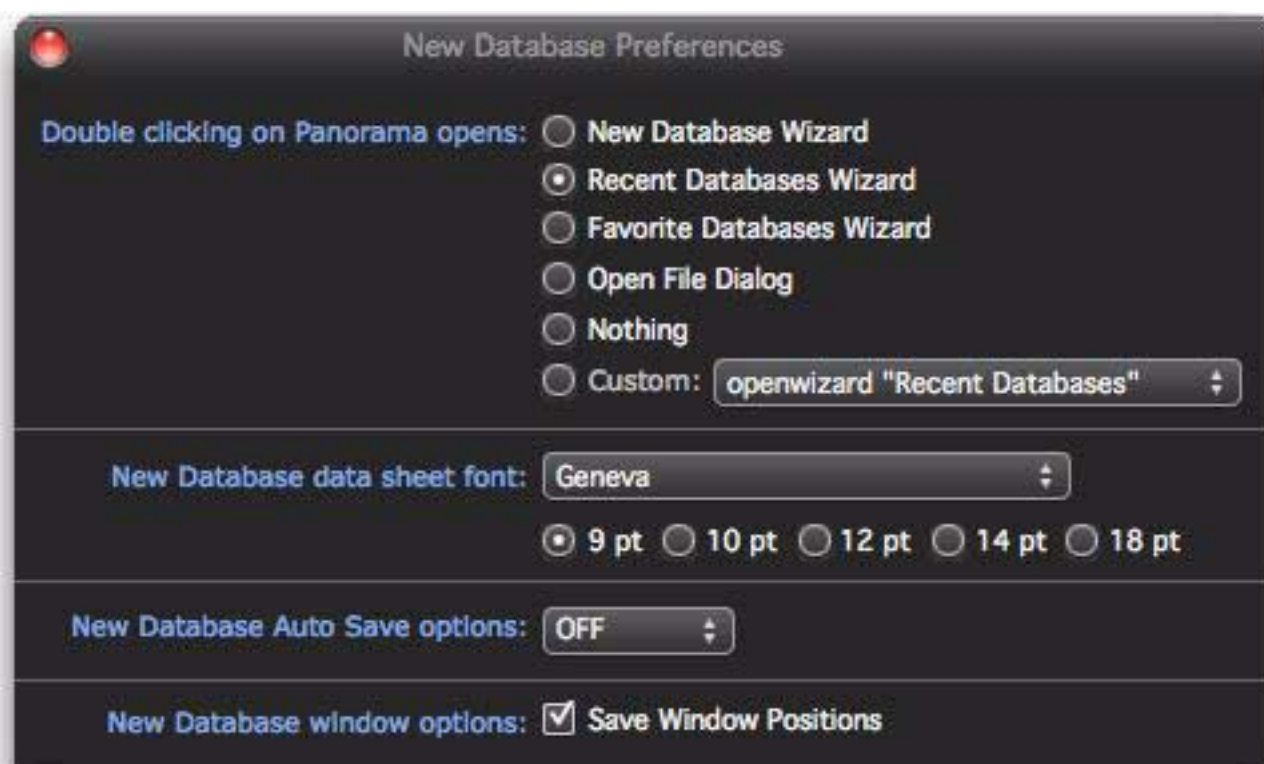


This wizard can be used to create new databases (see “[Using the New Database Wizard](#)” on page 50), but it can also be used as a handy “command post” for Panorama using the icons in the top right corner.






 <p>Open Recent</p>	<p>Click here to open the Recent Databases wizard. This wizard makes it easy to re-open databases that were recently opened. See “The Recent Databases Wizard” on page 44 for more information.</p>
 <p>Help</p>	<p>Click here to open the Help & Documentation wizard. This wizard gives you rapid access to the various PDF files, on-line references and screencasts (movies) provided with Panorama. See “Help & Documentation” on page 45 of the Wizards & Demos PDF file for more information.</p>
 <p>Preferences</p>	<p>Click here to change the preferences for this wizard, including controlling what happens when you double click on the Panorama application icon (see below).</p>

Changing the Default Launch Action

When you double click on the Panorama application icon Panorama normally opens the **New Database** wizard automatically. You can change this, however, by clicking on the **Preferences** tool in this wizard.



You have five different choices of what action Panorama will take when you double click on its icon:

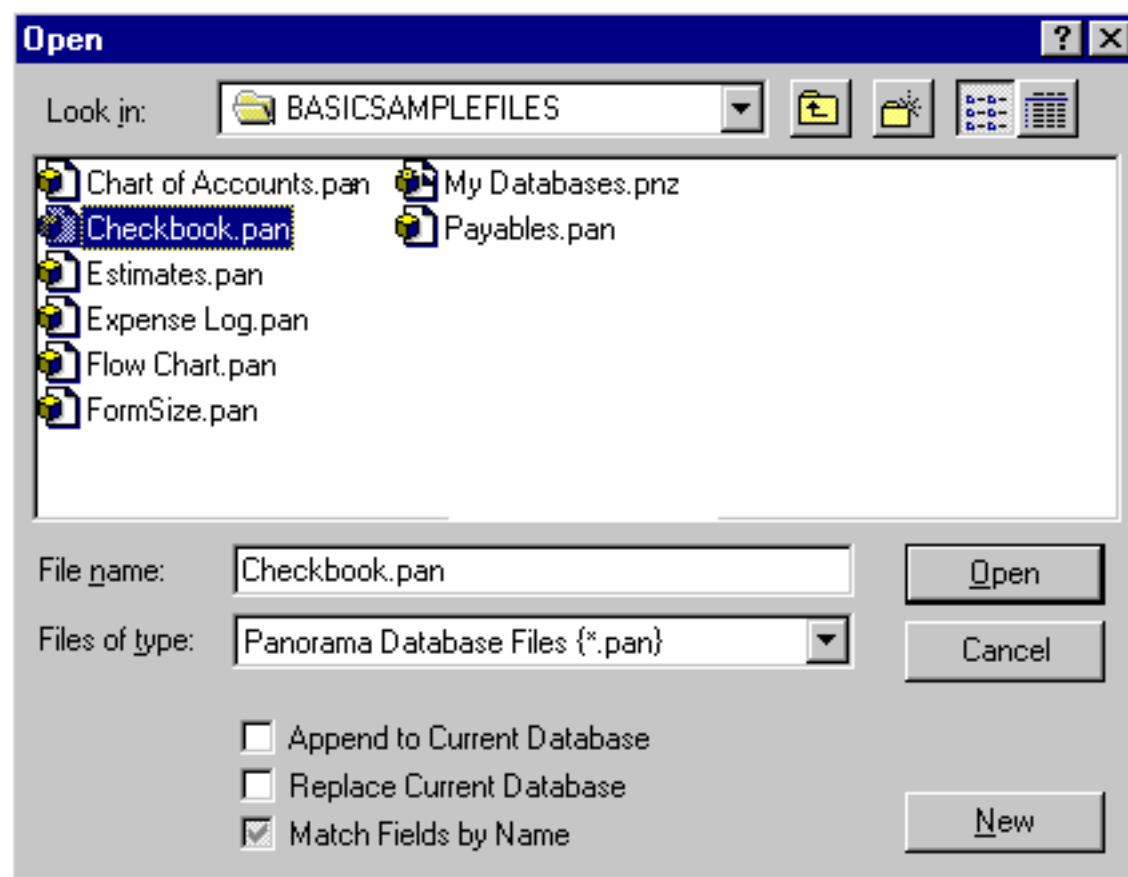
 New Database Wizard	Open the New Database wizard (see “ Using the New Database Wizard ” on page 50). This is the default when Panorama is first installed.
 Recent Databases Wizard	Open the Recent Databases wizard (see “ The Recent Databases Wizard ” on page 44).
 Open Wizard	Open the Open Wizard wizard (see “ Open Wizard ” on page 17 of the Wizards & Demos PDF file).
 Open File Dialog	Open the Open File dialog. This is the same dialog that appears when you choose Open File from the File menu, and was the action always taken by previous versions of Panorama when it was double clicked.
 Nothing	Do nothing at all. Only the Panorama menus appear, allowing you to use the File and Wizard menus to choose your next action.

There is also a sixth choice, **Custom**. This choice is a pop-up menu allowing you to pick any wizard as the startup window.

Opening a Database

Before you can work with a database you have to open it. From the desktop the quickest way to do this is to simply double click on the file’s icon. Or you can select the icon and choose **Open** from the desktop’s File Menu.

If Panorama is already running you can use the **Open File** command (File Menu) to open the file. Simply locate the file you want to open and double click on it. Or select the file and press the **Open** button.



This dialog has several additional buttons for importing, combining and creating new databases. For now you can simply ignore these options.

You can also open a database using the **Recent Databases** and **Favorite Databases** wizards, described later in this chapter (see “[The Recent Databases Wizard](#)” on page 44 and “[Advanced Database Opening Techniques](#)” on page 47).

Databases and RAM

When a database is opened, Panorama copies the information from the disk into the computer's internal electronic memory (RAM). Everything you do to a file takes place in RAM; including data entry, sorting, calculating, and drawing. If you want to store your work permanently, you must save it from RAM back to the disk using the **Save** command.

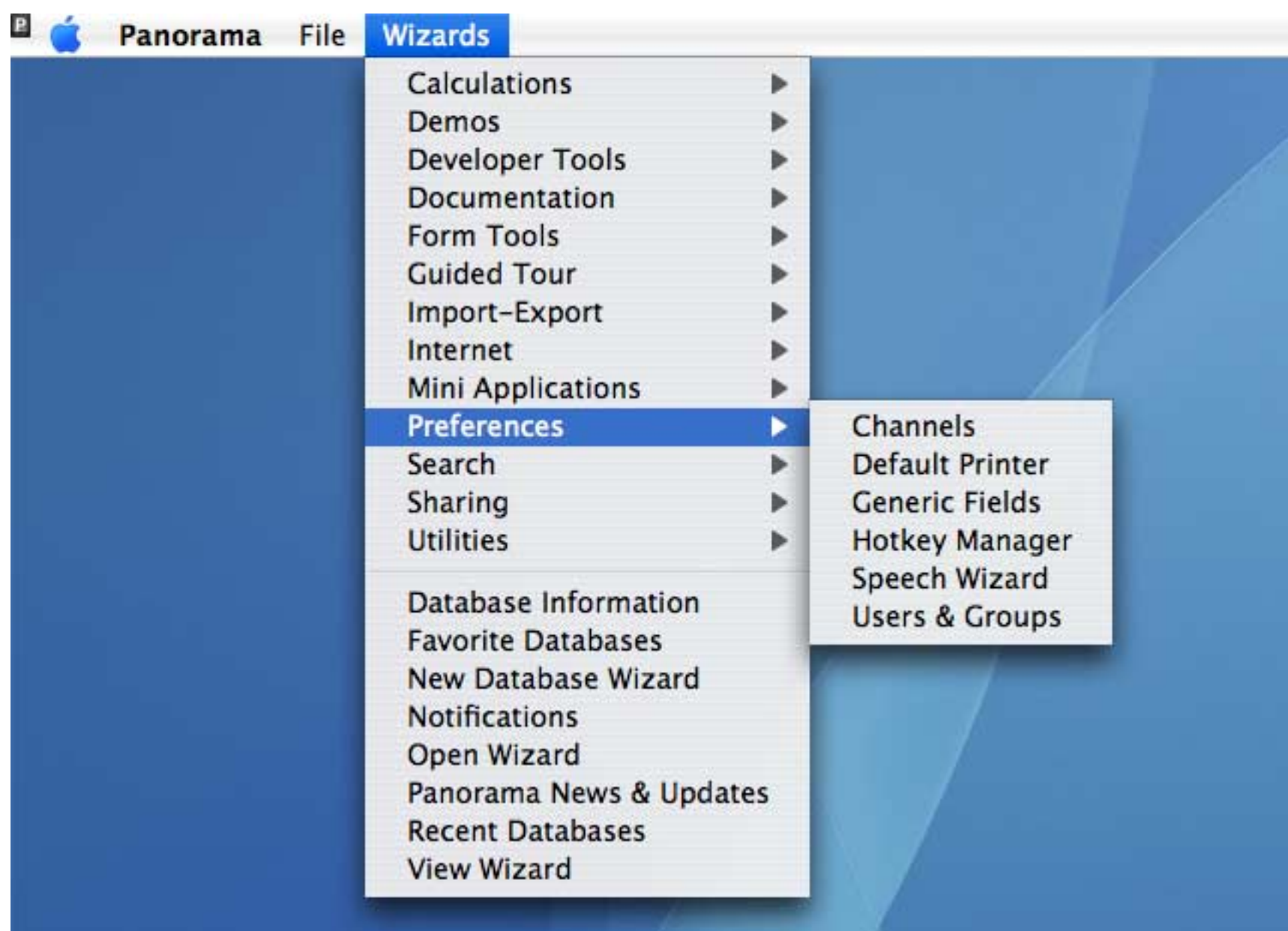
Most database programs don't take the extra step of copying the database from the disk into RAM before working with it. Since your computer can access data in RAM hundreds or even thousands of times faster than data on the disk, bringing the data into RAM makes Panorama much faster than most other database programs. If you've used other database programs you'll immediately notice how much "zipper" Panorama is compared to the programs you are used to.

If your computer has enough RAM available, you can open several Panorama databases at the same time. For more information about working with multiple files see "[Opening Multiple Files](#)" on page 74.

If your files are very large you may need to tell Panorama to use more memory. See "[Monitoring Memory Usage](#)" on page 137 for more information on this topic.

The Wizard Menu

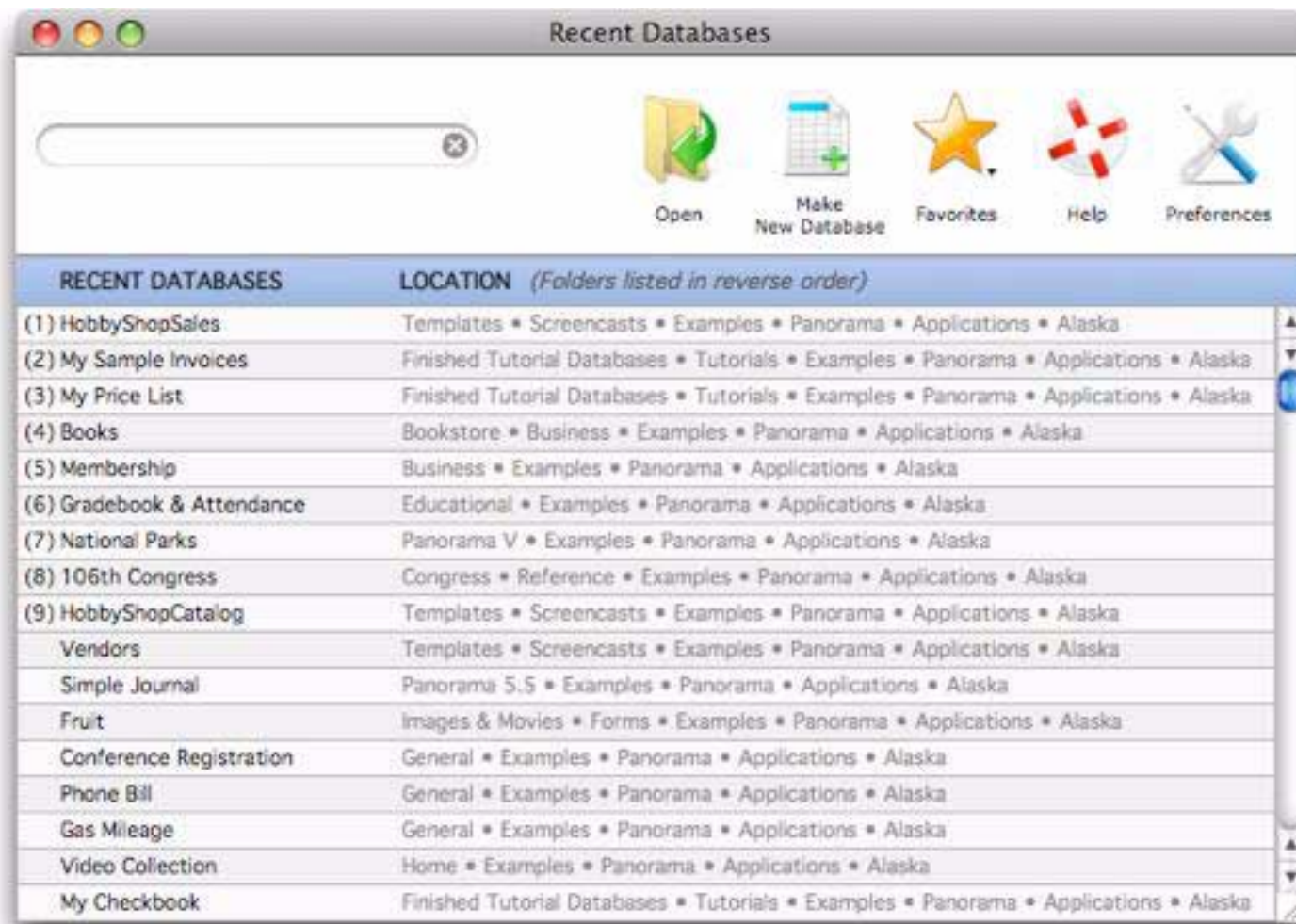
Panorama includes a number of pre-built databases that you can use as is, modify for your own purposes, or simply use as learning tools. With only a few exceptions these pre-built databases are completely accessible so that you can not only use them as is but also take them apart and see how they work. All of these databases can be opened with the **Wizards** menu and its submenus.



Many of these wizards are described throughout this manual. You can also find a complete description of every wizard in the separate **Wizards & Demos PDF file**.

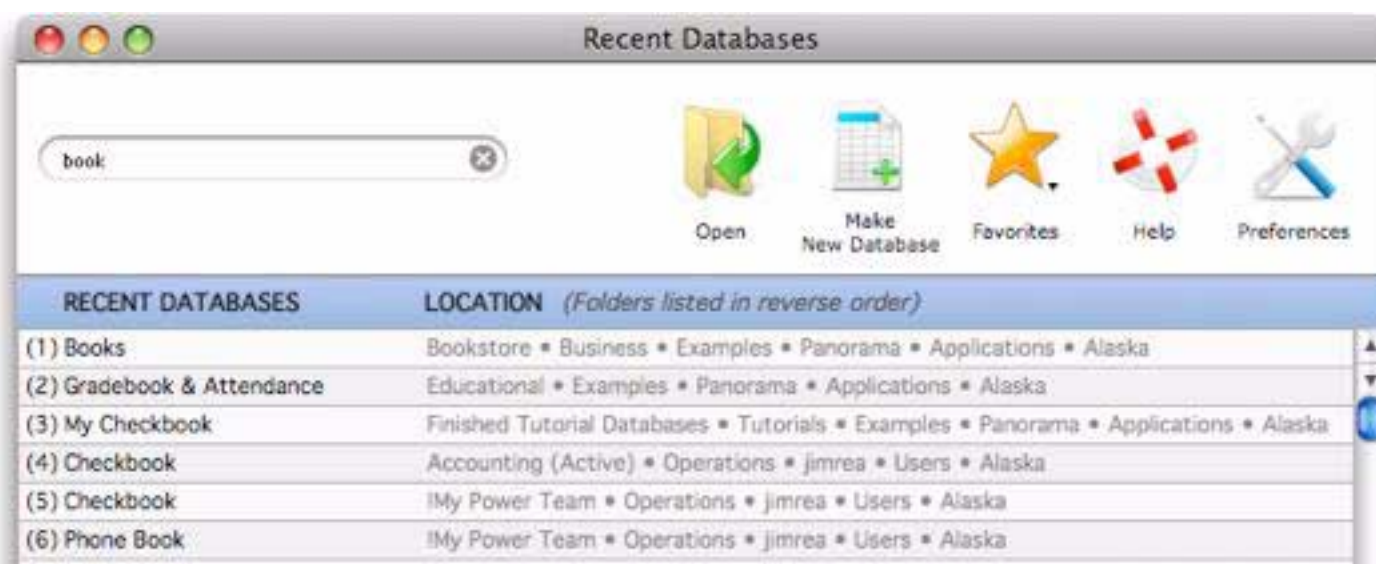
The Recent Databases Wizard

This wizard makes it easy to re-open recently opened databases. It can be opened by choosing **Recent Databases** from the **File** menu. The wizard lists the databases that have been opened recently.



To re-open a database simply double click its name on the list. You can also open the first nine items simply by pressing the **1** thru **9** keys on your keyboard. There's no need to press **Return**, **Enter**, or anything else, just press the number and the database will open.

To search for a particular database simply type into the search box at the top of the wizard.



At any time you can press the **1** thru **9** keys to re-open a database. For example type **boo1** to open the **Checkbook** database, **boo2** to launch the **Phone Book** database, etc. You can re-open any previously opened database with just a few keystrokes.

The Prefs dialog allows you to exclude specified folders and files from the list of recent databases. By default wizards are excluded.



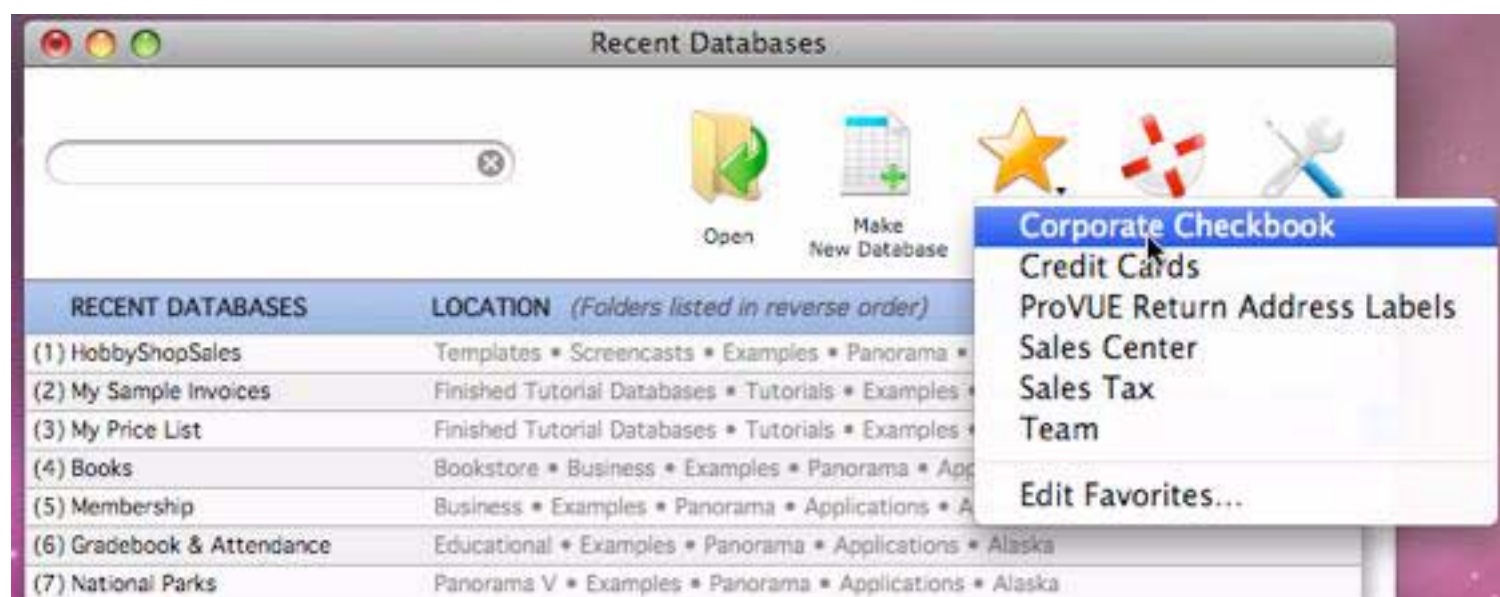
If you want to include other folders or files simply list them in the dialog, one per line. You can use the @ symbol (Option-D) to specify the current Panorama folder.



With the setting shown above any databases in the Accounting folder will be excluded.

The Favorites Menu

In addition to recent databases, which are handled automatically, you can also designate a list of favorite databases. To access a favorite, click on the yellow star and choose from the pop-up menu, which opens the requested favorite.

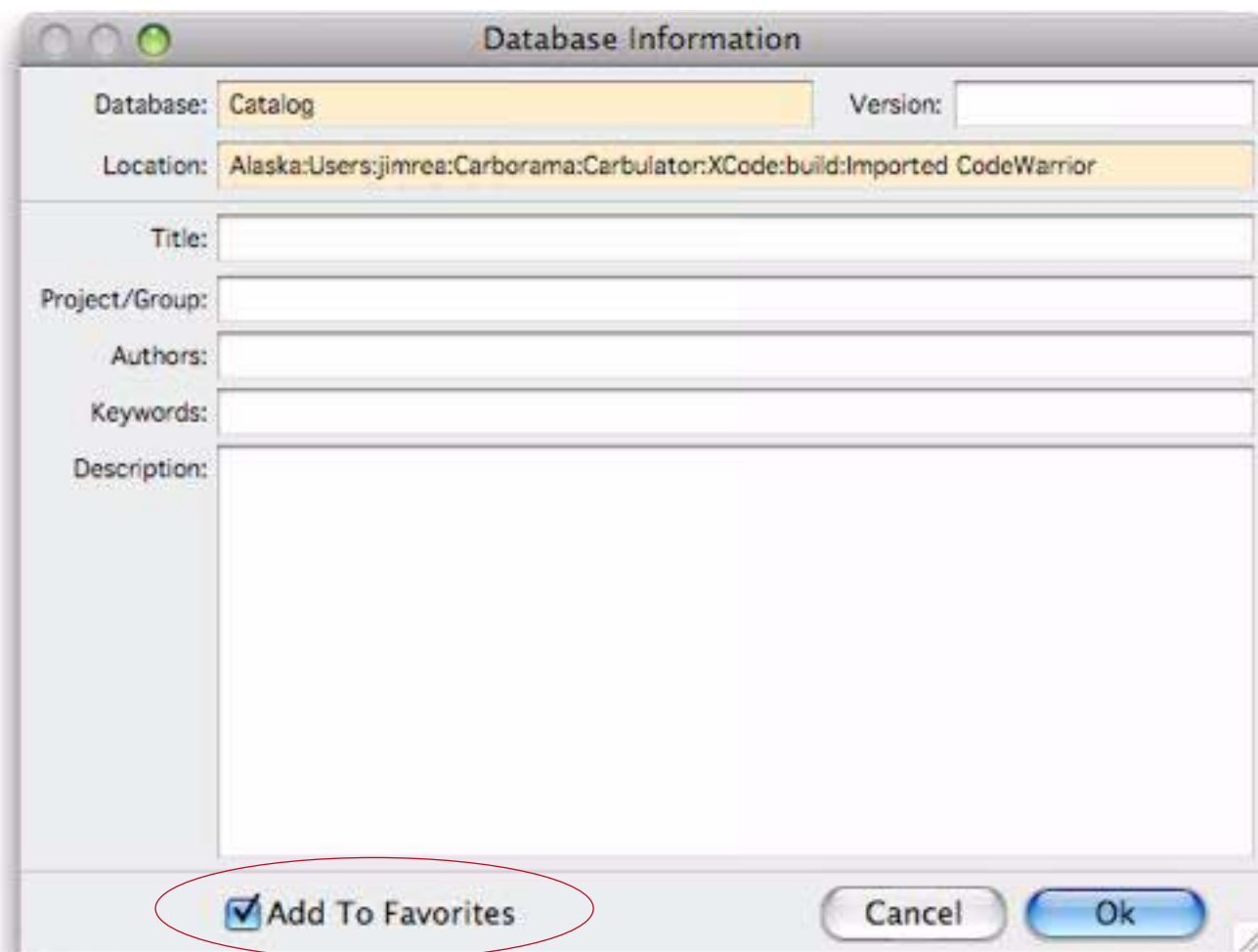


To modify the list of favorites, choose **Edit Favorites** from the pop-up menu.



To delete a favorite, press the corresponding - button. To add a new favorite, press the **Add to Favorites** button at the bottom of the dialog. Panorama will ask you to locate the database you want to add to the favorites list. Press **Choose** to add the database to the list.

If a database is currently open there is a second way to add it to the list. Start by choosing **Database Information** from the Setup menu. When the dialog appears, check the **Add To Favorites** option.



Press **Ok** to add the database to the list of favorites.

Advanced Database Opening Techniques

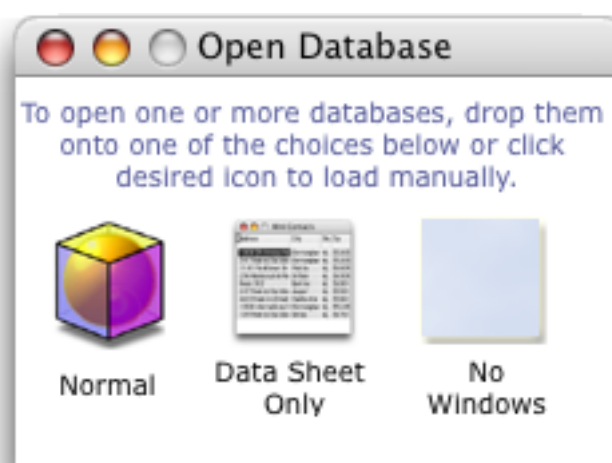
The standard techniques for opening a database (double clicking, Open File dialog, Favorite Databases, etc.) will work fine in 99,999 of 100,000 cases. Sometimes, however, you may need to use a more specialized technique to open a database. For example, if a database has lost its MacOS type/creator information (perhaps by sending it through an e-mail client that doesn't properly support this information, a common problem) the standard techniques will not work. In this section we'll describe the advanced techniques for these very unusual cases.

Opening a Database With Incorrect Type/Creator Information

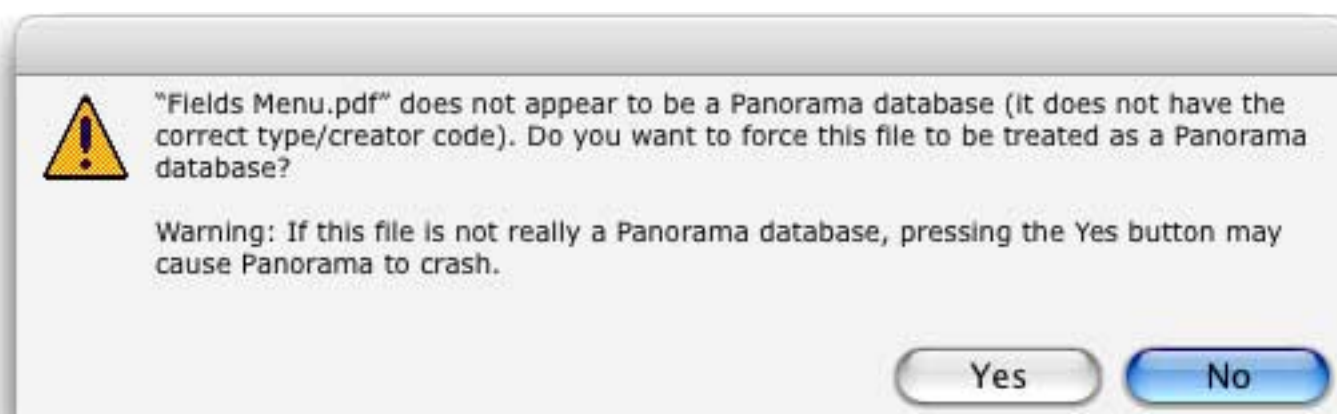
On MacOS systems each type of database is identified by special "type and creator" codes that are kept in the disk directory. Panorama normally sets up these codes when a database is first created so you never have to worry about them. However, if you transfer a Panorama database from a PC computer it will not have the correct "type and creator" codes. These codes can also become missing or corrupted when transferring a file via some e-mail programs. (To avoid this, we recommend compressing the database into a .zip file before sending it via e-mail.)

Note: If the database name ends with .pan, the type and creator code are not necessary, and you can skip this section. So for maximum compatibility with both Mac's and PC's, give your databases names like Contacts.pan, Checking.pan, Sales.pan, etc.

If you have a file that you know is a Panorama database, but the type and creator codes are missing or wrong, you can still open the database. To do this, open the **Open Database** wizard (in the Utilities submenu). This wizard has a single window with three icons:



To open the database, simply drag it over the icon on the left (labeled **Normal**). If the type and creator information are Ok, the database will simply open (just as if you had double clicked on it). If the type and creator information are missing or corrupted, a warning dialog will appear:

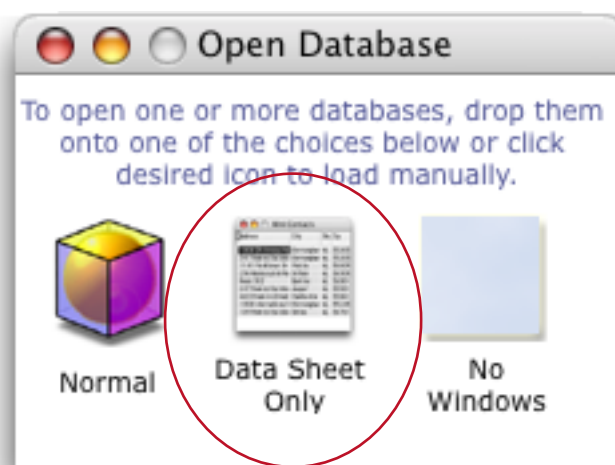


If you are sure that this file is a Panorama database (unlikely in the example above) go ahead and press the **Yes** button. The wizard will set the type and creator codes to indicate that this is a Panorama database and then it will go ahead and open the file. The next time you need to open this file you should be able to do so normally.

Opening a Database Without Normal Initialization

When Panorama opens a database it normally performs an initialization process. If the window positions were saved (see “[Saving Window Positions](#)” on page 64) Panorama will open any windows that were open the last time the database was saved (forms, procedures, etc.) In addition, Panorama will run any custom initialization program that you have set up for this database (see “[.Initialize](#)” on page 382 of *Formulas & Programming*).

In certain rare instances you may want Panorama to skip this initialization process. The most common reason for doing this is if you have made a mistake in the custom initialization program that you have set up. If this mistake prevents the database from opening properly, you can't even get the database open to change the program. Quite a pickle! Fortunately the **Open Database** wizard can handle this situation. Simply drag the database onto the **Data Sheet Only** icon.



The database will open, but Panorama will skip the normal initialization process, and only the data sheet window will open (no forms).

Opening a Database with No Windows

To open a database with no windows at all, drag it onto the **No Windows** icon in the **Open Database** wizard. (This opens a database with no windows once. If you want a database to always open with no window use the **Save As** command, see “[Saving with No Windows](#)” on page 149).

Opening with Multiple Copies of Panorama on Your System

In most cases you'll have only one copy of Panorama on your computer, and you can simply skip this section. However, on MacOS (either OS 9 or OS X) it is possible to have multiple copies of Panorama installed at once. Unless you have a special need, we recommend that you install only one copy of Panorama on your computer and remove all others. (For example, the technical support staff here at ProVUE has both Panorama 5.5 and Panorama 6 installed at the same time, and the programming staff has additional development versions installed.) However, if you do have a special need to use multiple copies of Panorama you'll want to control which copy of Panorama you are using at different times.

The simplest method to control which version of Panorama is in use is to locate the Panorama application you want to use, double click on it, then use the **Open File** dialog (see above) to open the database you want to use. If you are using OS X you can put multiple copies of Panorama in the dock, and click on the one you want to use, then use the **Open File** dialog to open each database.

Using the **Open File** dialog is a bit awkward. Another method for opening a database with a specific copy of Panorama is to drag the database onto the actual specific Panorama icon itself (or onto the dock icon for that copy of Panorama).

If you are going to use one copy of Panorama most of the time you can tell Mac OS X to open that version automatically when you click on any database. To set this up, click once on the icon of any Panorama database, then choose **Get Info** from the File menu. This opens an Info window for that database.



use pop-up menu to select specific copy of Panorama you want to use

Click here to make this the default version of Panorama when double clicking on any database.

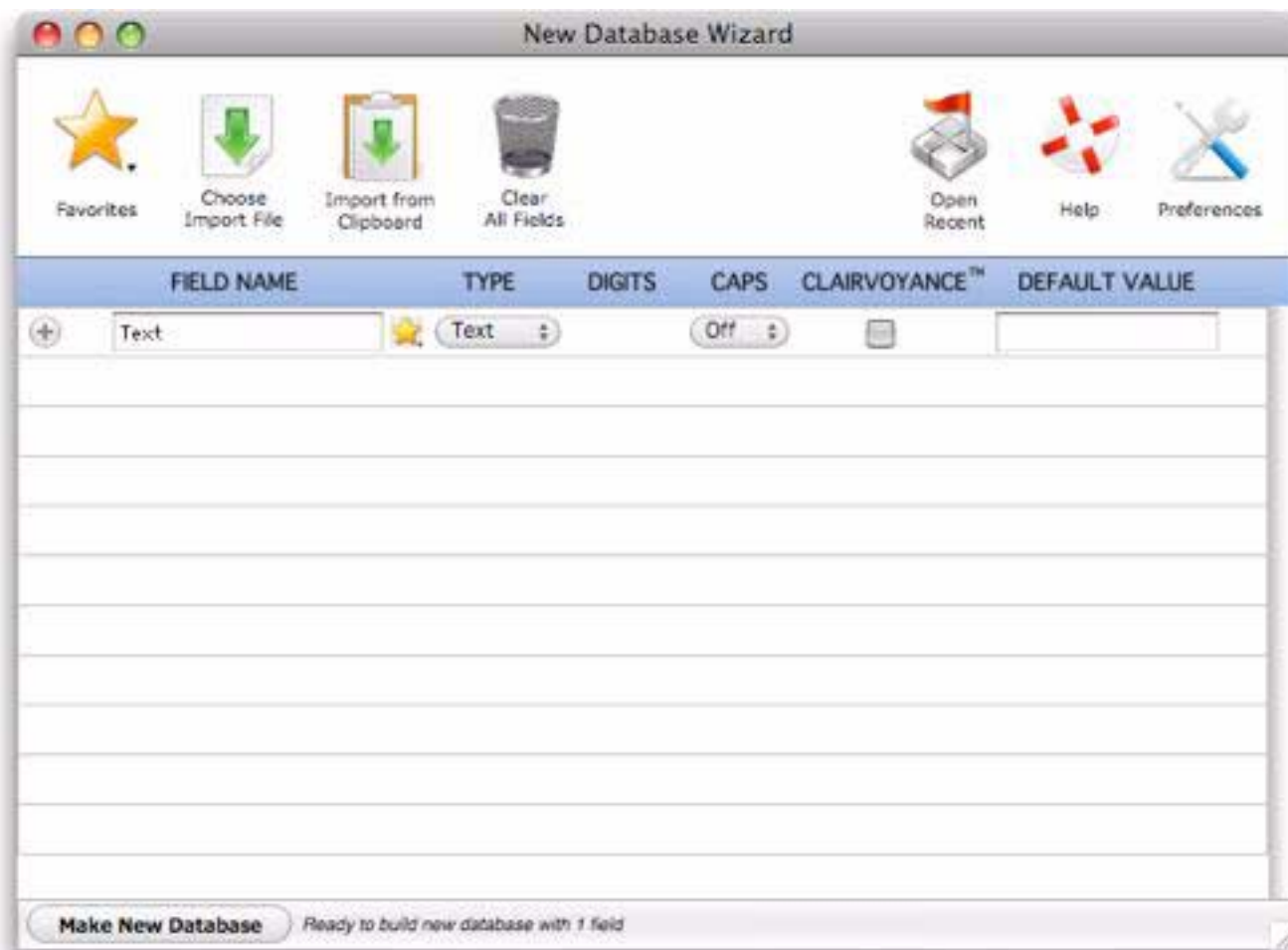
As shown in the illustration above, you can use the **Open with:** pop-up menu to select which version of Panorama you want to launch when you double click on this database. Press the **Change All** button if you want this copy of Panorama to launch when you click on any Panorama database.

Creating a New Database

Panorama has two ways to create a new database — using the **New Database** wizard and using the **Open File** dialog.

Using the **New Database Wizard**

To help make creating new databases easier Panorama includes “wizard” for creating new databases.

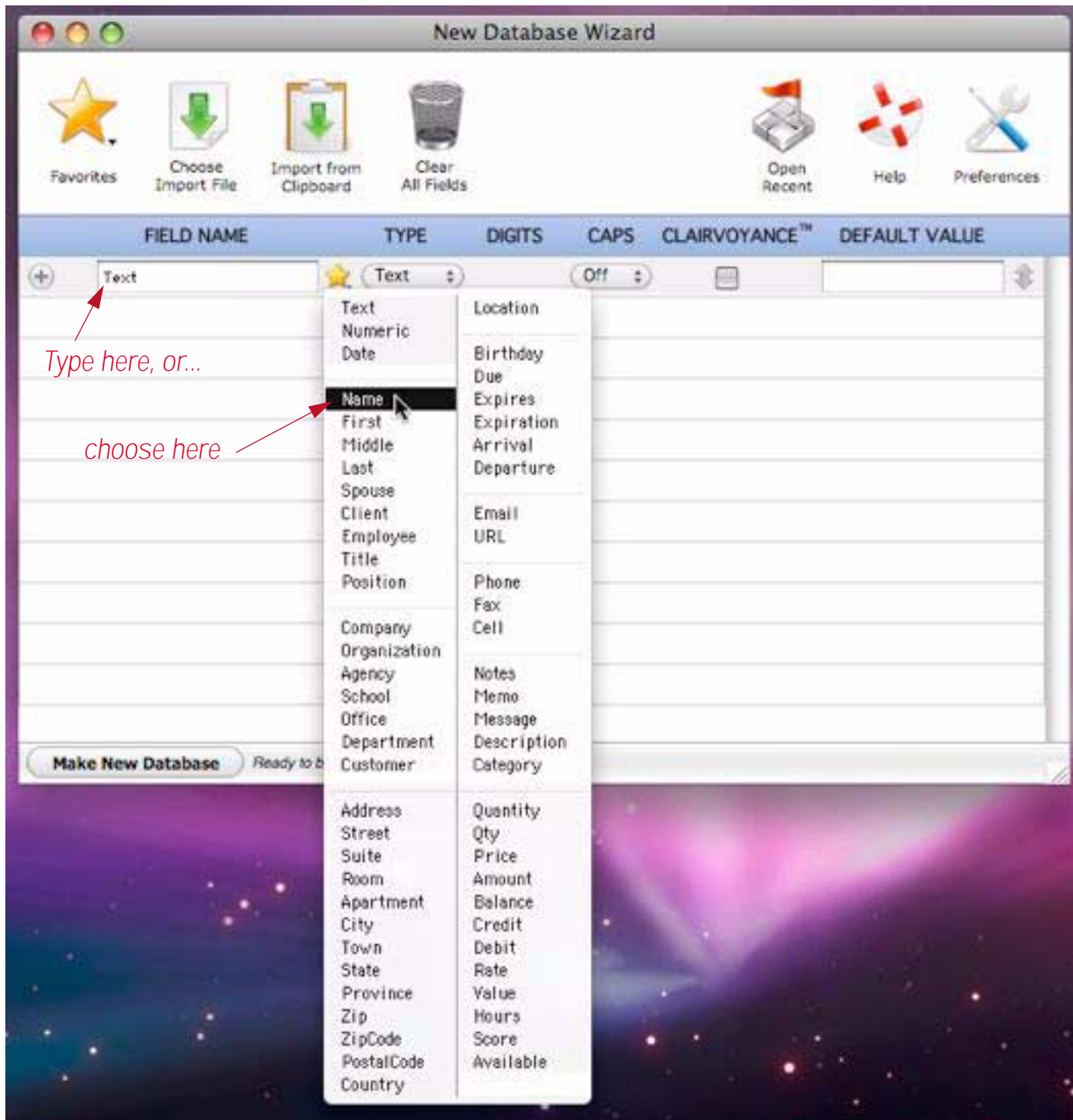


If Panorama is already open you can choose **New File** from the **File** menu to open this wizard. (You can also use the **Wizards** menu to open the **New Database Wizard**.)



Creating a Database with the Wizard

To create a database start by typing in the name of the first field. You can also click on the yellow star to choose from a list of common field names.

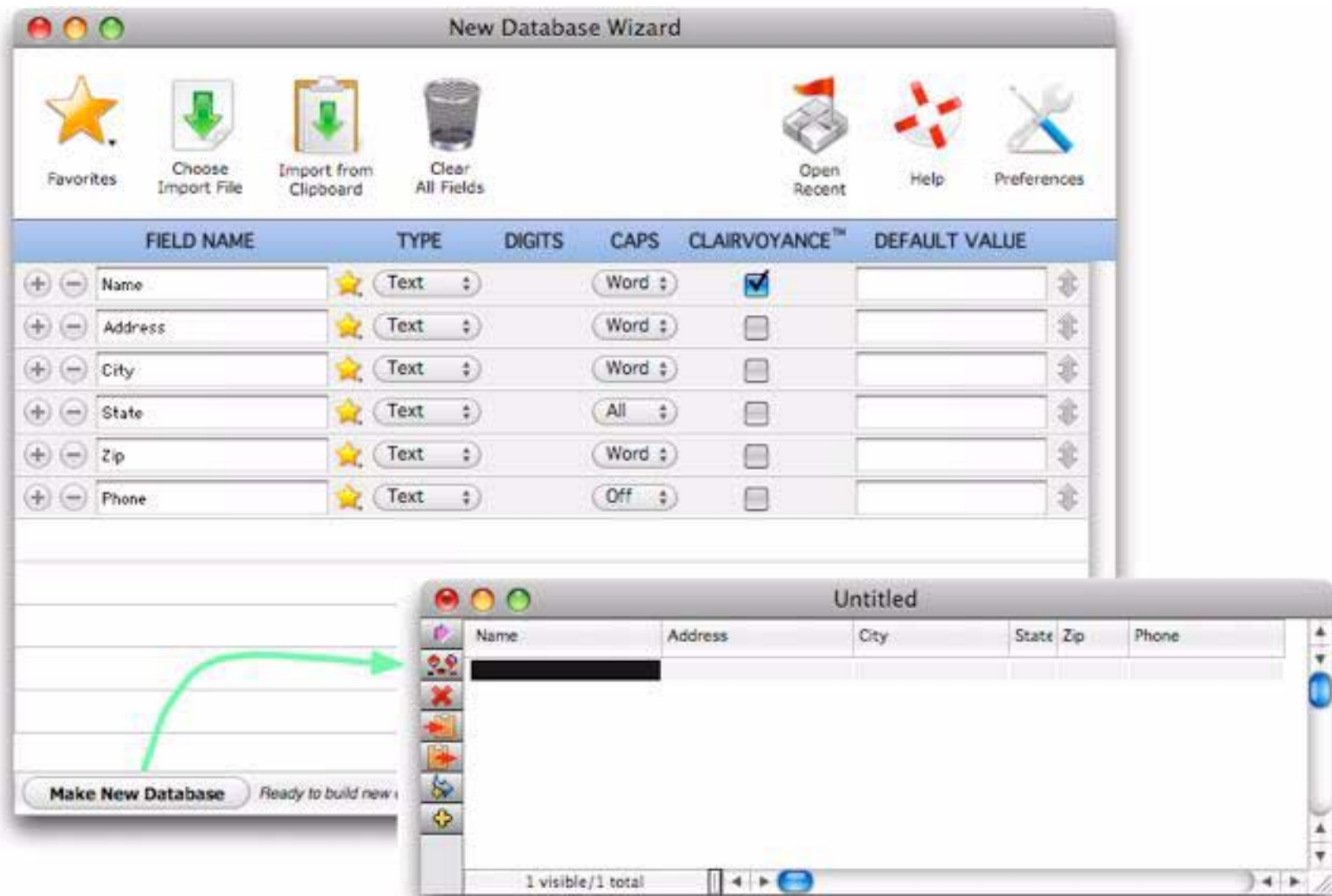


To add a second field, press the + button and fill in the field name, like this:



There's a shortcut if you're creating a field with a common name — right click on the + button (or Control-Click), then choose the field name from the pop-up menu.

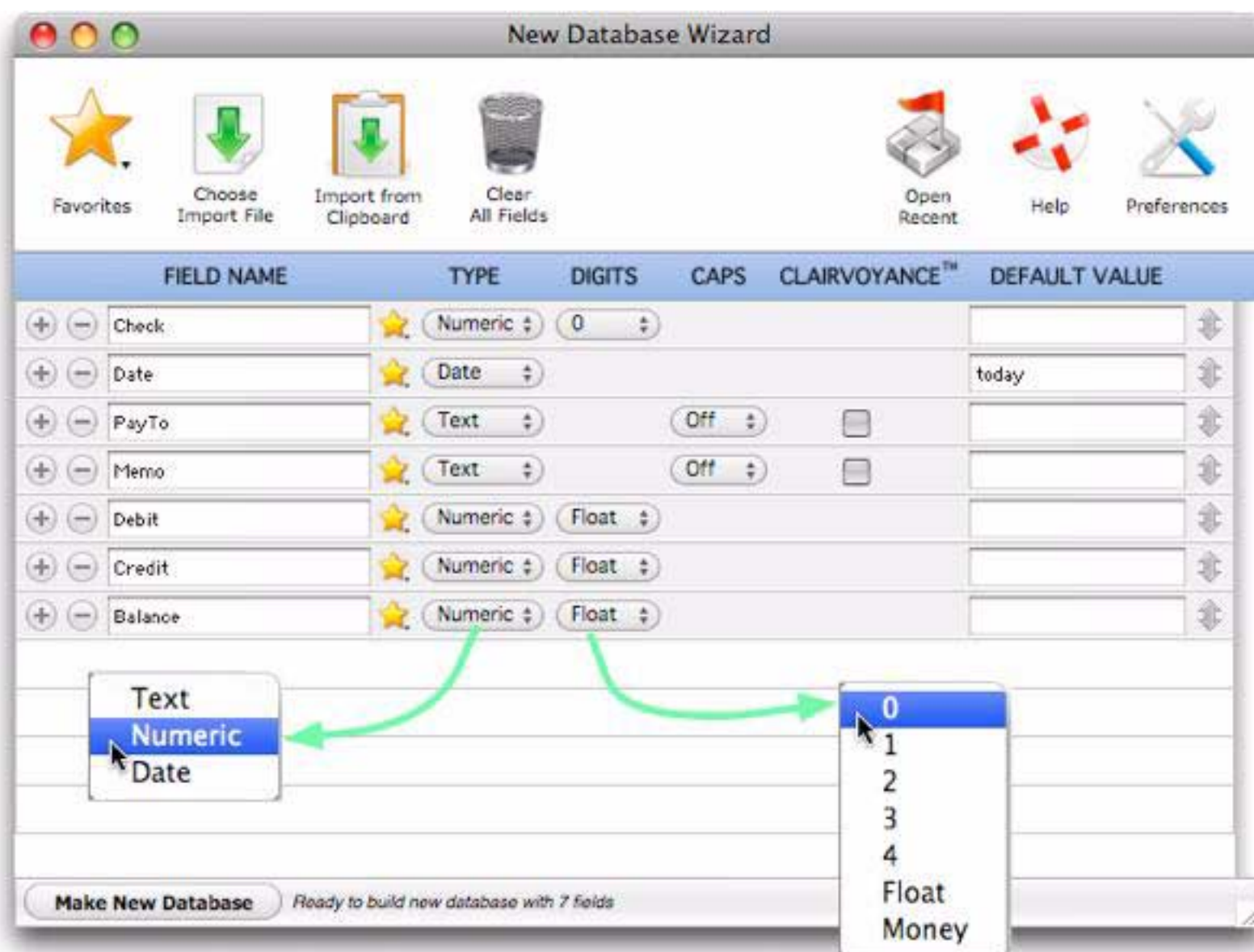
Once all of the fields have been added, press the **Make New Database** button.



Panorama automatically sets the width of each field. See "[Changing the Width of a Field](#)" on page 199 to learn how to manually adjust the width of a field. Before you continue you should save your new database (see "[Saving a Database](#)" on page 63).

Creating Numeric and Date Fields

In Panorama, all data is not the same. To get the most out of a database, Panorama needs to know what type of data you intend to store in each field — text, numbers or dates (see “[Data Types](#)” on page 245). The **New Database Wizard** normally creates fields designed for holding text. If a field will contain numbers or dates use the pop-up menu to designate the data type.



Numeric data can be stored in either **fixed point** or **floating point** format. If you choose fixed point you have a choice of 0, 1, 2, 3, or 4 digits after the decimal point (the Money type is also fixed point, 2 digits).

Number of Digits After Decimal Point	Example	Largest Value	Smallest Value	Typical Uses
0	93842	2,100,000,000	1	Quantities, Part Numbers
1	73.1	210,000,000	0.1	Rarely Used
2	253.22	21,000,000	0.01	Money (Dollars, Pounds, etc.)
3	0.447	2,100,000	0.001	Rarely Used
4	929.1123	210,000	0.0001	Rarely Used
Float	1.46e-12	$1.7 \cdot 10^{308}$	$2.3 \cdot 10^{-308}$	Scientific Data

You may wonder why there are so many choices for storing numeric data. After all, a number is a number—right? Not quite. By choosing different numeric storage formats you are making a trade-off between space, speed, accuracy, and range.

Storing numbers using floating point gives you the most accuracy and numeric range. Floating point allows you to store extremely large or small values with up to 16 digits of accuracy. If you are in doubt, go ahead and pick floating point format.

Fixed point storage is more limited. The accuracy is only about 9 digits. The largest number that can be stored is about 2 billion ($2 \cdot 10^9$) while the smallest fixed point number is 0.0001 (10^{-4}). Trying to store larger or smaller values using fixed point storage will result in errors.

On the other hand the space required for fixed point storage is up to 8 times smaller than floating point for the same number, and Panorama can perform fixed point arithmetic somewhat faster than floating point. You should use fixed point numeric storage whenever possible. Check the table above to see if the numbers you will be using fit in one of the fixed point numeric ranges. (With today's modern computers, you may not need to worry about performance or memory usage in most applications, and it's usually ok to use floating point for most applications.)

Money. Usually the best way to store monetary values is using either 2-digit fixed point or Panorama's special Money format. The money format is the same as 2-digit fixed point but automatically enters the decimal point for you during data entry. This table below shows how Panorama interprets data you enter into a money field.

When you enter...	it becomes
87204	872.04
3267	32.67
14	0.14
2	0.02
42.	42.00
15.4	15.40
156.78	156.78

Both the 2-digit and money formats allow you to store monetary values up to 21 million dollars, pounds, francs, etc. (If your business deals with values greater than 21 million you should use floating point numeric storage.)

Default Values

You can assign a default value to any field (see "[Default Values](#)" on page 296). To default to a fixed value, simply enter the value.

FIELD NAME	TYPE	DIGITS	CAPS	CLAIRVOYANCE™	DEFAULT VALUE
Organization	Text		Word	<input checked="" type="checkbox"/>	
Address	Text		Word	<input type="checkbox"/>	
City	Text		Word	<input checked="" type="checkbox"/>	
State	Text		All	<input type="checkbox"/>	
Zip	Text		Word	<input type="checkbox"/>	
Phone	Text		Off	<input type="checkbox"/>	
Country	Text		Word	<input type="checkbox"/>	USA
Shipping	Text		Off	<input type="checkbox"/>	Federal Express

To repeat the previous value in this field (ditto) use the " symbol. When the defaults are set up as shown below, a new record will automatically contain the same date and city as the previous record.

	FIELD NAME	TYPE	DIGITS	CAPS	CLAIRVOYANCE™	DEFAULT VALUE
+ -	Date	★ Text		Off	<input type="checkbox"/>	"
+ -	Organization	★ Text		Word	<input checked="" type="checkbox"/>	
+ -	Address	★ Text		Word	<input type="checkbox"/>	
+ -	City	★ Text		Word	<input checked="" type="checkbox"/>	"

To automatically increment a numeric or date field use plus followed by a number (+1, +2, +5, etc.), like this. When creating a new record, Panorama will take the value in the current record, increment it as specified, and put the new number into the specified field.

	FIELD NAME	TYPE	DIGITS	CAPS	CLAIRVOYANCE™	DEFAULT VALUE
+	Check	★ Text		Off	<input type="checkbox"/>	+1

You can also use the + symbol by itself. In that situation, Panorama uses an internal counter. The counter is increased each time a new record is added. The counter can also be changed manually if necessary, see "[Manually Changing the Record Number Counter](#)" on page 301.

	FIELD NAME	TYPE	DIGITS	CAPS	CLAIRVOYANCE™	DEFAULT VALUE
+	Invoice	★ Text		Off	<input type="checkbox"/>	+

To default to today's date use [today](#). (This option only works for date fields).

	FIELD NAME	TYPE	DIGITS	CAPS	CLAIRVOYANCE™	DEFAULT VALUE
+ -	Invoice	★ Text		Off	<input type="checkbox"/>	+
+ -	Date	★ Date				today
+ -	Organization	★ Text		Word	<input checked="" type="checkbox"/>	

Automatic Capitalization

When you are creating text fields you can enable automatic capitalization, either for all characters, by word or by sentence.

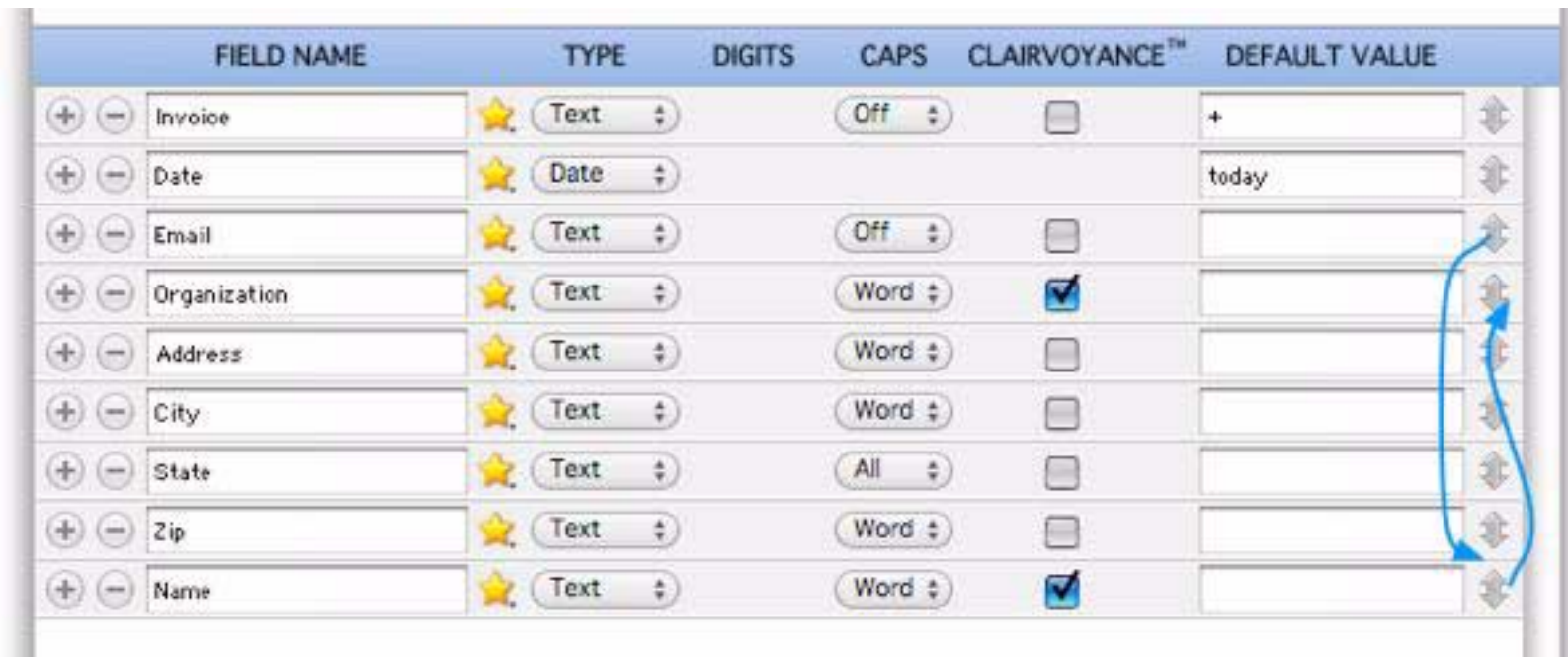
+ -	Organization	★ Text		Word	<input checked="" type="checkbox"/>	
+ -	Address	★ Text			<input type="checkbox"/>	
+ -	City	★ Text			<input type="checkbox"/>	
+ -	State	★ Text			<input type="checkbox"/>	
+ -	Zip	★ Text		Word	<input type="checkbox"/>	

Clairvoyance®

Another option for text fields is Clairvoyance®. When enabled, Panorama will auto-complete text entry for you based on previous entries in the database. For more information, see "[Clairvoyance®](#)" on page 284.

Rearranging Fields

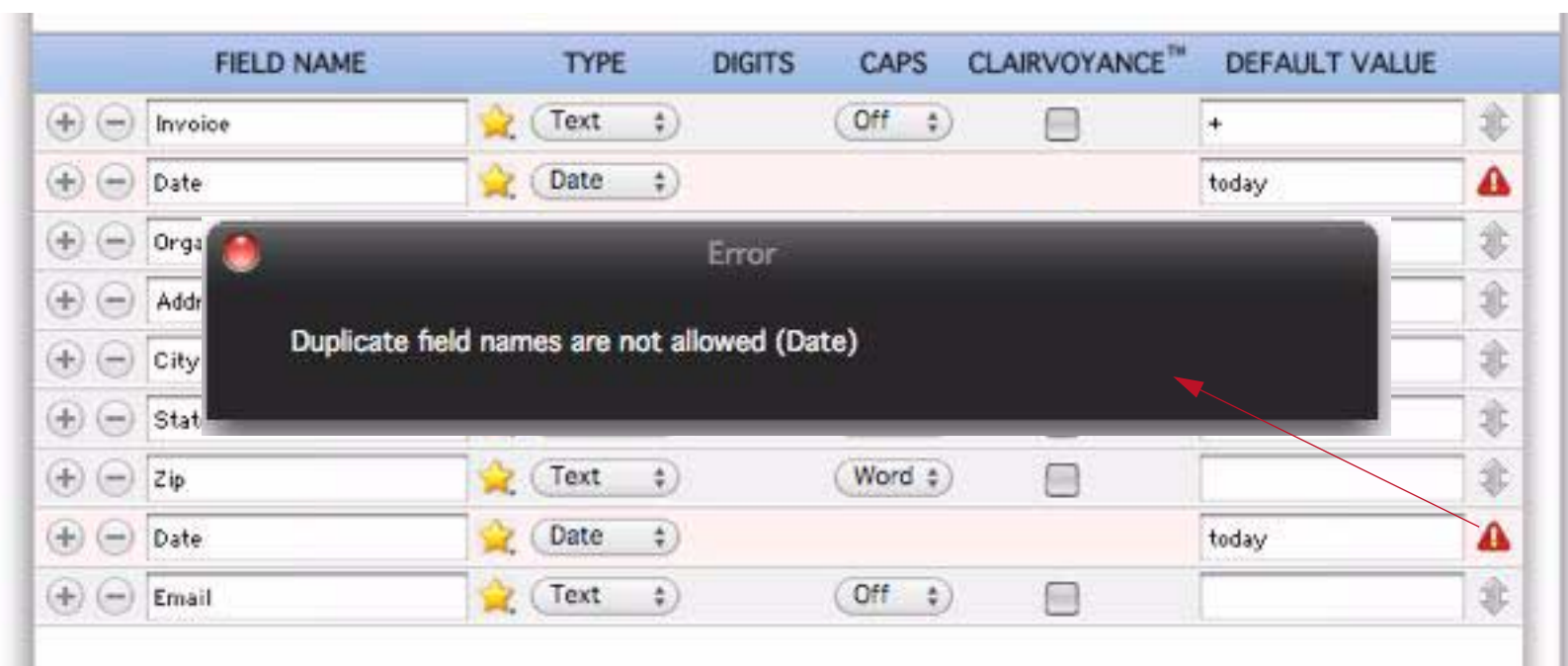
To re-arrange fields before you create the database, just drag on the double arrows on the right side of the windows.



Note: Fields cannot be dragged when you are importing data (see “[Creating a Database from a Text File](#)” on page 59), only when creating an empty new, database.

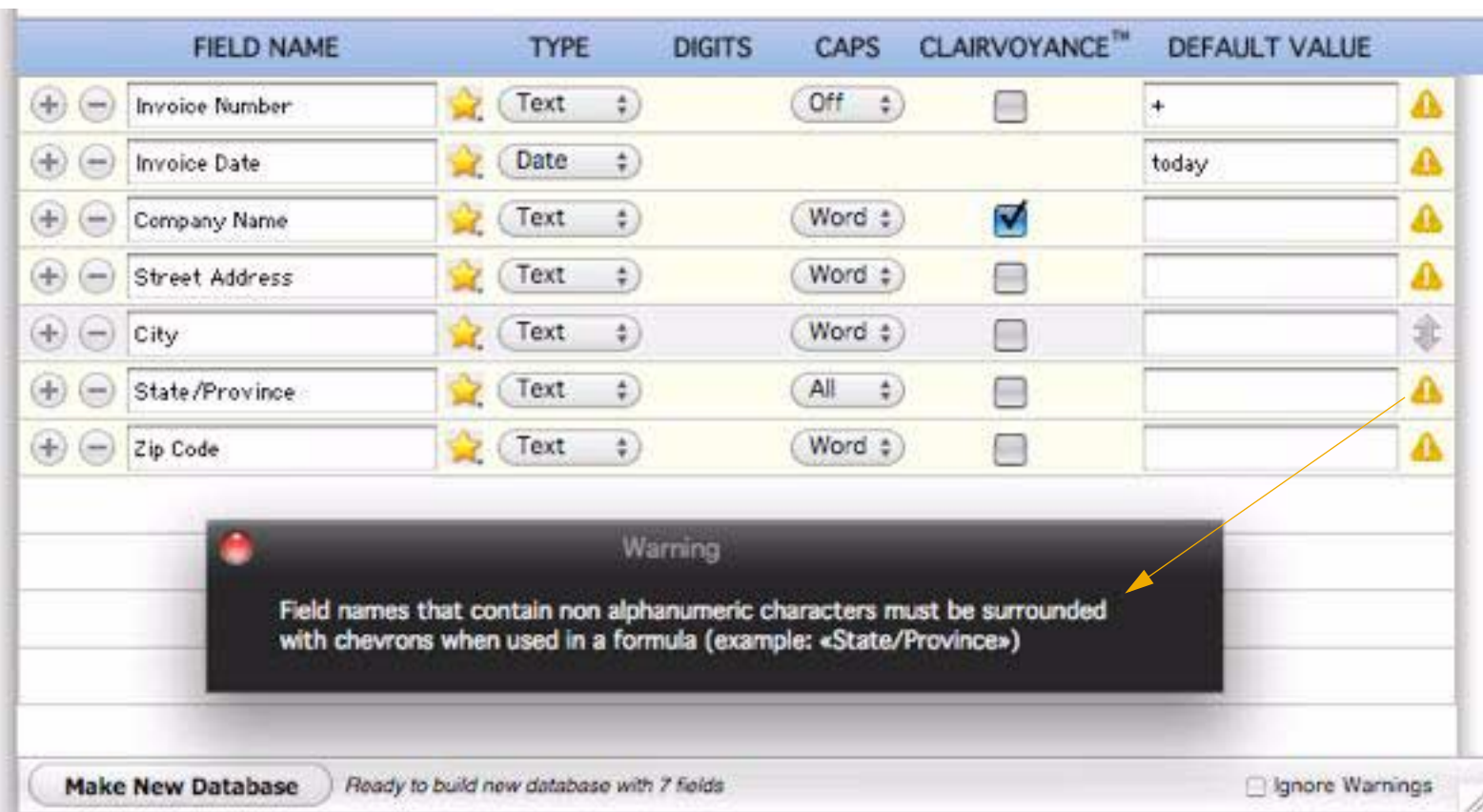
Field Name Warnings and Errors

The New Database wizard will warn you if you create a field name that is improper or that will require special handling in formulas. There are two types of improper field names — a blank field name, or a duplicate field name. If you create an improper field name Panorama will display a red background behind the field line, with a red alert icon. Click the red alert icon to see a description of the problem.

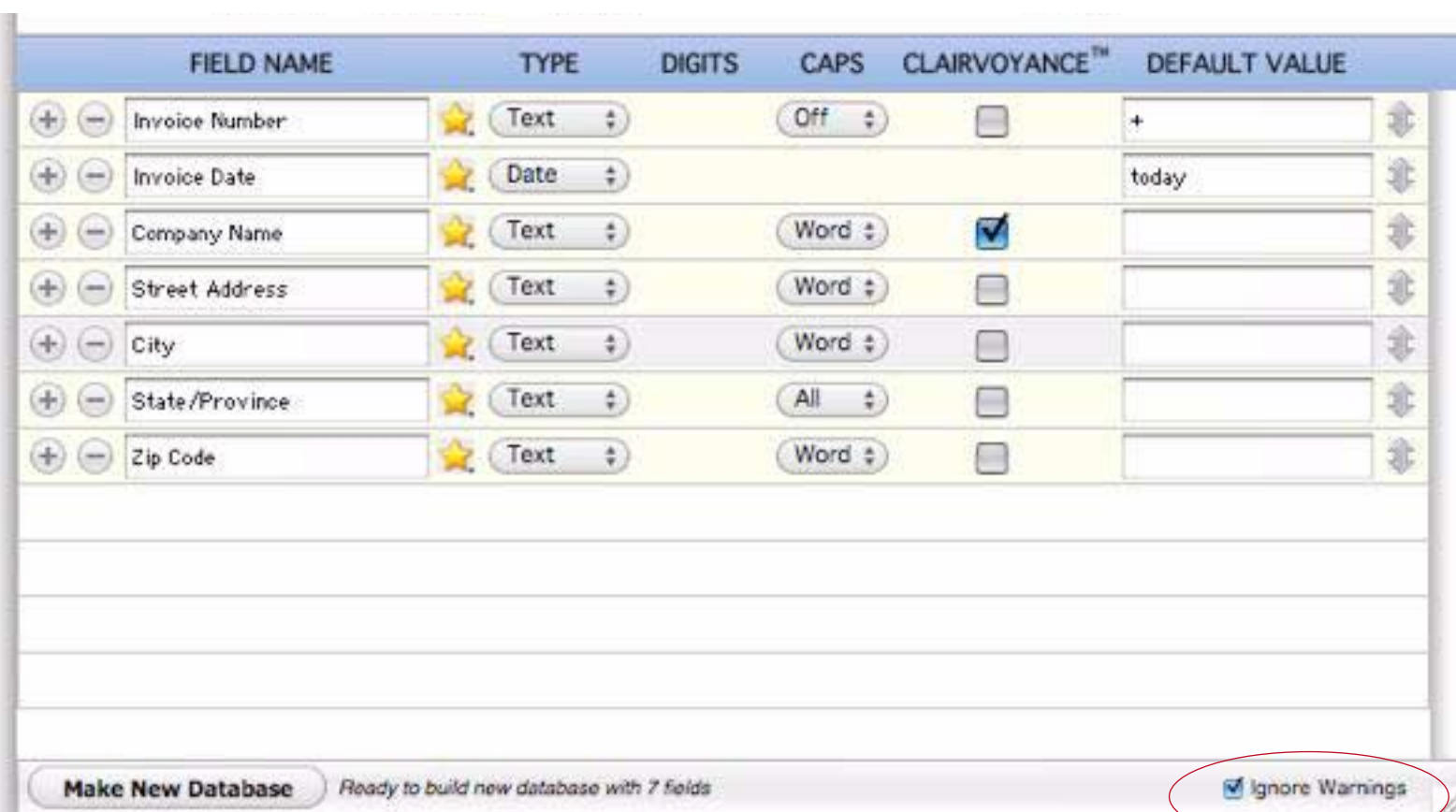


The New Database wizard will not allow you to create the database until the improper field names have been fixed.

Field names that will require special handling in formulas are flagged with a yellow background and a yellow alert triangle.

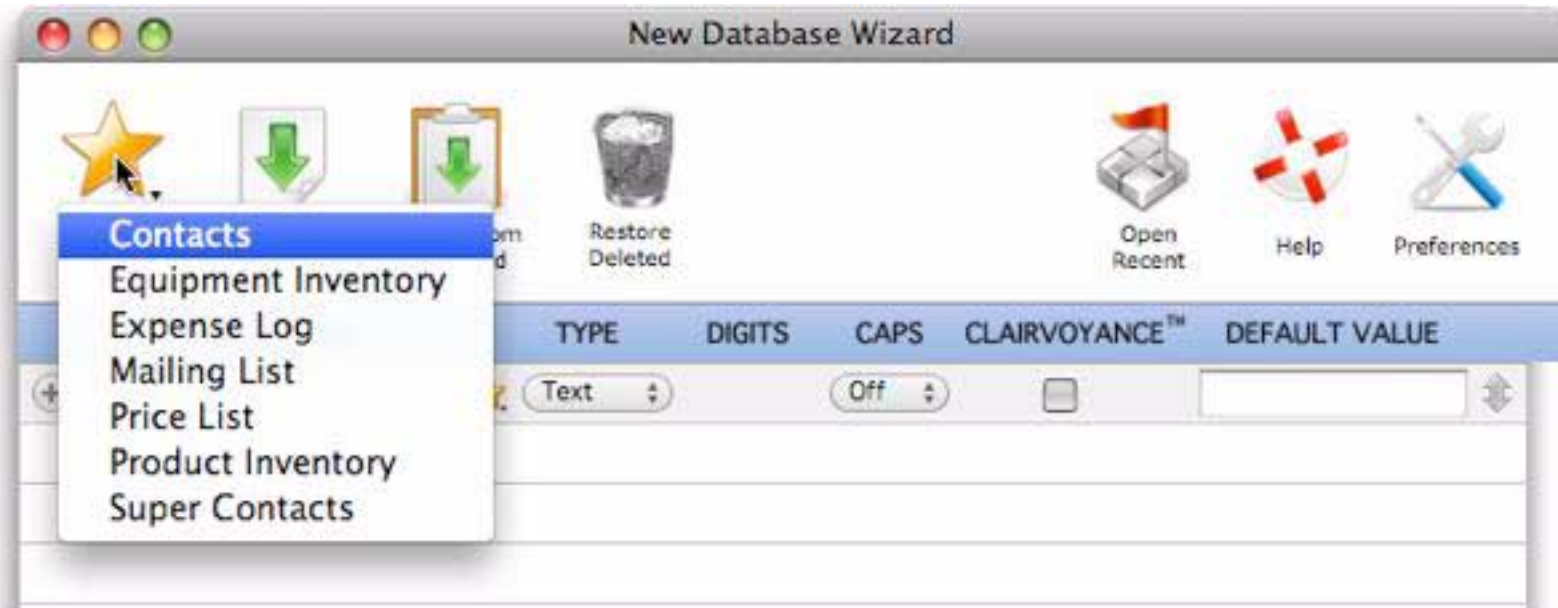


Unlike improper field names, the New Database Wizard will allow you to create the database without changing the field names, though it will warn you when you actually create the database. It's simply up to you to make sure any formulas you create have the special handling necessary (see "[Fields](#)" on page 50). If you enable the **Ignore Warnings** option then Panorama will not display any warnings or yellow icons, though it does still show a yellow background for these fields.

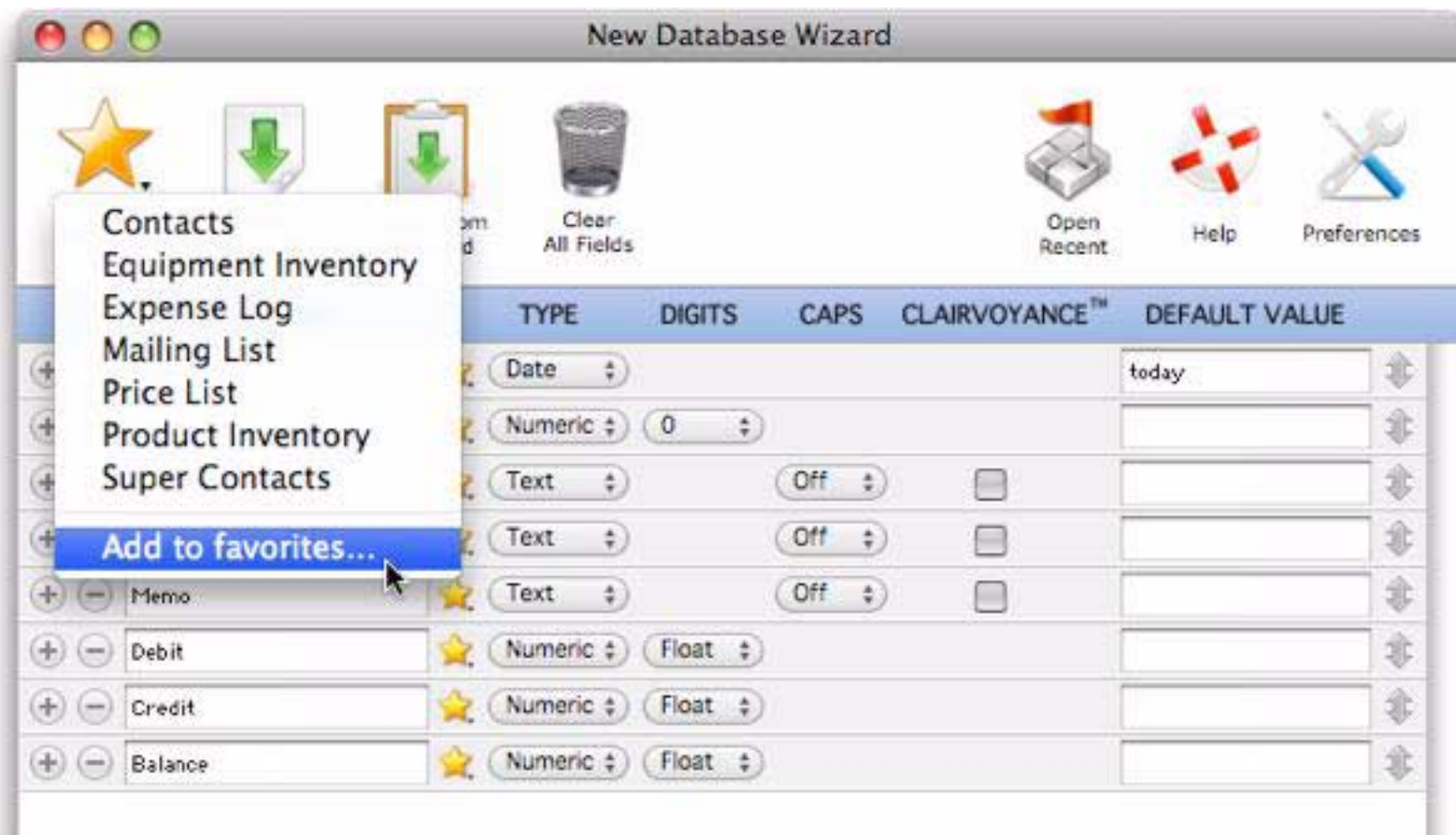


Favorites

Panorama comes pre-equipped with a set of templates for creating new databases. To choose one of these, simply click on the yellow Favorites star.



You can add your own templates at any time (and remove the standard templates as well). The first step is to set up the fields in the proper configuration, then click on the Favorites star and choose Add to favorites.



The wizard will ask for a name for the new favorite.



That's all there is to it! The new favorite now appears in the menu (in alphabetical order).

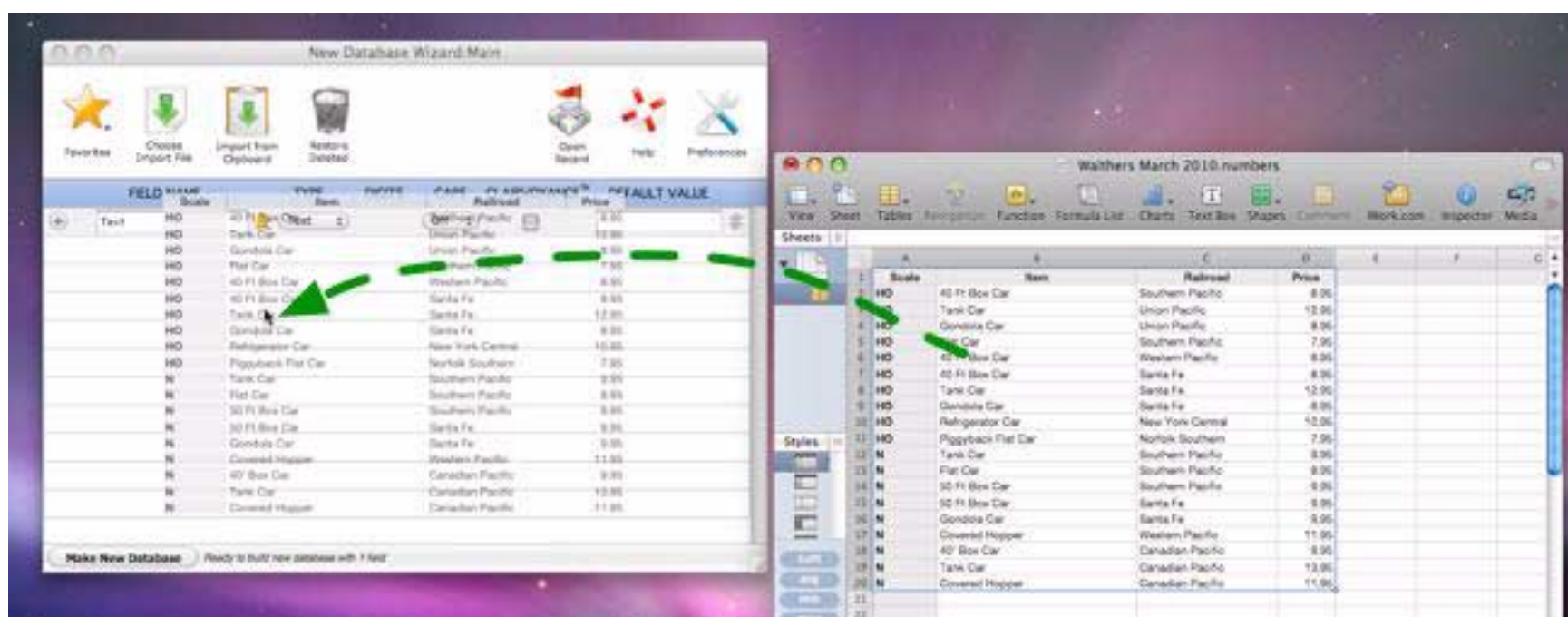


To rename or remove a favorite, first select it from the menu. Then open the menu again and choose **Remove** or **Rename**.

Creating a Database from a Text File

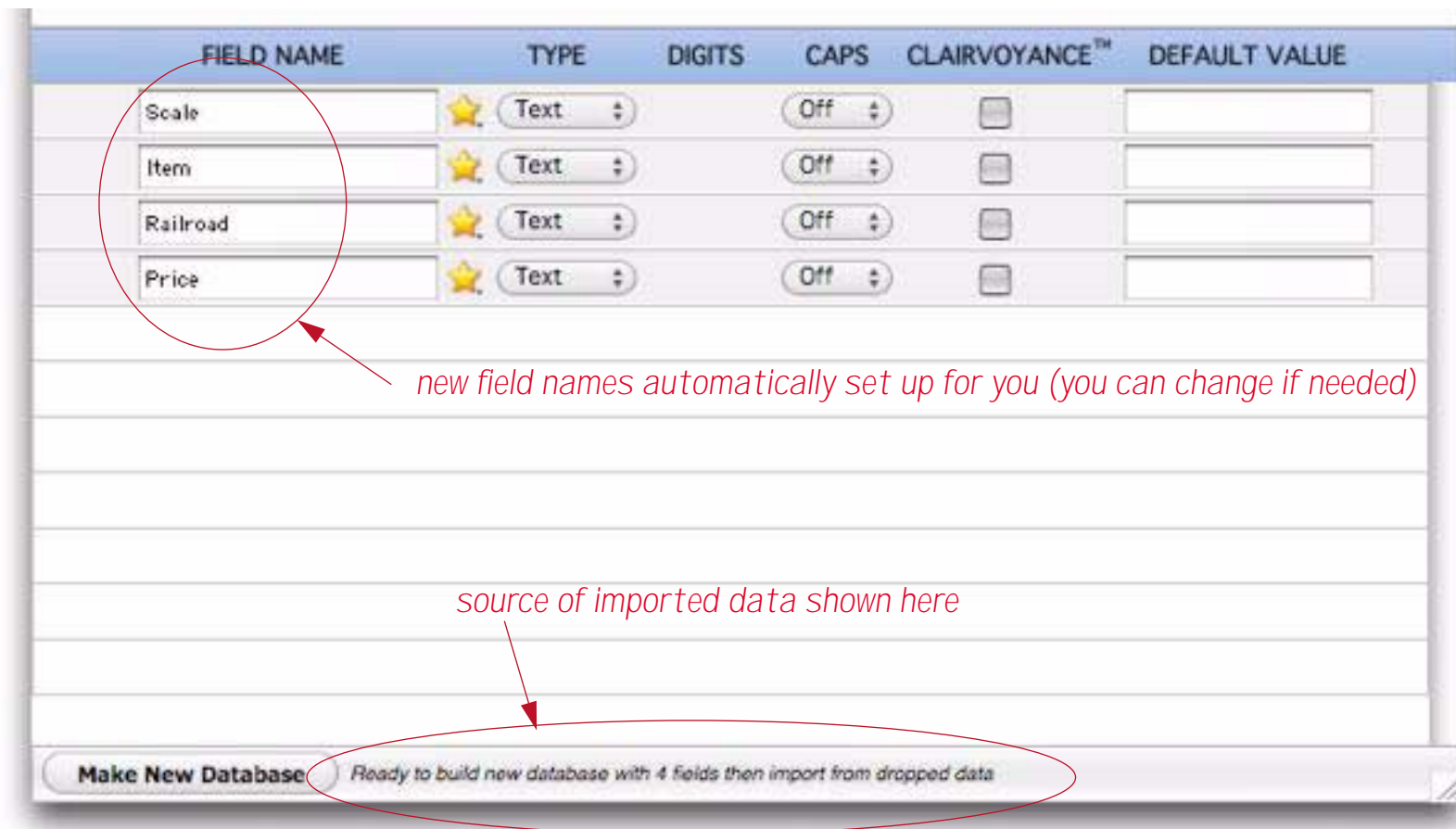
The **New Database Wizard** usually creates an empty database, but it can also create a database from a text file and automatically import the text (see ["Importing a Text File"](#) on page 82). There are four possible ways to start this process.

- 1) Drag a tab or comma delimited text file onto the wizard.
- 2) Drag data directly from a spreadsheet, word processor or text editor onto the wizard (Mac only), as shown below.



- 3) Click on the **Choose Import File** button, then select a text file containing tab or comma delimited text.
- 4) Copy tab or comma delimited text into the clipboard, then press the **Import from Clipboard** button.

Whatever process you choose, the wizard will use the first line of the imported data as the initial field names.



You can make adjustments to the database design before actually creating the database, including changing the field names and types, setting up defaults, auto capitalization and Clairvoyance®. You cannot, however, add, remove or re-arrange fields (of course this can be done later, once the database is set up).

When everything is ready press the **Make New Database** button. Panorama creates the new database and brings in the data.

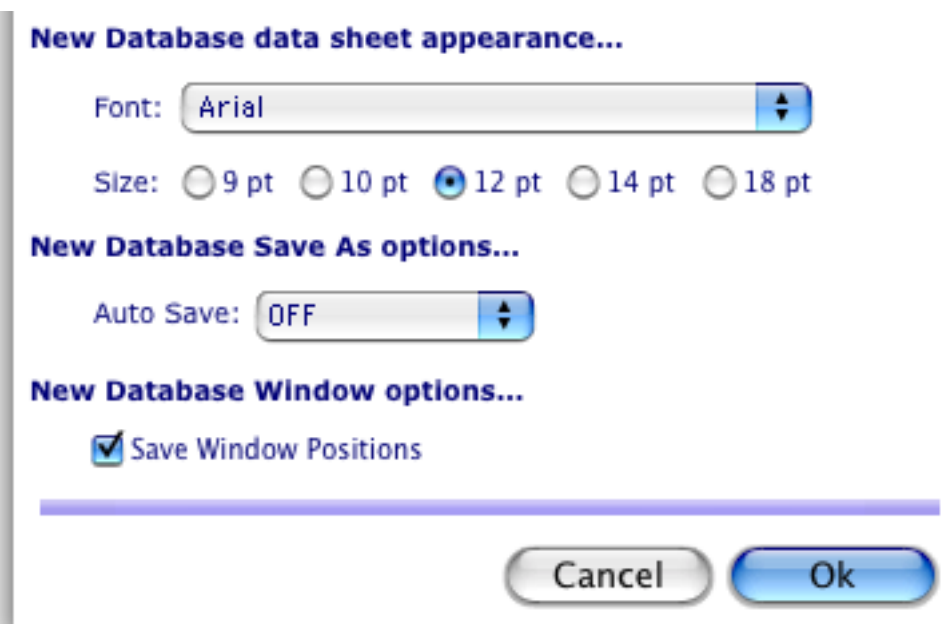
Scale	Item	Railroad	Price
HO	40 Ft Box Car	Southern Pacific	8.95
HO	Tank Car	Union Pacific	12.95
HO	Gondola Car	Union Pacific	8.95
HO	Flat Car	Southern Pacific	7.95
HO	40 Ft Box Car	Western Pacific	8.95
HO	40 Ft Box Car	Santa Fe	8.95
HO	Tank Car	Santa Fe	12.95
HO	Gondola Car	Santa Fe	8.95
HO	Refrigerator Car	New York Central	10.95
HO	Piggyback Flat Car	Norfolk Southern	7.95
N	Tank Car	Southern Pacific	9.95
N	Flat Car	Southern Pacific	8.95
N	50 Ft Box Car	Southern Pacific	9.95
N	50 Ft Box Car	Santa Fe	9.95
N	Gondola Car	Santa Fe	9.95
N	Covered Hopper	Western Pacific	11.95
N	40, A&B Box Car	Canadian Pacific	9.95
N	Tank Car	Canadian Pacific	13.95
N	Covered Hopper	Canadian Pacific	11.95

19 visible/19 total

The new database is ready to save and use.

New Database Options (Font, Windows, Save As)

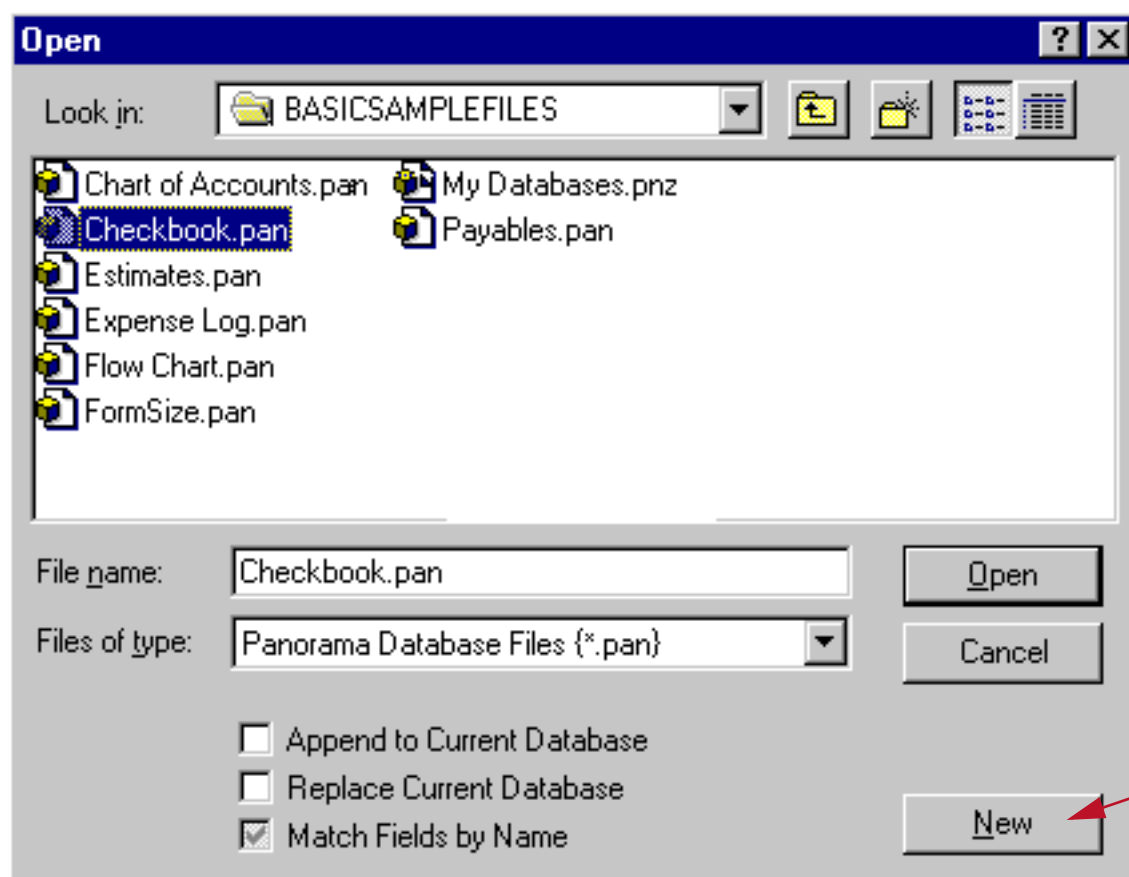
Click the Prefs icon (on the upper far right) to change the preferences for creating a new database.



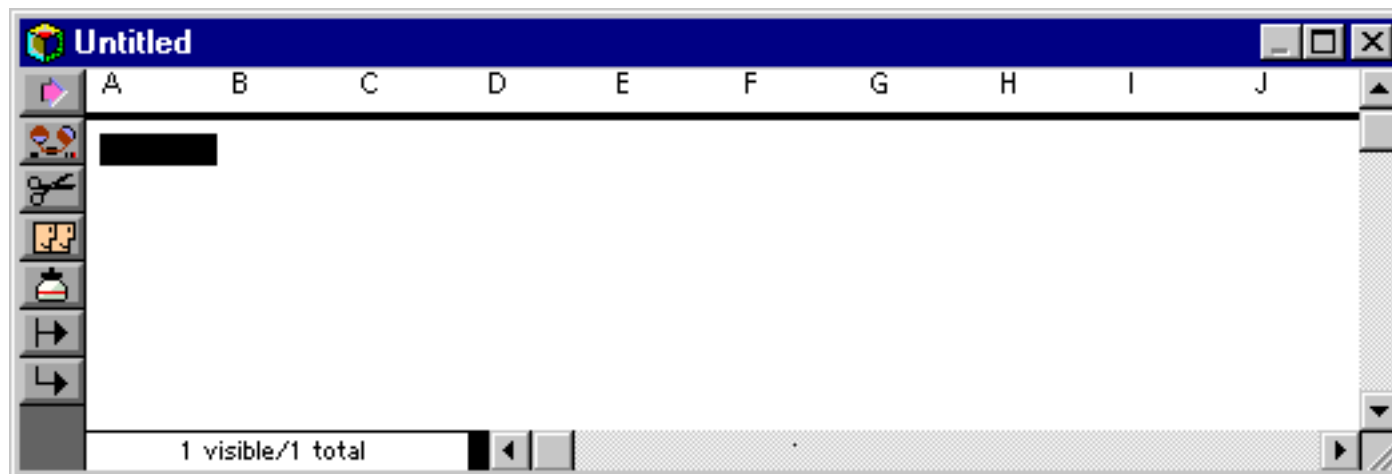
You can specify any font and size you want for your new data sheets. (Of course you can change this at any time later with the Font menu.) If you want your database to be saved automatically at regular intervals you can select this here (see “[Auto-Save](#)” on page 65 to learn how to change this later. Finally you can choose whether you want Panorama to save your window positions when you save the database (see “[Saving Window Positions](#)” on page 64).

Creating a New Database with the Open File dialog

The Open File dialog also provides a simple method for creating a new Panorama database. Simply choose **Open File** from the File Menu, then press the **New** button.

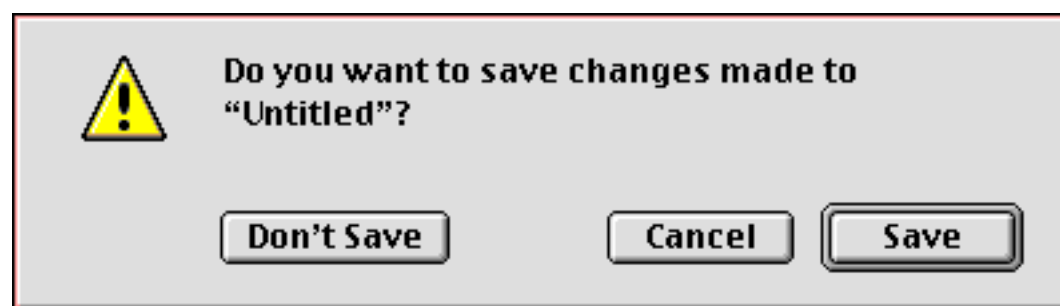


A new database created this way has ten fields and is called **Untitled**. These fields are named alphabetically: **A** through **J** (You can change the names later). You can start entering data right away or you can change the fields before you begin (See “[Fields](#)” on page 193).



Closing Panorama

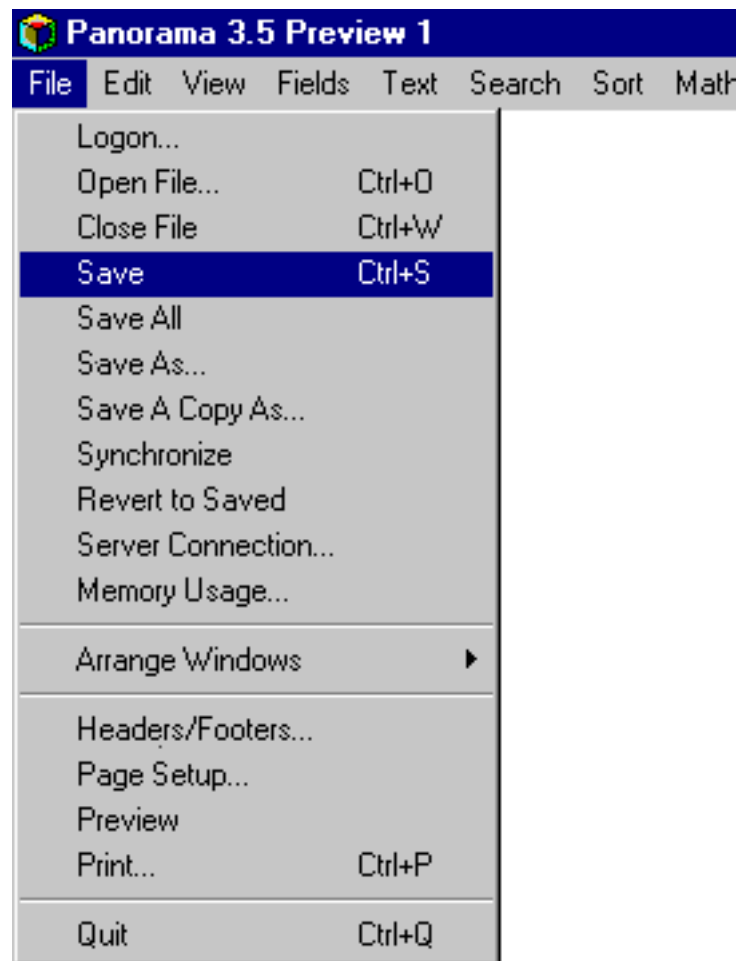
When you are finished with Panorama, use the **Quit** command (File Menu) to return to the desktop. If you have not saved your work, Panorama will display an alert and ask if you would like to save the work now.



Simply press the **Save** button to permanently save the database on the disk and return to the desktop.

Saving a Database

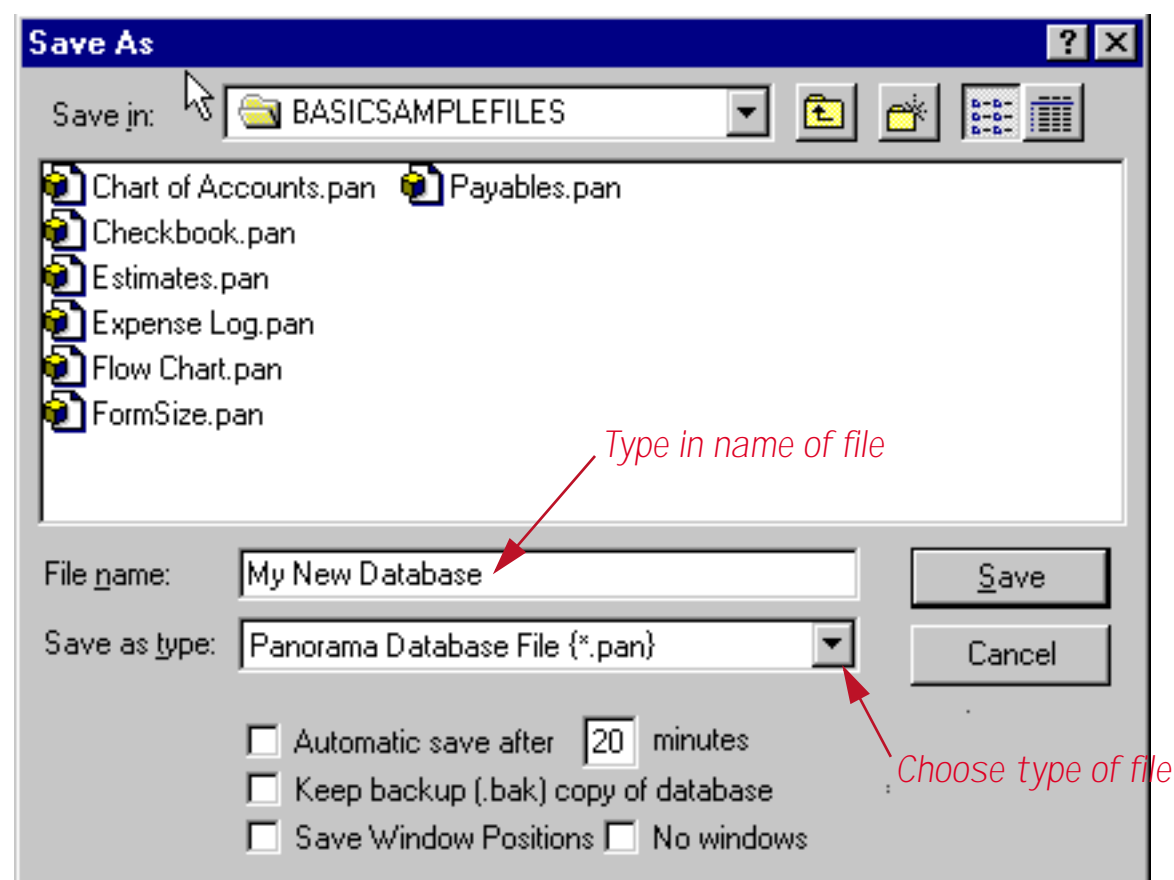
You can save your work permanently on the disk at any time with the **Save**, **Save As**, or **Save a Copy As** commands in the File menu. The **Save** command saves the database permanently on the disk, then allows you to continue with your work. You should save your work often.



The **Save A Copy As** command makes a copy of the database under a new name. It leaves the original copy in memory so you can continue to work on it. This command is like duplicating a sheet of paper and then continuing to work on the original.

The **Save As** command also makes a copy of the database under a new name. The **Save As** command, however, leaves the new copy in memory—not the original. This command is like duplicating a sheet of paper and then working on the copy while setting the original aside.

The **Save As** command allows you to choose the location where you want to save the file, the name of the new file, and several file options.



On Windows computers all Panorama database names end with **.pan**. This is called the **extension**, and it tells the system that this file is a Panorama database. You should not type the extension into the Save As dialog box—Panorama will automatically add the extension for you.

You can save the database as a regular Panorama file, as a text only file (see “[Exporting a Text File](#)” on page 105), or create a file set (see “[File Sets](#)” on page 75). You can also use the **Save As** command to turn on the **Save Window Positions**, **Auto-Save** and **Keep Backup Copy** options described later in this chapter.

Saving Window Positions

If you check the **Save Window Positions** option, Panorama will save the positions of each open window that belongs to the file being saved (if the database is created with the **New Database Wizard** this option will already be checked the first time you save). The next time the file is opened, Panorama will automatically open the same windows in the same positions. Each time you save the file, Panorama will save the new window positions. (Note: Starting with Panorama 5.5, Panorama no longer remembers the positions of any procedure windows that are open. Only data sheet and form windows will be opened automatically.)

It is also possible to lock in window positions so that they will always be open in the same positions, even if you move the windows and save again. To do this, first choose **Save As** and check the **Save Window Positions** option. Move the windows into the desired positions and then choose **Save** from the File Menu. Now, open the **File Privileges** dialog and change from **Author** to **User** or **Custom** level. (To open this dialog on a Macintosh computer, hold down the **Command** or **Option** key and choose **About Panorama** from the Apple menu. To open this dialog on a Windows system, hold down the **Control** or **Alt** key and choose **About Panorama** from the Help menu. See “[The Privilege Dialog](#)” on page 184 for details on this command.) Close the dialog, and choose **Save** again. The window positions are now locked in place. To unlock them, switch back to **Author** mode.

Obsolete Save Options

The Save-As dialog options described below are now obsolete, and if you are using them on existing databases, we recommend you turn them off. Auto-save of individual files is now replaced by Total Recall (see “[Total Recall \(Auto-Save/Crash Recovery\)](#)” on page 66), and the .b Backup file option is now superseded by Time Lapse (see “[Time Lapse](#)” on page 67).

Auto-Save

If you wish, you can ask Panorama to automatically save your file every few minutes. To turn on this feature, choose **Save As**, then check the **Automatic Save** option and enter how often you want Panorama to save the file. When you are done, press the **Save** button. (If you are using a Macintosh computer and you have saved this file before, Panorama will ask you if you want to replace the existing file. Press **Yes**).

Once you have turned on the Automatic Save option it remains on unless you **Save As** again and turn it off.

Pitfalls of Auto-Save. If you think you might need to use **Revert to Saved**, you should not use auto-save. When you are using auto-save keep in mind that you no longer control when the file will be saved. This lack of control can cause problems if Panorama saves the file when you didn't want it to. In particular, if you have deleted items from your database you won't be able to get them back using **Revert to Saved** once the file has been automatically saved.

Because they can remove large amounts of data from your database, the **Remove Unselected** and **Remove Detail** commands are especially dangerous with auto-save. To help reduce this danger, these commands give you the option to temporarily suspend auto-save. Once you have suspended auto-save it will remain off until you manually save the file (with the **Save** command).

Backup Files

Like most programs, Panorama normally stores only one copy of each database on the disk. If you wish, however, you can tell Panorama to keep a second copy of a database. This extra backup copy can help protect you from mistakes.

The backup copy of a database is a copy of what was saved the second to the last time. Having a backup copy of the database means that if you make a mistake and save when you didn't mean to, you can still get back to the previous version of the database.

The backup copy of the file has the same name as the original with .b added. On Macintosh computers the .b is added at the end of the filename (for example the backup file for **Checkbook** is **Checkbook.b**). On Windows computers the .b is added just before the .pan extension (for example the backup file for **Contacts.pan** is **Contacts.b.pan**).

Macintosh computers are limited to 32 character file names. Because of this limitation, the original filename cannot exceed 29 characters if the **Keep Backup** option is used. (If the filename is more than 29 characters, Panorama will ignore the **Keep Backup** option.)

To tell Panorama to keep a backup copy, use the **Save As** command to save the file and check the **Keep Backup Copy of Database** option. Once this option is checked, Panorama will keep a backup copy whenever the file is saved.

Opening Backup Files

You can open a backup file by double clicking on it, just like any other Panorama database. On the Macintosh however, you cannot open backup files with the **Open File** command, because the backup files are not displayed in the dialog.

Total Recall (Auto-Save/Crash Recovery)

Total Recall allows Panorama to fully recover after a crash -- whether due to a power outage, hardware problem, system crash, or Panorama bug (never!). When Panorama is relaunched after a crash it asks you if you want to start over or resume where you left off.

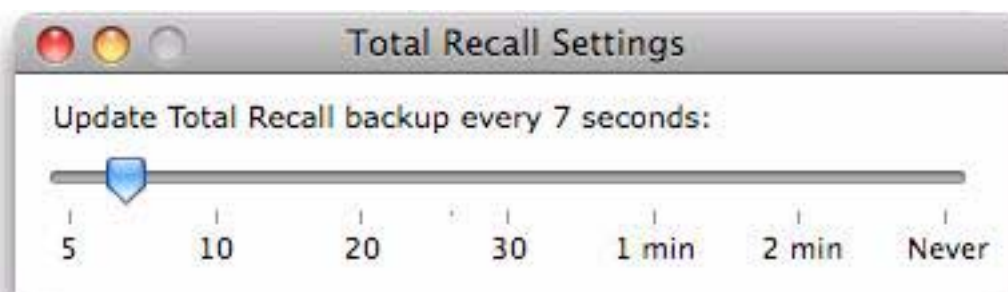


If you press **Resume Previous Session** Panorama automatically restores everything just as you left it -- all open files, open windows, etc. Only the last few seconds of work will be lost. It's almost as if nothing has happened at all — you can just continue with your work as if nothing had happened.

Total Recall does not affect normal file saving, so if you have unsaved changes when the crash occurs, they will still be unsaved when Panorama is restored (in other words, **Revert to Saved** can still be used after the crash/restore cycle). Panorama will even restore any work you've done in a new database that has never been saved!

Setting the Total Recall Save Frequency

Total Recall works by periodically saving all of Panorama's RAM to disk. It uses the fastest possible technique for this, so in most cases you'll never even notice this is happening. To adjust how often periodic saves occur, open the **Preferences** window and choose **Total Recall**.



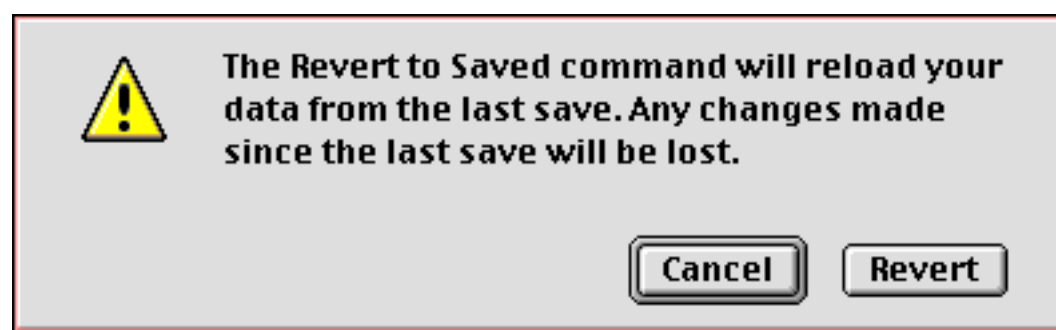
Simply drag the slider to set the time, or to turn the feature completely off.

Rolling Back Database Changes

As you'll learn in the following chapter, Panorama is a powerful tool for working with and manipulating data, it's an incredible power tool for your data. Unlike a real power tool, however, you don't have to worry about safety or about accidentally destroying data by improper use of the tool. Even if you accidentally deleted all of your data, Panorama's capability for rolling back changes will protect you. You can work confidently in the knowledge that your previous work is always safe.

Revert to Saved

Panorama's first level of rollback is the **Revert to Saved** command (File Menu). This command recopies the original file from the disk into RAM. This will undo all the changes made since the last time the file was saved. By all changes we mean all changes: data entry, sorting, formulas, graphic editing, creating/deleting forms, crosstabs or procedures—every single thing you've done to this database since the last time you saved. Before Panorama actually goes ahead with this command it asks you to verify that you really want to do this.



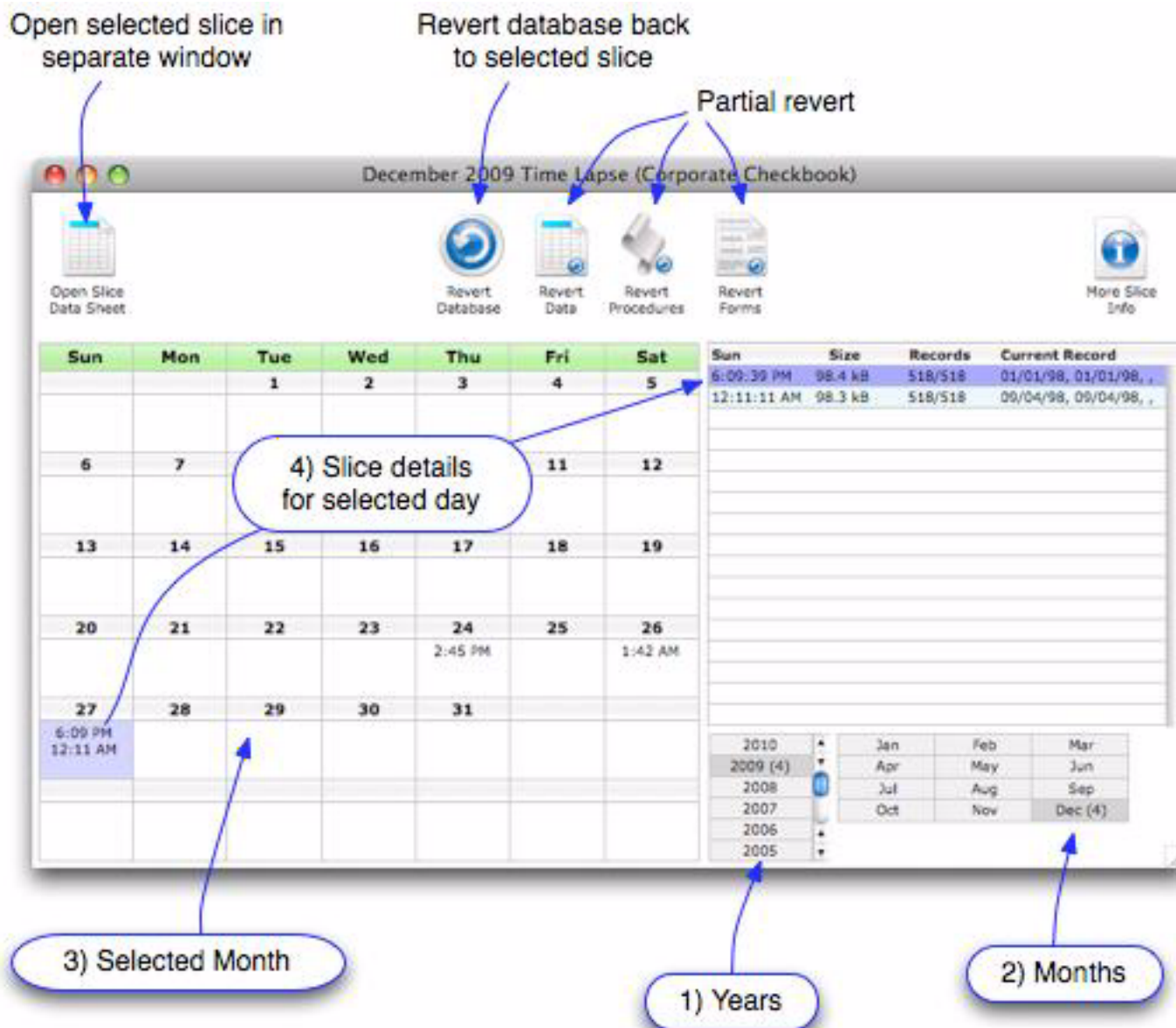
If you press Revert then Panorama will discard all of the changes made since the last time you saved the database.

Time Lapse

Panorama's Time Lapse feature is like **Revert to Saved** on steroids. With Time Lapse you can roll back to previous versions of your database made earlier today or at various times in the past. In addition to doing a full revert, you can also selectively revert only the data, only the procedures, or only the forms. You can also open previous versions of the database (called "slices") in separate windows so that you can compare them with the current database or even copy and paste data, code or form objects between versions.

Each time you save a database Panorama also makes another copy ("slice") for the Time Lapse feature. By default Panorama keeps up to 25 slices of previous versions of the database (more on how Panorama eventually determines how to "thin out" the slices in a moment.)

To see the previous slices that have been saved for the current database choose Time Lapse from the File menu. The slices are displayed in a monthly calendar format.



Choose the year, month and day of the slice you are interested in (it defaults to today). (Note: The 1) Years and 2) Months lists show the number of slices available in the year and month.) Then choose the exact slice you are interested in from the list on the right. For each slice the list shows the date and time it was saved, the number of records, and the contents of the current record at the time the slice was saved.

Once you've selected a slice you can use the tools across the top to work with that slice:

Open Slice Data Sheet — Click here to open the slice in a separate window. When opening a previous slice this way Panorama always opens just the data sheet. Panorama ignores any saved window positions, it does not run any .Initialize procedure, and if this is a shared database it does not connect the database to the server or try to synchronize the database. The title of the window shows the database name and the date and time the slice was saved (the original database name may be truncated if necessary).

Date	Copy of Date	Check	PayTo	Category	Memo	Copy of Memo
January 5, 1998	01/05/98	118	Precision Plastics	Purchases	Invoice 60632	Invoice 60632
January 5, 1998	01/05/98	119	Tech Media	Purchases	Invoice 48536	Invoice 48536
January 5, 1998	01/05/98	120	Miller Industries	Purchases	Invoice 90513	Invoice 90513
January 5, 1998	01/05/98	121	Cool Creek Studio	Advertising		
January 5, 1998	01/05/98	122	Anderson Manufacturing	Purchases	Invoice 17730	Invoice 17730
January 9, 1998	01/09/98		DEPOSIT	Deposit		
January 12, 1998	01/12/98	123	Poly Payroll Services	Payroll		
January 12, 1998	01/12/98	124	Anderson Manufacturing	Purchases	Invoice 79066	Invoice 79066
January 12, 1998	01/12/98	125	Clark Supply	Purchases	Invoice 91494	Invoice 91494
January 16, 1998	01/16/98		DEPOSIT	Deposit		
January 19, 1998	01/19/98	126	Tech Media	Purchases	Invoice 77138	Invoice 77138
January 19, 1998	01/19/98	127	Poly Payroll Services	Payroll		
January 19, 1998	01/19/98	128	Airborne	Shipping	Invoice 16582	Invoice 16582
January 19, 1998	01/19/98	129	Clark Supply	Purchases	Invoice 13589	Invoice 13589
January 19, 1998	01/19/98	130	FedEx	Shipping	Invoice 75951	Invoice 75951
January 19, 1998	01/19/98	131	Staples	Office Supplies		
January 19, 1998	01/19/98	132	Champion Trucking	Shipping	Invoice 26309	Invoice 26309
January 19, 1998	01/19/98	133	Costco	Office Supplies		

As you can see above, the data is all displayed in gray rather than black, and you cannot edit the data. You can copy it to the clipboard, however.

Though the slice always opens using the data sheet, you can use the **View** menu to open forms or procedures. If you try to save the slice Panorama will prompt you for a new file name/location. This makes the slice into a new, separate database that has no connection with the original database.

Revert Database — Click here to revert the current copy of the database to this previous version. All of the data, forms, procedures, permanent variables, print settings, etc. are all reverted back to the older version of the database.

Note: Reverting to a previous slice doesn't prevent you from later reverting to a more recent slice. You can easily move back in forth in time. Be careful, though, it can get confusing if you don't keep track of what you are doing.

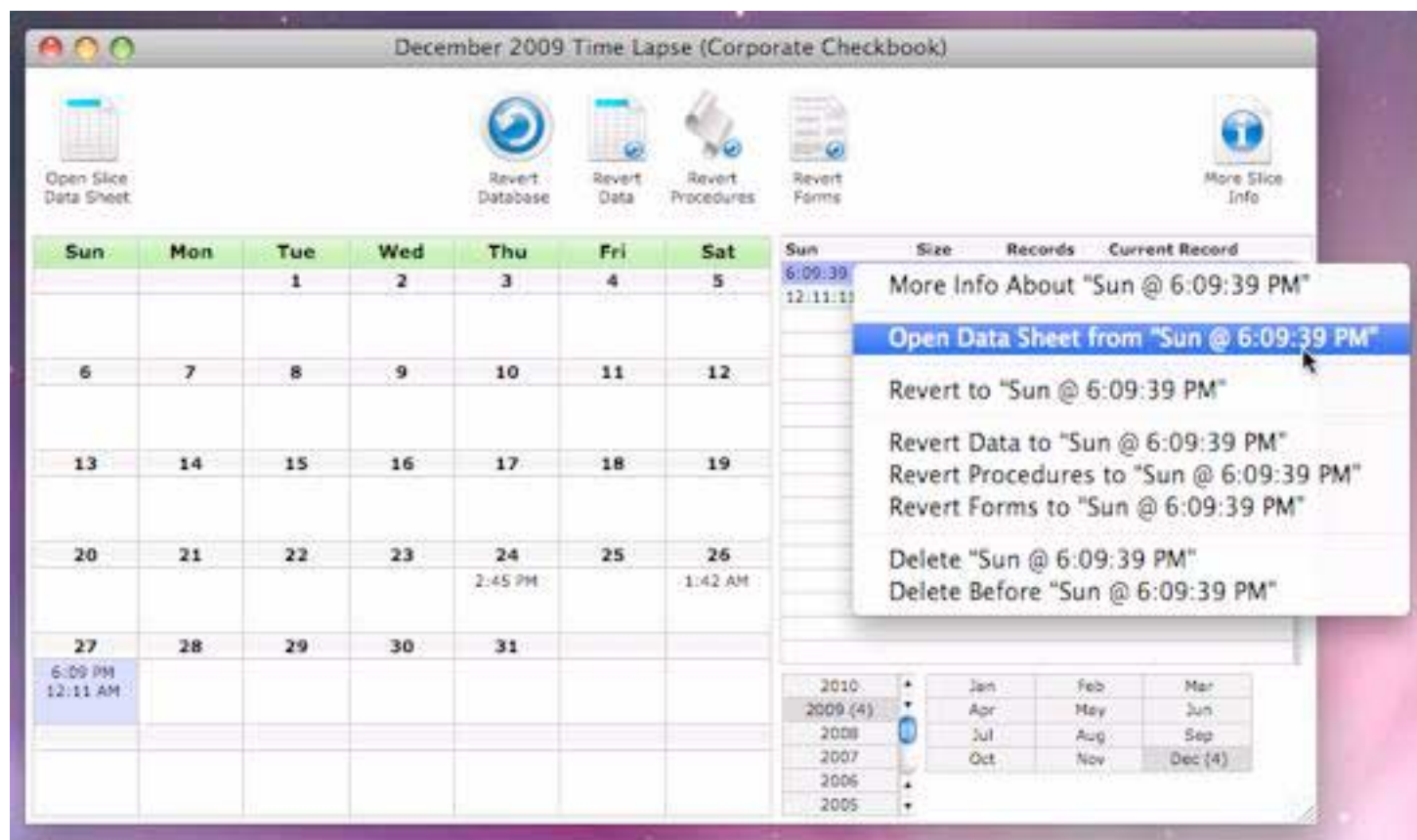
Revert Data — Click here to revert the just the data to this previous version. All forms, procedures, permanent variables, print settings, etc. are undisturbed. (Essentially Panorama imports the data from the previous slice into the current copy of the database.)

Revert Procedures — Click here to revert just the procedure code to this previous version. Everything else is undisturbed. For example, suppose you had made changes to procedures that didn't work out. You could simply revert the procedures back to the previous code, while keeping all of the updated data, forms, etc. (If you want to revert just a single procedure, open the previous slice with the **Open Slice Data Sheet** tool, open the procedure with the **View** menu and then manually copy the procedure code.)

Revert Forms — Click here to revert just the procedure code to this previous version. Everything else is undisturbed.

More Info — Click here to display more information about this saved slice, including a list of the forms, procedures and crosstabs in the database at the time the slice was saved.

Right Click/Context Menu — In addition to the tools across the top of the window you can also right click on a slice for a list of operations that can be performed on that slice.



The first six options in this menu are the same as the tools on the top of the window. The last two options allow you to manually delete saved slices.

Delete — Choose to delete this particular slice.

Delete Before — Choose this to delete all slices saved before this slice. Note: We mean all slices, including slices saved on previous days, months, and years.

Time Lapse Preferences

By default Panorama keeps up to 25 “slices” of each database, and it tries to keep slices from a range of periods, not just the most recent. While in the Time Lapse window you can use the Setup->Global Preferences dialog to adjust how Panorama decides which slices to keep.



If necessary, you can override the preferences for a specific database. For example, if you have an extra-important database you may want to keep 50 copies instead of 25. Use the Setup->Preferences Override dialog to customize Time Lapse for a particular database.

Important Note: Time Lapse only works with database files that are inside the current users folder. Time Lapse slices will not be saved if the database is outside this folder (on an external drive, for example).

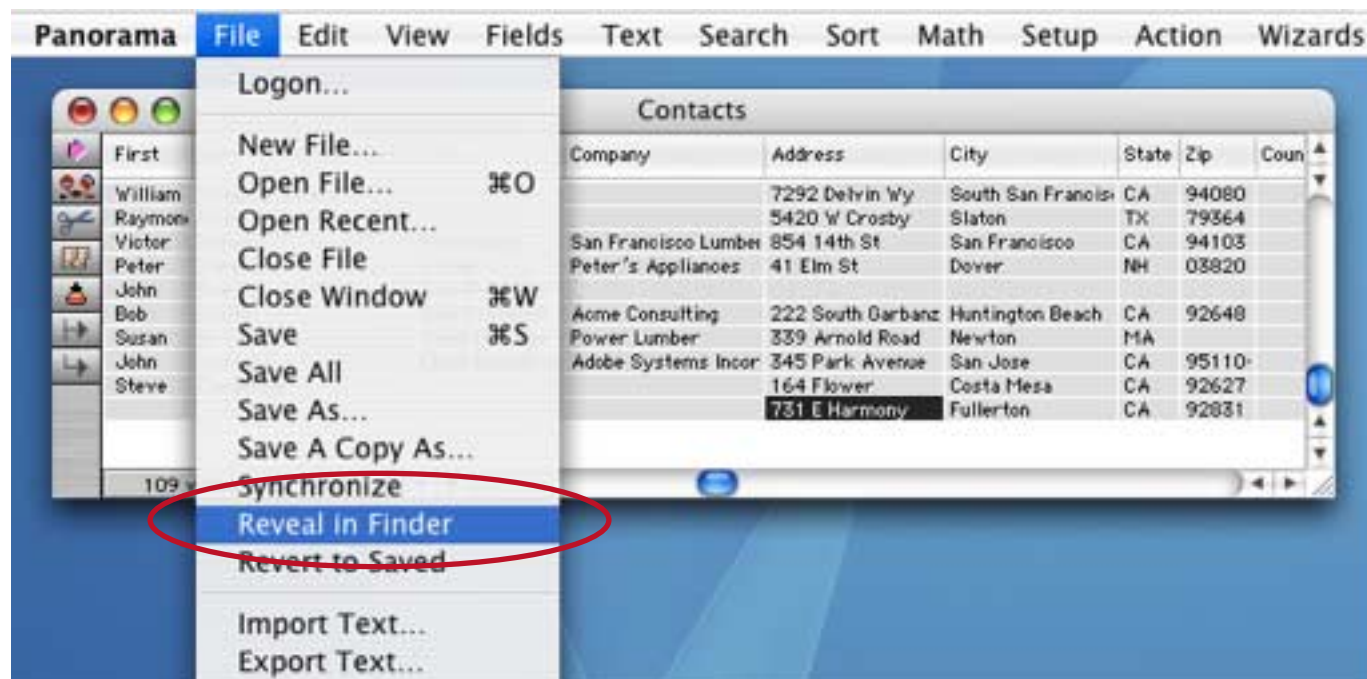
On the Importance of Backing Up

You’ve heard it before, you’ll hear it again—there’s no substitute for regular backups. Panorama’s Time Lapse option is great for recovering from your mistakes, but it won’t do you any good if your hard disk fails, or even gets stolen. Yes, it can happen to you! To protect from fire or theft you should keep your backups at a separate location. Any experienced user will tell you that “Having good backups means never having to say you’re sorry!”

Of course some of you will ignore this advice until it happens to you. We get too many sad calls from people who have lost thousands of records due to a hardware failure. Don’t take a chance on being one of them.

Finding a Database on the Hard Disk

To find the location of the current database on the hard drive simply choose the **Reveal in Finder** command from the **File** menu.



This will open the folder containing the database and highlight the database file.

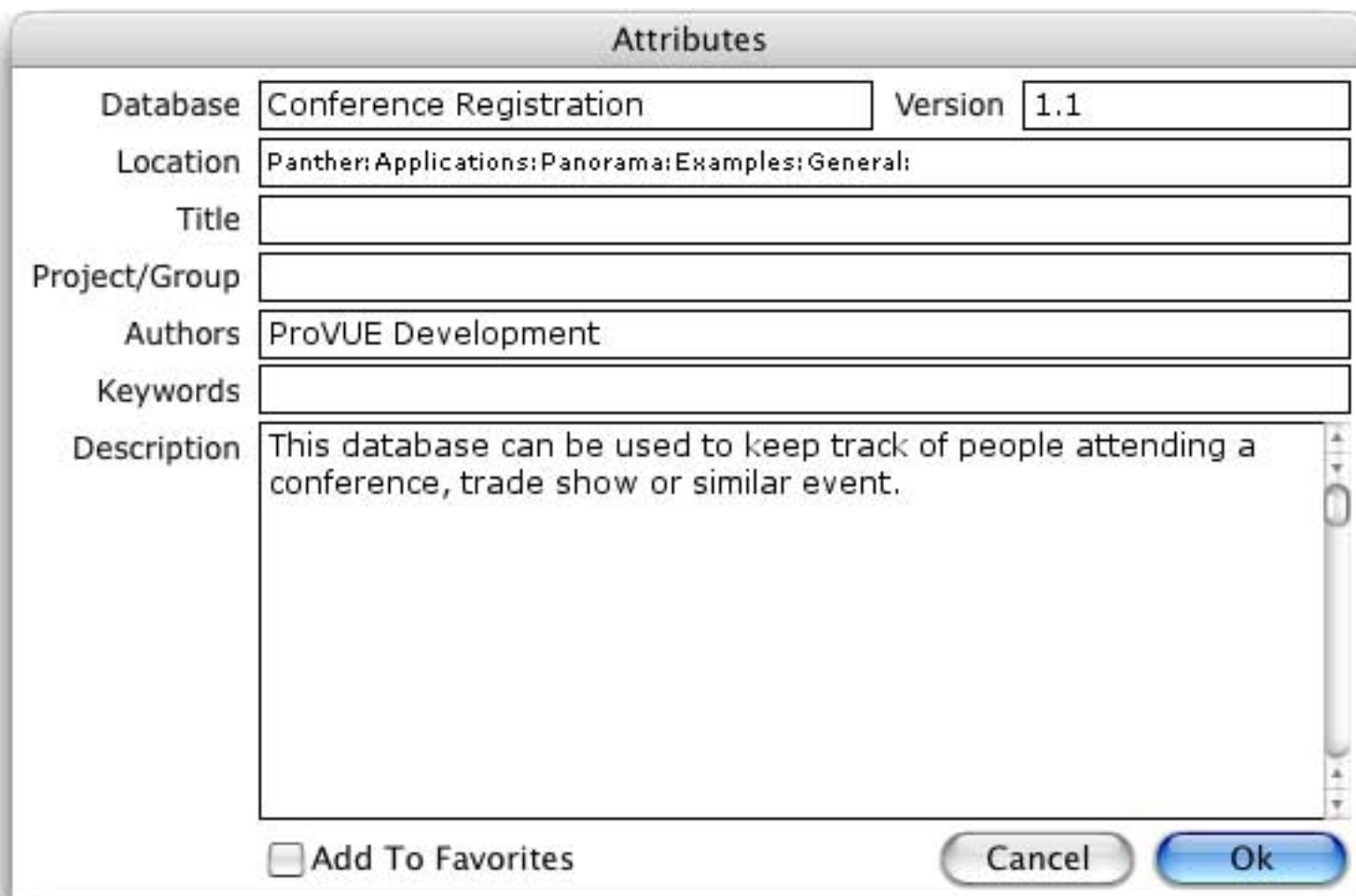


Note: This feature is only available in Mac OS X.

Viewing and Modifying Database Metadata

Metadata is defined as data that describes other data. The **Database Information** wizard allows you to view and modify descriptive information about any database: the title, author name, description, keywords, etc.

The **Database Information** wizard always works with whatever database is displayed in the topmost window. To view or modify the descriptive information simply choose **Database Information** from the Wizard menu. Unlike most wizards, this one opens a dialog window which displays the metadata information.



The screenshot shows a dialog window titled "Attributes" with the following fields and values:

Database	Conference Registration	Version	1.1
Location	Panther: Applications: Panorama: Examples: General:		
Title			
Project/Group			
Authors	ProVUE Development		
Keywords			
Description	This database can be used to keep track of people attending a conference, trade show or similar event.		

At the bottom of the dialog, there is a checkbox labeled "Add To Favorites" which is currently unchecked. To the right of this checkbox are two buttons: "Cancel" and "Ok".

The **Database** and **Location** fields are always filled in for you, and cannot be changed. You can modify all of the other fields to contain any text you like. When you press the **Ok** button the metadata is stored in the database itself (in this case inside the **Conference Registration** database). Warning: Just like other database information, the metadata isn't saved permanently until you use the **Save** command.

Working with Multiple Databases

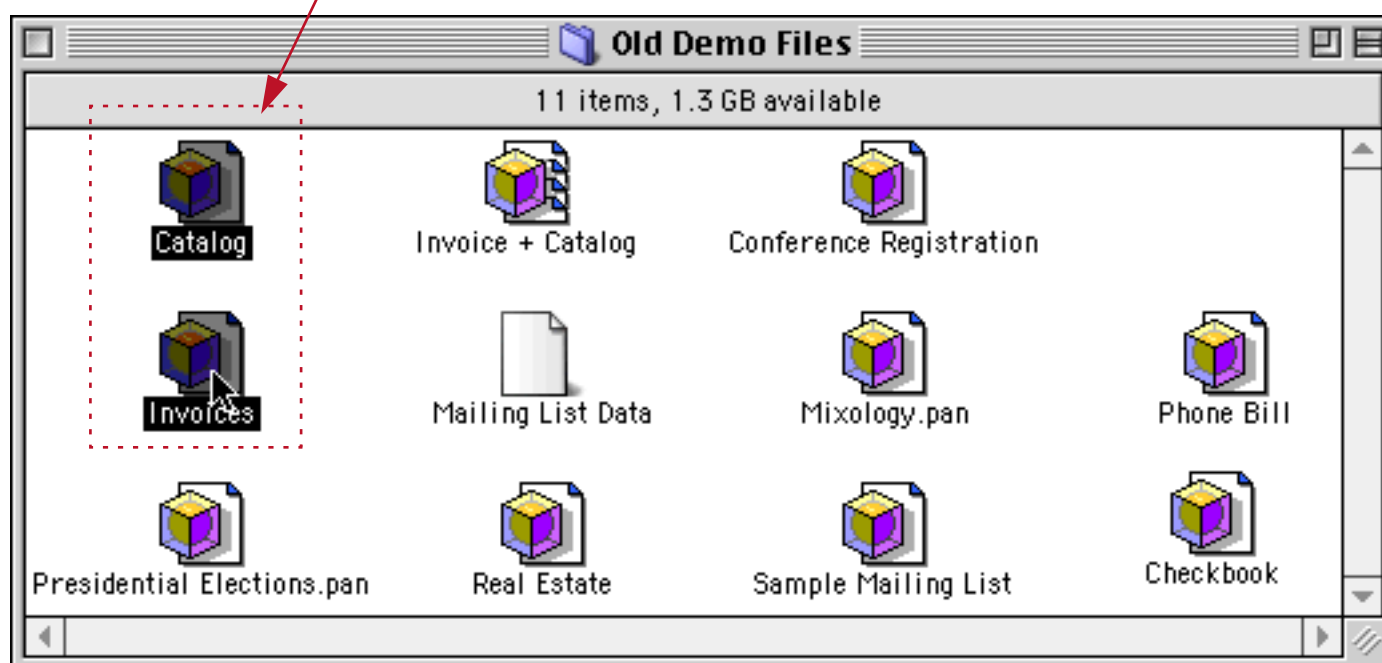
Panorama can work with several databases at the same time. The databases can be independent, or they may contain related information.

As you use Panorama, you'll probably encounter many tasks that require working with several databases at once. For example, when you are working with an invoice database, you may need to have the customer and price list databases available. As you are working with a checkbook database, you may need to access information in vendor and accounts payable databases. When you are working with a class scheduling database, you may also need the course catalog and student registration databases. Panorama can handle all these tasks.

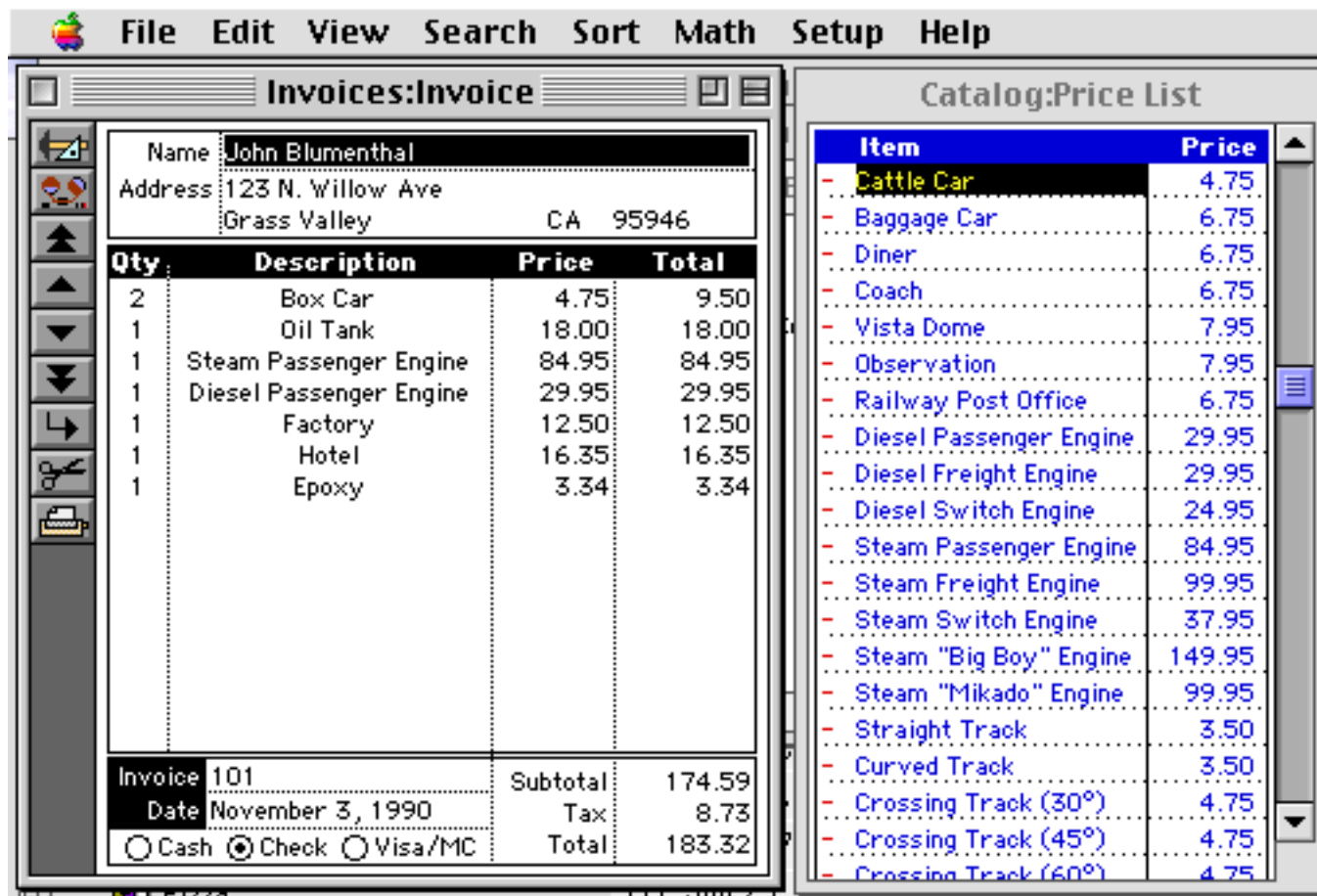
Opening Multiple Files

You can open multiple files all at once using the desktop (Explorer), or one at a time after Panorama is open. From the desktop, first select the files and then double click on one of them. (To select several files, either hold down the **Shift** key as you click on each file, or drag the mouse around the files.)

select the files you want to open and then double click on one of them



Panorama will open all of the databases you have selected.



To open an additional file from inside Panorama, use the **Open File** command in the File Menu. You can continue to open files until you run out of memory. (You are also limited to 64 open windows.)

File Sets

If you plan to use a group of files together, you can create a special document that represents the entire group. This special document is called a File Set. File Sets have their own unique icon.

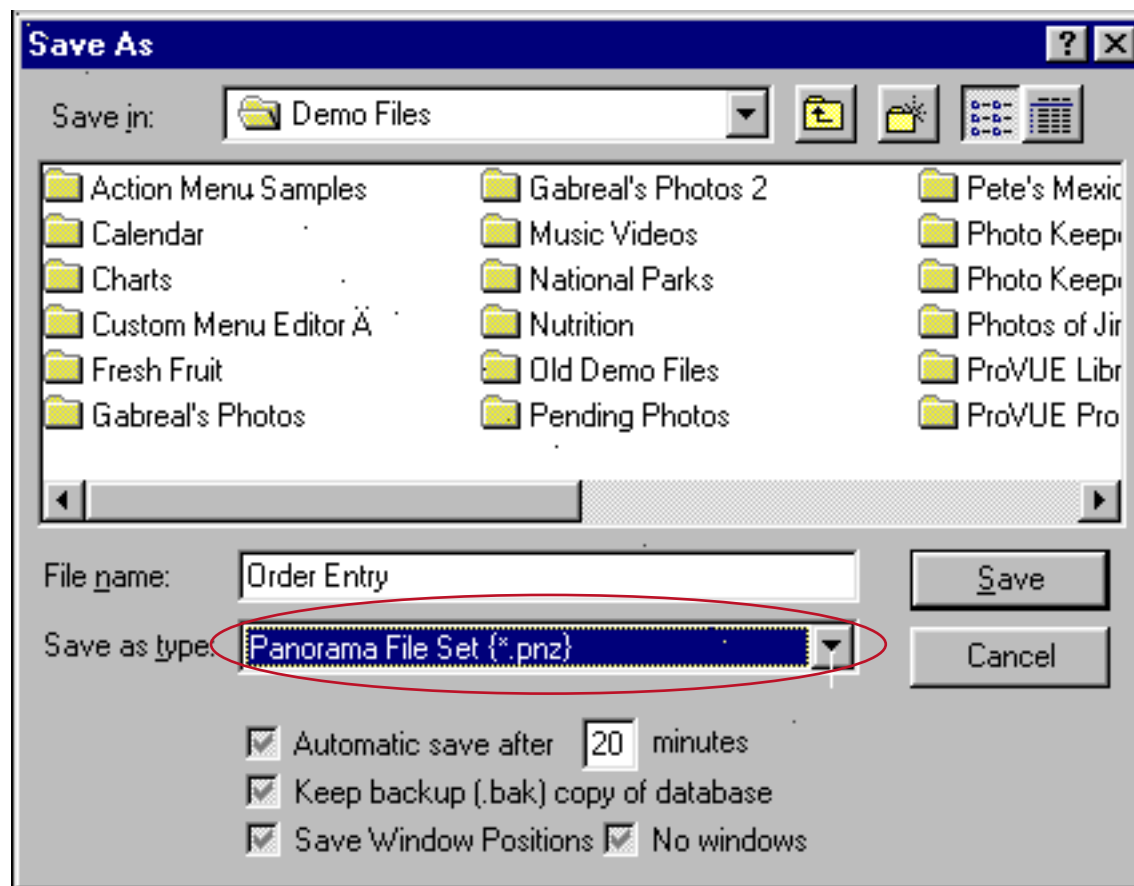


When you double click on a file set icon, Panorama will automatically open all the files included by the set. For example, you could create an **Order Entry** file set that automatically opens three databases—**Invoice**, **Customer List**, and **Price List**. A file set can also be opened with the **Open File** dialog.

To create a file set, first open the databases you want to include in the set. (Make sure that no other files that you don't want included in the set are open. Every open file will be included in the set. If you are not sure what files are currently open you can use the Memory Usage command to find out — see “[Monitoring Memory Usage](#)” on page 137.) Then use the Save As command in the File menu. Type in the name of the file set. If you are using a Macintosh computer check the **Set** radio button.



If you are using a Windows PC computer use the combo box to choose the **Panorama File Set (*.pnz)** option



Press the **Save** button to create the file set document.

All the databases in a file set must be in the same folder as the file set itself. The files will be opened in the same order that they were originally opened when you created the set. If you want to make sure that the files open in a certain order, you should open the files manually (with the **Open File** command) in that order before saving the file set.

A file set cannot be edited or changed once it is created. To change a file set, you must use **Save As** to create it over again.

Tip: It's important to realize that the file set document does not contain the actual databases themselves—the databases are still in separate files. If you copy the file set to another folder or disk, you also need to copy the actual database files.

Tip: You cannot save the window positions associated with a file set. Instead, you must save the window positions of each individual database within the set. See "[Saving Window Positions](#)" on page 64 for more information on saving window positions.

The AutoLoad File Set

Panorama allows you to create a special file set that loads automatically when Panorama is launched. This file set must be called either **AutoLoad** (Macintosh) or **AutoLoad.pnz** (Windows PC) and must be in the same folder as the Panorama application itself. However, this file set only loads automatically if no other database is opened. In other words, if you double click on the Panorama application itself, the **AutoLoad** file set will open, but if you double click on a Panorama database or file set, the **AutoLoad** file set will not open. The **AutoLoad** file set will also open automatically if Panorama is launched automatically (for example from the Startup Items folder, an AppleScript or by configuring a CD to automatically run Panorama from the CD when the disk is entered).

The **AutoLoad** file set must be in the same folder as Panorama. If that is not possible, you can create an alias (Mac) or shortcut (Windows PC) to the **AutoLoad** file set and move the alias into the Panorama folder. The alias/shortcut must be named **AutoLoad**, not **AutoLoad alias** or any other name.

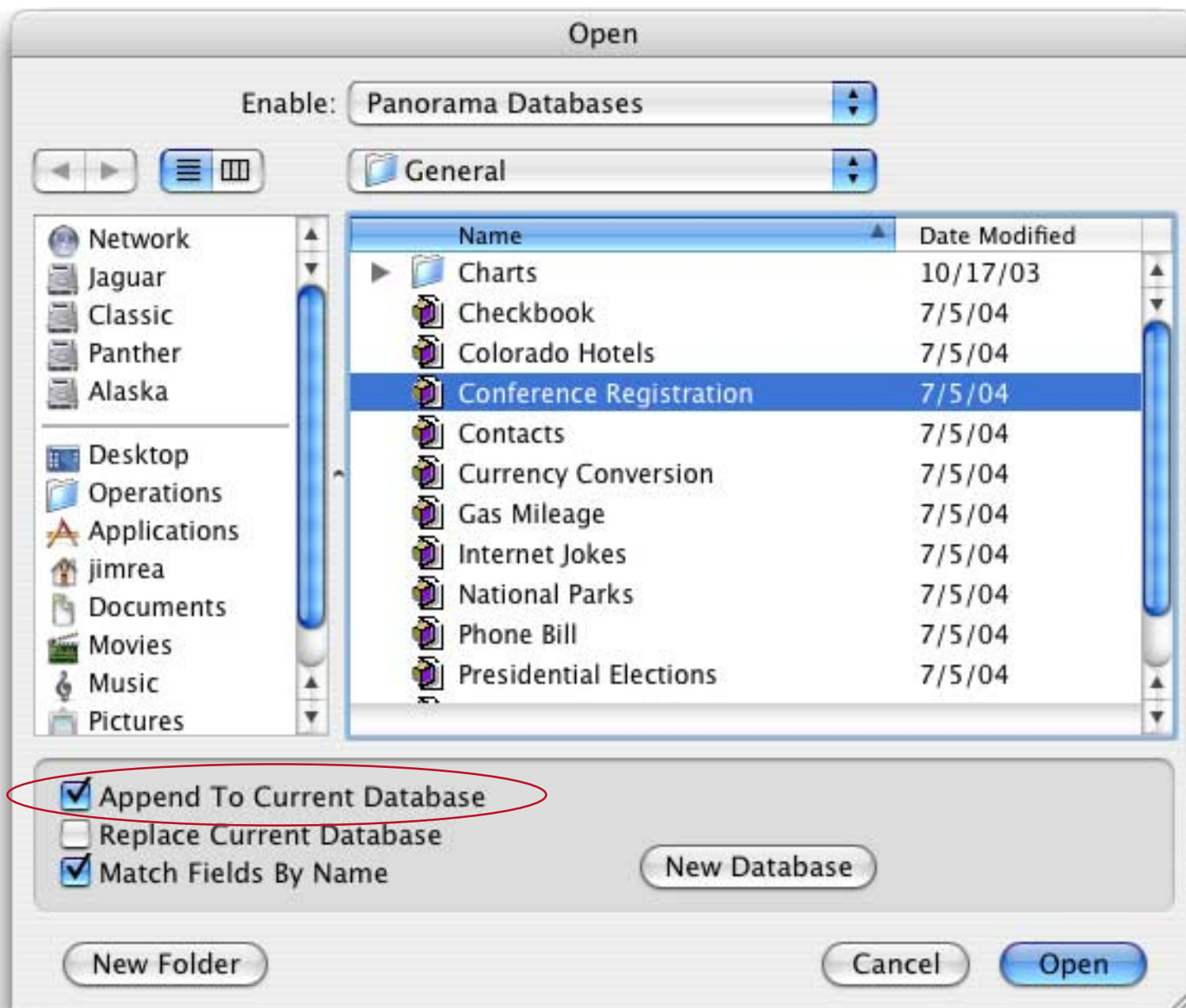
Saving Multiple Files

The **Save** command only saves one file at a time—the file associated with the top window. To save all the open files, use the **Save All** command. (Note: Only databases that have actually been changed will be saved.)

When you use the **Quit** command, Panorama will check each open database to see if it has been modified. Panorama will ask you if you want to save your changes before shutting down Panorama.

Appending One Database to Another

To append a database to the end of the current database, use the **Append To Current Database** option in the **Open File** dialog.



When you press the **Open** button the data in the selected file is appended to the end of the current file. (Only the data is appended, not the forms, procedures, crosstabs, or Flash Art.)

If the **Match Fields by Name** option is checked Panorama will examine the two databases and look for fields with the same names. Only the data in these fields will be appended. For example if both databases contain fields named **Address**, **City**, **State** and **Zip** then the information in these fields will be appended. However if one database has a field named **Zip** and the other has a field called **PostalCode**, the data in these fields will not be appended. The field names must match exactly — **Company** and **COMPANY** will not match.

If the **Match Fields by Name** option is not checked Panorama will append fields according to their order. In other words, the first field of the second database will be appended to the first field of the current database, the second field to the second field, etc. Usually appending two databases this way makes sense only if both databases have the same fields in the same order. If they don't, you can open the second database, re-arrange the fields and then append (see below).

If the **Match Fields by Name** option is not checked and the database being appended has more fields than the current database, the extra fields will be ignored. If the data types in the two files are incompatible, some data may be lost. For example, data will be lost if you try to append text into a numeric field. Panorama will alert you if this happens, but it cannot tell you exactly what data has been lost.

After the append is finished, Panorama positions the database at the first new record. All the records above this position are part of the original file. All the records at and below this position are part of the new appended data.

Date	CkNum	PayTo	Category	Debit
08/21/99	2242	PacTel Cellular	Telephone	147.65
08/21/99	2248	Sprint	Telephone	26.84
08/23/99	2256	Public Storage	Rent	100.00
08/29/99	2257	Advertiser's Mailing Ser	Advertising	425.00
08/29/99	2260	Blue Cross Of Calif	Insurance	177.85
08/29/99	2263	AMA	Office Supplies	112.98
08/29/99	2262	Home Depot	Office Supplies	48.33
08/29/99	2259	NEBS	Office Supplies	151.37
08/29/99	2258	Pacific Partners	Rent	3,874.00
08/29/99	2261	AT&T	Telephone	32.13
09/04/99		DEPOSIT		
09/05/99	2264	Sears & Roebuck	Office Supplies	341.12
09/06/99	2266	Advertiser's Mailing Ser	Advertising	495.41
09/06/99	2265	Advertiser's Mailing Ser	Postage	141.00

Appending an Open Database

Panorama can append a database that is already open. Panorama will append the copy of the database that is open in memory, not the original on disk. This is handy if you want to modify a file before you append it.

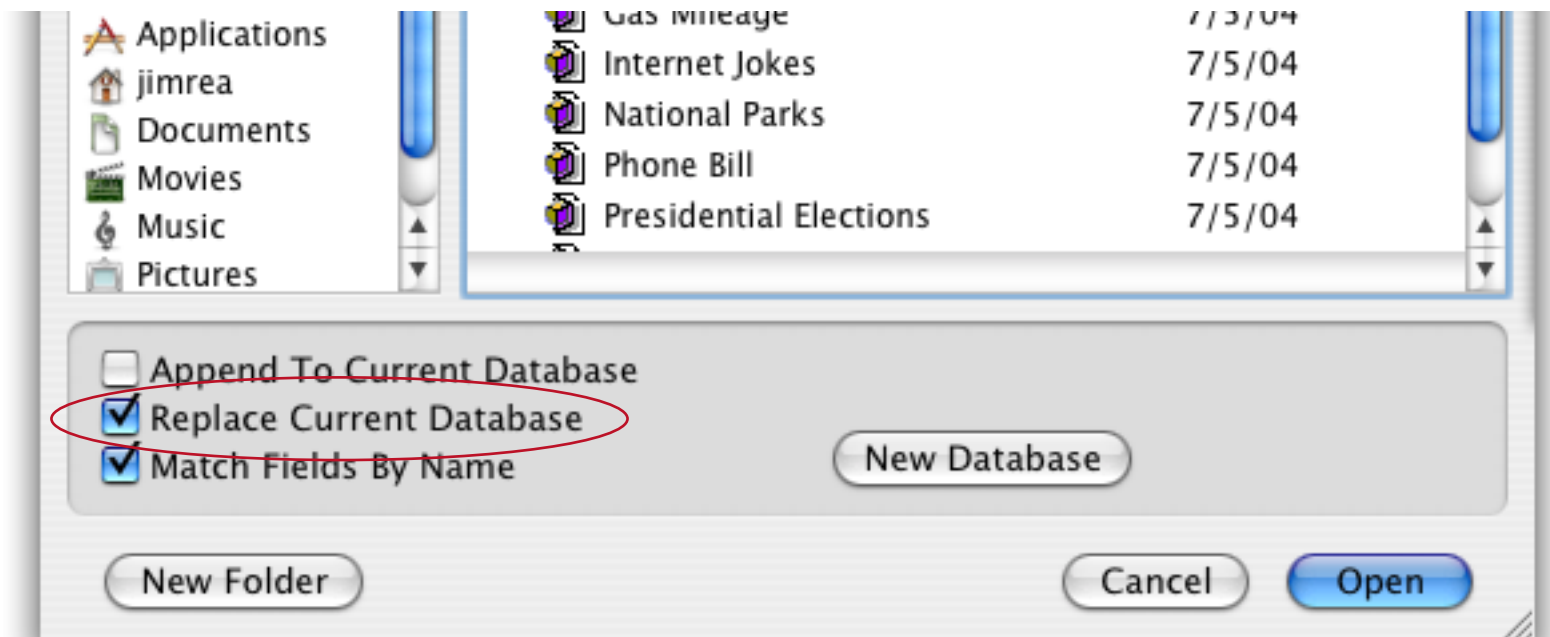
Panorama can also append a database to itself. In this case Panorama will append the original copy of the database on disk. For example if you open a database with 1,000 records, delete 500 records without saving, and then append the database to itself, you will wind up with 1,500 records.

Appending Imported Data

By checking the **OverVUE** or **Import** radio buttons (PC) or selecting the **Text Files (Import)** option from **Enable** pop-up menu (Macintosh) in the **Open File** dialog, you can import data and append it to the current database in a single step. Either tab or comma delimited TEXT files can be appended. The data being imported should contain the same fields in the same order as the current database. If the fields do not match, some data may be lost. For a complete discussion of importing data into Panorama, see "[Importing a Text File](#)" on page 82.

Replacing Obsolete Data

Another Open File dialog option is **Replace Current Database**.



This option allows you to completely replace the data in the current database with the data in another database. This is useful if the current database contains obsolete data, but has forms or procedure you want to use.

Depending on whether or not the **Match Fields by Name** option is checked the new data should either have the same field names as the old database or it should have the same fields in the same order as the current database. If the fields do not match, some data may be lost. The **Replace Current Database** option works exactly like the **Append** option, except that Panorama removes all the data in the current database before appending the data.

You can also replace the current data with imported data—just check the **Replace Current Database** option and also check **OverVUE** or **Import** (PC) or select **Text File (Import)** from the **Enable** pop-up menu. The data being imported should contain the same fields in the same order as the current database. If the fields do not match, some data may be lost.

Importing and Exporting Data

Panorama allows you to freely exchange information between it and other applications. The common terms for these exchanges are **importing** and **exporting**.

Importing means to transfer information from another program or computer into a Panorama file. The data can then be manipulated using Panorama's menu commands and tools. Panorama's import capabilities allow you to take advantage of databases that have already been keyed in or databases on other computers (for instance, on minicomputers or electronic bulletin boards). See "[Importing a Text File](#)" on page 82.

Exporting is the exact opposite of importing. To export data from Panorama means to take data from a Panorama file and make it accessible to another "foreign" program. For example, Panorama data can be exported to Excel so that it can be included in a spreadsheet. See "[Exporting a Text File](#)" on page 105.

In addition to the manual techniques described in this chapter it is also possible to set up a procedure to automatically import or export data. To learn more about this see "[Importing Text Files](#)" on page 409 and "[Exporting Text Files](#)" on page 413.

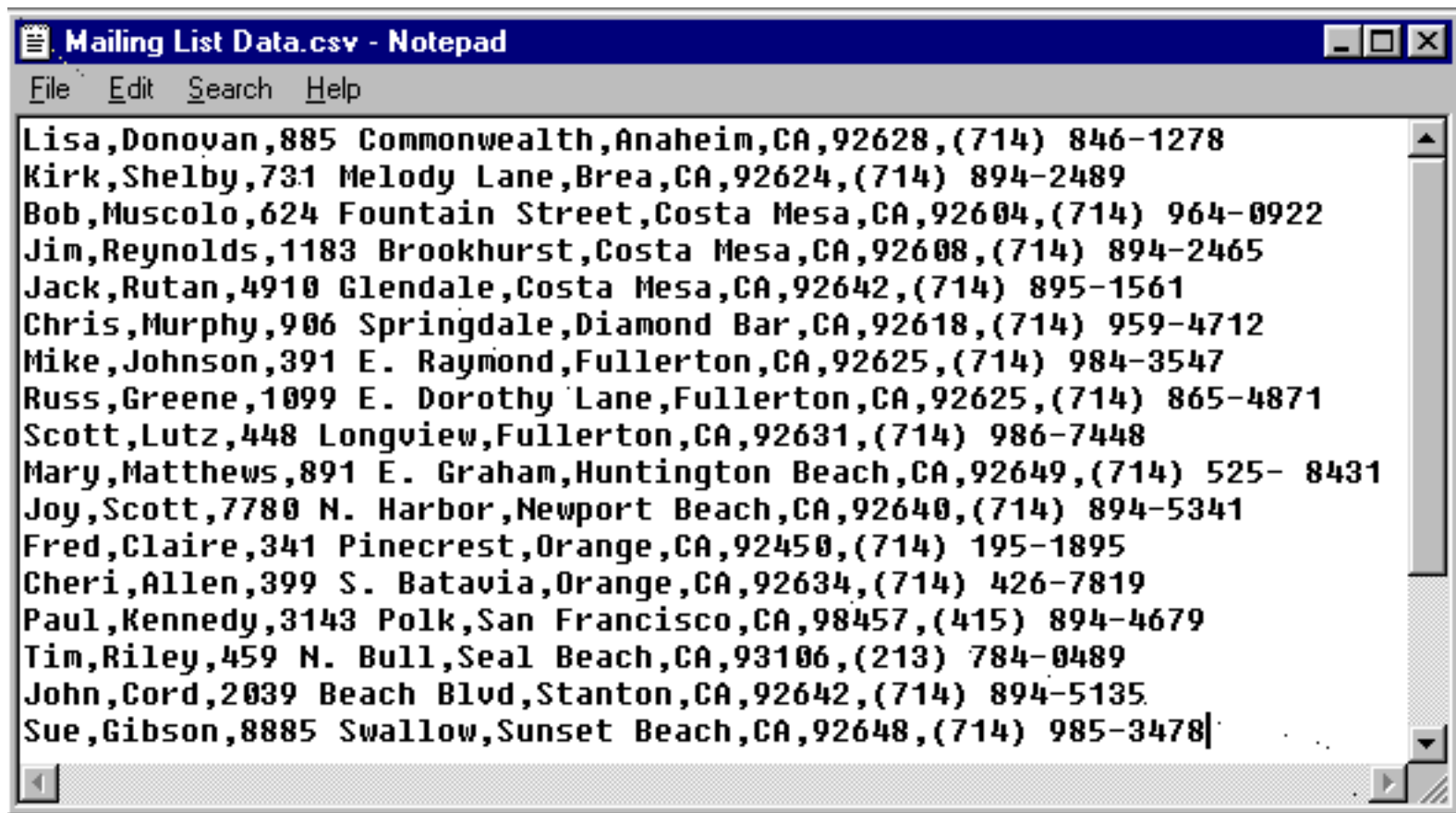
Working with Text Files

Panorama cannot directly access information in database or spreadsheet files created by other programs. Exchanging data between Panorama and another program requires an intermediate **text file**. A text file is very basic because it contains just the data—no forms, procedures, graphics, or anything else. Because text files are so simple, they provide a common interchange format for different programs. Virtually all database, spreadsheet, and word processing programs can read and write text files. This makes transferring data between Panorama and another program a two step process. Let's take Excel as an example. To transfer data from Panorama to Excel you first must export the data from Panorama as a text file. Then you go into Excel and import the text file. To transfer data from Excel to Panorama you start by exporting the data from Excel as a text file. Once the text file has been created you can go into Panorama and import the data from the text file.

In addition to importing and exporting text files you can also edit them directly. On the Macintosh the **SimpleText** application is provided free with every computer. Here's what a typical text file looks like in this application.



On PC systems text files can be edited with the **Notepad** or **WordPad** applications.





On PC systems text files often have a three letter filename extension of **.txt**, for example **My Data.txt**. However, text files may use other extensions as well, such as the **.csv** (short for **comma separated values**) file shown above. Panorama can work with text files with any extension.

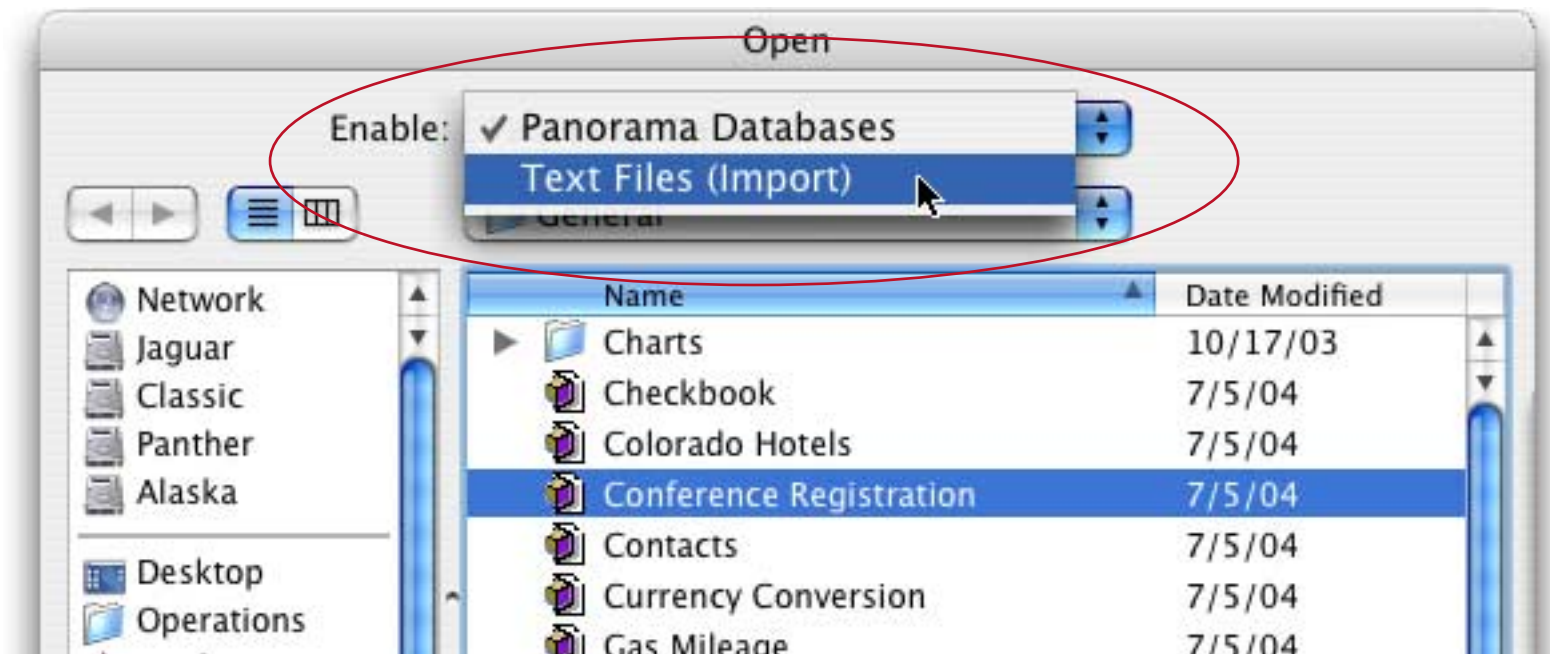
On Macintosh systems no extension is required. However we recommend adding **.txt** to the end of the filename anyway. This makes it easier to remember what kind of data is in the file and also improves compatibility in case the file is ever transferred to a PC system.

Importing a Text File

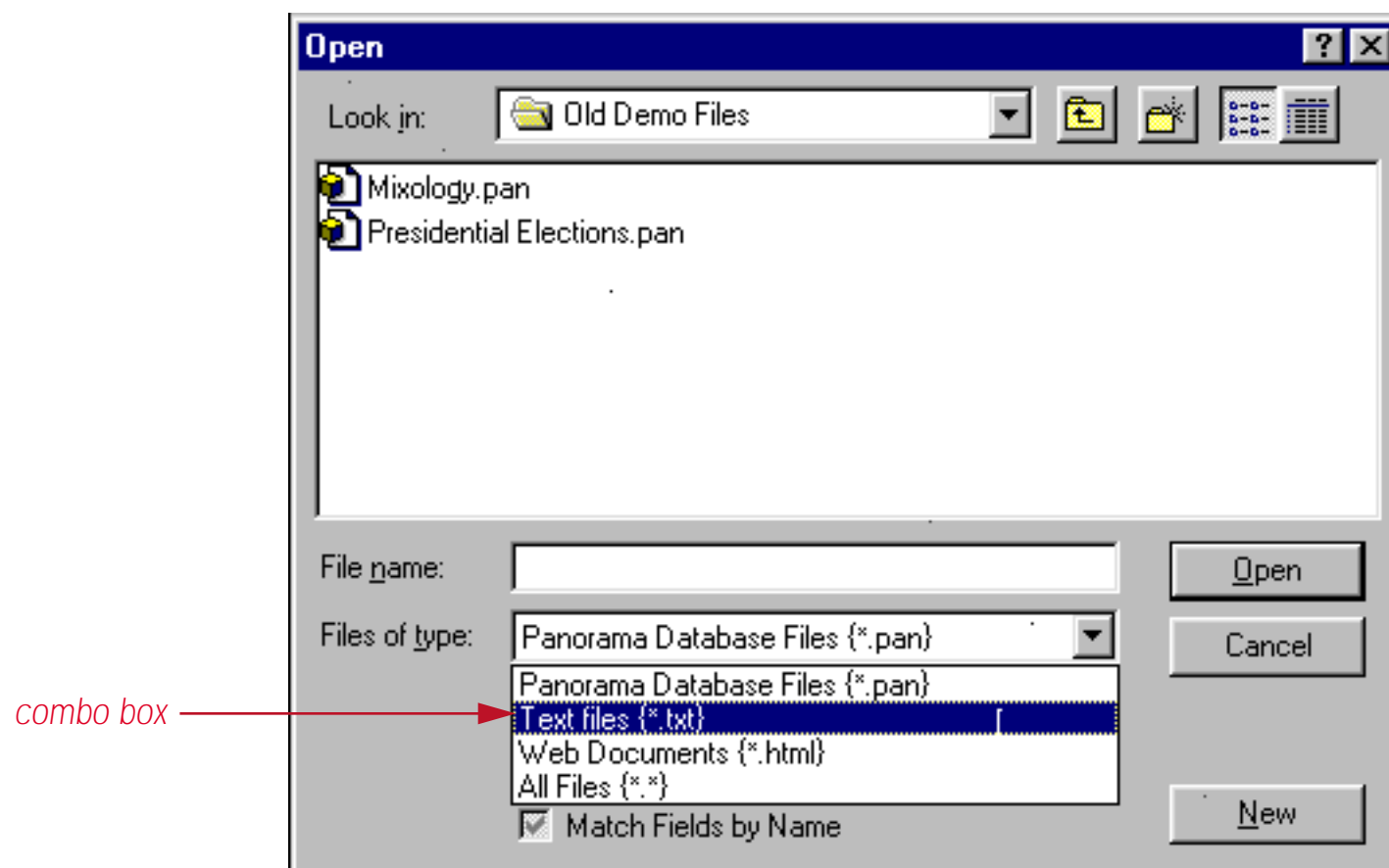
The first step in importing a text file is to prepare the text file. You can create it manually using a text editor like **SimpleText** or **Notepad**, but usually the text file is created by exporting from another database or spreadsheet program.

Macintosh	PC
 Mailing List.txt	 Mailing List.txt Mailing List Data.csv

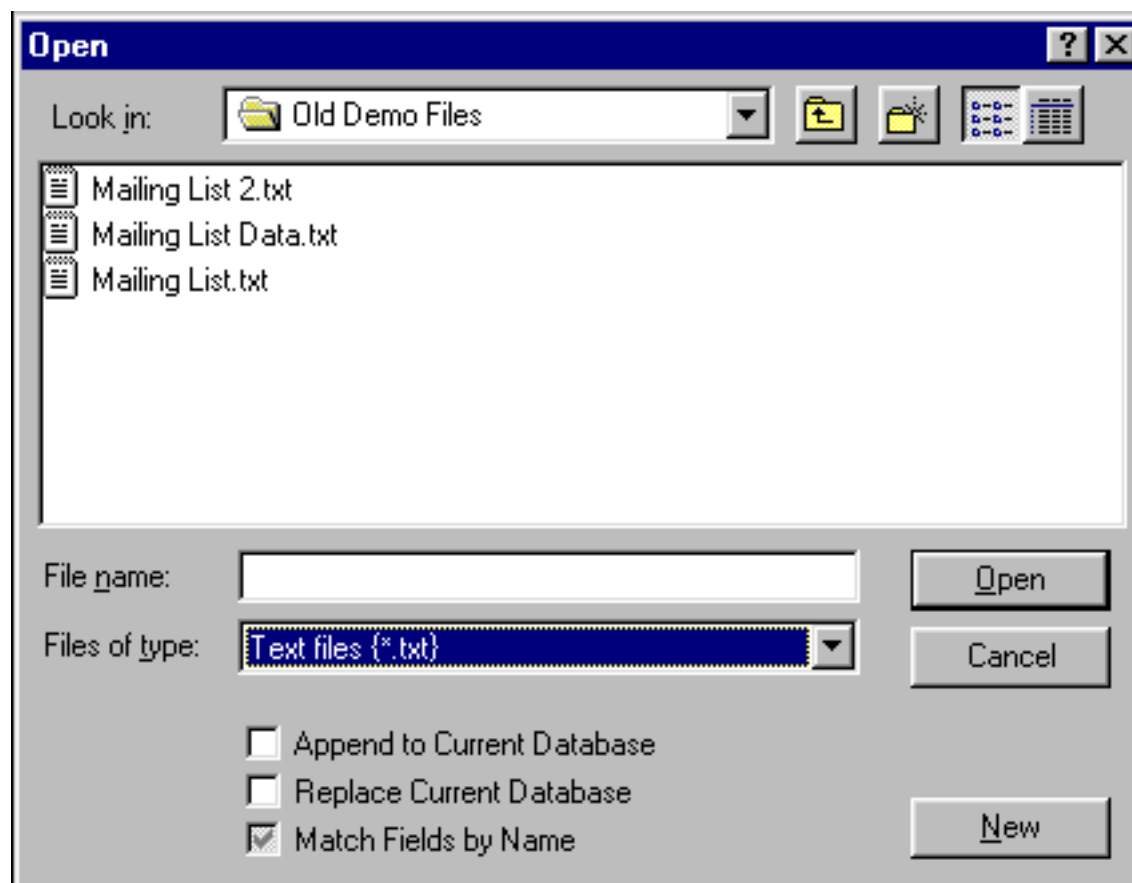
Once the text file is prepared go into Panorama and choose **Open File** from the File menu. This is the same dialog that is used for opening Panorama databases. On the Macintosh, choose **Text Files (Import)** from the **Enable** pop-up menu to see a list of text files that can be imported.



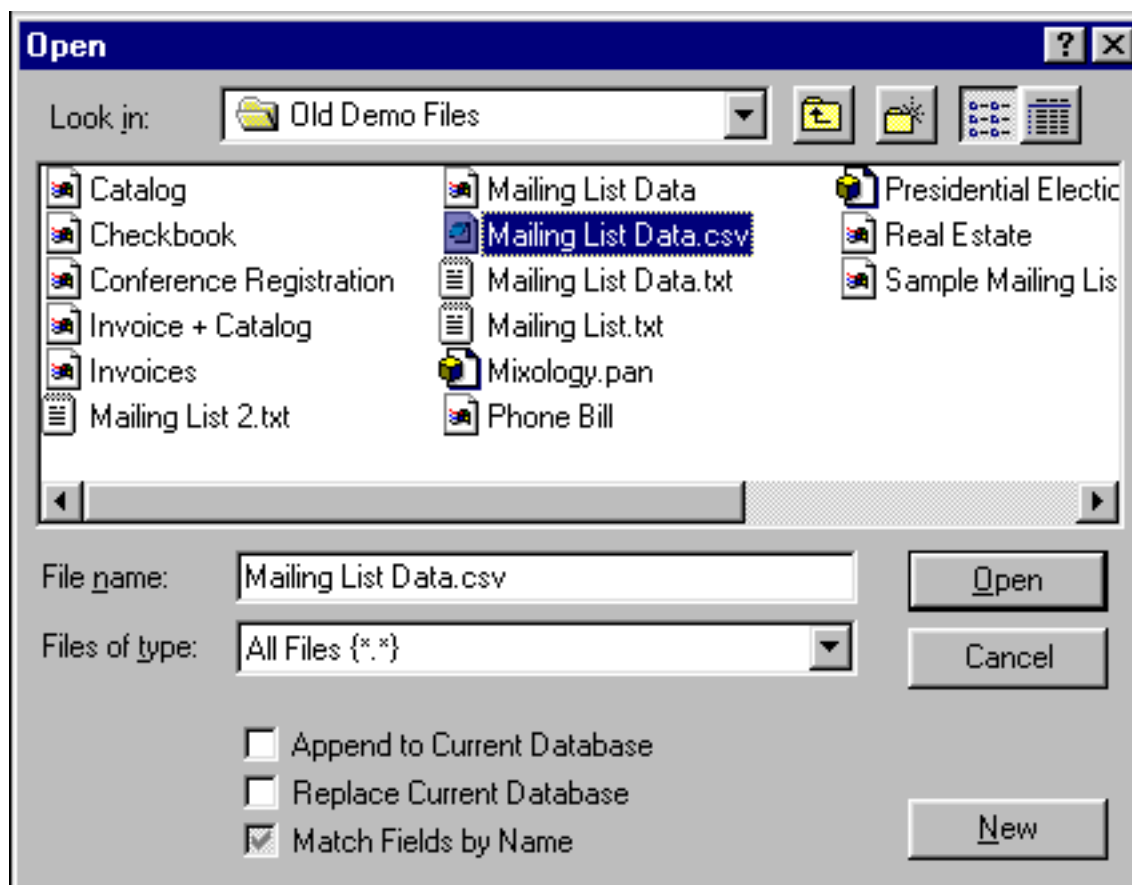
If you are using a Windows PC computer then use the combo box to choose **Text files (*.txt)**.



When you choose this option the dialog will list all of the **.txt** files available to be imported.



If you want to import a text file that does not use the **.txt** extension then use the combo box to choose **All files (*.*)**. This causes all files to be listed. In this illustration the **All files** option is being used to allow a **.csv** file to be selected for import.



Once the text file you want to import is visible simply click on it and press the **Open** button. Panorama will create a new database and fill it with the data from the text file. Panorama automatically examines the text file to decide whether the data is tab or comma separated and then creates the number of columns required to hold the data.



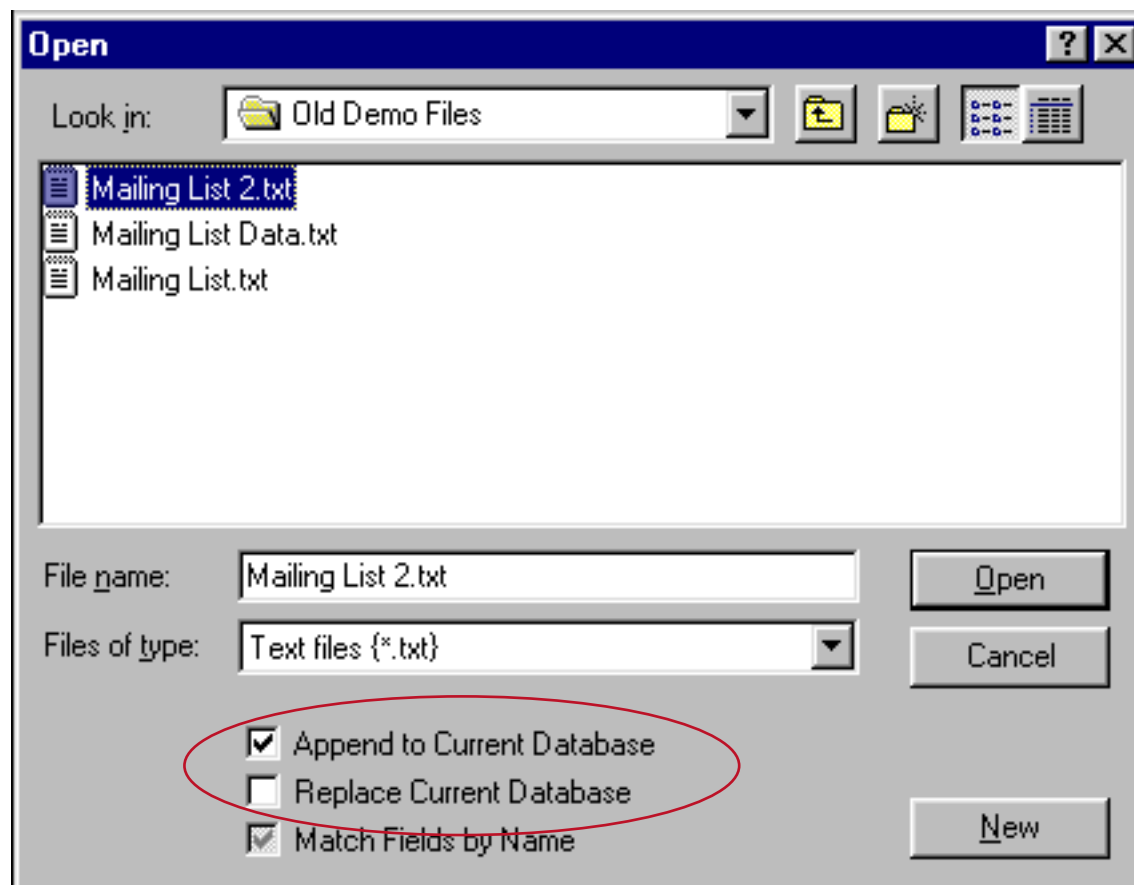
	A	B	C	D	E	F	G
	Lisa	Donovan	885 Commo	Anaheim	CA	92628	(714) 846-7
	Kirk	Shelby	731 Melody	Brea	CA	92624	(714) 894-2
	Bob	Muscolo	624 Fountai	Costa Mesa	CA	92604	(714) 964-0
	Jim	Reynolds	1183 Brook	Costa Mesa	CA	92608	(714) 894-2
	Jack	Rutan	4910 Glend	Costa Mesa	CA	92642	(714) 895-7
	Chris	Murphy	906 Springc	Diamond Bai	CA	92618	(714) 959-4
	Mike	Johnson	391 E. Rayn	Fullerton	CA	92625	(714) 984-3
	Russ	Greene	1099 E. Dor	Fullerton	CA	92625	(714) 865-4
	Scott	Lutz	448 Longvie	Fullerton	CA	92631	(714) 986-7
	Mary	Matthews	891 E. Grah	Huntington I	CA	92649	(714) 525-
	Joy	Scott	7780 N. Har	Newport Be:	CA	92640	(714) 894-5
	Fred	Claire	341 Pinecre	Orange	CA	92450	(714) 195-7
	Cheri	Allen	399 S. Bata	Orange	CA	92634	(714) 426-7
	Paul	Kennedy	3143 Polk	San Francis	CA	98457	(415) 894-4
	Tim	Riley	459 N. Bull	Seal Beach	CA	93106	(213) 784-0
	John	Cord	2039 Beach	Stanton	CA	92642	(714) 894-5
	Sue	Gibson	8885 Swallc	Sunset Bear	CA	92648	(714) 985-3
	Kevin	Mitchell	212 E. Dove	Tustin	CA	92635	(714) 549-8
	Andy	Dudas	32149 N. Mi	Chicago	IL	60678	(312) 857-4
	Mike	Corning	53 Deerhavi	Mahwah	NJ	9631	(201) 877-4
	Doug	Lewis	36 E. 30th	New York	NY	10552	(212) 975-7
	Fred	Sampson	2104 E 8th	Fullerton	CA	94075	(714) 234-5

The new database is initially assigned the name **Untitled** (or if that is taken, **Untitled 2**, **Untitled 3**, etc.). The first time you **Save** the database Panorama will ask you to assign the actual name to the file.

The columns in the new database are initially assigned the names **A**, **B**, **C**, etc. To assign real names to these columns you can use the **Field Properties** dialog (see “[Field Properties](#)” on page 215) or the Design Sheet (see “[The Design Sheet](#)” on page 212)

Importing into an Existing Database

When you import a text file Panorama normally creates a brand new database, as described in the previous section. However, it is also possible to import data into an existing database. To do this you must check either the **Append to Current Database** or the **Replace Current Database** option in the Open File dialog.



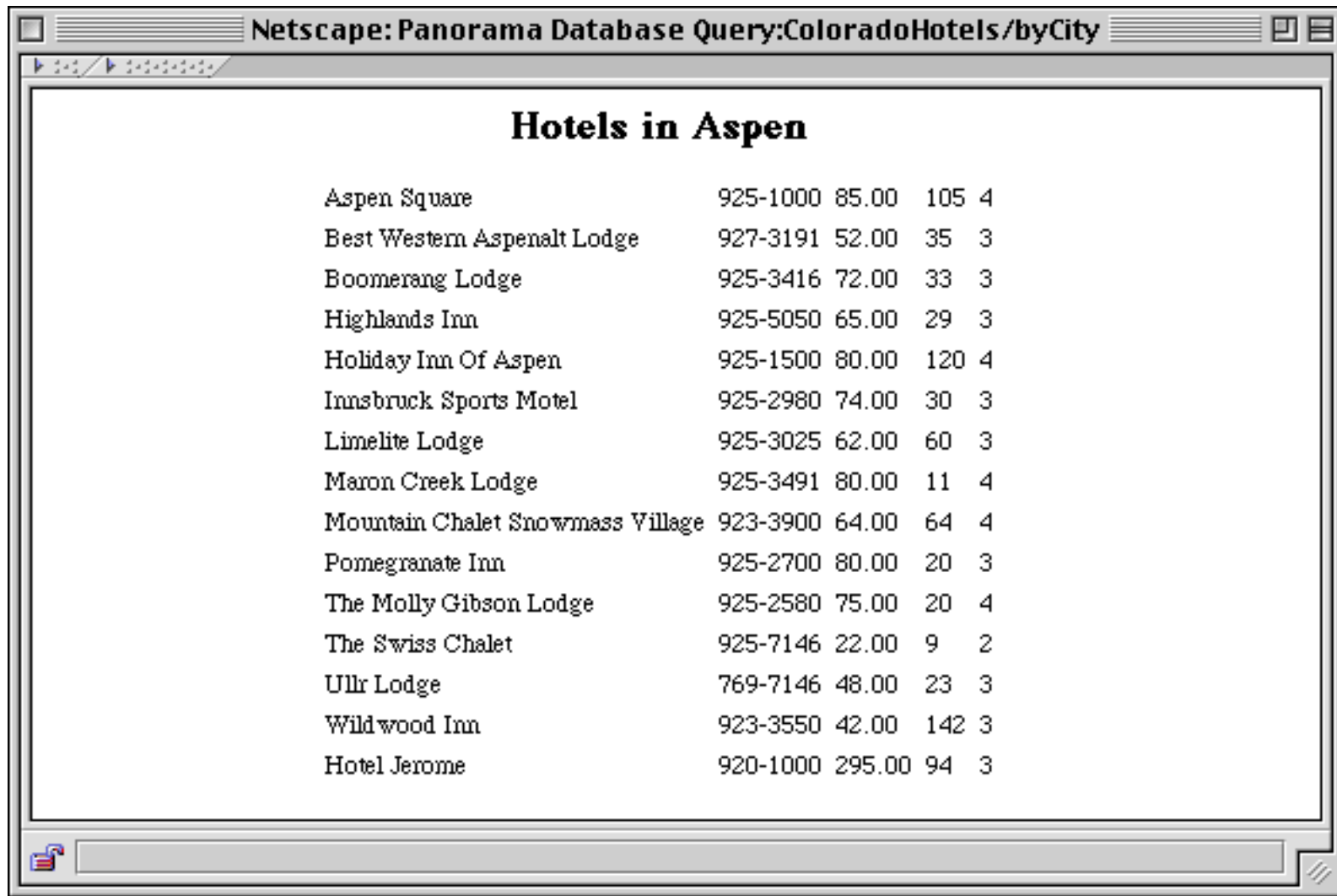
The data being imported should have the same fields in the same order as the current database. If the fields are not in the same order you should use the **Text Import Wizard** (see “[Using the Text Import Wizard](#)” on page 94) to import the text. Otherwise some data may be lost.

If the **Append to Current Database** option is checked, the imported data will be appended to the end of the current database. Use this option to add new data to an existing database.

If the **Replace Current Database** option is checked, the imported data will completely replace the current data. The old data will be erased, then replaced with the new imported data. Use this option to update a database with the latest information, while leaving all the forms, reports, crosstabs, and procedures intact.

Importing HTML Tables

Panorama can automatically import tables from a text file that contains HTML with the `<table>` tag. As an example consider the HTML page shown below.



The screenshot shows a Netscape browser window with the title "Netscape: Panorama Database Query:ColoradoHotels/byCity". The main content area displays a table titled "Hotels in Aspen". The table lists 15 hotels with their names, phone numbers, rates, and other details.

Hotels in Aspen				
Aspen Square	925-1000	85.00	105	4
Best Western Aspenalt Lodge	927-3191	52.00	35	3
Boomerang Lodge	925-3416	72.00	33	3
Highlands Inn	925-5050	65.00	29	3
Holiday Inn Of Aspen	925-1500	80.00	120	4
Innsbruck Sports Motel	925-2980	74.00	30	3
Limelite Lodge	925-3025	62.00	60	3
Maron Creek Lodge	925-3491	80.00	11	4
Mountain Chalet Snowmass Village	923-3900	64.00	64	4
Pomegranate Inn	925-2700	80.00	20	3
The Molly Gibson Lodge	925-2580	75.00	20	4
The Swiss Chalet	925-7146	22.00	9	2
Ullr Lodge	769-7146	48.00	23	3
Wildwood Inn	923-3550	42.00	142	3
Hotel Jerome	920-1000	295.00	94	3

To import the data on this page you must first save the page as a text file. Consult the documentation for your browser to learn how to do this. A sample HTML file named [Aspen Hotels.html](#) is supplied with your copy of Panorama — locate this file now if you want to follow along.



If you examine this file with a text editor you should see the `<table>` tag followed by the data and finished up with the `</table>` tag.

```

Aspen Hotels.html
<html>
<head>
<title>Panorama Database Query :ColoradoHotels/byCity</title>
</head>
<body bgcolor="FFFFFF" text="000000" text="0000FF" text="336666">
<center>
<h2>Hotels in Aspen</h2>
<table>
<tr><td>Aspen Square</td><td>925-1000</td><td>85.00</td><td>105</td><td>4</td></tr>
<tr><td>Best Western Aspenalt Lodge</td><td>927-3191</td><td>52.00</td><td>35</td><td>3</td></tr>
<tr><td>Boomerang Lodge</td><td>925-3416</td><td>72.00</td><td>33</td><td>3</td></tr>
<tr><td>Highlands Inn</td><td>925-5050</td><td>65.00</td><td>29</td><td>3</td></tr>
<tr><td>Holiday Inn Of Aspen</td><td>925-1500</td><td>80.00</td><td>120</td><td>4</td></tr>
<tr><td>Innsbruck Sports Motel</td><td>925-2980</td><td>74.00</td><td>30</td><td>3</td></tr>
<tr><td>Limelite Lodge</td><td>925-3025</td><td>62.00</td><td>60</td><td>3</td></tr>
<tr><td>Maron Creek Lodge</td><td>925-3491</td><td>80.00</td><td>11</td><td>4</td></tr>
<tr><td>Mountain Chalet Snowmass Village</td><td>923-3900</td><td>64.00</td><td>64</td><td>4</td></tr>
<tr><td>Pomegranate Inn</td><td>925-2700</td><td>80.00</td><td>20</td><td>3</td></tr>
<tr><td>The Molly Gibson Lodge</td><td>925-2580</td><td>75.00</td><td>20</td><td>4</td></tr>
<tr><td>The Swiss Chalet</td><td>925-7146</td><td>22.00</td><td>9</td><td>2</td></tr>
<tr><td>Ullr Lodge</td><td>769-7146</td><td>48.00</td><td>23</td><td>3</td></tr>
<tr><td>Wildwood Inn</td><td>923-3550</td><td>42.00</td><td>142</td><td>3</td></tr>
<tr><td>Hotel Jerome</td><td>920-1000</td><td>295.00</td><td>94</td><td>3</td></tr>
</table>
</center>

</body>
</html>

```

You can import this file just like any other text file. Panorama will scan the file and notice the `<table>` tag. When it finds this tag it switches gears and goes into HTML table import mode. It automatically analyzes the tags and extracts the data in the table. Voila!

A	B	C	D	E
Aspen Square	925-1000	85.00	105	4
Best Western /	927-3191	52.00	35	3
Boomerang Lod	925-3416	72.00	33	3
Highlands Inn	925-5050	65.00	29	3
Holiday Inn Of	925-1500	80.00	120	4
Innsbruck Spor	925-2980	74.00	30	3
Limelite Lodge	925-3025	62.00	60	3
Maron Creek Lc	925-3491	80.00	11	4
Mountain Chale	923-3900	64.00	64	4
Pomegranate li	925-2700	80.00	20	3
The Molly Gibs	925-2580	75.00	20	4
The Swiss Cha	925-7146	22.00	9	2
Ullr Lodge	769-7146	48.00	23	3
Wildwood Inn	923-3550	42.00	142	3
Hotel Jerome	920-1000	295.00	94	3

15 visible/15 total

If the `.html` file contains more than one `<table>` tag Panorama will only import the first one. You may need to manually edit the file before you import to make sure that the data you want to import is the first table in the file.

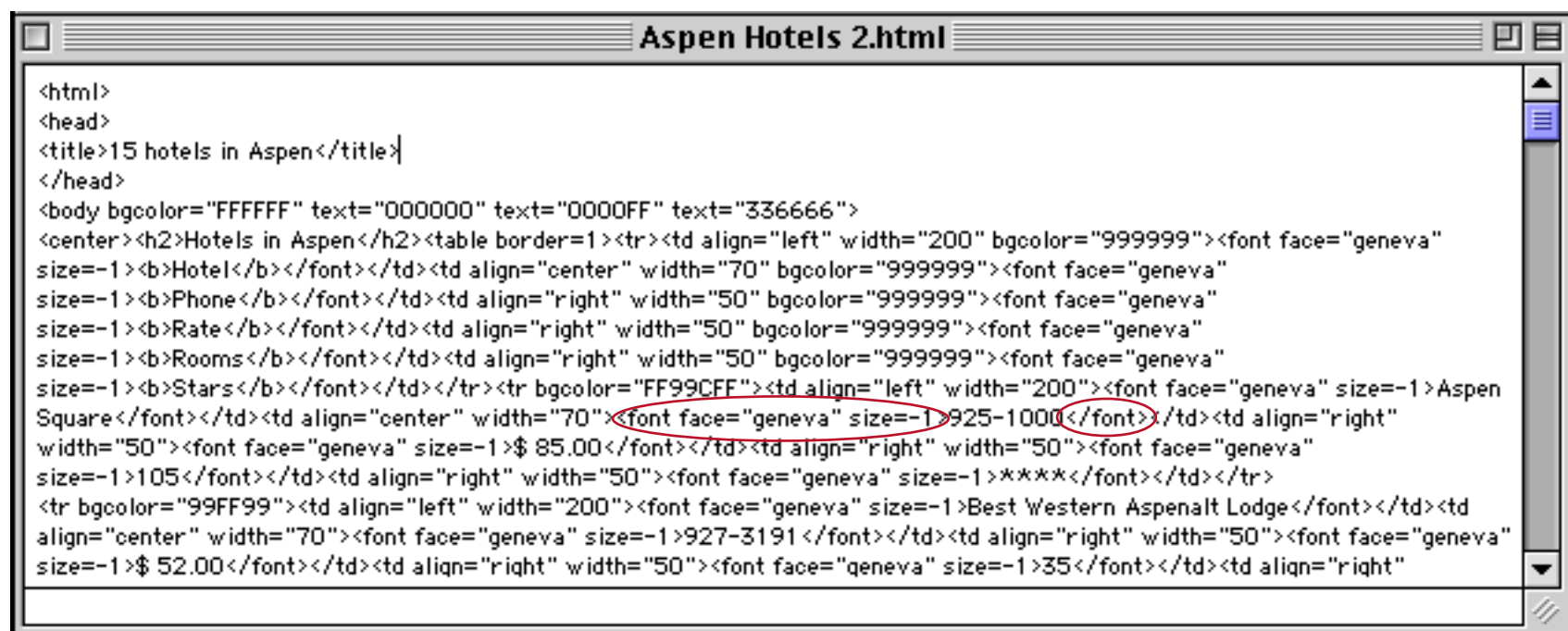
In some cases you may need to do further work to clean up the data after it is imported. Consider the table shown here.



The screenshot shows a Netscape browser window titled "Netscape: 15 hotels in Aspen". The main content is a table with the following data:

Hotel	Phone	Rate	Rooms	Stars
Aspen Square	925-1000	\$ 85.00	105	****
Best Western Aspenalt Lodge	927-3191	\$ 52.00	35	***
Boomerang Lodge	925-3416	\$ 72.00	33	***
Highlands Inn	925-5050	\$ 65.00	29	***
Holiday Inn Of Aspen	925-1500	\$ 80.00	120	****
Innsbruck Sports Motel	925-2980	\$ 74.00	30	***
Limelite Lodge	925-3025	\$ 62.00	60	***
Maron Creek Lodge	925-3491	\$ 80.00	11	****
Mountain Chalet Snowmass Village	923-3900	\$ 64.00	64	****
Pomegranate Inn	925-2700	\$ 80.00	20	***
The Molly Gibson Lodge	925-2580	\$ 75.00	20	****
The Swiss Chalet	925-7146	\$ 22.00	9	**
Ullr Lodge	769-7146	\$ 48.00	23	***
Wildwood Inn	923-3550	\$ 42.00	142	***
Hotel Jerome	920-1000	\$ 295.00	94	***

In this case the html is much more complex, and each data cell contains tags for setting the font.

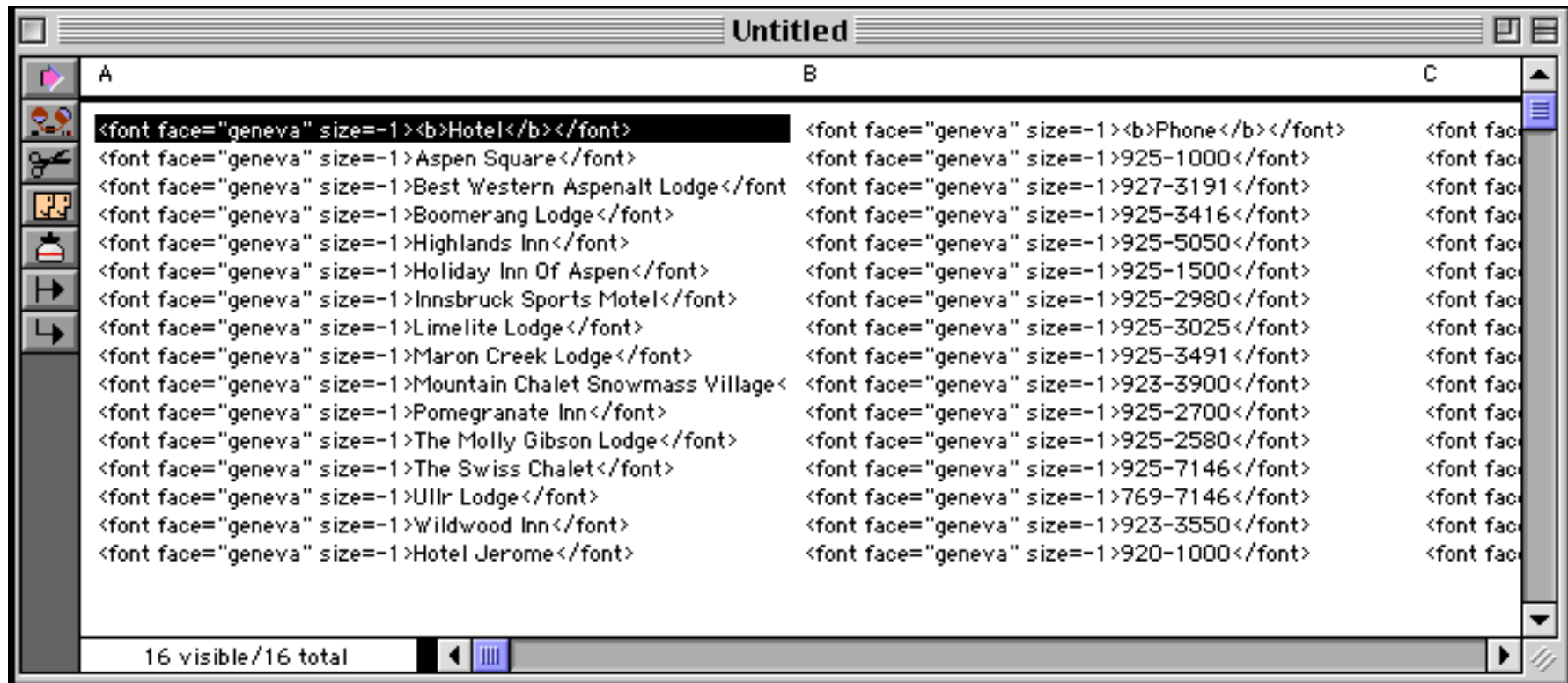


```

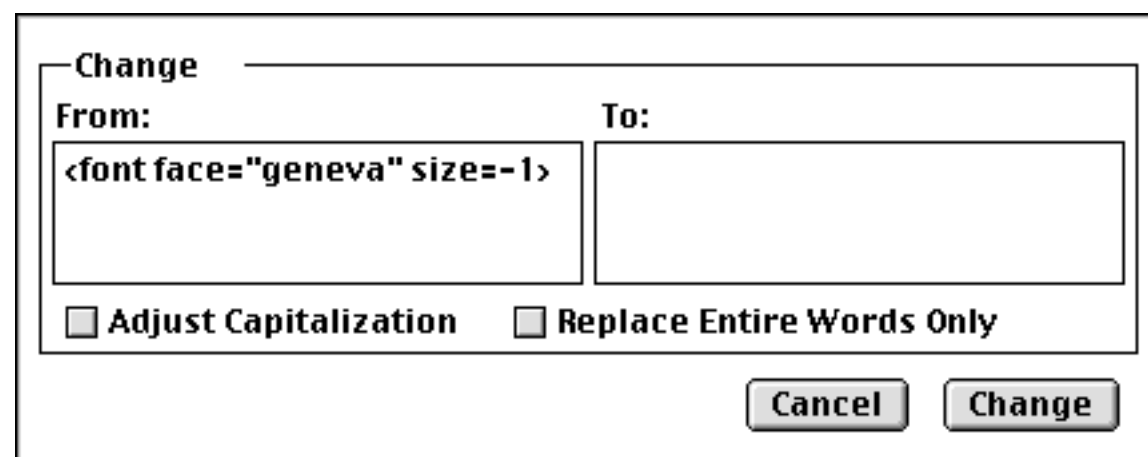
<html>
<head>
<title>15 hotels in Aspen</title>
</head>
<body bgcolor="FFFFFF" text="000000" text="0000FF" text="336666">
<center><h2>Hotels in Aspen</h2><table border=1><tr><td align="left" width="200" bgcolor="999999"><font face="geneva"
size=-1><b>Hotel</b></font></td><td align="center" width="70" bgcolor="999999"><font face="geneva"
size=-1><b>Phone</b></font></td><td align="right" width="50" bgcolor="999999"><font face="geneva"
size=-1><b>Rate</b></font></td><td align="right" width="50" bgcolor="999999"><font face="geneva"
size=-1><b>Rooms</b></font></td><td align="right" width="50" bgcolor="999999"><font face="geneva"
size=-1><b>Stars</b></font></td></tr><tr bgcolor="FF99CFF"><td align="left" width="200"><font face="geneva" size=-1>Aspen
Square</font></td><td align="center" width="70"><font face="geneva" size=-1>925-1000</font></td><td align="right"
width="50"><font face="geneva" size=-1>$ 85.00</font></td><td align="right" width="50"><font face="geneva"
size=-1>105</font></td><td align="right" width="50"><font face="geneva" size=-1>****</font></td></tr>
<tr bgcolor="99FF99"><td align="left" width="200"><font face="geneva" size=-1>Best Western Aspenalt Lodge</font></td><td
align="center" width="70"><font face="geneva" size=-1>927-3191</font></td><td align="right" width="50"><font face="geneva"
size=-1>$ 52.00</font></td><td align="right" width="50"><font face="geneva" size=-1>35</font></td><td align="right"

```

When the data is imported, these tags are also imported.



If you wish you can use the **Change** command to get rid of these extra tags (see “[Change \(Find and Replace\)](#)” on page 472). Start by replacing `` with nothing.



The command removes this tag from the first column.

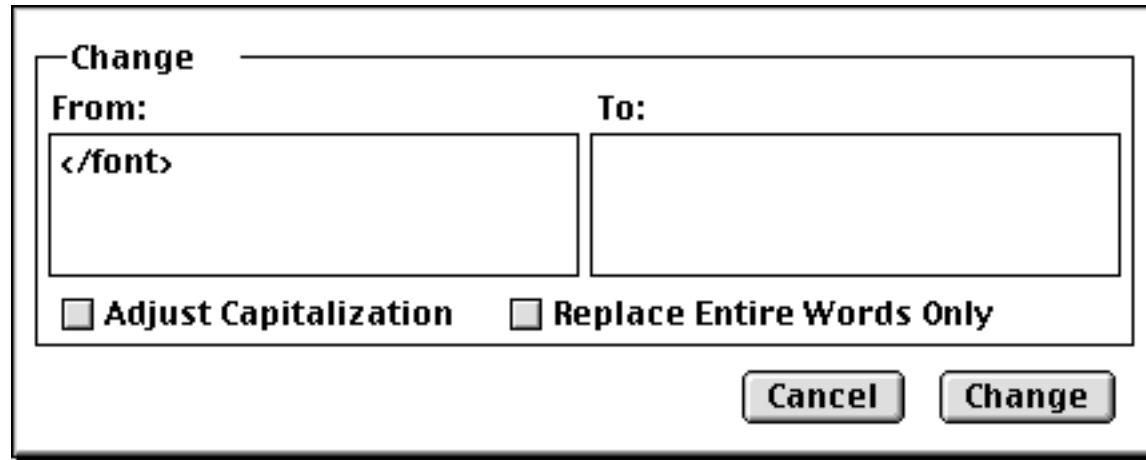
A	B	C
Hotel	Phone	<font fac
Aspen Square	925-1000	<font fac
Best Western Aspenalt Lodge	927-3191	<font fac
Boomerang Lodge	925-3416	<font fac
Highlands Inn	925-5050	<font fac
Holiday Inn Of Aspen	925-1500	<font fac
Innsbruck Sports Motel	925-2980	<font fac
Limelite Lodge	925-3025	<font fac
Maron Creek Lodge	925-3491	<font fac
Mountain Chalet Snowmass Village	923-3900	<font fac
Pomegranate Inn	925-2700	<font fac
The Molly Gibson Lodge	925-2580	<font fac
The Swiss Chalet	925-7146	<font fac
Ullr Lodge	769-7146	<font fac
Wildwood Inn	923-3550	<font fac
Hotel Jerome	920-1000	<font fac

Repeat this process for each additional column. (This is an excellent potential application for automation with a procedure — see “[Procedures](#)” on page 203 of *Formulas & Programming*.)

A	B	C	D	E
Hotel	Phone	Rate</fc	Rooms	Stars</
Aspen Square	925-1000	\$ 85.00	105	****
Best Western Aspenalt Lodge	927-3191	\$ 52.00	35	***
Boomerang Lodge	925-3416	\$ 72.00	33	***
Highlands Inn	925-5050	\$ 65.00	29	***
Holiday Inn Of Aspen	925-1500	\$ 80.00	120	****
Innsbruck Sports Motel	925-2980	\$ 74.00	30	***
Limelite Lodge	925-3025	\$ 62.00	60	***
Maron Creek Lodge	925-3491	\$ 80.00	11	****
Mountain Chalet Snowmass Village	923-3900	\$ 64.00	64	****
Pomegranate Inn	925-2700	\$ 80.00	20	***
The Molly Gibson Lodge	925-2580	\$ 75.00	20	****
The Swiss Chalet	925-7146	\$ 22.00	9	**
Ullr Lodge	769-7146	\$ 48.00	23	***
Wildwood Inn	923-3550	\$ 42.00	142	***
Hotel Jerome	920-1000	\$ 295.00	94	***

As you can see we’ve also adjusted the column widths. See “[Changing the Width of a Field](#)” on page 199 to learn how to do this.

Now we need to go back to the first column and replace `` with nothing.



The first column is now pretty much cleaned up.

A	B	C	D	E
Hotel	Phone	Rate	Rooms	Stars
Aspen Square	925-1000	\$ 85.00	105	****
Best Western Aspenalt Lodge	927-3191	\$ 52.00	35	***
Boomerang Lodge	925-3416	\$ 72.00	33	***
Highlands Inn	925-5050	\$ 65.00	29	***
Holiday Inn Of Aspen	925-1500	\$ 80.00	120	****
Innsbruck Sports Motel	925-2980	\$ 74.00	30	***
Limelite Lodge	925-3025	\$ 62.00	60	***
Maron Creek Lodge	925-3491	\$ 80.00	11	****
Mountain Chalet Snowmass Village	923-3900	\$ 64.00	64	****
Pomegranate Inn	925-2700	\$ 80.00	20	***
The Molly Gibson Lodge	925-2580	\$ 75.00	20	****
The Swiss Chalet	925-7146	\$ 22.00	9	**
Ullr Lodge	769-7146	\$ 48.00	23	***
Wildwood Inn	923-3550	\$ 42.00	142	***
Hotel Jerome	920-1000	\$ 295.00	94	***

Repeating the process for the other columns.

A	B	C	D	E
Hotel	Phone	Rate	Rooms	Stars
Aspen Square	925-1000	\$ 85.00	105	****
Best Western Aspenalt Lodge	927-3191	\$ 52.00	35	***
Boomerang Lodge	925-3416	\$ 72.00	33	***
Highlands Inn	925-5050	\$ 65.00	29	***
Holiday Inn Of Aspen	925-1500	\$ 80.00	120	****
Innsbruck Sports Motel	925-2980	\$ 74.00	30	***
Limelite Lodge	925-3025	\$ 62.00	60	***
Maron Creek Lodge	925-3491	\$ 80.00	11	****
Mountain Chalet Snowmass Village	923-3900	\$ 64.00	64	****
Pomegranate Inn	925-2700	\$ 80.00	20	***
The Molly Gibson Lodge	925-2580	\$ 75.00	20	****
The Swiss Chalet	925-7146	\$ 22.00	9	**
Ullr Lodge	769-7146	\$ 48.00	23	***
Wildwood Inn	923-3550	\$ 42.00	142	***
Hotel Jerome	920-1000	\$ 295.00	94	***

Cleaning up this data was a fair amount of work but was much easier than typing in the data all over again, and less prone to errors.

Importing OverVUE Files

OverVUE was ProVUE's first database program and the predecessor to Panorama. However, since the last version of OverVUE is almost twenty years old, Panorama 5 and later no longer supports import of OverVUE documents.

Re-Arranging Imported Data

Sometimes the data you want to import is not set up the way you want. Perhaps the fields are in the wrong order, or the data is not split into fields correctly. The easiest way to handle this is to use the **Text Import Wizard** (see "[Using the Text Import Wizard](#)" on page 94). If you don't want to use the wizard, Panorama has lots of great tools for transforming the imported data after it is imported.

If the fields are simply in the wrong order, you can easily re-arrange them. See "[Re-Arranging Fields](#)" on page 219 for details on re-arranging the field order.

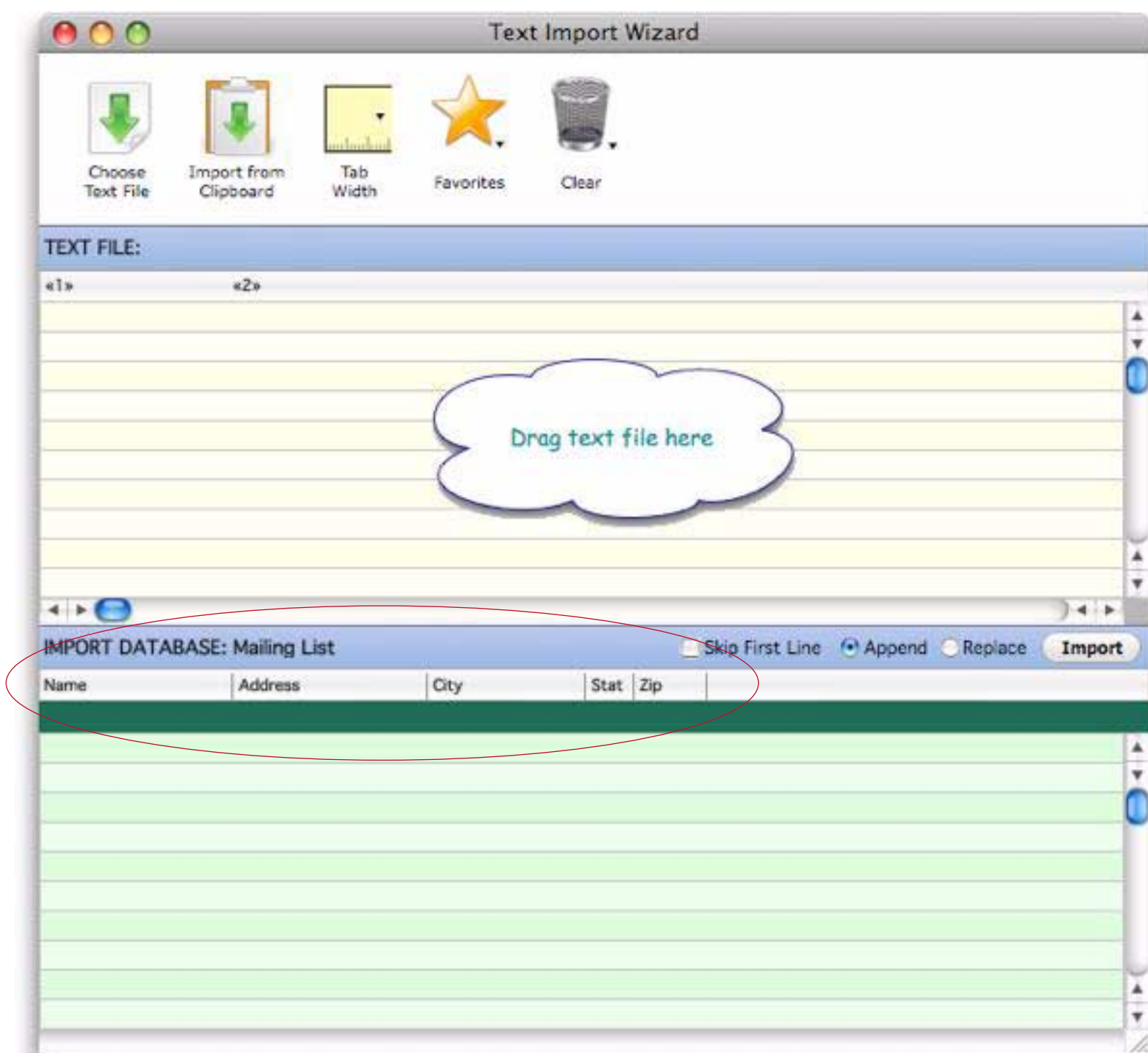
If the data is not split into fields properly using tabs or commas, you can use the **Manipulate Data in Field** command to massage the data into shape. See "[The Manipulate Data Dialog](#)" on page 434 to learn more about this command.

Using the Text Import Wizard

The **Text Import Wizard** makes it easy to import a text file into an existing database, even if the fields in the text file are not in the same order as the database fields. Usually you'll start the process by opening the database you want to import the data into. To illustrate this wizard we'll use a very simple mailing list file.



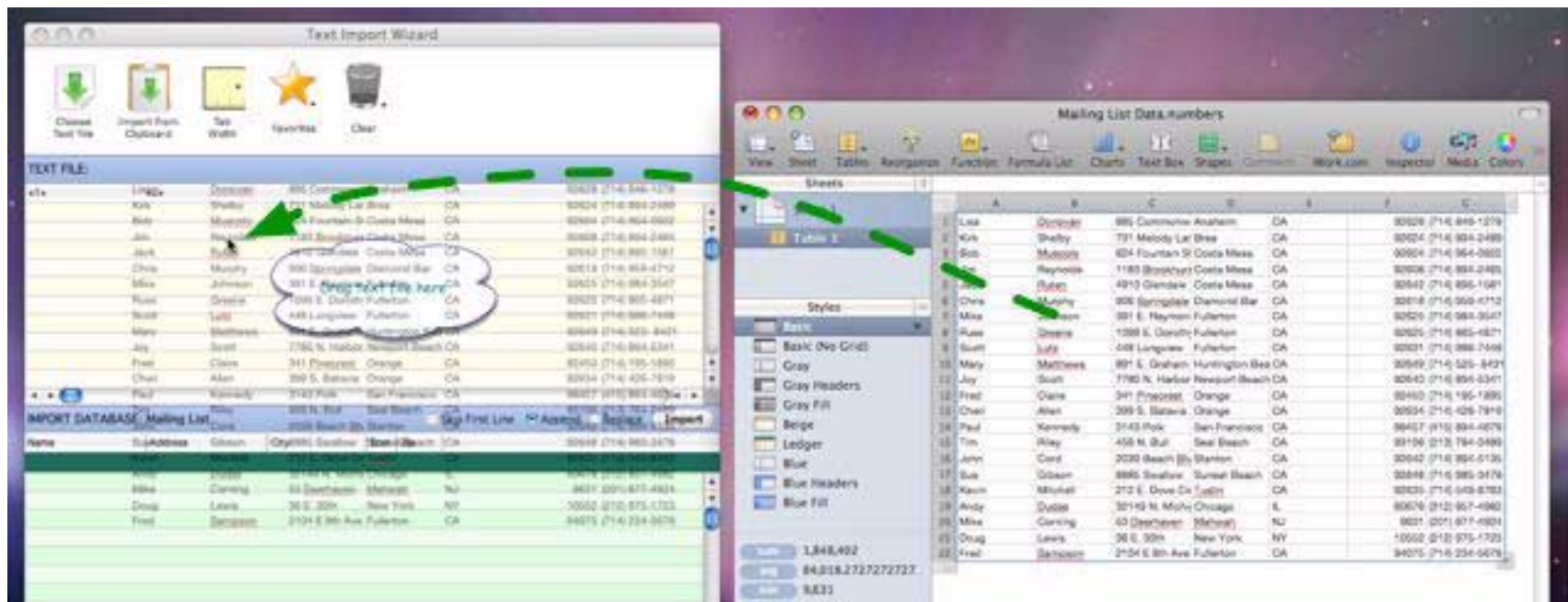
To start the import process choose **Import Text** from the **File** menu. As you can see the bottom section side of the window shows that we are going to import into the **Mailing List** file, and lists the five fields in this database.



The next step is to select the text you want to import into this database. There are four possible ways to do this.

- 1) Drag a tab or comma delimited text file onto the top half of the wizard.

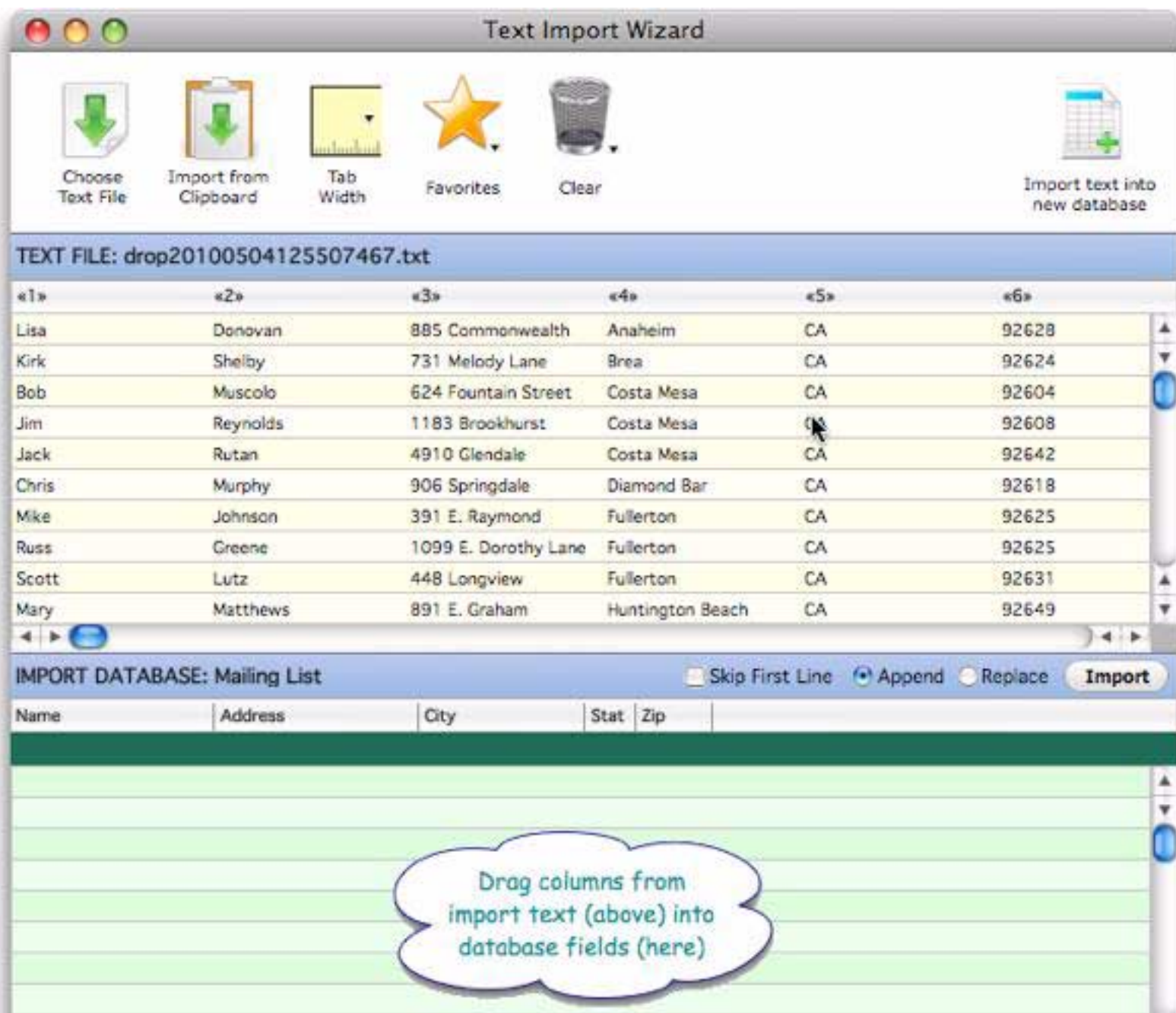
2) Drag data directly from a spreadsheet, word processor or text editor onto the top half of the wizard (Mac only), as shown below.



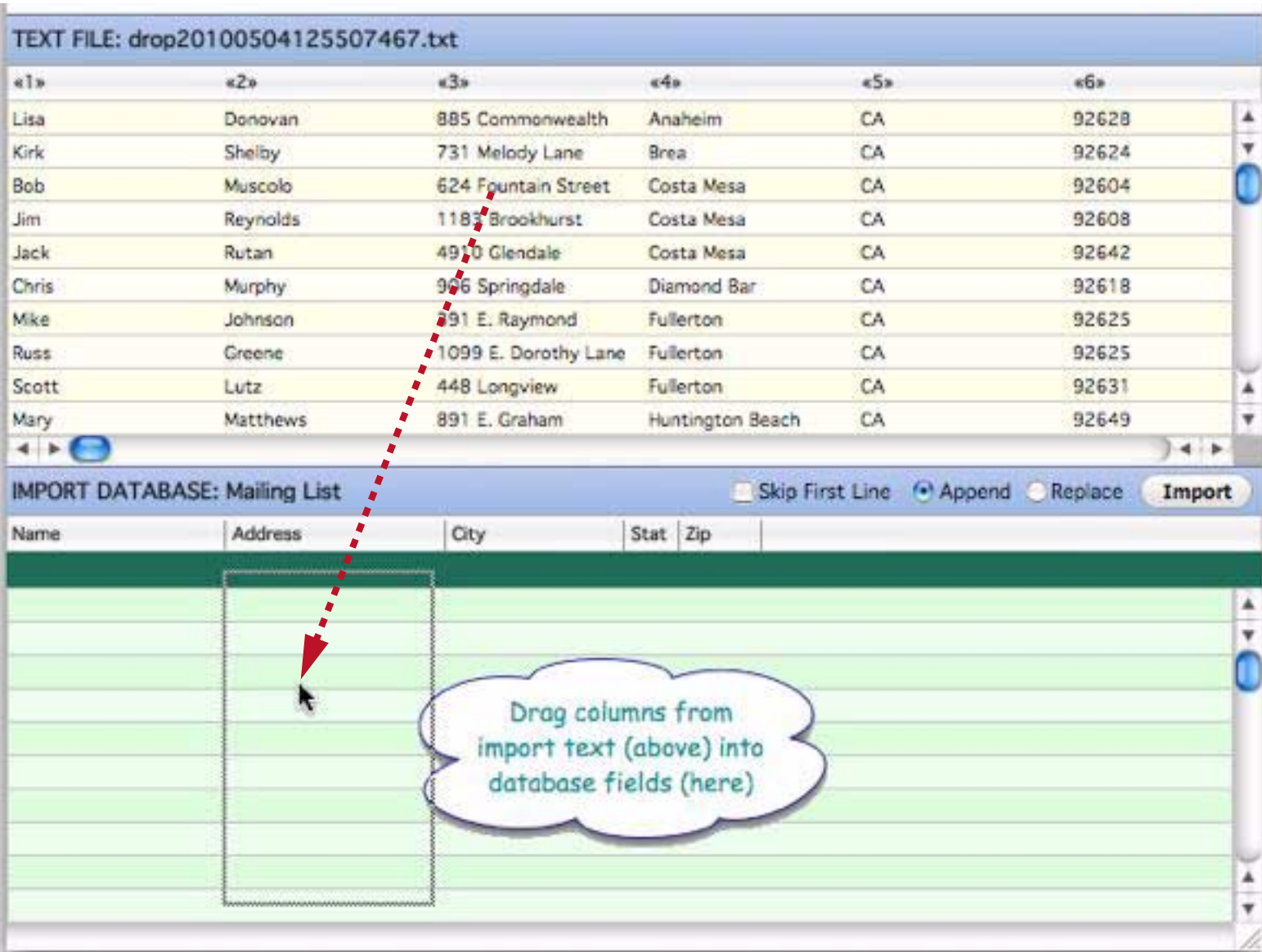
3) Click on the **Choose Text File** button, then select a text file containing tab or comma delimited text.

4) Copy tab or comma delimited text into the clipboard, then press the **Import from Clipboard** button.

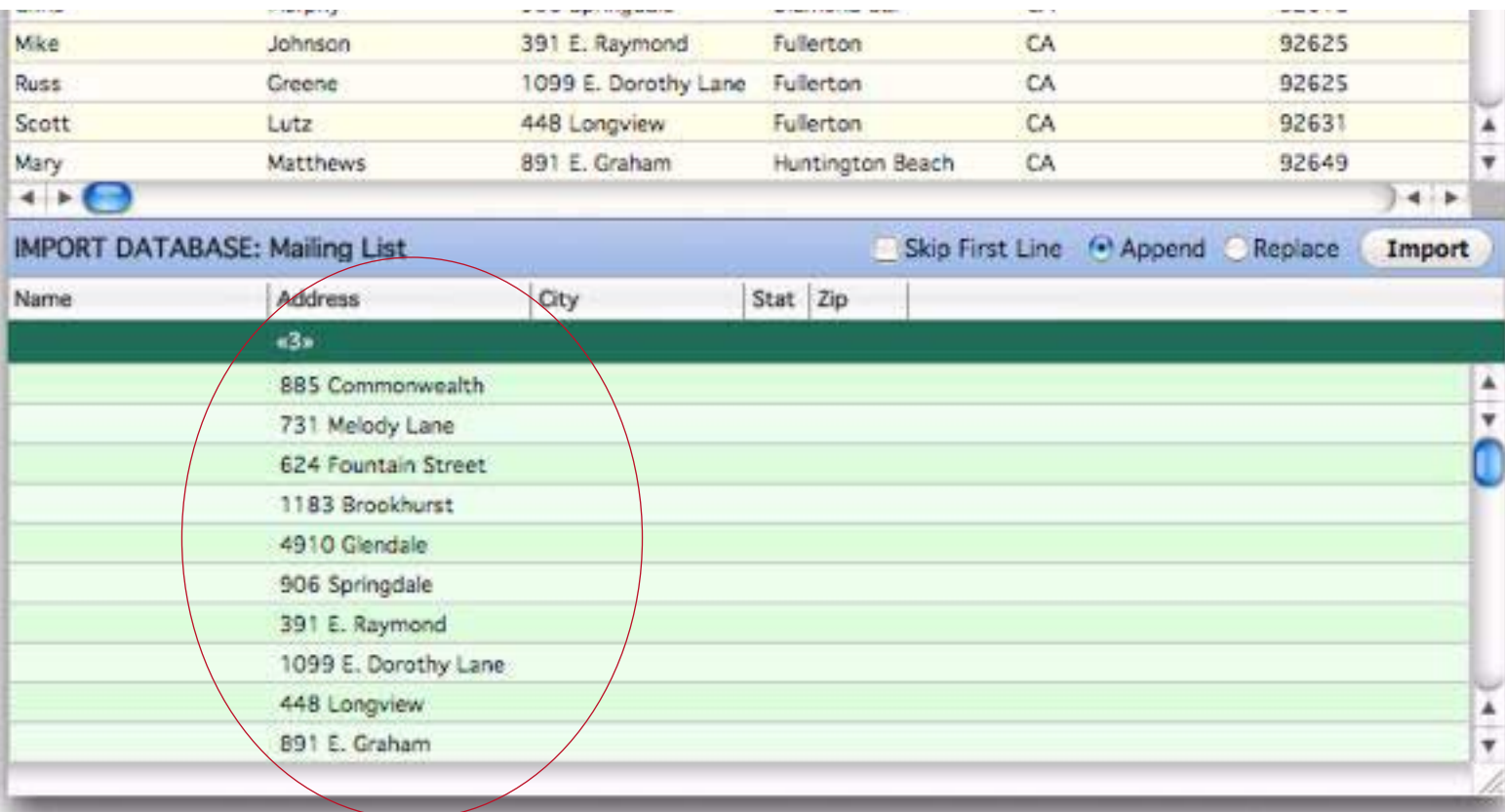
The selected text will appear in the top section of the wizard.



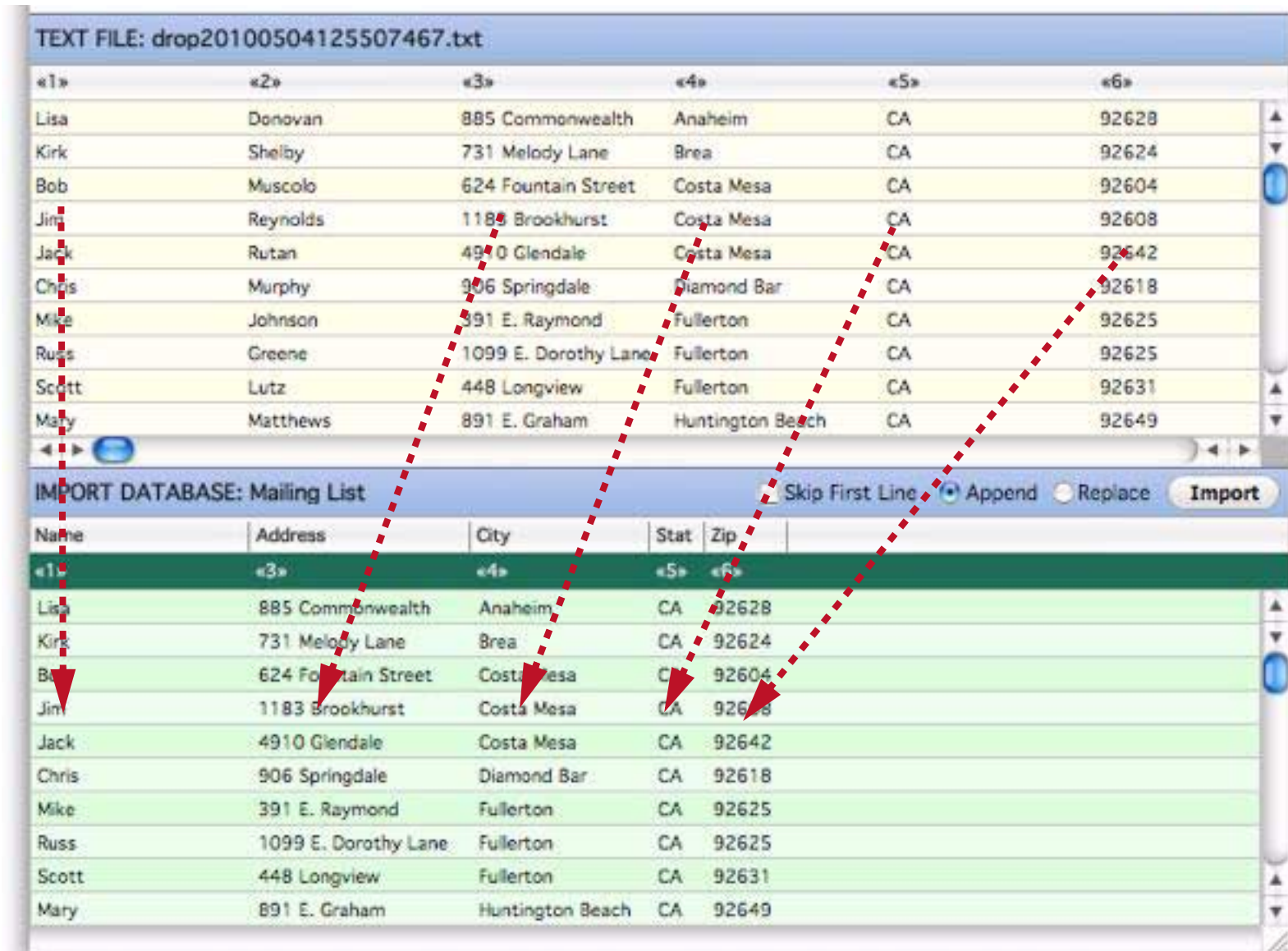
If the imported text is already in the correct arrangement you can simply click on the **Favorites** button (yellow star), choose **ALL IMPORT COLUMNS** from the pop-up menu, then press the **Import** button. Otherwise, the next step is setting up the import configuration. There are several ways to do that, but usually the easiest is to drag fields from the top to the bottom section of the wizard.



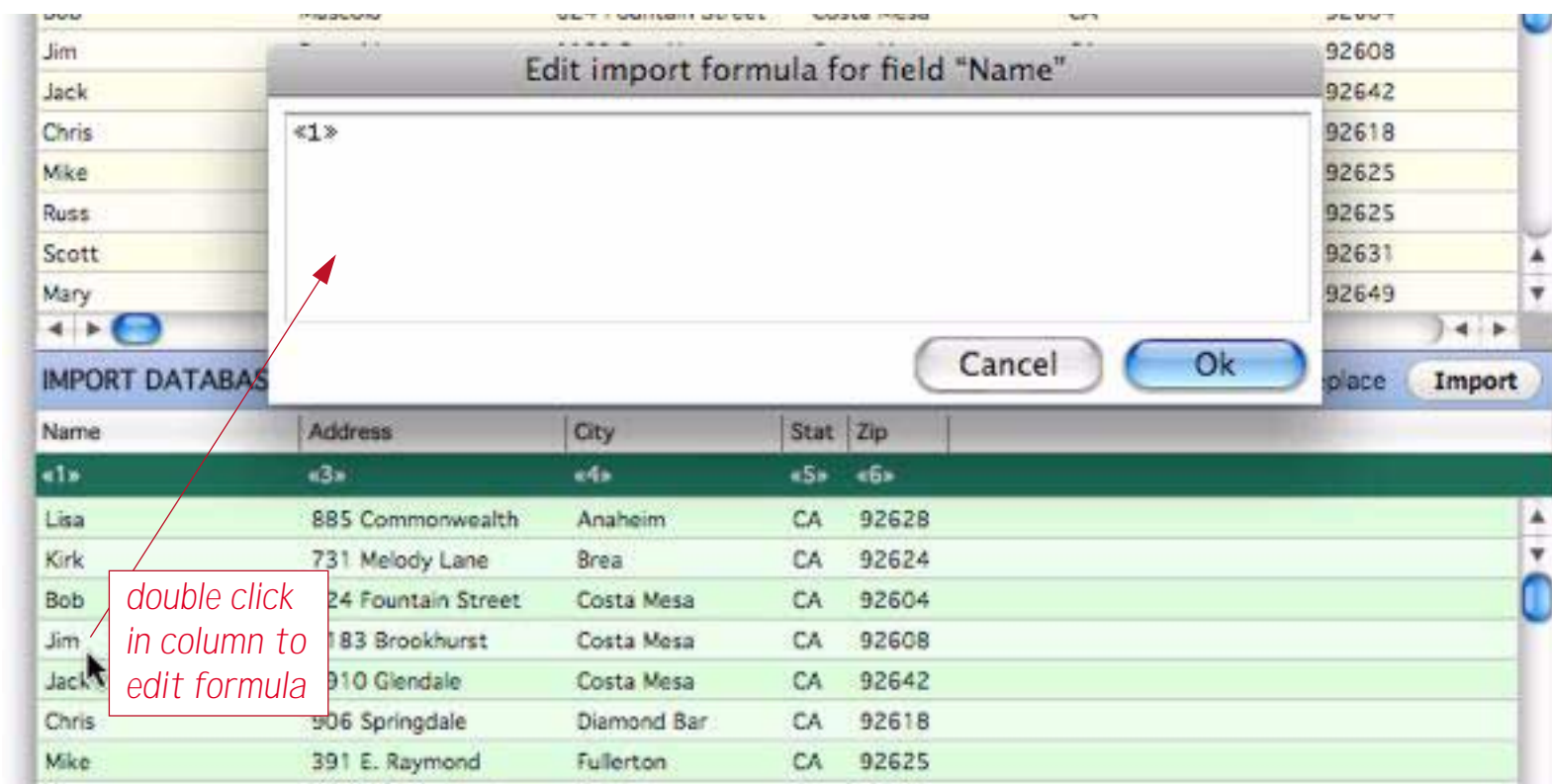
When you release the mouse the wizard will update the import configuration.



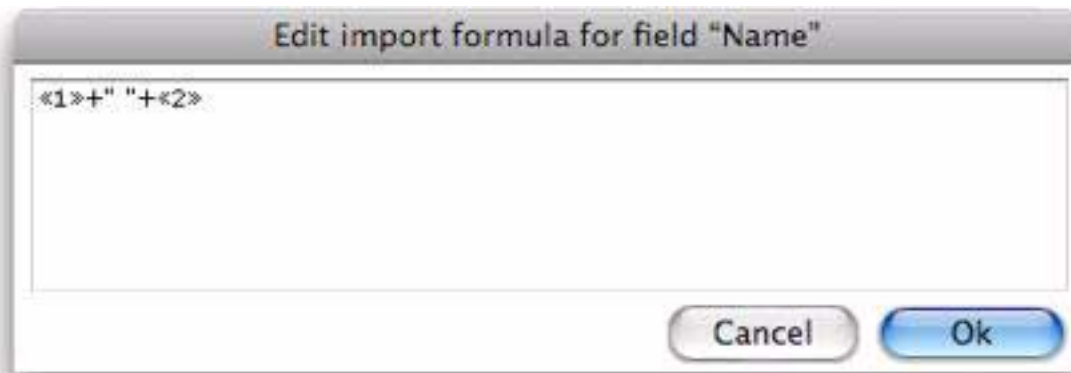
You'll need to drag each field you want to import down from the top to the bottom.



Sometimes the data you want to import doesn't match the fields in the database. In this case the database has only a single **Name** field, but the import data contains separate first and last names. Somehow these separate fields will need to be combined as the data is imported. The import wizard allows you to do this with a **formula** (see "[Formulas](#)" on page 19 of *Formulas & Programming*). To edit the formula for a field double click anywhere in the field's column.



Within this formula you can include any import field by typing the field number in between « and » characters (see “[Special Characters](#)” on page 57 of *Formulas & Programming*, or simply use the Fields menu to type in the field number for you). To “glue” two text items together you can use the + symbol (see “[Gluing Strings Together](#)” on page 67 of *Formulas & Programming*). To include constant text in the formula put the text inside quotes (see “[Constants](#)” on page 49 of *Formulas & Programming*). The illustration below shows a formula that combines the first and last name into a single field (with a space in between).



Press the **OK** button to preview the result of this formula.

IMPORT DATABASE: Mailing List					
Name	Address	City	Stat	Zip	
«1»+" "+«2»	«3»	«4»	«5»	«6»	
Lisa Donovan	885 Commonwealth	Anaheim	CA	92628	
Kirk Shelby	731 Melody Lane	Brea	CA	92624	
Bob Muscolo	624 Fountain Street	Costa Mesa	CA	92604	
Jim Reynolds	1183 Brookhurst	Costa Mesa	CA	92608	
Jack Rutan	4910 Glendale	Costa Mesa	CA	92642	
Chris Murphy	906 Springdale	Diamond Bar	CA	92618	
Mike Johnson	391 E. Raymond	Fullerton	CA	92625	
Russ Greene	1099 E. Dorothy Lane	Fullerton	CA	92625	
Scott Lutz	448 Longview	Fullerton	CA	92631	

You are almost ready to import the data. Before you do, make sure that the **Append** or **Replace** option you want is selected. **Append** will append the new data to whatever data is already in the database, while **Replace** will erase and replace the existing data.) You may also want to choose to skip the first line of the imported data.

IMPORT DATABASE: Mailing List					
Name	Address	City	Stat	Zip	
«1»+" "+«2»	«3»	«4»	«5»	«6»	
Lisa Donovan	885 Commonwealth	Anaheim	CA	92628	

Now press the **Import** button. The wizard imports the data into the original database.

Untitled					
Name	Address	City	State	Zip	
Lisa Donovan	885 Commonwealth	Anaheim	CA	92628	
Kirk Shelby	731 Melody Lane	Brea	CA	92624	
Bob Muscolo	624 Fountain Street	Costa Mesa	CA	92604	
Jim Reynolds	1183 Brookhurst	Costa Mesa	CA	92608	
Jack Rutan	4910 Glendale	Costa Mesa	CA	92642	
Chris Murphy	906 Springdale	Diamond Bar	CA	92618	
Mike Johnson	391 E. Raymond	Fullerton	CA	92625	
Russ Greene	1099 E. Dorothy Lane	Fullerton	CA	92625	
Scott Lutz	448 Longview	Fullerton	CA	92631	

Common Import Formulas

Using a formula you can combine import fields, split import fields, convert to upper case or lower case, and much much more. You've already learned how to combine two or more import fields together with the `+` symbol like this (see "[Gluing Strings Together](#)" on page 67 of *Formulas & Programming*).

```
<1>+" "+<2>
```

```
<2>+" , "+<1>
```

To pick out a single word (for example a first or last name) you can use the `firstword()` or `lastword()` functions (see "[Text Arrays](#)" on page 93 of *Formulas & Programming*). Here is a formula for picking the first name from a combined name field (assumed to be the first field, `<1>`, and using the format `First Last`, for example `John Smith`).

```
firstword(<1>)
```

To convert text to upper case use the `upper()` function (see "[String Modification Functions](#)" on page 80 of *Formulas & Programming*). This formula extracts the last name and converts it to upper case.

```
upper(lastword(<1>))
```

To extract only a limited number of characters use a `text funnel` (see "[Taking Strings Apart \(Text Funnels\)](#)" on page 69 of *Formulas & Programming*). This formula extracts the first five characters from a zip code.

```
<6>[1,5]
```

This table lists some common formulas that can be useful when importing.

Formula	Description
<code>firstword(<1>)</code>	extract the first word of the first import column
<code>lastword(<1>)</code>	extract the last word of the first import column
<code><1>+" "+<2></code>	combine the first and second import columns (with a space in between)
<code>trimstart(<1>,2)</code>	include everything but the first two characters of the first import column
<code>trim(<1>,3)</code>	include everything but the last two characters of the first import column
<code><1>[2,4]</code>	extract the 2nd thru 4th characters from the first import column
<code>upper(<1>)</code>	include first import column, converted to upper case (all caps)
<code>lower(<1>)</code>	include first import column, converted to lower case
<code>upperword(<1>)</code>	include first import column, first character of each word capitalized
<code>striptoalpha(<1>)</code>	include first import column, but only alphabetic characters
<code>stripchar(<1>,"09.-")</code>	include first import column, but only numeric digits, periods, and minus signs (useful for importing numbers when there are extraneous characters like currency symbols)

Here is an example that uses several of these techniques.

IMPORT DATABASE: Mini Contacts Skip First Line Append Replace **Import**

Prefix	First	Middle	Last	Suffi	Organization	Title	Address	City	St	Zip	Countr
	firstword(«1»)		upper(lastword(«1»))				«2»	«3»	«4	«5»[1,5]	
	Neil		ABERCRO				1502 Longworth HOB	Washington	DC	20515	
	Gary		ACKERMA				2243 Rayburn HOB	Washington	DC	20515	
	Robert		ADERHOL				1007 Longworth HOB	Washington	DC	20515	
	Thomas		ALLEN				1717 Longworth HOB	Washington	DC	20515	
	Robert		ANDREWS				2439 Rayburn HOB	Washington	DC	20515	
	Bill		ARCHER				1236 Longworth HOB	Washington	DC	20515	
	Richard		ARMEY				301 Cannon HOB	Washington	DC	20515	
	Joe		BACA				2300 Rayburn HOB	Washington	DC	20515	
	Spencer		BACHUS				442 Cannon HOB	Washington	DC	20515	
	Brian		BAIRD				1721 Longworth HOB	Washington	DC	20515	
	Richard		BAKER				434 Cannon HOB	Washington	DC	20515	

firstword(«1»)

upper(lastword(«1»))

«5»[1,5]

To learn more about Panorama formulas see “[Formulas](#)” on page 19 of *Formulas & Programming*.

More Import Configuration Techniques

This section describes some additional techniques for setting up the import configuration.

Tab Width. The top section of the Text Import wizard displays the data to be imported in fixed width columns. Click on the **Tab Width** icon to change the width of these columns.

Text Import Wizard

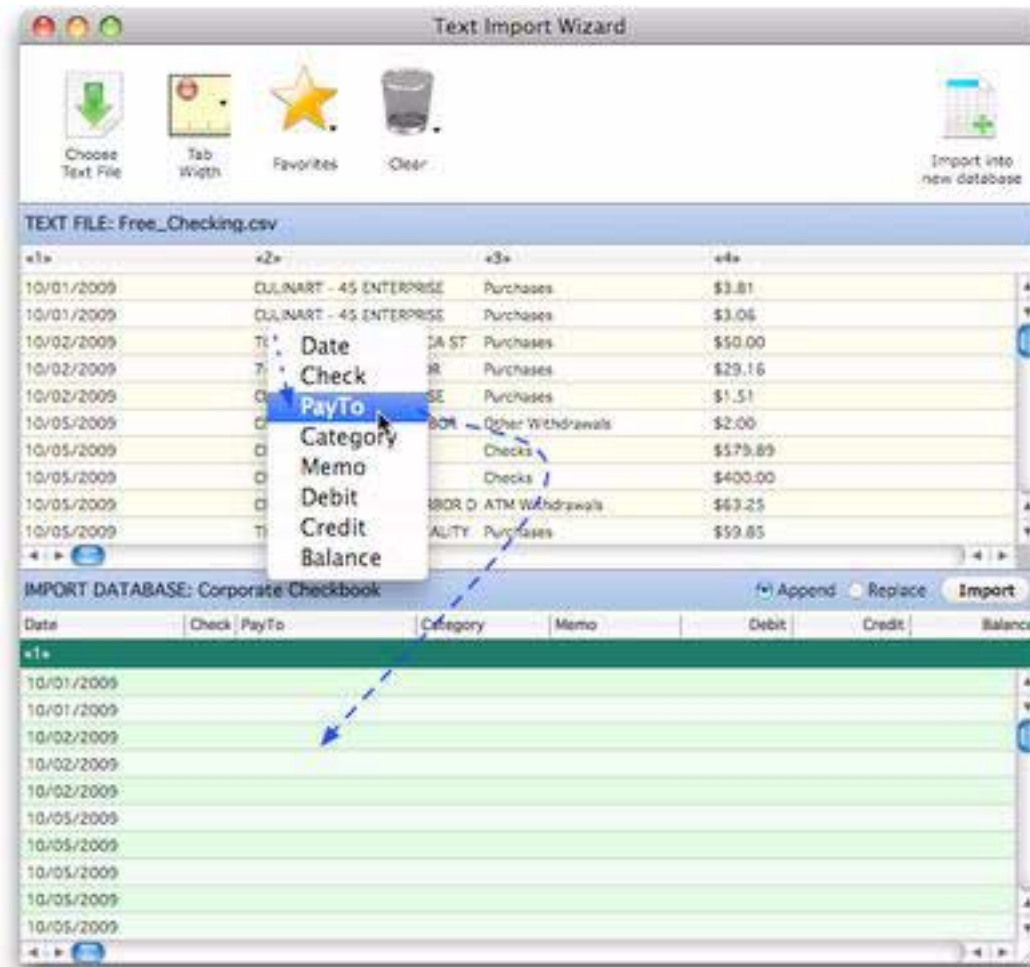
Choose Text File Import from Clipboard **Tab Width** Favorites Clear Import text into new database

TEXT FILE: Congress (House)

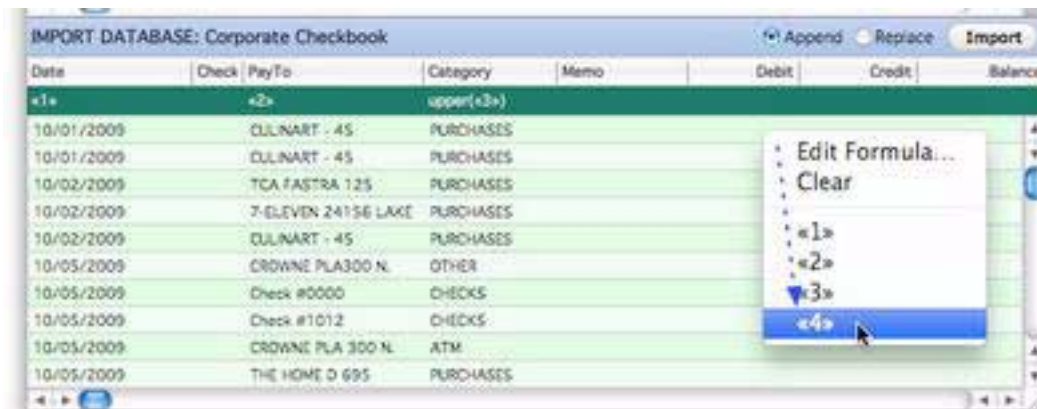
«1»	«2»	«3»	«4»	«5»
Neil Abercrombie	1502 Long	Washington	DC	20515-1101
Gary Ackerman	2243 Rayb	Washington	DC	20515-3205
Robert Aderholt	1007 Long	Washington	DC	20515-0104
Thomas Allen	1717 Long	Washington	DC	20515-1901
Robert Andrews	2439 Rayburn HOB	Washington	DC	20515-3001
Bill Archer	1236 Longworth HOB	Washington	DC	20515-4307

0.5"
1.0"
1.5"
2.0"
2.5"
3.0"
3.5"
4.0"

Configuration Context Menus. As an alternate to dragging columns you can set up the configuration by right clicking on either the top or bottom section of the wizard. Right clicking on an imported column allows you to choose a database field to “slot” the imported column into.



Right clicking on a database field allows you to choose an import column to “slot” into that field. You can also edit the formula associated with the field, or clear the field.



Rearranging and Deleting Import Columns. If you make a mistake you can simply drag the column to the correct position, or drag it completely out of the bottom section to remove it.



You can also remove a column by right-clicking on it and choosing **Clear** from the pop-up menu.

Starting Over. To start over, simply drag another text file onto the top section of the dialog. Or, you can click on the trash can icon.



Clear Import Configuration clears out the bottom section of the wizard. **Reset Wizard** clears the entire wizard, after using this option you must re-select the text to be imported.

Choosing a Database to Import Into. The **Text Import Wizard** normally imports into database that was active when the wizard was opened. However, you can use the **Database** menu to choose to import into any open database. Simply choose the database you want to import into and then set up the configuration.

Importing into a New Database. The Text Import wizard is for importing into an existing database. If you decide you would rather import into a new database, click the **Import into new database icon**. (This icon does not appear until you have selected a text file.)

Converting an Import Configuration into a Procedure. To convert the current import configuration into a procedure choose the **Copy Procedure to Clipboard** command from the **Special** menu. Now create a procedure (see "[Writing a Procedure from Scratch](#)" on page 216 of *Formulas & Programming*) and **Paste** the automatically generated procedure into it.



For more information on creating and using procedures see "[Procedures](#)" on page 203 of *Formulas & Programming*.

Saving the Import Configuration for Later

To save an import configuration for later, click on the **Favorites** icon and choose **Add to favorites**.



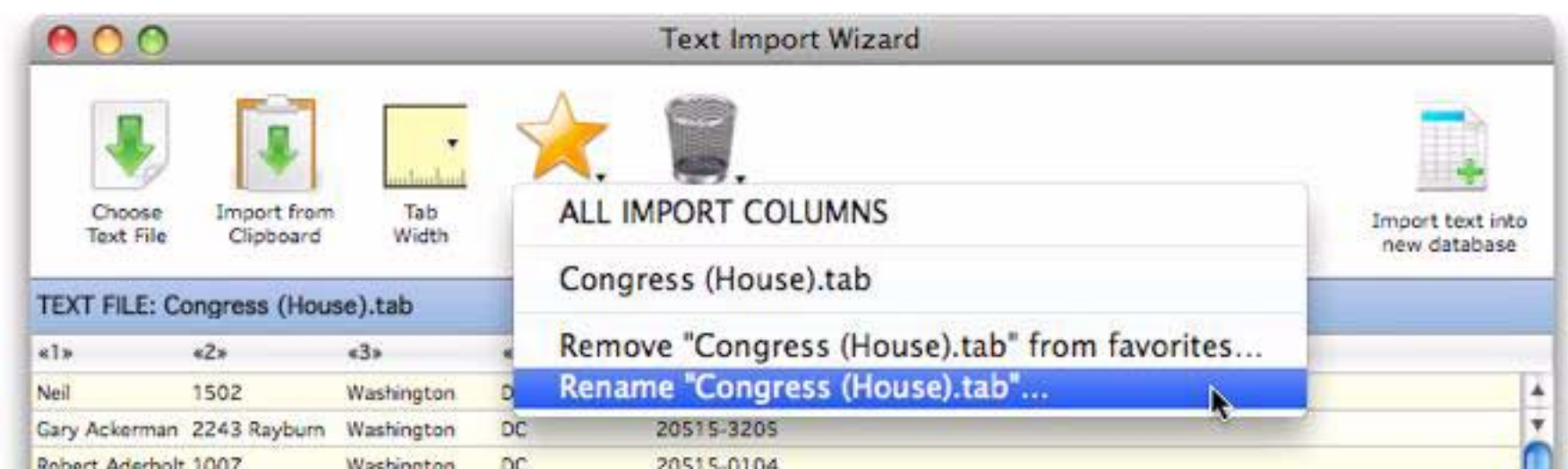
You'll be asked to give the new favorite a name. (If you use the name of the text file being imported, Panorama will automatically use this favorite configuration if you later re-import this text file.)



Later you can use the pop-up menu to bring back the saved configuration.



If you want to delete or rename a favorite, first select it, then click on the **Favorites** star again. Then choose **Remove** or **Rename**.



ALL IMPORT COLUMNS. In addition to the favorites you set up, Panorama automatically sets up a favorite called **ALL IMPORT COLUMNS**. This favorite sets up a configuration where the first imported text field goes into the first database field, the second database field into the second field, etc.

Importing Financial Data (QIF, OFX, QFX)

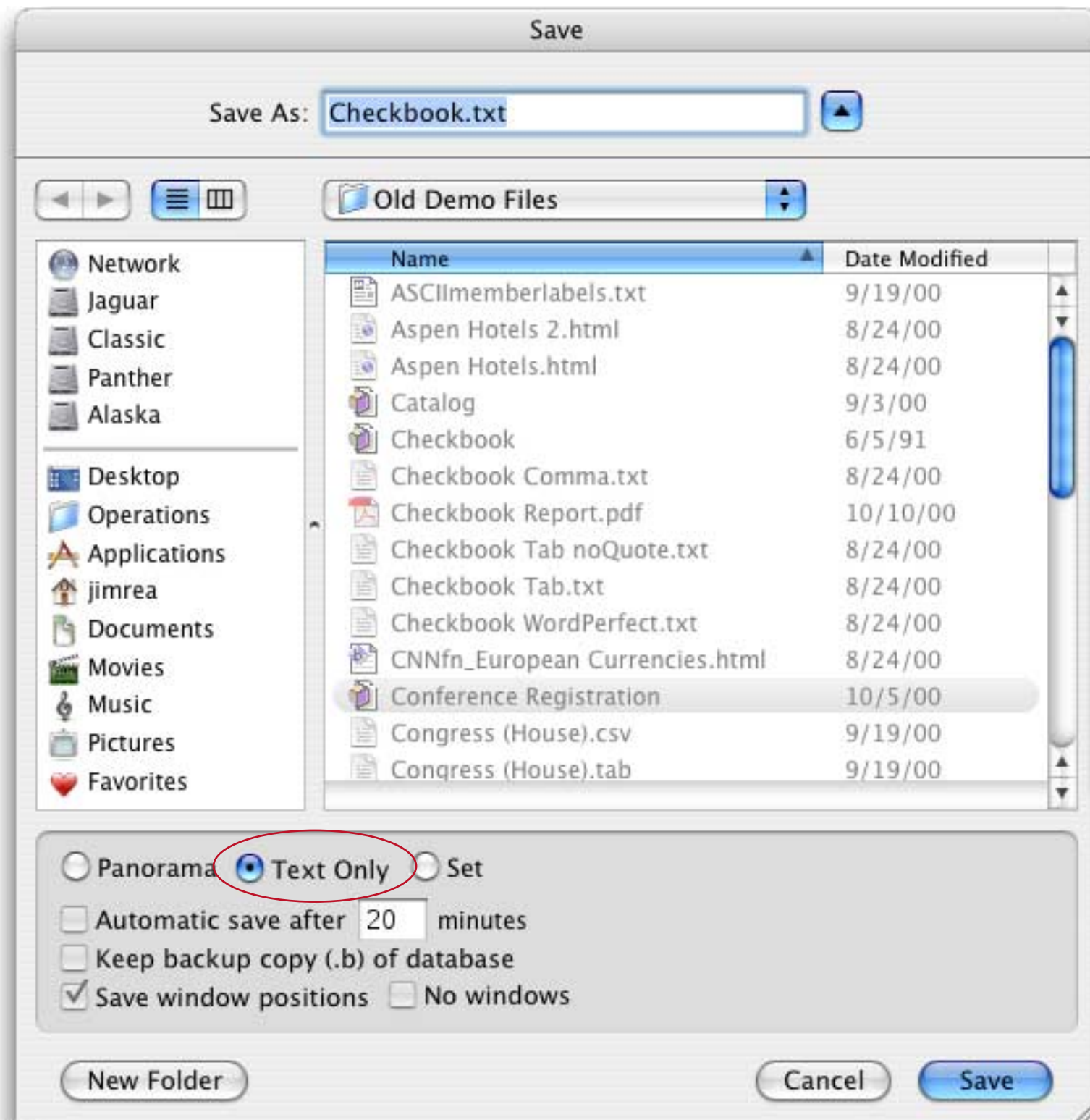
Panorama can import data directly from financial applications and from data downloaded from financial institution web sites. To learn more about this feature see “[Financial Data Wizard](#)” on page 60 of the **Wizards & Demos** PDF file.

Importing VCard Data

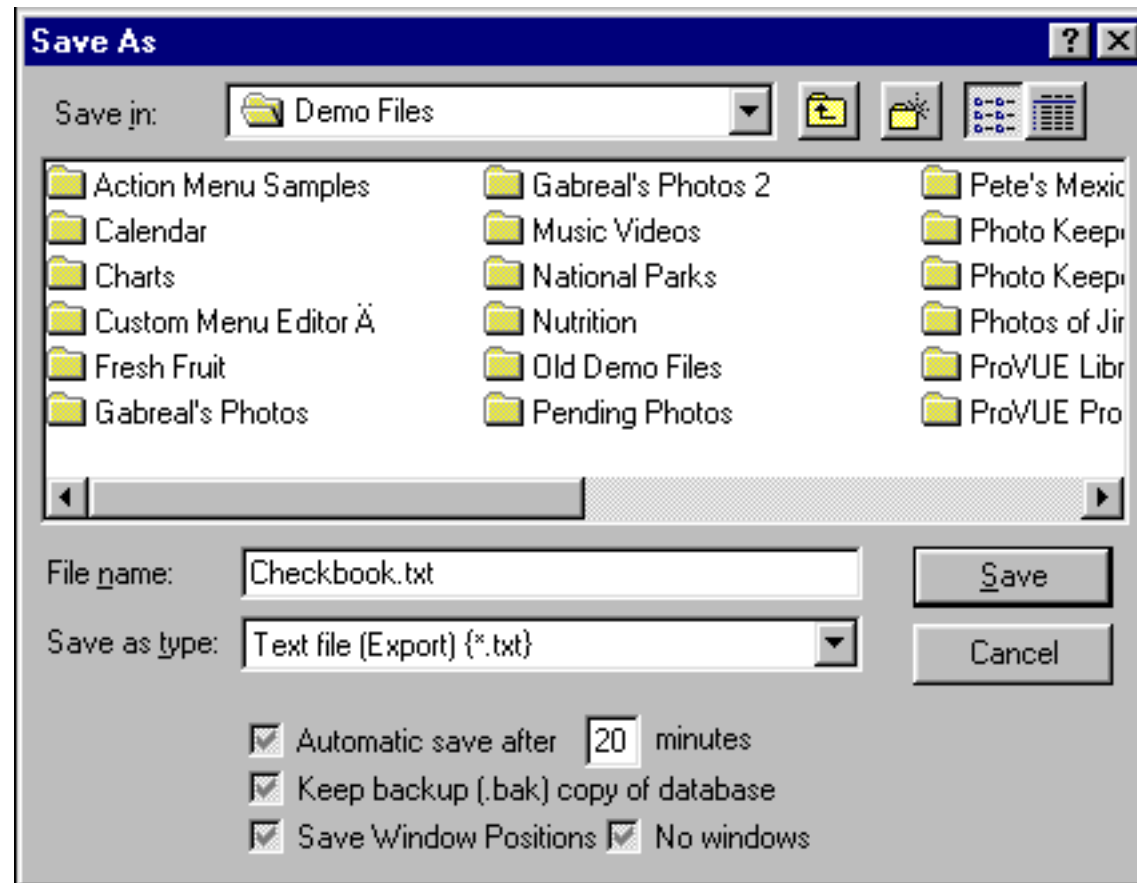
Panorama can import VCard data files from applications that support VCards. To learn more about this feature see “[Using Generic Fields with the VCard Wizard](#)” on page 237.

Exporting a Text File

To export the selected records (see “[Searching and Selecting](#)” on page 331) in the current database into a text file, use the **Save As** command in the File menu. The standard save dialog will appear on the screen. If you are using a Macintosh computer select the folder and name of the text file and click the **Text Only** radio button. (The name must be different from the database name.)



If you are using a Windows PC computer use the combo box to choose the **Text file (Export) (*.txt)** option.



Once the name and text only option are set up, click the **Save** button. This opens a second dialog that allows you to specify which fields to include in the exported data and what format to use.



Only the fields you select will be included in the text file. To select a field, click the mouse on the field name. To select additional fields, click on them also. To un-select a field, click on the field again. If you want to export all the fields in the database, you can quickly select them all with the **Select All** button.

The four radio buttons—**Commas**, **Tabs**, **Tabs w/o quotes**, and **Word Perfect**—let you pick how the text file is formatted.

Option	Description	Example
Commas	Exported file will have commas between each field and a carriage return at the end of each line. If a data cell contains a comma, it will be surrounded by quotes (").	<pre>01/08/90,1907,Northern Illinois Mold,96.05 01/08/90,1908,U S Postmaster,75.00 01/08/90,1909,"Advertiser's Mailing Service, Inc.",390.80 01/16/90,1910,"Coudert Brothers, Attorney's At Law",223.52 01/16/90,1911,Paramount Stationers,105.84 01/17/90,1912,California Capitol,36.00 01/17/90,1913,California Capitol,28.00 01/17/90,1914,U S Postmaster,75.00 01/17/90,1915,Sacramento Bee,795.00 01/22/90,1916,Walthers,"12,463.00" 01/22/90,1917,Blue Cross Of Calif,279.03</pre>
Tabs	Exported file will have an invisible tab character between each field and a carriage return (Mac) or carriage-return/line feed (Windows) at the end of each line. If a data cell contains a comma, it will be surrounded by quotes (").	<pre>01/08/90 1907 Northern Illinois Mold 96.05 01/08/90 1908 U S Postmaster 75.00 01/08/90 1909 "Advertiser's Mailing Service, Inc." 390.80 01/16/90 1910 "Coudert Brothers, Attorney's At Law" 223.52 01/16/90 1911 Paramount Stationers 105.84 01/17/90 1912 California Capitol 36.00 01/17/90 1913 California Capitol 28.00 01/17/90 1914 U S Postmaster 75.00 01/17/90 1915 Sacramento Bee 795.00 01/22/90 1916 Walthers "12,463.00" 01/22/90 1917 Blue Cross Of Calif 279.03</pre>
Tabs w/o quotes	Exported file will have an invisible tab character between each field and a carriage return (Mac) or carriage-return/line feed (Windows) at the end of each line. No quotes are added even if the data contains commas.	<pre>01/08/90 1907 Northern Illinois Mold 96.05 01/08/90 1908 U S Postmaster 75.00 01/08/90 1909 Advertiser's Mailing Service, Inc. 390.80 01/16/90 1910 Coudert Brothers, Attorney's At Law 223.52 01/16/90 1911 Paramount Stationers 105.84 01/17/90 1912 California Capitol 36.00 01/17/90 1913 California Capitol 28.00 01/17/90 1914 U S Postmaster 75.00 01/17/90 1915 Sacramento Bee 795.00 01/22/90 1916 Walthers 12,463.00 01/22/90 1917 Blue Cross Of Calif 279.03</pre>

Option	Description	Example
Word Perfect	Exported file will use Word Perfect's unique mail merge format, which requires a Control-R/Carriage Return between each field and a Control-E/Carriage Return between each record.	

The **Field Names** checkbox lets you choose whether you want the first record of the text file to list the field names. If this button is checked, an extra line will be added to the top of the text file. This extra line will contain the names of each field.

```

Date,Num,Pay To,Debit
01/08/90,1907,Northern Illinois Mold,96.05
01/08/90,1908,U S Postmaster,75.00
01/08/90,1909,"Advertiser's Mailing Service, Inc.",390.80
01/16/90,1910,"Coudert Brothers, Attorney/s At Law",223.52
01/16/90,1911,Paramount Stationers,105.84
01/17/90,1912,California Capitol,36.00
01/17/90,1913,California Capitol,28.00
01/17/90,1914,U S Postmaster,75.00
01/17/90,1915,Sacramento Bee,795.00
01/22/90,1916,Walthers,"12,463.00"
01/22/90,1917,Blue Cross Of Calif,279.03

```

The **Output Patterns** checkbox controls whether the data is exported using the output patterns set up for each field (see “[Numeric Output Patterns](#)” on page 250 and “[Date Output Patterns](#)” on page 255), or in the standard numeric and date formats. Checking this box will cause numeric and date columns to be exported in using the output patterns you have set up for each field.

Once you have selected the fields you want exported and checked the appropriate buttons and boxes, pressing the **OK** button will export the data to a text file on the disk.

The **Save As** command exports only the selected records in the database. If you don't want to export the entire database, use the **Find/Select** command to choose just the records you want (see “[Searching and Selecting](#)” on page 331) before using the **Save As** command. Only the selected records will be exported.

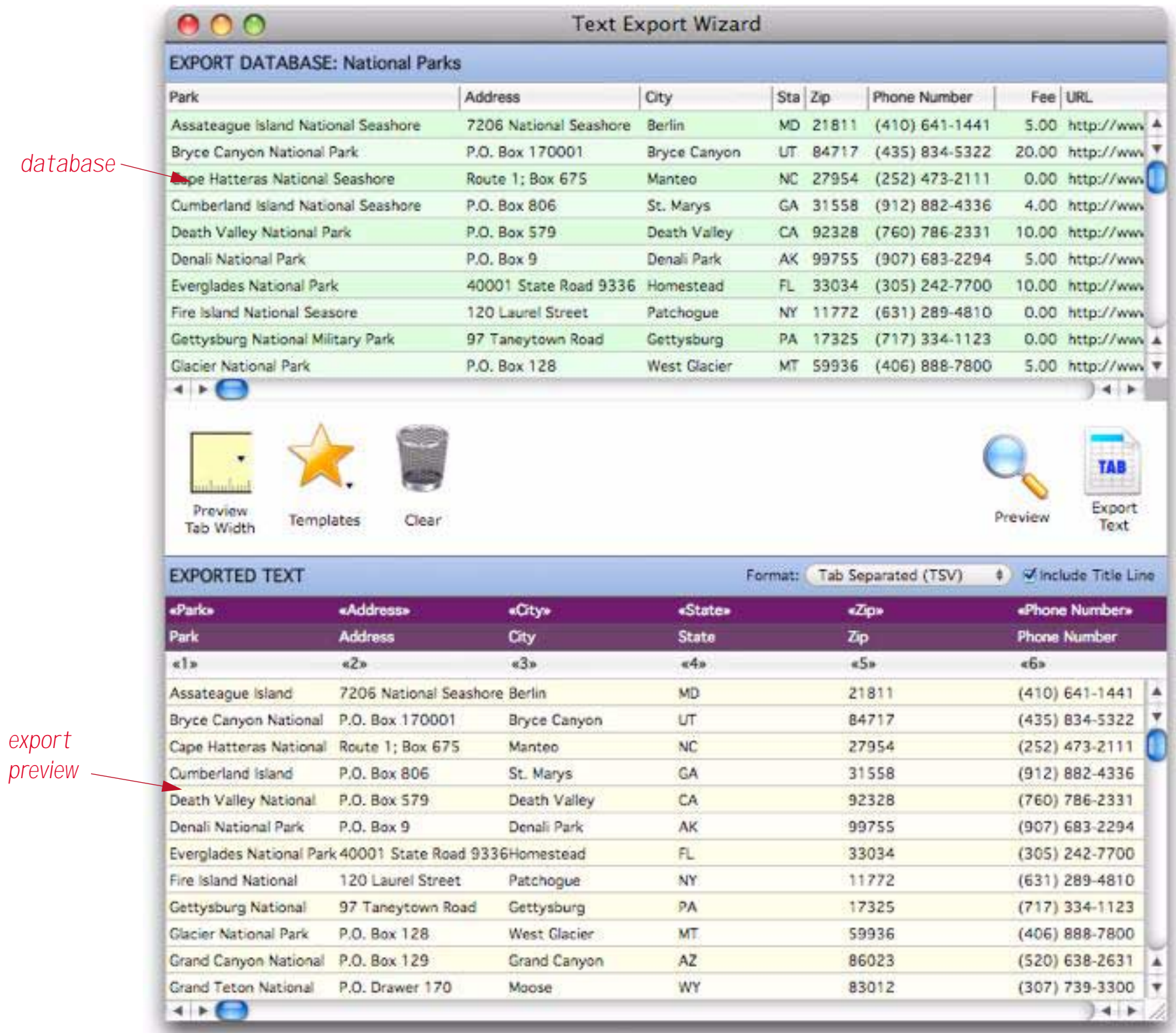
Exporting with the Text Export Wizard

The **Save As** dialog gives you limited control over the format of the text you are exporting. For more control you can use the **Text Export Wizard**. This wizard allows you to specify the order of the fields being exported, and to manipulate the data as it is being exported (converting it to upper case, for example, or combining several database fields into one export field). The wizard can even be used to convert the database into an HTML table. To illustrate this wizard we will use this database of national parks.

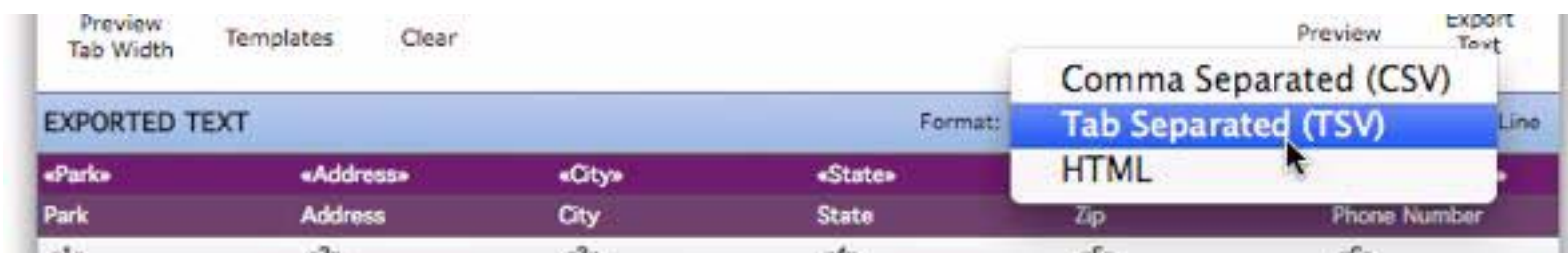
Park	Address	City	Sta	Zip	Phone Number	Fee	URL
Assateague Island National Seashore	7206 National Seashore	Berlin	MD	21811	(410) 641-1441	\$5.00	http://www
Bryce Canyon National Park	P.O. Box 170001	Bryce Canyon	UT	84717	(435) 834-5322	\$20.00	http://www
Cape Hatteras National Seashore	Route 1 ; Box 675	Manteo	NC	27954	(252) 473-2111	\$0.00	http://www
Cumberland Island National Seashore	P.O. Box 806	St. Marys	GA	31558	(912) 882-4336	\$4.00	http://www
Death Valley National Park	P.O. Box 579	Death Valley	CA	92328	(760) 786-2331	\$10.00	http://www
Denali National Park	P.O. Box 9	Denali Park	AK	99755	(907) 683-2294	\$5.00	http://www
Everglades National Park	40001 State Road 9336	Homestead	FL	33034	(305) 242-7700	\$10.00	http://www
Fire Island National Seashore	120 Laurel Street	Patchogue	NY	11772	(631) 289-4810	\$0.00	http://www
Gettysburg National Military Park	97 Taneytown Road	Gettysburg	PA	17325	(717) 334-1123	\$0.00	http://www
Glacier National Park	P.O. Box 128	West Glacier	MT	59936	(406) 888-7800	\$5.00	http://www
Grand Canyon National Park	P.O. Box 129	Grand Canyon	AZ	86023	(520) 638-2631	\$10.00	http://www
Grand Teton National Park	P.O. Drawer 170	Moose	WY	83012	(307) 739-3300	\$20.00	http://www
Great Basin National Park		Baker	NV	89311	(775) 234-7331	\$0.00	http://www
Great Smoky Mountains National Park	107 Park Headquarters I	Gatlinburg	TN	37738	(865) 436-1200	\$0.00	http://www
Gulf Islands National Seashore	1801 Gulf Breeze Parkway	Gulf Breeze	FL	32561	(850) 934-2600	\$6.00	http://www
Mount Rushmore National Memorial	P.O. Box 268	Keystone	SD	57751	(605) 574-2523	\$0.00	http://www
Olympic National Park	600 East Park Avenue	Port Angeles	WA	98362	(360) 452-4501	\$10.00	http://www
Rocky Mountain National Park		Estes Park	CO	80517	(970) 586-1206	\$10.00	http://www
White House	1450 Pennsylvania Avenue	Washington	DC	20241	(202) 208-1631	\$0.00	http://www
Yellowstone National Park	P.O. Box 168	Yellowstone	WY	82190	(307) 344-7381	\$10.00	http://www
Yosemite National Park	P.O. Box 577	Yosemite	CA	95389	(209) 372-0200	\$10.00	http://www

21 visible/21 total

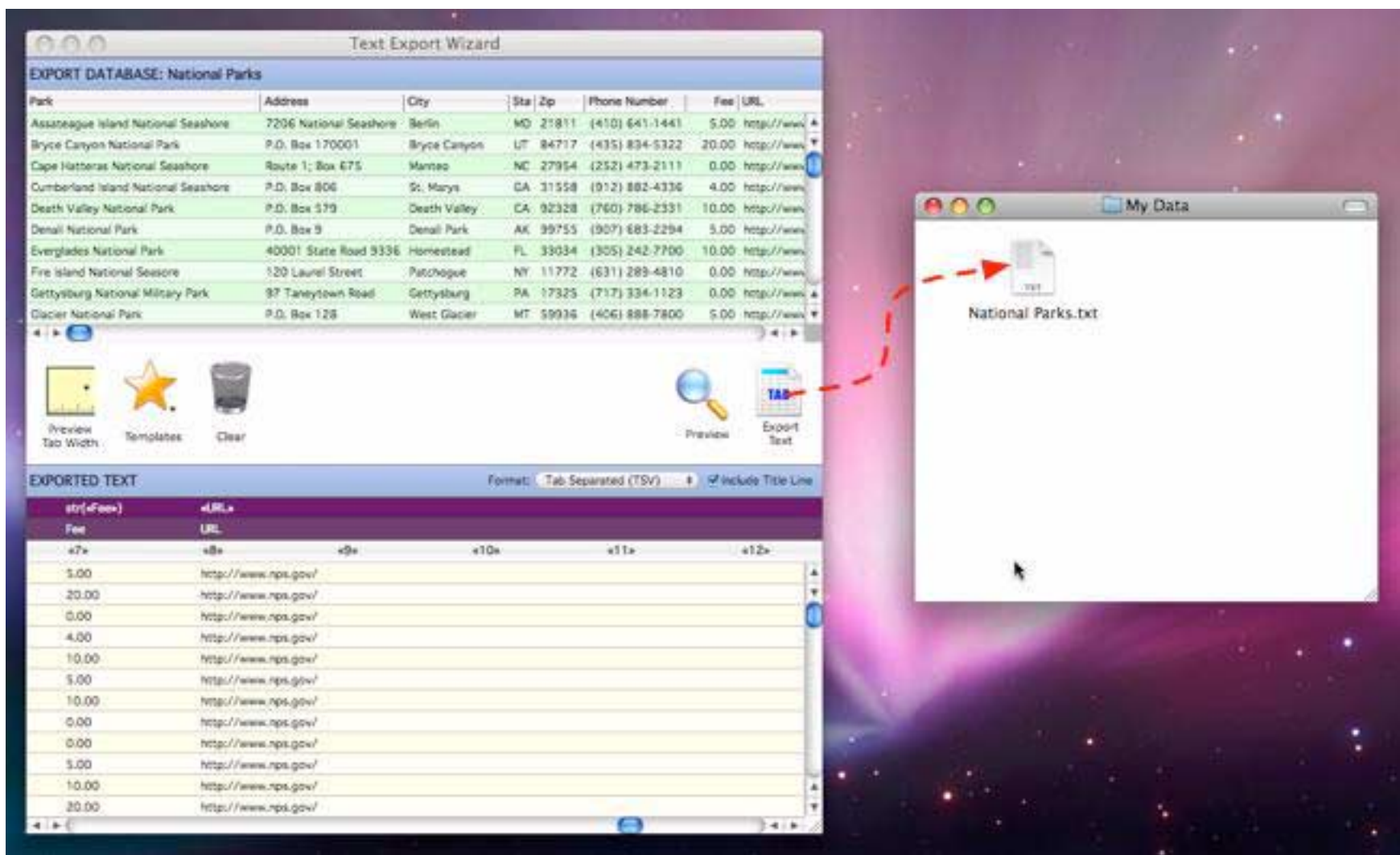
To begin the export process choose **Export Text** from the **File** menu. The top section of the dialog shows the database being exported, the bottom section shows a preview of the exported text. When you first open the wizard, it is automatically configured to export all fields in the database, in the order they appear in the database.



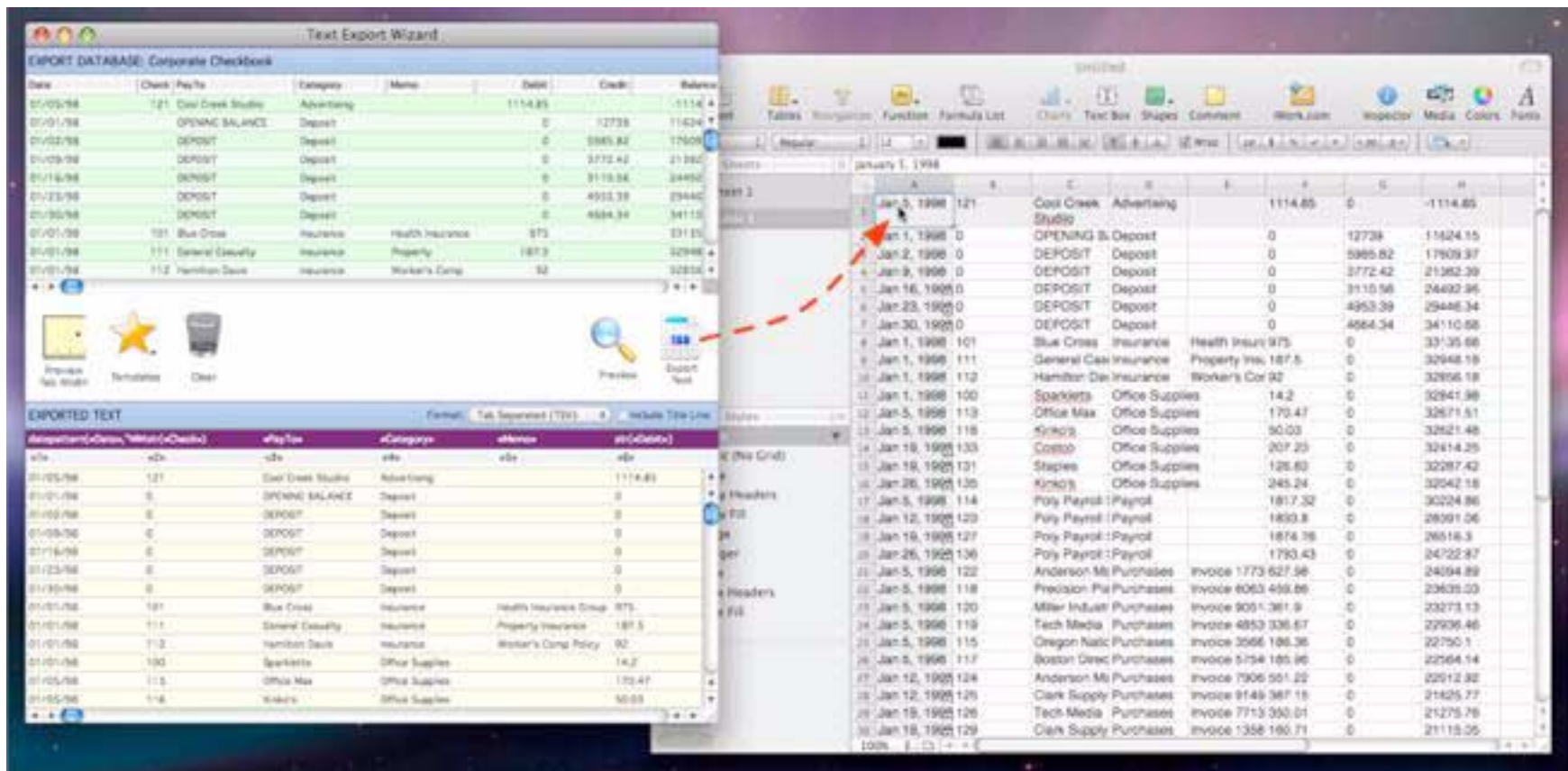
Use the pop-up menu to choose the format of the exported text.



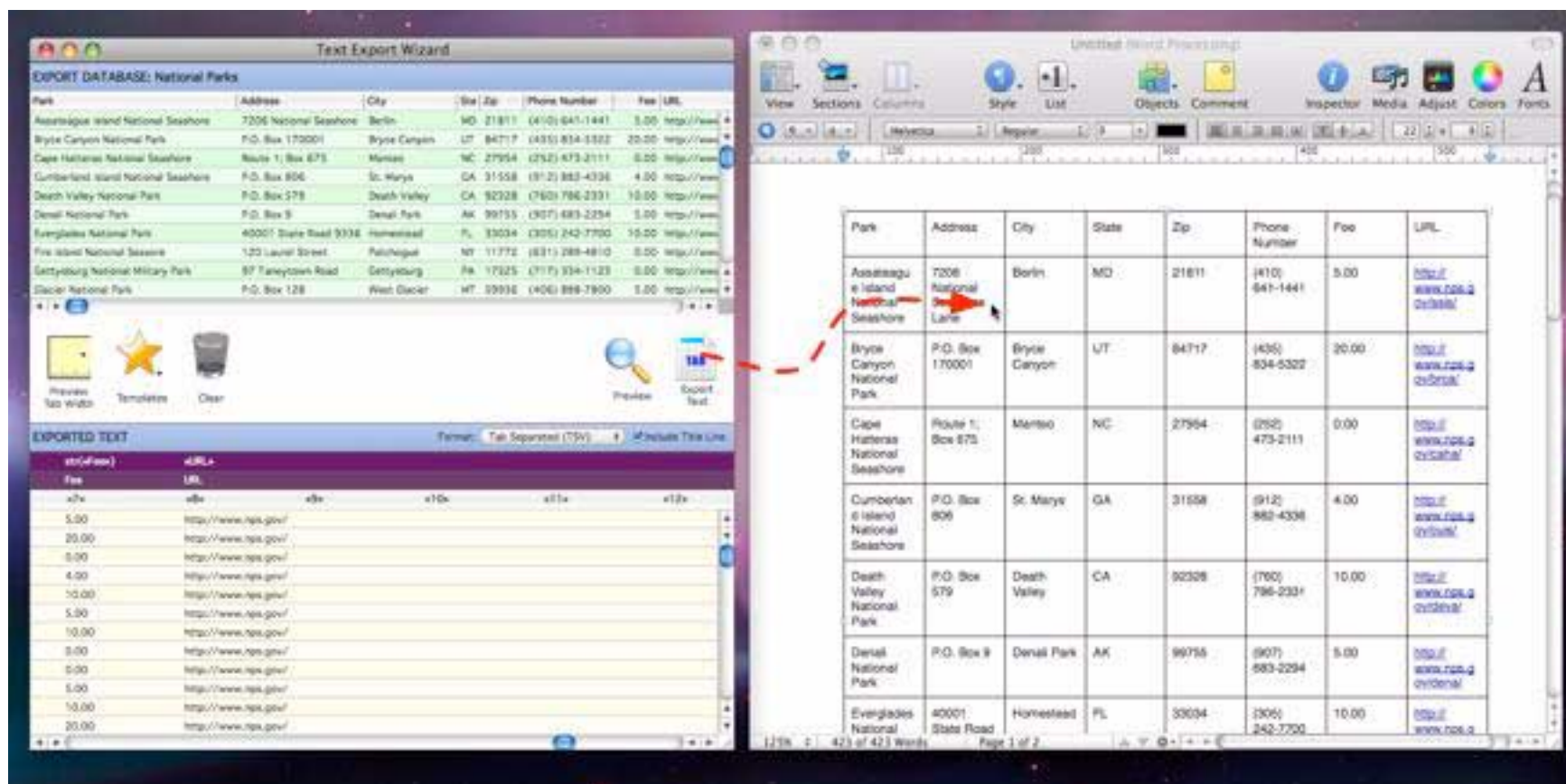
If you are using a Macintosh you can export the text simply by dragging from the Export Text icon to wherever you need to go. For example, you can drag the icon onto any folder (any Finder window).



You can also drag onto any application that can receive dropped text. For example, you can drag onto a Numbers spreadsheet, as shown here:



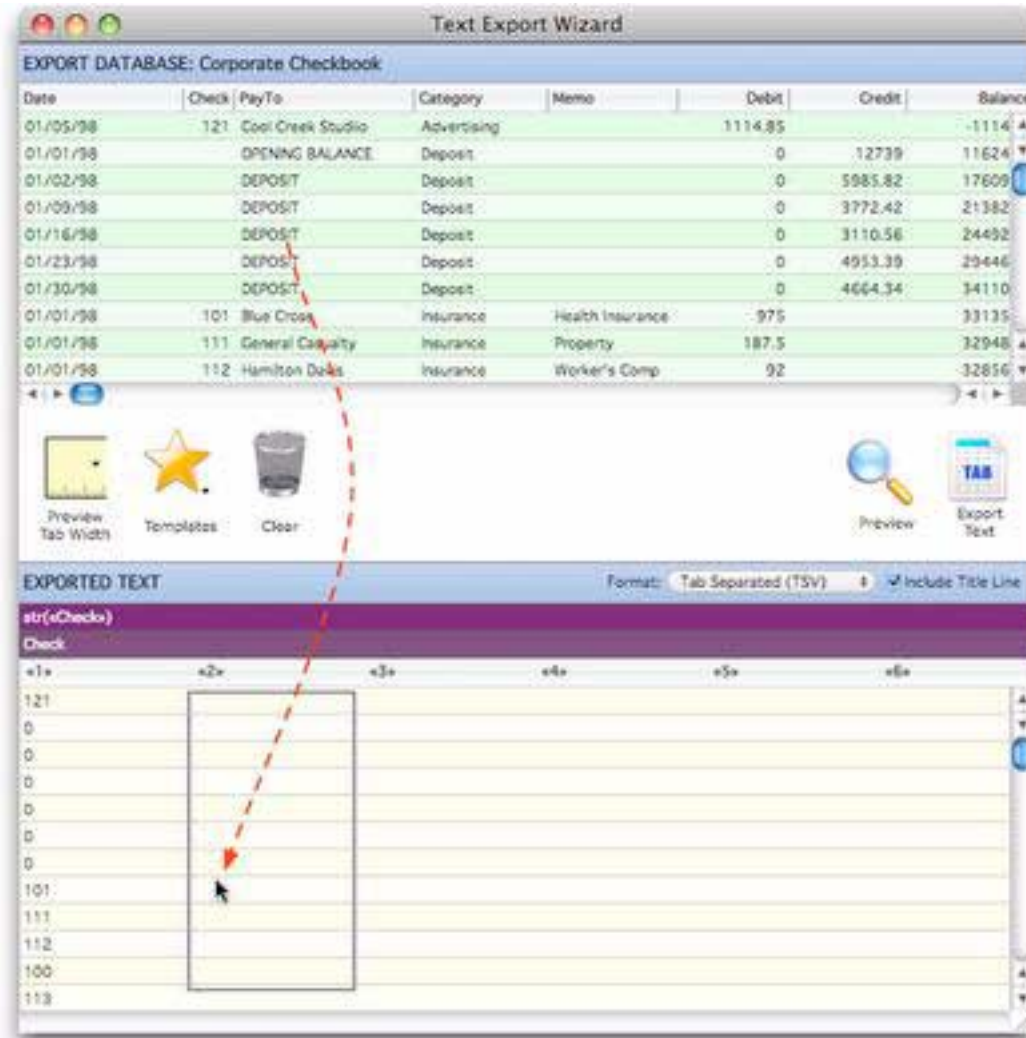
Many word processors can also handle tabular data. For example, you could drag exported Panorama data directly into a table in Pages, like this:



If you are using a Windows system, or if you don't want to drag, just click on the **Export Text** icon instead of dragging. This opens a dialog that allows you to select a location for the exported text. You can also use the **Export** menu to export to a file or to the clipboard (right clicking on the **Export Text** icon also displays this menu.)

Customizing the Export Field Arrangement

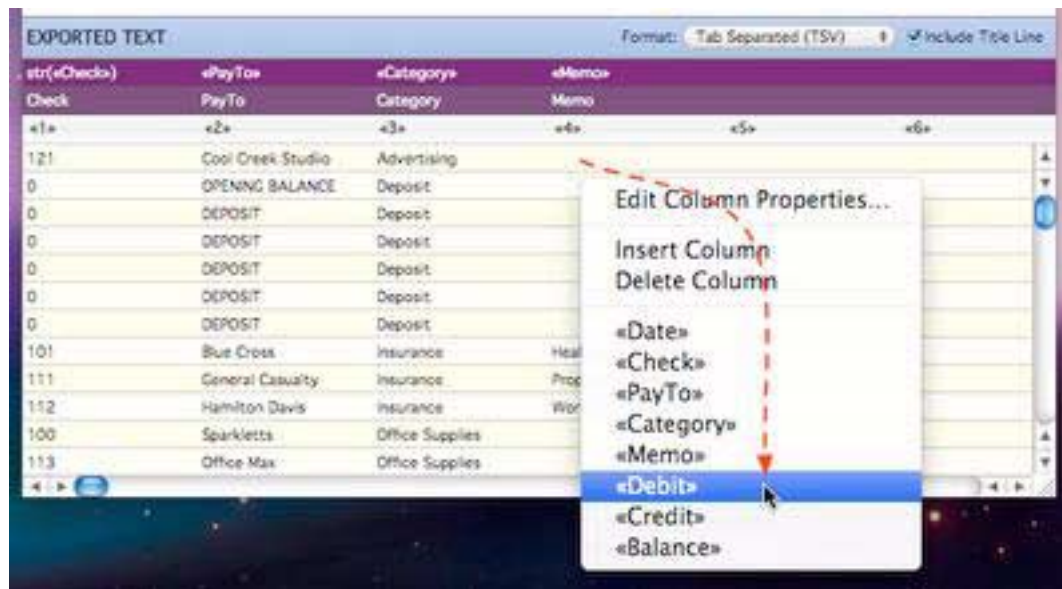
When you first open the Text Export wizard it defaults to exporting all of the fields in the database. You can easily customize this if you need a different arrangement. If you want to start from scratch, click on the **Clear** icon (you can always go back to all fields by clicking on the yellow star and choosing ALL FIELDS from the Template pop-up menu). Then you can drag fields from the database (top section) to the export (bottom section).



If you make a mistake don't worry, just re-drag the column into the correct spot. Or you can drag a column out of the export area to remove it.

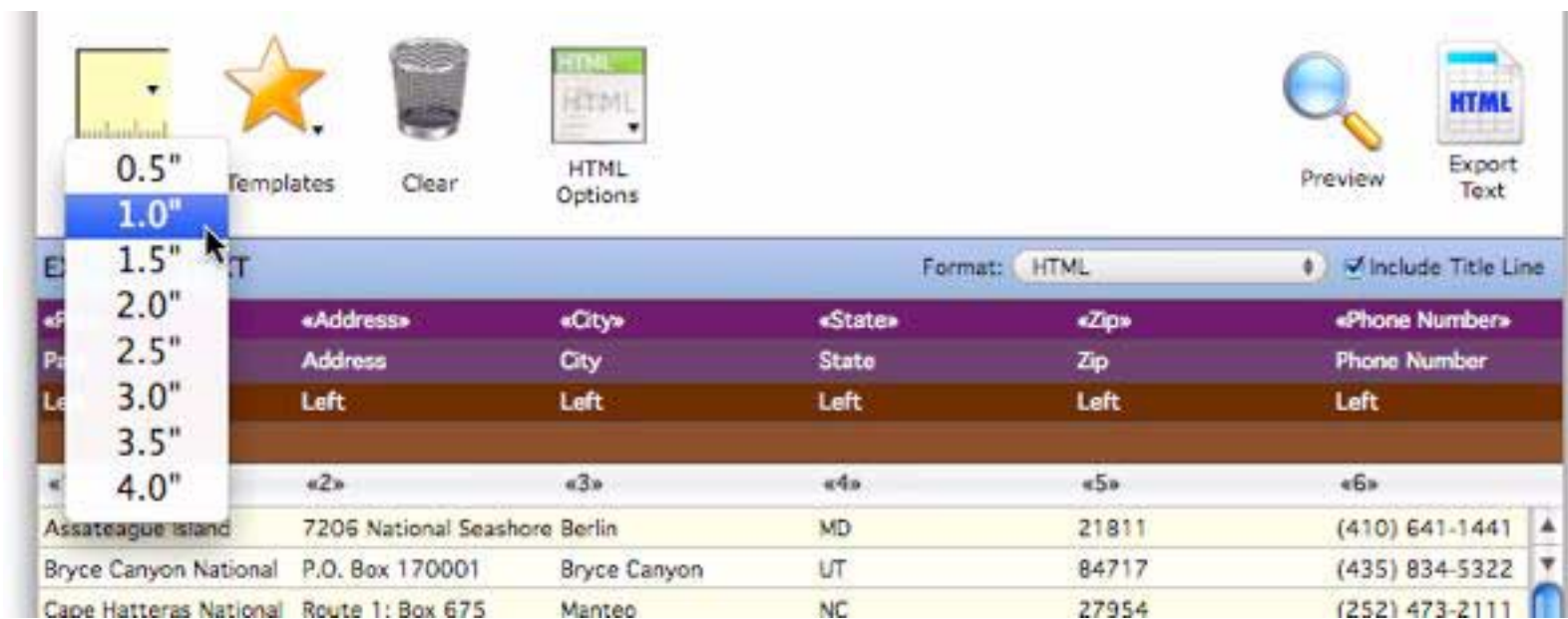


Another method for setting up the configuration is to right click on an export column. This gives you options for editing the column options (more on that in a moment), inserting a deleting columns, and setting the column to a database field.



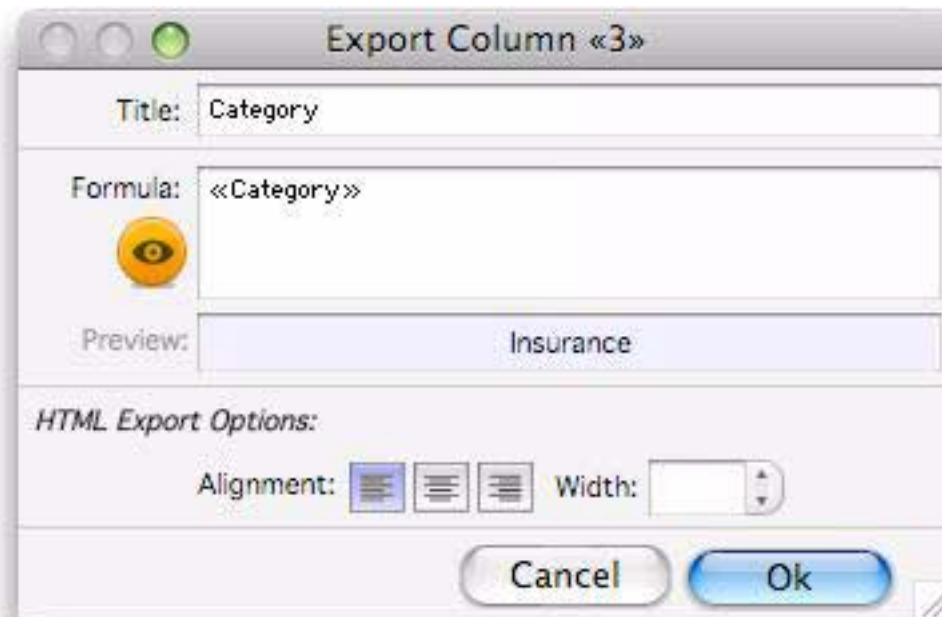
There is a similar pop-up menu if you right click on a database field.

Preview Tab Width. The wizard defaults to displaying the previewed export columns on 1.5 inch spacings. To change the spacing, click on the Preview Tab Width icon and choose the width from the pop-up menu.



Customizing Export Column Properties

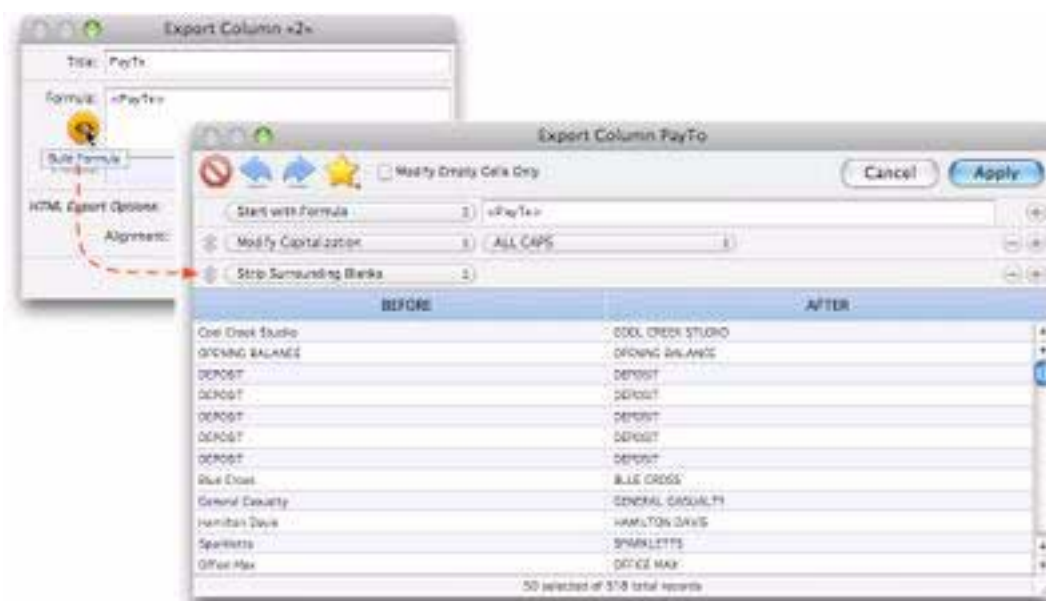
So far we've assumed that the columns in exported text will consist of unmodified database fields -- re-arranged, perhaps, but otherwise unchanged. However, it's possible for Panorama to manipulate the data as it is exported. You can combine two database fields into one exported column, split one database field into two export columns, force to upper or lower case, etc. If the **Include Title Line** option has been enabled you can also customize the title of each column. To make these changes simply double click on any column in the lower section of the wizard, or right click and choose **Edit Column Properties** from the pop-up menu. This dialog will appear:



To manipulate the data as it is being exported, edit the formula. You can use any function or operator as part of the formula. For example, this formula converts the category field to upper case as it is being exported:



For assistance in constructing a formula, press the **Build Formula** icon. This opens the **Manipulate Data** dialog, which you can use to build a formula step-by-step (see [“The Manipulate Data Dialog”](#) on page 434).



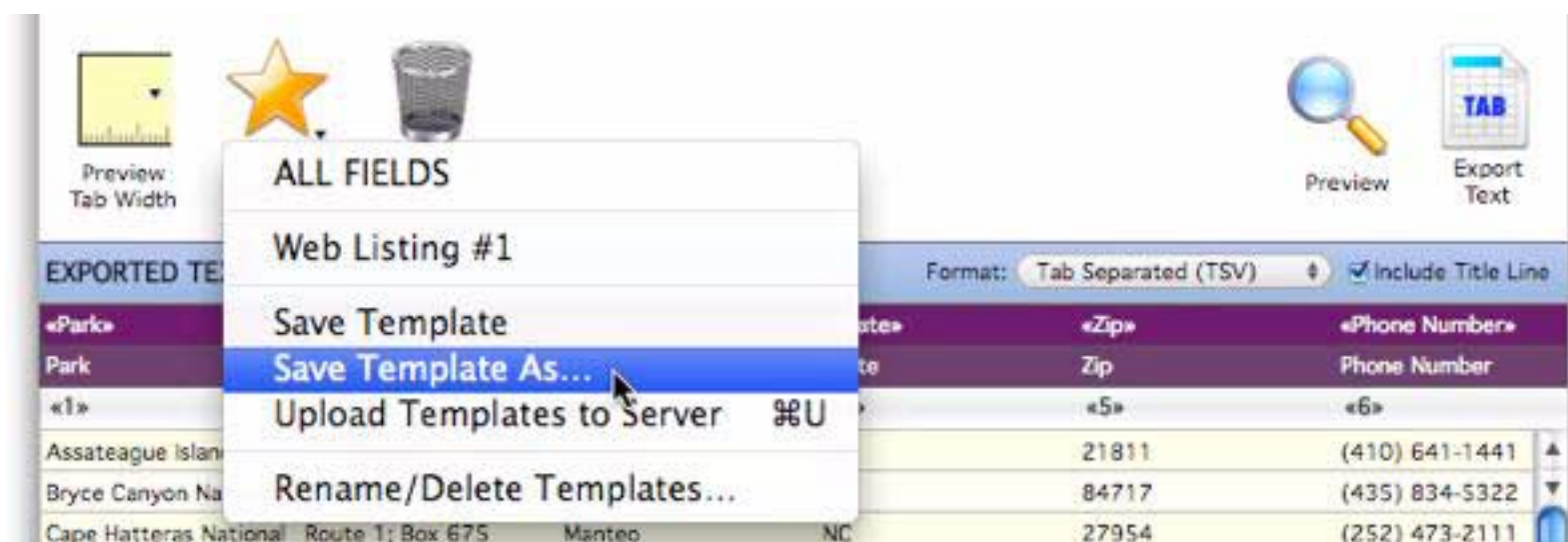
When you close the Column Properties dialog the wizard shows a preview of what the manipulated export column will look like (in this case the field is being converted to all upper case as it is exported).

str(«Check»)	«PayTo»	upper(«Category»)	str(«Debit»)
Check	PayTo	Category	Debit
«1»	«2»	«3»	«4»
121	Cool Creek Studio	ADVERTISING	1114.85
0	OPENING BALANCE	DEPOSIT	0
0	DEPOSIT	DEPOSIT	0
0	DEPOSIT	DEPOSIT	0
0	DEPOSIT	DEPOSIT	0
0	DEPOSIT	DEPOSIT	0
0	DEPOSIT	DEPOSIT	0
101	Blue Cross	INSURANCE	975
111	General Casualty	INSURANCE	187.5
112	Hamilton Davis	INSURANCE	92
100	Sparkletts	OFFICE SUPPLIES	14.2
113	Office Max	OFFICE SUPPLIES	170.4

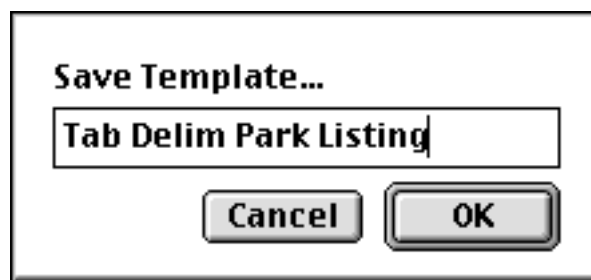
The **Text Export Wizard** allows you to use any valid Panorama formula (see “[Formulas](#)” on page 19 of *Formulas & Programming*) to create each item. See “[Using Formulas to Display Text](#)” on page 621 for examples of formulas that are useful for exporting data.

Export Templates

If you think you’ll need to use an export configuration more than once you can save it as a **template**. The first step is to set up the configuration (as described in the previous section). Once the configuration is set up you can save it with the **Save Template** or **Save Template As...** commands in the **Template** menu. This menu is available in the menu bar or by clicking the yellow star:



The wizard will prompt you to type in a name for the new template (the default is the name of the text file being imported).

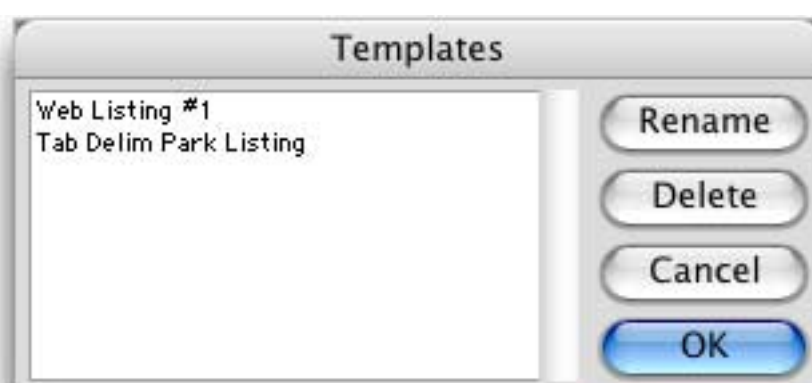


Once a template has been saved you can open it again by selecting it from the Template menu. (Note: The template is actually stored in the database being imported into (in this case [National Parks](#)). The template is only available when that database is being exported from. Each database may contain its own separate set of templates, which makes sense since the export configuration used with one database is not likely to work with any other database.)



The wizard loads the entire export configuration, ready to go. You can use the configuration as is or modify it before you actually import the data.

If you want to delete or rename a template choose the **Rename/Delete Templates...** command from the Template menu. To rename a template first click on it and then press the **Rename** button. A dialog appears allowing you to type in a new name. To delete a template press the **Delete** button.



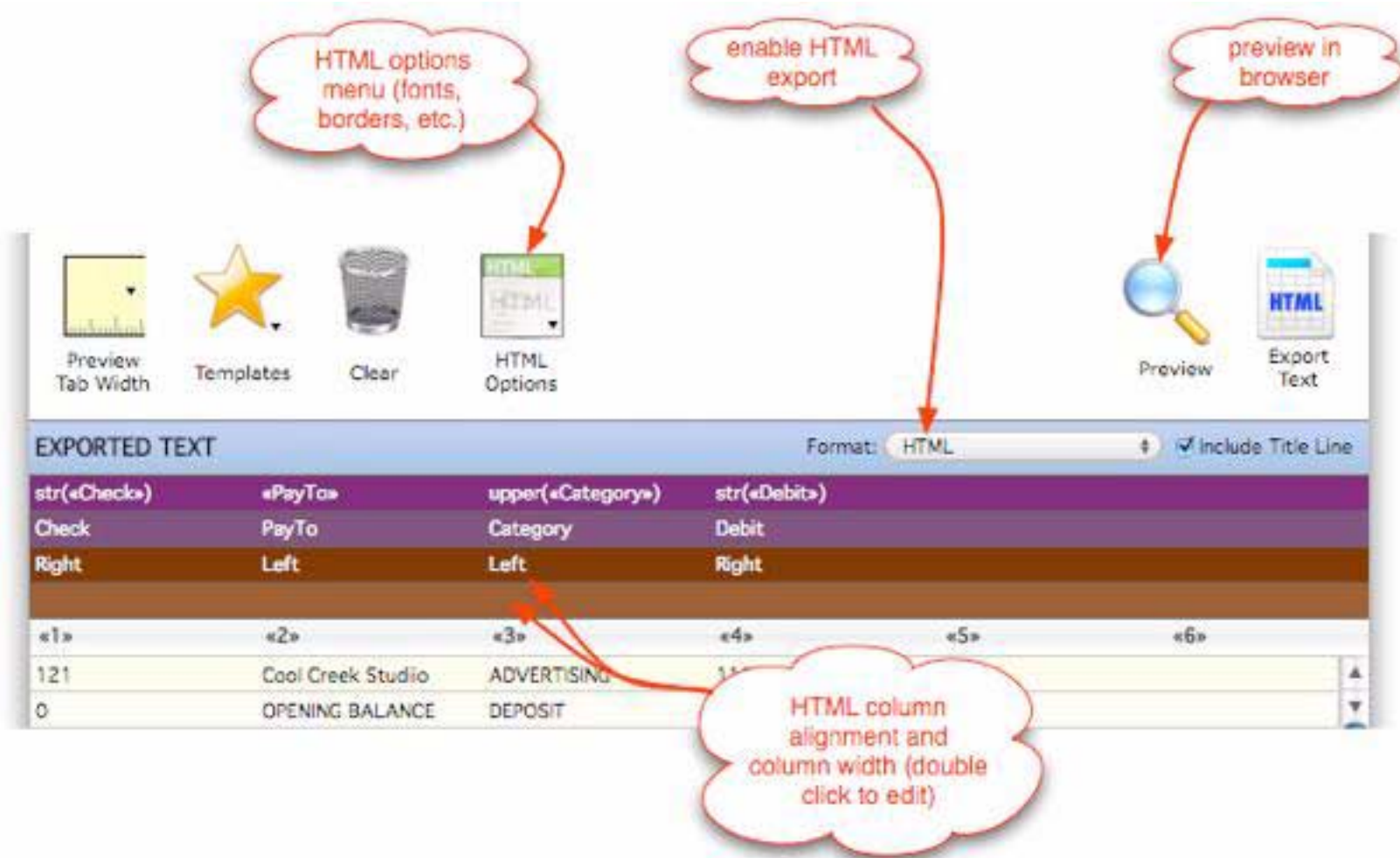
When you are done press the **OK** button.

Choosing a Database to Export From

The **Text Import Wizard** normally exports from database that was active when the wizard was opened. However, you can use the **Database** menu to choose to export from any open database. Simply choose the database you want to export from and then set up the configuration.

Exporting HTML Tables

To export a database as an HTML table choose HTML from the pop-up menu. This adds several new options to the wizard:

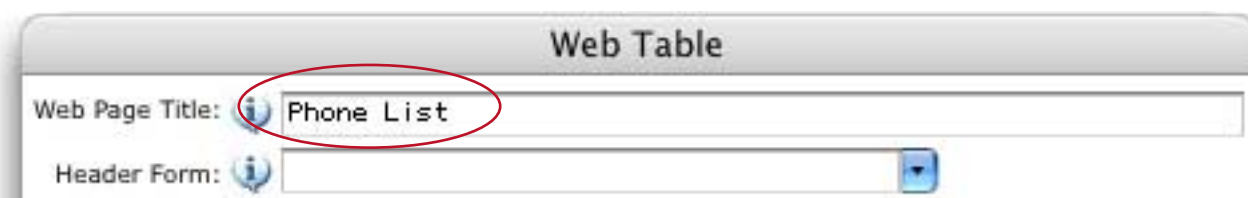


Press the **Preview** icon to see what the HTML output will look like in a web browser:

The screenshot shows a web browser window titled 'National Parks'. The address bar shows a file path: 'file:///private/var/folders/M8/M8C1801z2RWesk+1YsGln+++TQ/TemporaryItems/National%20Parks.html'. The browser displays a table with the following data:

Park	Address	City	State	Zip	Phone Number	Fee	URL
Assateague Island National Seashore	7206 National Seashore Lane	Berlin	MD	21811	(410) 641-1441	5.00	http://www.nps.gov/asis/
Bryce Canyon National Park	P.O. Box 170001	Bryce Canyon	UT	84717	(435) 834-5322	20.00	http://www.nps.gov/brca/
Cape Hatteras National Seashore	Route 1; Box 675	Manteo	NC	27954	(252) 473-2111	0.00	http://www.nps.gov/caha/
Cumberland Island National Seashore	P.O. Box 806	St. Marys	GA	31558	(912) 882-4336	4.00	http://www.nps.gov/cuis/
Death Valley National Park	P.O. Box 579	Death Valley	CA	92328	(760) 786-2331	10.00	http://www.nps.gov/deva/
Denali National Park	P.O. Box 9	Denali Park	AK	99755	(907) 683-2294	5.00	http://www.nps.gov/dena/
Everglades National Park	40001 State Road 9336	Homestead	FL	33034	(305) 242-7700	10.00	http://www.nps.gov/ever/
Fire Island National Seashore	120 Laurel Street	Patchogue	NY	11772	(631) 289-4810	0.00	http://www.nps.gov/fias/
Gettysburg National Military Park	97 Taneytown Road	Gettysburg	PA	17325	(717) 334-1123	0.00	http://www.nps.gov/gett/
Glacier National Park	P.O. Box 128	West Glacier	MT	59936	(406) 888-7800	5.00	http://www.nps.gov/glac/
Grand Canyon National Park	P.O. Box 129	Grand Canyon	AZ	86023	(520) 638-2631	10.00	http://www.nps.gov/grca/
Grand Teton National Park	P.O. Drawer 170	Moose	WY	83012	(307) 739-3300	20.00	http://www.nps.gov/grte/
Great Basin National Park		Baker	NV	89311	(775) 234-7331	0.00	http://www.nps.gov/grba/
Great Smoking Mountains National Park	107 Park Headquarters Road	Gatlinburg	TN	37738	(865) 436-1200	0.00	http://www.nps.gov/grsm/
Gulf Islands National Seashore	1801 Gulf Breeze Parkway	Gulf Breeze	FL	32561	(850) 934-2600	6.00	http://www.nps.gov/guis/
Mount Rushmore National Memorial	P.O. Box 268	Keystone	SD	57751	(605) 574-2523	0.00	http://www.nps.gov/moru/
Olympic National Park	600 East Park Avenue	Port Angeles	WA	98362	(360) 452-4501	10.00	http://www.nps.gov/olym/
Rocky Mountain National Park		Estes Park	CO	80517	(970) 586-1206	10.00	http://www.nps.gov/romo/
White House	1450 Pennsylvania Avenue NW	Washington	DC	20241	(202) 208-1631	0.00	http://www.nps.gov/whho/
Yellowstone National Park	P.O. Box 168	Yellowstone National Park	WY	82190	(307) 344-7381	10.00	http://www.nps.gov/yell/
Yosemite National Park	P.O. Box 577	Yosemite	CA	95389	(209) 372-0200	10.00	http://www.nps.gov/yose/

Web Page Title. The **Web Page Title** is the title that appears in the title bar of the browser window when this table is displayed. It defaults to the database name. For example, suppose you set the title to **Phone List**.



Here's the table with title displayed in a browser.

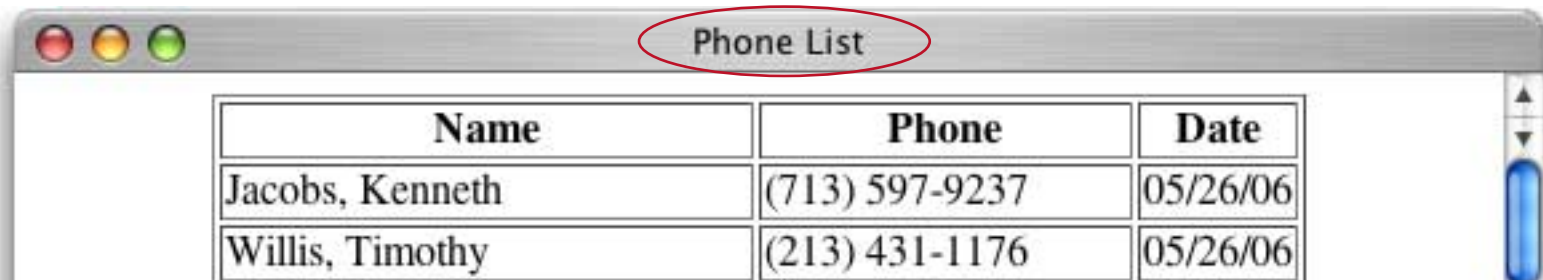


Table Header Form. The **Header Form** option allows you to “stick” a form on top of the table. However this option only works when used with the Panorama Enterprise server. For more information see the Panorama Enterprise Handbook, a separate PDF file.

Table Margins. The **Left Margin** and **Top Margin** allow the table to be precisely positioned relative to the upper left hand corner of the page.



The margins are specified in pixels (1 pixel = 1/72th of an inch). The margins shown above move the table down and to the right.



You may need to “twiddle” with the numbers a bit to get the position you want. Just press the **Preview in Browser** button to see what the current margins look like.

Table Border. The Table Border is a numeric value that specifies the thickness (in pixels) of the border around each cell in the table. If the value is set to 0 then there is no border at all. Here are some examples of different border settings.

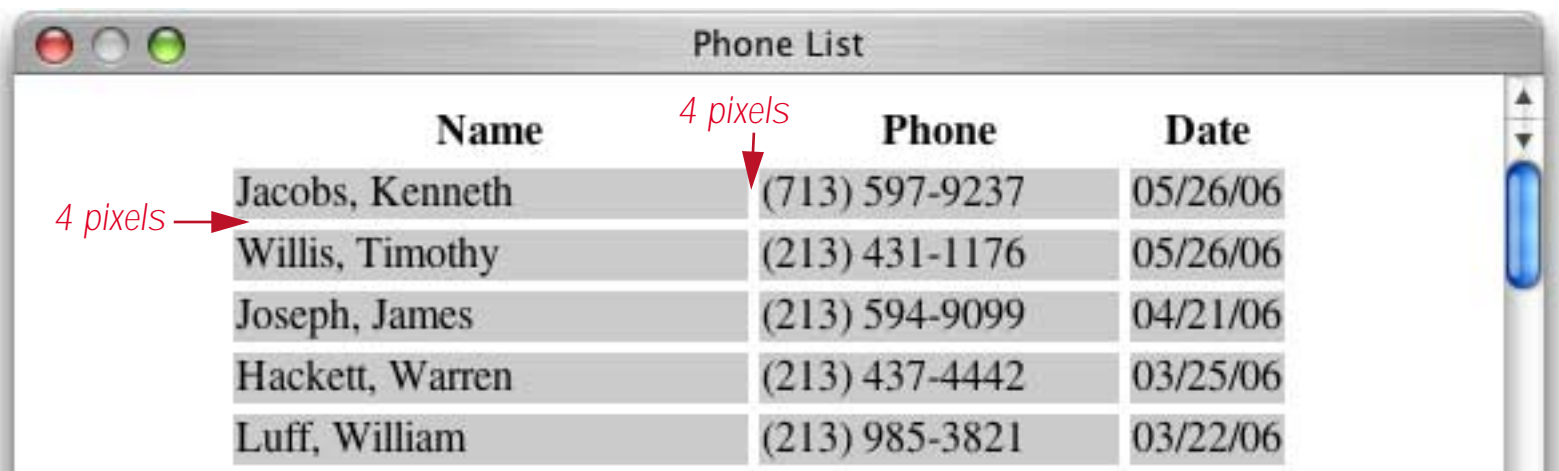
Border	Example
0	
1	
2	

When combined with the cell spacing, cell padding, and cell color options there are literally dozens of options for customizing the table appearance.

Cell Spacing. This option controls the space between each cell in the table (in pixels).

Table Border: Cell Spacing: Cell Padding:

It's easier to see the cell spacing if the table cells have a colored background. In this example there is 4 pixels between each cell.



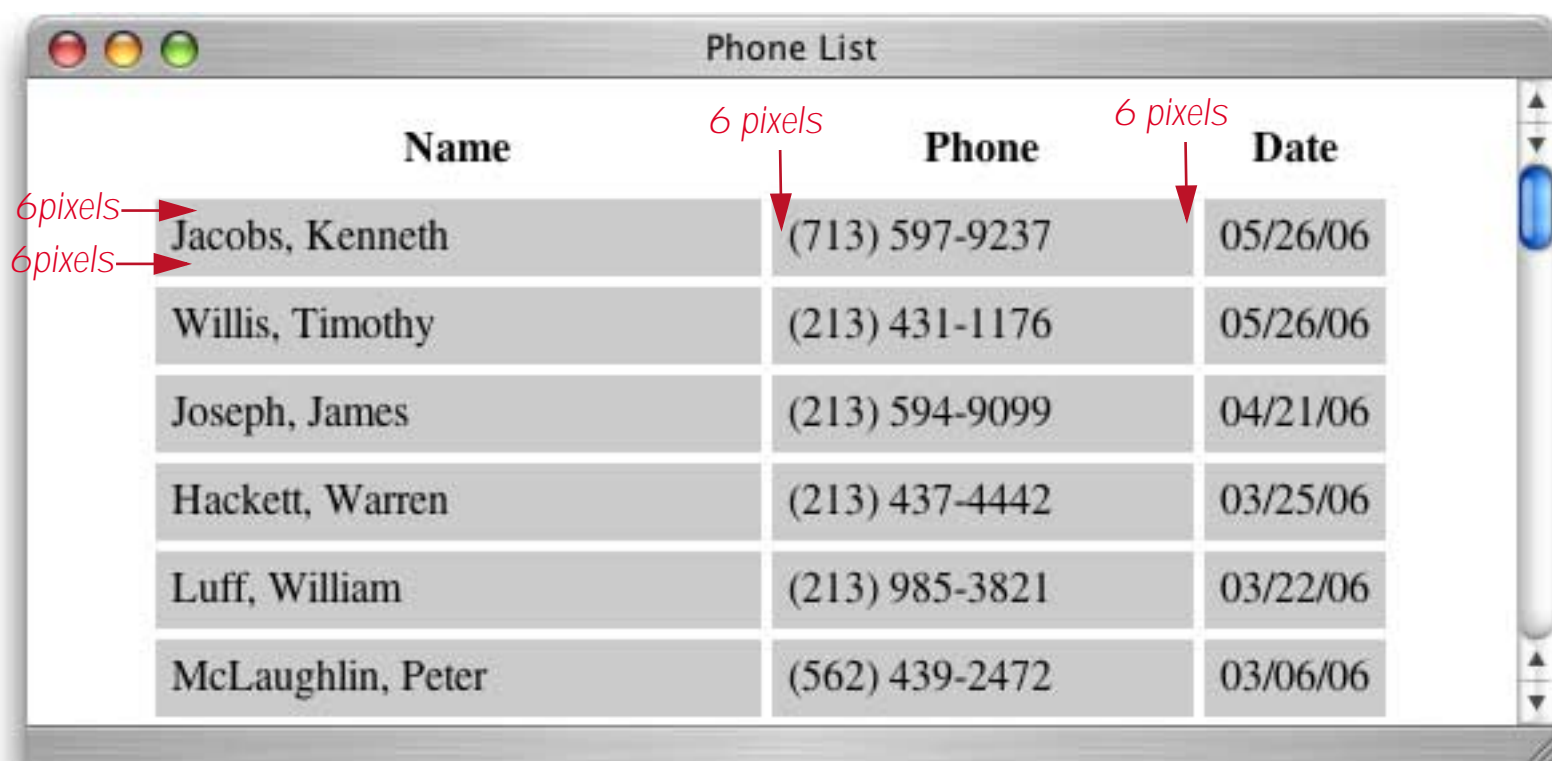
The screenshot shows a window titled "Phone List" containing a table with three columns: "Name", "Phone", and "Date". The table has five rows of data. Red arrows point to the gaps between the first and second rows, and between the first and second columns, with the label "4 pixels".

Name	Phone	Date
Jacobs, Kenneth	(713) 597-9237	05/26/06
Willis, Timothy	(213) 431-1176	05/26/06
Joseph, James	(213) 594-9099	04/21/06
Hackett, Warren	(213) 437-4442	03/25/06
Luff, William	(213) 985-3821	03/22/06

Cell Padding. This option controls the space between the contents of each cell (text or image) and the edge of each cell (in pixels).

Table Border: Cell Spacing: Cell Padding:

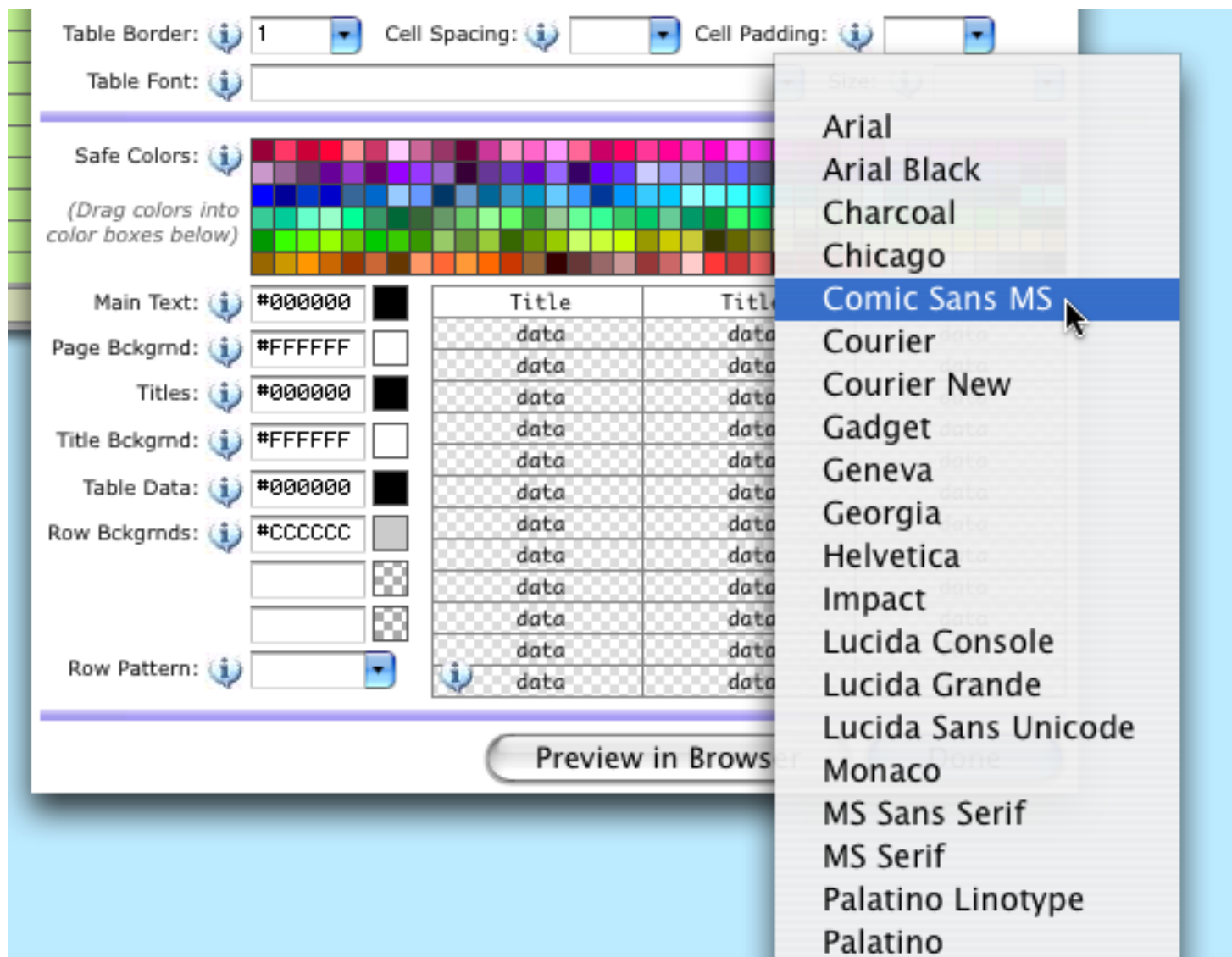
In this example there are 6 pixels of padding around each cell.



The screenshot shows a window titled "Phone List" containing a table with three columns: "Name", "Phone", and "Date". The table has six rows of data. Red arrows point to the padding around the first row and the first two columns, with the label "6 pixels".

Name	Phone	Date
Jacobs, Kenneth	(713) 597-9237	05/26/06
Willis, Timothy	(213) 431-1176	05/26/06
Joseph, James	(213) 594-9099	04/21/06
Hackett, Warren	(213) 437-4442	03/25/06
Luff, William	(213) 985-3821	03/22/06
McLaughlin, Peter	(562) 439-2472	03/06/06

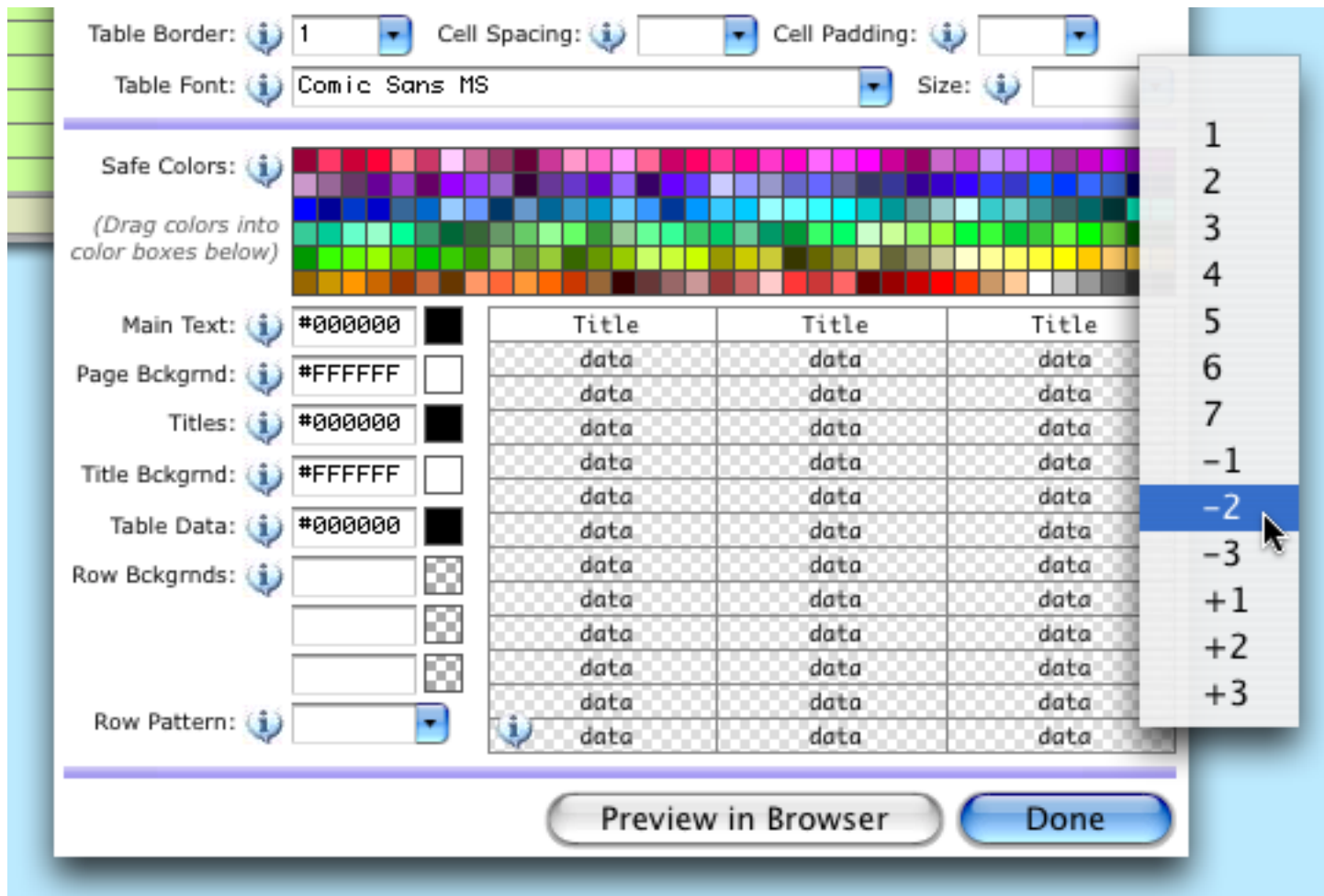
Table Font. This option specifies the font to use to display the table. (If left blank the browser's default font will be used.) You can either type in the font name or choose from a pop-up menu listing the most common web fonts.



On your own computer you can use any font you want because you have complete control over what fonts are installed and available for use. A web page, however, is the opposite situation since you have zero control over what fonts may be available when the page is viewed. Because of this it is usually best to pick from a restricted subset of fonts that are almost universally available. The fonts that are most commonly available are: *Arial*, *Comic Sans MS*, *Courier*, *Georgia*, *Helvetica*, *Times* and *Verdana*. Here's what the phone number table looks like using *Comic Sans*.

Name	Phone	Date
Sutton, Alfred	(703) 242-5125	06/26/06
McDaniel, Thomas	(212) 310-4886	06/26/06
Weber, Samuel	(201) 431-5137	06/26/06
Rowe, Douglas	(609) 490-1972	06/26/06
Swartz, Daniel	(212) 556-6657	06/26/06
Alexander, Allen	(914) 967-7684	06/26/06
Dannell, Herbert	(914) 793-5017	06/26/06

Text Size. This option specifies the size of the text to be used for the table. But take note — the size is not specified in pixels. Instead it is specified using a special HTML text size specification. Absolute values (1-7) specify a fixed font size from extremely small (1) to huge (7). Negative values specify sizes smaller than the text size in the rest of the page, for example -2 is two sizes smaller than normal font. Positive values specify sizes larger than the text size in the rest of the page, for example +2 is two sizes larger than normal font. You can type in the size or select from a pop-up menu of common sizes.

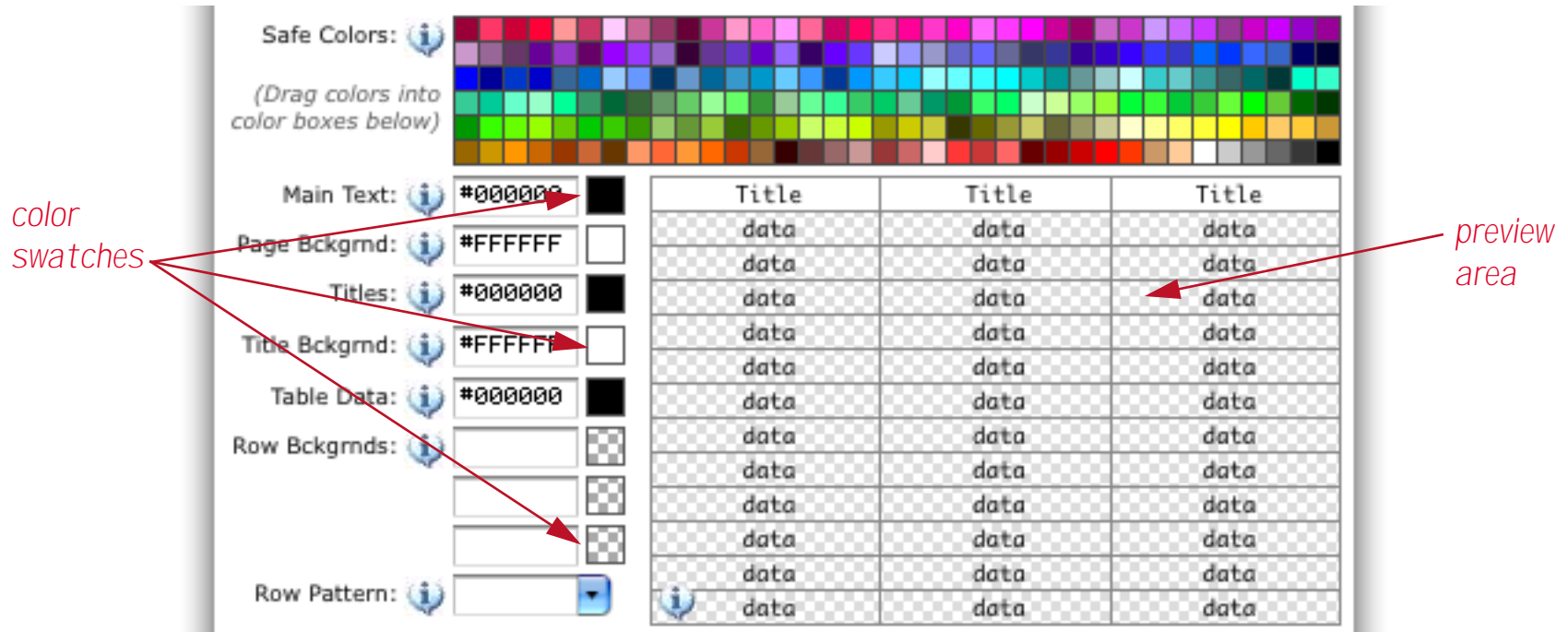


Here's the same table as the previous example but with the text displayed in a smaller (-2) size.

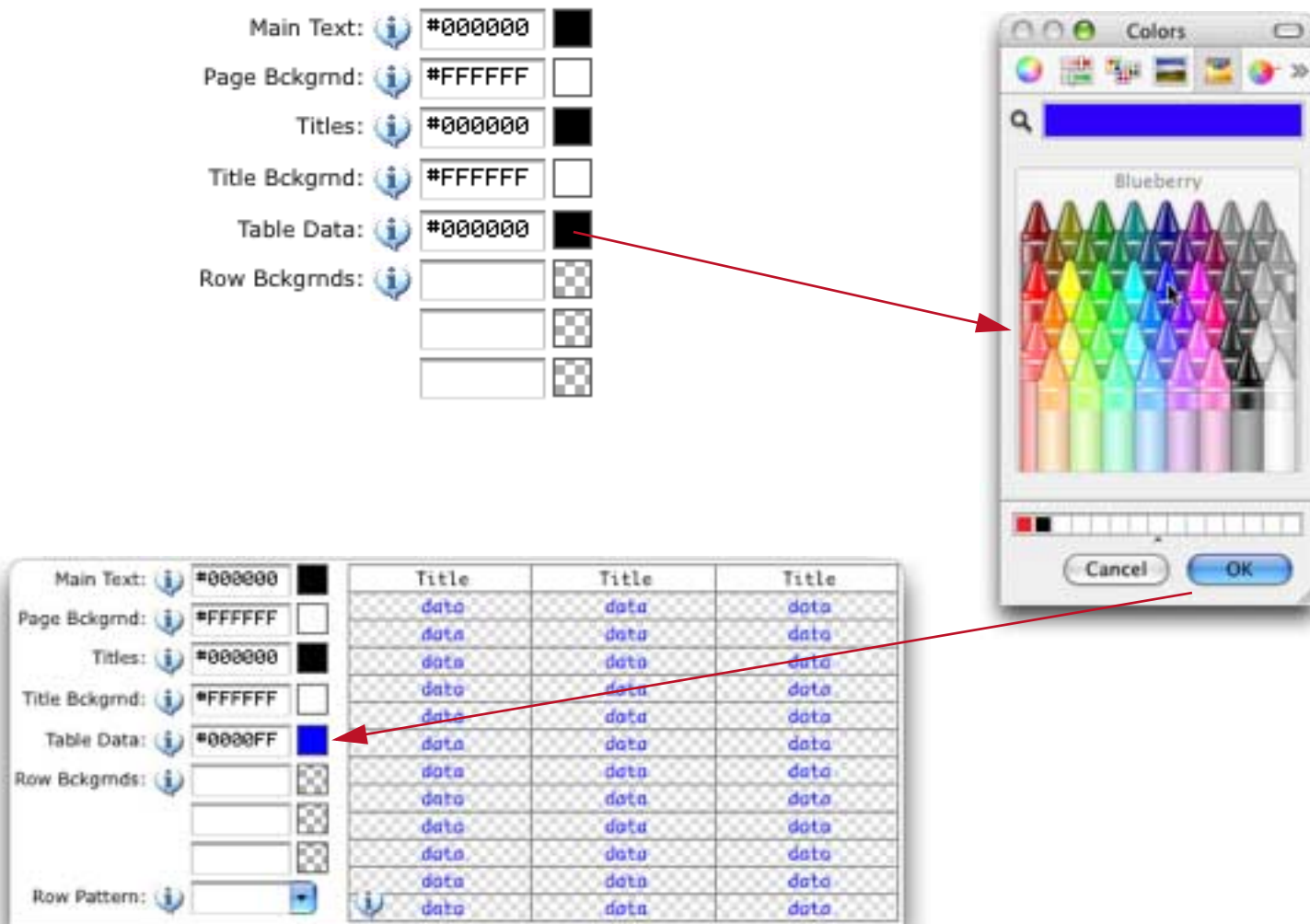
The image shows a browser window titled 'Phone Numbers' displaying a table with three columns: 'Name', 'Phone', and 'Date'. The text in the table is smaller than in the previous example. The table contains the following data:

Name	Phone	Date
Sutton, Alfred	(703) 242-5125	06/26/06
McDaniel, Thomas	(212) 310-4886	06/26/06
Weber, Samuel	(201) 431-5137	06/26/06
Rowe, Douglas	(609) 490-1972	06/26/06
Swartz, Daniel	(212) 556-6657	06/26/06
Alexander, Allen	(914) 967-7684	06/26/06
Donnell, Herbert	(914) 793-5017	06/26/06
Swift, Anthony	(215) 925-6820	06/26/06
Booth, Thomas	(215) 942-1183	06/26/06
Kuo, Joseph	(202) 806-4622	06/26/06
Cline, Samuel	(301) 761-8958	06/26/06

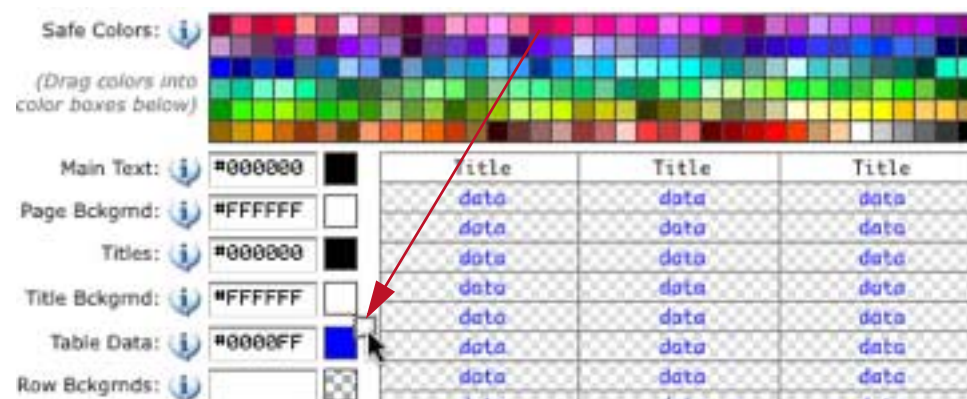
Text and Background Colors. By default Panorama web tables use black text on a transparent background. The bottom half of the dialog allows you to specify any custom color combination you want. There are 8 color swatches on the left hand side, and a preview area that simulates the selected color combinations on the right (only the color selections are previewed, this area does not show borders, cell spacing, padding, font or size).



Color Selection Techniques. There are three ways to change a color swatch in this dialog. The simplest method is to simply click on a swatch. This opens the systems standard color picker dialog. When you select the color the swatch and preview will update.



The second method is using the palette of 216 “web safe” colors. A few years ago, when most computers supported only 256 different colors, this list of 216 “web safe” colors was suggested as a standard. (The reason there are only 216 safe colors, not 256, is because the Microsoft and Mac operating system used 40 different “reserved” fixed system colors (about 20 each).) Since most computers can now display millions of colors it’s no longer all that important to use colors from this palette, but the palette is still available for your use. To use one of these colors simple drag it from the palette to one of the eight swatches.



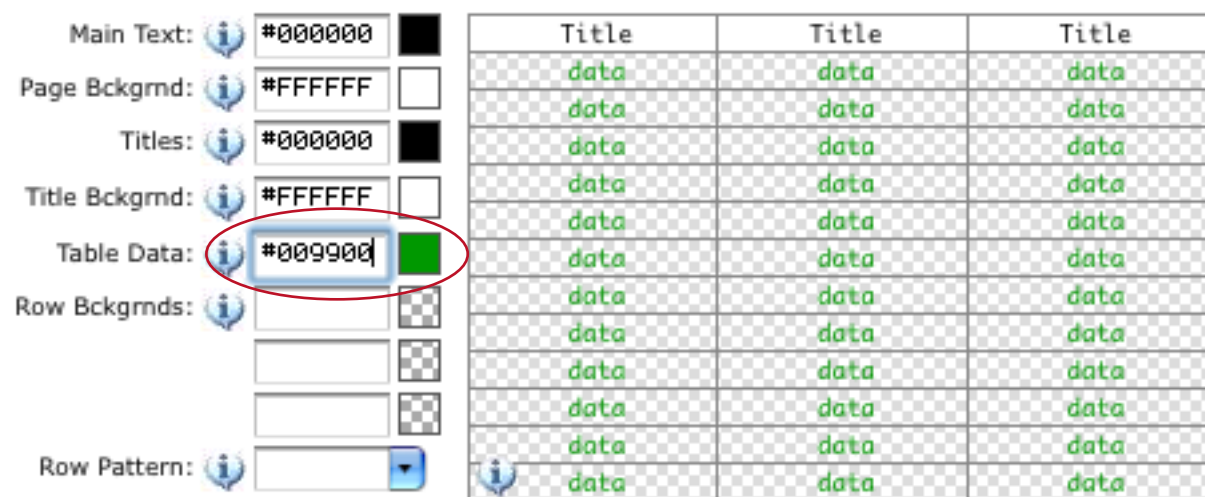
When the color is dropped onto the swatch the swatch changes to the selected color.



The third method for setting the color is to type in the color using the HTML color notation. HTML colors are defined using a hexadecimal notation for the combination of Red, Green, and Blue color values (RGB). The lowest value that can be given to one of the light sources is 0 (hex #00). The highest value is 255 (hex #FF). For example #0000FF represents pure blue, #00FF00 represents pure green, and #FF0000 represents pure red. Using this notation you can specify millions of different colors. A few of these are shown in the table below.

	FFFFFF	FFCCFF	FF99FF	FF66FF	FF33FF	FF00FF	
	FFFACC	FFCCCC	FF99CC	FF66CC	FF33CC	FF00CC	
	FFFF99	FFCC99	FF9999	FF6699	FF3399	FF0099	
EEEEEE	FFFF66	FFCC66	FF9966	FF6666	FF3366	FF0066	00FF00
DDDDDD	FFFF33	FFCC33	FF9933	FF6633	FF3333	FF0033	00EE00
CCCCCC	FFFF00	FFCC00	FF9900	FF6600	FF3300	FF0000	00DD00
BBBBBB	CCFFFF	CCCCFF	CC99FF	CC66FF	CC33FF	CC00FF	00CC00
AAAAAA	CCFFCC	CCCCCC	CC99CC	CC66CC	CC33CC	CC00CC	00BB00
999999	CCFF99	CCCC99	CC9999	CC6699	CC3399	CC0099	00AA00
888888	CCFF66	CCCC66	CC9966	CC6666	CC3366	CC0066	009900
777777	CCFF33	CCCC33	CC9933	CC6633	CC3333	CC0033	008800
666666	CCFF00	CCCC00	CC9900	CC6600	CC3300	CC0000	007700
555555	99FFFF	99CCFF	9999FF	9966FF	9933FF	9900FF	006600
444444	99FFCC	99CCCC	9999CC	9966CC	9933CC	9900CC	005500
333333	99FF99	99CC99	999999	996699	993399	990099	004400
222222	99FF66	99CC66	999966	996666	993366	990066	003300
111111	99FF33	99CC33	999933	996633	993333	990033	002200
000000	99FF00	99CC00	999900	996600	993300	990000	001100
FF0000	66FFFF	66CCFF	6699FF	6666FF	6633FF	6600FF	0000FF
EE0000	66FFCC	66CCCC	6699CC	6666CC	6633CC	6600CC	0000EE
DD0000	66FF99	66CC99	669999	666699	663399	660099	0000DD
CC0000	66FF66	66CC66	669966	666666	663366	660066	0000CC
BB0000	66FF33	66CC33	669933	666633	663333	660033	0000BB
AA0000	66FF00	66CC00	669900	666600	663300	660000	0000AA
990000	33FFFF	33CCFF	3399FF	3366FF	3333FF	3300FF	000099
880000	33FFCC	33CCCC	3399CC	3366CC	3333CC	3300CC	000088
770000	33FF99	33CC99	339999	336699	333399	330099	000077
660000	33FF66	33CC66	339966	336666	333366	330066	000066
550000	33FF33	33CC33	339933	336633	333333	330033	000055
440000	33FF00	33CC00	339900	336600	333300	330000	000044
330000	00FFFF	00CCFF	0099FF	0066FF	0033FF	0000FF	000033
220000	00FFCC	00CCCC	0099CC	0066CC	0033CC	0000CC	000022
110000	00FF99	00CC99	009999	006699	003399	000099	000011
	00FF66	00CC66	009966	006666	003366	000066	
	00FF33	00CC33	009933	006633	003333	000033	
	00FF00	00CC00	009900	006600	003300	000000	

The illustration shows how the table data can be displayed in dark green by typing #009900 into the Table Data color.



The color will appear in the swatch and preview when you click on another area of the dialog.

You've probably noticed that some swatches and areas of the preview are shown with a light gray checkerboard pattern. This indicates that these colors have not been set and will be transparent.

Main Text Color. This is the default text color for the entire page, including any text outside the table. Usually there isn't any text outside the table, but you can add extra text (headers, footers, etc.) using the **HTML Templates** dialog (see "[Customizing the table HTML \(advanced\)](#)" on page 136). Here's a simple example with an extra header at the top of the page.



Technical note: What this color actually does is change the `text` parameter in the `<body>` tag of the page.

```
<body bgcolor="#FFFFFF" text="#FF0033" link="0000FF" vlink="336666">
```

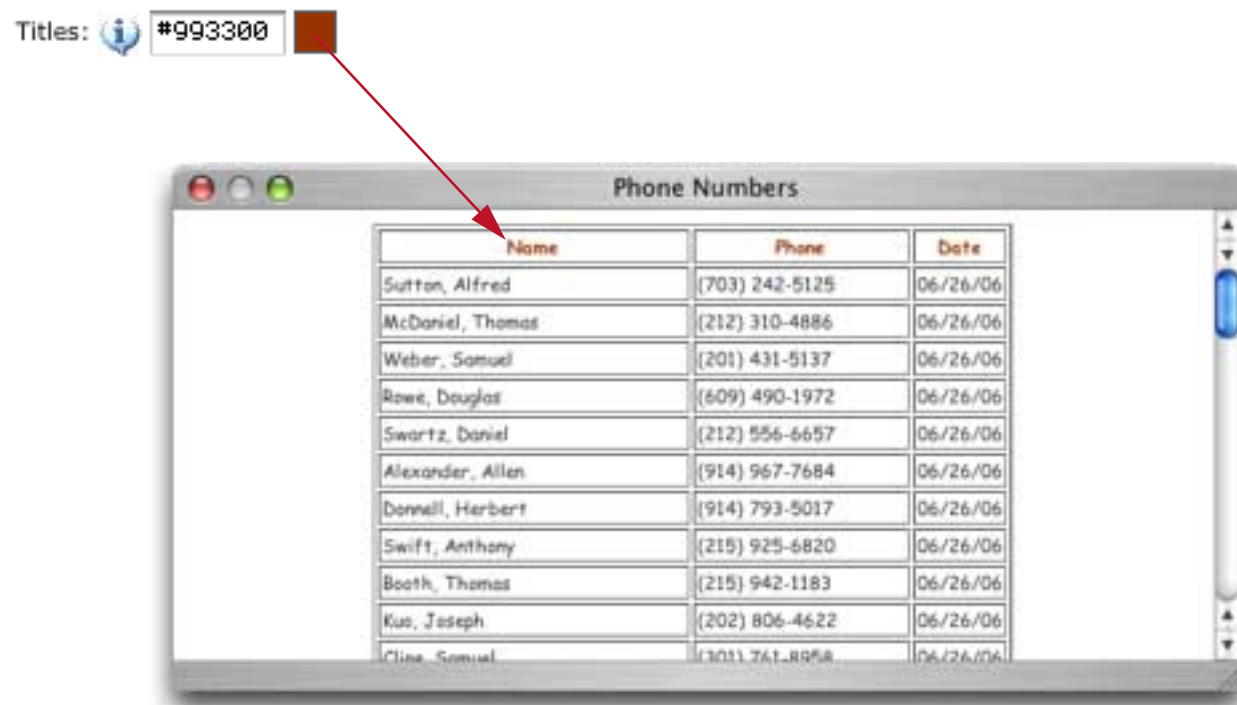
Page Background Color. This is the default background color for the entire page (not just the table). Here is a typical example.



Technical note: What this color actually does is change the `bgcolor` parameter in the `<body>` tag of the page.

```
<body bgcolor="#D3FFD8" text="#000000" link="#0000FF" vlink="#336666">
```

Title Color. This is the color for the column titles.



Title Background Color. This is the background color for the column titles. If you pick a dark background color then it's best to pick a light title color, or vice versa.

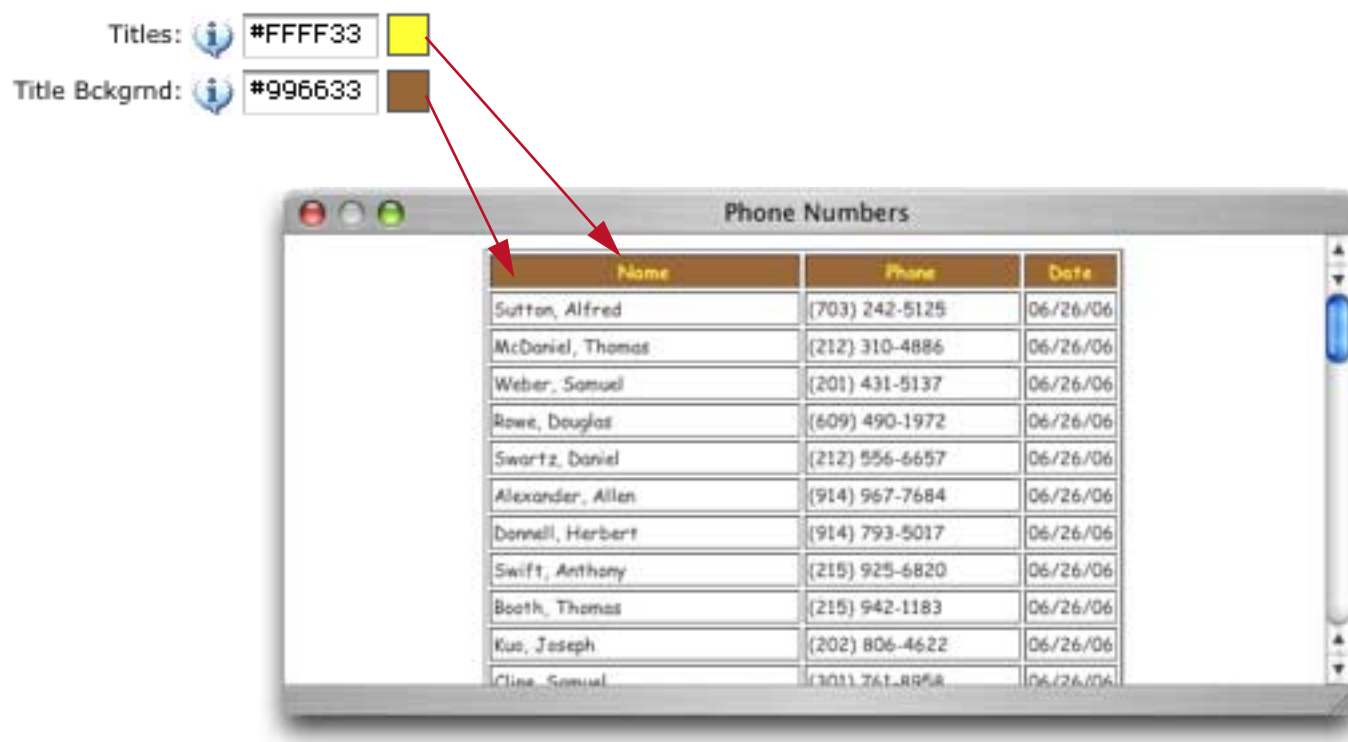
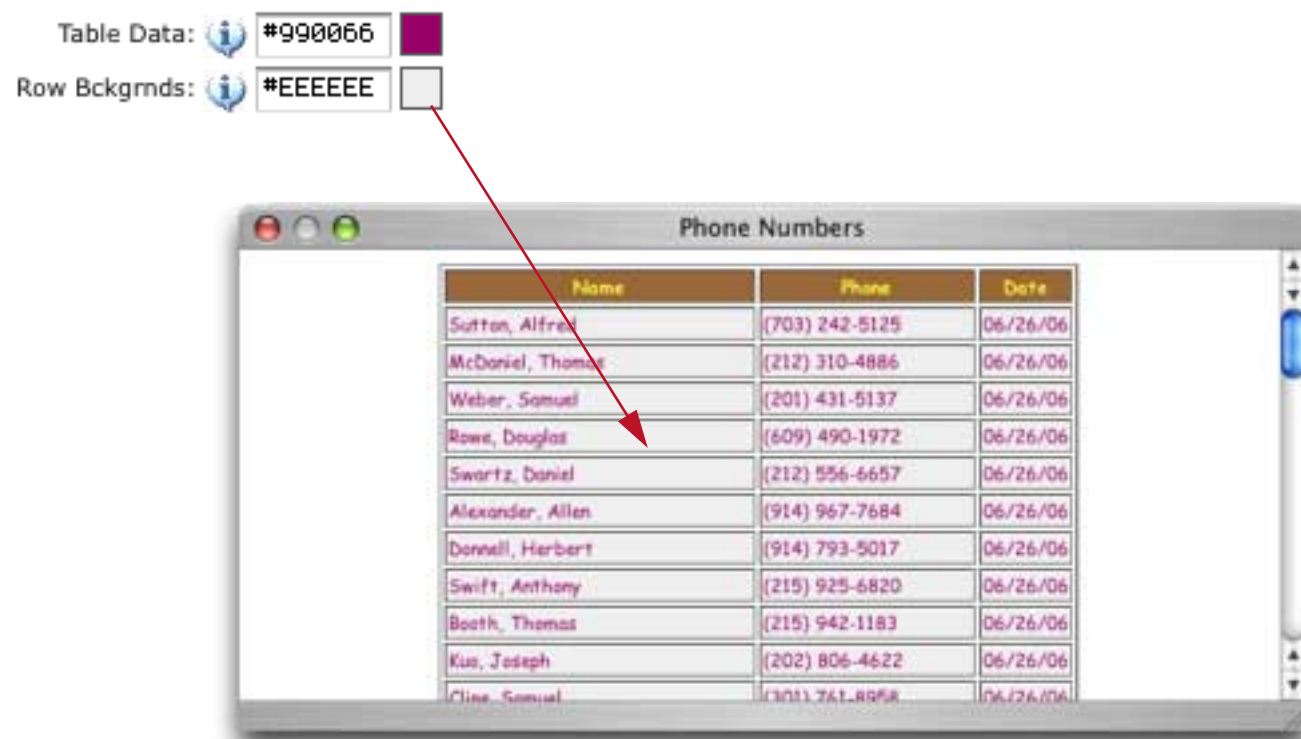


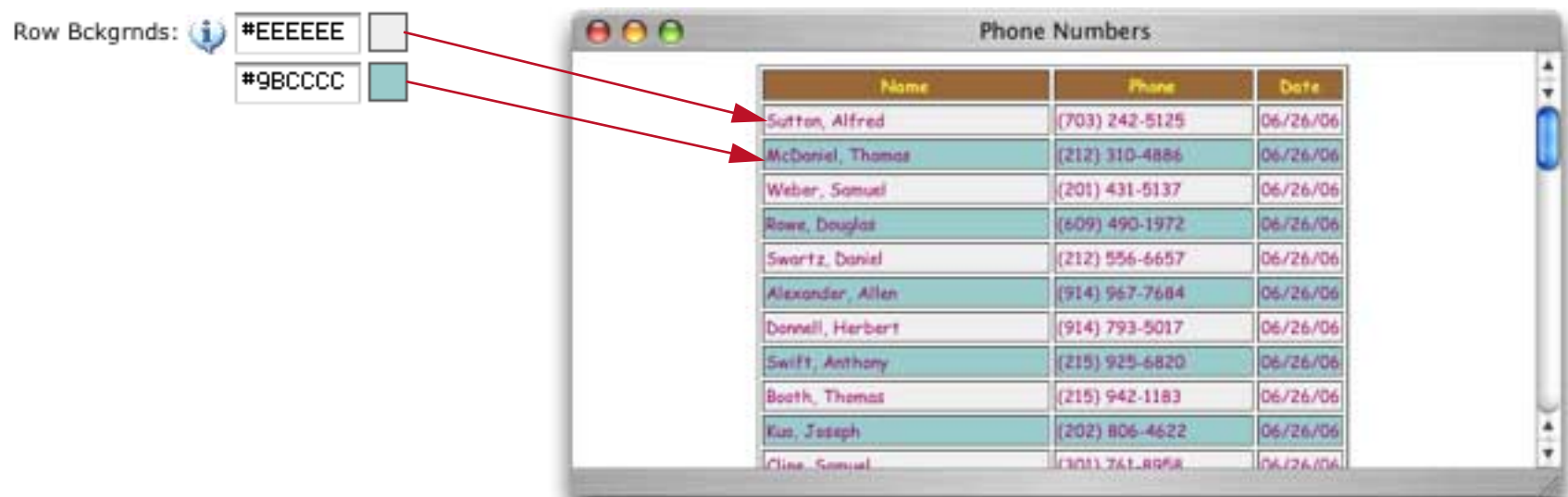
Table Data Color. This is the color for the text in the table.



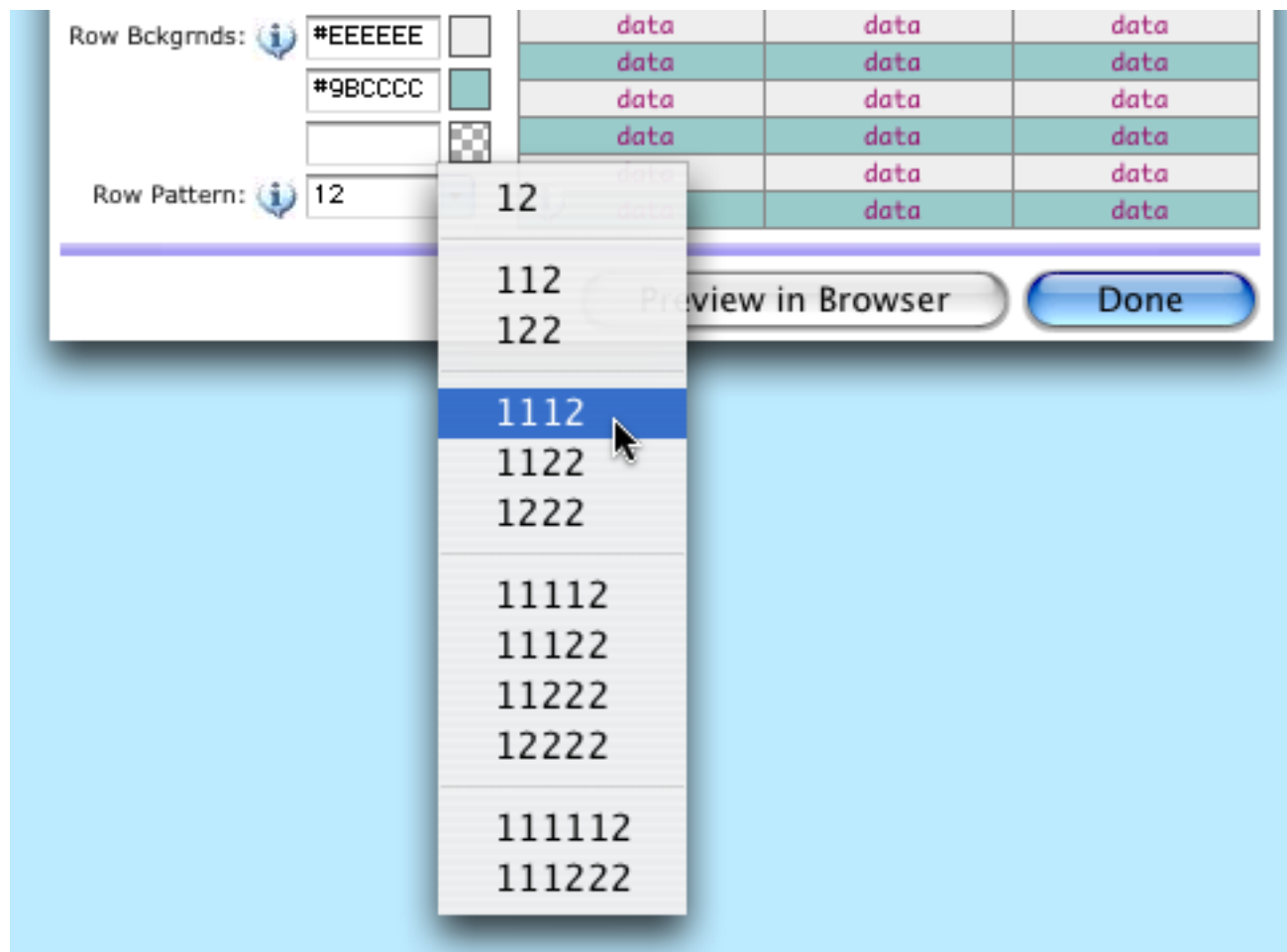
Row Background Color. This is the background color for the body of the table. If you pick a dark background color then it's best to pick a light title color, or vice versa.



Multiple Background Colors. You can actually specify up to three **row background colors**. If you specify more than one background color the server will automatically alternate them on successive rows.



The default pattern is for the colors to alternate every other row — 12121212. The row pattern allows you to change the way the colors alternate. You can either type in a pattern, for example 11221122, or you can select from common patterns from the pop-up menu.



With this pattern the table will have a grey background for three rows (color 1), then a blue background (color 2), then three grey rows, one blue, etc.

Name	Phone	Date
Sutton, Alfred	(703) 242-5125	06/26/06
McDaniel, Thomas	(212) 310-4886	06/26/06
Weber, Samuel	(201) 431-5137	06/26/06
Rowe, Douglas	(609) 490-1972	06/26/06
Swartz, Daniel	(212) 556-6657	06/26/06
Alexander, Allen	(914) 967-7684	06/26/06
Donnell, Herbert	(914) 793-5017	06/26/06
Swift, Anthony	(215) 925-6820	06/26/06
Booth, Thomas	(215) 942-1183	06/26/06
Kuo, Joseph	(202) 806-4622	06/26/06
Cline, Samuel	(301) 761-8858	06/26/06

Don't forget that you can adjust the font, borders and cell spacing with the other options described earlier in this section.

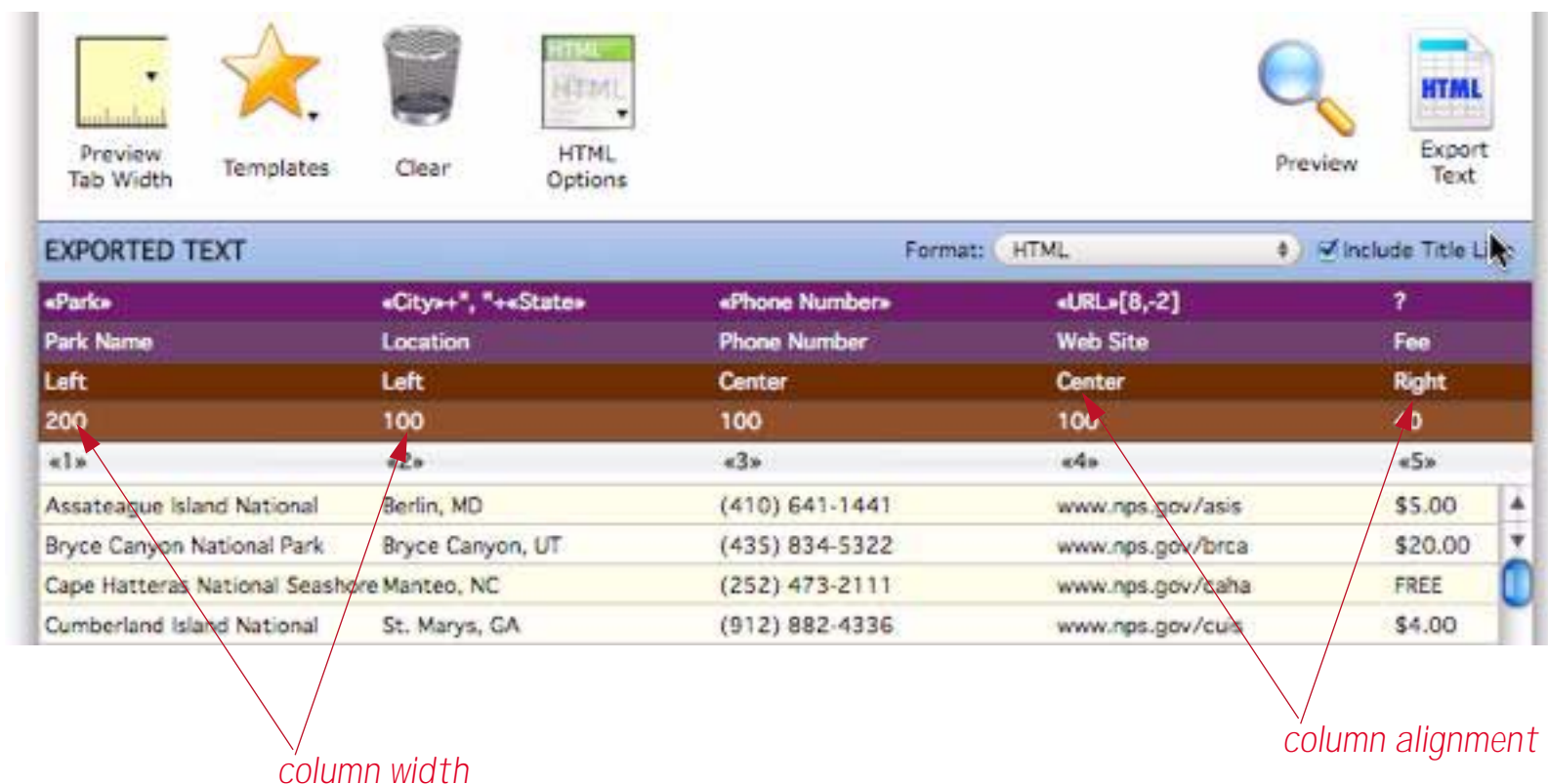


Name	Phone	Date
Sutton, Alfred	(703) 242-5125	06/26/06
McDaniel, Thomas	(212) 310-4886	06/26/06
Weber, Samuel	(201) 431-5137	06/26/06
Rowe, Douglas	(609) 490-1972	06/26/06
Swartz, Daniel	(212) 556-6657	06/26/06
Alexander, Allen	(914) 967-7684	06/26/06
Donnell, Herbert	(914) 793-5017	06/26/06
Swift, Anthony	(215) 925-6620	06/26/06
Booth, Thomas	(215) 942-1183	06/26/06
Kuo, Joseph	(202) 806-4622	06/26/06
Cline, Samuel	(301) 761-8958	06/26/06
Wylie, Phillip	(301) 831-1370	06/26/06
Rumsey, Aaron	(703) 671-5889	06/26/06

When you are finished customizing the appearance press the **Done** button to close the dialog. The changes are automatically saved to the template.

HTML Table Column Widths and Alignment

If you don't assign any column widths the browser will try to assign appropriate widths for you. If you don't like the widths the browser has picked you can specify the widths to be used. The widths are specified in pixels or as percentages. Be forewarned, however, that sometimes a browser may sometimes ignore the widths you specify and go ahead and use whatever widths it wants!



Preview Tab Width Templates Clear HTML Options Preview Export Text

Format: HTML Include Title Li

«Park»	«City»+, "«State»	«Phone Numbers»	«URL»[8,-2]	?
Park Name	Location	Phone Number	Web Site	Fee
Left	Left	Center	Center	Right
200	100	100	100	100
«1»	«2»	«3»	«4»	«5»
Assateague Island National	Berlin, MD	(410) 641-1441	www.nps.gov/asis	\$5.00
Bryce Canyon National Park	Bryce Canyon, UT	(435) 834-5322	www.nps.gov/brca	\$20.00
Cape Hatteras National Seashore	Manteo, NC	(252) 473-2111	www.nps.gov/caha	FREE
Cumberland Island National	St. Marys, GA	(912) 882-4336	www.nps.gov/cuis	\$4.00

column width *column alignment*

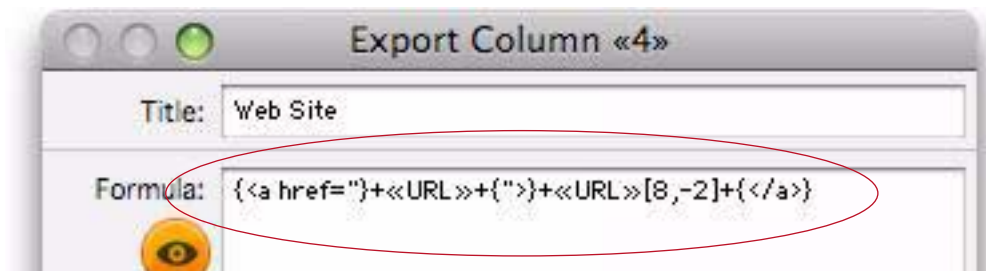
To change the width or alignment, double click anywhere in the column, which opens this dialog:



You can either type in a width, or choose a percentage from the pop-up menu. Click on whatever alignment you want to use.

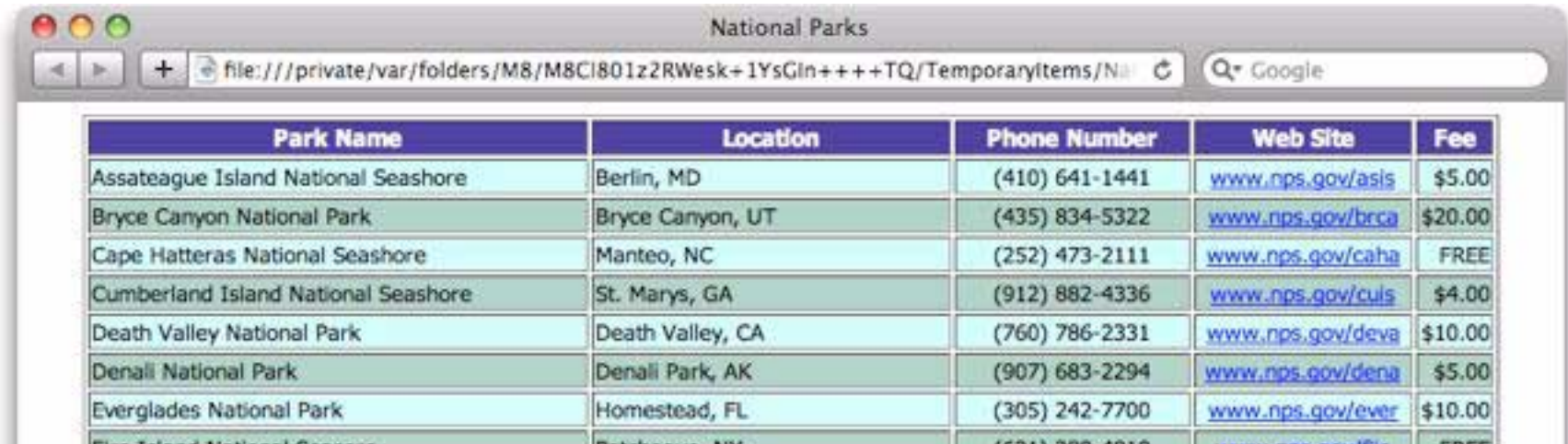
Inserting Links in an HTML Table

You can customize the formula for a column to generate HTML directly, for example to insert a link tag.



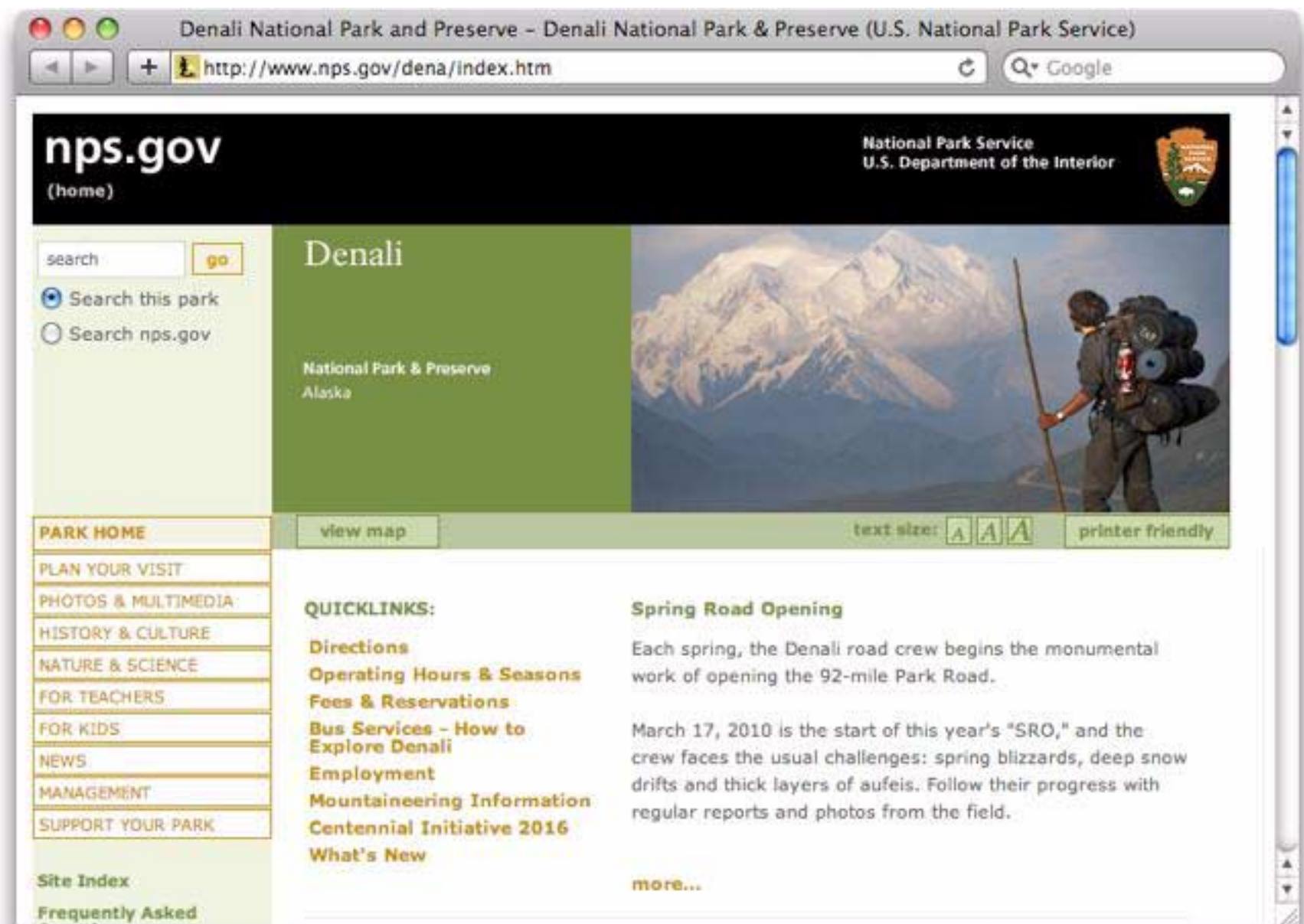
x

The wizard will use the formula to generate links automatically.



Park Name	Location	Phone Number	Web Site	Fee
Assateague Island National Seashore	Berlin, MD	(410) 641-1441	www.nps.gov/asls	\$5.00
Bryce Canyon National Park	Bryce Canyon, UT	(435) 834-5322	www.nps.gov/brca	\$20.00
Cape Hatteras National Seashore	Manteo, NC	(252) 473-2111	www.nps.gov/caha	FREE
Cumberland Island National Seashore	St. Marys, GA	(912) 882-4336	www.nps.gov/culs	\$4.00
Death Valley National Park	Death Valley, CA	(760) 786-2331	www.nps.gov/deva	\$10.00
Denali National Park	Denali Park, AK	(907) 683-2294	www.nps.gov/dena	\$5.00
Everglades National Park	Homestead, FL	(305) 242-7700	www.nps.gov/ever	\$10.00

Just click on a link to jump to the corresponding web page!



Denali National Park and Preserve - Denali National Park & Preserve (U.S. National Park Service)

http://www.nps.gov/dena/index.htm

nps.gov (home)

National Park Service
U.S. Department of the Interior

search

Search this park
 Search nps.gov

Denali
National Park & Preserve
Alaska

[view map](#) text size: [printer friendly](#)

PARK HOME

- PLAN YOUR VISIT
- PHOTOS & MULTIMEDIA
- HISTORY & CULTURE
- NATURE & SCIENCE
- FOR TEACHERS
- FOR KIDS
- NEWS
- MANAGEMENT
- SUPPORT YOUR PARK

Site Index
Frequently Asked

QUICKLINKS:

- [Directions](#)
- [Operating Hours & Seasons](#)
- [Fees & Reservations](#)
- [Bus Services - How to Explore Denali](#)
- [Employment](#)
- [Mountaineering Information](#)
- [Centennial Initiative 2016](#)
- [What's New](#)

Spring Road Opening

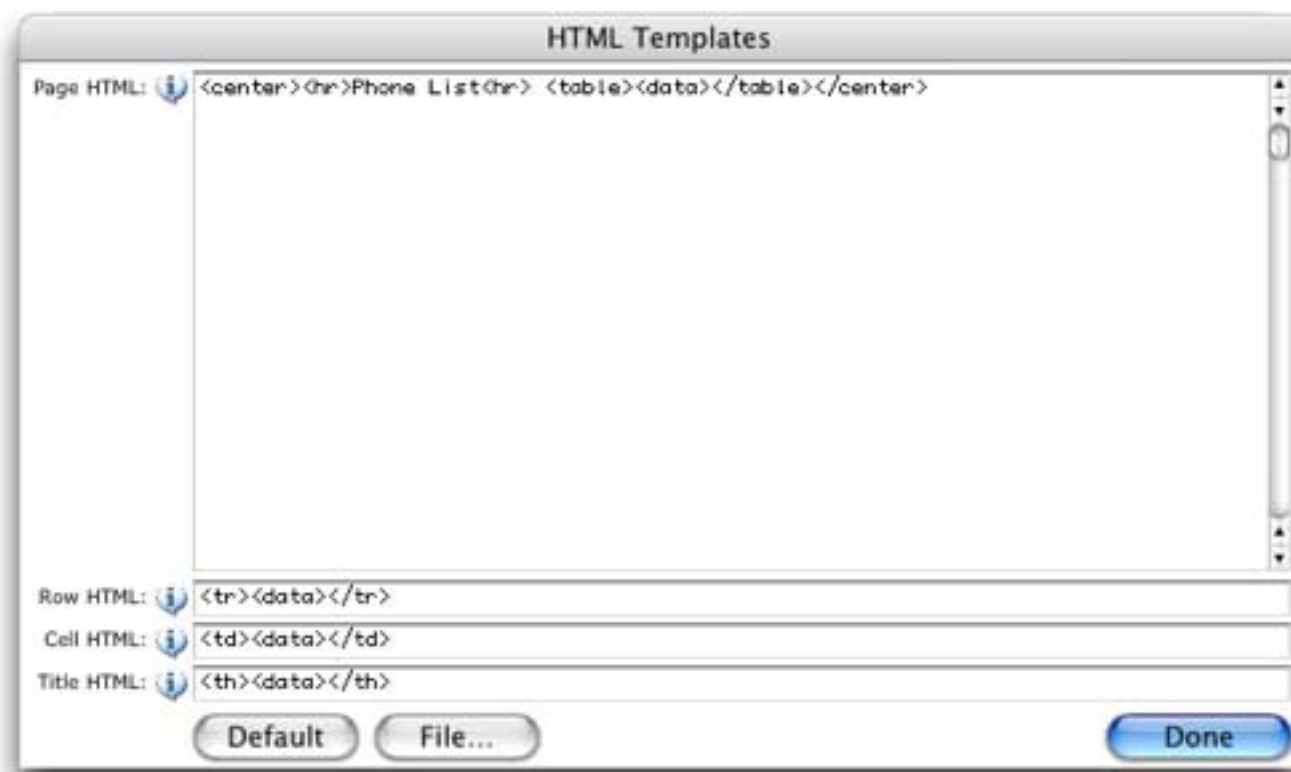
Each spring, the Denali road crew begins the monumental work of opening the 92-mile Park Road.

March 17, 2010 is the start of this year's "SRO," and the crew faces the usual challenges: spring blizzards, deep snow drifts and thick layers of aufeis. Follow their progress with regular reports and photos from the field.


[more...](#)

Customizing the table HTML (advanced)

The Text Export wizard normally generates the HTML for a web table page automatically. You can, however, use the HTML Templates dialog (in the Text Export Wizard's HTML menu) to customize the HTML Panorama generates.



The dialog controls how HTML is generated for each cell, row, and for the overall page.

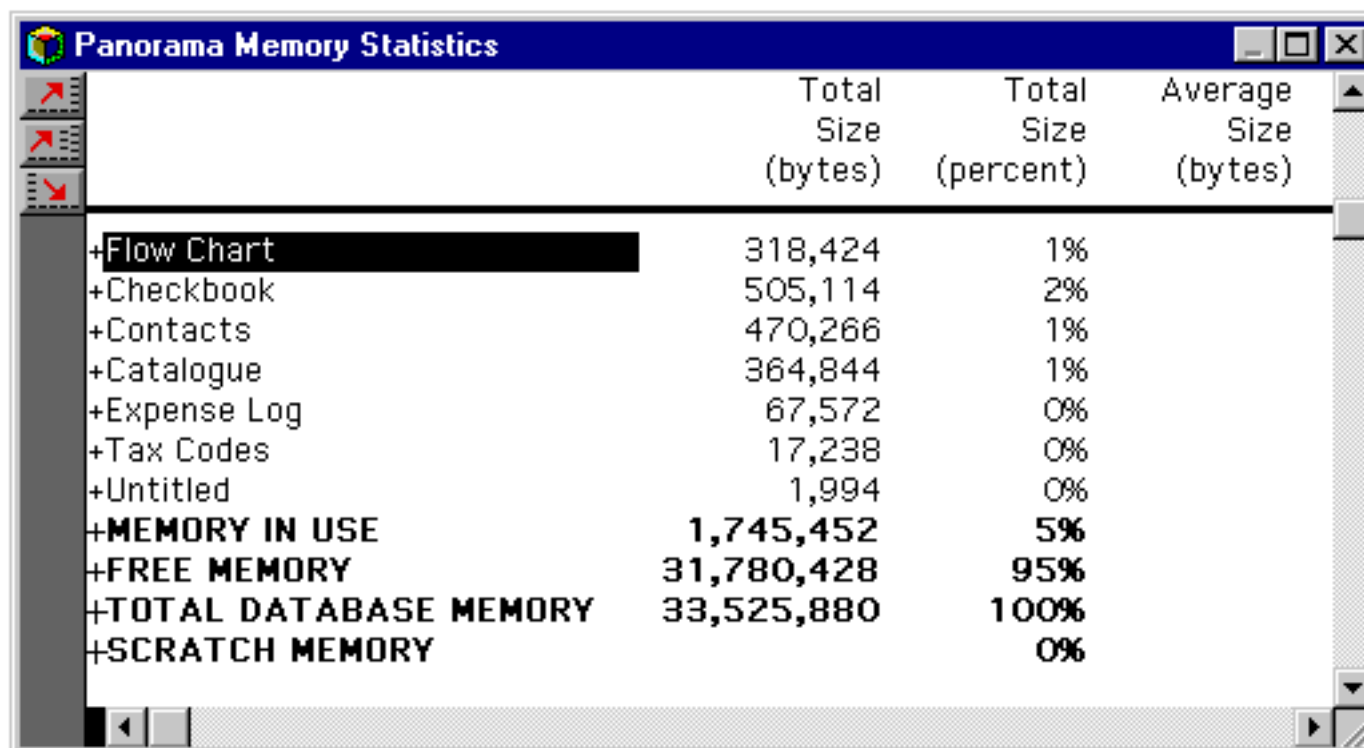
Option	Examples	Description
Page HTML	<pre><center><hr>Phone List<hr> <table><data></table></center></pre> 	<p>This is the template for the overall HTML of the body of the page (the wizard will create the header and footer automatically). At a minimum it should include the tags <code><table><data></table></code>. The wizard will automatically replace the <code><data></code> tag with the body of table generated from the database.</p>
Row HTML	<pre><tr valign=center><data></tr></pre>	<p>This is the template for each line in the table. At a minimum it should include the tags <code><tr><data></tr></code>. The wizard will automatically replace the <code><data></code> tag with the body of the line (which has been built up from individual cells, see the next entry).</p>
Cell HTML	<pre><td><i><data></i></td></pre>	<p>This is the template for each cell in the table. At a minimum it should include the tags <code><td><data></td></code>. The wizard will automatically replace the <code><data></code> tag with the data (an individual cell) from the database. As it does so the wizard will automatically prepare the data for HTML display, for example, converting non 7-bit characters to the appropriate HTML entity wherever possible.</p>
Title HTML	<pre><td><data></td></pre>	<p>This is the template for each title in the table. At a minimum it should include the tags <code><th><data></th></code> or <code><td><data></td></code>. The wizard will automatically replace the <code><data></code> tag with the column title as specified in the wizard.</p>

Exporting VCard Data

Panorama can export VCard data files to applications that support VCards. To learn more about this feature see “[Using Generic Fields with the VCard Wizard](#)” on page 237.

Monitoring Memory Usage

Each database you open with Panorama is copied into the RAM memory of your computer. For most typical databases you’ll have plenty of RAM available. You can use the **Memory Usage** command in the File Menu to see how much memory is in use and how much is available for expansion or for opening additional databases. This command opens a statistics window that displays the current memory usage of every open database, along with overall memory usage statistics.



	Total Size (bytes)	Total Size (percent)	Average Size (bytes)
+Flow Chart	318,424	1%	
+Checkbook	505,114	2%	
+Contacts	470,266	1%	
+Catalogue	364,844	1%	
+Expense Log	67,572	0%	
+Tax Codes	17,238	0%	
+Untitled	1,994	0%	
+MEMORY IN USE	1,745,452	5%	
+FREE MEMORY	31,780,428	95%	
+TOTAL DATABASE MEMORY	33,525,880	100%	
+SCRATCH MEMORY		0%	

At the top of the memory statistics data sheet, each open file is listed with the amount of memory used by that file (in bytes and as a percentage of the total memory). The **Memory In Use** line shows the total amount of memory used by all of the open databases (in this case just under 2 megabytes for 7 databases). The **Free Memory** line shows the amount of free memory available for database expansion or for loading more databases (in this case over 32 megabytes). The **Total Database Memory** line shows the total amount of memory available for Panorama databases, including the memory that is already in use.

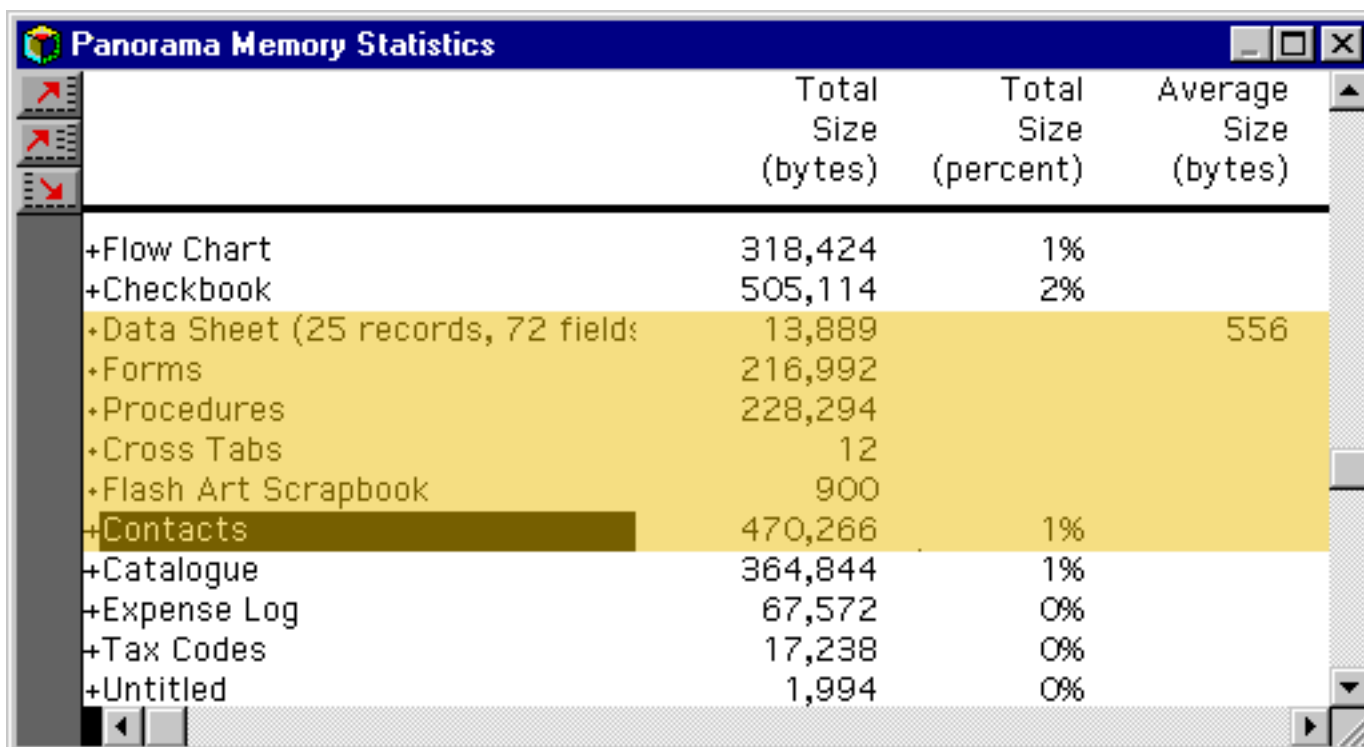
The memory statistics window has four columns. The first column shows the name of each memory area. The second column contains the actual number of bytes used by each area, while the third column displays each area’s memory size as a percentage of the total database memory. The fourth column, Average Size, will be explained later.

When you are done with the memory statistics window, you can put it away by pressing the close box.

Memory Usage Details

The memory statistics window shown above doesn't show much detail—only the overall memory usage for each file. You can use Panorama's outline tools (see "[Expanding and Collapsing the Summary Outline](#)" on page 376) to expand to greater levels of detail. To see more detail about a particular file, click on that file and choose the **Expand** tool.

Click on the database you want to examine and press the  **Expand tool**

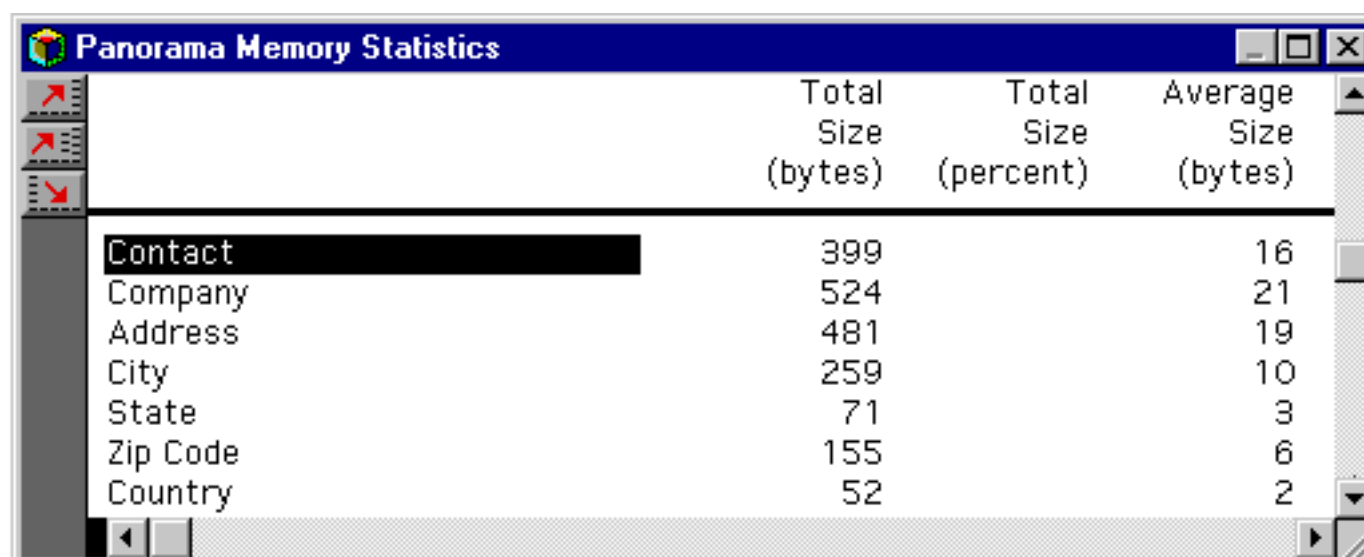


	Total Size (bytes)	Total Size (percent)	Average Size (bytes)
+Flow Chart	318,424	1%	
+Checkbook	505,114	2%	
+Data Sheet (25 records, 72 fields)	13,889		556
+Forms	216,992		
+Procedures	228,294		
+Cross Tabs	12		
+Flash Art Scrapbook	900		
+Contacts	470,266	1%	
+Catalogue	364,844	1%	
+Expense Log	67,572	0%	
+Tax Codes	17,238	0%	
+Untitled	1,994	0%	

The database statistics for this file are now divided into five subdivisions: **Data Sheet**, **Forms**, **Procedures**, **Cross Tabs**, and **Flash Art Scrapbook**. (Note: The yellow highlight in the window above is for illustration purposes only, it does not appear in the real window.)

The **Data Sheet** portion of the file contains the actual data itself. This line shows the number of records in the database, the total amount of data occupied by the data itself, and the average character length of each record in the database. In this case the database contains 25 records that are an average of 556 bytes long.

The **Data Sheet** line can be expanded further to show the amount of memory used by each field in the database, as shown below.



	Total Size (bytes)	Total Size (percent)	Average Size (bytes)
Contact	399		16
Company	524		21
Address	481		19
City	259		10
State	71		3
Zip Code	155		6
Country	52		2

Each line shows the total amount of memory used by one field of the database, and the average size of one cell. For example, the **Contact** field (Name) is an average of 16 characters long, while the **Company** field is an average of 21 characters long.

The **Forms**, **Procedures**, and **Cross Tabs** lines can be expanded to show the actual amount of memory used by each individual form, procedure, and crosstab within the database. The **Flash Art Scrapbook** line can be expanded to show the size of each picture in the **Flash Art Scrapbook**. You usually won't need this kind of detail, but it can be useful if a file seems unusually large and you need to find out why.

Multiple Memory Statistic Windows

The memory statistics window displays a snapshot of Panorama's memory usage at a single point in time. The window will not be updated as memory usage changes. However, it is possible to take another snapshot to see how usage has changed. In fact, you can open over a dozen memory usage snapshot windows on the screen at one time, so that they can easily be compared with each other.

As an example, suppose you wanted to see how much memory is saved by converting the City field in a mailing list database from text to choice data type. (Using the choice type will save memory by storing the actual name only once, no matter how many times it is used in the database.) Start by taking a **Memory Usage** snapshot to see the original size of the City field. Then use the design sheet to convert the field from text to choice. Use the **Automatic Choices** command to create the list of cities (See "[Generating a List of Choices Automatically](#)" on page 262). Finally, choose **Memory Usage** from the File Menu again to take another memory snapshot. You can compare the two memory snapshots to see the actual effect of the change (in this example, 3,474 bytes saved).

	Total Size (bytes)	Total Size (percent)	Average Size (bytes)
Hotel	8,220		19
City	4,559		10
Rate	1,318		3
Units			
Phone			
Stars			
+Data Sheet (439 records)			
+Forms			
+Procedures			
+Cross Tabs			
+Flash Art Scrapbook			
+Colorado Hotels			
+MEMORY IN USE			
+FREE MEMORY			
+TOTAL DATABASE MEMORY			
+SCRATCH MEMORY			

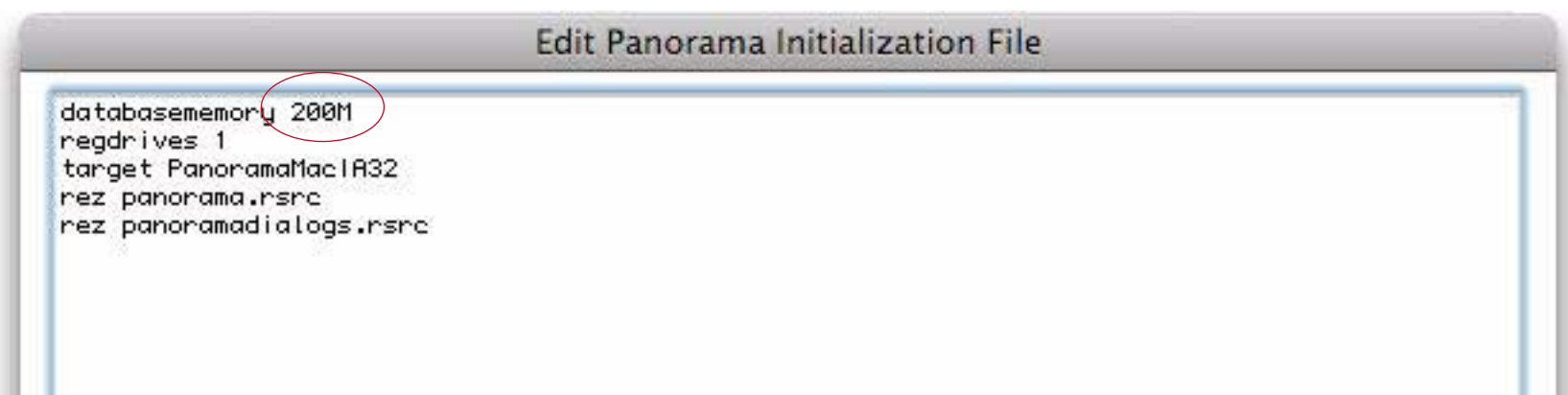
	Total Size (bytes)	Total Size (percent)	Average Size (bytes)
Hotel	8,220		19
City	1,085		2
Rate	1,318		3
Units	940		2
Phone	3,951		9
Stars	878		2
+Data Sheet (439 records, 6 fields)	18,587		42
+Forms	38,810		
+Procedures	12		
+Cross Tabs	12		
+Flash Art Scrapbook	10,910		
+Colorado Hotels	70,698	1%	
+Panorama Memory Statistics	2,970	0%	
+MEMORY IN USE	73,668	1%	
+FREE MEMORY	12,107,292	99%	
+TOTAL DATABASE MEMORY	12,180,960	100%	
+SCRATCH MEMORY	655,000	7%	

Adjusting Panorama's Memory Allocation

As shipped from the factory, Panorama normally allocates 200 megabytes of memory for databases. For most applications this is more than enough. However, if you wish to use extremely large databases you may need to increase this allocation. To do this, start by opening the Preferences dialog (from the Panorama menu) and then choose **Edit Panorama Initialization File** from the Special menu.



This opens Panorama's initialization file.



The **databasememory** line controls the amount of memory allocated by Panorama for databases. You may set this to any value from 3M to 4000M. (Don't forget the M!). Once you have set the new value press the **OK** button, then relaunch Panorama. When launching, Panorama will attempt to allocate the amount of memory you have requested. However, if the amount requested is not available, it will allocate the largest amount possible on your system.

Note: If you set this value to larger than the physical amount of memory available on your computer, you may reduce the amount of virtual memory available for other applications. We do not recommend opening databases that are larger than the physical memory size of your computer. Panorama will open the file and operate correctly, but its performance may be severely degraded.

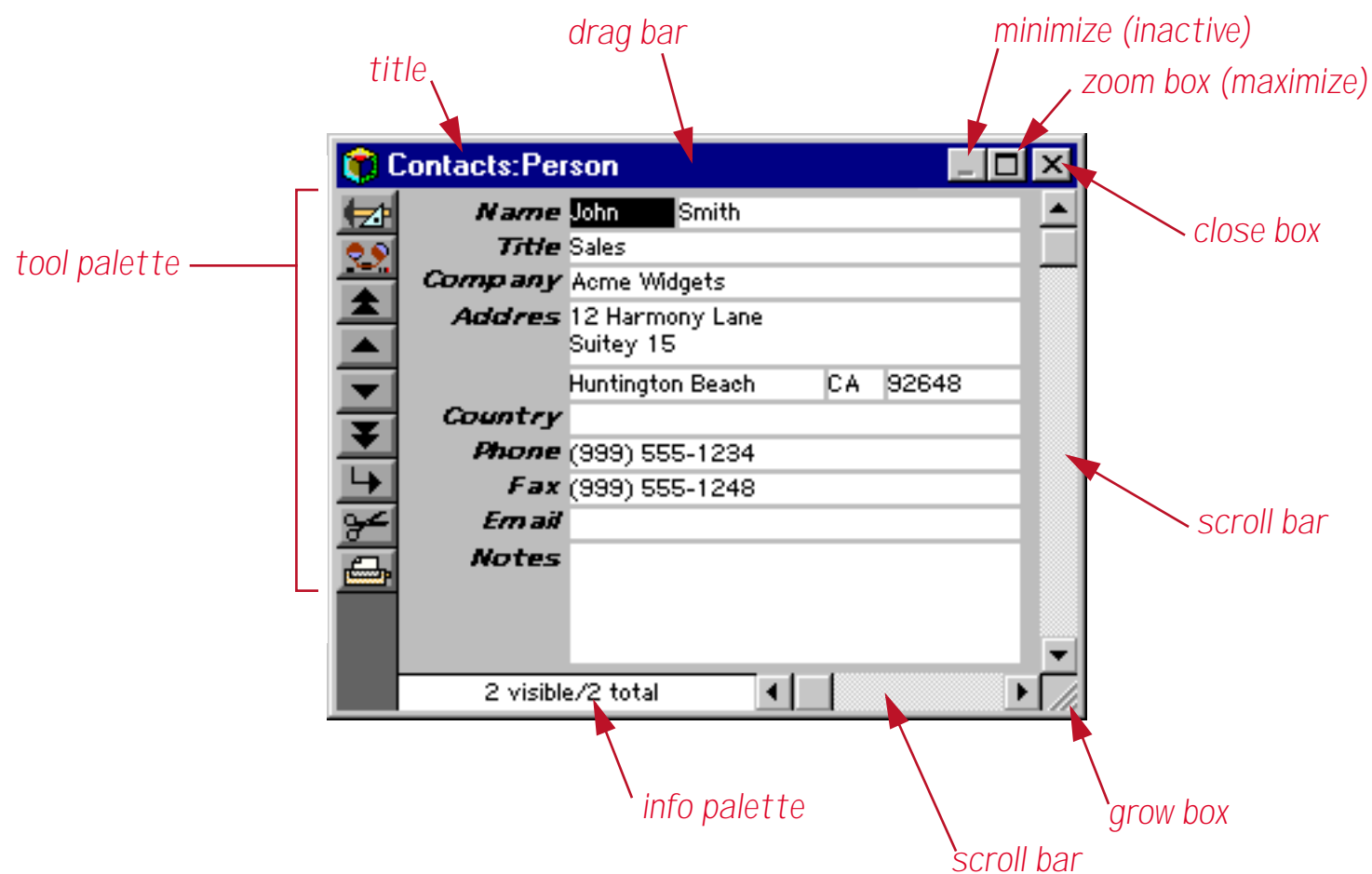
Chapter 2: Windows



As you use Panorama most of the action takes place inside windows. Panorama uses standard windows with a few unique touches, including a tool palette with pop-up help on the left side of each window. Panorama also has an enhanced zoom box that lets you zoom a window to a specific position. This chapter covers both the standard and enhanced window features.

Window Components

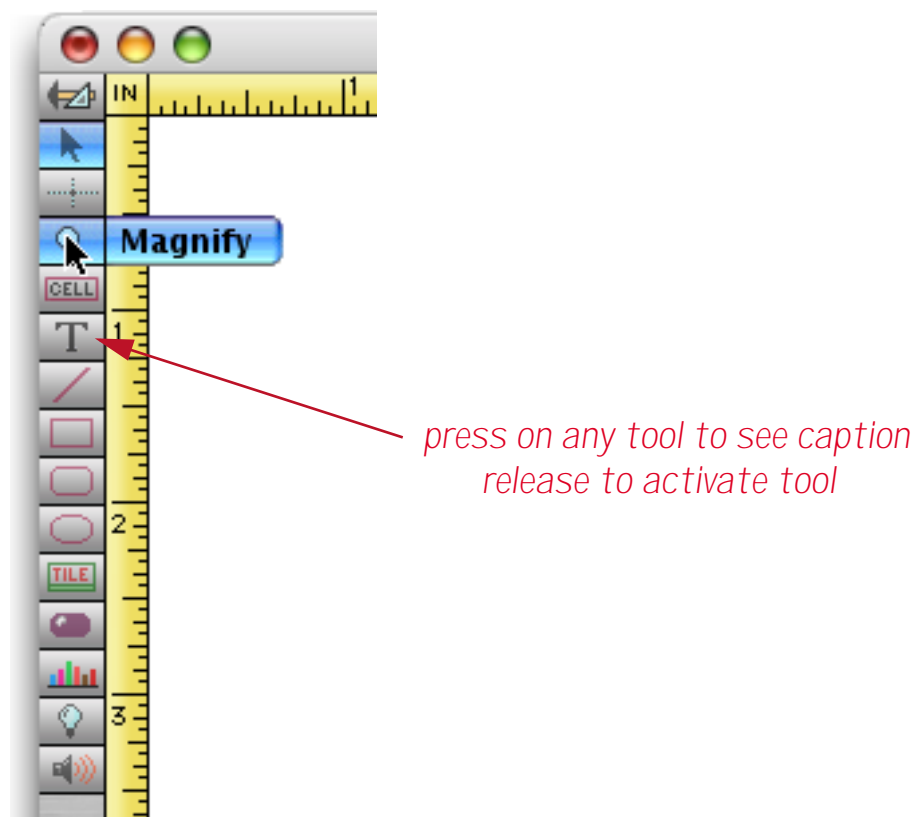
Each Panorama window has about a dozen components for configuring and controlling the window. Each of these components is activated by clicking or dragging with the mouse. Here's what a typical Panorama window looks like on a PC system.



On the Macintosh windows look very similar, except that the close box is on the left and the title is centered.

Tool Palette

The left side of each window contains a tool palette. To help you learn and remember the function of each tool, the tool palette displays a pop-up caption whenever you click on a tool. The caption will remain visible as long as you hold the mouse down over the tool.



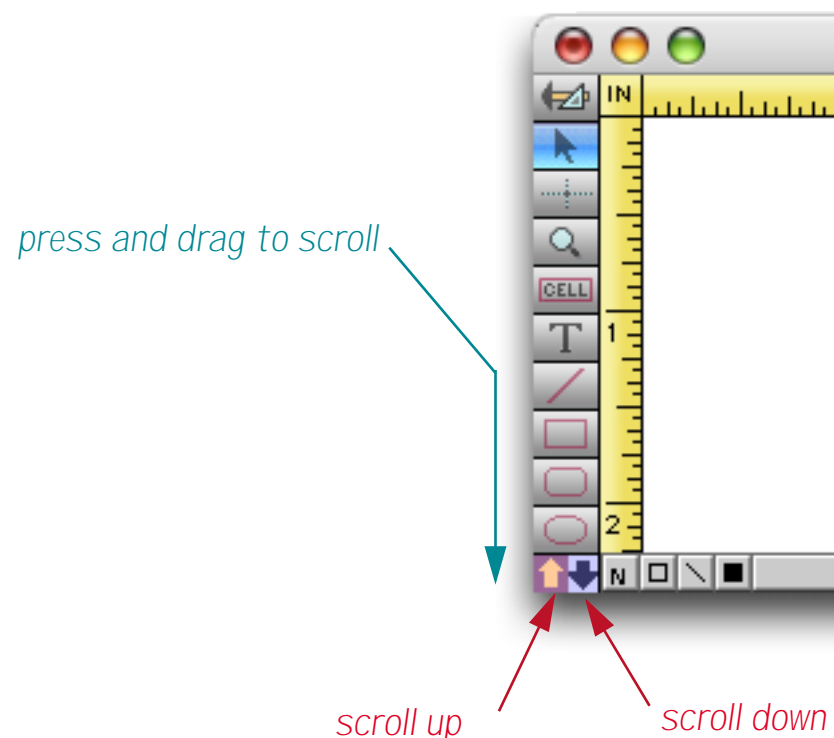
Unlike most tool palettes that perform a function when you click on a tool, Panorama's tool palette doesn't perform the function until you release the mouse. This allows you to look at the caption before you activate the tool. (Of course, you don't have to hold down the mouse and look at the caption. Once you have memorized the tool icons you can simply click on the tool you want—just like your favorite graphics or page layout program.)

You can scan through the tool captions by dragging the mouse up or down the palette (just as you would scan across the menu bar). The caption for each tool pops up as the mouse is dragged across it. You can stop at any time and release the mouse to activate a tool.

Remember, to activate a tool you must release the mouse over the tool itself—not over the pop-up caption. The pop-up caption is not a menu.

Scrolling the Tool Palette

What if all the tools don't fit in the window? You can scroll the tools by pressing on any tool and then dragging to the top or bottom of the palette. When you reach the edge of the palette the tools will scroll. You can also scroll the tools by clicking on one of the small arrows at the bottom of the palette. Each click scrolls by one tool.



If you have a scroll wheel mouse you can also scroll the tool palette by moving the mouse over the palette and turning the scroll wheel (OS X only).

Close Box

Clicking on the close box makes the window go away. If you hold down the **option** key (Mac) or **alt** key (PC) while you click the close box, Panorama will close the current file along with all of its windows.

Drag Bar

The drag bar allows you to move the window to a new position. When you press the drag bar a dotted outline of the window appears. Drag the outline to the new position, then release the mouse. Moving the window does not change the contents of the window. (You can also move the window by zooming into a spot—see below.)

Title

The window title displays the name of the database and information about the view being displayed in the window (form name, magnification, etc.).

Zoom Box (Maximize)

Clicking on the zoom (maximize) box allows you to quickly zoom the window to cover the entire screen. Clicking the zoom box again pops the window back into its original position. The zoom box is very handy when you want to temporarily concentrate on a specific window.

The zoom box can also be used to move a window to a specific spot on the screen. See [“Zooming Into a Box”](#) on page 148.

Grow Box

The grow box adjusts the size of the window. When you press on the grow box a dotted outline of the window appears. Drag the bottom right hand corner of this outline and then release to set the new window size. (You can also set the size of a window by zooming into a spot—see above.) On PC systems you can also adjust the size of a window by dragging any side of the window.

Scroll Bars

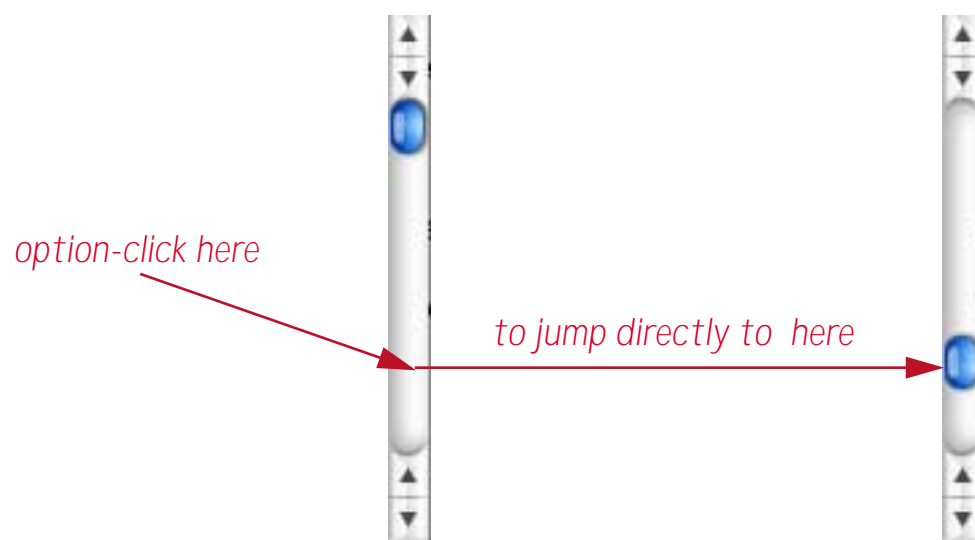
The scroll bars are used to shift the information or graphics displayed in the window. The vertical scroll bar (on the right edge of the window) shifts the display up and down, while the horizontal scroll bar (on the bottom edge of the window) shifts the display left and right. The sliding box inside each scroll bar shows the current position of the display.

If you are using OS X and a mouse with a scroll wheel, Panorama supports the scroll wheel. This wheel normally causes the window to scroll vertically when turned. If the **Shift** key is held down, the wheel will scroll the window horizontally.

When using OS X or OS 9, the **Option** key changes the way the scroll bars work. If you hold down the **Option** key and click on the up or down arrows, the window will scroll up or down an entire page. If you hold down the **Option** key and click in the main body of the scroll bar, the window will scroll directly to that spot.

Instant Jump to any Scroll Bar Position

To jump instantly to any position within a scroll bar hold down the **Option** key and click on the location you want to jump to.



Note: Most Mac OS X applications support this behaviour, including Safari, Preview, GarageBand, etc.

Horizontal Scrollwheel Scrolling with Shift Key

When using any scroll wheel holding down the **Shift** key while turning the wheel will cause the window to scroll horizontally. Note: Most Mac OS X applications support this behaviour, including Safari, Preview, GarageBand, etc.

Mighty Mouse and Trackpad Scrolling Support

Panorama supports vertical scrolling with the ball on Apple's Mighty Mouse, as well as two finger scrolling on laptop trackpads. Please note, however, that horizontal and diagonal scrolling are not supported (though you can scroll diagonally using the **Shift** key as noted above).

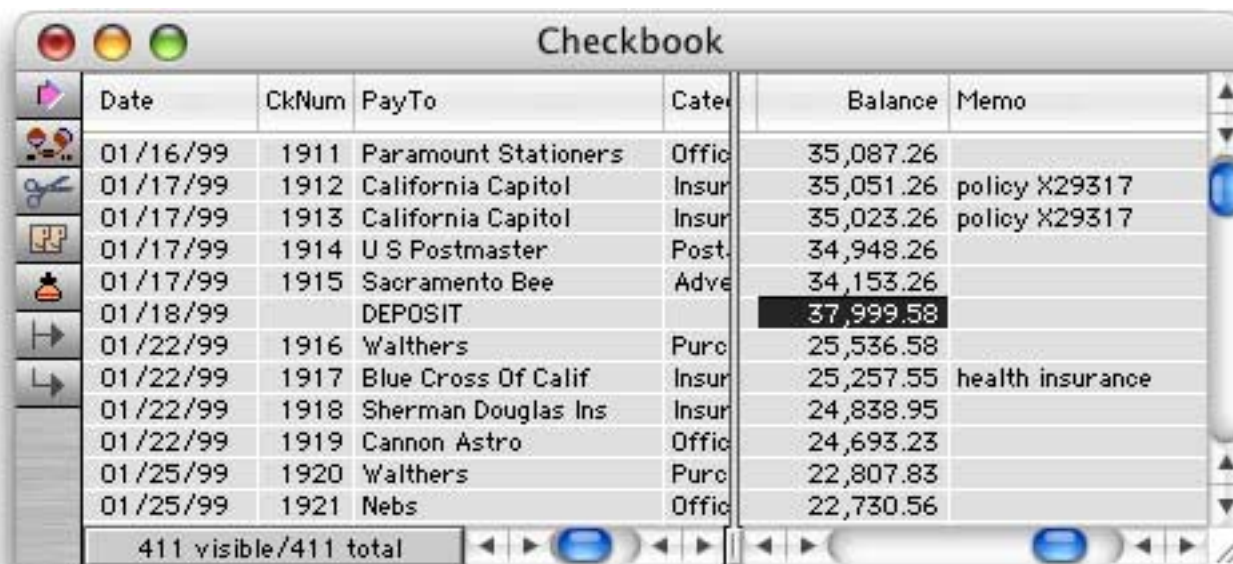
Splitting a Window

Some Panorama windows can be split into two side by side panes. Each pane displays a different area of the database. The two panes are locked together vertically, but each pane has its own horizontal scroll bar.



press and drag to split window

To split a window, drag the **splitter** to the right. (The **splitter** is the small black rectangle to the left of the horizontal scroll bar.)



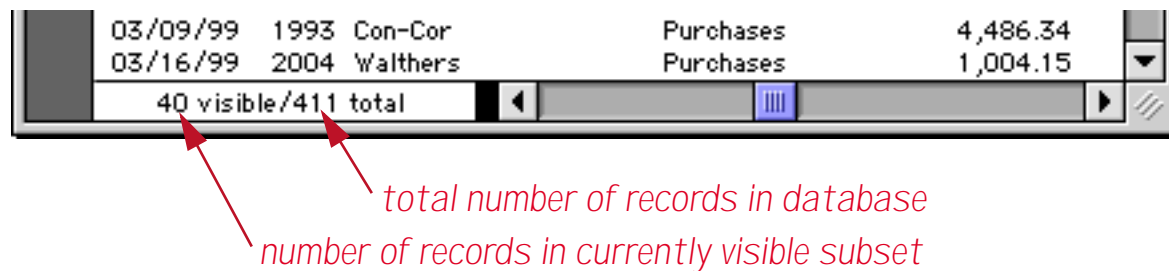
each pane may be scrolled separately

drag to adjust split

To remove the split, drag the splitter back to the left edge. To adjust the split location, drag the splitter into position.

Info Palette

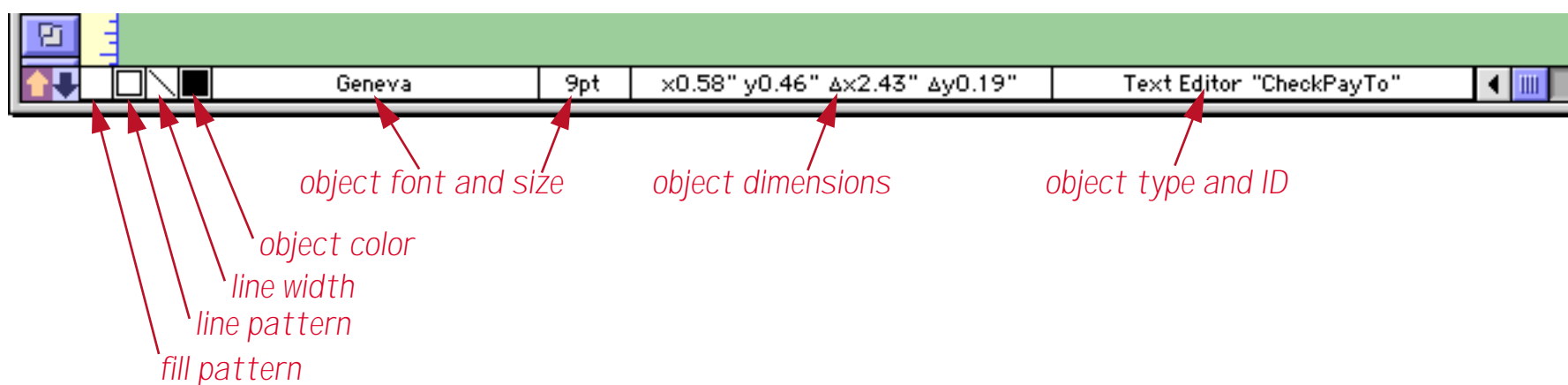
Many Panorama windows display an **Info Palette** along the bottom left corner of the window. In windows that are used for displaying and editing data (data sheet, forms, crosstabs), the info palette displays the current number of database records in the bottom left corner of each window. Panorama displays both the total number of records and the number of visible (selected) records.



If the window is less than 3 inches wide, the record count will not appear. You can also turn the record count on or off with the **Show Record Count** command in the Setup menu.

Clicking anywhere in the record count opens the **Find/Select** dialog. This dialog allows you to locate information within the database. See "[The Find/Select Dialog](#)" on page 336 for details on this dialog.

When a form window is switched into **Graphic Display Mode** the Info Palette displays a graphic control strip. This strip displays the graphic attributes of the currently selected object (or objects), and allows you to change the attributes with pop-up menus.

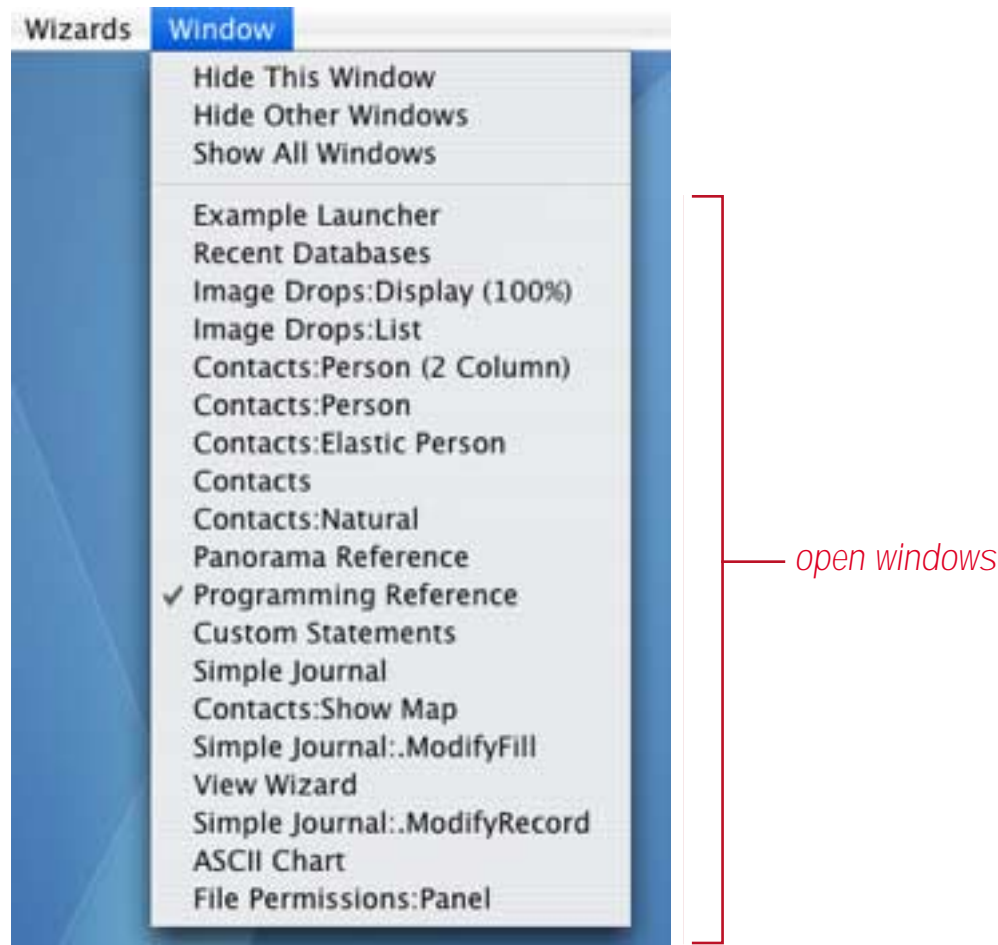


See "[The Graphic Control Strip](#)" on page 505, for more information on the graphic control strip.

Procedure windows also display status information along the bottom of the window. When writing a procedure Panorama displays error messages here. When single stepping through a procedure Panorama displays the results of any assignments into fields or variables in this area (see "[The Panorama Interactive Debugger](#)" on page 315 of *Formulas & Programming*).

Bringing a Window to the Front

Each new window you open appears on top of the other windows. To bring another window to the front, simply click anywhere on the window. If the window is hidden you can bring it to the front with the **Window** menu.



Another way to bring a window to the front is to use the **Arrange Windows** wizard (see “[Bringing Windows to the Front](#)” on page 162).

Hiding Windows

The **Hide This Window** command (in the **Windows** menu) temporarily hides the current window. The window becomes invisible, but can be made to re-appear by selecting it from the **Arrange Windows** submenu.

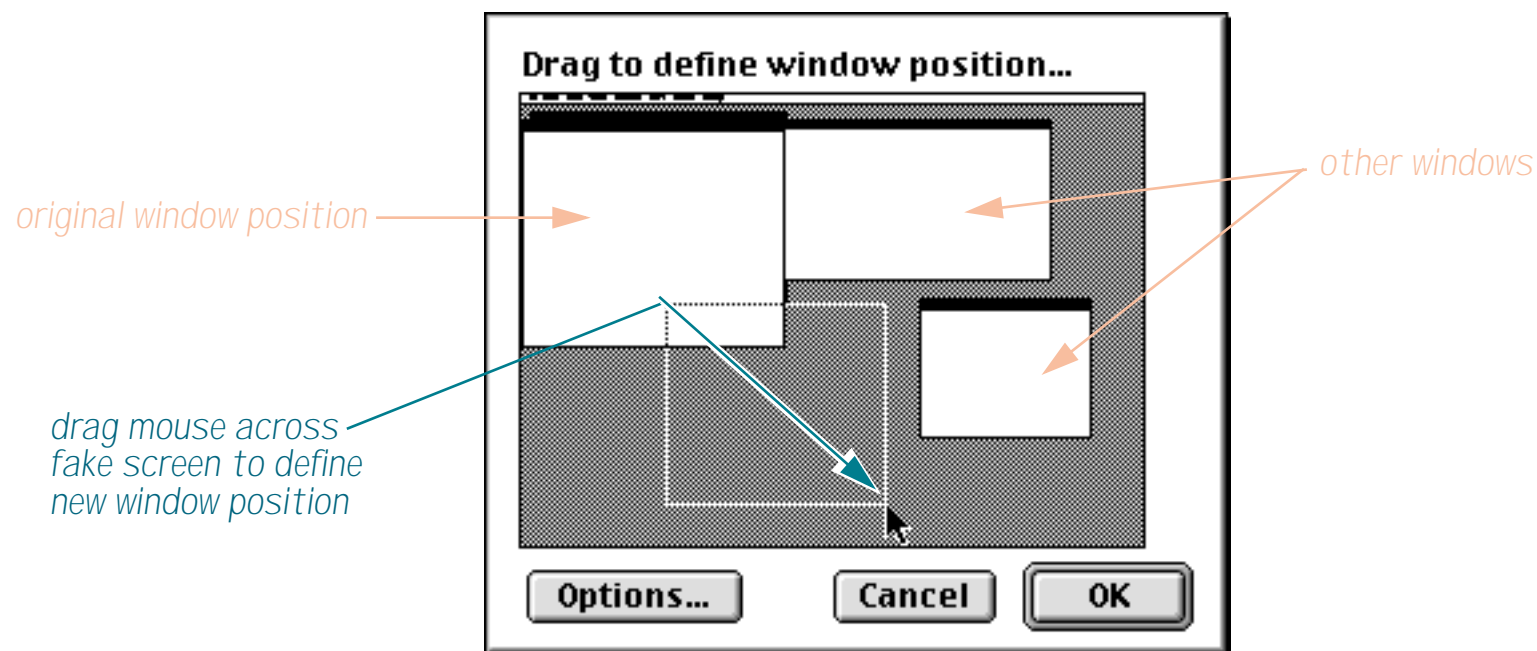
The **Hide Other Windows** command (in the **Windows** menu) temporarily hides all **Panorama** windows except for the current window.

The **Show All Windows** command (in the **Windows** menu) makes all invisible windows visible again.

Zooming Into a Box

The zoom box can also be used to zoom the window into a pre-defined box on the screen. This allows you to move and resize the window in one step.

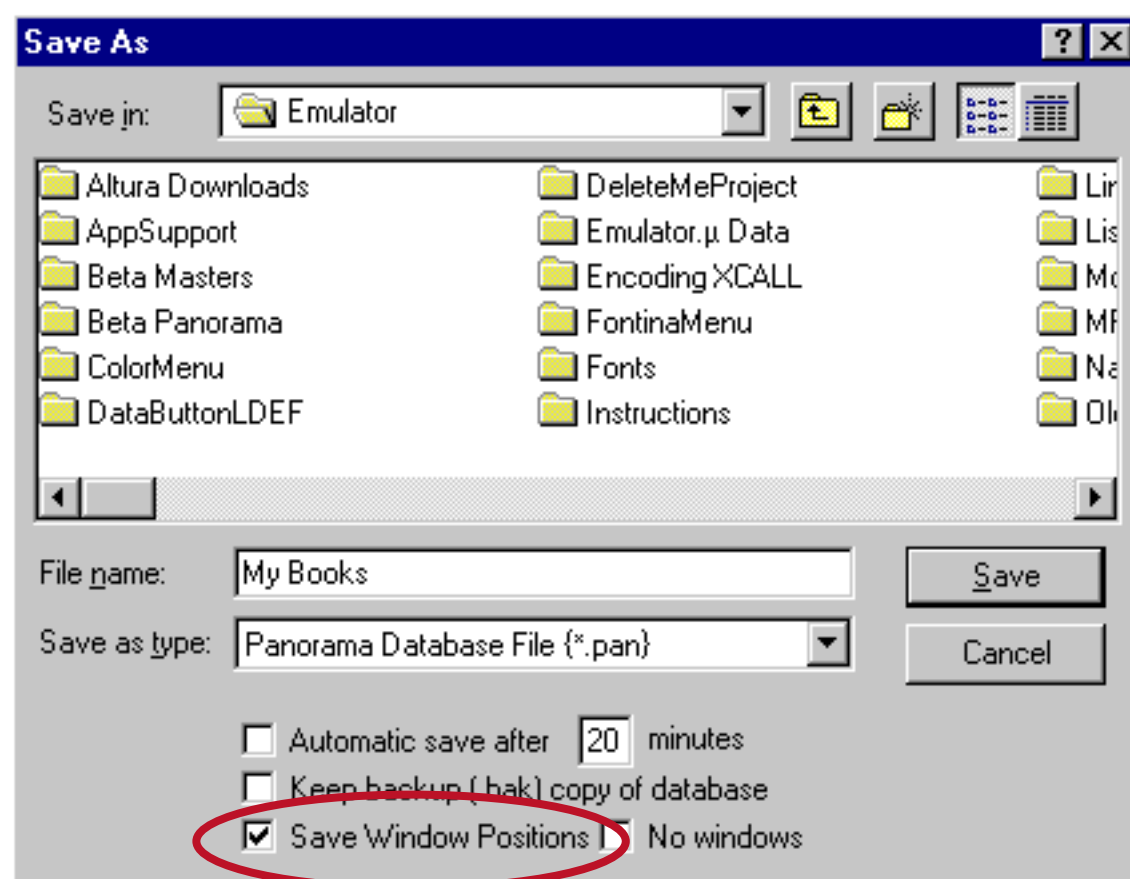
To zoom a window to a specific spot you must hold down a special key while you click on the zoom box. On Windows (PC) systems this is the **Control** key, on Macintosh systems this is the **Command** key. When you click on the zoom box while holding down this key the window options dialog will appear.



Drag the mouse across this dialog to define the new location for the window. When you press **Ok**, the window will “hop” into the new location.

Saving Window Positions

If you check the **Save Window Positions** option in the **Save As** dialog, Panorama will remember the position of each open window in the file being saved. The next time the file is opened, Panorama will open the same windows in the same positions.



Note: The **Save Window Positions** option is only available when you save an individual file. You cannot save window positions as part of a file set. If you want the files in a file set to open with predetermined window positions, you must save each individual file with the **Save Window Positions** option enabled.

Saving with No Windows

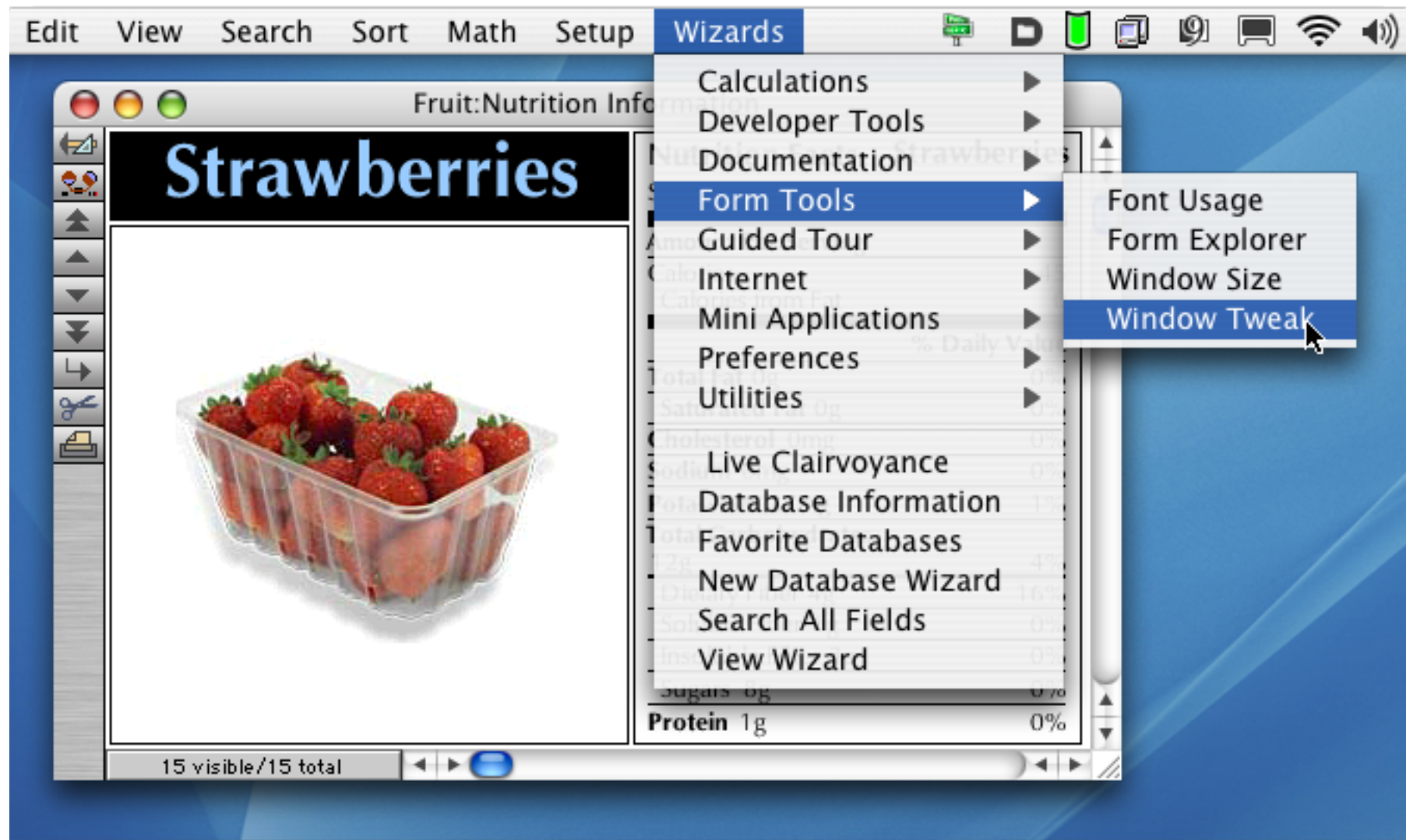
If you check the **No Windows** option the database will open without any open windows at all. Why would you want a database without any windows? It could be used as an invisible reference to store information that is needed by other databases but never (or rarely) changes, for example a tax or shipping rate table (see [“Linking With Another Database”](#) on page 131 of *Formulas & Programming*). A database with no windows can also be referenced by a procedure using “secret windows” (see [“Temporary “Invisible” Windows”](#) on page 454 of *Formulas & Programming*).

If you want to open a window in a database that has been saved with the **No Windows** option you can use the **View Wizard**. See [“The View Wizard”](#) on page 173 to learn how to open windows in any database. You can also open a window in an invisible database with a procedure. See [“Databases Without Windows”](#) on page 455 of *Formulas & Programming* to learn how to bring back windows using this technique.

As an alternative to saving a database with the **No Windows** option you can instead open the database with a procedure using the `opensecret` statement. This statement opens the database without any windows.

Turning Window Components On and Off (Window Tweak Wizard)

Using the **Window Tweak** command in the Wizard menu you can enable and disable the tool palette and scroll bars in a form. Start with a normal form window.



When you choose **Window Tweak** the wizard will remove the tool palette and scroll bars from the window.

The screenshot shows the 'Fruit:Nutrition Information' window after applying 'Window Tweak'. The tool palette and scroll bars have been removed. The form content includes a title 'Strawberries', an image of strawberries, and a table with 'Protein 1g' and '0%'.

Nutrition Facts		Strawberries
Serving Size	8 medium berries	
Amount Per Serving		
Calories	45	
Calories from Fat	0	
% Daily Value		
Total Fat 0g	0%	
Saturated Fat 0g	0%	
Cholesterol 0mg	0%	
Sodium 0mg	0%	
Potassium 27mg	1%	
Total Carbohydrates		
12g	4%	
Dietary Fiber 4g	16%	
Soluble Fiber 1g	0%	
Insoluble Fiber 3g	0%	
Sugars 8g	0%	
Protein 1g	0%	

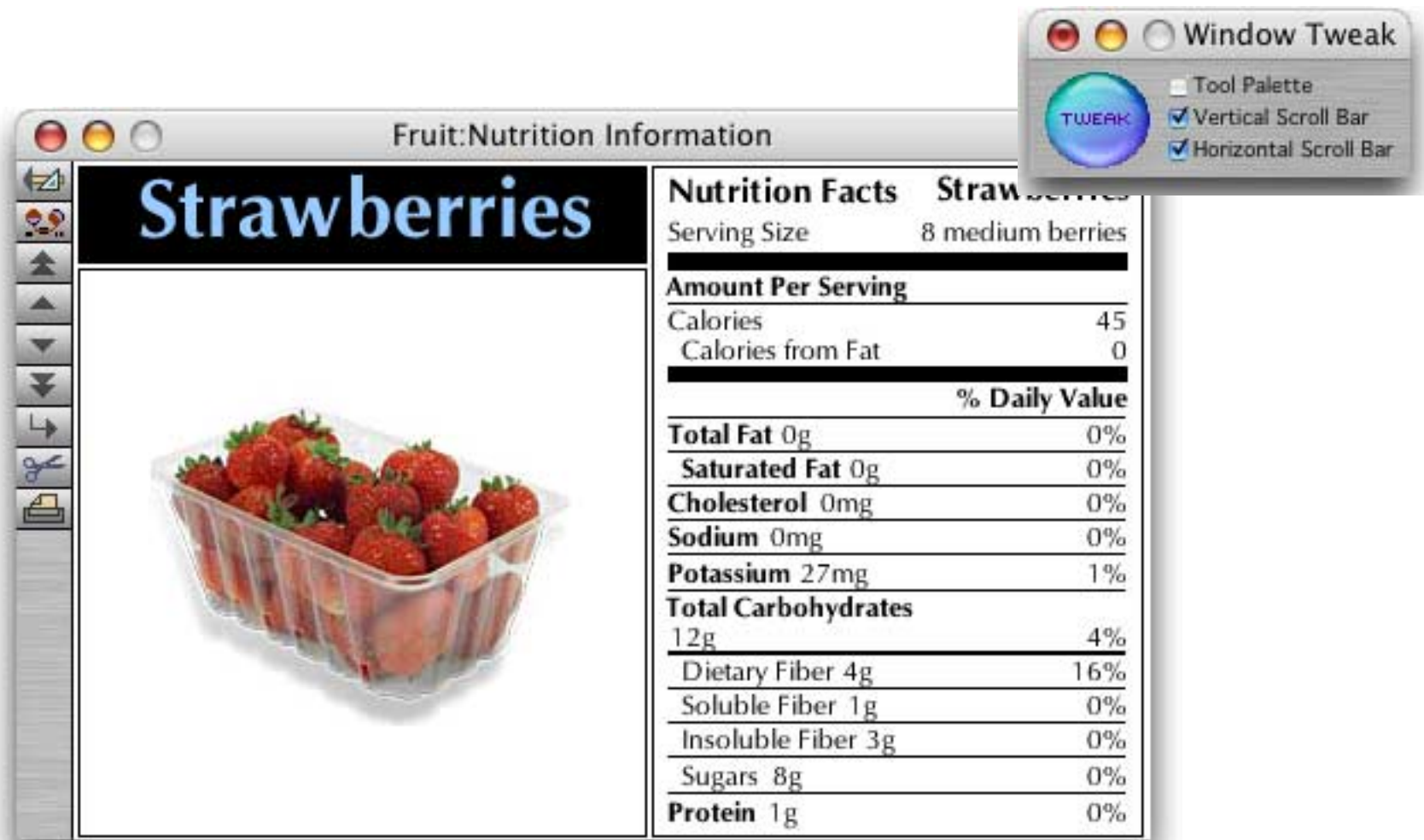
Choose **Window Tweak** again to bring the tool palette and scroll bars back again.

In addition to “tweaking” the current window the **Window Tweak** wizard also opens a small window.



When this window is open you can quickly tweak any form window. Simply bring the form window to the front, then click on the big round **Tweak** button.

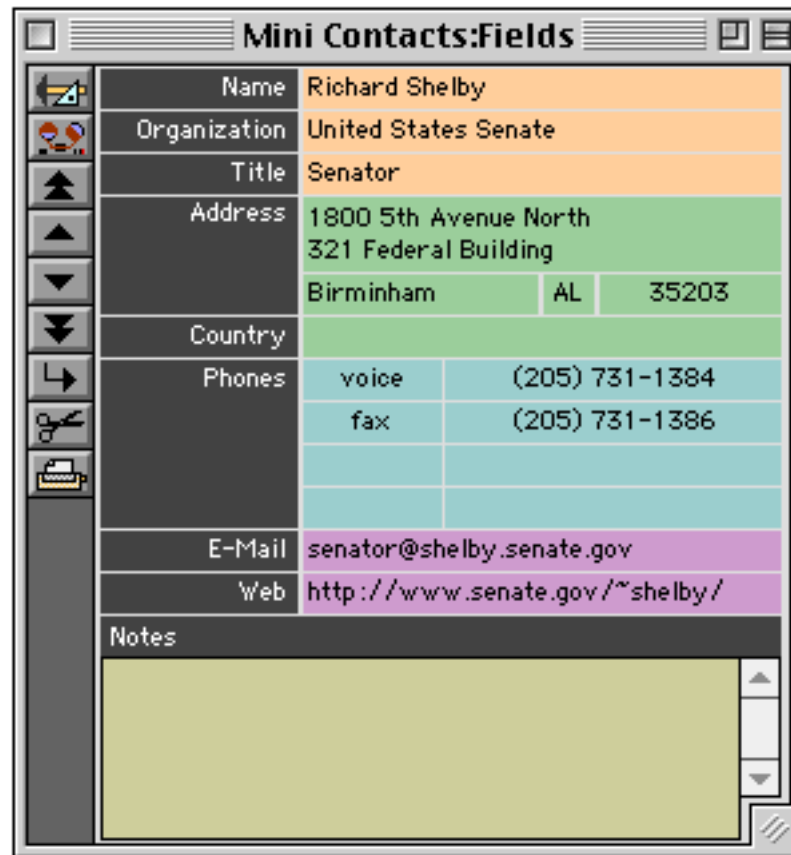
You can also use this window to control which window components get “tweaked.” Normally both scroll bars and the tool palette get tweaked. However, you can disabled some of these options. A disabled option doesn’t get tweaked. For example, if the **Tool Palette** option is disabled then the tool palette will not be removed. Here is a window with both scroll bars “tweaked” but the tool palette has been left alone.



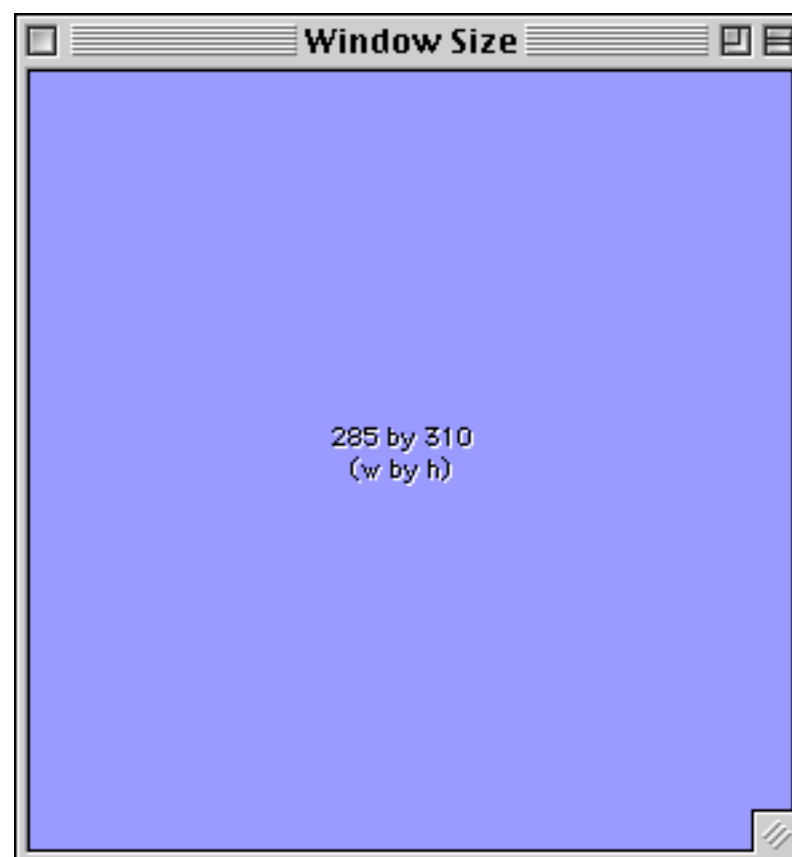
When you press the **Tweak** button again the scroll bars will re-appear.

Measuring a Window (Window Size Wizard)

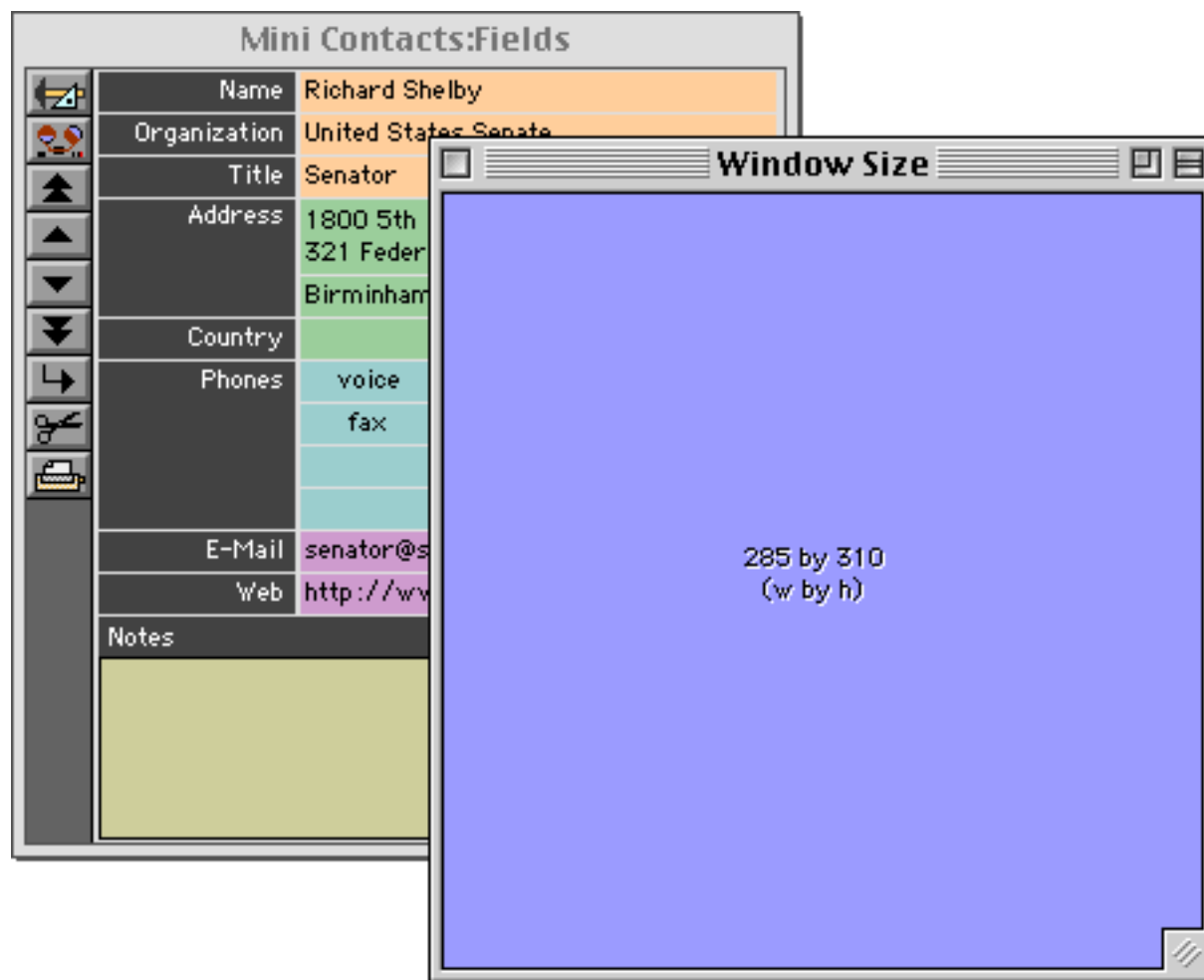
Sometimes you may need to measure the height and width of a window (for example if you want to write a procedure to re-open the window the same size, see “[Specifying the New Window Location](#)” on page 446 of *Formulas & Programming*). It’s easy to measure a window with the **Window Size** wizard. First bring the window you want to measure to the front, then select **Window Size** from the Form Tools submenu of the Wizard menu.



The wizard will cover the window and show the dimensions of the window.



Don't worry, your original window is still there. It's just hidden behind the Window Size wizard, as you can see by dragging the wizard to the side.



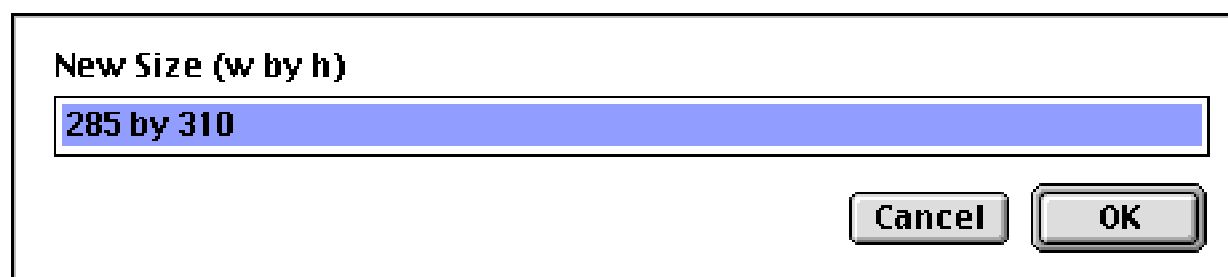
You can drag and resize the window anywhere you like. Or you can simply click on a window and select **Window Size** from the Wizard menu and the size window will jump to cover the window you have selected. When you're done with the window you can simply close it.

Setting Exact Window Dimensions

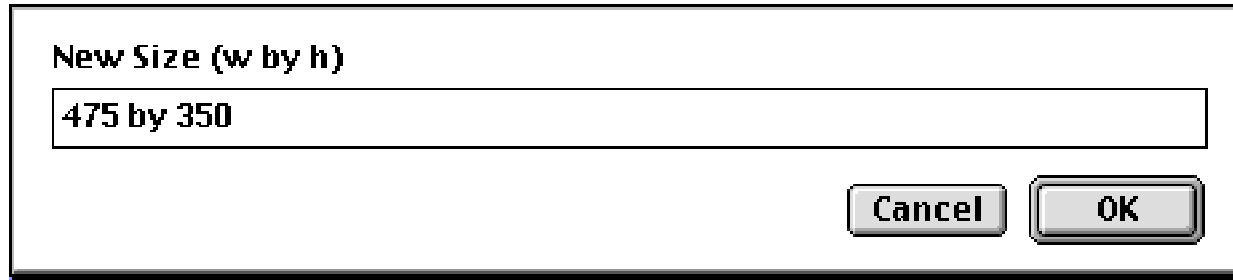
In addition to displaying the current window dimensions the **Window Size** wizard can also be used to precisely set new dimensions. Start by opening the wizard, as described in the previous section. Then choose the **Set Size** command from the **WindowSize** menu.



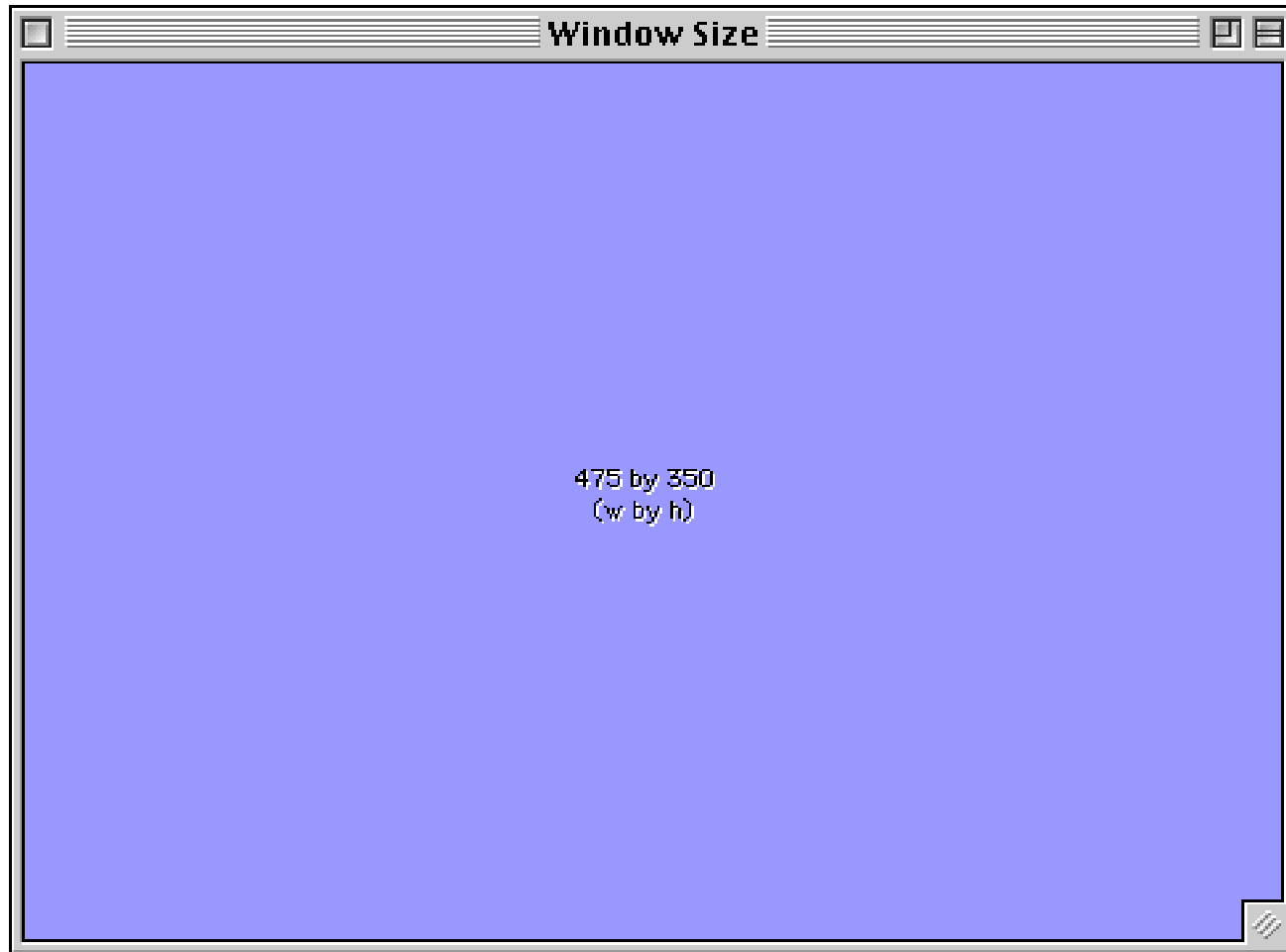
This command displays a dialog that shows the current window dimensions.



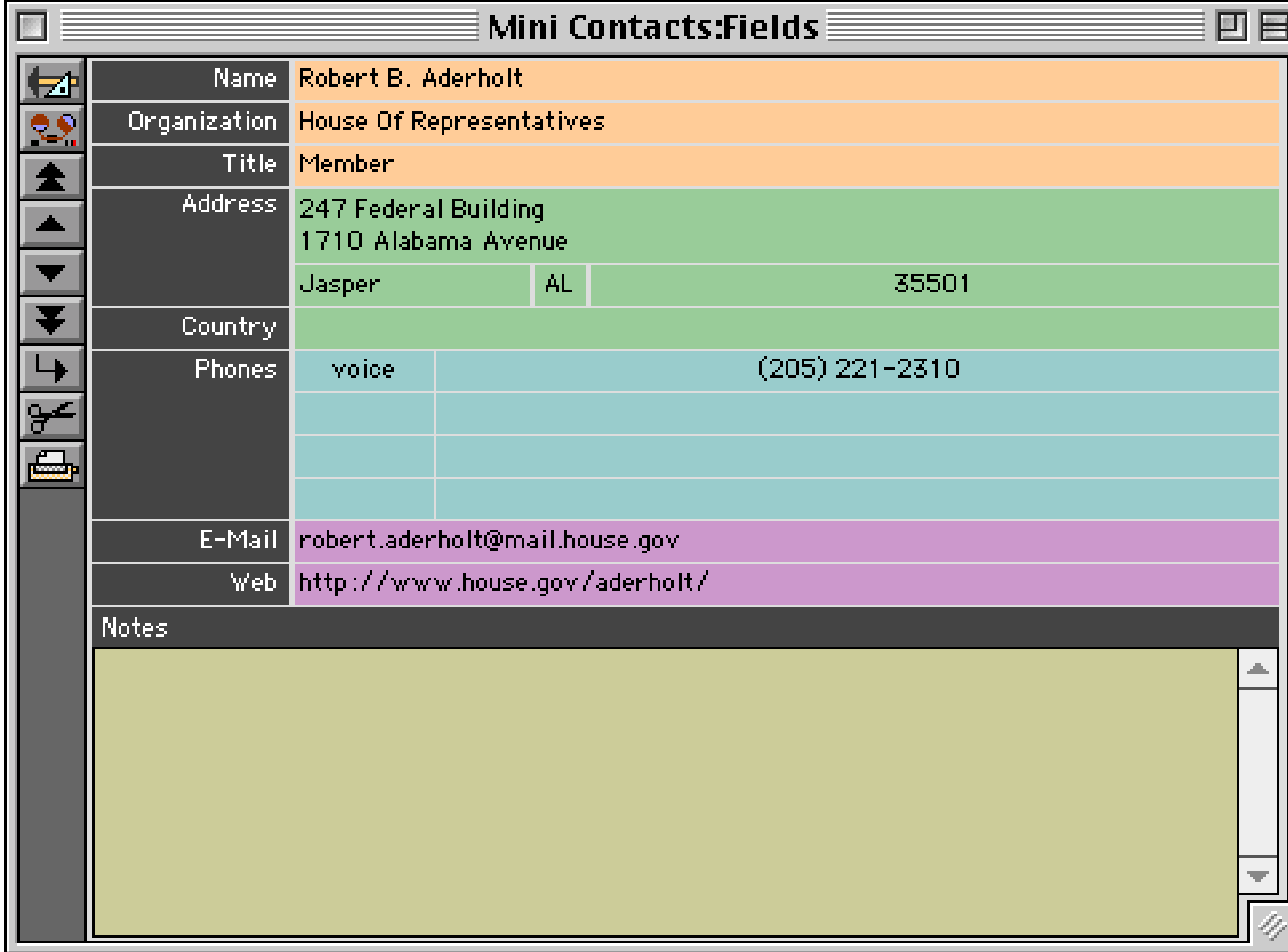
Use this dialog to type in the new dimensions you want.



When you press the **OK** button Panorama will adjust the size of the wizard's window to the new dimensions.



When you close the wizard's window (or move it to the side) you will see that the original window has also been adjusted to the new dimensions.



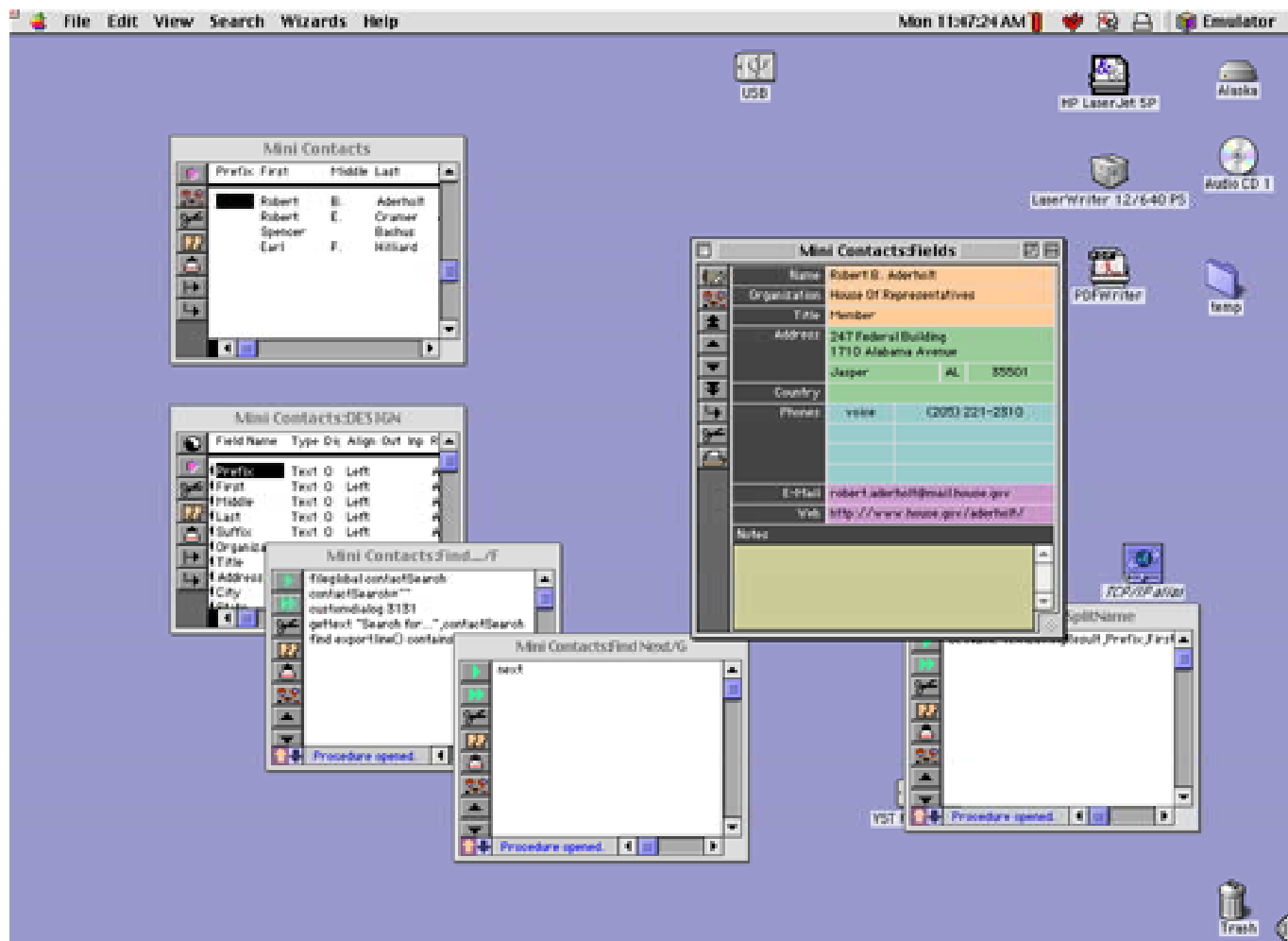
The screenshot shows a window titled "Mini Contacts:Fields" with a vertical toolbar on the left containing icons for home, search, back, forward, print, and other functions. The main area is a form with the following fields:

Name	Robert B. Aderholt		
Organization	House Of Representatives		
Title	Member		
Address	247 Federal Building 1710 Alabama Avenue		
	Jasper	AL	35501
Country			
Phones	voice	(205) 221-2310	
E-Mail	robert.aderholt@mail.house.gov		
Web	http://www.house.gov/aderholt/		
Notes	<div style="border: 1px solid gray; height: 100px;"></div>		

Arranging All Open Windows at Once (Tiling and Stacking)

Normally you manipulate one window at a time. The **Arrange Windows** wizard allows you to arrange all of the open Panorama windows into a regular pattern, either side by side (tiled) or piled on top of each other with a slight offset.

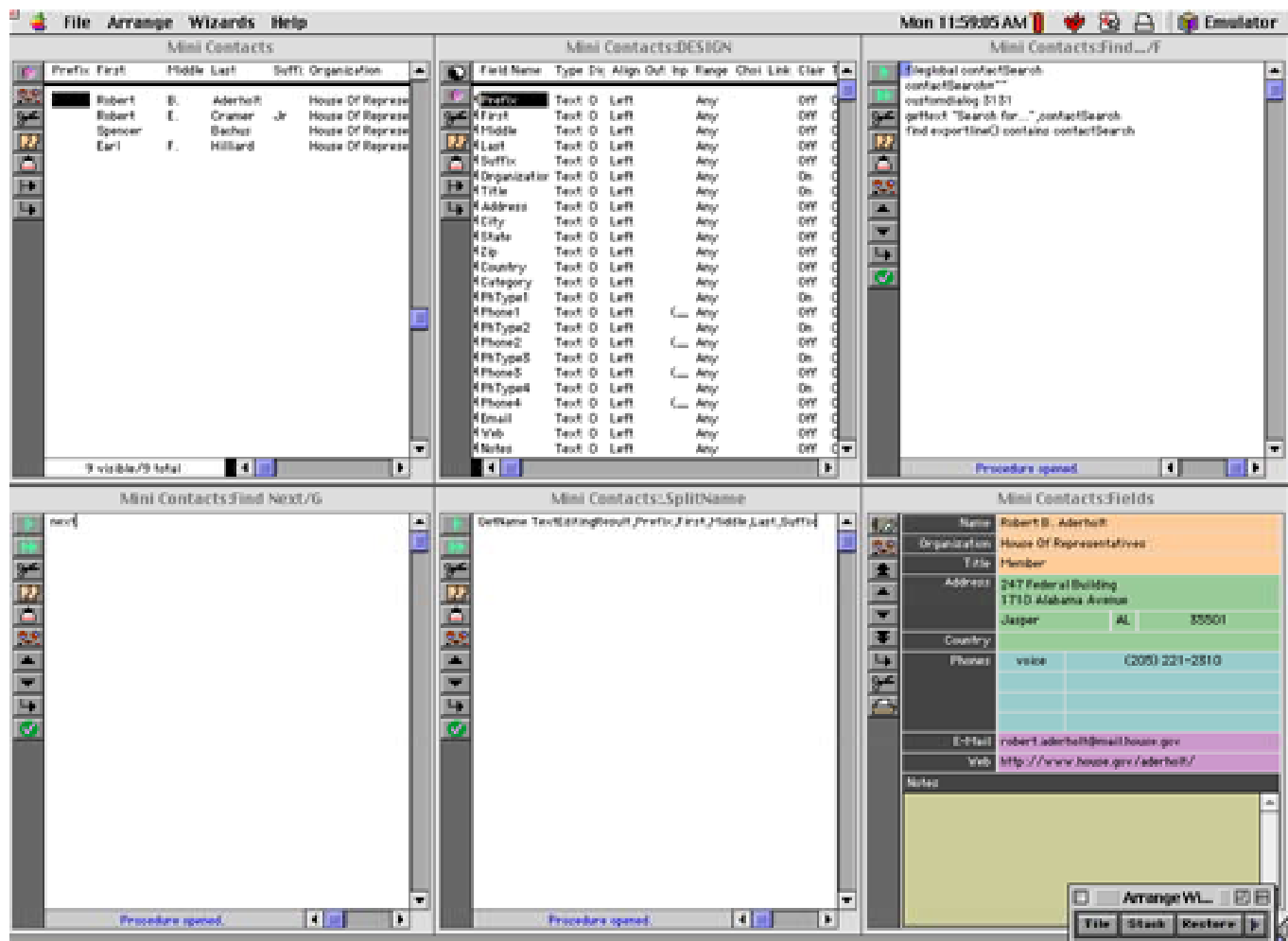
To illustrate the operation of this wizard, let's suppose that there are currently six Panorama windows open in more or less random locations, like this.



The first step is to choose **Arrange Windows** from the Wizard menu. This displays the **Arrange Windows** options.

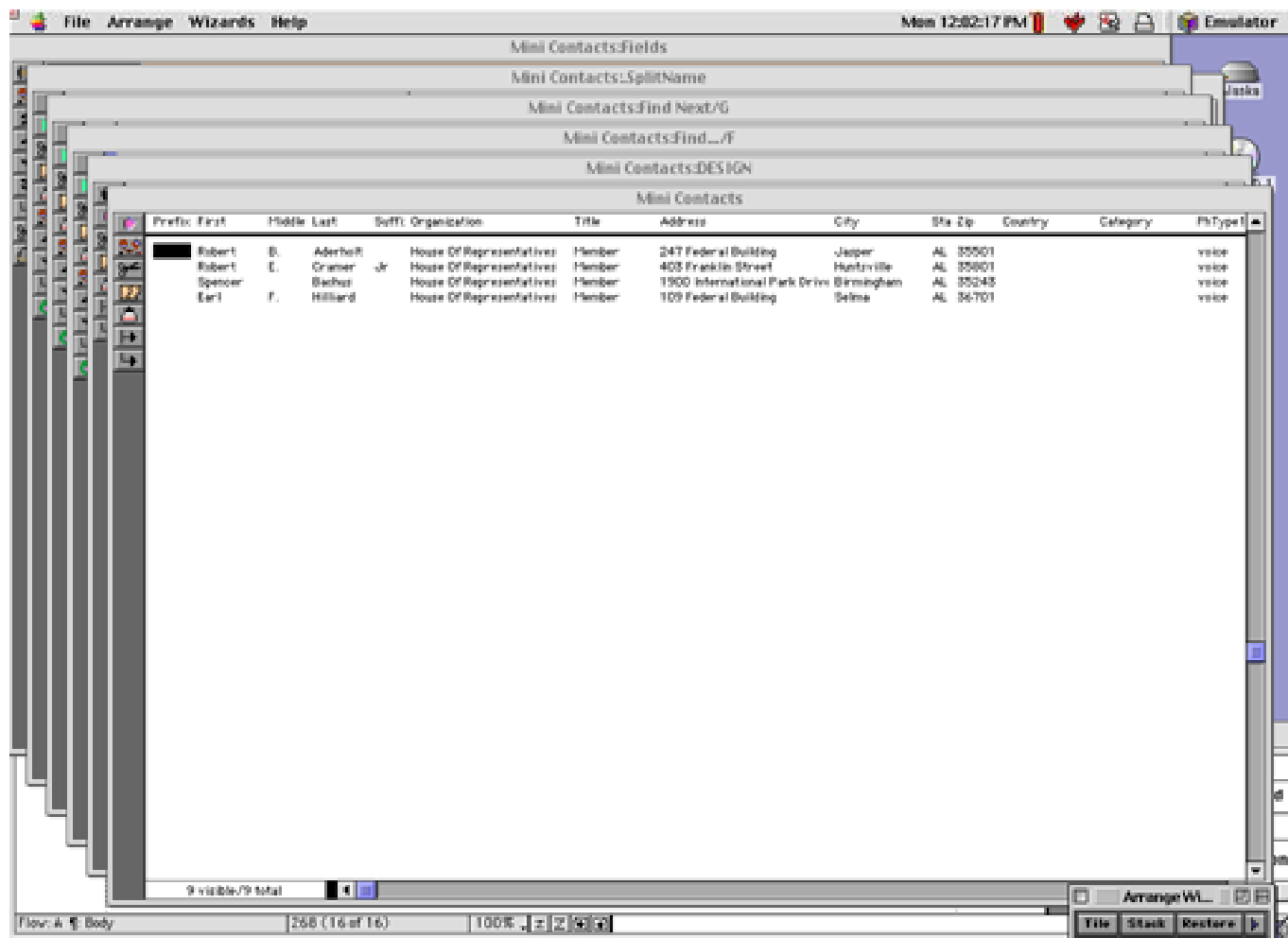


To arrange the windows in a grid (like floor tiles) press the **Tile** button.

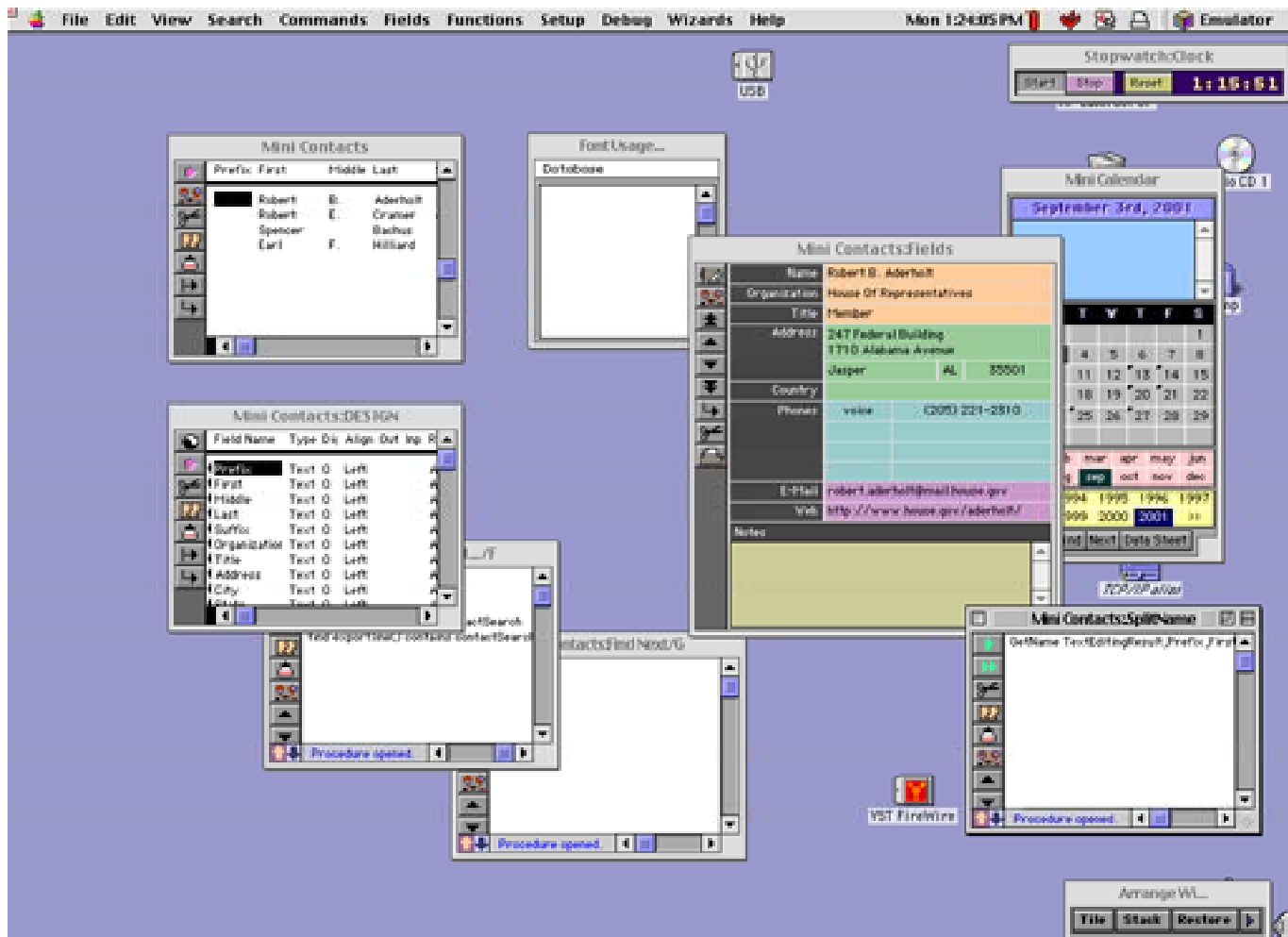


If you decide you don't like this new arrangement you can revert to the original window positions by pressing the **Restore** button.

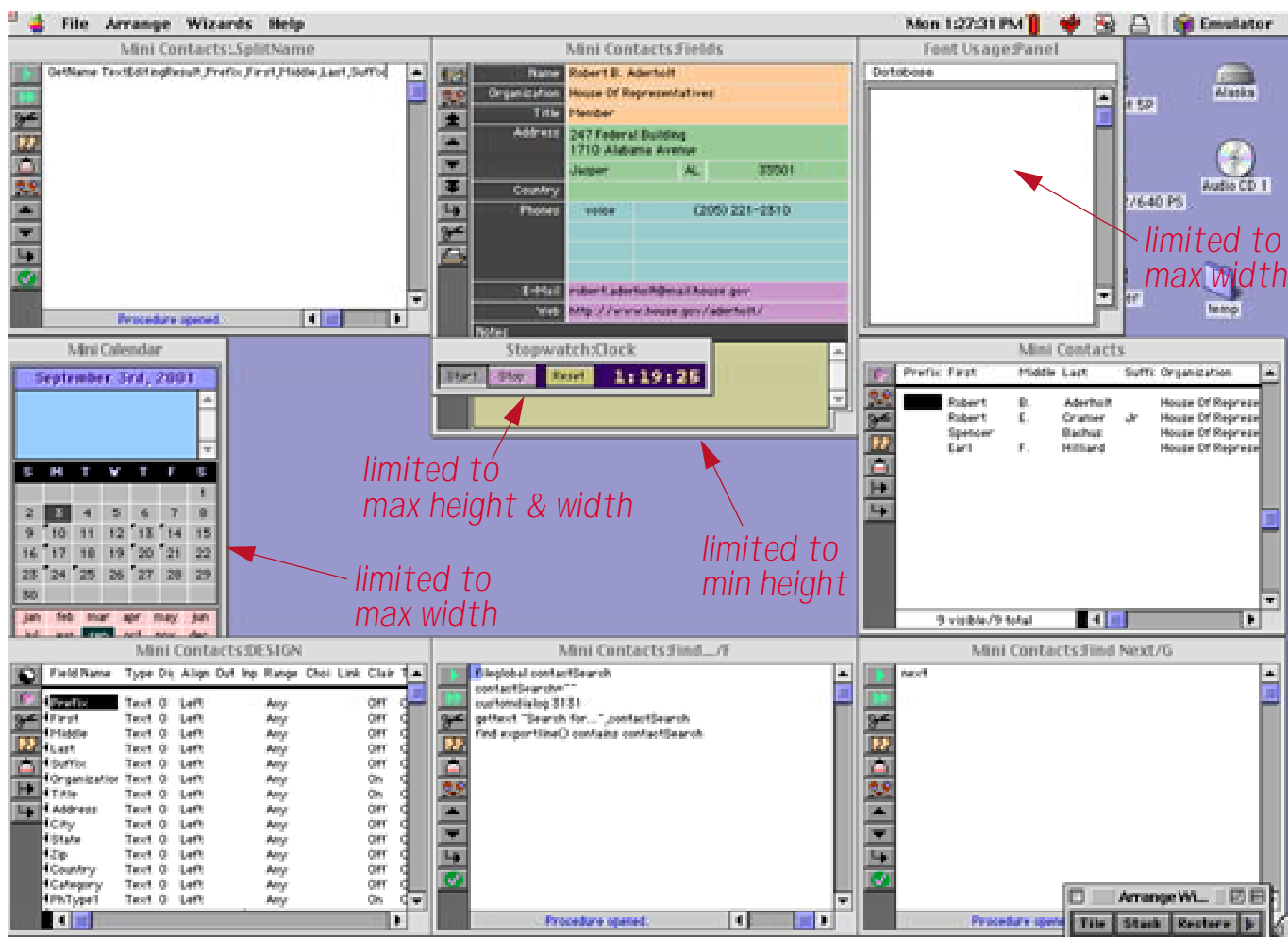
To make all the windows the same size, arranged in a staggered pattern, press the **Stack** button.



When Panorama stacks or tiles the windows it checks the attributes of each window. It won't make any window smaller than its minimum size or larger than its maximum size. Sometimes this can prevent the tile or stack patterns from aligning perfectly. For example, suppose you start with the windows shown here.



Because of restrictions on the minimum and maximum window dimensions these windows cannot fit perfectly in the tile pattern. Panorama will leave some gaps and some overlaps.



Saving and Restoring Window Positions

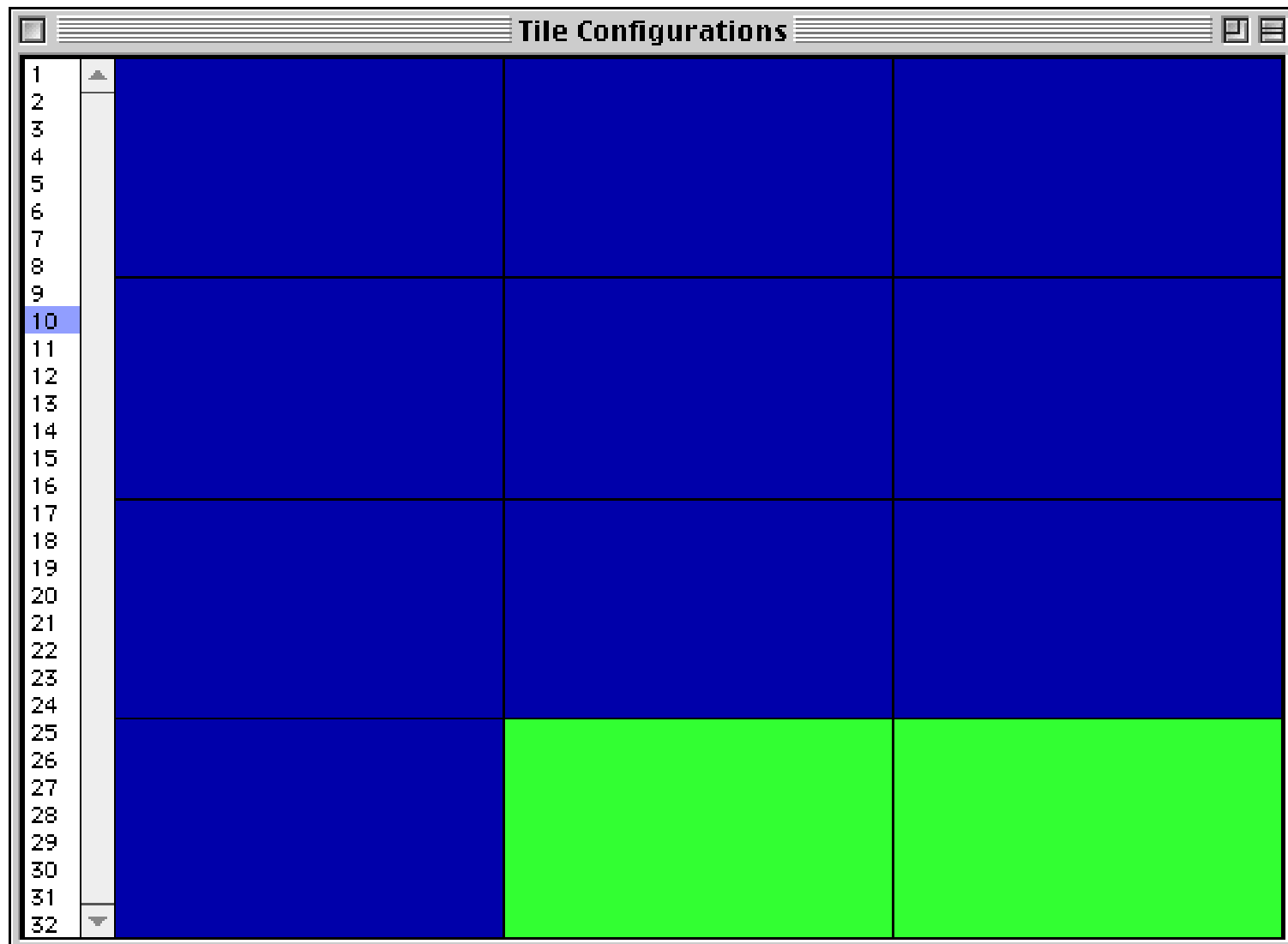
The **Arrange Windows** wizard automatically saves window positions each time you **Tile** or **Stack** the windows, allowing you to go back to the original window configuration. You can also ask the wizard to save the current window positions at any time.



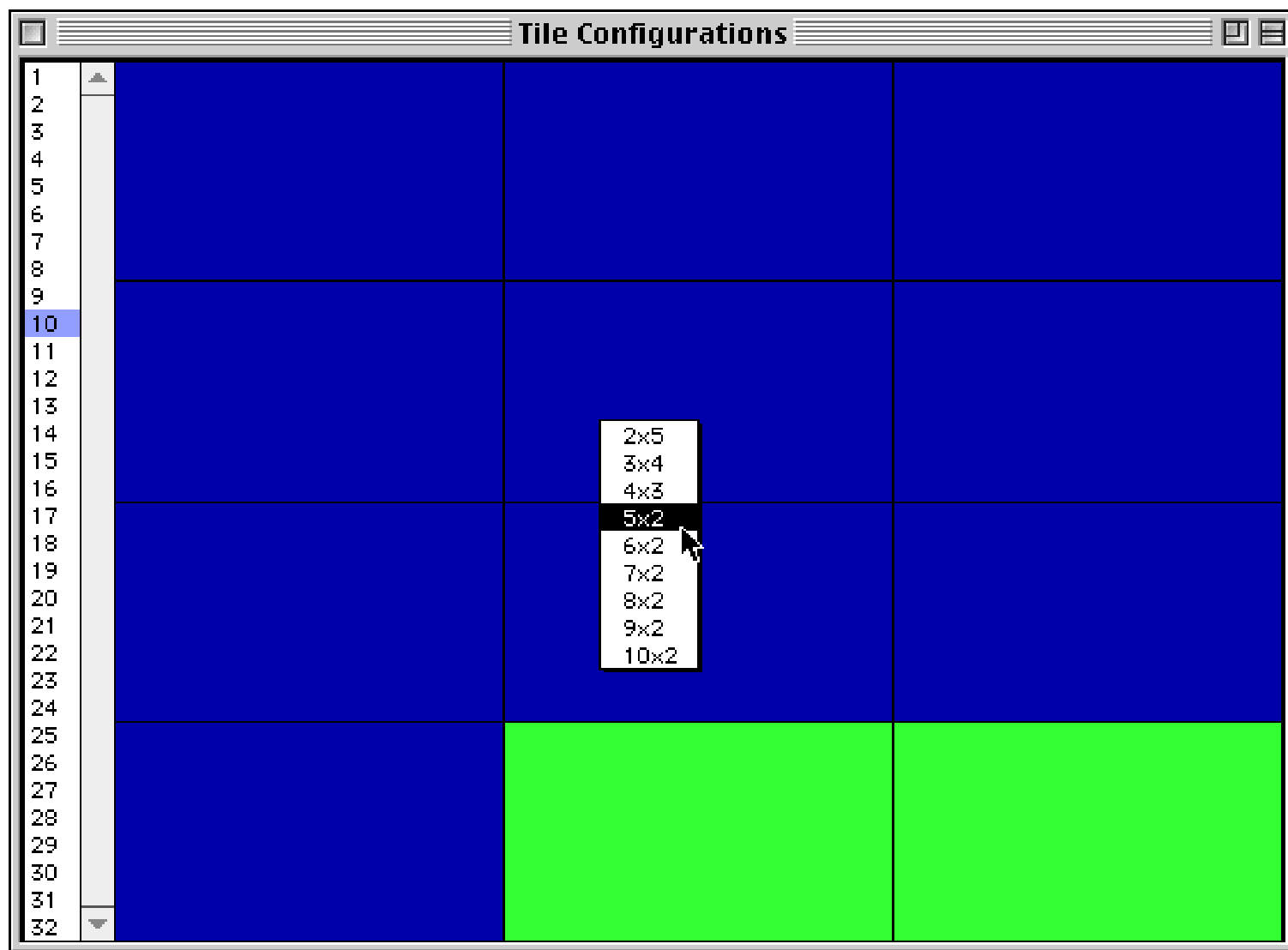
Later you can restore the original window positions by choosing **Restore Window Positions**. Please note, however, that this only affects the windows that were open when the window positions were saved. If a window has since been closed, **Restore Window Positions** will not re-open it. Conversely, if additional windows have been opened since the window positions were saved these new windows will not be affected by the **Restore Window Positions** command.

Choosing Tile Configurations

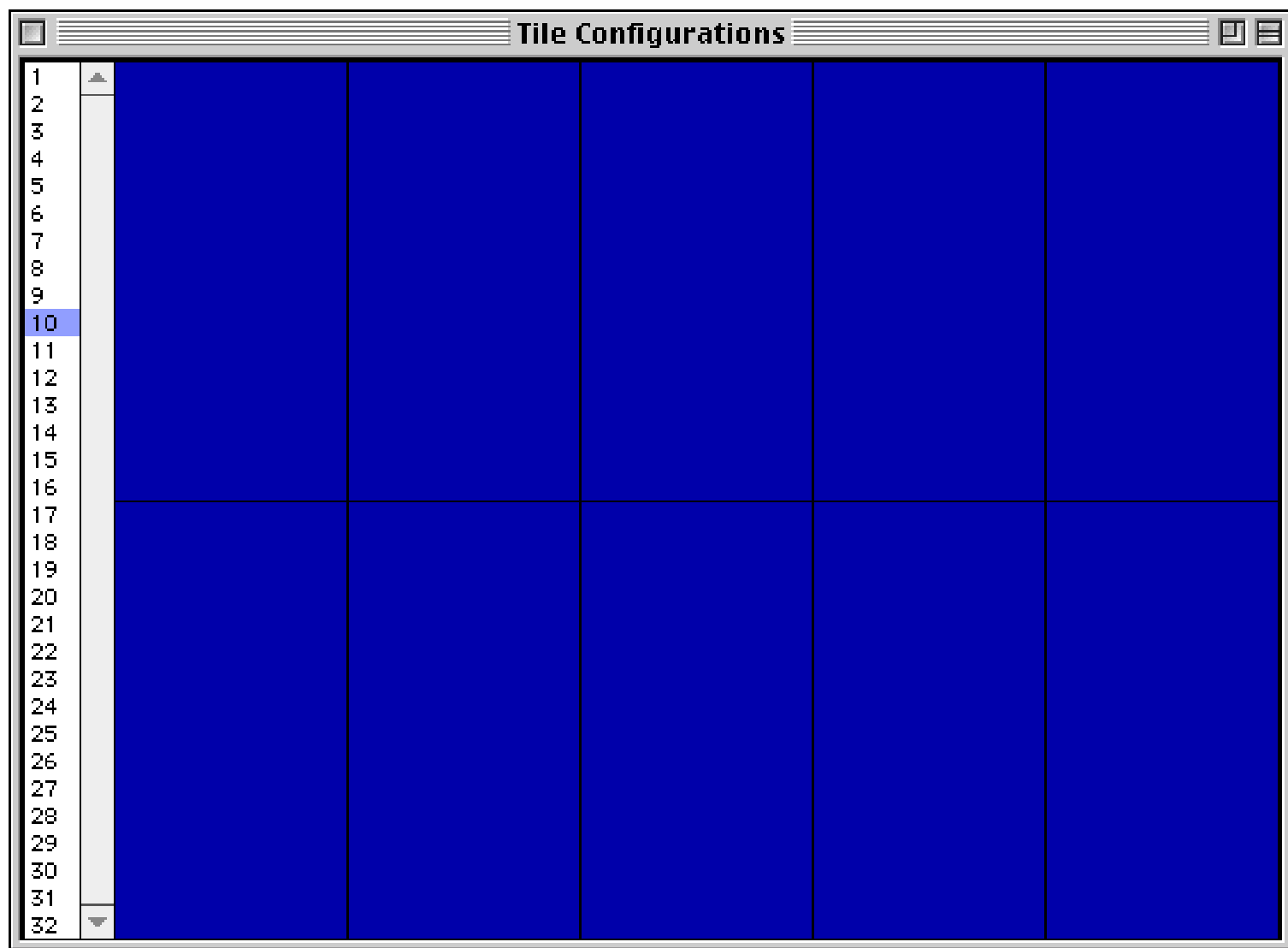
The Arrange Windows wizard allows you to choose pattern used for tiling windows. For example, suppose you have ten windows. Should the tiles be 4 by 3, or 5 by 2, or 2 by 5 or some other design? We've supplied a default arrangement, but you can open the **Tile Configurations** window to change the design at any time. When you open this window it shows you the current configuration for the current number of windows. In this example there are currently 10 windows open, and they will be tiled into a 4 high by 3 wide grid. Any empty slots are displayed in light green.



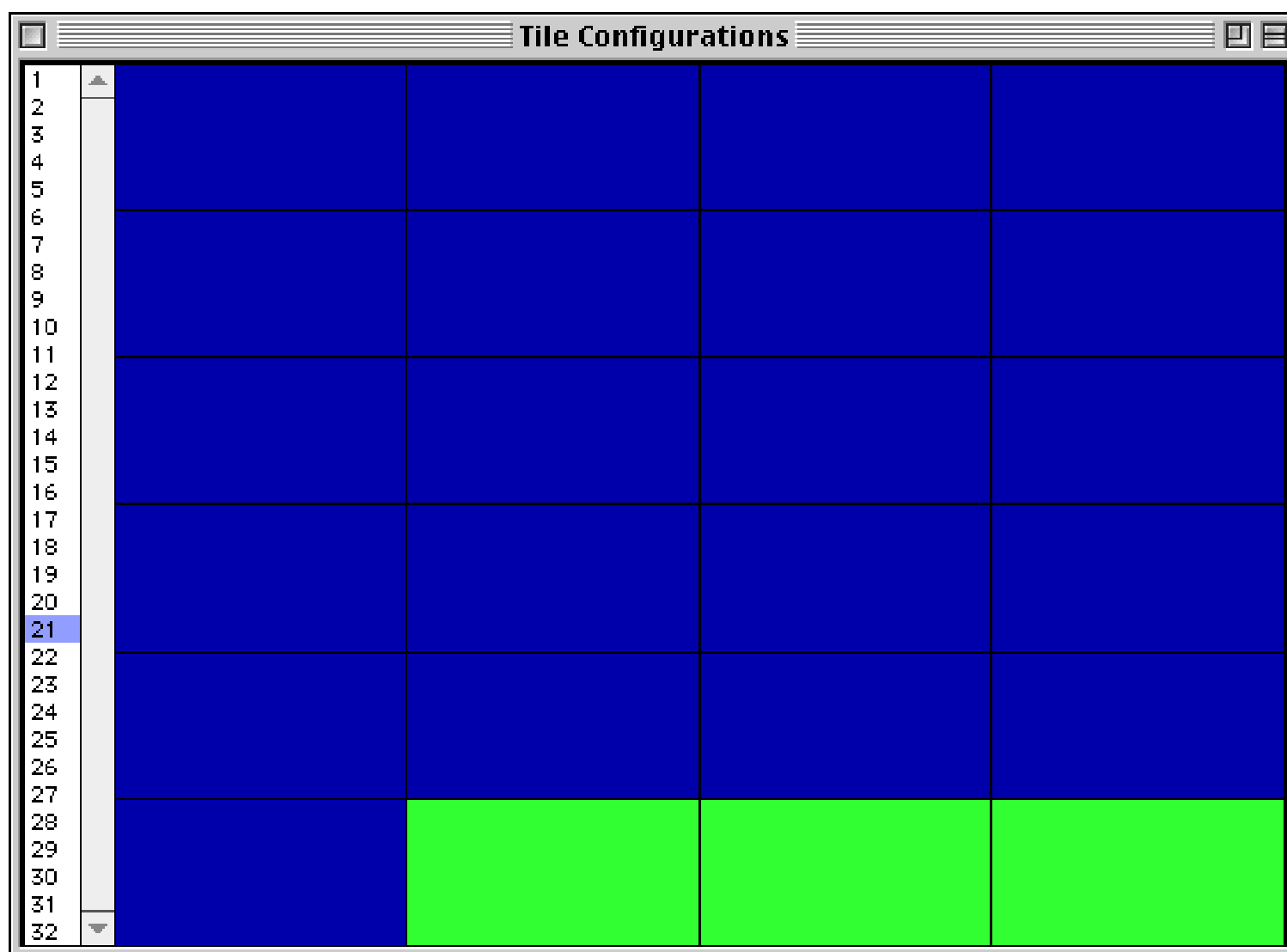
To change the configuration simply press the mouse anywhere on the grid. A pop-up menu listing possible arrangements will appear.



Select the arrangement you want from the pop-up menu. After you make your selection the grid will be updated to reflect your choice.



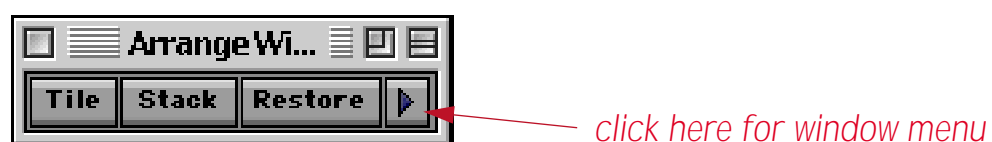
You can use the list on the left side of the window to set up the configuration for any number of windows (up to Panorama's maximum of 64 windows).



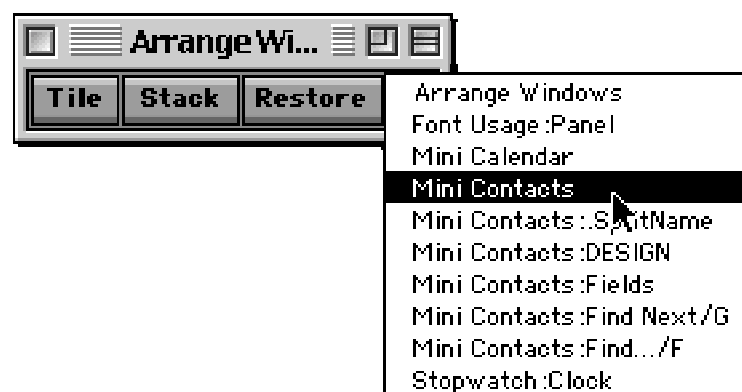
When you are done simply close the **Tile Configuration** window and press the **Tile** button.

Bringing Windows to the Front

The **Arrange Windows** wizard also provides an alternative method for bringing a window to the front. To bring any window to the front, click on the arrow button.



When you press on this button a menu listing all the open windows will appear. Simply select the window you want to bring to the front.



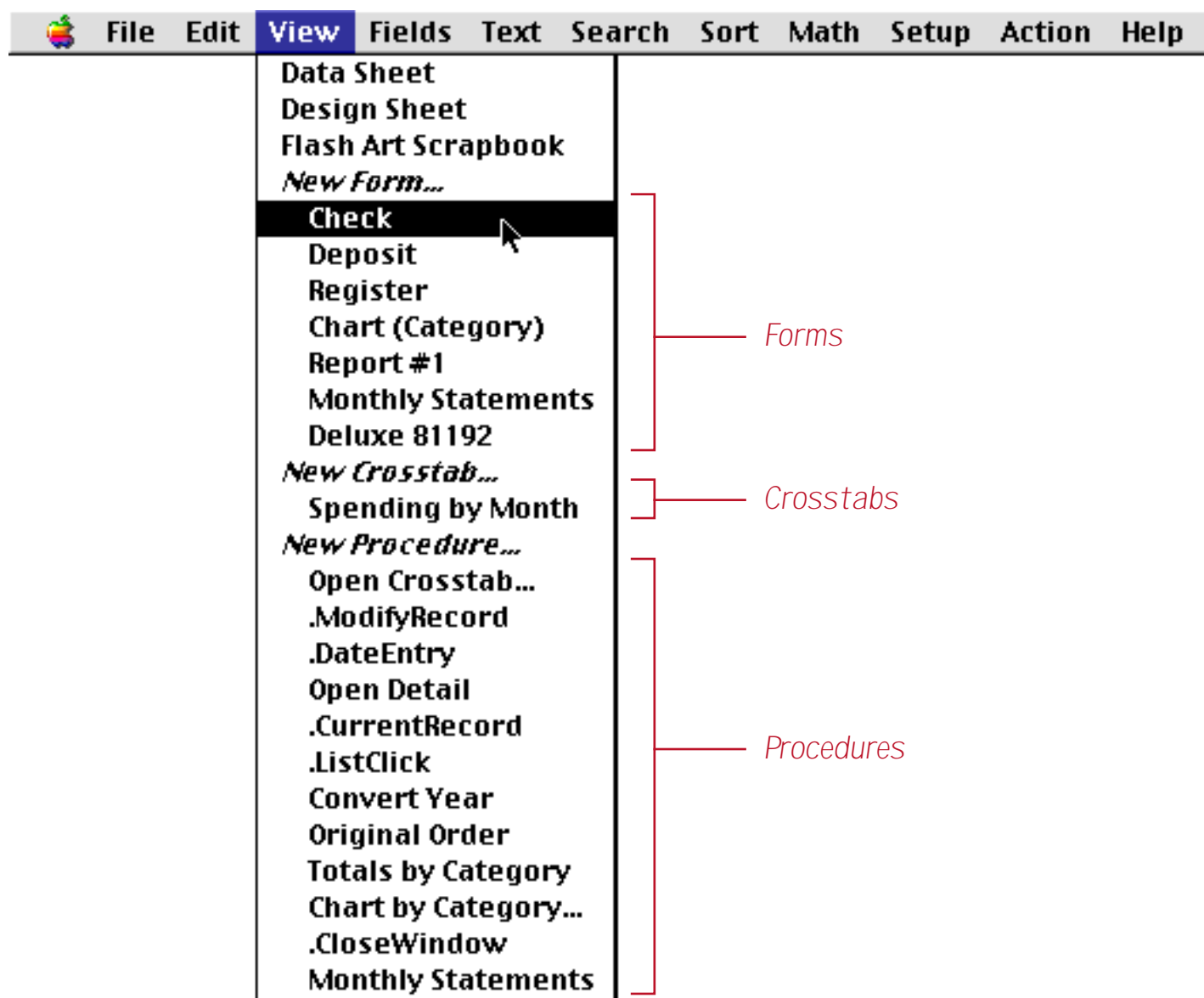
Of course you can also bring a window to the front by clicking on it or using the **Arrange** submenu in the File menu (see "[Bringing a Window to the Front](#)" on page 147).

Chapter 3: Views



A Panorama database can have up to six elements: data sheet, forms, design sheet, procedures, crosstabs, and flash art. Each window shows a view of one of these elements.

The **View** menu is just to the right of the Edit menu.



Use this menu to pick which view you want to see in the window. Choosing different views from this menu is like pointing a camera in different directions.

Types of Panorama Views

Panorama has six different kinds of views. Each type of view gives you access to a different element of the database or gives you a different perspective on your data (for example, form vs. data sheet).

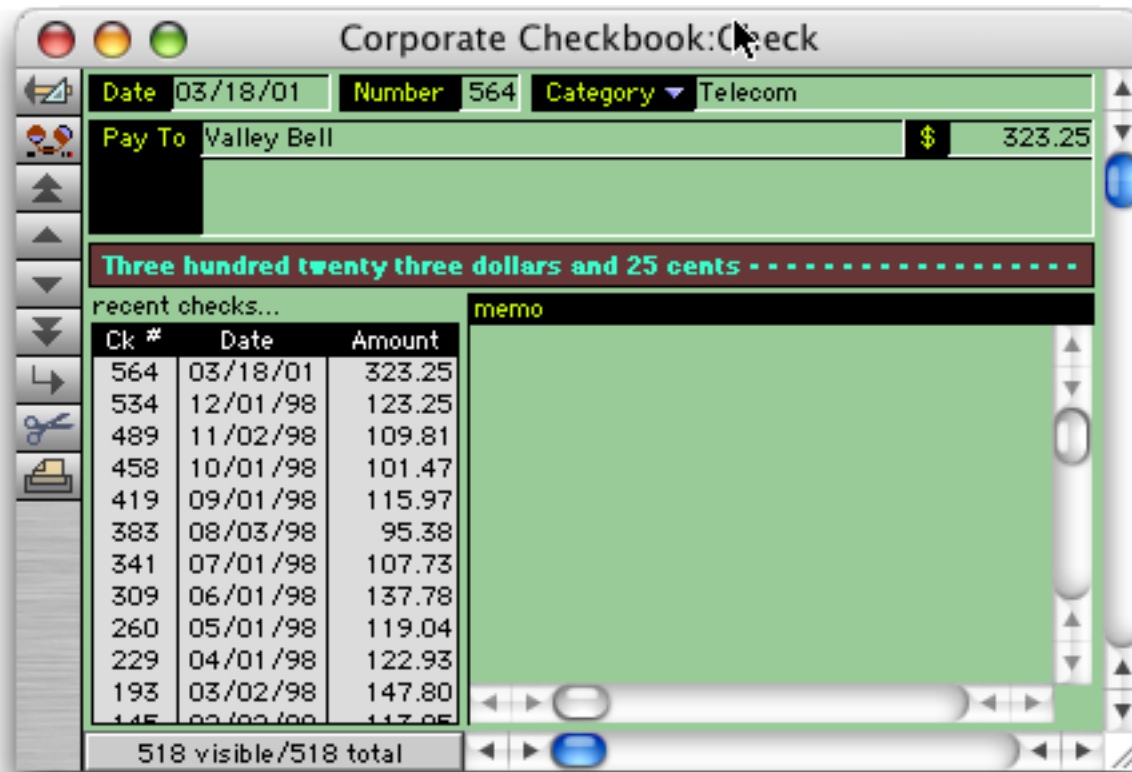
A new database starts with a data sheet, design sheet, and an empty flash art scrapbook. Views for forms, procedures, and crosstabs can be added if desired.

Data Sheet and Form Views

The most important views are the data sheet and forms. These views give you access to the actual data. Use the **data sheet** view when you want to display the database as a sheet of rows and columns. The data sheet view has a fixed format very much like a spreadsheet, as shown below. Although you can make minor alterations like changing the font size or the width of a column, you cannot add graphics or change the overall arrangement of the data sheet view.

Date	Ck #	Pay To	GL Category	Debit	Credit	Balance
01/01/90		OPENING BALANCE			35,978.47	35,978.47
01/08/90	1907	Northern Illinois Mold	Equipment Rental	96.05		35,882.42
01/08/90	1908	U S Postmaster	Postage	75.00		35,807.42
01/08/90	1909	Advertiser's Mailing Service, I	Advertising	390.80		35,416.62
01/16/90	1910	Coudert Brothers, Attorney's /	Legal Fees	223.52		35,193.10
01/16/90	1911	Paramount Stationers	Office Supplies	105.84		35,087.26
01/17/90	1912	California Capitol	Insurance	36.00		35,051.26
01/17/90	1913	California Capitol	Insurance	28.00		35,023.26
01/17/90	1914	U S Postmaster	Postage	75.00		34,948.26
01/17/90	1915	Sacramento Bee	Advertising	795.00		34,153.26
01/18/90		DEPOSIT			3,846.32	37,999.58
01/22/90	1916	Walthers	Purchases	12,463.00		25,536.58
01/22/90	1917	Blue Cross Of Calif	Insurance	279.03		25,257.55
01/22/90	1918	Sherman Douglas Ins	Insurance	418.60		24,838.95
01/22/90	1919	Cannon Astro	Office Supplies	145.72		24,693.23
01/25/90	1920	Walthers	Purchases	1,885.40		22,807.83
01/25/90	1921	Nebs	Office Supplies	77.27		22,730.56
01/25/90	1922	Ramona Drinking Water	Office Supplies	98.10		22,632.46
01/25/90	1923	Pacific Partners	Rent	4,070.83		18,561.63
01/29/90	1924	Athearn	Purchases	1,906.32		16,655.31
01/29/90	1925	Advertiser's Mailing Service, I	Advertising	860.22		15,795.09
01/29/90	1926	PacTel Cellular	Telephone	141.09		15,654.00
01/30/90	1927	State Board Of Equalization	Taxes	549.00		15,105.00
01/30/90	1928	Walthers	Purchases	828.70		14,276.30

Use a **form** view when you want complete control over the arrangement and appearance of your data. Instead of appearing in a fixed row and column grid, the data can be arranged any way you want. Graphics can be added for clarity or to simulate an actual paper form. The form view is much more flexible than the data sheet view, but it is also more work to set up. Here is a typical example of a form. Notice that the window name shows the database name, **Checkbook**, followed by the form name, **Plain Checks**.



Every Panorama database has a single data sheet view, but can have any number of form views. A simple database might not have any form views, while a complex database may have dozens. You create as many forms as you need. Each form is identified by a unique name.

Since the data sheet and form views are based on the same underlying data, any action or change made to the data in one of these views will immediately appear in the other views. Of course you'll only notice this when several windows are open at once.

Other Views

In addition to the data sheet and form views Panorama has four other kinds of views. Instead of accessing the actual data, these views let you access the other components of a Panorama file.

The **design sheet** view is the DNA or blueprint of the database. It contains the actual structure of the database fields. You can add and remove fields and make other minor modifications to the database structure without using the design sheet, but the design sheet provides the ultimate control over the structure of your database. See "[The Design Sheet](#)" on page 212 to learn more.

Field Name	Type	Digits	Align	Output Pattern	Input Pattern	Range	Choices	Link	Clair	Tab	Caps	Dup	Defa
Date	Date	0	Left			Any			Off	Off	Off	Yes	Toda
Check	Numeric	0	Right	#,		Any			Off	Off	Off	Yes	+1
PayTo	Text	0	Left			Any			On	Off	Word	Yes	
Category	Text	0	Left			Any	Rent Lec		On	Off	Word	Yes	
Memo	Text	0	Left			Any			Off	Off	Off	Yes	
Debit	Numeric	Float	Right	#,##		Any			Off	Off	Off	Yes	
Credit	Numeric	Float	Right	#,##		Any			Off	Off	Off	Yes	
Balance	Numeric	Float	Right	#,##		Any			Off	Off	Off	Yes	

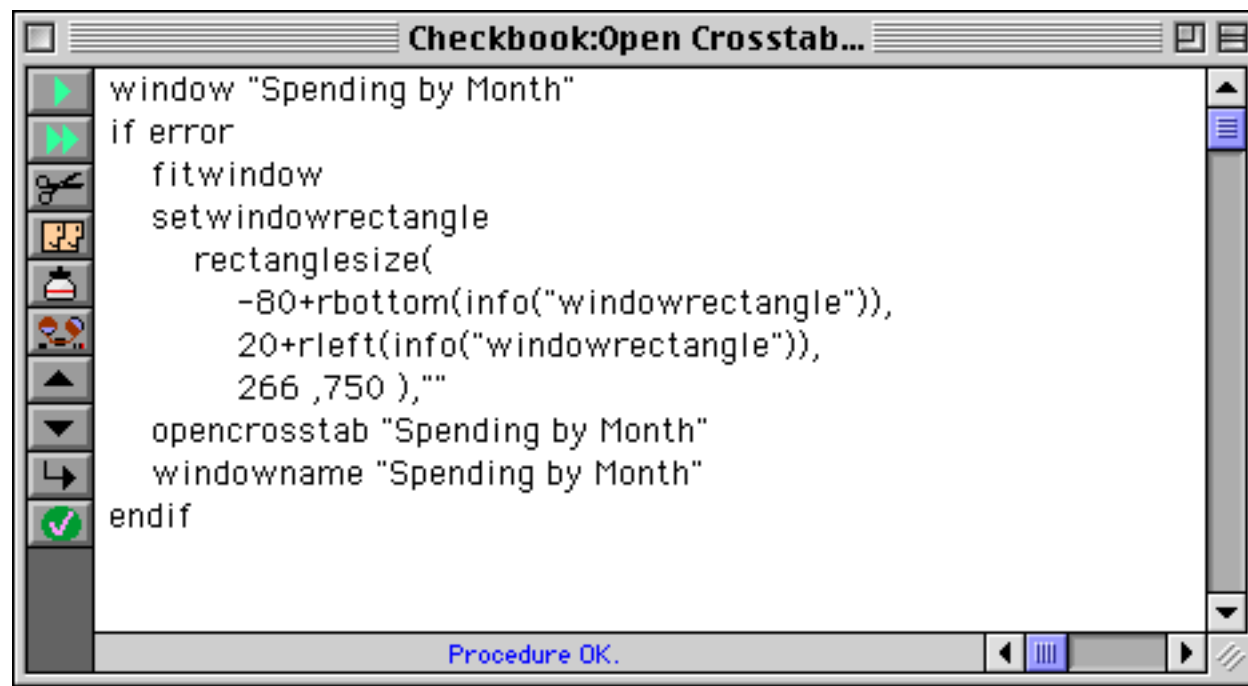
The flash art scrapbook view contains a catalog of pictures that can be displayed in a form or report. Using the flash art scrapbook can sometimes save a significant amount of memory over pasting pictures directly into the database, and it can be easier too. To learn more about the flash art scrapbook see “[The Flash Art Scrapbook \(Gallery\)](#)” on page 764.



Crosstab views display a special 2-way summarization of the information in a database. Crosstabs display the relationships between data in different fields, exposing trends that might be invisible in the normal database views (data sheet and forms). Like form views, a database can contain any number of crosstab views—it may have none or several, and each crosstab has a name. The window name shows the database name (for example **Checkbook**), followed by XTABS, followed by the crosstab name (for example **Spending by Month**). To learn more about crosstabs see “[Crosstabs](#)” on page 415.

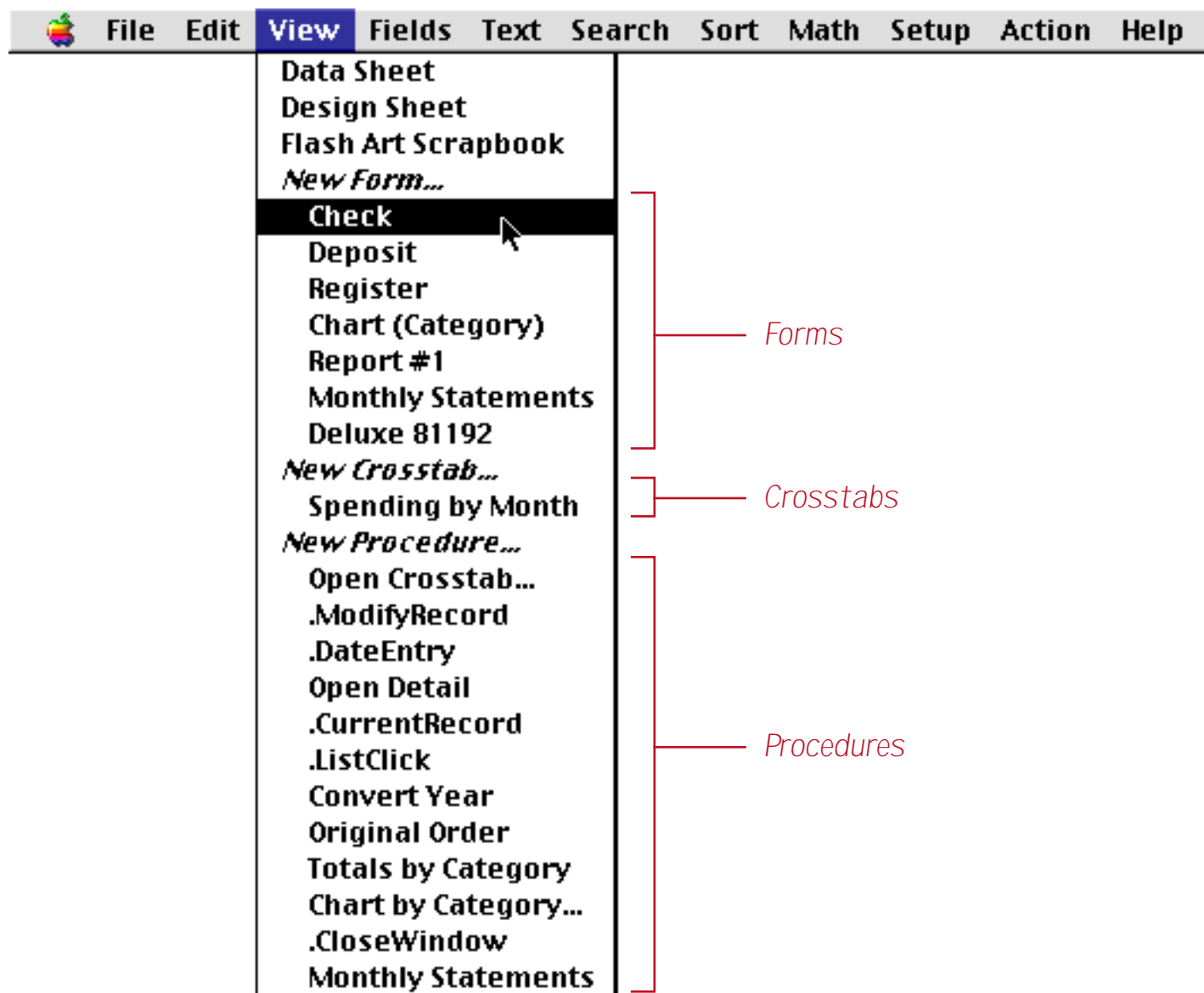
xtab	Jan 98	Feb 98	Mar 98	Apr 98	May 98	Jun 98	TOTAL
Advertising	1,114.85	3,874.92	2,202.67	2,631.00	2,396.43	2,653.66	30,011.38
DEPOSIT	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fixed Assets		1,974.81	1,363.94	727.11	2,828.50		10,222.66
Insurance	1,254.50	1,254.50	1,254.50	1,254.50	1,254.50	1,254.50	15,054.00
Legal				282.44			2,893.63
Office Supplies	614.01	938.45	1,043.33	752.83	321.54	481.47	7,425.49
Payroll	7,319.30	6,966.12	9,123.23	6,726.87	7,172.42	8,966.83	92,219.14
Purchases	4,106.41	2,135.08	3,447.93	1,961.64	2,380.31	2,567.58	29,666.43
Rent	1,580.00	1,580.00	1,580.00	1,580.00	1,580.00	1,580.00	18,960.00
Shipping	540.39	298.76	1,228.69	1,106.24	1,486.10	835.82	11,183.63
Telecom	423.19	514.61	454.94	451.65	417.80	402.95	5,450.39
Utilities	249.84	236.05	208.95	234.49	234.61	215.48	2,590.70
TOTAL	17,202.48	19,773.29	21,908.19	17,708.77	20,072.21	18,958.28	15, 225,677.47

Procedure views contain sequences of instructions for Panorama to follow. You don't have to remember each step—Panorama will remember for you. Once a procedure is set up, it can be activated several different ways. You can choose the procedure from a menu, press a button, or use a **Command** key combination (Macintosh) or **Control** key shortcut (PC). Procedures can even be activated automatically when special events occur. Like form and crosstab views, a database can contain any number of procedure views. Each procedure has its own name, which is shown in the window title. To learn more about procedures see "[Procedures](#)" on page 203 of *Formulas & Programming*.



Switching Between Views

The **View** Menu lists all the views in a database. The pre-defined views appear at the top—data sheet, design sheet, and flash art scrapbook. Next come the views you've created—forms, crosstabs, and procedures. The View Menu also contains commands for creating your own new views—new form, new crosstab, and new procedure.

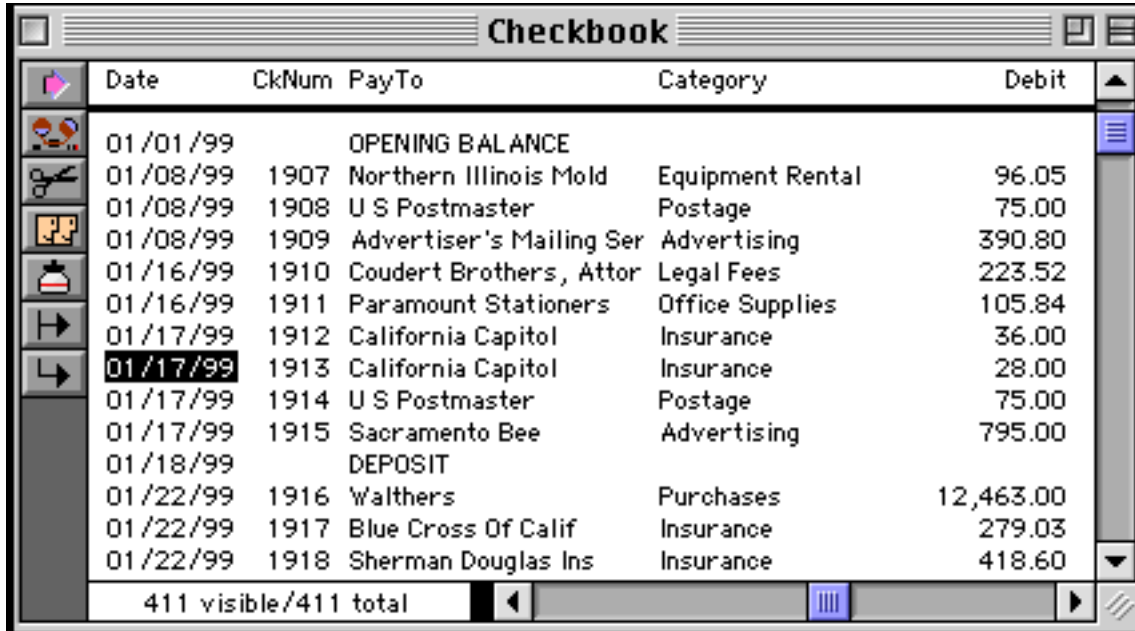


To switch to a different view within the same window, simply choose the view from the menu and release the mouse. You can flip back and forth between views at any time.

Opening More Than One Window Per Database

You can also use the view menu to open a new window, allowing you to see two views of the database at once. To open a second window the same size as the current window, hold down the **Alt** key while you select from the View Menu. (If you are using a Macintosh, hold down the **Control** key or the **Option** key.) The new window will appear slightly below and to the right of the original window.

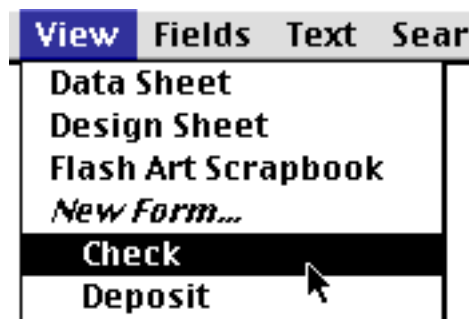
1) Start with one window



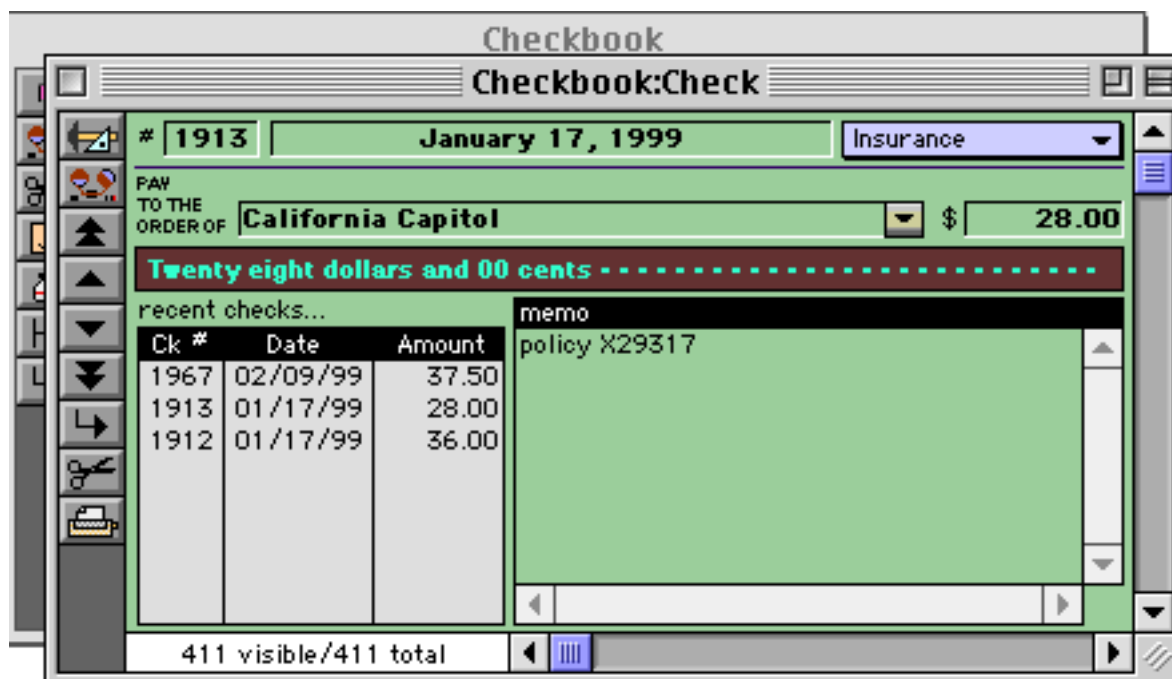
Date	CkNum	PayTo	Category	Debit
01/01/99		OPENING BALANCE		
01/08/99	1907	Northern Illinois Mold	Equipment Rental	96.05
01/08/99	1908	U S Postmaster	Postage	75.00
01/08/99	1909	Advertiser's Mailing Ser	Advertising	390.80
01/16/99	1910	Coudert Brothers, Attor	Legal Fees	223.52
01/16/99	1911	Paramount Stationers	Office Supplies	105.84
01/17/99	1912	California Capitol	Insurance	36.00
01/17/99	1913	California Capitol	Insurance	28.00
01/17/99	1914	U S Postmaster	Postage	75.00
01/17/99	1915	Sacramento Bee	Advertising	795.00
01/18/99		DEPOSIT		
01/22/99	1916	Walthers	Purchases	12,463.00
01/22/99	1917	Blue Cross Of Calif	Insurance	279.03
01/22/99	1918	Sherman Douglas Ins	Insurance	418.60

411 visible/411 total

2) While holding down the Alt key (PC) or the Control key (Mac), make a selection from the View menu. On the Mac you can also use the Option key.



3) The new window appears slightly below and to the right...



The 'Checkbook:Check' window displays the following information:

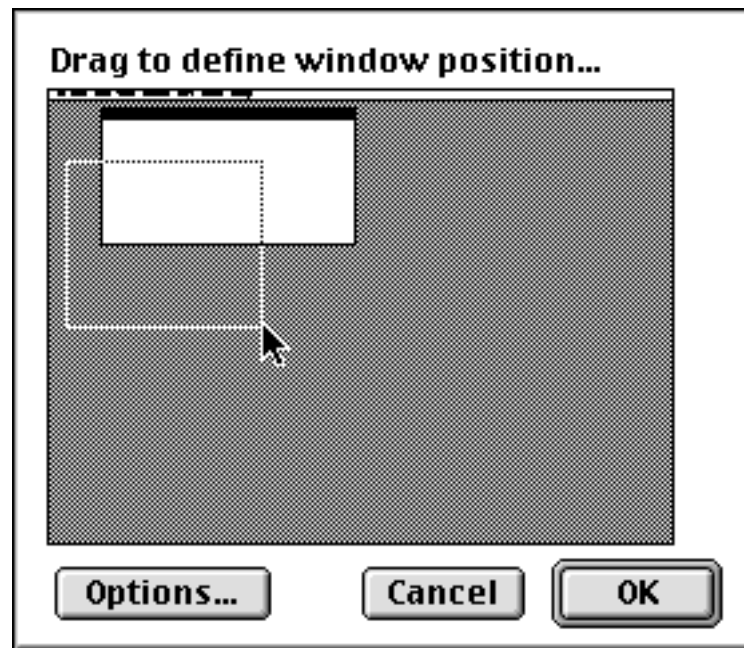
- Check #: 1913
- Date: January 17, 1999
- Category: Insurance
- Pay to the order of: California Capitol
- Amount: \$ 28.00
- Amount in words: Twenty eight dollars and 00 cents
- Recent checks table:

Ck #	Date	Amount
1967	02/09/99	37.50
1913	01/17/99	28.00
1912	01/17/99	36.00
- Memo: policy X29317

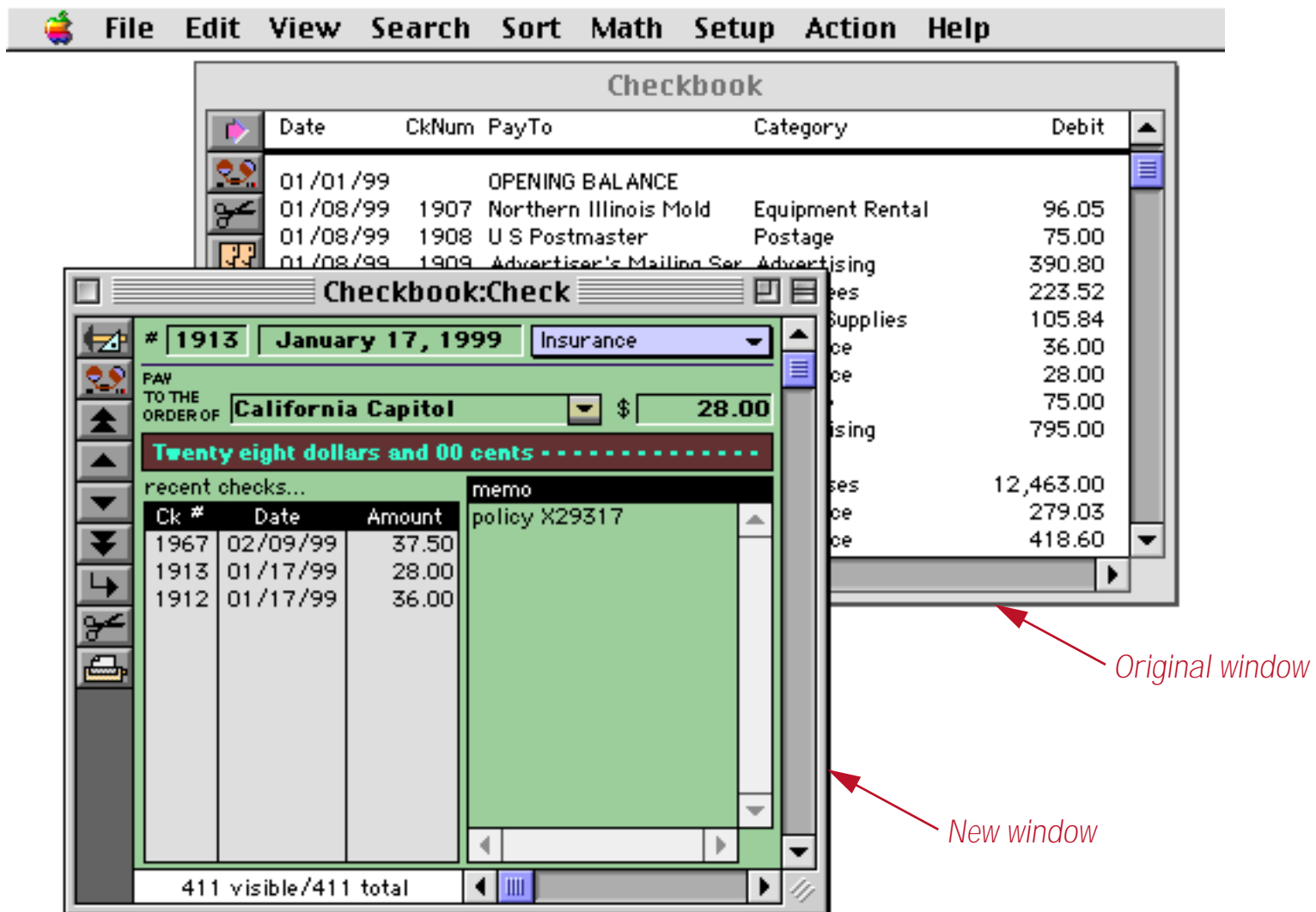
411 visible/411 total

The new window will track the original window. In fact, all windows associated with a database will track each other automatically. Any changes made in one window automatically appear in all other windows, and when any navigation is done in one window (moving up or down within the database) all of the other windows will follow along.

Another technique allows you to control the exact size and position of the new window in advance. (Of course you can always drag and resize it after it has been opened.) To use this technique, hold down the **Control** key while you select from the View Menu. (If you are using a Macintosh, hold down the **Command** key.) After you choose the view you want to open, the **Window Options** dialog will appear shown below. This dialog shows a miniature view of the entire computer screen, along with the positions of every window.



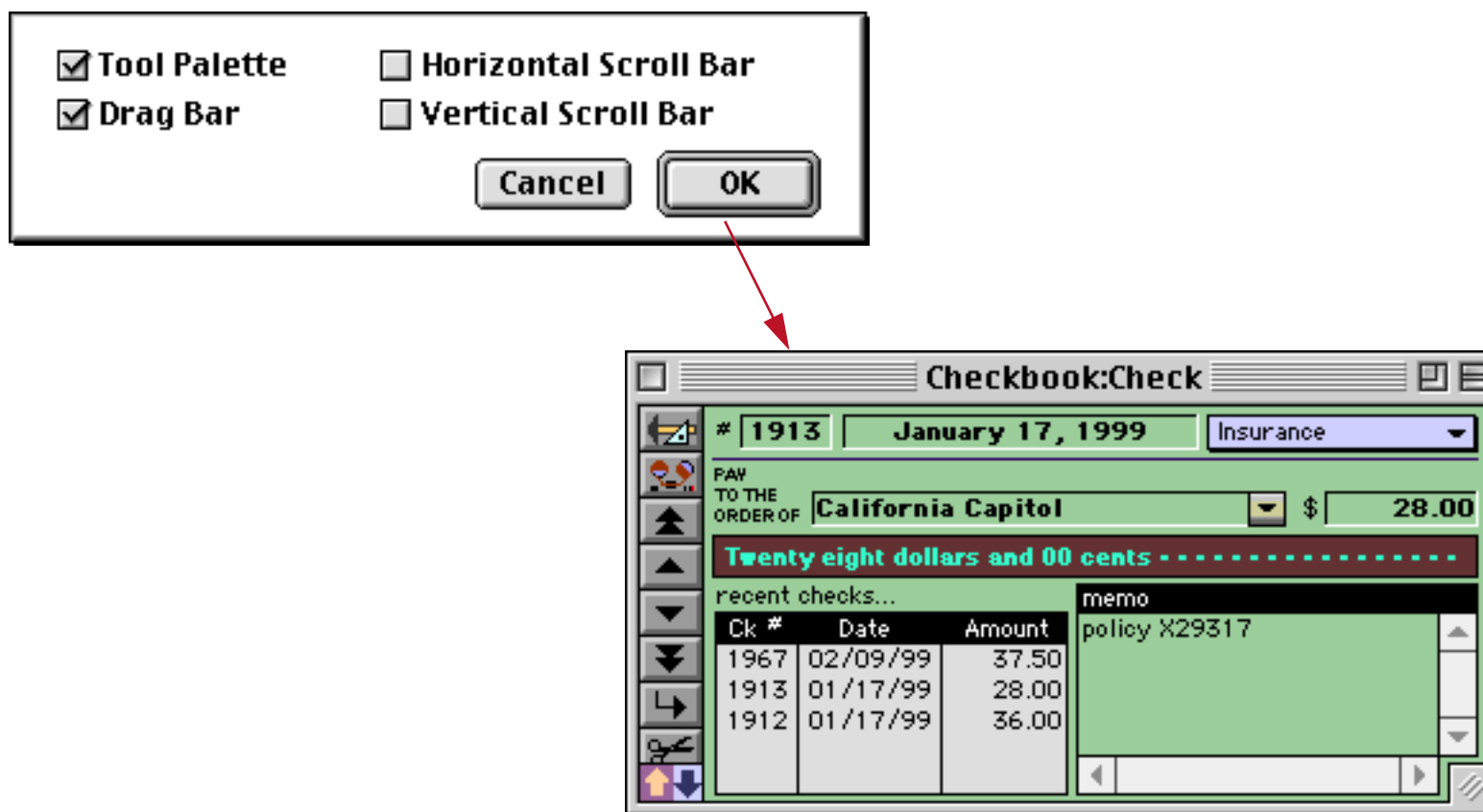
To define the position and size of the new window, simply drag a rectangle across the miniature screen, as shown in the illustration above. If you don't get the position quite right, simply drag again. (Of course you can also adjust the position and size later.) When you press the **Ok** button the new window will open in the location you have specified.



Panorama allows you to open up to 64 windows at one time.

Window Options

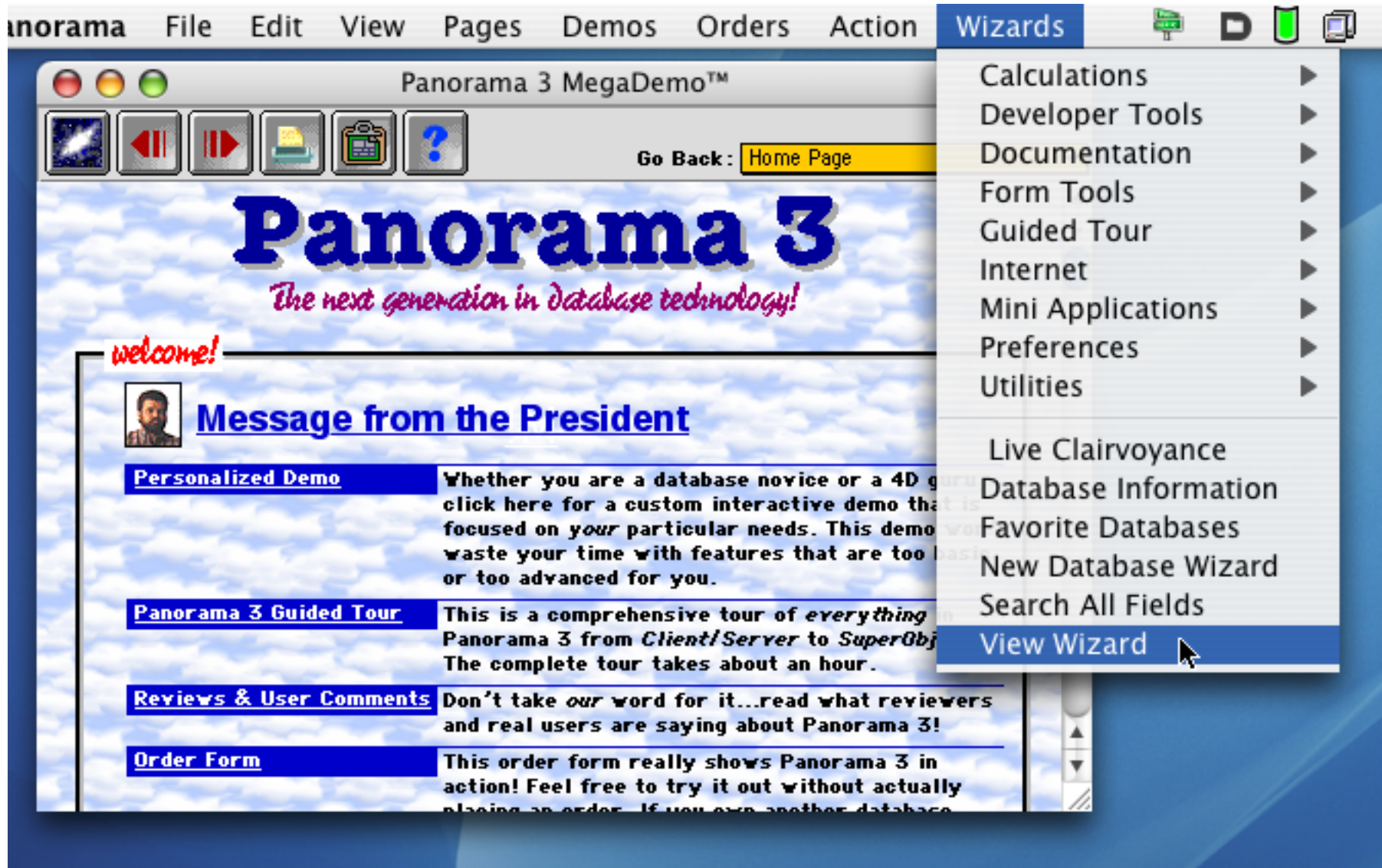
The **Options** button in the Window Options dialog allows you to selectively eliminate up to four components from a new window—the tool palette, scroll bars, and drag bar (you can also turn these components on and off with the **Window Tweak** wizard, see “[Turning Window Components On and Off \(Window Tweak Wizard\)](#)” on page 150). This illustration shows a form with the scroll bars removed.








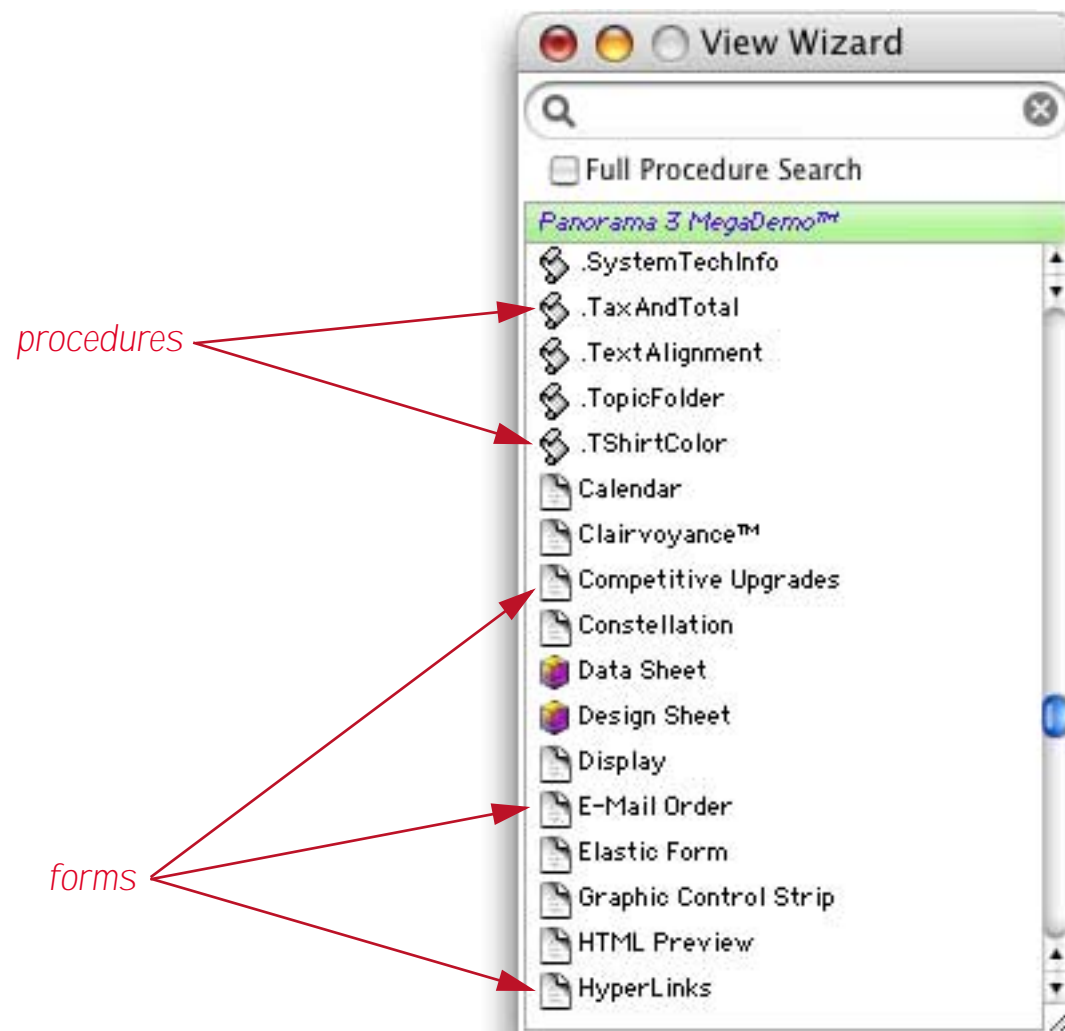
Some views will not work properly if components are eliminated—for example, you should not eliminate the vertical scroll bar from a data sheet. Be very careful if you remove the drag bar. If the drag bar is removed, the window cannot be manually moved, resized, or closed. (It can be closed by programming a procedure to close the window.)

The View Wizard

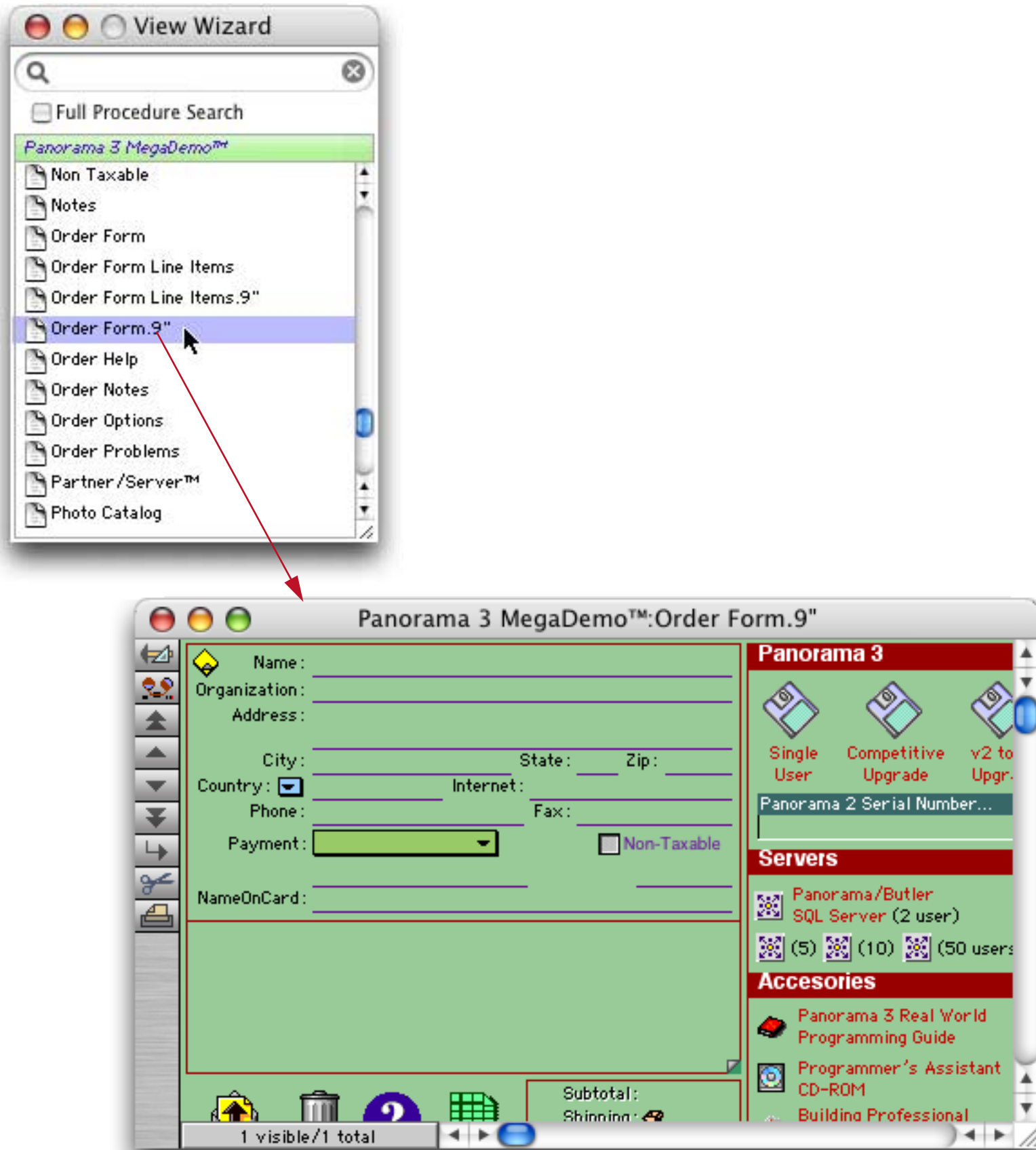
The **View** menu works well for most databases, but when a database grows to dozens of forms and hundreds of procedures it can get a bit unwieldy. For these situations the **View Wizard** comes in handy. This is a database that comes with Panorama that can help you locate and open any view. When you first open the View Wizard database it displays a list of all the forms or procedures in the currently open Panorama database. (Whether it initially displays forms or procedures depends on what type of window was open before the wizard was activated.) For example, suppose the **Panorama 3 MegaDemo™** file is open.



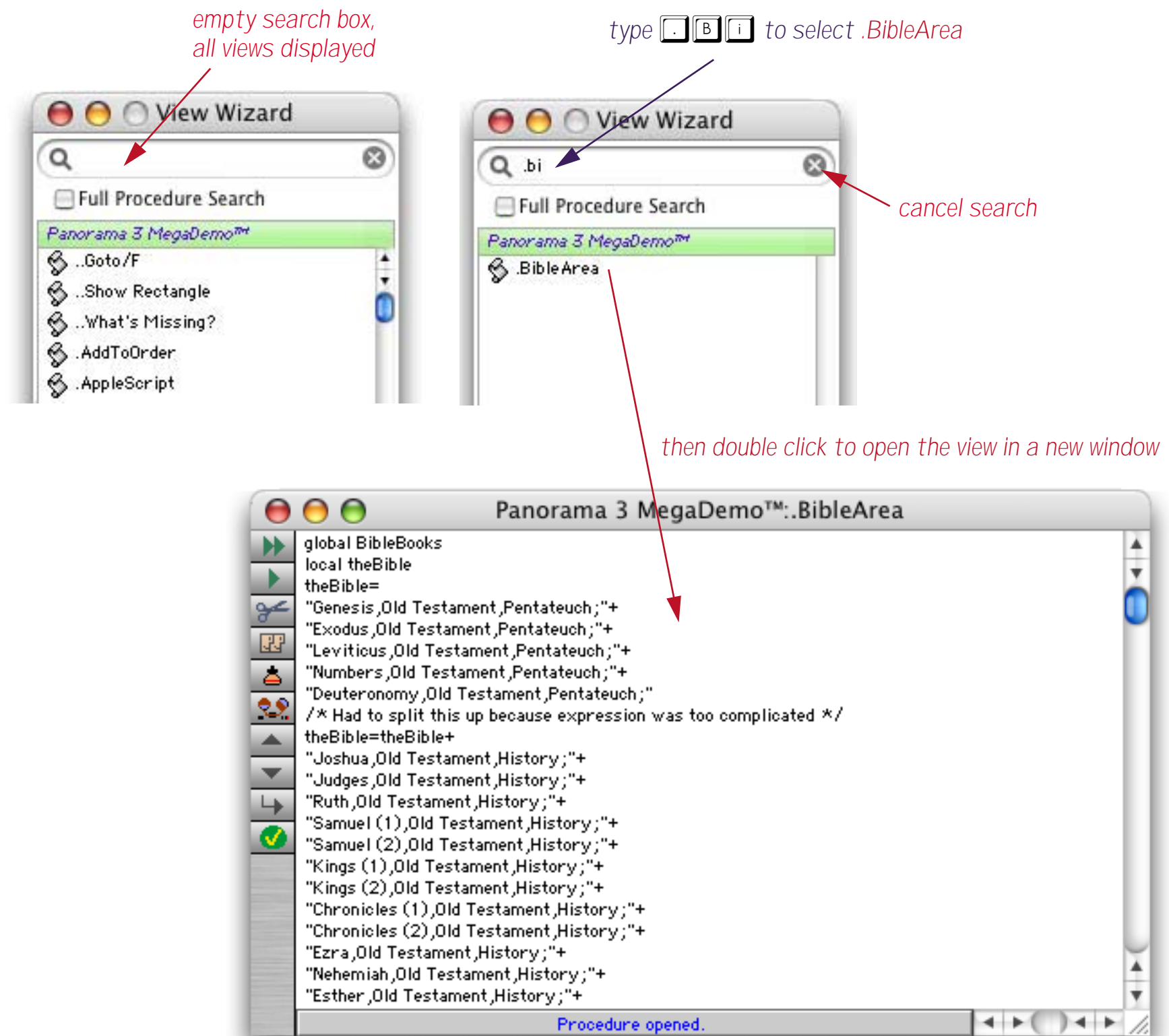
When the **View Wizard** opens it displays a list of the views in this database ([Panorama 3 MegaDemo](#)), including  forms,  procedures,  crosstabs, the  data sheet and the  design sheet. In the example below the procedures and forms appear to be grouped together, but that is just a coincidence — the views are listed in alphabetical order.



Double click to open any view.



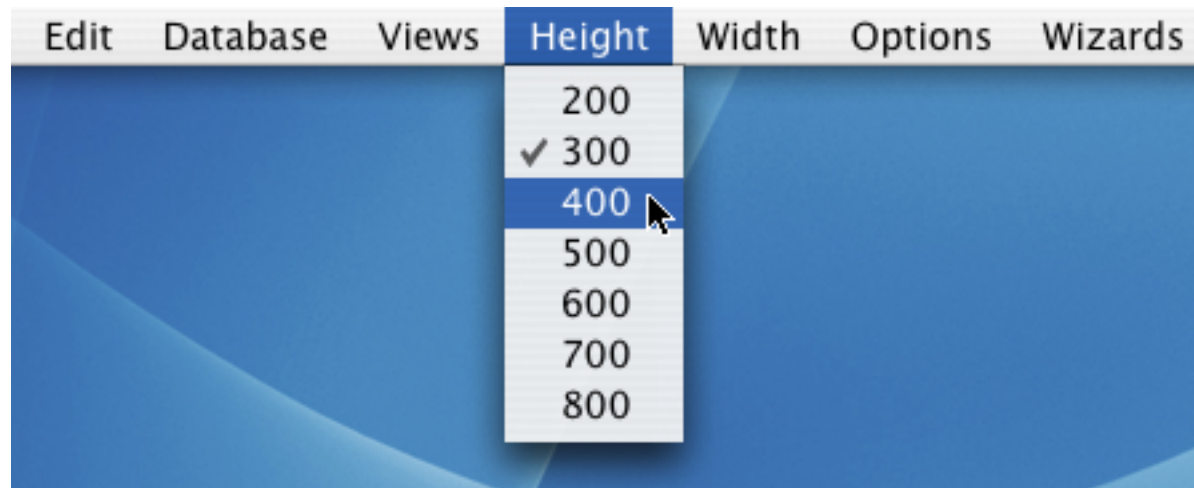
If you know the name of the view you want to open you can find it quickly by typing in the first few letters. As you type each letter, the wizard will show you the views that match that name.



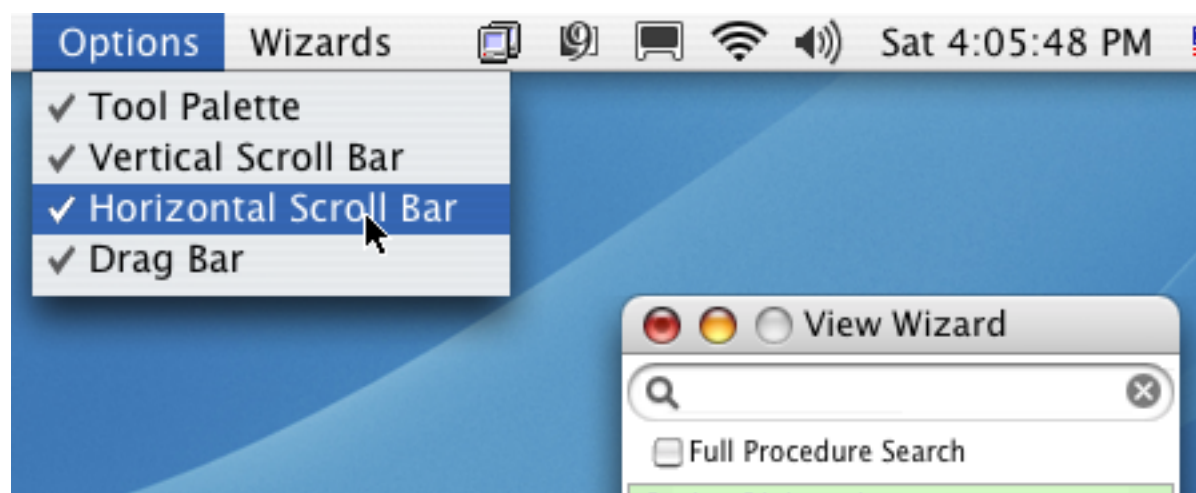
Use the Database menu to view forms, procedures or crosstabs in a different open database.

View Wizard Window Size and Options

The **Height**, **Width** and **Options** menus allow you to control the size and options of the new window. The **Height** and **Width** menus specify the dimensions of the new window in pixels (72 pixels per inch).



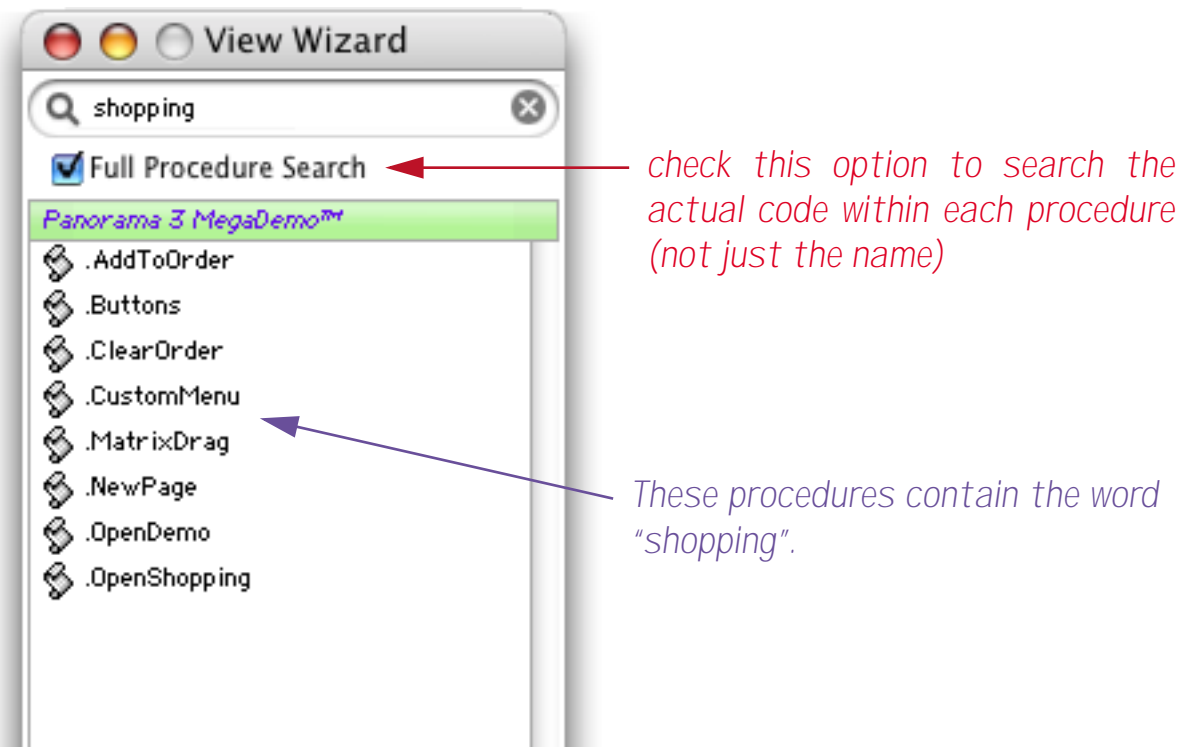
If you are opening a form view you can also use the **Options** menu to control whether or not the tool palette, scroll bars and drag bar appear in the new window. (These options are ignored when opening other kinds of windows.)



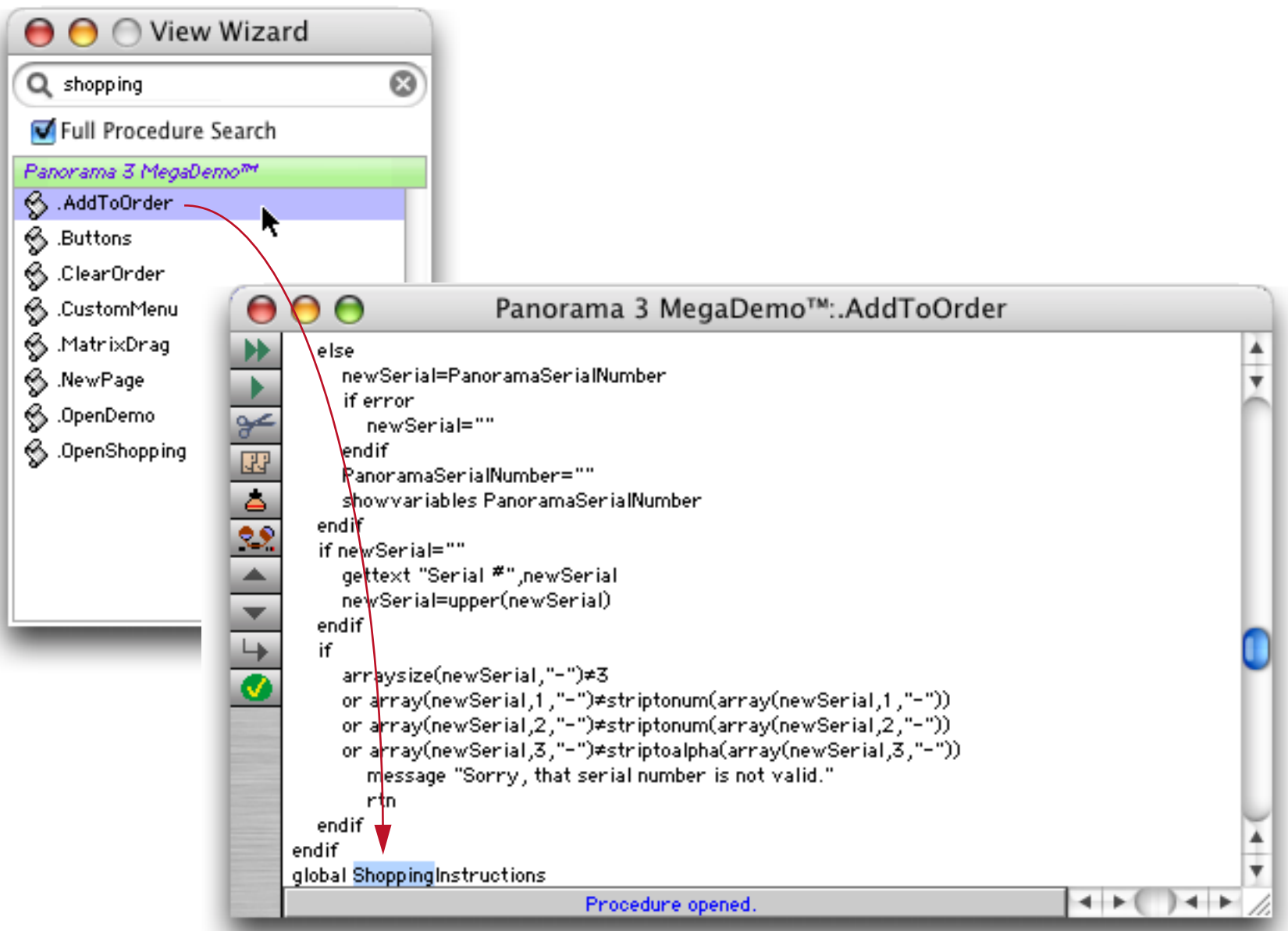
Remember that you can also adjust a form window's size and options after you have opened it with the **Window Tweak** wizard, see "[Turning Window Components On and Off \(Window Tweak Wizard\)](#)" on page 150.)

Searching All Procedures

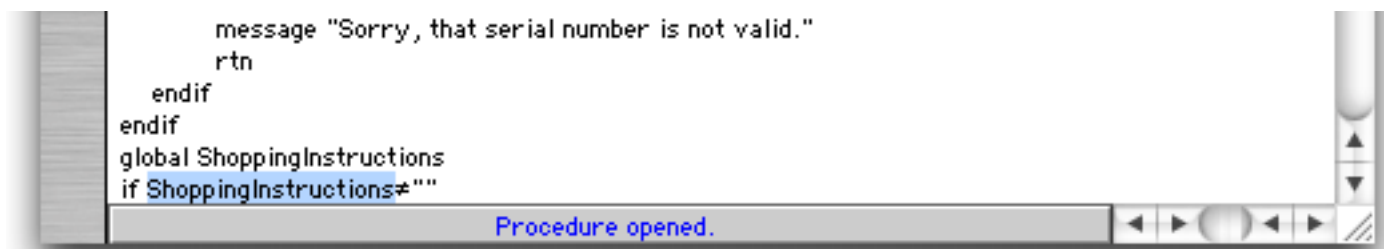
The **View Wizard** has the capability of searching the text of all procedures in a database. Simply check the **Full Procedure Search** option and type in the word or phrase you want to search for. The list will update as you type each key.



When you double click on one of these procedures the wizard will open the procedure window and automatically locate the first occurrence of the word or phrase.



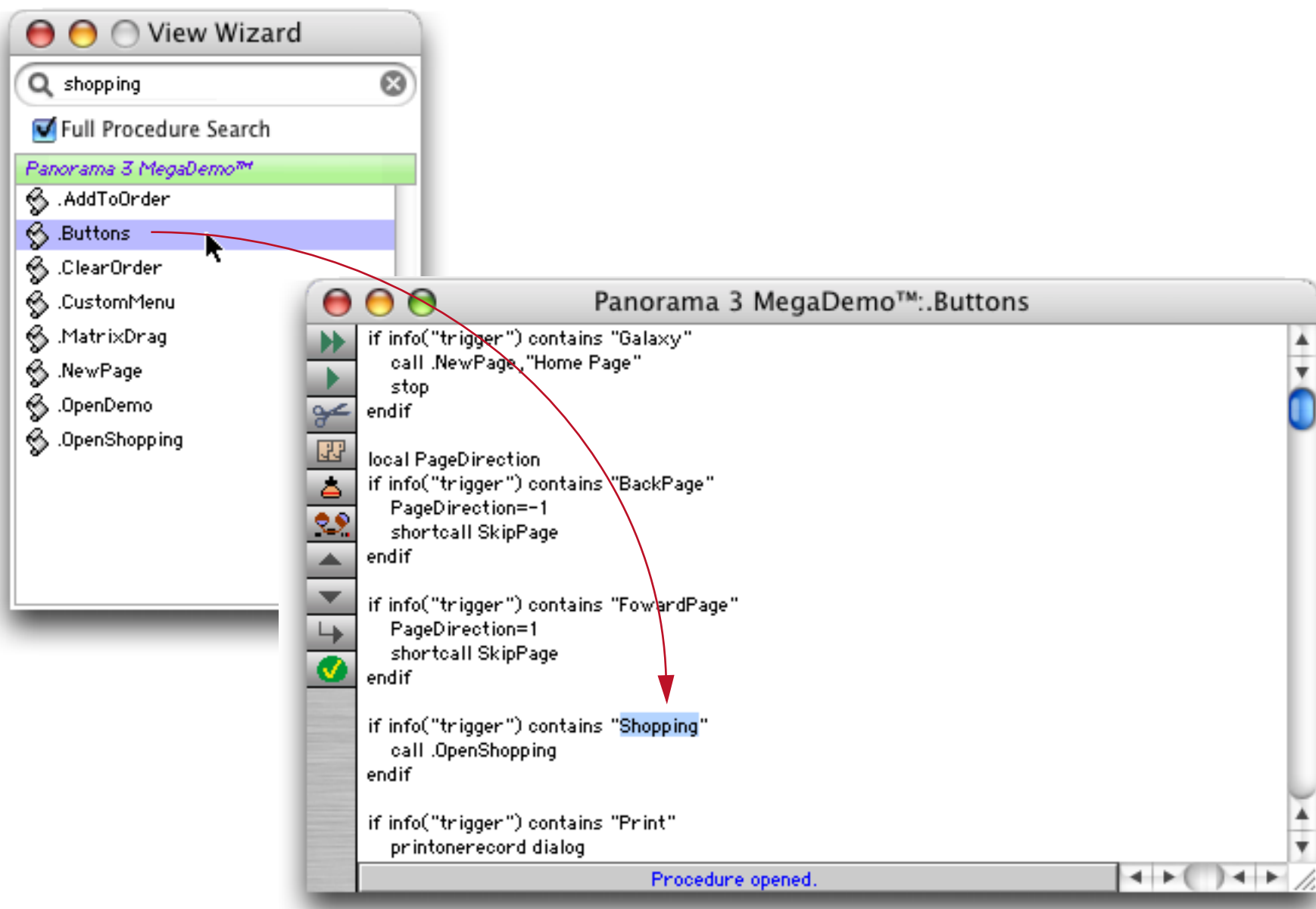
Choose **Find Next** from the Search menu to find the next occurrence of this word or phrase within the procedure (if any).



```
message "Sorry, that serial number is not valid."
rtn
endif
endif
global ShoppingInstructions
if ShoppingInstructions=""
```

Procedure opened.

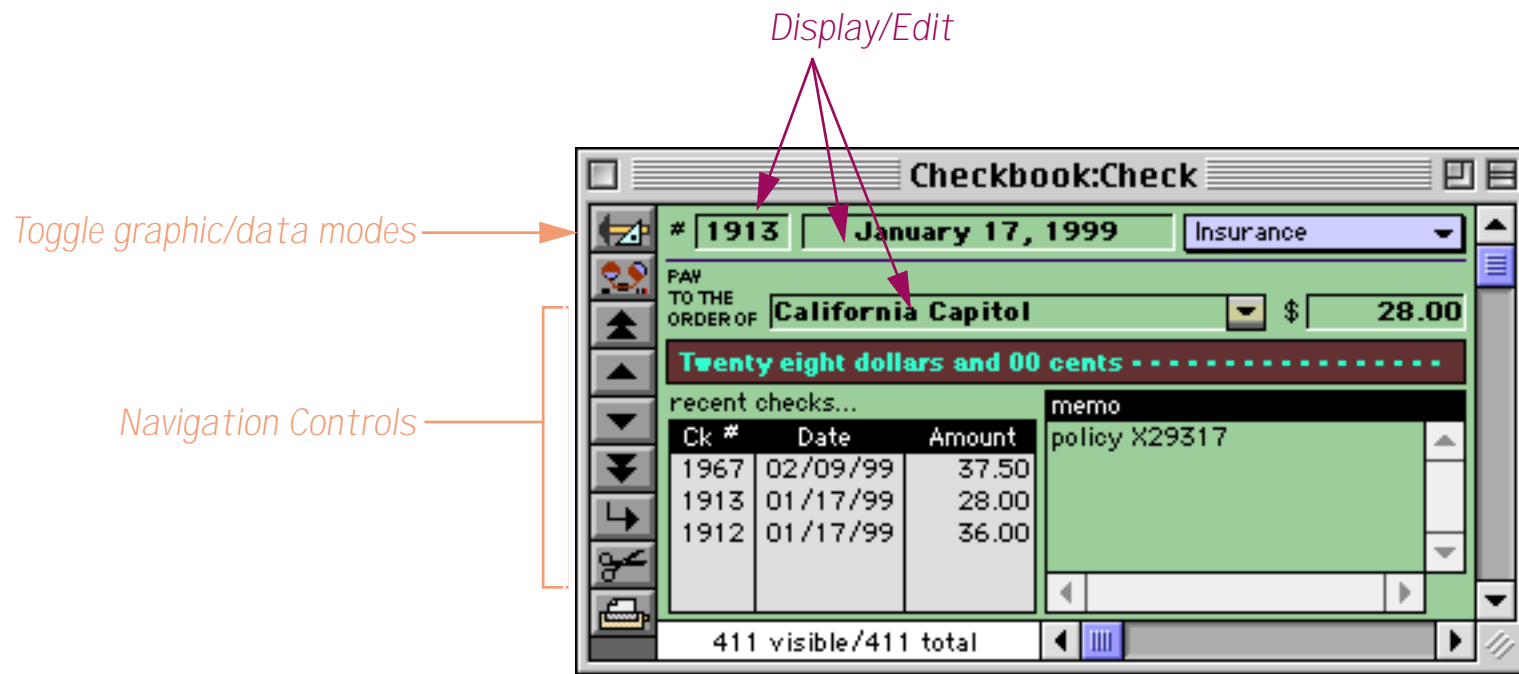
You can repeat using the **Find Next** command until you have located every occurrence of the word or phrase in this procedure. At that point you'll need to go back to the **View Wizard** to continue with the next procedure.



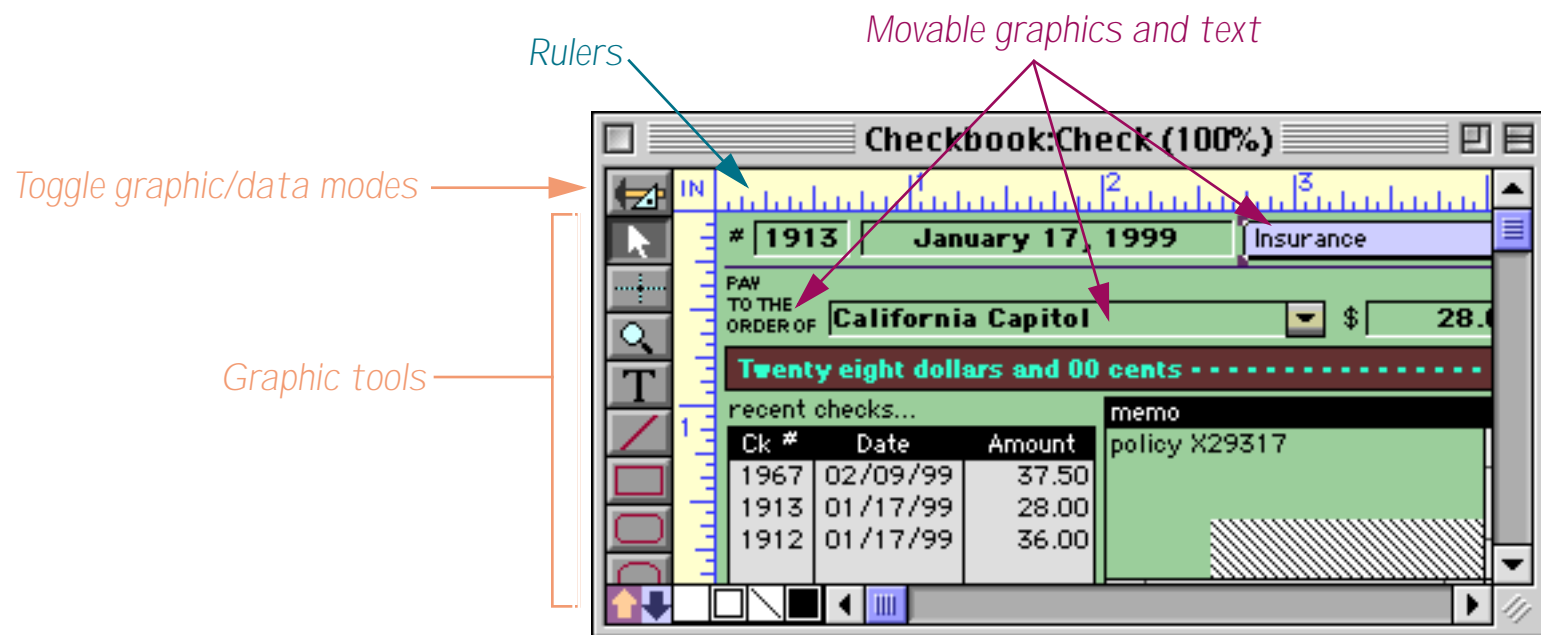
You can continue this process until you have located every occurrence of the word or phrase in the database.


Form Modes: Data Access vs. Graphic Design

Unlike other views, the Form View operates in two distinct modes—data access and graphic design. **Data access mode** (also called “data mode”) is the default mode. In this mode you can view and display data, and navigate through the database.



Graphic design mode (also called “graphics mode”) functions like an electronic drafting table. In this mode you design the form by drawing lines, boxes, and other graphic elements. This mode is very similar to many drawing and page layout programs. Graphic design mode is easily recognized by the rulers that appear at the top and left edges of the windows.



To switch between data access and graphic design modes, click on the  tool. Each click on this tool toggles the window between the two modes.

Form Operation: Individual Pages vs. View-As-List

Panorama allows you to set up blank forms as individual pages or as a continuous sheet (**view-as-list**). When forms are set up as individual pages you see one record at a time. You can flip through the records just as you would shuffle through a stack of paper forms. All of the examples of forms you've seen so far are individual page forms.

A **view-as-list** form displays data as a continuous sheet, as shown below. Instead of flipping from record to record, you scroll up and down through the data in a manner similar to the data sheet. However, unlike the data sheet, a view-as-list form allows you to arrange the data any way you like, and even include graphics in the display. On the other hand, view-as-list forms are slower than the data sheet (because of the overhead in displaying the graphics) and they are much more work to set up.

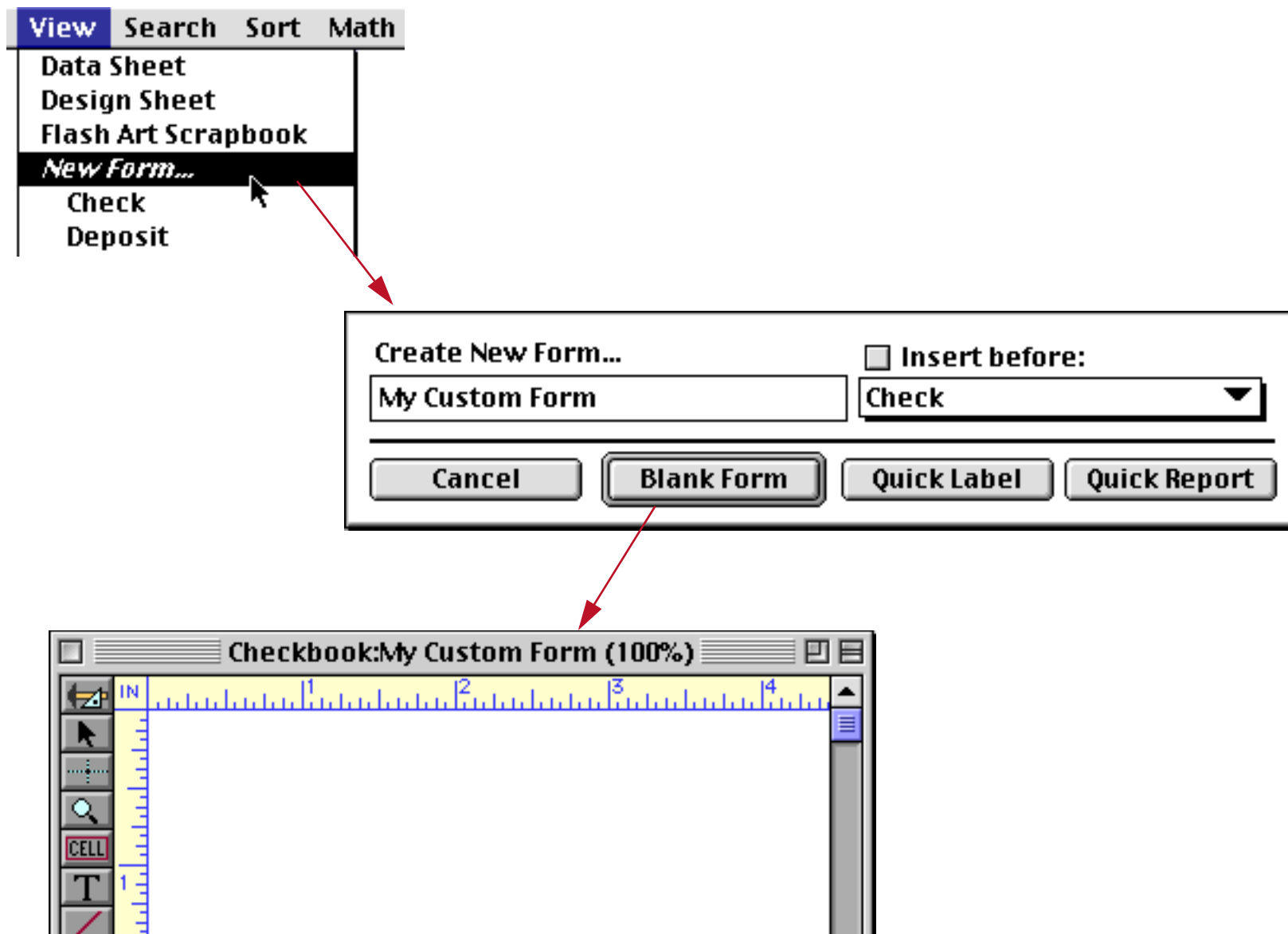
Date	Num/Pay To (Category)	Amount	Balance
01/17/99	1913 California Capitol (Insurance)	28.00	35,023.26
01/17/99	1914 U S Postmaster (Postage)	75.00	34,948.26
01/17/99	1915 Sacramento Bee (Advertising)	795.00	34,153.26
01/18/99	DEPOSIT	+3,846.32	37,999.58
01/22/99	1916 Walthers (Purchases)	12,463.00	25,536.58
01/22/99	1917 Blue Cross Of Calif (Insurance)	279.03	25,257.55
01/22/99	1918 Sherman Douglas Ins (Insurance)	418.60	24,838.95
01/22/99	1919 Cannon Astro (Office Supplies)	145.72	24,693.23
01/25/99	1920	1,885.40	22,807.83

411 visible/411 total

Unless you tell it otherwise, Panorama sets up a new form as individual pages. To convert the form to a continuous sheet you must use the **Form Preferences** command (Setup menu) to set the **View-as-List** option. You will also have to define the boundaries of the form by setting up a data tile (and optional header tile). For more information about setting up view-as-list forms see "[View-As-List Forms](#)" on page 899.

Creating a New Form, Crosstab or Procedure

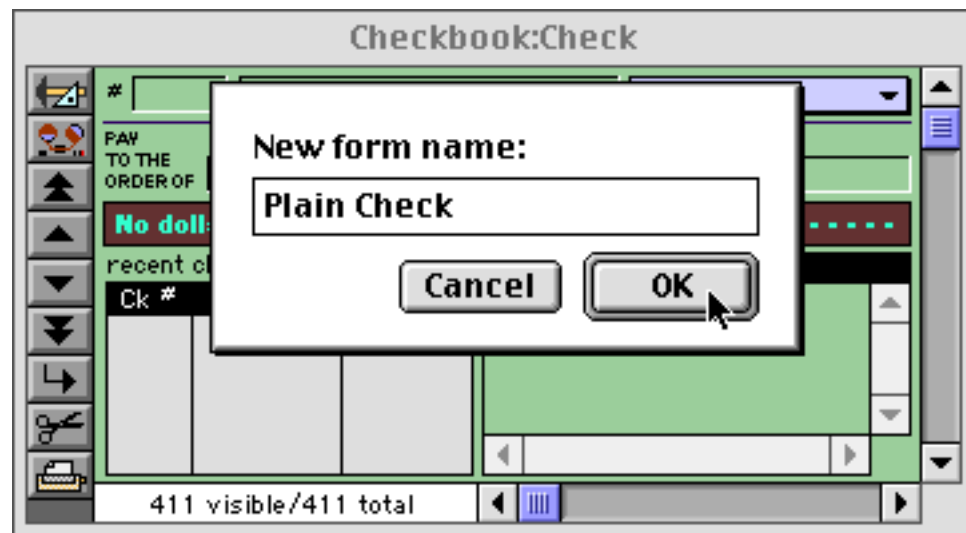
To create a new view, choose **New Form**, **New Crosstab**, or **New Procedure** from the View Menu. A dialog box will appear asking you to name the new view. A view name may be up to 25 characters long and can contain any letter, number or punctuation.



When you create a new view, it is usually added to the end of the appropriate section in the View Menu. For example, a new form usually becomes the last form in the View Menu. If you wish, you can insert the new view into the middle of the View Menu. To do this, check the **Insert before** button and use the pop-up menu directly below the Insert before button to specify the position of the new view. You can also re-arrange the order of the views using the **Re-Arrange** command in the Setup menu.

Renaming a Form, Crosstab or Procedure

To rename the currently visible form, crosstab or procedure choose **Rename Form**, **Rename Crosstab**, or **Rename Procedure** from the Setup Menu. Type in the new name (limit 25 characters) and press **Ok**.



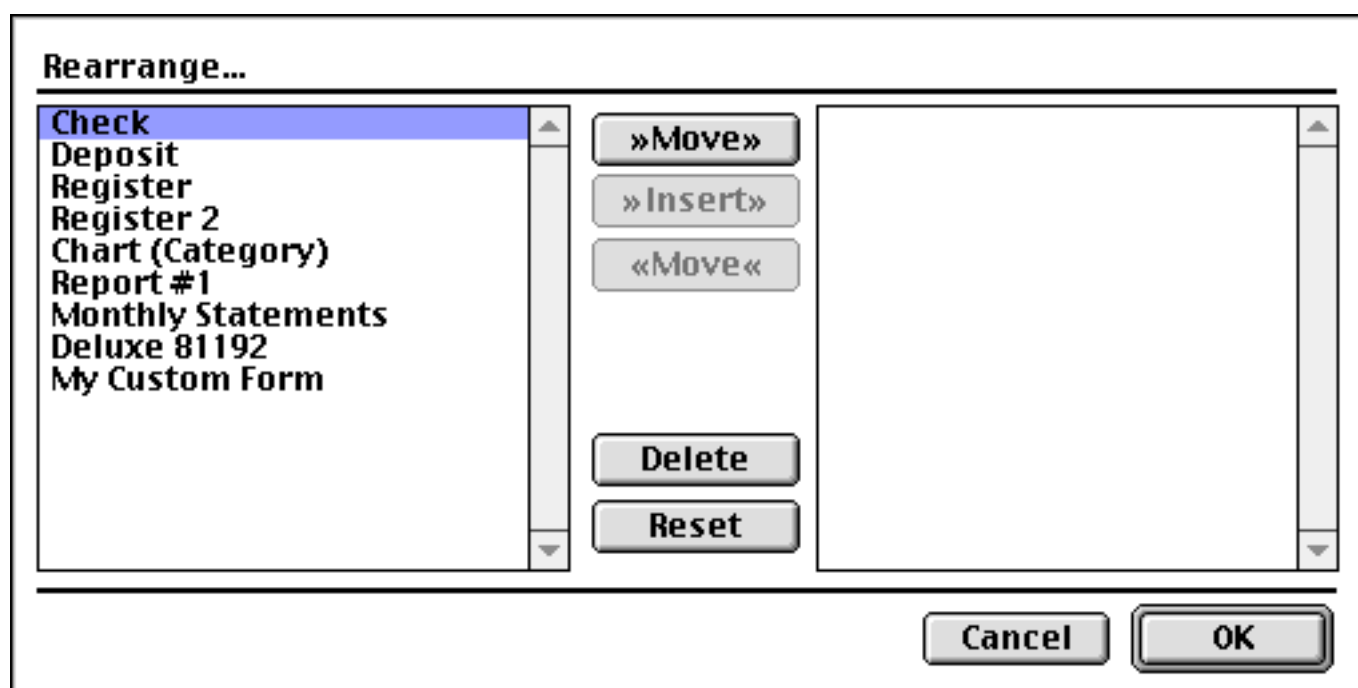
Deleting a Form, Crosstab or Procedure

To delete a form, crosstab, or procedure choose **Delete Form**, **Delete Crosstab**, or **Delete Procedure** from the Setup Menu. Since you cannot undo after you delete a view, Panorama will ask you if you are sure before it actually deletes the view. Note: If only one view is open and you remove it, Panorama will close the entire file. To avoid this, open an extra window before you delete a view.

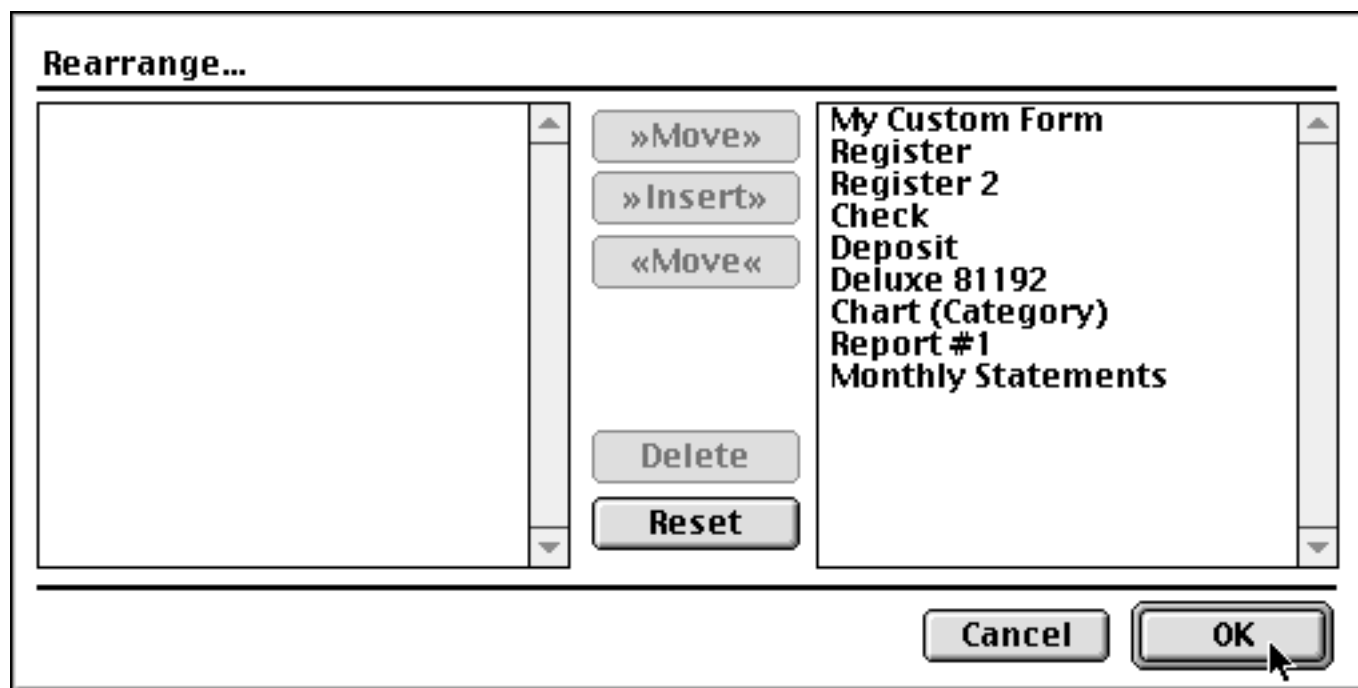
You can also delete views with the **Re-Arrange** command in the Setup menu (described in the next section). The **Re-Arrange** command is the fastest way to remove several views at once (see below).

Changing the Order of Forms, Crosstabs or Procedures

The **Re-Arrange Forms**, **Re-Arrange Crosstabs**, and **Re-Arrange Procedures** commands in the Setup menu change the order of the items listed in the View Menu. Each of these commands displays a dialog box listing the current view order on the left and the new view order on the right.



This dialog is like a puzzle—the object is to move the views from the left to the right in the order you want. To move a view to the other side, either double-click on it or press the **>>Move>>** button. To insert a view into the middle of the list on the right, first select the spot where you want to insert and then press the **>>Insert>>** button. When all the views have been moved to the right hand side, press the **Ok** button to rearrange the views.

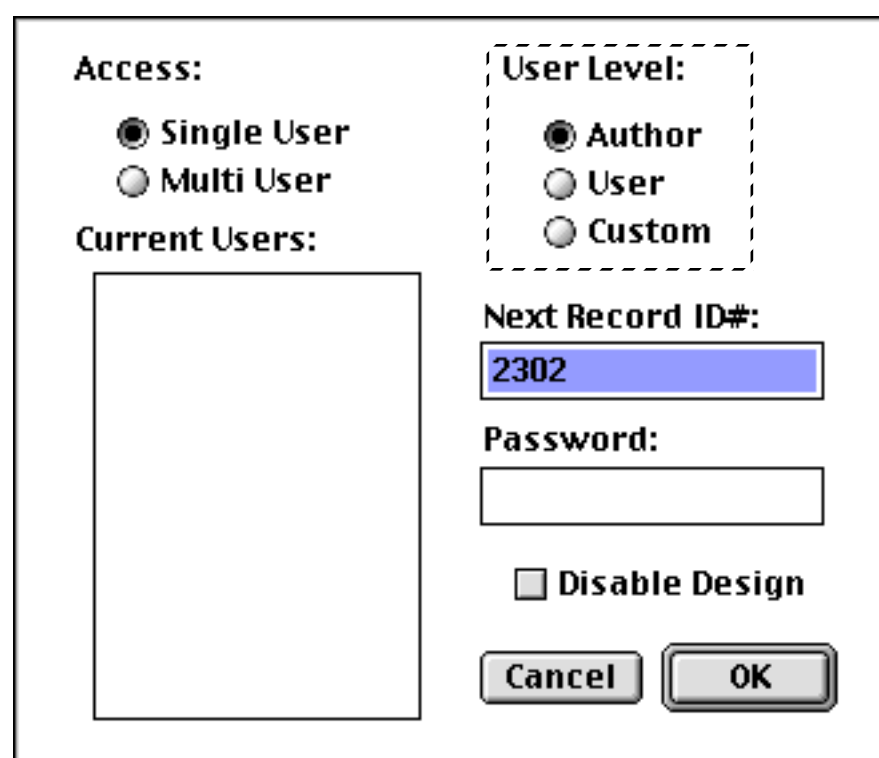


You can also use this dialog to delete views. To delete one or more views, press the **Delete** button instead of moving the view to the right. **Warning:** You cannot delete an open view using the **Re-Arrange** command. First close the view (form, crosstab or procedure) and then delete the view.

The Privilege Dialog

The **View** menu normally gives you complete freedom to access any view in your database. If other people are going to be using your database you may want to prevent them from switching to unauthorized views.

To restrict user access to the **View** menu, use the Privilege dialog (shown below). To open this dialog on a Macintosh computer, hold down the **Command** or **Option** key and choose **About Panorama** from the Apple menu. To open this dialog on a Windows system, hold down the **Control** or **Alt** key and choose **About Panorama** from the Help menu. This dialog allows you to choose one of three possible user levels for the current database: **Author**, **User**, and **Custom**.



The **Author** level places no restrictions on the user—he or she can change the database design, draw graphics, open and close windows, and generally perform any Panorama operation described in this manual.

The **User** level allows the user to perform data entry and analysis, but prevents the user from changing the database design or changing the graphics in a form. User level disables the **View** menu, so the user cannot choose which view he or she wants to use. They can only use views that are opened automatically when the database is opened or views that are opened with procedures set up in advance.

The **Custom** level is even more restrictive. All of the tools in the tool palette disappear, along with all of the menus except for the **File**, **Edit** and **Action** menus. When the database is locked to the custom level, the user can perform data entry and predefined programs (procedures)—and that's it. Everything else is forbidden.

To prevent unauthorized users from changing the user level, the Privilege dialog can be protected with a password. Once the password is set, you cannot open the Privilege dialog unless you know the password.

User Levels vs. Save Window Positions

If the user level is set to **User** or **Custom** the **Save** command will not save the new window positions—even if the **Save Window Positions** option is turned on. The window positions are only saved when the file is at the Author level. This allows the database author to reliably set up the initial views and window positions.

Hiding Sensitive Data

Since the **User** and **Custom** levels prevent the user from using the **View** menu, it is possible to hide fields containing sensitive information from most users of a database. To do this:

- 1) Create a form that shows only the non-sensitive data.
- 2) Close all of the other windows associated with this database.
- 3) Save the database with the **Save Window Positions** option checked.
- 4) Set the user level to **User** or **Custom** (you will probably want to set a password at this time also)
- 5) Save the file again.

The next time this database is opened, only the form displaying the non-sensitive data will appear. Since the database is locked, the user cannot open any of the views that contain sensitive information. Users who know the password can use the **Privileges** dialog to switch to **Author** level, or you can set up a procedure that switches views if the user knows the correct password.

Chapter 4: Records



The heart of a database is, naturally, the data stored in it. Since storing and organizing data is Panorama's primary task, it has special rules and procedures for handling data.

Data Organization

Inside each Panorama database the information is organized into records and fields. A record consists of a group of related information. In a personnel database, for example, each record would contain all the information about a single employee. Most databases have anywhere from several dozen to several thousand individual records. The example database shown below has 102 records, 17 of which are currently visible in the window.

First	Last	Title	Company	Address	City	State	Zip
Henry	Hultquist		Lincoln Lumber	1197 S. 17th	Lincoln	NE	68502
Steve	Jackson	Purchasing	Ann Arbor Lumber	389 Worden	Ann Arbor	MI	48103
Glen	Knock		South Portland Lumber	909 Wescott Rd	South Portland	ME	04106
	Kovacs	Owner	Stephen's Appliances	90 Duane Lane	Demarest	NJ	07627
Mike	Kuenning	Sales Manager	Gamma Printing	3 Almy Drive	Malvern	PA	19355
Scott	Lay		Portland Lumber	1278 N.E. 136th	Portland	OR	97230
Wes	Lemarr			57 Hobart Ave	Rutherford	NJ	07070
Jerry	Levan			883 Boone Trail	Richmond	KY	40475
Tom	Long		Austin Lumber	1897 Balcones Drive	Austin	TX	78731
Tom	Love			53 Clubhouse Drive	Woodbury	CT	06798
Nadine	Lucas	Purchasing	N.L. Plumbing	759 2nd Ave	San Francisco	CA	94118
John	Maguire	Vice President	Akron Lumber	39 Beck Ave	Akron	OH	44302
James	Mahan	Owner	J.M. Plumbing	1294 W. 31st	Los Angeles	CA	90018
John	Marshall	President	John's Appliances	6110 Lowbank	Jenison	MI	49428
Don	Meadows	Sales Manager	Austin Lumber	1144 A West 6th	Austin	TX	78703
Charles	Michaels			5238 Quince	Upland	CA	91786
Steve	Miller	President	SM Printing	3894 11th Court	Jupiter	FL	33458

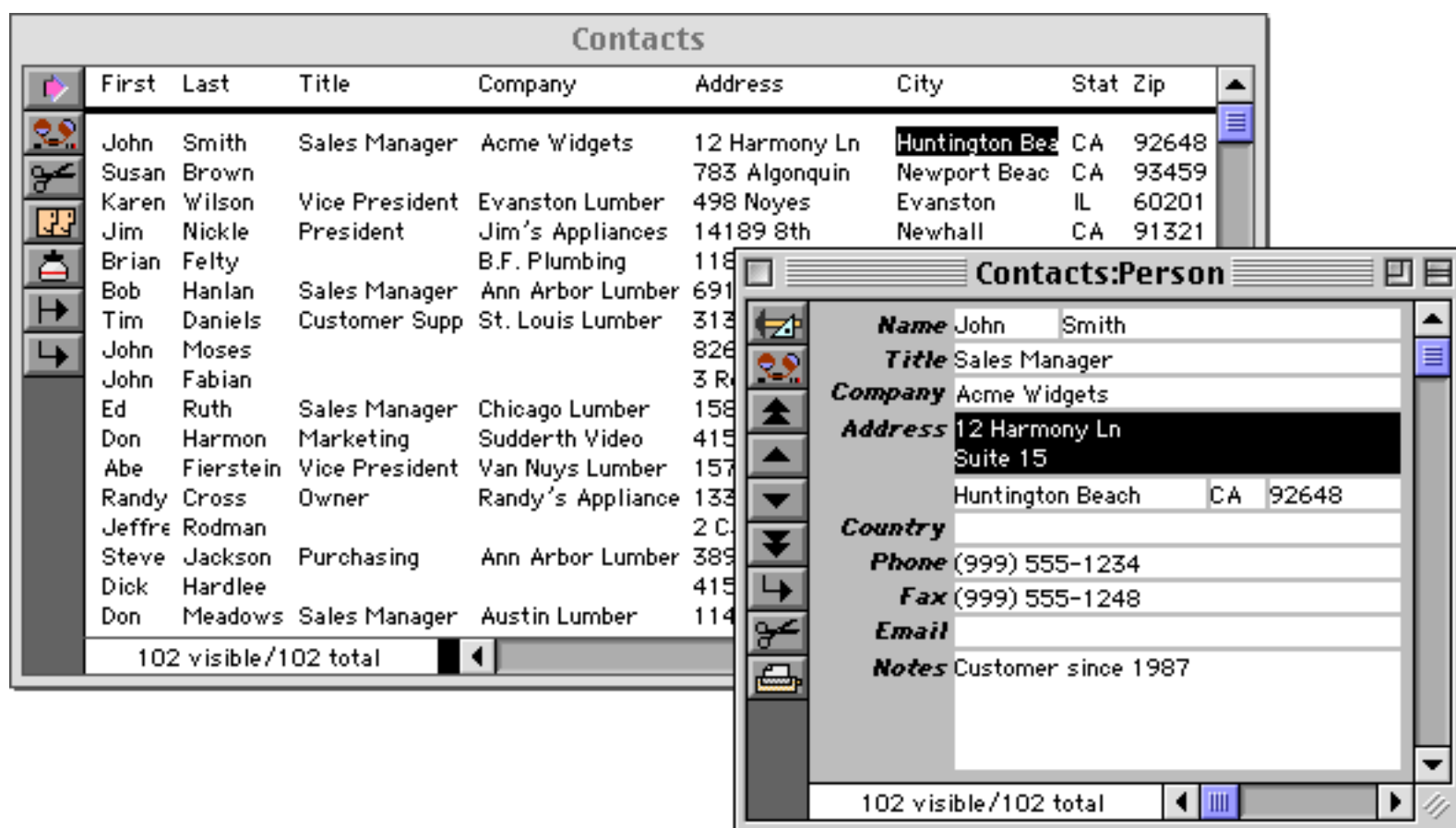
The database is also divided into fields. Each field contains a specific item of information—a street address, a phone number, a birthdate, etc. Most databases have somewhere between five and one-hundred fields (Panorama allows up to 65,000 fields per database).

Every record in a database contains exactly the same fields. If certain records don't use a particular field it can be left empty, but the field itself still exists for every record. For example, notice that in the illustration above some of the Title and Company entries are empty. (However, you can create a form that does not display all of the fields. See "[Displaying and Editing Text](#)" on page 587.)

As you work with a database, you will constantly be adding new records, revising and removing old records, and rearranging (sorting, etc.) existing records. Fields can also be added, revised, and removed, but you will do this much less often. Once the fields are set up, you will usually leave them alone.

Tables vs. Individual Pages

Panorama can display any database either as a table of records or as an individual page for each record. In the table format each line corresponds to a record, and each column corresponds to a field. Common examples include phone directories and price lists. In the individual page format each page corresponds to a single record. Each item on the page corresponds to a field. Common examples include invoices, tax returns, and report cards.



Panorama doesn't care whether the database is displayed as a table or as individual pages. As you can see, the same information is displayed and edited either way. Use the method that seems natural for the database you are working with.

Special Records

Most database programs treat every record the same way. Panorama, however, distinguishes between three different types of records: **data records**, **summary records**, and **invisible records**. Most of the work you do will be with ordinary data records. Summary and invisible records, however, are the keys to some of Panorama's unique capabilities.

Data Records

Ordinary records used for data storage are called **data records**. You can create new data records one at a time by keying in information, or you can add many new data records at once by importing data.

Summary Records

Summary records are temporary records used for calculating totals, subtotals, and other summary information. Panorama's **Group** commands automatically create summary records for you. When viewing the database as a sheet you can identify summary records by the light blue background color, and by the fact that they are usually displayed in bold.

Date	CkNum	PayTo	Category	Debit
02/15/99	1979	U S Postmaster	Postage	125.00
02/20/99	1980	U S Postmaster	Postage	80.00
03/20/99	2012	U S Postmaster	Postage	25.00
03/20/99	2013	U S Postmaster	Postage	85.00
05/22/99	2104	U S Postmaster	Postage	115.00
07/16/99	2186	U S Postmaster	Postage	75.00
08/20/99	2239	U S Postmaster	Postage	85.00
		U S Postmaster		850.00
03/28/99	2022	U S Sprint	Telephone	42.31
06/05/99	2152	U S Sprint	Telephone	79.53
		U S Sprint		121.84
02/26/99	1982	University Copy System	Office Supplies	36.20
		University Copy Sys		36.20
02/01/99	1938	Unocal	Auto	182.59
02/09/99	1968	Unocal	Auto	57.62
03/16/99	2007	Unocal	Auto	33.32
05/24/99	2111	Unocal	Auto	119.05
07/16/99	2189	Unocal	Auto	38.11
07/24/99	2213	Unocal	Auto	34.44
08/20/99	2240	Unocal	Auto	89.91
		Unocal		555.04

520 visible/540 total

summary records

Summary records may appear in one of seven levels, from 1 to 7. Each higher level is used for a higher level of subtotal. Each summary level can be identified by the deeper shade of blue in the background, as shown here. This database has been grouped into three summary levels.

Date	CkNum	PayTo	Category	Debit
07/24/99	2212	City Of Caboose	Utilities	98.52
09/19/99	2290	City Of Caboose	Utilities	103.15
		City Of Caboose		488.57
02/09/99	1973	S C E	Utilities	172.03
03/29/99	2043	S C E	Utilities	89.46
05/07/99	2083	S C E	Utilities	96.26
05/24/99	2118	S C E	Utilities	97.00
06/05/99	2154	S C E	Utilities	157.31
06/14/99	2161	S C E	Utilities	56.27
08/13/99	2235	S C E	Utilities	86.53
09/19/99	2291	S C E	Utilities	81.13
		S C E		835.99
02/09/99	1972	So. Calif. Gas Co.	Utilities	136.33
03/29/99	2042	So. Calif. Gas Co.	Utilities	217.32
05/07/99	2085	So. Calif. Gas Co.	Utilities	86.74
05/24/99	2117	So. Calif. Gas Co.	Utilities	134.99
09/19/99	2292	So. Calif. Gas Co.	Utilities	154.95
		So. Calif. Gas Co.		730.33
			Utilities	2,054.89
				183,651.22

542 visible/543 total

level 1 (company)

level 2 (category)

level 3 (grand total)

Panorama allows you to treat summary records as a collapsible outline. You can use the **Outline Level** command to collapse the outline to show only high level summaries, then use the **Expand**, **Expand All**, and **Collapse** tools to expose the detail you need to see. For more about Panorama's outline capability, see "[Summaries and Outlines](#)" on page 365.

The screenshot shows a window titled "Checkbook" with a table of transactions. The table has columns for Date, CkNum, PayTo, Category, and Debit. Summary records are shown in bold text. On the left side of the table, there are three red arrows pointing to the expand/collapse icons, labeled "Expand", "Expand All", and "Collapse".

Date	CkNum	PayTo	Category	Debit
			Printing	188.96
			Purchases	66,217.17
			Rent	35,026.34
		Airborne Express		35.40
		AIRS		138.07
		American Customs H		34.00
		B J D Trucking Inc.		37.50
		Burlington Air Expre		95.17
		Consolidated Freight		150.20
01/30/99	1929	Federal Express	Shipping	178.75
03/20/99	2015	Federal Express	Shipping	170.00
03/28/99	2032	Federal Express	Shipping	150.00
05/14/99	2101	Federal Express	Shipping	170.00
		Federal Express		668.75
		U P S		769.11
			Shipping	1,928.20
			Taxes	5,152.79
			Telephone	5,690.50
			Utilities	2,054.89
				183,651.22

29 visible/563 total

Summary records are designed to have a very short lifetime—usually only a few minutes. When you want to calculate subtotals or other summaries you'll create new summary records. After you've examined (and possibly printed) the summaries, you'll use the **Remove Summaries** command to remove them so you can get back to regular work with your database. For more information about summary records, see "[3-Step Summarizing](#)" on page 365.

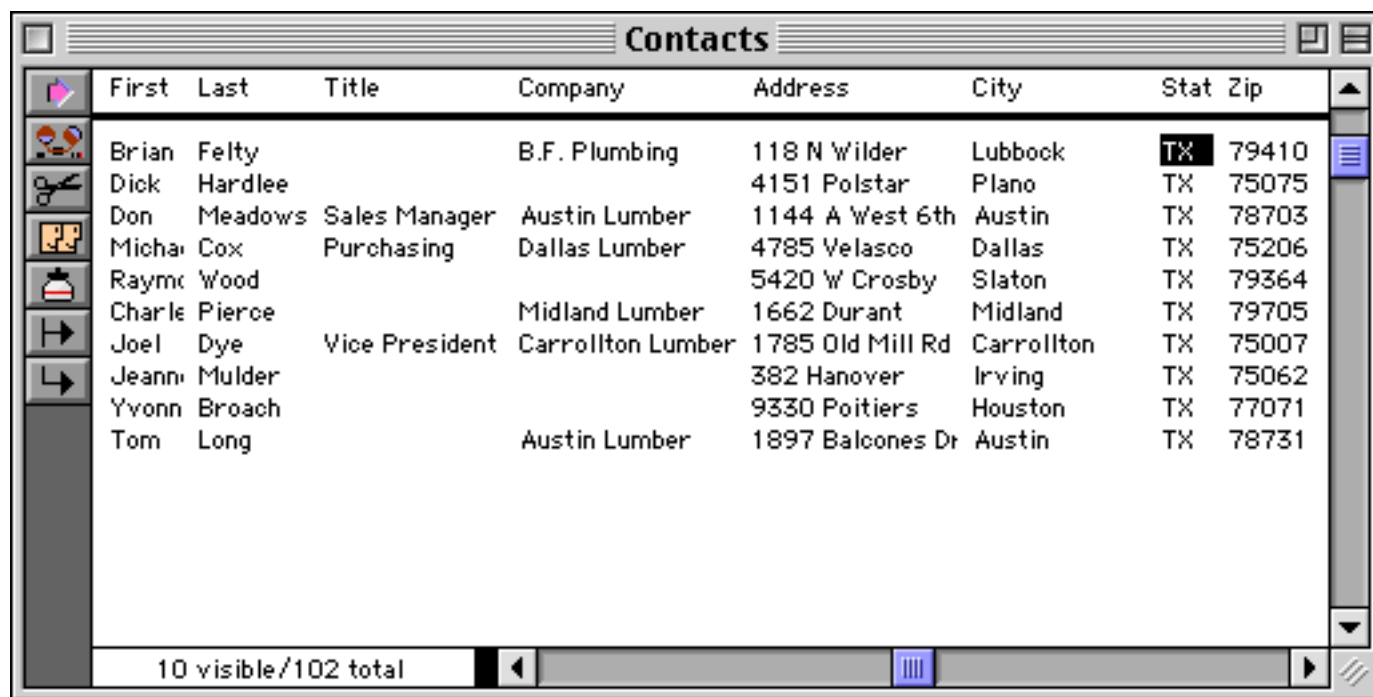
Invisible Records

Invisible records are ordinary data or summary records that have been made temporarily invisible. For instance right now you might be interested only in sales made in California, transactions over \$250,000, or invoices over 45 days old. Panorama's **Find/Select** commands allow you to choose the data you want to see and make the rest temporarily invisible. This allows you to see just the information you are interested in without the other data getting in the way.

The following illustrations show a typical example. The original database started out with 102 records. We can use the **Find/Select** command to make 92 of these records temporarily invisible.



When the **Select** button is pressed, only records in Texas remain visible. All other records become temporarily invisible.



First	Last	Title	Company	Address	City	Stat	Zip
Brian	Felty		B.F. Plumbing	118 N Wilder	Lubbock	TX	79410
Dick	Hardlee			4151 Polstar	Plano	TX	75075
Don	Meadows	Sales Manager	Austin Lumber	1144 A West 6th	Austin	TX	78703
Michael	Cox	Purchasing	Dallas Lumber	4785 Velasco	Dallas	TX	75206
Raymond	Wood			5420 W Crosby	Slaton	TX	79364
Charles	Pierce		Midland Lumber	1662 Durant	Midland	TX	79705
Joel	Dye	Vice President	Carrollton Lumber	1785 Old Mill Rd	Carrollton	TX	75007
Jeannette	Mulder			382 Hanover	Irving	TX	75062
Yvonne	Broach			9330 Poitiers	Houston	TX	77071
Tom	Long		Austin Lumber	1897 Balcones Dr	Austin	TX	78731

At any time you can make all records visible again with the **Select All** command. You can also make a new selection at any time. For more information about invisible records, see [“Finding vs. Selecting”](#) on page 331.

Chapter 5: Fields



The information stored in a database is organized into records and fields. Each field contains a specific category of information—names, phone numbers, birthdates, etc. Your first task after creating a new database is to decide how many and what fields are needed to get the job done. It's somewhat like designing a house—you have to decide what the best configuration is. How many bedrooms you need? How many baths? Will you need an office? And just like architecture, there are sometimes trade-offs that have to be made in designing a database.

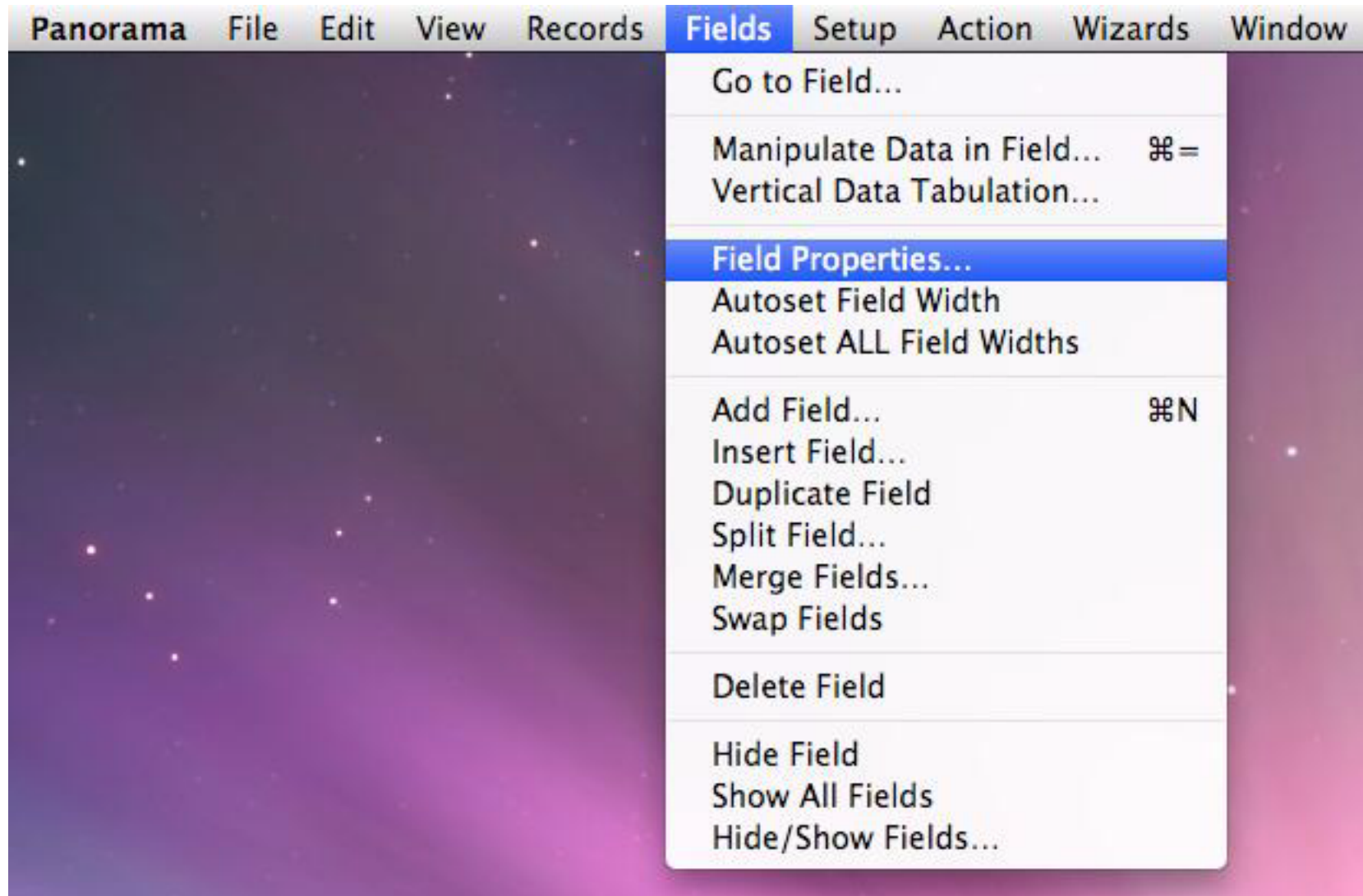
For some database jobs it is extremely obvious how the fields should be set up. But usually you have more flexibility than you might think. Take a simple name and address list, probably one of the most basic database applications. How should the name be stored? All in one field? Or should there be separate fields for first and last names? What about Mr./Ms./Mrs., should that be in a separate field? There are no hard and fast answers—it depends on how you want to use the database. For this example (names), data entry will probably be easier if you use a single field. On the other hand, you'll have more options for organizing and formatting if you split the name into several fields. The choice is up to you.

One thing to keep in mind is that if you make a mistake, it is much easier to combine two fields together than it is to split a single field into two. For example, it is quite easy to take separate first and last name fields and combine them, but if you type the names into a single field it could be quite difficult to later split them apart. If you have any doubt, it is better to err on the side of separating the data into more fields.

You can add new fields, remove fields, or change the properties of fields at any time, even after you've filled the database with data. Once you start entering data, however, it can be more work to re-arrange the fields. Some extra planning before you start entering data can pay big dividends in the long run.

The Fields Menu

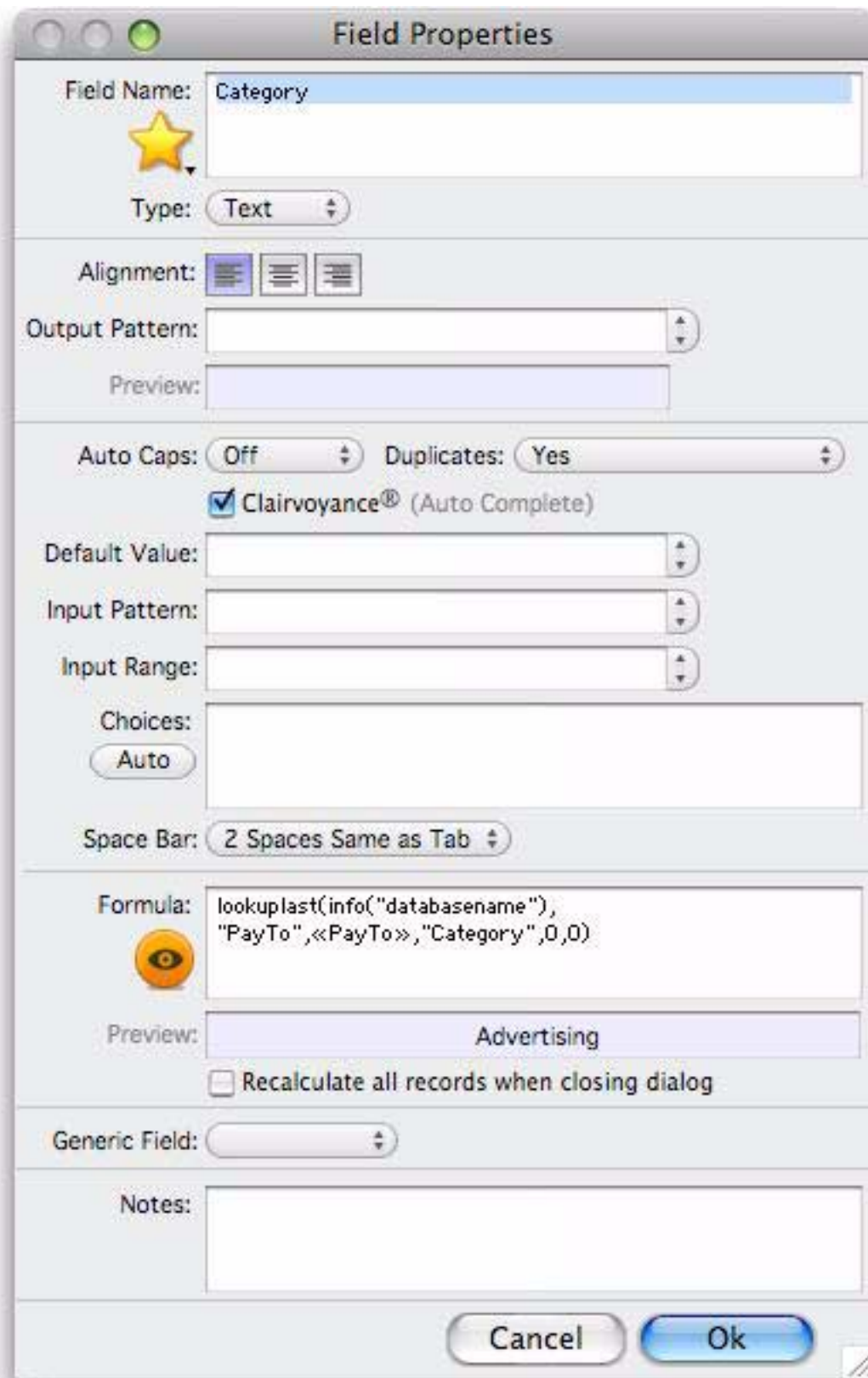
The commands for adding, removing and modifying fields are found in the Fields menu.



You can also access these commands by right-clicking the name of a field at the top of the data sheet.

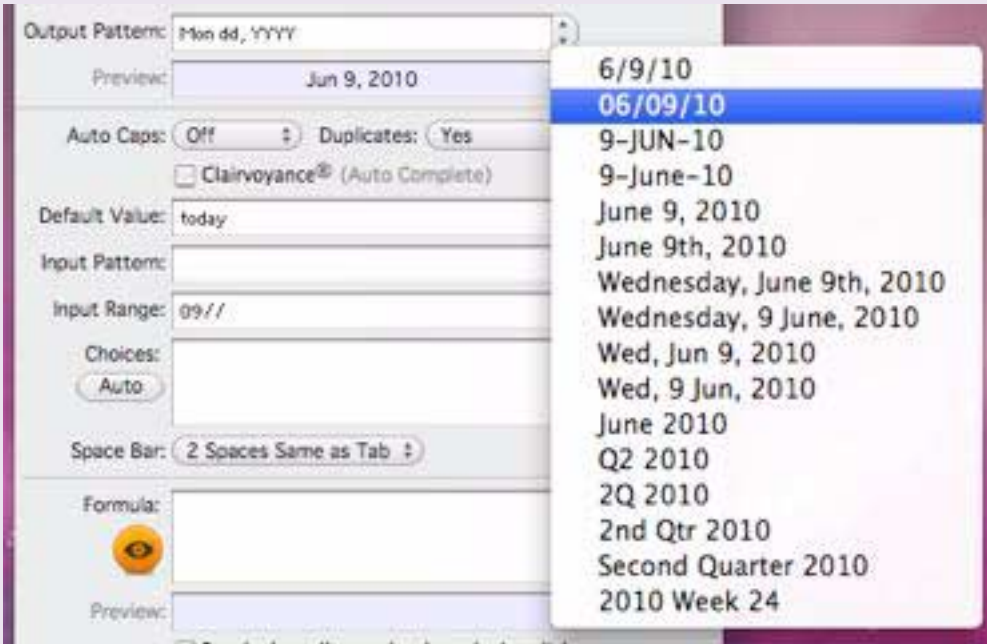
Modifying the Properties of an Existing Field

To modify a field's properties, choose **Field Properties** from the **Fields** menu, or simply double click on the name of the field at the top of the data sheet.



There are nearly two dozen field properties that you can customize. Most of these can be set in the Field Properties dialog, though a few are only accessible using the Design Sheet (see [“The Design Sheet”](#) on page 212).

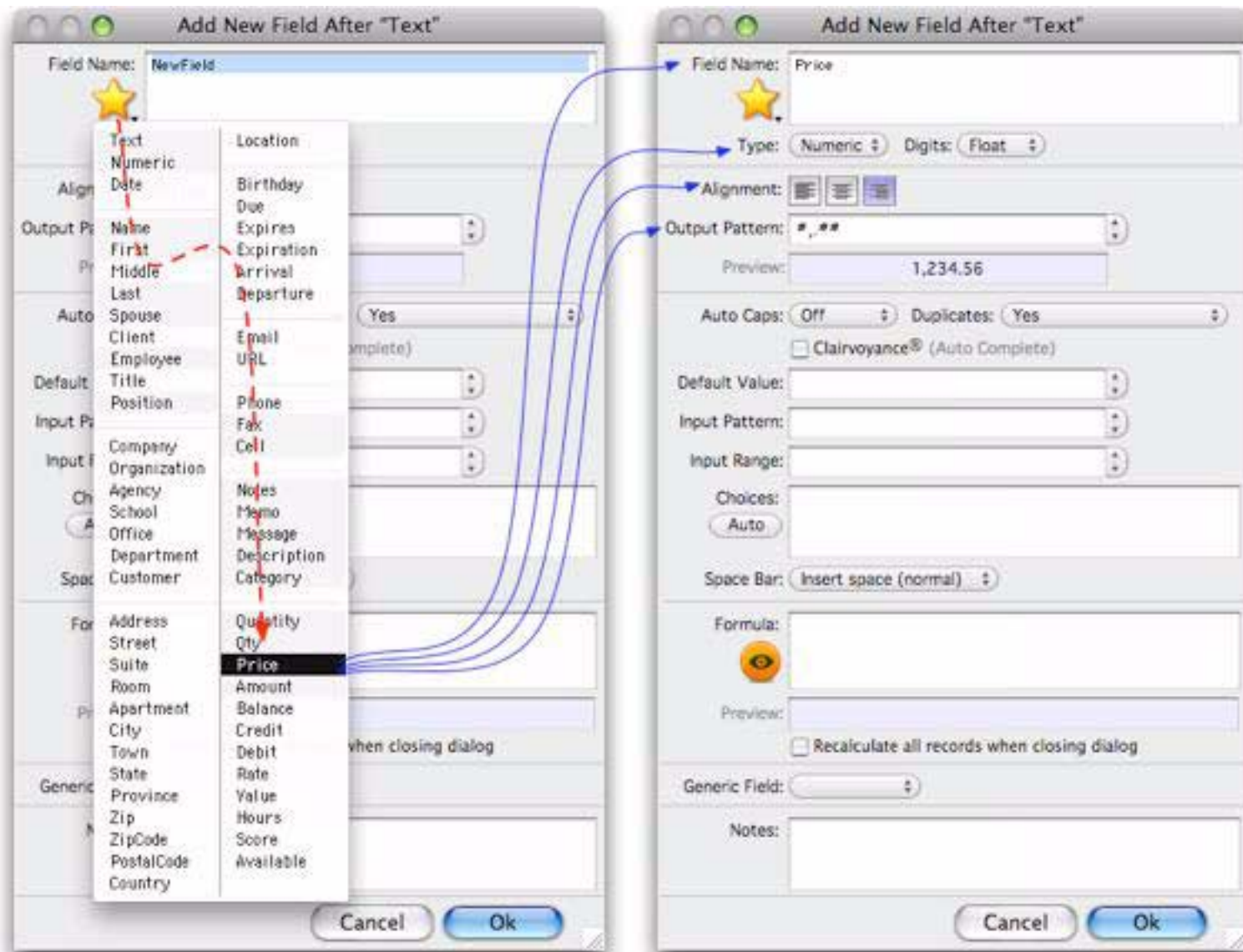
Field Name	<p>The field name identifies the field. It helps you remember what is in the field, and is also used to identify the field in formulas.</p> <p>Panorama does not place any restrictions on your choice of field names, but there are some ramifications to using an unusual name (see “Rules for Field Names” on page 220).</p> <p>Click on the star icon (to the left of the field name) to see a pop-up menu of common field names. Choosing a name from this list sets not only the field name, but also the data type, output pattern, default value and other options (of course you can customize these later if you want).</p>
------------	---

Type	This pop-up menu specifies the type of data stored in each field: text, numeric, date, or choices. See “Data Types” on page 245 for more information.
Digits	This pop-up menu appears if you’ve specified <i>Numeric</i> for the data type (see above). The menu specifies the number of digits to be used after the decimal point with numeric data: 0 , 1 , 2 , 3 , 4 , Float or Money . See “Numeric Data” on page 249 for more information.
Align	These buttons specify how the field should be aligned in the data sheet: left, center, or right flush. Usually left flush is used for everything except numbers, which are displayed right flush.
Output Pattern	<p>The output pattern allows you to specify the display format for numbers or dates. See “Numeric Output Patterns” on page 250 and see “Date Output Patterns” on page 255 for more information. You can either type in the pattern manually, or you can click on the icon to the right for a pop-up menu of common patterns.</p>  <p>The dialog shows a preview of what the pattern will look like with actual data.</p>
Auto Caps	Use this pop-up menu to tell Panorama to automatically capitalize data entry in a field. Panorama can automatically capitalize everything, or just the first letter of each word or sentence. See “Automatic Capitalization” on page 281.
Dups	This option specifies whether or not you want to allow duplicate entries in this field. You can also specify that you want to require duplicate entries (no unique values). See “Checking for Duplicate Data” on page 283.
Clairvoyance®	This option controls Panorama’s Clairvoyance (auto-fill) feature. This feature tries to anticipate what you are about to type, then types it for you. See “Clairvoyance®” on page 284 for the straight scoop.
Link	This option (which is available only in the design sheet) allows you to link this field with a field in another database. Only Clairvoyance® is affected by this link. You can set up this field with the Clairvoyance Link command. For more information see “Clairvoyance® Across Multiple Files” on page 286.
Default Value	This option allows you to specify a default value for the field when a new record is created. See “Default Values” on page 296. You can either type in the default value or choose from a pop-up menu of common defaults for the type of data in the field.
Input Pattern	The input pattern forces data into a specific pattern as it is entered, for example phone numbers or social security numbers. See “Input Patterns” on page 291 for more information. You can either type in the default value or choose from a pop-up menu of common input patterns for the type of data in the field.
Input Range	This option allows you to restrict the characters that can be entered in a field. For example, you can restrict a field to only allow alphabetic or numeric entry. See “Restricting Character Types” on page 293 for more information.

Choices	This column allows you to specify a list of choices that are valid for this field; for instance Yes/No , Gold/Silver/Bronze or Regular/Unleaded . The list of choices is used by the Choices data type (see “ Choices ” on page 259) and is also used by the Choice Palette (see “ The Choice Palette ” on page 317). You can also press the Auto button to let Panorama automatically generate the list of choices for you (of course this only works if the database already contains data).
Space Bar Tabs	This option controls the Space Bar Tab feature. This feature makes the Space Bar work just like the Tab key, saving wear and tear on your left pinky. See “ Tabbing with the Space Bar ” on page 279 for details.
Formula	This column allows you to specify one or more calculations to be performed whenever the information in this field changes or is confirmed. For example, an invoice can be set up so that all totals are calculated whenever a quantity or price is entered or changed. See “ Automatic Calculations ” on page 303.
Read	This attribute is used to control the security level for displaying (reading) the data in this field. The value in this field may be from 0 (anyone can see this data) to 255 (only users with the highest possible security level can see this data). For more information on security levels see the Panorama Security Handbook, available separately. (This option is not accessible in the Field Properties dialog, only in the Design Sheet.)
Write	This attribute is used to control the security level for modifying (writing) the data in this field. The value in this field may be from 0 (anyone can modify this data) to 255 (only users with the highest possible security level can modify this data). For more information on security levels see the Panorama Security Handbook, available separately. (This option is not accessible in the Field Properties dialog, only in the Design Sheet.)
Width	This contains the approximate width (in characters) of the field in the data sheet. For example, a width of 20 means that the column is about 20 characters wide (the actual width depends on the font and size). Although you can use the design sheet to set the column width, it is easier and more exact to set the width by dragging on the column name (See “ Changing the Width of a Field ” on page 199). (This option is not accessible in the Field Properties dialog, only in the Design Sheet.)
Generic Field	This option allows a field to be designated as a “generic” field (see “ “Generic” Fields ” on page 230). Generic fields are fields that contain standard contact information — names, addresses, phone numbers, etc. Designating a field as generic allows the data in that field allows the data to be easily exchanged with other databases and compatible applications (for example Apple’s <i>Address Book</i> application). This option may be set in the Field Properties dialog or using the Generic Fields preference pane, it is not accessible in the Design Sheet.
Notes	You can use this field to keep notes about the field. If a database contains dozens or hundreds of fields, it may be difficult to remember what each field is for. You can use this field to store reminders to yourself about the purpose and use of each field. Panorama ignores the contents of this column.

Adding New Fields

To add a new field, use the **Add Field** or **Insert Field** command in the **Fields Menu**. The only difference is that **Add Field** adds the new field at the end of the database, **Insert Field** insert the new field in front of the current field. If your new field has a common name you can simply click on the star and choose the name from the pop-up menu. As shown in the diagram below, Panorama will automatically fill in all of the options that make sense for the field name you have chosen.



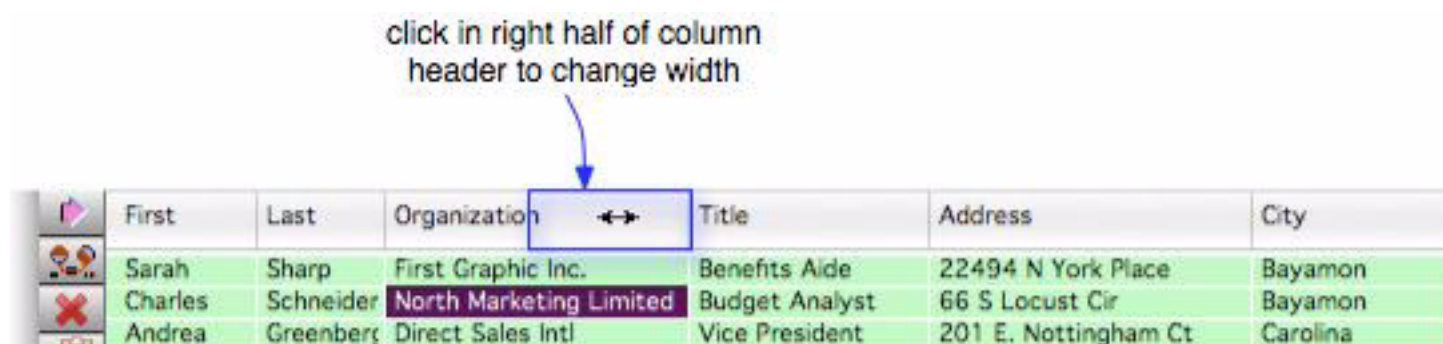
Press **Ok** to actually create the new field.

Deleting a Field

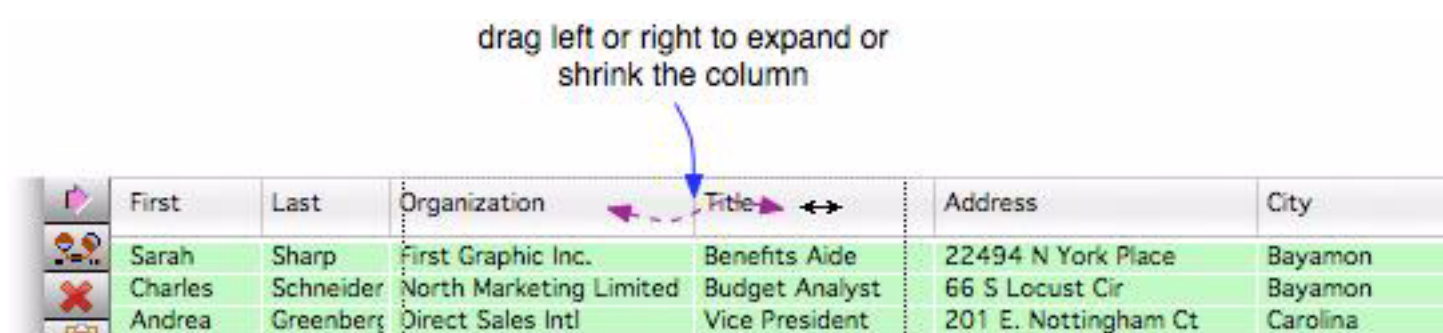
To delete a field from the database, select a cell in the field and choose **Delete Field** from the **Fields Menu**. (If you are using the data sheet, you can also press **Command-Delete** (Mac) or **Control-Delete** (Windows) to delete a field.) This not only deletes the field, it also deletes any data in the field. If the field contains data, Panorama will warn you that it is about to delete the field. You must confirm that you really want to delete the field before Panorama will proceed. You cannot **Undo** this operation, so be careful!

Changing the Width of a Field

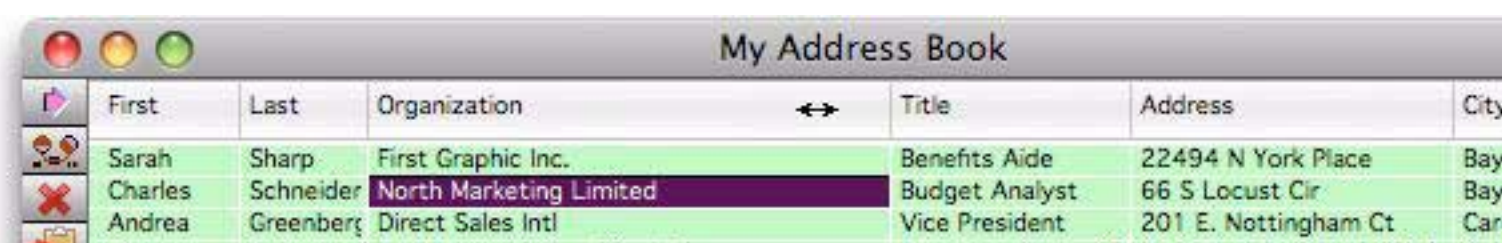
To change the width of a field, move the mouse over the right half of column name (or the left half if the column is right aligned, like a numeric column). The mouse cursor will turn into a double headed arrow.



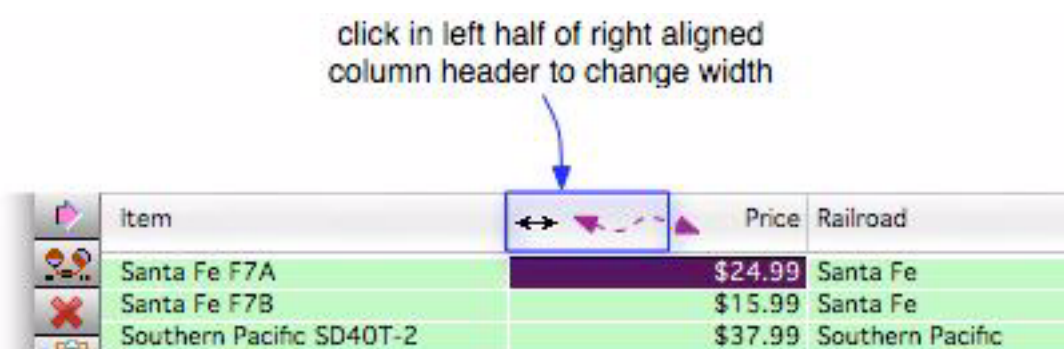
When you see the double headed arrow, press the mouse. A gray box appears around the column. Drag the mouse left or right, then release the mouse when the field is the correct width.



When the mouse is released the column width is adjusted (in this case, made wider).



If the column is right aligned (for example a numeric column) the process is flipped. Instead of dragging on the right half of the column header, you click and drag on the left half.



It sounds more complicated than it is. Just move the mouse until you see the double headed arrow, then drag left or right.

Automatically Setting the Field Width

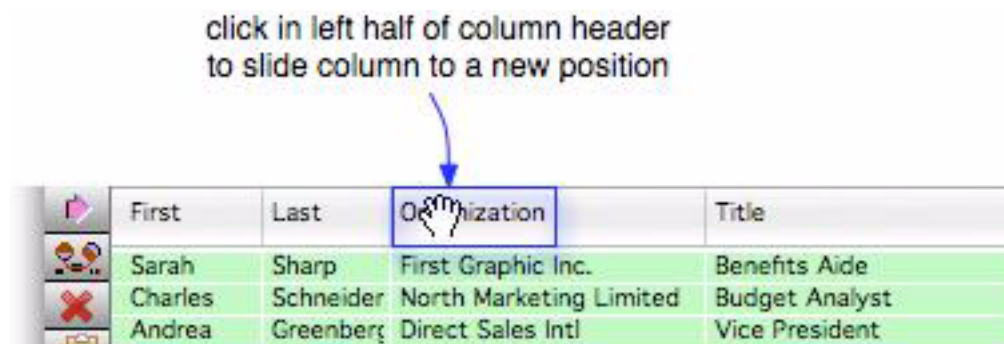
If you'd like Panorama to set the field width for you, just choose the **Autoset Field Width** command from the **Fields** menu. To set the field width, Panorama calculates the average width of entries in the field, and then sets the width to 120% of that value. For most fields this should be close to the optimum width, but of course you can always make your own manual adjustments as described in the previous section.

The **Autoset ALL Field Widths** command sets the width of all fields. This can be handy after importing a lot of new data into a database.

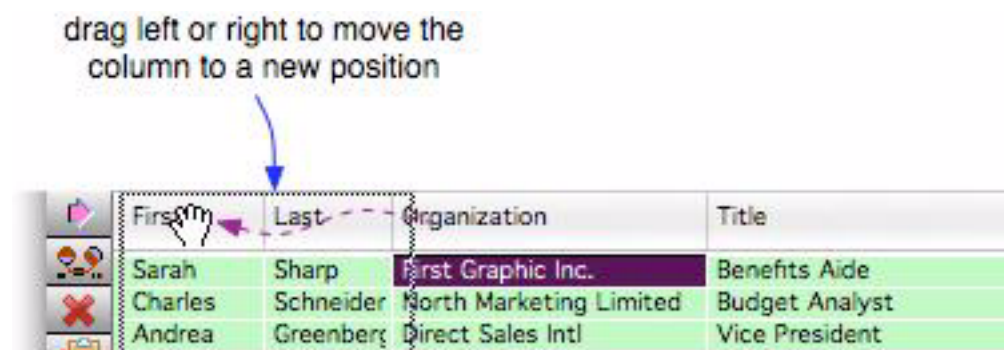
Note: Panorama automatically adjusts the field width after certain manipulations, for example splitting and merging fields.

Re Arranging the Field Order

To move a field to a new position within the data sheet, move the mouse over the left half of column name (or the right half if the column is right aligned, like a numeric column). You'll see the mouse cursor turn into a hand.



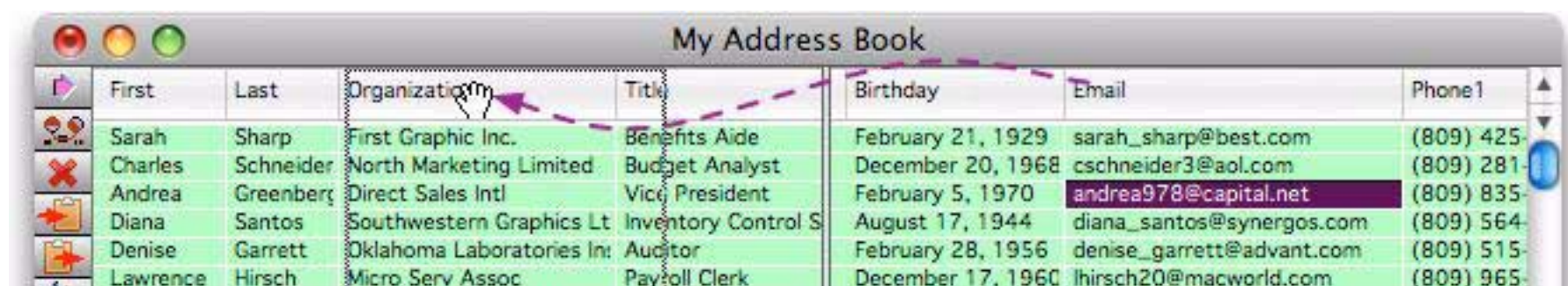
Now drag the column to the left or right to the new spot.



When the mouse is released the column moves to the new position.



If the data sheet is split horizontally you can drag a column from one side to the other. This makes it easy to move a column a long horizontal distance within the sheet.



In the example above, the **Email** field will be moved between the **Last** and **Organization** fields.

Note: You can also swap two adjacent fields with the **Swap Fields** command.

Duplicating a Field

To make a copy of a field, click anywhere in the field and chose the **Duplicate Field** command from the **Fields** menu.

Item	Price	Copy of Price	Railroad	Category
Santa Fe F7A	\$24.99	\$24.99	Santa Fe	Diesel Engin
Santa Fe F7B	\$15.99	\$15.99	Santa Fe	Diesel Engin
Southern Pacific SD40T-2	\$37.99	\$37.99	Southern Pacific	Diesel Engin
Santa Fe SD40-2	\$22.49	\$22.49	Santa Fe	Diesel Engin
Chessie U30B	\$28.99	\$28.99	Chessie System	Diesel Engin
Southern Pacific SD-45	\$29.99	\$29.99	Southern Pacific	Diesel Engin
Union Pacific AC4400	\$50.49	\$50.49	Union Pacific	Diesel Engin
Conrail SW1500	\$29.99	\$29.99	Conrail	Diesel Engin
Norfolk Southern SW1500	\$29.99	\$29.99	Norfolk Southern	Diesel Engin
NASA SW1500	\$29.99	\$29.99	NASA	Diesel Engin

The duplicate will be named “Copy of “ original field, as shown above. To change the name just double click on the name to open the **Field Properties** dialog.

Splitting a Field

Sometimes you’ll need to take an existing field that already has data in it and split it apart. This can be accomplished with the **Split Field** dialog. For example, this database contains a combined **Name** field that we’d like to split into separate **First** and **Last** fields.

Number	Date	Name	Address	City	State	Zip	DayPho
1000	01/01/10	Derrick Ramsey	35081 W. Birch Rd.	Walnut Creek	CA	94596	(925) 6
1001	01/01/10	Dennis Barr	4592 E. 26Th Apt	Stockton	NJ	08559	(908) 2
1002	01/01/10	Alan Coleman	534 S. First Circle	Oxford	OH	45056	(513) 2
1003	01/02/10	Phyllis Powers	217 W Beechwood Lane	Moran	WY	83013	(307) 8
1004	01/02/10	Patricia Houston	315 S. Water Drive	Syracuse	NY	13210	(315) 8
1005	01/02/10	Sandra Ford	322 N.W. Myers Way	Portland	OR	97224	(503) 2
1006	01/03/10	Kevin Costa	675 N.W. Yakima Pl	East Rockaway	NY	11518	(516) 2
1007	01/03/10	Sandra Porter	8586 N. Highland Rd	Fallbrook	CA	92028	(714) 7

To split the field, click on it then choose **Split Field** from the **Fields** menu. The preview area shows how the data will be split. Since splitting at the first space is the default for this dialog, the split looks perfect.

Split text after first space Strip surrounding Blanks Punctuation Keep Original Field Cancel Split

LEFT	RIGHT
Derrick	Ramsey
Dennis	Barr
Alan	Coleman
Phyllis	Powers
Patricia	Houston
Sandra	Ford

Before actually performing the split you have the change to assign the names for the new fields. Just type in the names you want to use.

LEFT	RIGHT
Derrick	Ramsey

Press the **Split** button to actually split the field into two fields.

Number	Date	First	Last	Address	City	State	Zip
1000	01/01/10	Derrick	Ramsey	35081 W. Birch Rd.	Walnut Creek	CA	94596
1001	01/01/10	Dennis	Barr	4592 E. 26Th Apt	Stockton	NJ	08559
1002	01/01/10	Alan	Coleman	534 S. First Circle	Oxford	OH	45056
1003	01/02/10	Phyllis	Powers	237 W Beechwood Lane	Moran	WY	83013
1004	01/02/10	Patricia	Houston	395 S. Water Drive	Syracuse	NY	13210
1005	01/02/10	Sandra	Ford	322 N.W. Myers Way	Portland	OR	97224
1006	01/03/10	Kevin	Costa	675 N.W. Yakima Pl	East Rockaway	NY	11518
1007	01/03/10	Sandra	Porter	8586 N. Highland Rd	Fallbrook	CA	92028
1008	01/04/10	Gary	Ferreyra	37712 South Sand Rd	San Diego	CA	92186

Controlling the Split Location

Panorama can split a field at any of three dozen different characters or symbols, or at a specific character position. For example, an e-mail address can be split into user name and ISP by splitting at the @ symbol.

character

- space
- line
- comma
- period
- colon
- semicolon
- dash
- @ symbol**
- # symbol
- \$ symbol
- % symbol
- & symbol
- + symbol
- * symbol
- / symbol
- \ symbol
- ? symbol
- (symbol
-) symbol
- [symbol
-] symbol
- { symbol
- } symbol
- " symbol
- ' symbol
- " symbol
- " symbol
- ' symbol
- ' symbol
- ^ symbol
- | symbol
- ~ symbol

Split text: after first

Split Email Field

Surrounding Blanks Punctuation Keep Original Field

Cancel Split

LEFT Left Email

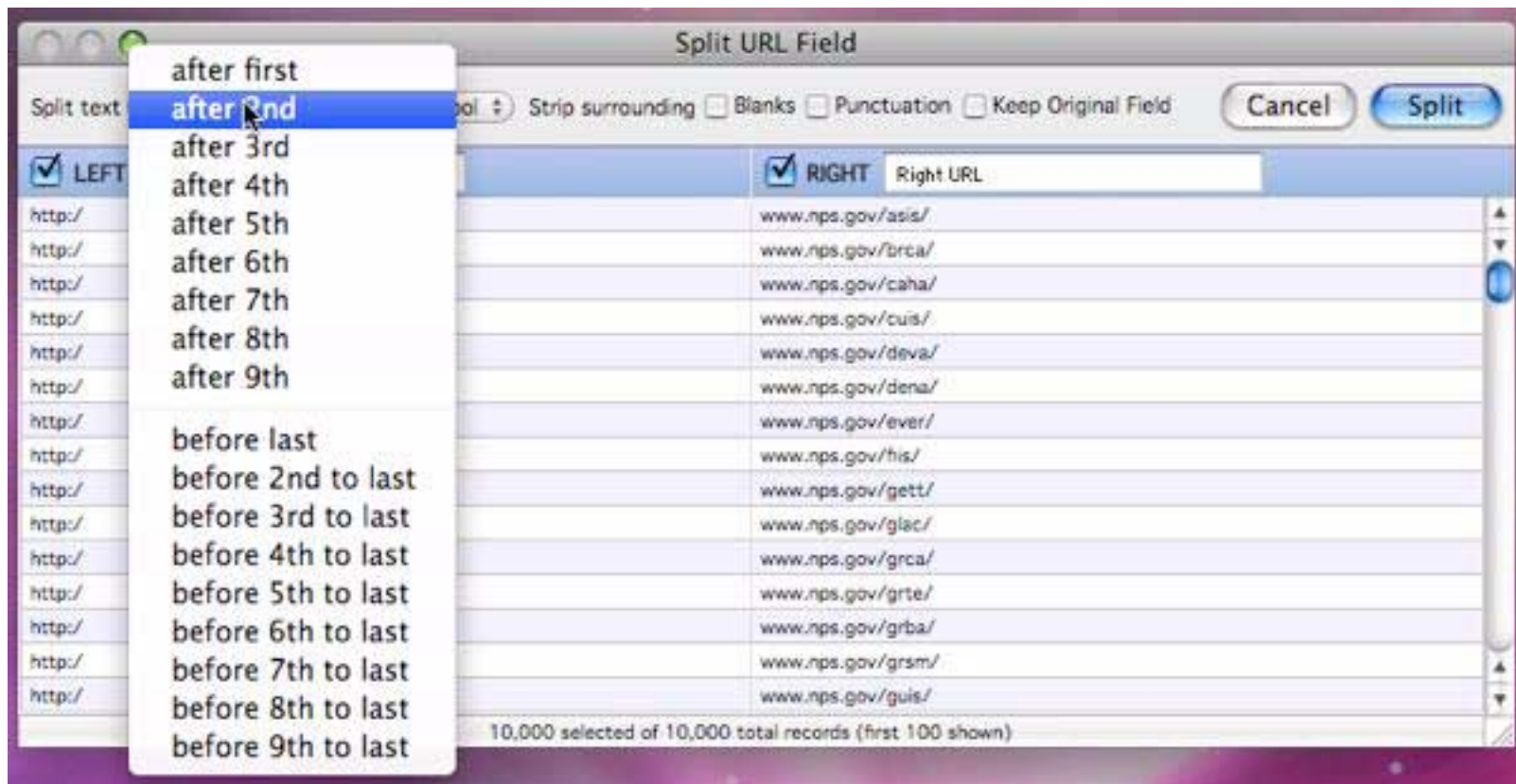
sarah_sharp
cschneider3
andrea978
diana_santos
denise_garrett
lhirsch20
dtorres4
craig491
brenda_zoet
stanley_denton
jhester71
cynthia552
midred996
linda584
ronald462

RIGHT Right Email

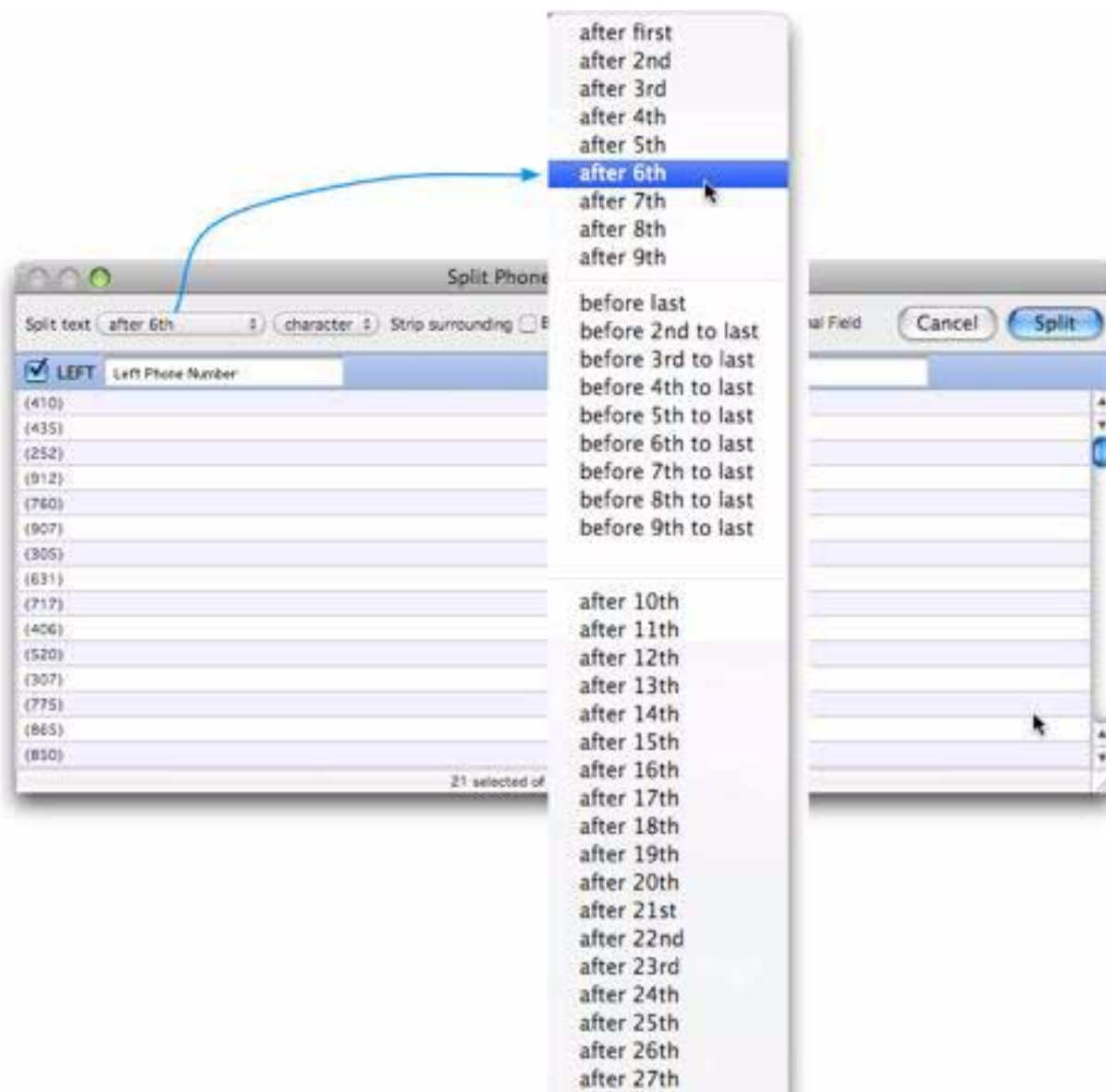
best.com
aol.com
capital.net
synergos.com
advant.com
macworld.com
hotmail.com
macconnect.com
earthlink.com
sprintmail.com
ix.netcom.com
idirect.com
earthlink.net
pacinfo.com
hotmail.com

ected of 1,257 total records (first 100 shown)

You don't have to split at the first instance of a character - you can choose any of the first or last nine instances. In this example the split occurs after the second / symbol.



If you choose to split at a character position instead of at a character or symbol, the pop-up menu expands to allow you to select up to the first 99 positions. In this example a phone number is split into separate area codes and local numbers by splitting after the sixth character (this is just one way to split a phone number, another method will be described later).



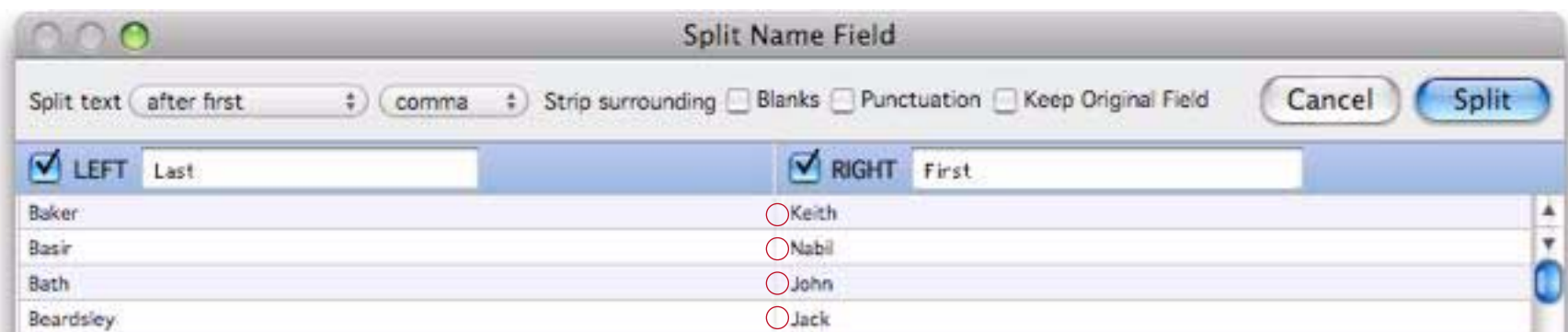
Stripping Extra Spaces and Punctuation

Sometimes after you split a field there will be extra spaces or punctuation that needs to be removed. For example, suppose you want to split this name field into separate last and first names.



Name	Title	Company	Address	City	State	Zip
Baker, Keith	Sales Manager	Northgate Video	552 Northgate	Lindenhurst	IL	600
Basir, Nabil		Armonk Lumber	12 Upland Lane	Armonk	NY	105
Bath, John	President	J.B. Plumbing	8864 Ave	Mendota Heights	MN	551
Beardsley, Jack	Sales Manager	Toledo Lumber	4964 Pelham	Toledo	OH	436
Berg, Carl	Owner	C.B. Plumbing	161 Norton St	New Haven	CT	065
Bianchi, Leslie			23 Oak St	Lexington	MA	021
Bilbury, Mary	Vice President	M.B. Plumbing	2754 Parkway	Beverly Hills	CA	902
Bizzarri, Joseph	Owner	JB Printing	7045 Mandel	Westchester	IL	601
Blair, David	Owner	DB Printing	869 W. Temple	Lenox	IA	508
Bodner, Al			93 Valencia Lane	Clifton Park	NY	120

This can easily be done by splitting on the comma, like this.



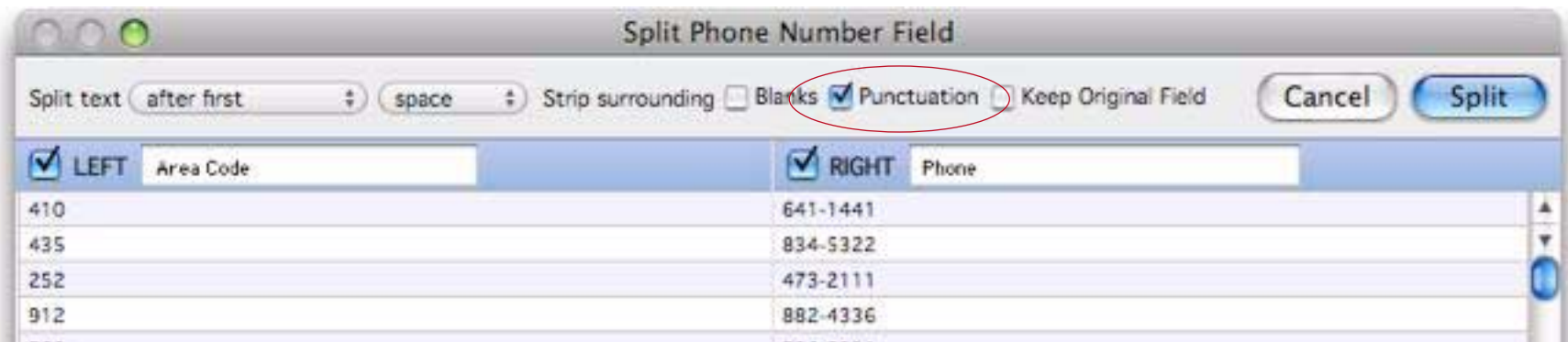
But ... there's a problem — an extra space at the beginning of each first name. To remove this extra space check the **Strip surrounding Blanks** checkbox.



Sometimes you'll need to strip off punctuation in addition to or instead of blanks. In this example the dialog is splitting a phone number into separate area codes and local numbers.



To eliminate the (and) around the area code check the **Strip Surrounding Punctuation** option.



If necessary, you can always perform additional cleanup with the Manipulate Data dialog after the fields have been split (see “[The Manipulate Data Dialog](#)” on page 434).

Partial Splits

Usually splitting involves turning one field into two, but sometimes you just want to keep one part of the original field and discard the rest. To do that just uncheck the side of split that you don’t want. For example, this dialog splits off the **http** portion of the URL.



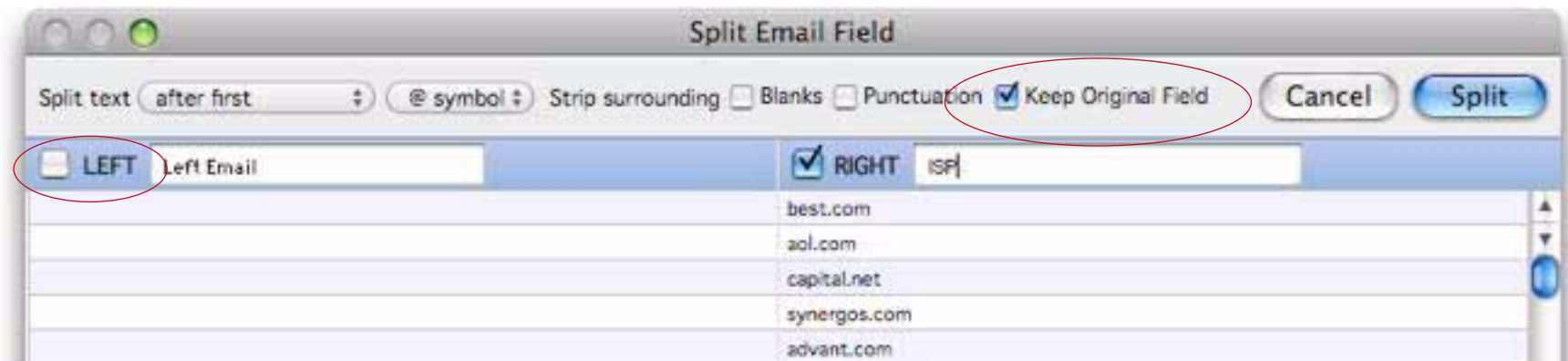
We really don’t need a field that just contains http over and over. By unchecking the **LEFT** option, only the right portion of the data is retained.



A useful option is to do a partial split combined with keeping the original field. For example, suppose I want to start with this database and create a field that contains the email ISP name (aol.com, me.com, etc.)

First	Last	Email	Organization	Title	Add
Sarah	Sharp	sarah_sharp@best.com	First Graphic Inc.	Benefits Aide	224
Charles	Schneider	cschneider3@aol.com	North Marketing Limited	Budget Analyst	66
Andrea	Greenberg	andrea978@capital.net	Direct Sales Intl	Vice President	201
Diana	Santos	diana_santos@synergos.com	Southwestern Graphics Lt	Inventory Control Speciali	110
Denise	Garrett	denise_garrett@advant.com	Oklahoma Laboratories In:	Auditor	534
Lawrence	Hirsch	lhirsch20@macworld.com	Micro Serv Assoc	Payroll Clerk	333

Here's the setup for the Split Field dialog.

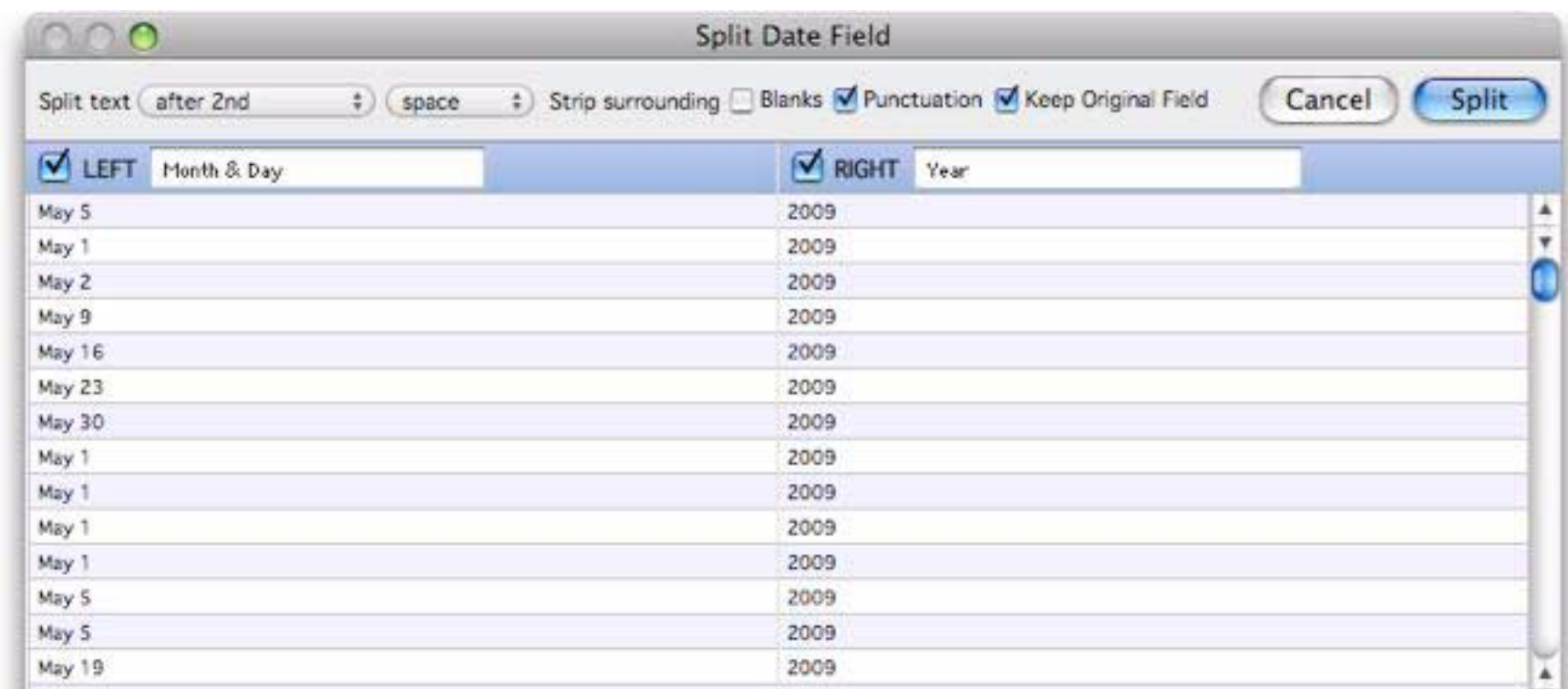


Here's the final split.

	First	Last	ISP	Email	Organization	Title
	Sarah	Sharp	best.com	sarah_sharp@best.com	First Graphic Inc.	Benefits /
	Charles	Schneider	aol.com	cschneider3@aol.com	North Marketing Limited	Budget A
	Andrea	Greenberg	capital.net	andrea978@capital.net	Direct Sales Intl	Vice Pres
	Diana	Santos	synergos.com	diana_santos@synergos.com	Southwestern Graphics Lt	Inventory
	Denise	Garrett	advant.com	denise_garrett@advant.com	Oklahoma Laboratories In	Auditor
	Lawrence	Hirsch	macworld.com	lhirsch20@macworld.com	Micro Serv Assoc	Payroll Cl
	David	Torres	hotmail.com	dtorres4@hotmail.com	World Enterprises Assoc.	Sales Ass

Splitting Non-Text Fields

It's possible, though unusual, to split number or date fields. The number or date is converted to text before being split, and the resulting fields are always text fields. Here's an example (please note that you may need to set the output pattern for the date or number field before you split it to get the format you want).



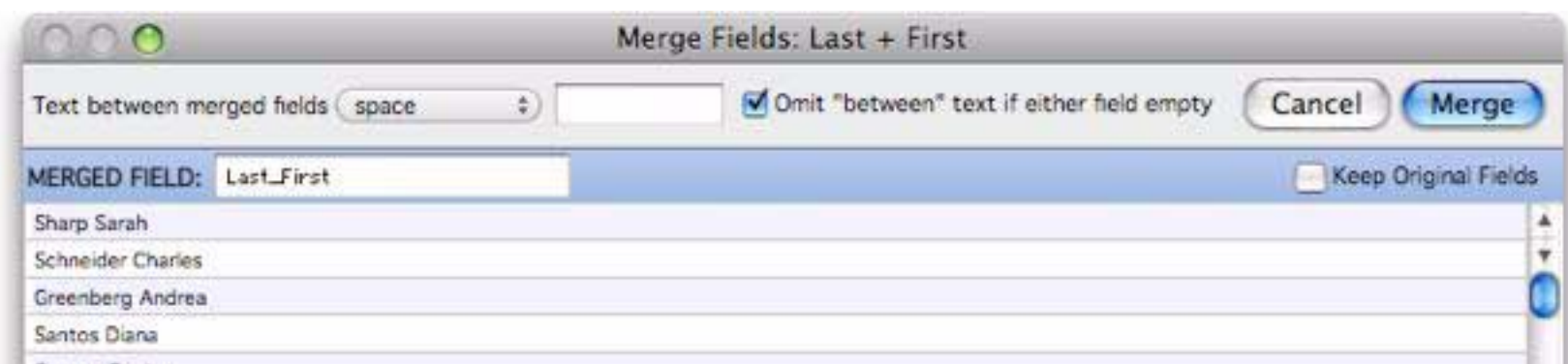
Merging Adjacent Fields

To merge two adjacent fields, click on the leftmost field you want to merge and choose **Merge Fields** from the **Fields** menu. To illustrate this we'll merge the **Last** and **First** name fields in this database.

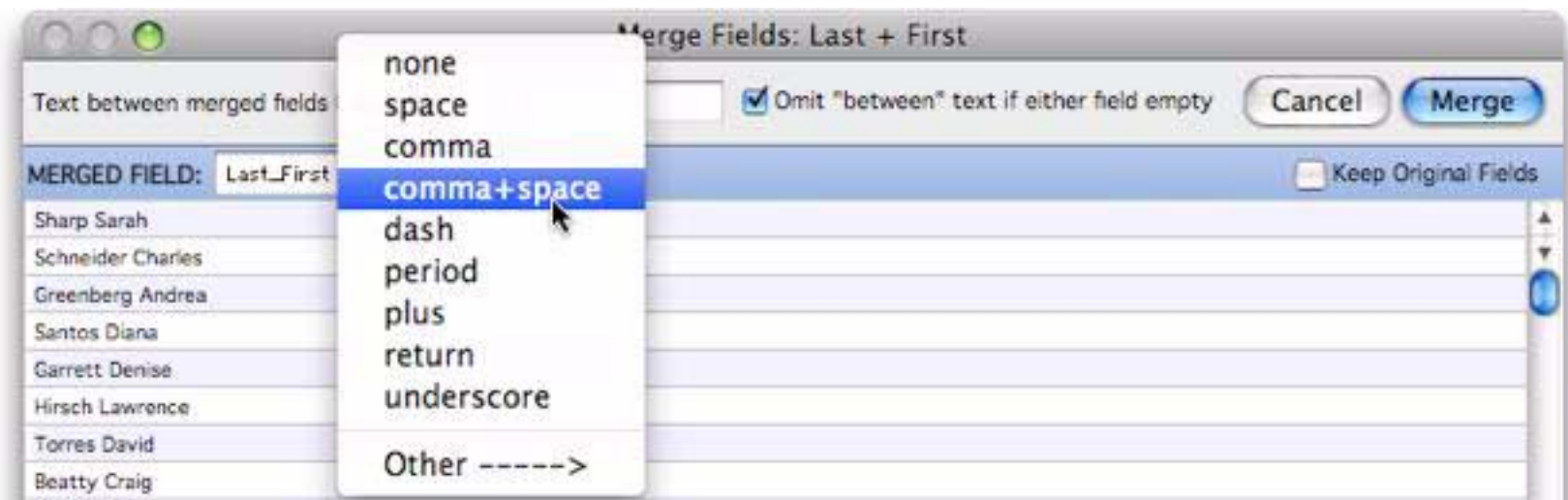


	Last	First	Organization	Title	Email	Add
	Sharp	Sarah	First Graphic Inc.	Benefits Aide	sarah_sharp@best.com	224
	Schneider	Charles	North Marketing Limited	Budget Analyst	cschneider3@aol.com	66
	Greenberg	Andrea	Direct Sales Intl	Vice President	andrea978@capital.net	201
	Santos	Diana	Southwestern Graphics Lt	Inventory Control Speciali	diana_santos@synergos.com	110

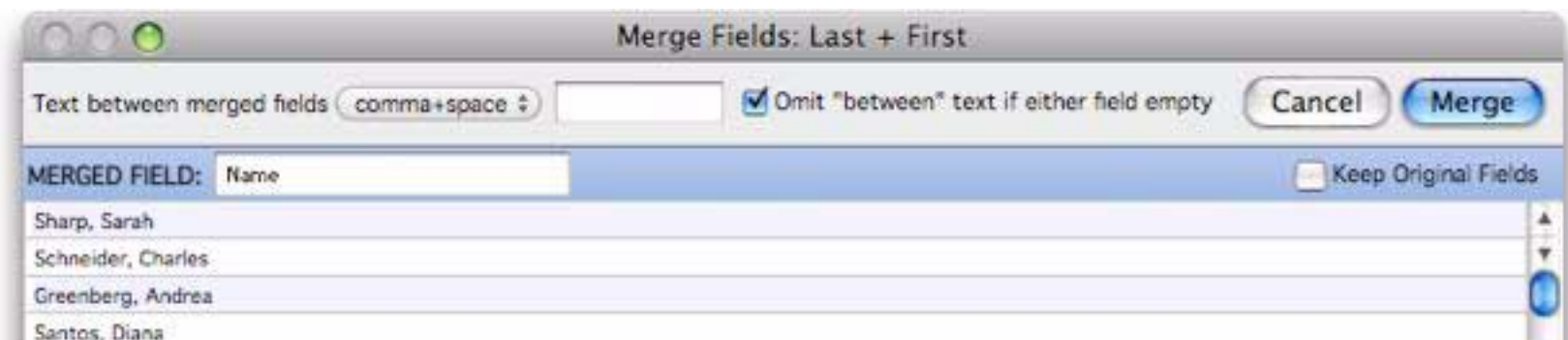
When the Merge Fields dialog is first opened it defaults to merging the fields with a single space in between.



Use the pop-up menu to select the text to appear between the merged fields.



The preview shows what the merged field will look like. Edit the field name and you're ready to merge.

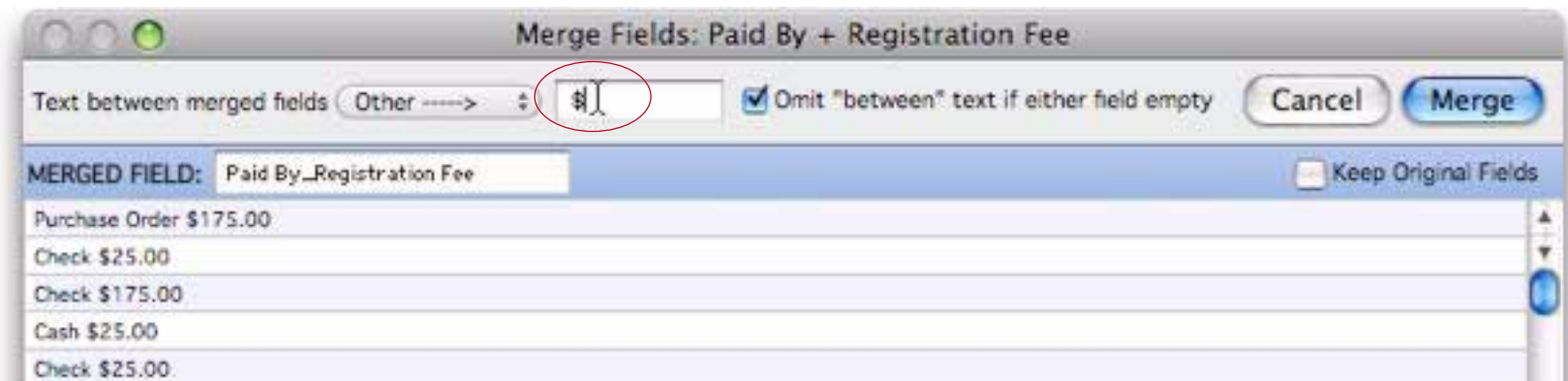


Here's the finished result.

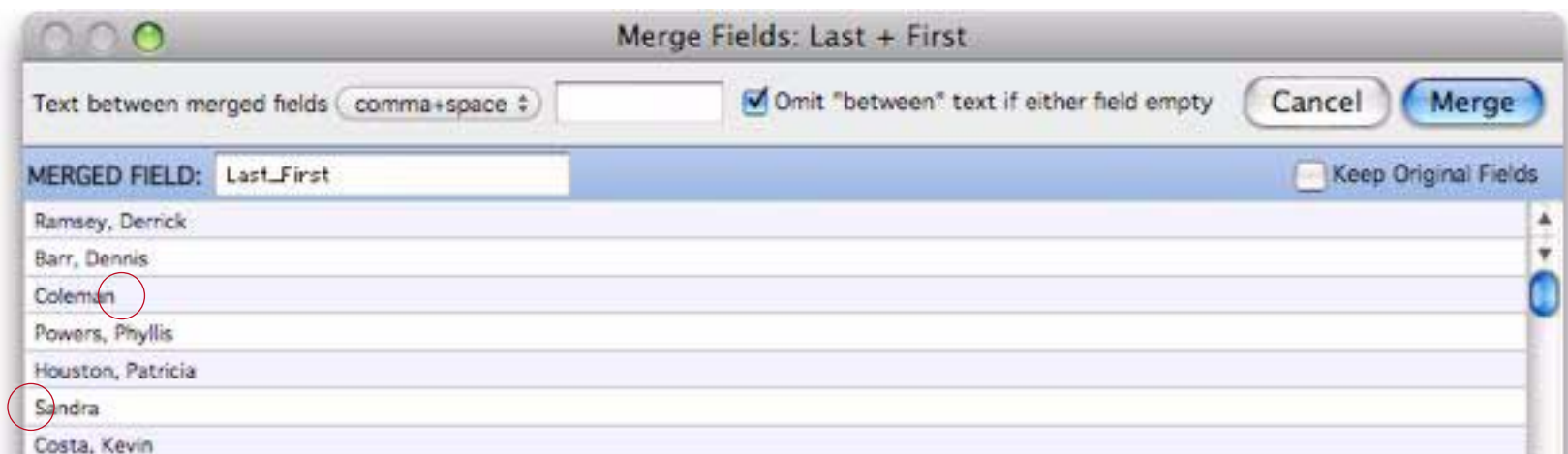
Name	Organization	Title	Email	Address
Sharp, Sarah	First Graphic Inc.	Benefits Aide	sarah_sharp@best.com	21
Schneider, Charles	North Marketing Limited	Budget Analyst	cschneider3@aol.com	61
Greenberg, Andrea	Direct Sales Intl	Vice President	andrea978@capital.net	21
Santos, Diana	Southwestern Graphics Lt	Inventory Control Speciali	diana_santos@synergos.com	11
Garrett, Denise	Oklahoma Laboratories Inc	Auditor	denise_garrett@oklab.com	51

Merge Field Options

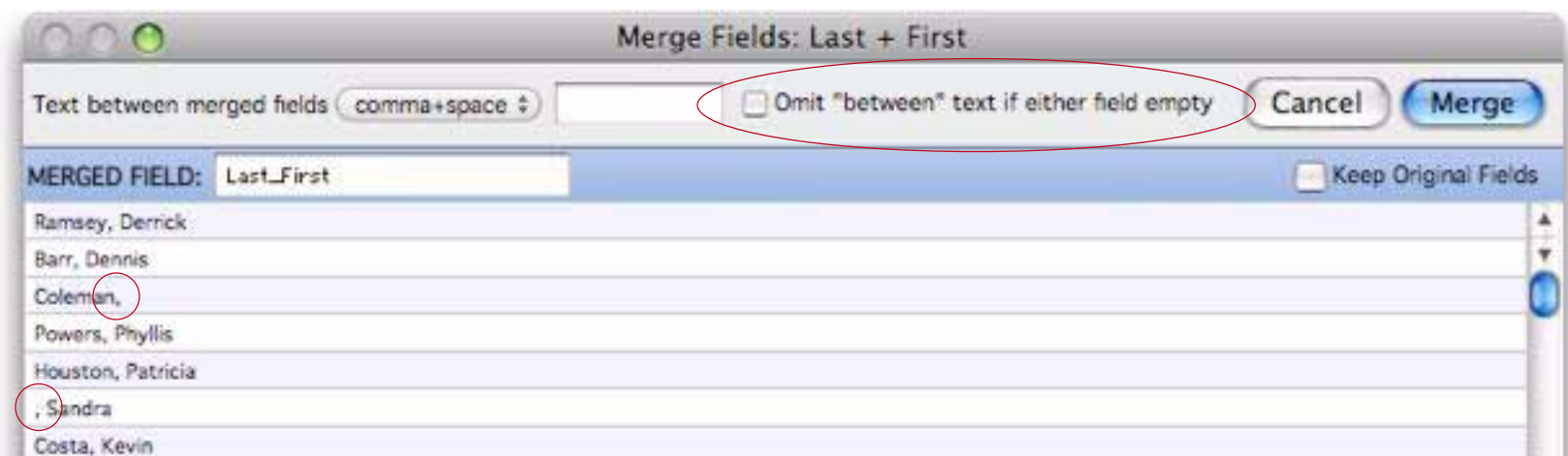
You can type any text you want to be inserted between the merged fields.



Normally the Merge Fields dialog intelligently omits the text in between the fields if one or both of the fields are missing.



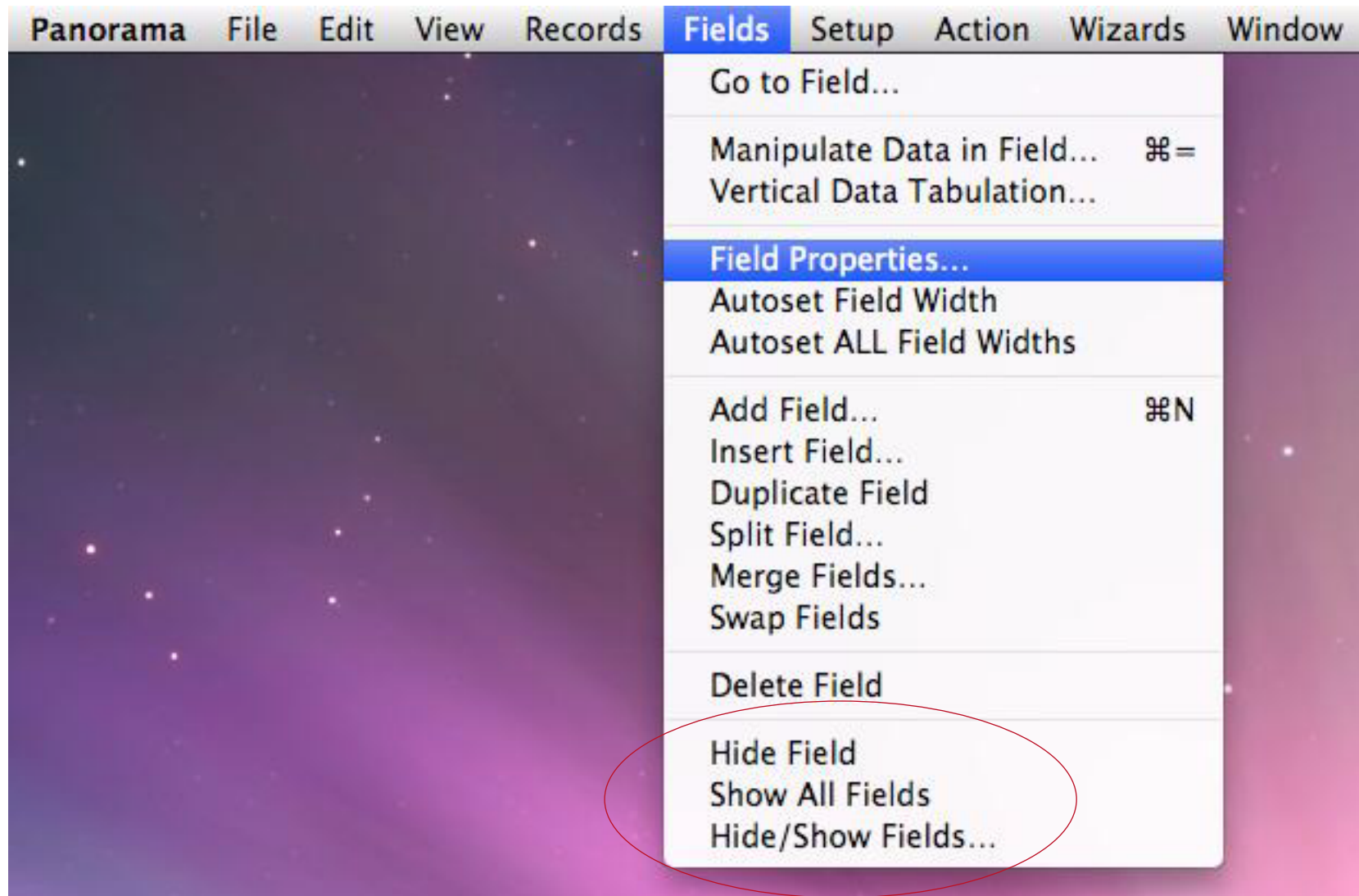
If necessary, however, you can tell Panorama to always include this text even if one or both fields are missing.



The final option is **Keep Original Fields**, which allows you to merge the fields while still keeping the original split fields.

Hiding and Showing Fields

If you don't want to see one or more fields, you can temporarily hide them in the data sheet. This is great for de-cluttering the data sheet and also eliminates the need to create a custom form for many simple reports. The commands for hiding and showing fields are at the bottom of the Fields menu. (In addition to the menu bar, these commands also appear when you right-click on a data sheet column title.)



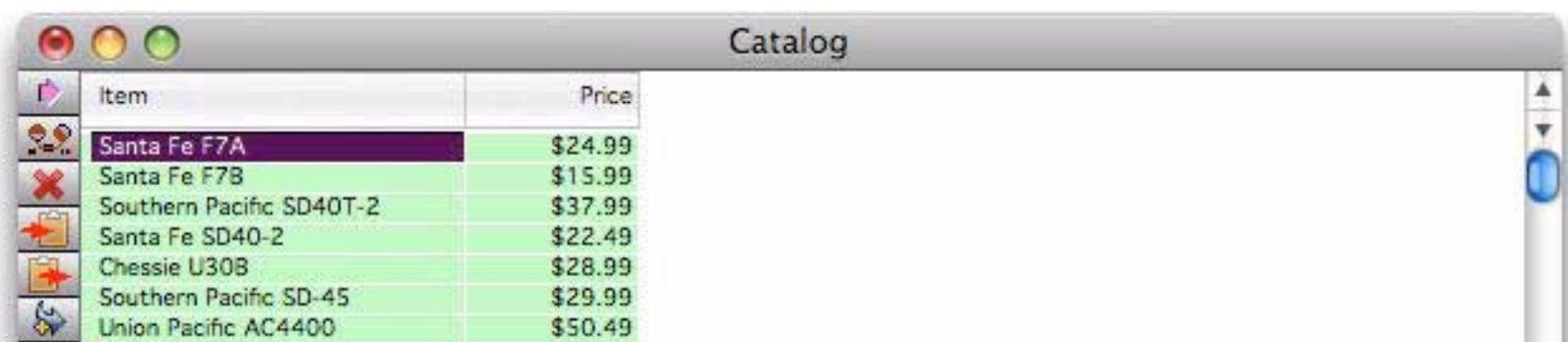
To hide the current field, choose **Hide Field** (Note: You must have at least one visible field, and you cannot hide or show fields if the design sheet is open).

To make all hidden fields visible again, choose **Show All Fields**. (Note: Using the **New Generation** tool in the Design Sheet will also make all fields visible.)

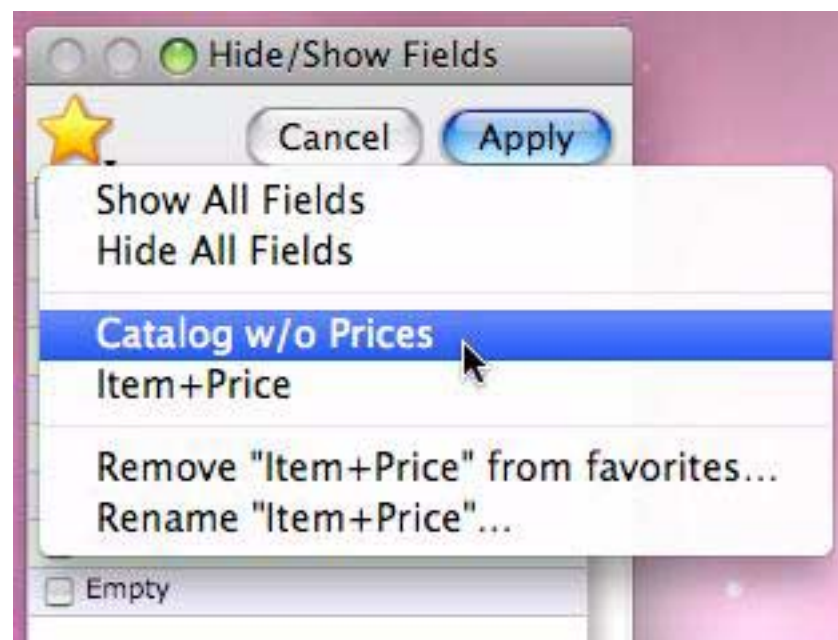
To hide and/or show a bunch of fields at once, open the **Hide/Show Fields** dialog.



This dialog displays a list of all the fields in the database. Check the fields you want to be visible, then press the **Apply** button. All of the unchecked fields will be hidden.



If you have a configuration that you want to use regularly, click on the **Favorites** icon (yellow star). This brings up a pop-up menu listing your favorite configurations.

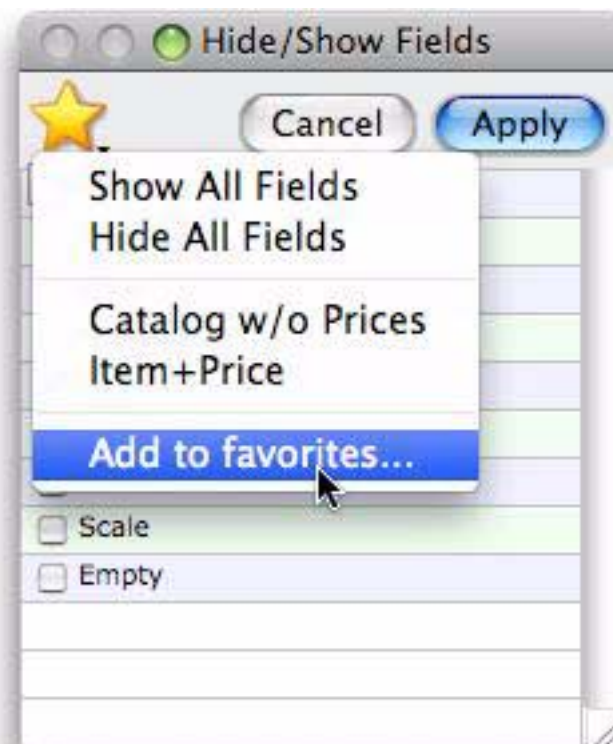


The first two items in the menu are permanent, and quickly show or hide all fields. The other items in this menu are custom and are set up by you on a database by database basis.

To create a new favorite, start by choosing the fields you want to show.



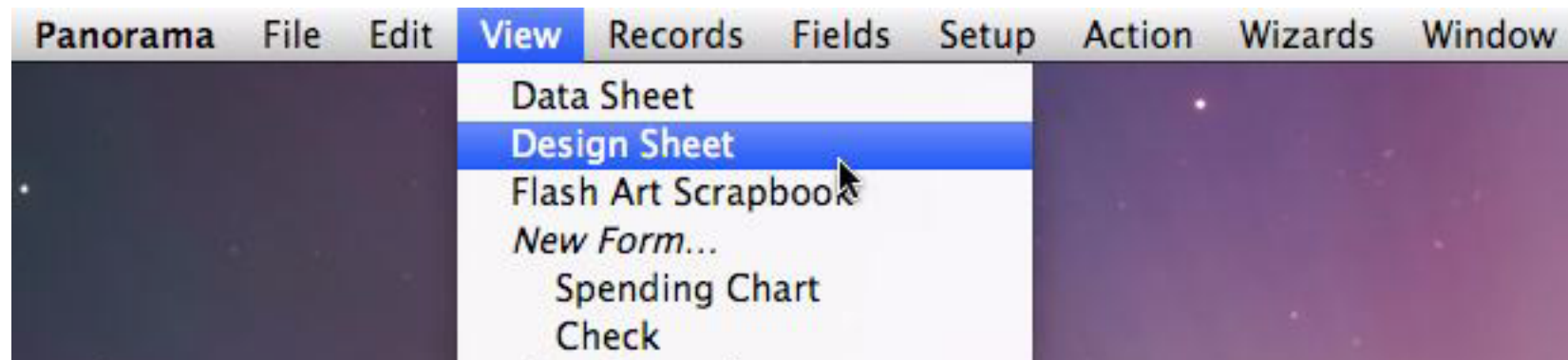
Then click on the star and choose Add to favorites....



Panorama will ask you for a name for the new favorite and then save the configuration for later use.

The Design Sheet

The **Fields** menu provides an easy way to add or remove a few fields at a time. The disadvantage of the **Fields** menu is that it only allows you to see a little piece of the database structure at a time. To get a more comprehensive view you'll need to open the actual blueprints of the database—the **design sheet**. Like other parts of the database, the design sheet is accessible from the **View** menu.



The design sheet shows all the fields and their properties. Like DNA, the design sheet contains all the information about how the database is organized.

 A screenshot of the 'My Checkbook:DESIGN' window. It displays a table with columns for Field Name, Type, Digits, Align, Output Pattern, Input Pattern, Range, Choices, Link, Clair, Tab, and Caps. The 'Date' field is selected.

Field Name	Type	Digits	Align	Output Pattern	Input Pattern	Range	Choices	Link	Clair	Tab	Caps
Date	Date	0	Left			Any			Off	Off	Off
Check	Numeric	0	Right	#,		Any			Off	Off	Off
Pay To	Text	0	Left			Any			On	Off	Word
Category	Text	0	Left			Any	Rent Lec		Off	Off	Word
Memo	Text	0	Left			Any			Off	Off	Off
Debit	Numeric	Float	Right	#, ##		Any			Off	Off	Off
Credit	Numeric	Float	Right	#, ##		Any			Off	Off	Off
Balance	Numeric	Float	Right	#, ##		Any			Off	Off	Off

Database “Generations”

When DNA mutates, the change doesn't take effect until the next generation. Panorama's design sheet works the same way. The changes you make to the design sheet don't immediately change the database. Instead, Panorama waits for you to tell it to create a “new generation” of the database. This allows you to make multiple changes to the design sheet, check the changes for accuracy, and then apply all of the changes at once to the actual database structure.

There are three ways to tell Panorama to create a new generation.

1. Click the **New Generation** tool.



2. Switch the window to a different view (using the **View Menu**).

3. Close the design sheet window.

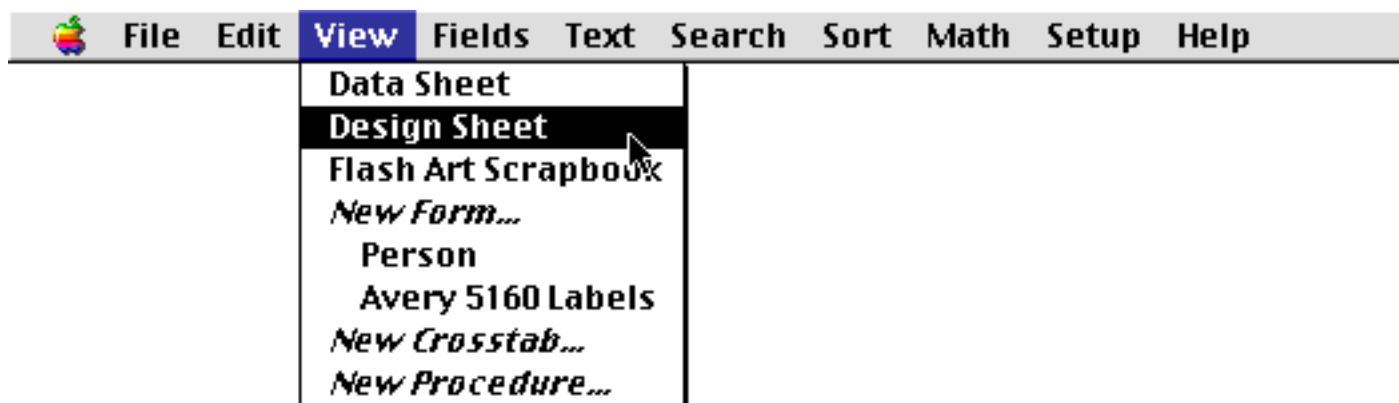
Notice that you don't have to close the design sheet window to create a new generation. If you wish, you can even leave the design sheet open as you work with the database. This allows you to make a change to the design sheet, then quickly test the change and make further changes if necessary.

Once you have created a new generation, you cannot go back to the old generation with the **Undo** command. However, you can go back to the last generation saved on the disk with the **Revert to Saved** command (See [“Total Recall \(Auto-Save/Crash Recovery\)”](#) on page 66).

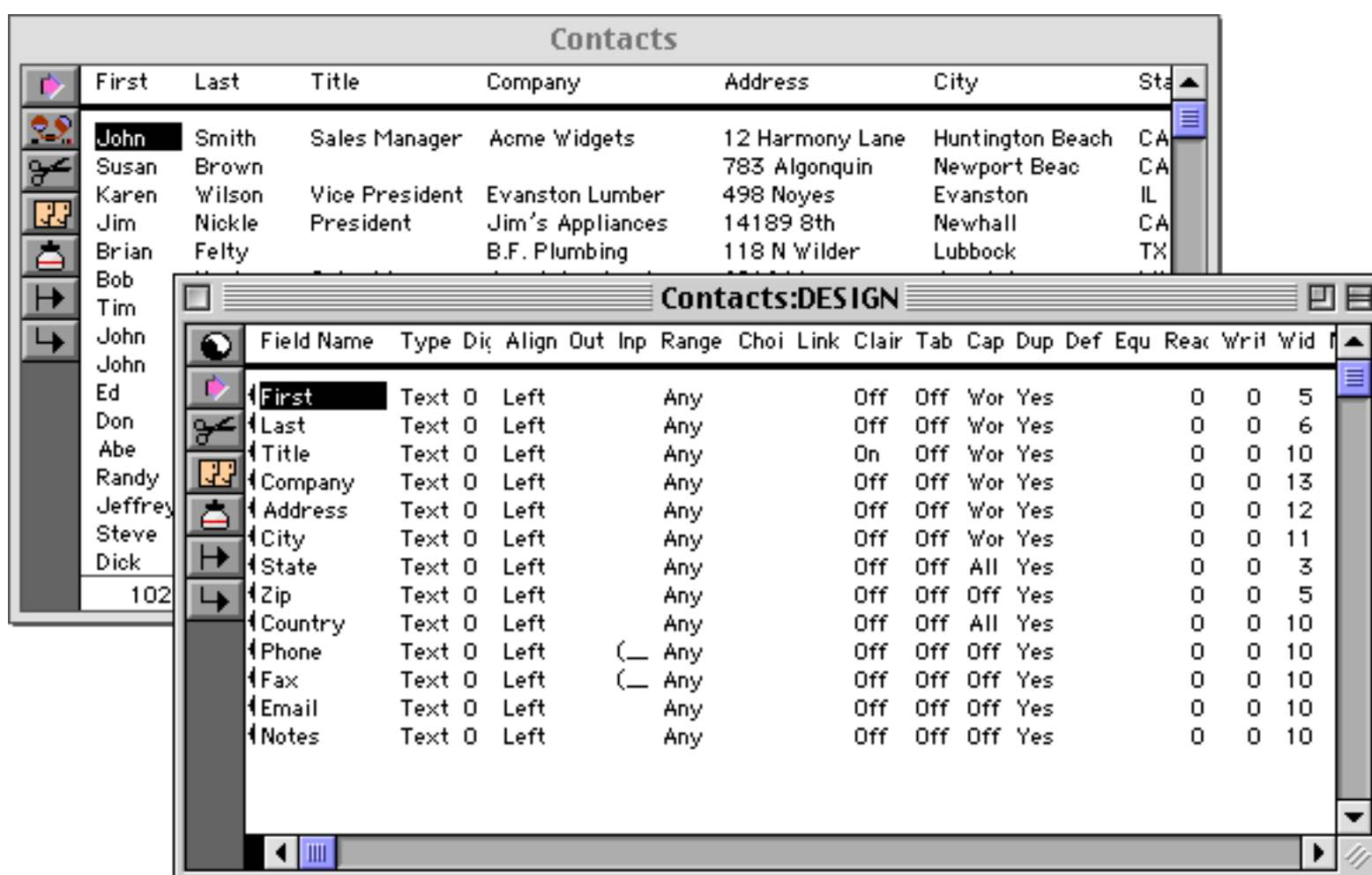
Typical Design Sheet Operation

Once you get the hang of it, the data sheet is very simple to use. As an example, we’ll show how to add two new fields to a **Contacts** database using the design sheet. We’ll add fields for a prefix (**Mr./Ms./Mrs.**) and for a middle name.

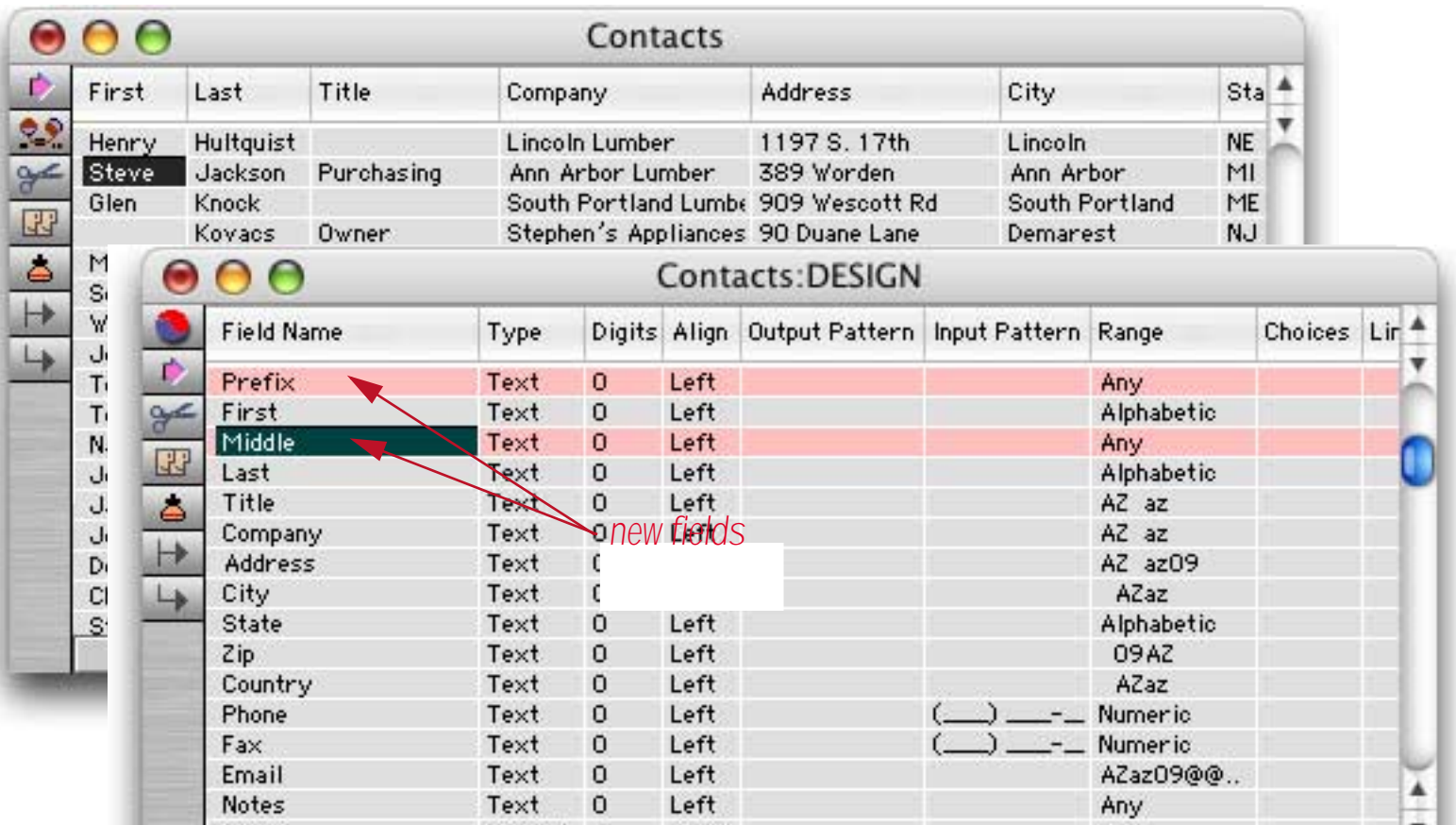
The first step is to open the design sheet using the View Menu.



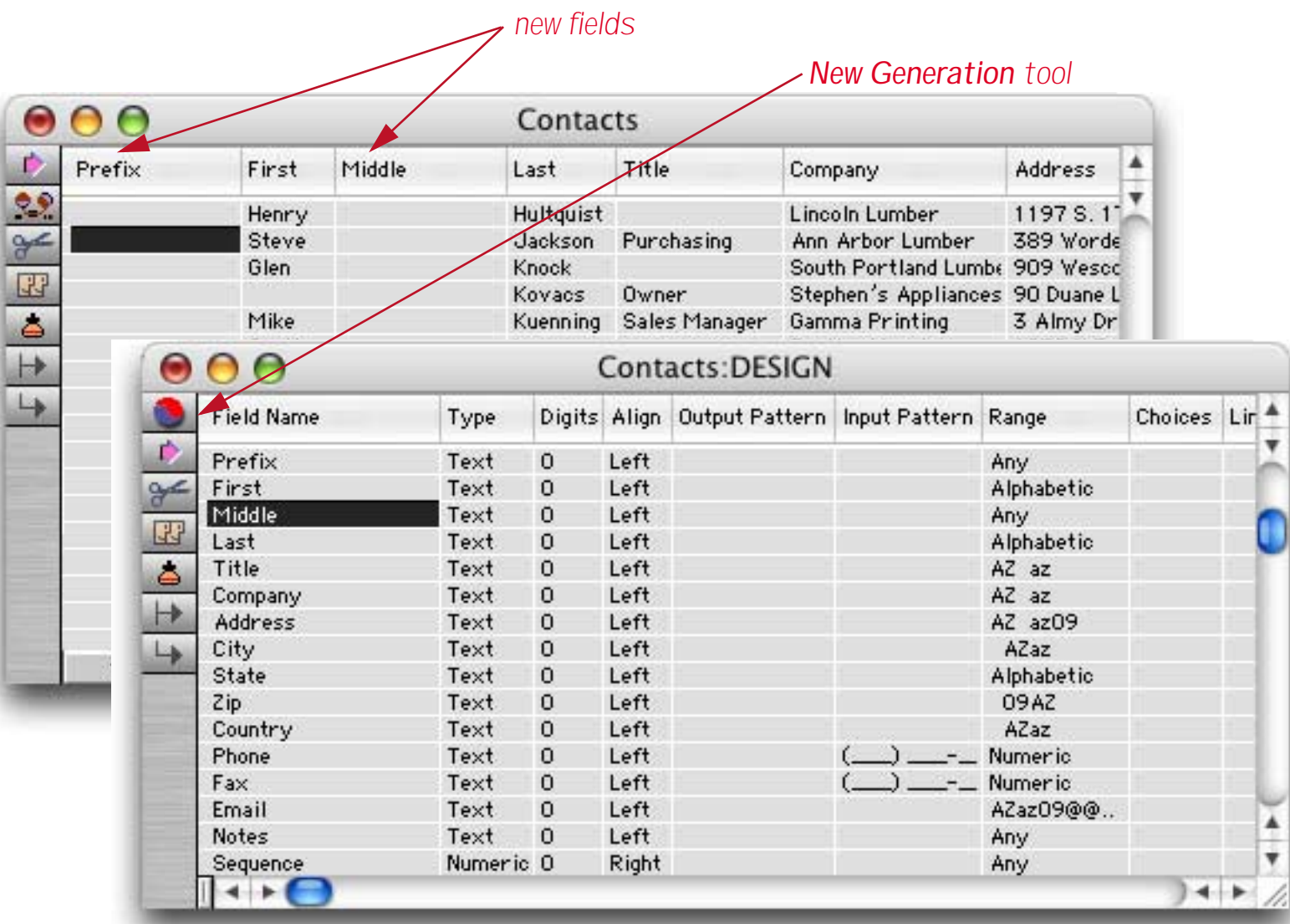
If you hold down the **Control** key (Mac) or **Alt** key (Windows) the design sheet will open in a separate window, allowing you to see both the data sheet and the design sheet at the same time (see [“Opening More Than One Window Per Database”](#) on page 169). In the illustration below we’ve dragged the design sheet window down and to the right so that we can see both windows at once.



Now we'll add the two new fields to the design sheet. We use the **Insert New Record** tool to insert the new lines, then type in the field names. The new fields are displayed with a pink background to show that they have not been added to the database yet.



Once the fields are entered, click on the **New Generation** tool to update the database itself.



The new fields are ready to use—you can bring the data sheet forward and start entering data in them right away. It's not necessary to close the design sheet first—you can leave it open in case you need to make further modifications to the fields. It's usually a good idea, however, to close the design sheet when you are not going to be using it again for a while.

Wait just one minute! There's one final step you don't want to forget. When you're sure you've got the structure you want, make sure you **Save** the database to make your changes permanent (See "[Saving a Database](#)" on page 63)!

Field Properties

Each row in the design sheet contains all the properties for a single field in the database. The design sheet contains 19 columns—one column for each field property.

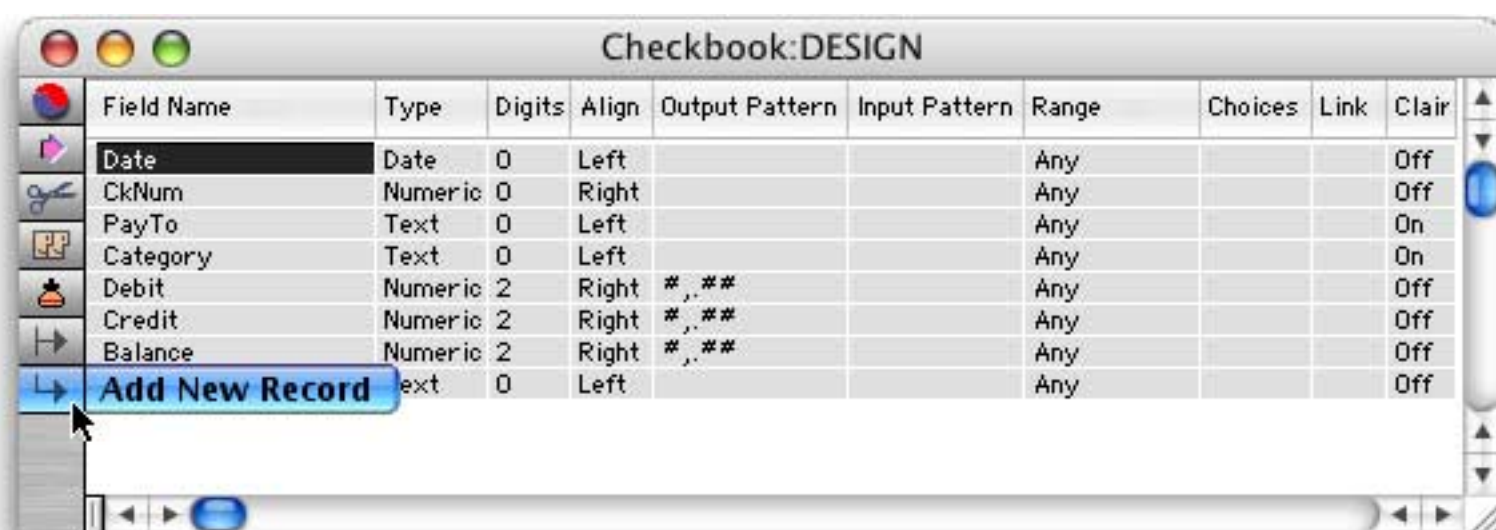
Field Name	The field name identifies the field. It helps you remember what is in the field, and is also used to identify the field in formulas. Panorama does not place any restrictions on your choice of field names, but there are some ramifications to using an unusual name (see " Rules for Field Names " on page 220).
Type	This column specifies the type of data stored in each field: text, numeric, date, choices, or picture. See " Data Types " on page 245 for more information.
Digits	This column specifies the number of digits to be used after the decimal point with numeric data: 0, 1, 2, 3, 4, Float or Money . See " Numeric Data " on page 249 for more information.
Align	This column specifies how the field should be aligned in the data sheet: left, center, or right flush. Usually left flush is used for everything except numbers, which are displayed right flush.
Output Pattern	The output pattern allows you to specify the display format for numbers or dates. See " Numeric Output Patterns " on page 250 and see " Date Output Patterns " on page 255 for more information.
Input Pattern	The input pattern forces data into a specific pattern as it is entered, for example phone numbers or social security numbers. See " Input Patterns " on page 291 for more information.
Range	This column allows you to restrict the characters that can be entered in a field. For example, you can restrict a field to only allow alphabetic or numeric entry. See " Restricting Character Types " on page 293 for more information.
Choices	This column allows you to specify a list of choices that are valid for this field; for instance Yes/No, Gold/Silver/Bronze or Regular/Unleaded . The list of choices is used by the Choices data type (see " Choices " on page 259) and is also used by the Choice Palette (see " The Choice Palette " on page 317).
Link	This column allows you to link this field with a field in another database. Only Clairvoyance [®] is affected by this link. You can set up this field with the Clairvoyance Link command. For more information see " Clairvoyance[®] Across Multiple Files " on page 286.
Clairvoyance [®]	This column controls Panorama's Clairvoyance feature. This feature tries to anticipate what you are about to type, then types it for you. See " Clairvoyance[®] " on page 284 for the straight scoop.
Tabs	This column controls the Space Bar Tab feature. This feature makes the Space Bar work just like the Tab key, saving wear and tear on your left pinky. See " Tabbing with the Space Bar " on page 279 for details.
Caps	Use this column to tell Panorama to automatically capitalize data entry in a field. Panorama can automatically capitalize everything, or just the first letter of each word or sentence. See " Automatic Capitalization " on page 281.
Dups	This column specifies whether or not you want to allow duplicate entries in this field. You can also specify that you want to require duplicate entries (no unique values). See " Checking for Duplicate Data " on page 283.
Default Value	This column allows you to specify a default value for the field when a new record is created. See " Default Values " on page 296.

Equation	This column allows you to specify one or more calculations to be performed whenever the information in this field changes or is confirmed. For example, an invoice can be set up so that all totals are calculated whenever a quantity or price is entered or changed. See “ Automatic Calculations ” on page 303.
Read	This attribute is used to control the security level for displaying (reading) the data in this field. The value in this field may be from 0 (anyone can see this data) to 255 (only users with the highest possible security level can see this data). For more information on security levels see the Panorama Security Handbook, available separately.
Write	This attribute is used to control the security level for modifying (writing) the data in this field. The value in this field may be from 0 (anyone can modify this data) to 255 (only users with the highest possible security level can modify this data). For more information on security levels see the Panorama Security Handbook, available separately.
Width	This contains the approximate width (in characters) of the field in the data sheet. For example, a width of 20 means that the column is about 20 characters wide (the actual width depends on the font and size). Although you can use the design sheet to set the column width, it is easier and more exact to set the width by dragging on the column name (See “ Changing the Width of a Field ” on page 199).
Notes	You can use this field to keep notes about the field. If a database contains dozens or hundreds of fields, it may be difficult to remember what each field is for. You can use this field to store reminders to yourself about the purpose and use of each field. Panorama ignores the contents of this column.

Adding New Fields Using the Design Sheet

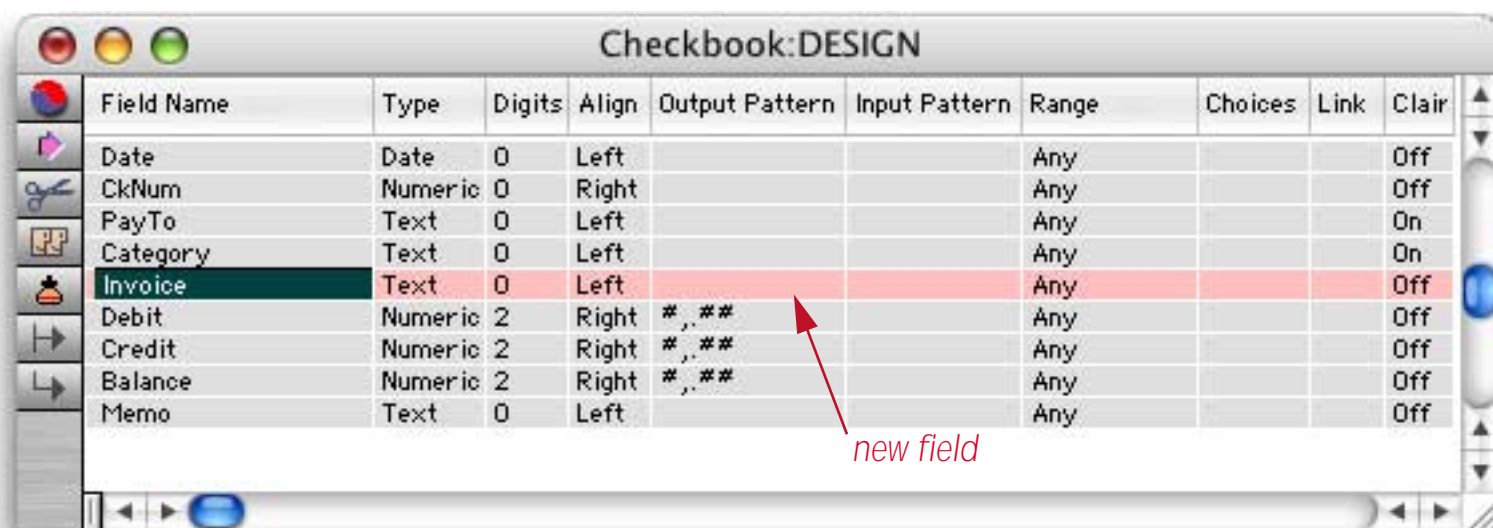
In addition to changing the properties of existing fields, the design sheet can be used to add new fields or to delete existing fields. The design sheet is especially handy when you need to add a lot of new fields at once.

Since each line in the design sheet corresponds to a field, you can add new fields simply by adding new lines to the design sheet. The design sheet works the same way as the data sheet—you can add new lines using the **Add New Record** tool, the **Insert New Record** tool, or by pressing the **Return** key. (Keep in mind that each **record** in the design sheet corresponds to a **field** in the database, so adding or inserting a record here is equivalent to adding or inserting a field in the database itself.)



Remember that adding a line to the design sheet does not immediately create the new field. When you are ready to actually add the new field(s) to the database, tell Panorama to create a new generation (See “[Database “Generations”](#)” on page 212).

When you add a new line to the design sheet, you may notice that your new line has a pink background. This pink background serves as a reminder of the new fields you have created.



As soon as you create a new generation, the background of any new fields will change to gray. On the other hand, if you close the design sheet without creating a new generation, the new fields will not be created.

Removing Fields Using the Design Sheet

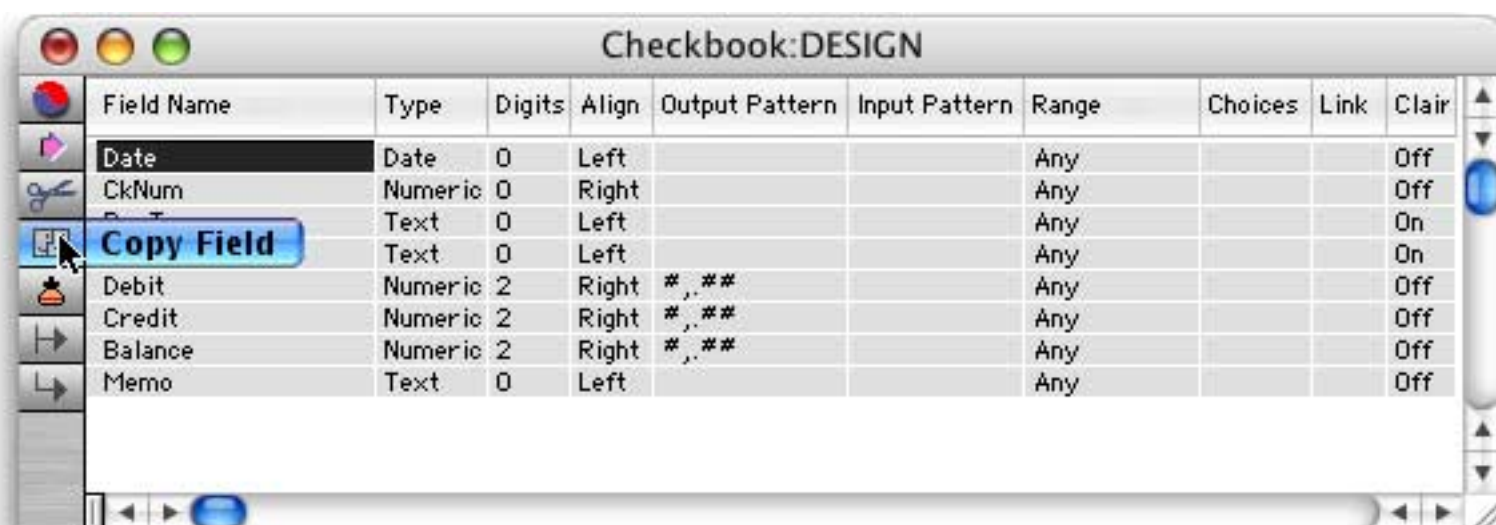
To remove a field from the database simply remove the corresponding line from the design sheet and then tell Panorama to create a new generation. You can delete a field using the **Cut Field** tool or by pressing the **Delete** key (Mac) or the **Backspace** key (PC).

When you remove a field, all the data in that field is lost forever (unless of course, you have another copy on the disk). Remember, you cannot go back to an old generation with the **Undo** command. Therefore, you'll want to be very sure that you really don't need a field anymore before you remove it.

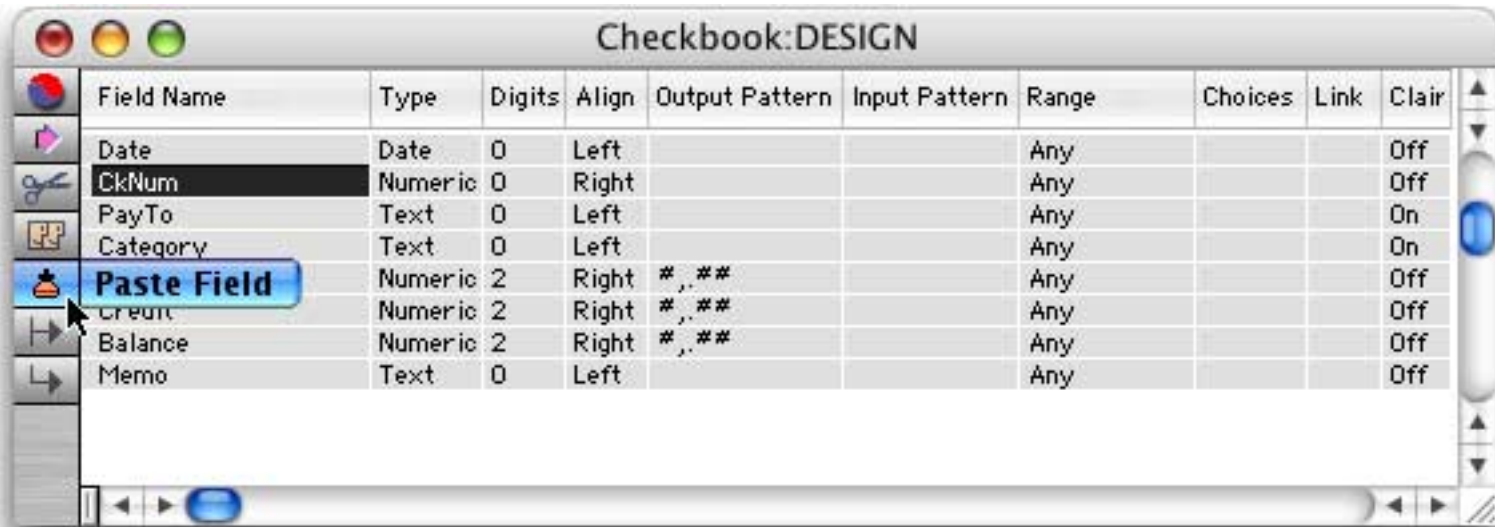
Making a Copy of a Field

You can create a copy of a field, including all the data in the field, by copying the corresponding line in the design sheet. Use the **Copy Field** tool to copy the line into the clipboard, then use the **Paste Field** tool to make a copy of the line in the design sheet. You'll probably want to rename the new field. (You must use the clipboard to create the copy—you cannot simply type in a copy of the line.) When you create a new generation the database will contain a copy of the field, including the data in the field.

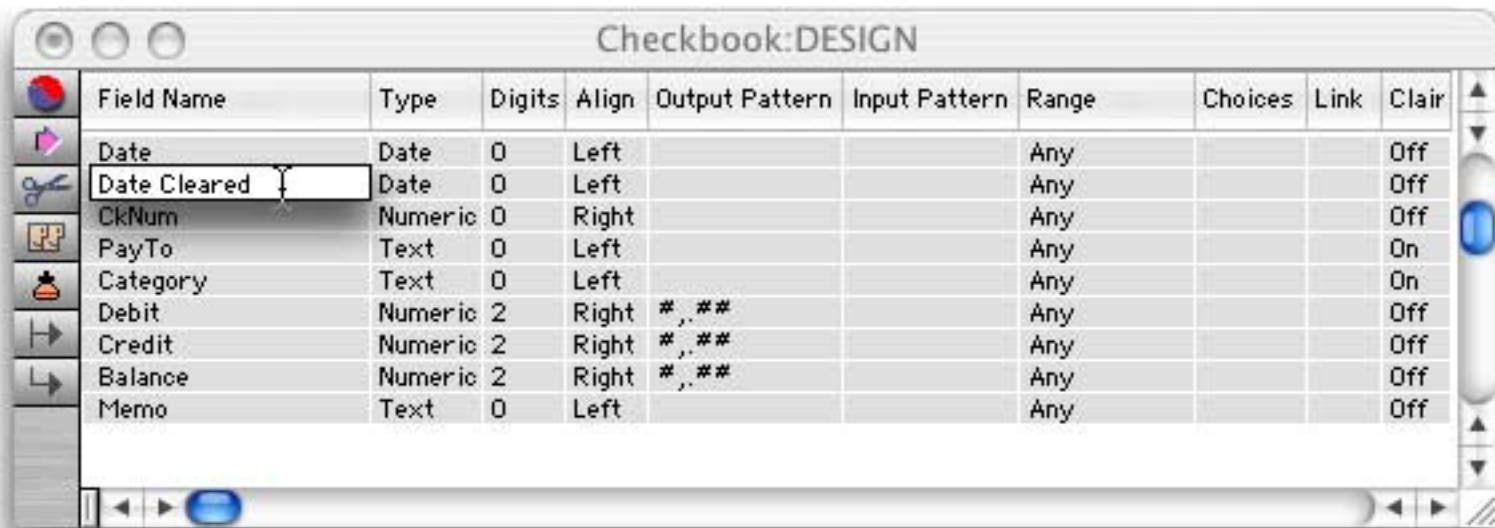
For example, let's suppose we want to create a **DateCleared** field for a Checkbook database, starting with the data already in the **Date** field. Start by selecting the **Date** field and copying it into the clipboard.



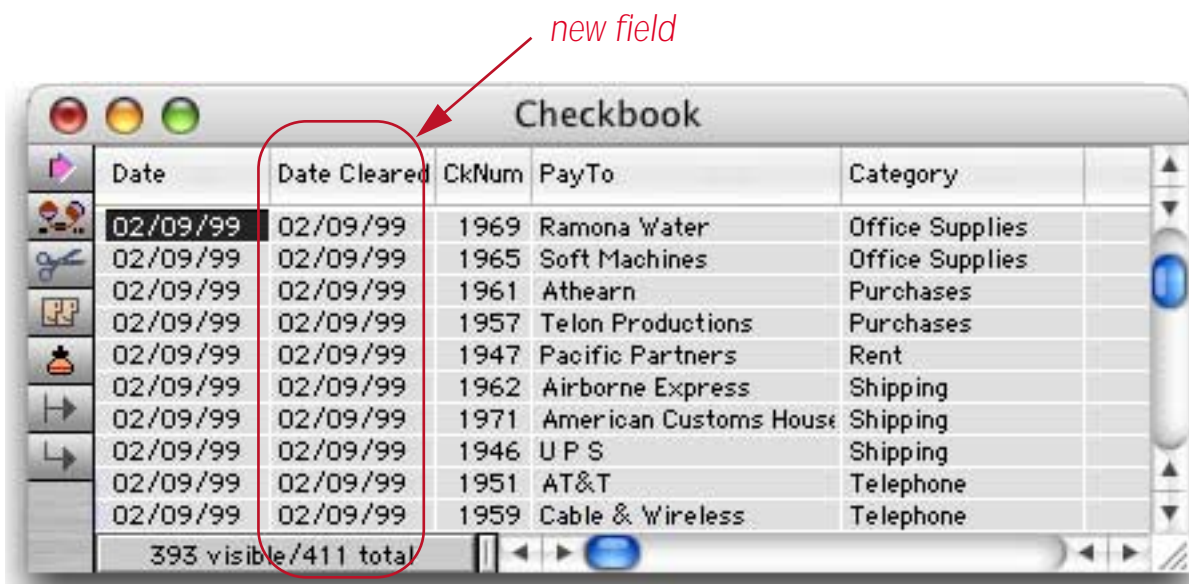
Now select the position for the new field and paste it in.



Rename the new field to **DateCleared**. Notice that the “new” field does not have a pink back ground, because it is not really a new field, but a copy of an existing field.



Use the View Menu to switch to the data sheet. When Panorama asks you if you want a New Generation, press the **Yes** button. As you can see, Panorama has created the new field with a copy of the data in the old field.



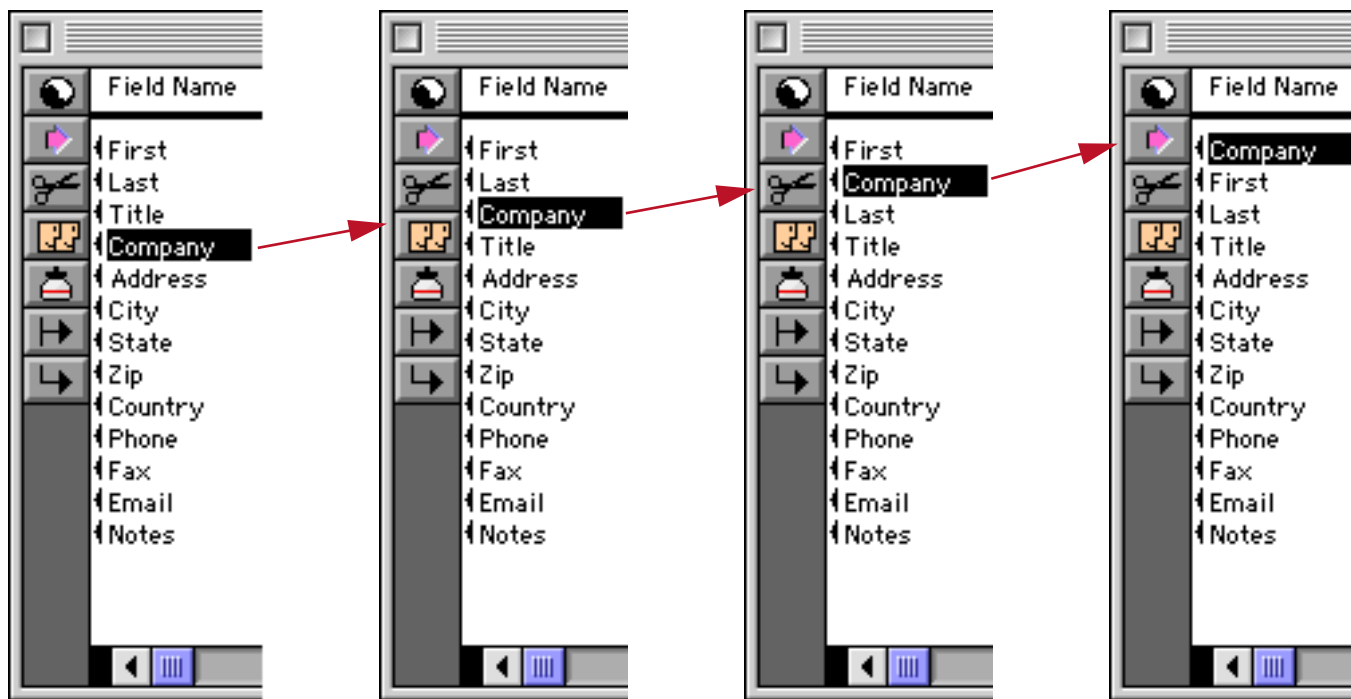
Note: You can only use this technique to copy fields within a single database. You cannot copy a field from one database and paste it into another database.

By the way, this technique is not the only way to copy a field. You can also use the **Formula Fill** command to copy a field at any time, not just when it is created (See “[Propagate](#)” on page 466.)

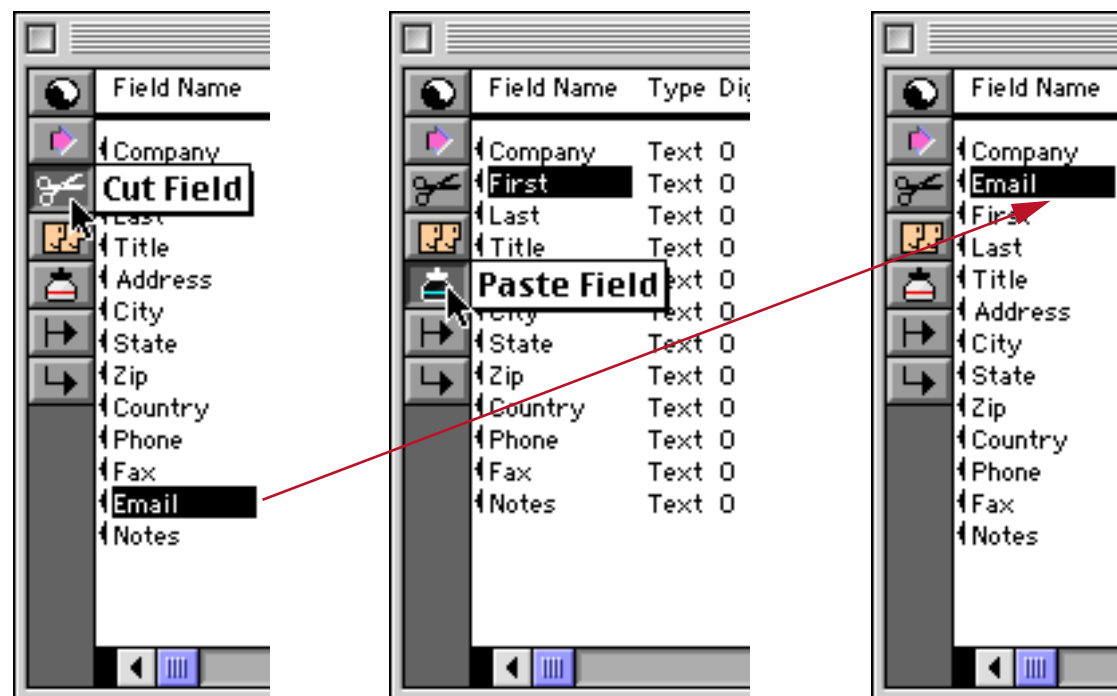
Re-Arranging Fields

The design sheet can also be used to re-arrange the order of the fields. It’s a two step process—first re-arrange the lines in the design sheet, then create a new generation.

To move a field up one line in the design sheet, press **Command-Up Arrow** (Mac) or **Control-Up Arrow** (PC). To move a field down one line in the design sheet, press **Command-Down Arrow** (Mac) or **Control-Down Arrow** (PC). Keep pressing until the field reaches the desired position.



Another way to move a field is with the **Cut Field** and **Paste Field** tools. This method may be faster if you need to move a field a long distance.



When the fields are in the correct order, tell Panorama to create a new generation.

Rules for Field Names

Each field in a Panorama database is identified by a field name. Field names serve several purposes: they remind you what the field is for (i.e. the **Dates** field probably contains dates, the **Name** field probably contains names, etc.), they appear at the top of each column in the data sheet, and they are used to identify fields in formulas and procedures (for example **Amount=Qty*Price**).

Panorama doesn't place any restrictions on the field names you choose. Field names may be as long as you want, and they may contain any character that can be typed from the keyboard. Field names may be split over two or more lines (see below). You can even have two or more fields with the same name (but we recommend that you avoid this, see the next paragraph).

However, if you are planning to use a field in a formula or procedure, you may want to avoid some of these unusual possibilities. If you have two or more fields with the same name, only the first field will be accessible to a formula. Field names containing blanks or punctuation (for instance P/E Ratio) are more difficult to use in a formula. To use such a field in a formula, you must surround the field name with « and » (for example «P/E Ratio»). See “**Fields**” on page 50). (If you left out the «», Panorama would think you were trying to divide **P** by **E**, with **Ratio** left over.) You may want to avoid field names like **Date**, **Seconds**, **And**, **Or**, and **Sum**. These names can be confusing when used in a formula because Panorama has functions with the same names.

Multiple Line Field Names

It is possible split a field name over two or more lines. The main reason for doing this is to create a multiple line title for the data sheet. Simply type in a **Return** between each line.

Field Name	Type	Diç	Align	Out	Inp	Range	Choi	Link	Clair	Tab	Cap	Dup	Def	Equ	Reac	Writ	Wid
First Name	Text	0	Left			Any			Off	Off	Wor	Yes		0	0	0	4
Last Name	Text	0	Left			Any			Off	Off	Wor	Yes		0	0	0	11
Title	Text	0	Left			Any			On	Off	Wor	Yes		0	0	0	9
Company	Text	0	Left			Any			Off	Off	Wor	Yes		0	0	0	11
Address	Text	0	Left			Any			Off	Off	Wor	Yes		0	0	0	11
City	Text	0	Left			Any			Off	Off	Wor	Yes		0	0	0	9
State	Text	0	Left			Any			Off	Off	All	Yes		0	0	0	3
Zip	Text	0	Left			Any			Off	Off	Off	Yes		0	0	0	5
Code	Text	0	Left			Any			Off	Off	All	Yes		0	0	0	10
Phone Number	Text	0	Left		(	Any			Off	Off	Off	Yes		0	0	0	10
Fax Number	Text	0	Left		(	Any			Off	Off	Off	Yes		0	0	0	10
Email	Text	0	Left			Any			Off	Off	Off	Yes		0	0	0	10
Notes	Text	0	Left			Any			Off	Off	Off	Yes		0	0	0	10

In the data sheet this field name will appear on two lines, like this.

First Name	Last Name	Title	Company	Address	City	Stat	Zip Code
John	Smith	Sales Manager	Acme Widgets	12 Harmony Ln	Huntington Bea	CA	92648
Susan	Brown			783 Algonquin	Newport Beac	CA	93459
Karen	Wilson	Vice Presiden	Evanston Lumber	498 Noyes	Evanston	IL	60201
Jim	Nickle	President	Jim's Appliances	14189 8th	Newhall	CA	91321
Brian	Felty		B.F. Plumbing	118 N Wilder	Lubbock	TX	79410
Bob	Hanlan	Sales Manager	Ann Arbor Lumber	6916 Morgan	Ann Arbor	MI	48104
Tim	Daniels	Customer Sup	St. Louis Lumber	3133 Cornell	St. Louis	MO	63130
John	Moses			8265 Leticia	San Clemente	CA	92672
John	Fabian			3 Rose Hill	Woodstock	VT	05091
Ed	Ruth	Sales Manager	Chicago Lumber	1580 N. Oconto	Chicago	IL	60634
Don	Harmon	Marketing	Sudderth Video	415 Sudderth	Ruidoso	NM	88345
Abe	Fierstein	Vice Presiden	Van Nuys Lumber	1571 Haskell	Van Nuys	CA	91409
Randy	Cross	Owner	Randy's Appliance	133 Hunt Rd	Chelsford	MA	01824
Jeffre	Rodman			2 Cary Rd	Chestnut Hill	MA	02167
Steve	Jackson	Purchasing	Ann Arbor Lumber	389 Worden	Ann Arbor	MI	48103

If you use one of these fields in a formula, the **Return's** should be represented as spaces, as shown here. The formula on the left is correct, the formula on the right is wrong.

Correct	Wrong
<code><<Zip Code>>=92365</code>	<code><<Zip Code>>=92365</code>

Repeating Fields (Line Items)

Some databases contain several similar fields repeating within each record. For example, an invoice usually contains several quantities, product descriptions, product prices, etc. These fields are often called **Line Items** because they repeat for each line on the invoice. In Panorama these line item fields are created by adding a numeric suffix to the root field name, for example **Qty1**, **Qty2**, ... **Qty15**. This illustration shows part of a form that contains line items arranged into 15 rows by 4 columns.

Qty	Description	Price	Total
2	Box Car	4.75	9.50
1	Oil Tank	18.00	18.00
1	Steam Passenger Engine	84.95	84.95
1	Diesel Passenger Engine	29.95	29.95
1	Factory	12.50	12.50
1	Hotel	16.35	16.35
1	Epoxy	3.34	3.34
4	Hotel	16.35	65.40
1	Railway Post Office	6.75	6.75
12	Straight Track	3.50	42.00
18	Curved Track	3.50	63.00
1	Crossing Track (45°)	4.75	4.75
1	Crossing Gate	27.95	27.95
6	Insulated Rail Joiner (24)	0.90	5.40
1	Semaphore	18.99	18.99
Invoice 101		Subtotal	174.59
Date November 3, 1990		Tax	8.73
<input type="radio"/> Cash <input checked="" type="radio"/> Check <input type="radio"/> Visa/MC		Total	183.32

In the design sheet these line item fields are simply 60 individual fields.

Field Name	Type	Diç	Align	Out	Equation	Reac	Writ	Wid
Quantity1	Num	0	Right			0	0	3
Description1	Text	0	Left			0	0	15
Price1	Num	2	Right		zerobank(lookup("Catalog","Item",DescriptionΩ,"Price",PriceΩ,0))	0	0	5
Total1	Num	2	Right		zerobank(QuantityΩ*PriceΩ)	0	0	5
Quantity2	Num	0	Right			0	0	3
Description2	Text	0	Left			0	0	15
Price2	Num	2	Right		zerobank(lookup("Catalog","Item",DescriptionΩ,"Price",PriceΩ,0))	0	0	5
Total2	Num	2	Right		zerobank(QuantityΩ*PriceΩ)	0	0	5
Quantity3	Num	0	Right			0	0	3
Description3	Text	0	Left			0	0	15
Price3	Num	2	Right		zerobank(lookup("Catalog","Item",DescriptionΩ,"Price",PriceΩ,0))	0	0	5
Total3	Num	2	Right		zerobank(QuantityΩ*PriceΩ)	0	0	5
Quantity4	Num	0	Right			0	0	3
Description4	Text	0	Left			0	0	15
Price4	Num	2	Right		zerobank(lookup("Catalog","Item",DescriptionΩ,"Price",PriceΩ,0))	0	0	5
Total4	Num	2	Right		zerobank(QuantityΩ*PriceΩ)	0	0	5
Quantity5	Num	0	Right			0	0	3
Description5	Text	0	Left			0	0	15
Price5	Num	2	Right		zerobank(lookup("Catalog","Item",DescriptionΩ,"Price",PriceΩ,0))	0	0	5
Total5	Num	2	Right		zerobank(QuantityΩ*PriceΩ)	0	0	5
Quantity6	Num	0	Right			0	0	3
Description6	Text	0	Left			0	0	15
Price6	Num	2	Right		zerobank(lookup("Catalog","Item",DescriptionΩ,"Price",PriceΩ,0))	0	0	5
Total6	Num	2	Right		zerobank(QuantityΩ*PriceΩ)	0	0	5
Quantity7	Num	0	Right			0	0	3

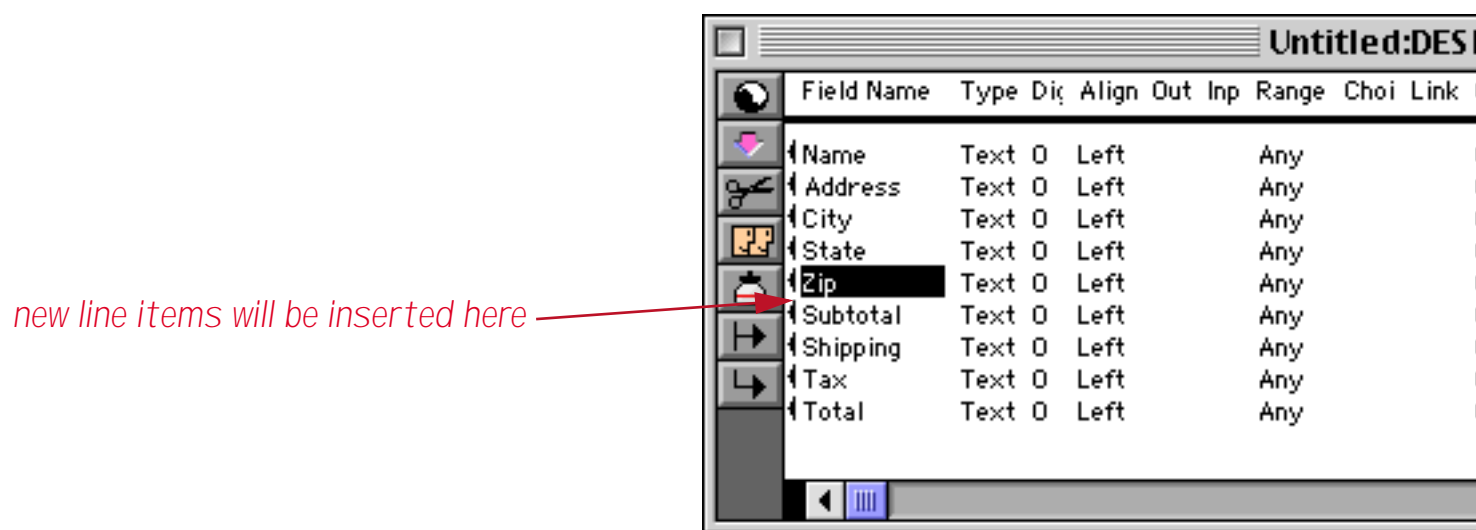
Right about now you are probably groaning at the thought of typing in all those fields. Don't panic yet — we've got you covered (keep reading)!

Creating Line Item Fields

You can create line item fields the same way you create ordinary fields, using the **Add Field** command (see “[Adding New Fields](#)” on page 198) or the design sheet (see “[Adding New Fields Using the Design Sheet](#)” on page 216). Just make sure to add the numeric suffix to the end of each name (with no space), and remember to spell the base name the same way each time, including capitalization.

OK	Not OK
Qty1	Q1
Qty2	Qty2
Qty3	QTY3
Qty4	Qty4

The design sheet has a shortcut for creating multiple line items in a hurry—the **Create Line Items** dialog in the **Special** menu. To use this dialog start by positioning the cursor just above the spot where you want the line items inserted. In the illustration below, the line items will be inserted between the **Zip** and **Subtotal** fields.



Once the cursor is in the correct spot choose **Create Line Items** from the **Special** menu.

Create Line Items...

Number from: 1 To 9

Cancel OK

The dialog allows you to enter up to eight root line item names (for example **Qty**, **Item**, **Price**, etc.). You can also specify the starting and ending numeric suffixes (for example 1 through 9).

Create Line Items...

Qty Item Price Total

Number from: 1 To 5

Cancel OK

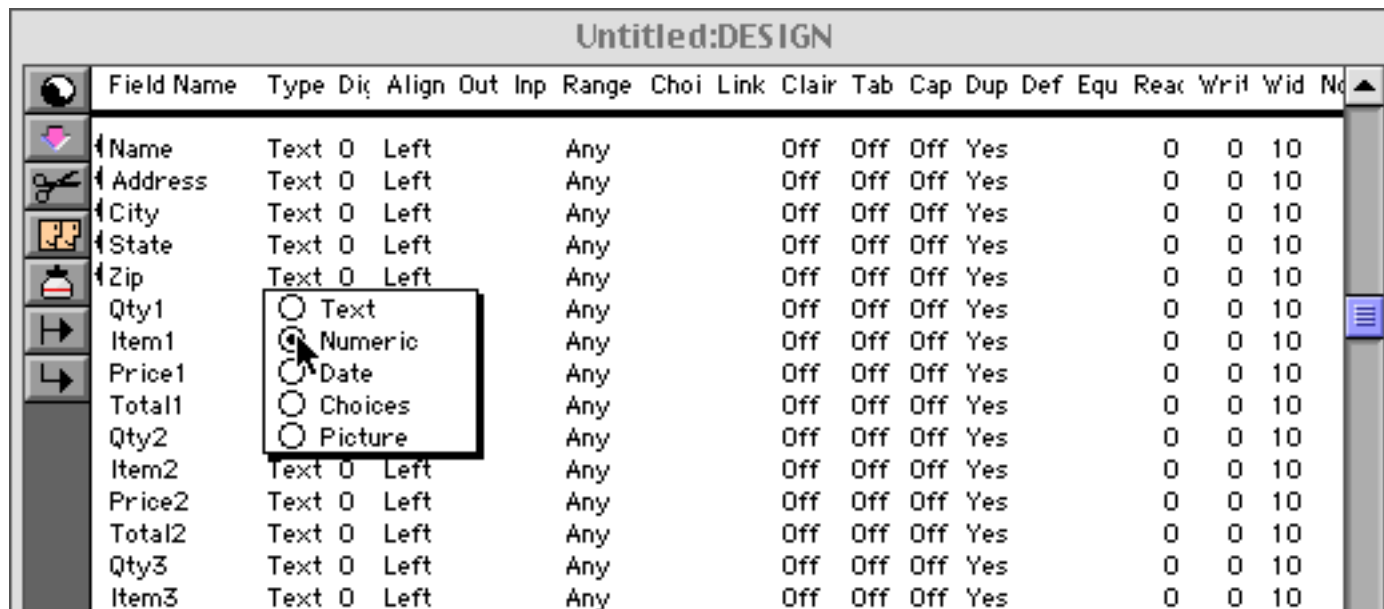
When you press **OK** Panorama will automatically insert the line items into the design sheet. The line items are inserted below the currently selected field.

Field Name	Type	Dig	Align	Out	Inp	Range	Choi	Link	Clair	Tab	Cap	Dup	Def	Equ	Reac	Writ	Wid	No
Name	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Address	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
City	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
State	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Zip	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Qty1	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Item1	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Price1	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Total1	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Qty2	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Item2	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Price2	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Total2	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Qty3	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Item3	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Price3	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Total3	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Qty4	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Item4	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Price4	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Total4	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Qty5	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Item5	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Price5	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Total5	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Subtotal	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Shipping	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Tax	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	
Total	Text	0	Left			Any			Off	Off	Off	Yes			0	0	10	

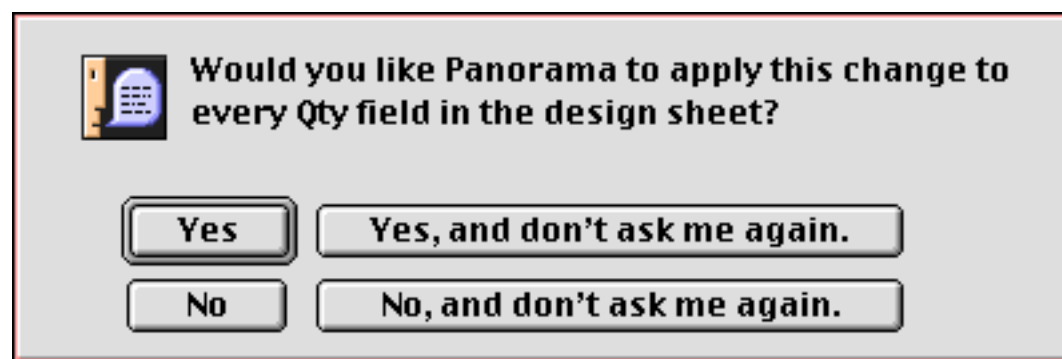
The new line item fields are actually added to the database when a new generation is created (see “[Database Generations](#)” on page 212).

Modifying Line Item Fields

When you modify the properties of a line item field, you usually want to make the same change to all the corresponding fields. For example, if you change **Qty1** to numeric, you probably also want to change **Qty2**, **Qty3**, **Qty4**...**Qty15** to numeric also. The design sheet can do this for you. Whenever you change any of the properties of a particular line item field, Panorama will ask you if you would like to make the same change to all of the other corresponding line item fields. To illustrate this, let's go ahead and change **Qty1** to numeric.



When you press the **Enter** key you will be presented with a choice.



If you press **Yes** (or the **Enter** key), Panorama will go ahead and change all of the **Qty** fields to numeric.

Field Name	Type	Di	Align	Out	Inp	Range	Choi	Link	Clair	Tab	Cap	Dup	Def	Equ	Reac	Writ	Wid	No
Name	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Address	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
City	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
State	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Zip	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Qty1	Num	0	Right			Any			Off	Off	Off	Yes		0	0	10		
Item1	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Price1	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Total1	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Qty2	Num	0	Right			Any			Off	Off	Off	Yes		0	0	10		
Item2	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Price2	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Total2	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Qty3	Num	0	Right			Any			Off	Off	Off	Yes		0	0	10		
Item3	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Price3	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Total3	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Qty4	Num	0	Right			Any			Off	Off	Off	Yes		0	0	10		
Item4	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Price4	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Total4	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Qty5	Num	0	Right			Any			Off	Off	Off	Yes		0	0	10		
Item5	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Price5	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Total5	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Subtotal	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Shipping	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Tax	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		
Total	Text	0	Left			Any			Off	Off	Off	Yes		0	0	10		

This auto-repeat feature works for any column in the design sheet (except the **Field Name**). For example, we could type a formula into the **Total4** field.

Total3	Text	0	Left	Any	Off	Off	Off	Yes	0
Qty4	Num	0	Right	Any	Off	Off	Off	Yes	0
Item4	Text	0	Left	Any	Off	Off	Off	Yes	0
Price4	Text	0	Left	Any	Off	Off	Off	Yes	0
Total4	Text	0	Left	Any	Off	Off	Off	Yes	QtyΩ*PriceΩ
Qty5	Num	0	Right	Any	Off	Off	Off	Yes	0
Item5	Text	0	Left	Any	Off	Off	Off	Yes	0
Price5	Text	0	Left	Any	Off	Off	Off	Yes	0
Total5	Text	0	Left	Any	Off	Off	Off	Yes	0
Subtotal	Text	0	Left	Any	Off	Off	Off	Yes	0
Shipping	Text	0	Left	Any	Off	Off	Off	Yes	0

When you press **Enter** Panorama can automatically repeat this formula to all the other **Total** fields.

Field Name	Type	Di	Align	Out	Inp	Range	Choi	Link	Clair	Tab	Cap	Dup	Def	Equation	Reac
Name	Text	0	Left		Any		Off	Off	Off	Yes					0
Address	Text	0	Left		Any		Off	Off	Off	Yes					0
City	Text	0	Left		Any		Off	Off	Off	Yes					0
State	Text	0	Left		Any		Off	Off	Off	Yes					0
Zip	Text	0	Left		Any		Off	Off	Off	Yes					0
Qty1	Num	0	Right		Any		Off	Off	Off	Yes					0
Item1	Text	0	Left		Any		Off	Off	Off	Yes					0
Price1	Text	0	Left		Any		Off	Off	Off	Yes					0
Total1	Text	0	Left		Any		Off	Off	Off	Yes				QtyΩ*PriceΩ	0
Qty2	Num	0	Right		Any		Off	Off	Off	Yes					0
Item2	Text	0	Left		Any		Off	Off	Off	Yes					0
Price2	Text	0	Left		Any		Off	Off	Off	Yes					0
Total2	Text	0	Left		Any		Off	Off	Off	Yes				QtyΩ*PriceΩ	0
Qty3	Num	0	Right		Any		Off	Off	Off	Yes					0
Item3	Text	0	Left		Any		Off	Off	Off	Yes					0
Price3	Text	0	Left		Any		Off	Off	Off	Yes					0
Total3	Text	0	Left		Any		Off	Off	Off	Yes				QtyΩ*PriceΩ	0
Qty4	Num	0	Right		Any		Off	Off	Off	Yes					0
Item4	Text	0	Left		Any		Off	Off	Off	Yes					0
Price4	Text	0	Left		Any		Off	Off	Off	Yes					0
Total4	Text	0	Left		Any		Off	Off	Off	Yes				QtyΩ*PriceΩ	0
Qty5	Num	0	Right		Any		Off	Off	Off	Yes					0
Item5	Text	0	Left		Any		Off	Off	Off	Yes					0
Price5	Text	0	Left		Any		Off	Off	Off	Yes					0
Total5	Text	0	Left		Any		Off	Off	Off	Yes				QtyΩ*PriceΩ	0
Subtotal	Text	0	Left		Any		Off	Off	Off	Yes					0
Shipping	Text	0	Left		Any		Off	Off	Off	Yes					0
Tax	Text	0	Left		Any		Off	Off	Off	Yes					0
Total	Text	0	Left		Any		Off	Off	Off	Yes					0

To learn more about creating formulas for line items (and those funny Ω characters) see “[Line Item Fields](#)” on page 52.

If you press **Yes, and don't ask me again** or **No, and don't ask me again** Panorama will remember your choice for as long as the design sheet is open. If you close the design sheet and then re-open it later, however, Panorama will start asking you again (until you tell it not to again!).

Adding More Line Item Fields

If necessary you can use the **Create Line Items** dialog to add new line items at any time. For example, suppose we wanted to add three more line items to the five we created earlier. Start by placing the cursor on the last line item.

Total4	Text	0	Left	Any	Off	Off	Off	Yes	QtyΩ*PriceΩ	0
Qty5	Num	0	Right	Any	Off	Off	Off	Yes		0
Item5	Text	0	Left	Any	Off	Off	Off	Yes		0
Price5	Text	0	Left	Any	Off	Off	Off	Yes		0
Total5	Text	0	Left	Any	Off	Off	Off	Yes	QtyΩ*PriceΩ	0
Subtotal	Text	0	Left	Any	Off	Off	Off	Yes		0
Shipping	Text	0	Left	Any	Off	Off	Off	Yes		0
Tax	Text	0	Left	Any	Off	Off	Off	Yes		0
Total	Text	0	Left	Any	Off	Off	Off	Yes		0

Now open the **Create Line Items** dialog and type in the field name roots again. Set the numbering to start just past the previously created line items (in this case 6).

Create Line Items...

Qty	Item	Price	Total				
Number from:		6	To	8			

Panorama adds the new line items.

Field Name	Type	Dig	Align	Out	Inp	Range	Choi	Link	Clair	Tab	Cap	Dup	Def	Equation	Reac
Price1	Text	0	Left			Any			Off	Off	Off	Yes			0
Total1	Text	0	Left			Any			Off	Off	Off	Yes		QtyΩ*PriceΩ	0
Qty2	Num	0	Right			Any			Off	Off	Off	Yes			0
Item2	Text	0	Left			Any			Off	Off	Off	Yes			0
Price2	Text	0	Left			Any			Off	Off	Off	Yes			0
Total2	Text	0	Left			Any			Off	Off	Off	Yes		QtyΩ*PriceΩ	0
Qty3	Num	0	Right			Any			Off	Off	Off	Yes			0
Item3	Text	0	Left			Any			Off	Off	Off	Yes			0
Price3	Text	0	Left			Any			Off	Off	Off	Yes			0
Total3	Text	0	Left			Any			Off	Off	Off	Yes		QtyΩ*PriceΩ	0
Qty4	Num	0	Right			Any			Off	Off	Off	Yes			0
Item4	Text	0	Left			Any			Off	Off	Off	Yes			0
Price4	Text	0	Left			Any			Off	Off	Off	Yes			0
Total4	Text	0	Left			Any			Off	Off	Off	Yes		QtyΩ*PriceΩ	0
Qty5	Num	0	Right			Any			Off	Off	Off	Yes			0
Item5	Text	0	Left			Any			Off	Off	Off	Yes			0
Price5	Text	0	Left			Any			Off	Off	Off	Yes			0
Total5	Text	0	Left			Any			Off	Off	Off	Yes		QtyΩ*PriceΩ	0
Qty6	Text	0	Left			Any			Off	Off	Off	Yes			0
Item6	Text	0	Left			Any			Off	Off	Off	Yes			0
Price6	Text	0	Left			Any			Off	Off	Off	Yes			0
Total6	Text	0	Left			Any			Off	Off	Off	Yes			0
Qty7	Text	0	Left			Any			Off	Off	Off	Yes			0
Item7	Text	0	Left			Any			Off	Off	Off	Yes			0
Price7	Text	0	Left			Any			Off	Off	Off	Yes			0
Total7	Text	0	Left			Any			Off	Off	Off	Yes			0
Qty8	Text	0	Left			Any			Off	Off	Off	Yes			0
Item8	Text	0	Left			Any			Off	Off	Off	Yes			0
Price8	Text	0	Left			Any			Off	Off	Off	Yes			0
Total8	Text	0	Left			Any			Off	Off	Off	Yes			0
Subtotal	Text	0	Left			Any			Off	Off	Off	Yes			0

These new items do not have any of the modifications you may have made to the existing line items (type, equation, etc.) To update the new items simply edit open and close the appropriate data cells in one of the line items that are already set up and let Panorama copy the changes into the new line items (see “[Modifying Line Item Fields](#)” on page 225).

Learn More About Line Items

Line items get special treatment in the design sheet, in formulas, and in form layout. To learn about set up formulas for calculating line items see “[Line Item Fields](#)” on page 52 and “[Adding Line Item Fields](#)” on page 62. You’ll also find some examples of line item calculations in “[Automatic Calculations](#)” on page 303. To learn how to automatically create rows and columns of line item cells in a form see “[Line Items in a Form](#)” on page 669. To learn how to adjust the width of an entire column of line item cells in a form see “[Cluster Resize](#)” on page 541. To learn how to change the font size of a table of line item cells see “[Adjusting Spacing Between Multiple Objects](#)” on page 556.

“Generic” Fields

Databases come in all sizes and shapes. Generic fields allow different databases to share information even if they have different field names or slightly different configurations. For example, one database may store company names in a field named **Company**, while another may have a similar field named **Organization**. By setting up generic fields for each database, you build a bridge so that Panorama knows that these two fields, though named differently, contain the same type of information. Once this bridge is built Panorama can exchange data between these two databases (for example by drag and drop), and between Panorama and other applications that can share information (for example Apple’s Address Book).

Unlike normal Panorama fields, generic fields don’t actually store any information themselves. Instead, a generic field simply references one or more normal Panorama fields that contain the same information. When Panorama needs to access the information in the generic field, it examines the generic field definition (see below) to extract the data from the actual database fields.

Standard Generic Fields

While ordinary Panorama fields can store an unlimited variety of information, there are only about two dozen generic fields to choose from (this list may grow in future releases). Not all databases will be able to support all of these generic fields, but a database that contains contact information (mailing lists, phone books, etc.) will be able to support many of them.

Category	Generic Field	Description	Examples
Contact	Name	A person’s first and last name.	John Wilson, Mary Furnare
	Nickname	A person’s nickname.	Sammy, Beth
	Prefix	A person’s honorific.	Mr., Ms., Dr.
	First	A person’s first name.	John, Mary
	Middle	A person’s middle name or initial.	August, Walker
	Last	A person’s last name.	Wilson, Furnare
	Suffix	A person’s suffix.	Jr., D.D.S
	Formal	A person’s honorific and last name.	Dr. Wilson, Ms. Furnare
	FullName	A person’s complete name.	Dr. John August Wilson
Affiliation	Position	A person’s title or position within an organization.	President, Sales Manager
	Organization	The company, school, agency or other organization this person is affiliated with (if any).	Acme Construction
	Division	The major division or group this person is affiliated with (if any).	Communications Products
	Department	The department this person is affiliated with (if any).	Human Resources
Address	Address	Street address.	1892 North Glendale Blvd.
	Suite	Suite, apartment or room number (if any)	Room 463
	City	City or town.	Saskatoon
	State	State or province.	SK
	Zip	Zip or postal code	4Y2 A8G
	Country	Country	Canada
Internet	Email	Email address. This field may contain multiple e-mail addresses, one per line.	maryf@acme.com
	Web	URL for web site	http://www.acme.com/cp/hr/

Category	Generic Field	Description	Examples
Telephone (separate)	Voice	Primary phone number.	(303) 442-9011
	Fax	Fax phone number.	(888) 763-1290
	Cell	Cell or mobile phone number.	(909) 487-2063
	Home	Home phone number.	(562) 491-3992
	Work	Work phone number	(324) 987-3367 ext 2384
	Pager	Pager number.	(817) 335-9832
Telephone (line items/ array)	PhoneType	The PhoneType and Phone fields are composite fields designed for holding multiple phone numbers. Use these generic fields when the underlying database contains phone numbers in line items or an array instead of in separate fields. Each line in these fields corresponds to a single phone number. Each line in the PhoneType generic field contains the type of the corresponding phone number: Home, Office, Cell, Fax, etc. Each line in the Phone generic field contains the actual phone number.	Voice Cell Fax
	Phone		(303) 442-9011 (909) 487-2063 (888) 763-1290
Other	Notes	Notes, memos, comments, etc.	

If you are familiar with the vCard specification (RFC 2426) for exchanging data between programs you'll recognize that many of these generic fields correspond to vCard fields.

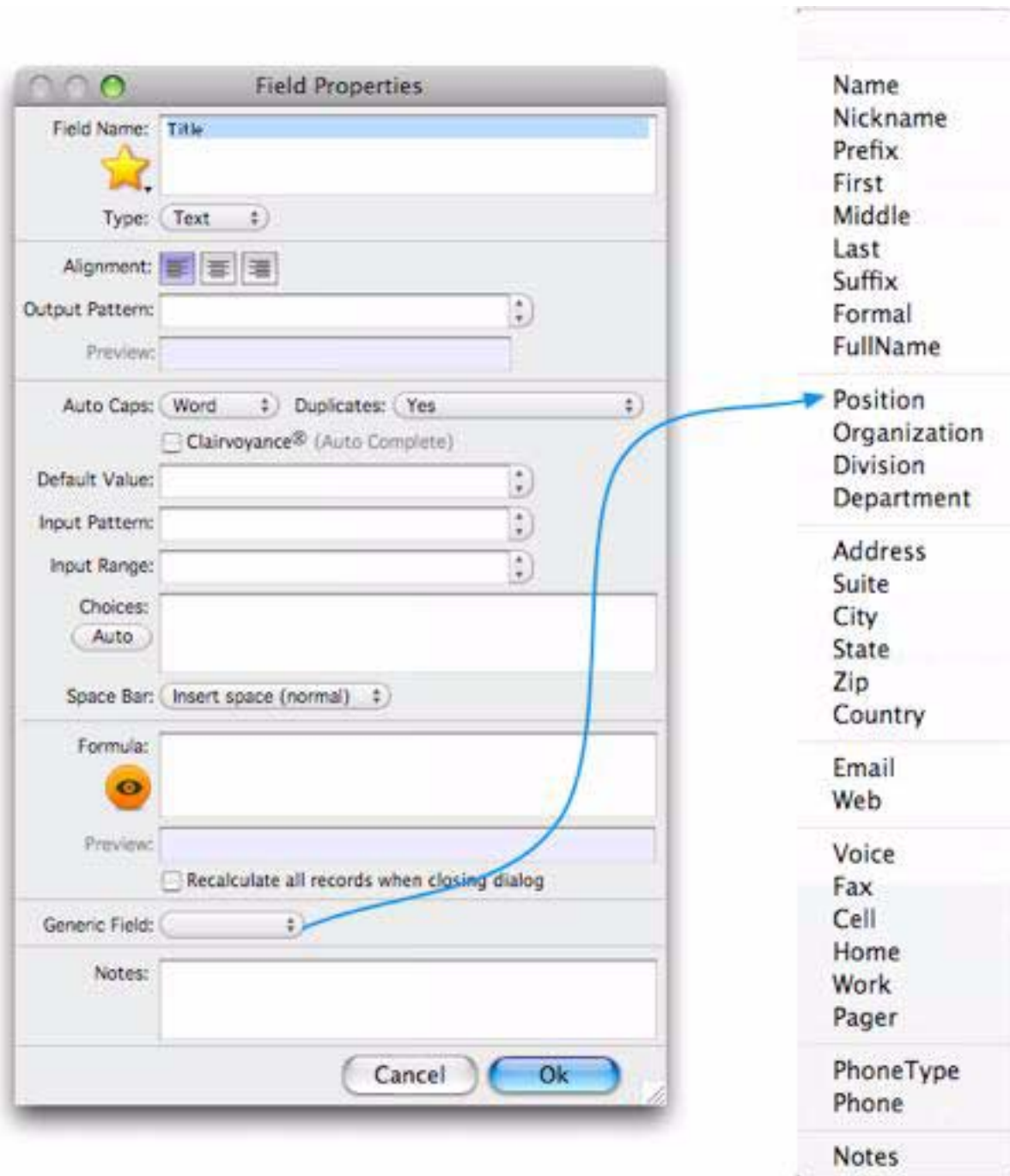
Adding Generic Fields to an Existing Database

Normal Panorama fields are set up with the New Database wizard, Design Sheet, or Field Properties dialog. Generic fields can be set up with the Field Properties dialog or with **Generic Fields** preferences. Generic fields can be added to an existing database at any time. The next few paragraphs will illustrate the process for setting up generic fields. This example will use a basic address book database, shown here.

First	Last	Organization	Title	Address	City	State	Zip
Barbara	Moldenh	Memphis Consultants Inc	CIO	155 Elm Ter	Canandaigua	NY	14425
Beverly	Welsh	Hills Newspapers Limited	Safety Administrator	17671 Sandhill Dr	Duluth	MN	55801
Joseph	Diaz	North Agency Assoc.	Senior Applications F	891 South Ravenswood Ci	Palm Coast	FL	32137
Peter	Guthrie	Future Insurance Co.	Planning Director	22460 Windsor Pkwy	Boston	MA	02130
Kenneth	Peck	East Semiconductor Institu	Buidling Maintenance	932 E Fulton St.	Chicago	IL	60641
Francis	Phelps	Northwest Capital Product	Senior GIS Techniciar	333 Brookwood Trail	Wilmington	VT	05363
Denise	Orshak	Middle Information Assoc	Senior GIS Techniciar	8338 East Marshall Apt	Fargo	ND	58103
Anna	Smythe	Mark Newspapers Foundati	Maintenance Mechani	267 West Westminster Ci	Orlando	FL	32817
Helather	Booth	Hamilton Agency Group	Materials Supervisor	22477 North Burlington P	Miami	FL	33178
Marvin	Steele	Family Environmental Gro	Department Budget S	12519 E Ramon Ave	Wellton	AZ	85356
Lois	Kern	Johnson Newspapers Instit	Quality Assurance En	579 N.E. Beale Court	Dallas	TX	75240
Paul	Wilson	Davis Planning Institute	Machinist	9692 N.W. Massachusetts	Marvland Hiegh	MO	63043

Setting up Generic Fields with the Field Properties Dialog

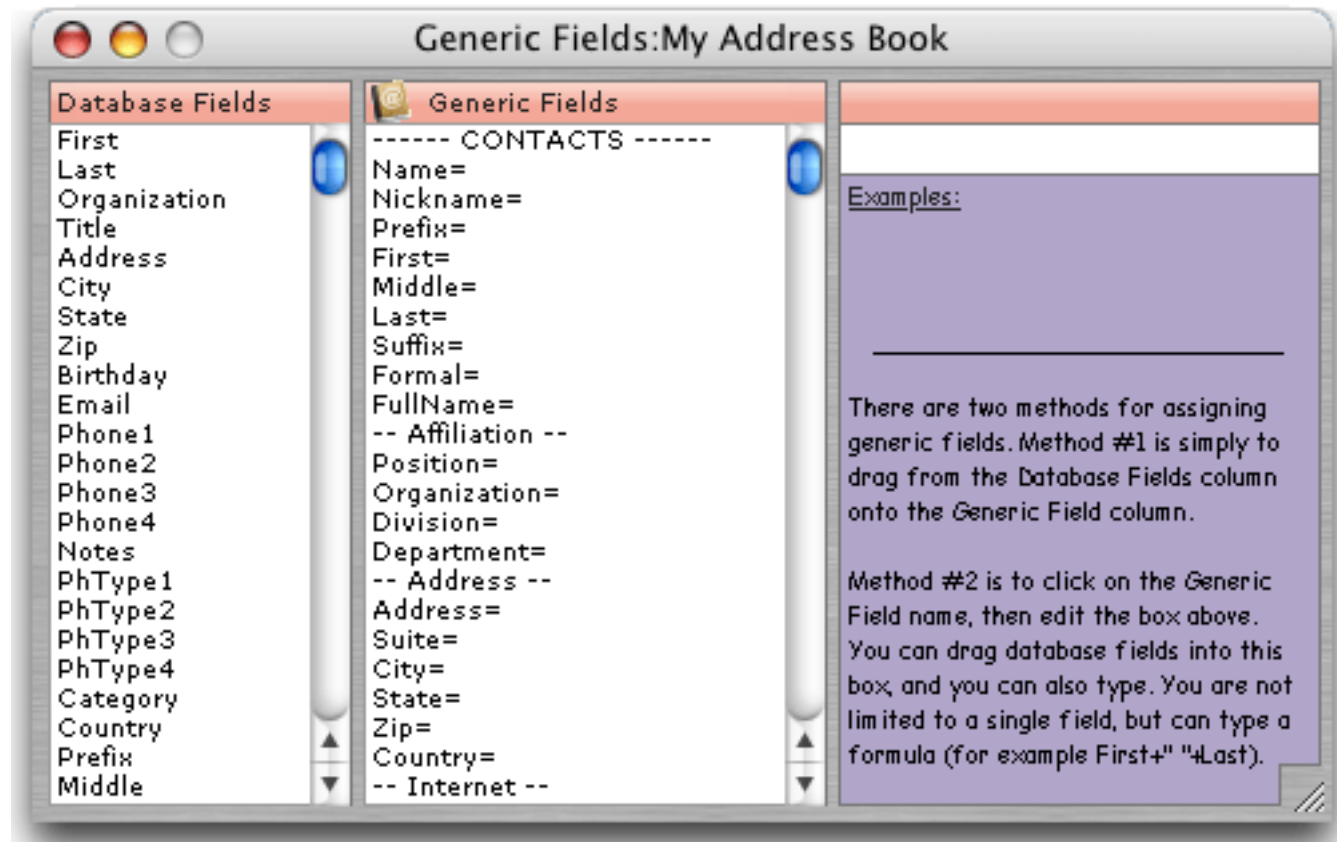
To specify that a field is a generic field, open the **Field Properties** dialog and select from the Generic Field pop-up menu.



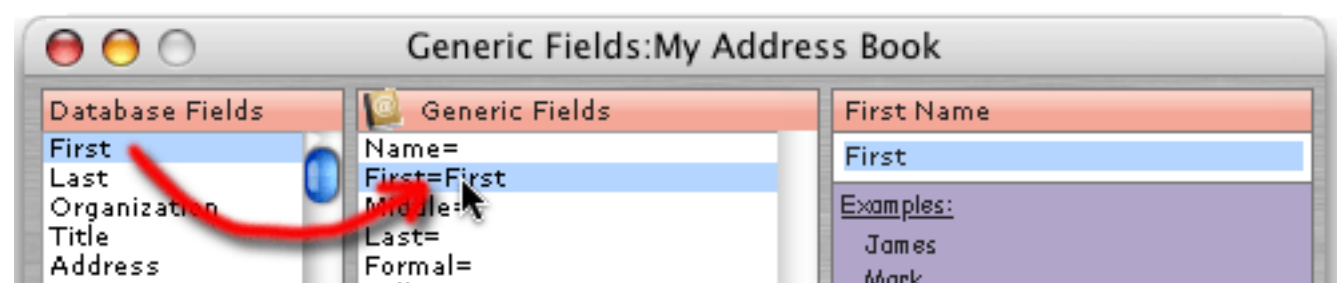
That's it!

Using the Generic Fields Preferences

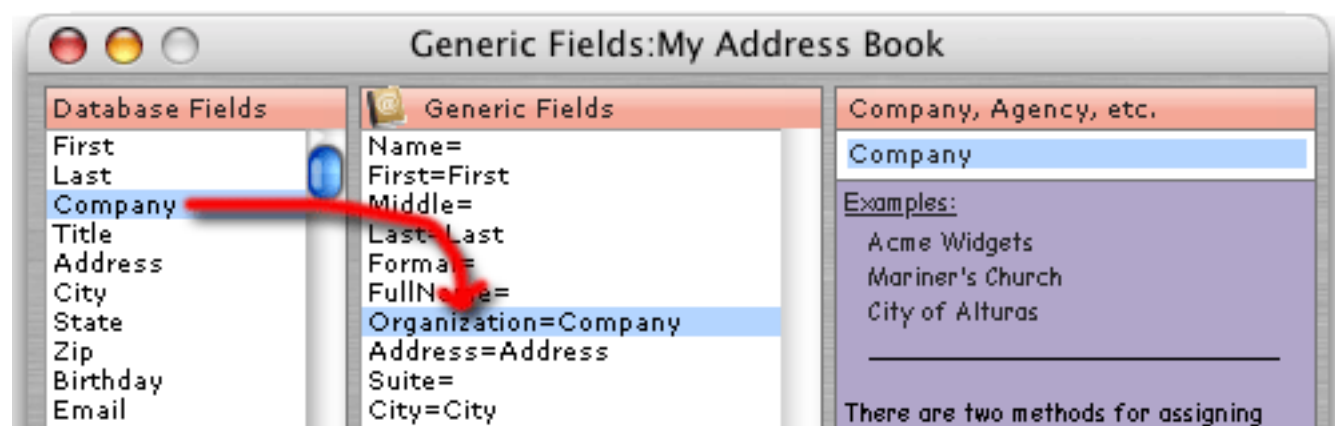
The **Generic Fields** preferences allows you to set up all of a databases generic fields at once. It also allows you to set up generic fields that correspond to multiple actual fields. The first step is to open the **Generic Fields** window — choose **Preferences** from the Panorama menu then **Generic Fields**. The **Generic Fields** preferences are divided into three columns. The left column, **Database Fields**, lists the actual fields in the database. The second column, **Generic Fields**, lists the generic fields for this database. The generic fields column is divided into major sections (like CONTACTS) and minor sections (Affiliation, Address, etc.) Since we're just starting, none of the generic fields have been defined (everything to the right of the = sign is blank). The rightmost column is for assigning formulas to define generic fields, we'll discuss that further in a moment.



If an actual field in the database contains the exact data required by a generic field, you can simply drag the field from the **Database Fields** column to the appropriate generic field in the **Generic Fields** column.

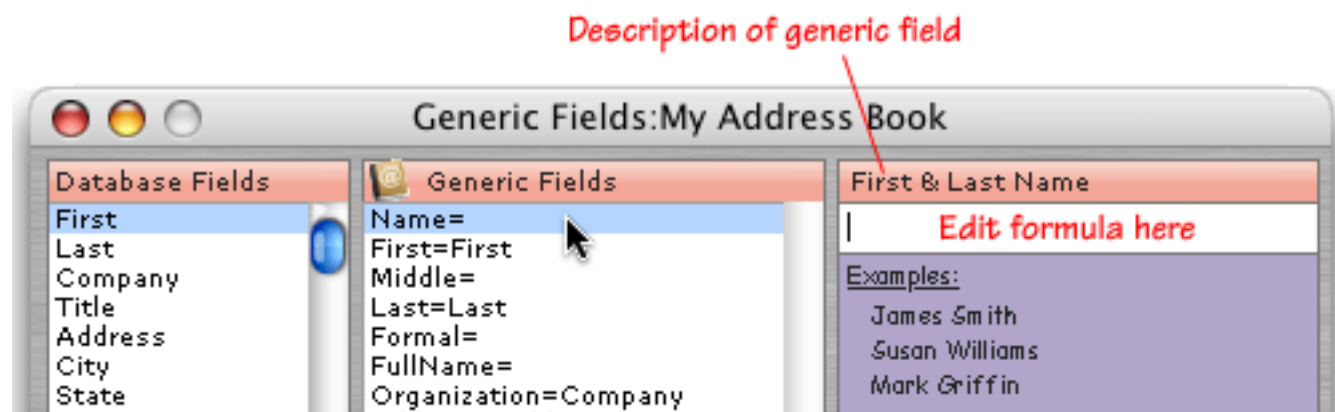


This drag and drop process must be repeated for each actual database field that corresponds to a generic field. Notice that the name of the database field does not have to be the same as the name of the generic field, as long as both contain the same data. (In this case, the actual database field that contains the organization name is called **Company**.)

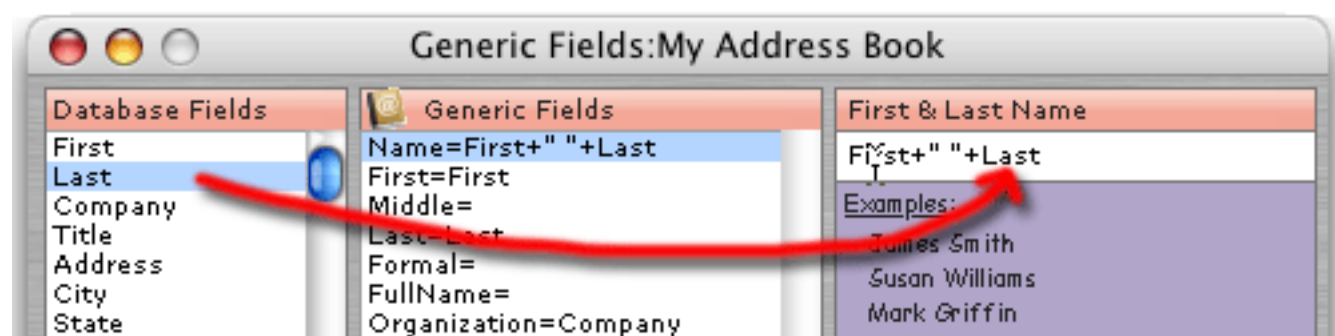


Assigning Multiple Database Fields to a Generic Field

In some cases there will be no single database field that corresponds to a generic field. In that case you may be able to create a formula for the generic field. For our example, our sample database has no combined **Name** field (first and last names). However, we can simulate that field with the formula `First+" "+Last` (see "[Text Formulas](#)" on page 67 of *Formulas & Programming* for more information on how this formula was constructed). Instead of dragging to set up the generic field, it must be typed into the right hand column of the wizard. For example, to set up a formula for the generic **Name** field, first click on that generic field. This enables the rightmost pane of the window, which is used for editing formulas.



You can type in the formula, and you can also drag field names from the **Database Fields** column.



Note: A generic field that is defined with a formula can be used to export data, but not to import it.

Configuring Generic Phone Number Fields

The Generic Fields wizard supports three different ways to store phone numbers: separate fields, line items, and arrays.

Probably the most common method for storing phone numbers is to store each number in a separate field. For example, the database might have a field for voice numbers, another field for fax numbers, another for cell phones, etc. Here is a typical example of a database with separate fields for main phone number, cell phone and fax.

Name	Address	City	State	Zip	Phone	CellPhone	Fax
John Wilson	123 Apple Lane	Fullerton	CA	92831	(714) 831-4567	(714) 555-1398	(714) 927-3000
Mark Bonzers	45 Bisbee Place	Huntington	CA	92648	(714) 821-3898	(714) 332-3341	
Jill Mathers	365 Orchid Street	Newport	CA	92661	(714) 893-1212	(714) 669-1340	
Mark Wilson	12 First Ave	Anaheim	CA	92631	(714) 440-8912		(714) 498-2349

To link these separate fields to generic fields, scroll down to the **Phone (Separate)** section of the **Generic Fields** column and drag the database fields to the corresponding generic fields.

Database Fields

- Name
- Address
- City
- State
- Zip
- Phone
- CellPhone**
- Fax

Generic Fields

- Department=
- Address --
- Address=Address
- Suite=
- City=City
- State=State
- Zip=Zip
- Country=
- Internet --
- Email=
- Web=
- Phone (Separate) --
- Voice=Phone
- Fax=Fax
- Cell=CellPhone**
- Home=
- Work=
- Pager=
- Phone (Line Items/Array) --
- PhoneType=
- Phone=
- Other Data --
- Notes=

Cell Phone Number

CellPhone

Examples:

(714) 555-1212
408-232-1234
212/331-0090

There are two methods for assigning generic fields. Method #1 is simply to drag from the Database Fields column onto the Generic Field column.

Method #2 is to click on the Generic Field name, then edit the box above. You can drag database fields into this box, and you can also type. You are not limited to a single field, but can type a formula (for example First+" "+Last).

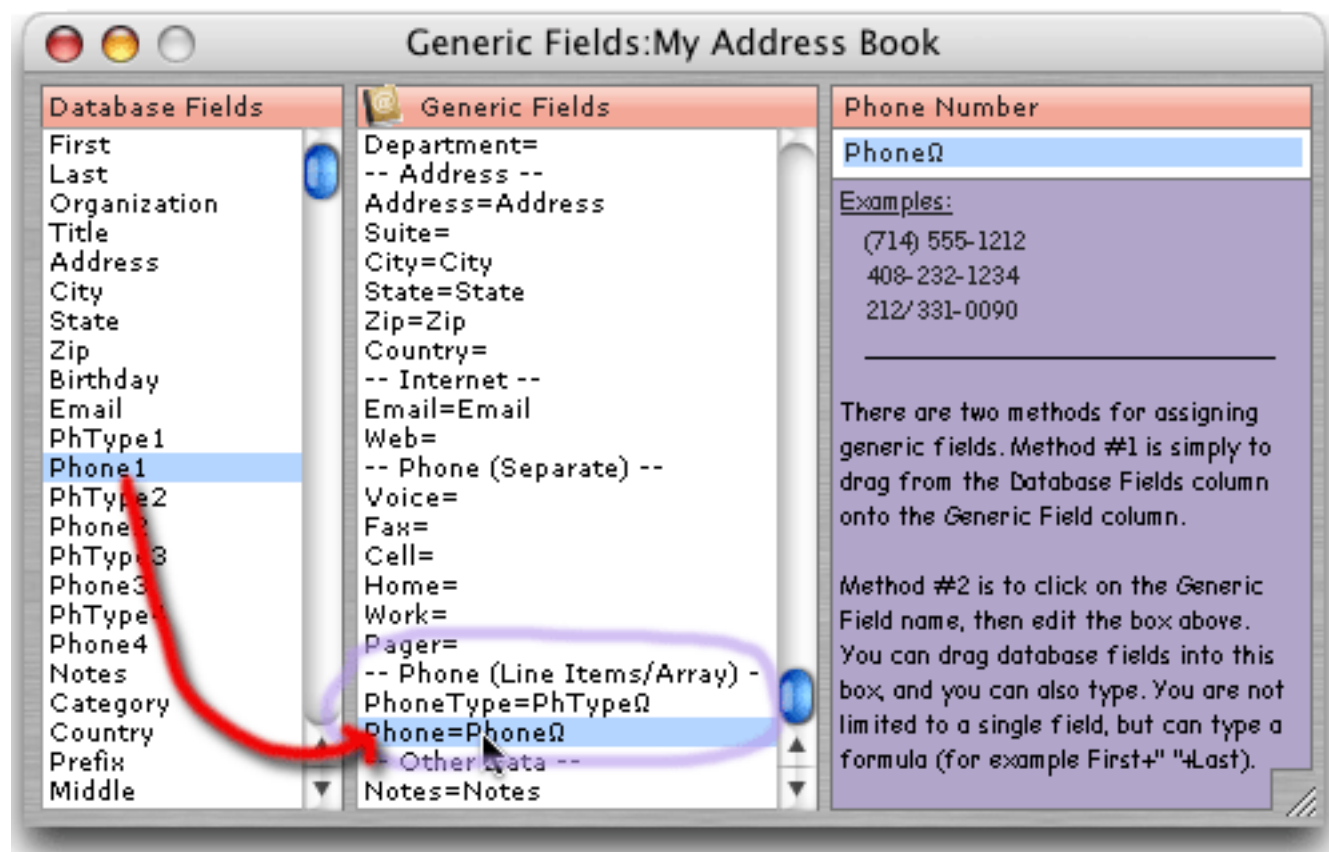
The second method for storing phone numbers is to use line item fields. Line item fields are repeating fields with a numeric suffix, for example **Phone1**, **Phone2**, **Phone3**, etc. (see “[Repeating Fields \(Line Items\)](#)” on page 222 for a general discussion of line item fields). The Generic Fields wizard assumes that phone numbers are stored in two sets of line item fields, phone types (voice, fax, cell, etc.) and the actual phone numbers themselves. Here's a typical example with four sets of line items:

First	Last	Organization	PhType1	Phone1	PhType2	Phone2	PhType3	Phone3	PhType4	Phone4
Phyllis	Eldridge	Clark Sports	Phone	(310) 426-7235	Fax	(310) 426-1874				
Nancy	Hess	Arkansas Re	Work	(510) 730-5912	Cell	(510) 730-5994	Fax	(510) 454-9832	Home	(408) 23
Joan	Pearson	Anderson Pl	Voice	(413) 880-8445	Fax	(413) 880-5648	Cell	(413) 882-3490		
Joanne	Kemp	Georgia Fina	Phone	(215) 980-3119						
Richard	Craven	Family Photo	Phone	(815) 492-1804	Cell	(815) 492-4230	Pager	(815) 980-8141		
Norma	Mahan	Houston Des	Phone	(408) 309-6622	Fax	(408) 309-1106				

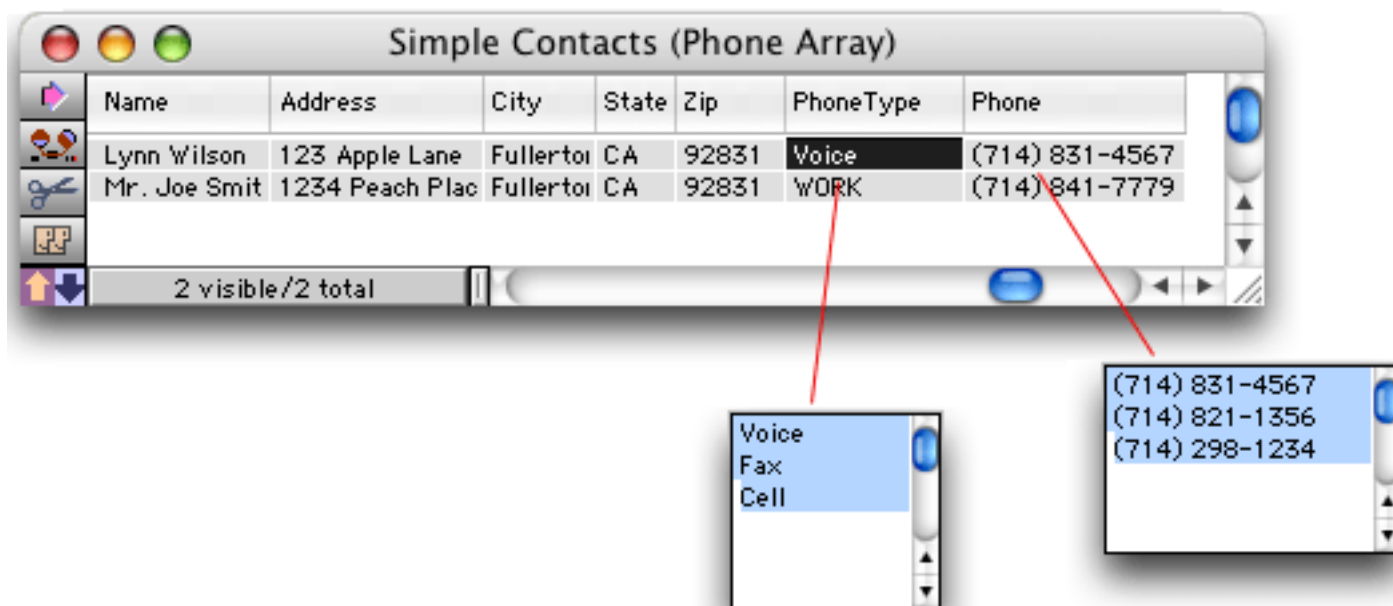
Line item fields like this are usually arranged in rows and columns on a form, like this:

Phones	Work	(510) 730-5912
	Cell	(510) 730-5994
	Fax	(510) 454-9832
	Home	(408) 232-3498

To link these line item fields to generic fields, scroll down to the **Phone (Line Items/Array)** section of the **Generic Fields** column. Drag the first phone type line item field (in this case **PhType1**) over the **PhoneType** generic field. Then drag the first phone number field (in this case **Phone1**) over the **Phone** generic field. As you release the mouse you'll notice that the field number changes from 1 to Ω , as shown below. This confirms that all of the line item fields are linked to this generic field.



The final method for storing phone numbers is to use carriage return delimited arrays. In this case there are two fields, with each line corresponding to a single phone number.

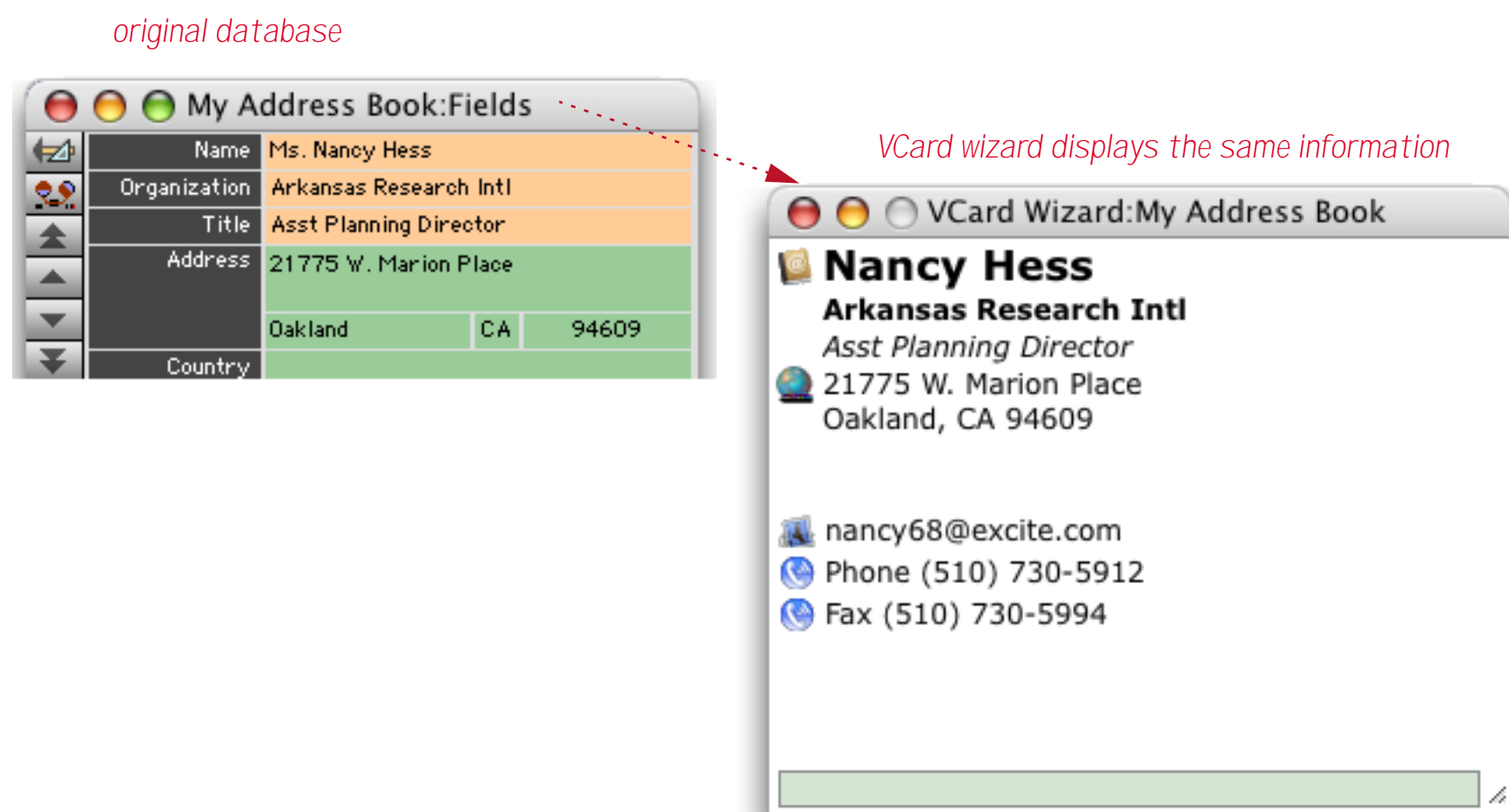


This arrangement allows you to store an unlimited number of phone numbers in only two fields. To link these two fields to generic fields, scroll down to the **Phone (Line Items/Array)** section of the Generic Fields column. Drag the phone type field (in this case **PhoneType**) over the **PhoneType** generic field. Then drag the phone number field (in this case **Phone**) over the **Phone** generic field.

Using Generic Fields with the VCard Wizard

Once generic fields have been set up they can be used to transfer data between the database and other databases that also have generic fields, or between the database and applications that support vCards. For example an address could be copied to Apple's address book, or used to display a map. A phone number can be used to actually dial the phone, or an e-mail address to send an e-mail.

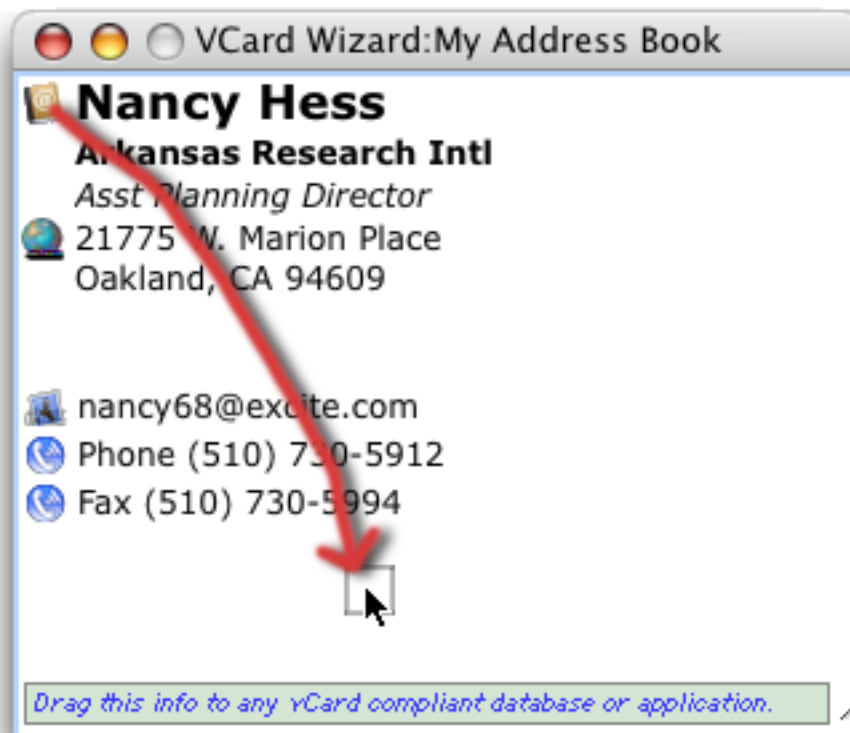
The slickest way to use generic fields is to program them into your database itself (see "[VCard Drag and Drop](#)" on page 656). However, it's not necessary to do any programming to use generic fields. The **VCard Wizard** allows you to use generic fields without any programming at all. You'll find this wizard in the **Utilities** submenu of the Wizard menu. When you first open this wizard it will display the generic data from the current database, as shown below. (If the current database doesn't have any generic fields, it will display an error message.)



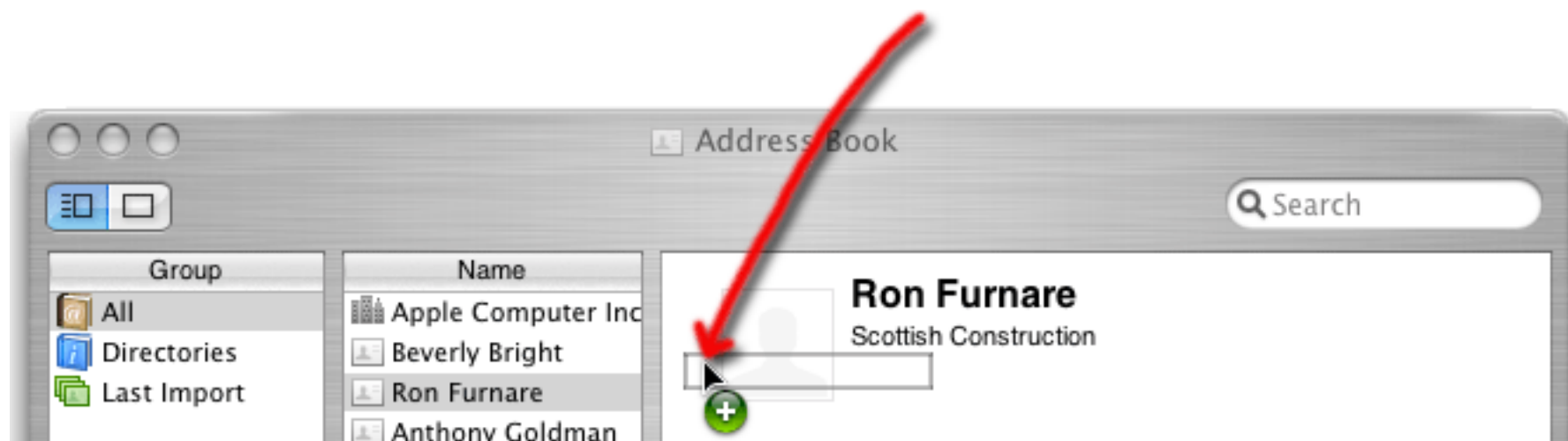
If you later move to a different record in the **My Address Book** database, or edit the data, the **VCard Wizard** will automatically update when you bring it back to the front.

Dragging Data to Other Applications or Databases

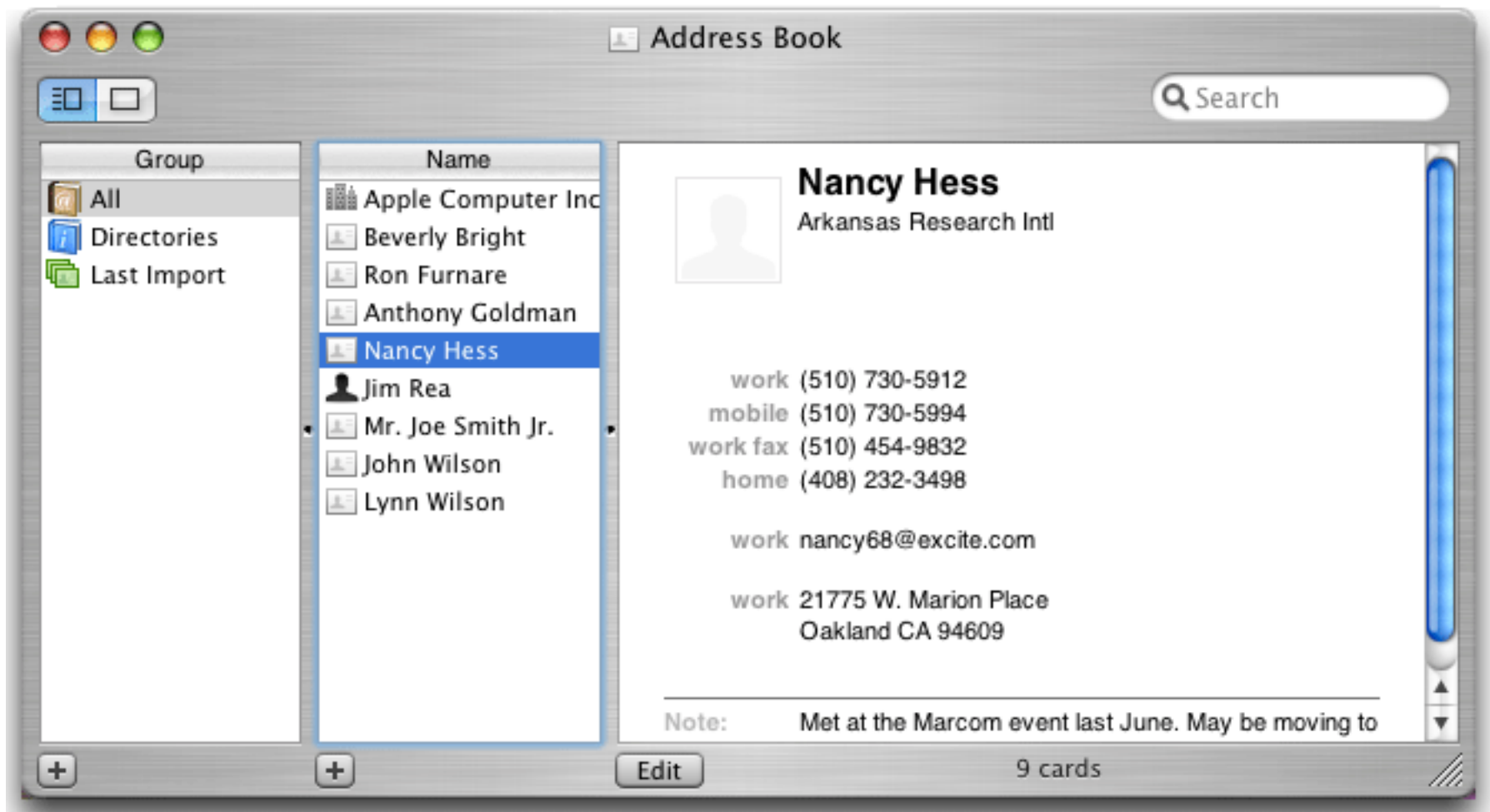
By dragging the phone book icon you can drag data to Apple's Address Book (or any other application that supports VCards) or to any database that has generic fields.



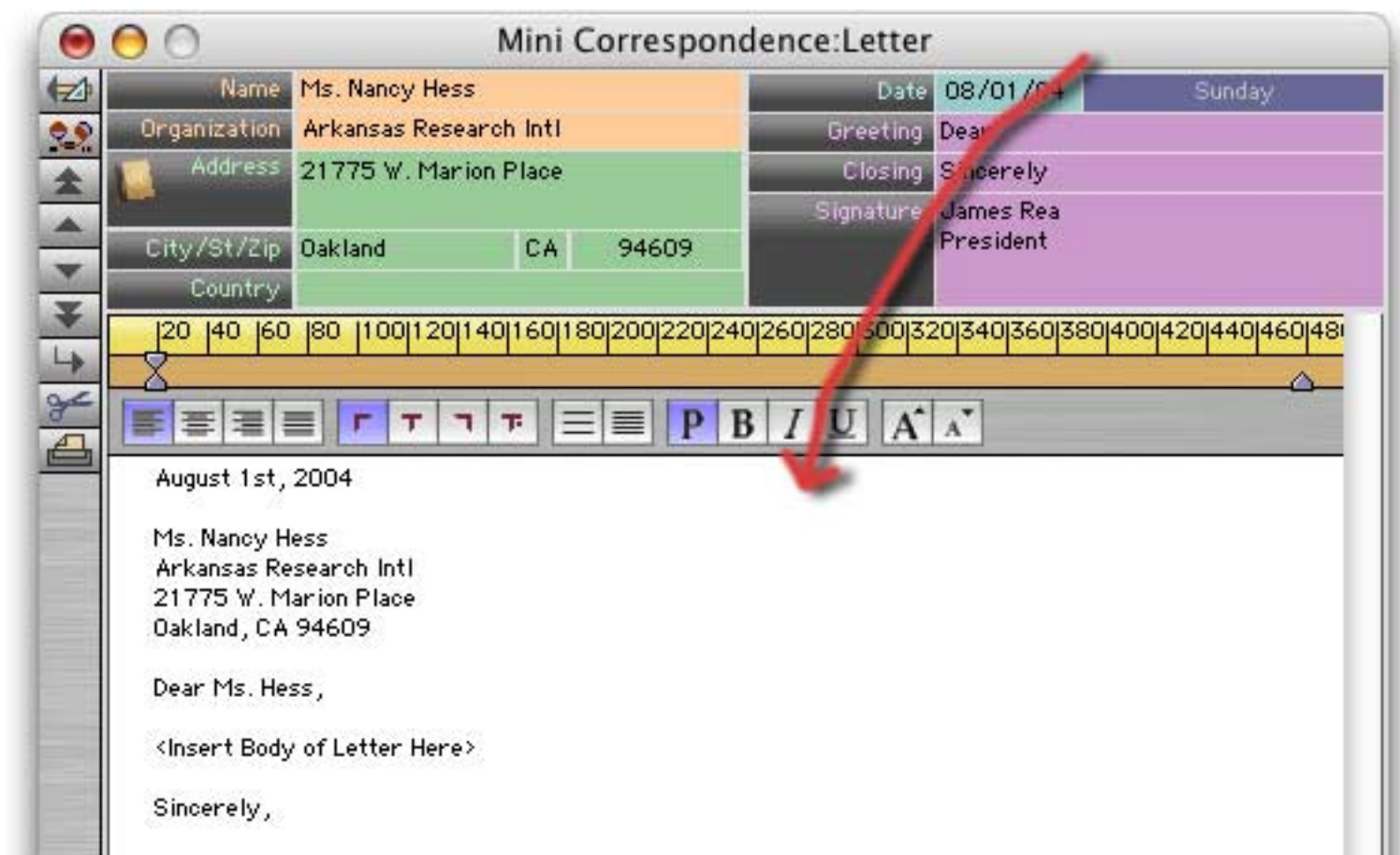
Drag onto the Address Book (or any VCard compatible application).



When you release the mouse, the data will be added to a new card in the Address Book.

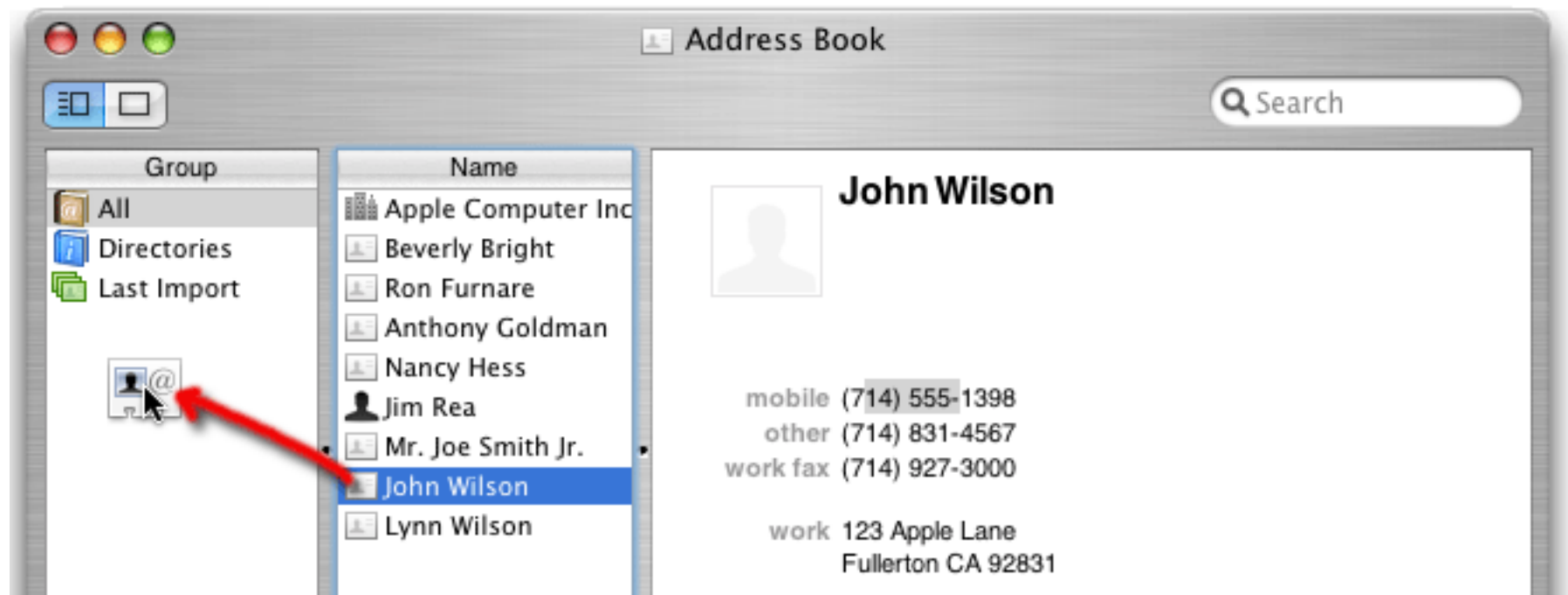


You can also drag onto other databases that support generic fields. In this example the same person has been dragged onto the Mini Correspondence wizard, creating a new letter to [Ms. Hess](#).

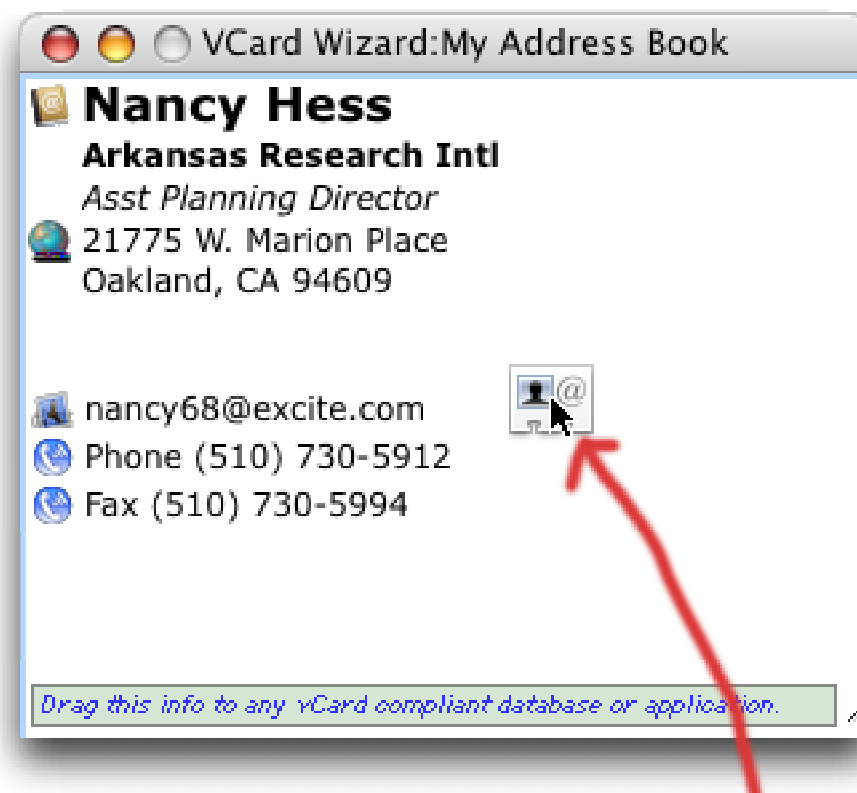


Dragging Data from other Applications or Databases

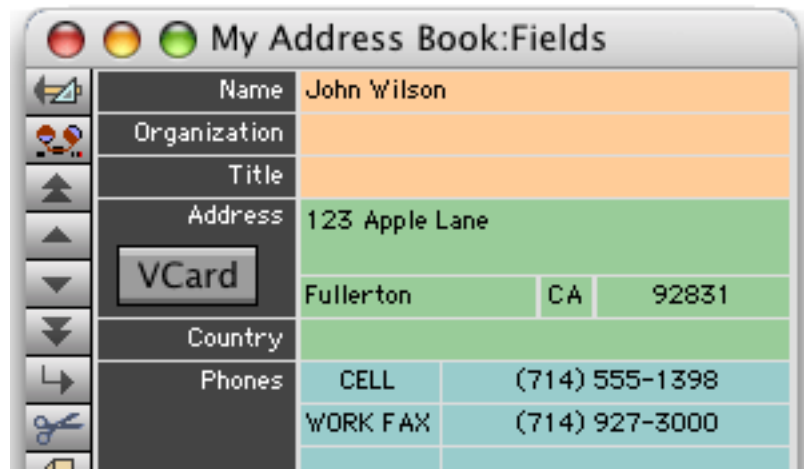
To copy data from the Address Book (or any VCard compatible application) to your database, simply drag to anywhere on the VCard Wizard.



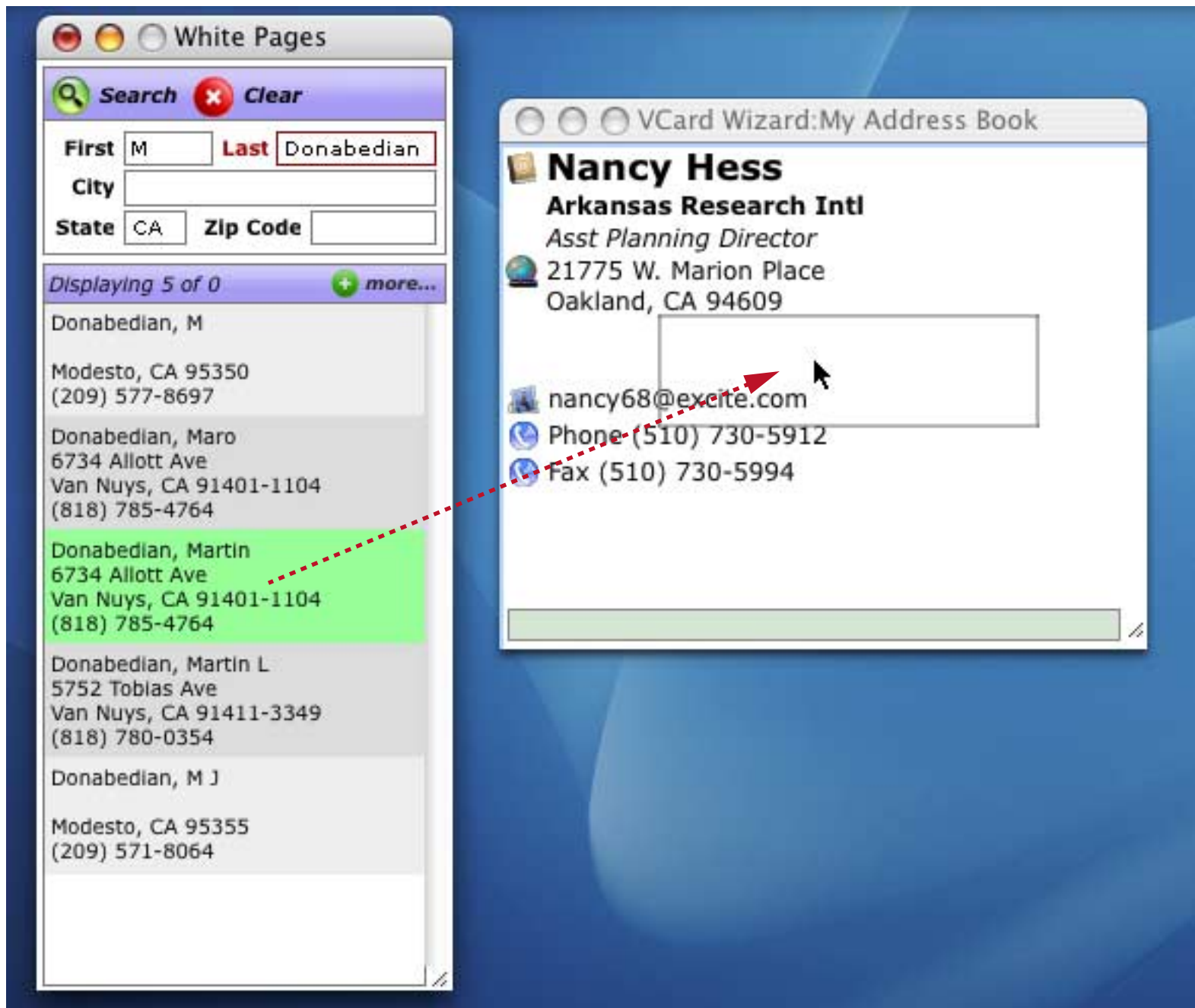
Drag the address to anywhere on the VCard Wizard.



When you release the mouse the contact will be added to the end of the database.



You can also drag from other databases that support generic fields. When you drag from the White Pages wizard to the VCard Wizard, the address is added to the database that is currently linked to the VCard Wizard (in this case [My Address Book](#)).




Displaying a Map


To display a map of the current address, click on the globe icon. The map will appear in whatever browser you have set up as the default browser.



Sending an Email

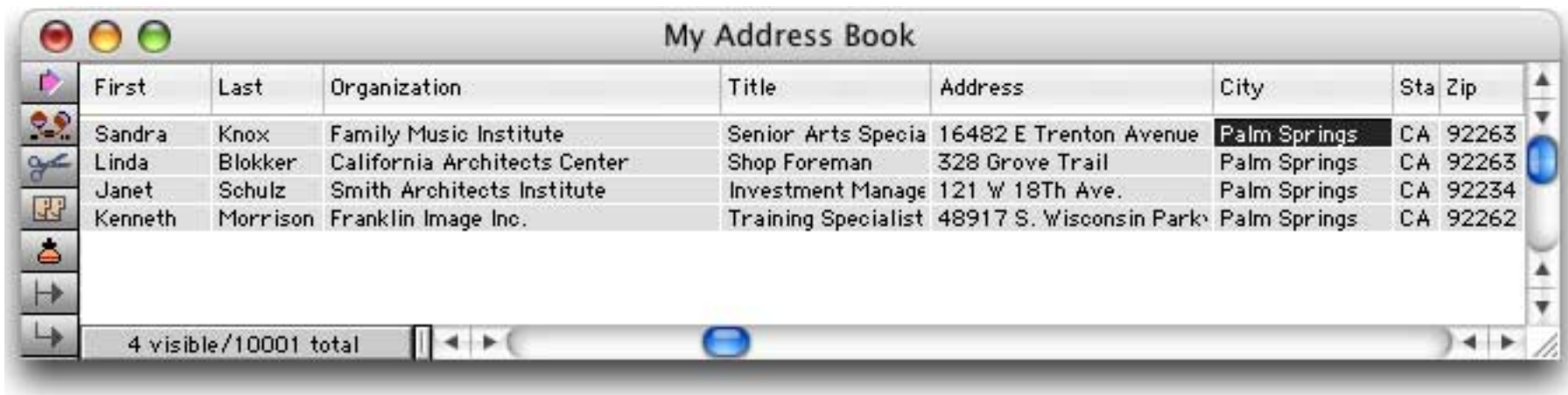
To send an e-mail, click on the  postage stamp icon. The wizard will open the default e-mail program on your computer and create a new e-mail message to this person.

Dialing the Phone

To dial the phone, click on the  telephone icon. Before you do, be sure you have set up the Channels wizard (see “[Channels](#)” on page 93 of *Wizards & Demos*) to specify the dialing method you want to use (touch tones, modem, Vonage VOIP, etc.) and your local dialing information (area code, calling prefix and suffix, etc.).

Exporting a Batch of VCards

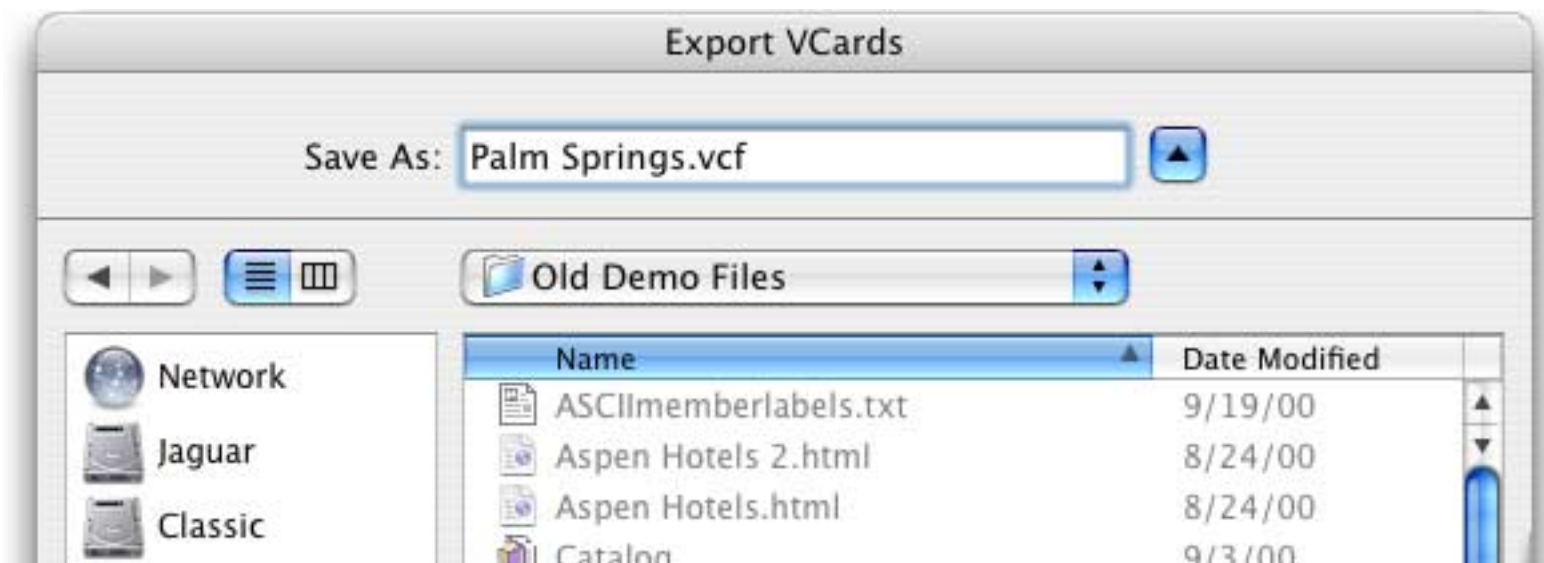
In addition to transferring records one at a time (by dragging them) you can also export a batch of vCards at once in a file. Start by selecting the records you want to export, in this case all records in [Palm Springs, CA](#).



Open the **VCard Wizard** and select **Export VCards...** from the VCard menu. The wizard will ask you to confirm that you want to export multiple vCards.



Next the wizard will ask you for the name of the file you want to export. We recommend that you use the `.vcf` suffix for vCard files.



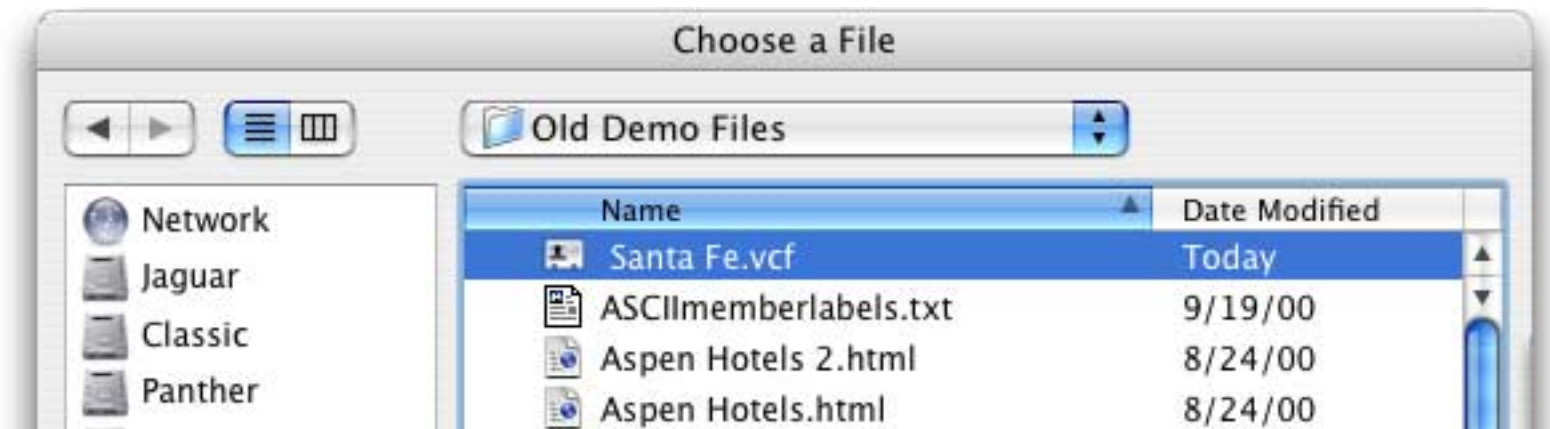
The resulting file can be imported into other applications that support vCard import (for example Apple's Address Book).



Palm Springs.vcf

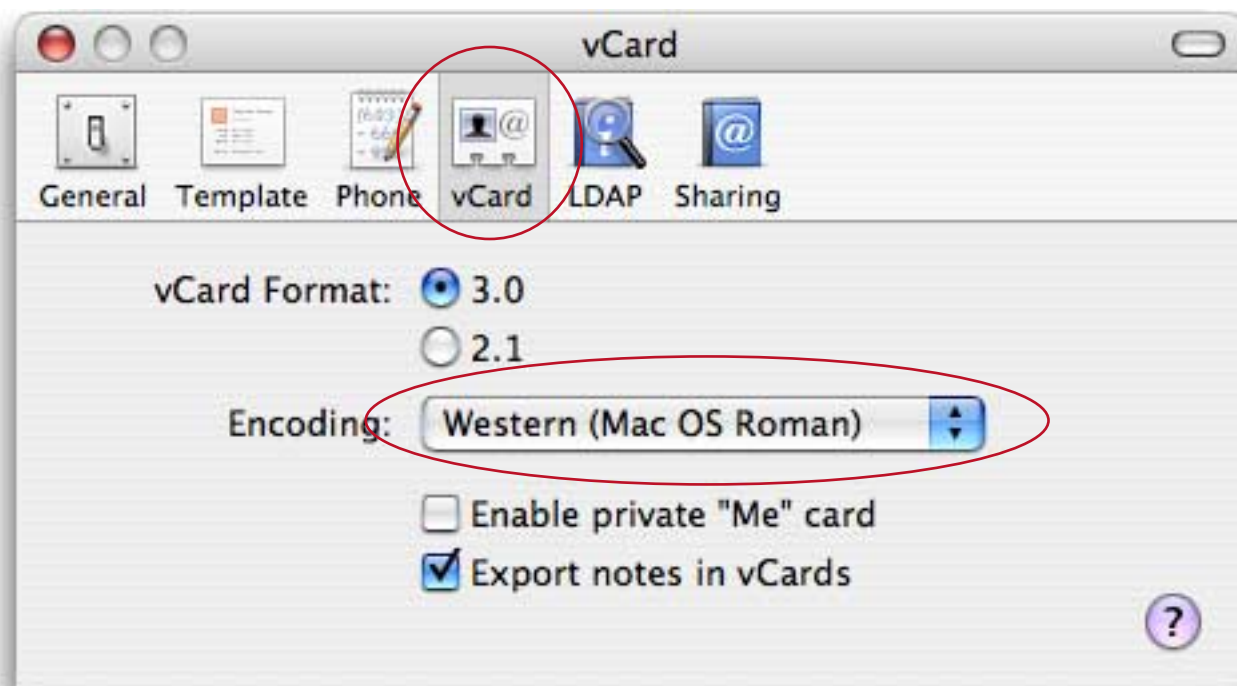
Importing a Batch of VCards

To import a file containing a batch of VCards choose **Import VCards** from the **VCards** menu. The wizard will ask you to select the file you want to import.



Press the **Choose** button and the vCards will be imported to the end of the current database.

Panorama is designed to import vCards that use the **Western (Mac OS Roman)** encoding. If you are exporting vCards from Apple's Address Book application you should make sure that this encoding is specified before exporting the VCards from address book. To do that, open Address Book and choose **Preferences** from the **Address Book** menu. Select the vCard tab, then use the pop-up menu to select **Western (Mac OS Roman)**.



If some other encoding is selected Panorama may not be able to import the vCards properly, or perhaps even at all.

Chapter 6: Data Types



In Panorama, all data is not the same. Just as Eskimos distinguish between 16 types of snow, Panorama distinguishes between five types of data—**text**, **numeric**, **date**, **choices**, and **pictures**. To get the most out of a database, Panorama needs to know what type of data you intend to store in each field. This lets Panorama store the data efficiently and check for data entry errors. It also tells Panorama how to compare different values (numbers, text, and dates are all compared differently) which is important for sorting and selecting data. The data type also tells Panorama how to format some kinds of data (numbers and dates).

As mentioned above, Panorama databases can contain five different types of data. When you create the database, you specify what type of data will be stored in each field.

Data Type	Uses	Examples
Text	Names, Addresses, Descriptions, etc.	John, 234 Peach Avenue
Numeric	Prices, Quantities, etc.	4, 78.23, 4.9e-2
Date	Dates.	9/18/2002
Choices	Multiple Choice Options	Yes/No, Gold/Silver/Bronze
Picture (Obsolete)	Photographs, Drawings	n/a

The **text** data type is used for storing ordinary text—names, addresses, descriptions, etc. Panorama cannot perform mathematical calculations (add, subtract, etc.) on data that is stored as text.

The **numeric** data type is used for storing numbers—prices, quantities, etc. Use the numeric data type for any field you want to use in a calculation. The numeric data type has several variations that are discussed later in this chapter.

It's not always necessary to store numbers in numeric fields. For example, zip codes and phone numbers are usually stored in text fields, not numeric fields. This allows the use of nine digit zip codes (for example **92867-3482**) and foreign postal codes and phone numbers. In general, use a numeric field if you want to perform numeric calculations (addition, multiplication, etc.) and/or if you want to select or sort the information in numeric order (1, 2, 3, ... 10, 20, 30, ... etc.)

The **date** data type is self explanatory—it is used for storing dates (for instance March 1, 1994). Panorama understands the properties of dates—it knows that May 1st follows April 30th and that there are six days between May 28th and June 3rd. Dates are discussed in more detail later in this chapter. Panorama can handle dates from 100 A.D. to well past the year 20,000 A.D.

The **choices** data type is used for storing data that has only a few possible values—for instance **yes/no**, **gold/silver/bronze**, or **coach/first class**. The choices data type saves space by storing a special code instead of the entire text. The procedure for setting up a field using the choices data type is described at the end of this chapter.

The **picture** data type is used for storing—you guessed it—pictures! This data type allows you to paste graphics from other Macintosh programs into your Panorama database. However, in general we do not recommend storing pictures within the database using the picture data type. Instead, you should store images in separate files and display them using Panorama’s **Flash Art** feature (See “[Flash Art™](#)” on page 750).

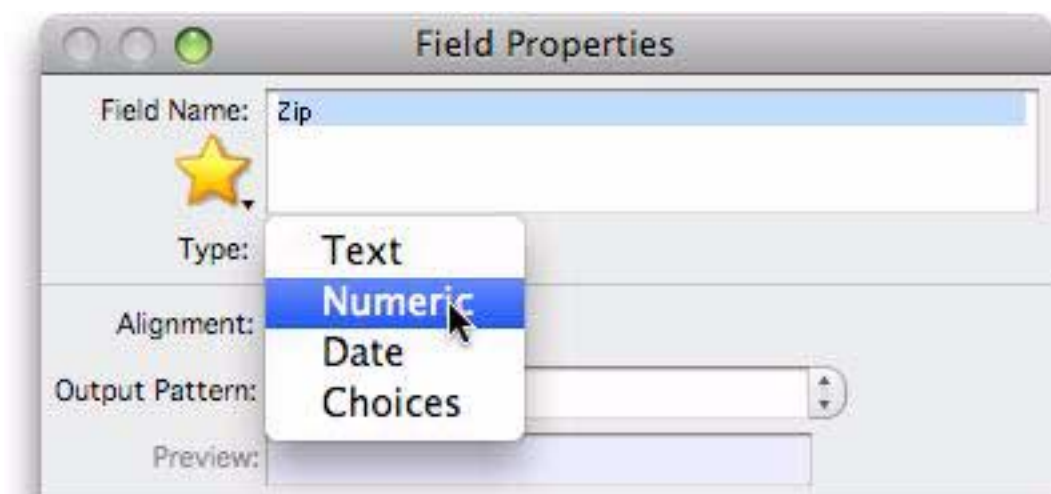
Data Types and Memory Usage

When we started writing Panorama in 1986, a typical personal computer had about 1 megabyte of memory. Because Panorama loads the entire database into RAM, it was critical to store the data as efficiently as possible. To do this we created a variety of data types, allowing you to pick the data type that was most efficient for each field (for example, there are 6 different numeric data types).

Nowadays a typical computer has 32 megabytes, 64 megabytes, or even more RAM. For most applications it is no longer necessary to be hypervigilant about choosing the most efficient data type. For example, for numbers, it’s usually fine to simply use the most flexible **floating point** option, even though this consumes a little bit more memory. It’s also rarely necessary to use the **choice** data type—you can simply use the **text** data type instead. Throughout the rest of this chapter you’ll find a lot of discussion about picking the most efficient data type for each field. If you are working with small to moderate size databases (from 10 to 20,000 records) you probably don’t need to worry about picking the most efficient data types. You can simply stick with three basic data types—text, floating point numbers, and dates. That being said, you can probably skip over most of the material in the rest of this chapter!

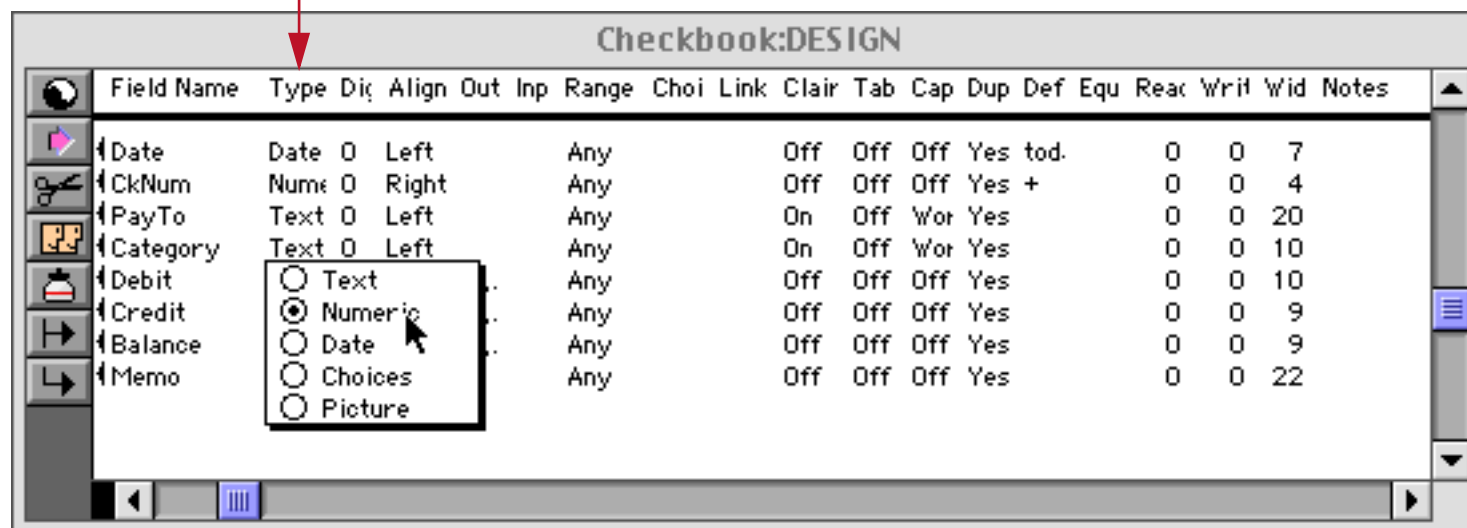
Setting Up a Field’s Data Type

The data type of a field can be specified with either the Setup Menu or the Design Sheet. The simplest method is using the **Field Properties** command in the Setup Menu. The **Field Properties** dialog box contains a pop-up menu for selecting the data type. Tip: You can also open the Field Properties dialog box by double clicking on the name of the field on the data sheet.



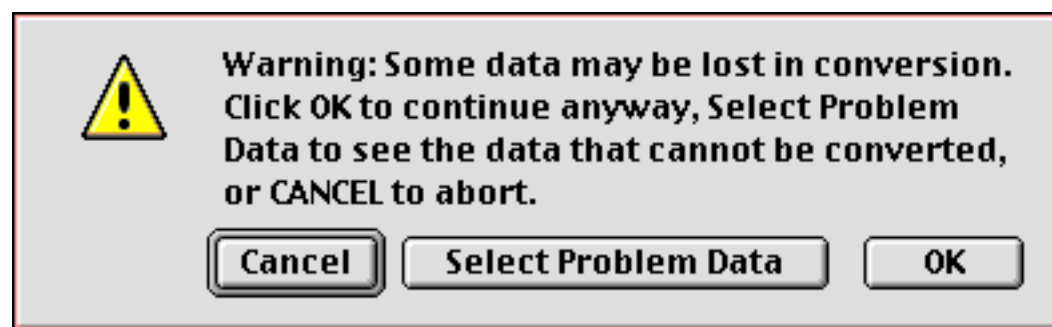
An alternate way to specify the data type is using the Design Sheet. The second column of the design sheet contains the data type of each field in the database. Using the design sheet allows you to quickly modify many fields at a time. See “[The Design Sheet](#)” on page 212 for more information on opening and using the design sheet.

double click on any cell in this column to change the field type



Data Type Conversion Problems

When you change the data type of an existing field it is possible that you may lose some of the data in that field. For example, if you convert a field from text to numeric, any letters or punctuation will be lost in the conversion. Panorama will warn you if this situation occurs.



The alert gives you three options:

OK — Pressing this button tells Panorama to complete the conversion. Any data that cannot be converted will be removed. For example, if you are converting a field from text to numeric any non-numeric data will be lost in the conversion.

Cancel — Pressing this button cancels the conversion

Select Problem Data Pressing this button tells Panorama to cancel the conversion and show you the data that is causing the problem. This option lets you look at the data that is causing the problem and decide what to do next. If necessary, you can make manual adjustments to the data, or you may decide that you don't want to change the data type after all.

For example, suppose you wanted to change the Zip code field in the database below to numeric.

Address	City	State	Zip	Country
12 Harmony Lane	Huntington Beach	CA	92648	
783 Algonquin	Newport Beac	CA	93459	
498 Noyes	Evanston	IL	60201	
14189 8th	Newhall	CA	91321	
398 N. Churchill	Barrie	ONT	V5A 7B2	CANADA
118 N Wilder	Lubbock	TX	79410	
6916 Morgan	Ann Arbor	MI	48104	
3133 Cornell	St. Louis	MO	63130	
8265 Leticia	San Clemente	CA	92672	
3 Rose Hill	Woodstock	VT	05091	
1580 N. Oconto	Chicago	IL	60634	
415 Sudderth	Ruidoso	NM	88345	
1571 Haskell	Van Nuys	CA	91409	
133 Hunt Rd	Chelsford	MA	01824	
2 Cary Rd	Chestnut Hill	MA	02167	

104 visible/104 total

When you attempted to make the conversion, Panorama would display the conversion warning alert. Press **Select Problem Data** to see what is causing the problem.

Address	City	State	Zip	Country
398 N. Churchill	Barrie	ONT	V5A 7B2	CANADA
898 Lark	Prince Rupert	BC	S3D 9H4	CANADA

Aha! The problem is the Canadian postal codes, which have letters instead of numbers. At this point you would probably want to rethink the idea of converting the Zip Code field to numeric.

If you did decide to go ahead with the conversion, Panorama would strip the letters from the Canadian postal codes.

Address	City	State	Zip	Country
398 N. Churchill	Barrie	ONT	572	CANADA
898 Lark	Prince Rupert	BC	394	CANADA

When you are done looking at the problem data, choose the **Select All** command (Search Menu) to make all the data visible again. (See "[Finding vs. Selecting](#)" on page 331 for more information on selecting and the **Select All** command.)

Numeric Data

Numeric data can be stored in either **fixed point** or **floating point** format. If you choose fixed point you have a choice of 0, 1, 2, 3, or 4 digits after the decimal point.

Number of Digits After Decimal Point	Example	Largest Value	Smallest Value	Typical Uses
0	93842	2,100,000,000	1	Quantities, Part Numbers
1	73.1	210,000,000	0.1	Rarely Used
2	253.22	21,000,000	0.01	Money (Dollars, Pounds, etc.)
3	0.447	2,100,000	0.001	Rarely Used
4	929.1123	210,000	0.0001	Rarely Used
Float	1.46e-12	$1.7 \cdot 10^{308}$	$2.3 \cdot 10^{-308}$	Scientific Data

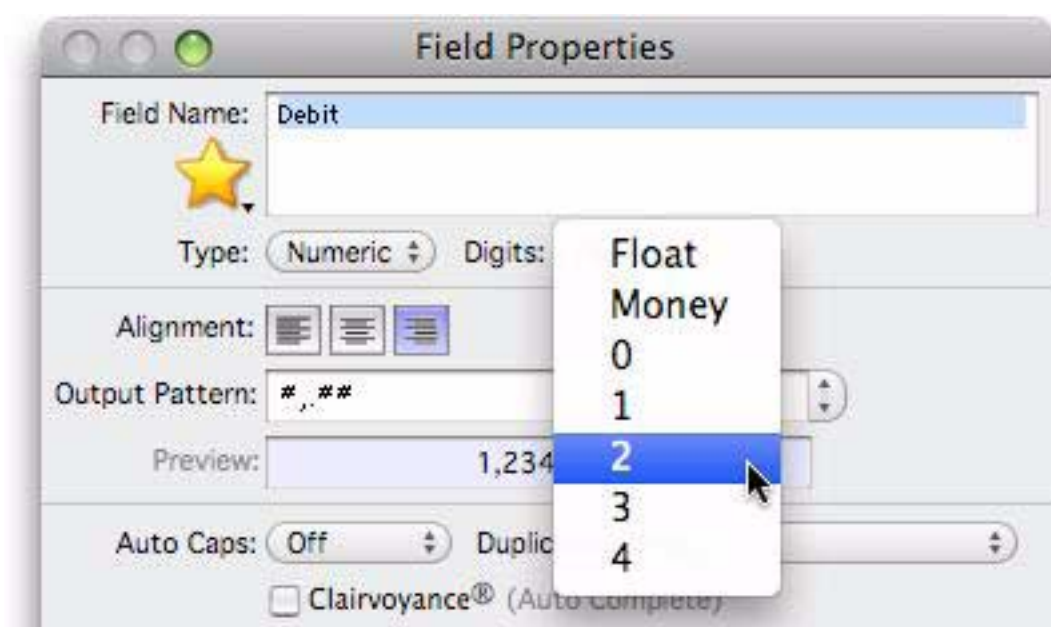
You may wonder why there are so many choices for storing numeric data. After all, a number is a number—right? Not quite. By choosing different numeric storage formats you are making a trade-off between space, speed, accuracy, and range.

Storing numbers using floating point gives you the most accuracy and numeric range. Floating point allows you to store extremely large or small values with up to 16 digits of accuracy. If you are in doubt, go ahead and pick floating point format.

Fixed point storage is more limited. The accuracy is only about 9 digits. The largest number that can be stored is about 2 billion ($2 \cdot 10^9$) while the smallest fixed point number is 0.0001 (10^{-4}). Trying to store larger or smaller values using fixed point storage will result in errors.

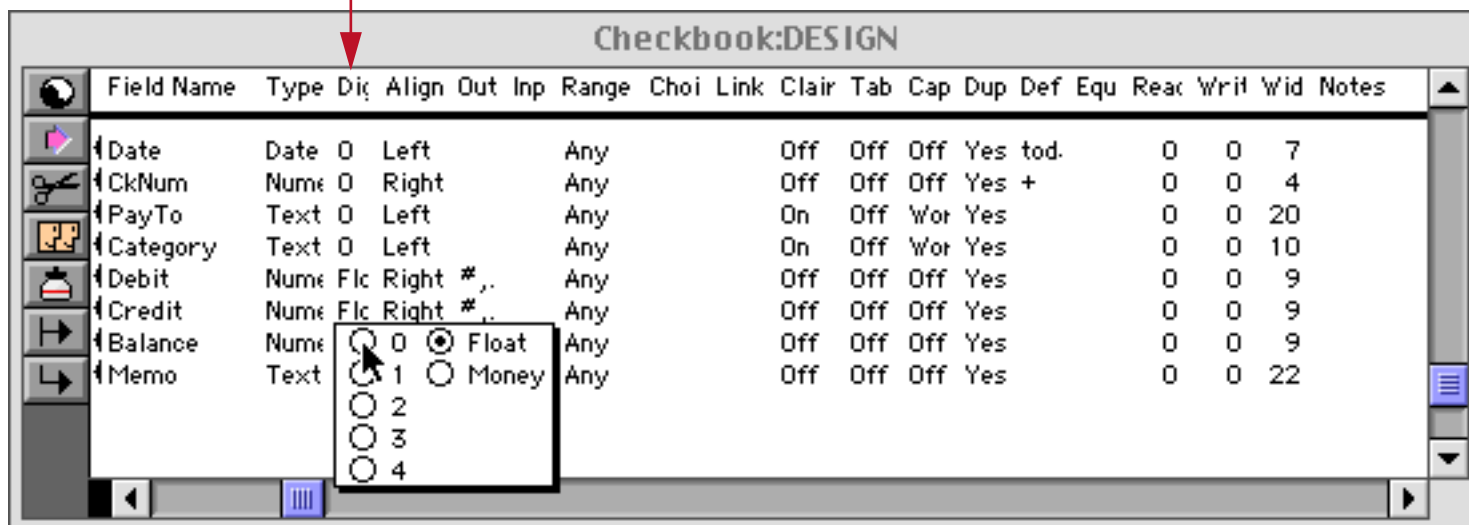
On the other hand the space required for fixed point storage is up to 8 times smaller than floating point for the same number, and Panorama can perform fixed point arithmetic much faster than floating point. You should use fixed point numeric storage whenever possible. Check the table above to see if the numbers you will be using fit in one of the fixed point numeric ranges.

You can set the number of digits via a pop-up menu in the **Field Properties** dialog box.



You can also set the number of digits using the **Digits** column in the design sheet.

double click on any cell in this column to change the number of digits



Money

Usually the best way to store monetary values is using either 2-digit fixed point or Panorama's special Money format. The money format is the same as 2-digit fixed point but automatically enters the decimal point for you during data entry. This table below shows how Panorama interprets data you enter into a money field.

When you enter...	it becomes
87204	872.04
3267	32.67
14	0.14
2	0.02
42.	42.00
15.4	15.40
156.78	156.78

Both the 2-digit and money formats allow you to store monetary values up to 21 million dollars, pounds, francs, etc. (If your business deals with values greater than 21 million you should use floating point numeric storage.)

Numeric Output Patterns

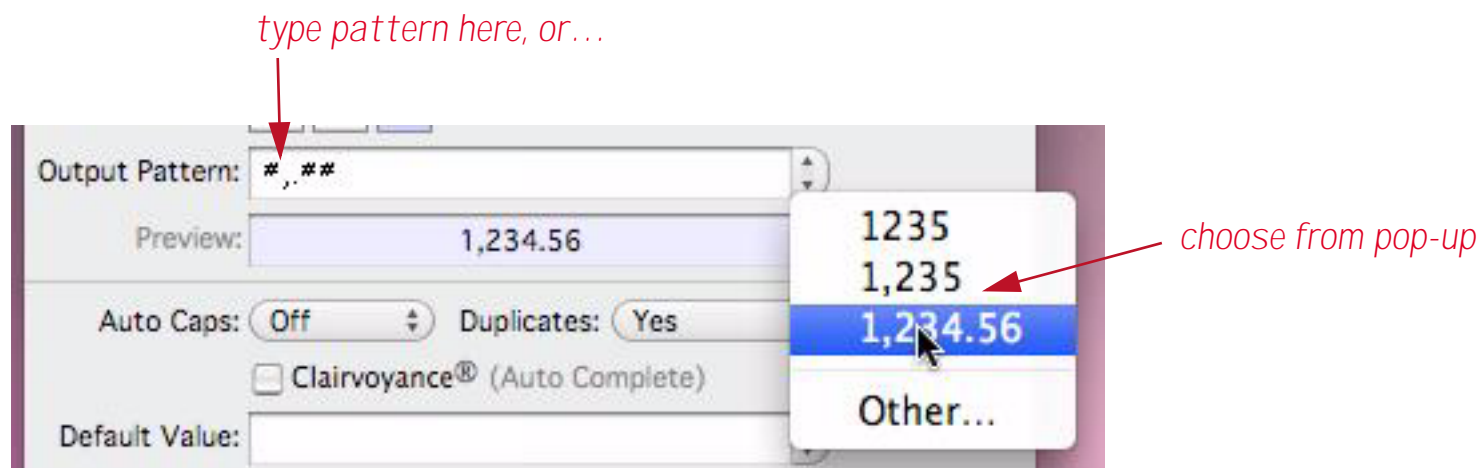
Output patterns allow you to control the way a number is displayed. In the design sheet, output patterns can be used to control how numbers are displayed in the data sheet. Output patterns can also be used in a formula (See "[Converting Between Numbers and Strings](#)" on page 84 of *Formulas & Programming*).

Below are some ways the same number may be displayed using different output patterns. Remember, the way a number is displayed does not change its internal value. All the numbers listed below have the value 2654.

2654
 2,654
 \$2,654.00
 002654
 2.654e+3
 26-54
 Two thousand six hundred fifty four

Numeric output patterns consist of a string of characters containing one or more # symbols. The # symbol tells Panorama how and where to print the number.

The overall output pattern for a field can be set using the **Pattern** button in the **Field Properties** dialog box or the **Output Pattern** column in the design sheet.



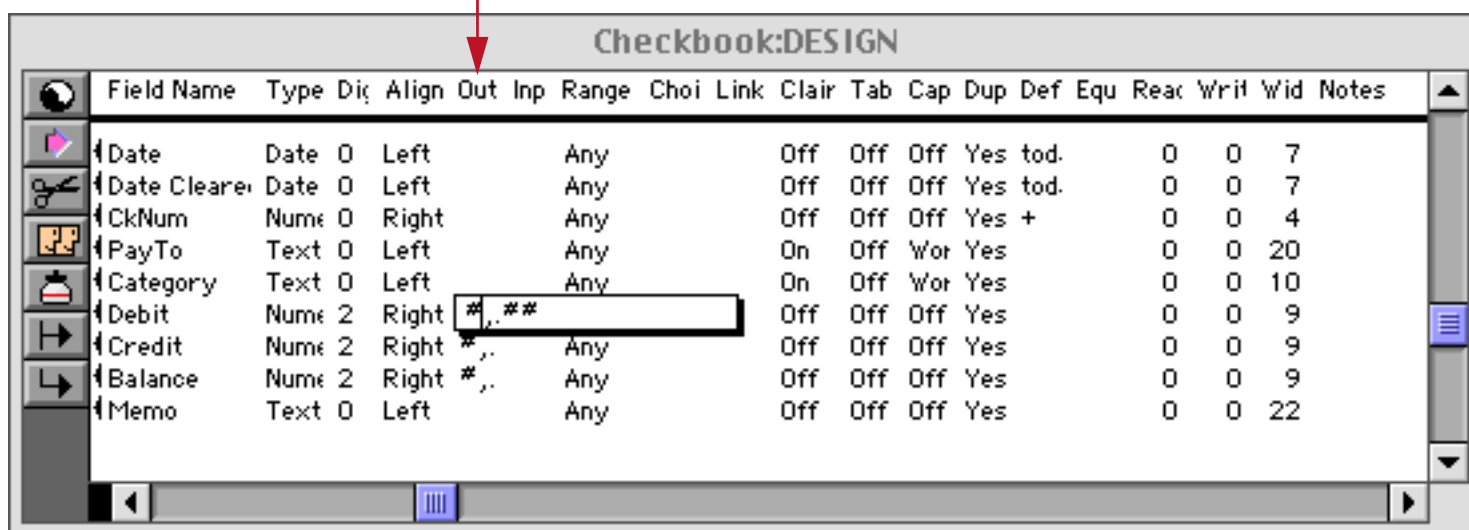
If you choose **Other** from the pop-up menu a secondary dialog appears:



Simply choose the options you want using the checkboxes and pop-up menus. Close the window when you are done.

If you are using the design sheet to set up the pattern, simply type the pattern into the **Output Pattern** column. See “[The Design Sheet](#)” on page 212 for more information on opening and using the design sheet.

type the pattern into the Output Pattern column



Fixed Decimal Point Patterns

The table below shows how the output pattern can be used to display numbers with a specified number of digits after the decimal point. These output patterns force a fixed point display even if you are displaying floating point numbers. They also allow you to override the natural display of fixed point numbers. For example, a money field can be set up to display only dollars, while still keeping track of cents for calculation purposes.

Number	Pattern	Display
1234.56		1234.56
1234.56	#	1235
1234.56	##	1234.6
1234.56	###	1234.56
1234.56	####	1234.5600

Notice that if the number of # symbols after the decimal point is less than the number of digits in the number, Panorama will round the number rather than truncating it.

Numbers with Commas, Punctuation, and Measurement Units

If a comma is added to the pattern, the number will be printed with a comma every third digit. Other characters can also be added to the beginning or end and will be displayed unchanged. For example, you can add a currency symbol or measurement unit to the pattern, as shown below:

Number	Pattern	Display
1234.56	#,##	1,234.56
1234.56	\$#,##	\$1,234.56
1234.56	#,## kg	1,234.56 kg

Scientific Notation

If an **E** or **e** is added at the end of the output pattern, the number will be displayed using scientific notation. Any number may be displayed in scientific notation, including fixed point numbers.

Number	Pattern	Display
1234.56	#e	1e+3
1234.56	#. #E	1.2e+3
1234.56	###e	1.23e+3
1234.56	####E	1.235e+3
1234.56	#####E	1.2346e+3
1234.56	#####E	1.23456e+3
1234.56	#####E	1.234560e+3
1234.56	#. #E kg	1.2e+3 kg

Special Patterns for Negative Numbers

Negative numbers are usually displayed with a minus sign in the front of the number. This can be changed to a trailing minus sign or to enclosing parentheses.

Number	Pattern	Display
-1234.56	###	-1234.56
1234.56	###	1234.56
-1234.56	###-	1234.56-
1234.56	###-	1234.56
-1234.56	(###)	(1234.56)
1234.56	(###)	1234.56

Leading Zeros

You can use an output pattern to force Panorama to display leading zeros. To do this, put several # symbols in a row without a decimal point.

Number	Pattern	Display
123	#####	00123
1234	#####	01234
12345	#####	12345

Tip: If you are storing US Zip codes in a numeric field, use ##### as the output pattern. This pattern makes sure that all 5 zip code digits are displayed, even if the first digit is zero.

If your database also contains Canadian postal codes, the zip codes must be stored in a text field. In that case no output pattern is necessary.

Numbers with Multiple Components

An output pattern can be used to split a number into multiple components. To split up a number, spread the # characters through the output pattern, one # symbol for each digit you want to print. The examples below show how this feature can be used for social security numbers, phone numbers, and combination locks.

Number	Pattern	Display
219304349	###-##-####	219-20-4349
5293672	###-####	529-3672
241018	L## R## L##	L24 R10 L18

Using output patterns this way can save a lot of memory. For instance, storing the combination **L24 R10 L18** as text requires 11 bytes per combination. Storing the same combination as a number requires only 3 bytes per combination. If your database contains 10,000 combinations this represents a savings of 80k of memory. (Sure, in the new millennium 80k isn't much! But if your database contains one million records using an output pattern would save 8 megabytes.)

Phone Numbers

We recommend storing phone numbers in text fields. However, using multiple component output patterns it is possible to store phone numbers as numbers. For local phone numbers you can use the output pattern **###-####** and store the numbers as fixed point with zero digits. This results in a savings of 5 bytes per phone number (3 bytes vs. 8 bytes). On the other hand, who ever heard of a 7 digit phone number in this day of area code splits every other week?

A long distance phone number requires more accuracy than is available in a fixed point number, so you'll have to use the floating point data type. The output pattern is **(###) ###-####**. This results in a savings of 6 bytes per phone number (8 bytes vs. 14 bytes).

If your phone numbers are stored as numbers you should only enter the digits. For example to enter the number (800) 432-4567 type **8004324567**.

We recommend storing phone numbers in a text field. Although this takes more memory, it is more flexible, allowing you to add extensions or other notes (for example 329-9583 ext 241). If you do use a text field, you can use an input pattern to enter the (,), and - characters for you. See "[Input Patterns](#)" on page 291 for more information on this technique.

Plural Suffixes

If a pattern contains measurement units you may want to properly pluralize the units depending on the value being displayed. Use the ~ symbol to do this.

Number	Pattern	Display
1	# mile~	1 mile
5	# mile~	5 miles

Displaying Numbers as Words

If you wish, numbers can be displayed as words instead of digits. To do this, use the **s** symbol instead of the # symbol. Only one **s** symbol should be used. To make the **s** symbol on a Macintosh, press **Option-6**. On the PC, press **Alt-0167**. Only the integer part of the number will be displayed—any fractional part will be ignored.

If you are displaying money, you'll probably want to display the fractional part (cents) as well as the integer part. You can do this with the ¢ (cents) symbol. On the Macintosh, press **Option-4** to create the ¢ symbol. On the PC, press **Alt-0162**. Use one ¢ for each digit you want display (usually 2).

Number	Pattern	Display
312	\$	Three hundred twelve
42.29	\$ dollar~ and ¢¢/100	Forty two dollars and 29/100

Dates

Panorama has a special data type for storing dates. When you use the date type to store your dates, Panorama can sort your dates in the correct order, check your dates for validity as they are entered, and calculate the number of days between two dates. Dates are quite compact; almost any date in the 20th or 21st century will take only two bytes of storage.

Entering Dates

Panorama is very flexible about how you type dates. We call this feature “smart dates.” You can enter dates numerically (for instance **04/09/02** or **4/9/2**) or you can spell out the date (for instance **April 9th, 1997** or **Apr 9 97**). You can use any character as a separator between numeric dates, for example **4-9-01** or even **4.9.01**.

To enter today's date, simply type **today**. You can also enter **yesterday** or **tomorrow**. Panorama will automatically convert these entries to the correct month, day and year.

If the date is in the current week, you can simply type in the name of the day, for example **saturday** or **tue**. To specify a day in the previous or upcoming weeks add the words **last** or **next**, for example **next tuesday** or **last saturday**.

When a date is edited, Panorama normally displays the date in the format **mm/dd/yy**. However, if you have set up an output pattern that Panorama understands for data entry, it will use that pattern instead. Patterns that can be used for data entry include **Month dd, yyyy**, **Mon dd yy**, and **mm/dd/yyyy**.

If you are using an international system and you enter the date as numbers you must use the format **dd/mm/yy**. Panorama does not understand the format **7-Aug-1998**. (However you may use any delimiter character you want, for example **7/8/98** or **7-8-98** or even **7.8.98**.)

Default Year and Century

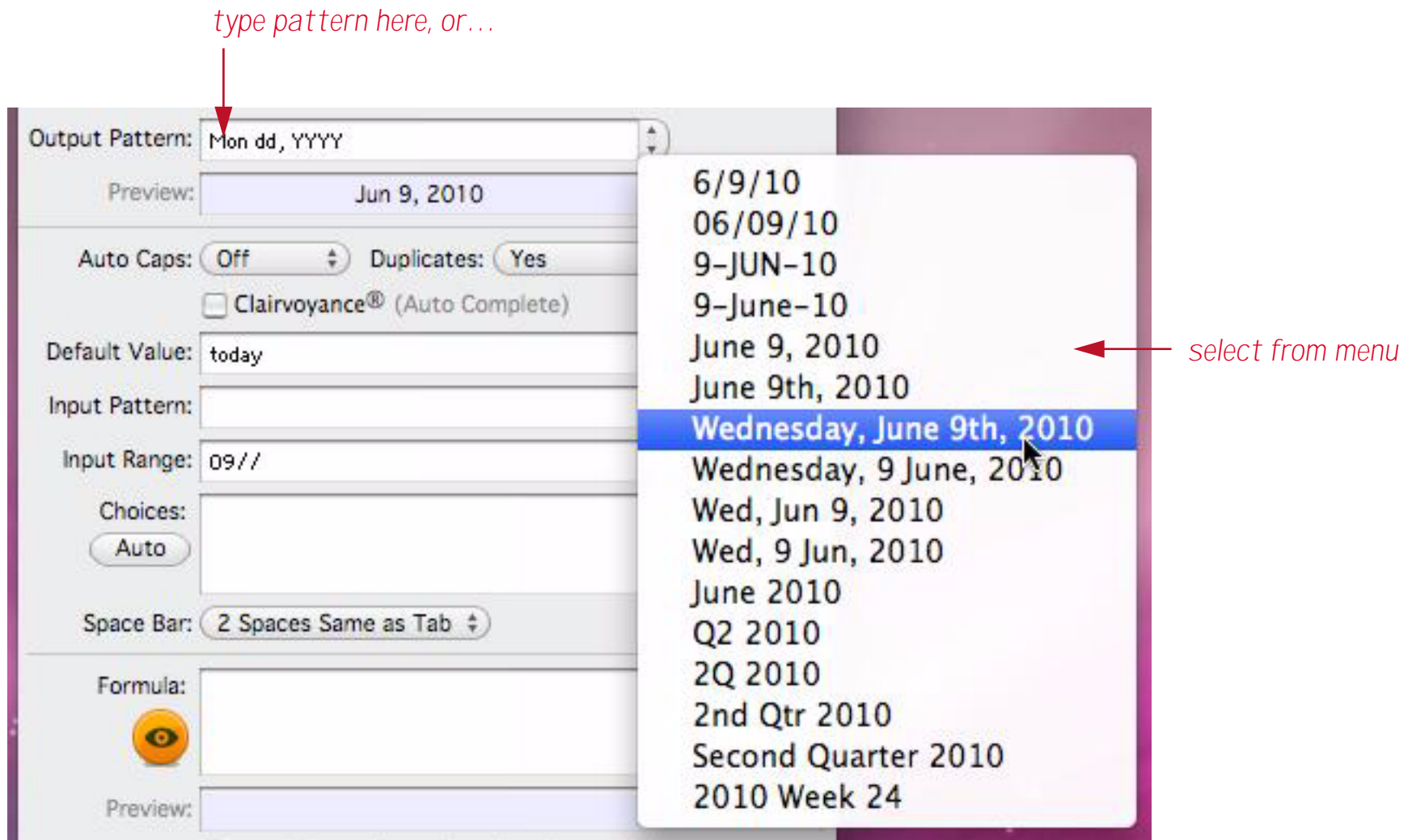
When you enter a date, you can leave the year off and let Panorama figure it out for you. Panorama will automatically round the date to the nearest year. For instance, if today's date is **3/9/02** and you enter the date **4/1** then Panorama will assume you mean **4/1/02**. But if you enter **12/1** (or **December 1**) Panorama will assume you mean **12/1/01**, not **12/1/02**, because **12/1/01** is closer to **3/9/02** than **12/1/02** is.

Panorama also rounds dates to the current century. If the current year is **2002** (or even **1992**) and you enter the date **7/2/23** Panorama will assume you mean **7/2/2023**. If you want to enter a date more than 50 years from the current date you must enter the full date, for example **7/2/1923**

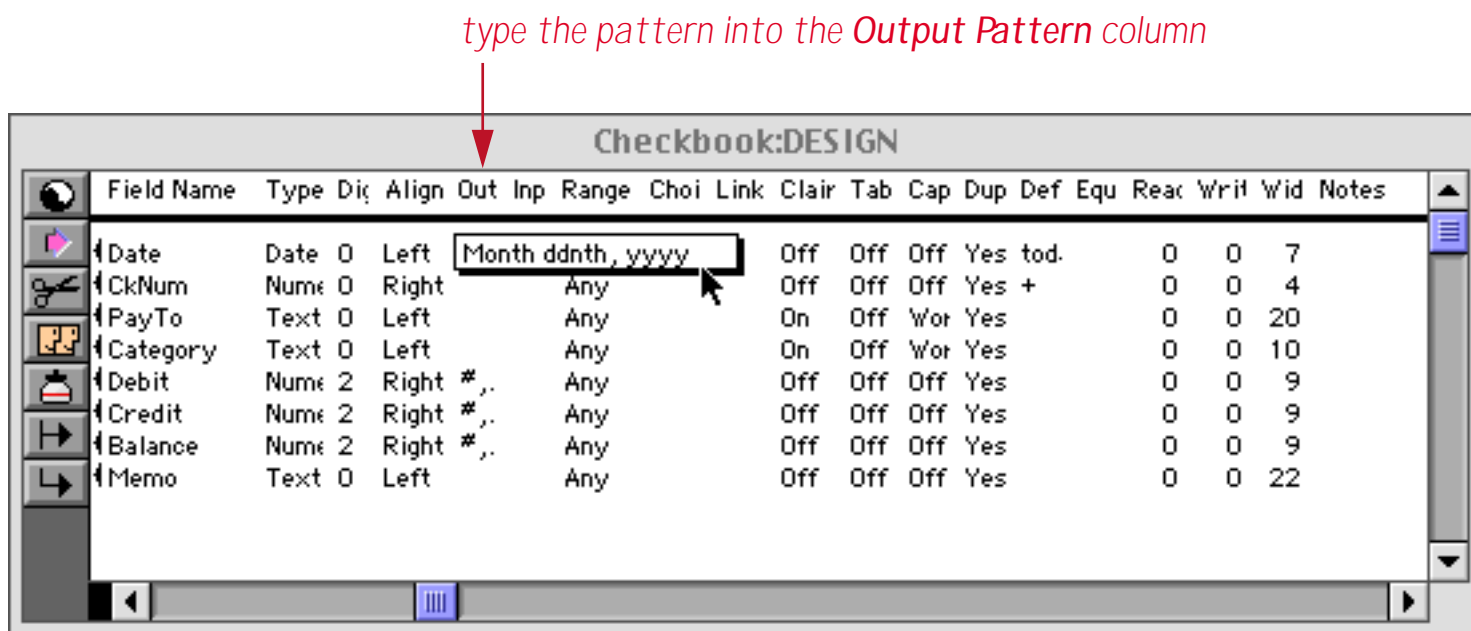
Date Output Patterns

Output patterns allow you to control the format Panorama uses to display dates. A date output pattern consists of a number of individual components (month, day, year, etc.) that are strung together. For example, the pattern **mm/dd/yy** contains three components and will display in the format **3/11/04**.

The overall output pattern for a field can be set using the **Pattern** section of the **Field Properties** dialog box or using the **Output Pattern** column in the design sheet.



If you are using the design sheet to set up the pattern, simply type the pattern into the **Output Pattern** column. See [“The Design Sheet”](#) on page 212 for more information on opening and using the design sheet.



Date Pattern Components

There are 15 different basic components that can be used as part of a date pattern. A date pattern is built up by combining these components together with punctuation to build a complete pattern. (See “[Common Date Output Patterns](#)” on page 258 for examples of complete, ready-to-use date patterns.)

Component	Example	Description
yy	02	Year (within century)
yyyy	2002	Year (including century)
qq	2	Quarter (numeric)
qtr	2nd	Quarter (abbreviated)
quarter	second	Quarter (spelled out)
mm	9	Month (numeric)
MM	09	Month (with leading zero)
mon	sep	Month (abbreviated)
month	september	Month (spelled out)
ww	46	Week (within year)
dd	5	Day (numeric)
DD	05	Day (with leading zero)
day	tue	Day Of Week (abbreviated)
dayofweek	tuesday	Day Of Week (spelled out)
dow	3	Day Of Week (0[sun]-6[sat])

Some of these components (`qtr`, `quarter`, `mon`, `month`, `day`, and `dayofweek`) can be either upper or lower case. The table below shows how a component can be displayed in all lower case, initial caps, or all upper case.

Pattern	Display
month	september
Month	September
MONTH	SEPTEMBER
dayofweek	friday
DayOfWeek	Friday
DAYOFWEEK	FRIDAY

Common Date Output Patterns

A date output pattern is assembled from the basic components listed in the previous section along with any punctuation or text that is needed between the components. The table below lists several common date patterns.

Date	Pattern	Display
3/9/2002	mm/dd/yy	3/9/02
3/9/2002	MM/DD/YY	03/09/02
3/9/2002	mm-dd-yyyy	3-9-2002
3/9/2002	dd-MON-yy	9-MAR-02
3/9/2002	dd-Month-yy	9-March-02
3/9/2002	Month dd, yyyy	March 9, 2002
3/9/2002	Month ddnth, yyyy	March 9th, 2002
3/9/2002	DayOfWeek, Month ddnth, yyyy	Saturday, March 9th, 2002
3/9/2002	qqqyy	1q02
3/9/2002	Week ww of yyyy	Week 11 of 2002
5/23/2002	Quarter "Quarter" yyyy	Second Quarter 2002
7/11/2004	Qtr "Qtr" yyyy	3rd Qtr 2004
3/9/2002	"Day" dd, "Month" mm	Day 9, Month 3
3/1/2002	ddnth "day of" Month, yyyy	1st day of March, 2002
3/2/2002	ddnth "day of" Month, yyyy	2nd day of March, 2002
3/9/2002	ddnth "day of" Month, yyyy	9th day of March, 2002
3/1/1867	mmnth "month of" yyyy	3rd month of 1867
3/9/1978	wwnth week of yyyy	3rd week of 1978

If you need to include the words `qtr`, `quarter`, `mon`, `month`, or `day` in your date, you must quote them so that they are not treated as components, as shown in several of the examples in the table above. The quote key is just to the left of the **Return** key. Be sure to use regular quotes, not smart quotes (" not " ").

As shown in several of the examples, you can add the suffix `nth` to the `mm`, `ww`, or `dd` components, Panorama automatically adds the correct suffix depending on the number displayed.

Choices

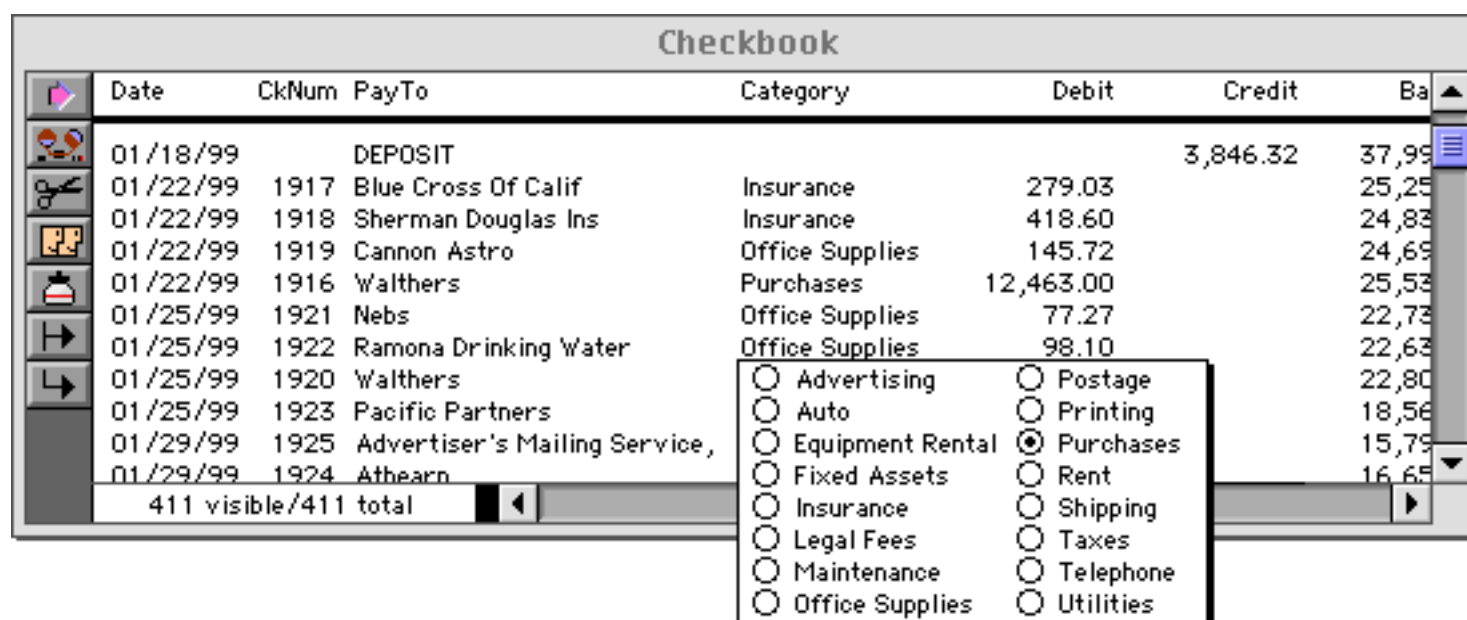
The choices data type is used for storing data that has only a few possible values. Some typical examples of this type of data are listed below. (Notice that in the case of choices that contain spaces, like **US Mail** and **Eastman Kodak**, the space is represented by an underscore, for example **US_Mail** and **Eastman_Kodak**.) Of course you can use the text data type to store this kind of information, but using the choices type can speed up data entry, reduce keying errors, and reduce storage space.

Type of Data	Typical Choices
Questionnaire	Yes No
Video Format	VHS DVD
Gasoline	Regular Supreme Diesel
Shipping Carrier	UPS US_Mail FedEx Airborne DHL
Film ASA Speeds	25 64 100 200 400 800 1000
Film Manufacturers	Agfa-Gevaert Eastman_Kodak Fuji_Photo 3M
Credit Terms	Net_10 Net_30 COD Pre_Pay
Operating System	Windows MacOS Linux
Medals	Gold Silver Bronze

The choices data type works by keeping a list of the possible choices for each field. In the database Panorama stores a choice number instead of storing the actual data—for example 1 for yes and 2 for no. The list of choices is used to decode the number whenever Panorama needs to display or use the data. The number itself is never visible.

Choice Data Entry (Choice Palette)

The choices data type is treated differently than other data types for data entry. Instead of entering the data from the keyboard, you pick a selection from a choice palette containing radio buttons for each choice.

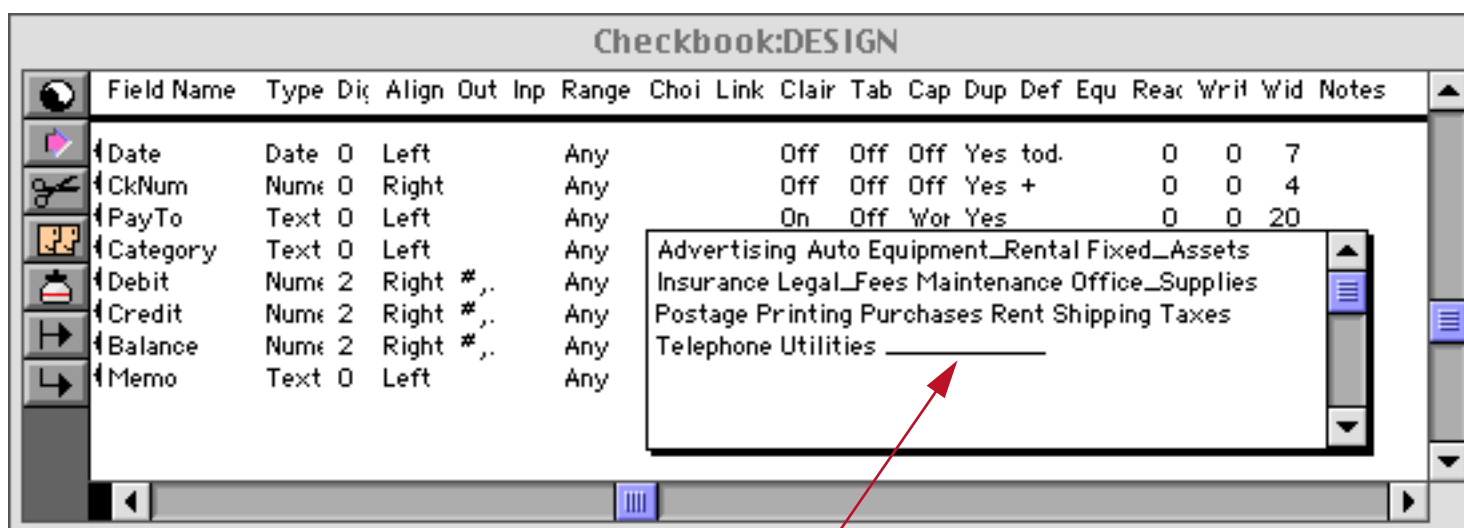


If the choice list allows for exceptions, there will also be a box allowing you to type in the exceptions. See “[The Choice Palette](#)” on page 317 for more information on using the choice palette.

In addition to picking from the list of radio buttons, you can also pick an item from the choice palette by typing in the first few letters of the item. For example, if the choice palette contains the buttons **Gold**, **Silver** and **Bronze** you can pick **Gold** by pressing the **G** key. If two or more buttons start with the same letter, keep typing until you reach a letter that is different.

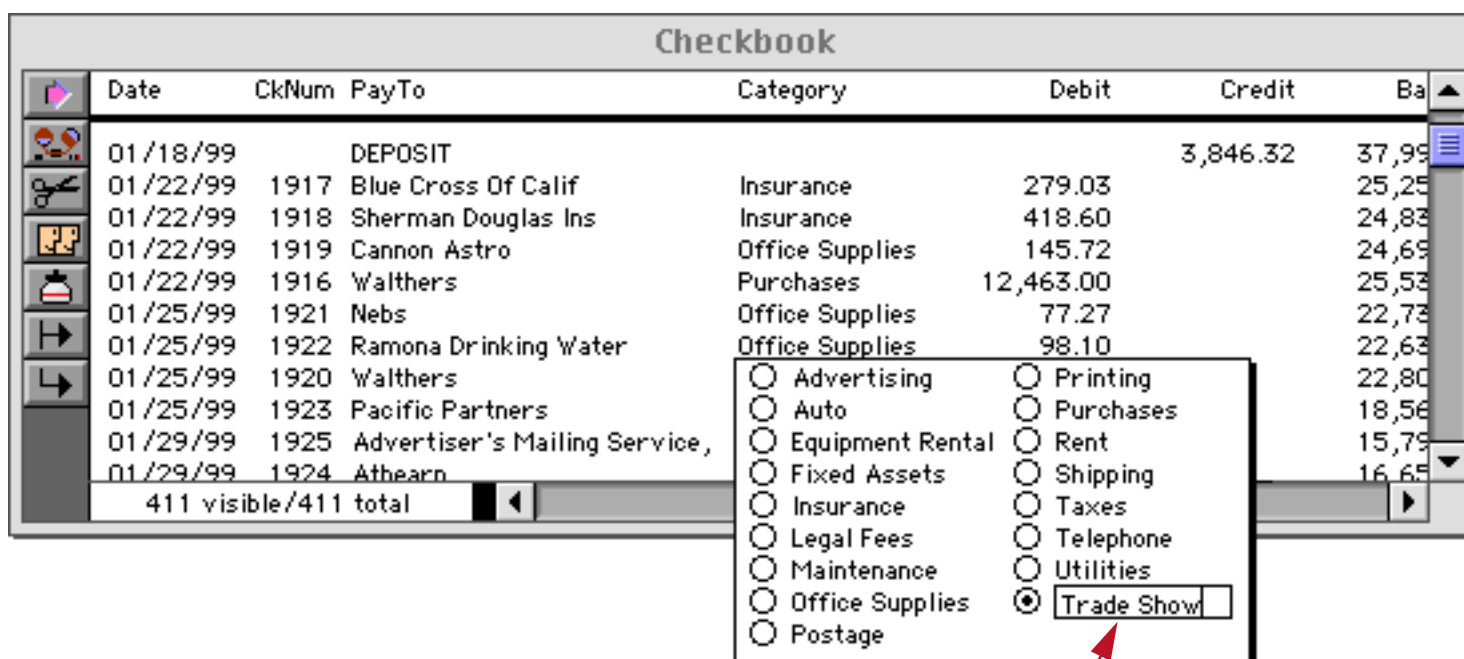
Exceptions

You can use the choices data type even if you cannot anticipate all of the possible choices in advance. For example, you may usually ship via **UPS** and **Federal Express**, but occasionally you use a variety of other shippers. In this situation you need to allow exceptions to the choice list. To allow exceptions, type in a line of underscores at the end of the list.



to allow exceptions, type in a line of underscores

In the data sheet, this line of underscores will appear as a text entry box where any value may be typed in. The number of underscores determines the size of the exception box in the choice palette. For a larger box, add more underscores.



type exceptions in this box

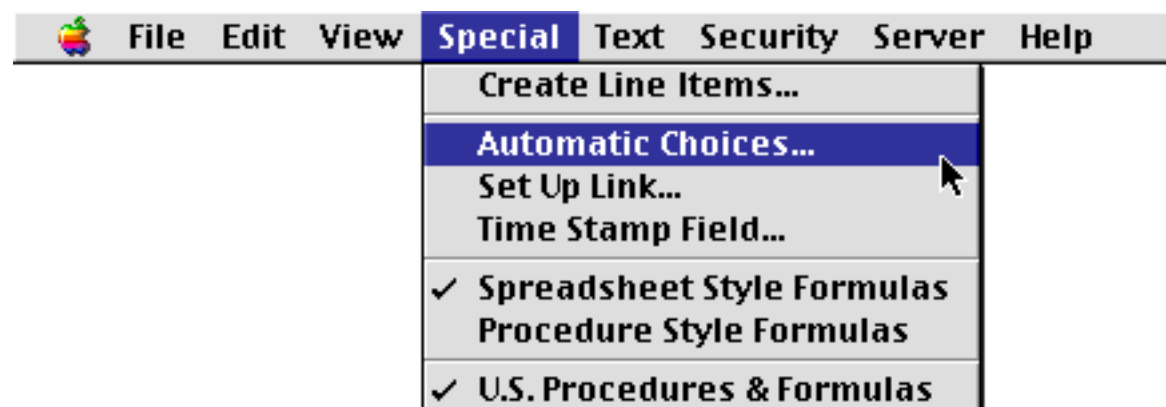
When a value is entered into the database that is not one of the choices in the list, the value is stored as an exception. Panorama must store the entire value instead of an internal number. As long as the number of exceptions is small the choices data type is still useful. However, if there are too many exceptions, you should stick to the normal text and numeric data types. In the worst case, if all the values are exceptions, the database will actually take more memory than it would if you simply stored the data as text.

Generating a List of Choices Automatically

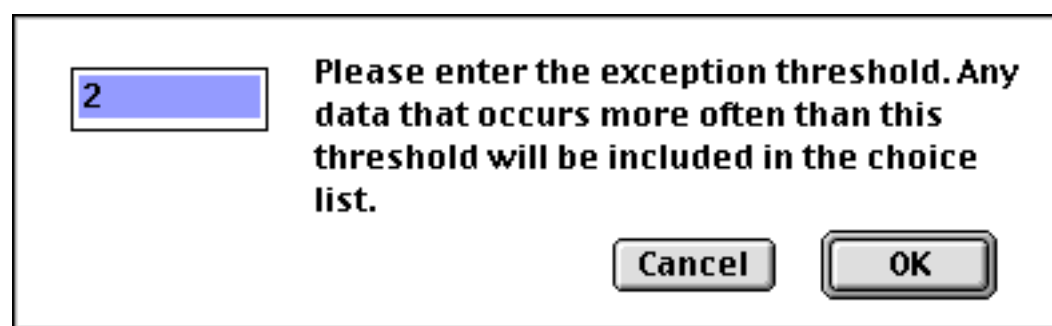
If your database already contains data, Panorama can examine the database and automatically generate a list of choices for you. Just press the **Auto** button in the **Field Properties** dialog.



In the Design Sheet you can use the **Automatic Choices** command (Special Menu) available in the design sheet. Select the field (by clicking on the corresponding row in the design sheet), then choose **Automatic Choices** from the Special Menu.



Before this command can generate the choice list you must specify an exception threshold.



This value tells Panorama how many times a choice must appear in the database to be included in the choice list. Any value that appears fewer times than the threshold will become an exception. Any value that appears that many times or more will be included in the choice list. When you press **Ok**, Panorama will scan the database and create a choice list containing all the choices that occur the same number or more times than the number specified by the exception threshold.

How do you decide what value to use for the exception threshold? There is no hard and fast answer. For larger databases you will probably want to use a larger value. Experiment with different values to see the effect on the choice list, then choose a value that includes the common choices on the list, while leaving out the values that only occur occasionally

Updating the Choice List

As a database grows, the choices list may need to change over time. Choices that were once exceptions can become common, while once popular choices become obsolete. If this occurs, you can update the choice list—either manually or with the **Automatic Choices** command.

Using Math Operations with Choices

Sorry, no can do. If you need to perform any kind of math calculations (**Total**, **Average**, etc.) you must store the information using the numeric data type. However, you can **Count** a choice type field.

Sorting Choices

Data stored using the choices data type is sorted according to the order of the choice list. Therefore, if you want the choices to be sorted alphabetically, you must make sure that the choice list is in alphabetical (A-Z) order. The **Automatic Choices** command does this for you.

Sometimes you may wish to sort the choices in a different order. For example, Olympic medals should be sorted in the order **Gold, Silver, Bronze** instead of alphabetically (**Bronze, Gold, Silver**). If you need the choices to sort non-alphabetically simply set up the choice list in the order you want.

Warning: If your choice list is in non-alphabetic order the sort order of exceptions is ambiguous. For example if the choice list is **Gold, Silver, Bronze** where does the exception **Copper** go? The final order is not predictable. You should only use a non-alphabetic choice list if there are no exceptions allowed.

Chapter 7: Data Entry & Editing



Before you can organize, analyze, or report anything, you have to get your data into the computer. Usually this means using the keyboard to type it in. Panorama has been designed to help make this task fast and accurate.

Of course, if the information is already stored on a computer, you may be able to access it without re-typing. Panorama can exchange data with most Macintosh software packages, and with many PC and mainframe packages as well. See ["Importing a Text File"](#) on page 82.

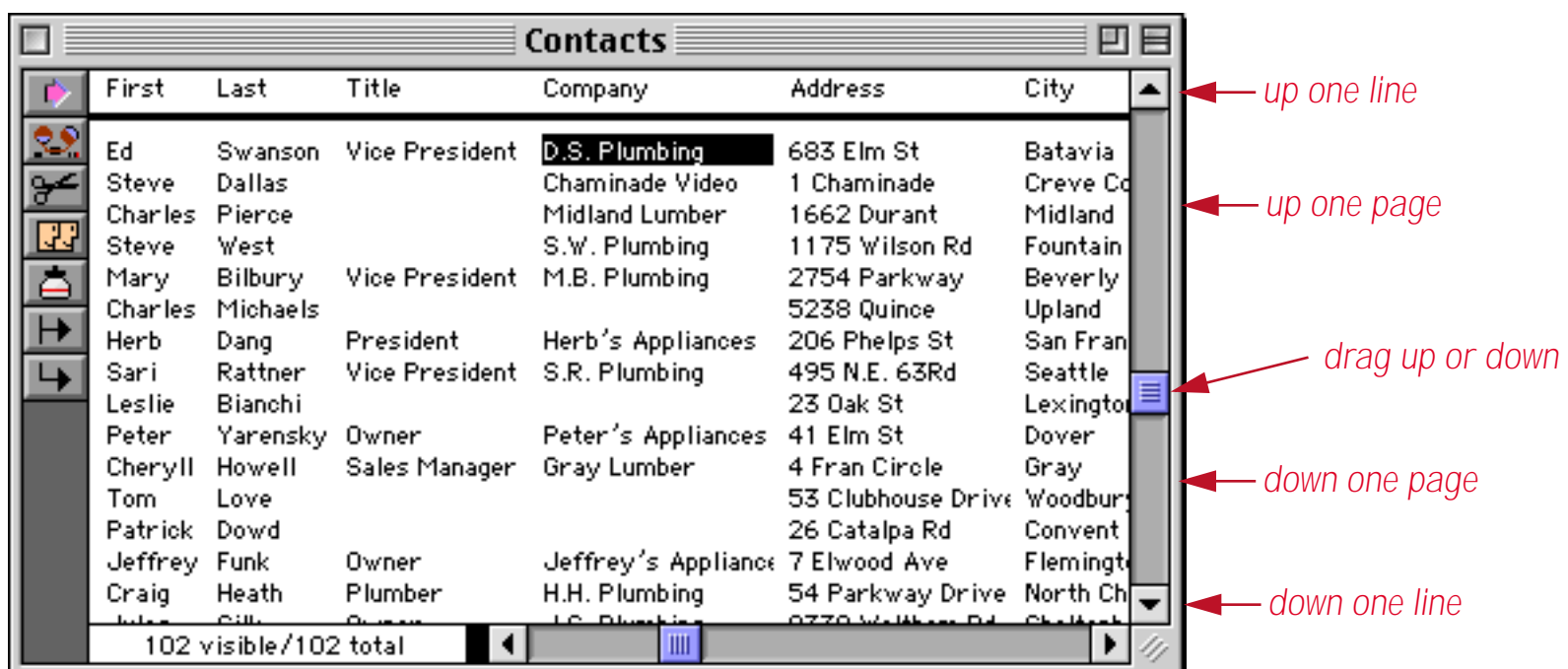
Editing Records

A new database starts out with just one lonely record. Over its lifetime hundreds or even thousands of records will be added to a typical database. In addition, many records will become obsolete and be deleted. Both inserting and deleting records are easy tasks with Panorama.

Moving From Record to Record

Unless your database is very small, only a small part of it will be visible at a time. You can shift the data within the window to work with different parts of the database. To shift the data you either scroll (data sheet) or flip from page to page (form).

Use the vertical scroll bar to scroll a data sheet to any record in the database. Click on the scroll bar arrows to move up or down one record at a time. Click in the scroll bar's gray area to move up or down one window at a time. Drag the scroll bar thumb to move directly to any position in the database.



When you are using a form window, the vertical scroll bar works differently. Instead of scrolling to another record, the scroll bar shifts the position of the form within the window. This allows you to get at every corner of a large form even if you are using a small window. To move from record to record, use the **First Record**, **Previous Record**, **Next Record**, and **Last Record** tools in the tool palette. The **First Record** tool brings you to the very first visible record in the database—the top line of the data sheet. The **Last Record** tool takes you to the end of the database—the bottom line of the data sheet. The **Previous Record** and **Next Record** tools move one record at a time. You can also move up or down one record at a time by pressing the **Up Arrow** or **Down Arrow** keys.

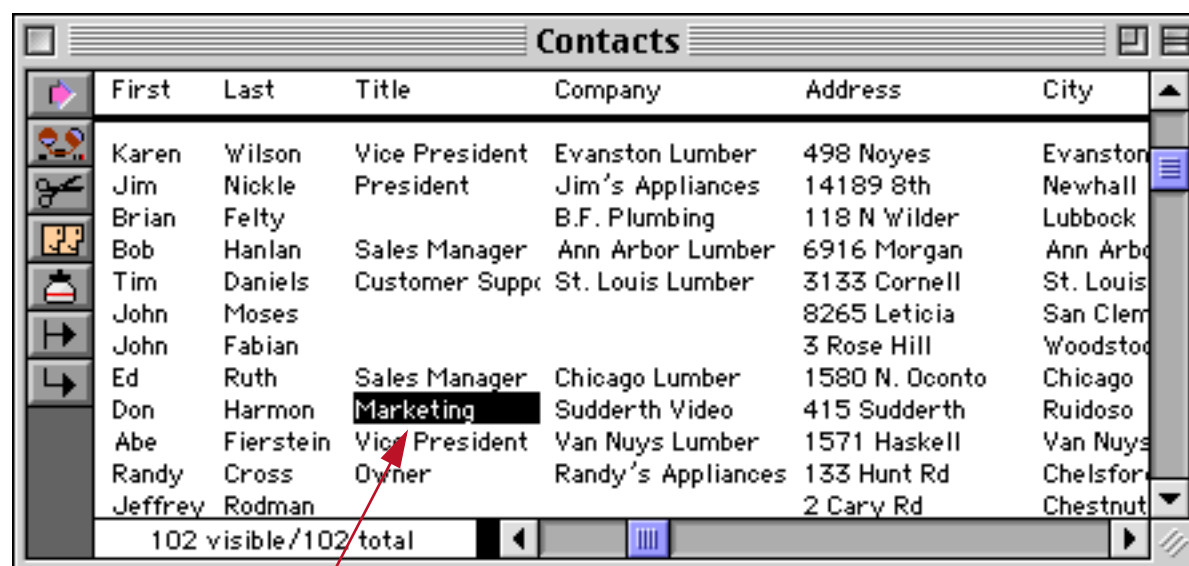


If the database has more than two open windows (for example a form and a data sheet), the position of both windows will always remain synchronized. In other words, if you scroll the data sheet the form will follow and vice versa.

In addition to manually moving from record to record, you can let Panorama search for the information you want to look at or modify. The **Find/Select** command (Search Menu) can use a variety of criteria to locate the information you need. See [“The Find/Select Dialog”](#) on page 336, for more information on this command.

Moving from Field to Field

Within a data sheet, you can move to another field by clicking anywhere the field's column (if it is visible) or by clicking on the horizontal scroll bar. (See “[Splitting a Window](#)” on page 145 for information on how to split a window into two separately scrollable “panes.”)



click anywhere in a column to select a field

or use the scroll bar

You can also use the **Goto Field** dialog (in the **Fields** menu) to move to a specific field. This is especially useful if the database dozens or hundreds of fields. Initially the dialog displays a list of all of the fields in the database. To go to a specific field click on it and press the Goto button, or simply double click on the field name.



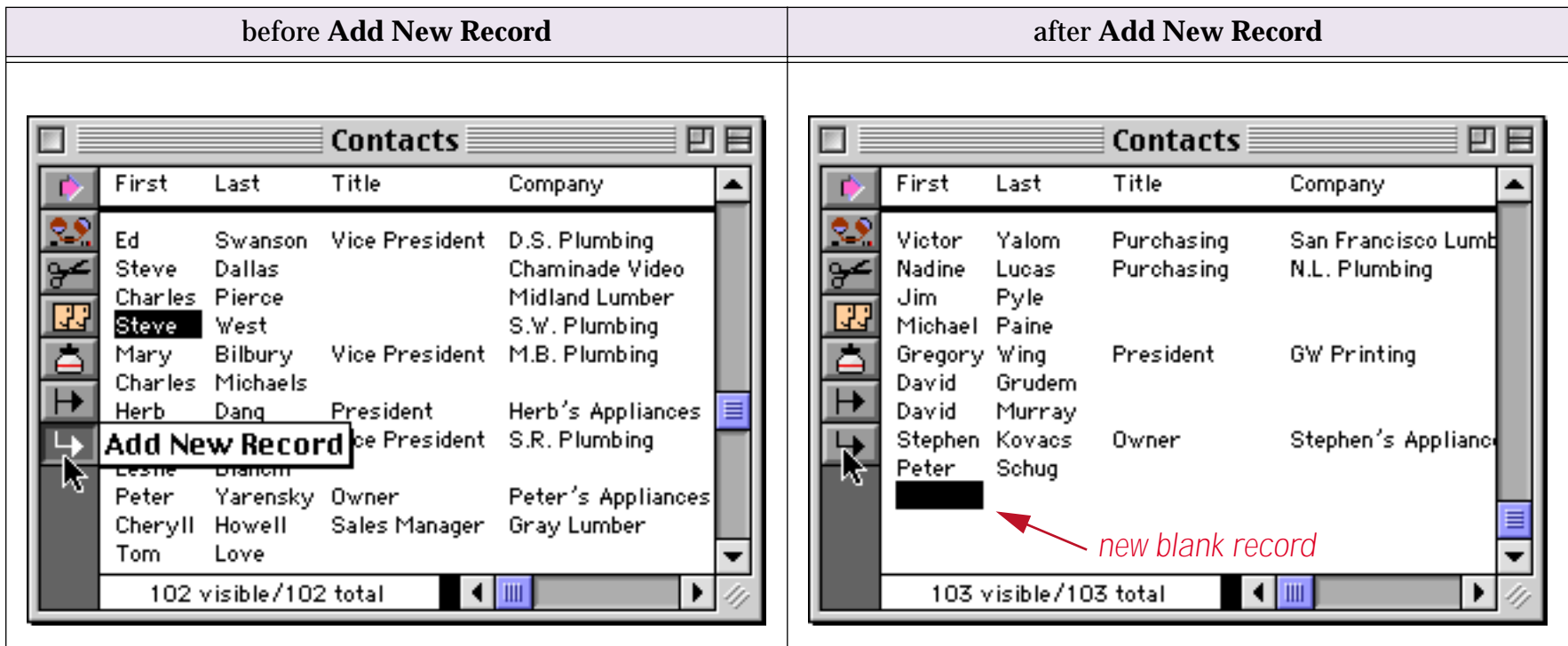
You can also search for the field you want. Type in a few letters from the field name in the search area.



The first nine fields listed are numbered from (1) to (9). To go to one of these fields simply press the corresponding numeric key. For example to go to the **Country** field in the example above you could simply press **co**.

Adding a New Record

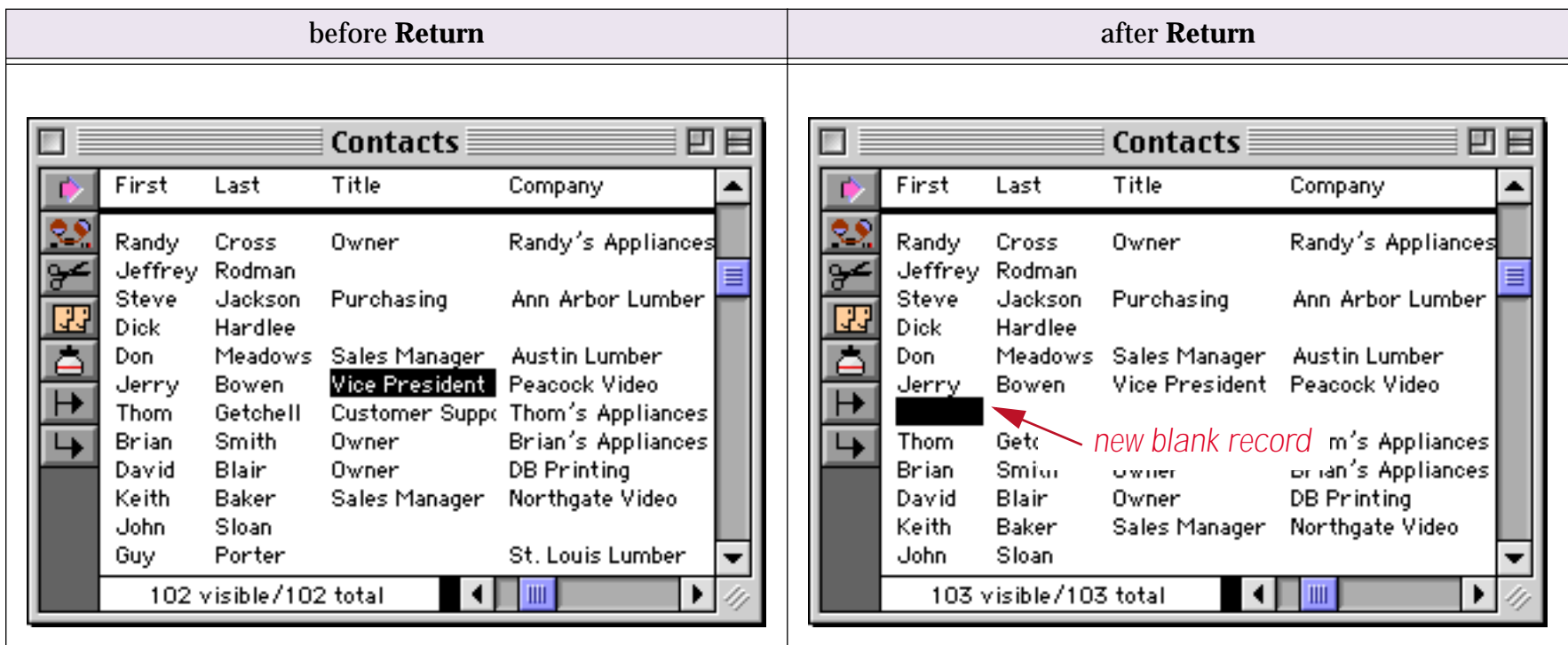
To add a new record to the end (bottom) of the database, either click on the **Add New Record** tool or choose **Add New Record** from the Edit Menu.



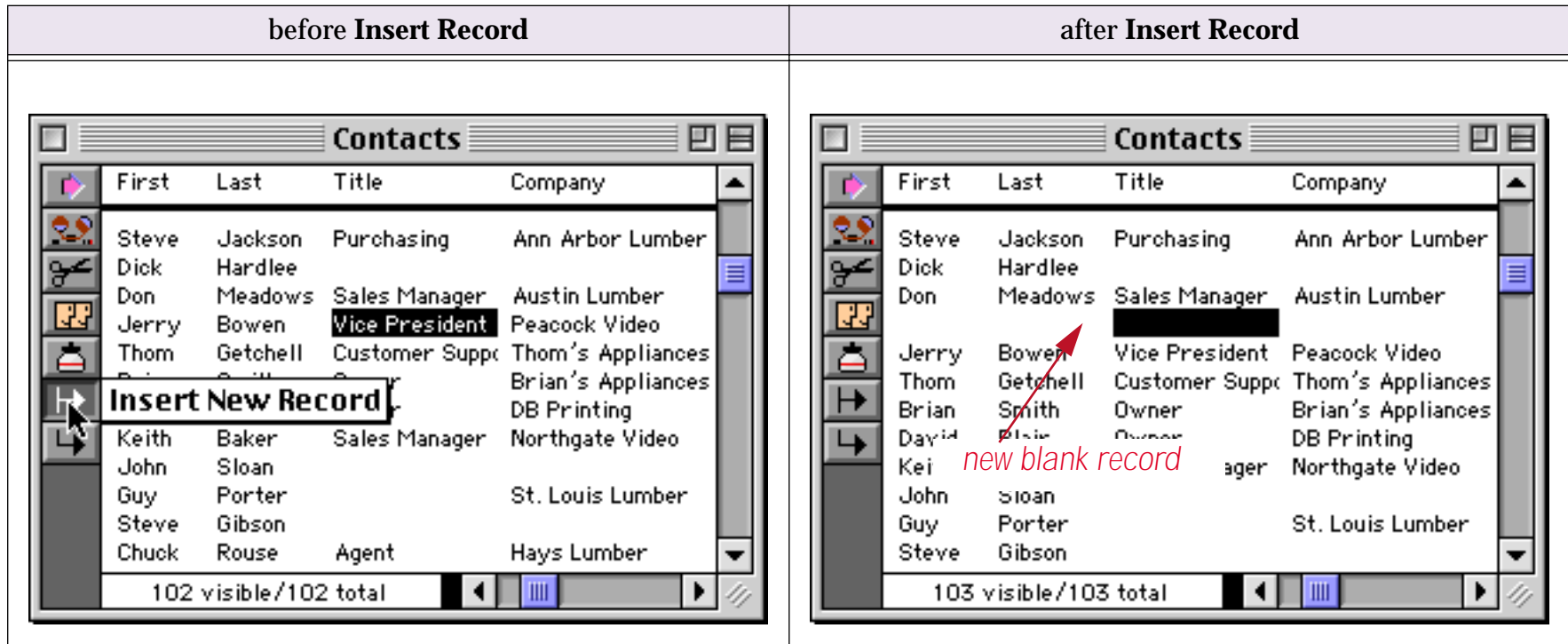
You can also add a new record by tabbing from the end of the bottom line of the data sheet.

Inserting a New Record

When you are working in the data sheet, you can insert a new record either above or below the current record. (In a form you can only add new records at the end of the database.) To insert a new record after the current record press the **Return** key.



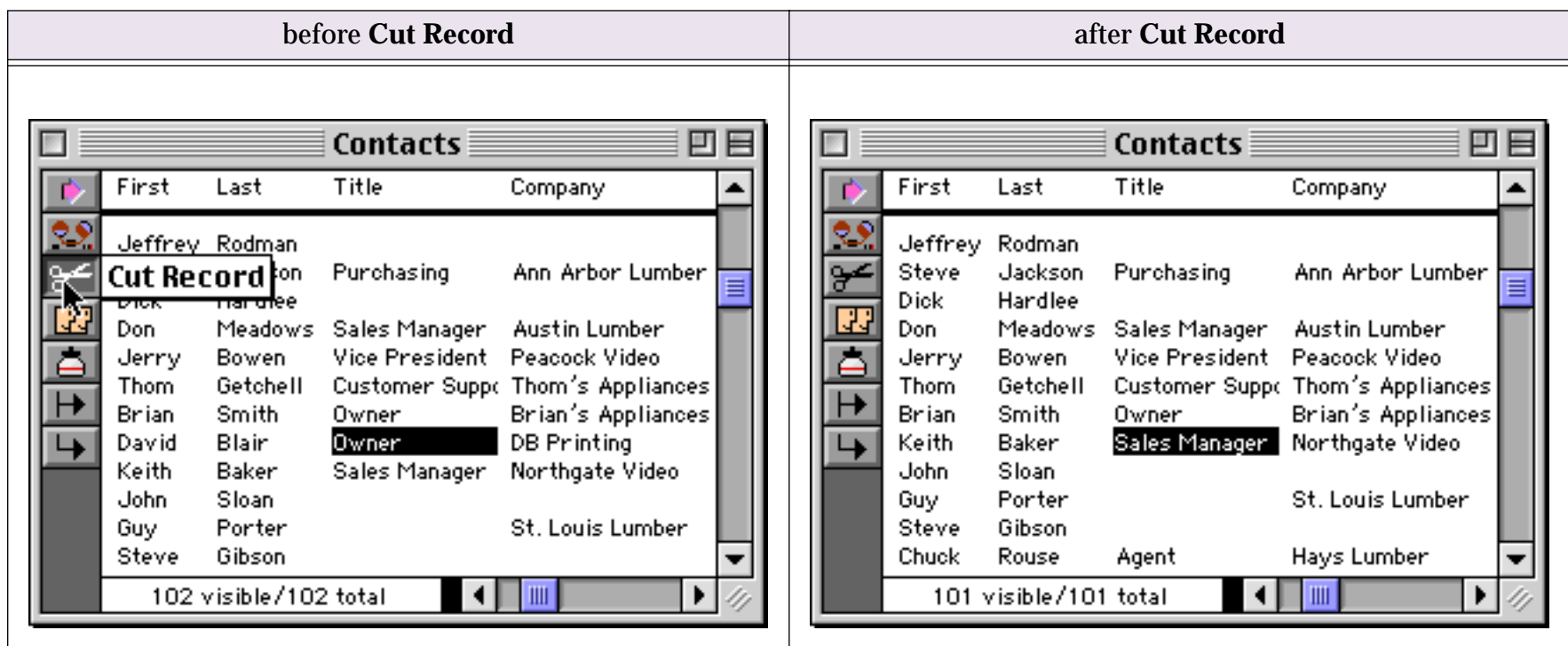
To insert a new record before the current record, click on the **Insert Record** tool.



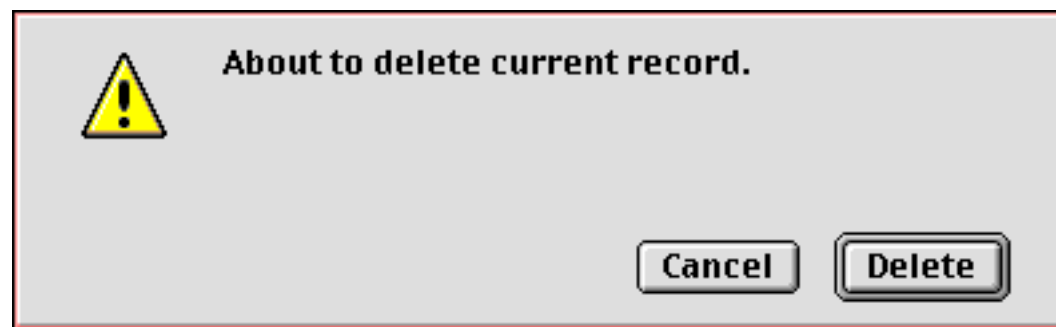
Usually new records are completely blank, ready for your input (as shown in the examples above). You can, however, ask Panorama to automatically fill in one or more cells whenever a new record is created. A field can default to a fixed value (like **yes** or **no**, or **taxable**, or today's date), an automatically incrementing number (**1, 2, 3, ...**), or a copy of the data in a previous record. See "[Default Values](#)" on page 296 for more information.

Deleting a Record

To delete an entire record, click on the **Cut Record** tool.



If you are using the data sheet, you can also delete a record by pressing the **Delete** or **Backspace** key (upper right hand corner of the keyboard, above **Return**). Panorama will display an alert asking you to confirm that you really want to delete the record. (Mac only tip: If you want to skip the alert, hold down the **Option** key while you delete the record.)

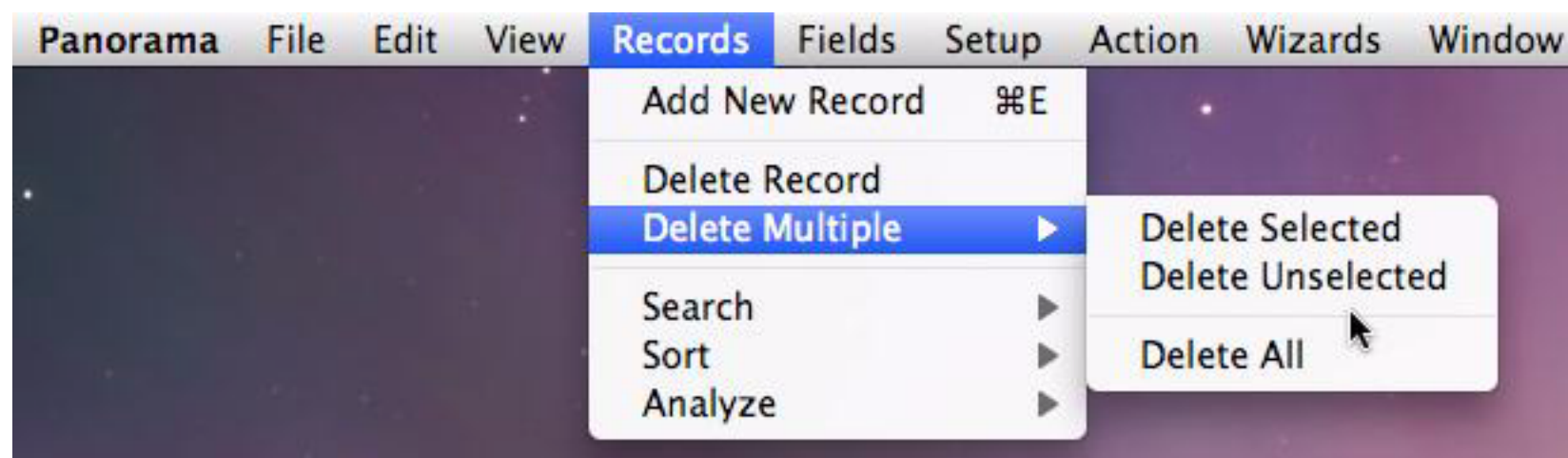


If you delete a line accidentally, you can use **Undo** to restore the line. You can also get the line back with the **Paste Record** tool.

Tip: A Panorama database must have at least one visible record—it cannot have zero records. If your database has only one record, Panorama will not allow you to delete it.

Deleting Multiple Records

Sometimes you may need to systematically delete large numbers of records. For example, you might need to delete all invoices previous to 1987 or all students with below passing grades. Instead of deleting these records one-by-one you can let Panorama do most of the work for you. First use the **Find/Select** command to select either the records you want to keep or the records you want to remove. If you selected the records you want to keep, use the **Remove Unselected** command to delete everything else. If you selected the records you want to remove use **Remove Selected**.



Remember, however, that you cannot delete every record—you must leave at least one record in the database at all times. See [“The Find/Select Dialog”](#) on page 336 and [“Permanently Removing Unselected Data”](#) on page 360 for more information on these commands.

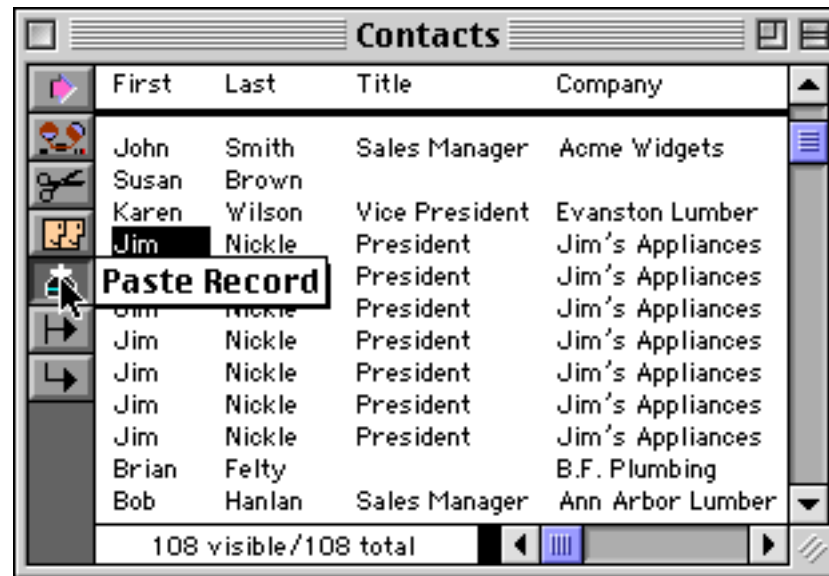
Delete All

To delete all the data in the database, use the **Delete All** command (see above). This command deletes all the data, leaving just one blank record. Before it performs this dastardly deed, Panorama asks you to confirm that you really know what you are doing. Keep in mind that there is no **Undo** after **Delete All**. (However, if you saved a copy of your database, you can **Revert to Saved**, or you can use Panorama’s Time Lapse feature to get back the previous data.)

You can use the **Delete All** command to set up a clone of an existing database. First open the original database, then use **Save As** to save it under a new name (See [“Saving a Database”](#) on page 63). Finally use **Delete All** to empty the new database. The new “cloned” database will contain all of the forms, crosstabs and procedures of the original database, but no data.

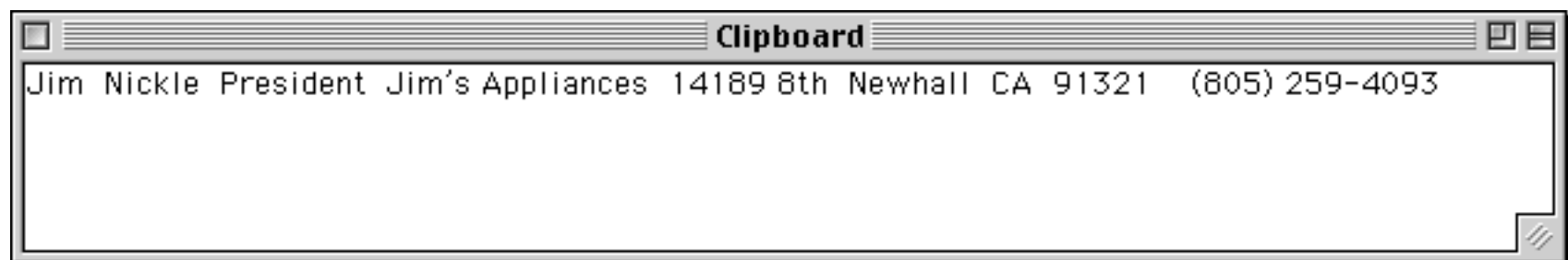
Duplicating a Record

In the data sheet you can easily make one or more copies of a record. Use the **Copy Record** tool to copy the current line into the clipboard, then use the **Paste Record** tool to paste the line back into the database. The **Paste Record** tool inserts a new line just above the current line and then pastes the contents of the clipboard into the new line. You can paste the record back into the database as many times as you like. In this illustration the **Paste Record** tool has already made six copies of the line, and is about to create a seventh.



The Clipboard Window

If you would like to see the contents of the clipboard use the **Show Clipboard** command (Edit Menu) to open the Clipboard window. You can watch the clipboard change each time you cut or copy something. Here's what the clipboard looks like as we are copying the records in the example above.



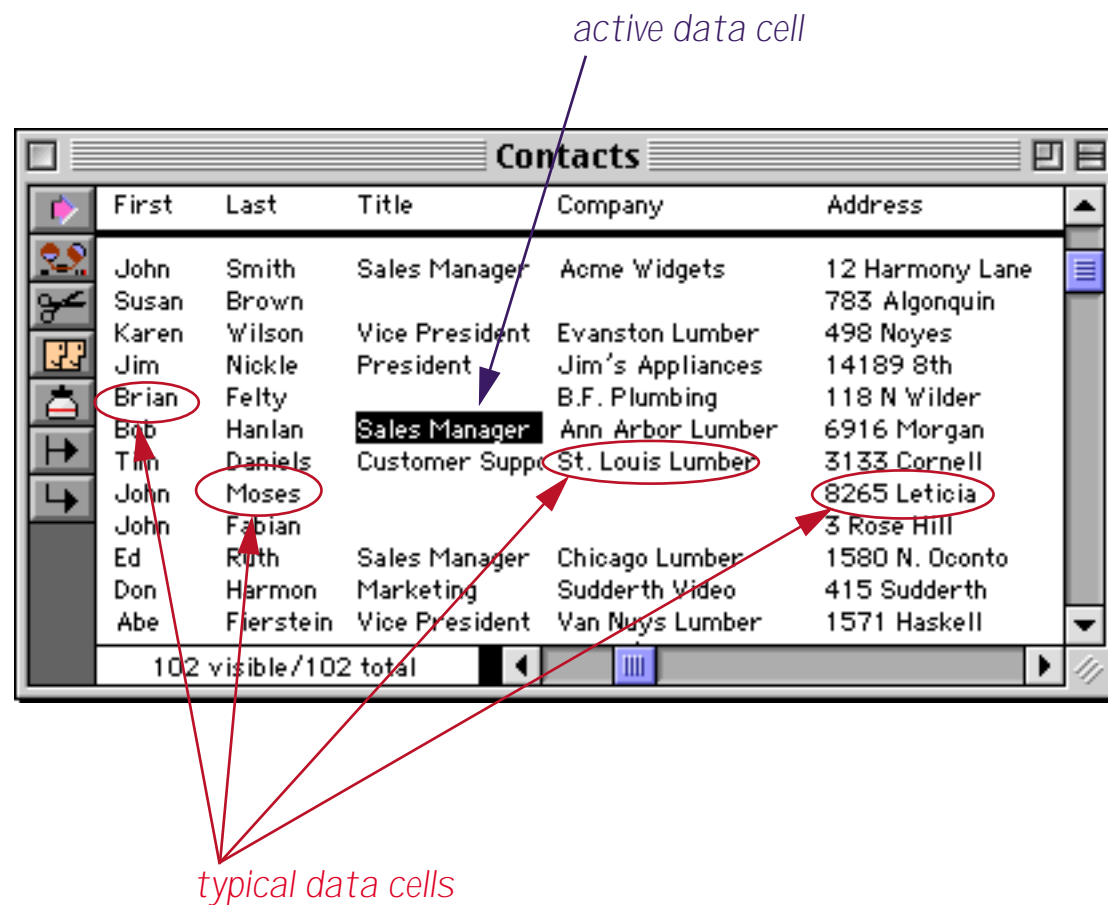
Close the clipboard window when you are finished using it.

Moving a Record

Sometimes you may wish to move a record from one spot to another. You can do this using the data sheet. To move a record use the **Delete** or **Backspace** key or the **Cut Record** tool to remove the line, then use the **Paste Record** tool to insert the line in its new position.

Editing Data Within a Cell

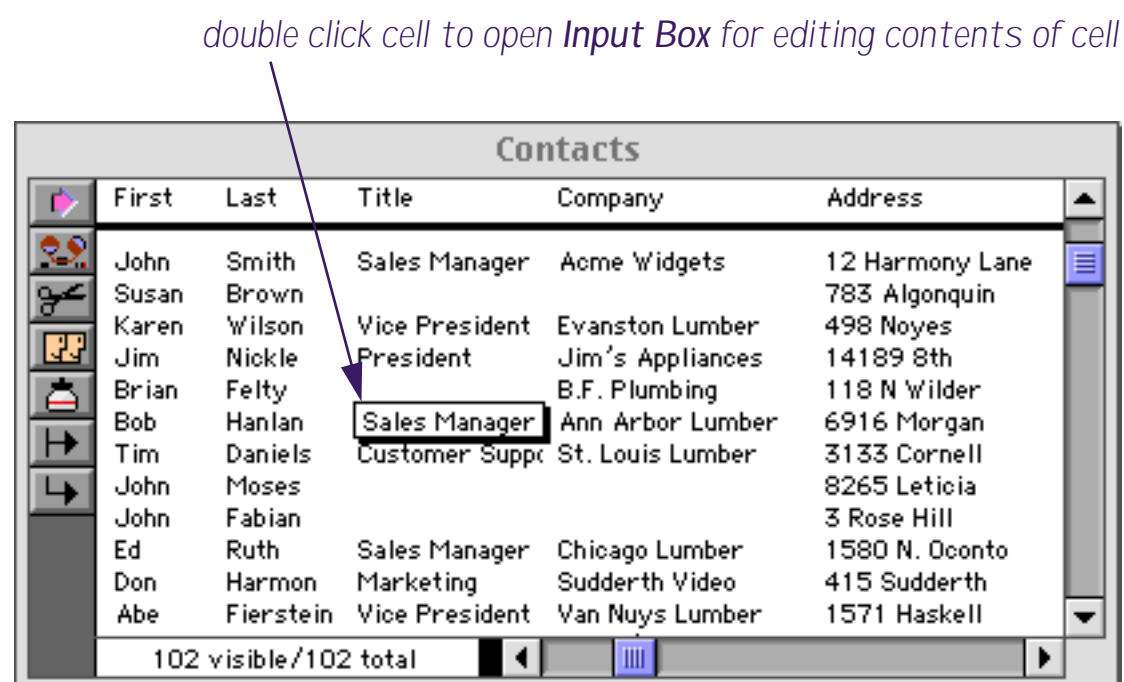
Data cells are the smallest unit of information handled by Panorama. Each data cell contains a single piece of information—a person's name, a phone number, an account balance.



The currently selected cell is called the active cell. Only one cell can be active at a time. You can activate a cell by clicking on it, or by scrolling to it with the scroll bars. You can also move the active cell with the arrow keys.

The Input Box

Every data cell has a pop-up **Input Box** that is used to edit the text within the cell. The Input Box acts like a temporary window that pops up on top of the data cell for data entry and editing.



You can open the Input Box by double clicking on the cell, or by making the cell active and starting to type. Once the Input Box is open, you can edit the text within the cell using the usual mouse editing (word processing) techniques. Specifically, you can click the mouse to select an insertion point, drag the mouse to select a range of characters, cut, copy or paste selected text using the clipboard, or use the keyboard to type characters at the insertion point. (If you are not familiar with these techniques you should review the operating system documentation that came with your computer.)

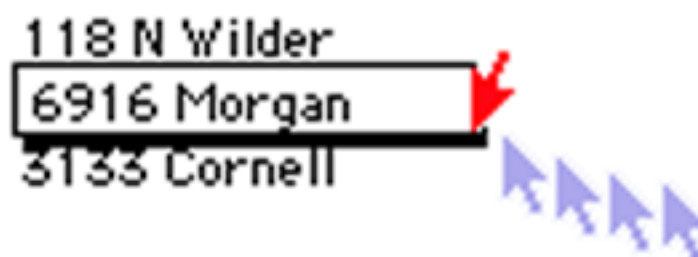
When you have finished editing the text within the cell, press the **Enter** key. This closes the Input Box and updates the data cell with your changes. The Input Box closes automatically (and updates the data) if you click on any other data cell or window. Tip: Clicking anywhere outside of the Input Box is the same as pressing the **Enter** key.

If the Input Box is only one line high pressing the **Return** key will close the Input Box and update the data cell. If the Input Box is more than one line high the **Return** key adds a new line to the data cell (see the next section).

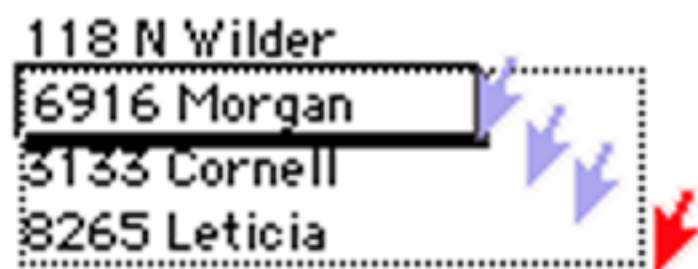
If you would like to close the Input Box without updating the data cell, press **Command-Period** (Mac) or **Control-Period** (Windows). Pressing the **Esc** key also closes the Input Box without updating the data cell. Or you can use the **Undo** command to restore the original text, then press the **Enter** key.

Expanding the Input Box

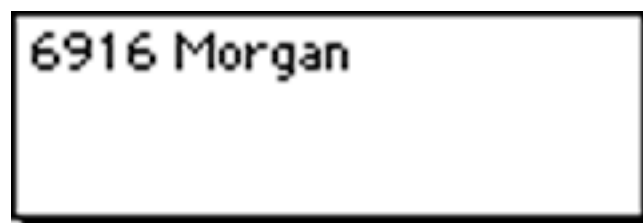
One of the most powerful features of the Input Box is that it can be expanded to accommodate large amounts of data. To expand the Input Box, move the mouse to the lower right corner of the box. When you reach the corner, the arrow will flip over. In the illustration below, you see the normal arrow cursor as you approach the corner. The arrow flips over when it reaches the corner of the Input Box. (The arrow doesn't actually change color as shown here, the color is simply to make the illustration more clear.)



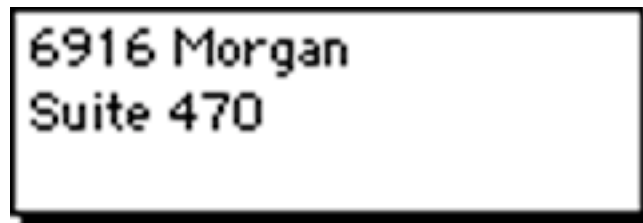
Once you see the upside down arrow, press the mouse and drag the corner of the box to its new location.



When you release the mouse Panorama will change the size of the box.

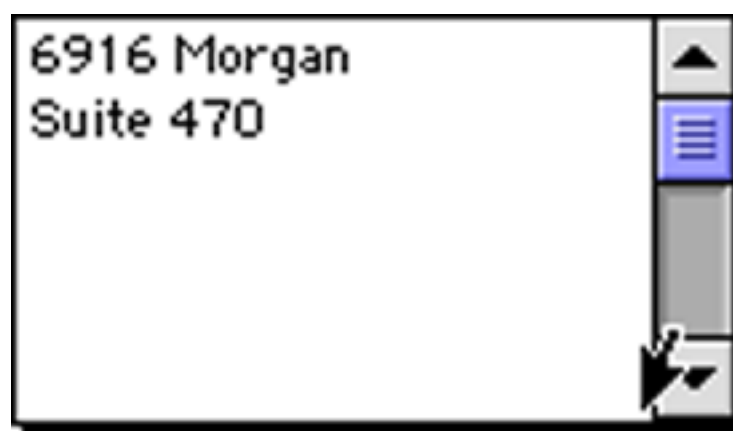


Now you can type additional lines into the Input Box. Press **Return** to start a new line.



Once you change the size of the Input Box, Panorama remembers the size permanently. In the data sheet, the Input Box size is remembered separately for each column, while in a form the size is remembered for each individual data cell object. (Of course Panorama will forget the sizes if you **Close** or **Quit** without saving the database.)

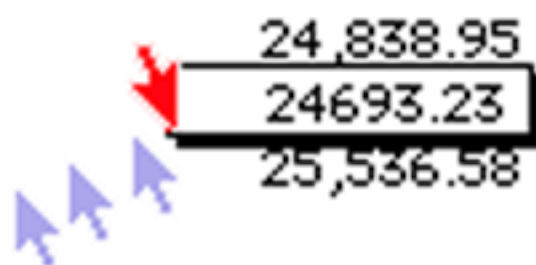
If you make the Input Box more than one inch high, a scroll bar is added on the right hand side of the box. The scroll bar allows you to enter and edit up to 32,767 characters per data cell.



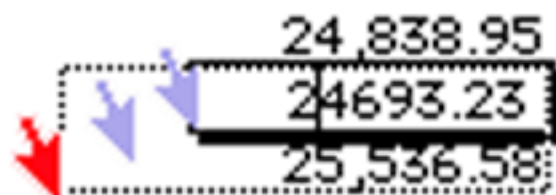
Tip: The scroll bar is actually outside the Input Box. To change the size of the Input Box you must click in the bottom corner of the box itself, just to the left of the scroll bar (as shown above). Do not try to drag the corner of the scroll bar.

Expanding a Right Justified Input Box

If you are editing a right flush data cell, move the mouse to the lower left corner of the box instead of the lower right hand corner.



Once the mouse is over the lower left hand corner you can expand down and/or to the left.



Now you can edit the text in the expanded input Box. Press **Enter** when you are finished.

24693.23

Editing Cells Within a Form

All of the previous examples have shown editing cells within the data sheet. However, a form may contain data cells also. Unlike the data sheet, the cells on a form may be arranged any way you like. They can also be more than one line high.



The screenshot shows a window titled "Contacts:Person". The form contains the following fields and values:

Name	John	Smith
Title	Sales Manager	
Company	Acme Widgets	
Address	12 Harmony Lane Suite 15	
	Huntington Beach	CA 92648
Country		
Phone	(999) 555-1234	
Fax	(999) 555-1248	
Email		
Notes	Customer since 1987	

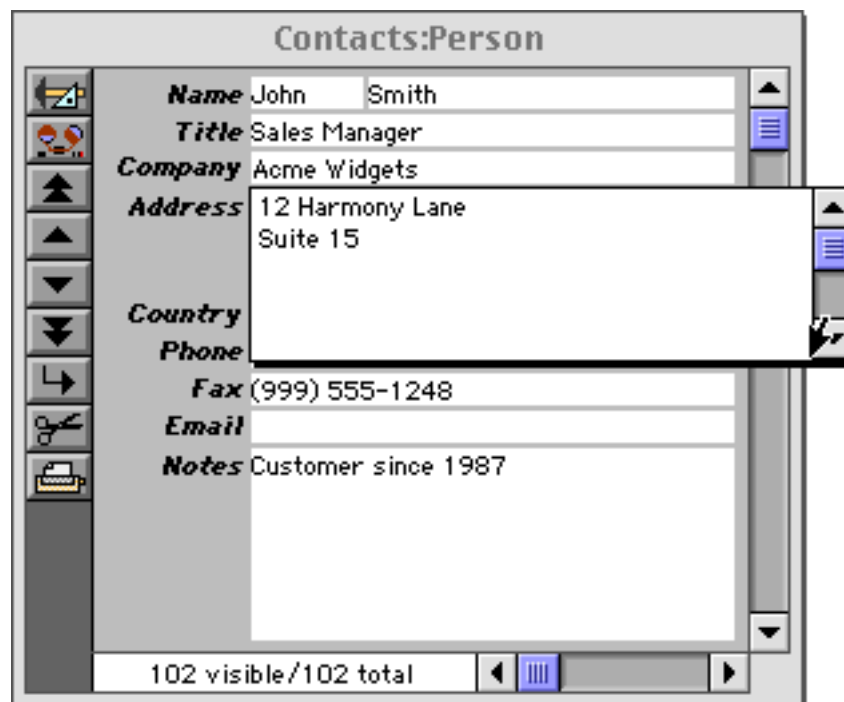
At the bottom of the window, it says "102 visible/102 total".

Just as in the data sheet, you double click on a cell to edit it.



The screenshot shows the same "Contacts:Person" form window. The "Smith" cell in the "Name" field is now selected, and a mouse cursor is pointing at it, indicating it is ready for editing.

You can also move the mouse over the corner of the cell and drag to expand the Input Box.



See “[Working with Data Cell Objects](#)” on page 635 to learn how to create a form with data cells.

As an alternative to data cells, a form may be designed with **Text Editor SuperObjects**. Text Editor SuperObjects allow you to edit text right in the form window—no double click is required. You can simply click or drag on the text to begin editing. Press **Enter** when you are finished. The illustration below shows the effect of double clicking on the word **Harmony**. As you can see, instead of opening an Input Box this selects the word for editing.



Since the Text Editor SuperObject doesn't use an Input Box, you cannot expand the size of the editing area “on-the-fly” the same way you can with data cells. The editing area must be defined in advance. On the other hand, the Text Editor SuperObject doesn't require the extra double click, and works more like other standard applications you may be used to. See “[Text Editor SuperObject](#)” on page 639 to learn how to create a form with Text Editor SuperObjects.

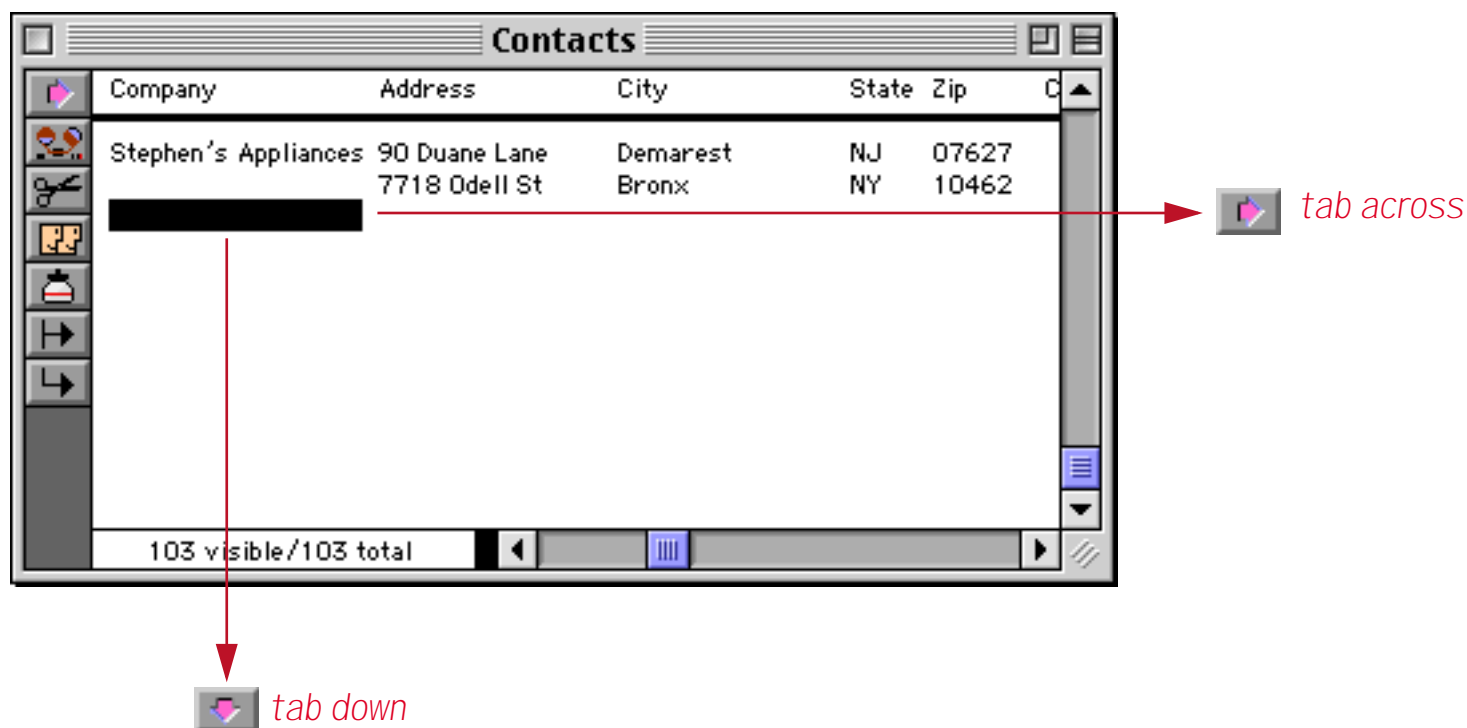
Tabbing from Cell to Cell

To make it easier to enter several cells in a row, Panorama allows you to use the **Tab** key to move from cell to cell as you enter data. In the data sheet you normally move from left to right, in a form from top to bottom. If you want to move backwards press **Shift-Tab**.

Tab Down

In the data sheet the **Tab** key normally moves from left to right. Sometimes it may be more convenient to key a column from top to bottom instead of across a row from left to right. For instance, you may find it easier to key in a dozen names, then a dozen addresses, then a dozen cities, instead of keying in each record separately.

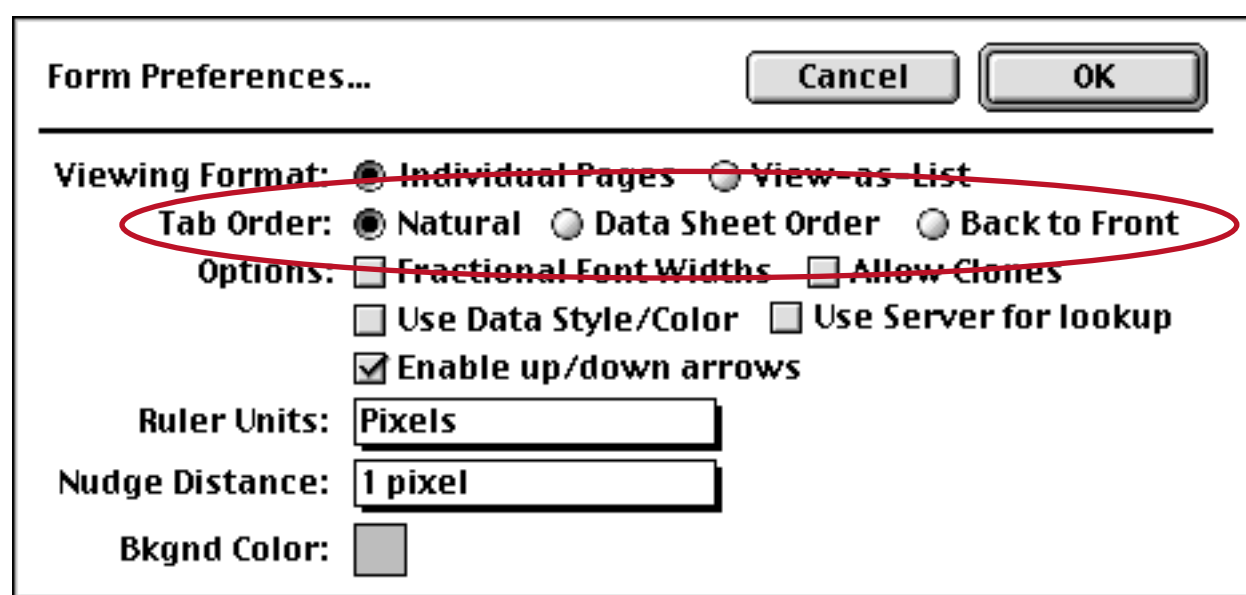
Click on the **Tab Down** tool to change the tab direction from across to down. Click the tool again to change back to normal tab operation. Panorama indicates that tab down is active by changing the arrow direction in the **Tab Down** tool.



Tab down can also be used in forms when the view-as-list option is enabled. See “[View-As-List Forms](#)” on page 899 for more information on the view-as-list option.

Tab Order in Forms

Panorama has three tab order options for forms—**data sheet order**, **back to front order**, and **natural order**. Use the **Form Preferences** command (Setup Menu) to specify the tab order option you want to use. (The form must be in graphic design mode. See “[Form Modes: Data Access vs. Graphic Design](#)” on page 485 if you are not already familiar with using graphic design mode.)

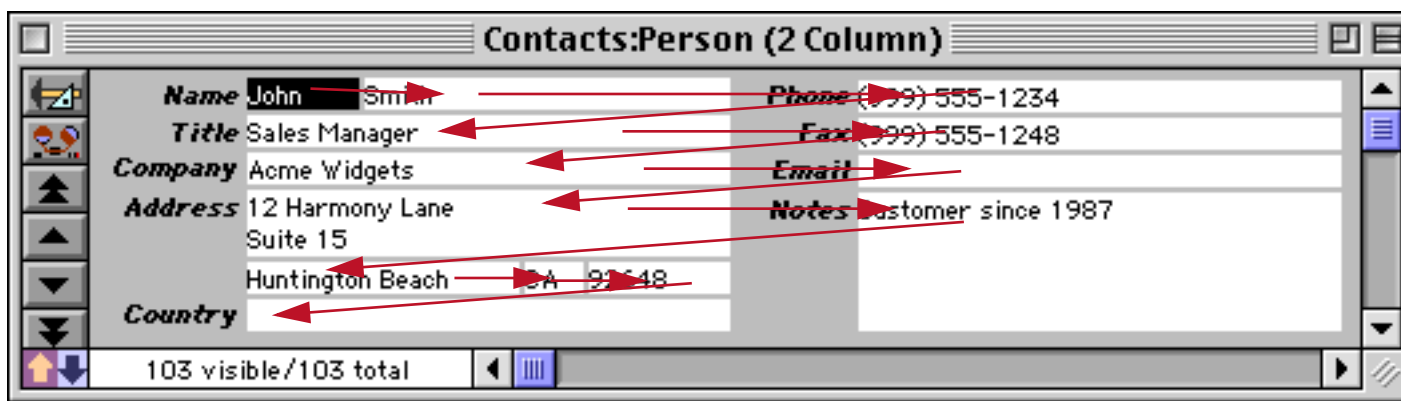


Data sheet order is exactly that—the **Tab** key moves from cell to cell in the same order as it would in the data sheet. However, data sheet order will not work if your form contains one or more variables in addition to fields to be edited (See “[Text Editor Options](#)” on page 643).

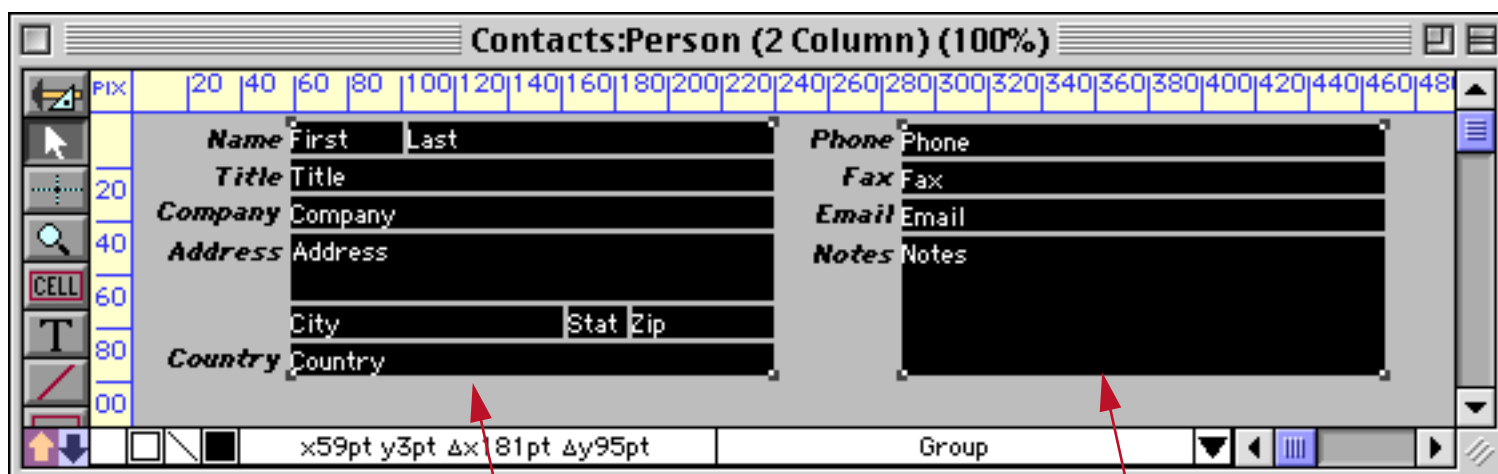
Natural order causes the **Tab** key to move from left to right, then from top to bottom.



This usually works well (and is the default option), but in some cases isn't really what you want. This is especially true in forms with side by side columns of data.



To fix this you can alter the natural order by grouping data cells together—the **Tab** key will move through all the cells in the group of objects (in natural order) before it moves to the next cell. In this case the data cells need to be brought together into two groups using the **Group** command (see “[Grouping Objects Together](#)” on page 536 for more information on grouping graphic objects.)



group 1

group 2

Now that the cells have been grouped together the tab order will tab through all of the cells in the left hand column before moving to the right hand column.

Back to Front order gives you the most control, but also takes the most work to set up. When this option is enabled the tab order depends on the back to front layering of the data cell objects in the graphic design mode. Use **Send to Back** to bring a data cell to the start of the tab order, and **Bring to Front** to send it to the end of the tab order. See “[Changing the Stacking Order](#)” on page 569 for more information on these commands.

For example, suppose your form contained three fields A, B, and C and you wanted to tab from field to field in the order B > A > C. To set up this order click on field B and use **Bring to Front** (the form must be in graphic design mode). Then click on field A and use **Bring to Front**. Finally click on field C and use **Bring to Front**.

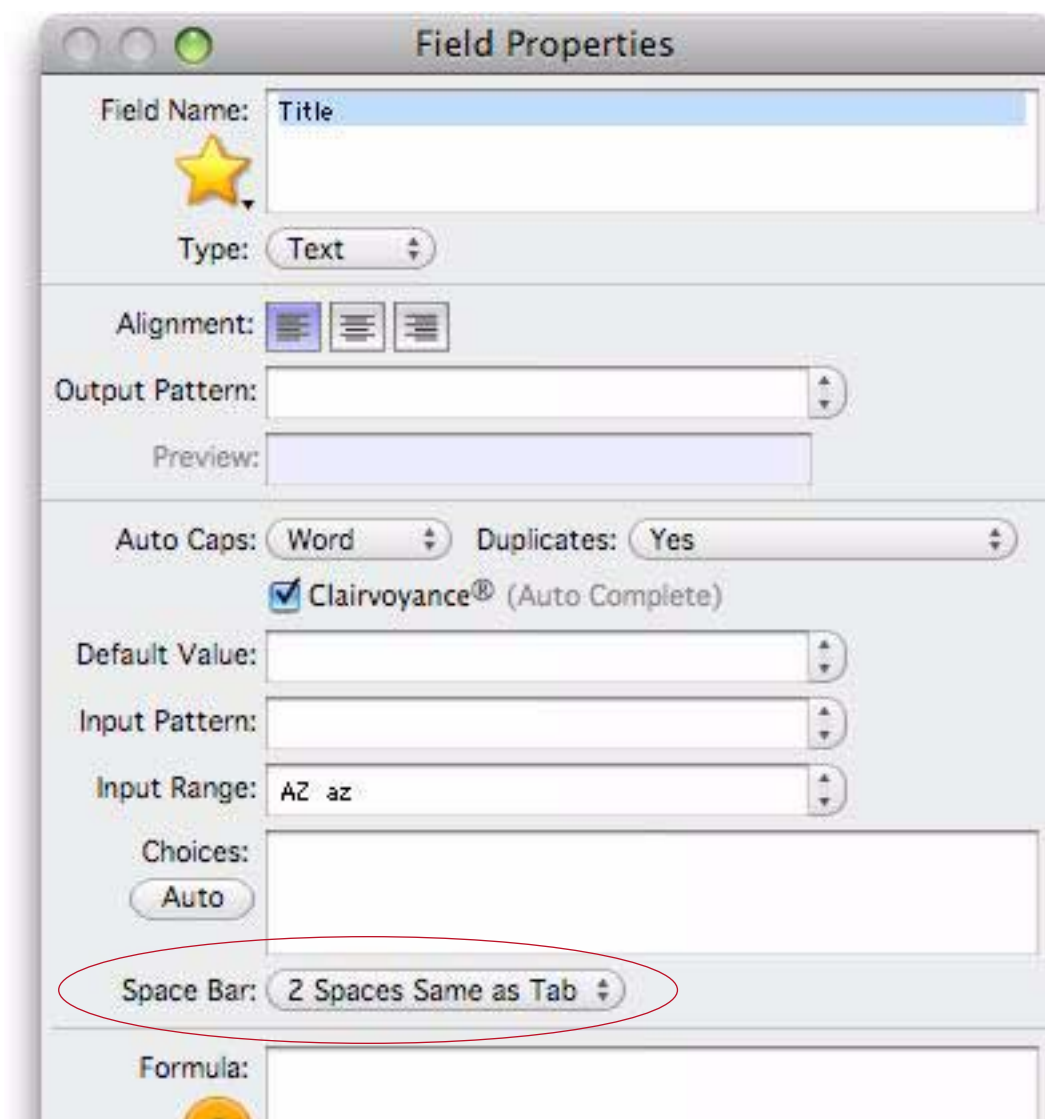
Tabbing with the Space Bar

Using the **Tab** key is a great timesaver when entering lots of data, but it sure is tough on your left pinky. You can use Panorama’s **Space Bar Tab** option to give your pinky a rest. When you are using this option, pressing the **Space Bar** once or twice tells Panorama to skip to the next cell, just like the **Tab** key.

The **Space Bar Tab** option can be configured separately for each field in the database. If a field never contains a space (for example state, zip code, or price) you can use the **1 Space** option. This option makes pressing the **Space Bar** skip to the next cell.

If a field sometimes contains blanks (for example name, address, or description) you can use the **2 Space** option. When this option is active, you can press the **Space Bar** twice in a row to skip to the next cell. (This option does not usually work well with Clairvoyance.)

To set up the **Space Bar Tab** option, use the Field Properties Data Entry Options sub-dialog (open the Field Properties dialog and press the **Data Entry** button).



You can also set up the **Space Bar Tab** option with the **Tabs** column in the design sheet. (See "[The Design Sheet](#)" on page 212 if you are not familiar with the design sheet.)

	Field Name	Type	Dir	Align	Out	Inp	Range	Choi	Link	Clair	Tabs	Cap	Dup
	First	Text	0	Left			Any			Off	1 Space	Wor	Yes
	Last	Text	0	Left			Any			Off	1 Space	Wor	Yes
	Title	Text	0	Left			Any			On	2 Space	Wor	Yes
	Company	Text	0	Left			Any			Off	2 Space	Wor	Yes
	Address	Text	0	Left			Any			Off	2 Space	Wor	Yes
	City	Text	0	Left			Any			Off	2 Space	Wor	Yes
	State	Text	0	Left			Any			Off	2 Space	Wor	Yes
	Zip	Text	0	Left			Any			Off	2 Space	Wor	Yes
	Country	Text	0	Left			Any			Off	2 Space	All	Yes
	Phone	Text	0	Left	(_		Any			Off	Off	Off	Yes
	Fax	Text	0	Left	(_		Any			Off	Off	Off	Yes
	Email	Text	0	Left			Any			Off	Off	Off	Yes

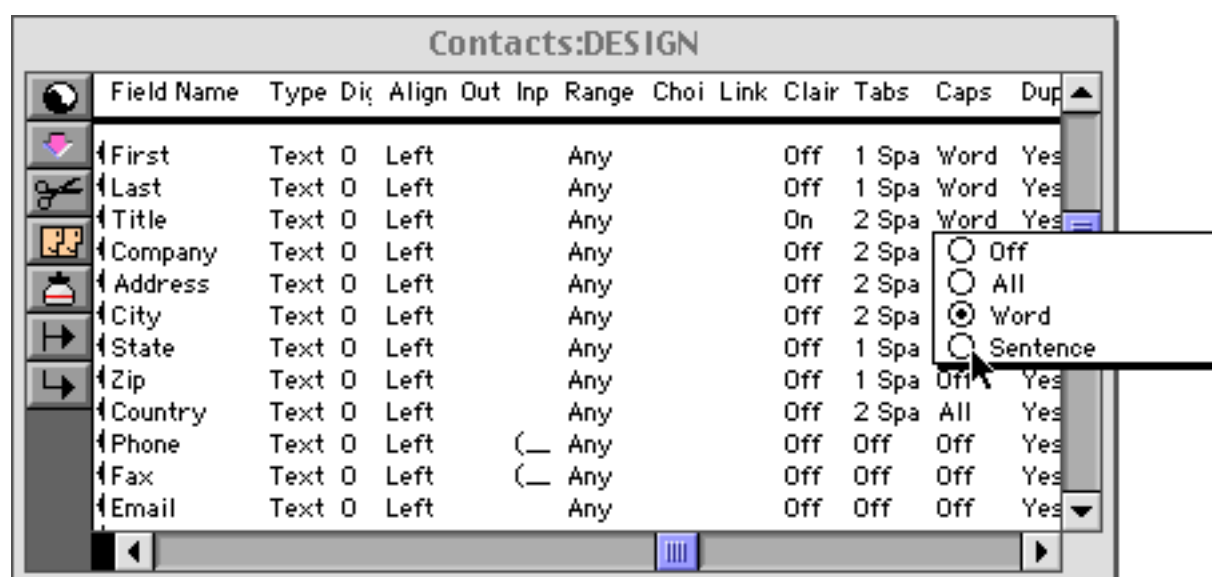
The **Space Bar Tab** option may not sound very exciting on paper. You may wonder if it is worth the bother. This option really does make it easier to enter lots of data without cramping your fingers, especially the left pinky. Give it a shot!

Data Entry Accelerators

Data entry is probably the most tedious task you'll face while using your computer. Let's face it, no one enjoys keying in data. The best way is to get someone else to do it! But since that usually isn't possible, Panorama includes a number of features that help accelerate data entry. You don't have to use any of these features, but when you do, you'll find that ugly data entry tasks are finished faster and more accurately.

Automatic Capitalization

Panorama has four options for automatic capitalization: **off**, **all**, **word**, and **sentence**. You can set up automatic capitalization with the **Field Properties** dialog or with the **Caps** column in the design sheet.



The **All** option tells Panorama to capitalize every letter entered into the field. Use this option for fields containing abbreviations—CA, NY, etc.

The **Word** option tells Panorama to capitalize the first letter of each word. Use this option for fields containing names, addresses, etc.

Sometimes you may need to override Panorama's automatic word capitalization. If you need an extra capital letter simply press the **Shift** key (for instance **McDonald**). If you want the first letter of a word to be lower case type the letter twice (**Bank Oof America**), then delete the upper case letter (**Bank of America**).

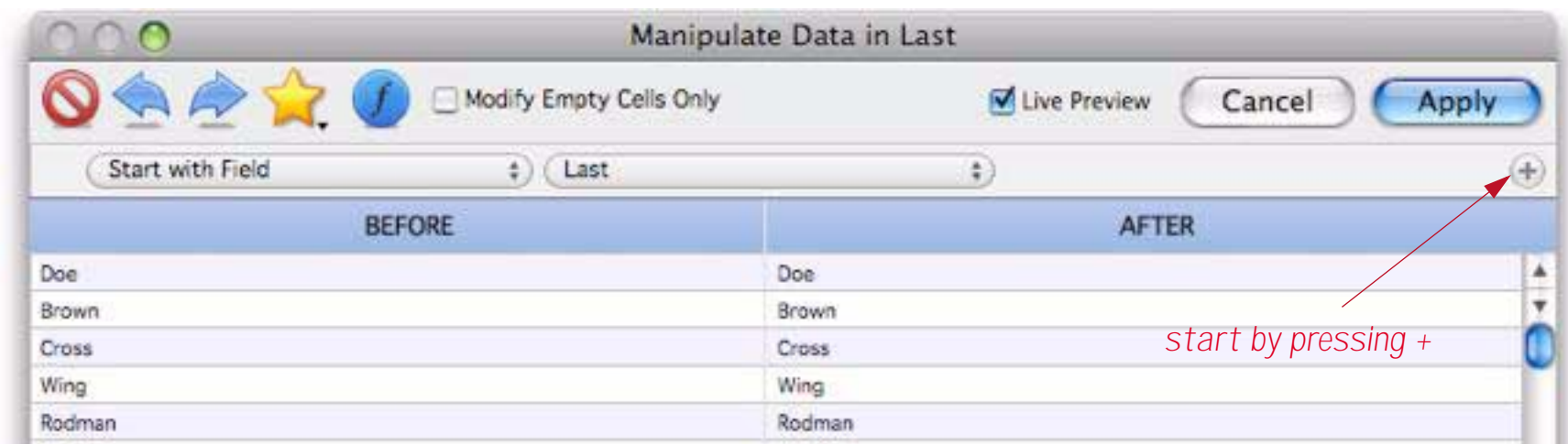
The **Sentence** option tells Panorama to capitalize the first letter of each sentence. Use this option for fields containing paragraphs of text—for instance catalog descriptions or correspondence.

Changing Capitalization of Existing Data

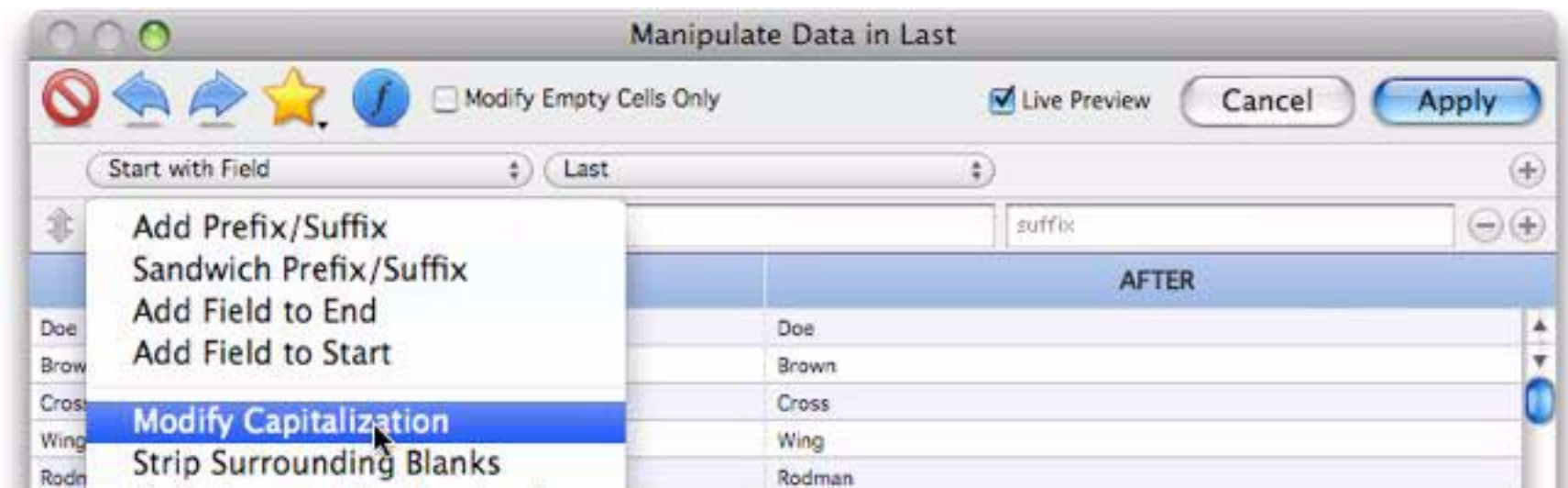
Automatic capitalization only applies to new data as it is typed into the database. It does not change data that has already been entered. It also does not automatically capitalize imported data or data pasted into the database. If you want to change the capitalization of existing data, you must use the **Manipulate Data** dialog. This is best explained with an example. Suppose you wanted to convert the last names in the database below to all upper case. Start by clicking anywhere in the **Last** column.



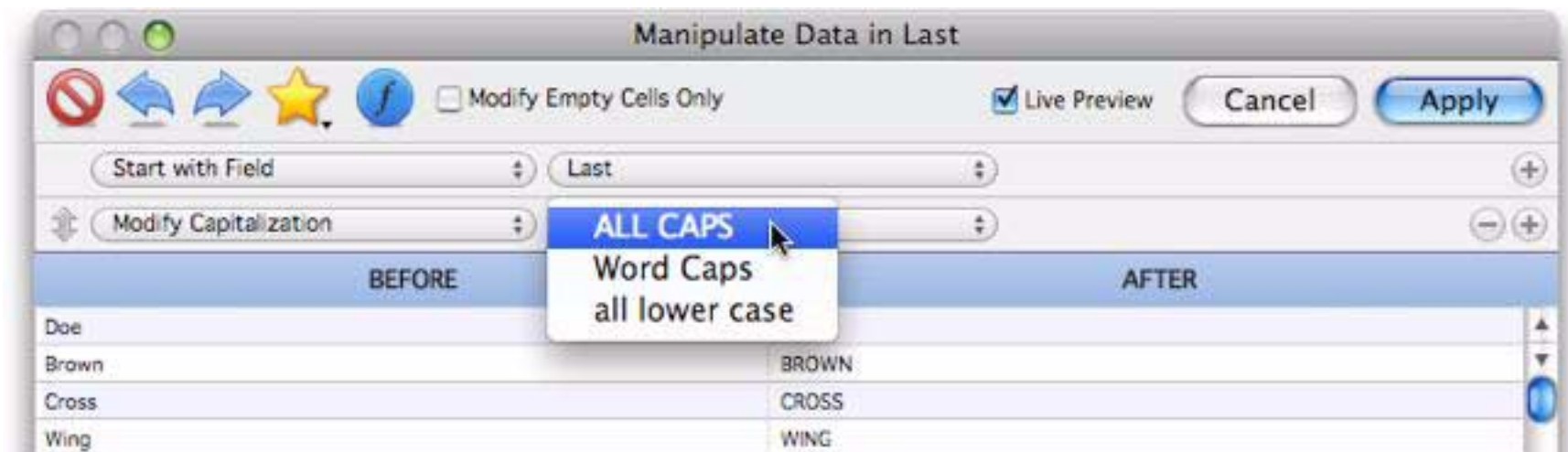
Now choose **Manipulate Data in Field** from the **Fields** Menu.



Click the **+** button (on the right) to add another row to the dialog, then choose **Modify Capitalization** from the pop-up menu.



Now choose the type of capitalization you want.



When you press the **Apply** button, the field will be converted to all upper case.

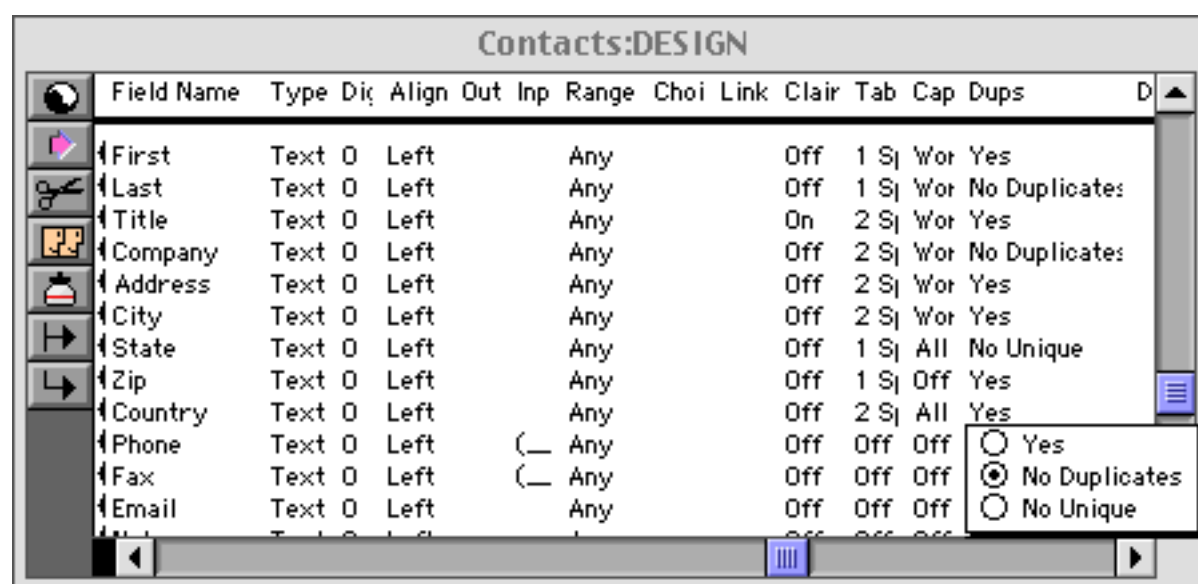


See “[The Manipulate Data Dialog](#)” on page 434 for further details about the Manipulate Data in Field dialog.

Checking for Duplicate Data

Panorama usually does not care if you enter duplicate information into a database. However, if you wish you can ask Panorama to check for duplicate data every time you enter or edit a data cell in a given field.

Panorama has three options for checking duplicate data—**Yes**, **No Duplicates** and **No Unique**. You can set up duplicate checking with the **Field Properties** dialog or with the **Dups** column in the design sheet.



The **Yes** option simply tells Panorama to allow duplicates. This is the default.

Use the **No Duplicates** option to make sure that a value is not entered more than once. For instance, a check-book database should never have duplicate check numbers.

The **No Unique** option tells Panorama to warn you if you attempt to enter a value that is not already in the database. For instance if a field contains only **Yes/No** values, this option would warn you if you attempted to enter **True** or **False**.

When Panorama encounters a duplicate or unique value (depending on the option), it warns you. However, it does not prevent you from entering the value. You are given the option of entering the data even though it conflicts with the existing data—it's up to you.



Checking for Duplicates in Existing Data

Checking for duplicates only happens when new data is typed into the database. Panorama does not check data that has already been entered, and it does not check data that is imported or pasted into the database.

There are several techniques for checking for duplicates in existing data. See “[Select Duplicates](#)” on page 362 to learn how to use the **Select Duplicates** command. Another method is to sort the data and then use the **UnPropagate** command to identify the duplicates (by searching for blank cells). See “[Using UnPropagate to Eliminate Duplicates](#)” on page 470 for details on the **UnPropagate** command and this technique.

Clairvoyance®

Many databases contain fields where the same information is repeated over and over. For instance, a check-book will contain the same bills month after month—rent, phone, utilities, charge cards. Another example is an inventory database that contains many items from each vendor, with the vendor name repeated over and over. Panorama’s Clairvoyance feature anticipates when you are about to enter data that has been entered before, and completes the entry for you. This can save you a lot of typing, and helps improve consistency as well.

How Clairvoyance® Works

How can Panorama anticipate what you are about to type? The secret lies in Panorama’s ability to scan the database in a fraction of a second. When you are using Clairvoyance, Panorama scans the entire database each time you enter a character. As it scans the database, it checks the characters you have typed against the data already in the database. When there is only one possible match, Clairvoyance guesses that you are about to repeat yourself and completes the word or phrase for you.

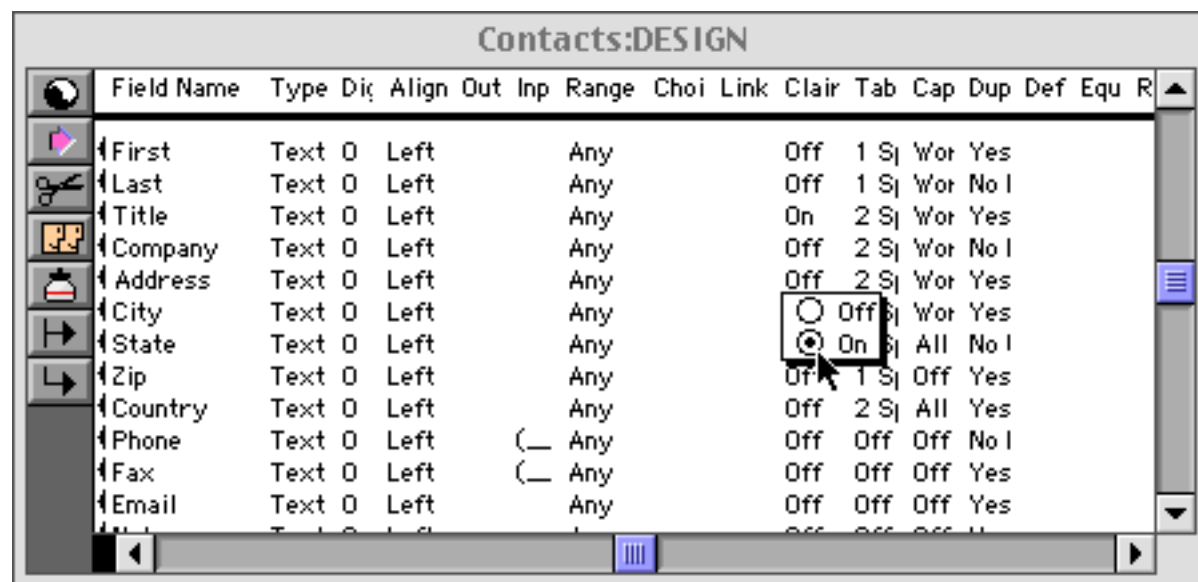
type	n	<input type="text" value="N"/>
	e	<input type="text" value="Ne"/>
	w	<input type="text" value="New"/>
	p	<input type="text" value="Newport Beach"/>

Of course, Clairvoyance can only be helpful when you are repeating a word or phrase that is already in the database. If you are entering a new word or phrase, Clairvoyance cannot help you—but it won't get in your way, either. As you type in a new word or phrase Clairvoyance may guess that you are entering an old word or phrase. Just keep typing, and Clairvoyance will automatically erase its guess when it no longer matches what you have typed.

type n [N]
 e [Ne]
 w [New]
 p [Newport Beach]
 o [Newport Beach]
 r [Newport Beach]
 t [Newport Beach]
 space [Newport Beach]
 n [Newport N]
 e [Newport Ne]
 w [Newport New]
 s [Newport News]

Turning Clairvoyance® On or Off

Clairvoyance can be turned on or off with the **Field Properties** dialog box (Fields Menu) or with the **Clairvoyance** column in the design sheet.



Clairvoyance® Helps Insure Data Consistency

One problem when building large databases is making sure that information always gets entered the same way, especially when more than one person is keying in the data. For example, a single company could be entered in your inventory database many ways—

Fuji
 Fuji, Inc
 Fuji USA
 Fuji Photo, Inc
 Fuji Photo Film USA
 Fuji USA, Inc.

Clairvoyance helps solve this problem by accurately repeating the information time after time. You may find that Clairvoyance's ability to insure data consistency is more important than the keystroke savings.

Using Clairvoyance® With Dates

We do not recommend using Clairvoyance with date fields. Although Clairvoyance will work with dates, it is not very useful since dates only contain up to six characters anyway. Using Clairvoyance with a date field can be annoying, because scanning a date field takes much longer than for regular text fields. This can make the data entry seem somewhat sluggish.

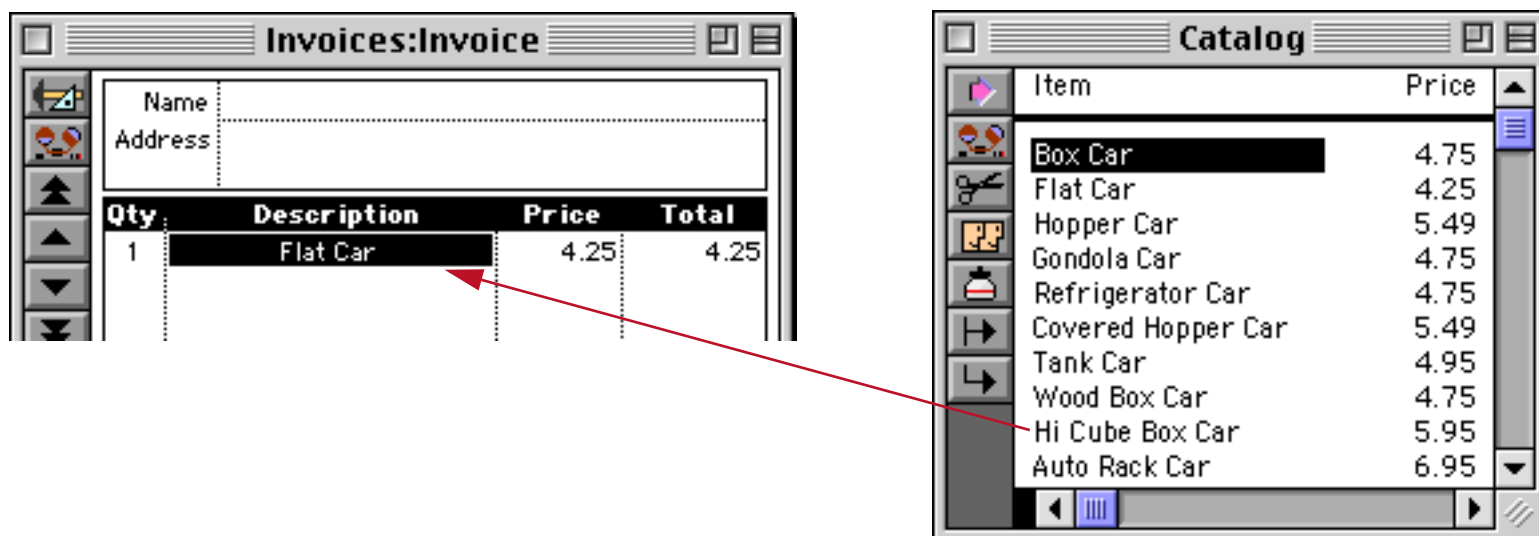
Clairvoyance® Across Multiple Files

Clairvoyance normally works only with the data you have already typed into the current database. But if you have already typed this information into another database, you can specify that Clairvoyance should be linked to that database instead of the current one. For example, you could link an invoice with your price list, allowing you to type in only a few letters to bring up a product description. This is called linking clairvoyance to another field.

There are two reasons for linking clairvoyance to another field. Clairvoyance cannot anticipate values until they have been typed in at least once. If all the possible values have already been entered into another database, Clairvoyance can start working immediately by looking into the other database.

Another advantage is speed. If your price list contains 200 records and your invoice database contains 2000 records, Clairvoyance can scan the price list 10 times faster. As your database gets larger, this speed difference may become noticeable.

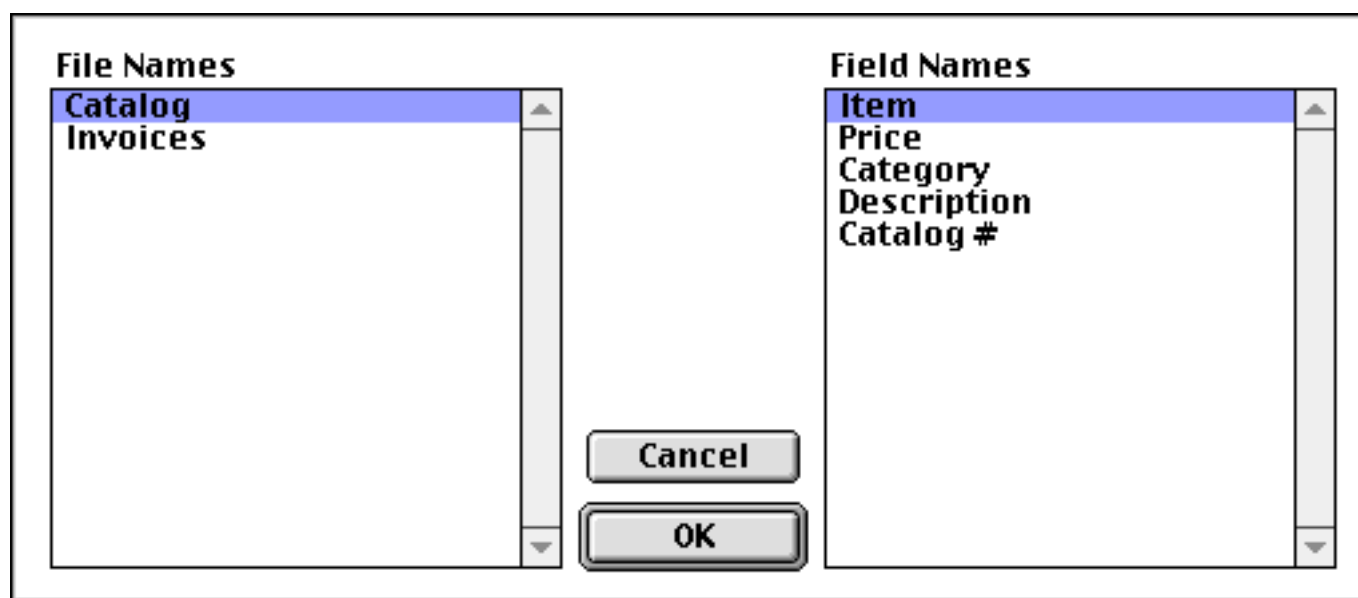
To illustrate setting up a clairvoyance link to another field we'll use the invoice and catalog databases shown below. We'll link the **Item** field in the **Catalog** database to the **Description** field in the **Invoices** database.



To set up the link open the **Invoices** design sheet. Click on the name of the field you want to set up, in this case **Description1**.

Field Name	Type	Di	Align	Out	Inp	Range	Choi	Link	Clair	Ta
Name	Text 0		Left			Any			On	2 9
Address	Text 0		Left			Any			Off	2 9
City	Text 0		Left			Any			On	2 9
State	Text 0		Left			Alphat			Off	1 9
Zip	Text 0		Left			Numer			Off	1 9
Payment Method	Text 0		Left			Any			Off	Off
Credit Card	Text 0		Left			Any			Off	Off
Payment Number	Text 0		Left			Any			Off	Off
Expiration	Text 0		Left			Any			Off	Off
Authorization	Text 0		Left			Any			Off	Off
Quantity1	Num 0		Right			Numer			Off	1 9
Description1	Text 0		Left			Any			On	2 9
Price1	Num 2		Right			Any			Off	1 9
Total1	Num 2		Right			Any			Off	1 9

Once the field is selected choose **Set Up Link** from the Special menu, which opens the dialog shown below. On the left hand side of the dialog is a list of open databases. Select the database containing the field you want to link to, in this case **Catalog**. Once the database is selected a list of fields in that database appears on the right. Select the field you want to link to, in this case **Item**.



Once the database and field are selected press **OK** to enter the link into the design sheet. You can see the new link definition in the **Link** column.

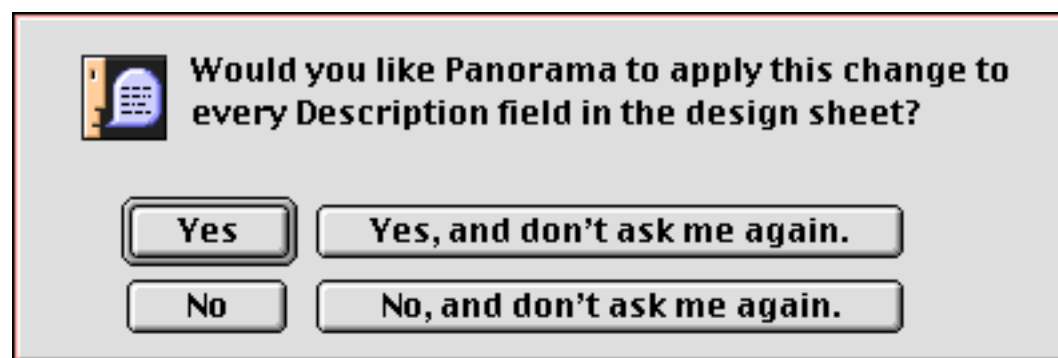
Field Name	Type	Di	Align	Out	Inp	Range	Choi	Link	Clair	Ta
Name	Text	0	Left			Any			On	2 9
Address	Text	0	Left			Any			Off	2 9
City	Text	0	Left			Any			On	2 9
State	Text	0	Left			Alphat			Off	1 9
Zip	Text	0	Left			Numer			Off	1 9
Payment Method	Text	0	Left			Any			Off	Off
Credit Card	Text	0	Left			Any			Off	Off
Payment Number	Text	0	Left			Any			Off	Off
Expiration	Text	0	Left			Any			Off	Off
Authorization	Text	0	Left			Any			Off	Off
Quantity1	Num	0	Right			Numer			Off	1 9
Description1	Text	0	Left			Any		Catalog:Item	On	2 9
Price1	Num	2	Right			Any			Off	1 9
Total1	Num	2	Right			Any			Off	1 9
Quantity2	Num	0	Right			Numer			Off	1 9
Description2	Text	0	Left			Any			On	2 9
Price2	Num	2	Right			Any			Off	1 9
Total2	Num	2	Right			Any			Off	1 9

As you can see the link definition is simply the name of the database followed by a colon (:) followed by the field name. You can type in a link definition manually if you want instead of using the **Set Up Link** dialog.

In this example **Description1** is a line item field (see “[Repeating Fields \(Line Items\)](#)” on page 222) you will probably want to set up the same link for all of the other line items (**Description2**, **Description3**, etc.). The easy way to do this is to simply double click on the **Link** cell, like this.

Authorization	Text	0	Left			Any			Off	Off
Quantity1	Num	0	Right			Numer			Off	1 9
Description1	Text	0	Left			Any		Catalog:Item	On	2 9
Price1	Num	2	Right			Any			Off	1 9
Total1	Num	2	Right			Any			Off	1 9

When you press **Enter** Panorama will ask you if you want to copy this data to all of the other line items (see “[Modifying Line Item Fields](#)” on page 225).



Press **Yes** and Panorama will make the changes.

Field Name	Type	Di	Align	Out	Inp	Range	Choi	Link	Clair	Ta
Description1	Text	0	Left			Any		Catalog:Item	On	29
Price1	Num	2	Right			Any			Off	19
Total1	Num	2	Right			Any			Off	19
Quantity2	Num	0	Right			Number			Off	19
Description2	Text	0	Left			Any		Catalog:Item	On	29
Price2	Num	2	Right			Any			Off	19
Total2	Num	2	Right			Any			Off	19
Quantity3	Num	0	Right			Number			Off	19
Description3	Text	0	Left			Any		Catalog:Item	On	29
Price3	Num	2	Right			Any			Off	19
Total3	Num	2	Right			Any			Off	19
Quantity4	Num	0	Right			Number			Off	19
Description4	Text	0	Left			Any		Catalog:Item	On	29
Price4	Num	2	Right			Any			Off	19
Total4	Num	2	Right			Any			Off	19
Quantity5	Num	0	Right			Number			Off	19
Description5	Text	0	Left			Any		Catalog:Item	On	29
Price5	Num	2	Right			Any			Off	19

Like all other design sheet options, the link does not actually take effect until you tell Panorama to create a new generation (see “[Database “Generations”](#)” on page 212).

When you are editing data within a field that has a clairvoyance link set up, Clairvoyance checks the characters you type against the data in the second database. When it finds a possible match, it enters the rest of the value for you.

The image shows two windows. On the left is the 'Invoices:Invoice' window with a table:

Qty	Description	Price	Total
1	Flat Car	4.25	4.25
3	Hopper Car		

On the right is the 'Catalog' window showing a list of items and their prices:

Item	Price
Box Car	4.75
Flat Car	4.25
Hopper Car	5.49
Gondola Car	4.75
Refrigerator Car	4.75
Covered Hopper Car	5.49
Tank Car	4.95
Wood Box Car	4.75
Hi Cube Box Car	5.95
Auto Rack Car	6.95

A red arrow points from the 'Hopper Car' entry in the 'Invoices:Invoice' table to the 'Hopper Car' entry in the 'Catalog' list, which is circled in red.

In this example Clairvoyance has been linked to a field in another database. However you can also link Clairvoyance to a field in the same database.

Clairrows

When you hold down the **Command** key (Mac) or **Control** key (Windows), the up and down arrows on the keyboard become clairvoyant arrows, or “**clairrows**.” With the key held down you can use the arrows to scan through the values that are already in the database. Each time you press **Command/Control-Down Arrow** the next value appears, while each time you press **Command/Control-Up Arrow** the previous value appears. You can scan through the values until you find the information you are looking for, then press the **Enter** key to enter the value.

To give the clairrows a head start you can type in the first few letters of the information you are looking for. For example, suppose that you are looking through a travel database for a particular Best Western Hotel. Start by typing **Best**, then press **Command/Control-Down Arrow**. The first hotel with a name beginning with **Best** will appear. Each time you press **Command/Control-Down Arrow** the name of next hotel (alphabetically) will appear—for example **Best Western Aspenalt Lodge**, **Best Western Bar X Motel**, **Best Western Boulder Inn**, etc. Press **Command/Control-Up Arrow** to move backwards through the hotel names. Continue until the hotel you are looking for appears, then press **Enter**.

	type b	B
	e	Be
	s	Bes
	t	Best
Cmd/Ctl-Down Arrow		Best Western Aspenalt Lodge
Cmd/Ctl-Down Arrow		Best Western Bar X Motel
Cmd/Ctl-Down Arrow		Best Western Boulder Inn
Cmd/Ctl-Down Arrow		Best Western Caravan Motel
Cmd/Ctl-Up Arrow		Best Western Boulder Inn
Enter		Best Western Boulder Inn

This technique also works when Clairvoyance has been linked to a field in another database (see “[Clairvoyance® Across Multiple Files](#)” on page 286).

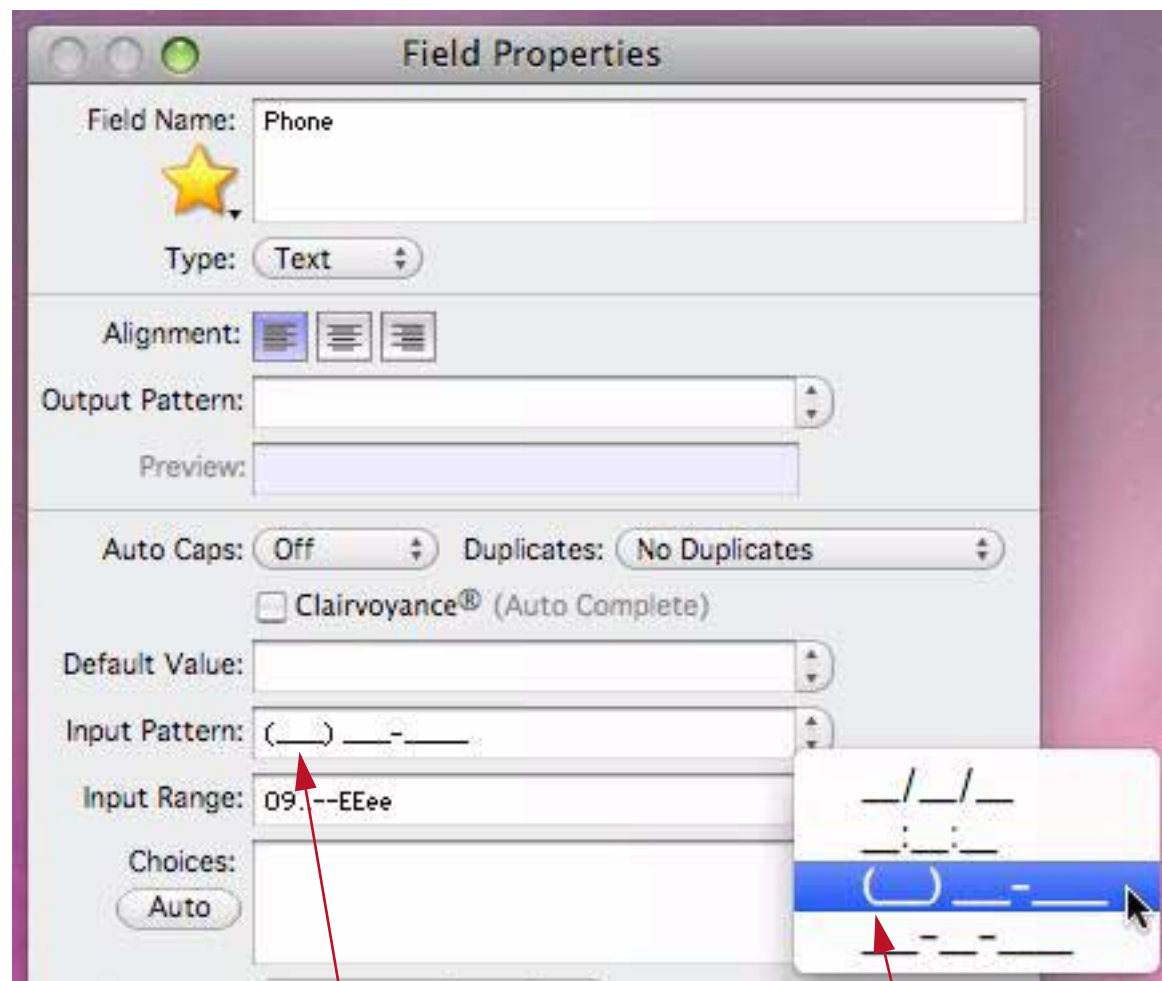
Input Patterns

Sometimes you may wish to force the data being entered into a specific pattern. For instance in the United States and Canada long distance phone numbers almost always use the pattern (999) 999-9999. Panorama's **Input Pattern** can take care of entering the pattern for you. Once the pattern is set up, you only type the actual data (in this case the digits of the phone number). Panorama combines the data you enter with the pattern to produce the actual data. For example, combining the input pattern (_ _ _) _ _ _ - _ _ _ _ with **3124562468** produces the data **(312) 456-2468**.

An input pattern consists of a string of characters with an underscore in each spot where actual data will be entered. The input pattern is just like fill in the blanks, but instead of filling in the blanks you fill in the underscores. (Press Shift-Dash to enter the underscore character. The dash key is in the top row of the keyboard, just to the right of the 0 key.) The table below lists some common input patterns.

Type of Data	Input Pattern	Example
Phone Number	(_ _ _) _ _ _ - _ _ _ _	(312) 456-2469
Social Security Number	_ _ _ - _ _ - _ _ _ _	234-54-5476
License Plate	_ _ _ _ _ _ _ _	AGB 287
Date	_ _ / _ _ / _ _	03/24/05
Time	_ _ : _ _ : _ _ _ _	11:24:36 PM

You can set up the input pattern with the Field Properties dialog.



Choose from a pop-up menu of common input patterns, or...

type the input pattern into the box

You can also set up the pattern with the **Input Pattern** column of the design sheet. (See “[The Design Sheet](#)” on page 212 if you are not already familiar with using the design sheet.)

Field Name	Type	Dig	Align	Out	Input Pattern	Range	Choi	Link	Clair	Tab	Cap
First	Text	0	Left			Any		Off	1	Sj	Wor
Last	Text	0	Left			Any		Off	1	Sj	Wor
Title	Text	0	Left			Any		On	2	Sj	Wor
Company	Text	0	Left			Any		Off	2	Sj	Wor
Address	Text	0	Left			Any		Off	2	Sj	Wor
City	Text	0	Left			Any		On	2	Sj	Wor
State	Text	0	Left			Any		Off	1	Sj	All
Zip	Text	0	Left			Any		Off	1	Sj	Off
Country	Text	0	Left			Any		Off	2	Sj	All
Phone	Text	0	Left		() - - - -	Any		Off	Off	Off	
Fax	Text	0	Left		() - - - -	Any		Off	Off	Off	
Email	Text	0	Left			Any		Off	Off	Off	

Tip: Input patterns should not be used with numeric fields. If you want to add a pattern to a numeric value, you should use an output pattern (See “[Numeric Output Patterns](#)” on page 250).

Entering Data with an Input Pattern

This illustration shows an example of entering a phone number with an input pattern.

type 3	<input type="text" value="(3"/>
1	<input type="text" value="(31"/>
2	<input type="text" value="(312"/>
4	<input type="text" value="(312) 4"/>
5	<input type="text" value="(312) 45"/>
6	<input type="text" value="(312) 456-"/>
2	<input type="text" value="(312) 456-2"/>
4	<input type="text" value="(312) 456-24"/>
6	<input type="text" value="(312) 456-246"/>
8	<input type="text" value="(312) 456-2468"/>

The input pattern is only active when you are adding new characters at the end of the text. It does not adjust the data when you are inserting text in the middle of the cell. For example, it does not prevent you from creating a four digit area code, like this:

click in middle of text	<input type="text" value="(312) 456-2468"/>
type 4	<input type="text" value="(3142) 456-2468"/>

Using Input Patterns with Dates

The purpose of input patterns is to save keystrokes in data entry by inserting constantly occurring dashes, colons, parentheses, or other punctuation. When it comes to date fields, you must decide how you like to enter dates. Using the input pattern `__ /__ /__` removes the need to type `/`'s (or some other separator) between the month, day and year. However, using the pattern requires that you type leading zeros in front of

single digit months and days. For instance, to enter **January 1st** you must type **0101**. Without the pattern you can enter a single digit, for example **1/1**. (Keep in mind that Panorama allows any non-numeric character as the separator, so you could also type **1.1** on a numeric keypad—very fast.) It's up to you which method you prefer.

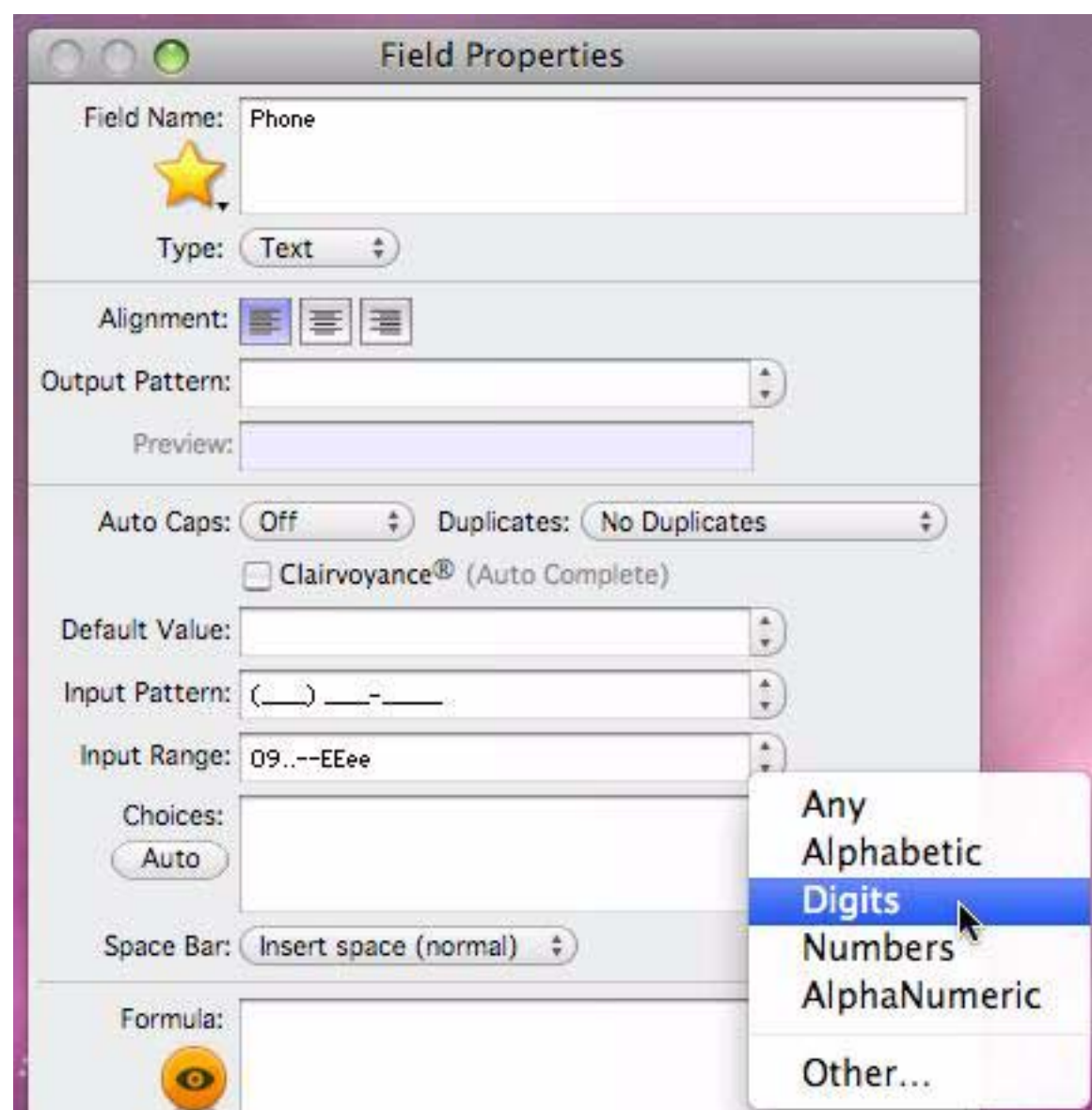
One other point to keep in mind—the input pattern can interfere with Panorama's Smart Date feature (“[Entering Dates](#)” on page 255). For example, with a pattern if you attempt to enter **yesterday** you will get **ye/st/erday**, and if you enter **tuesday** you will get **tu/es/day**. You can go back and edit out the /'s, but if you are going to use Smart Dates frequently you might want to forego the input pattern.

An input pattern can be used to override Panorama's century rounding feature. If you want to enter all dates in the 20th century you can use the pattern **__ /__ /19__**. If you are using this pattern then Panorama will treat **030423** as **3/4/1923**, not **3/4/2023**. (Remember, Panorama normally rounds the year to the nearest century (within 50 years) if you do not specify all four digits of the year.)

Restricting Character Types

Panorama normally allows you to enter any character that can be typed from the keyboard. If necessary you can restrict the kinds of characters that can be entered into each field. Panorama has five different character restriction levels—**Any**, **Alphabetic**, **Numeric**, **AlphaNumeric**, and **Custom**.

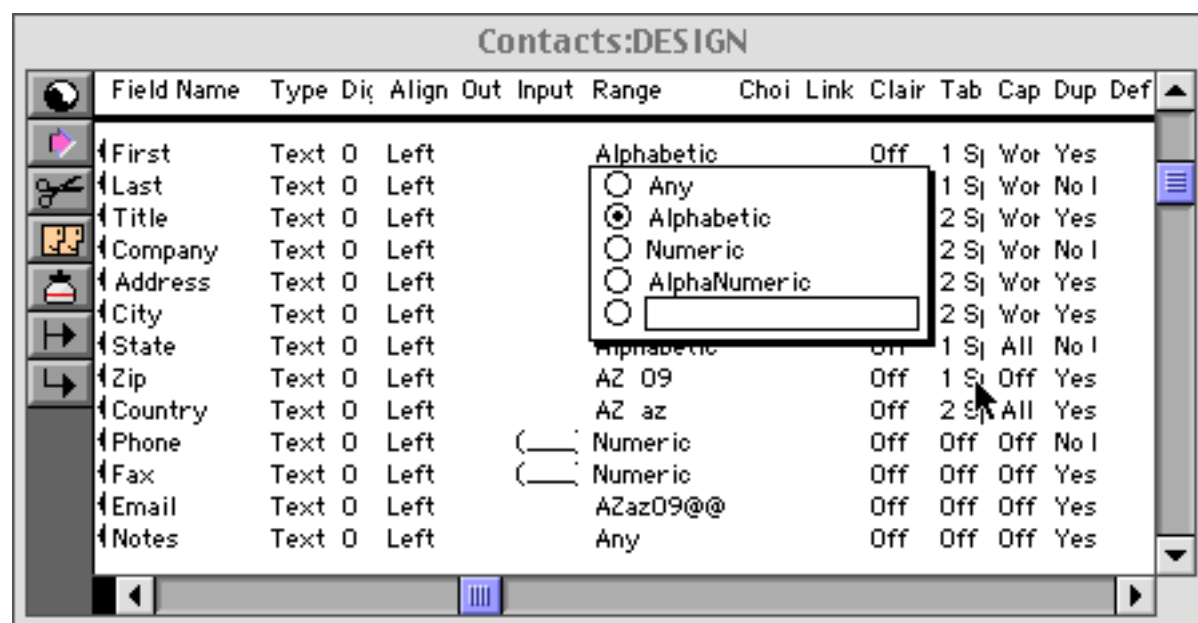
You can choose basic character entry restrictions with the pop-up menu in Field Properties dialog.



If you choose the **Other...** option an advanced dialog opens. Simply check the all of the character sets you want to allow, then close the window.



You can also set up the character range with the **Range** column of the design sheet. (See [“The Design Sheet”](#) on page 212 if you are not already familiar with using the design sheet.)



The **Any** “restriction” really isn’t a restriction at all—it allows any kind of text—letters, numbers, spaces, or punctuation. Panorama lets you type in anything you want with no restrictions. This is the default option.

The **Alphabetic** restriction allows only letters (A-Z and a-z) and spaces. The letters may be either upper or lower case. If you attempt to type in a non-alphabetic character (a number, for example) Panorama will beep and ignore the character.

The **Numeric** restriction allows only digits (0...9), periods, minus sign, and the letter E (for scientific notation).

The **AlphaNumeric** restriction allows both letters and numbers, as well as spaces.

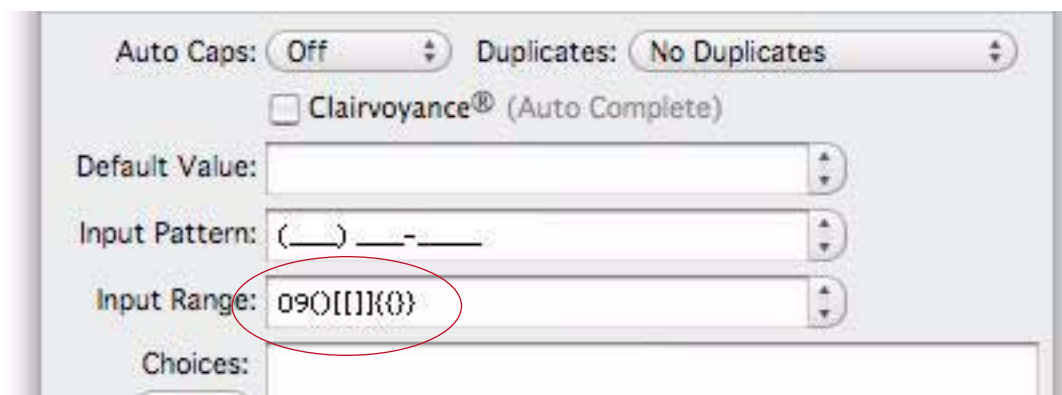
Custom Character Restrictions

The **Custom** option allows you to exactly specify the characters you want to allow and disallow in this field. The actual characters allowed are defined by one or more pairs of characters. Each pair specifies a range of characters that are allowed. For example the pair **09** would allow all characters in the range 0...9, while the pair **az** would allow all lower case letters. You can combine several pairs to create a more complex range, for example **az09** for all lower case letters or numbers. A pair may specify a single character as both the beginning and end of the range, for instance **%%** (only the percent symbol allowed), or **09%%** (numerals and the percent symbol, but not the decimal point). If you wish to allow spaces, one of the pairs should be a pair of spaces, for instance **AZ az09**. To preview the effect of a character range you can use the ASCII Chart wizard — see “[Showing Character Ranges with the ASCII Wizard](#)” on page 91 of *Formulas & Programming*.

The table below shows some common examples of custom character restrictions. For each range a sample of Ok data and bad data is shown, with the disallowed characters shown in **red**.

Custom Range	Ok Data	Bad Data	Comments
09	936	923.77	Only digits, no decimal point, spaces or other punctuation allowed.
09..	156.23	1,294.48	Basic fixed point numbers
09..%%	67.82%	67.82 %	Percentages (no spaces)
09//	5/23/02	March 1st	Numeric format dates
09::	1:24:83	1:24 PM	Time
09 :::AAaaMMmmPPpp	5:32 PM	5:32 DL	Time (am/pm)
AZ	SEATTLE	Seattle	Upper case letters only—no punctuation or lower case letters
Azaz	John	John Smith	Letters but no spaces
AZaz@..	sue@my.net	sue\$my.net	Handy for email addresses
09 (())--	(213) 444-1234	342-3982 ext 12	Basic US phone numbers
!~	Check#	El Niño	Everything ok except spaces, international characters and special symbols
!Û	Niño	El Niño	Everything ok except spaces

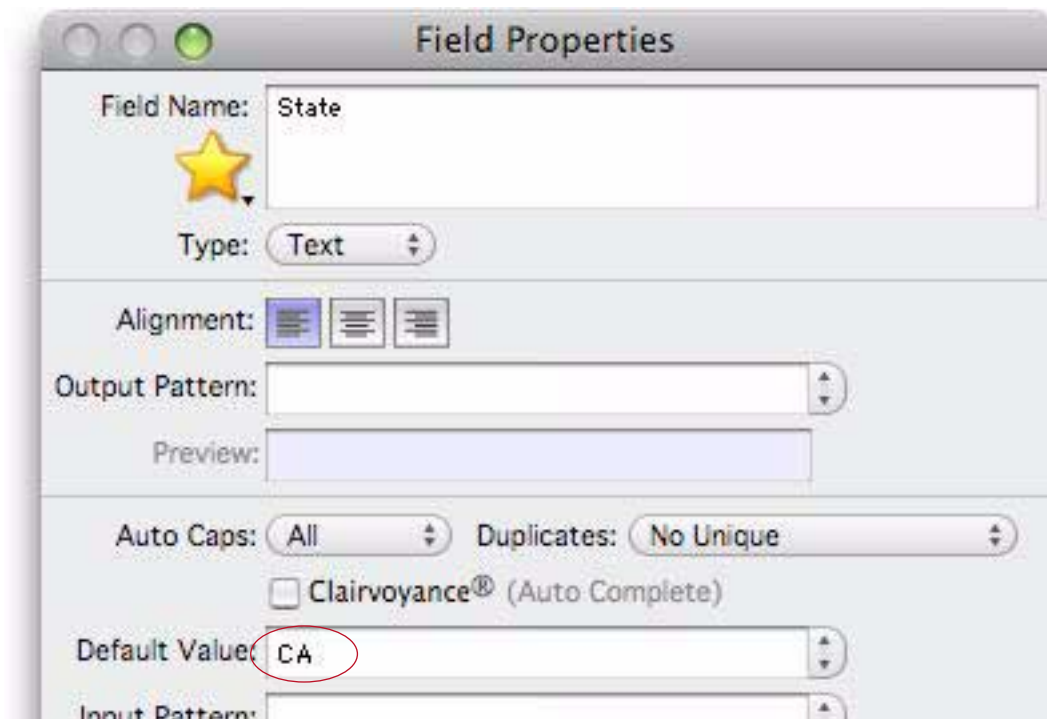
If you are using the **Field Properties** dialog, you can set up a custom restriction by typing the custom range directly into the dialog.



When you press the **OK** button Panorama will convert the list into a series of character ranges as described in the previous section. If you want to see what the custom range you have created looks like, open the design sheet.

Default Values

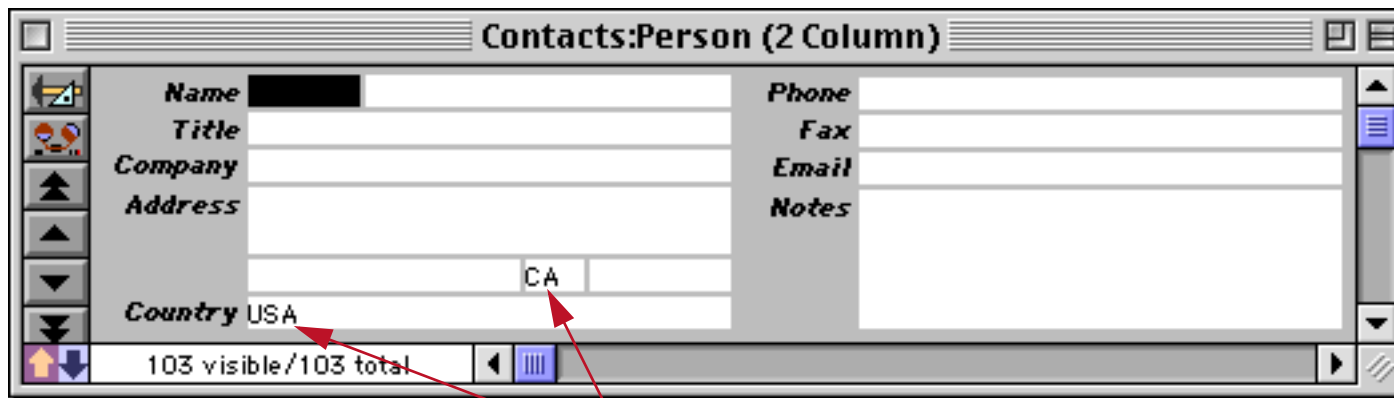
When a new record is added to a database, it is usually completely empty. You can, however, set up a default value for each field. One way to set up default values is with the Field Properties dialog. The dialog below is for a **State** field which defaults to **CA** (California).



You can also set up the default with the **Value** column of the design sheet. (See [“The Design Sheet”](#) on page 212 if you are not already familiar with using the design sheet.)

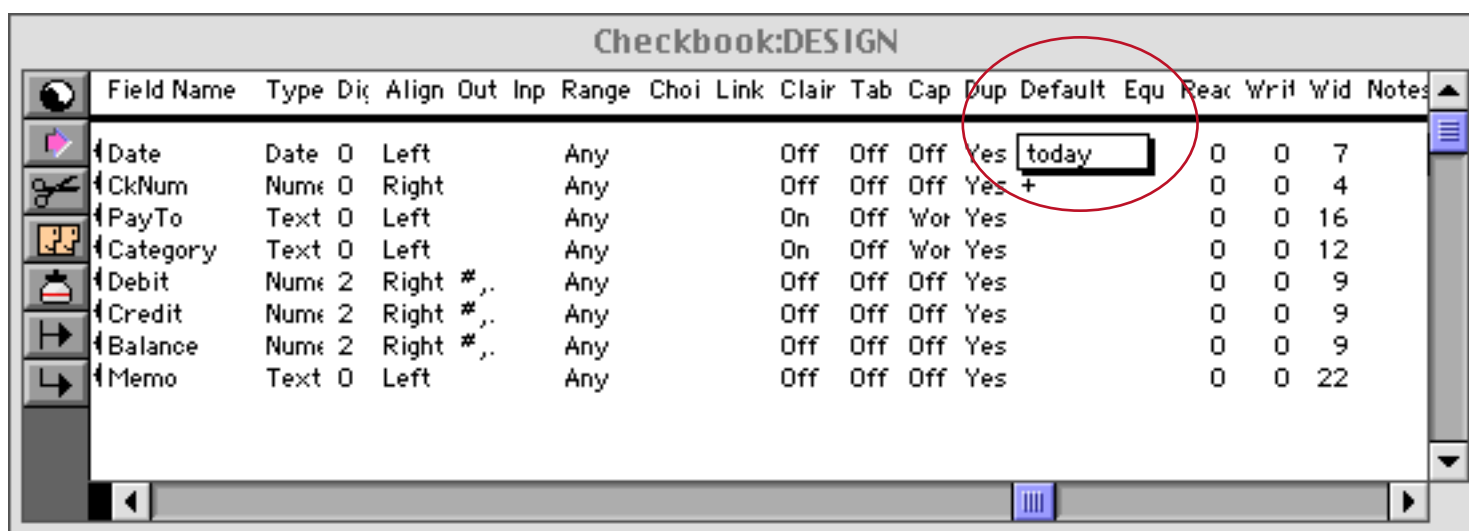
	Field Name	Type	Dir	Align	Out	Inp	Range	Chc	Link	Clair	Tab	Cap	Dup	Default	Equ
👤	First	Text	0	Left			Alpha			Off	1 Sj	Wor	Yes		
✂️	Last	Text	0	Left			Alpha			Off	1 Sj	Wor	No I		
👤	Title	Text	0	Left			AZ a			On	2 Sj	Wor	Yes		
🏢	Company	Text	0	Left			AZ a			Off	2 Sj	Wor	No I		
🏠	Address	Text	0	Left			AZ a			Off	2 Sj	Wor	Yes		
🏠	City	Text	0	Left			AZ a			On	2 Sj	Wor	Yes		
🏠	State	Text	0	Left			Alpha			Off	1 Sj	All	No I	CA	
🏠	Zip	Text	0	Left			AZ 0			Off	1 Sj	Off	Yes		
🌐	Country	Text	0	Left			AZ a			Off	2 Sj	All	Yes	USA	
☎️	Phone	Text	0	Left	(_		Nume			Off	Off	Off	No I		
☎️	Fax	Text	0	Left	(_		Nume			Off	Off	Off	Yes		
✉️	Email	Text	0	Left			AZazl			Off	Off	Off	Yes		
📝	Notes	Text	0	Left			Any			Off	Off	Off	Yes		

The simplest default is a fixed value, as shown in the example above. For example you might want the Country field to default to your home country, a shipping field to default to your preferred shipper. Once defaults are set up, they are automatically entered whenever a new record is created.

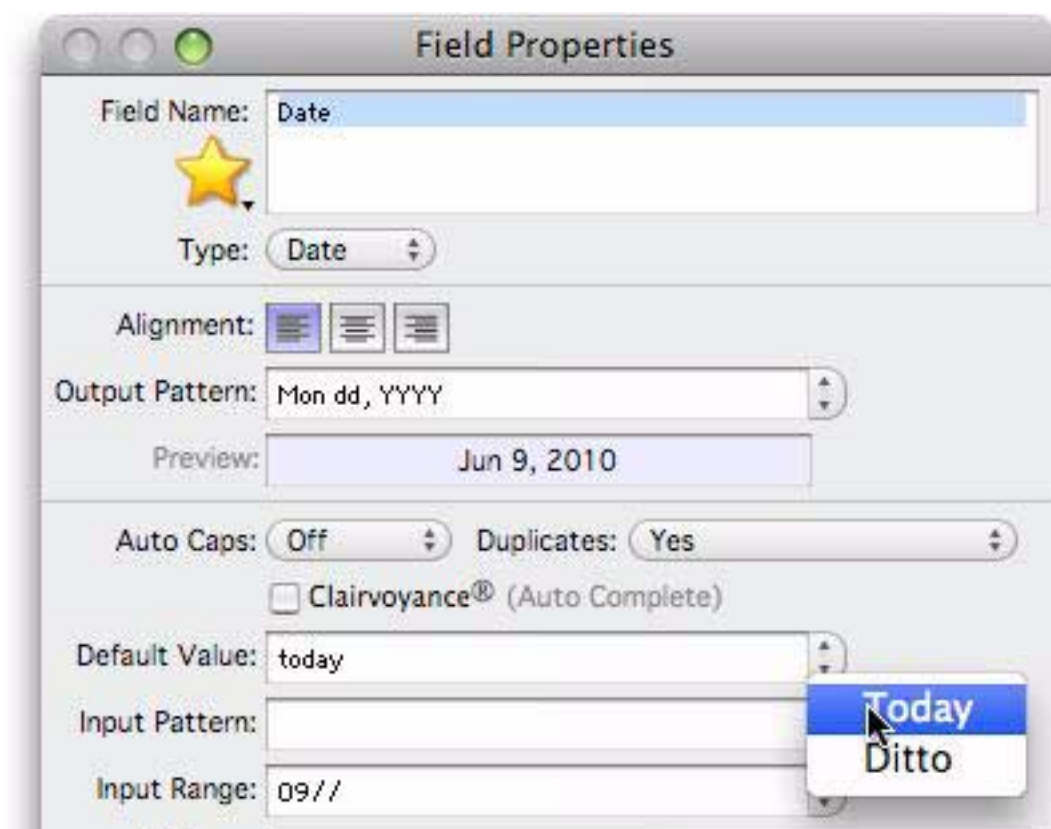


Default to Today's Date

To default to today's date use the default value [today](#).



If you are using the **Field Properties** dialog, you can choose **Today** from the pop-up menu (or you can just type in [today](#)).



Note: The **today** default only works for fields that use the date data type. If you use the default value **today** with a text field you will simply get the word today. See “[Dates](#)” on page 255 for more information on the date data type.

“Ditto” Defaults Based on the Previous Record

Instead of being fixed, a default value can be based on the data in the previous record. You can produce this type of “**ditto**” default by using the default value ". This is the quote character, which is produced by holding down the **Shift** key and pressing the " key (just to the right of the **semicolon** key). (Some people mistakenly call this the double-quote character.)

Field Name	Type	Diç	Align	Out	Inp	Range	Choi	Link	Clair	Tab	Cap	Dup	Defai	Equ
First	Text	0	Left			Alphat		Off	1	Sj	Wor	Yes		
Last	Text	0	Left			Alphat		Off	1	Sj	Wor	No	I	
Title	Text	0	Left			AZ az		On	2	Sj	Wor	Yes		
Company	Text	0	Left			AZ az		Off	2	Sj	Wor	No	I	
Address	Text	0	Left			AZ az		Off	2	Sj	Wor	Yes		
City	Text	0	Left			AZ az		On	2	Sj	Wor	Yes	"	
State	Text	0	Left			Alphat		Off	1	Sj	All	No	I	CA
Zip	Text	0	Left			AZ 09		Off	1	Sj	Off	Yes	"	
Country	Text	0	Left			AZ az		Off	2	Sj	All	Yes	USA	
Phone	Text	0	Left	(		Numer		Off	Off	Off	No	I		
Fax	Text	0	Left	(		Numer		Off	Off	Off	Yes			
Email	Text	0	Left			AZaz0		Off	Off	Off	Yes			
Notes	Text	0	Left			Any		Off	Off	Off	Yes			

When you create a new record, the fields using the ditto default will contain the same values as the previous record. In this illustration a new record has been added with four default values, two fixed and two “ditto.”

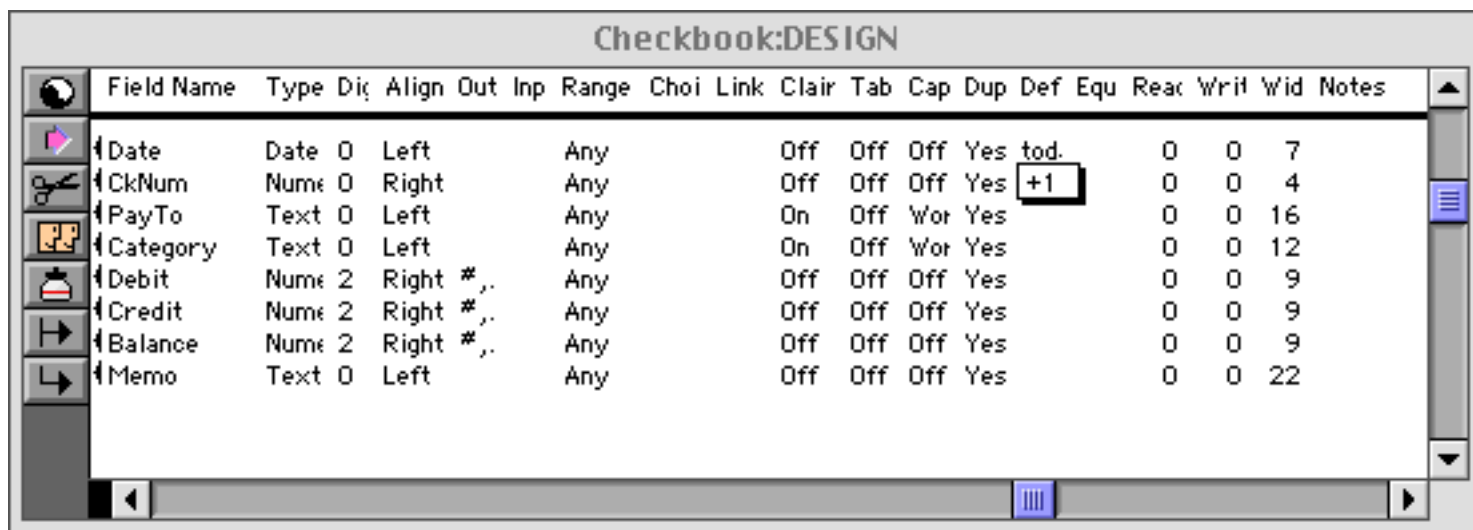
Company	Address	City	State	Zip	Country
	7292 Delvin Wy	South San Francis	CA	94080	
San Francisco Lumber	854 14th St	San Francisco	CA	94103	
N.L. Plumbing	759 2Nd Ave	San Francisco	CA	94118	
	7265 Lakeland Drive	Roseville	CA	95661	
	625 S.E. High	Pullman	WA	99163	
GW Printing	779 Arnold Rd	Newton Centre	MA	02159	
	15 Lownds Drive	Windsor Locks	CT	06096	
	31 Cross Highway	Westport	CT	06880	
Stephen's Appliances	90 Duane Lane	Demarest	NJ	07627	
	7718 Odell St	Bronx	NY	10462	
		Bronx	CA	10462	USA

"ditto" defaults for City and Zip

fixed defaults for State and Country

Automatically Incrementing Defaults (1, 2, 3, ...) Based on the Previous Record

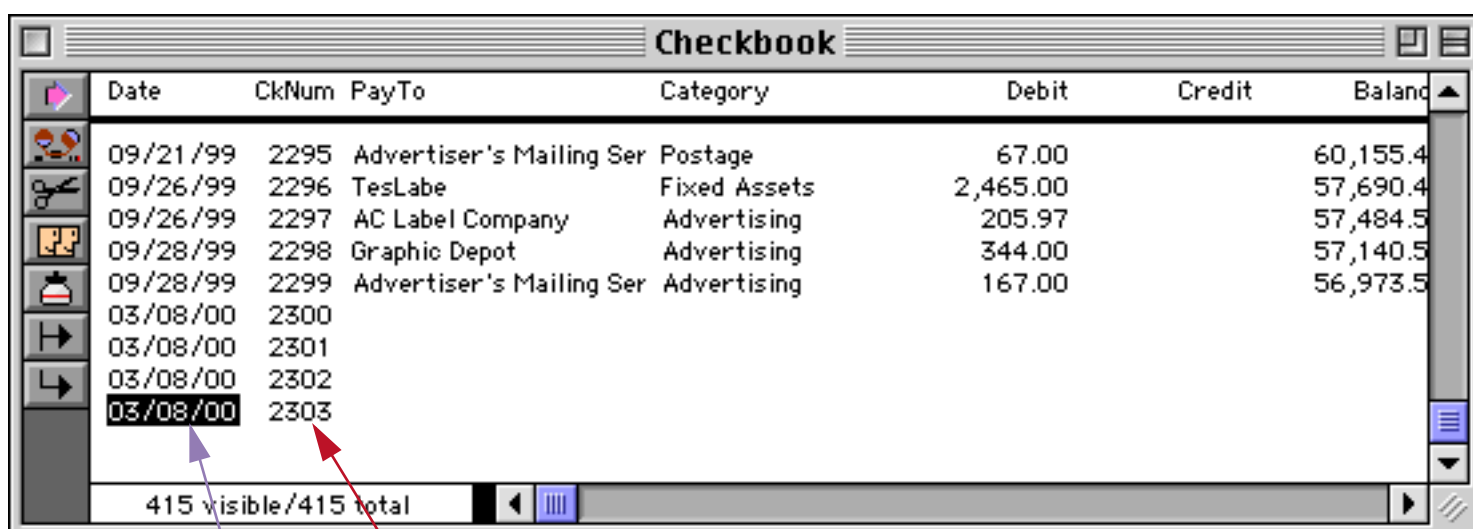
For a numeric field you can specify a default that is created by adding to the previous value in the field. To do this, use a default of **+nn**, where **nn** is the amount to add to the previous value. For example **+1** causes the value to increment by one for each new record.



Field Name	Type	Dig	Align	Out	Inp	Range	Choi	Link	Clair	Tab	Cap	Dup	Def	Equ	Reac	Writ	Wid	Notes
Date	Date	0	Left			Any			Off	Off	Off	Yes	tod.	0	0		7	
CkNum	Num	0	Right			Any			Off	Off	Off	Yes	+1	0	0		4	
PayTo	Text	0	Left			Any			On	Off	Wor	Yes		0	0		16	
Category	Text	0	Left			Any			On	Off	Wor	Yes		0	0		12	
Debit	Num	2	Right	#,.		Any			Off	Off	Off	Yes		0	0		9	
Credit	Num	2	Right	#,.		Any			Off	Off	Off	Yes		0	0		9	
Balance	Num	2	Right	#,.		Any			Off	Off	Off	Yes		0	0		9	
Memo	Text	0	Left			Any			Off	Off	Off	Yes		0	0		22	

You can use any number, even a negative number like **+5**. This default would cause Panorama to add negative 5 (same as subtracting 5) to the value each time a new record is created. If the numeric type allows it, you can even use non-integer values like **2.5** or **0.1**.

As new records are added to the database, they are numbered automatically, like this.



Date	CkNum	PayTo	Category	Debit	Credit	Balance
09/21/99	2295	Advertiser's Mailing Ser	Postage	67.00		60,155.4
09/26/99	2296	TesLabe	Fixed Assets	2,465.00		57,690.4
09/26/99	2297	AC Label Company	Advertising	205.97		57,484.5
09/28/99	2298	Graphic Depot	Advertising	344.00		57,140.5
09/28/99	2299	Advertiser's Mailing Ser	Advertising	167.00		56,973.5
03/08/00	2300					
03/08/00	2301					
03/08/00	2302					
03/08/00	2303					

automatically incrementing check numbers

this field set up to default to today's date

Be sure to keep in mind that an incrementing default like +1 is based on the previous record, not on the largest value in the entire database. So if you insert a record in the middle of the database, the incremented value will be based on the value just above it, not on the value at the end of the database.

Date	CkNum	PayTo	Category	Debit	Credit	Balance
09/21/99	2295	Advertiser's Mailing Ser	Postage	67.00		60,155.4
09/26/99	2296	TesLabe	Fixed Assets	2,465.00		57,690.4
09/26/99	2297	AC Label Company	Advertising	205.97		57,484.5
03/08/00	2298					
03/08/00	2299					
03/08/00	2300					
09/28/99	2298	Graphic Depot	Advertising	344.00		57,140.5
09/28/99	2299	Advertiser's Mailing Ser	Advertising	167.00		56,973.5
03/08/00	2300					
03/08/00	2301					
03/08/00	2302					

records inserted in the middle have incorrect numbers

If you want to generate a unique incrementing number for use as a record ID (for instance an invoice number or check number), use the technique described in the next section.

Creating a Unique Record Number

Many databases applications require that each record contain a unique number that can be used to identify the record. Common examples include invoice numbers, batch ID's, employee numbers, etc. Panorama can automatically assign a unique number to each new record as it is created, even if several people are using the database simultaneously over a network.

The field containing the record number must be a numeric field. To specify that this field should contain a unique record number, the default should be + . Do not specify any increment value, just use a single + character.

Field Name	Type	Di	Align	Out	Inp	Range	Choi	Link	Clair	Tab	Cap	Dup	Def	Equ	Reac	Writ	Wid	Notes
Date	Date	0	Left			Any		Off	Off	Off	Yes	tod.		0	0	7		
CkNum	Nume	0	Right			Any		Off	Off	Off	Yes	+		0	0	4		
PayTo	Text	0	Left			Any		On	Off	Wor	Yes			0	0	16		
Category	Text	0	Left			Any		On	Off	Wor	Yes			0	0	12		
Debit	Nume	2	Right	#,.		Any		Off	Off	Off	Yes			0	0	9		
Credit	Nume	2	Right	#,.		Any		Off	Off	Off	Yes			0	0	9		
Balance	Nume	2	Right	#,.		Any		Off	Off	Off	Yes			0	0	9		
Memo	Text	0	Left			Any		Off	Off	Off	Yes			0	0	22		

Each database contains a counter for keeping track of the next record number. Every time a new record is created the counter is incremented by one. Even if the record is later deleted, the number will never be re-used (unless you Quit Panorama or close the database without saving your changes, or unless you reset the counter manually as described below).

Manually Changing the Record Number Counter

You can manually change the record number counter using the **Privileges** dialog. (See “[The Privilege Dialog](#)” on page 184 if you don’t know how to open this dialog.) Simply type in any integer value for the **Next Record ID#** option.

The screenshot shows a dialog box with the following sections:

- Access:**
 - Single User
 - Multi User
- User Level:**
 - Author
 - User
 - Custom
- Current Users:** (An empty rectangular box)
- Next Record ID#:** (A text box containing the value 2302, circled in red)
- Password:** (An empty text box)
- Disable Design
- Buttons: Cancel, OK

It is also possible to access and modify this ID number in a procedure. (See “[GETAUTONUMBER](#)” on page 5290 and “[SETAUTONUMBER](#)” on page 5738 of the *Panorama Reference*.) To access the next record ID # use the [GetAutoNumber](#) statement. Here is a simple procedure that displays the next record ID number.

```
local id
GetAutoNumber id
message "The next record number will be "+str(id)+"."
```

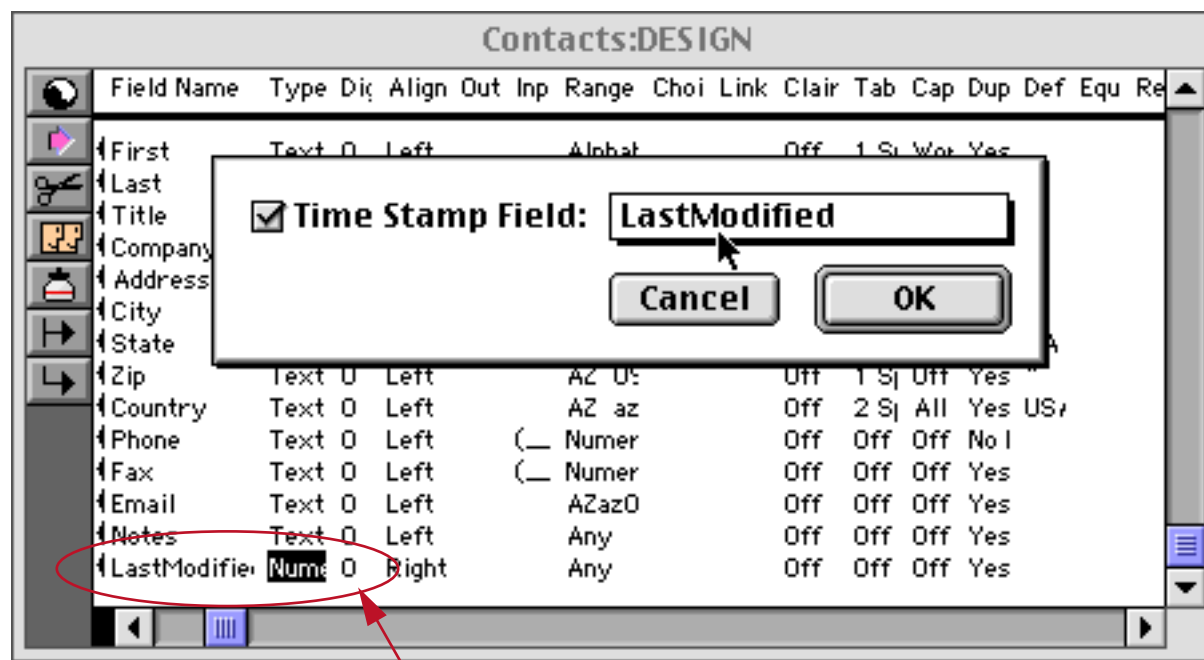
This one line procedure uses the [SetAutoNumber](#) statement to reset the record ID number to 1000.

```
SetAutoNumber 1000
```

Automatic Time/Date Stamping

Using the design sheet you can designate a field as a **time stamp** field. Once a field has been designated as a time stamp field, Panorama will automatically copy the current date and time into this field every time any other field in the record is modified. Setting up a time stamp field allows you to reliably track when each record in the database was last modified.

To set up a time stamp field you must have the design sheet open. Choose the **Time Stamp Field** command from the Special menu, then use the pop-up menu to select the field that will become the time stamp field. This field must be an integer (numeric 0 digits) field and it must already exist in the data sheet. (Just adding a new field to the design sheet isn't enough to make it appear in the Time Stamp dialog's pop-up menu. You must also make a new generation.)



time stamp field must be Numeric 0 Digits

Once the time stamp field is set up, Panorama will automatically update the time and date every time any cell in that database is modified. The value stored in the cell is actually the number of seconds since midnight, January 1, 1904. This combination of date and time into a single number is called a **SuperDate**. See "[SuperDates \(combined date and time\)](#)" on page 118 of *Formulas & Programming* for more information about SuperDates.

Company	Address	City	State	LastModified
	7292 Delvin Wy	South San Francis	CA	-1259563192
San Francisco Lumber	854 14th St	San Francisco	CA	-1259563194
N.L. Plumbing	759 2Nd Ave	San Francisco	CA	-1259563196
	7265 Lakeland Dri	Roseville	CA	-1259563198
	625 S.E. High	Pullman	WA	-1259563199
GW Printing	779 Arnold Rd	Newton Centre	MA	-1259563200
	15 Lownds Drive	Windsor Locks	CT	-1259563202
	31 Cross Highway	Westport	CT	-1259563205
Stephen's Appliances	90 Duane Lane	Demarest	NJ	-1259563208
	7718 Odell St	Bronx	NY	-1259563216

As you can see, it's pretty difficult to look at a SuperDate and make much sense of it. Fortunately, you can convert a SuperDate into a regular Panorama date with the `regulardate()` function, and into a regular time (seconds since midnight) with the `regulartime()` function. Here is a formula that converts a SuperDate in the field `LastModified` into a readable date and time.

```
datepattern(regulardate>LastModified), "mm/dd/yy") + " @ " +
timepattern(regulartime>LastModified), "hh:mm:ss am/pm")
```


This formula may be used in an auto-wrap text object (see “[Displaying Formulas in Auto-Wrap Text](#)” on page 602) or Text Display SuperObject (see “[Text Display SuperObjects™](#)” on page 608) to display the modification date in a format like this: [11/27/03 @ 4:37:22 PM](#).

Automatic Calculations

The **Equation** column in the design sheet allows you to set up a formula for calculating the value of a field based on the values in other fields (see “[The Design Sheet](#)” on page 212 if you are not already familiar with using the design sheet).

In the following sections you’ll learn how to perform calculations within the current record as data is entered. To learn how to calculate an entire column of data at once see “[The Manipulate Data Dialog](#)” on page 434 and “[Storing Formula Results in the Database](#)” on page 22 of *Formulas & Programming*. To learn how to display the result of a calculation without storing it in the database see “[Displaying Formulas in Auto-Wrap Text](#)” on page 602, “[Text Display SuperObjects™](#)” on page 608 and “[Displaying/Printing A Formula](#)” on page 20 of *Formulas & Programming*.

Spreadsheet Mode Calculations

If you’ve ever used a spreadsheet you’ll be very comfortable with Panorama’s default **Spreadsheet Mode** for automatic calculations (see “[Procedure Mode Calculations](#)” on page 311 for an alternative calculation mode). In this mode you simply place the formula for calculating a field into the Equation column of the design sheet for that field. To illustrate this we’ll use this simple database with four numeric fields for data entry (**A**, **B**, **C** and **D**) and two fields that we will be calculated (**Total** and **Avg**).

City	A	B	C	D	Total	Avg
Anaheim	3.25	7.31	14.82	1.93	27.31	6.83
Bakersfield	2.29	8.26	12.91	3.02	26.48	6.62
Camarillo	2.83	9.19	15.11	2.54	29.67	7.42
Fullerton	2.59	8.25	13.48	1.77	26.09	6.52
Laguna Beach	3.06	9.45	12.5	3.01	28.02	7.00
Newport Beach	3.18	7.22	12.32	2.38	25.10	6.27
Whittier	3.67	5.23	14.24	3.27	26.41	6.60

To automatically calculate the total and average simply enter the formulas in the appropriate rows of the **Equation** column in the design sheet.

Field Name	Type	Dir	Align	Out	Inp	Range	Choi	Link	Clair	Tab	Cap	Dup	Def	Equation	Reac	Writ	Wid	Notes
City	Text	O	Left			Any		Off	Off	Off	Yes				0	0	11	
A	Num	F	Right			Any		Off	Off	Off	Yes				0	0	4	
B	Num	F	Right			Any		Off	Off	Off	Yes				0	0	4	
C	Num	F	Right			Any		Off	Off	Off	Yes				0	0	4	
D	Num	F	Right			Any		Off	Off	Off	Yes				0	0	4	
Total	Num	F	Right	#.#		Any		Off	Off	Off	Yes			A+B+C+D	0	0	4	
Avg	Num	F	Right	#.#		Any		Off	Off	Off	Yes			(A+B+C+D)/4	0	0	4	

formula to calculate total
formula to calculate average

To activate these formulas you need to create a new generation for this database (see “[Database “Generations”](#)” on page 212). Once you’ve done this you can start entering or updating information. In this illustration a new record has been added (**Diamond Bar**) and the first number typed in (but not entered into the database yet).

City	A	B	C	D	Total	Avg
Anaheim	3.25	7.31	14.82	1.93	27.31	6.83
Bakersfield	2.29	8.26	12.91	3.02	26.48	6.62
Camarillo	2.83	9.19	15.11	2.54	29.67	7.42
Diamond Bar	3.13					
Fullerton	2.59	8.25	13.48	1.77	26.09	6.52
Laguna Beach	3.06	9.45	12.5	3.01	28.02	7.00
Newport Beach	3.18	7.22	12.32	2.38	25.70	6.27
Whittier	3.67	5.23	14.24	3.27	26.41	6.60

As soon as the data is entered by pressing the **Tab** (or **Enter**) keys the formulas update the **Total** and **Avg** fields.

City	A	B	C	D	Total	Avg
Anaheim	3.25	7.31	14.82	1.93	27.31	6.83
Bakersfield	2.29	8.26	12.91	3.02	26.48	6.62
Camarillo	2.83	9.19	15.11	2.54	29.67	7.42
Diamond Bar	3.13				3.13	0.78
Fullerton	2.59	8.25	13.48	1.77	26.09	6.52
Laguna Beach	3.06	9.45	12.5	3.01	28.02	7.00
Newport Beach	3.18	7.22	12.32	2.38	25.70	6.27
Whittier	3.67	5.23	14.24	3.27	26.41	6.60

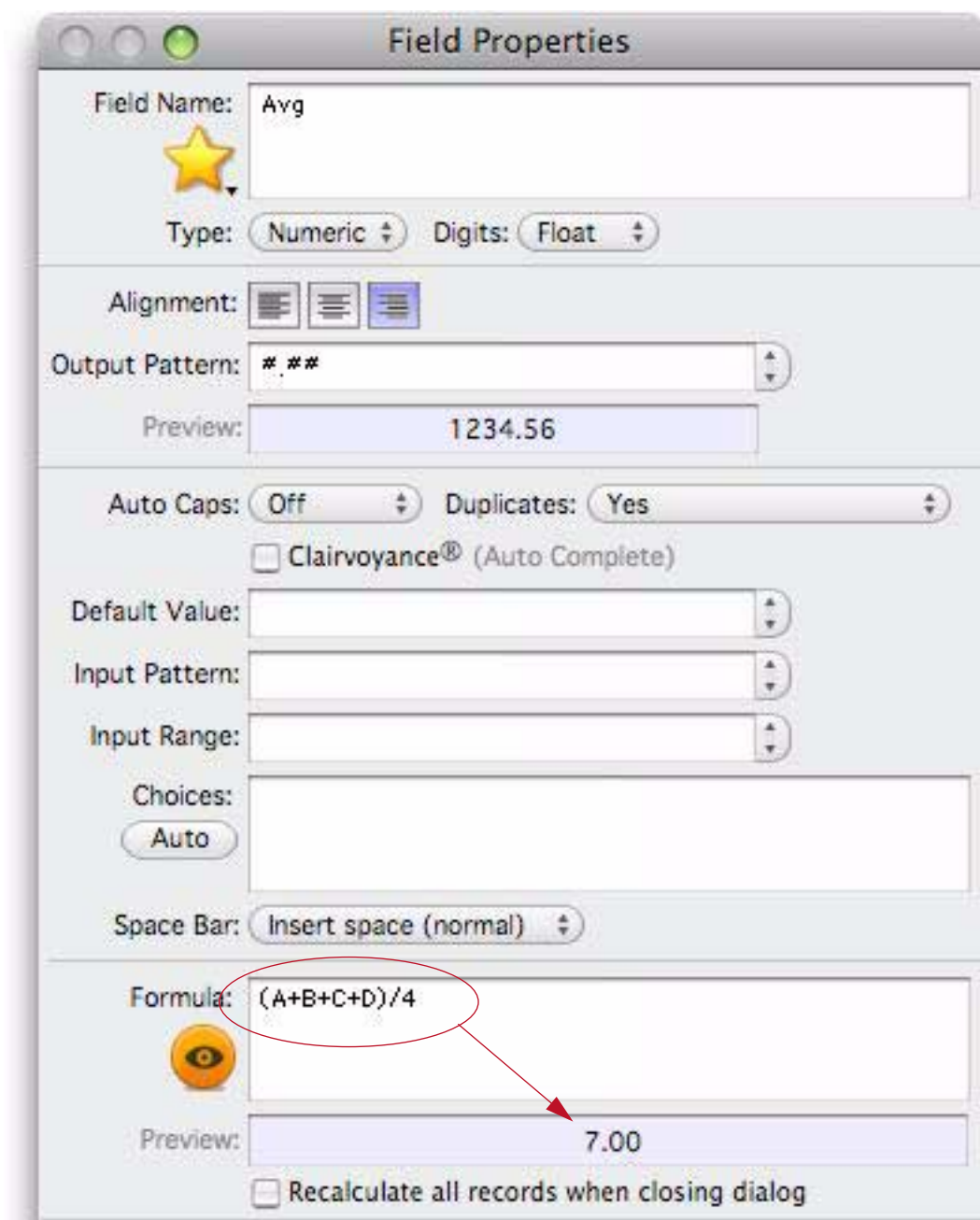
formulas in design sheet update fields as data is entered

As more data is entered the **Total** and **Avg** fields are updated instantaneously.

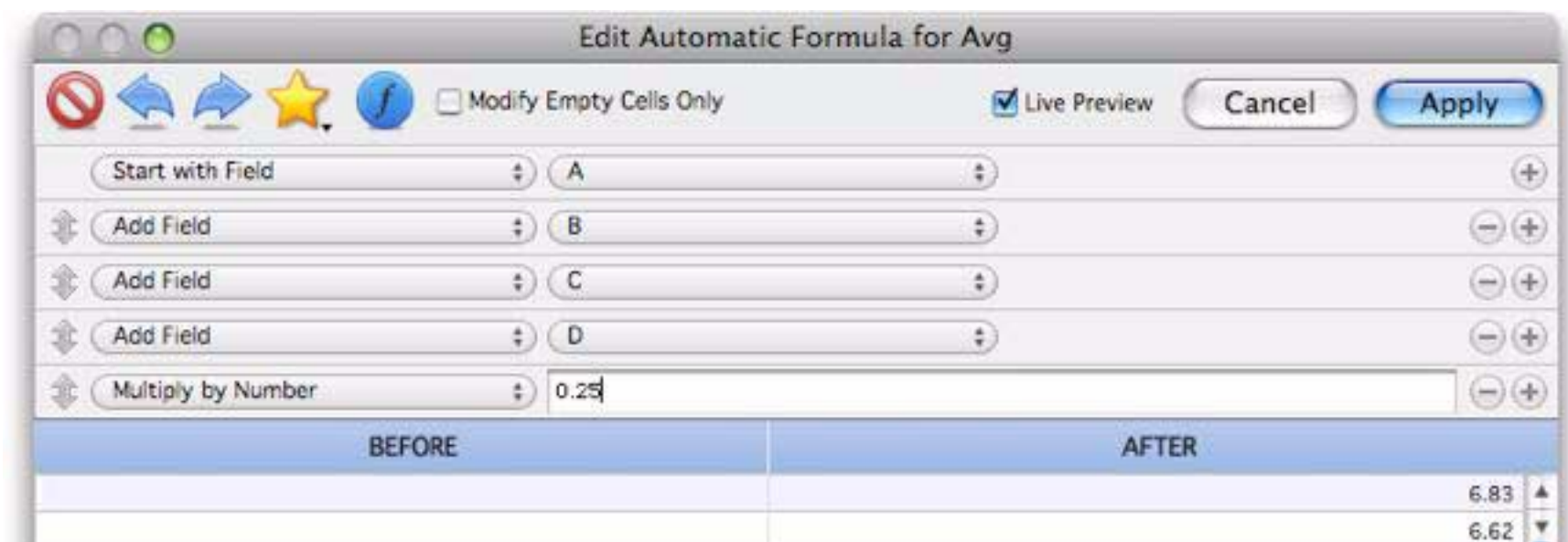
City	A	B	C	D	Total	Avg
Anaheim	3.25	7.31	14.82	1.93	27.31	6.83
Bakersfield	2.29	8.26	12.91	3.02	26.48	6.62
Camarillo	2.83	9.19	15.11	2.54	29.67	7.42
Diamond Bar	3.13	7.81			10.94	2.73
Fullerton	2.59	8.25	13.48	1.77	26.09	6.52
Laguna Beach	3.06	9.45	12.5	3.01	28.02	7.00
Newport Beach	3.18	7.22	12.32	2.38	25.70	6.27
Whittier	3.67	5.23	14.24	3.27	26.41	6.60

The **Total** and **Avg** fields will be updated any time the **A**, **B**, **C** or **D** fields are modified.

You can also edit the formula with the **Field Properties** dialog. The dialog shows a preview of the formula result.



Click on the yellow eye to open a dialog that can assist with assembling a formula.



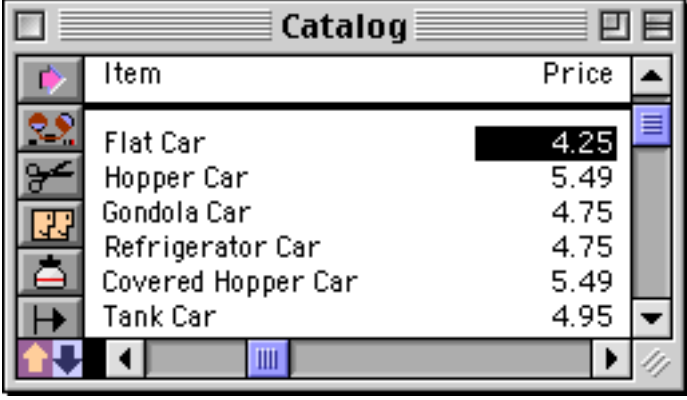
This dialog works just like the **Manipulate Data in Field** dialog, see [“The Manipulate Data Dialog”](#) on page 434.

Next we'll look at a simple invoice that shows some more realistic examples of automatic calculations in action. Here are the calculations needed as data is entered.

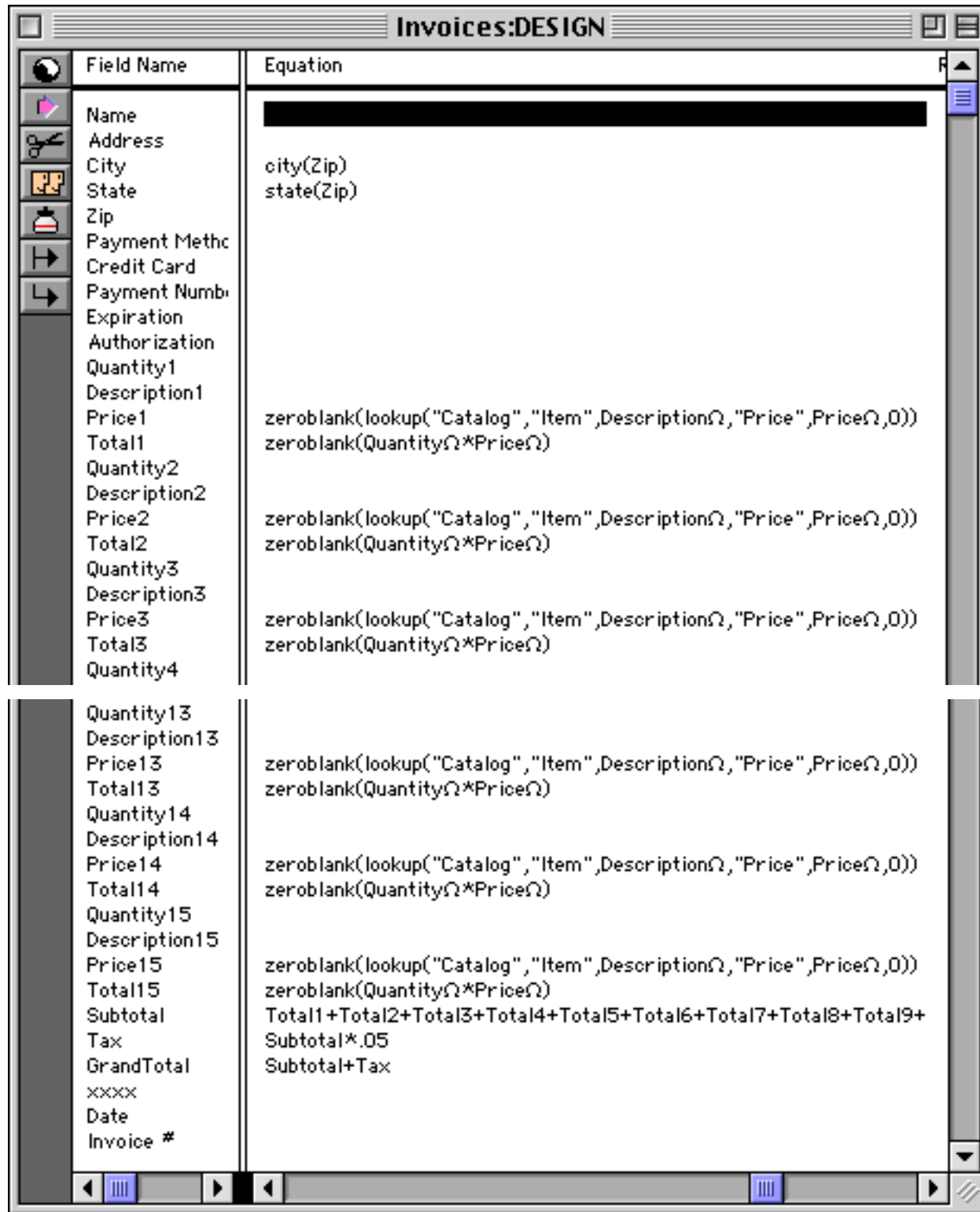
The screenshot shows an 'Invoices:Invoice' window. At the top, there are fields for Name (Joe Munro), Address (3739 Blossom Lane, Huntington Beach, CA 92648), and a zip code (92648). Below this is a table with columns: Qty, Description, Price, and Total. The table contains five rows of items: Steam Passenger Engine (Qty: 2, Price: 84.95, Total: 169.90), Box Car (Qty: 3, Price: 4.75, Total: 14.25), Gondola Car (Qty: 1, Price: 4.75, Total: 4.75), Flat Car (Qty: 4, Price: 4.25, Total: 17.00), and Hopper Car (Qty: 2, Price: 5.49, Total: 10.98). Below the table is a summary section with fields for Invoice (216), Date (August 27, 2000), Subtotal (221.63), Tax (11.08), and Total (232.71). There are also radio buttons for Cash, Check, and Visa/MC. Red arrows point from text labels to various parts of the interface: 'city(Zip)' and 'state(Zip)' point to the zip code field; 'zeroblank(lookup("Catalog",Item,DescriptionΩ,PriceΩ,0))' points to the Price column; 'zeroblank(QuantityΩ*PriceΩ)' points to the Total column; 'Total1+Total2+Total3+ ... +Total13+Total14+Total15' points to the Subtotal field; 'Subtotal*0.05' points to the Tax field; and 'Subtotal+Tax' points to the Total field.

This table explains each of these formulas. Several of these formulas reference line item fields using the Ω character, see “[Line Item Fields](#)” on page 52 to learn how these fields can be used in a formula.

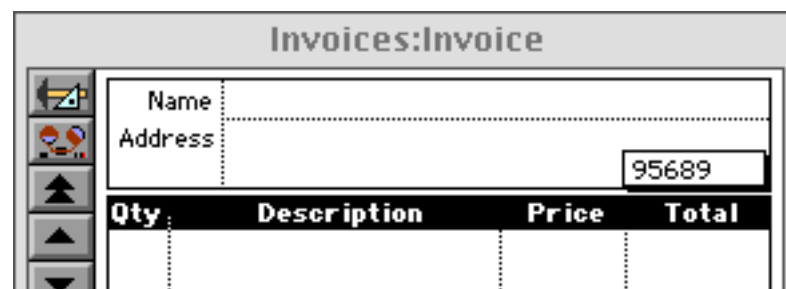
Formula	Explanation
<code>city(Zip)</code>	Using Panorama’s optional zip code lookup database (see “ Zip Code Lookup ” on page 145 of <i>Formulas & Programming</i>) this formula looks up the name of the city when the zip code is entered. For example, if 92548 is entered this formula will calculate that the city name is Huntington Beach .
<code>state(Zip)</code>	Using Panorama’s optional zip code lookup database (see “ Zip Code Lookup ” on page 145 of <i>Formulas & Programming</i>) this formula looks up the name of the state when the zip code is entered. For example, if 92548 is entered this formula will calculate that the state is CA .

Formula	Explanation
<pre>zeroblank(lookup("Catalog",Item, DescriptionΩ,Price,0))</pre>	<p>When an item is entered this formula looks up the price from a catalog database (see “Linking With Another Database” on page 131 of <i>Formulas & Programming</i>). Here’s what the catalog database, which must be open, looks like.</p>  <p>Panorama’s Clairvoyance Link option has been used to help make sure that the Description always matches an item in the catalog database. See “Clairvoyance® Across Multiple Files” on page 286 to learn how to set up this option.</p>
<pre>zeroblank(QuantityΩ*PriceΩ)</pre>	<p>This formula calculates the total for a each line item row (see “Line Item Fields” on page 52). The <code>zeroblank()</code> function (also used in the previous formula) suppresses zero values to make sure that the empty items really look empty (see “ZERO-BLANK(” on page 5915) of the <i>Panorama Reference</i>.</p>
<pre>Total1+Total2+Total3+ ... Total13+Total14+Total15</pre>	<p>This formula calculates the sum of all the line item totals. The <code>sum()</code> function (see “Adding Line Item Fields” on page 62) cannot be used because it is not compatible with Spreadsheet Mode. If this calculation is being performed in Procedure Mode (see “Procedure Mode Calculations” on page 311) this formula can be replaced with the much simpler formula <code>sum("TotalΩ")</code>.</p>
<pre>Subtotal*0.05</pre>	<p>This formula calculates the sales tax at 5%. To calculate the sales tax for a non-integer rate (for example 7.75%) using 2 digit numeric fields the formula must be rewritten as <code>(Subtotal*7.75)/100</code> to avoid numeric overflow problems (see “Overflow/Underflow Problems” on page 61 of <i>Formulas & Programming</i>). If you are using floating point fields the formula can simply be <code>Subtotal*0.0775</code>.</p>
<pre>Subtotal+Tax</pre>	<p>This formula calculates the grand total.</p>

Each of these formulas must be set up in the **Equation** column of the design sheet. The **Price** and **Total** line item formulas only need to be entered once. Panorama will automatically copy them to the other line item fields (see “[Modifying Line Item Fields](#)” on page 225).



Once the formulas have been typed in you need to create a new generation for this database (see “[Database Generations](#)” on page 212). Once you’ve done this you can start entering or updating information. For example you can enter the zip code **95689**.



If the optional Zip Code dictionary is installed the formula will “calculate” the city and state. Yes, there really is a place named Volcano, California.

The screenshot shows the 'Invoices:Invoice' window. The 'Address' field is populated with 'Volcano' and 'CA 95689'. The 'Qty' field is empty, and the 'Description', 'Price', and 'Total' fields are also empty.

Qty	Description	Price	Total

When you enter a quantity Panorama calculates the line item total. Since the price hasn't been entered yet, the total is zero, which is suppressed by the `zeroblank()` function (see “[ZEROBLANK\(\)](#)” on page 5915 of the *Panorama Reference*).

The screenshot shows the 'Invoices:Invoice' window. The 'Qty' field is now populated with '1'. The 'Description', 'Price', and 'Total' fields are still empty. The 'Total' field is circled in red, indicating it is zero.

Qty	Description	Price	Total
1			

When a description is entered Panorama kicks into high gear. The automatic calculations look up the price from the catalog database, multiply the price by the quantity for the line item total, calculate the subtotal, the tax, and the grand total.

The screenshot shows the 'Invoices:Invoice' window. The 'Description' field is now populated with 'Flat Car'. The 'Price' and 'Total' fields are both populated with '4.25'. The 'Total' field is circled in red. The bottom of the window shows the invoice summary:

Qty	Description	Price	Total
1	Flat Car	4.25	4.25

Invoice 217	Subtotal	4.25
Date August 27, 2000	Tax	0.21
<input type="radio"/> Cash <input type="radio"/> Check <input type="radio"/> Visa/MC	Total	4.46

One potential problem appears if a calculation is “circular,” in other words, if the result of the calculation is part of the calculation itself. In this database the formula for calculating the **Price** field actually contains the **Price** field.

```
zeroblank(lookup("Catalog",Item,Description,Price,Price,0))
```

If you attempt to edit a price, this will trigger the calculation, which modifies the price. Let's suppose you decide to give the customer a 50 cent discount on their flat car.

Qty	Description	Price	Total
1	Flat Car	3.75	4.25

When you press the **Enter** key Panorama performs the calculations. But in this case part of the calculation is to look up the price from the catalog database. This resets the price back to \$4.25.

Qty	Description	Price	Total
1	Flat Car	4.25	4.25

The solution is to edit the description so that it no longer matches any entry in the catalog database. In this case we've added the word (**Discount**) after the item name. Once the description has been modified you can go ahead and mark down the price.

Qty	Description	Price	Total
1	Flat Car (Discount)	3.75	3.75

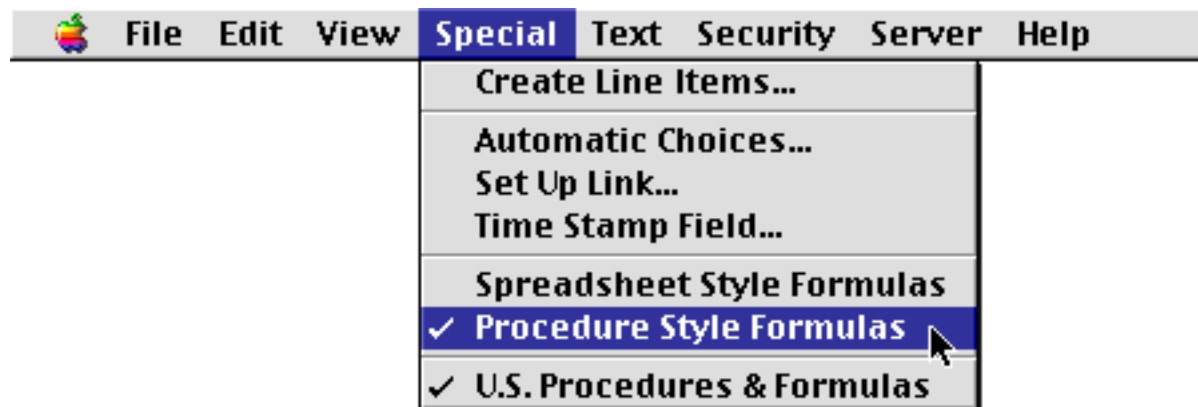
Invoice	217	Subtotal	3.75
Date	August 27, 2000	Tax	0.17
<input type="radio"/> Cash <input type="radio"/> Check <input type="radio"/> Visa/MC		Total	3.92

For another solution to this “circular” calculation problem see the next section.

Procedure Mode Calculations

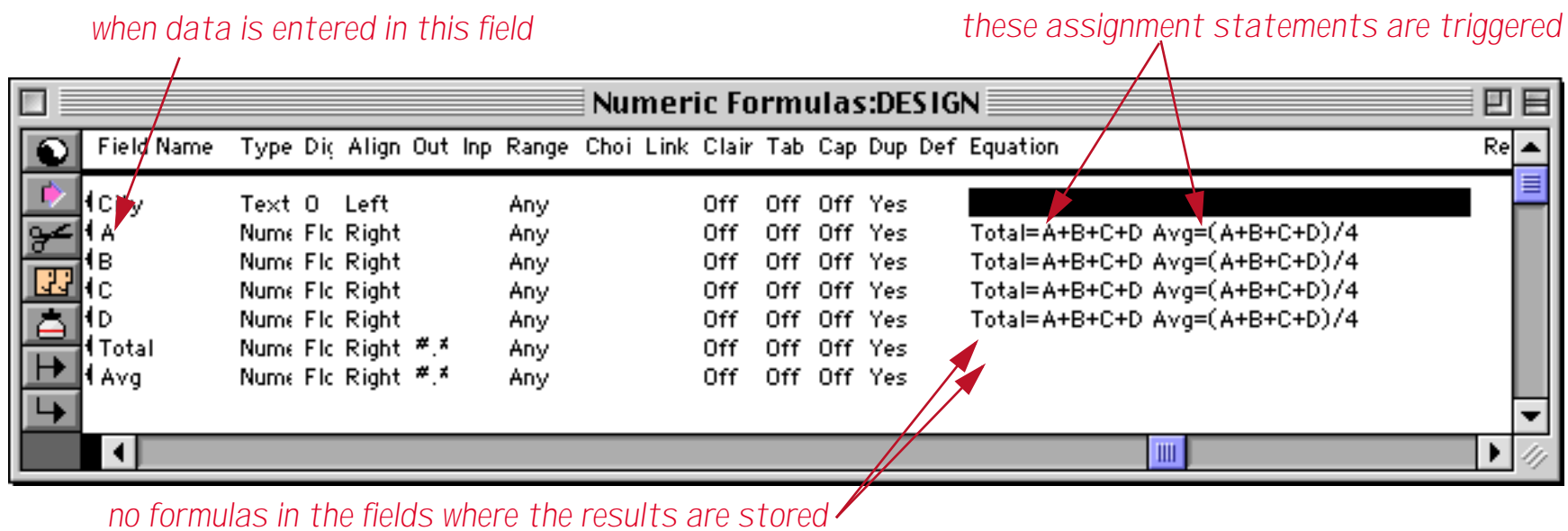
An alternate mode for performing calculations is called **Procedure Mode**. In this mode little “mini-procedures” are triggered when data is entered into a cell. Each mini-procedure can contain one or more assignment statements (see “[Assignment Statements](#)” on page 243 of *Formulas & Programming*). A mini-procedure can also trigger a real procedure (see “[Automatically Triggering a Procedure](#)” on page 314). (Note: Procedure mode calculations can only be set up with the design sheet, not with the **Field Properties** dialog).

To use procedure mode you must turn it on. This is done with the **Special** menu in the design sheet.



Note: New databases default to **Spreadsheet Mode**. However, if a database was created with Panorama 2.1 or earlier it will default to **Procedure Mode** for compatibility with these earlier versions of Panorama. Either way you can easily switch back and forth between the modes using the **Special** menu. However, you will have to re-create any formulas in the **Equation** column when you make the switch.

When procedure mode is used the assignment statements go along with the field(s) where the data entry is done, not where the answer is placed. This usually means that you’ll have to repeat the assignment statements to place them in each column where the data is entered. Use the **Copy** and **Paste** commands to duplicate the assignment statements into each field.



Once these assignment statements are entered and the new generation has been created (see “[Database “Generations”](#)” on page 212) the automatic calculations will be performed when data entry is performed, just as it was when Spreadsheet Mode was used.

data entered here

City	A	B	C	D	Total	Avg
Camarillo	2.83	9.19	15.11	2.54	29.67	7.42
Diamond Bar	3.13	7.81	13.19	3.11	27.24	6.81
Fullerton	2.59	8.25	13.48	1.77	26.09	6.52
Laguna Beach	3.06	9.45	12.5	3.01	28.02	7.00
Newport Beach	3.18	7.22	12.32	2.38	25.70	6.27
Whittier	3.67	5.23	14.24	3.27	26.41	6.60
Zuma Beach	3.29				3.29	0.82

assignment statements calculate these values

Here is the design sheet for a revised version of our simple invoice example. This version is designed to use Procedure Mode calculations. We've opened the Equation cell for Description3 so that you can see all five assignment statements that are performed when data is triggered in this field. As you can see these are basically the same formulas that we used in Spreadsheet Mode, but re-arranged into a single cell. In addition, we also used the `sum()` function (see "[SUM\(\)](#)" on page 5816 of the *Panorama Reference*), which works just fine in Procedure Mode.

Invoices:DESIGN			
Field Name	Type	Dl	Equation
Name	Text	0	
Address	Text	0	
City	Text	0	
State	Text	0	
Zip	Text	0	City=city(Zip) State=state(Zip)
Payment Me	Text	0	
Credit Card	Text	0	
Payment Nu	Text	0	
Expiration	Text	0	
Authorizati	Text	0	
Quantity1	Num	0	TotalΩ=zeroblank(QuantityΩ*PriceΩ)
Description1	Text	0	PriceΩ=zeroblank(lookup("Catalog","Item",DescriptionΩ,"Price",PriceΩ,0))
Price1	Num	2	TotalΩ=zeroblank(QuantityΩ*PriceΩ)
Total1	Num	2	
Quantity2	Num	0	TotalΩ=zeroblank(QuantityΩ*PriceΩ)
Description2	Text	0	PriceΩ=zeroblank(lookup("Catalog","Item",DescriptionΩ,"Price",PriceΩ,0))
Price2	Num	2	TotalΩ=zeroblank(QuantityΩ*PriceΩ)
Total2	Num	2	
Quantity3	Num	0	TotalΩ=zeroblank(QuantityΩ*PriceΩ)
Description3	Text	0	PriceΩ=zeroblank(lookup("Catalog","Item",DescriptionΩ,"Price",PriceΩ,0))
Price3	Num	2	TotalΩ=zeroblank(QuantityΩ*PriceΩ)
Total3	Num	2	Subtotal=sum("TotalΩ")
Quantity4	Num	0	Tax=Subtotal*0.05
Description4	Text	0	GrandTotal=Subtotal+Tax
Price4	Num	2	
Total4	Num	2	
Quantity5	Num	0	TotalΩ=zeroblank(QuantityΩ*PriceΩ)
Description5	Text	0	PriceΩ=zeroblank(lookup("Catalog","Item",DescriptionΩ,"Price",PriceΩ,0))
Price5	Num	2	TotalΩ=zeroblank(QuantityΩ*PriceΩ)
Total5	Num	2	
Quantity6	Num	0	TotalΩ=zeroblank(QuantityΩ*PriceΩ)
Description6	Text	0	PriceΩ=zeroblank(lookup("Catalog","Item",DescriptionΩ,"Price",PriceΩ,0))
Price6	Num	2	TotalΩ=zeroblank(QuantityΩ*PriceΩ)
Total6	Num	2	
Quantity14	Num	0	TotalΩ=zeroblank(QuantityΩ*PriceΩ)
Description14	Text	0	PriceΩ=zeroblank(lookup("Catalog","Item",DescriptionΩ,"Price",PriceΩ,0))
Price14	Num	2	TotalΩ=zeroblank(QuantityΩ*PriceΩ)
Total14	Num	2	
Quantity15	Num	0	TotalΩ=zeroblank(QuantityΩ*PriceΩ)
Description15	Text	0	PriceΩ=zeroblank(lookup("Catalog","Item",DescriptionΩ,"Price",PriceΩ,0))
Price15	Num	2	TotalΩ=zeroblank(QuantityΩ*PriceΩ)
Total15	Num	2	
Subtotal	Num	2	
Tax	Num	2	
GrandTotal	Num	2	
xxxx	Num	2	
Date	Date	0	
Invoice #	Num	0	

Using Procedure Mode gives you precise control over what calculations are performed. In this example that means that an item's price can be modified without Panorama trying to re-lookup the price from the catalog database (as it did in the previous section in Spreadsheet Mode).

Qty	Description	Price	Total
1	Flat Car	3.75	3.75

Invoice 217	Subtotal	3.75
Date August 28, 2000	Tax	0.17
<input type="radio"/> Cash <input type="radio"/> Check <input type="radio"/> Visa/MC	Total	3.92

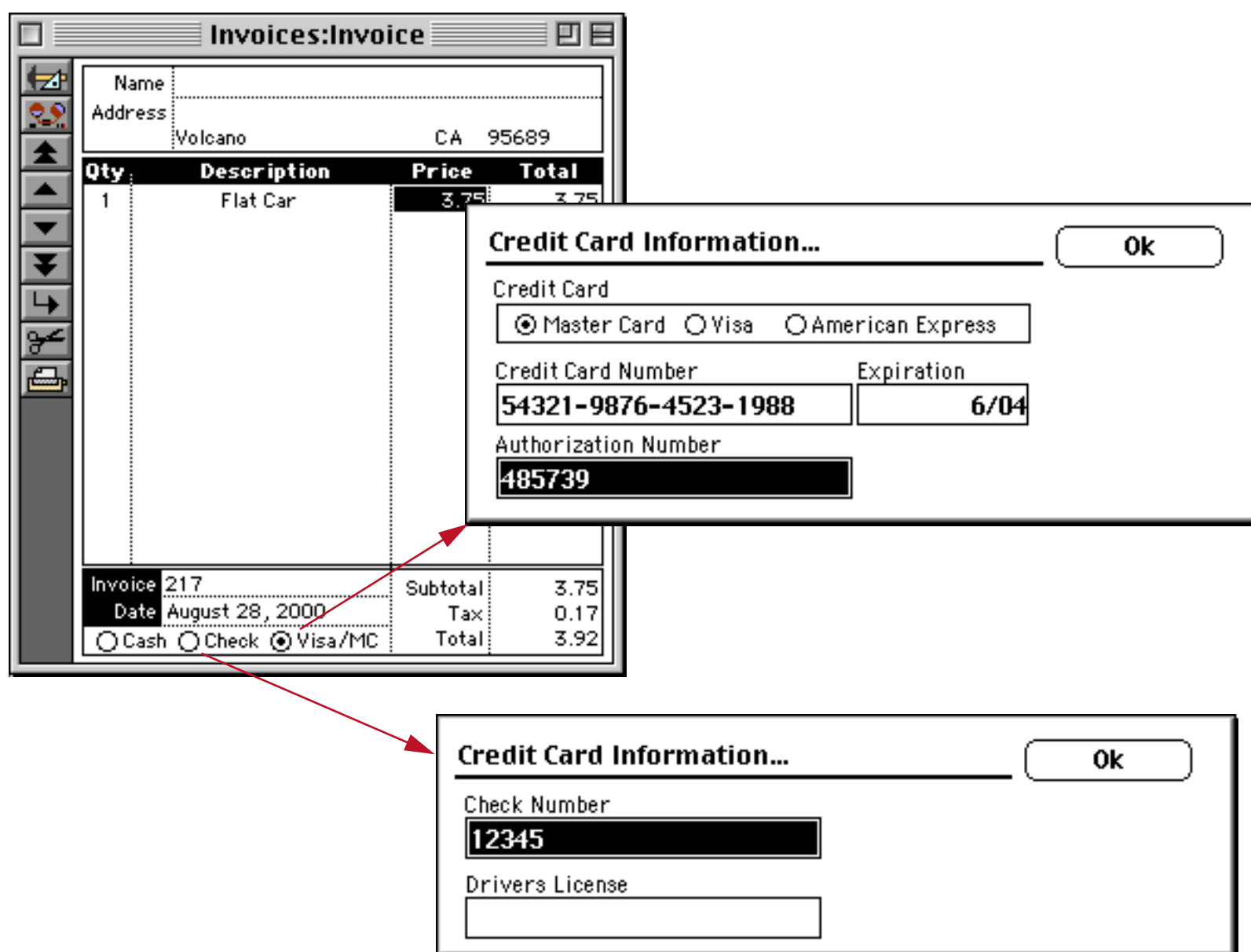
As you can see we have been able to discount the price without having to modify the description. This precise control over exactly what calculations are performed is one of the advantages of Procedure Mode, and sometimes makes it worth the extra effort.

Automatically Triggering a Procedure

When Procedure Mode is used data entry can trigger a real procedure in addition to performing calculations. To trigger a procedure simply enter the name of the procedure in the **Equation** column of the design sheet (the procedure name may not contain any spaces). If the procedure name is combined with any assignment statements the procedure name must come last. Here is an example that triggers the **.PaymentDialog** procedure whenever the **Payment Method** field is edited.

Field Name	Typ	Cap	Dup	Def	Equation	Reac
Name	Tex	Wor	Yes			0
Address	Tex	Wor	Yes			0
City	Tex	Wor	Yes			0
State	Tex	All	No I			0
Zip	Tex	Off	Yes		City=city(Zip) State=state(Zip)	0
Payment Method	Tex	Off	Yes		.PaymentDialog	0
Credit Card	Tex	Off	Yes			0
Payment Number	Tex	Off	Yes			0
Expiration	Tex	Off	Yes			0
Authorization	Tex	Off	Yes			0
Quantity1	Nun	Off	Yes		TotalΩ=zeroblank(QuantityΩ*PriceΩ)	0
Description1	Tex	Wor	Yes		PriceΩ=zeroblank(lookup("Catalog", "Item", DescriptionΩ)	0
Price1	Nun	Off	Yes		TotalΩ=zeroblank(QuantityΩ*PriceΩ)	0
Total1	Nun	Off	Yes			0
Quantity2	Nun	Off	Yes		TotalΩ=zeroblank(QuantityΩ*PriceΩ)	0

This procedure makes a dialog appear whenever the **Payment Method** field is modified (in this case by clicking on radio buttons). The exact dialog that appears depends on which radio button was clicked.



If you are using Spreadsheet Mode there is no way to trigger a procedure from the design sheet. However, you can still create a **.ModifyRecord** procedure that will be triggered whenever any field is modified. See [“.ModifyRecord”](#) on page 383 of *Formulas & Programming* to learn more about this special procedure.

Pros and Cons of Spreadsheet vs. Procedure Mode

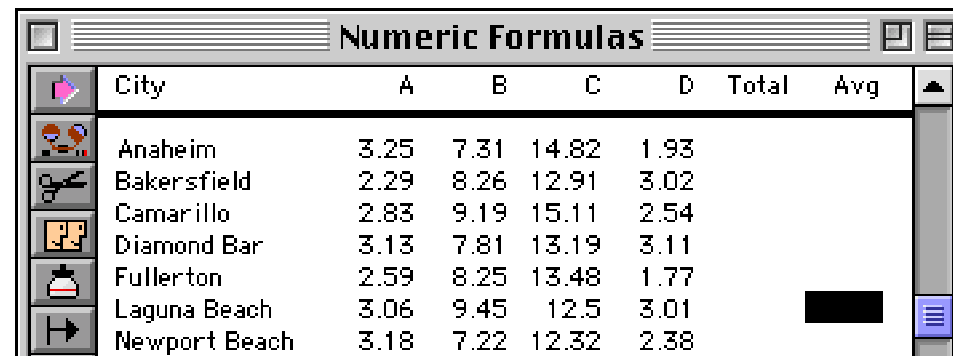
How do you decide which mode to use? The table below summarizes the advantages of each mode.

Spreadsheet Mode	Procedure Mode
<ul style="list-style-type: none"> • Easier to use (less typing) <ul style="list-style-type: none"> • Easier to modify • Less chance of errors • More familiar to spreadsheet users • Can be set up with Field Properties dialog 	<ul style="list-style-type: none"> • More precise control • Can trigger a procedure • Works with <code>sum()</code> function • Slightly faster execution

For most applications Spreadsheet Mode works fine and is easier to use.

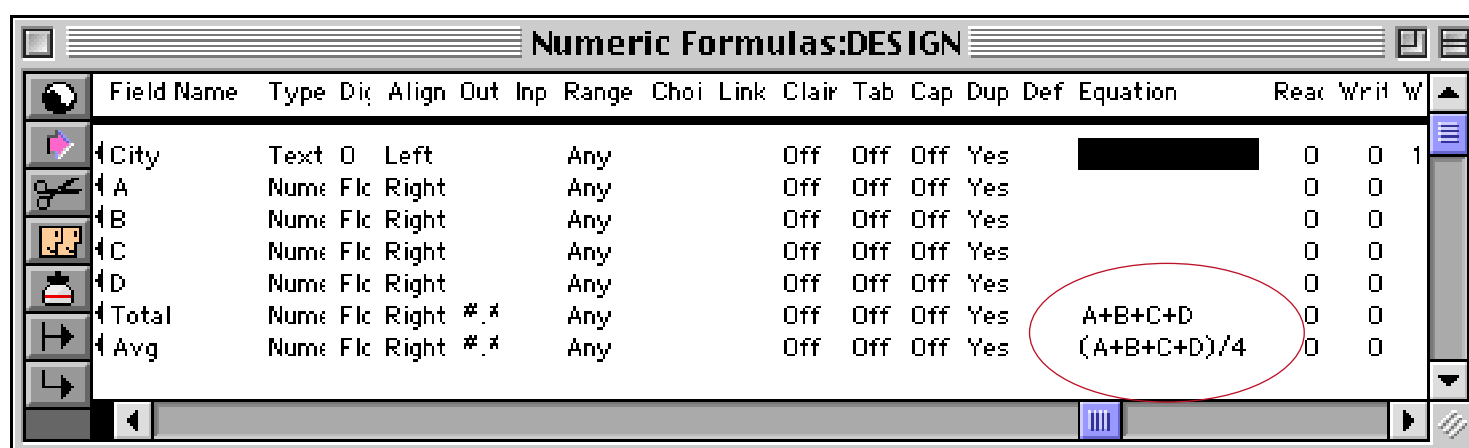
The Run Automatic Calculations Wizard

When you set up an automatic calculation that calculation is automatically applied when new data is entered or existing data is modified. The calculation is not applied to any existing data. One way to apply a calculation to existing data is to use the **Formula Fill** command in the Math menu (see “[Propagate](#)” on page 466). Another method is to use the **Run Automatic Calculations** wizard. This wizard will perform calculations based on the formulas you have entered into the design sheet (see “[Automatic Calculations](#)” on page 303). For example, consider this sample database.



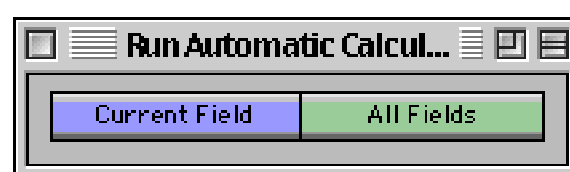
City	A	B	C	D	Total	Avg
Anaheim	3.25	7.31	14.82	1.93		
Bakersfield	2.29	8.26	12.91	3.02		
Camarillo	2.83	9.19	15.11	2.54		
Diamond Bar	3.13	7.81	13.19	3.11		
Fullerton	2.59	8.25	13.48	1.77		
Laguna Beach	3.06	9.45	12.5	3.01		
Newport Beach	3.18	7.22	12.32	2.38		

Looking at the design sheet we can see that calculations have been set up for the **Total** and **Avg** fields.

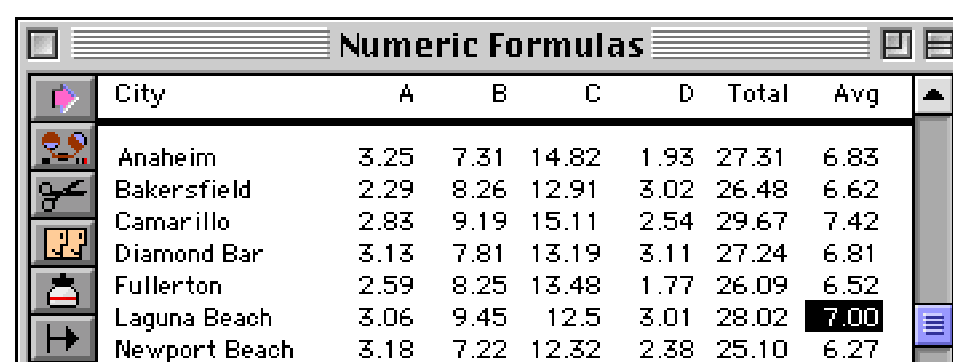


Field Name	Type	Dir	Align	Out	Inp	Range	Choi	Link	Clair	Tab	Cap	Dup	Def	Equation	Reax	Writ	W
City	Text	0	Left			Any		Off	Off	Off	Yes				0	0	1
A	Num	Fic	Right			Any		Off	Off	Off	Yes				0	0	
B	Num	Fic	Right			Any		Off	Off	Off	Yes				0	0	
C	Num	Fic	Right			Any		Off	Off	Off	Yes				0	0	
D	Num	Fic	Right			Any		Off	Off	Off	Yes				0	0	
Total	Num	Fic	Right	#,.		Any		Off	Off	Off	Yes			A+B+C+D	0	0	
Avg	Num	Fic	Right	#,.		Any		Off	Off	Off	Yes			(A+B+C+D)/4	0	0	

When new data is entered into this database the **Total** and **Avg** fields are calculated automatically. However, they are not calculated for the existing data. To perform this calculation, open the **Run Automatic Calculations** wizard.



To calculate the values for all fields that have calculations set up (in this case **Total** and **Avg**) press the **All Fields** button. The wizard will perform the calculations and fill in the fields. (Note: This wizard only works with Spreadsheet mode formulas, it does not work if the database uses Procedure mode.)

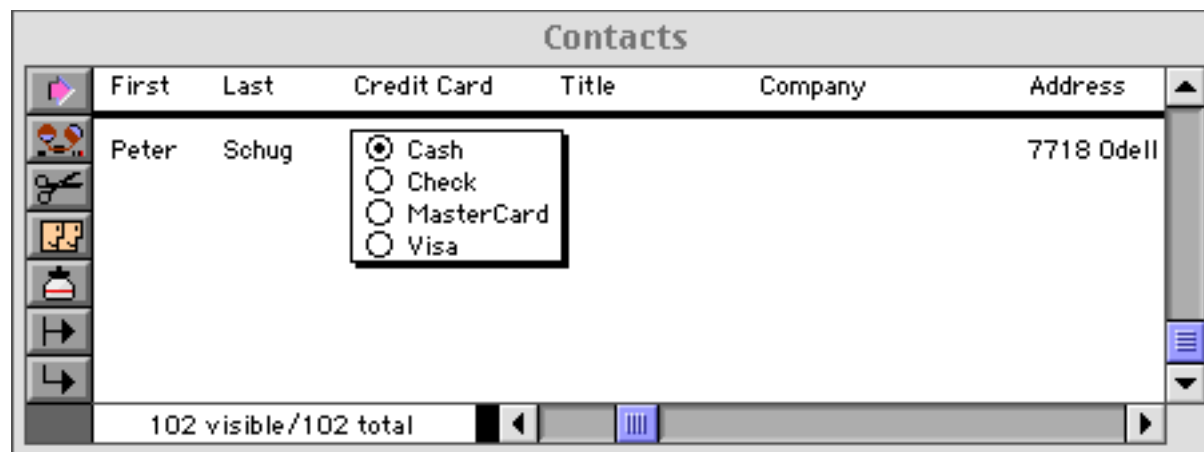


City	A	B	C	D	Total	Avg
Anaheim	3.25	7.31	14.82	1.93	27.31	6.83
Bakersfield	2.29	8.26	12.91	3.02	26.48	6.62
Camarillo	2.83	9.19	15.11	2.54	29.67	7.42
Diamond Bar	3.13	7.81	13.19	3.11	27.24	6.81
Fullerton	2.59	8.25	13.48	1.77	26.09	6.52
Laguna Beach	3.06	9.45	12.5	3.01	28.02	7.00
Newport Beach	3.18	7.22	12.32	2.38	25.10	6.27

If you only want to perform the calculation for the current field press the **Current Field** button. (If the current field doesn't have a calculation set up an alert message will appear.)

The Choice Palette

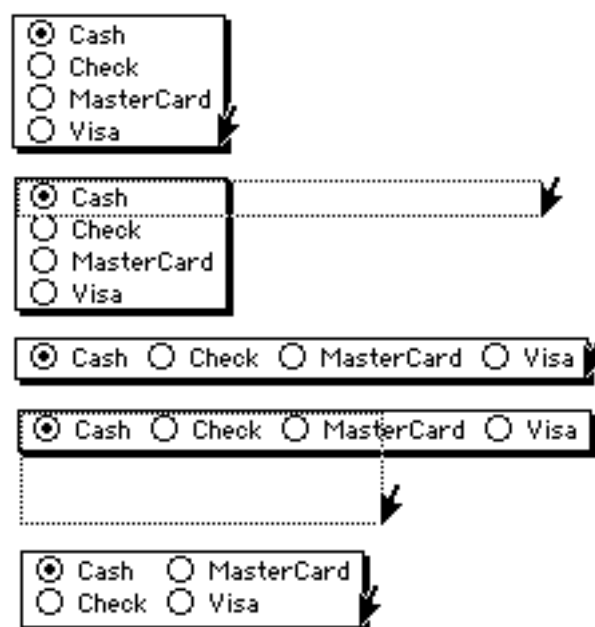
The choice palette provides a completely different way to use the Input Box. Instead of entering the data with the keyboard, you pick the value from a list of buttons.



The choice palette can be used with any data type except pictures. All you have to do is create a list of choices (see below).

Changing the Shape of the Choice Palette

Panorama automatically arranges the buttons in the choice palette for the best fit in the Input Box. By changing the size and shape of the Input Box you can arrange the buttons vertically, horizontally, or in a grid of rows and columns.

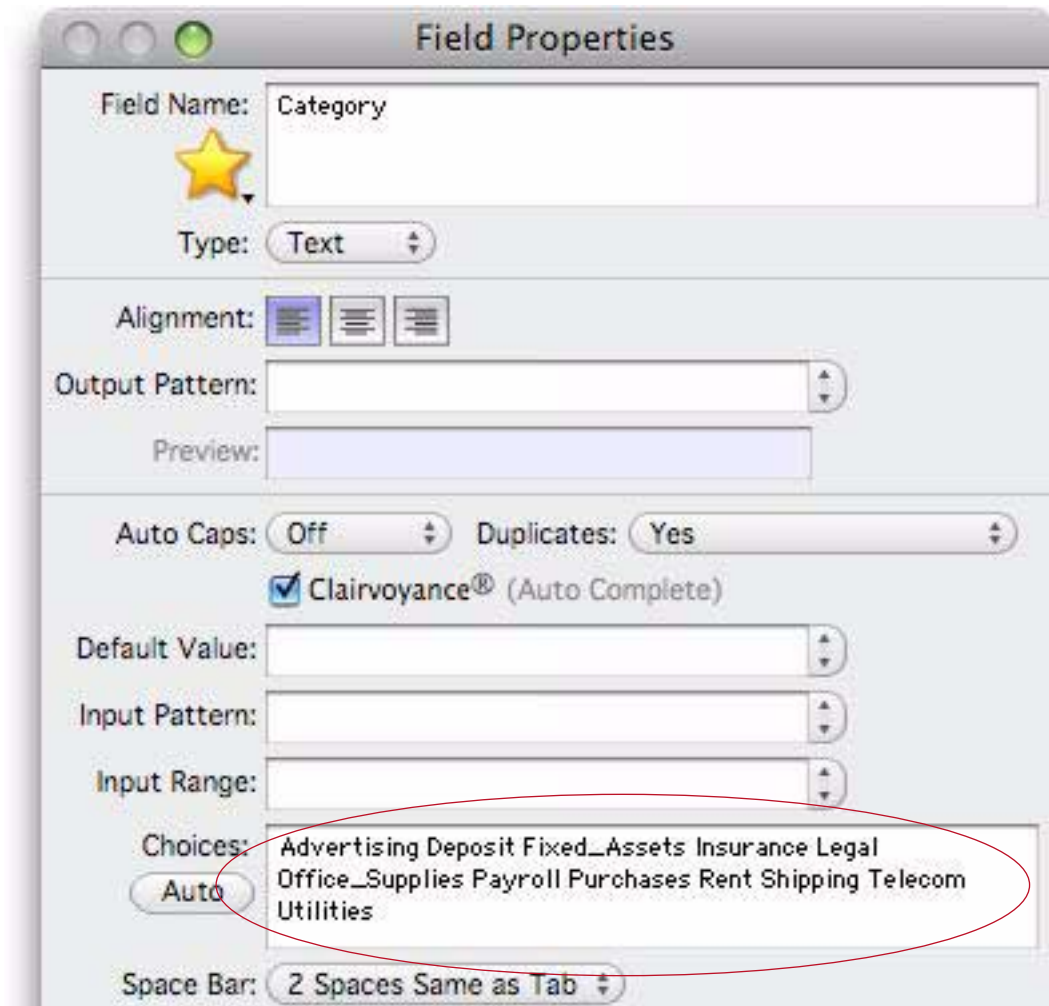


Creating the List of Choices

The list of choices (if any) for each field is kept in the **Choices** column of the design sheet. (See “[The Design Sheet](#)” on page 212 if you are not familiar with the design sheet.) You can key in the list manually or you can use the **Automatic Choices** command to create the list for you (See “[Creating the List of Choices](#)” on page 260).

If you key in the list of choices manually, you must separate each choice with a space. If a choice contains a space (**US Mail**) you must represent the space with an underscore character (**US_Mail**).

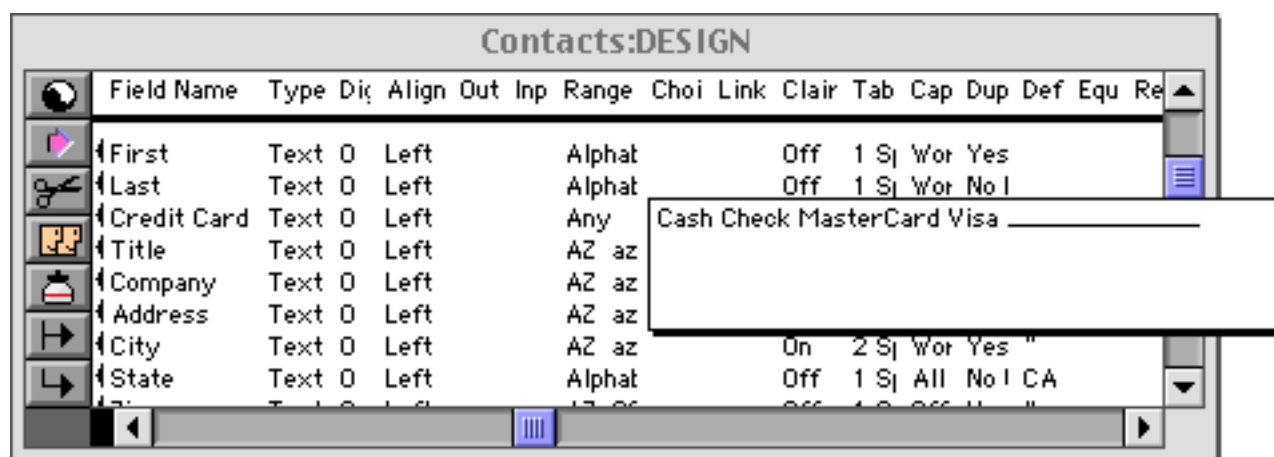
You can also set up the list of choices with the **Field Properties** dialog.



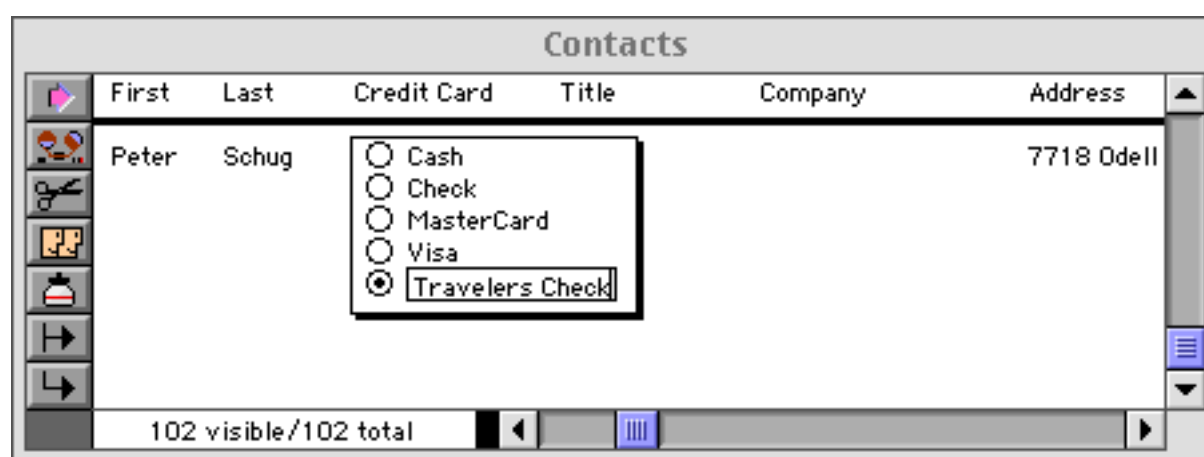
To automatically create the list press the **Auto** button. Panorama scans the database and creates a list of all the choices already in the data.

Exceptions

An option for any choice palette is an exception box. The exception box lets you type any value into the data cell, even if the choice palette doesn't contain a button for it. Use the exception box when you have a few common choices, but cannot anticipate every value in advance. To create an exception box, simply type in a line of underscores at the end of the choice list.



The exception box is always one line high. The width of the exception box is controlled by the number of underscores.



To make the exception box wider, add more underscores.

The Choice Palette vs. the Choices Data Type

If you've already read about the choices data type (See "[Choices](#)" on page 259), you may be wondering how the choice palette relates to the choices data type.

The choice palette is a way to enter data. It provides a way to enter or edit data by picking from a list of choices instead of typing from the keyboard. Using the choice palette does not affect how that data is stored, however. The data can be stored as text, as a number, a date, or using the choices data type.

The choices data type is a way to store data. This data type is efficient (saves memory) for storing data that has only a few possible values.

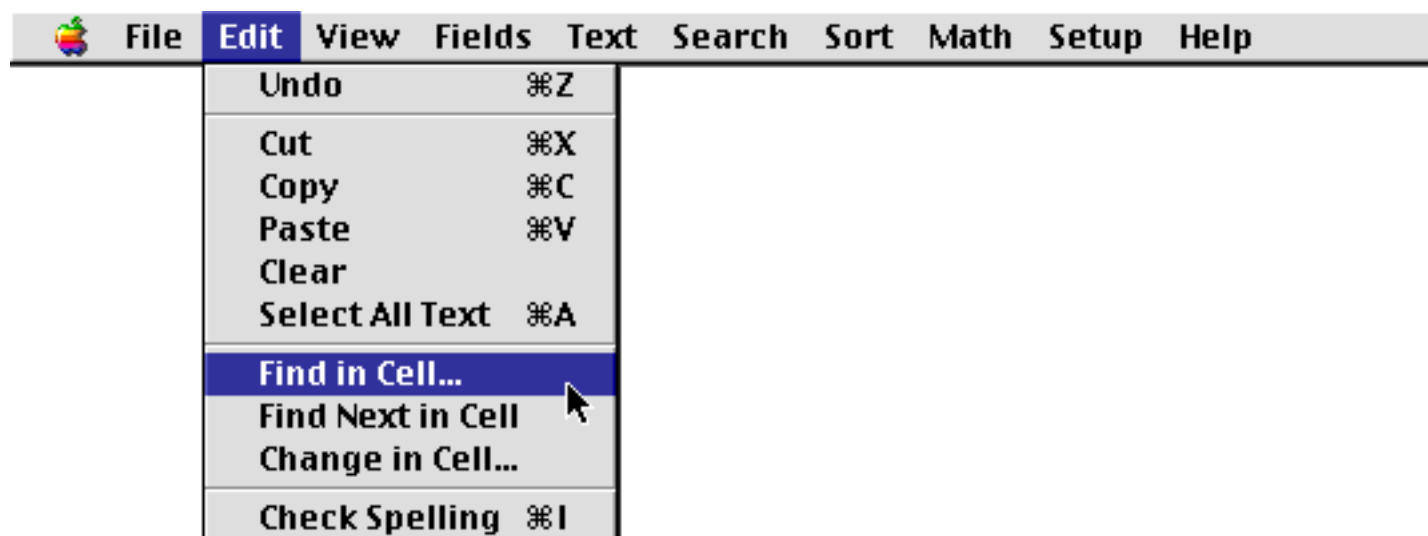
The choices data type can be used with a choice palette (and it usually is), but you can also use regular keyboard editing to enter choice values. A choice data type field will use regular keyboard editing (instead of the choice palette) if you set the number of digits to 1.

Editing Tools within a Data Cell

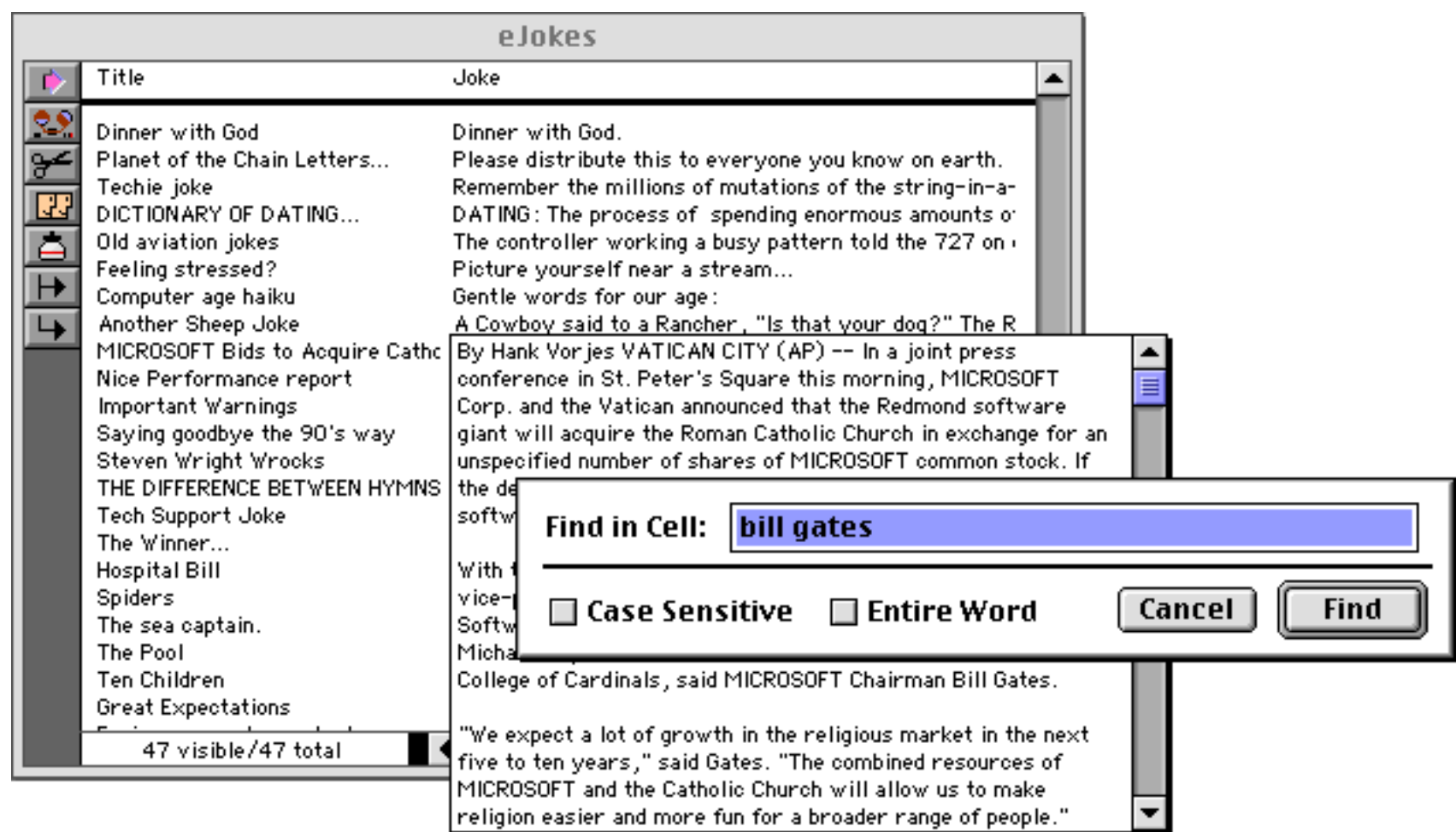
Most data cells contain no more than a few words or phrases. Some applications, however, require that each data cell contain several paragraphs or even an entire page of information. Panorama's search, replace, and spelling checker tools can help you accurately create catalogs, letters, glossaries, bibliographies, etc.

Searching for Text Within the Input Box

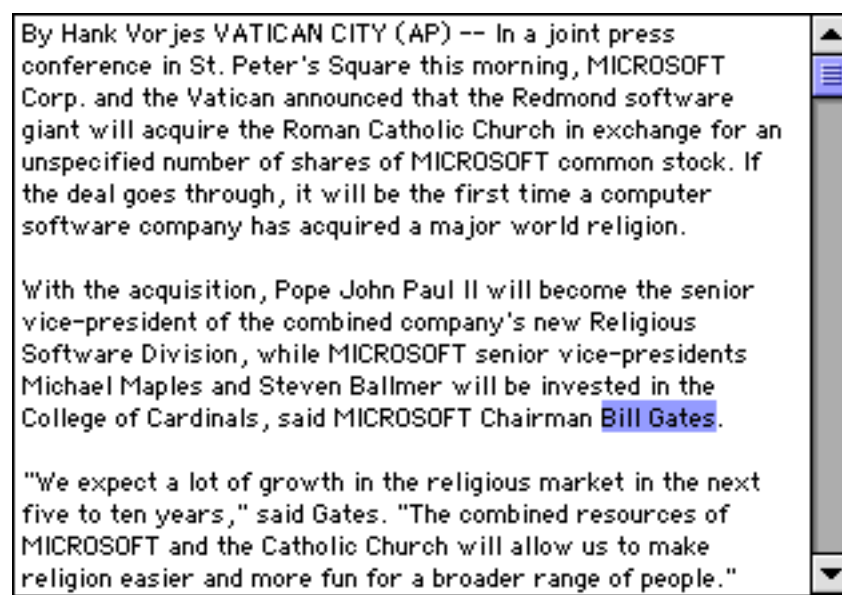
To locate a word or phrase within the Input Box use the **Find in Cell** command in the Edit Menu. Make sure you use the **Find in Cell** command in the Edit Menu, not the **Find/Select** command in the Search Menu.



Enter the word or phrase you want to search for into the dialog box, then press the **Find** button or the **Return** key.



Panorama will move the insertion point to the first occurrence of the word or phrase within the text in the cell.



If you want to look for more occurrences of the word or phrase, use the **Find Next in Cell** command in the **Edit** menu (not the **Find Next** command in the **Search** Menu).

The **Find in Cell** dialog has two options, **Case Sensitive** and **Words Only**. Use the **Case Sensitive** option if you want the **Find in Cell** command to only locate words or phrases that exactly match the capitalization of the text you are searching for. For example, when searching for the word **Panorama**, the **Find in Cell** command would normally also locate **panorama** and **PANORAMA**. However, if the **Case Sensitive** option is checked only **Panorama** will be located—the other two versions would be skipped.

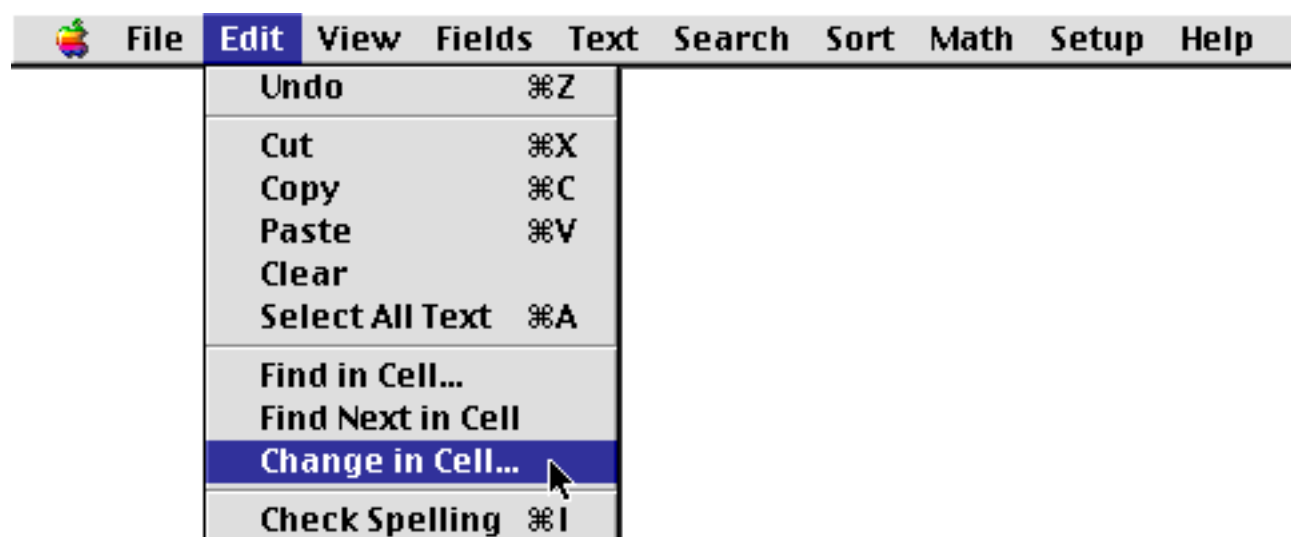
Use the **Words Only** option when you only want to locate occurrences of the text that are complete words, not part of a larger word. For example, if you search for the word **head**, the **Find in Cell** command will also locate the words **header**, **headline**, **subhead**, etc. However, if the **Words Only** option is checked, these additional variations will be skipped.

To find additional occurrences of the word or phrase within the Input Box, use the **Find Next in Cell** command in the Edit menu (not the Search menu).

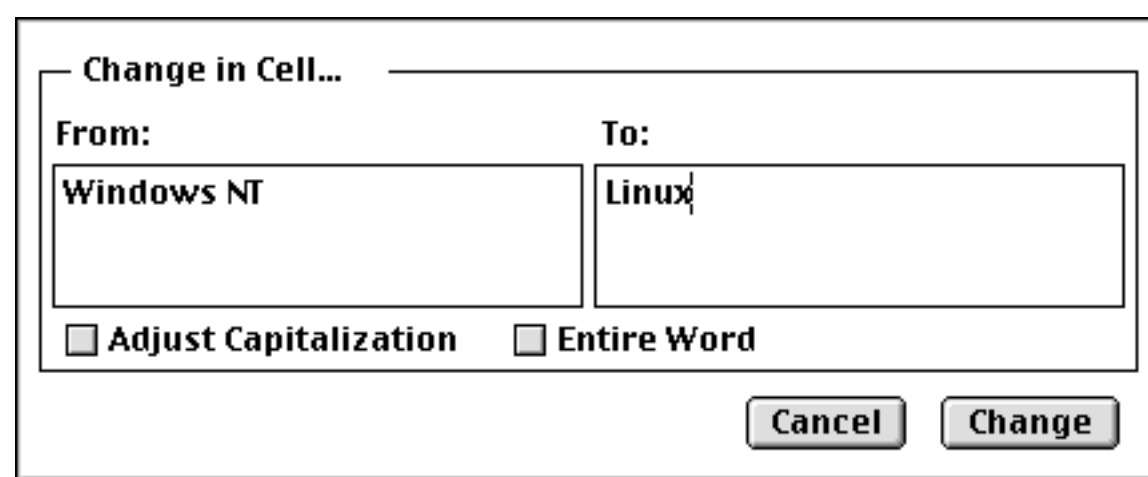
The **Find in Cell** command in the Edit menu searches only through the text in the Input Box. If you wish to search the entire database you must use the **Find/Select** command in the Search menu (see “[The Find/Select Dialog](#)” on page 336).

Replacing Words or Phrases Within a Cell

To replace a word or phrase within the Input Box use the **Change in Cell** command in the Edit Menu.



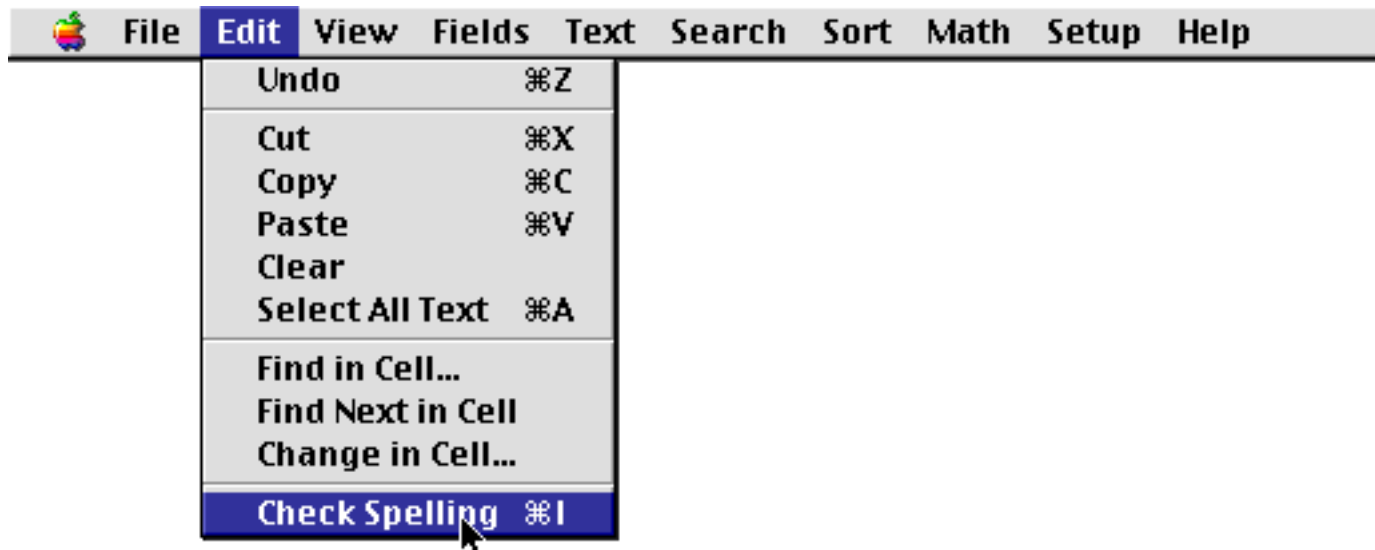
Make sure you use the **Change in Cell** command in the Edit Menu, not the **Change** command in the Search Menu. Enter the word or phrase you want to replace and the new word or phrase into the dialog box. Press the **Change** button or the **Enter** key to change all occurrences of the word or phrase within the Input Box.



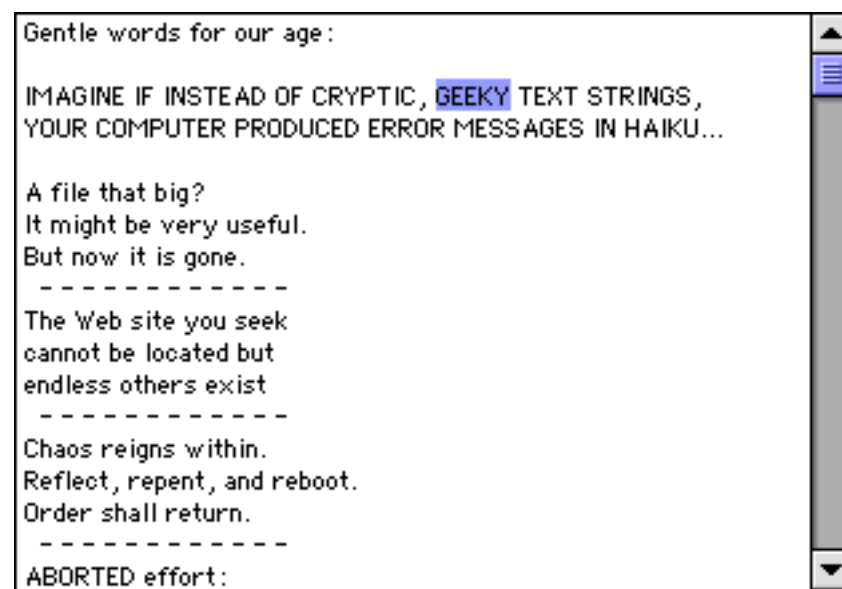
The **Change in Cell** dialog has the same **Case Sensitive** and **Words Only** options that appear in the **Find in Cell** dialog. These options work exactly the same way as described in the previous section.

Using the Spelling Checker within a Cell

If you have purchased Panorama's optional spelling dictionary, you can use the **Check Spelling** command (Edit Menu) to check the spelling of the text in the Input Box.



Starting from the currently selected spot in the text, the **Check Spelling** will scan the Input Box looking for spelling errors. If it finds a spelling error, Panorama will stop and highlight the misspelled word.



If the word is actually misspelled, you can correct the error. In the example above, **geeky** is probably correct, but is not in Panorama's dictionary. To resume scanning for more spelling errors, choose **Check Spelling** again from the Edit Menu.

Chapter 8: Sorting



Most data is more useful when it is in some kind of order. Panorama's Sort Menu has several commands that can quickly sort your data into order.

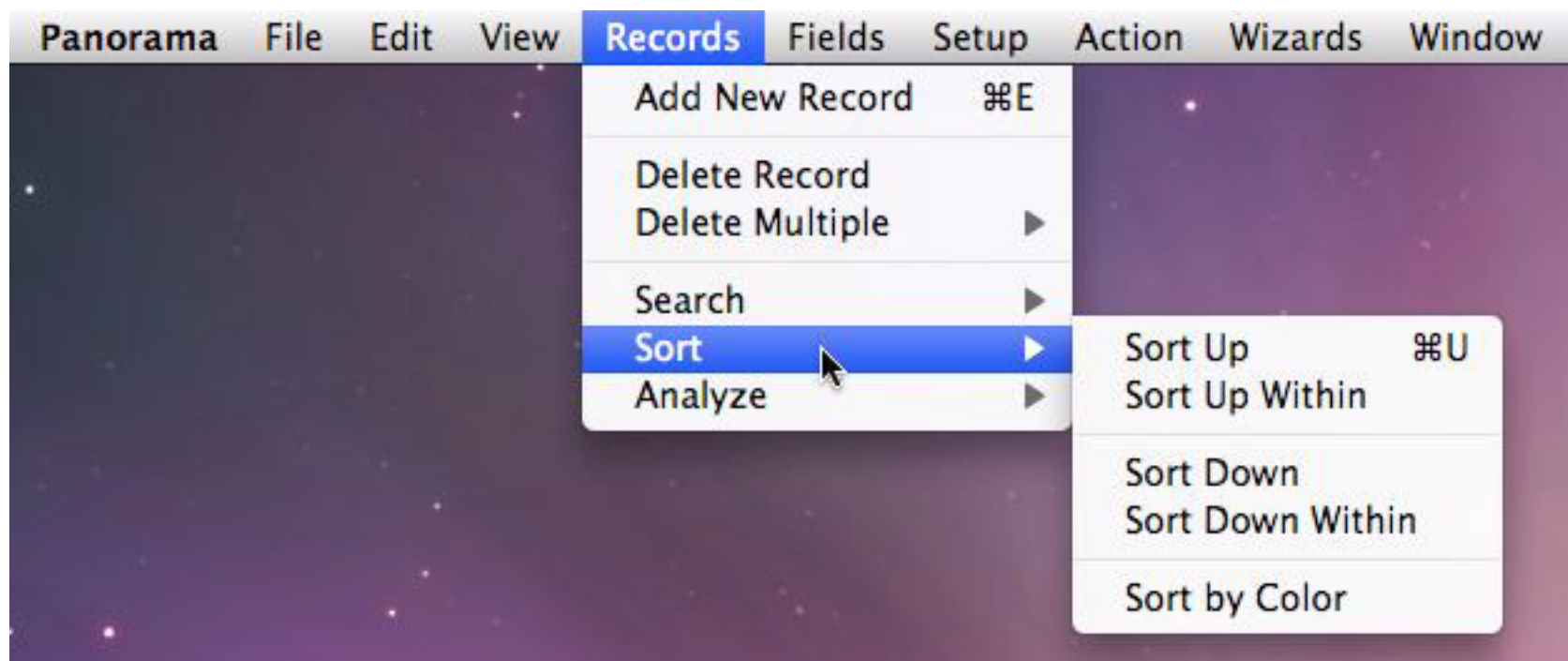
Basic Sorting

Before sorting, you must choose the field to be sorted. For example, you might want to sort a mailing list database by name, city, state, or zip code. To choose the field you want to sort, just click on it. In a data sheet or view-as-list window, you can click on any cell in the column. If you are using a regular form (individual pages), click on the field you want to sort. (You must click on a data cell, not on an auto-wrap text object containing the field.)

First	Last	Title	Company	Address	City
Abe	Fierstein	Vice President	Van Nuys Lumber	1571 Haskell	Van Nuys
Randy	Cross	Owner	Randy's Appliances	133 Hunt Rd	Chelsford
Jeffrey	Rodman			2 Cary Rd	Chestnut
Steve	Jackson	Purchasing	Ann Arbor Lumber	389 Worden	Ann Arbor
Dick	Hardlee			4151 Polstar	Plano
Don	Meadows	Sales Manager	Austin Lumber	1144 A West 6th	Austin
Jerry	Bowen	Vice President	Peacock Video	2847 Peacock	Highland
Thom	Getchell	Customer Support	Thom's Appliances	543 Laurel	Menlo Park
Brian	Smith	Owner	Brian's Appliances	1844 Tiburon	Hollister
David	Blair	Owner	DB Printing	869 W. Temple	Lenox
Keith	Baker	Sales Manager	Northgate Video	552 Northgate	Lindenhurst
John	Sloan			79 Danube Way	Olympia
Guy	Porter		St. Louis Lumber	8702 Pershing	St. Louis
Steve	Gibson			57 Sunnyview	St. Peter
Chuck	Rouse	Agent	Hays Lumber	625 West 15th	Hays
Peter	Silvers	Customer Support	P.S. Plumbing	9382 Hampson	New Orleans
Michael	Cox	Purchasing	Dallas Lumber	4785 Velasco	Dallas
James	Mahan	Owner	J.M. Plumbing	1294 W. 31st	Los Angeles
Garv	Gintz	President	Garv's Appliances	7436 35th S.W.	Seattle

102 visible/102 total

To sort in ascending order (A to Z) use the **Sort Up** command. To sort in descending order (Z to A) use the **Sort Down** command. The **Sort Down** command is especially useful with numeric data if you want to rank the numbers from largest to smallest.



When the database is sorted, all the records are re-arranged. However the current record remains in the same spot in the window. For example, if you click on the name **Zabriskie** and then sort, the record containing **Zabriskie** will remain on the screen. The record will not be in the same spot in the file, however, because it is now near the end of the file with the other Z's. In this case the current record was **Keith Baker**, which is still the current record. However the database is now sorted from A to Z within the **Last** name field.

The screenshot shows a window titled 'Contacts' with a table of contact information. The table has columns for First, Last, Title, Company, Address, and City. The records are sorted by last name. The current record is highlighted in black.

First	Last	Title	Company	Address	City	
Keith	Baker	Sales Manager	Northgate Video	552 Northgate	Lindenhu	
Nabil	Basir		Armonk Lumber	12 Upland Lane	Armonk	
John	Bath	President	J.B. Plumbing	8864 Ave	Mendota	
Jack	Beardsley	Sales Manager	Toledo Lumber	4964 Pelham	Toledo	
Carl	Berg	Owner	C.B. Plumbing	161 Norton St	New Hay	
Leslie	Bianchi			23 Oak St	Lexingto	
Mary	Bilbury	Vice President	M.B. Plumbing	2754 Parkway	Beverly	
Joseph	Bizzarri	Owner	JB Printing	7045 Mandel	Westche	
David	Blair	Owner	DB Printing	869 W. Temple	Lenox	
Al	Bodner			93 Valencia Lane	Clifton F	
Jerry	Boone			6125 Park Drive	Travers	
Jerry	Bowen	Vice President	Peacock Video	2847 Peacock	Highland	
Yvonne	Broach			9330 Poitiers	Houston	
Susan	Brown			783 Algonquin	Newport	
Tom	Cane			8820 Sierra Court	Dublin	
David	Cohn			307 Ronnie Drive	Buffalo O	
Michael	Cox	Purchasing	Dallas Lumber	4785 Velasco	Dallas	
Anne	Crane			Grosse Pointe Shores	11 Moorland Drive	Grosse F
Randy	Cross	Owner	Randy's Appliances	133 Hunt Rd	Chelsfor	

102 visible/102 total

Sorting By More Than One Field

It is often necessary to sort by more than one field at a time. For example, you may need to sort both first and last names, or cities and states. After you have sorted the database once, you can use the **Sort Up Within** (or **Sort Down Within**) commands to sort by additional fields.

For example to sort by city and state, first sort by the state.

Company	Address	City	State	Zip
M.B. Plumbing	2754 Parkway	Beverly Hills	CA	90210
Peacock Video	2847 Peacock	Highland	CA	92346
	783 Algonquin	Newport Beach	CA	93459
	8820 Sierra Court	Dublin	CA	94568
Herb's Appliances	206 Phelps St	San Francisco	CA	94124
M.D. Plumbing	518 Arneill Rd	Camarillo	CA	93010
	519 Leahy	Redwood City	CA	94061
Van Nuys Lumber	1571 Haskell	Van Nuys	CA	91409
Thom's Appliances	543 Laurel	Menlo Park	CA	94025
N.L. Plumbing	759 2Nd Ave	San Francisco	CA	94118
J.M. Plumbing	1294 W. 31St	Los Angeles	CA	90018
	5238 Quince	Upland	CA	91786
	8265 Leticia	San Clemente	CA	92672
Jim's Appliances	14189 8th	Newhall	CA	91321
Palo Alto Lumber	1828 Amaranta	Palo Alto	CA	94306
D.P. Plumbing	191 Treg Lane	Concord	CA	94518
	7265 Lakeland Drive	Roseville	CA	95661
Riverside Lumber	1901 Red Oak Drive	Riverside	CA	92509
Acme Widgets	12 Harmony Lane	Huntington Beach	CA	92648
Brian's Appliances	1844 Tiburon	Hollister	CA	95023
Latham Video	4792 Latham	Mountain View	CA	94041
P.T. Plumbing	1009 Secret Bay	Davis	CA	95616
	7292 Delvin Wy	South San Francisco	CA	94080
San Francisco Lumber	854 14th St	San Francisco	CA	94103
S.W. Plumbing	1175 Wilson Rd	Fountain	CO	80817
C.B. Plumbing	161 Norton St	New Haven	CT	06511
	15 Lownds Drive	Windsor Locks	CT	06096
	53 Clubhouse Drive	Woodbury	CT	06798
	31 Cross Highway	Westport	CT	06880
West Palm Beach Lurr	8206 13th Way	West Palm Beach	FL	33407
SM Printing	3894 11th Court	Jupiter	FL	33458
DB Printing	869 W. Temple	Lenox	IA	50851
Northgate Video	552 Northgate	Lindenhurst	IL	60046

As you can see, the records are now sorted by state. However, the cities are not sorted within each state. For example, **Davis, CA** should appear before **San Francisco, CA**, but it doesn't. In fact, within each state the records aren't sorted at all, they are still in the order they were in before they were sorted.

To complete our two column sort, click on the **City** field and use **Sort Up Within** to sort the cities. The **Sort Up Within** command leaves the states in order but sorts the cities within each state.

Company	Address	City	State	Zip
M.B. Plumbing	2754 Parkway	Beverly Hills	CA	90210
M.D. Plumbing	518 Arneill Rd	Camarillo	CA	93010
D.P. Plumbing	191 Treg Lane	Concord	CA	94518
P.T. Plumbing	1009 Secret Bay	Davis	CA	95616
	8820 Sierra Court	Dublin	CA	94568
Peacock Video	2847 Peacock	Highland	CA	92346
Brian's Appliances	1844 Tiburon	Hollister	CA	95023
Acme Widgets	12 Harmony Lane	Huntington Beach	CA	92648
J.M. Plumbing	1294 W. 31St	Los Angeles	CA	90018
Thom's Appliances	543 Laurel	Menlo Park	CA	94025
Latham Video	4792 Latham	Mountain View	CA	94041
Jim's Appliances	14189 8th	Newhall	CA	91321
	783 Algonquin	Newport Beach	CA	93459
Palo Alto Lumber	1828 Amaranta	Palo Alto	CA	94306
	519 Leahy	Redwood City	CA	94061
Riverside Lumber	1901 Red Oak Driv	Riverside	CA	92509
	7265 Lakeland Dri	Roseville	CA	95661
	8265 Leticia	San Clemente	CA	92672
Herb's Appliances	206 Phelps St	San Francisco	CA	94124
N.L. Plumbing	759 2Nd Ave	San Francisco	CA	94118
San Francisco Lumber	854 14th St	San Francisco	CA	94103
	7292 Delvin Wy	South San Francis	CA	94080
	5238 Quince	Upland	CA	91786
Van Nuys Lumber	1571 Haskell	Van Nuys	CA	91409
S.W. Plumbing	1175 Wilson Rd	Fountain	CO	80817
C.B. Plumbing	161 Norton St	New Haven	CT	06511
	31 Cross Highway	Westport	CT	06880
	15 Lownds Drive	Windsor Locks	CT	06096
	53 Clubhouse Drive	Woodbury	CT	06798
SM Printing	3894 11th Court	Jupiter	FL	33458
West Palm Beach Lurr	8206 13th Way	West Palm Beach	FL	33407
DB Printing	869 W. Temple	Lenox	IA	50851
D.S. Plumbing	683 Elm St	Batavia	IL	60510

As you can see, the cities are now sorted within **California** and **Connecticut** (and within all of the other states with more than one record as well).

The **Sort Within** commands can be used over and over again to sort 3, 4, or more fields within each other. Always start with the regular **Sort Up** or **Sort Down** commands, then use **Sort Up Within** or **Sort Down Within** to sort each of the additional fields. For example, if you look closely you will notice that the three **San Francisco** records in the window above are not sorted by zip code. If you wanted them to be, you could simply click on the **Zip** field and then choose **Sort Up Within** again. The records will still be sorted by state and by city within state, but now they will also be sorted by zip code within city as well.

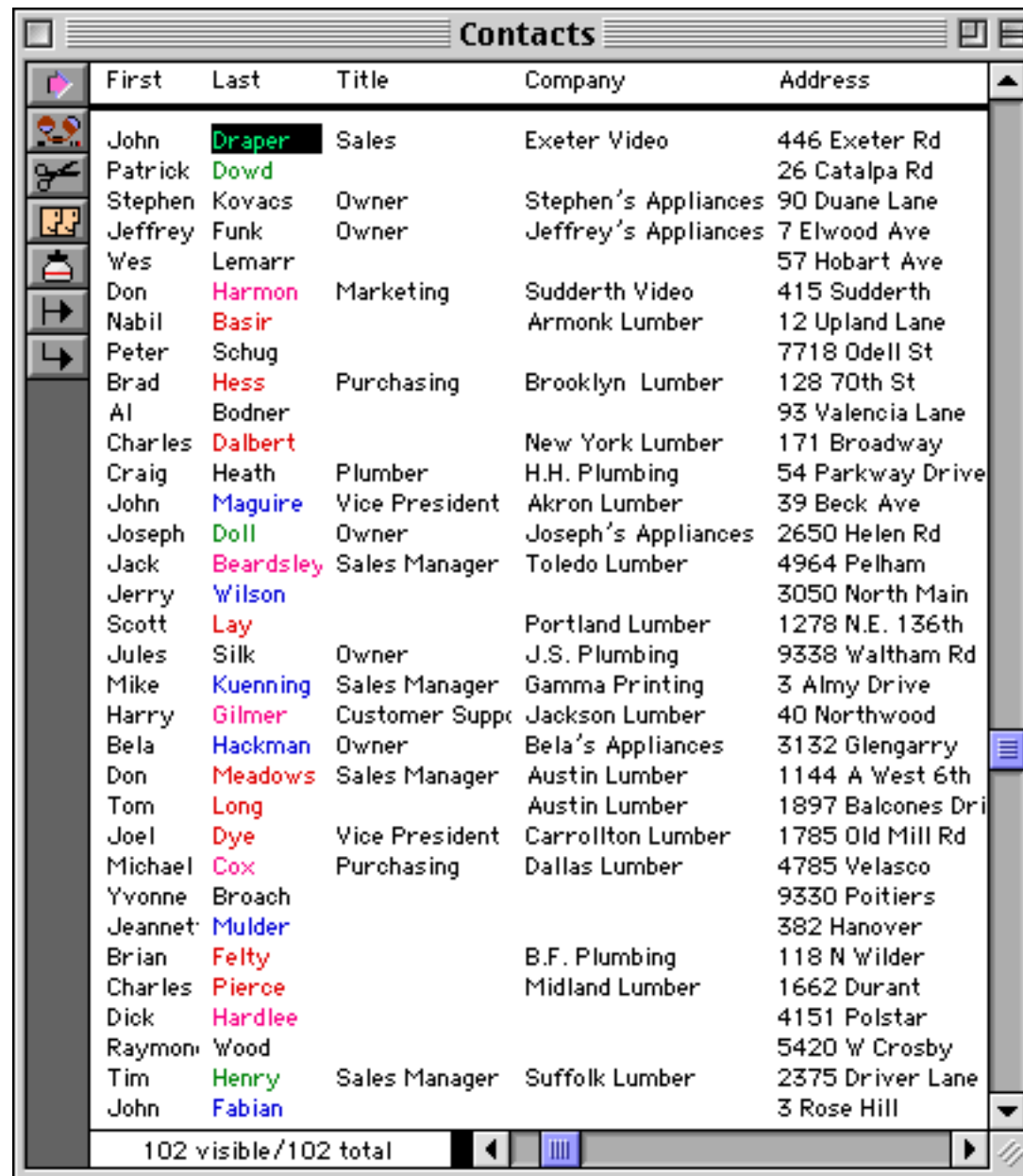
Riverside Lumber	1901 Red Oak Driv	Riverside	CA	92509
	7265 Lakeland Dri	Roseville	CA	95661
	8265 Leticia	San Clemente	CA	92672
San Francisco Lumber	854 14th St	San Francisco	CA	94103
N.L. Plumbing	759 2Nd Ave	San Francisco	CA	94118
Herb's Appliances	206 Phelps St	San Francisco	CA	94124
	7292 Delvin Wy	South San Francis	CA	94080
	5238 Quince	Upland	CA	91786
Van Nuys Lumber	1571 Haskell	Van Nuys	CA	91409
S.W. Plumbing	1175 Wilson Rd	Fountain	CO	80817
C.B. Plumbing	161 Norton St	New Haven	CT	06511

Note: There is an alternate way to sort multiple fields. This alternate method does not use the **Sort Within** command. Instead of sorting within, sort the fields in reverse order using the regular **Sort Up** or **Sort Down** commands. For example to sort by city within state, first click on the **City** field, then **Sort Up**, then click on the **State** field, and finally **Sort Up** again.

Sorting By Color

Usually the database is sorted according to the data in a field, but you can use the **Sort by Color** command to sort by the color of each cell in the field. Sorting by color can be useful if you have set up your database so that each color has a meaning. The sort order for colors is black, red, green, blue, cyan, magenta, yellow. See “[Data Style and Color](#)” on page 474 for details on how to assign a color to a cell.

Here is a database where each name has been assigned a color.



First	Last	Title	Company	Address
John	Draper	Sales	Exeter Video	446 Exeter Rd
Patrick	Dowd			26 Catalpa Rd
Stephen	Kovacs	Owner	Stephen's Appliances	90 Duane Lane
Jeffrey	Funk	Owner	Jeffrey's Appliances	7 Elwood Ave
Wes	Lemarr			57 Hobart Ave
Don	Harmon	Marketing	Sudderth Video	415 Sudderth
Nabil	Basir		Armonk Lumber	12 Upland Lane
Peter	Schug			7718 Odell St
Brad	Hess	Purchasing	Brooklyn Lumber	128 70th St
Al	Bodner			93 Valencia Lane
Charles	Dalbert		New York Lumber	171 Broadway
Craig	Heath	Plumber	H.H. Plumbing	54 Parkway Drive
John	Maguire	Vice President	Akron Lumber	39 Beck Ave
Joseph	Doll	Owner	Joseph's Appliances	2650 Helen Rd
Jack	Beardsley	Sales Manager	Toledo Lumber	4964 Pelham
Jerry	Wilson			3050 North Main
Scott	Lay		Portland Lumber	1278 N.E. 136th
Jules	Silk	Owner	J.S. Plumbing	9338 Waltham Rd
Mike	Kuening	Sales Manager	Gamma Printing	3 Almy Drive
Harry	Gilmer	Customer Supp	Jackson Lumber	40 Northwood
Bela	Hackman	Owner	Bela's Appliances	3132 Glengarry
Don	Meadows	Sales Manager	Austin Lumber	1144 A West 6th
Tom	Long		Austin Lumber	1897 Balcones Dri
Joel	Dye	Vice President	Carrollton Lumber	1785 Old Mill Rd
Michael	Cox	Purchasing	Dallas Lumber	4785 Velasco
Yvonne	Broach			9330 Poitiers
Jeannet	Mulder			382 Hanover
Brian	Felty		B.F. Plumbing	118 N Wilder
Charles	Pierce		Midland Lumber	1662 Durant
Dick	Hardlee			4151 Polstar
Raymon	Wood			5420 W Crosby
Tim	Henry	Sales Manager	Suffolk Lumber	2375 Driver Lane
John	Fabian			3 Rose Hill

After Sort By Color the records are grouped together by color.

First	Last	Title	Company	Address
Nabil	Basir		Armonk Lumber	12 Upland Lane
Brad	Hess	Purchasing	Brooklyn Lumber	128 70th St
Charles	Dalbert		New York Lumber	171 Broadway
Scott	Lay		Portland Lumber	1278 N.E. 136th
Don	Meadows	Sales Manager	Austin Lumber	1144 A West 6th
Tom	Long		Austin Lumber	1897 Balcones Dri
Joel	Dye	Vice President	Carrollton Lumber	1785 Old Mill Rd
Brian	Felty		B.F. Plumbing	118 N Wilder
Charles	Pierce		Midland Lumber	1662 Durant
Mary	Bilbury	Vice President	M.B. Plumbing	2754 Parkway
Jerry	Bowen	Vice President	Peacock Video	2847 Peacock
Herb	Dang	President	Herb's Appliances	206 Phelps St
Tim	Moran			220 East Parkway
Jeffrey	Rodman			2 Cary Rd
Leslie	Bianchi			23 Oak St
Patrick	Dowd			26 Catalpa Rd
Joseph	Doll	Owner	Joseph's Appliances	2650 Helen Rd
Tim	Henry	Sales Manager	Suffolk Lumber	2375 Driver Lane
David	Murray			31 Cross Highway
Steve	Miller	President	SM Printing	3894 11th Court
David	Cohn			307 Ronnie Drive
Steve	Jackson	Purchasing	Ann Arbor Lumber	389 Worden
Tim	Daniels	Customer Supp	St. Louis Lumber	3133 Cornell
John	Maguire	Vice President	Akron Lumber	39 Beck Ave
Jerry	Wilson			3050 North Main
Mike	Kuenning	Sales Manager	Gamma Printing	3 Almy Drive
Bela	Hackman	Owner	Bela's Appliances	3132 Glengarry
Jeannet	Mulder			382 Hanover
John	Fabian			3 Rose Hill
Lee	Tucker	Sales Manager	Latham Video	4792 Latham
Karen	Wilson	Vice President	Evanston Lumber	498 Noyes
Cheryll	Howell	Sales Manager	Gray Lumber	4 Fran Circle
Peter	Yarensky	Owner	Peter's Appliances	41 Elm St

Undo Sorting

The **Undo** command will undo the effect of the last **Sort** or **Sort Within** command, putting the database back into the original order. Remember that only the last sort can be undone. Once you sort again the original order cannot be restored (unless you have saved the file on the disk in the original order, then you can use **Revert to Saved** to restore the order.)

Sorting Numbers and Dates

It is important to store numbers using the numeric data type, and dates using the date type. If you store numbers and dates using the text data type they will not sort correctly, as shown in this table.

Stored as Numeric (correct)	Stored as Text (incorrect)
9	6000
80	700
700	80
6000	9

If your numbers or dates are not sorting correctly, make sure they are stored using the correct data type. See "[Numeric Data](#)" on page 249 for more information on the numeric data type. See "[Dates](#)" on page 255 for more information on the date data type.

Sorting Right Justified Text

If your text is right justified, it will sort like a numeric field. In other words, **2** will sort before **10**, and **B** will sort before **AA**. The actual sorting rules for right justified text are—1) short data sorts before longer data (B before AA) and 2) if two data items are the same length, they will be sorted in alphabetical order (AA before BA).

Sorting Selected Data

Sorting is not affected by the **Find/Select** command. The sort commands always sort the entire database—not just the selected records. When the invisible data is selected again you will see that it is sorted properly within the rest of the data.

Sorting Within Groups

Later you'll learn how Panorama can organize a database into groups, with summaries for each group. (See "[3-Step Summarizing](#)" on page 365.) If you attempt to sort your database after it has been grouped, Panorama will automatically sort the data within the groups instead of sorting the entire database. If you want to sort the entire database you must remove the groups with the **Remove Summaries** command (Sort Menu).

Sorting Choices

Data stored using the choices data type is sorted according to the order of the choice list in the design sheet. If you want the choices to be sorted alphabetically, you must make sure that the choice list is in alphabetical (A-Z) order. The **Automatic Choices** command does this for you.

Sometimes you may wish to sort the choices in a different order. For example, Olympic medals should be sorted in the order **Gold, Silver, Bronze** instead of alphabetically (**Bronze, Gold, Silver**). If you need the choices to sort non-alphabetically, simply set up the choice list in the order you want.

Warning: If you use a non-alphabetic choice order, Panorama cannot correctly sort exceptions. Panorama will attempt to place the exceptions in alphabetical order, but if the choice list is not in alphabetical order that may be impossible. The final order is not predictable. If the choice list allows exceptions it should be in alphabetical order.

See "[Choices](#)" on page 259 for more information on the choice list and the choice data type.

Chapter 9: Searching and Selecting

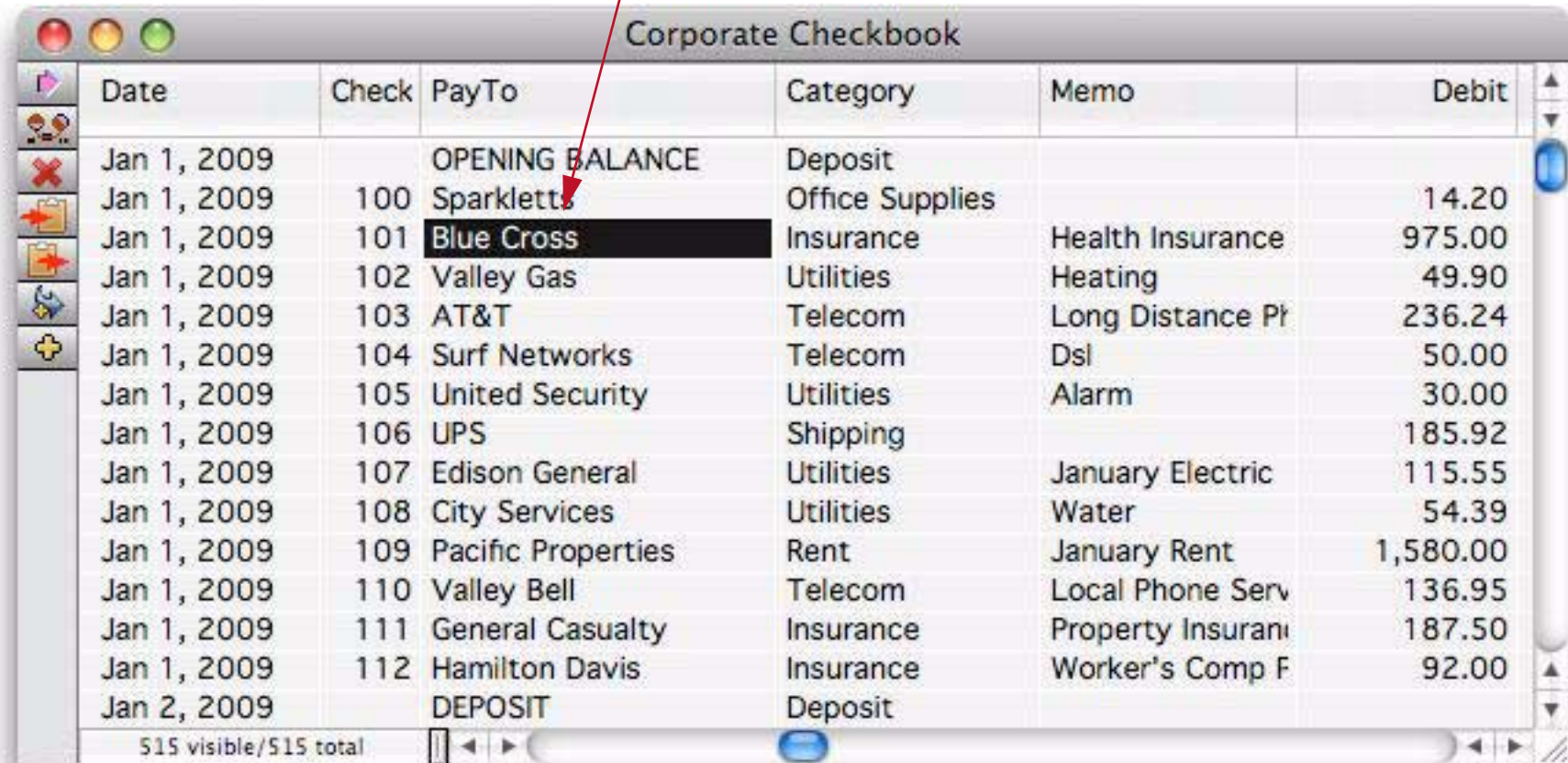


A Panorama database may contain dozens, hundreds, or even thousands of records. Finding a particular piece of information could be like locating a needle in a haystack. Fortunately Panorama can easily locate information for you.

Finding vs. Selecting

Panorama has two ways of locating information, finding and selecting. Finding is much like looking up a name in a phone book—Panorama points out the location of the information you are looking for. For example, you might ask Panorama to find a phone number or a price in a catalog. Panorama will locate the information, and position the database to that spot. In this example we've asked Panorama to find [Blue Cross](#).

find Blue Cross

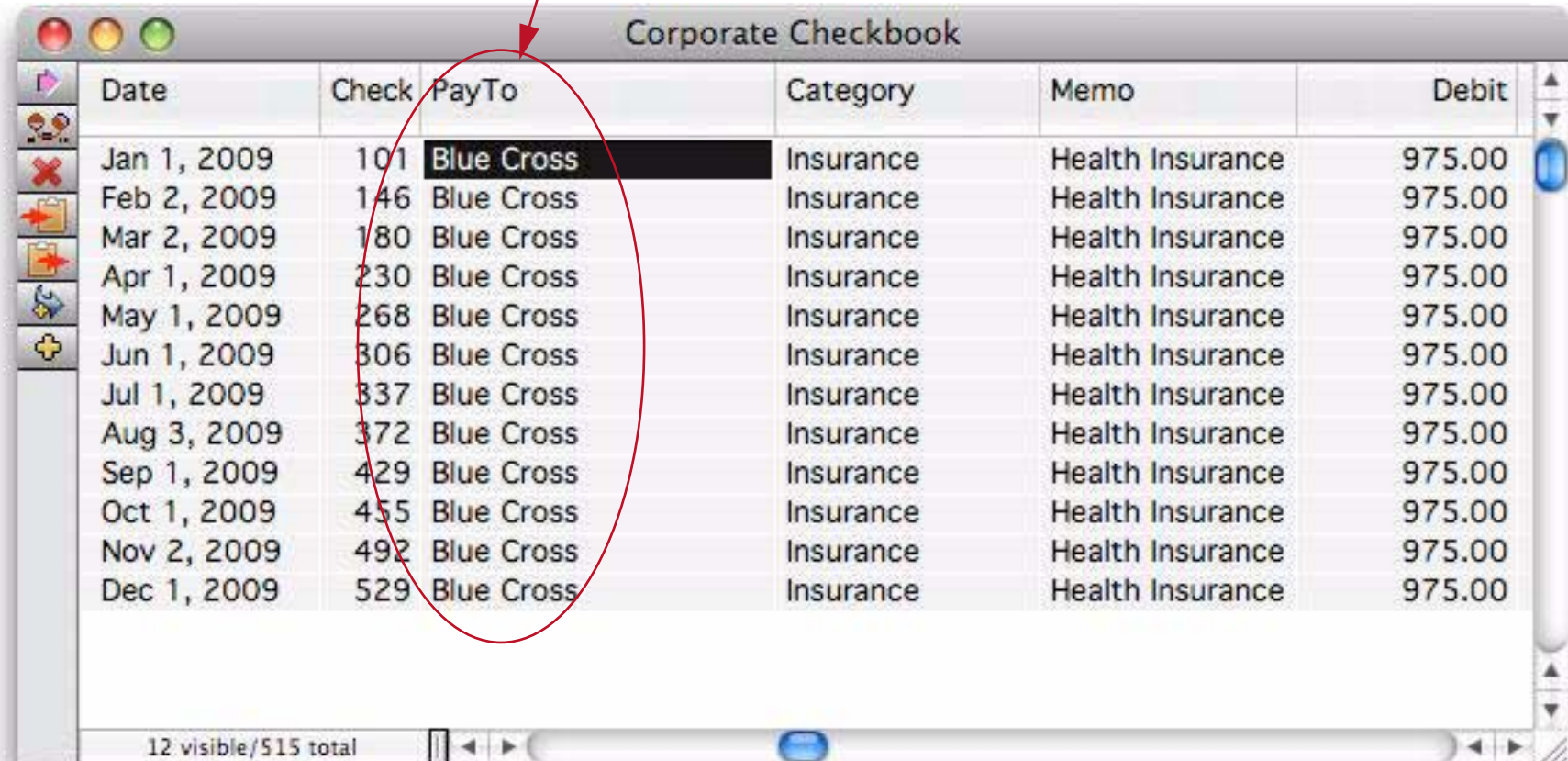


Date	Check	PayTo	Category	Memo	Debit
Jan 1, 2009		OPENING BALANCE	Deposit		
Jan 1, 2009	100	Sparkletts	Office Supplies		14.20
Jan 1, 2009	101	Blue Cross	Insurance	Health Insurance	975.00
Jan 1, 2009	102	Valley Gas	Utilities	Heating	49.90
Jan 1, 2009	103	AT&T	Telecom	Long Distance Pr	236.24
Jan 1, 2009	104	Surf Networks	Telecom	Dsl	50.00
Jan 1, 2009	105	United Security	Utilities	Alarm	30.00
Jan 1, 2009	106	UPS	Shipping		185.92
Jan 1, 2009	107	Edison General	Utilities	January Electric	115.55
Jan 1, 2009	108	City Services	Utilities	Water	54.39
Jan 1, 2009	109	Pacific Properties	Rent	January Rent	1,580.00
Jan 1, 2009	110	Valley Bell	Telecom	Local Phone Serv	136.95
Jan 1, 2009	111	General Casualty	Insurance	Property Insuran	187.50
Jan 1, 2009	112	Hamilton Davis	Insurance	Worker's Comp F	92.00
Jan 2, 2009		DEPOSIT	Deposit		

515 visible/515 total

Selecting is like creating a whole new phone book containing only the information you are looking for. All the selected data remains visible, while everything else temporarily vanishes. For example, you might ask Panorama to select all customers that have purchased from you in the last six months, or all transactions over \$250,000.

select Blue Cross



Date	Check	PayTo	Category	Memo	Debit
Jan 1, 2009	101	Blue Cross	Insurance	Health Insurance	975.00
Feb 2, 2009	146	Blue Cross	Insurance	Health Insurance	975.00
Mar 2, 2009	180	Blue Cross	Insurance	Health Insurance	975.00
Apr 1, 2009	230	Blue Cross	Insurance	Health Insurance	975.00
May 1, 2009	268	Blue Cross	Insurance	Health Insurance	975.00
Jun 1, 2009	306	Blue Cross	Insurance	Health Insurance	975.00
Jul 1, 2009	337	Blue Cross	Insurance	Health Insurance	975.00
Aug 3, 2009	372	Blue Cross	Insurance	Health Insurance	975.00
Sep 1, 2009	429	Blue Cross	Insurance	Health Insurance	975.00
Oct 1, 2009	455	Blue Cross	Insurance	Health Insurance	975.00
Nov 2, 2009	492	Blue Cross	Insurance	Health Insurance	975.00
Dec 1, 2009	529	Blue Cross	Insurance	Health Insurance	975.00

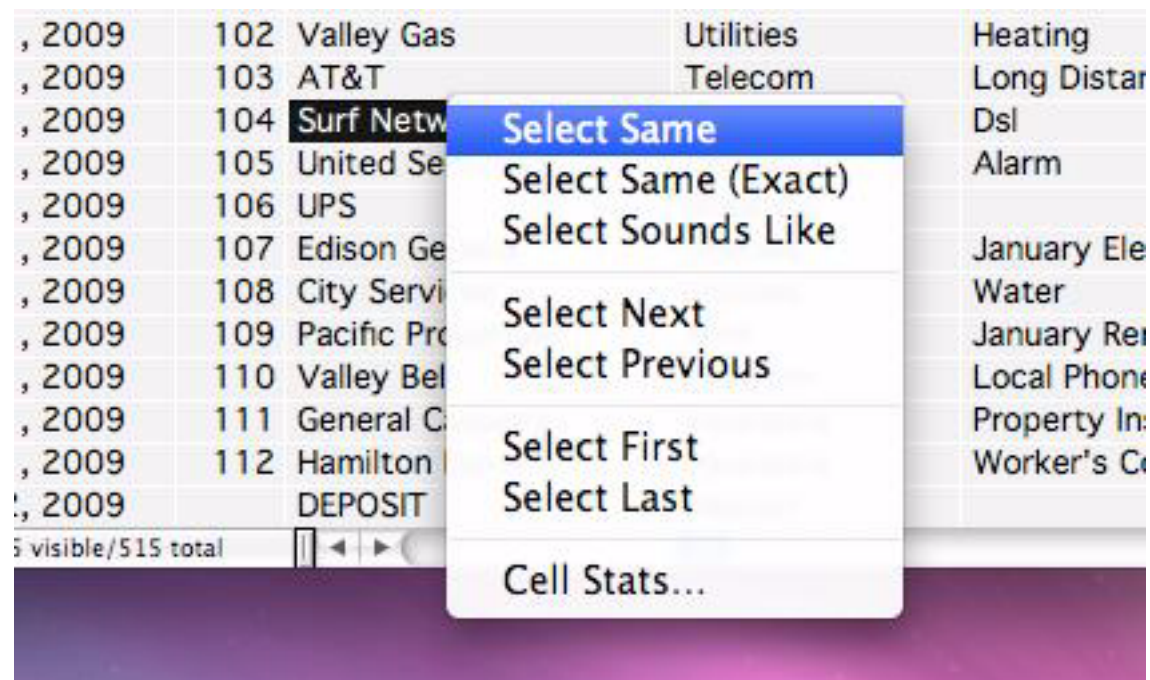
12 visible / 515 total

Deciding whether to find or select is your choice. Usually find is used when you want to locate a specific item like an address or price, while select is used when you want to locate a set of information. You can also combine the two techniques—for example, first select a subset of the database, then find a specific item within that subset.

Note: Some other database programs have a “Find” command that actually does the same thing as Panorama’s Select command (for example FileMaker). These programs do not have a true find capability like Panorama.

Selecting with the Context Menu

If you want to select more data that is related to data you can see on the screen, the easy way to do it is to use the context menu. To see this menu simply right click on any data cell (if you don't have a two button mouse, hold down the control key and click on the cell).



The selection options in the menu vary depending on the type of data you click on.

Text	Numeric	Date
<ul style="list-style-type: none"> Select Same Select Same (Exact) Select Sounds Like Select Next Select Previous Select First Select Last Cell Stats... 	<ul style="list-style-type: none"> Select Same Value Select Larger Select Smaller Select Within 10% Column Stats... 	<ul style="list-style-type: none"> Select Same Day Select After Select Before Select Same Week Select Same Month Select Same Quarter Select Same Year Select Next Week Select Next Month Select Next Quarter Select Next Year Select Previous Week Select Previous Month Select Previous Quarter Select Previous Year

Select Same

The **Select Same** option selects cells that contain the same value as the cell that was clicked on. For text cells, this will include cells that are the same except for capitalization (so **pat**, **Pat** and **PAT** would all be treated the same). If you want only cells that match in all aspects including capitalization, choose **Select Same (Exact)**. The **Select Sounds Like** option uses a phonetic option, selecting all cells that sound similar, for example Guti-eriez, Guteres, Gutierrez, etc.

For date fields there are additional options for different periods — *same week, month, quarter* or *year*. For example to find all records in January, just right click on any date in January and choose **Select Same Month**.

For numeric fields you can use **Select Within 10%** to find all records that are near the clicked value. For example if you clicked on a cell that contained 2,000 this would select all records between 1,800 and 2,200.

Select Larger/Smaller

These options apply to numeric cells. For example, right click on a cell that contain \$100 and choose **Select Larger** to select all records with values greater than 100.

Select Before/After

These options apply to date cells. For example, to find all records before a certain date simply right click on the date and choose **Select Before**. If you clicked on a cell that contained January 1, 2007 then Panorama would select all records from 2006 or earlier.

Select Next/Previous/First/Last

These commands allow you to “walk” through the data, one item at a time. **Select Next** is like **Select Same**, except that instead of selecting data that is the same as the current cell, it selects the next data item. For example, suppose you have a database field named **Category** that contains these seven categories.

Advertising
Payroll
Printing
Rent
Shipping
Utilities
Travel

If you right click on a cell that contains *Printing* and choose **Select Next**, Panorama will show you all of the records that contain *Rent*. Choosing **Select Next** again will show you *Shipping*, then *Utilities*, then finally *Travel*.

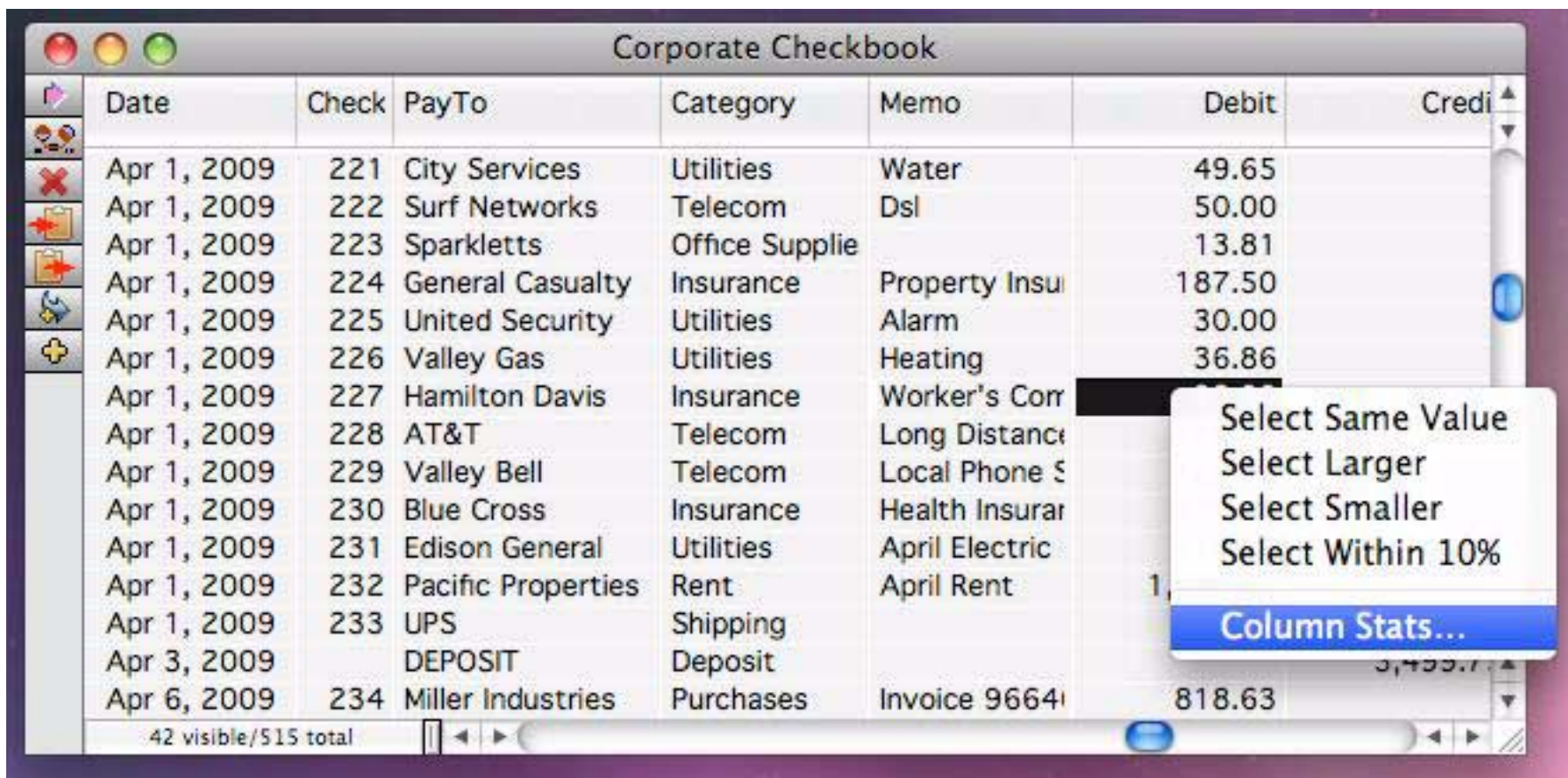
Select Previous goes in the opposite direction. If you right click on a cell that contains *Printing* and choose **Select Previous**, Panorama will show you all of the records that contain *Payroll*. Choosing **Select Next** again will show you *Advertising*.

Select First will show you the first value in the field. In this example you could right click on any cell in the *Category* field and choose **Select First** to see all of the *Advertising* records. You could then “walk” thru each of the different categories by choosing **Select Next**.

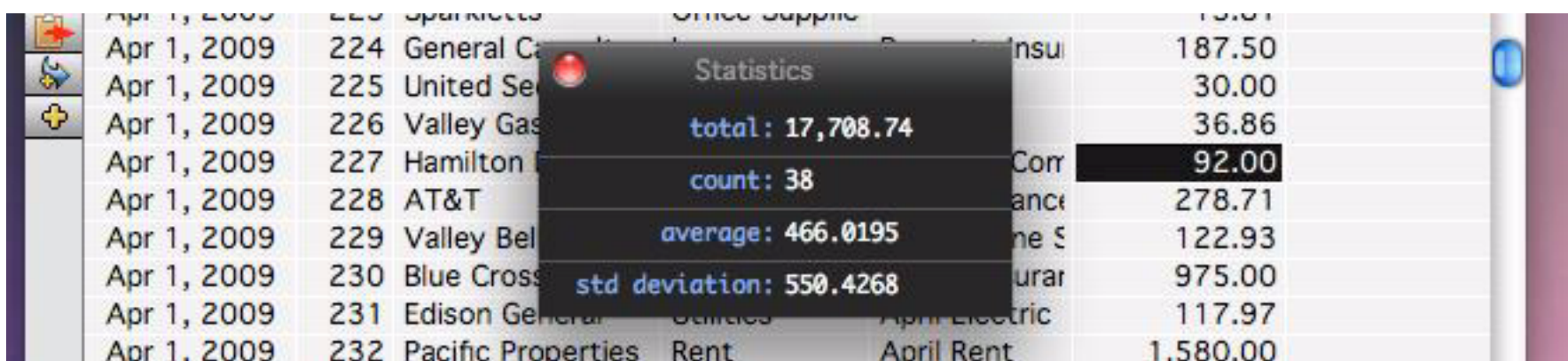
When working with date fields you can “walk” thru the data by day, week, month, quarter or year. For example, you could start by right clicking on a cell in January and choosing **Select Same Month** to see all of the records in January. Then choose **Select Next Month** to see all of the records in February, then again for March, April, May, etc.

Quick Subtotals

Once you've made a selection you can click on a numeric field and choose **Column Stats** from the context menu to get some quick statistics about the selected records. For example, you could start by selecting all records in April, then right click and choose **Column Stats**.



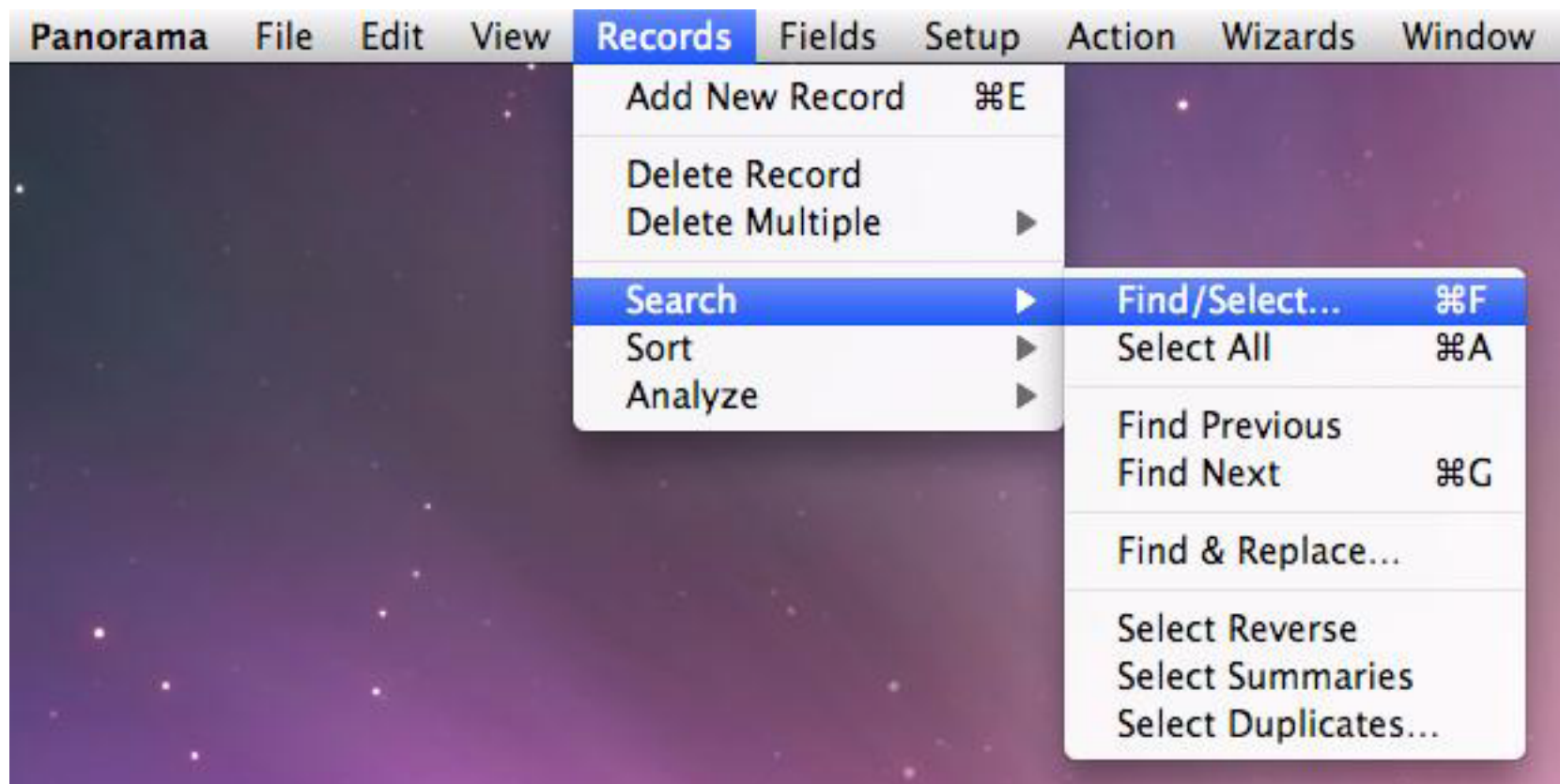
A small window appears displaying information about the debits in the currently selected records, including the total, count, average and standard deviation.



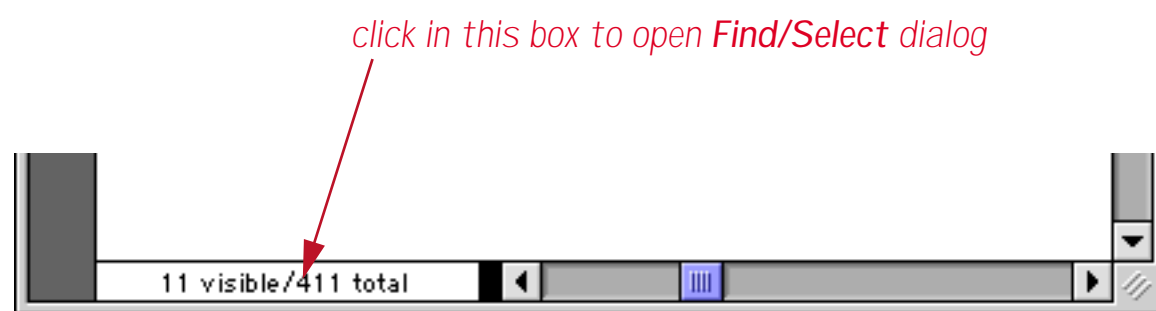
Close the window when you are ready to do further processing.

The Find/Select Dialog

Panorama locates information by scanning through the entire database looking for data that matches your criteria. The **Find/Select** dialog (Records->Search) allows you to specify the criteria for locating information—including the field (or fields) containing the data, the kind of match you want (contains, exact match, greater than, etc.) and the match value (the data you are looking for).



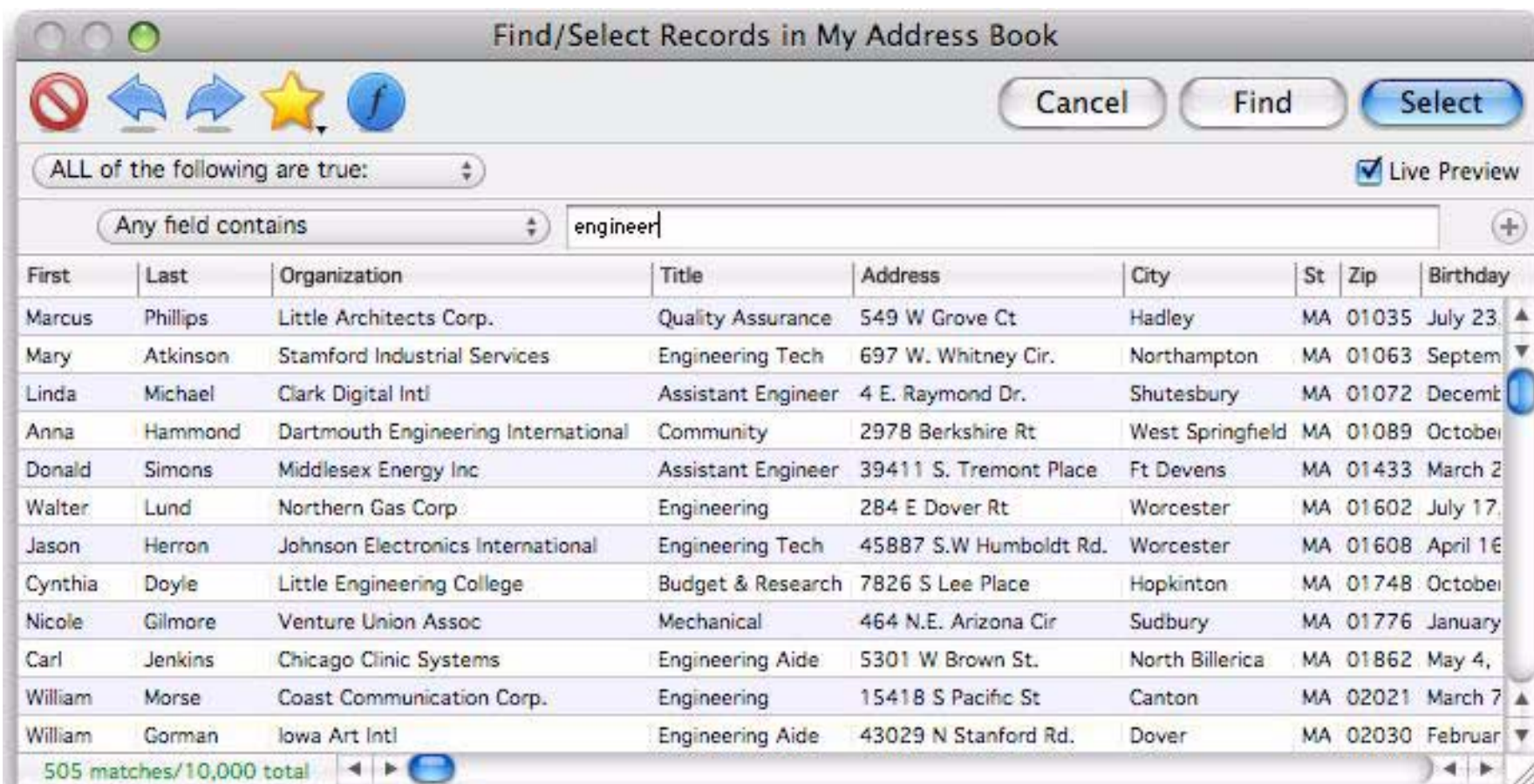
Tip: You can also open the **Find/Select** dialog by clicking on the record count displayed in the lower left hand corner of the window.



Here is what the Find/Select dialog looks like when you first open it.

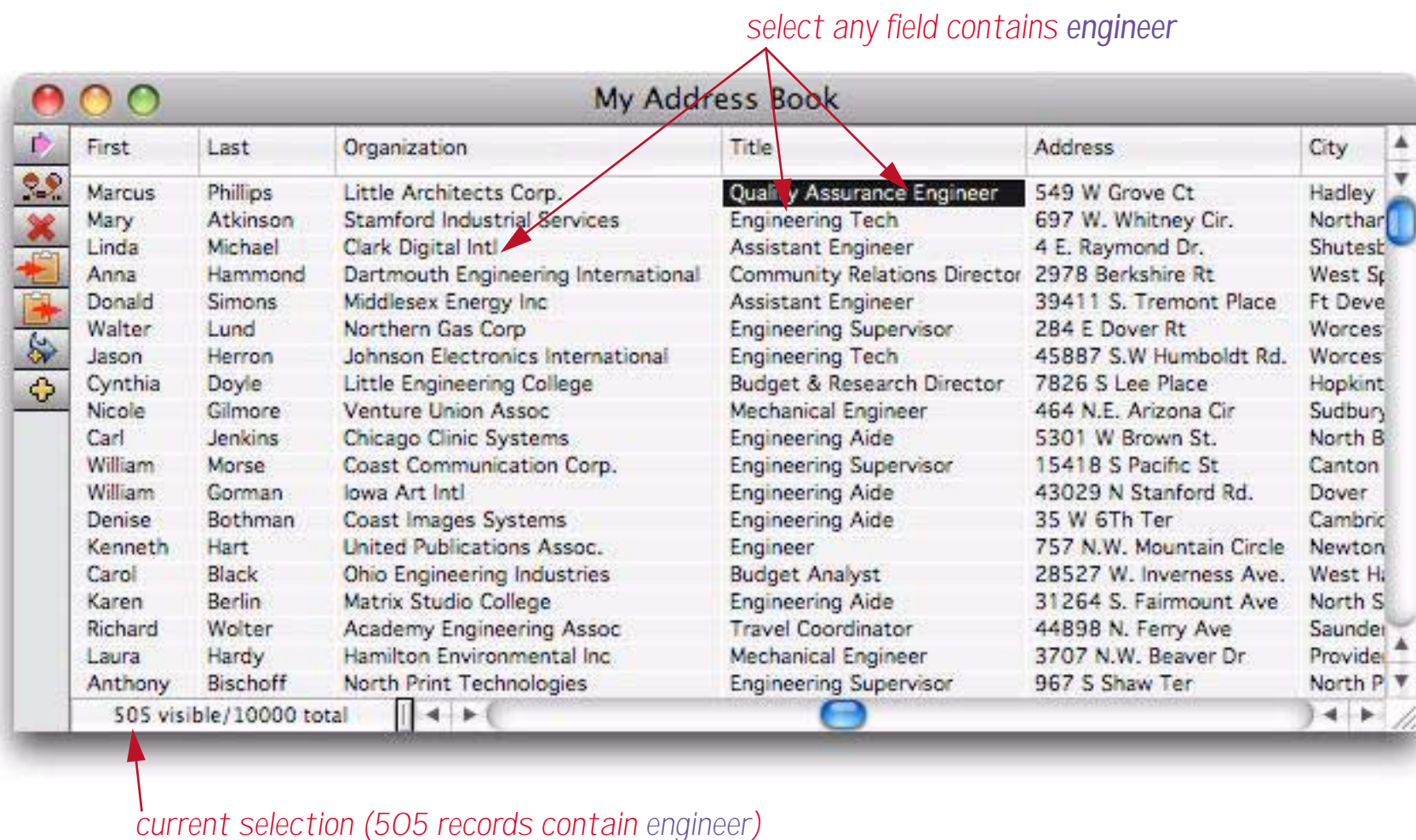


By default the Find/Select dialog searches all fields in the database. Simply type in the word, phrase or name you want to search for. If the **Live Preview** option is checked, a preview of the search results will appear immediately as you type. Here's an example of a search for **engineer**. In this example **engineer** has been found in both the *Organization* and *Title* fields.



Selecting a Subset

To actually select a subset of the database, press the **Select** button. Panorama will scan through the entire database and select the records that match the criteria you have specified. The selected records remain visible, while the records that do not match temporarily vanish. Panorama displays the number of selected records in the lower left hand corner of the window.



To restore the invisible records, choose the **Select All** command from the Search Menu.

To make a different selection, simply use **Find/Select** again. The original selection will vanish and the new selection will become visible. (You do not need to choose **Select All** before selecting another subset.)

Note: If your database is large and you have selected only a few records, you may find that Panorama seems sluggish. Remember, Panorama may be skipping over hundreds of invisible records that are between the visible records on the screen. When you use **Select All**, Panorama's normal blazing speed will return.

Note: After you have selected a subset of the data, you may find that you cannot move the data sheet scroll bar to the very top or very bottom. This will happen if the first or last record is not one of the selected (visible) records.

Find and Find Next

Another way to locate data is to "find" it (see "[Finding vs. Selecting](#)" on page 331). There are two ways to find a record — either double click on it in the preview or press the **Find** button. Double clicking on a record in the preview closes the dialog and causes Panorama to jump to the actual record in the database. When you press the **Find** button, Panorama will go to the top of the database and start scanning. When Panorama finds a data cell that matches what you are looking for, it stops scanning and displays the information it has found.

To resume scanning for additional matches, use the **Find Next** command (if there aren't any more matches, Panorama will beep). To scan backwards, use the **Find Previous** command. (You can also use Find Next and Find Previous after double clicking on a record in the preview.)

Creating Specific Search Criteria

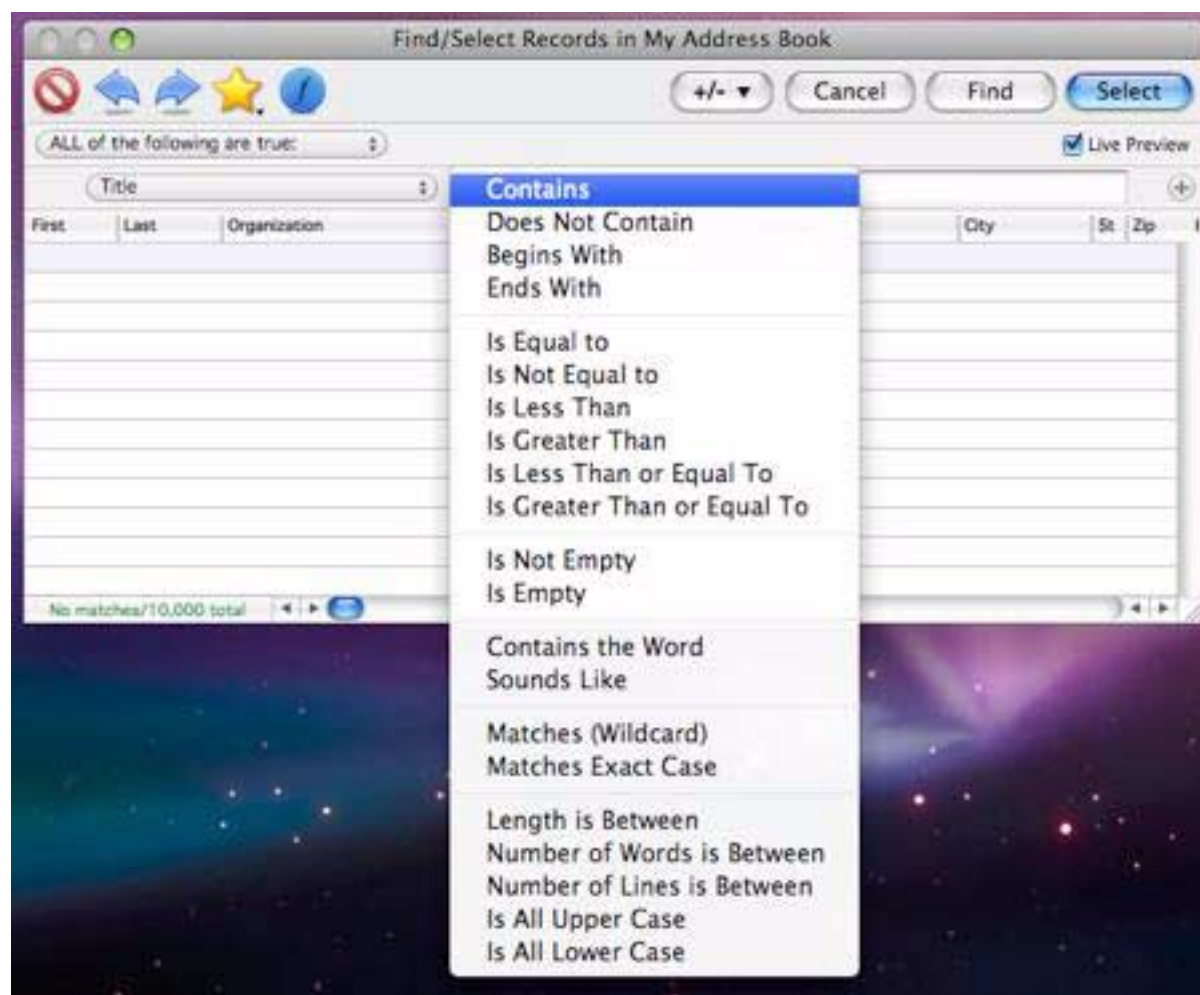
Panorama allows you to set up detailed criteria to narrow a search down to the exact information you are looking for. You've already seen the most general search, for text contained in any field, now we'll look at how to narrow a search to more specific criteria.

Searching a Specific Field

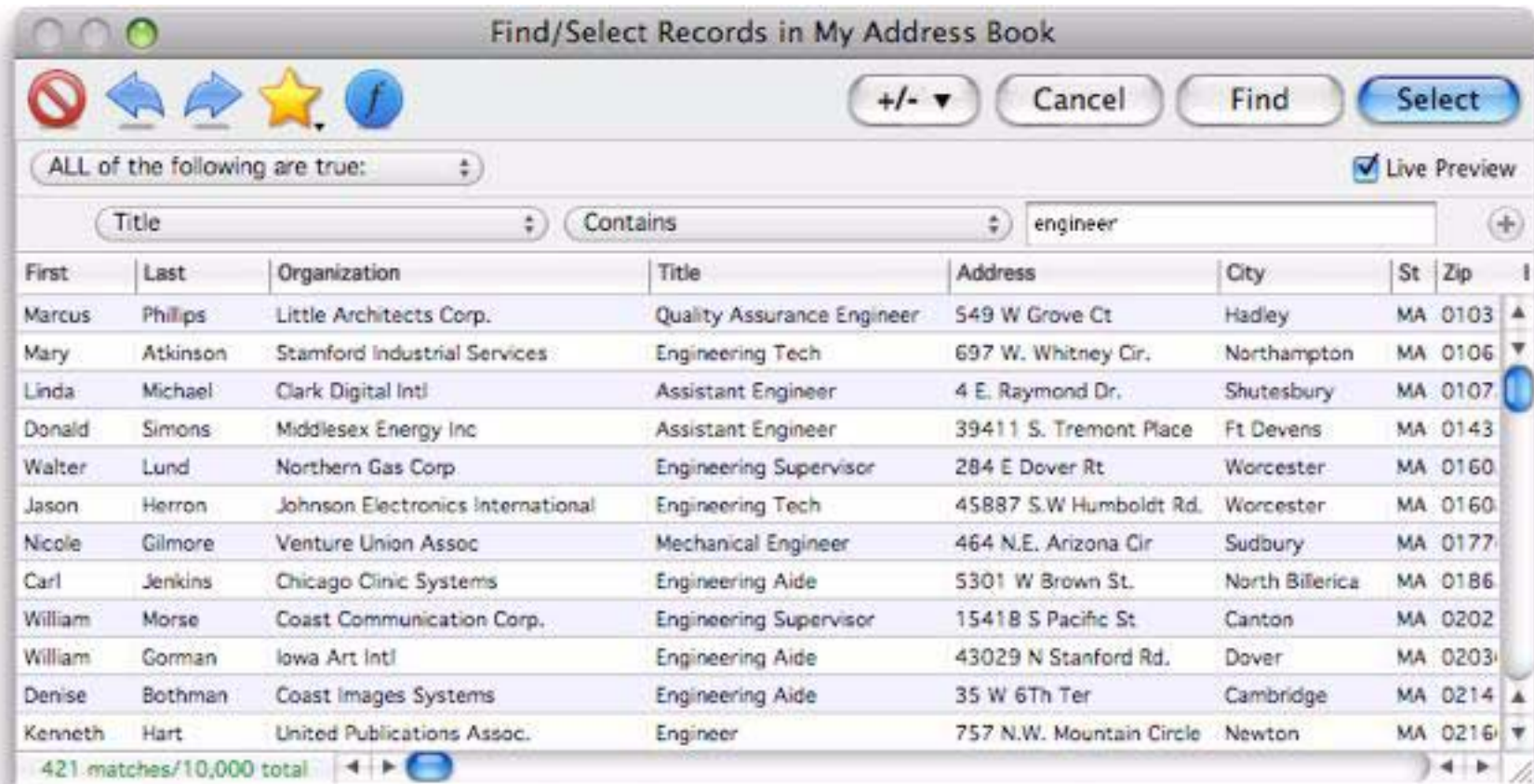
To search in a specific field instead of all fields, choose the field you want to search from the pop-up menu.



Once you've selected a field you also have the option of selecting a comparison method for matching the data with the field. The matching options available will change depending on the type of field you have selected (text, number or date). Matching options are covered in more detail later in this chapter.

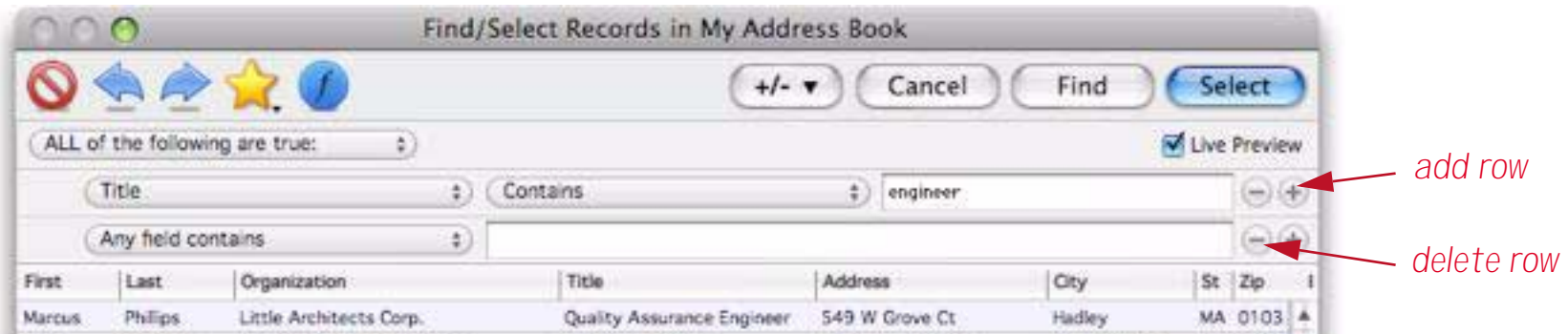


Once you've selected the field and matching option you can type in the data you are looking for. If the **Live Preview** option is checked the preview will update as you press each key. In this example the search done earlier in this chapter has been narrowed to show only records where the job title contains **engineer**, instead of engineer being in any field.

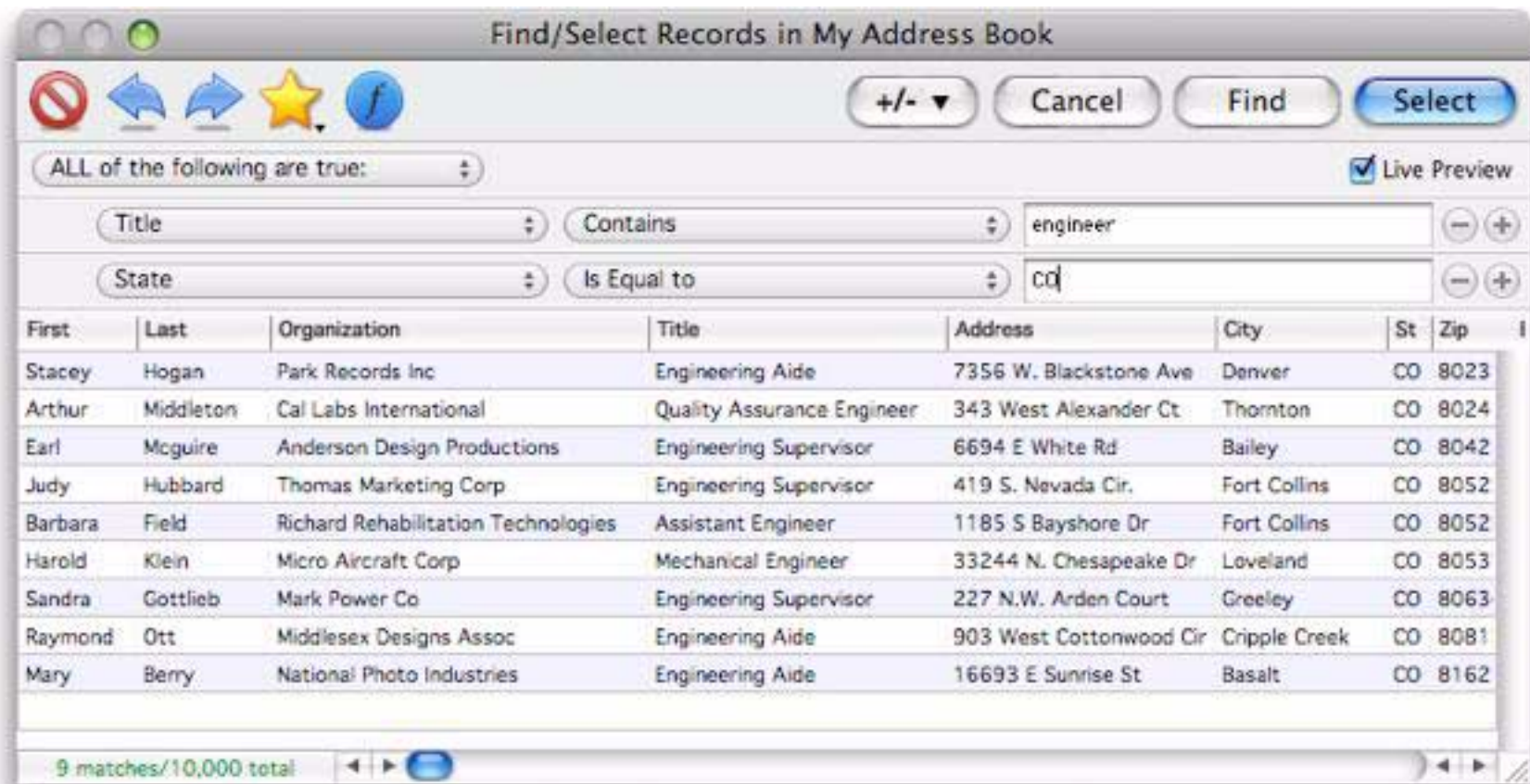


Compound Searches

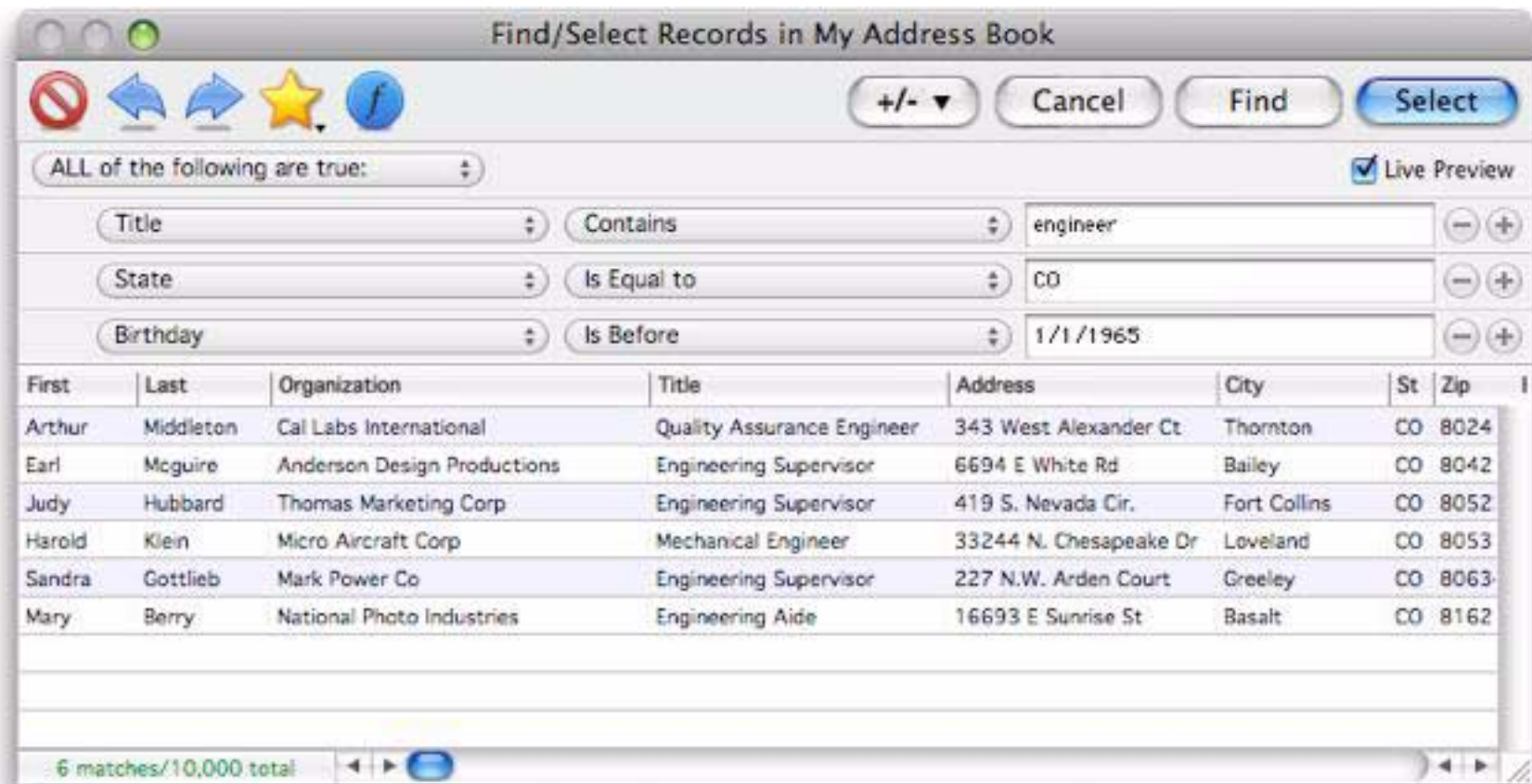
To search for multiple terms at once, press the + button at the far right end. This adds another row to the search criteria.



In this example I've revised the search to show engineers in Colorado.



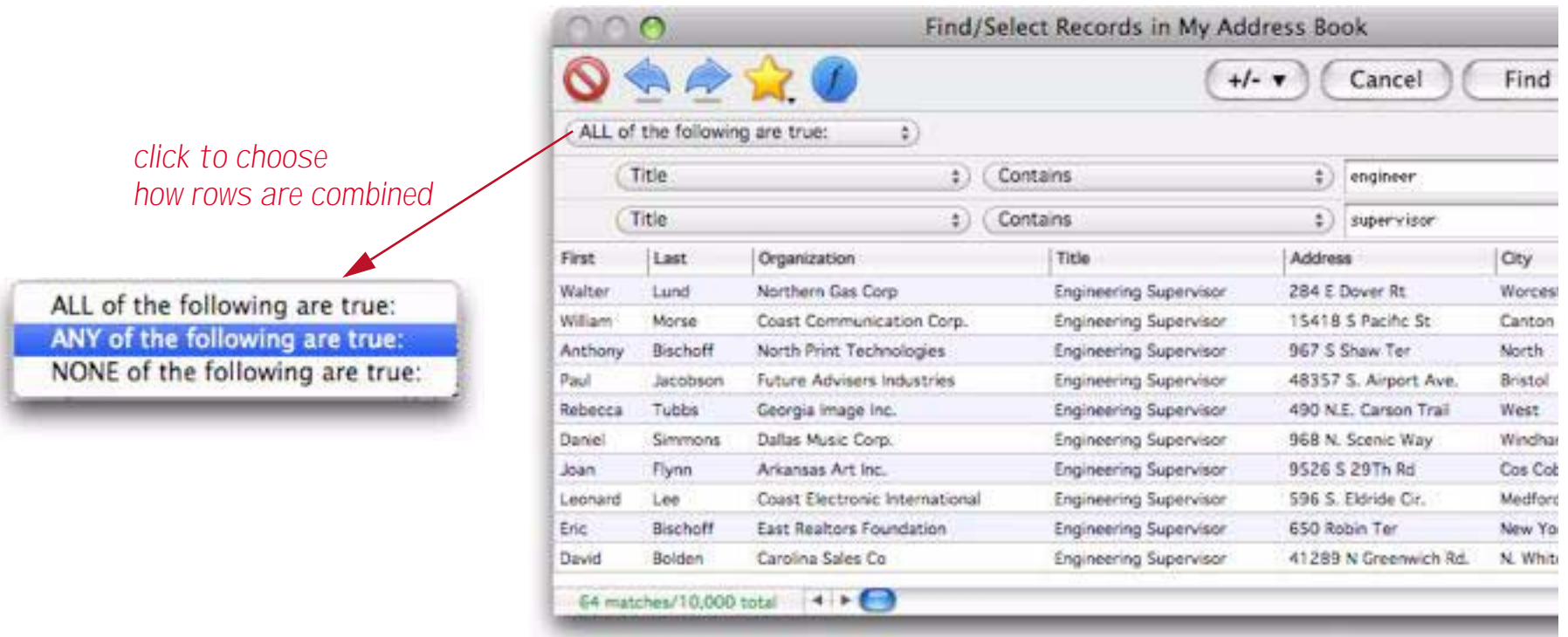
You can continue adding multiple search rows as necessary, for example here I've narrowed the search down to engineers in Colorado born before 1965.



Once you've narrowed the search down to the subset you want you can press the **Select** or **Find** buttons to apply the search to the actual database. (You can also save this search for later, see "[Managing Queries](#)" on page 355).

Compound Search with AND/OR

Normally when you specify multiple criteria they must all be true, in other words, each criteria is ANDed together. In the previous example, a record matches if the Title contains engineer **and** the state is CO **and** the birthdate is before 1965. Using the pop-up menu at the top left of the dialog you can change how multiple criteria are combined.



By changing this pop-up menu I can search for anyone who is either an engineer or a supervisor.

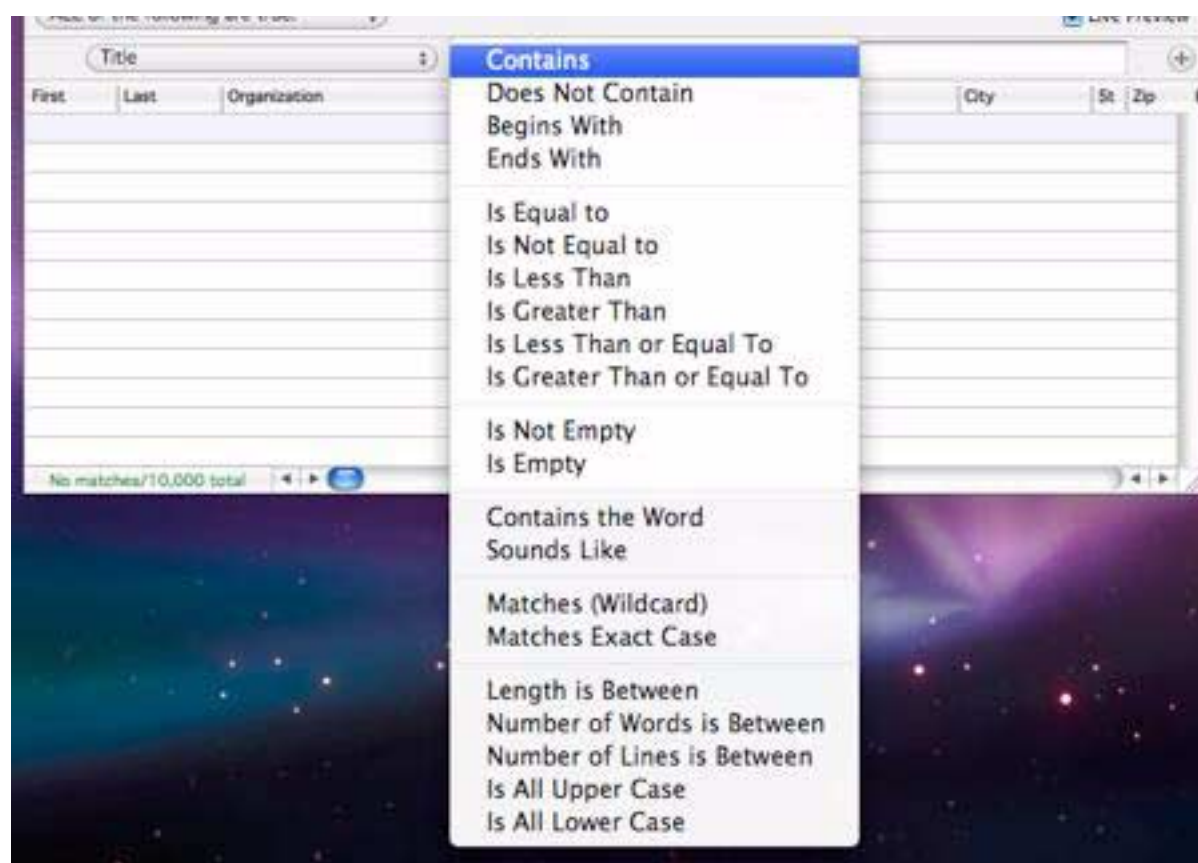


Or, I can find anyone who is neither an engineer nor a supervisor.



Search Options (Text)

When searching in a text field there are almost two dozen options for determining whether data is a match.



Contains — Any data cell that contains the match value will be identified as a match. For example, if you ask Panorama to locate cities containing an, it will locate cities like Anaheim, Lansing, Los Angeles, and San Jose since they all contain an. Notice that capitalization is ignored, so an, An, AN, and aN are all acceptable matches.

Does Not Contain — Any data cell that does not contain the match value will be identified as a match. For example, if you ask Panorama to locate phone numbers not containing (714) it will locate phone numbers in other area codes. Capitalization is ignored, so an, An, AN, and aN are all equivalent as far as this option is concerned.

Begins With — Any data cell that begins with the match value will be identified as a match. For example, if you ask Panorama to locate states beginning with co, it will locate states like Colorado and Connecticut. Capitalization is ignored, so co, Co, CO, and cO are all acceptable matches.

Ends With — Any data cell that ends with the match value will be identified as a match. For example, if you ask Panorama to locate baseball teams ending with sox it will locate both Red Sox and White Sox. Capitalization is ignored, so sox, Sox, SOX, and sOx are all acceptable matches.

Is Equal to (=) — Any data cell that exactly matches the match value will be identified as a match. An exact match means just that. The spelling, punctuation, and capitalization must be exactly the same—for example red will not match RED or Red.

Is Not Equal to (\neq) — Any data cell that does not exactly match the match value will be identified as a match.

Is Less Than (<) — Any data cell that is less than the value in the box on the right will be identified as a match.

Is Greater Than (>) — Any data cell that is greater than the match value will be identified as a match.

Is Less Than or Equal to (\leq) — Any data cell that is less than or equal to the match value will be identified as a match.

Is Greater Than or Equal to (\geq) — Any data cell that is greater than or equal to the match value will be identified as a match.

Contains the Word — Any data cell that contains the specified word will be identified as a match. The word must not be part of a larger word. For example, if you specify *contains the word* **engineer** it will not match **engineers** or **engineering**.

Sounds Like — Any data cell that “sounds like” the match value will be identified as a match. Panorama uses a special algorithm to determine which values sound like the match value. This algorithm is not perfect, but it does work pretty well. For example, if you are looking for someone named Luboviski but you are not sure if it is spelled with an i, ie, or y, the sounds like match will save the day.

The sounds like match can be used with more than one word at a time. For example, if you are searching through a video rental database for the movie **Escape from New York**, the sounds like algorithm will find it even if it is misspelled **Escapade from New York**. If any word in the match value sounds like any word in the data cell, the data will be identified as a match.

Note: If two words do not start with the same letter, the sounds like algorithm will not think they sound alike. For example, sounds like does not think that **Chris** and **Kris** sound alike.

Matches (Wildcard) — This option allows you to create a “pattern” for comparing data. The pattern allows you to set up very flexible “wildcard” matches where some characters must match but others don’t have to. The pattern must contain one or more “normal” characters (letters, numbers, punctuation, etc.) and also may contain one or more of the wildcard characters **?** (question mark) and ***** (asterisk). The **?** wildcard character will match any character in this position. The ***** wildcard character will match any number of characters in this position.

A few examples should help to make the operation of the wildcard characters within the pattern clear. Suppose you want to find all records where the first three digits of the zip code are **926**, and you don’t care what the last three digits are. The pattern will be **926???**. This pattern will match any five digit zip code that begins with 926. It will not match if there are less than or more than 5 characters in the zip code.

If the pattern is changed to **926***, Panorama will match with any zip code that begins with **926**, no matter what the length is. It could be three digits long or thirty — Panorama doesn’t care and will say that it matches as long as it starts with **926**.

By changing the pattern to **926???*** we tell Panorama to match any zip code that starts with **926** and is at least five characters long. The zip code could be 5, 6, 7, or 70 characters long, but will not match if it is only 3 or 4 characters long.

If you wanted to select only 9 digit zip codes we could use the pattern **?????-????**. This will match any 10 character long string with a - (dash) in the sixth position.

Suppose that you wanted to find everyone in your database with the last name **Johnson** and the first initial **J**. Assuming that the first and last names are stored in a single field, you could use the pattern **j*johnson** to locate the person (or persons) you are looking for. The **match** option doesn’t care about upper or lower case, so this pattern would match **Jerry Johnson**, **jim johnson**, or **JOHN JOHNSON**. (It will also match weird data like **j346ujohnson** or **j@#opcjohnson**, so take care to watch for unexpected matches.) If you want upper and lower case treated as different characters use the **matches exact case** option (see below).

Matches Exact Case — This option is the same as the **matches (wildcard)** option (see above), except that any letters in the data must exactly match the pattern, including upper vs. lower case. For example, if the pattern is **J*Johnson**, names like **Jerry Johnson** will match, but **JERRY JOHNSON** will not match.

Length is Between — When this option is selected there are two match values, the minimum and maximum length (in characters). In this example this option is being used to search for organizations with unusually long names (more than 35 characters).



Number of Words is Between — When this option is selected there are two match values, the minimum and maximum number of words. In this example this option is being used to search for job titles with only one word in them (excluding compound titles like vice president or security analyst).



Number of Lines is Between — When this option is selected there are two match values, the minimum and maximum number of lines. For example, you could use this to find all records where a cell contained more than one line by using 2 for the minimum number of lines and 9999 for the maximum.

Is All Upper Case — Any data cell that contains all upper case characters (for example **AZ**) will be identified as a match.

Is All Lower Case — Any data cell that contains all lower case characters (for example **west**) will be identified as a match.

Is All Word Caps — Any data cell that contains words with the first character capitalized (for example **San Diego**) will be identified as a match.

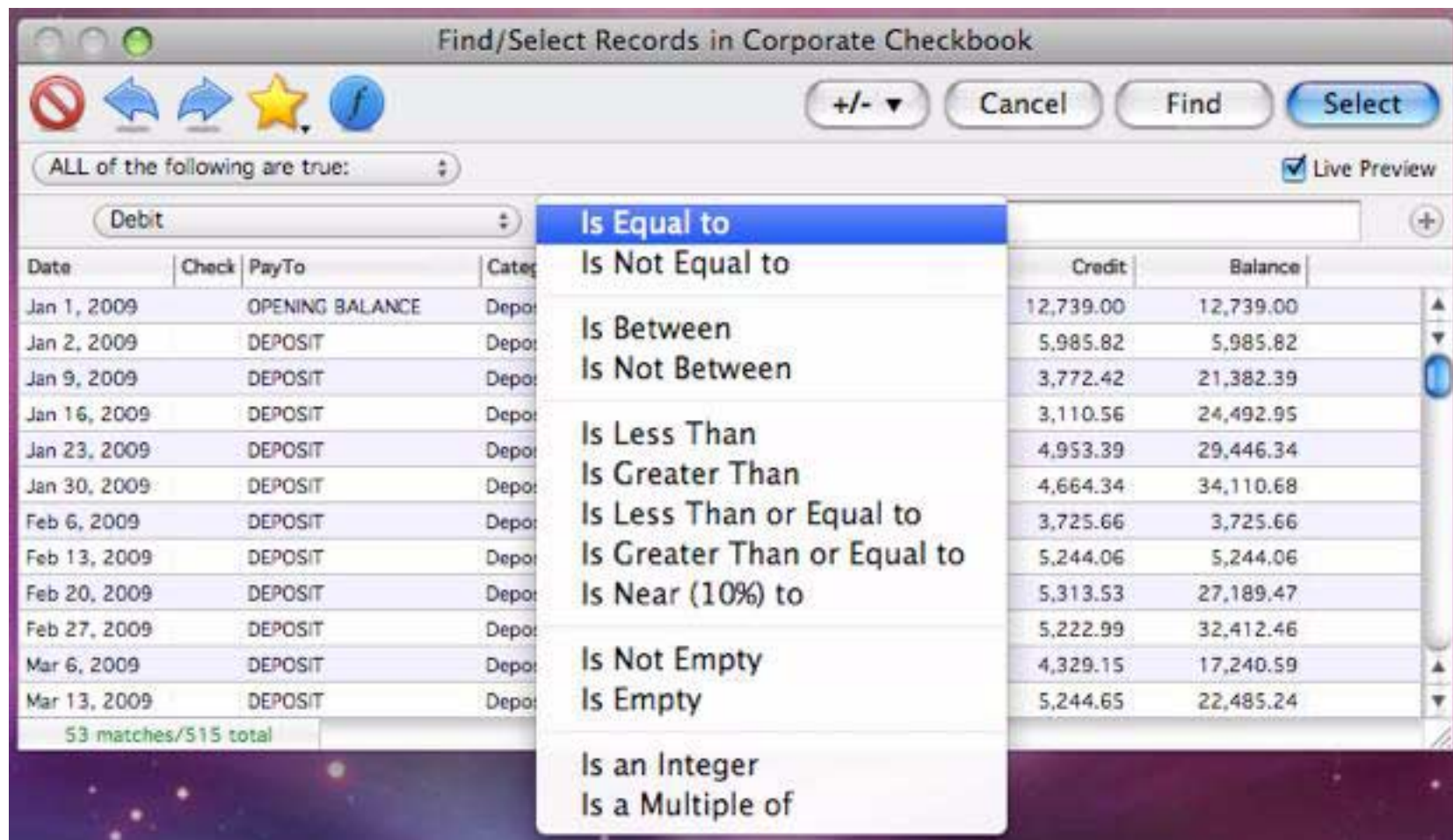
Is Not All Upper Case — Any data cell that contains any lower case characters (for example **az**) will be identified as a match. This is useful for double checking that a column is all upper case (for example a column of state abbreviations).

Is Not All Lower Case — Any data cell that contains any upper case characters (for example **West**) will be identified as a match.

Is Not All Word Caps — Any data cell that contains words with the first character lower case, or any other character upper case (for example **hOusTon**, **CHICAGO** or **philadelphia**) will be identified as a match. This is useful for double checking the capitalization of fields containing proper names.

Search Options (Numbers)

When searching in a numeric field there are over a dozen options for determining whether data is a match.



Is Equal to (=) — Any data cell that exactly matches the match value will be identified as a match.

Is Not Equal to (\neq) — Any data cell that does not exactly match the match value will be identified as a match.

Is Between — Any data cell that contains a value between the two specified match values will be identified as a match.

Date	Check	PayTo	Category	Memo	Debit	Credit	Balance
Feb 2, 2009	150	Sparkletts	Office Supplies		13.98		29,169.17
Feb 2, 2009	151	Pacific Properties	Rent	February Rent	1,580.00		17,563.50
Feb 2, 2009	152	Poly Payroll Services	Payroll		1,772.17		26,472.53
Feb 9, 2009	153	Fry's Electronics	Office Supplies		192.48		28,768.09
Feb 9, 2009	154	Valley Publications	Advertising	Invoice 1462	923.74		15,857.40
Feb 9, 2009	155	Clark Supply	Purchases	Invoice 10455	316.59		20,260.44

Is Not Between — Any data cell that contains a value outside the two specified match values will be identified as a match.

Is Less Than (<) — Any data cell that is less than the value in the box on the right will be identified as a match.

Is Greater Than (>) — Any data cell that is greater than the match value will be identified as a match.

Is Less Than or Equal to (\leq) — Any data cell that is less than or equal to the match value will be identified as a match.

Is Greater Than or Equal to (\geq) — Any data cell that is greater than or equal to the match value will be identified as a match.

Is Near (10%) to — Any data cell that is within plus or minus 10% of the specified will be identified as a match.

Is Not Empty — Any data cell that contains a value (even zero) will be identified as a match.

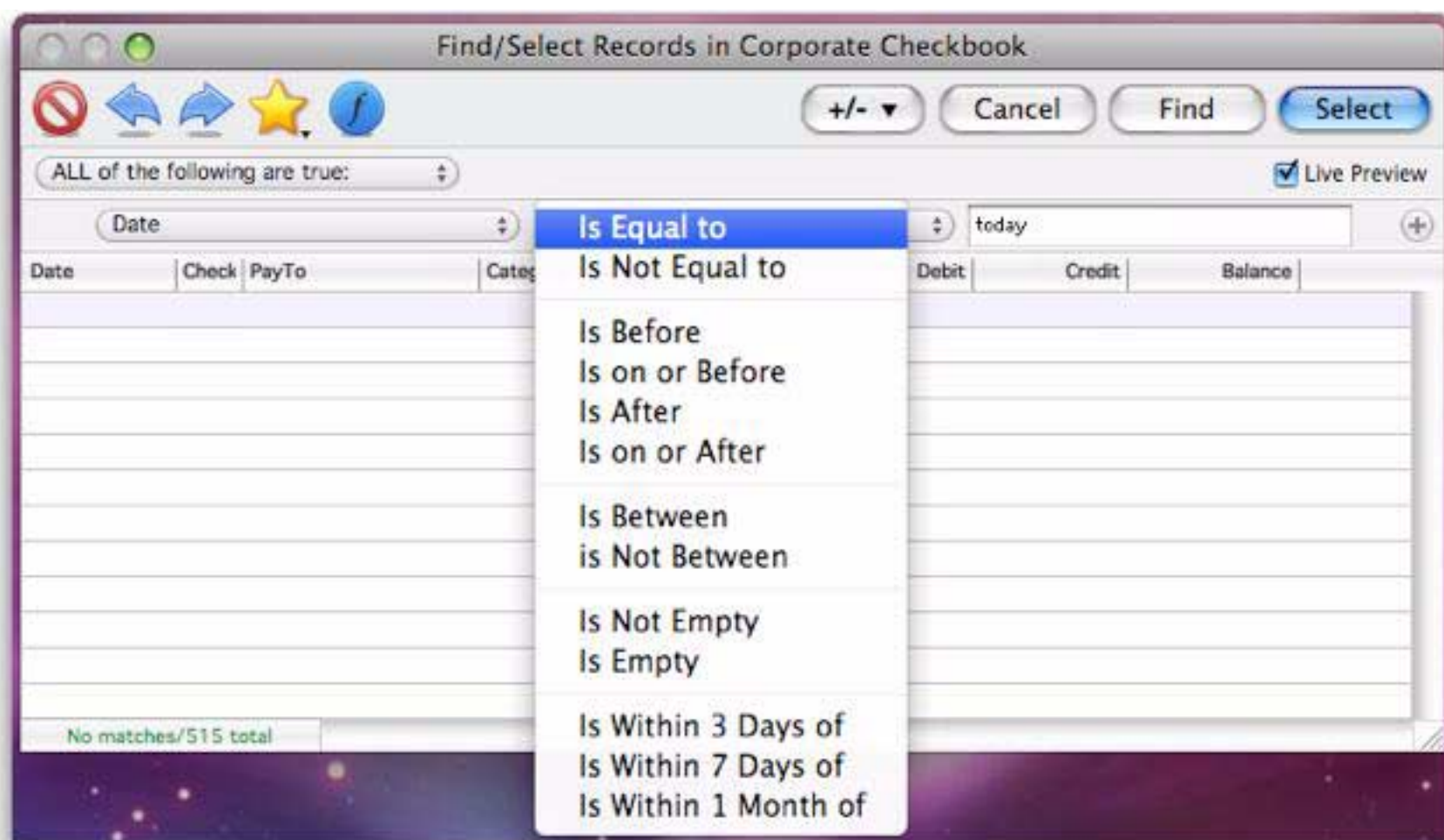
Is Empty — Any data cell that does not contain a value will be identified as a match. In other words, this option locates completely blank fields.

Is an Integer — Any data cell that contains an integer value will be identified as a match. For example, 1, 2, 45 and 5,687 would match but 1.27, 9.87 and 764.12 would not.

Is a Multiple of — Any data cell that is a multiple of the specified value will be identified as a match. For example if you specify 2 then 2, 4, 6, 8, etc. would match, while any other numbers would not.

Search Options (Dates)

When searching in a date field there are over a dozen options for determining whether data is a match. When specifying a date you can use Smart Dates (see “[Entering Dates](#)” on page 255), so you can use dates like March 12, yesterday, or last tuesday.



Is Equal to (=) — Any data cell that exactly matches the match value will be identified as a match.

Is Not Equal to (≠) — Any data cell that does not exactly match the match value will be identified as a match.

Is Before — Any data cell that contains a date before the date you type into the box on the right will be identified as a match.

Is on or Before — Any data cell that contains a date before or on the date you type into the box on the right will be identified as a match.

Is After — Any data cell that contains a date after the date you type into the box on the right will be identified as a match.

Is on or After — Any data cell that contains a date after or on the date you type into the box on the right will be identified as a match.

Is Between — Any data cell that contains a date between the two specified dates will be identified as a match. In this example all checks between last friday and today are selected (the example was taken on March 30, 2010).

Date	Check	PayTo	Category	Memo	Debit	Credit	Balance
Mar 27, 2010		DEPOSIT	Deposit			3,761.53	31,293.87
Mar 30, 2010	213	Office Max	Office Supplies		134.97		26,932.09
Mar 30, 2010	214	Telon Productions	Purchases	Invoice 18763	726.98		14,572.98
Mar 30, 2010	215	Precision Plastics	Purchases	Invoice 42862	411.58		14,161.40
Mar 30, 2010	216	Staples	Office Supplies		153.16		27,067.06
Mar 30, 2010	217	Poly Payroll Services	Payroll		1,871.71		17,808.85
Mar 30, 2010	218	Miller Industries	Purchases	Invoice 47187	400.48		13,760.92
Mar 30, 2010	219	Post Office	Shipping		305.84		10,985.41
Mar 30, 2010	220	Airborne	Shipping	Invoice 84971	33.19		10,952.22

Is Not Between — Any data cell that contains a value outside the two specified dates will be identified as a match.

Is Not Empty — Any data cell that contains a any date will be identified as a match. Blank cells will not be selected.

Is Empty — Any data cell that does not contain a value will be identified as a match. In other words, this option locates completely blank fields.

Is Today — Any data cell with today's date is identified as a match.

Is This Week — Any data cell in the current week is identified as a match.

Is This Month — Any data cell in the current month is identified as a match.

Is This Quarter — Any data cell in the current quarter (3 months) is identified as a match.

Is This Year — Any data cell in the current year is identified as a match.

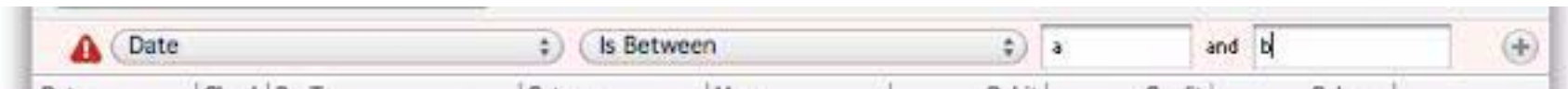
Is Within 3 Days of — Any data cell that contains a date within 3 days of the specified date will be identified as a match.

Is Within 7 Days of — Any data cell that contains a date within a week of the specified date will be identified as a match.

Is Within 1 Month of — Any data cell that contains a date within a month of the specified date will be identified as a match.

Query Errors

It's possible to create a query that doesn't make sense -- for example asking Panorama to match all records with dates between **a** and **b**. When this happens Panorama will display a pink background behind the query line that doesn't make sense, along with a red alert triangle.

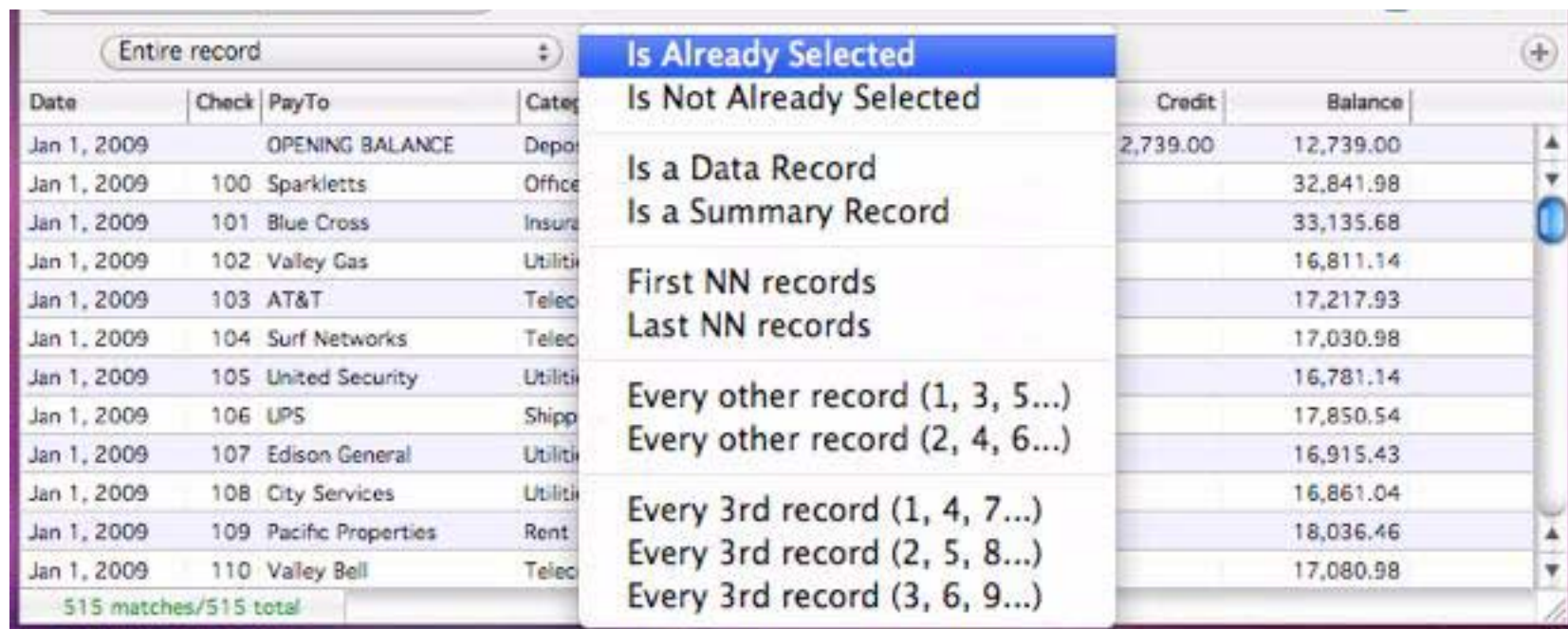


Click the red alert triangle to see the exact problem (in this case *Illegal Date*).



Search Options (Entire Records)

Most searches are based on specific fields, but there are also about a dozen criteria that apply to entire records. (Keep in mind that these criteria can be used in any combination with other search criteria.)



Is Already Selected — This option allows new selections to be partially based on the results of previous selections. If this option is chosen, only records that were already matched in a previous selection will be identified as a match. In the example below, a previous selection located all organizations with **Photo** in the name. Now that selection is being revised to include only photo related organizations in Texas. (To learn about another way to revise an existing selection see [“Revising a Previous Selection”](#) on page 357.)



Is Not Already Selected — This option allows new selections to be partially based on the results of previous selections. If this option is chosen, only records that were *not* matched in the previous selection will be identified as a match in this selection.

Is a Data Record — Any raw data record (not a summary record) will be identified as a match.

Is a Summary Record — Any summary record will be identified as a match. (This option duplicates the **Select Summaries** command that was available in previous versions of Panorama.)

First NN records — This option allows you to select the first few records in the database. In this example the first 25 records in the database will be selected.



Last NN records — This option allows you to select the last few records in the database.

Every other record (1, 3, 5...) — This option allows you to select half of the records in the database. Every other record is selected, starting with the first record.

Every other record (2, 4, 6...) — This option allows you to select half of the records in the database. Every other record is selected, starting with the second record.

Every 3rd record (1, 4, 7...) — This option allows you to select one third of the records in the database. Every third record is selected, starting with the first record.

Every 3rd record (2, 5, 8...) — This option allows you to select one third of the records in the database. Every third record is selected, starting with the second record.

Every 3rd record (3, 6, 9...) — This option allows you to select one third of the records in the database. Every third record is selected, starting with the third record.

Search Options (Formula)

The standard matching options can be combined in many ways to easily perform most searches, but Panorama has an even more powerful option — searching with a boolean formula. This option is a bit “geeky”, but allows you to locate virtually anything that can be described by Panorama’s powerful formulas.

The **formula is true** option relies on the ability of a formula to make comparisons and true-false decisions. See “[True/False Formulas](#)” on page 124 of *Formulas & Programming* for a detailed explanation of **true-false logic**. Here is an example that shows how a formula can be used to combine both **and** and **or** operators into a single query.



The **formula is true** option allows you to select data based on calculations or comparisons between two fields. For example, the formula

```
Price/Cost > 2
```


allows you to quickly locate items with high profit margins, like this.

Item	Description	Price	Cost	Railroad	Category	SubCategory	Manufacturer
ATSF 50' Box (Grand	Running on the Atchison	\$5.39	1.70	Santa Fe	Freight Car	Box Car	Athearn
ATSF Observation	Passengers pay extra to ride	\$10.19	3.42	Santa Fe	Passenger Car	Observation	Athearn
ATSF Vista Dome	The Vista Dome streamliner	\$22.19	8.70	Santa Fe	Passenger Car	Vista Dome	Athearn
Bell ACF27 Tank Car	This tankcar with Bell Oil	\$14.39	5.54	Shipper	Freight Car	Tank Car	Intermount
C & NW SDP-40	The SDP-40 was produced by	\$29.99	9.45	Chicago &	Diesel Engine	Passenger	Athearn
C&NW 40' Stock Car	From the mid-1800s until	\$4.99	1.75	Chicago &	Freight Car	Stock Car	Athearn
C&NW Drop Bottom Gon	This USRA composite drop-	\$16.19	6.00	Chicago &	Freight Car	Gondola Car	Intermount
CP Flat Car	Among the longest cars on	\$6.49	2.04	Canadian	Freight Car	Flat Car	Athearn
CS 40' Single Dome Tank	Carrying liquid fuels, this	\$4.49	1.70	Shipper	Freight Car	Tank Car	Athearn
New Haven Diner	This diner on the NH line	\$8.49	3.03	New Haven	Passenger Car	Diner	Athearn
Penn Salt 40' Tank Car	Hauling liquid fuel, this 40'	\$7.99	2.80	Shipper	Freight Car	Tank Car	Bachmann
Pennsy Observation Car	Running at the end of the	\$27.29	9.93	Pennsylvania	Passenger Car	Observation	Bachmann

Panorama has hundreds of different functions that can be used in a formula to perform very specific selections. In the example below the `upperword()` function has been used to locate cities where a character other than the first character in a word has been capitalized (in most cases a space is missing). The formula has instantly located the 12 records (out of ten thousand) in this database where the city name has been incorrectly capitalized. With any other database program the only way to find these mistakes would be to search the entire database by hand.

First	Last	Organization	Title	Address	City	St	Zip	Birthday
Alan	Poulsen	George Graphic Inc	Media Productions	588 N Nelson Drive	SanJuan	PR	00927	December
Pamela	Mester	East Media Corp	Materials	420 N.W. Howe Drive	MYSTIC	CT	06355	October 2
Janet	Houston	Mark Capital Assoc	Budget Analysis	895 W. Warner Drive	COLUMBIA	MD	21046	April 22, 1
Richard	Ralph	Pacific Rehabilitation Inc.	Video Productions	23274 E Pennsylvania St	SouthBend	IN	46615	June 27, 1
Anthony	Christens	Colorado Capital Technologies	Payroll Supervisor	902 Columbia Ln	FLint	MI	48507	July 29, 1
Mark	Koch	Northern Press Systems	Facilities	803 S. Palsade Trail	LosAngeles	CA	90014	September
Mary	Edwards	Texas Publications Group	Information Clerk	93 South Atlantic Ln	BeverlyHills	CA	90212	December
Helather	Knutson	James Sound Co.	System Analyst	47364 S 13Th Rd.	LaHabra	CA	90633	February 2
Ruth	Jennings	Liberty Printing Assoc	Public Works	7192 W Homestead Rd	SantaFe Springs	CA	90670	November
Shirley	Reid	Jones Financial Services	Computer Operator	1440 S.W Fisher Street	Lake ArrowHead	CA	92352	March 3, 1
Carl	Rosenber	Marshall Chemical Assoc	Manager	26141 S. Belvedere Blvd	Lake ArrowHead	CA	92352	July 25, 1
Dennis	Sartorius	Professional Management Foundation	Information Clerk	483 W Northridge Dr.	LaPine	OR	97739	October 2

Combining Formulas with Other Search Options

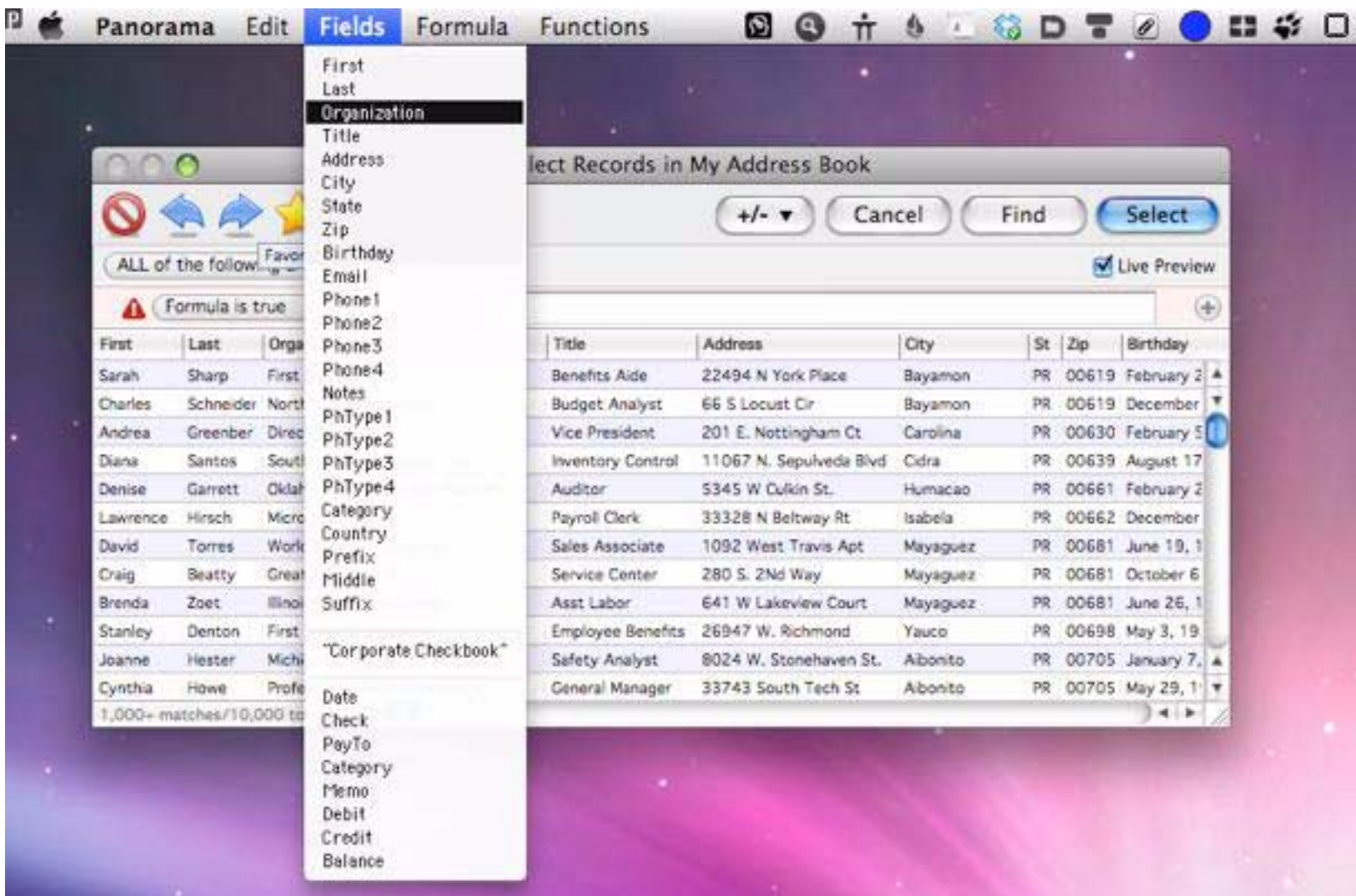
A formula search can be combined with standard search options, like this:



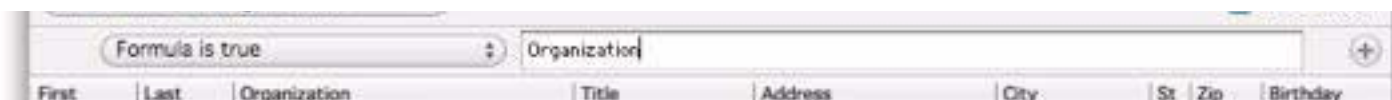
You can even combine multiple formulas in different rows. You can intermix formulas and standard search options in any combination.

Help with Creating Formulas

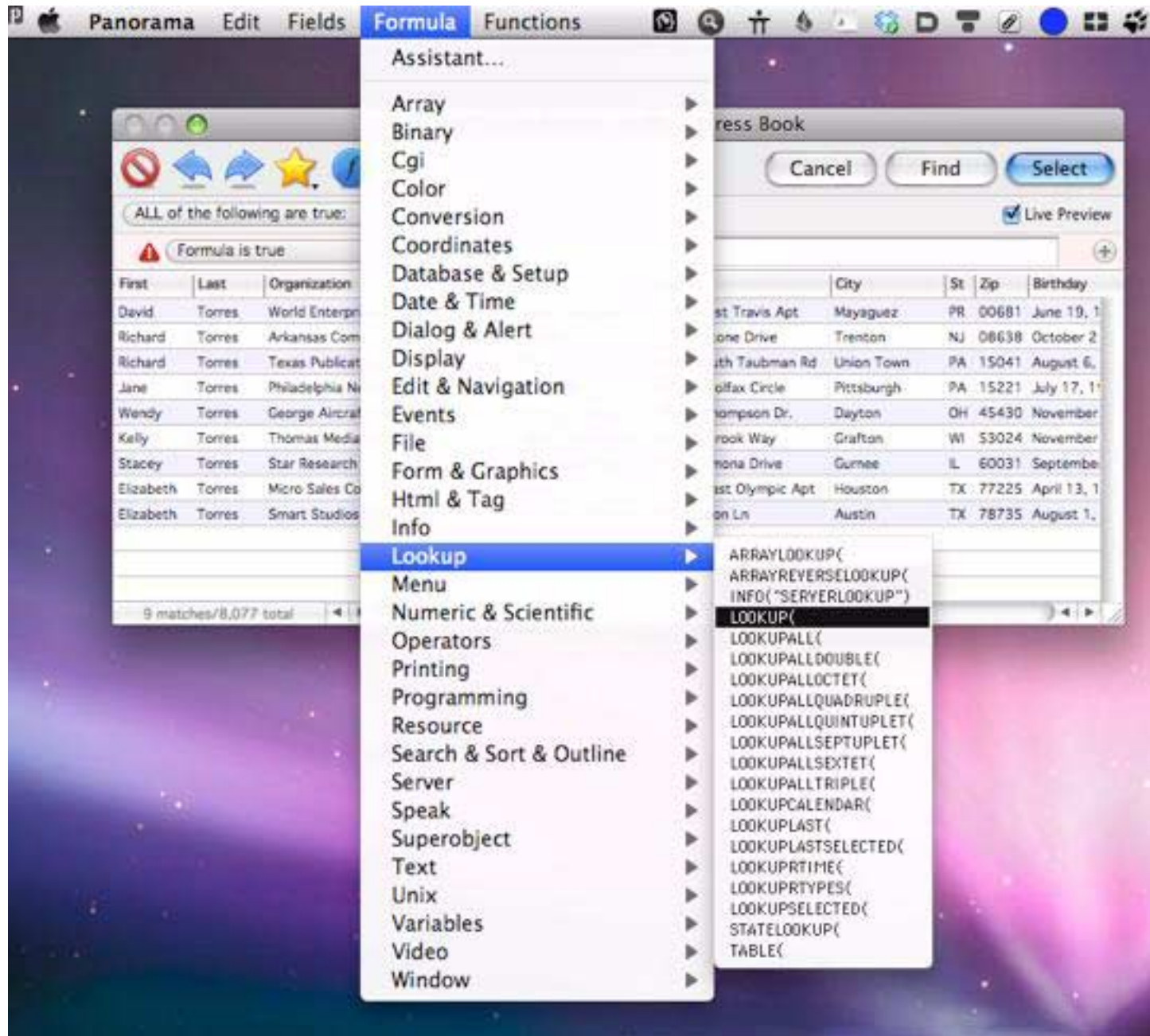
In the process of creating a formula you'll often need to type in field names and functions. You don't have to have these memorized, Panorama can help you type these in quickly and accurately. To type in a field name, choose from the **Fields** menu. (This menu lists all of the fields in all open databases. The currently active database is listed first.)



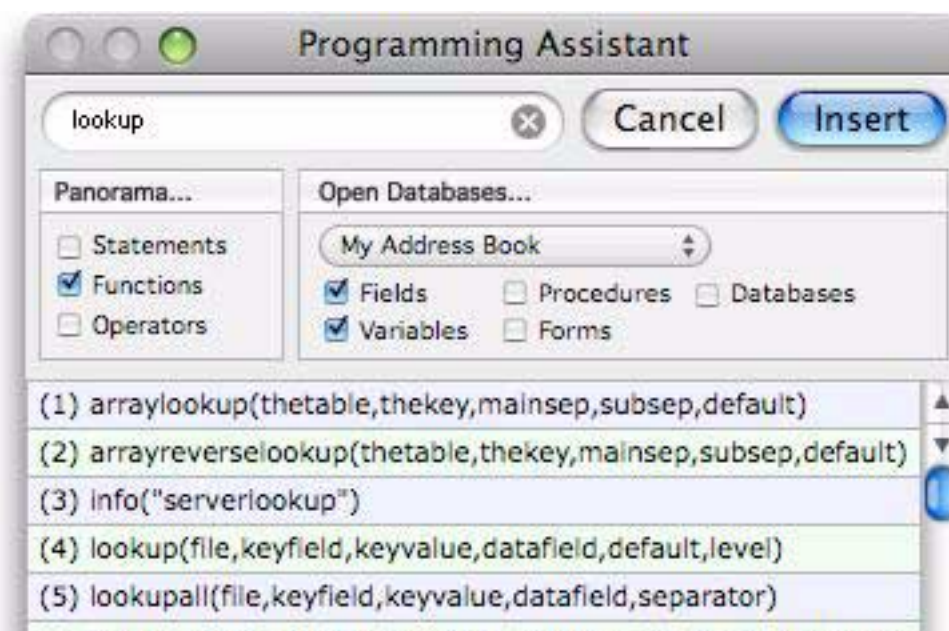
When you make your selection the field name will be typed into the formula for you. (If the field name has any punctuation in it the necessary « and » chevrons will be added automatically.)



To enter a function name, use the Formula menu.



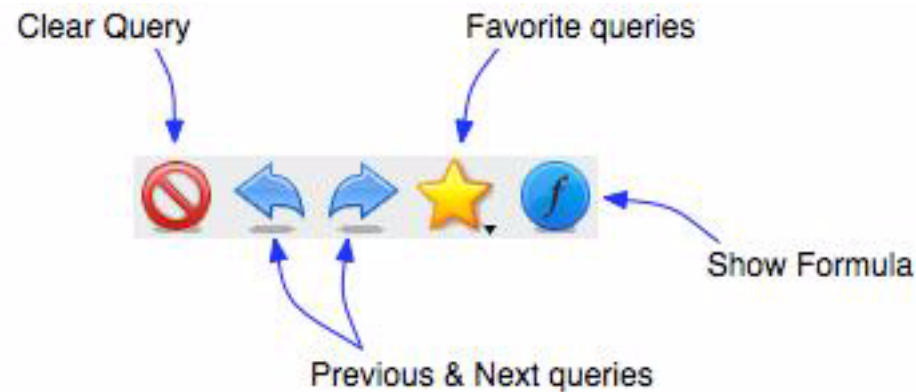
Instead of choosing a function directly from a menu, you can also open the Programming Assistant. This dialog allows you to type in the first few letters to quickly find the function you want.



Once the function you want is visible you can 1) click on it and press the **Insert** button, 2) double click on the function name, or 3) type 1-9 to insert the any of the first nine functions listed. For more information on the Programming Assistant see "[The Programming Assistant Dialog](#)" on page 225 of *Formulas & Programming*.

Managing Queries

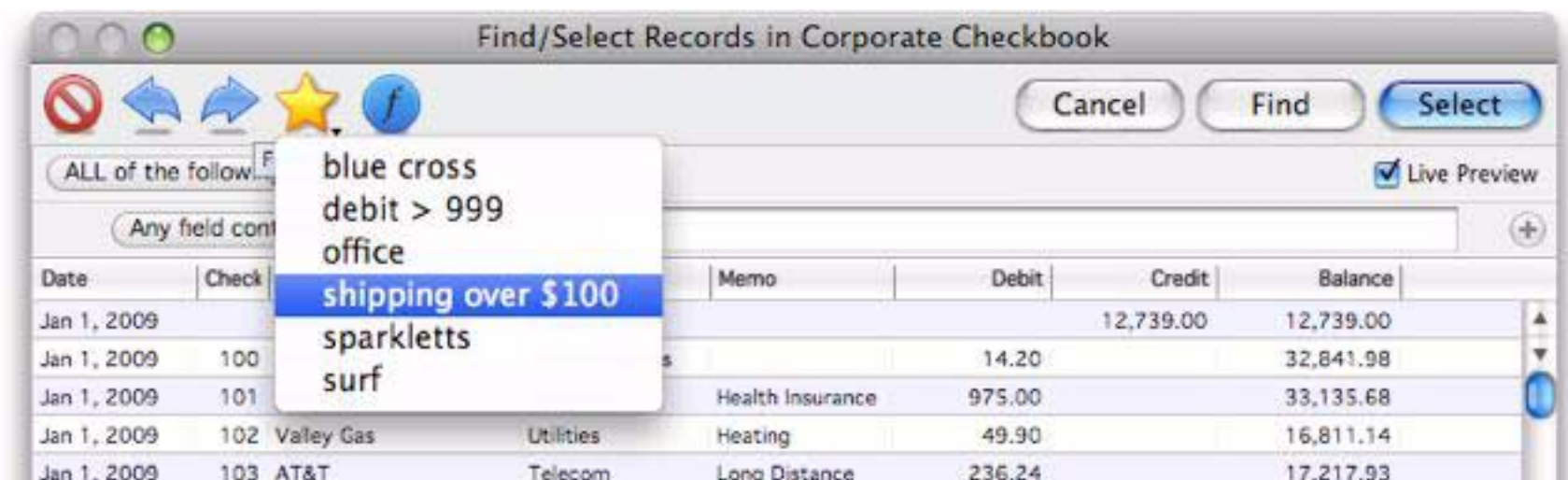
The tools in the upper left corner of the **Find/Select** dialog allow you to manage and easily re-use previous queries.



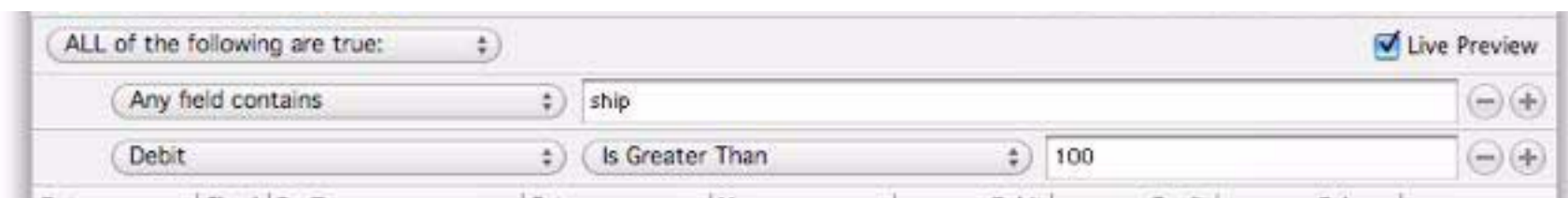
Clear Query — This button clears the current query. It resets the dialog to a simple query of searching all fields for a word or phrase. (If you press **Clear Query** by mistake you can press **Previous Query** to go back.)

Previous Query, Next Query — This pair of buttons allows you to go back to previously used queries. (Note: Only queries that you actually "finalized" by pressing the **Find** or **Select** buttons are included in the list of previously used queries.)

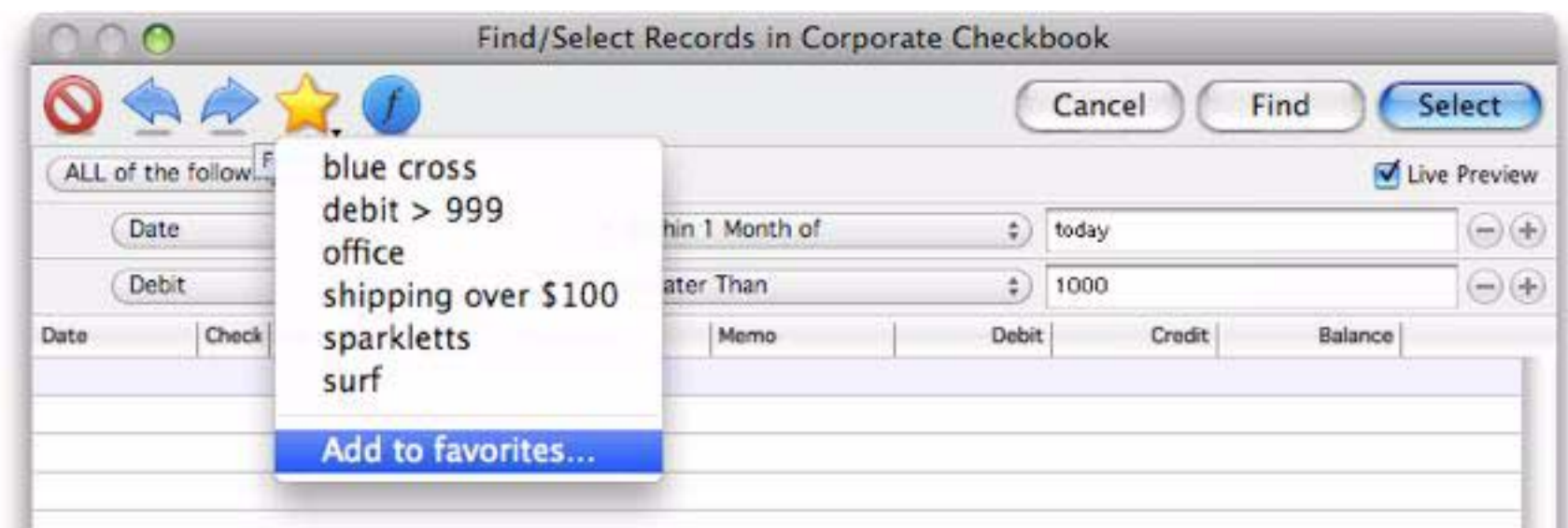
Favorites — This button displays a pop-up menu of favorite queries, along with options for adding and removing favorites. To select a favorite you've saved previously, just click on the star and choose the favorite from the menu.



The query is restored just as it was saved. You can use it as is by pressing **Select** or **Find**, or you can modify it first.



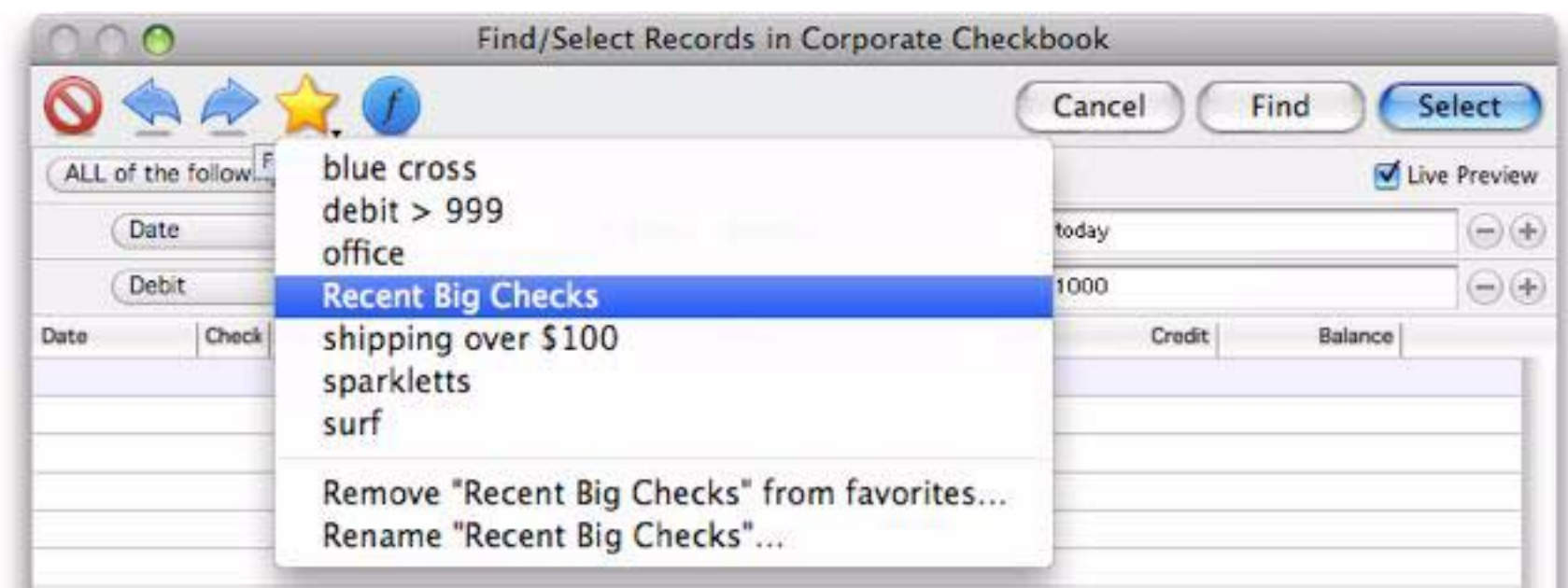
To save a new favorite, first set up the query specification, then click on the star and choose **Add to favorites...**



Enter a name for the new favorite.



Your new favorite now appears in the pop-up menu.



To delete or rename a favorite, first select the favorite from the pop-up menu. Then choose **Remove** or **Rename**, as shown above.

Note: In addition to saving favorites, you can also include a query in a procedure by using Panorama's recorder (see "[Creating a Procedure with the Recorder](#)" on page 212 of *Formulas & Programming*).

Show Formula — This button opens a small window that shows the internal formula associated with the current query. Normally you would never need to use this, but it can be handy if you want to copy the formula for use in a procedure.

Live Preview

The Live Preview area of the dialog displays a preview of the search you are about to perform. For small to medium sized databases the live preview area will update instantaneously as you change the search. If your database contains tens of thousands of records, or if you are using an older computer, updating the preview may take a second or two. While the preview is updating the number of records will display in gray in the lower left hand corner of the dialog. When the preview is complete the number will turn green.



turns green when live preview update is complete

Note: The Live Preview area will only show up to about 1,000 records. If there are more than 1,000 matches the number of records displayed will not be accurate (a + is added to the number to indicate that there are additional matches not counted). To see the exact number of matches use the **Select** button.

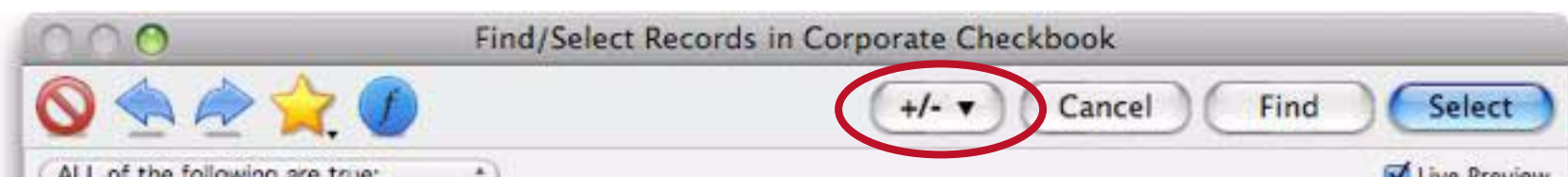
If your database is large or your computer is slow, you may want to temporarily turn off Live Preview updating while you set up the query. Simply uncheck the **Live Preview** checkbox in the upper right corner. To resume the live preview simply re-check the checkbox.

If you want to leave the Live Preview option off by default, open **Preferences** from the Panorama menu, then open the *General Preferences* panel, then uncheck **Enable Live Preview** in the *Search Options* area.

Revising a Previous Selection

As you have seen, the Find/Select dialog makes it easy to make selections based on multiple criteria at once. Sometimes, however, you don't know in advance exactly what you are working for. Panorama has two options that let you build a selection incrementally — **Select Within** and **Select Additional**. The **Select Within** option allows you to whittle your data down gradually until you've extracted just the nugget of information you really need. The **Select Additional** button lets you assemble the pieces of information you need piece by piece.

To use these options, first make a regular selection, then open the Find/Select dialog again. When there is already a previous selection you'll see an additional **+/-** button at the top of the dialog.



Set up the revised selection criteria and then click on the +/- button to choose either **Select Within** or **Select Additional** from the pop-up menu.



To demonstrate this, I'll start by selecting **Office Supplies** in this checkbook database.

Date	Check	PayTo	Category	Memo	Debit
Jan 1, 2009	100	Sparkletts	Office Supplies		14.20
Jan 5, 2009	113	Office Max	Office Supplies		170.47
Jan 5, 2009	116	Kinko's	Office Supplies		50.03
Jan 19, 2009	131	Staples	Office Supplies		126.83
Jan 19, 2009	133	Costco	Office Supplies		207.23
Jan 26, 2009	135	Kinko's	Office Supplies		245.24
Feb 2, 2009	150	Sparkletts	Office Supplies		13.98
Feb 9, 2009	153	Fry's Electronics	Office Supplies		192.48
Feb 9, 2009	156	Office Max	Office Supplies		129.61

Now I want to revise this selection to show only office supply purchases greater than \$500. To do that, I open the Find/Select dialog and set up the selection for checks (Debit) greater than 500. Notice that the preview shows *all* checks greater than 500, not just office supplies. When you revise selections this way, the preview does not show you what the revised selection will look like.

Date	Check	PayTo	Category	Memo	Debit	Credit	Balance
Jan 1, 2009	101	Blue Cross	Insurance	Health Insurance	975.00		33,135.68
Jan 1, 2009	109	Pacific Properties	Rent	January Rent	1,580.00		18,036.46
Jan 5, 2009	114	Poly Payroll Services	Payroll		1,817.32		30,224.86
Jan 5, 2009	121	Cool Creek Studio	Advertising		1,114.85		-1,114.85
Jan 5, 2009	122	Anderson Manufacturing	Purchases	Invoice 17730	627.98		24,094.89
Jan 12, 2009	123	Poly Payroll Services	Payroll		1,833.80		28,391.06
Jan 12, 2009	124	Anderson Manufacturing	Purchases	Invoice 79066	551.22		22,012.92
Jan 19, 2009	127	Poly Payroll Services	Payroll		1,874.76		26,516.30
Jan 26, 2009	134	Stamford Mfg	Purchases	Invoice 98266	1,498.59		19,616.46
Jan 26, 2009	136	Poly Payroll Services	Payroll		1,793.43		24,722.87
Feb 2, 2009	146	Blue Cross	Insurance	Health Insurance	975.00		29,462.65
Feb 2, 2009	151	Pacific Properties	Rent	February Rent	1,580.00		17,563.50

To actually revise the selection, click on the +/- button and choose **Select Within Current Subset** from the pop-up menu.



Now the revised selection appears -- there are only two checks for office supplies greater than \$500.

Date	Check	PayTo	Category	Memo	Debit
Mar 9, 2009	201	Fry's Electronics	Office Supplies		580.67
Dec 21, 2009	559	Fry's Electronics	Office Supplies		1,189.22

2 visible/515 total

Of course, you could obtain the same effect by combining multiple criteria in the first place. But you don't always know in advance exactly what you are looking for. The **Select Within** option allows you to whittle your data down gradually until you've extracted just the nugget of information you really need.

The **Select Additional** option is similar, but allows you to select a superset of the currently selected records. For example, if you have already selected names in Ohio, you could use **Select Additional** to also select names in Illinois. The result would be the subset containing all names in either Ohio or Illinois. The **Select Additional** option lets you assemble the pieces of information you need piece by piece.

Select Reverse

The **Select Reverse** command (in the Records->Search menu) reverses selected and deselected records. For instance, if you have selected all transactions greater than \$600, the **Select Reverse** command will select all transactions less than or equal to \$600.

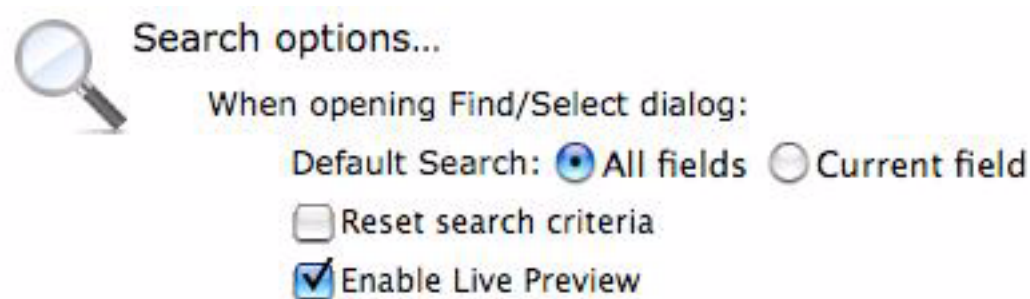
Undo Select

The **Undo** command can reverse the effects of the last 16 select operations, including **Select**, **Select Within**, **Select Additional**, and **Select Reverse**. As long as you do not use any other commands or tools, you can use the **Undo** command up to 16 times in a row.

The quickest way to select the entire database is the **Select All** command (Command-A).

Customizing the Find/Select Dialog

The Find/Select dialog has several options that can be customized. To access these options, open the Preferences dialog, then click on the General Preferences button. This opens a window with many types of preferences, but at the moment we're only interested in the Search options.



The first option is **Default Search**. If the **All Fields** option is checked, the dialog will initially default to searching all fields when it is first opened. If the **Current Field** option is checked, the dialog will default to searching just the currently selected field (this is similar to previous versions of Panorama).

The **Reset search criteria** option controls whether the Find/Select dialog starts fresh each time it opens. If this option is checked, the dialog will always start empty when it opens, ready for a new search (you can recall the previous search by pressing the **Previous Query** icon, see “[Managing Queries](#)” on page 355). If this option is *not* checked, the dialog will start out with the previous search. You can then modify the search, or you can start over by pressing the **Clear Query** icon (see “[Managing Queries](#)” on page 355).

The **Enable Live Preview** option controls whether Live Preview is enabled when you first open the dialog. This is normally on, but if you have a slower computer or use extremely large databases you may want to turn Live Preview off to make the dialog more responsive. See “[Live Preview](#)” on page 357.

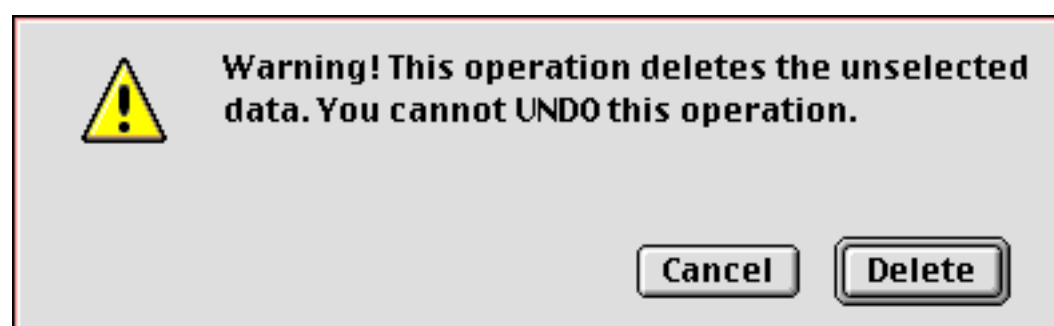
Using the “Classic” Find/Select Dialog

If for some reason you want to use the older (pre-Panorama 6) search dialogs, open the Preferences dialog, then click on the General Preferences button. Then check the **Use “Classic” menus (Search, Sort, Math)** option. This also enables the older search wizards: *Live Clairvoyance*, *Search All Fields*, and *Quick Search*. For more information on these “classic” dialogs and wizards see the Panorama 5.5 documentation (available from the ProVUE web site).

Permanently Removing Unselected Data

Unselected data is hidden, but it is still part of the database. You can restore the invisible data with the **Select All** command. Sometimes, however, you may wish to free the memory occupied by the hidden records. The **Remove Selected** and **Remove Unselected** command in the Records->Search Menu allow you to permanently remove records from the database based on a selection.

Before Panorama actually erases the unselected data, it asks you to confirm that you really want to proceed. Panorama doesn't want you to accidentally delete hundreds or thousands of records. Be careful, because these command cannot be reversed with the **Undo** command.



If you have saved a copy of the data on disk prior to using **Remove Selected** or **Remove Unselected**, you can still recover the data with the **Revert to Saved** command (until you save again). Even after you have saved the database, you can still recover the previous data with Panorama's *Time Lapse* feature (see "[Time Lapse](#)" on page 67).

Panorama's Total Recall feature (introduced in Panorama 6) eliminated the need for the Auto-Save option, and we recommend that you disable this option if it is in use (using the Save As dialog). However, if you are still using this option, be aware that it can interfere with your ability to restore data after using the **Remove Selected** or **Remove Unselected** commands. If **Auto-Save** is on and you use **Remove Unselected**, Panorama will ask if you would like to temporarily disable **Auto-Save**. If you do disable **Auto-Save**, it will remain disabled until you manually save the file with the **Save** command. (See "[Auto-Save](#)" on page 109.)

The Select Summaries Command

The **Select Summaries** command (Records->Search menu) selects all of the summary records in the database, and makes all the data records invisible. At the same time, it converts the summary records into data records.

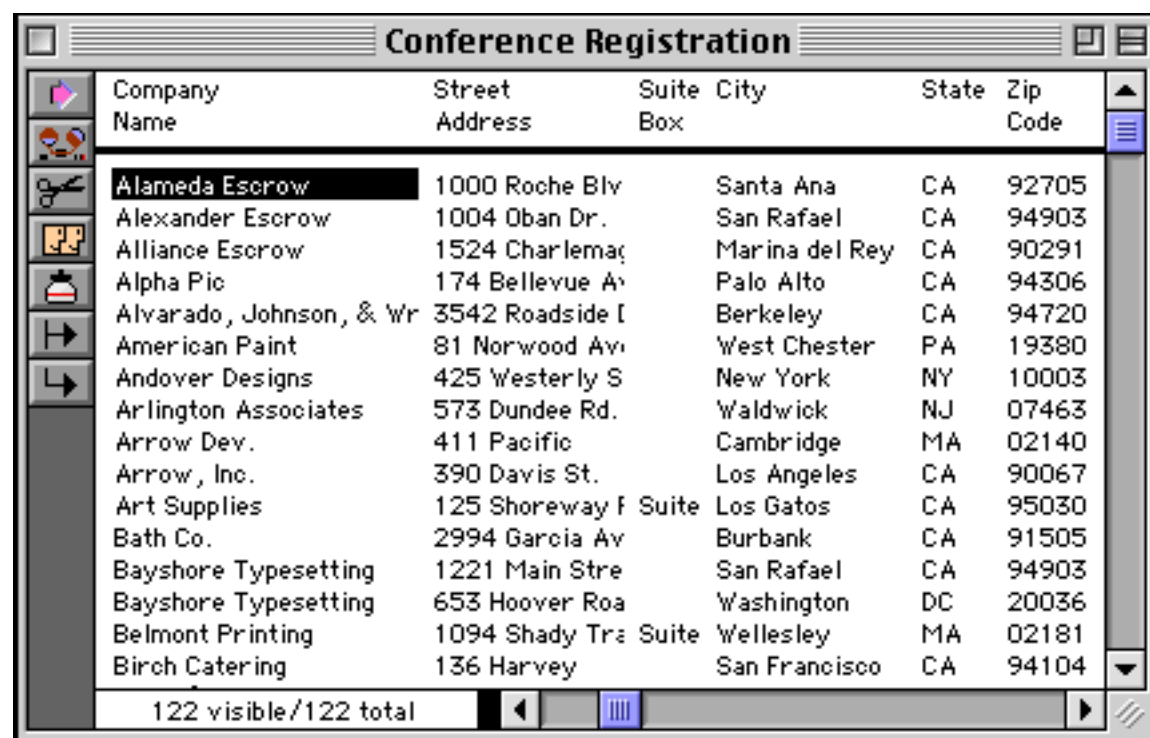
You can use the **Select Summaries** command to select random records within your database. First pick the records you want to select by turning them into summary records. (To turn a record into a summary record, click on the left edge of the record in the data sheet. See "[Manually Creating and Removing Summary Records](#)" on page 402.) To actually select the summaries, choose **Select Summaries** from the Search menu. Remember, this will convert all your summary records into data records.

Warning: If you use the **Select Summaries** command to select random records, you can't use summary records for their regular job—calculating subtotals. If you need to use summary records for calculating subtotals, don't use the **Select Summaries** command! Instead, create an extra field for specifying the records you want to select. See "[3-Step Summarizing](#)" on page 393 for more information on the regular uses of summary records.

Select Duplicates

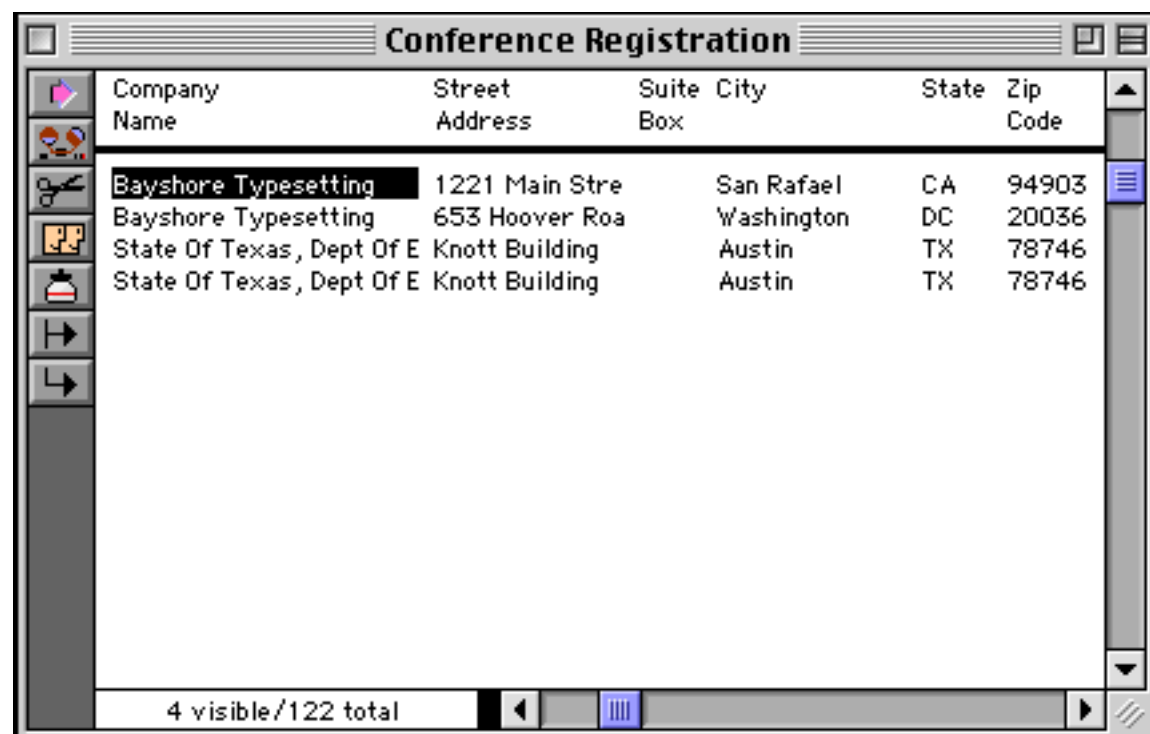
The **Select Duplicates** command (in the Search Menu) provides a fast and easy way to locate duplicate information in a database. The **Select Duplicates** command does not remove the duplicates, it simply selects them so you can examine them. You can then decide what to do about each duplicate on a case-by-case basis. You may select duplicates based on a single field (for example, all duplicate company names), on multiple fields (for example, all records with duplicate address, city, and state), or on a formula that may combine fields or use partial fields (for example, all records containing duplicate area codes).

To select duplicates based on a single field, start by using the **Sort Up** command to sort the database by that field. If the database is not sorted, the **Select Duplicates** command will warn you. For example, here is a conference registration database that may contain duplicate company information. It has been sorted into alphabetical order by company.



Company Name	Street Address	Suite Box	City	State	Zip Code
Alameda Escrow	1000 Roche Blv		Santa Ana	CA	92705
Alexander Escrow	1004 Oban Dr.		San Rafael	CA	94903
Alliance Escrow	1524 Charlemaç		Marina del Rey	CA	90291
Alpha Pic	174 Bellevue Av		Palo Alto	CA	94306
Alvarado, Johnson, & Wr	3542 Roadside I		Berkeley	CA	94720
American Paint	81 Norwood Av		West Chester	PA	19380
Andover Designs	425 Westerly S		New York	NY	10003
Arlington Associates	573 Dundee Rd.		Waldwick	NJ	07463
Arrow Dev.	411 Pacific		Cambridge	MA	02140
Arrow, Inc.	390 Davis St.		Los Angeles	CA	90067
Art Supplies	125 Shoreway F Suite		Los Gatos	CA	95030
Bath Co.	2994 Garcia Av		Burbank	CA	91505
Bayshore Typesetting	1221 Main Stre		San Rafael	CA	94903
Bayshore Typesetting	653 Hoover Roa		Washington	DC	20036
Belmont Printing	1094 Shady Tra Suite		Wellesley	MA	02181
Birch Catering	136 Harvey		San Francisco	CA	94104

After the database is sorted, choose the **Select Duplicates** command from the Search Menu (Make sure you have clicked on the field you want to check for duplicates before selecting the command.) This command opens a dialog box. Leave the dialog box empty and press the **OK** button. Panorama will select the records that contain duplicate information (if any), making everything else invisible.



Company Name	Street Address	Suite Box	City	State	Zip Code
Bayshore Typesetting	1221 Main Stre		San Rafael	CA	94903
Bayshore Typesetting	653 Hoover Roa		Washington	DC	20036
State Of Texas, Dept Of E	Knott Building		Austin	TX	78746
State Of Texas, Dept Of E	Knott Building		Austin	TX	78746

As you can see, there are two possible duplicates in this database.

The **Select Duplicates** command allows you to examine duplicate records. See “[Using UnPropagate to Eliminate Duplicates](#)” on page 470 if you simply want to delete all but the first duplicate entry automatically.

Select Duplicates Using a Formula

To select duplicates based on multiple and/or partial fields, you’ll need to use a formula. The formula tells Panorama exactly what data should be checked for duplicates. For example, suppose a database contains separate fields for first and last names. This formula could be used to check for duplicate names:

```
FirstName+LastName
```

If you wanted to check for duplicates using the first initial and the last name, you would use this formula:

```
FirstName[1,1]+LastName
```

This formula would tell Panorama to treat **John Doe**, **Joan Doe**, and **Jeff Doe** as duplicates because they all have the same first initial and last name. Let’s search for duplicates in our conference registration file. Start by sorting up by Last Name.

T	First Name	Last Name	Company	Street Address	Suite Box	City
	Mr. Jim	Abrahms	International Transportat	329 North State		Alam
	Mrs. Kathy	Abrams	Interplay Productions	750 Ridder Parl		Newp
	Mr. Marty	Abrams	Minutemen Press	2150 Executive	Suite	San N
	Mrs. Barbara	Abrams	Pacific Micro	472 Wheelers F.		Menlo
	Ms. Ruth	Adams	Corporate Dynamics Inc.	1210 West Dayl		Redw
	Mr. Tim	Adams	Hy-Ten	430 Clyde Aven		Moun
	Mr. Calvin	Adams	Quantum Computer Servic	2082 Michelson	Suite	Vienn
	Mrs. Michelle	Adams	Sceptre	10159 Alliance		Cuper
	Mr. Danny	Alexander	Educational Resources	3431 Forest Cir		San B
	Ms. Nancy	Alexander	JPSA	3431 Forrest Br		Berke
	Mr. Jared	Alexander	Kinetic Computing	1315 Bridgeway		Santa
	Mr. Clark	Alman	American Paint	81 Norwood Av		West
	Ms. Christy	Alpert	Signal Research	1120 Sharon Pa		Cuper

Now sort up within by first name.

T	First Name	Last Name	Company	Street Address	Suite Box	City
	Mr. Jim	Abrahms	International Transportat	329 North State		Alam
	Mrs. Kathy	Abrams	Interplay Productions	750 Ridder Parl		Newp
	Mr. Marty	Abrams	Minutemen Press	2150 Executive	Suite	San N
	Mrs. Barbara	Abrams	Pacific Micro	472 Wheelers F.		Menlo
	Ms. Ruth	Adams	Corporate Dynamics Inc.	1210 West Dayl		Redw
	Mr. Tim	Adams	Hy-Ten	430 Clyde Aven		Moun
	Mr. Calvin	Adams	Quantum Computer Servic	2082 Michelson	Suite	Vienn
	Mrs. Michelle	Adams	Sceptre	10159 Alliance		Cuper
	Mr. Danny	Alexander	Educational Resources	3431 Forest Cir		San B

Now choose the **Select Duplicates** command, and type in the formula:

Enter formula (or leave empty to find dups in current field):

«First Name»[1,1]+«Last Name»

Cancel OK

Here is the final result. There are two **R Jacobsen's**, two **J Jones**, two **R Knights**, and two **J South's**.

T	First Name	Last Name	Company Name	Street Address	Suite Box	City
Mr.	Randy	Jacobsen	Images By Jacobsen	180 Brent St.		Camb
Mrs.	Roxie	Jacobsen	Alpha Pic	174 Bellevue Av		Palo
Ms.	Jocelyn	Jones	Jones & Assoc.	284 Fairlawn Lr		San R
Mr.	Joe	Jones	Professionals Inc.	2 Owen St.		Provo
Ms.	Robin	Knight	Fico Appliance Service	2155 S. Bascom	Suite	Talla
Mr.	Ronald	Knight	Lynton Video	4501 Challenger		Newt
Mr.	Joe	South	House Buyers	849 Independenc		Wash
Mr.	Joe	South	Prospect Insurance	39 Washington r		Malv

Note: The formula must produce a text result. If you want to include numeric fields, they must be converted to text with the **str()** or **pattern()** functions (see “[Converting Between Numbers and Strings](#)” on page 84 of *Formulas & Programming*). Date fields must be converted to text with the **datepattern()** function (see “[Converting Between Dates and Text](#)” on page 107 of *Formulas & Programming*).

Warning: When you are using a formula to check for duplicates, only the first 300 characters from the formula result are actually used for duplicate checking. If the first 300 characters are the same, Panorama will treat these records as duplicates. Normally, this isn't a problem when you are check for duplicate names, addresses, etc., which are much shorter than 300 characters.

Chapter 10: Summaries and Outlines



It is very difficult to look at a database containing thousands of records and make much sense of it. There's simply too much information to cope with. To make the information more understandable, it needs to be summarized. Panorama can rapidly summarize a database according to the criteria you specify.

Panorama has two methods for summarizing a database. The first method, which is discussed in this chapter, is to create an outline using summary records. See "[Crosstabs](#)" on page 415 to learn about the second method, [crosstabs](#).

3-Step Summarizing

Summarizing a database is a three step process—**group**, **calculate**, and **outline**. Before diving into all the details and options, let's take a look at a basic overview of these three steps.

The first step is always the raw data. For this example we'll use a checkbook database, which we will summarize by category. Notice that the categories start out in more or less random order.

Date	CkNum	PayTo	Category	Debit
01/08/99	1907	Northern Illinois Mold	Equipment Rental	96.05
01/08/99	1908	U S Postmaster	Postage	75.00
01/08/99	1909	Advertiser's Mailing Ser	Advertising	390.80
01/16/99	1910	Coudert Brothers, Attor	Legal Fees	223.52
01/16/99	1911	Paramount Stationers	Office Supplies	105.84
01/17/99	1912	California Capitol	Insurance	36.00
01/17/99	1913	California Capitol	Insurance	28.00
01/17/99	1914	U S Postmaster	Postage	75.00
01/17/99	1915	Sacramento Bee	Advertising	795.00
01/22/99	1916	Walthers	Purchases	12,463.00
01/22/99	1917	Blue Cross Of Calif	Insurance	279.03
01/22/99	1918	Sherman Douglas Ins	Insurance	418.60
01/22/99	1919	Cannon Astro	Office Supplies	145.72
01/25/99	1920	Walthers	Purchases	1,885.40
01/25/99	1921	Nebs	Office Supplies	77.27
01/25/99	1922	Ramona Drinking Water	Office Supplies	98.10
01/25/99	1923	Pacific Partners	Rent	4,070.83
01/29/99	1924	Athearn	Purchases	1,906.32
01/29/99	1925	Advertiser's Mailing Ser	Advertising	860.22
01/29/99	1926	PacTel Cellular	Telephone	141.09
01/30/99	1927	State Board Of Equalizat	Taxes	549.00
01/30/99	1928	Walthers	Purchases	828.70
01/30/99	1929	Federal Express	Shipping	178.75
01/31/99	1930	U P S	Shipping	52.97
01/31/99	1931	Sacramento Bee	Advertising	795.00
02/07/99	1932	Cable & Wireless	Telephone	99.25
02/01/99	1933	Ed Burnett Consultants	Advertising	327.64
02/01/99	1934	US Sprint	Telephone	17.14
02/01/99	1935	Copierland	Office Supplies	137.04
02/01/99	1936	Alpha Graphics	Advertising	195.74
02/01/99	1937	Walthers	Purchases	536.00
02/01/99	1938	Unocal	Auto	182.59
02/01/99	1939	FastFacts	Office Supplies	108.25
02/01/99	1940	Yuba Register	Advertising	316.66
02/07/99	1941	City Of Caboose	Utilities	84.78
02/07/99	1942	U S Postmaster	Postage	75.00
02/07/99	1943	U S Postmaster	Postage	35.00
02/09/99	1944	Page One	Advertising	23.68
02/09/99	1945	Blue Cross Of Calif	Insurance	256.47
02/09/99	1946	U P S	Shipping	122.60
02/09/99	1947	Pacific Partners	Rent	3,862.63
02/09/99	1948	California Secretary Of:	Legal Fees	5.00
02/09/99	1949	City Of Caboose	Legal Fees	90.00
02/09/99	1950	Pitney Bowes	Equipment Rental	73.14

411 visible/411 total

Step 1 is **group**, so we'll start with the **Group Up** command (**Records->Analyze** menu) to divide the database into groups by spending category (advertising, purchases, rent, etc.). As you can see, the database is now sorted in order by category. In addition, Panorama has added several new records to the database. These are called **summary records** and can be identified by their blue background color and by the fact that they are displayed in bold.

Date	CkNum	PayTo	Category	Debit
07/16/99	2185	Railroad Model Craftsma	Advertising	453.42
07/18/99	2199	New Direction	Advertising	112.48
07/19/99	2203	Model Railroader	Advertising	110.00
07/20/99	2205	Advertiser's Mailing Ser	Advertising	27.00
07/24/99	2206	Sir Speedy	Advertising	142.40
07/24/99	2209	Advertiser's Mailing Ser	Advertising	500.00
07/24/99	2211	Railroad Model Craftsma	Advertising	453.42
08/13/99	2227	Page One	Advertising	92.05
08/14/99	2237	Advertiser's Mailing Ser	Advertising	500.00
08/29/99	2257	Advertiser's Mailing Ser	Advertising	425.00
09/06/99	2266	Advertiser's Mailing Ser	Advertising	495.41
09/18/99	2271	Railroad Model Craftsma	Advertising	453.42
09/19/99	2283	Caboose Gazette	Advertising	1,990.10
09/26/99	2297	AC Label Company	Advertising	205.97
09/28/99	2298	Graphic Depot	Advertising	344.00
09/28/99	2299	Advertiser's Mailing Ser	Advertising	167.00
			Advertising	
02/01/99	1938	Unocal	Auto	182.59
02/09/99	1968	Unocal	Auto	57.62
03/16/99	2007	Unocal	Auto	33.32
05/24/99	2111	Unocal	Auto	119.05
07/16/99	2189	Unocal	Auto	38.11
07/24/99	2213	Unocal	Auto	34.44
08/20/99	2240	Unocal	Auto	89.91
			Auto	
01/08/99	1907	Northern Illinois Mold	Equipment Rental	96.05
02/09/99	1950	Pitney Bowes	Equipment Rental	73.14
04/23/99	2063	Pitney Bowes	Equipment Rental	79.69
05/24/99	2137	Pitney Bowes	Equipment Rental	25.75
05/24/99	2141	Pitney Bowes	Equipment Rental	79.69
08/21/99	2251	Pitney Bowes	Equipment Rental	198.00
08/21/99	2253	Pitney Bowes	Equipment Rental	79.69
			Equipment Renta	
02/09/99	1952	GECC	Fixed Assets	428.39
05/02/99	2072	GECC	Fixed Assets	704.00
05/24/99	2112	GECC	Fixed Assets	74.00
06/14/99	2158	C M S	Fixed Assets	1,168.75
07/03/99	2175	GECC	Fixed Assets	250.00
07/18/99	2200	SSG LaserWorks	Fixed Assets	793.00
08/21/99	2243	GECC	Fixed Assets	725.00
09/18/99	2275	T.W. Bender Group	Fixed Assets	2,814.33
09/19/99	2280	GECC	Fixed Assets	352.00
09/26/99	2296	TesLabe	Fixed Assets	2,465.00
			Fixed Assets	

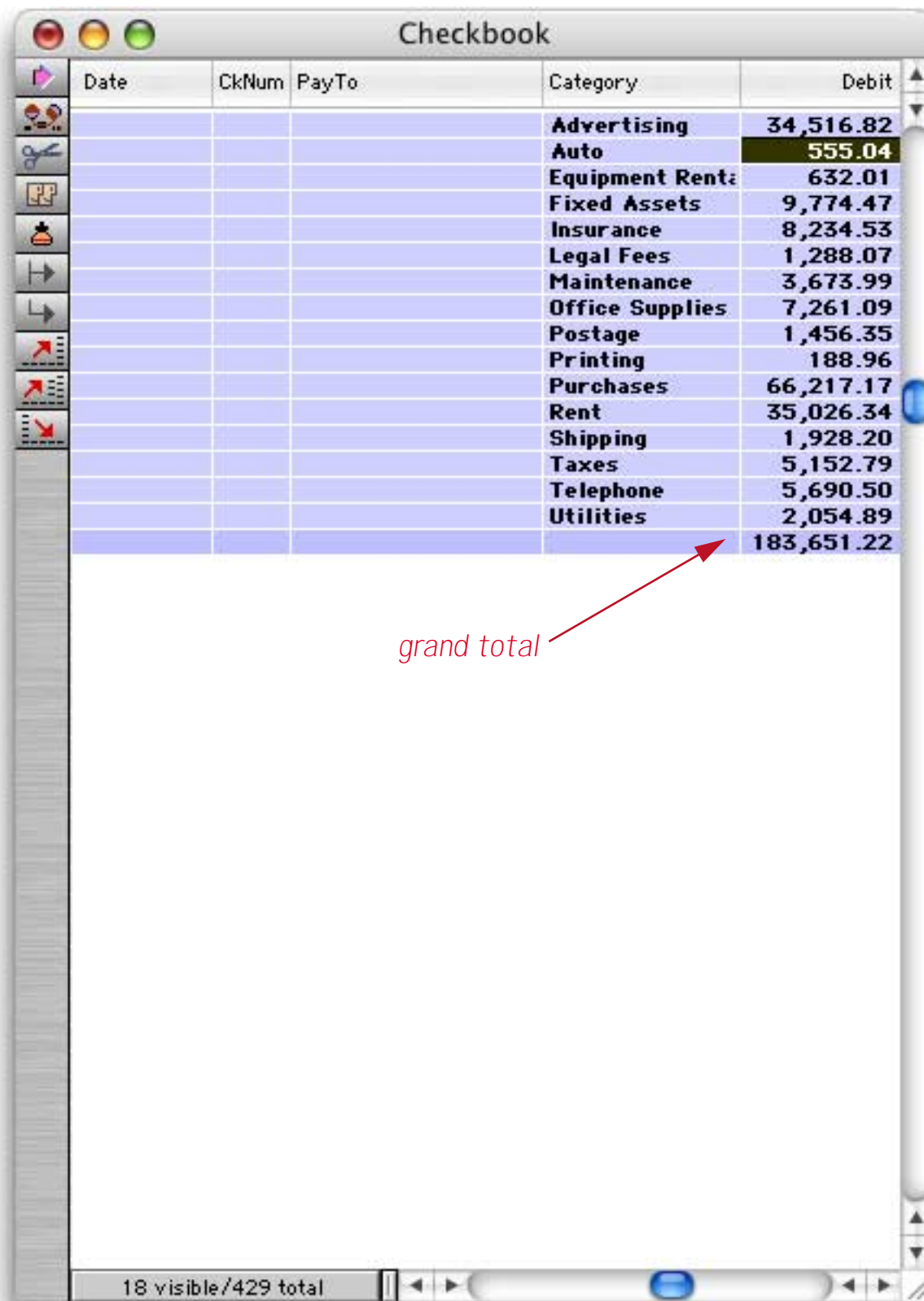
429 visible/429 total

Step 2 is **calculate**, which we'll do with the **Total** command (**Records->Analyze** menu). This command scans the database and calculates the subtotal for each category, as well as an overall total at the bottom of the database (not visible in this illustration).

Date	CkNum	PayTo	Category	Debit
07/16/99	2185	Railroad Model Craftsma	Advertising	453.42
07/18/99	2199	New Direction	Advertising	112.48
07/19/99	2203	Model Railroader	Advertising	110.00
07/20/99	2205	Advertiser's Mailing Ser	Advertising	27.00
07/24/99	2206	Sir Speedy	Advertising	142.40
07/24/99	2209	Advertiser's Mailing Ser	Advertising	500.00
07/24/99	2211	Railroad Model Craftsma	Advertising	453.42
08/13/99	2227	Page One	Advertising	92.05
08/14/99	2237	Advertiser's Mailing Ser	Advertising	500.00
08/29/99	2257	Advertiser's Mailing Ser	Advertising	425.00
09/06/99	2266	Advertiser's Mailing Ser	Advertising	495.41
09/18/99	2271	Railroad Model Craftsma	Advertising	453.42
09/19/99	2283	Caboose Gazette	Advertising	1,990.10
09/26/99	2297	AC Label Company	Advertising	205.97
09/28/99	2298	Graphic Depot	Advertising	344.00
09/28/99	2299	Advertiser's Mailing Ser	Advertising	167.00
			Advertising	34,516.82
02/01/99	1938	Unocal	Auto	182.59
02/09/99	1968	Unocal	Auto	57.62
03/16/99	2007	Unocal	Auto	33.32
05/24/99	2111	Unocal	Auto	119.05
07/16/99	2189	Unocal	Auto	38.11
07/24/99	2213	Unocal	Auto	34.44
08/20/99	2240	Unocal	Auto	89.91
			Auto	555.04
01/08/99	1907	Northern Illinois Mold	Equipment Rental	96.05
02/09/99	1950	Pitney Bowes	Equipment Rental	73.14
04/23/99	2063	Pitney Bowes	Equipment Rental	79.69
05/24/99	2137	Pitney Bowes	Equipment Rental	25.75
05/24/99	2141	Pitney Bowes	Equipment Rental	79.69
08/21/99	2251	Pitney Bowes	Equipment Rental	198.00
08/21/99	2253	Pitney Bowes	Equipment Rental	79.69
			Equipment Rent:	632.01
02/09/99	1952	GECC	Fixed Assets	428.39
05/02/99	2072	GECC	Fixed Assets	704.00
05/24/99	2112	GECC	Fixed Assets	74.00
06/14/99	2158	C M S	Fixed Assets	1,168.75
07/03/99	2175	GECC	Fixed Assets	250.00
07/18/99	2200	SSG LaserWorks	Fixed Assets	793.00
08/21/99	2243	GECC	Fixed Assets	725.00
09/18/99	2275	T.W. Bender Group	Fixed Assets	2,814.33
09/19/99	2280	GECC	Fixed Assets	352.00
09/26/99	2296	TesLabe	Fixed Assets	2,465.00
			Fixed Assets	9,774.47

429 visible/429 total

Step 3 is **outline**, which allows us to hide unnecessary detail so that we can focus on just the numbers that are important to us. For our example we'll use the **Summary Outline Level** dialog (**Records->Analyze** menu) to collapse the database so that only the summary information is visible. In addition to the subtotals you can also now see the grand total at the bottom. Notice that the background blue color for the grand total is slightly darker than the other summary records.



Date	CkNum	PayTo	Category	Debit
			Advertising	34,516.82
			Auto	555.04
			Equipment Rentals	632.01
			Fixed Assets	9,774.47
			Insurance	8,234.53
			Legal Fees	1,288.07
			Maintenance	3,673.99
			Office Supplies	7,261.09
			Postage	1,456.35
			Printing	188.96
			Purchases	66,217.17
			Rent	35,026.34
			Shipping	1,928.20
			Taxes	5,152.79
			Telephone	5,690.50
			Utilities	2,054.89
				183,651.22

grand total

18 visible/429 total

Using the **Expand** and **Collapse** tools (in the tool palette) the summaries can be expanded or collapsed to show more or less detail. Here we've used the **Expand** tool to examine the maintenance detail.

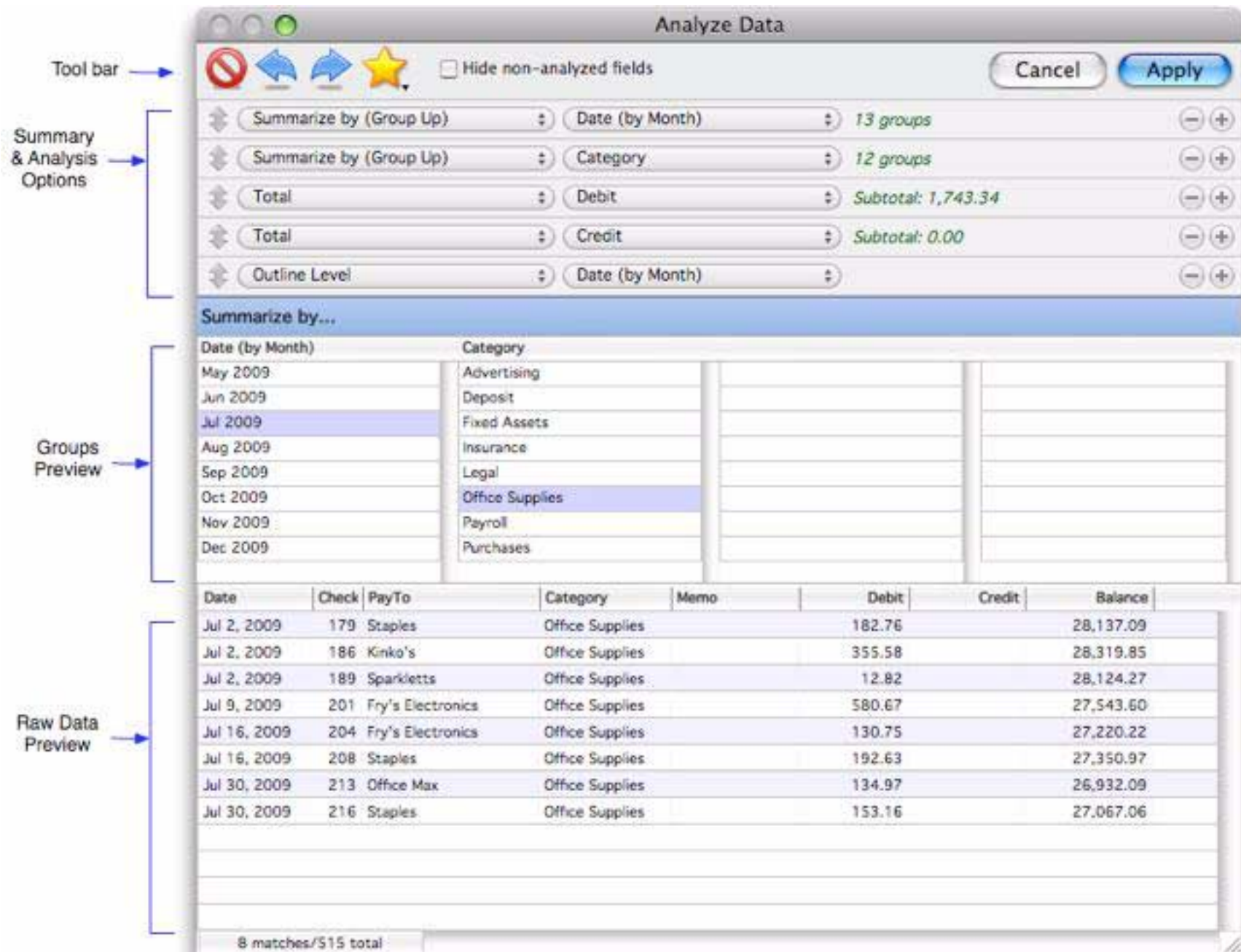
Date	CkNum	PayTo	Category	Debit
			Advertising	34,516.82
			Auto	555.04
			Equipment Rent:	632.01
			Fixed Assets	9,774.47
			Insurance	8,234.53
			Legal Fees	1,288.07
02/09/99	1964	Copierland	Maintenance	310.00
03/01/99	1986	Boyer & Ambrose Carpe	Maintenance	87.50
03/12/99	2002	Boyer & Ambrose Carpe	Maintenance	156.35
03/29/99	2037	Priority One Computers	Maintenance	496.40
03/29/99	2046	Executive Surveillance	Maintenance	132.00
04/24/99	2067	Boyer & Ambrose Carpe	Maintenance	132.00
05/08/99	2090	ServiceWorld	Maintenance	265.63
05/24/99	2114	E T S	Maintenance	49.00
05/24/99	2116	Sun Computers	Maintenance	282.00
05/24/99	2139	Pitney Bowes	Maintenance	140.00
05/29/99	2149	Sun Computers	Maintenance	276.00
06/05/99	2157	Sun Computers	Maintenance	101.25
06/21/99	2167	Dial One	Maintenance	267.13
07/16/99	2190	Executive Surveillance	Maintenance	168.00
07/24/99	2214	J & M Fire Extinguisher	Maintenance	38.19
08/08/99	2220	Newport Buidling & Mai	Maintenance	120.00
08/21/99	2252	Vint Pest Control	Maintenance	120.00
09/18/99	2270	Computek Computer	Maintenance	100.00
09/18/99	2274	Boyer & Ambrose Carpe	Maintenance	432.54
			Maintenance	3,673.99
			Office Supplies	7,261.09
			Postage	1,456.35
			Printing	188.96
			Purchases	66,217.17
			Rent	35,026.34
			Shipping	1,928.20
			Taxes	5,152.79
			Telephone	5,690.50
			Utilities	2,054.89
				183,651.22

37 visible/429 total

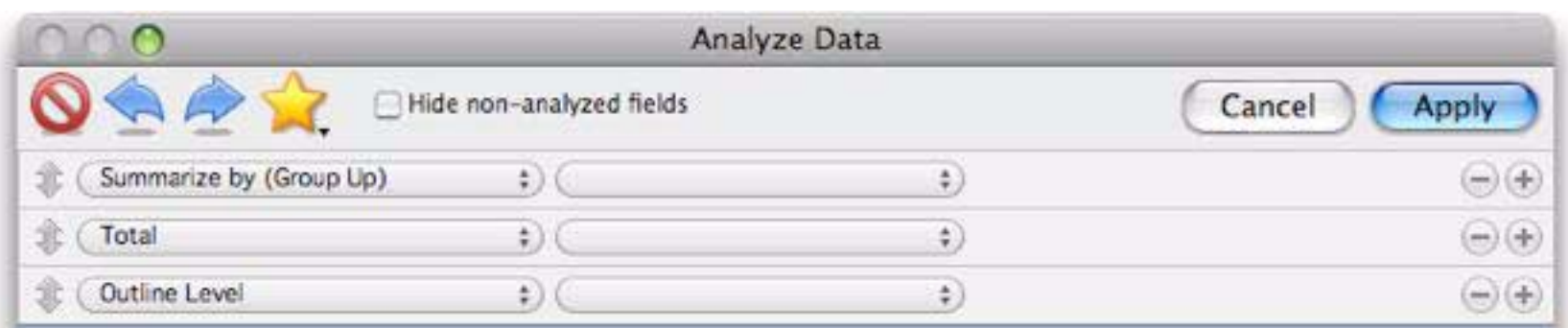
When you are finished with the summary, use the **Remove All Summaries** command (**Records->Analyze** menu) to remove the subtotals and totals, leaving only the original data. You can then continue with normal operations on your database (data entry, sorting, searching, etc.).

The Summarize & Analyze Dialog

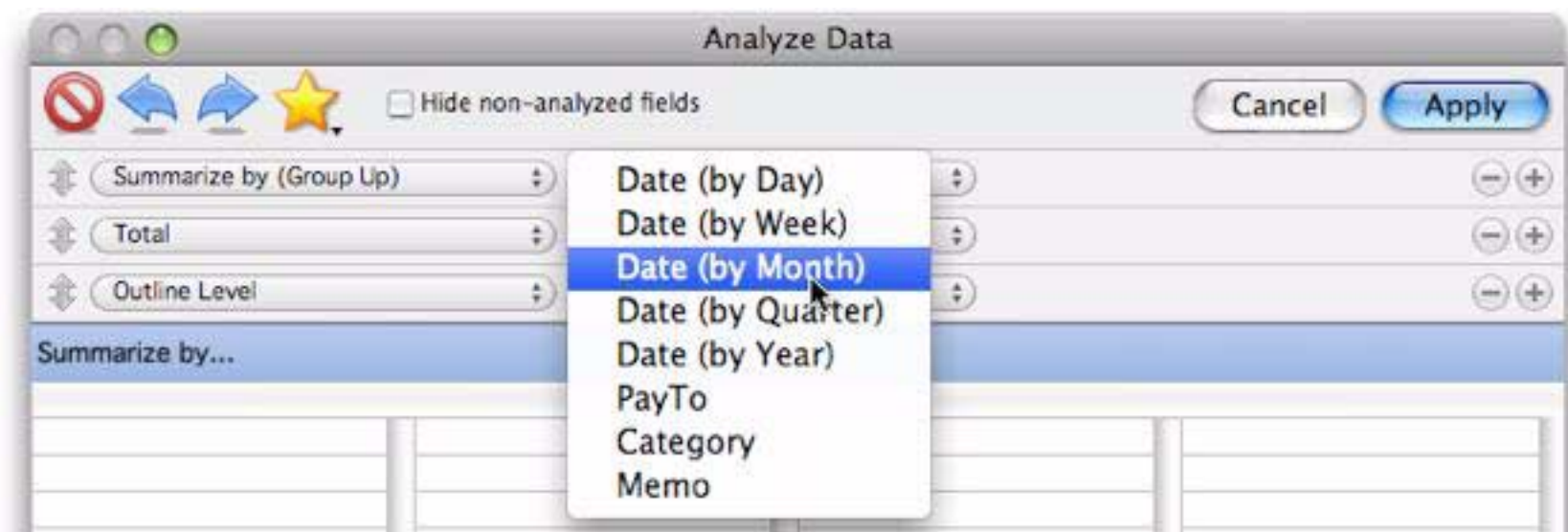
In the preceding examples the Group/Calculate/Outline analysis was done manually, one step at a time, to make the steps easier to understand. Starting with Panorama 6, however, there is a new feature that combines all three of these steps into a single, all-in-one dialog. (You can still perform these steps separately, see “[Generating Summaries Manually](#)” on page 394.) This dialog allows you to use pop-up menus to set up the entire Group/Calculate/Outline process, and allows you to preview the analysis before you actually apply it to the database.



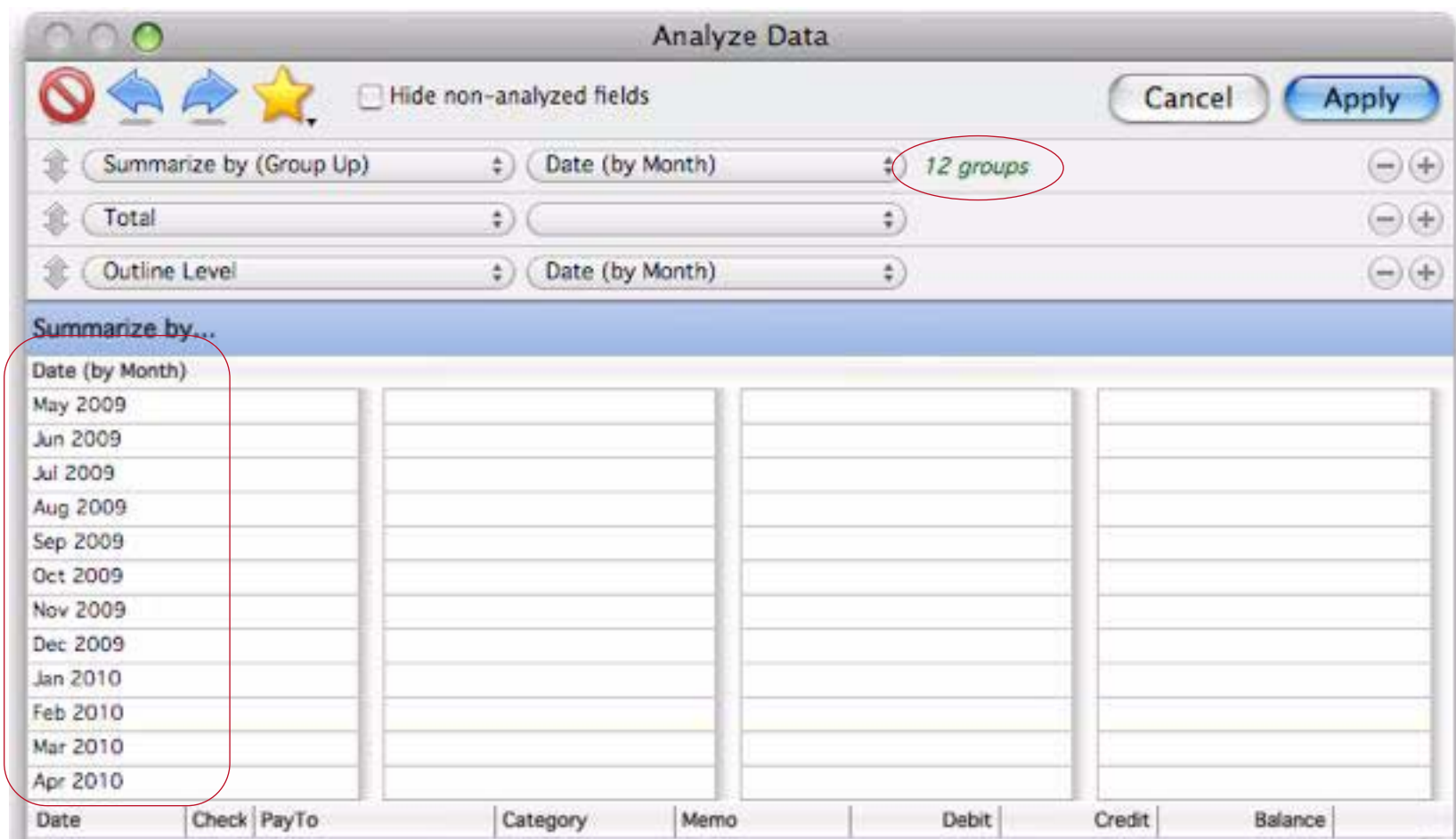
The top section of the dialog, *Summary & Analysis Options*, is where the Group/Calculate/Outline analysis is set up. When you first open the dialog this section contains three rows that are preset for summary (group), total (calculate) and outline level:



Start by choosing the field you want to summarize by. For date columns you will also have a choice of periods (day, month, year, etc.)



Once you've selected the summarization field the dialog will show you how many different groups of data are associated with that field, and also list all of the groups in the *Group Preview* area below.



Next, use the pop-up menu in the second row to choose a column you want to perform calculations on. (In addition to totals, you can also calculate counts, averages, minimums and maximums.) Once you've chosen a column the dialog will show you the grand total for this column.



The final row allows you to control what level of the outline is initially displayed. It defaults to the primary summary field, so you can usually just leave it as-is. However you have a choice of any field you have summarized by or you can elect to include the raw data in the display.

To actually create the outline press the **Apply** button. Panorama will organize the database into an outline with summary records for the groups you have specified.

Date	Check	PayTo	Category	Memo	Debit	Credit
May 30, 2009					18,444.39	
Jun 27, 2009					19,773.28	
Jul 30, 2009					24,608.22	
Aug 27, 2009					17,708.74	
Sep 29, 2009					20,072.20	
Oct 29, 2009					19,558.28	
Nov 30, 2009					17,703.57	
Dec 31, 2009					20,610.35	
Jan 28, 2010					13,480.07	
Feb 28, 2010					18,991.58	
Mar 30, 2010					20,584.70	
Apr 28, 2010					19,553.96	
					231,089.34	

13 visible / 528 total

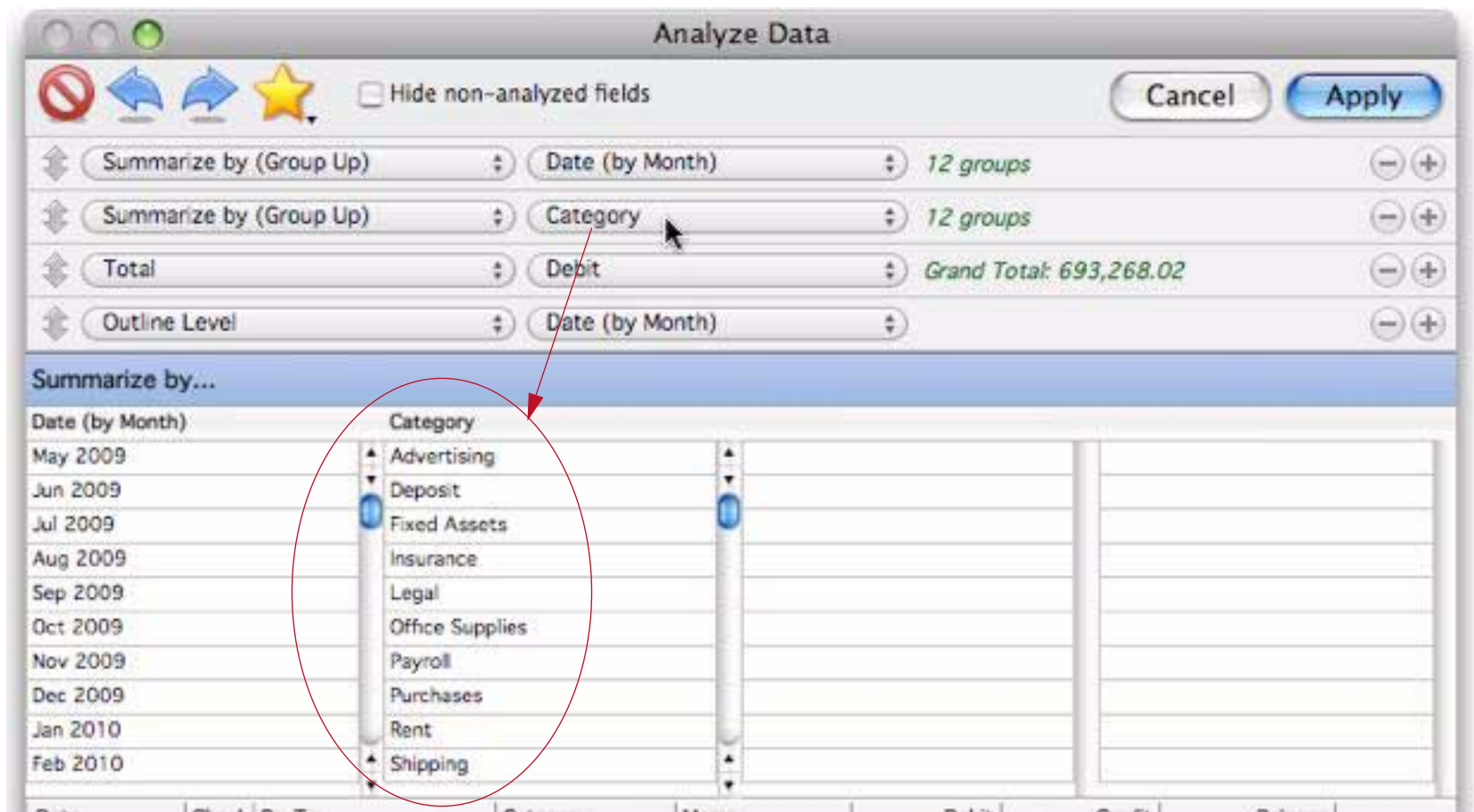
Multi-Level Summaries

The previous example create one summary level. Panorama can create up to seven nested summary levels, for example Categories within Months, or Cities within States within Months within Years. To add an additional summary level, re-open the **Summarize & Analyze** dialog, then press the + button on the first row to add a second summary level.

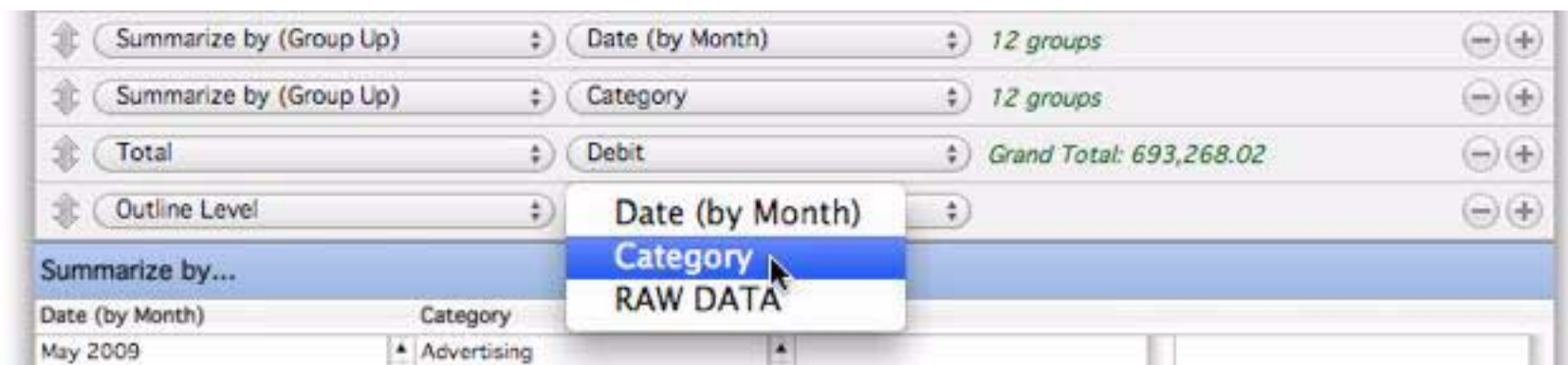
click + to add another summary level



Now use the pop-up menu to select the field to be summarized. The summary preview will show the groups that will appear at this summary level.



The outline level pop-up menu now gives you the choice of either summary level or raw data. All levels at and above the selected level will be display.



Pressing the **Apply** button organizes the database into a multi-level outline.

sub summaries by category (within month)

Date	Check	PayTo	Category	Memo	Debit	Credit
			Deposit		0.00	
			Insurance		1,254.50	
			Office Supplies		814.00	
			Payroll		7,319.31	
			Purchases		5,106.41	
			Rent		1,580.00	
			Shipping		582.29	
			Telecom		423.19	
			Utilities		249.84	
May 30, 2009					18,444.39	
			Advertising		3,874.92	
			Deposit		0.00	
			Fixed Assets		1,974.81	
			Insurance		1,254.50	
			Office Supplies		938.45	
			Payroll		6,966.12	
			Purchases		2,135.08	
			Rent		1,580.00	
			Shipping		298.75	
			Telecom		514.61	
			Utilities		236.04	
Jun 27, 2009					19,773.28	

summaries by month

Scrolling down to the bottom of the database shows the grand total for the entire database.

			Shipping		938.68	
			Telecom		468.80	
			Utilities		184.14	
Mar 30, 2010					20,584.70	
			Advertising		2,528.52	
			Deposit		0.00	
			Fixed Assets		1,063.90	
			Insurance		1,254.50	
			Office Supplies		1,349.14	
			Payroll		7,021.22	
			Purchases		3,001.53	
			Rent		1,580.00	
			Shipping		1,084.97	
			Telecom		449.00	
			Utilities		221.18	
Apr 28, 2010					19,553.96	
					231,089.34	

grand total

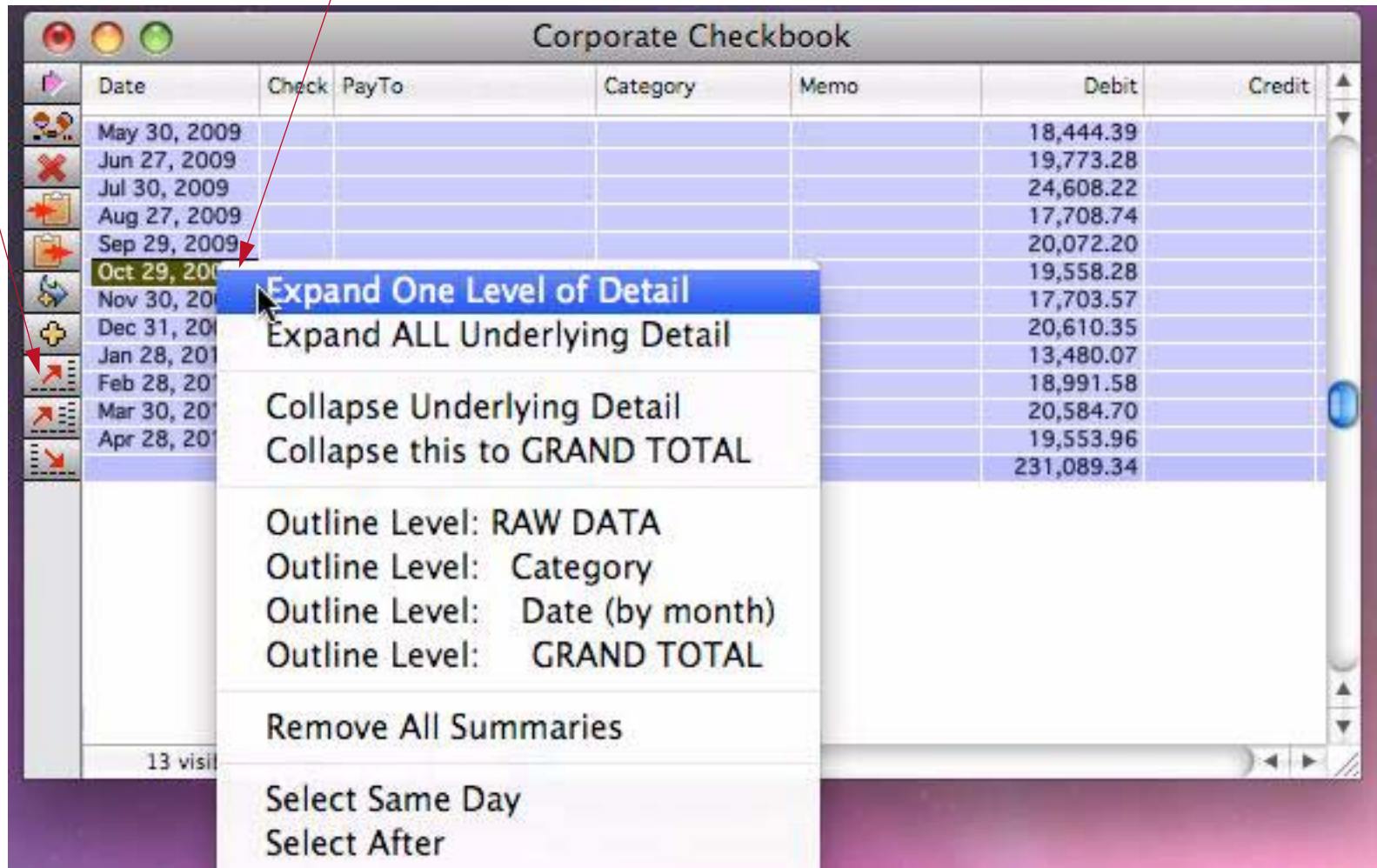
Using the same technique you can add up to seven nested summary levels.

Expanding and Collapsing the Summary Outline

A unique feature of Panorama is that summaries aren't just static on a report, they can be dynamically expanded or collapse to show more or less detail. You can "zoom out" to look for major trends, then "zoom in" to examine specific details. We call this collapsing (zoom out) and expanding (zoom in). To expand a particular summary, click on the summary, then click on the **Expand** tool or right click on the summary and choose **Expand One Level of Detail** from the pop-up menu (you can right click on any cell in the line).

click on Expand tool

or right click and choose Expand One Level of Detail



Panorama makes the next level of detail visible.



If the database has more than one summary level you can repeat the process all the way down to the raw data.

Corporate Checkbook

Date	Check	PayTo	Category	Memo	Debit	Credit
May 30, 2009					18,444.39	
Jun 27, 2009					19,773.28	
Jul 30, 2009					24,608.22	
Aug 27, 2009					17,708.74	
Sep 29, 2009					20,072.20	
			Advertising		2,653.66	
			Deposit		0.00	
			Insurance		1,254.50	
			Office Supplies		581.47	
			Payroll		8,966.83	
			Purchase			
			Rent			
			Shipping			
			Telecom			
			Utilities			
Oct 29, 2009						
Nov 30, 2009						
Dec 31, 2009						
Jan 28, 2010						

Context Menu Options:

- Expand One Level of Detail
- Expand ALL Underlying Detail
- Collapse Underlying Detail
- Collapse this to Date (by month)

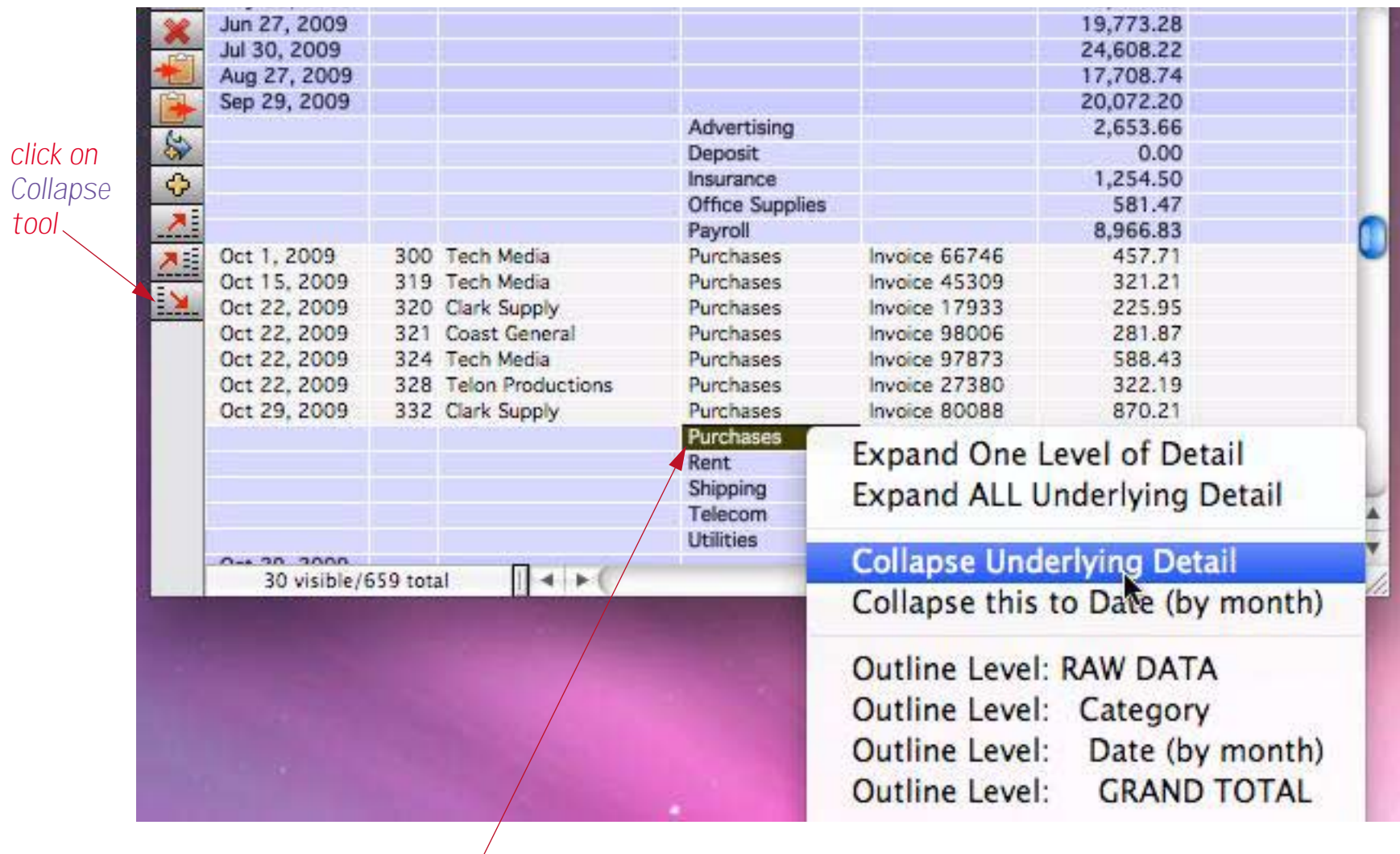
In this example we are now down to the raw data for purchases in October 2009.

Corporate Checkbook

Date	Check	PayTo	Category	Memo	Debit	Credit
May 30, 2009					18,444.39	
Jun 27, 2009					19,773.28	
Jul 30, 2009					24,608.22	
Aug 27, 2009					17,708.74	
Sep 29, 2009					20,072.20	
			Advertising		2,653.66	
			Deposit		0.00	
			Insurance		1,254.50	
			Office Supplies		581.47	
			Payroll		8,966.83	
Oct 1, 2009	300	Tech Media	Purchases	Invoice 66746	457.71	
Oct 15, 2009	319	Tech Media	Purchases	Invoice 45309	321.21	
Oct 22, 2009	320	Clark Supply	Purchases	Invoice 17933	225.95	
Oct 22, 2009	321	Coast General	Purchases	Invoice 98006	281.87	
Oct 22, 2009	324	Tech Media	Purchases	Invoice 97873	588.43	
Oct 22, 2009	328	Telon Productions	Purchases	Invoice 27380	322.19	
Oct 29, 2009	332	Clark Supply	Purchases	Invoice 80088	870.21	
			Purchases		3,067.57	
			Rent		1,580.00	
			Shipping		835.82	
			Telecom		402.95	
			Utilities		215.48	

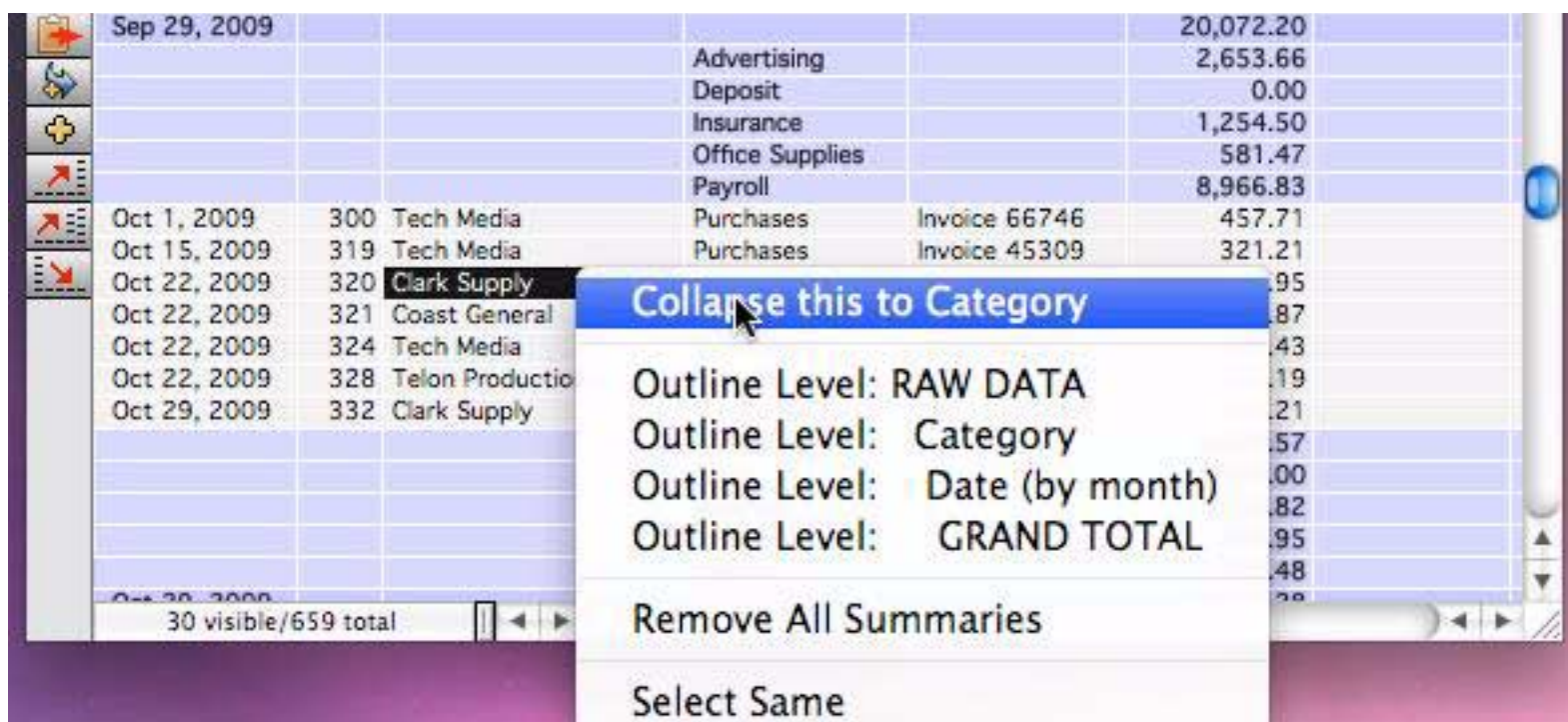
30 visible/659 total

To collapse a summary, click on it and then click on the Collapse tool. Or, right click and choose Collapse Underlying Detail.

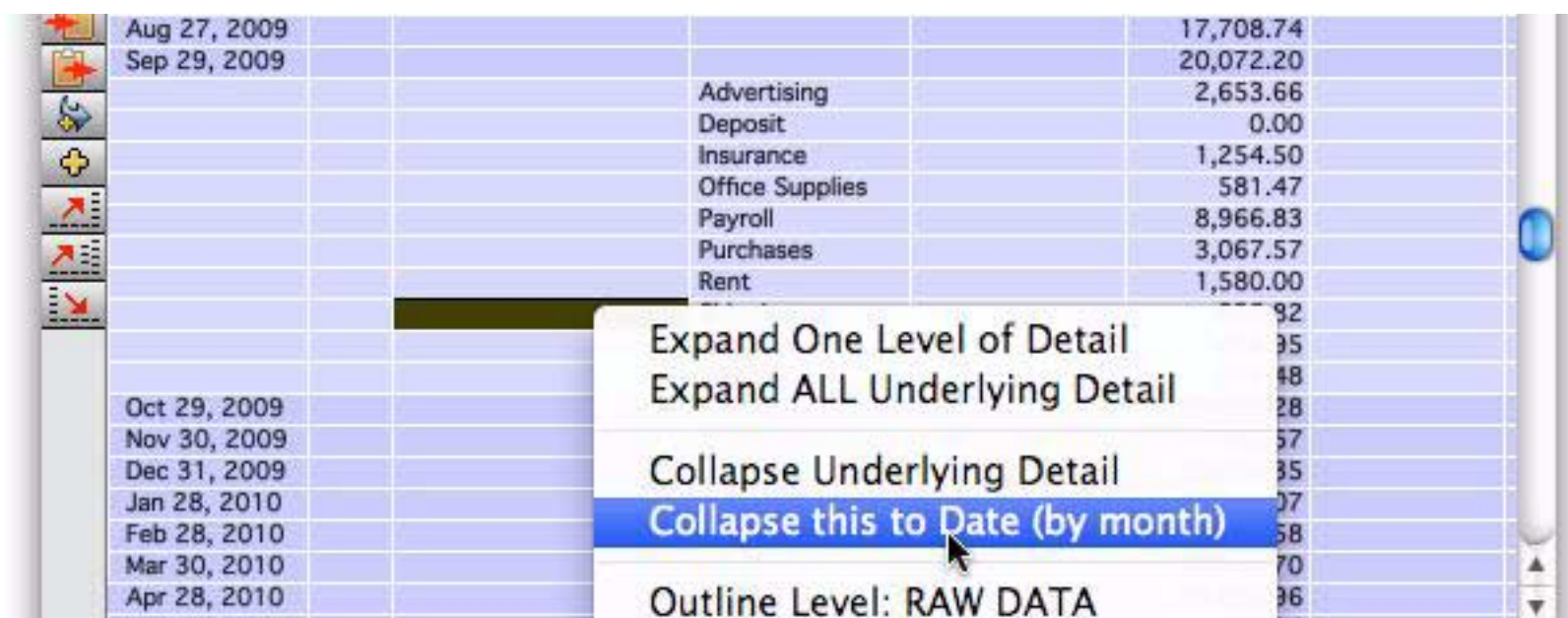


or right click and choose Collapse Underlying Detail

Another way to collapse is to right-click on a detail record, then choose Collapse this to. This is especially handy if the summary record you want to collapse isn't currently visible in the window.



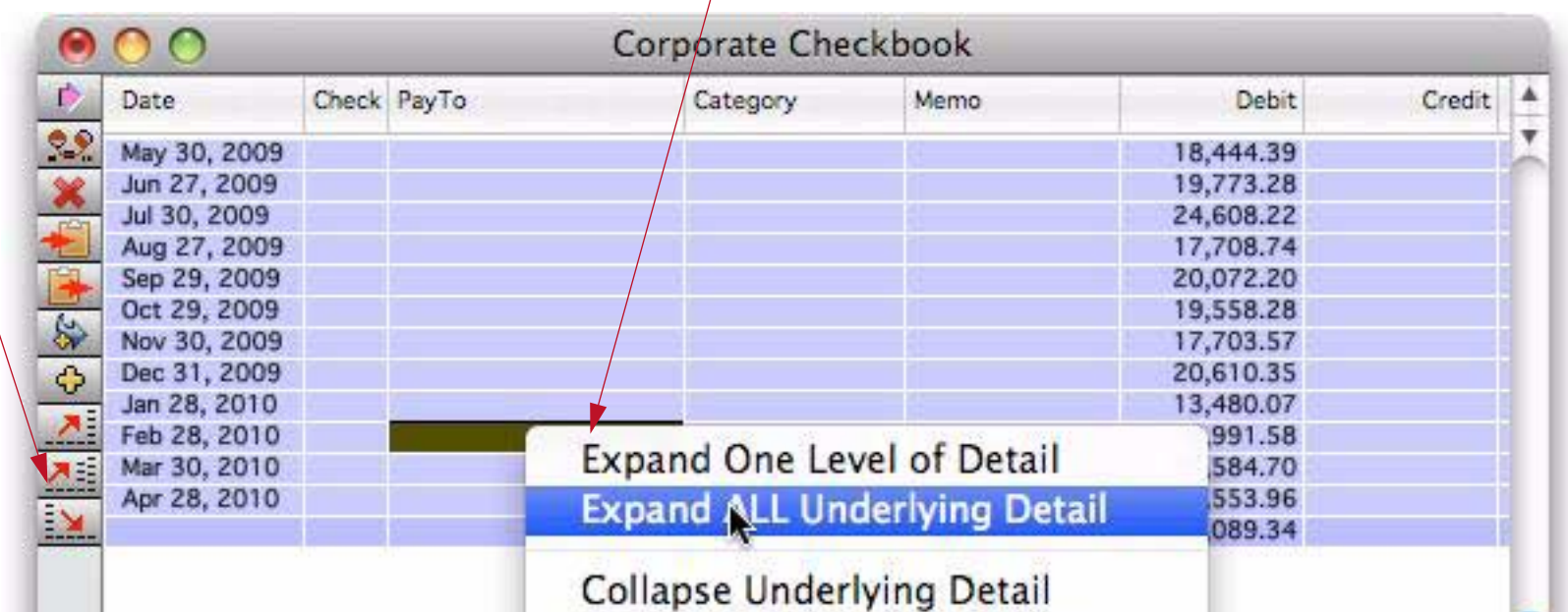
The example above shows doing this with a data record, but this trick works on any record except for the final grand total. The menu adjusts to show exactly what is about to be collapsed, as shown below.



At the start of this section we showed how to expand one level at a time. You can also click on a summary and ask Panorama to expand it all the way to the raw data, all in one step. To do this either click on the **Expand All** tool, or right click on the summary and choose **Expand ALL Underlying Detail**.

click on Expand All tool

or right click and choose Expand ALL Underlying Detail



This makes all subsummaries and raw detail associated with this summary record visible. In the example below, we now can see all of the data and sub-summaries for February 2010.

Date	Check	PayTo	Category	Memo	Debit	Credit
Feb 1, 2010	456	Pacific Properties	Rent	October Rent	1,580.00	
			Rent		1,580.00	
Feb 1, 2010	452	UPS	Shipping		88.94	
Feb 5, 2010	460	Champion Trucking	Shipping	Invoice 92122	182.83	
Feb 5, 2010	462	Airborne	Shipping	Invoice 24953	87.84	
Feb 5, 2010	463	Post Office	Shipping		258.32	
Feb 19, 2010	475	FedEx	Shipping	Invoice 21466	68.74	
Feb 26, 2010	482	Airborne	Shipping	Invoice 19692	36.31	
			Shipping		722.98	
Feb 1, 2010	451	Surf Networks	Telecom	Dsl	50.00	
Feb 1, 2010	457	AT&T	Telecom	Long Distance Ph	293.66	
Feb 1, 2010	458	Valley Bell	Telecom	Local Phone Servi	101.47	
			Telecom		445.13	
Feb 1, 2010	447	Valley Gas	Utilities	Heating	38.84	
Feb 1, 2010	448	City Services	Utilities	Water	43.00	
Feb 1, 2010	449	Edison General	Utilities	October Electric	83.75	
Feb 1, 2010	450	United Security	Utilities	Alarm	30.00	
			Utilities		195.59	
Feb 28, 2010					18,991.58	
Mar 30, 2010					20,584.70	
Apr 28, 2010					19,553.96	
					231,089.34	

Expanding and Collapsing the Overall Summary Outline

In the previous section you learned how to collapse and expand individual summary records. Sometimes, however, you'll want to expand or collapse the entire database as a whole. The fastest way to do this is with the Data Sheet Context menu. Simply right click anywhere in the data sheet and choose the outline level you want to see.

right click anywhere in data sheet

then choose the level you want to see

Date	Check	PayTo	Category	Memo	Debit	Credit
May 30, 2009					18,444.39	
Jun 27, 2009					73.28	
Jul 30, 2009					08.22	
Aug 27, 2009					08.74	
Sep 29, 2009					72.20	
Oct 29, 2009					58.28	
Nov 30, 2009					03.57	
Dec 31, 2009					10.35	
Jan 28, 2010					80.07	
Feb 28, 2010					91.58	
Mar 30, 2010					84.70	
Apr 28, 2010					53.96	
					89.34	

If you choose RAW DATA then everything will be visible — the original data, and all summary records.

Date	Check	PayTo	Category	Memo	Debit	Credit
May 5, 2009	121	Cool Creek Studio	Advertising		1,114.85	
May 1, 2009		OPENING BALANCE	Deposit			12,739.00
May 2, 2009		DEPOSIT	Deposit			5,985.82
May 9, 2009		DEPOSIT	Deposit			3,772.42
May 16, 2009		DEPOSIT	Deposit			3,110.56
May 23, 2009		DEPOSIT	Deposit			4,953.39
May 30, 2009		DEPOSIT	Deposit			4,664.34
May 1, 2009	101	Blue Cross	Insurance	Health Insurance	975.00	
May 1, 2009	111	General Casualty	Insurance	Property Insuranc	187.50	
May 1, 2009	112	Hamilton Davis	Insurance	Worker's Comp P	92.00	
May 1, 2009			Insurance		1,254.50	
May 1, 2009	100	Sparkletts	Office Supplies		14.20	
May 5, 2009	113	Office Max	Office Supplies		170.47	
May 5, 2009	116	Kinko's	Office Supplies		50.03	
May 19, 2009	131	Staples	Office Supplies		126.83	
May 19, 2009	133	Costco	Office Supplies		207.23	
May 26, 2009	135	Kinko's	Office Supplies		245.24	
May 1, 2009			Office Supplies		814.00	
May 5, 2009	114	Poly Payroll Services	Payroll		1,817.32	
May 12, 2009	123	Poly Payroll Services	Payroll		1,833.80	
May 19, 2009	127	Poly Payroll Services	Payroll		1,874.76	

If you choose GRAND TOTAL then only one record will be visible — the grand total summary record. The choices in between will display varying levels of summary detail.

A second way to expand or collapse the entire database is to use the Summary Outline Level dialog (in the Records->Analyze submenu). This dialog shows the current outline structure of the database.

Manage Summary Outline

Tool bar: Remove 131 summary records, Cancel, Show 144 summary records

Outline Levels:

- RAW DATA: 515 data records
- Category: 131 summary records
- Date (by month): 12 summary records
- GRAND TOTAL: 1 summary record

Outline Preview:

Date	Check	PayTo	Category	Memo	Debit	Credit	Balance
			Advertising		1,114.85		
			Deposit		0.00		
			Insurance		1,254.50		
			Office Supplies		814.00		
			Payroll		7,319.31		
			Purchases		5,106.41		
			Rent		1,580.00		
			Shipping		582.29		
			Telecom		423.19		
			Utilities		249.84		
May 30, 2009					18,444.39		
			Advertising		3,874.92		

144 expanded/659 total

To switch to a different level, click on the level and then press the green “eye” button. Or just double click on the level you want to see.

Getting Rid of Summary Records

When you're finished with summary records, you can simply choose **Records->Analyze->Remove All Summaries** to get rid of them. All of the summary records will disappear, and you can get back to working with your original data. This command is also available in the right-click context menu.

It's also possible to use the **Summary Outline Level** dialog to get rid of some summary record levels while retaining higher levels. To do this, click on the summary level you want to remove, then click on the trash can.

click on the summary level you want to remove

then click on the trash can



Getting Rid of Detail Records

Occasionally you may want to completely remove the raw data, leaving only the summary information. The **Summary Outline Level** dialog can do this also. To do this click on RAW DATA, then click on the trash can.

click on the RAW DATA level

then click on the trash can



This will remove all of the data records. The level 1 summaries (in this case Category) will be turned into data records. Level 2 summaries will be turned into Level 1, etc. Panorama will ask you to confirm before you delete the raw data, and you also have the option to later Revert to Saved or use Time Lapse if it turns out you made a mistake. Nevertheless, this feature is extremely dangerous, since it effectively deletes most of your database. Handle with care!

Ranking Summaries

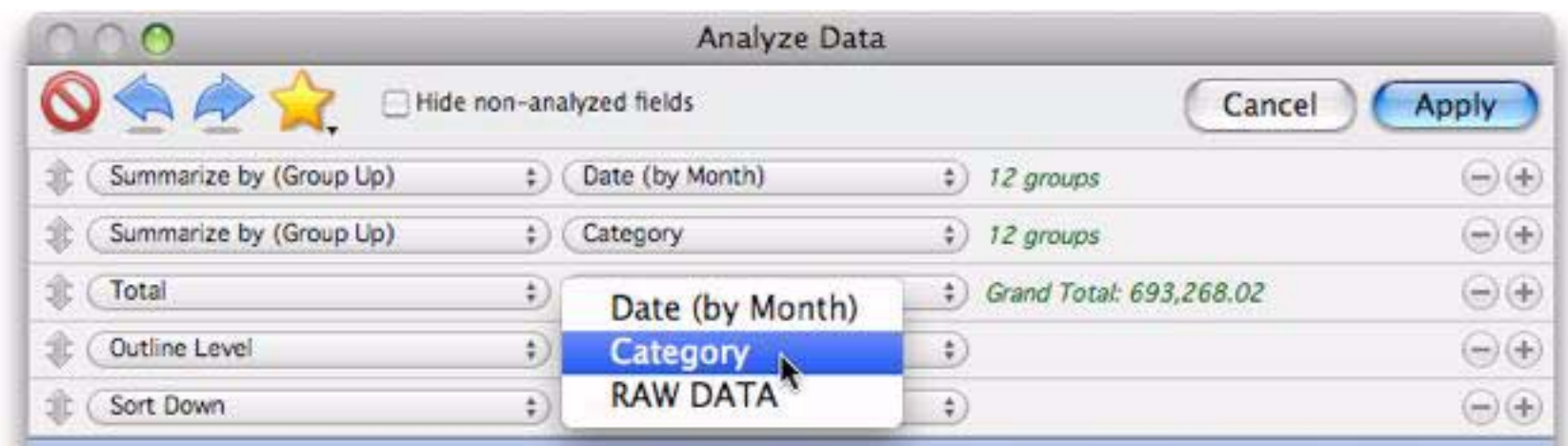
Panorama normally generates summaries in alphabetical order. By adding an extra rule to the **Summarize & Analyze** dialog you can tell Panorama to rank the summaries by value. For example, if you are summarizing by month they could be ranked to show the month with the highest sales (or spending, etc.) first, then the second highest etc. Start by clicking on the + button in the outline level row of the dialog.



Panorama assumes that you want to rank by the field that is being totalled in this analysis (in this case **Debit**), but you can choose another field if you wish. Then press the **Apply** button to see the ranked summaries.

Date	Check	PayTo	Category	Memo	Debit	Credit
			Payroll		92,219.12	
			Purchases		33,526.43	
			Advertising		30,011.39	
			Rent		18,960.00	
			Insurance		15,054.00	
			Shipping		11,175.50	
			Fixed Assets		10,022.66	
			Office Supplies		9,285.51	
			Telecom		5,350.38	
			Legal		2,893.63	
			Utilities		2,590.72	
			Deposit		0.00	
					231,089.34	

For multi-level nested summaries you can use the outline level pop-up menu to pick which level is ranked.

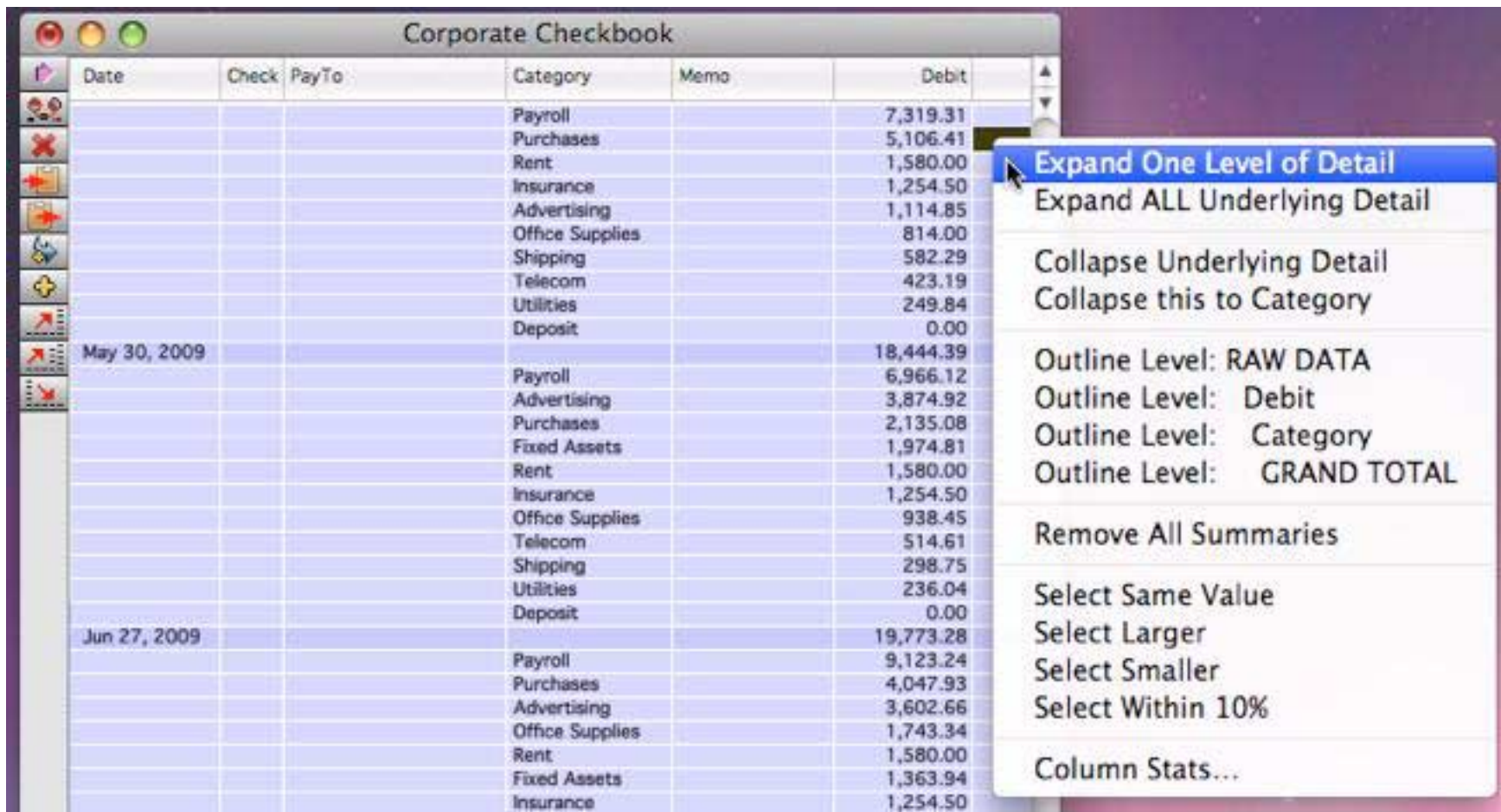


Whatever level you specified will be ranked. In this example, the category summaries are ranked within each month.

Date	Check	PayTo	Category	Memo	Debit
			Payroll		7,319.31
			Purchases		5,106.41
			Rent		1,580.00
			Insurance		1,254.50
			Advertising		1,114.85
			Office Supplies		814.00
			Shipping		582.29
			Telecom		423.19
			Utilities		249.84
			Deposit		0.00
May 30, 2009					18,444.39
			Payroll		6,966.12
			Advertising		3,874.92
			Purchases		2,135.08
			Fixed Assets		1,974.81
			Rent		1,580.00
			Insurance		1,254.50
			Office Supplies		938.45
			Telecom		514.61
			Shipping		298.75
			Utilities		236.04
			Deposit		0.00
Jun 27, 2009					19,773.28
			Payroll		9,123.24
			Purchases		4,047.93
			Advertising		3,602.66
			Office Supplies		1,743.34
			Rent		1,580.00
			Fixed Assets		1,363.94
			Insurance		1,254.50
			Shipping		1,228.70
			Telecom		454.95
			Utilities		208.96
			Deposit		0.00
Jul 30, 2009					24,608.22
			Payroll		6,726.87
			Advertising		2,631.00
			Purchases		1,961.64
			Rent		1,580.00
			Insurance		1,254.50
			Shipping		1,106.24
			Office Supplies		752.82
			Fixed Assets		727.11
			Telecom		451.64
			Legal		282.44
			Utilities		234.48
			Deposit		0.00

144 visible/659 total

Ranking the summaries doesn't affect the ability to expand detail. For example, now that the summaries are ranked we can easily see that the purchasing category in May was a bit higher than usual. To find out why, right click on the record and choose **Expand One Level of Detail** (or just click and choose the **Expand** tool).



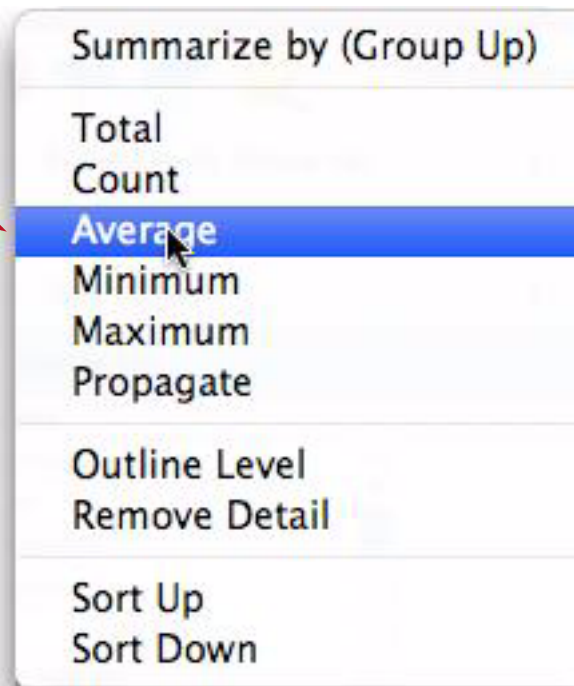
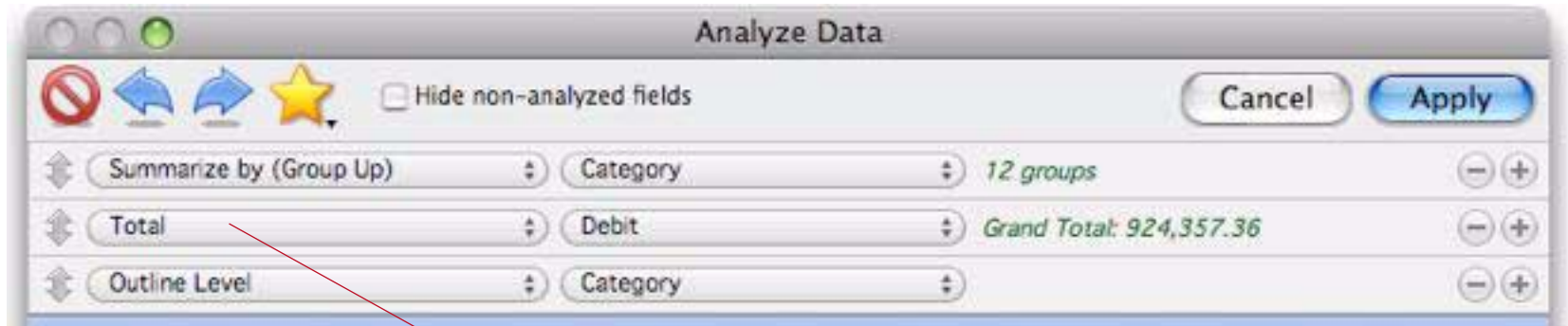
Now we can see that there was a large purchase made to Stamford Manufacturing, raising the purchasing in that month.



The ability to “zoom” in and out like this is a great tool for actually understanding your data.

Additional Calculation Options

The summaries shown so far have totalled a single field. However you can also perform counts, averages, etc. and you can also perform calculations on multiple fields. To change the type of calculation, choose from the pop-up menu.



To perform additional calculations, click the + button on the right.



Then use the pop-up menus to choose the type of calculation (Total, Average, etc.) and the field to perform the calculations on.



It's possible to perform multiple calculations on the same field, for example both the total and the average, as shown below.



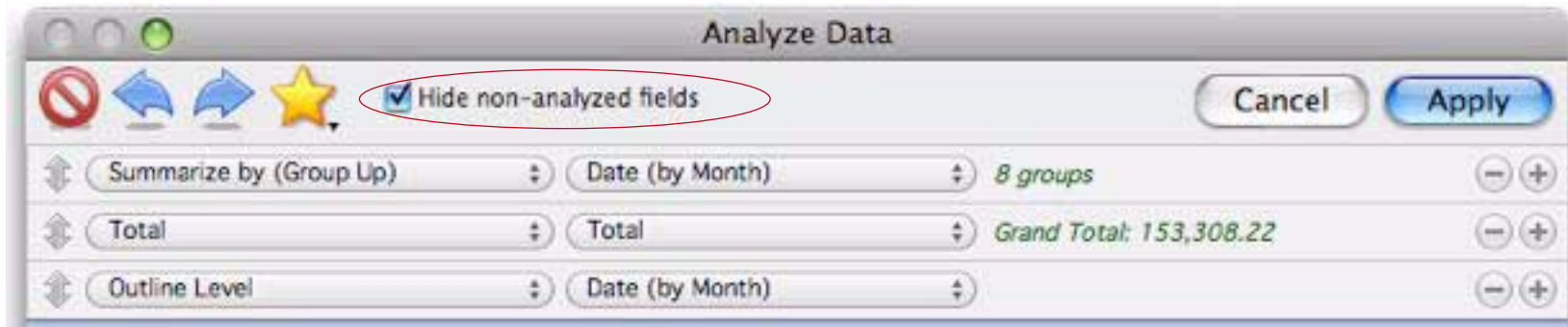
Both calculations will be displayed in the preview (as shown above). However, when you press **Apply** only the last calculation will appear in the database itself (in other words in the actual database only one calculation can be performed per field).

Hiding Non-Analyzed Fields

Sometimes a database will contain many fields but only a few are of interest for summaries or analysis. For example this database has over a dozen fields but a typical analysis might include only two fields, **Date** and **Total**.

Number	Date	Name	Address	City	State	Zip	DayPhone	PaymentMethod	CardNumber	CardExpires	Items	Subtotal	Tax	Total
1001	01/01/10	Derrick Ramsey	35081 W. Birch Rd.	Walnut Creek	CA	94596	(925) 839-7244	Visa	4082-9297-0143-2585	07/08	1-CARW 40' Stock Car-4.99-4.99	148.94	11.39	158.33
1002	01/01/10	Dennis Barr	4532 E. 26Th Apt	Stockton	NJ	08559	(908) 248-4447	MasterCard	5043-8283-2436-9223	03/02	1-Santa Fe GPS0-34.99-34.99	220.64		220.64
1003	01/01/10	Alan Coleman	534 S. First Circle	Oxford	OH	45056	(513) 258-0697	Visa	4031-2626-3348-3856	04/03	1-SP 4-B-4 GS4-74.95-74.95	99.83		99.83
1004	01/02/10	Phyllis Powers	237 W. Beechwood Lane	Moran	WY	83013	(307) 875-1205	MasterCard	5094-2561-0322-5052	07/02	1-LP Caboose-5.49-5.49	95.45		95.45
1005	01/02/10	Patricia Houston	395 S. Water Drive	Syracuse	NY	13210	(315) 826-4922	Visa	4084-8221-1395-1668	01/03	1-New Haven Diner-8.49-8.49	94.95		94.95
1006	01/02/10	Sandra Ford	322 N.W. Myers Way	Portland	OR	97224	(503) 225-5746	MasterCard	5000-1659-2793-1666	01/03	1-LP 40' Single Dome Tank Car-4.4	378.55		378.55
1007	01/03/10	Kevin Costa	675 N.W. Yakima Pl	East Rockaway	NY	11518	(516) 297-9200	MasterCard	5068-0166-5057-4281	07/01	1-Penney 50' Double Door Box-4.4	234.24		234.24
1007	01/03/10	Sandra Porter	8586 N. Highland Rd	Fallbrook	CA	92028	(714) 781-2477	Visa	4066-9686-0543-4522	05/01	1-Santa Fe GPS0-34.99-34.99	60.16	4.66	64.82
1008	01/04/10	Gary Fenwick	37712 South Sand Rd.	San Diego	CA	92186	(619) 664-8910	MasterCard	5087-4700-9634-9716	02/02	1-Chevy U300-28.99-28.99	194.30	15.04	209.34
1009	01/04/10	Kenneth Ackerman	18681 S. Sherwood Apt	Prospect	KY	40059	(502) 897-4137	Visa	4089-2832-3772-2854	10/03	1-Santa Fe 77A-24.99-24.99	70.97		70.97
1010	01/04/10	Barbara Land	44 N.W. Sawtooth Lane	Bartlesville	OK	74003	(918) 801-6209	Visa	4022-3751-3352-6697	03/03	1-Southern Pacific SD-45-29.99-21	189.29		189.29
1011	01/04/10	Edward Watson	761 S. Shea Ter	Athens	GA	30607	(404) 519-3017	American Express	3027-3756-1613-5213	01/03	1-Union Pacific ACA400-50.49-50	218.92		218.92
1012	01/04/10	Maureen Ralph	227 W. 23Rd Loop	Milwaukee	WI	53224	(414) 934-3142	Visa	4062-2495-7211-2476	04/03	1-LP 40' Single Dome Tank Car-4.4	77.32		77.32
1013	01/04/10	Paul Atkinson	358 W. Renner Loop	Santa Cruz	CA	95062	(408) 353-1940	Visa	4067-3330-4848-8944	08/02	1-Southern Pacific SM7-27.49-27	421.15	32.62	453.77
1014	01/05/10	Barbara Cobb	933 S. Crest Drive	Carlsbad	CA	92009	(619) 209-1394	Visa	4087-4311-5011-4026	07/01	1-SP 100 Ton Hopper-9.69-9.69	136.62	10.74	149.36
1015	01/05/10	Kath Kemp	267 S.W. Oakwood Court	New Philadelphia	OH	44663	(216) 922-5146	MasterCard	5072-4253-7005-8044	06/02	1-Penney SD-8-29.99-29.99	136.10		136.10
1016	01/05/10	Earl Pratt	25100 W. Hawk Parkway	Northbrook	IL	60062	(312) 751-8025	Visa	4041-4217-0582-8979	02/02	1-Southern Pacific GP 7-29.49-29	992.70		992.70

In this situation, simply check the **Hide non-analyzed fields** option.

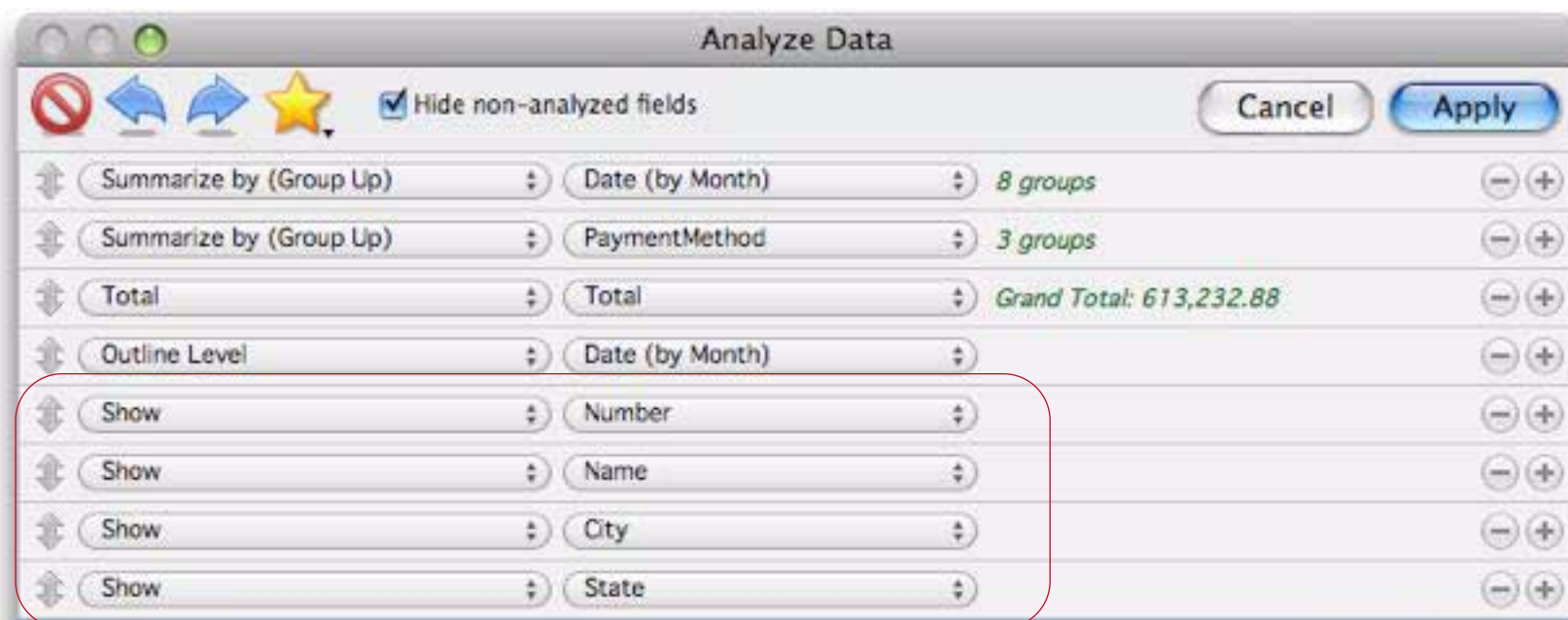


When you press the **Apply** button, Panorama will automatically hide all of the fields that aren't involved in the summary or calculation. This makes it much easier to examine the summary information.

The screenshot shows a window titled 'Sales' containing a table with two columns: 'Date' and 'Total'. The data is as follows:

Date	Total
01/31/10	14,939.24
02/28/10	16,463.98
03/31/10	17,522.50
04/30/10	14,820.58
05/31/10	20,641.00
06/30/10	24,033.76
07/31/10	16,916.54
08/31/10	27,970.62
	153,308.22

Sometimes you might want to leave one or more fields visible even if they aren't part of the summary or calculations. To do this, add extra rows to the analysis and specify **Show** for these fields, as shown below.



The primary reason why you might want to show these additional fields is so that the raw data in the fields is visible when you expand details of the summary, like this:

Number	Date	Name	City	State	PaymentMethod	Total
	01/31/10					14,939.24
	02/28/10					16,463.98
	03/31/10					17,522.50
					American Express	5,067.19
					MasterCard	5,810.09
1368	04/01/10	Eric Norton	Los Angeles	CA	Visa	130.10
1369	04/01/10	Brian Herriman	Crescent City	CA	Visa	125.47
1373	04/01/10	Herbert Parks	Portland	TX	Visa	69.96
1387	04/04/10	Lawrence Dawson	Miami	FL	Visa	132.24
1388	04/04/10	Patricia Paul	Alexandria	VA	Visa	113.92
1389	04/05/10	Esther Naylor	Greenfield	IN	Visa	176.74
1392	04/05/10	Janet Valdez	Williamsburg	VA	Visa	97.14
1400	04/07/10	Cheryl Berry	Ozark	MO	Visa	22.96
1401	04/08/10	Gerald Silva	Oklahoma City	OK	Visa	8.49
1403	04/08/10	George Wasson	Glenrock	WY	Visa	132.97
1418	04/11/10	Michael Greenberg	Shelby	MT	Visa	237.31
1425	04/13/10	Robert Nielsen	De Leon	TX	Visa	193.22
1429	04/14/10	Henry Conner	Mamaroneck	NY	Visa	59.87
1430	04/14/10	Stephanie Lambert	Chilton	TX	Visa	146.16
1434	04/15/10	Wendy Lerner	Huntington Beac	CA	Visa	216.72
1435	04/15/10	Joanne Roberts	Arlington	TX	Visa	209.07
1436	04/15/10	Richard Torres	Trenton	NJ	Visa	74.95
1447	04/18/10	Janice Hoffman	El Paso	TX	Visa	153.24
1454	04/20/10	Douglas Castaneda	Hayward	CA	Visa	5.90
1455	04/20/10	Brenda Cochran	Storrs Mansfield	CT	Visa	89.15
1456	04/20/10	Philip Spurgeon	Duncan	OK	Visa	140.12
1457	04/20/10	Kenneth Dewitt	Fort Lauderdale	FL	Visa	122.45
1463	04/21/10	Thomas Duffy	Phoenix	AZ	Visa	244.35
1471	04/24/10	Earl Brewster	Harker Heights	TX	Visa	34.48
1472	04/24/10	Herbert Rosen	Arlington	VA	Visa	67.94
1477	04/25/10	Arthur Dunn	Orlando	FL	Visa	200.70
1478	04/25/10	Eugene Walker	Aurora	OR	Visa	90.66
1480	04/26/10	Judy Chase	Farmington	NM	Visa	134.69
1487	04/29/10	Mary Soffici	Lebanon	TN	Visa	83.44
1493	04/30/10	Anthony Williams	Hawthorne	NJ	Visa	253.45
1497	04/30/10	Lawrence Connors	Mifflintown	PA	Visa	175.44
					Visa	3,943.30
	04/30/10					14,820.58
	05/31/10					20,641.00
	06/30/10					24,033.76
	07/31/10					16,916.54
	08/31/10					27,970.62
						153,308.22

Of course you can customize which fields are visible at any time, see “[Hiding and Showing Fields](#)” on page 209.

Previewing Subtotals

The Summarize & Analyze dialog allows you to preview summary results right in the dialog. When you click on a summary, the subtotal and preview areas update to reflect the item you clicked on. In the database shown below, there were 120 orders placed in February 2010, for a total of \$32,927.96.

The screenshot shows the 'Analyze Data' dialog box with the following configuration:

- Summarize by (Group Up): Date (by Month) - 8 groups
- Summarize by (Group Up): State - 52 groups
- Total: Total - Subtotal: 32,927.96
- Outline Level: Date (by Month)

The 'Summarize by...' section contains a table with the following data:

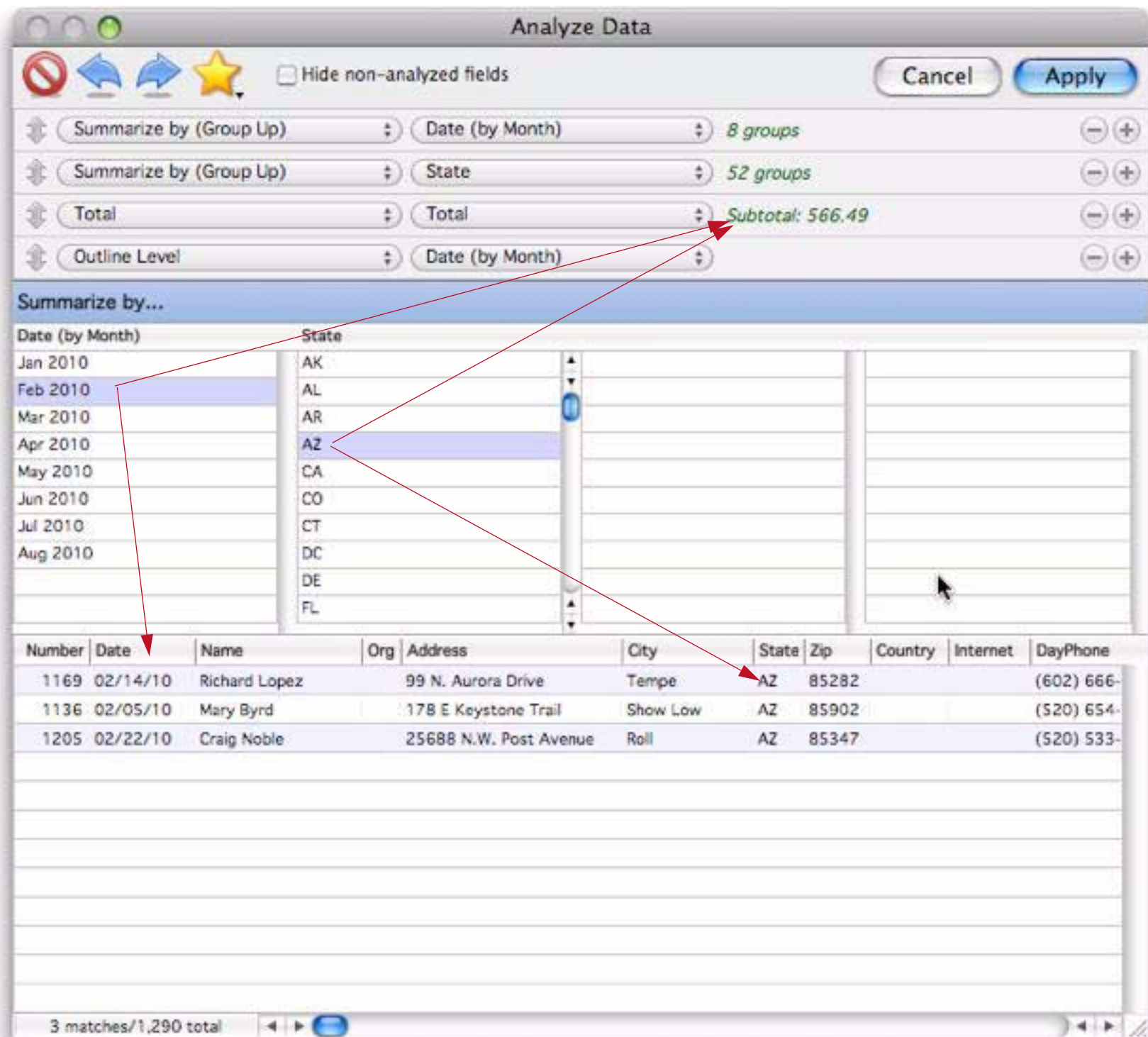
Date (by Month)	State
Jan 2010	AK
Feb 2010	AL
Mar 2010	AR
Apr 2010	AZ
May 2010	CA
Jun 2010	CO
Jul 2010	CT
Aug 2010	DC
	DE
	FL

The main data table below has the following columns: Number, Date, Name, Org, Address, City, State, Zip, Country, Internet, DayPhone. The first few rows are:

Number	Date	Name	Org	Address	City	State	Zip	Country	Internet	DayPhone
1108	02/01/10	Jeffrey Friedholm		475 S Westminster Ln	Billings	MT	59104			(406) 345-
1109	02/01/10	Elizabeth Hartley		656 North Brook Cir.	Madison	WI	53783			(608) 921-
1112	02/01/10	Phyllis Snyder		4250 South Elmwood Rd	Palos Park	IL	60464			(708) 942-
1115	02/02/10	Beverly Gamble		525 S. Carson Drive	New York	NY	10019			(212) 478-
1116	02/02/10	Judith Knudsen		344 N.W. Waverly Dr.	Miami	FL	33189			(305) 822-
1119	02/02/10	Laura Phelps		15315 S. Birchwood Rd.	Saint Louis	MO	63123			(314) 797-
1121	02/03/10	Patricia Humphrey		34466 E King Rd.	Oakton	VA	22124			(703) 372-
1122	02/03/10	Tracy Connor		9607 W. Black Ave.	Watertown	NY	13601			(315) 438-
1123	02/03/10	Scott Nichols		9836 S. Cook Rd	Union Pier	MI	49129			(616) 819-
1124	02/03/10	Doris Gutierrez		8276 West Arden Dr	Renton	WA	98055			(282) 765-
1128	02/04/10	Margaret Moyer		6336 W. Arrow Street	Dewitt	NY	13214			(315) 838-
1129	02/04/10	Walter Swanson		33223 S.E. Edwards Blvd.	Minneapolis	MN	55418			(612) 623-

At the bottom left, it shows '120 matches/1,290 total'.

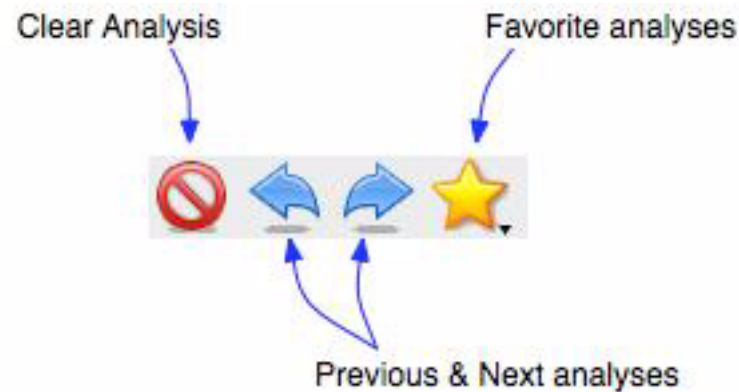
If you've grouped by multiple columns, you can click on multiple summary items to preview them. The illustration below shows that there were 3 orders placed from Arizona in February 2010, and you can see exactly who these orders were from. You can click around to preview any summary you like. If you click a selected summary, it will become unselected (for example if you want to see the grand total again.)



Using this technique you'll sometimes be able to get the answers you need right from the dialog, without even pressing the **Apply** button.

Managing Analyses

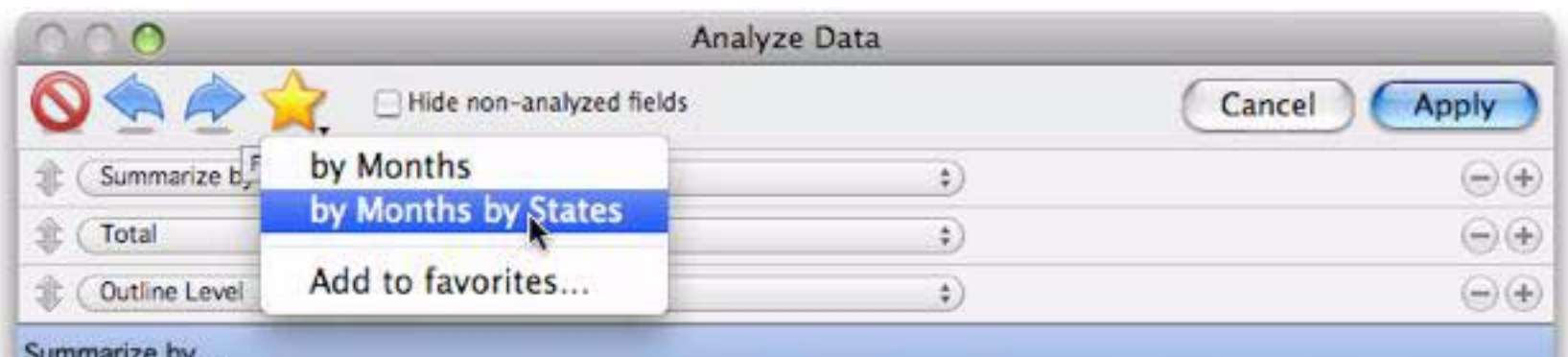
The tools in the upper left corner of the **Summarize & Analyze** dialog allow you to manage and easily re-use previous analyses.



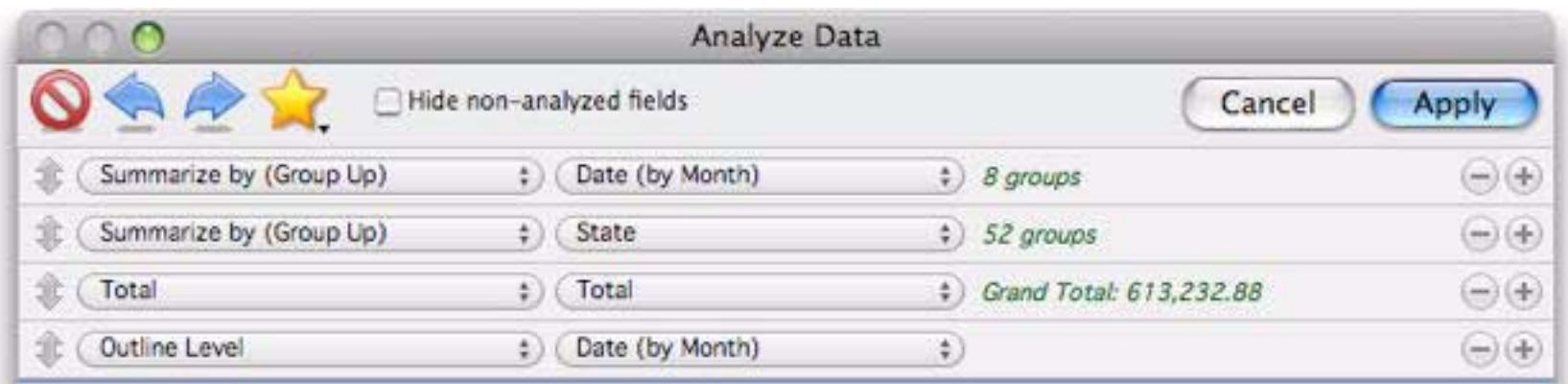
Clear Analysis — This button clears the current analysis, resetting the dialog. (If you press **Clear Analysis** by mistake you can press **Previous Analysis** to go back.)

Previous Analysis, Next Analysis — This pair of buttons allows you to go back to previously used analyses. (Note: Only analyses that you actually "finalized" by pressing the **Apply** button are included in the list of previously used analyses.)

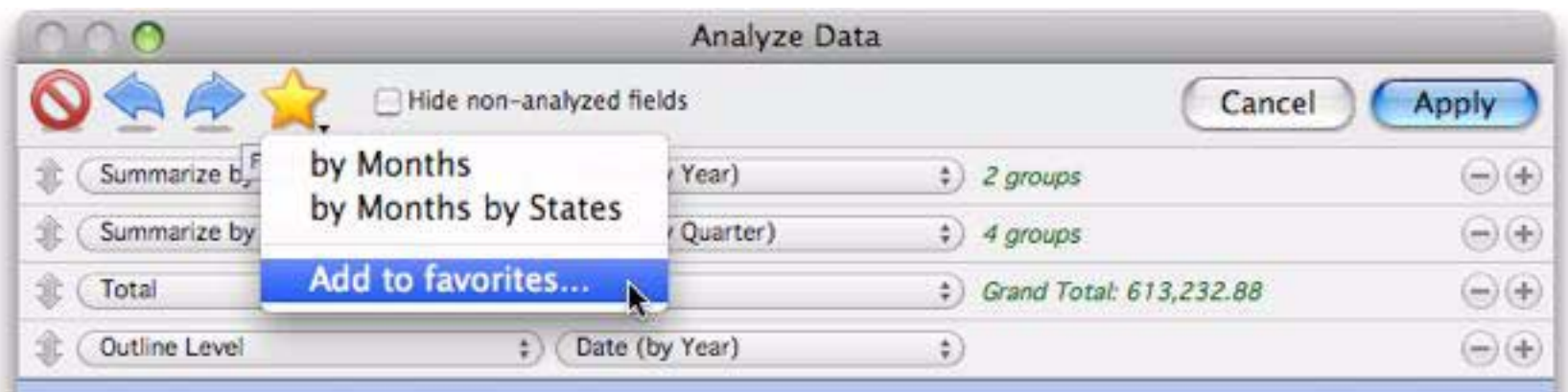
Favorites — This button displays a pop-up menu of favorite analyses, along with options for adding and removing favorites. To select a favorite you've saved previously, just click on the star and choose the favorite from the menu.



The analysis is restored just as it was saved. You can use it as is by pressing **Apply**, or you can modify it first.



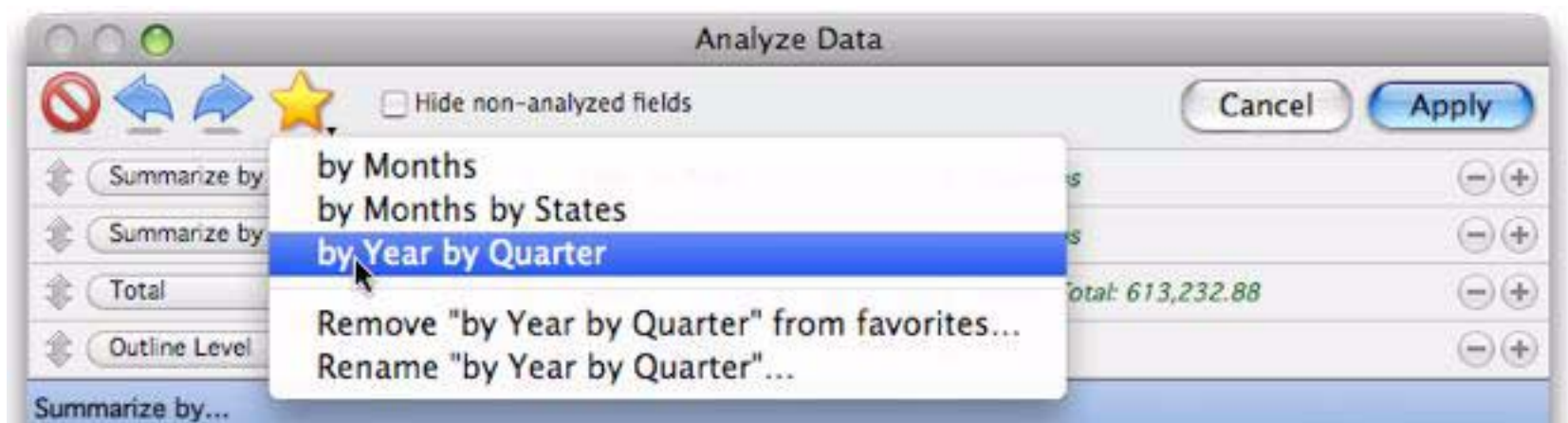
To save a new favorite, first set up the query specification, then click on the star and choose **Add to favorites...**



Enter a name for the new favorite.



Your new favorite now appears in the pop-up menu.



To delete or rename a favorite, first select the favorite from the pop-up menu. Then choose **Remove** or **Rename**, as shown above.

Note: In addition to saving favorites, you can also include an analysis in a procedure by using Panorama's recorder (see "[Creating a Procedure with the Recorder](#)" on page 212 of *Formulas & Programming*).

Generating Summaries Manually

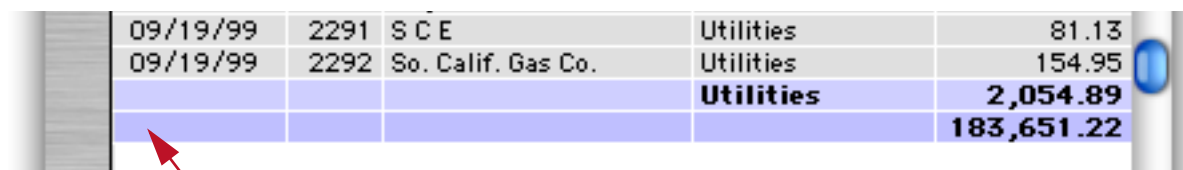
In addition to the **Summarize & Analyze** dialog you can also generate summaries “manually” step by step with commands in the **Analyze** submenu. (This technique will be familiar to users of previous versions of Panorama. The **Summarize & Analyze** dialog was introduced in Panorama 6.)

STEP 1 - GROUP

The first step in manually summarizing a database is to divide the database into groups or categories. For example, a checkbook database could be arranged into groups by month (Jan, Feb, Mar, etc.), by budget category (rent, food, transportation, etc.), or by payee (Evian Apartments, Lakeman’s Market, Unocal, etc.).

To divide a database into groups, first click anywhere in the field you want to group. Then use either the **Group Up** or **Group Down** command (**Records->Analyze** menu) to divide the database. The **Group Up** command arranges the data into ascending order—A’s first, Z’s last. The **Group Down** command arranges the data in descending order, Z to A.

The **Group Up** and **Group Down** commands add a special summary record at the end of each group. Summary records are temporary records used for calculating and displaying summary information. On the data sheet you can easily identify summary records by their blue background color, and by the fact that they are usually displayed in bold.



09/19/99	2291	S C E	Utilities	81.13
09/19/99	2292	So. Calif. Gas Co.	Utilities	154.95
			Utilities	2,054.89
				183,651.22

darkness of blue background indicates summary level

Subgroups

Groups can be sub-divided into even smaller subgroups. For example if you had arranged a mailing list into groups by state, you could further divide each state into subgroups by city. You can continue subdividing the groups up to six times (up to seven levels of groups within groups).

To subdivide groups into smaller groups, first click on the field you want to sub-group, then use the **Group Up** or **Group Down** command again.

When you are looking at the data sheet, you can identify the subgroup level by the size of the plus sign to the left of the summary record. The lowest level subgroups have the smallest plus signs; the higher level groups have larger plus signs. The grand-total record has the largest plus sign (see illustration above).

Grand Total

When you arrange a database into groups, Panorama automatically creates an additional summary record at the bottom of the database. This summary record is for the largest group of all, the entire database. When totals or other summary calculations are performed (see “[STEP 2 - CALCULATE](#)” on page 398), this summary record holds the overall grand total (or average, count, etc.) for all of the selected records in the entire database.

If all you need is a grand total (or average, count, etc.), you can skip Step 1 and go directly to Step 2, Calculate. When a summary calculation is performed on a database that doesn't have any summary records, Panorama automatically appends a single summary record to the end of the database. It then calculates the grand total (or average, count, whatever) in this summary record. The illustration below shows the result after the **Total** command has been used without first grouping the database.

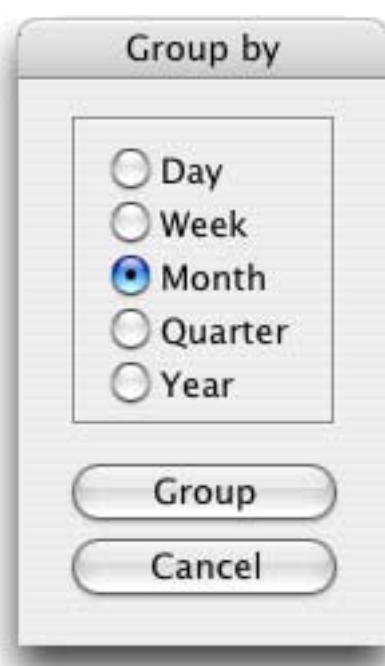
09/19/99	2292	So. Calif. Gas Co.	Utilities	154.95
09/19/99	2293	Pace Club	Office Supplies	168.00
09/21/99	2294	Advertiser's Mailing Ser	Postage	167.00
09/21/99	2295	Advertiser's Mailing Ser	Postage	67.00
09/26/99	2296	TesLabe	Fixed Assets	2,465.00
09/26/99	2297	AC Label Company	Advertising	205.97
09/28/99	2298	Graphic Depot	Advertising	344.00
09/28/99	2299	Advertiser's Mailing Ser	Advertising	167.00
08/01/04	2311			183,651.22

The Group Command

Unlike **Group Up** and **Group Down**, the **Group** command does not sort the database. The **Group** command is useful when you want to add summary records to a database that is already arranged in the proper order.

Grouping by Week, Month, Quarter, or Year

When a group command is used on a field containing dates, Panorama will ask you how long each group should be—a week, month, quarter, or year.



Select the period and press **Group** to arrange the data into groups. Note: The dates must be stored using the date data type, not text. See “[Dates](#)” on page 255, for more information about the date data type.

You can group dates more than once—for instance first by year, then by month. This produces subgroups (in this case by month) within the larger groups (by year).

Grouping a database by month, quarter, or year does not change the way the dates are displayed. You may want to change the output pattern for the date field so that only the month, quarter, or year is displayed, instead of the entire date. The output pattern is specified as part of the design sheet. To display only the month and year, use an output pattern like Mon-yy or mm-yy. To display only the quarter and year, the pattern could be **qqyy** or **Qtr “Qtr” yy**. To display the year only, the pattern could simply be **yy** or **yyyy**. See “[Date Output Patterns](#)” on page 255 for more information about date output patterns and how to set them up.

If you print a database that is grouped by month, quarter, or year, you can use different summary tiles to format the dates properly. See “[Printing Data Grouped by Month, Quarter or Year](#)” on page 1148.

Group by Color

The **Group by Color** command groups the database by the color of the data cells in the field. The database can be divided into as many as seven groups—black, red, green, blue, cyan, magenta, and yellow. See “[Data Style and Color](#)” on page 474 for details on how to assign colors to data cells.

Propagating Data into Summary Records

The **Group** commands create summary records but leaves most fields blank. The **Propagate** command can be used to copy additional information into the newly created summary records. In the illustration below the database has been **Grouped by City**.

Address	City	State	Zip
39 Beck Ave	Akron	OH	44302
	Akron		
8 Medford Court	Ann Arbor	MI	48104
6916 Morgan	Ann Arbor	MI	48104
389 Worden	Ann Arbor	MI	48103
	Ann Arbor		
12 Upland Lane	Armonk	NY	10504
	Armonk		
1897 Balcones Dri	Austin	TX	78731
1144 A West 6th	Austin	TX	78703
	Austin		
683 Elm St	Batavia	IL	60510
	Batavia		
2754 Parkway	Beverly Hills	CA	90210

Next we'll fill in the **State** field for each summary record by choosing **Propagate** from the Math menu.

Address	City	State	Zip
39 Beck Ave	Akron	OH	44302
	Akron	OH	
8 Medford Court	Ann Arbor	MI	48104
6916 Morgan	Ann Arbor	MI	48104
389 Worden	Ann Arbor	MI	48103
	Ann Arbor	MI	
12 Upland Lane	Armonk	NY	10504
	Armonk	NY	
1897 Balcones Dri	Austin	TX	78731
1144 A West 6th	Austin	TX	78703
	Austin	TX	
683 Elm St	Batavia	IL	60510
	Batavia	IL	
2754 Parkway	Beverly Hills	CA	90210

summaries filled in with Propagate

See “[Propagate](#)” on page 466 for more information on the **Propagate** command.

Manually Creating and Removing Summary Records

Summary records are normally created automatically with one of the three **Group** commands, and removed with the **Remove All Summaries** command. You can also manually turn any normal data record into a summary record and vice versa, although this should rarely be necessary. In fact, we actively discourage the use of this feature.

To turn a normal data record into a summary record, click anywhere in the record in the data sheet, then choose the **Toggle Summary Level** command in the **Records->Analyze** menu. Each time you choose this command will toggle between normal and summary.

start with an ordinary record...

01/17/99	1913	California Capitol	Insurance	28.00
01/17/99	1914	U S Postmaster	Postage	75.00
01/17/99	1915	Sacramento Bee	Advertising	795.00
01/22/99	1916	Walthers	Purchases	12,463.00
01/22/99	1917	Blue Cross Of Calif	Insurance	279.03

*Choose **Toggle Summary Level** to convert it to a summary record*

01/17/99	1913	California Capitol	Insurance	28.00
01/17/99	1914	U S Postmaster	Postage	75.00
01/17/99	1915	Sacramento Bee	Advertising	795.00
01/22/99	1916	Walthers	Purchases	12,463.00
01/22/99	1917	Blue Cross Of Calif	Insurance	279.03

*Choose **Toggle Summary Level** again to convert it back to a regular record*

01/17/99	1913	California Capitol	Insurance	28.00
01/17/99	1914	U S Postmaster	Postage	75.00
01/17/99	1915	Sacramento Bee	Advertising	795.00
01/22/99	1916	Walthers	Purchases	12,463.00
01/22/99	1917	Blue Cross Of Calif	Insurance	279.03

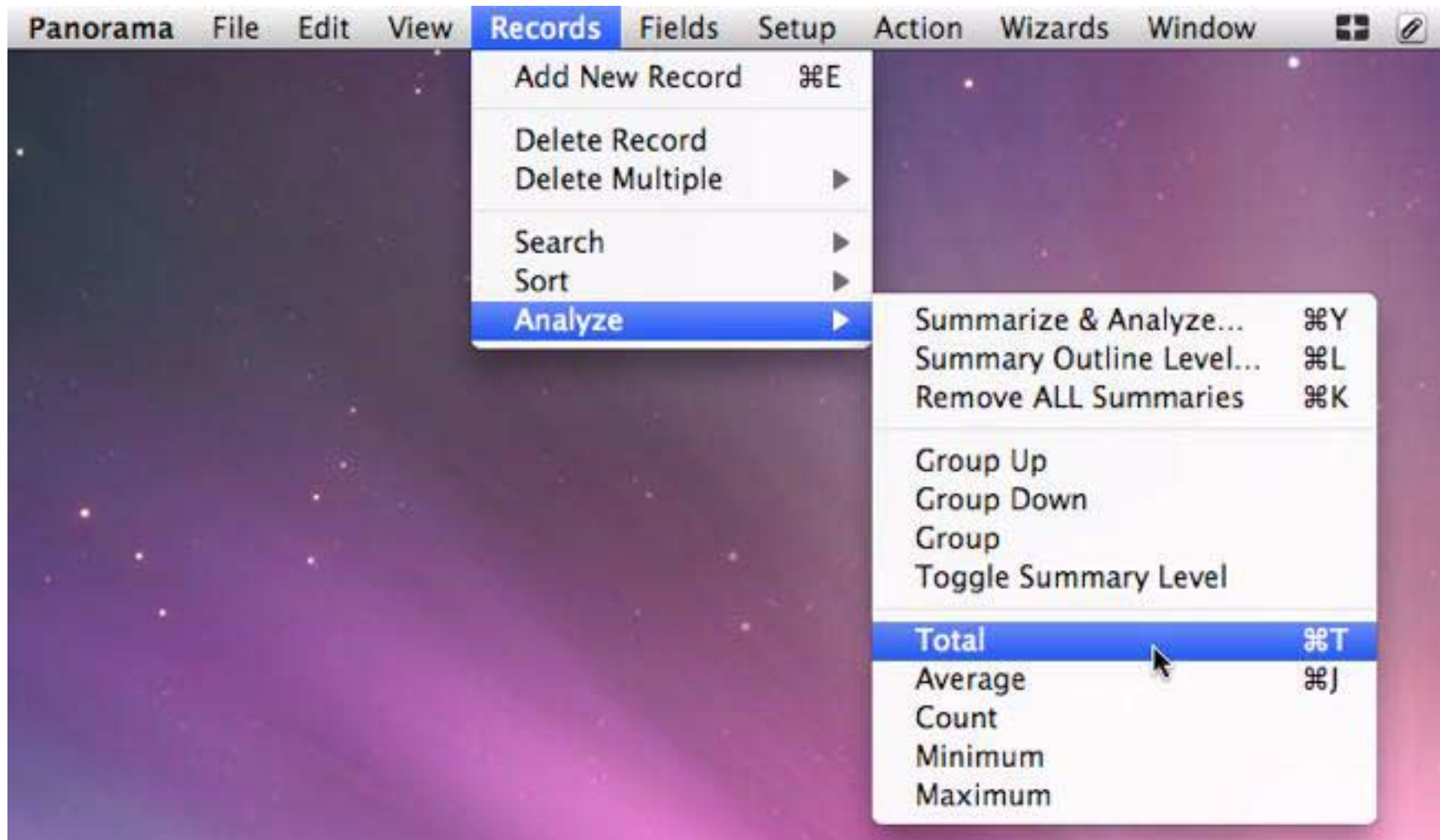
The **Toggle Summary Level** command allows you to create the lowest level of summary records, corresponding to the smallest subgroup. If you want to create higher level summary records (for instance for grand totals) hold down the **Option** key (Mac) or **Alt** key (PC) while you choose this command. As long as you hold down the **Option/Alt** key, each click will increase the summary level of the record. You can continue increasing the level until you get to the maximum level (seven). You can see the blue background get darker as the level increases.

There is no way to go down one level at a time, but by releasing the **Option/Alt** key and choosing the **Toggle Summary Level** command the line will turn back into an ordinary data record and you can start over.

If you want to select the summary records you have manually created, use the **Select Summaries** command. See "[The Select Summaries Command](#)" on page 361 for details on this command.

STEP 2 - CALCULATE

Once the database has been arranged into groups, the next step is to calculate the summary information. The **Records->Analyze** menu has 5 different kinds of summary calculations).



To perform a calculation, first pick the field you want to calculate by clicking on it. Then choose the command (**Total**, **Average**, etc.) from the **Analyze** menu. Panorama will calculate the summaries for each sub-group, group, and for the entire database.

Total

The **Total** command adds up the data in the current field. It calculates subtotals for each group and the grand total for the entire database. The **Total** command can only be used with numeric fields. If you attempt to total a text, date, or choice field, Panorama will display a warning message.

Count

The **Count** command counts the number of non-empty data cells in the current field. If the database is arranged into groups, it will also count the number of non-empty data cells in each group. Empty data cells will not be counted. You can count any field containing either text or numbers, but dates cannot be counted. (Date fields cannot be counted because Panorama would be unable to correctly display the result.)

Average

The **Average** command averages the data in the current field, calculating sub averages for each group and the overall average for the entire database. Averages can only be computed for numeric and date fields. If you attempt to average a non-numeric field Panorama will display a warning message.

Minimum

The **Minimum** command finds the smallest value in the current field. If the database is arranged into groups, it will find the smallest value in each group and sub-group. The **Minimum** command can be used with text, numeric or date fields.

Maximum

The **Maximum** command finds the largest value in the current field. If the database is arranged into groups, it will find the largest value in each group and sub-group. The **Maximum** command can be used with text, numeric or date fields.

Recalculating Summaries

Summaries are not re-calculated automatically when the database changes. If the information in the database changes, you must go back and use the Math menu to re-calculate. If the summary records have been deleted, or if the categories have changed, you must remove the summary records and re-group the database before you can re-calculate the new summary values.

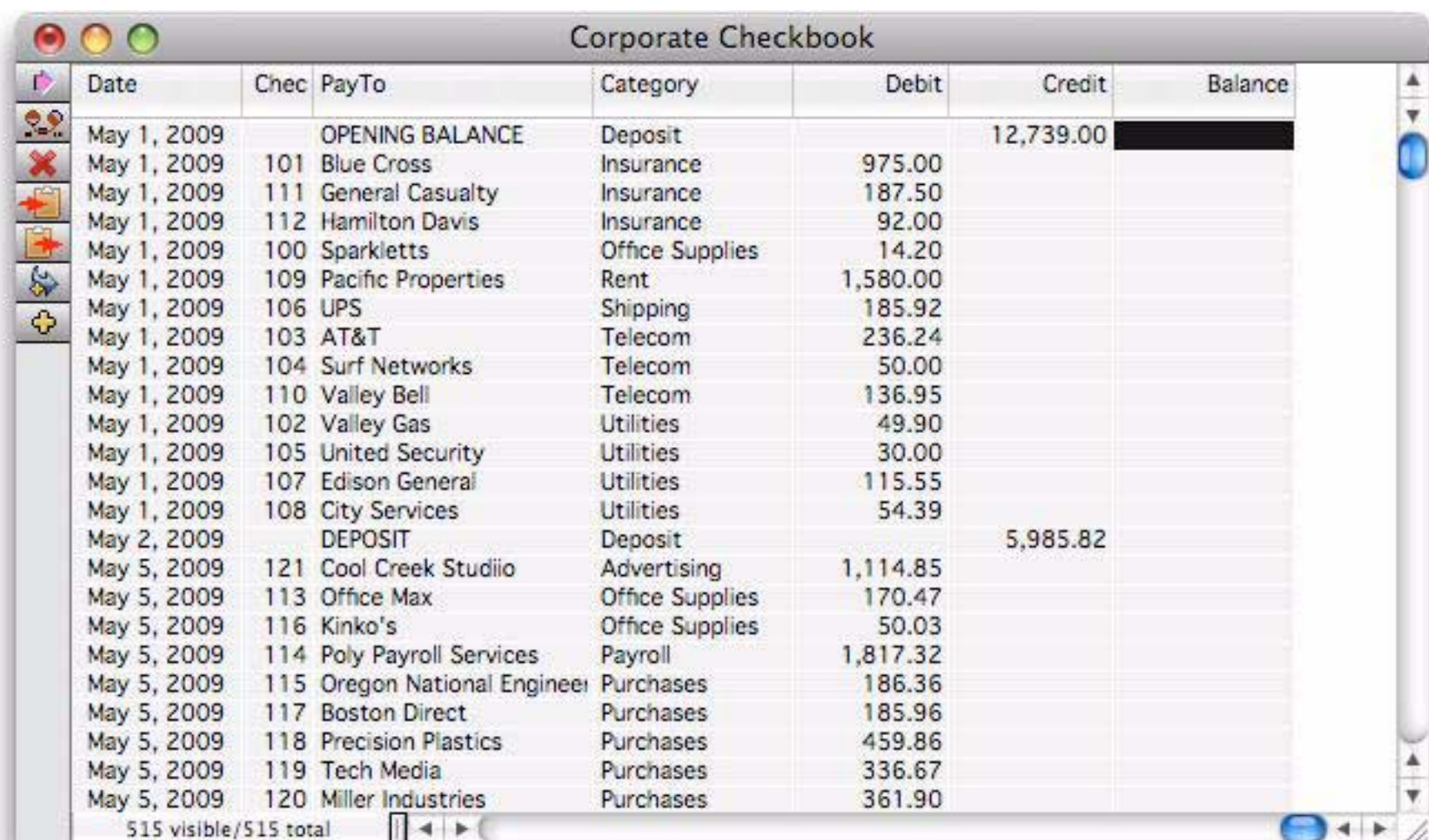
Running Total

Running Total, which is part of the **Vertical Data Tabulation** dialog, is a special computation. Unlike the other summary calculations, **Running Total** modifies every data cell in the active field, not just the summary records. Like the **Total** computation, **Running Total** starts at the top of the database and adds up each data cell as it moves down the column. **Running Total**, however, replaces each data cell with the current total. The result is a field which contains the cumulative total at each point in the database. This is very useful for computing checking account balances, sales year to date, and other cumulative statistics.

If you use the **Running Total** command on your raw data, the raw data will be destroyed in the process of calculating the running total. We recommend that you avoid this problem by creating an extra field to hold the running total. You can use the **Manipulate Data** dialog to copy the data into the field, and then use the **Running Total** command without disturbing the original raw data.

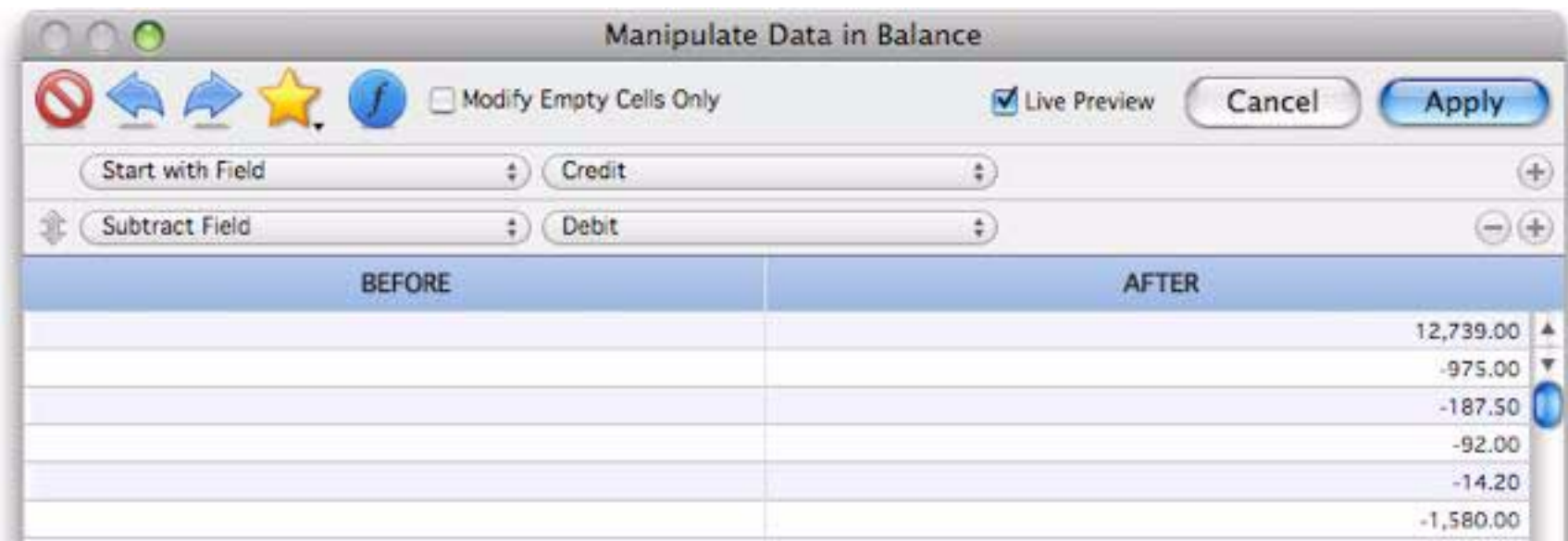
Using Running Total to Balance a Checkbook

Let's take a look at how to balance a checkbook using the **Running Total** command. Start with an empty **Balance** field.

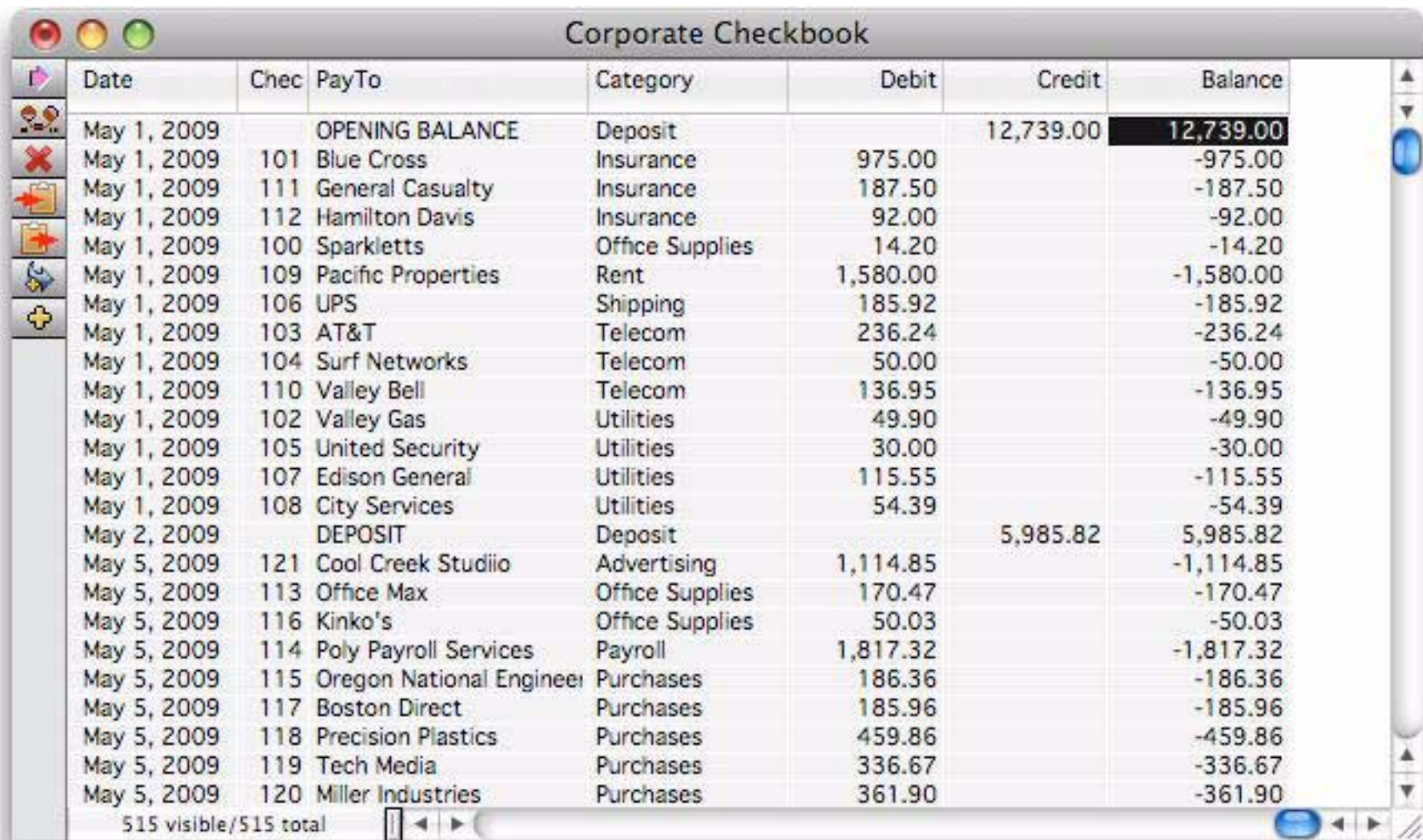


Date	Chec	PayTo	Category	Debit	Credit	Balance
May 1, 2009		OPENING BALANCE	Deposit		12,739.00	
May 1, 2009	101	Blue Cross	Insurance	975.00		
May 1, 2009	111	General Casualty	Insurance	187.50		
May 1, 2009	112	Hamilton Davis	Insurance	92.00		
May 1, 2009	100	Sparkletts	Office Supplies	14.20		
May 1, 2009	109	Pacific Properties	Rent	1,580.00		
May 1, 2009	106	UPS	Shipping	185.92		
May 1, 2009	103	AT&T	Telecom	236.24		
May 1, 2009	104	Surf Networks	Telecom	50.00		
May 1, 2009	110	Valley Bell	Telecom	136.95		
May 1, 2009	102	Valley Gas	Utilities	49.90		
May 1, 2009	105	United Security	Utilities	30.00		
May 1, 2009	107	Edison General	Utilities	115.55		
May 1, 2009	108	City Services	Utilities	54.39		
May 2, 2009		DEPOSIT	Deposit		5,985.82	
May 5, 2009	121	Cool Creek Studio	Advertising	1,114.85		
May 5, 2009	113	Office Max	Office Supplies	170.47		
May 5, 2009	116	Kinko's	Office Supplies	50.03		
May 5, 2009	114	Poly Payroll Services	Payroll	1,817.32		
May 5, 2009	115	Oregon National Engineer	Purchases	186.36		
May 5, 2009	117	Boston Direct	Purchases	185.96		
May 5, 2009	118	Precision Plastics	Purchases	459.86		
May 5, 2009	119	Tech Media	Purchases	336.67		
May 5, 2009	120	Miller Industries	Purchases	361.90		

Use the Manipulate Data dialog (see “[The Manipulate Data Dialog](#)” on page 434) to calculate the how much the balance changes for each line by subtracting **Debit** from **Credit**.



Press the **Apply** button to calculate.



Now choose the Vertical Data Tabulation command from the Fields menu, and click the **Running Total** option.

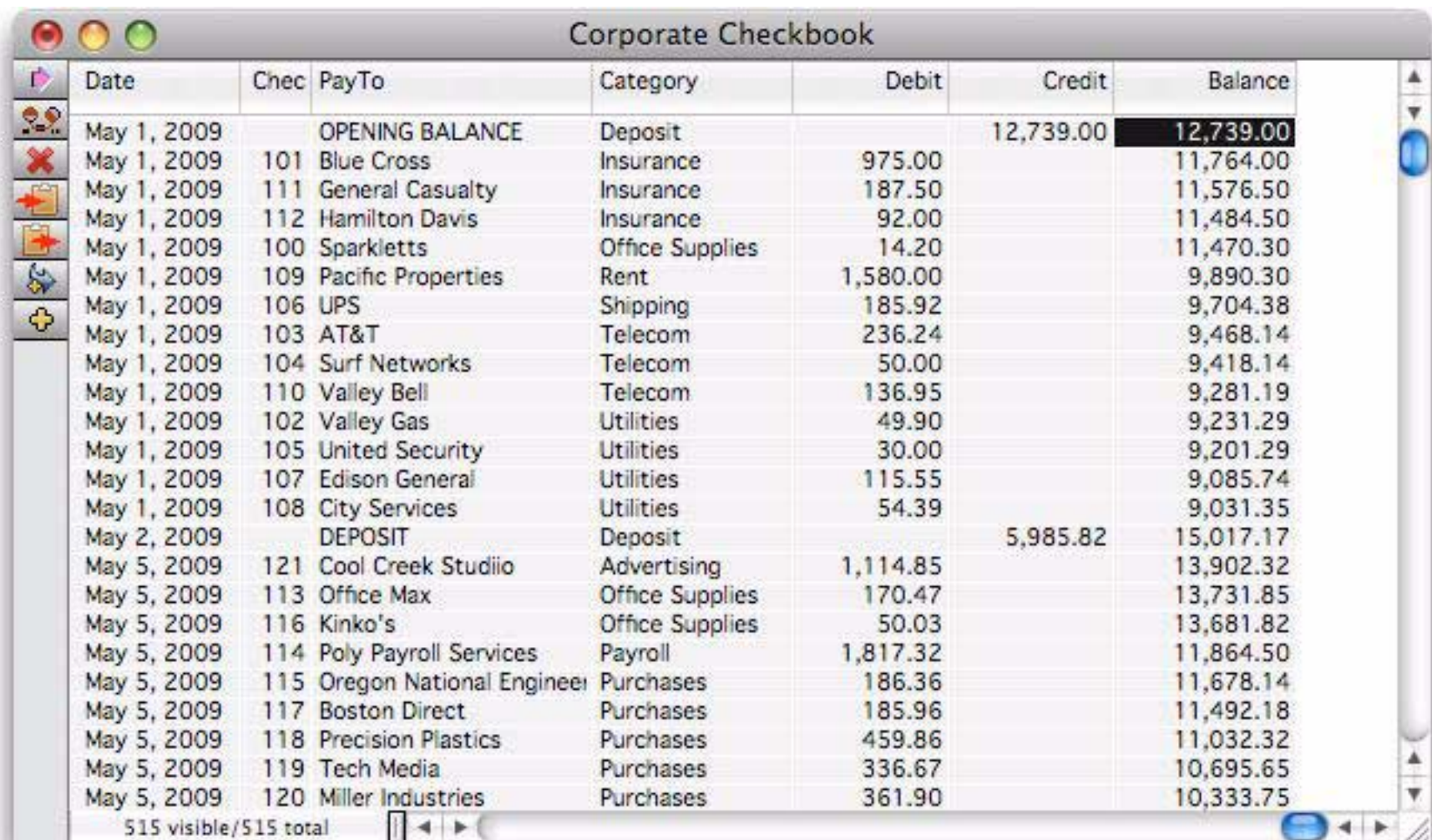
The dialog box 'Vertical Data Tabulation (Balance)' contains the following options and their visual representations:

- Propagate:** A diagram showing a red arrow pointing down from a blue section to a green section, and another red arrow pointing down from the green section to an orange section.
- Unpropagate:** A diagram showing a red 'X' over a diagonal arrow pointing from the blue section to the orange section.
- Propagate Up:** A diagram showing a red arrow pointing up from an orange section to a green section, and another red arrow pointing up from the green section to a blue section.
- Unpropagate Up:** A diagram showing a red 'X' over a diagonal arrow pointing from the orange section to the blue section.
- Running Total:** A diagram showing a red arrow pointing down from the blue section to the green section, and a red arrow pointing down from the green section to the orange section. This option is highlighted with a blue box.
- Running Difference:** A diagram showing a red arrow pointing down from the blue section to the orange section.

Below the options is a table with two columns: 'BEFORE' and 'AFTER'.

BEFORE	AFTER
12,739.00	12,739.00
-975.00	11,764.00
-187.50	11,576.50
-92.00	11,484.50
-14.20	11,470.30
-1,580.00	9,890.30
-185.92	9,704.38
-236.24	9,468.14
-50.00	9,418.14
-136.95	9,281.19
-49.90	9,231.29
-30.00	9,201.29

Press **Apply** to calculate the balance after each transaction.



Date	Chec	PayTo	Category	Debit	Credit	Balance
May 1, 2009		OPENING BALANCE	Deposit		12,739.00	12,739.00
May 1, 2009	101	Blue Cross	Insurance	975.00		11,764.00
May 1, 2009	111	General Casualty	Insurance	187.50		11,576.50
May 1, 2009	112	Hamilton Davis	Insurance	92.00		11,484.50
May 1, 2009	100	Sparkletts	Office Supplies	14.20		11,470.30
May 1, 2009	109	Pacific Properties	Rent	1,580.00		9,890.30
May 1, 2009	106	UPS	Shipping	185.92		9,704.38
May 1, 2009	103	AT&T	Telecom	236.24		9,468.14
May 1, 2009	104	Surf Networks	Telecom	50.00		9,418.14
May 1, 2009	110	Valley Bell	Telecom	136.95		9,281.19
May 1, 2009	102	Valley Gas	Utilities	49.90		9,231.29
May 1, 2009	105	United Security	Utilities	30.00		9,201.29
May 1, 2009	107	Edison General	Utilities	115.55		9,085.74
May 1, 2009	108	City Services	Utilities	54.39		9,031.35
May 2, 2009		DEPOSIT	Deposit		5,985.82	15,017.17
May 5, 2009	121	Cool Creek Studio	Advertising	1,114.85		13,902.32
May 5, 2009	113	Office Max	Office Supplies	170.47		13,731.85
May 5, 2009	116	Kinko's	Office Supplies	50.03		13,681.82
May 5, 2009	114	Poly Payroll Services	Payroll	1,817.32		11,864.50
May 5, 2009	115	Oregon National Engineer	Purchases	186.36		11,678.14
May 5, 2009	117	Boston Direct	Purchases	185.96		11,492.18
May 5, 2009	118	Precision Plastics	Purchases	459.86		11,032.32
May 5, 2009	119	Tech Media	Purchases	336.67		10,695.65
May 5, 2009	120	Miller Industries	Purchases	361.90		10,333.75

You'll need to repeat these steps when new transactions are added, or existing transactions changed. This process can be automated with a procedure.

```
field Balance
formulafill Credit-Debit
runningtotal
```

See "[Procedures](#)" on page 203 of *Formulas & Programming* for more information on creating procedures.

Running Difference

Running Difference is the opposite of **Running Total**. **Running Difference** fills each data cell with the difference between the cell and the cell above it. Use **Running Difference** when you want to compute the spread or interval between consecutive values, for example odometer readings or dates.

If you use the **Running Difference** command on your raw data, the raw data will be destroyed in the process of calculating the running difference. We recommend that you avoid this problem by creating an extra field to hold the running difference. You can use the **Manipulate Data** dialog to copy the data into the field, and then use the **Running Difference** command without disturbing the original raw data.

Using Running Difference to Calculate Gas Mileage

Let's take a look at how to balance a checkbook using the **Running Difference** command. Start with empty **Range** and **MPG** fields.

Date	Odometer	Gallons	\$/Gallon	Amount	Range	MPG
03/06/00	222	10.50	1.47	15.42		
03/12/00	536	13.80	1.42	19.58		
03/27/00	861	14.60	1.39	20.29		
04/07/00	1245	13.40	1.45	19.43		
04/14/00	1590	14.60	1.55	22.63		
04/18/00	1925	13.70	1.29	17.67		
04/29/00	2289	14.40	1.42	20.43		
05/04/00	2592	13.70	1.47	20.12		
05/09/00	2958	14.60	1.69	24.67		
05/15/00	3260	13.70	1.67	22.86		
05/22/00	3600	14.50	1.53	22.17		
05/28/00	3945	14.40	1.47	21.15		
06/03/00	4287	14.30	1.53	21.86		
06/07/00	4562	12.30	1.59	19.54		

Use the **Manipulate Data** command to copy the **Odometer** field into the **Range** field.

BEFORE	AFTER
	222
	536
	861
	1245
	1590
	1925

Press **Apply** to copy the field.

Date	Odometer	Gallons	\$/Gallon	Amount	Range	MPG
03/06/00	222	10.50	1.47	15.42	222.00	
03/12/00	536	13.80	1.42	19.58	536.00	
03/27/00	861	14.60	1.39	20.29	861.00	
04/07/00	1245	13.40	1.45	19.43	1245.00	
04/14/00	1590	14.60	1.55	22.63	1590.00	
04/18/00	1925	13.70	1.29	17.67	1925.00	
04/29/00	2289	14.40	1.42	20.43	2289.00	
05/04/00	2592	13.70	1.47	20.12	2592.00	
05/09/00	2958	14.60	1.69	24.67	2958.00	
05/15/00	3260	13.70	1.67	22.86	3260.00	
05/22/00	3600	14.50	1.53	22.17	3600.00	
05/28/00	3945	14.40	1.47	21.15	3945.00	
06/03/00	4287	14.30	1.53	21.86	4287.00	
06/07/00	4562	12.30	1.59	19.54	4562.00	

Now choose the **Vertical Data Tabulation** command from the **Fields** menu, and click the **Running Difference** option.

Vertical Data Tabulation (Range)

Cancel Apply

Propagate Unpropagate Propagate Up Unpropagate Up

Running Total Running Difference

BEFORE	AFTER
222.00	-222.00
536.00	-758.00
861.00	-1619.00
1245.00	-2864.00
1590.00	-4454.00
1925.00	-6379.00
2289.00	-8668.00
2592.00	-11260.00
2958.00	-14218.00
3260.00	-17478.00
3600.00	-21078.00
3945.00	-25023.00

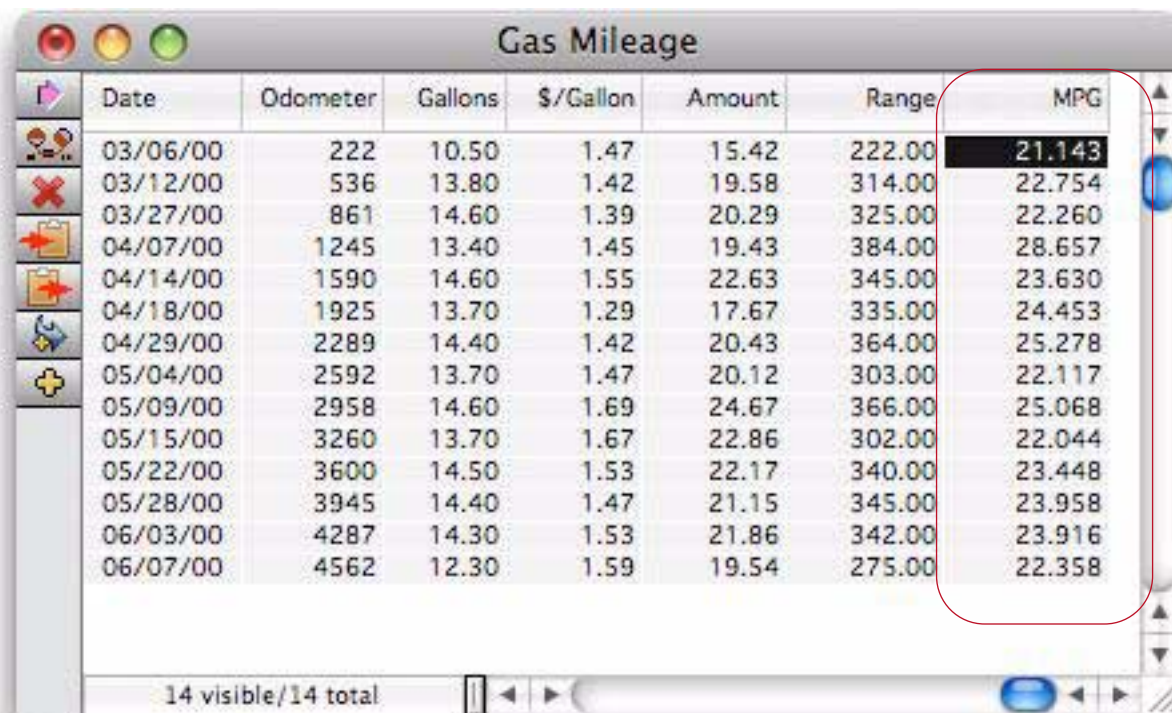
Press **Apply** to convert the odometer readings into the distance between fillups.

Date	Odometer	Gallons	\$/Gallon	Amount	Range	MPG
03/06/00	222	10.50	1.47	15.42	222.00	
03/12/00	536	13.80	1.42	19.58	314.00	
03/27/00	861	14.60	1.39	20.29	325.00	
04/07/00	1245	13.40	1.45	19.43	384.00	
04/14/00	1590	14.60	1.55	22.63	345.00	
04/18/00	1925	13.70	1.29	17.67	335.00	
04/29/00	2289	14.40	1.42	20.43	364.00	
05/04/00	2592	13.70	1.47	20.12	303.00	
05/09/00	2958	14.60	1.69	24.67	366.00	
05/15/00	3260	13.70	1.67	22.86	302.00	
05/22/00	3600	14.50	1.53	22.17	340.00	
05/28/00	3945	14.40	1.47	21.15	345.00	
06/03/00	4287	14.30	1.53	21.86	342.00	
06/07/00	4562	12.30	1.59	19.54	275.00	

Now we'll calculate the actual miles per gallon. Move to the MPG field and use the **Manipulate Data** command to calculate the formula $\text{Range} / \text{Gallons}$.

BEFORE	AFTER
	21.1429
	22.7536
	22.2603
	28.6567
	23.6301

Press **Apply** and presto, the miles per gallon between each fill-up is calculated.



Date	Odometer	Gallons	\$/Gallon	Amount	Range	MPG
03/06/00	222	10.50	1.47	15.42	222.00	21.143
03/12/00	536	13.80	1.42	19.58	314.00	22.754
03/27/00	861	14.60	1.39	20.29	325.00	22.260
04/07/00	1245	13.40	1.45	19.43	384.00	28.657
04/14/00	1590	14.60	1.55	22.63	345.00	23.630
04/18/00	1925	13.70	1.29	17.67	335.00	24.453
04/29/00	2289	14.40	1.42	20.43	364.00	25.278
05/04/00	2592	13.70	1.47	20.12	303.00	22.117
05/09/00	2958	14.60	1.69	24.67	366.00	25.068
05/15/00	3260	13.70	1.67	22.86	302.00	22.044
05/22/00	3600	14.50	1.53	22.17	340.00	23.448
05/28/00	3945	14.40	1.47	21.15	345.00	23.958
06/03/00	4287	14.30	1.53	21.86	342.00	23.916
06/07/00	4562	12.30	1.59	19.54	275.00	22.358

You'll need to repeat these steps periodically as you continue to drive. This process can be automated with a procedure.

```
field Range
formulafill Odometer
runningdifference
field MPG
formulafill Range/Gallons
```

See "[Procedures](#)" on page 203 of *Formulas & Programming* for more information on creating procedures.

STEP 3 - OUTLINE

Outlines are a way of organizing information into groups within groups. Panorama's group commands rearrange your database into an outline structure. Tip: Unlike most outlines which start from the top, Panorama's outline is upside-down...it starts from the bottom.

Unlike a paper outline, a Panorama outline can be expanded or collapsed to show more or less detail. This makes it easy to spot overall trends in your data, and then zero in on the details behind those trends.

Sorting by Summary Value

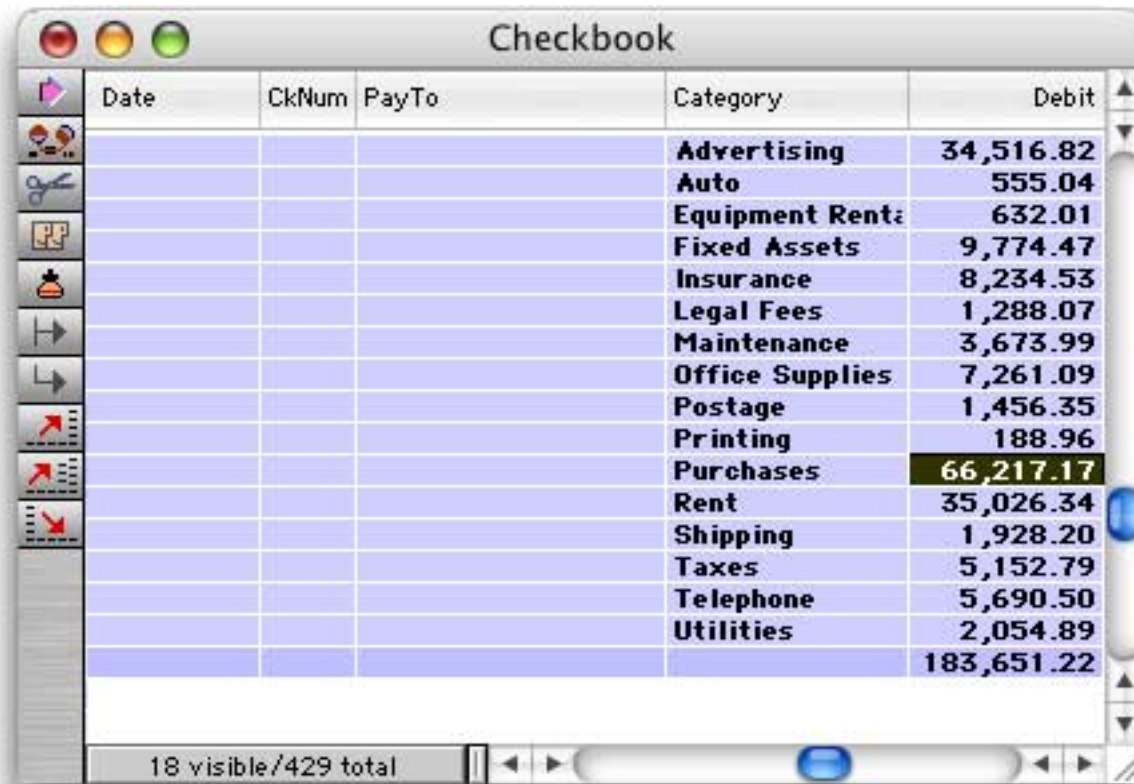
Once summary information has been calculated, you can sort the database so that the data is ranked in order by the summary values. For example, the information in an invoice database can be summarized by customer and then rearranged to rank each customer by sales volume. Once the data is ranked you can see who your top customers are at a glance. The ability to rank summary information is a unique feature of Panorama.

The first step in sorting summary information is to calculate the summary information. To do this use the group (see "[STEP 1 - GROUP](#)" on page 394) and summary calculation (see "[STEP 2 - CALCULATE](#)" on page 398) commands already covered in this chapter.

The second step is to collapse the outline. Use the **Summary Outline Level** command to collapse the database to the level you want to sort (see "[Expanding and Collapsing the Summary Outline](#)" on page 376).

Once the database is collapsed, the final step is to sort the database by summary value. Click on the field containing the summary values and then choose **Sort Up** or **Sort Down**. **Sort Down** is the usual choice because it ranks the summaries from highest to lowest.

To illustrate this technique, we started by grouping and totalling the checkbook database by category.



Date	CkNum	PayTo	Category	Debit
			Advertising	34,516.82
			Auto	555.04
			Equipment Rent:	632.01
			Fixed Assets	9,774.47
			Insurance	8,234.53
			Legal Fees	1,288.07
			Maintenance	3,673.99
			Office Supplies	7,261.09
			Postage	1,456.35
			Printing	188.96
			Purchases	66,217.17
			Rent	35,026.34
			Shipping	1,928.20
			Taxes	5,152.79
			Telephone	5,690.50
			Utilities	2,054.89
				183,651.22

18 visible/429 total

As you can see, the subtotals are listed in alphabetical order. Use the **Sort Down** command to sort the subtotals so that they are listed in order from highest to lowest amount.



Date	CkNum	PayTo	Category	Debit
			Purchases	66,217.17
			Rent	35,026.34
			Advertising	34,516.82
			Fixed Assets	9,774.47
			Insurance	8,234.53
			Office Supplies	7,261.09
			Telephone	5,690.50
			Taxes	5,152.79
			Maintenance	3,673.99
			Utilities	2,054.89
			Shipping	1,928.20
			Postage	1,456.35
			Legal Fees	1,288.07
			Equipment Rent:	632.01
			Auto	555.04
			Printing	188.96
				0.00
				183,651.22

18 visible/429 total

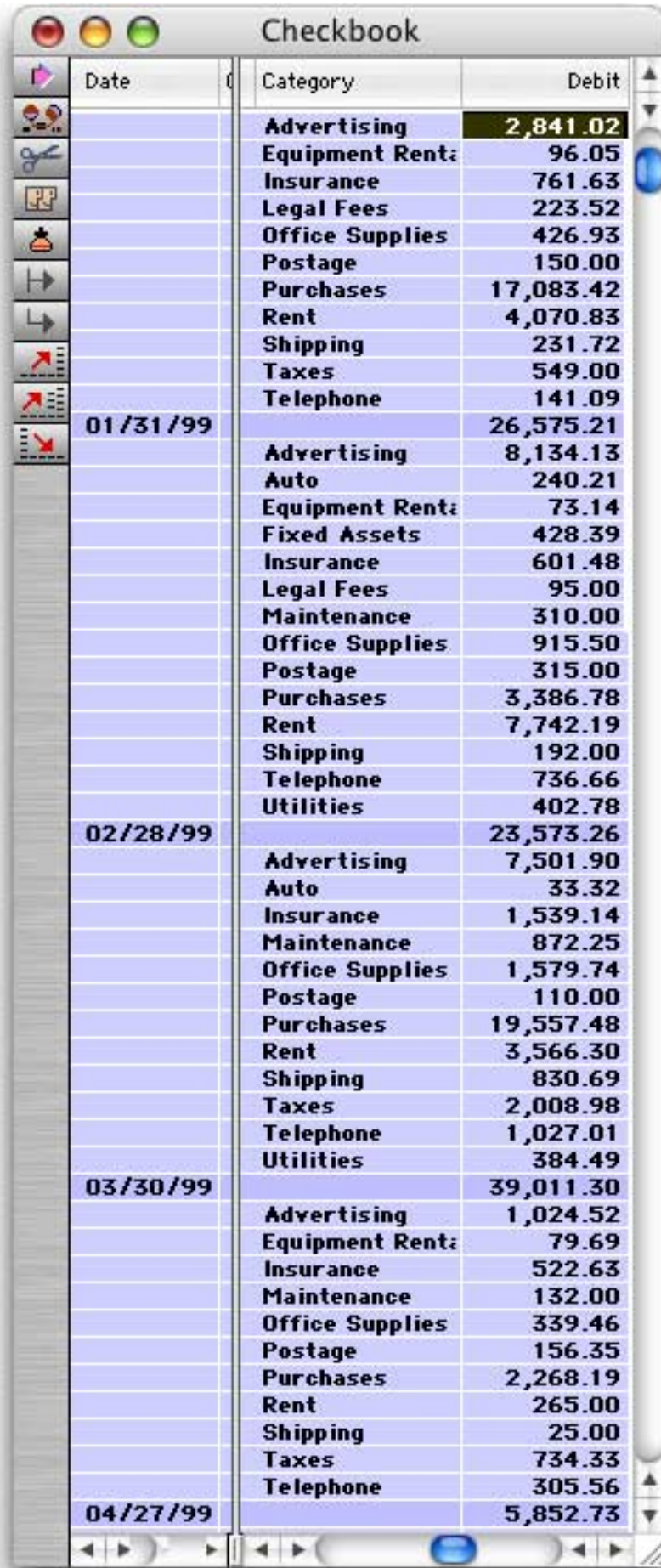
After the database has been sorted, you can re-expand some or all of the outline if you wish. The detail information for each summary follows the summary as it is sorted. (In other words, when the database is grouped the sort commands sort the groups, not the individual records.)

Date	CkNum	PayTo	Category	Debit
			Purchases	66,217.17
			Rent	35,026.34
			Advertising	34,516.82
05/24/99	2141	Pitney Bowes	Equipment Rental	79.69
08/21/99	2253	Pitney Bowes	Equipment Rental	79.69
01/08/99	1907	Northern Illinois Mold	Equipment Rental	96.05
02/09/99	1950	Pitney Bowes	Equipment Rental	73.14
04/23/99	2063	Pitney Bowes	Equipment Rental	79.69
05/24/99	2137	Pitney Bowes	Equipment Rental	25.75
09/19/99	2280	GECC	Fixed Assets	352.00
09/18/99	2275	T.W. Bender Group	Fixed Assets	2,814.33
09/26/99	2296	TesLabe	Fixed Assets	2,465.00
08/21/99	2243	GECC	Fixed Assets	725.00
07/18/99	2200	SSG LaserWorks	Fixed Assets	793.00
			Fixed Assets	9,774.47
			Insurance	8,234.53
			Office Supplies	7,261.09
			Telephone	5,690.50
			Taxes	5,152.79

29 visible/429 total

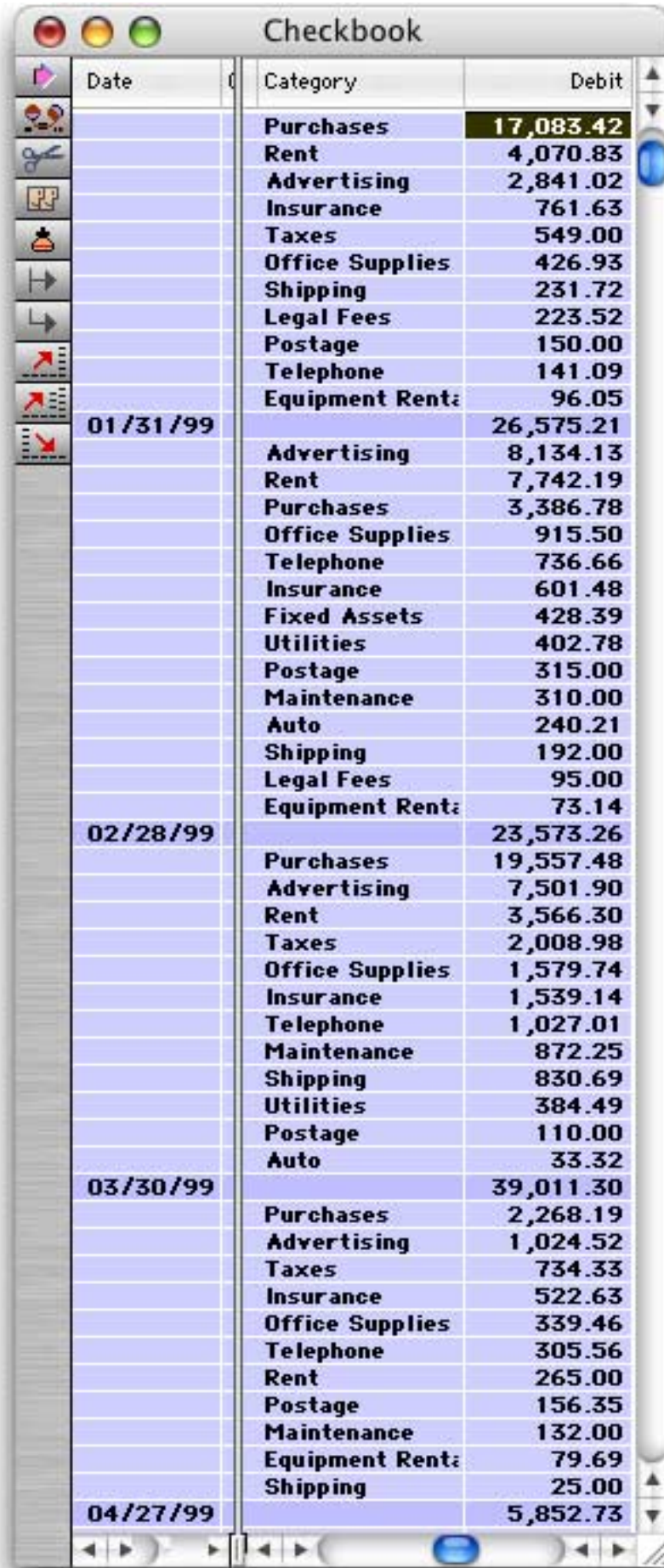
The real power of this technique appears when the database is grouped by multiple levels. For example, suppose the checkbook database is grouped by month and by category, then collapsed to show the monthly totals for each category. This is shown in the window on the left. On the right is the same database, but now the **Sort Down** command has been used to sort the subtotals. The subtotals have been sorted within each month. Now we can easily see that **Purchases** was the top spending category in January, March, and April, but **Advertising** was tops in February (with **Purchases** dropping to number 3).

before Sort Down...



Date	Category	Debit
01/31/99	Advertising	2,841.02
	Equipment Rent:	96.05
	Insurance	761.63
	Legal Fees	223.52
	Office Supplies	426.93
	Postage	150.00
	Purchases	17,083.42
	Rent	4,070.83
	Shipping	231.72
	Taxes	549.00
	Telephone	141.09
01/31/99		26,575.21
02/28/99	Advertising	8,134.13
	Auto	240.21
	Equipment Rent:	73.14
	Fixed Assets	428.39
	Insurance	601.48
	Legal Fees	95.00
	Maintenance	310.00
	Office Supplies	915.50
	Postage	315.00
	Purchases	3,386.78
	Rent	7,742.19
	Shipping	192.00
	Telephone	736.66
	Utilities	402.78
02/28/99		23,573.26
03/30/99	Advertising	7,501.90
	Auto	33.32
	Insurance	1,539.14
	Maintenance	872.25
	Office Supplies	1,579.74
	Postage	110.00
	Purchases	19,557.48
	Rent	3,566.30
	Shipping	830.69
	Taxes	2,008.98
	Telephone	1,027.01
	Utilities	384.49
	03/30/99		39,011.30
04/27/99	Advertising	1,024.52
	Equipment Rent:	79.69
	Insurance	522.63
	Maintenance	132.00
	Office Supplies	339.46
	Postage	156.35
	Purchases	2,268.19
	Rent	265.00
	Shipping	25.00
	Taxes	734.33
	Telephone	305.56
04/27/99		5,852.73

after Sort Down



Date	Category	Debit
01/31/99	Purchases	17,083.42
	Rent	4,070.83
	Advertising	2,841.02
	Insurance	761.63
	Taxes	549.00
	Office Supplies	426.93
	Shipping	231.72
	Legal Fees	223.52
	Postage	150.00
	Telephone	141.09
	Equipment Rent:	96.05
01/31/99		26,575.21
02/28/99	Advertising	8,134.13
	Rent	7,742.19
	Purchases	3,386.78
	Office Supplies	915.50
	Telephone	736.66
	Insurance	601.48
	Fixed Assets	428.39
	Utilities	402.78
	Postage	315.00
	Maintenance	310.00
	Auto	240.21
	Shipping	192.00
	Legal Fees	95.00
	Equipment Rent:	73.14
02/28/99		23,573.26
03/30/99	Purchases	19,557.48
	Advertising	7,501.90
	Rent	3,566.30
	Taxes	2,008.98
	Office Supplies	1,579.74
	Insurance	1,539.14
	Telephone	1,027.01
	Maintenance	872.25
	Shipping	830.69
	Utilities	384.49
	Postage	110.00
	Auto	33.32
	03/30/99		39,011.30
04/27/99	Purchases	2,268.19
	Advertising	1,024.52
	Taxes	734.33
	Insurance	522.63
	Office Supplies	339.46
	Telephone	305.56
	Rent	265.00
	Postage	156.35
	Maintenance	132.00
	Equipment Rent:	79.69
	Shipping	25.00
04/27/99		5,852.73

This technique is very powerful any time you need to rank summary information. You can quickly answer questions like “Who are our top customers?” “What products had the most service problems last year?” or “Which SKU’s are the best sellers in different seasons of the year?”

Sorting Within Groups

If you sort your database without collapsing it, Panorama will sort the data within each group instead of sorting the entire database. If you want to sort the summary values themselves, you must use the **Summary Outline Level** dialog to collapse the outline, as described in the previous section.

Printing Reports with Summary Information

You'll often want to print reports with the summary information you have generated. In Panorama reports are printed using forms and report tiles (see "[Custom Reports](#)" on page 1061). In addition to the standard report tools Panorama also has special features for printing summary information. You can print special headers and footers for each group, and can control how groups break across columns and pages. See "[Printing Summary Information](#)" on page 1141 to learn more about how to use these features.

The Mini Statistics Wizard

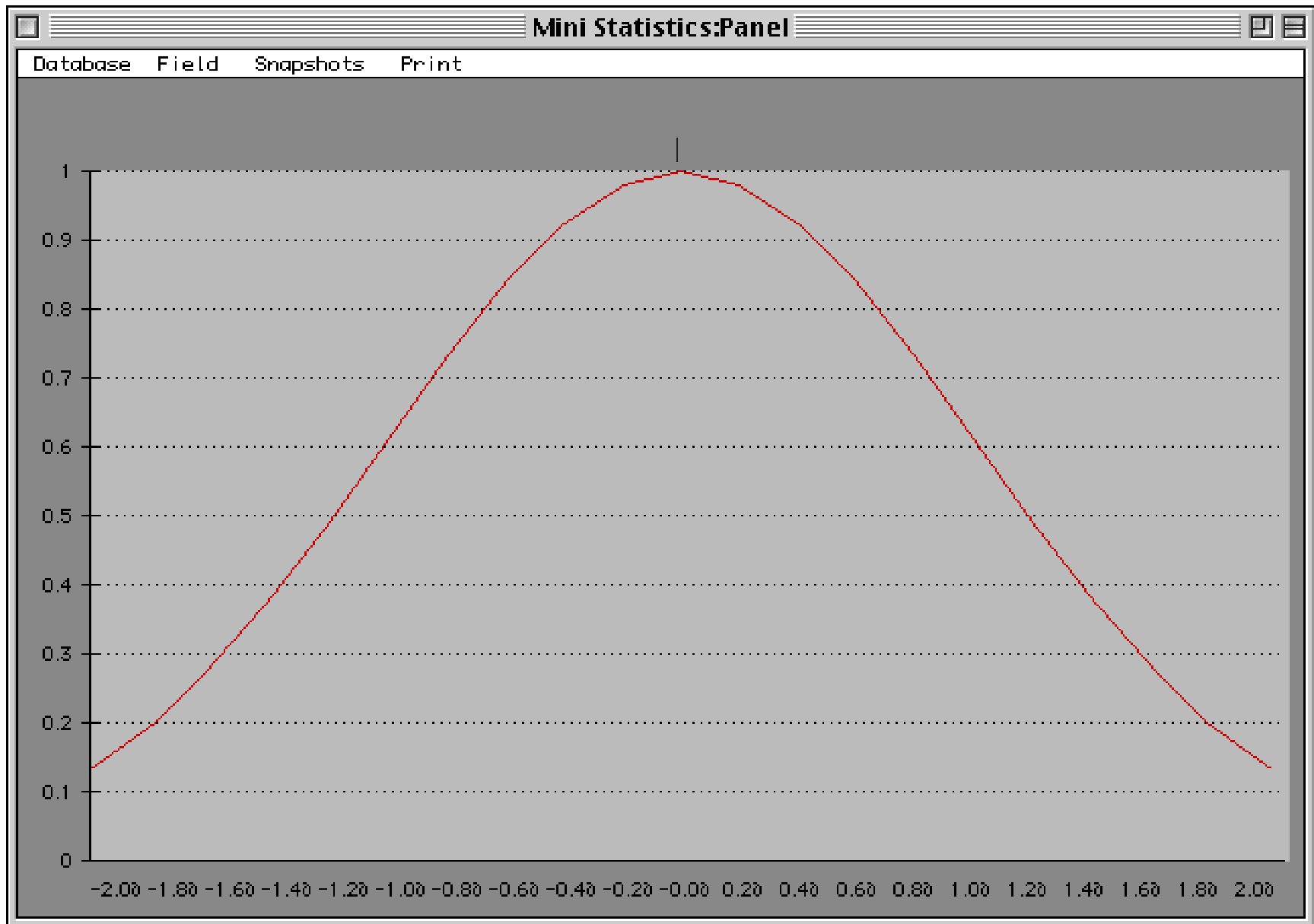
In addition to the summary & outline tools described previously in this chapter Panorama also has a special wizard to help with statistical analysis. This wizard can calculate the mean (average), median, and standard deviation of a data set. In addition the wizard can plot a normalized chart showing how the data is distributed around the mean. You can easily see how this distribution compares with the standard gaussian distribution (the famous bell shaped curve).

To use this wizard you'll need a database that contains one or more numeric fields. To illustrate we'll use a database that contains medical data.

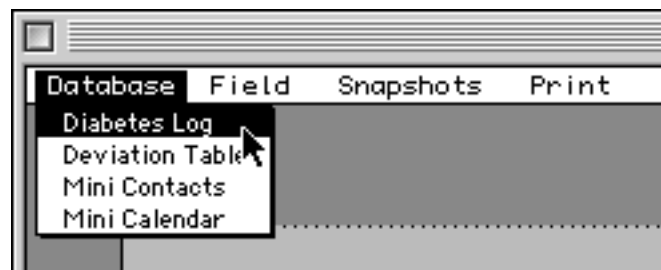
Date	BTime	BBLevel	ABTime	Medication	Max	Min	Zer	Weight
07/01/99	8:16 AM	122		None	122	94		185
07/02/99	8:38 AM	126		None	126	113		184
07/03/99	8:07 AM	103	10:54	None	119	103		186
07/04/99	6:10 AM	122		None	122	122		184
07/05/99	8:49 AM	133		None	133	133		185
07/06/99	7:53 AM	117		None	161	117		185
07/07/99	8:13 AM	117		None	117	117		184
07/08/99	7:41 AM	121		None	121	121		185
07/09/99	7:51 AM	125		None	125	96		183
07/10/99	9:12 AM	134		None	134	97		183
07/11/99	6:21 AM	125		None	125	99		183
07/12/99	10:28 AM	130		None	130	130		182

91 visible/682 total

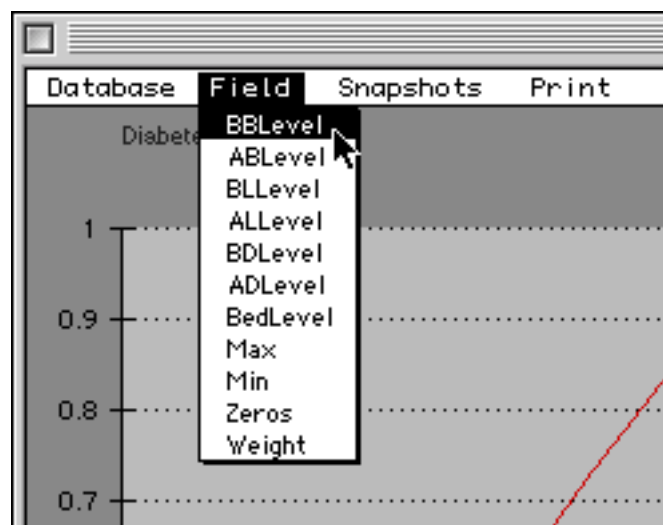
To analyze the data, open the **Mini Statistics** wizard.



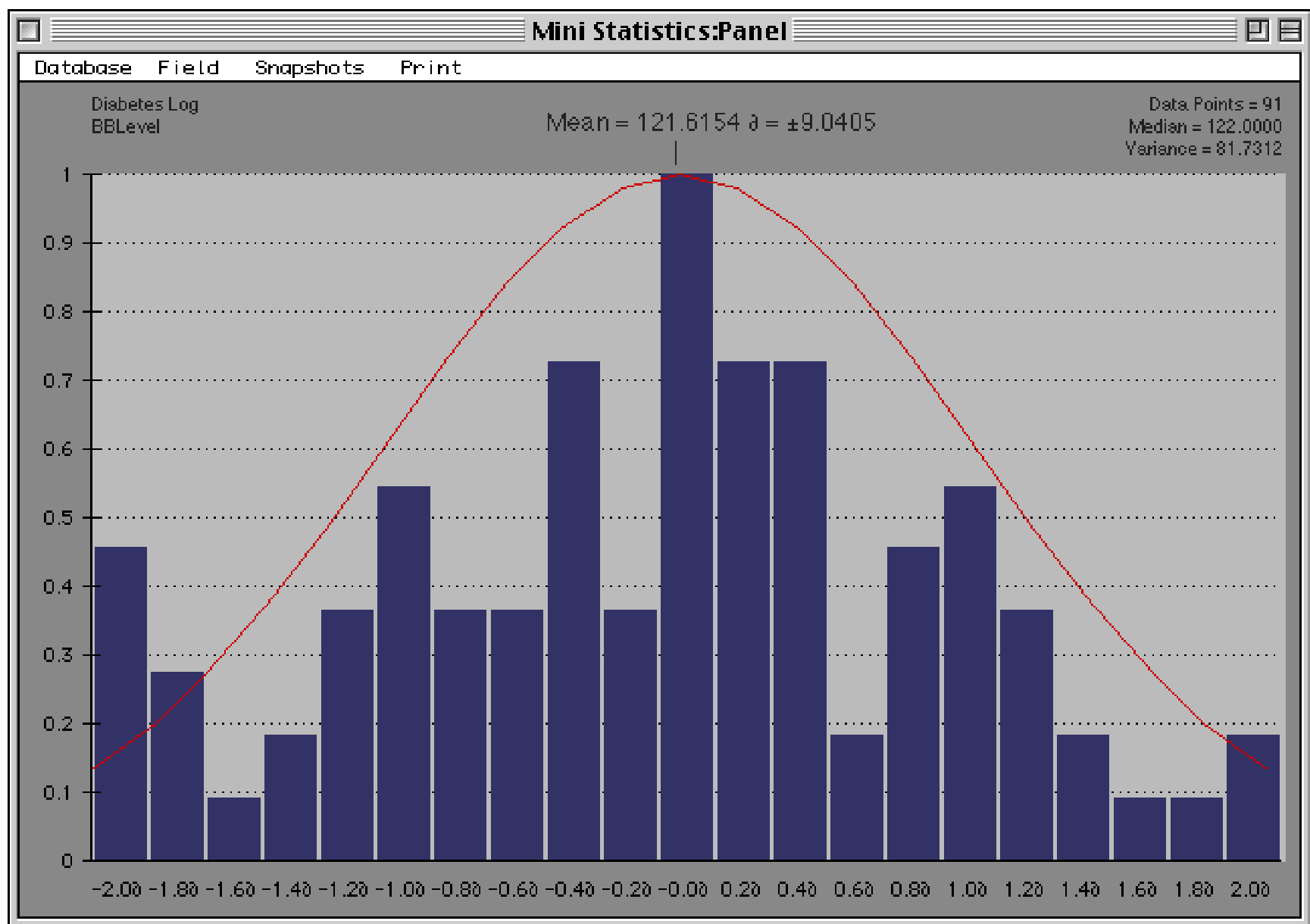
To set up the statistical analysis, start by selecting the database you want to use, in this case [Diabetes Log](#).



Now choose the field that contains the data you want to analyze, in this case **BLevel**. (Note: The **Field** menu only lists numeric fields — text, date and picture fields are not listed.)



After a couple of seconds the analysis will appear.

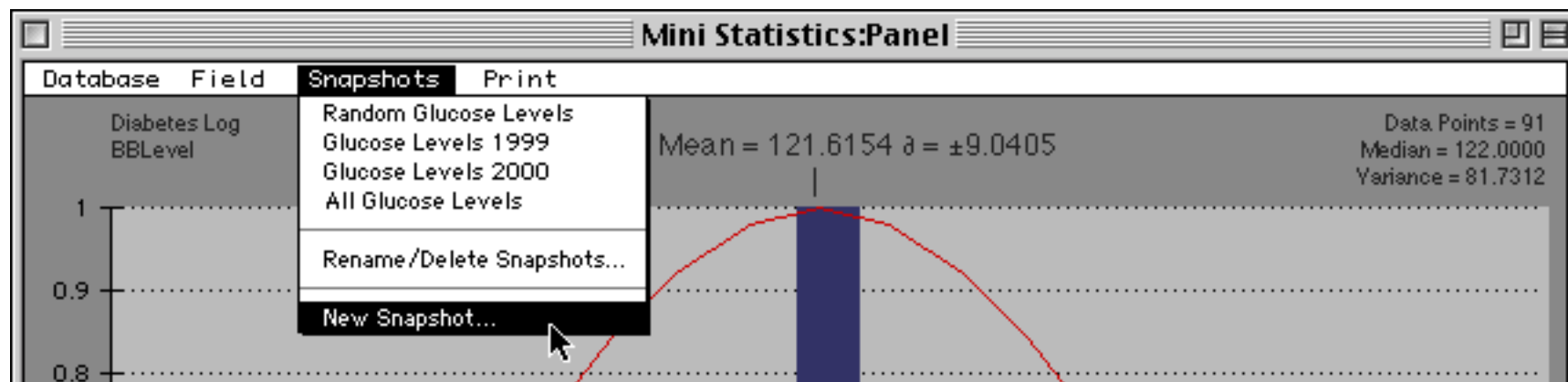


For these data points the mean (average) value is 121.6154. The standard deviation (σ) is 9.0405. The data set contains 91 values, the median is 122, and the variance is 81.7312. The blue bars show how the data is clustered around the mean, while the red line shows the normal gaussian “bell shaped curve” distribution.

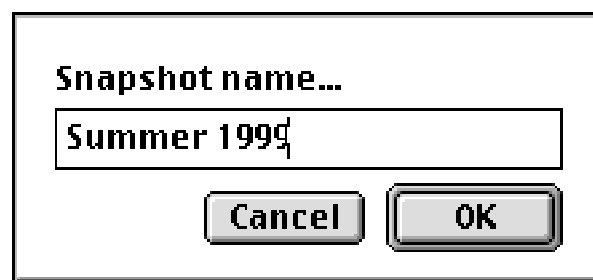
If the original data changes you may want to update the analysis. You can either select the field again from the **Fields** menu, or simply click on the chart.

Saving a Statistical Snapshot

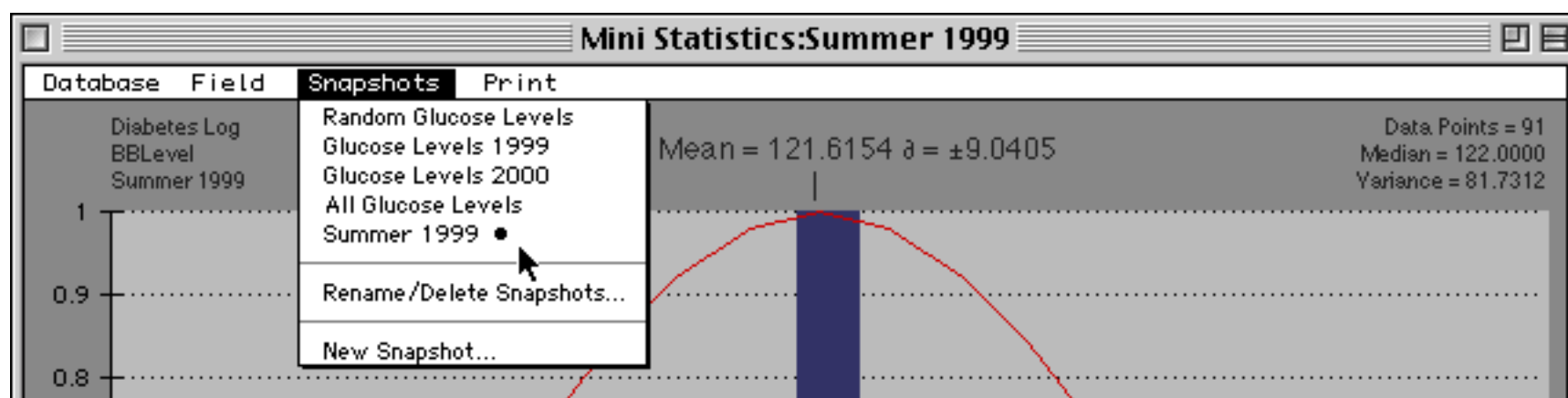
Once you've performed a statistical analysis on a set of data you can save a snapshot of that analysis for later review. To save a snapshot of the current analysis choose **New Snapshot** from the Snapshot menu.



Enter a name for the new snapshot. (If you enter the name of an existing snapshot it will overwrite the old snapshot.)



When you press the **OK** button the new snapshot is listed in the Snapshot menu.

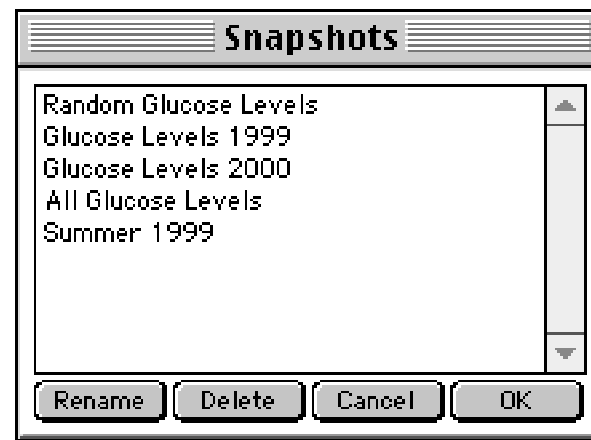


To see a snapshot you have recorded before simply select it from the menu.

Note: Snapshots are actually stored in a permanent variable in the database that contains the original data (in this case [Diabetes Log](#)). This means that you will only see the snapshots for the currently selected database. It also means that the snapshots are not permanently saved to disk until you save the original database to disk.

Renaming and Deleting Snapshots

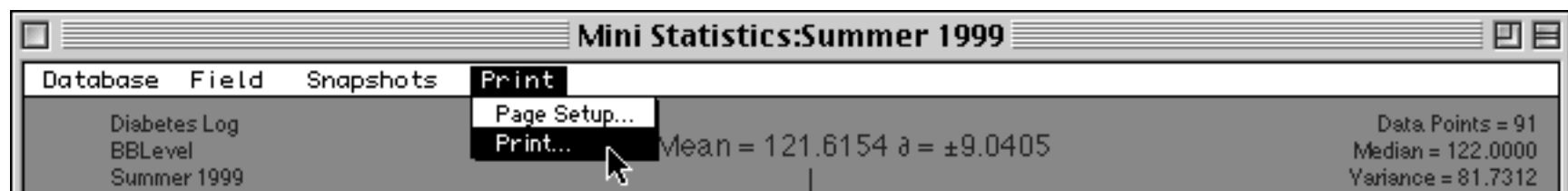
The Rename/Delete Snapshots command opens a dialog.



To rename a snapshot, click on it, press the **Rename** button, then type in the new name. To delete a snapshot, click on it and then press the **Delete** button.

Printing a Statistical Analysis

To print a statistical analysis use the **Print** menu inside the window.



Chapter 11: Crosstabs



This chapter describes Panorama's most powerful tool for analyzing and summarizing data—**crosstabs**. A crosstab is simply a table with categories across the top and down the left, with numbers in the middle and totals across the bottom and down the right.

xtab	Jan 99	Feb 99	Mar 99	Apr 99	May 99	Jun 99	TOTAL
Advertising	2,841.02	8,134.13	7,501.90	1,024.52	7,541.18	828.00	34,516.82
Auto		240.21	33.32		119.05		555.04
Equipment Rental	96.05	73.14		79.69	105.44		632.01
Fixed Assets		428.39			778.00	1,168.75	9,774.47
Insurance	761.63	601.48	1,539.14	522.63	1,220.45	461.99	8,234.53
Legal Fees	223.52	95.00			799.55	15.00	1,288.07
Maintenance		310.00	872.25	132.00	1,012.63	368.38	3,673.99
Office Supplies	426.93	915.50	1,579.74	339.46	1,265.34	281.52	7,261.09
Postage	150.00	315.00	110.00	156.35	115.00		1,456.35
Printing					96.68		188.96
Purchases	17,083.42	3,386.78	19,557.48	2,268.19	4,796.82	5,172.74	66,217.17
Rent	4,070.83	7,742.19	3,566.30	265.00	7,630.56	3,874.00	35,026.34
Shipping	231.72	192.00	830.69	25.00	220.00		1,928.20
Taxes	549.00		2,008.98	734.33	513.51	155.76	5,152.79
Telephone	141.09	736.66	1,027.01	305.56	915.96	202.31	5,690.50
Utilities		402.78	384.49		529.76	213.58	2,054.89
*TOTAL	26,575.21	23,573.26	39,011.30	5,852.73	27,659.93	12,742.03	183,651.22

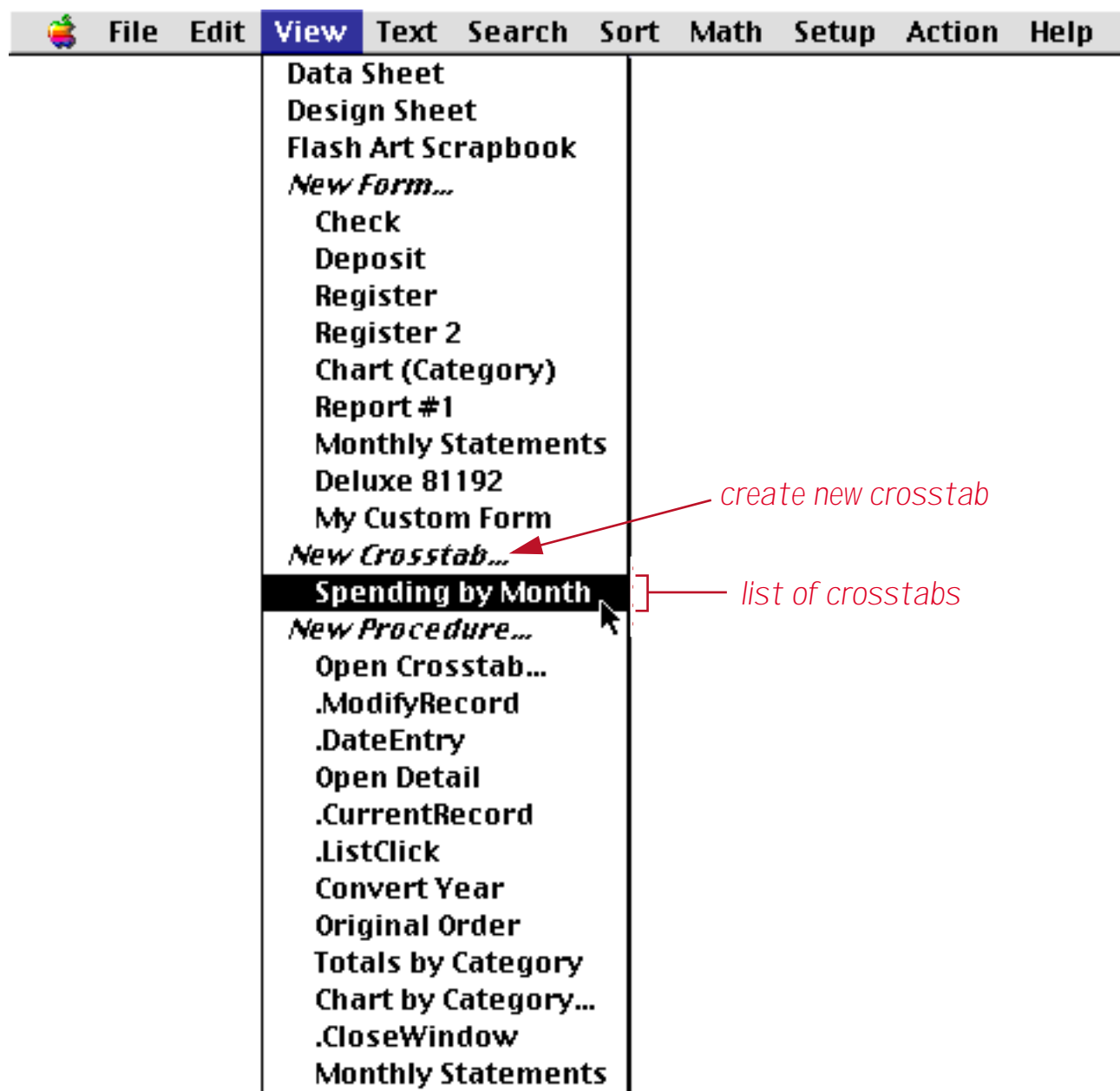
The word crosstab is short for cross tabulation, referring to the criss-cross way that totals are tabulated both across and down. Probably the most common example of a crosstab is a budget, with months or years across the top, and spending categories down the left.

Before Panorama became available, crosstabs were usually created using a spreadsheet. Spreadsheets are perfect for totalling the rows and columns in the crosstab table. Unfortunately, spreadsheets cannot help with the really tedious part of creating a crosstab table—taking the raw data, categorizing it, and converting it into the crosstab table format. With a spreadsheet, this tedious number crunching must be done by hand.

Panorama automates the entire crosstab process from start to finish. Starting with raw data (a checkbook database, for example), Panorama divides the data into categories and automatically creates and calculates the entire crosstab table. When the raw data changes, the entire process can be repeated with a single mouse click. A simple dialog sets up the whole process.

Panorama can also work a crosstab backwards, allowing you to locate the raw data associated with any crosstab value. For example, if the crosstab table shows that July's advertising expenditures seem a bit high, simply click on that value and press the **Select Original Data** tool. The individual data records for July advertising will appear.

Panorama does not limit you to one crosstab table per database. Each crosstab table appears in its own window, and you can have as many different crosstabs as you need. Crosstab tables are created and opened with the **View** menu.



Although each crosstab table gets its raw data from the main database, it is otherwise independent. Setting up and calculating a crosstab table does not change the main database in any way.

Category and Tabulation Fields

A crosstab is based on three fields in the main database. Two of these fields are called **category fields**, and the third is called the **tabulation field**. The two category fields are the fields that criss-cross across the top and left sides of the crosstab table. The tabulation field holds the raw data that is counted or totalled in the center of the crosstab table. In the example crosstab shown below, **Date** and **Category** are the category fields while **Debit** is the tabulation field.

Date	CkNum	PayTo	Category	Debit
01/22/99	1916	Walthers	Purchases	12,463.00
01/22/99	1917	Blue Cross Of Calif	Insurance	279.03
01/22/99	1918	Sherman Douglas Ins	Insurance	418.60
01/22/99	1919	Cannon Astro	Office Supplies	145.72
01/25/99	1920	Walthers	Purchases	1,885.40
01/25/99	1921	Nebs	Office Supplies	77.27
01/25/99	1922	Ramona Drinking Water	Office Supplies	98.10
01/25/99	1923	Pacific Partners	Rent	4,070.83
01/29/99	1924	Athearn	Purchases	1,906.32
01/29/99	1925	Advertiser's Mailing Ser	Advertising	860.22
01/29/99	1926	PacTel Cellular	Telephone	141.09
01/30/99	1927	State Board Of Equalizat	Taxes	549.00

xtab	Jan 99	Feb 99	Mar 99	Apr 99	May 99	Jun 99	TOTAL
Advertising	2,841.02	8,134.13	7,501.90	1,024.52	7,541.18	828.00	34,516.82
Auto		240.21	33.32		119.05		555.04
Equipment Rental	96.05	73.14		79.69	105.44		632.01
Fixed Assets		428.39			778.00	1,168.75	9,774.47
Insurance	761.63	601.48	1,539.14	522.63	1,220.45	461.99	8,234.53
Legal Fees	223.52	95.00			799.55	15.00	1,288.07
Maintenance		310.00	872.25	132.00	1,012.63	368.38	3,673.99
Office Supplies	426.93	915.50	1,579.74	339.46	1,265.34	281.52	7,261.09
Postage	150.00	315.00	110.00	156.35	115.00		1,456.35
Printing					96.68		188.96
Purchases	17,083.42	3,386.78	19,557.48	2,268.19	4,796.82	5,172.74	66,217.17
Rent	4,070.83	7,742.19	3,566.30	265.00	7,630.56	3,874.00	35,026.34
Shipping	231.72	192.00	830.69	25.00	220.00		1,928.20
Taxes	549.00		2,008.98	734.33	513.51	155.76	5,152.79
Telephone	141.09	736.66	1,027.01	305.56	915.96	202.31	5,690.50
Utilities		402.78	384.49		529.76	213.58	2,054.89
+TOTAL	26,575.21	23,573.26	39,011.30	5,852.73	27,659.93	12,742.03	183,651.2:

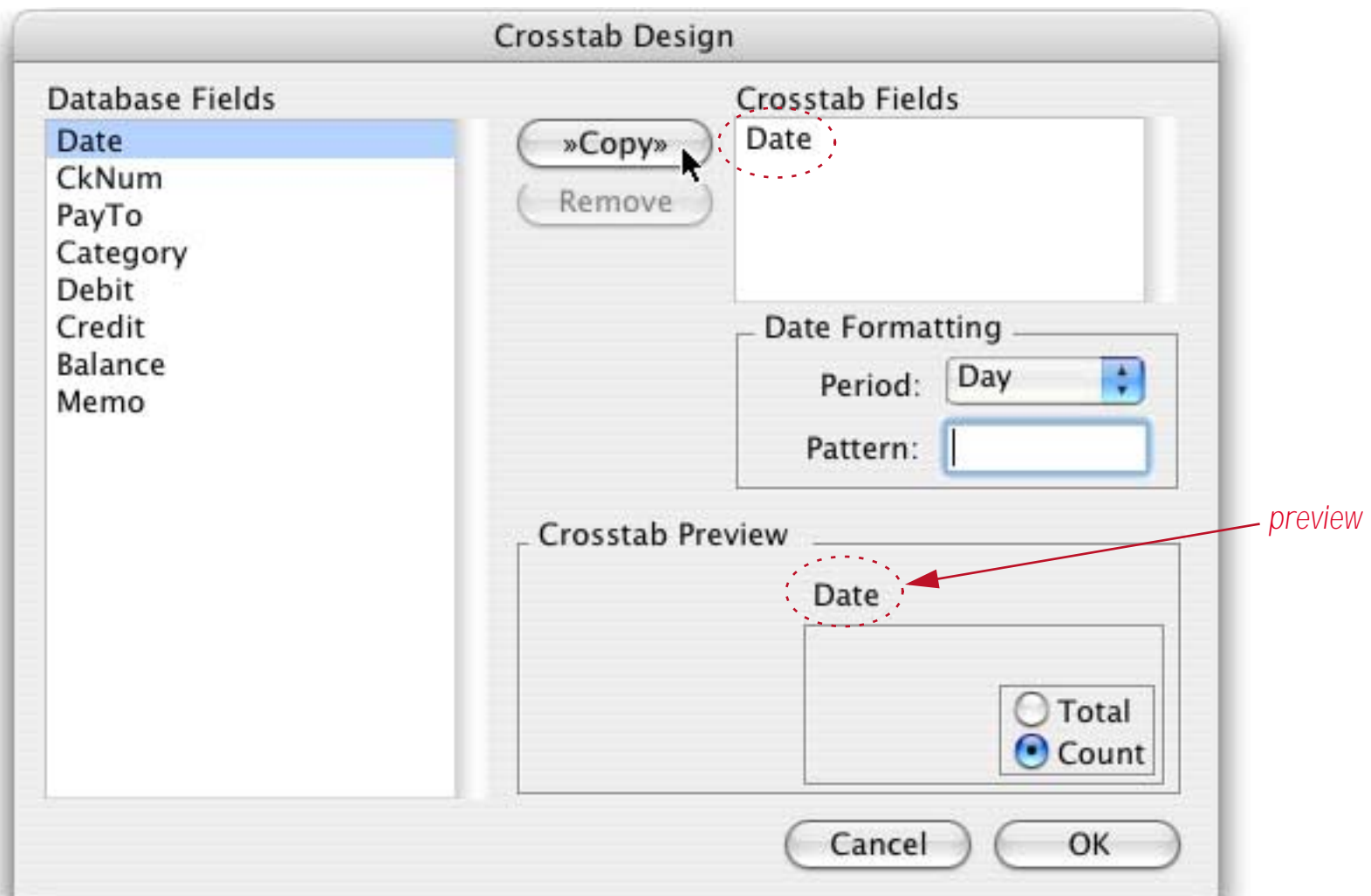
Creating and Setting Up a New Crosstab View

New crosstab views are created using the View menu. Choose **New Crosstab** from the menu. Then you must give the new crosstab view a name (up to 25 characters) and press **Ok** to create the new view.

When a new crosstab view is created, the **Crosstab Design** dialog box automatically appears. This dialog allows you to specify the category and tabulation fields (see previous section) and to specify what type of calculation (total or count) to use.

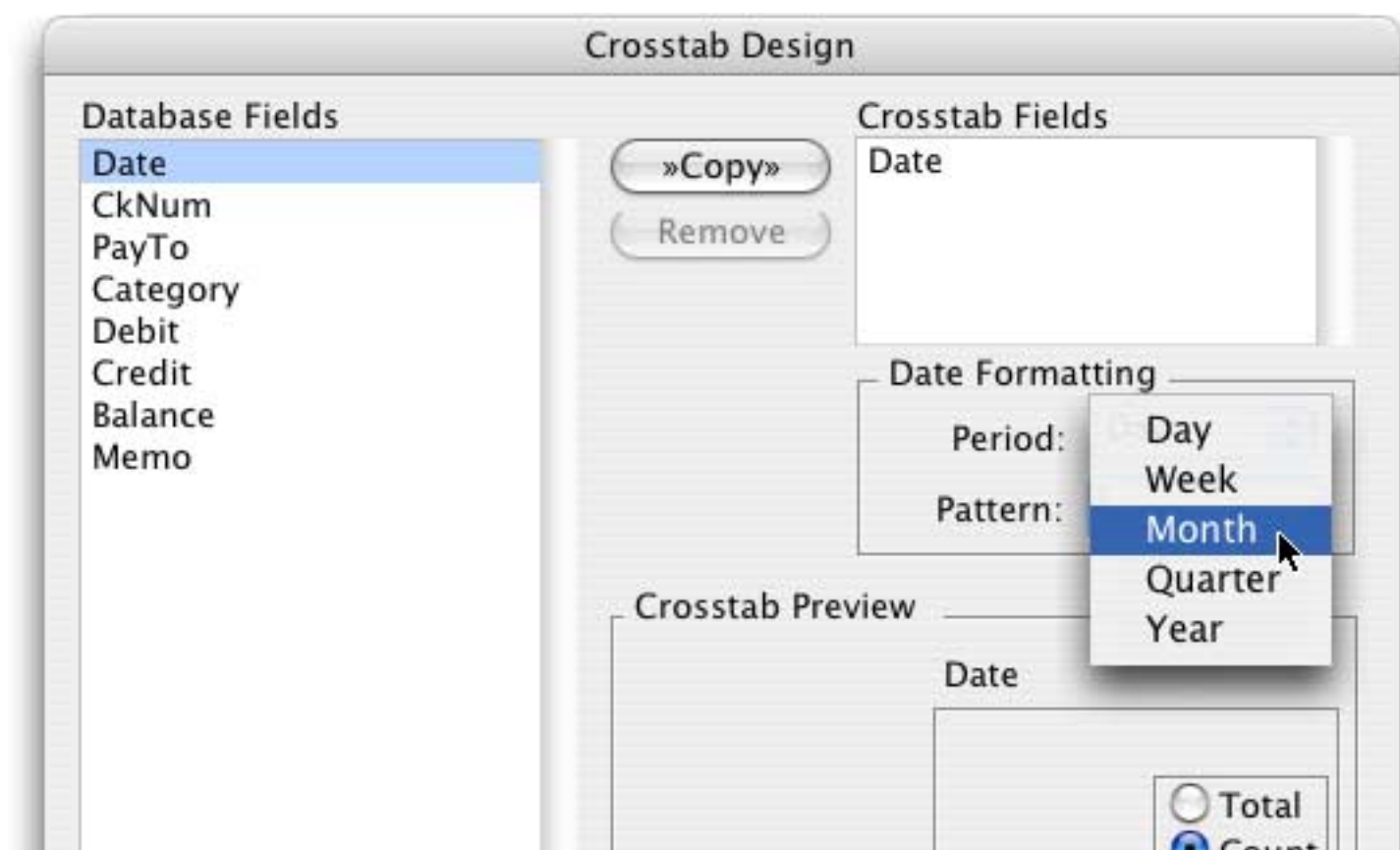
To use the Crosstab Design dialog you copy fields from the list on the left over to the list on the right. The left side lists all the fields in the database. The right side lists the fields in the crosstab. The first two fields copied to the right become the two category fields. The third field becomes the tabulation field. As you build the crosstab, a miniature schematic diagram of the crosstab appears in the lower right hand corner of the dialog.

Let's walk through the creation of a crosstab like the one shown at the beginning of this chapter. First, click on the **Date** field and copy it to the right. (Hint: To copy the field either press the **»Copy»** button or double click on the field name.)

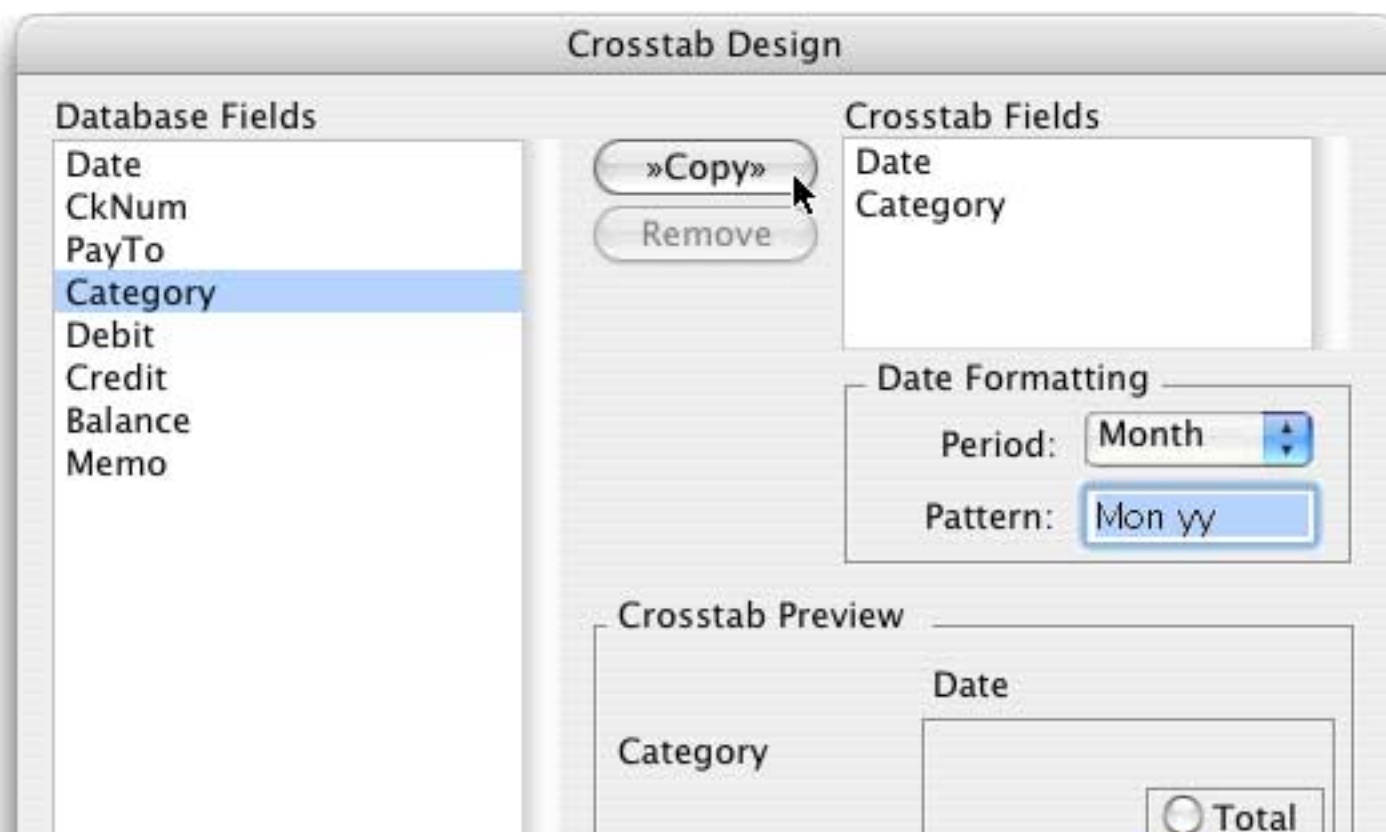


As you can see, the **Date** field now appears in the list of Crosstab fields. It also appears in the preview of the final crosstab, showing that the **Date** will appear across the top of the crosstab.

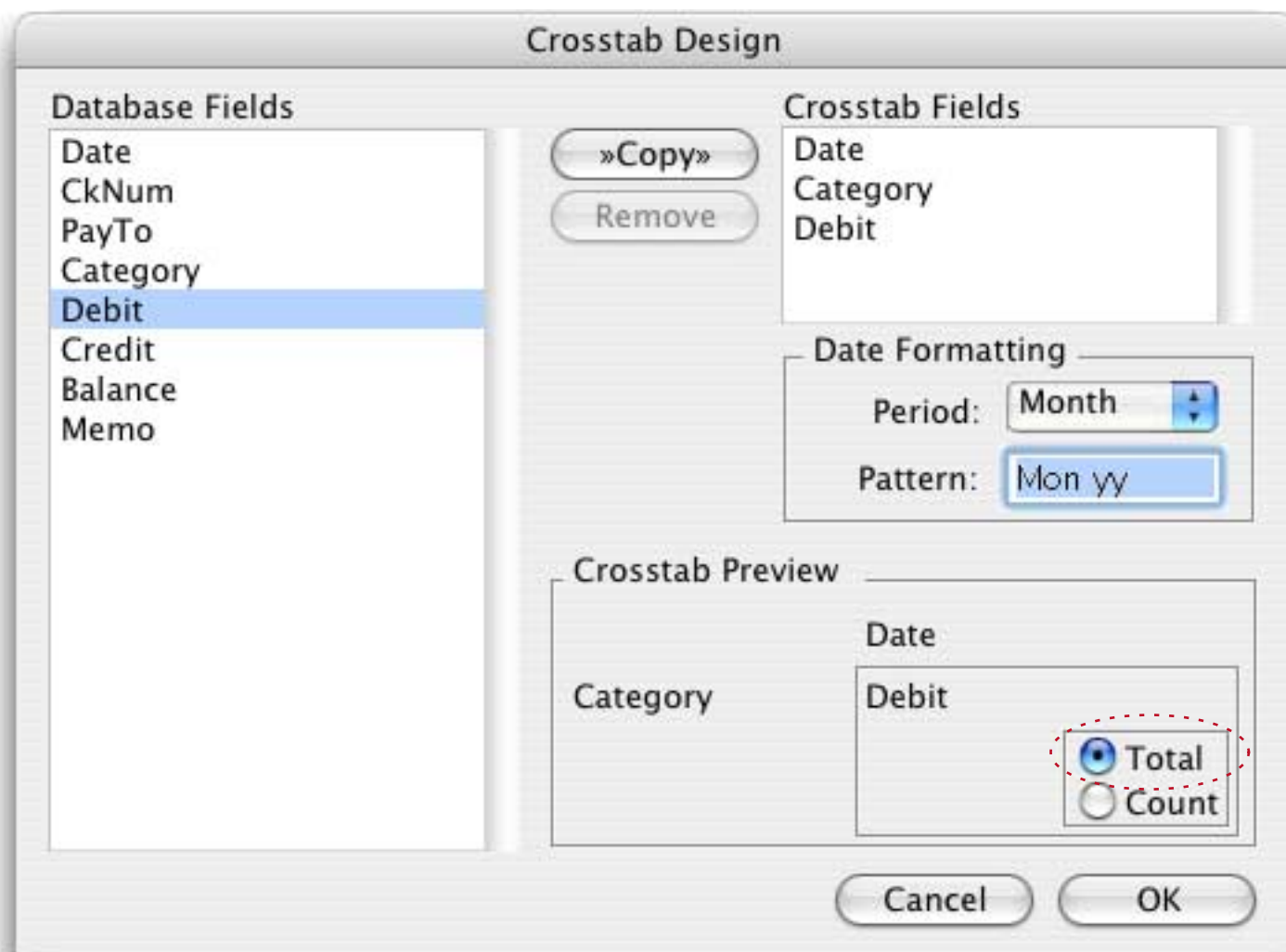
Since we want the date to be grouped by month, select **Month** from the **Date Period** pop-up menu. (If you forget to do this now you can always go back and change it later.)



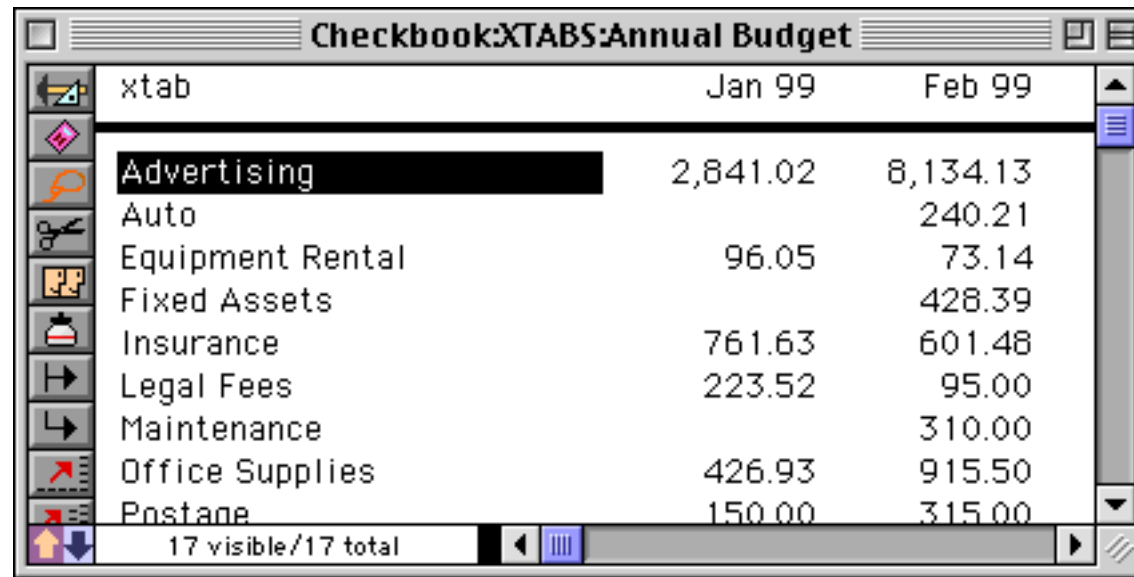
Next, copy the **Category** field into the crosstab. It will appear in the list and on the left side of the mini-diagram, showing that the category will appear on the left side of the crosstab.



Now copy the **Debit** field into the crosstab. You'll also need to click on the **Total** radio button, since we want to calculate sums of the checks, not counts of the checks.



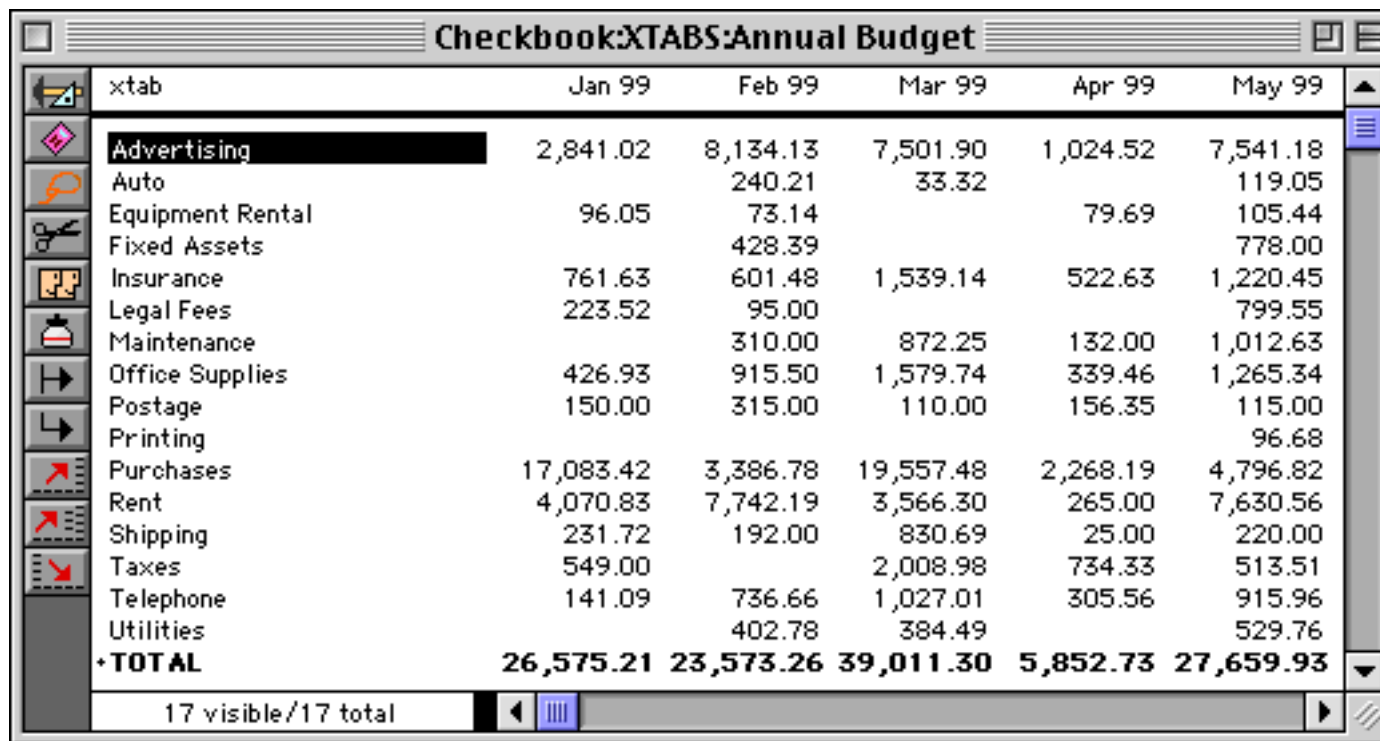
Once you've specified the category and tabulation fields, press **Ok** to actually calculate the crosstab. Depending on the complexity of the database, there may be a delay of seconds or even minutes as the crosstab is calculated. When the calculations are finished, the new crosstab table will appear. It will look something like this.



xtab	Jan 99	Feb 99
Advertising	2,841.02	8,134.13
Auto		240.21
Equipment Rental	96.05	73.14
Fixed Assets		428.39
Insurance	761.63	601.48
Legal Fees	223.52	95.00
Maintenance		310.00
Office Supplies	426.93	915.50
Postage	150.00	315.00

17 visible/17 total

You can use now adjust the window size, font, and column widths as you like.

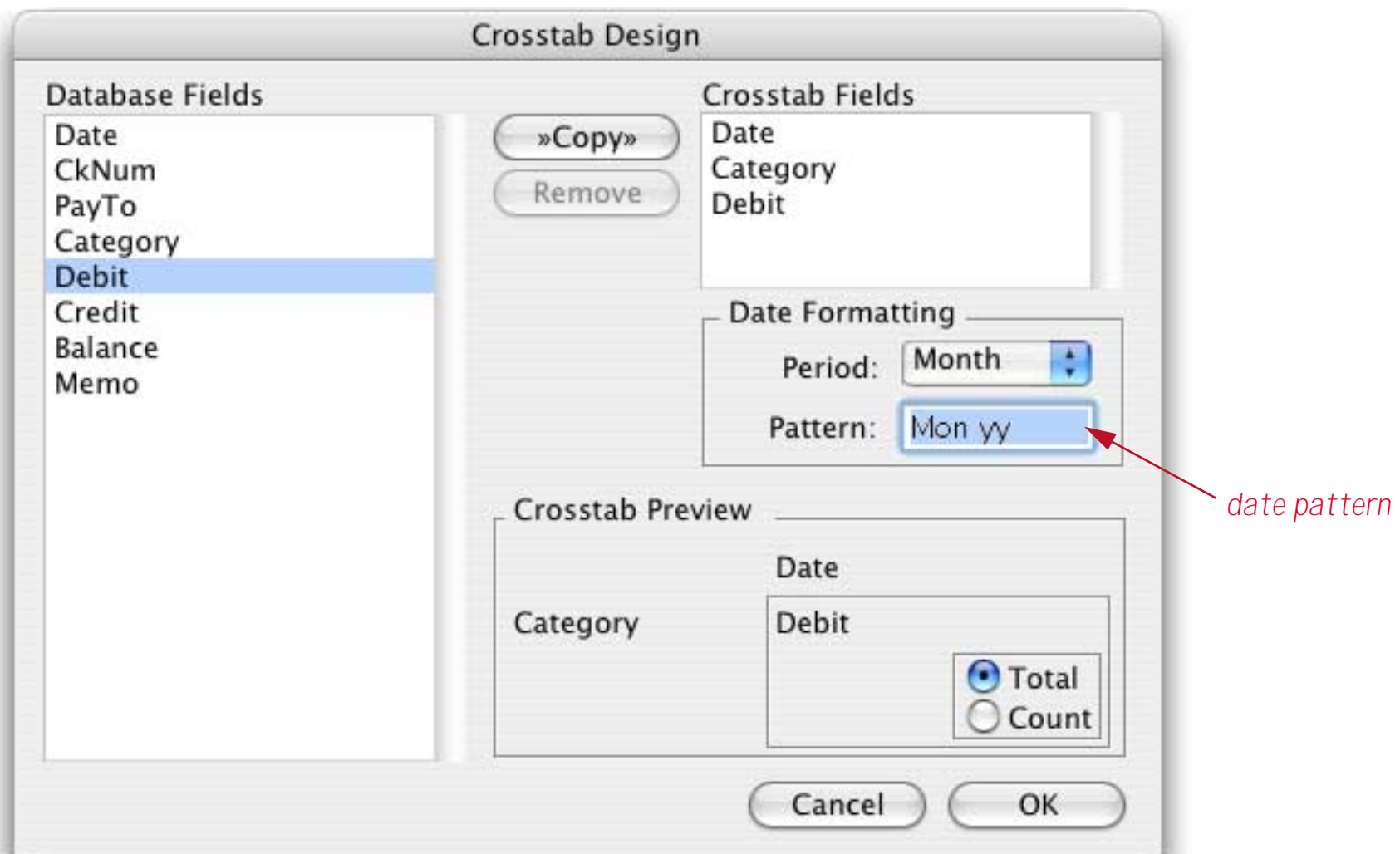


xtab	Jan 99	Feb 99	Mar 99	Apr 99	May 99
Advertising	2,841.02	8,134.13	7,501.90	1,024.52	7,541.18
Auto		240.21	33.32		119.05
Equipment Rental	96.05	73.14		79.69	105.44
Fixed Assets		428.39			778.00
Insurance	761.63	601.48	1,539.14	522.63	1,220.45
Legal Fees	223.52	95.00			799.55
Maintenance		310.00	872.25	132.00	1,012.63
Office Supplies	426.93	915.50	1,579.74	339.46	1,265.34
Postage	150.00	315.00	110.00	156.35	115.00
Printing					96.68
Purchases	17,083.42	3,386.78	19,557.48	2,268.19	4,796.82
Rent	4,070.83	7,742.19	3,566.30	265.00	7,630.56
Shipping	231.72	192.00	830.69	25.00	220.00
Taxes	549.00		2,008.98	734.33	513.51
Telephone	141.09	736.66	1,027.01	305.56	915.96
Utilities		402.78	384.49		529.76
+TOTAL	26,575.21	23,573.26	39,011.30	5,852.73	27,659.93

17 visible/17 total

Crosstabs by Day, Month, Quarter or Year

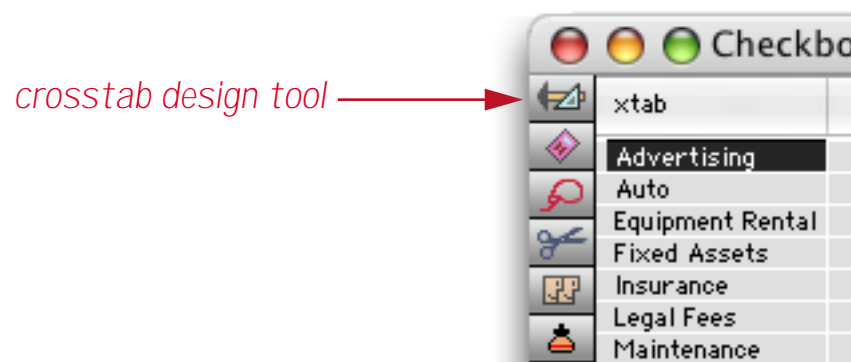
If one of the category fields contains dates, you must tell Panorama what period to group by. The **Date Period** pop-up menu has five choices: **day**, **week**, **month**, **quarter**, and **year**. You can also specify a pattern for displaying the date in the crosstab. For example, months can be displayed as **1-04**, **Jan-04**, or **January 2004**.



Panorama supplies a default pattern when you choose from the **Date Period** pop-up menu. You can use this predefined pattern, or you can type in any pattern you want. See [“Date Output Patterns”](#) on page 255 for more information about date patterns.

Changing the Crosstab Design

The crosstab design can be changed at any time by pressing the **Crosstab Design** tool. This brings up the same dialog box you used to originally set up the crosstab.



To erase the entire crosstab design and start over, select all the fields in the CrossTab Fields list and press the **Remove** button. (You can select all the fields by dragging the mouse over the list.)

If you want to change just one field, select both the old field from the CrossTab Fields list and the new field from the Database Fields list. Then press the **»Copy»** button to change the field.

Re-Calculating a Crosstab

Crosstabs do not automatically update when the main database changes. This is because of the time it takes to recalculate the crosstab. If you change the main database and want to re-calculate a crosstab, press the **Calculate Crosstab** tool.



Adjusting Crosstab Column Widths

When a new crosstab is created, Panorama tries to assign an appropriate width for each column. You can adjust these column widths the same way you would adjust the column widths in the data sheet. Move the cursor over the column titles and drag left or right to adjust the width.

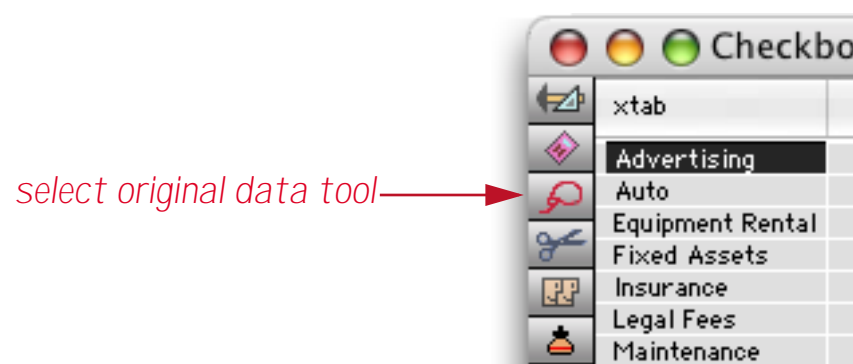
Whenever the crosstab is recalculated, Panorama automatically resets the width of every column except for the first two. The third, fourth, fifth and all additional columns are all set to the same width as the second column.

Crosstab Font and Size

You can change the font and size of the crosstab with the Text Menu.

Selecting Original Data

Using the **Select Original Data** tool, Panorama can locate the raw data behind any value in the crosstab table. To do this you must have a regular database window open in addition to the crosstab window, usually the data sheet window.



To select the original data, first click on the crosstab value you are interested in. Then click on the **Select Original Data** tool, The original data is selected and will appear in the data sheet or other database window. For example, you could click on the **Mar 99 Office Supplies** cell, then choose **Select Original Data**.

xtab	Jan 99	Feb 99	Mar 99	Apr 99	May 99	Jun 99
	0.00	0.00	0.00	0.00	0.00	0.00
Select Original Data	1.02	8,134.13	7,501.90	1,024.52	7,541.18	828.00
Auto		240.21	33.32		119.05	
Equipment Rental	96.05	73.14		79.69	105.44	
Fixed Assets		428.39			778.00	1,168.75
Insurance	761.63	601.48	1,539.14	522.63	1,220.45	461.99
Legal Fees	223.52	95.00			799.55	15.00
Maintenance		310.00	872.25	132.00	1,012.63	368.38
Office Supplies	426.93	915.50	1,579.74	339.46	1,265.34	281.52
Postage	150.00	315.00	110.00	156.35	115.00	
Printing					96.68	
Purchases	17,083.42	3,386.78	19,557.48	2,268.19	4,796.82	5,172.74
Rent	4,070.83	7,742.19	3,566.30	265.00	7,630.56	3,874.00
Shipping	231.72	192.00	830.69	25.00	220.00	
Taxes	549.00		2,008.98	734.33	513.51	155.76
Telephone	141.09	736.66	1,027.01	305.56	915.96	202.31
Utilities		402.78	384.49		529.76	213.58
*TOTAL	26,575.21	23,573.26	39,011.30	5,852.73	27,659.93	12,742.03

In the data sheet the raw data backing up this crosstab cell will be selected - in this case the seven checks written for **Office Supplies** in March of 1999.

Date	CkNum	PayTo	Category	Debit
03/12/99	1999	Pitney Bowes	Office Supplies	53.94
03/12/99	2001	Paper Mart	Office Supplies	572.78
03/12/99	2003	Pace Club	Office Supplies	267.47
03/28/99	2028	Pitney Bowes	Office Supplies	247.00
03/28/99	2030	NEBS	Office Supplies	67.20
03/28/99	2031	Ramona Drinking Water	Office Supplies	51.55
03/29/99	2036	Jeffco	Office Supplies	319.80

You can select the original data for any value in the crosstab. If you click on a cell in the first or last column of the crosstab, the **Select Original Data** tool will select all the data associated with the entire row. For example, you could click on the **Fixed Assets** cell.

xtab	Jan 99	Feb 99	Mar 99	Apr 99	May 99	Jun 99
	0.00	0.00	0.00	0.00	0.00	0.00
Select Original Data	1.02	8,134.13	7,501.90	1,024.52	7,541.18	828.00
Equipment Rental	96.05	73.14		79.69	105.44	
Fixed Assets		428.39			778.00	1,168.75
Insurance	761.63	601.48	1,539.14	522.63	1,220.45	461.99
Legal Fees	223.52	95.00			799.55	15.00
Maintenance		310.00	872.25	132.00	1,012.63	368.38
Office Supplies	426.93	915.50	1,579.74	339.46	1,265.34	281.52
Postage	150.00	315.00	110.00	156.35	115.00	
Printing					96.68	
Purchases	17,083.42	3,386.78	19,557.48	2,268.19	4,796.82	5,172.74
Rent	4,070.83	7,742.19	3,566.30	265.00	7,630.56	3,874.00
Shipping	231.72	192.00	830.69	25.00	220.00	
Taxes	549.00		2,008.98	734.33	513.51	155.76
Telephone	141.09	736.66	1,027.01	305.56	915.96	202.31
Utilities		402.78	384.49		529.76	213.58
*TOTAL	26,575.21	23,573.26	39,011.30	5,852.73	27,659.93	12,742.03

When you choose the **Select Original Data** tool, the data sheet will show all of the checks written for **Fixed Assets** in every month.

Date	CkNum	PayTo	Category	Debit
02/09/99	1952	GECC	Fixed Assets	428.39
05/02/99	2072	GECC	Fixed Assets	704.00
05/24/99	2112	GECC	Fixed Assets	74.00
06/14/99	2158	C M S	Fixed Assets	1,168.75
07/03/99	2175	GECC	Fixed Assets	250.00
07/18/99	2200	SSG LaserWorks	Fixed Assets	793.00
08/21/99	2243	GECC	Fixed Assets	725.00
09/18/99	2275	T.W. Bender Group	Fixed Assets	2,814.33
09/19/99	2280	GECC	Fixed Assets	352.00
09/26/99	2296	TesLabe	Fixed Assets	2,465.00

If you click on a cell in the bottom row of the crosstab, the **Select Original Data** tool will select all of the data for the entire column. For example, you could click on the total for [April 99](#).

xtab	Jan 99	Feb 99	Mar 99	Apr 99	May 99	Jun 99
	0.00	0.00	0.00	0.00	0.00	0.00
Select Original Data	1.02	8,134.13	7,501.90	1,024.52	7,541.18	828.00
Photo		240.21	33.32		119.05	
Equipment Rental	96.05	73.14		79.69	105.44	
Fixed Assets		428.39			778.00	1,168.75
Insurance	761.63	601.48	1,539.14	522.63	1,220.45	461.99
Legal Fees	223.52	95.00			799.55	15.00
Maintenance		310.00	872.25	132.00	1,012.63	368.38
Office Supplies	426.93	915.50	1,579.74	339.46	1,265.34	281.52
Postage	150.00	315.00	110.00	156.35	115.00	
Printing					96.68	
Purchases	17,083.42	3,386.78	19,557.48	2,268.19	4,796.82	5,172.74
Rent	4,070.83	7,742.19	3,566.30	265.00	7,630.56	3,874.00
Shipping	231.72	192.00	830.69	25.00	220.00	
Taxes	549.00		2,008.98	734.33	513.51	155.76
Telephone	141.09	736.66	1,027.01	305.56	915.96	202.31
Utilities		402.78	384.49		529.76	213.58
*TOTAL	26,575.21	23,573.26	39,011.30	5,852.73	27,659.93	12,742.03

When you choose the **Select Original Data** tool, the data sheet will show all of the checks written for [April 99](#) in every category.

Date	CkNum	PayTo	Category	Debit
04/04/99	2048	Blue Cross Of Calif	Insurance	177.55
04/04/99	2049	El Mar Plastics	Purchases	750.00
04/04/99	2050	Sir Speedy	Advertising	240.86
04/04/99	2051	Detail Associates	Purchases	104.10
04/06/99	2052	Sir Speedy	Advertising	186.65
04/16/99	2053	Advertiser's Mailing Ser	Postage	156.35
04/17/99	2054	Paper Mart	Office Supplies	339.46
04/17/99	2055	Public Storage	Rent	95.00
04/17/99	2056	U P S	Shipping	25.00
04/17/99	2057	PacTel Cellular	Telephone	187.58
04/17/99	2058	The Mail Secretary	Rent	75.00
04/17/99	2059	Public Storage	Rent	95.00
04/17/99	2060	Con-Cor	Purchases	448.36

If you click on the grand total value in the lower right hand corner of the crosstab, the **Select Original Data** tool will select the entire database.

To re-select the entire original database, activate a data sheet or form window, then choose the **Select All** command from the Search Menu. Be sure to re-select the entire database before you re-calculate the crosstab.

Warning: If the database has been edited since the crosstab was calculated, the **Select Original Data** tool may not be able to locate the original data. If the database contained invisible (unselected) data when the crosstab was calculated, the **Select Original Data** tool may select this unselected data. If this is a problem, use the **Remove Unselected** command before calculating the crosstab (see "[Permanently Removing Unselected Data](#)" on page 360). Make sure you have a backup copy of your data on disk before you use this command.

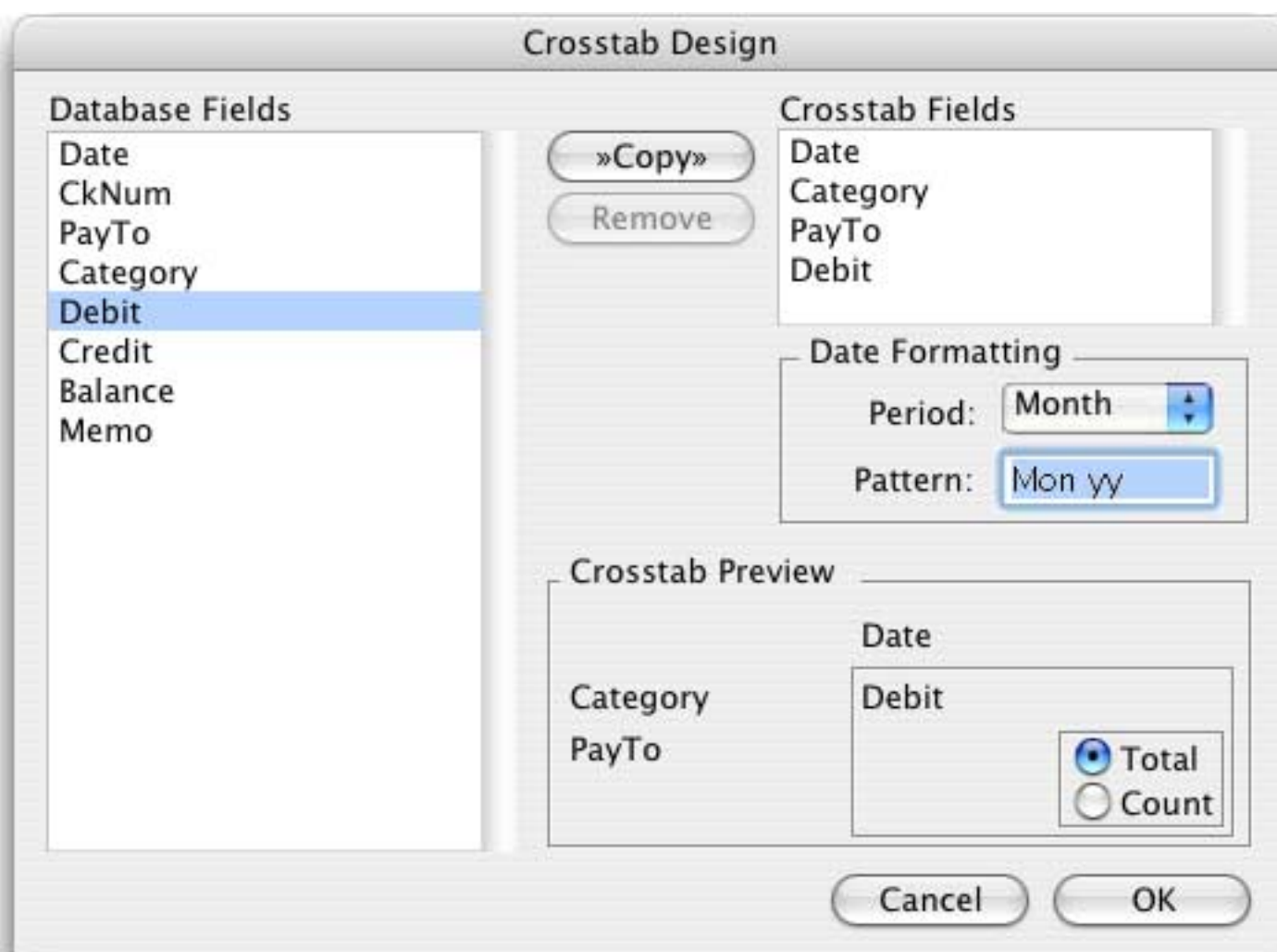
Crosstabs Based On Selected Data

To build a crosstab summary based on a subset of the database, use the **Find/Select** dialog before calculating the crosstab. For example, you can include this year's checks in a crosstab summary while excluding previous years. Be sure you select the data before you calculate the crosstab. (If you forget, just go back and select the data, then recalculate the crosstab).

Crosstabs Containing Outlines

Most crosstabs have just two **category fields**—one across the top and one down the left side. It is possible, however, to create a crosstab with two (or more) category fields down the left side of the crosstab. In that case the category fields will be combined in an outline structure down the left side of the crosstab. You can use Panorama's outline tools to expand and collapse the crosstab to show more or less detail. See "[STEP 3 - OUTLINE](#)" on page 406 for more information on these outline tools.

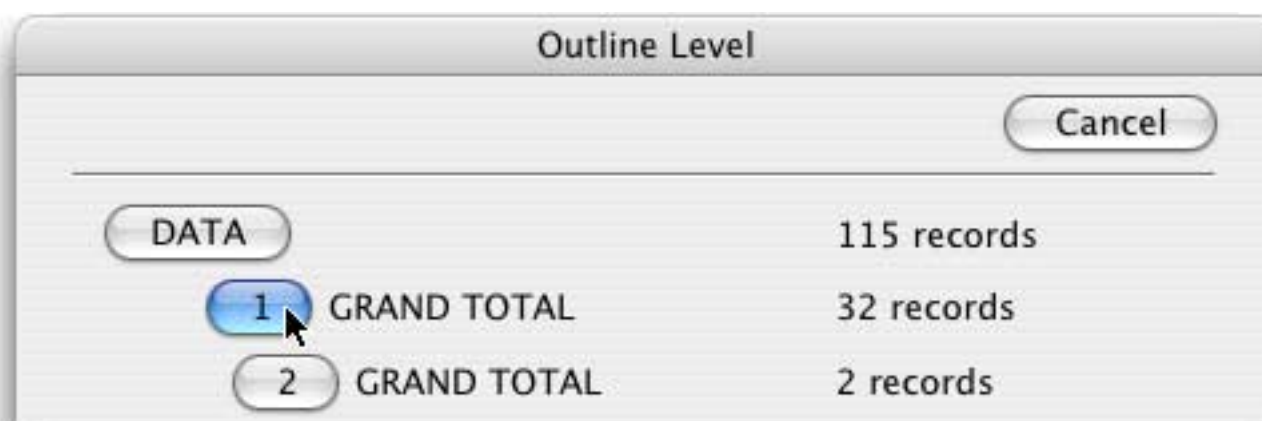
To set up a crosstab with more than one category field down the left, you must copy additional fields into the Crosstab Fields list. The first field is always the top category field, while the last field is always the tabulation field. The fields in the middle are the left category fields. Here is an example of what the dialog should look like when set up for a two level outline crosstab.



This crosstab breaks down spending per month not just for each category, but also for each vendor within each category.

xtab	Jan 99	Feb 99	Mar 99	Apr 99	May 99
Unocal		240.21	33.32		119.05
Auto	0.00	240.21	33.32	0.00	119.05
Northern Illinois Mold	96.05				
Pitney Bowes		73.14		79.69	105.44
Equipment Rental	96.05	73.14	0.00	79.69	105.44
C M S					
GECC		428.39			778.00
SSG LaserWorks					
T.W. Bender Group					
TesLabe					
Fixed Assets	0.00	428.39	0.00	0.00	778.00
A A A			45.00		128.65
ACSC		46.00			
Blue Cross Of Calif	279.03	517.98		522.63	188.20
California Capitol	64.00	37.50			
Employers Health			284.24		536.90
Maryland Casualty			367.90		290.70
SCAC					
Sherman Douglas Ins	418.60		842.00		76.00

Using the **Outline Level** command in the Sort Menu you can collapse the outline to show just the category summaries (see “[Sorting by Summary Value](#)” on page 406).



The collapsed outline looks kind of like our original, one-level crosstab.

xtab	Jan 99	Feb 99	Mar 99	Apr 99	May 99
Auto	0.00	240.21	33.32	0.00	119.05
Equipment Rental	96.05	73.14	0.00	79.69	105.44
Fixed Assets	0.00	428.39	0.00	0.00	778.00
Insurance	761.63	601.48	1,539.14	522.63	1,220.45
Legal Fees	223.52	95.00	0.00	0.00	799.55
Maintenance	0.00	310.00	872.25	132.00	1,012.63
Office Supplies	426.93	915.50	1,579.74	339.46	1,265.34
Postage	150.00	315.00	110.00	156.35	115.00
Printing	0.00	0.00	0.00	0.00	96.68
Purchases	17,083.42	3,386.78	19,557.48	2,268.19	4,796.82
Rent	4,070.83	7,742.19	3,566.30	265.00	7,630.56
Shipping	231.72	192.00	830.69	25.00	220.00
Taxes	549.00	0.00	2,008.98	734.33	513.51
Telephone	141.09	736.66	1,027.01	305.56	915.96
Utilities	0.00	402.78	384.49	0.00	529.76
TOTAL	26,575.21	23,573.26	39,011.30	5,852.73	27,659.93

17 visible/149 total

There's a big difference, however. We can use the Outline tools to selectively expand and/or collapse sections of the crosstab (see "[Expanding and Collapsing the Summary Outline](#)" on page 376).

xtab	Jan 99	Feb 99	Mar 99	Apr 99	May 99
Office Supplies	426.93	915.50	1,579.74	339.46	1,265.34
Postage	150.00	315.00	110.00	156.35	115.00
Printing	0.00	0.00	0.00	0.00	96.68
Purchases	17,083.42	3,386.78	19,557.48	2,268.19	4,796.82
Rent	4,070.83	7,742.19	3,566.30	265.00	7,630.56
Airborne Express		35.40			
AIRS			138.07		
American Customs House Broke		34.00			
B J D Trucking Inc.					
Burlington Air Express					
Consolidated Freight			150.20		
Federal Express	178.75		320.00		170.00
U P S	52.97	122.60	222.42	25.00	50.00
Shipping	231.72	192.00	830.69	25.00	220.00
Taxes	549.00	0.00	2,008.98	734.33	513.51
Telephone	141.09	736.66	1,027.01	305.56	915.96
Utilities	0.00	402.78	384.49	0.00	529.76
TOTAL	26,575.21	23,573.26	39,011.30	5,852.73	27,659.93

25 visible/149 total

Don't forget, you can click on any cell in any cell, including a summary cell, and use **Select Original Data** to see the raw data that went into the cell.

Sorting a Crosstab

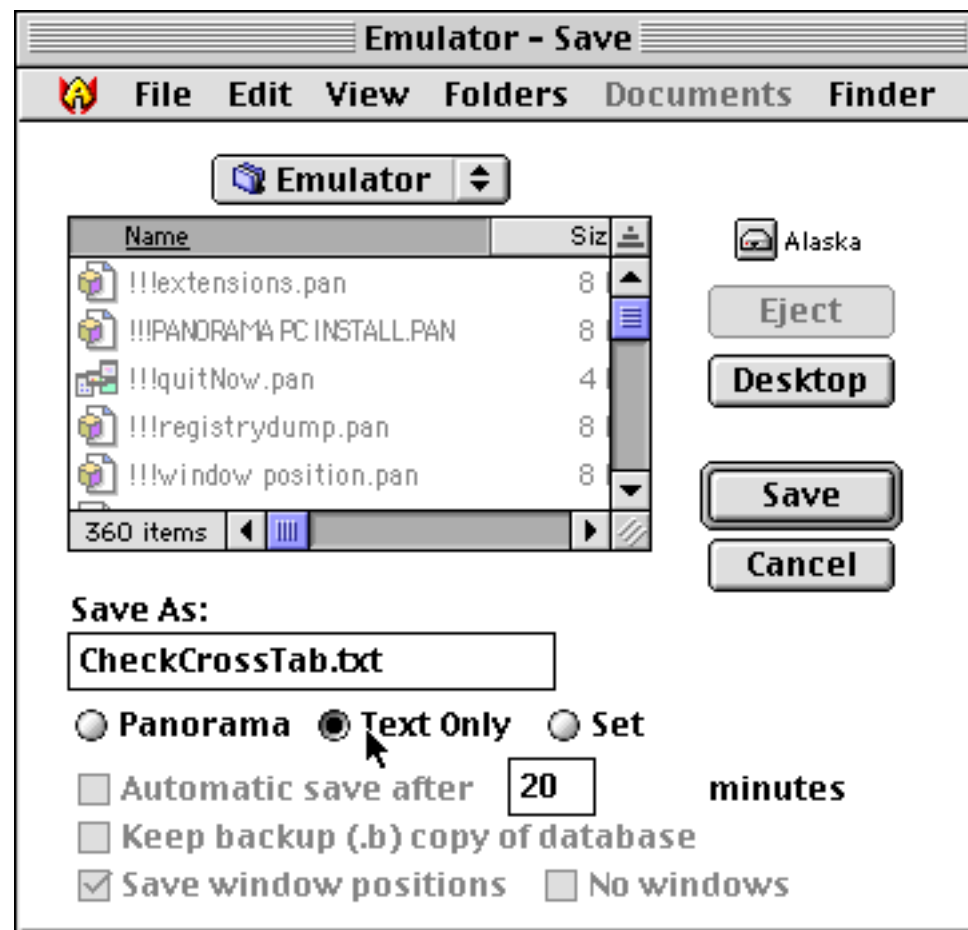
Crosstabs are automatically sorted by category. Use the **Sort Up** and **Sort Down** commands to sort the crosstab by other columns.

Removing and Renaming Crosstab Tables

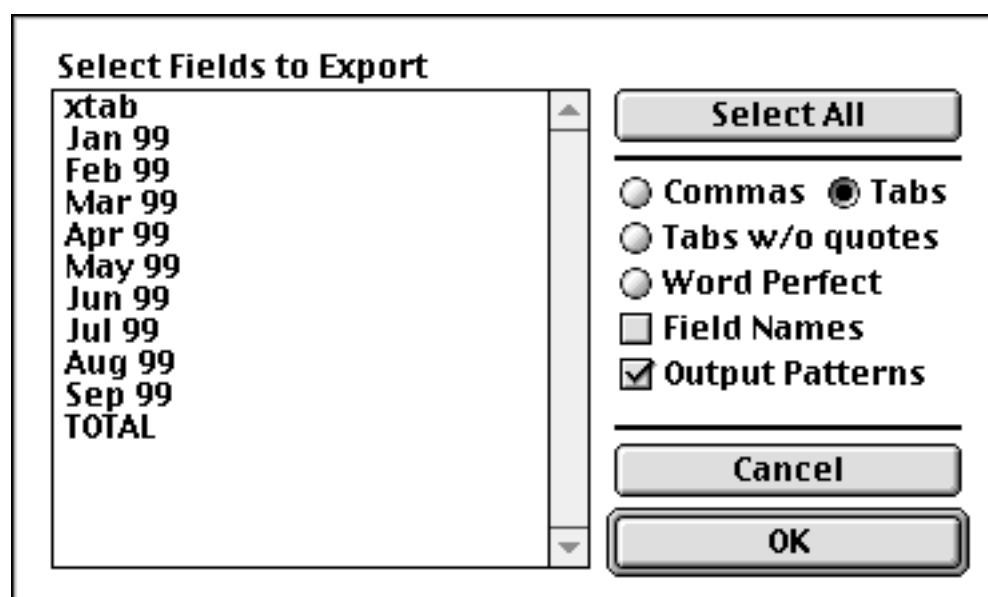
To remove a crosstab table, choose **Delete Crosstab** from the Setup Menu (“[Deleting a Form, Crosstab or Procedure](#)” on page 183). To rename a crosstab, choose **Rename Crosstab** from the Setup Menu (see “[Renaming a Form, Crosstab or Procedure](#)” on page 183). A crosstab name may be up to 25 characters long. You can also change the order of the crosstabs within the view menu using the **Re-Arrange Crosstabs** dialog (see “[Changing the Order of Forms, Crosstabs or Procedures](#)” on page 183).

Exporting a Crosstab Table

Use the **Save As** command to export the data in a crosstab table. Type in a file name and choose the **Text Only** option.



This brings up a second dialog allowing you to choose the columns you want to export and the export format (tab delimited, comma delimited, etc.).



Press the **Select All** button to select all the columns, then press **Ok** to export the data. See “[Exporting a Text File](#)” on page 105 for more information on the export dialog.

Once the crosstab data is exported, you can import it into another program or back into another Panorama database for further manipulation.

Chapter 12: Data Processing



This chapter describes some of the most powerful commands in Panorama. These commands allow you to automatically transform and modify large amounts of existing data. Many different kinds of transformations are possible, including mathematical calculations, re-arranging characters or words, transforming individual characters (for example converting from lower to upper case), and transformations based on patterns in the data. Transformations can be performed on all kinds of data, including text, numeric, dates, and choices.

The commands described in this chapter are very powerful. In a few seconds you may be able to make changes to your data that would otherwise require tedious hours of manual data entry. Like any power tool, these commands should be treated with respect. For insurance, you should **Save** your database before you begin trying to transform it (see “[Saving a Database](#)” on page 63). If you mangle your data, you can always get it back with the **Revert to Saved** command (see “[Total Recall \(Auto-Save/Crash Recovery\)](#)” on page 66) or using Panorama’s Time Lapse feature (see “[Time Lapse](#)” on page 67).

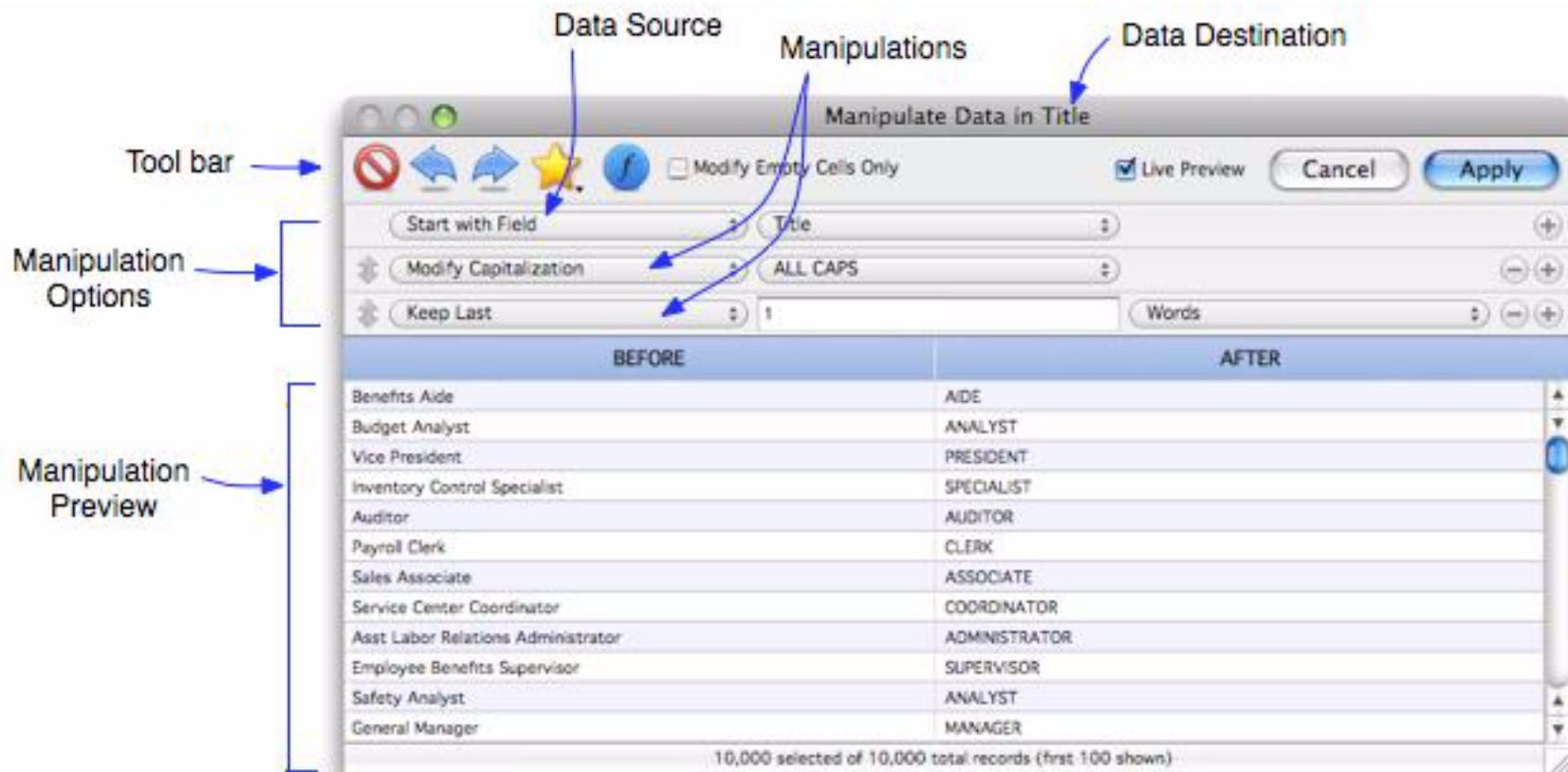
Transforming Selected Data

The transformation commands described in this chapter may be used on an entire database, or on a selected subset. The **Find/Select** command (or the right-click context menu) is used to select the data you want to transform, then the commands described in this chapter are used to transform the data. Only the selected data will be transformed—the invisible data will be left untouched. See “[The Find/Select Dialog](#)” on page 336 for more information on selecting a subset of the database.

The same rules apply to data that has been collapsed with the outline tools. If data is invisible because it has been collapsed, it will not be transformed. Only data that is both selected and expanded will be transformed. See “[Summaries and Outlines](#)” on page 365 for more information on outlines.

The Manipulate Data Dialog

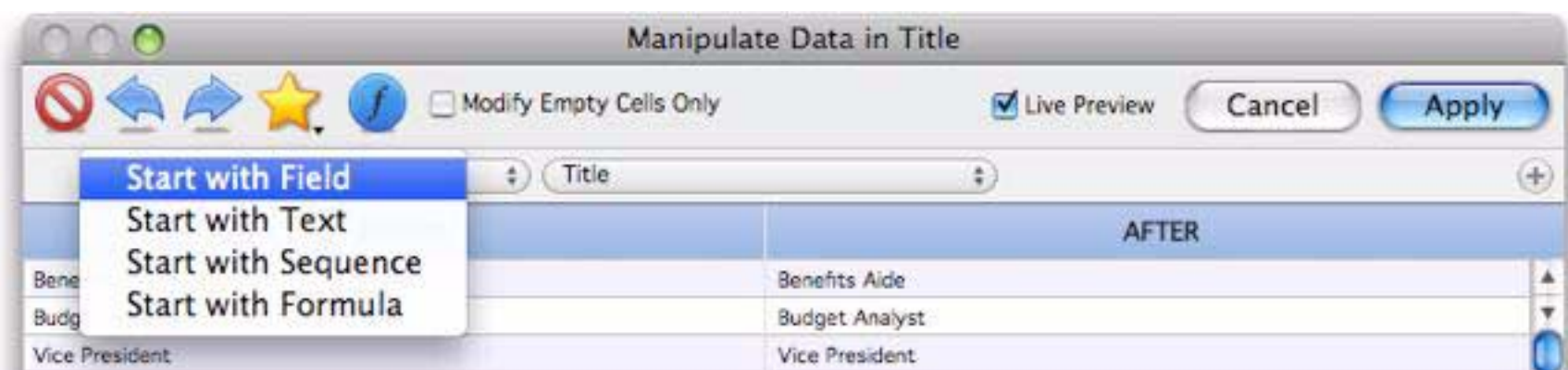
This dialog, in the Fields menu, is the workhorse of data manipulation. (If you've used previous versions of Panorama, the **Manipulate Data** dialog replaces Fill, Formula Fill, Empty Fill and Sequence commands you are used to.) When you first open this dialog you'll see that it is split into three sections:



There are three components to a manipulation — the data source, the manipulations, and the destination. The destination is the current field when the dialog is opened (to remind you, this field is shown in the title bar of the dialog). Any data already in the destination field will be overwritten when you press the **Apply** button.

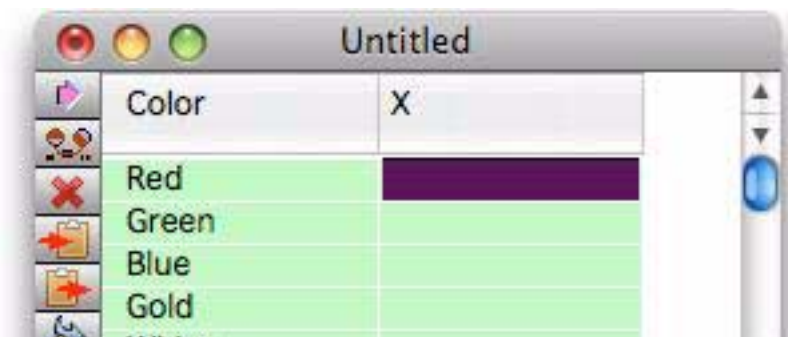
Specifying the Data Source

The first step in performing a manipulation is specifying a data source. There are four data source options: *Field*, *Text/Number/Date*, *Sequence* and *Formula*. Use the pop-up menu to choose the source you want to use:

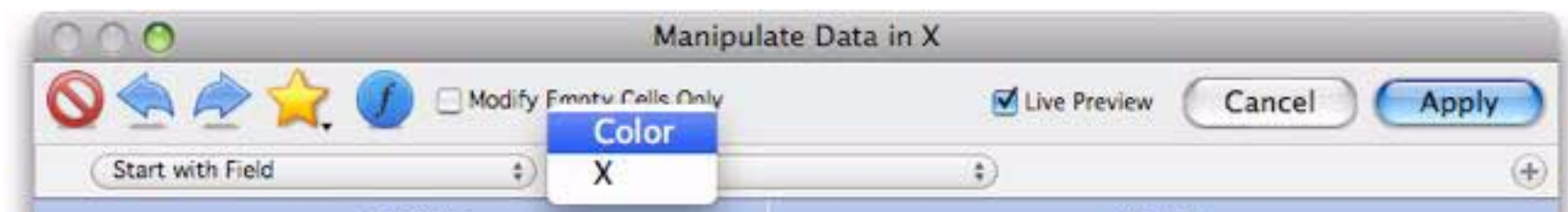


Start with Field

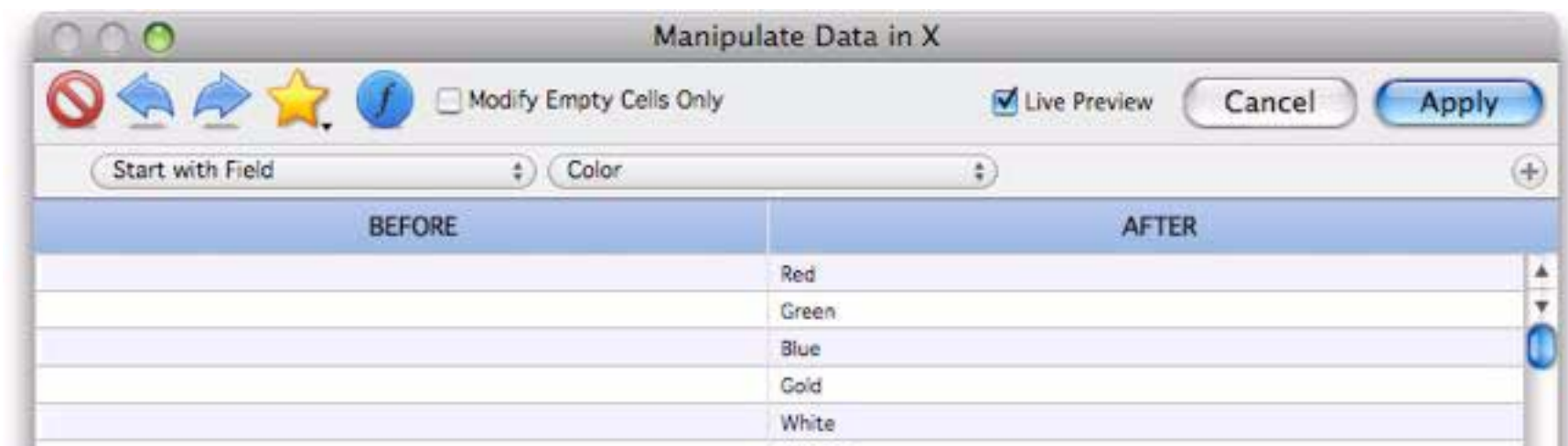
You'll usually want to manipulate data that is in an existing field in the database. Simply choose the field you want to manipulate from the pop-up menu. The simplest manipulation you can perform is to copy the data from one existing field to another. To illustrate this I'll copy the data in this database from the **Color** field to the **X** field. I start by clicking on the destination field, **X**.



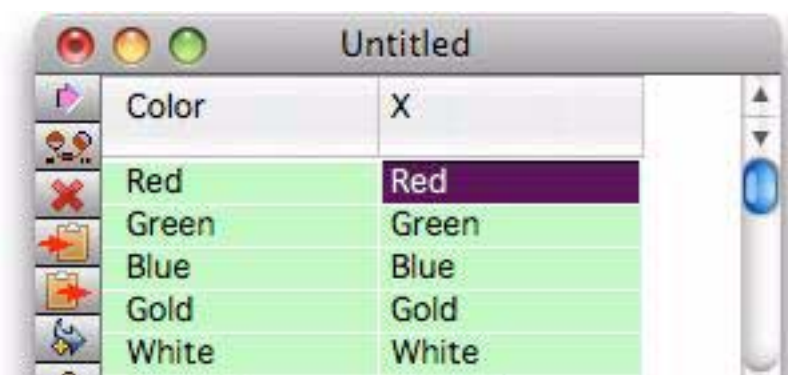
Now I open the **Manipulate Data** dialog (either from the Field menu, or by right clicking the field name, or by pressing **Command-=**). Then I choose the field I want to copy (**Color**) from the pop-up menu.



Once I've chosen the data source field the preview area shows what the result will look like. The **BEFORE** area shows the current contents of the **X** field (which is empty), the **AFTER** area shows what it will look like after the manipulation (in this case a copy of the **Color** field). The preview area always lets you know what is going to happen before you actually commit to modifying the original data.



To actually copy the data I press the **Apply** button. Now I have two copies of this field.



Of course most manipulations are more complicated than this, but the basic steps remain the same: Click on the destination field, open the dialog, choose the data source, choose the manipulations, then apply.

Start with a Fixed Value (Text/Number/Date)

Choose this option if you want to fill all of the selected cells in the current field with the same value. For example, suppose you wanted to mark all of the checks in this database as **Posted**.

Date	Check	Posted	PayTo	Debit	Credit
May 5, 2009	121	Cleared	Cool Creek Studiio	1,114.85	
May 1, 2009			OPENING BALANCE		12,739.00
May 2, 2009			DEPOSIT		5,985.82

The first step is to select only the records that should be modified -- in this case, with a check number larger than 0. I can easily do that by right clicking on a deposit and choosing **Select Larger**.

May 1, 2009			OPENING BALANCE		12,739.00
May 2, 2009			DEPOSIT		5,985.82
May 9, 2009					3,772.42
May 16, 2009					3,110.56
May 23, 2009					4,953.39
May 30, 2009					4,664.34
May 1, 2009	10		oss	975.00	
May 1, 2009	1		Casualty	187.50	

As you can see, the 462 checks in this database are now selected, while deposits and other transactions are not selected. Now I click anywhere in the field I want to modify, in this case **Posted**.

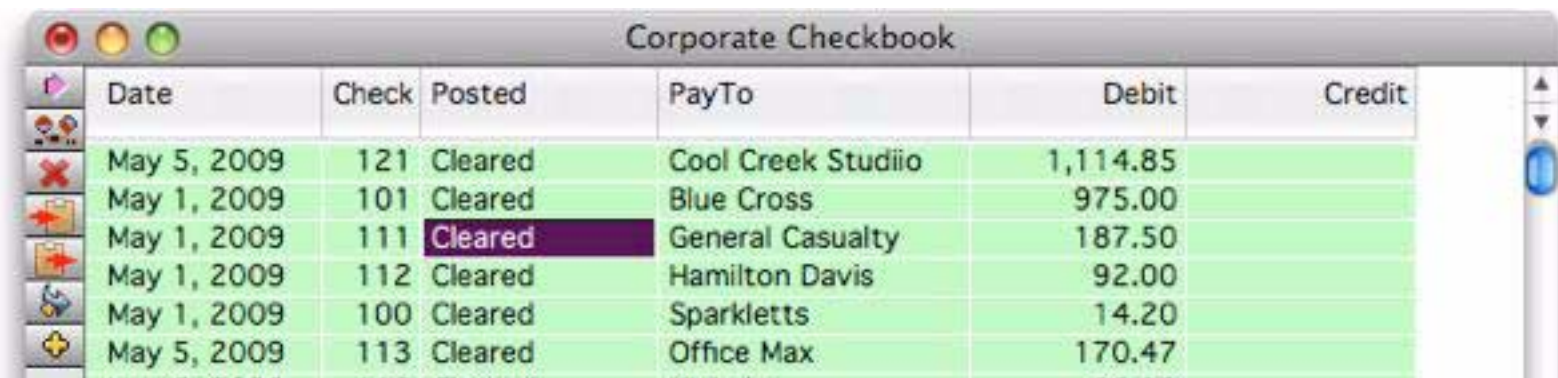
Date	Check	Posted	PayTo	Debit	Credit
May 5, 2009	121	Cleared	Cool Creek Studiio	1,114.85	
May 1, 2009	101		Blue Cross	975.00	
May 1, 2009	111		General Casualty	187.50	
May 1, 2009	112		Hamilton Davis	92.00	
May 1, 2009	100		Sparkletts	14.20	
May 5, 2009	113		Office Max	170.47	
May 5, 2009	116		Kinko's	50.03	
May 19, 2009	131		Staples	126.83	
May 19, 2009	133		Costco	207.23	
May 26, 2009	135		Kinko's	245.24	
May 5, 2009	114		Poly Payroll Services	1,817.32	

The database is ready to be manipulated. Open the **Manipulate Data** dialog and set up the options to fill every record with the same, fixed value.

1) choose from pop-up menu 2) type in text, number or date (depending on type of destination field)

BEFORE	AFTER
Cleared	Cleared
	Cleared

Press the **Apply** button to modify the actual data.



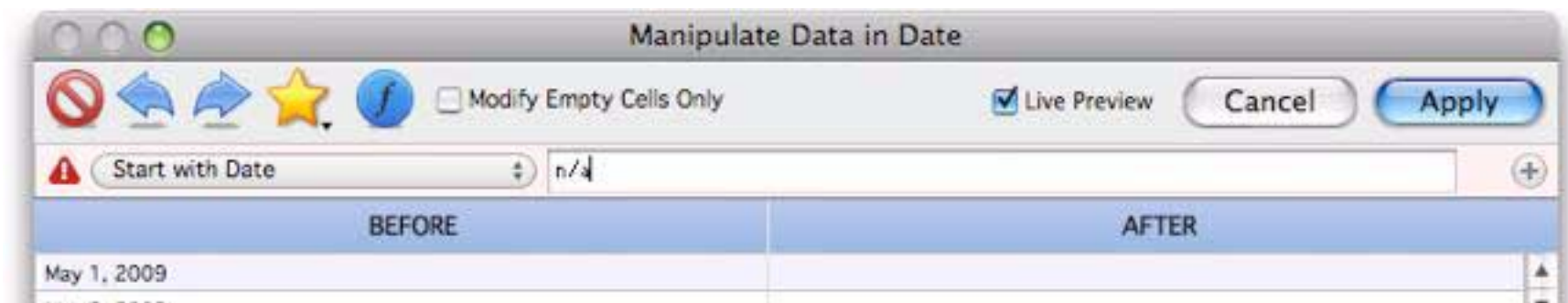
Date	Check	Posted	PayTo	Debit	Credit
May 5, 2009	121	Cleared	Cool Creek Studiio	1,114.85	
May 1, 2009	101	Cleared	Blue Cross	975.00	
May 1, 2009	111	Cleared	General Casualty	187.50	
May 1, 2009	112	Cleared	Hamilton Davis	92.00	
May 1, 2009	100	Cleared	Sparkletts	14.20	
May 5, 2009	113	Cleared	Office Max	170.47	

Choosing **Select All** shows all of the records again. As you can see, the unselected records were not modified.



Date	Check	Posted	PayTo	Debit	Credit
May 1, 2009	102	Cleared	Valley Gas	49.90	
May 1, 2009	105	Cleared	United Security	30.00	
May 1, 2009	107	Cleared	Edison General	115.55	
May 1, 2009	108	Cleared	City Services	54.39	
May 2, 2009			DEPOSIT		5,985.82
May 5, 2009	121	Cleared	Cool Creek Studiio	1,114.85	
May 5, 2009	113	Cleared	Office Max	170.47	
May 5, 2009	116	Cleared	Kinko's	50.03	
May 5, 2009	114	Cleared	Poly Payroll Services	1,817.32	
May 5, 2009	115	Cleared	Oregon National Engi	186.36	
May 5, 2009	117	Cleared	Boston Direct	185.96	

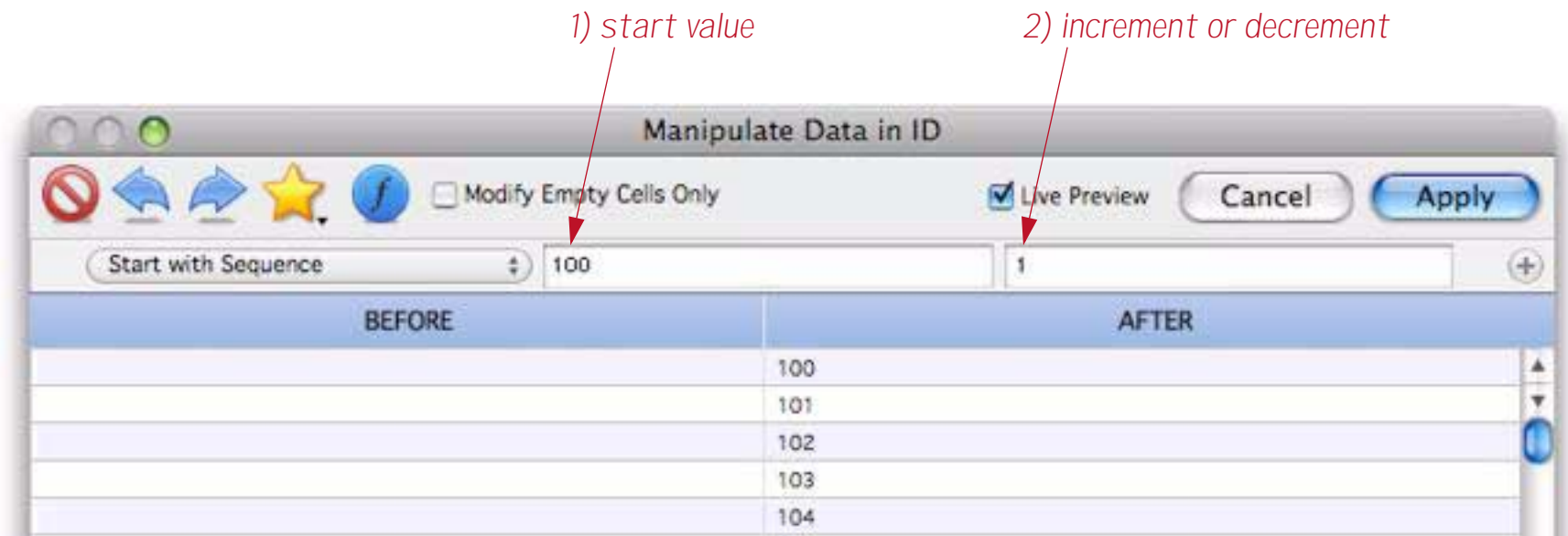
The new data must be compatible with the field that is being filled. For example, you cannot fill a date field with **n/a** because **n/a** is not a date value. Panorama will warn you if you attempt to fill a field with an incompatible value.



Click on the red triangle to find out more information about the problem (in this case, Illegal Date).

Starting with a Sequence

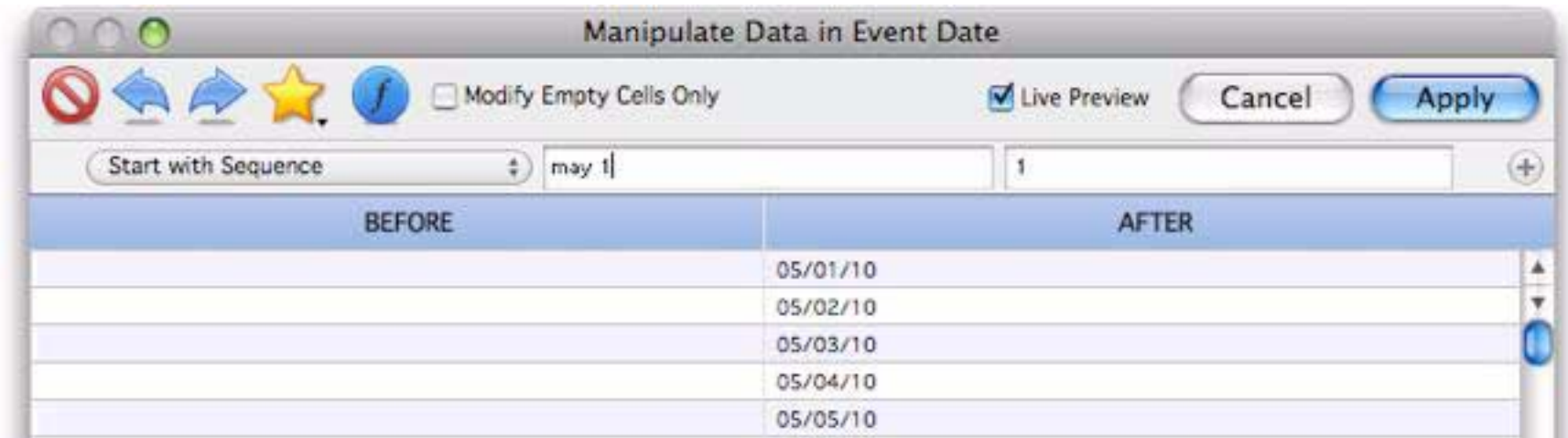
Choose this option if you want to fill the field with a incrementing or decrementing sequence, for example 1, 2, 3, 4, ... 100, 110, 120, ... 99, 98, 97, etc. When using this option you specify the starting value and the amount to increase or decrease for each record.



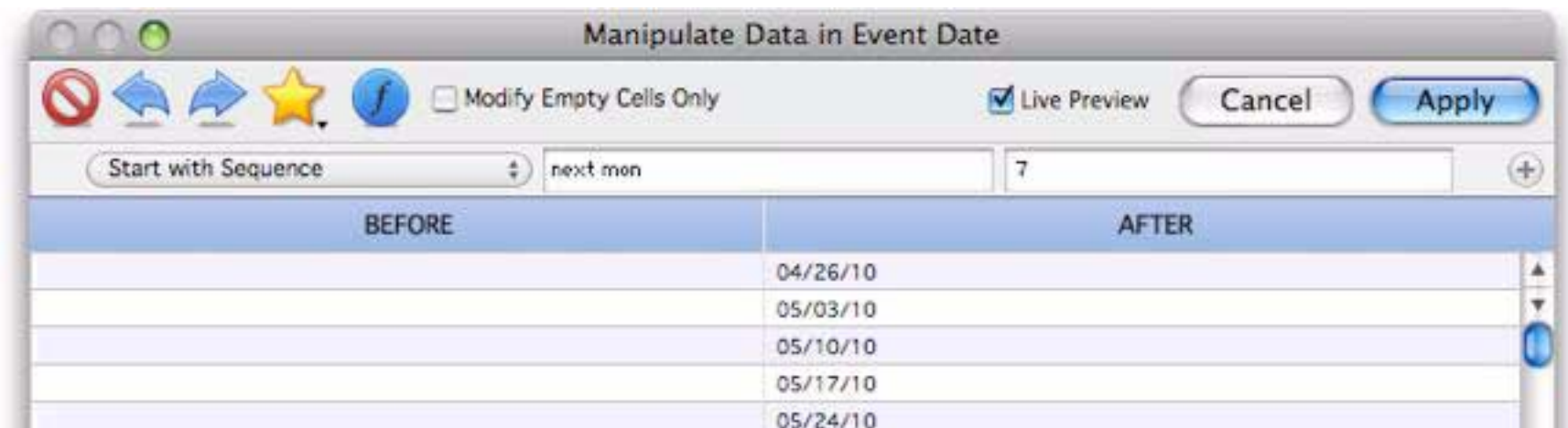
The preview shows what the sequence will look like, so just play with the values until you get the sequence you want.

Sequencing a Date Field

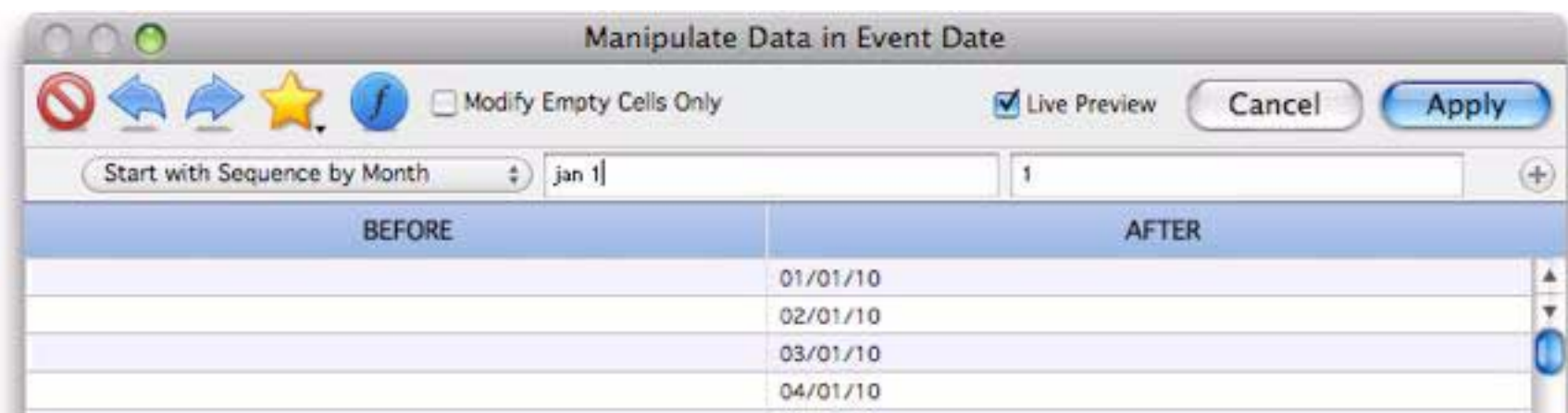
If the destination is a date field the start value must be a valid date (Panorama’s “smart dates” are allowed, so you can specify *today*, *yesterday*, *tomorrow*, *monday*, *tue*, *next tue*, etc. This example will generate a sequence every day starting with May 1st.



The example below generates a record for each week, starting with next Monday. If I wanted an event every two weeks, I would change the 7 to 14.



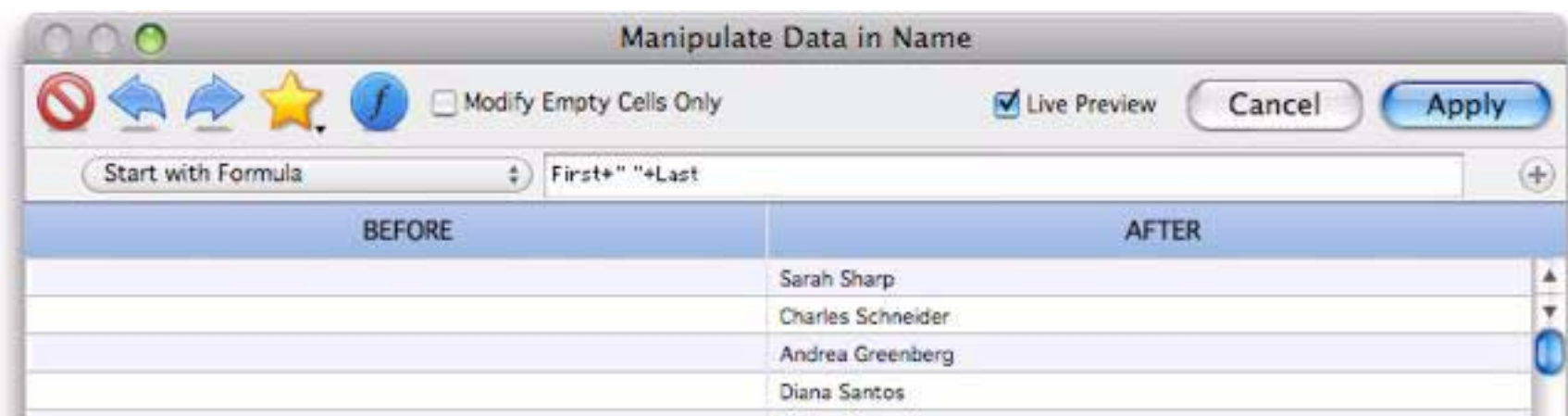
When manipulating a date field, an extra option appears in the Data Source pop-up menu — **Start with Sequence by Month**. This option allows date sequences to be generated by months, quarters or years.



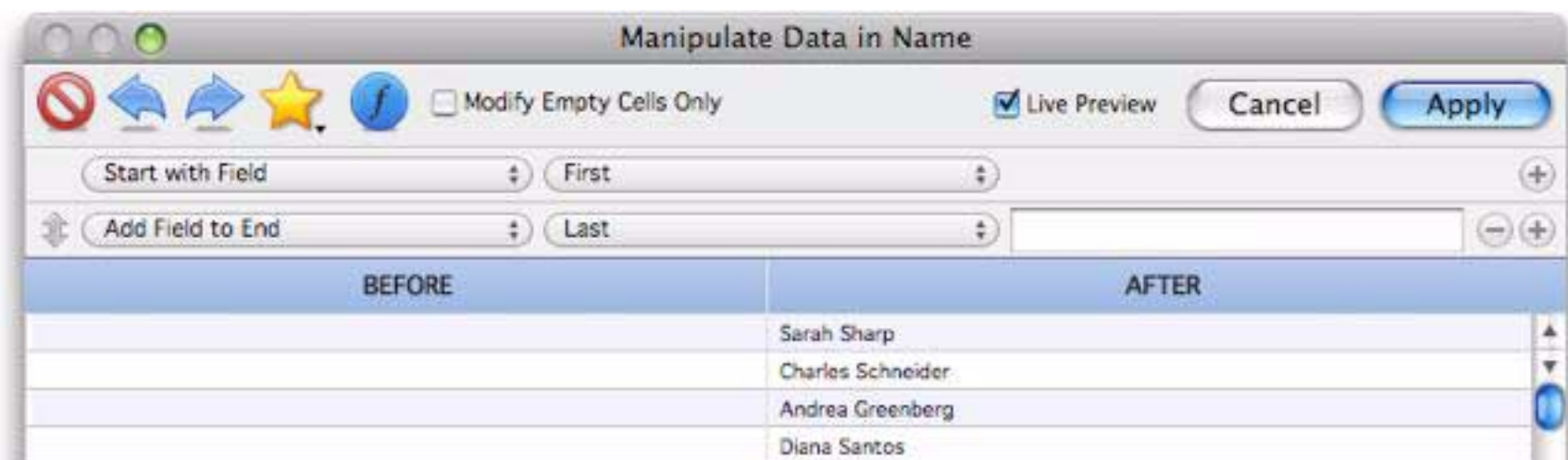
To generate the sequence by quarter, change the 1 to 3, for by year, change to 12.

Starting with a Formula

If none of the other options fit the bill you can use a formula as the starting point for your manipulation. Once you learn how to use them, formulas give you incredible power for any kind of manipulation you want to do. Formulas are covered in detail elsewhere (see “[Formulas](#)” on page 19 of *Formulas & Programming*), but let’s look at a simple example to see how a formula can be used in this dialog. In this example the database has three fields, First, Last and Name. The formula below combines the first and last names into a combined Name field.



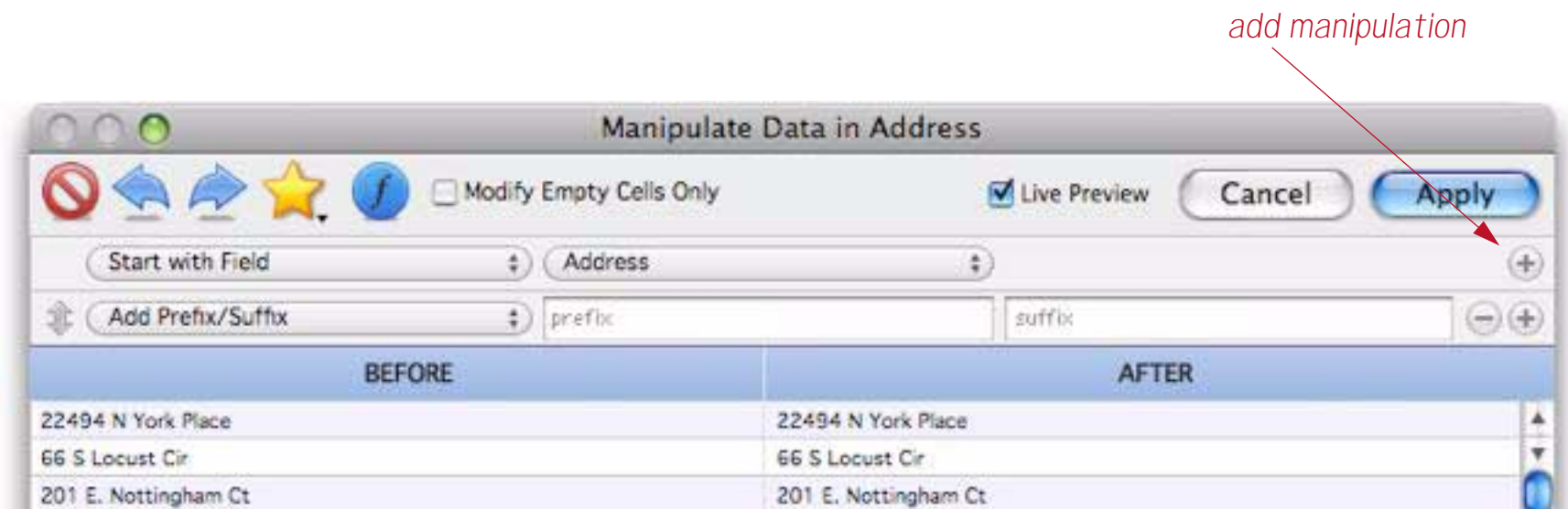
If you’ve used formulas in a programming language or spreadsheet before, this may look natural to you. Otherwise, it probably just looks like a geeky mystery. Fortunately many common manipulations can be performed simply by selecting from pop-up menus. Here’s an alternate method for combining the first and last names:



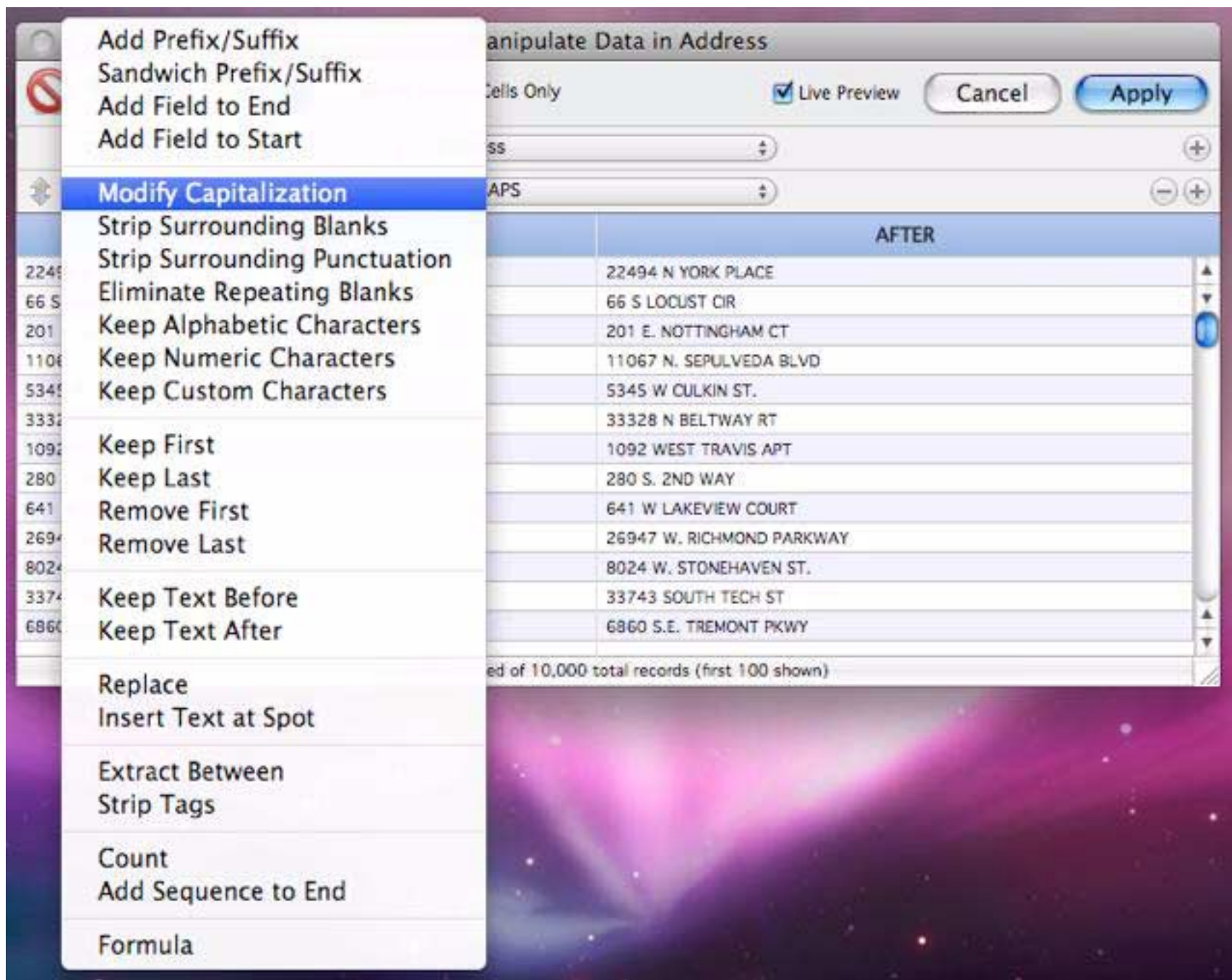
The following sections will explain how to set up these kinds of simple non-formula manipulations.

Manipulating the Data

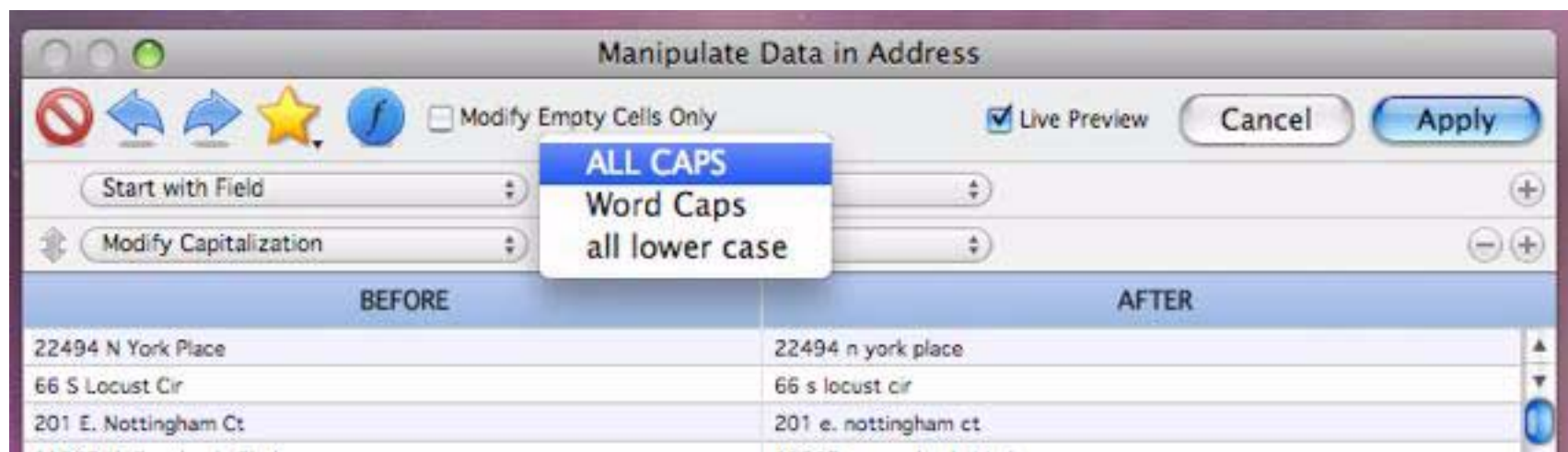
Unless you're doing something really simple like copying a field or filling with a fixed value, the second step is to add one or more manipulations to your data source. To add a manipulation, press the + button on the far right hand side of the dialog.



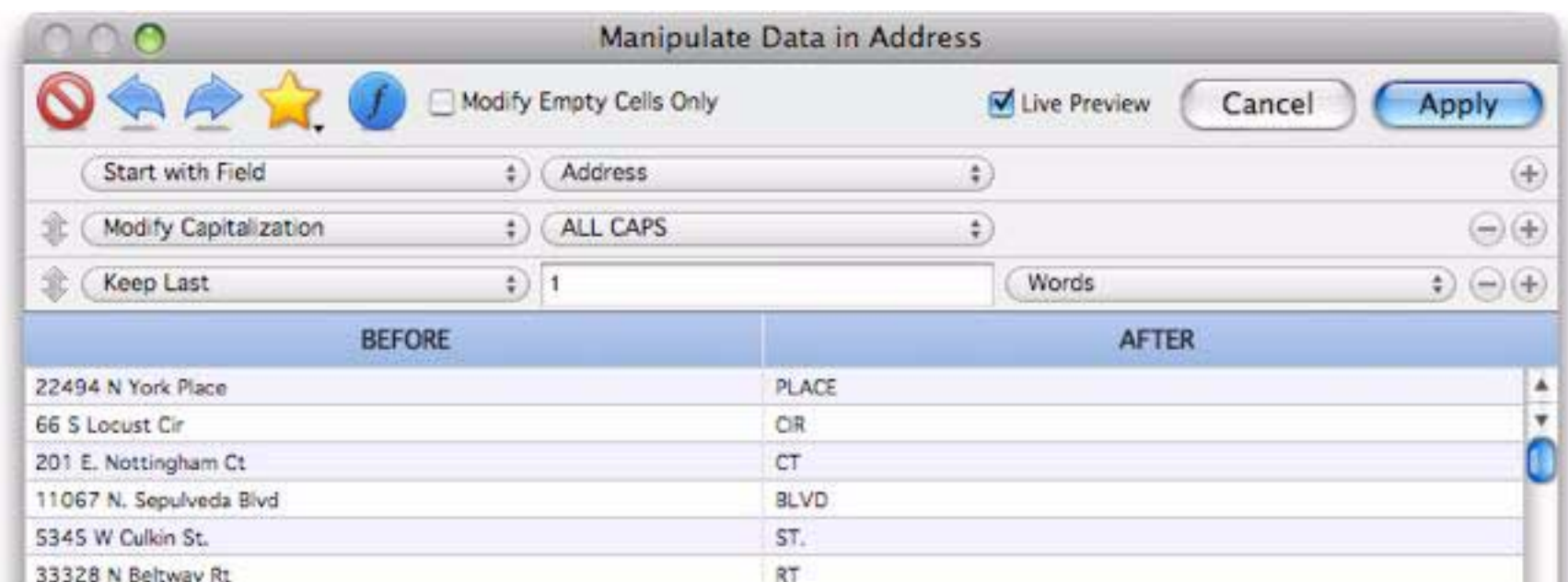
There are many standard manipulations you can choose from. Use the pop-up menu to pick the manipulation you want to use.



In most cases there will be one or two options you can specify to control the manipulation, either with a pop-up menu or by typing in an option.



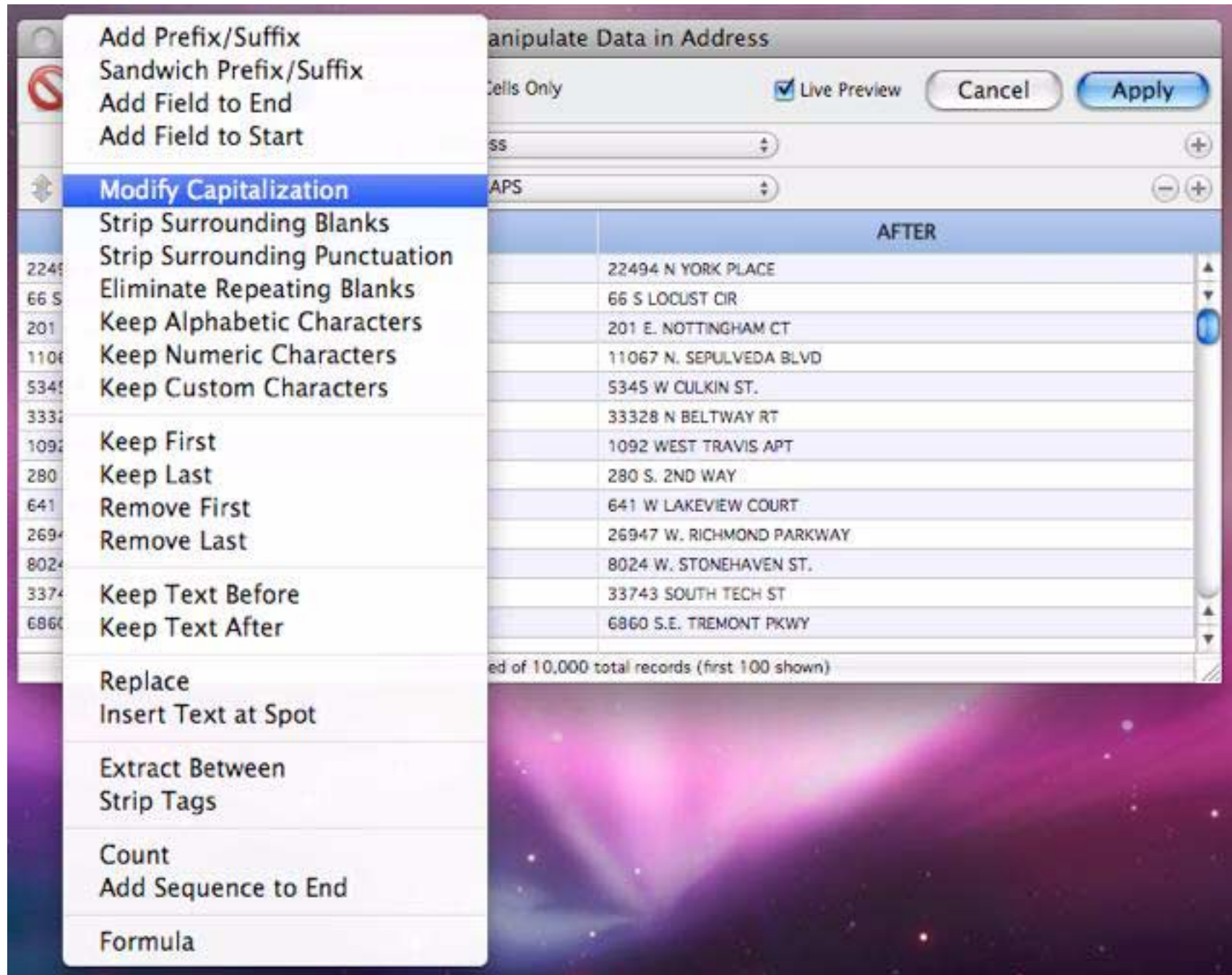
You can add up to seven manipulations, just keep pressing the + button.



When there are multiple manipulations they are performed in order from top to bottom. In some cases the order of the manipulations may be important. You can insert a new manipulation in any spot by pressing the appropriate + button, the new manipulation will be inserted just below the button you pressed. You can also re-arrange the order of the manipulations by dragging on the arrows on the left hand side. Keep your eye on the preview area to make sure that the manipulations are doing what you want them to.

Manipulating Text

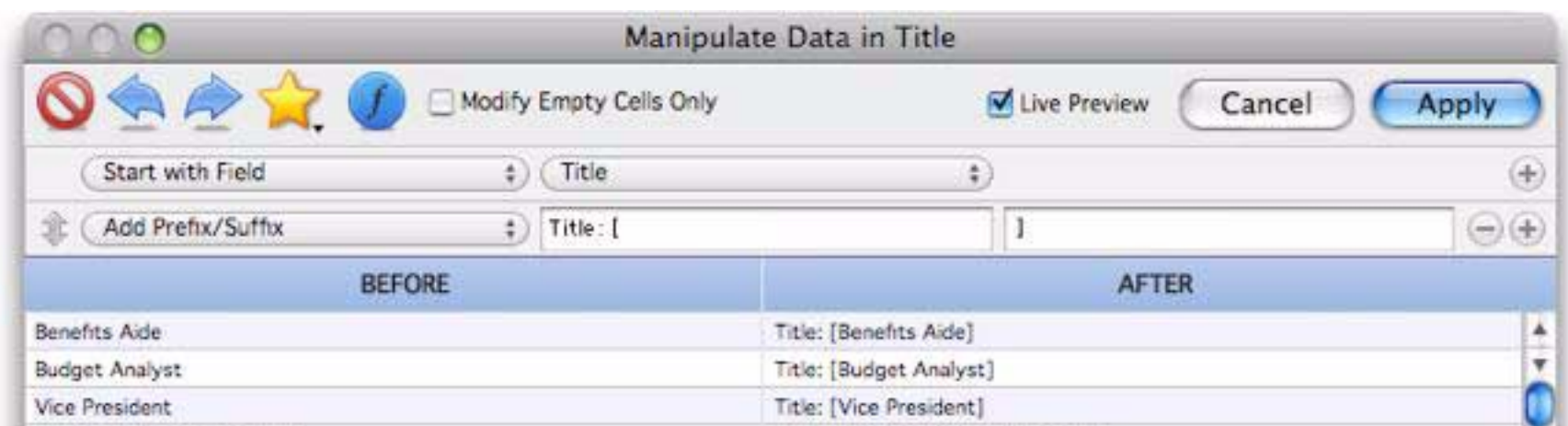
The types of manipulation you can perform varies depending on the type of data you are manipulating — text, numbers or dates. There are about two dozen different manipulations available for text.



The following sections discuss each of these manipulation options.

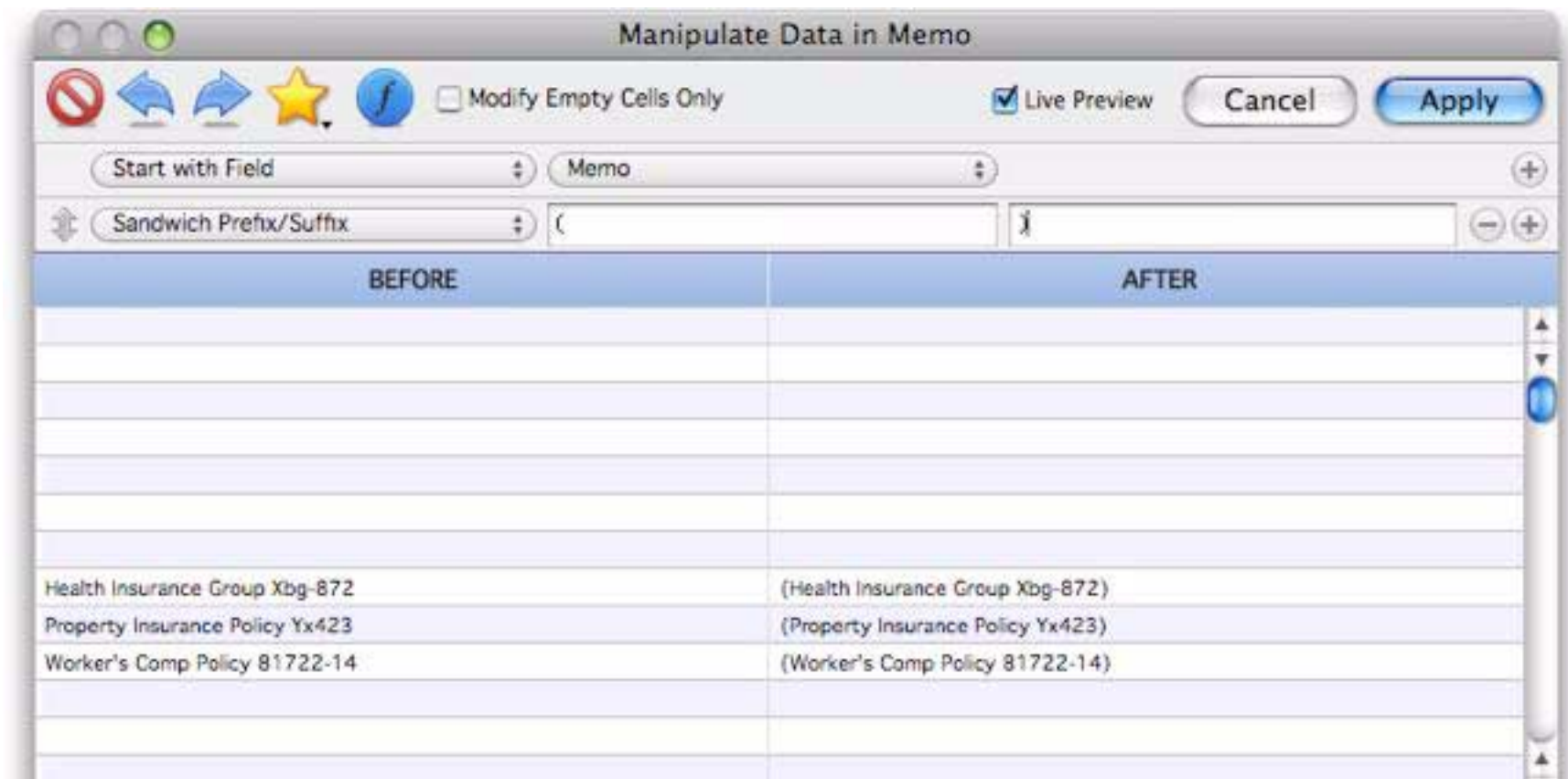
Add Prefix/Suffix

This option allows you to add a prefix to the beginning of the text, or a suffix on the end, or both (as shown below).



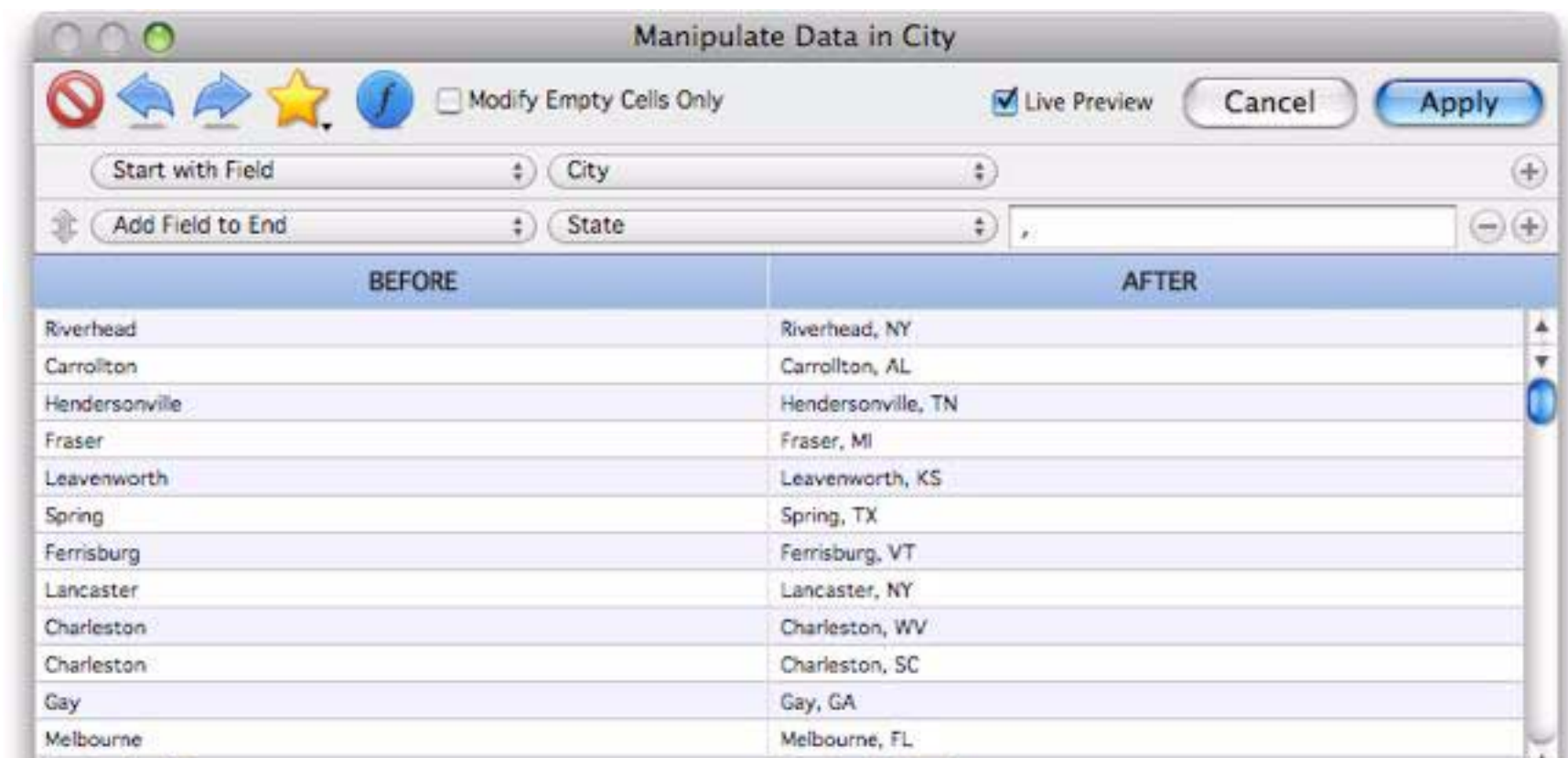
Sandwich Prefix/Suffix

This option also adds a prefix and/or a suffix. However, unlike the **Add Prefix/Suffix** option, when the “sandwich” option is used the prefix and/or suffix are only added if the source text is non-blank. In other words, if there is no “meat” then this sandwich doesn’t include any “bread” either.

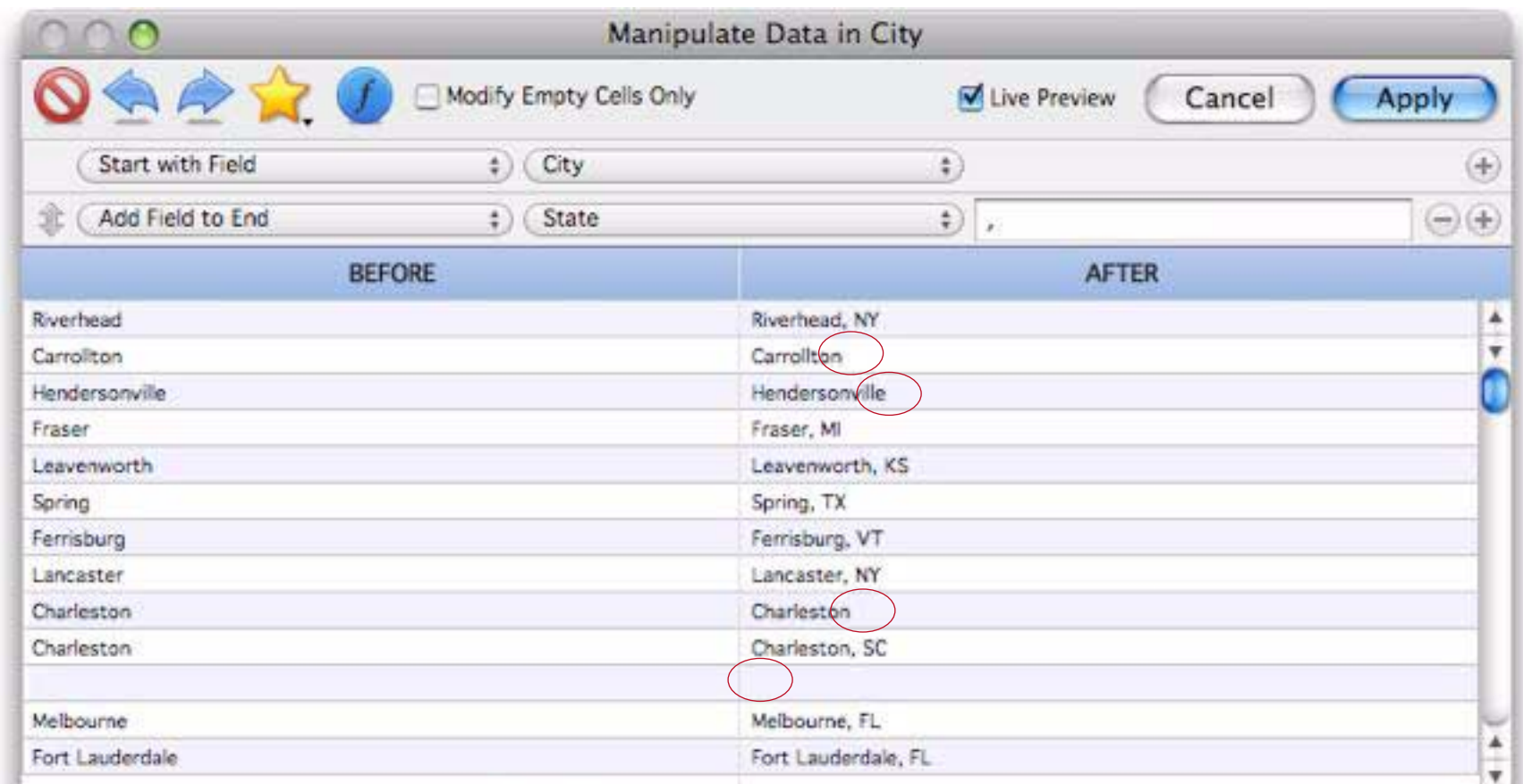


Add Field to End

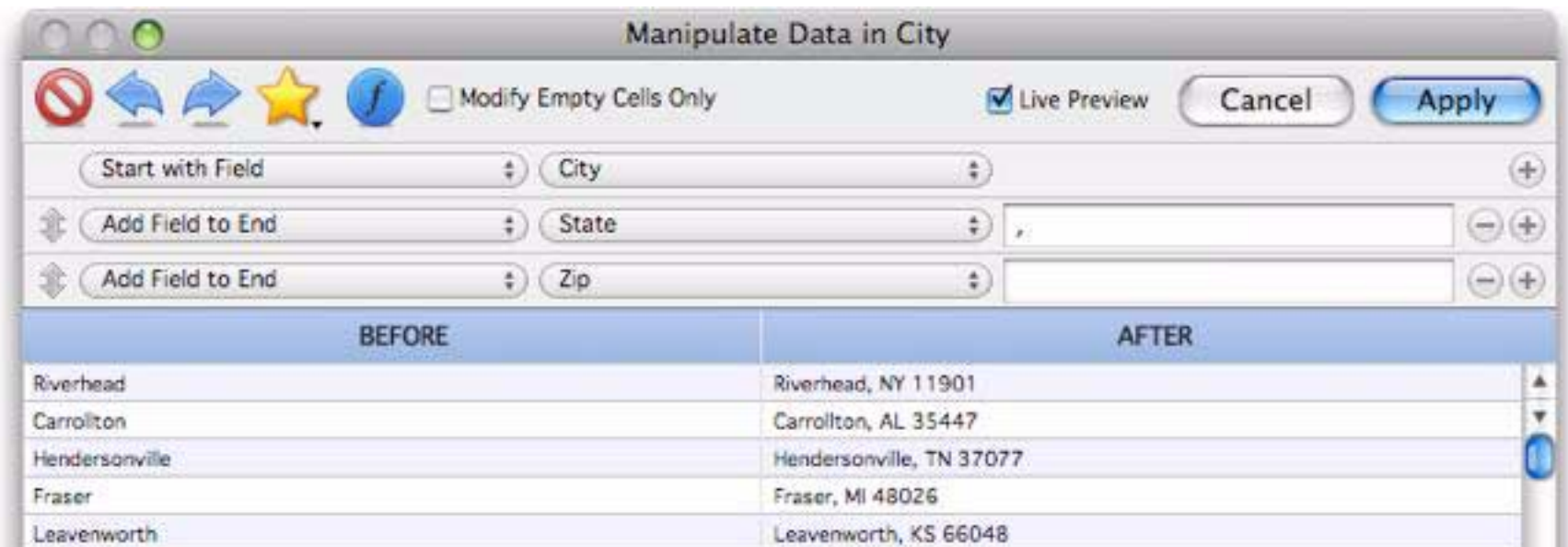
This option appends a database field to the end of the manipulated text. It also allows you to specify “connector” text between the existing text and the field being added (in the example below the connector text is a comma and a space).



Panorama is smart about adding the connector text -- the connector is only added if necessary. In the example below either the city or state is missing for some records. The connector is omitted in that case.

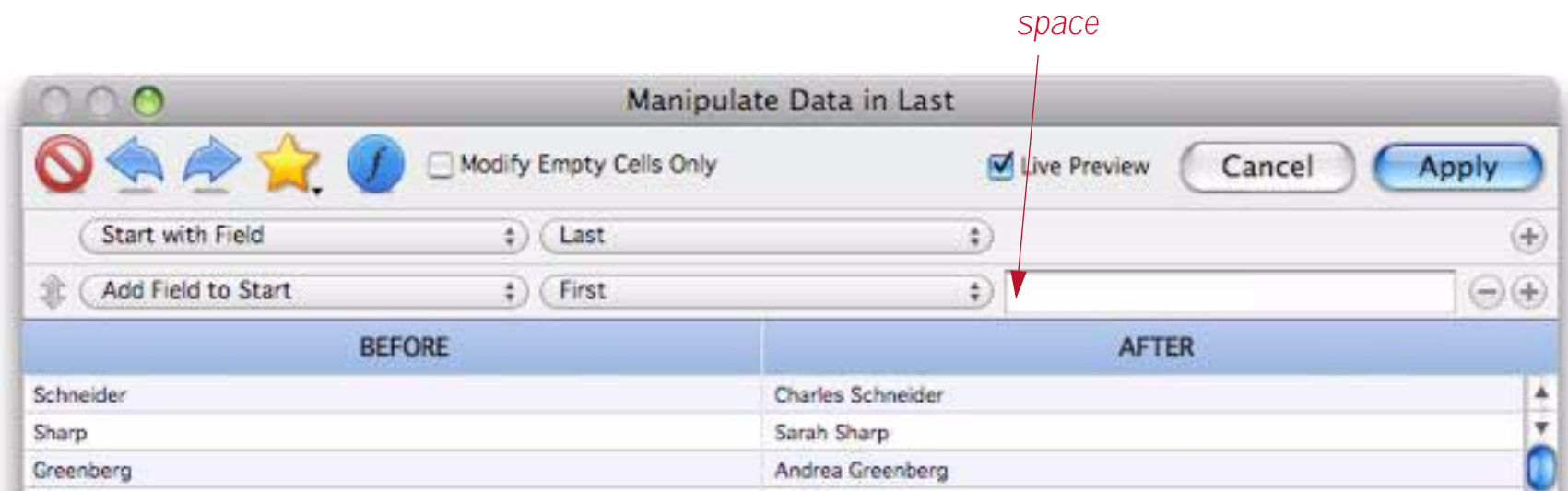


If necessary, you can append multiple fields, one after the next.



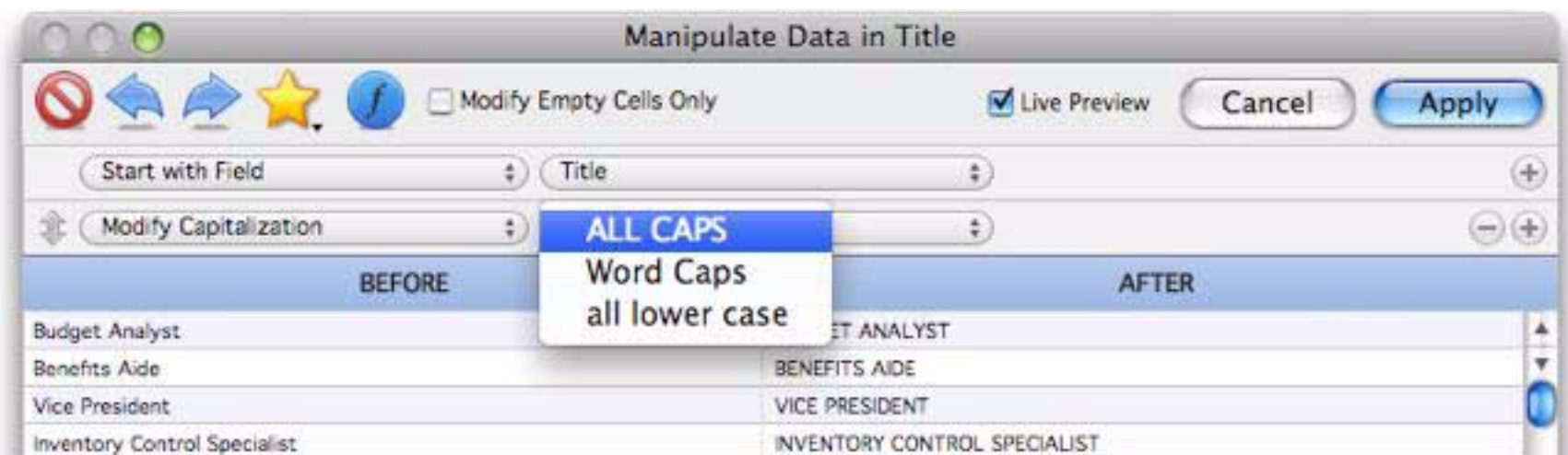
Add Field to Start

This option is just like **Add Field to End**, but the field is added at the beginning of the manipulated text. In the example below a space has been typed into the connector option.



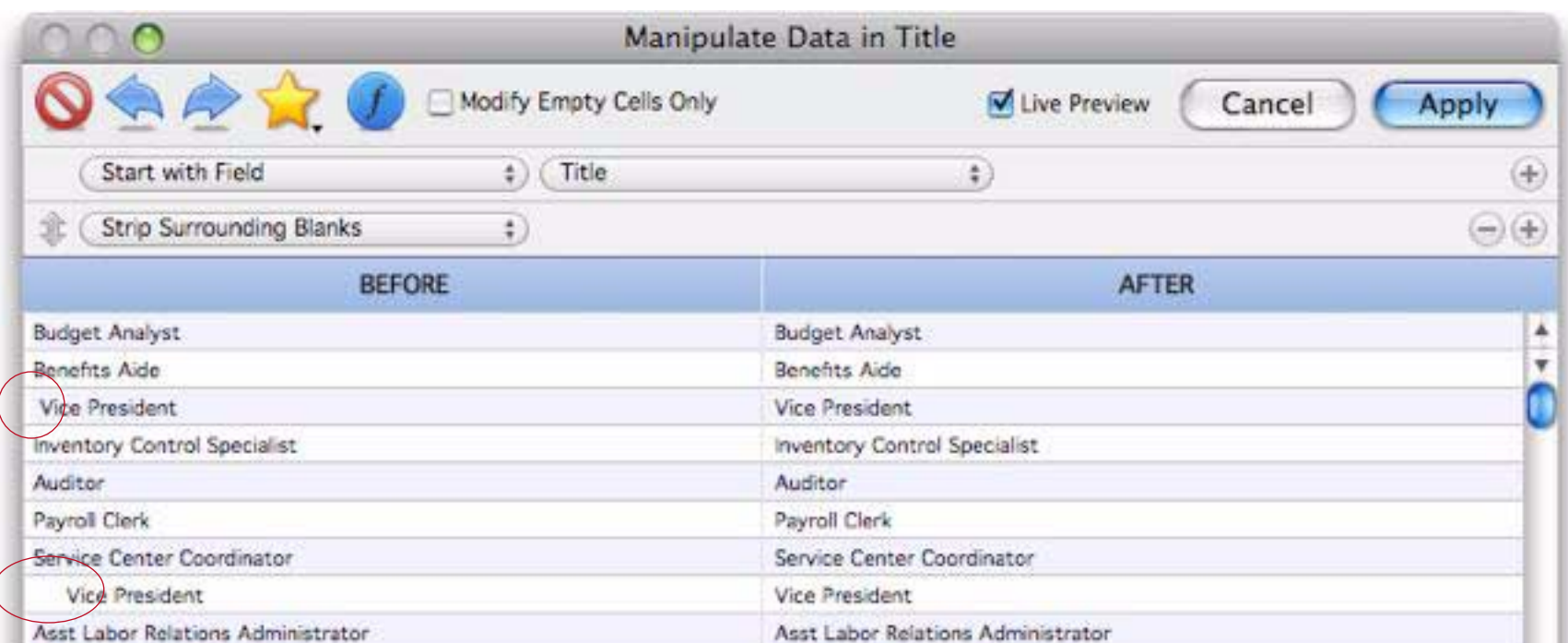
Modify Capitalization

This option changes the capitalization of the text. Use the pop-up menu to select all upper case, all lower case, or capitalization of the first letter of each word.



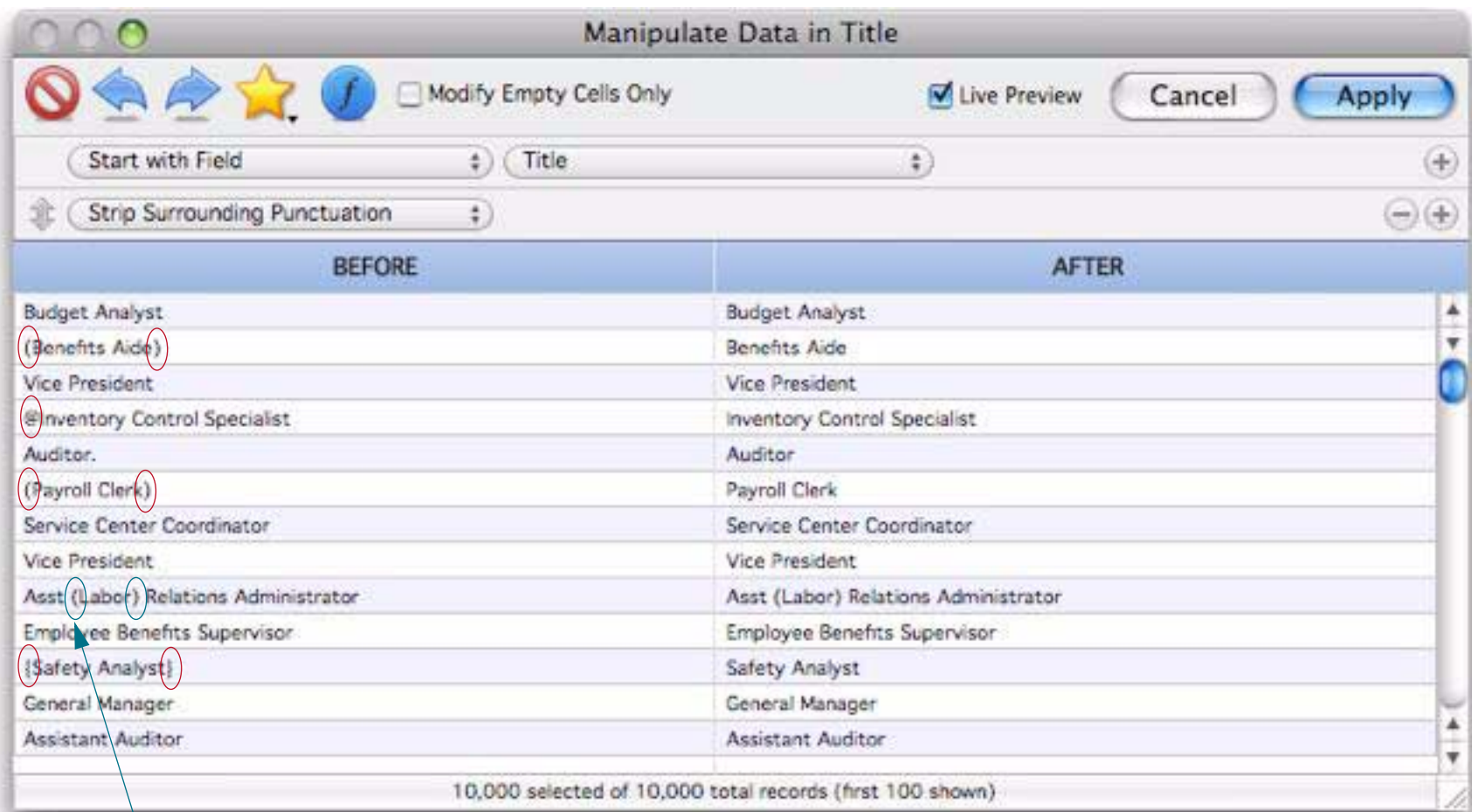
Strip Surrounding Blanks

This option strips off any extra blanks at the beginning or end of the text.



Strip Surrounding Punctuation

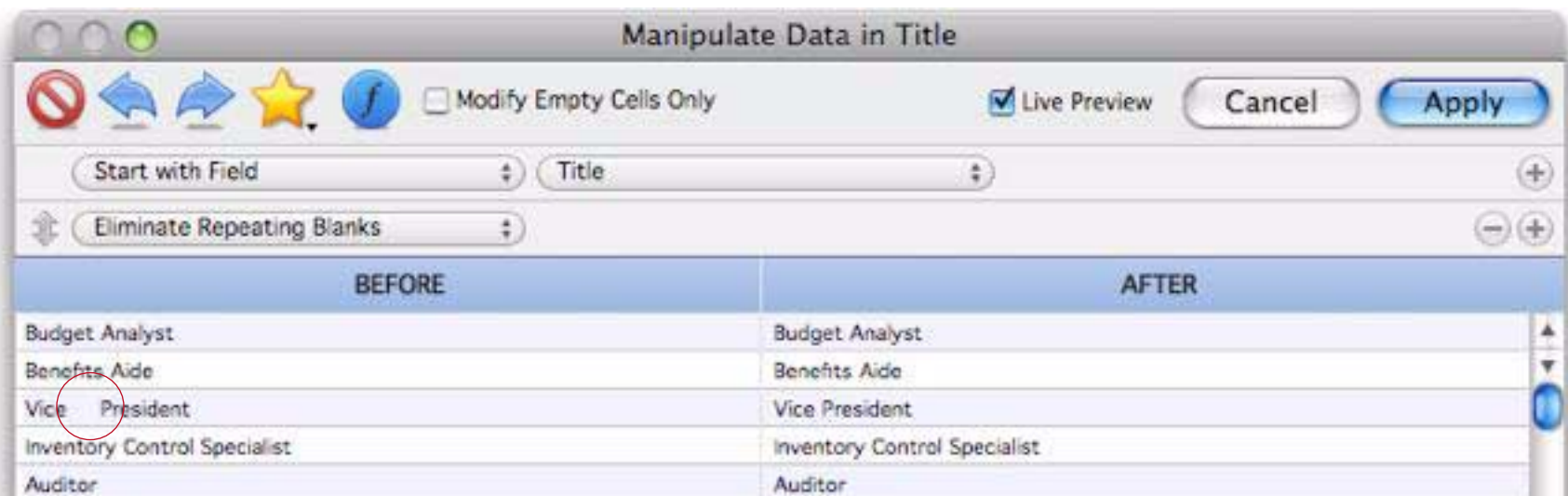
This option strips off any punctuation at the beginning or end of the data. (Punctuation in the middle of the data is left intact.) Punctuation is defined as any non-alphanumeric character, so this can be used to strip off extra parentheses, braces, periods, question marks, spaces etc.



punctuation in the middle is left intact

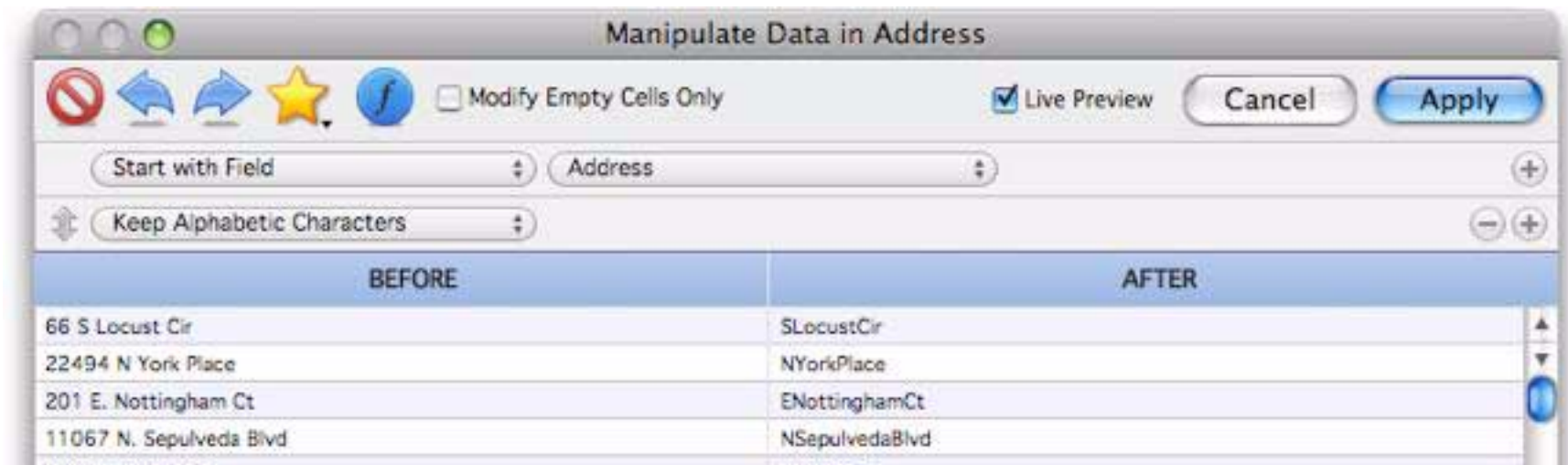
Eliminate Repeating Blanks

This option converts strings of two or more spaces in a row into single spaces.



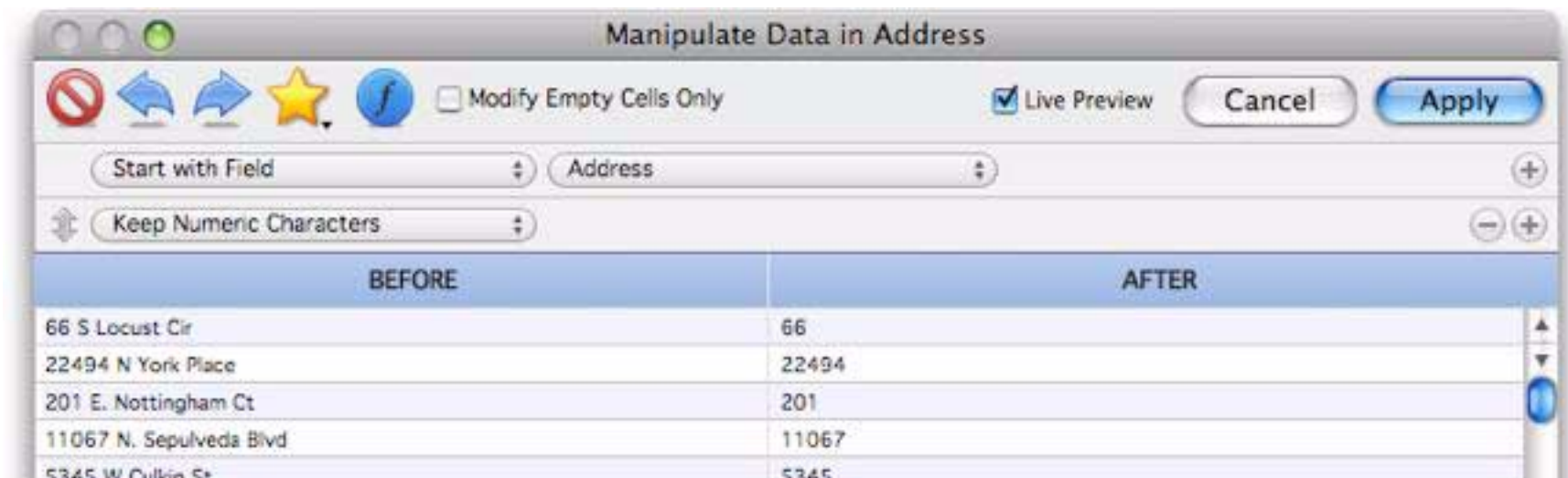
Keep Alphabetic Characters

This option strips out all non-alphabetic characters. In other words, anything other than A to Z and a to z will be stripped from the text.



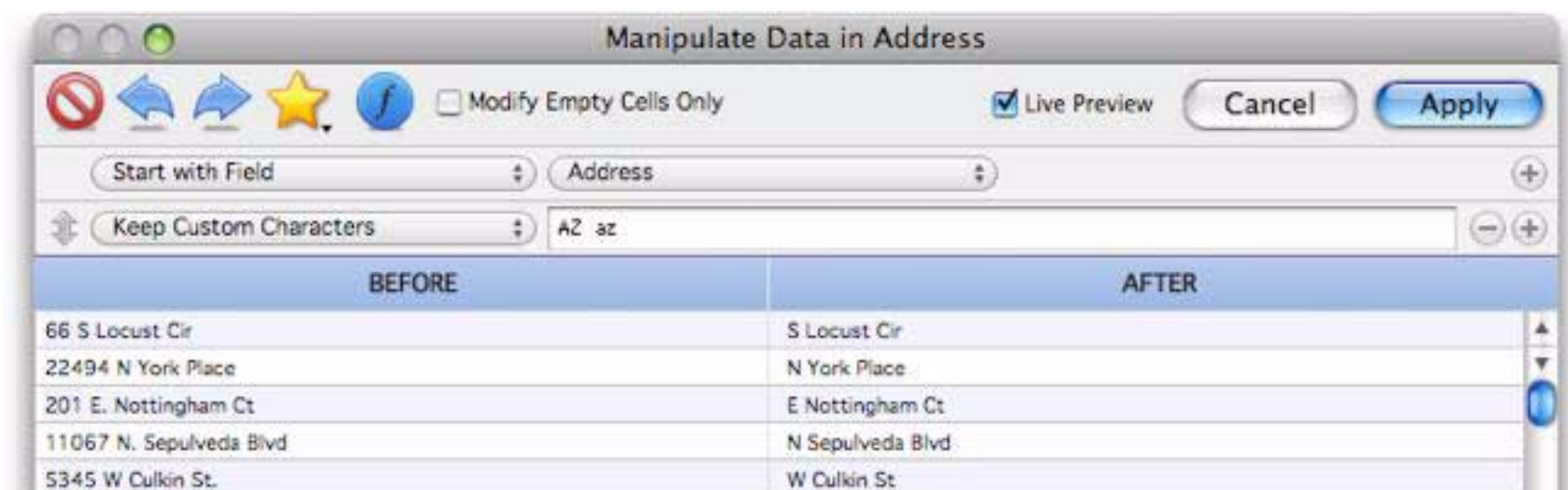
Keep Numeric Characters

This option strips out all non-numeric characters. In other words, anything other than 0 to 9 will be stripped from the text.



Keep Custom Characters

This option is more flexible than the previous two, but also a bit more complicated. It allows you to specify exactly what characters to keep and what to strip out. The characters to keep are specified as a series of character pairs. The example below includes three pairs: AZ (A to Z), space-space (space) and az (a to z). The result is that all characters except for letters and spaces are stripped.



Here are some common pairs:

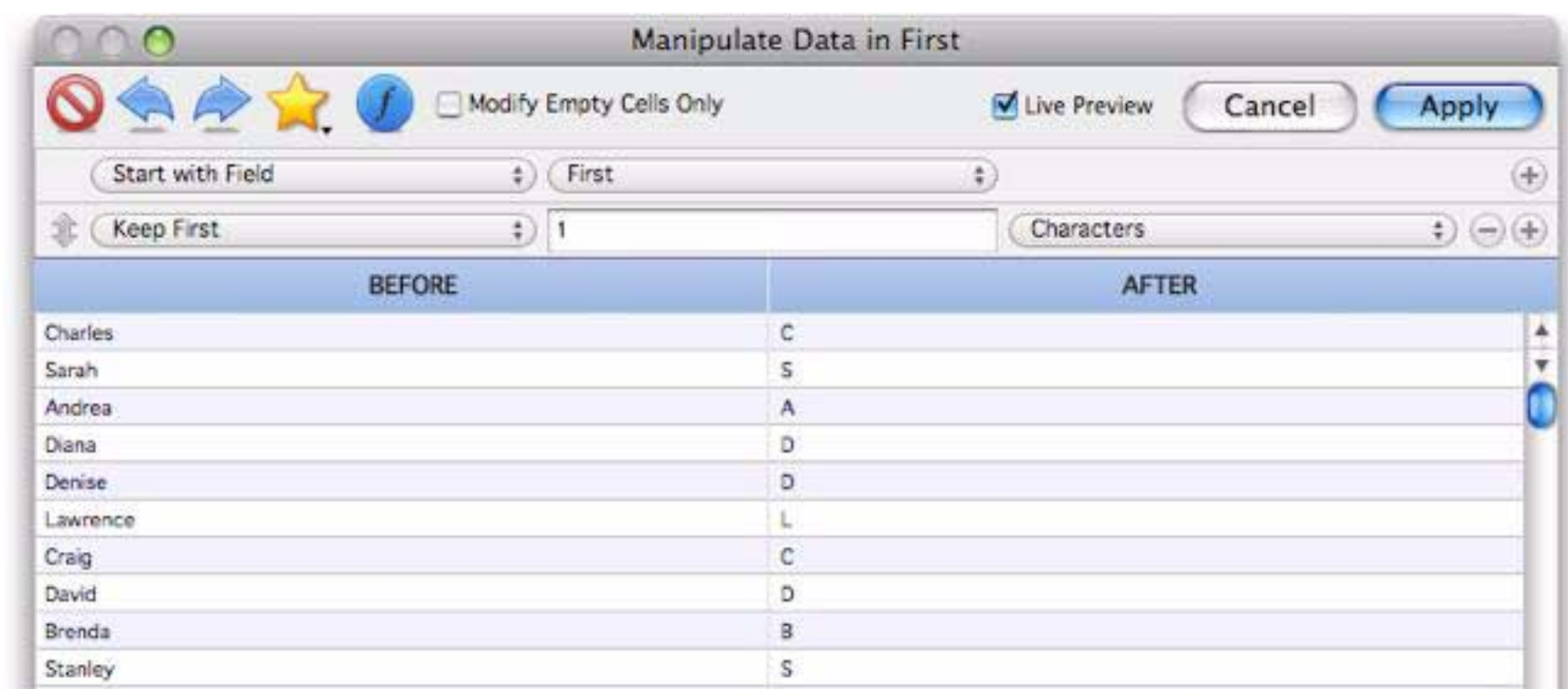
Pair	Description
AZ	Upper case characters
az	Lower case characters
09	Numeric digits
Äü	International characters
()	Parentheses
!~	All non-blank characters

If you want to include a single character rather than a range, simply include that character twice to make a pair. For example to allow semicolons use ;;, to allow exclamation points use !!. You can use as many pairs as you need, but make sure there is no punctuation or spaces between the pairs (of course punctuation and spaces can be used as part of a pair). Here are some typical custom character specifications you might want to use.

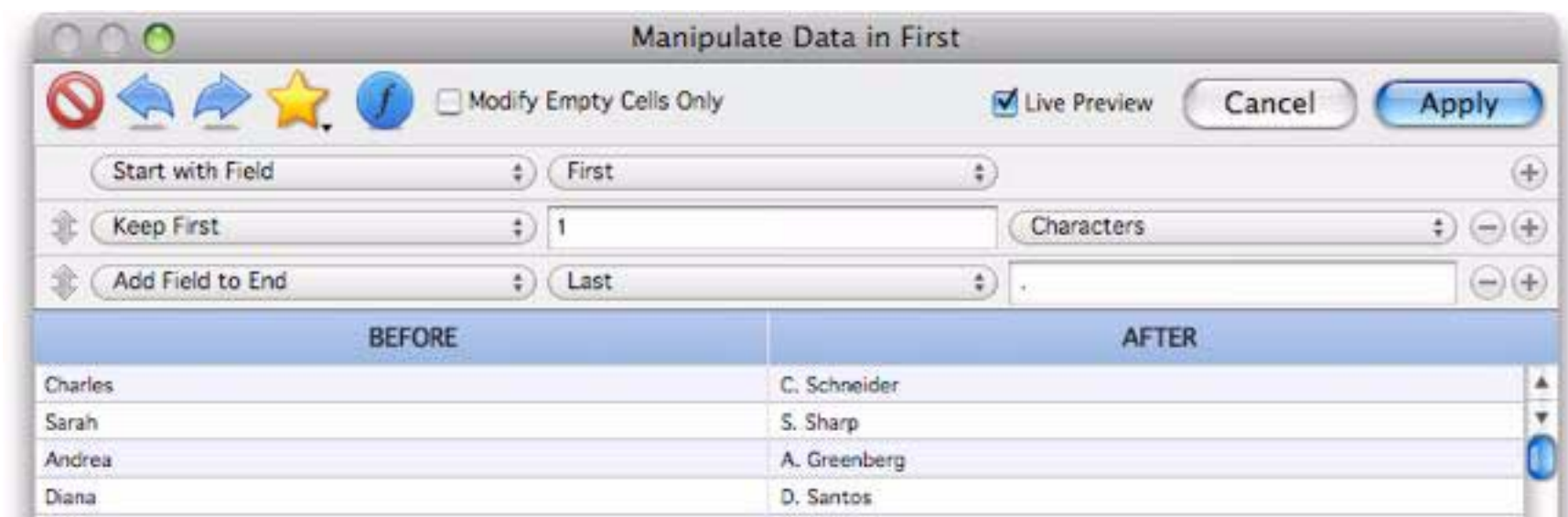
Spec	Description
AZaz	Alphabetic
AZ az	Letters & spaces
AZaz09	Alphanumeric
09()--	Phone numbers
09..+---	Positive or negative numbers
09//	Dates (mm/dd/yy)
09::AAaaMMmmPPpp	Times
\$\$09..--	Money (US)

Keep First

This option keeps the first few letters, words or lines of the data, removing the rest. For example, you could use this to convert a name into an initial.



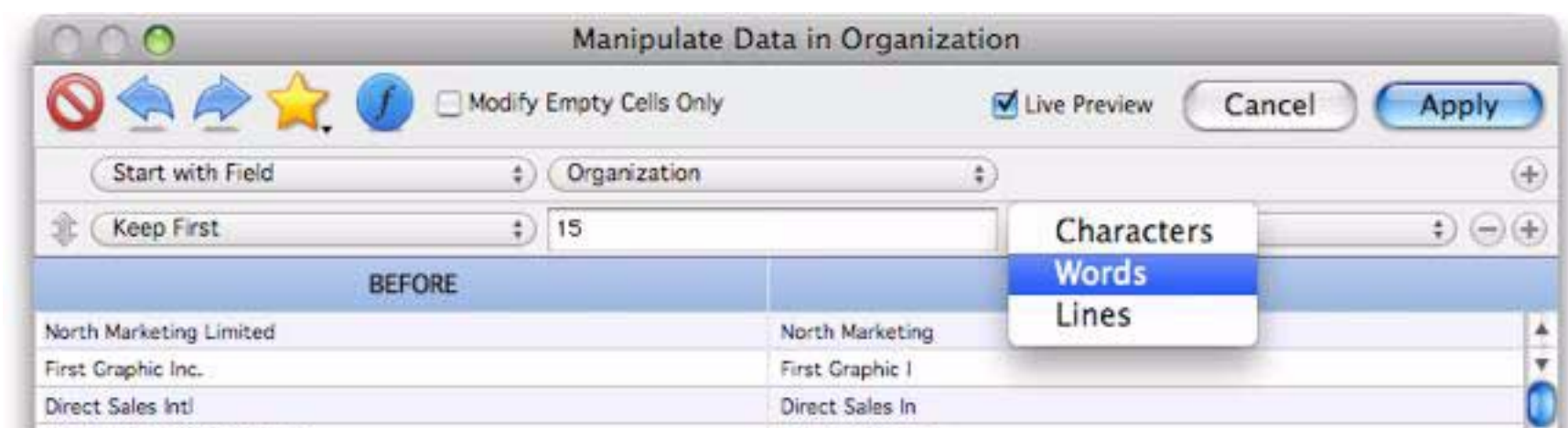
This might not seem that useful, but remember that you can combine multiple manipulations. Here I've added a second step that gives us the first initial and last name.



I can edit the number of characters, in this example keeping the first 15 characters of the organization name.

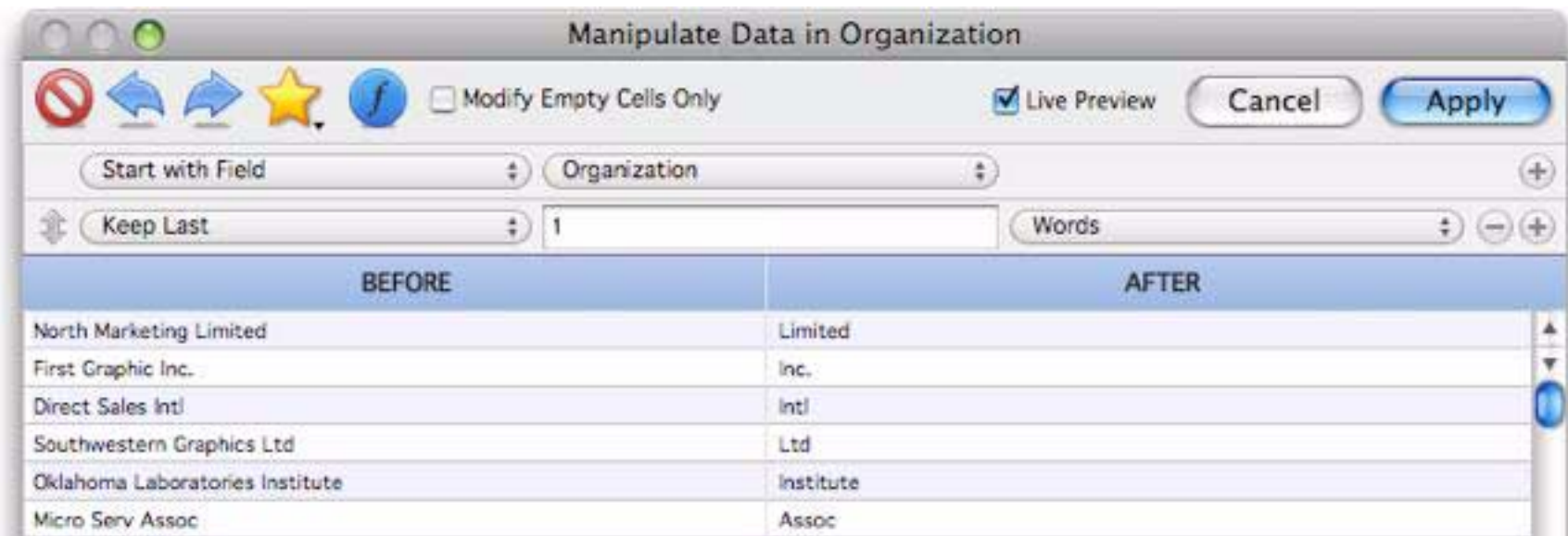


The pop-up menu allows you to pick whether you want to keep text by character, by word or by line.



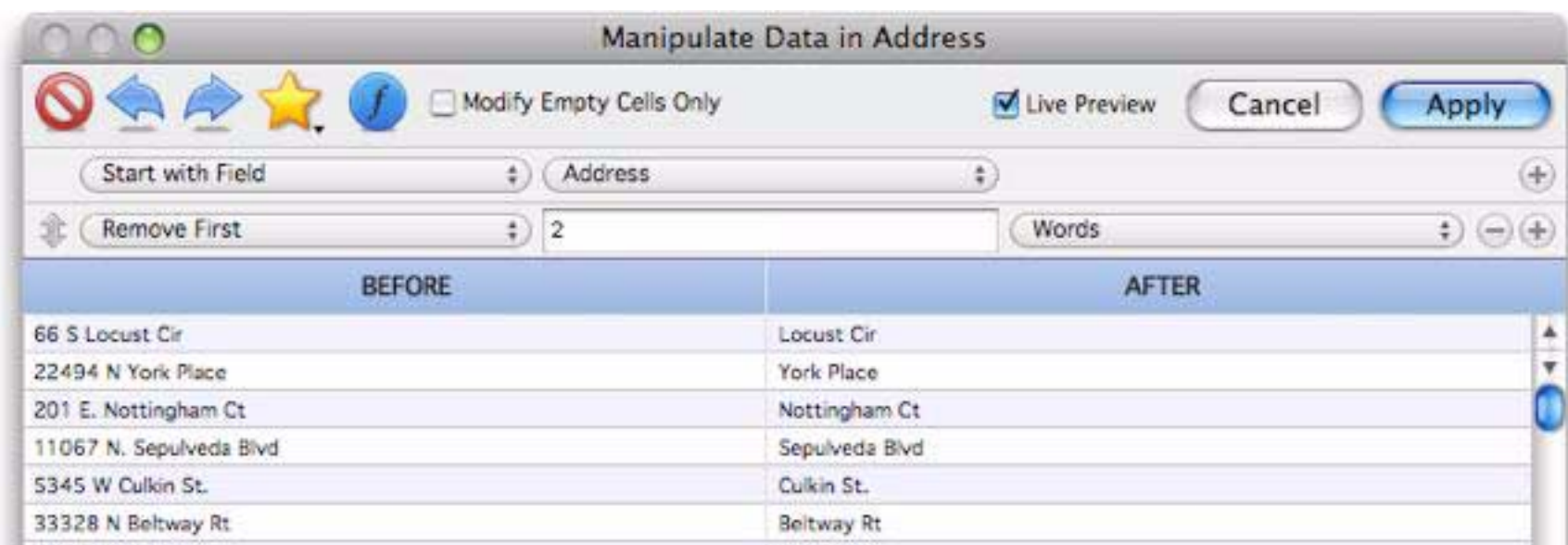
Keep Last

This option is similar to **Keep First**, but keeps characters, words or lines at the end of the data. In this example this option has been used to extract the last word from the organization name.



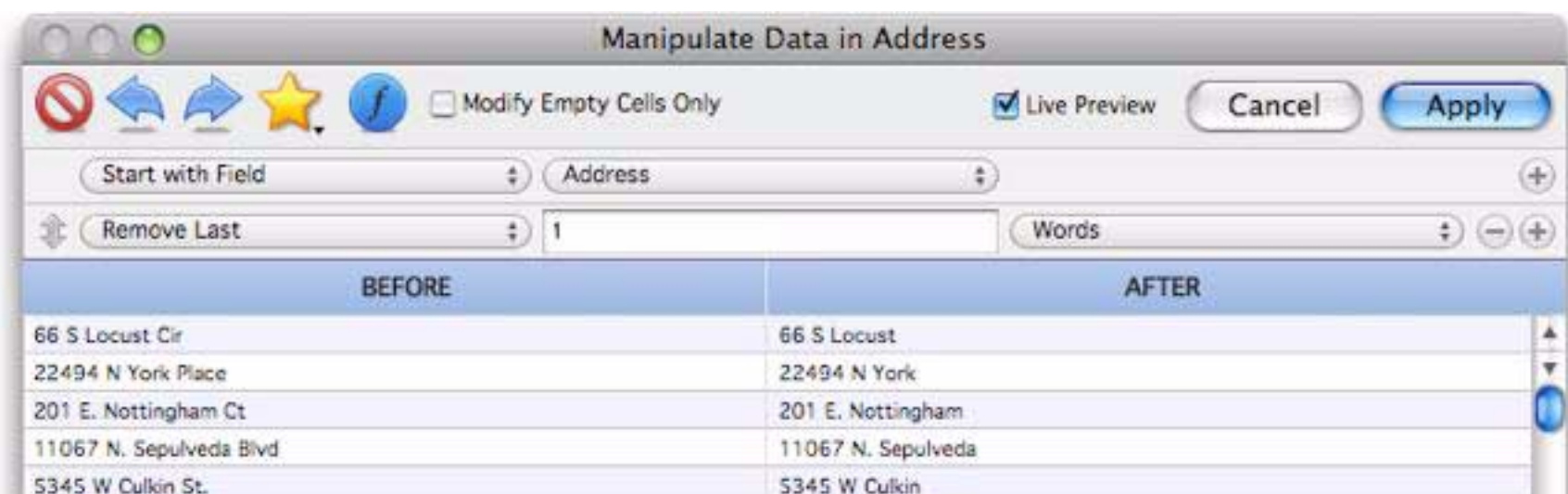
Remove First

This option removes characters, words or lines from the beginning of the text. In this example the first two words (number and direction) have been removed from the address, leaving only the street name.



Remove Last

This option removes characters, words or lines from the end of the text. In this example the last word (Ave, Place, Blvd, St. etc.) has been removed from the address.

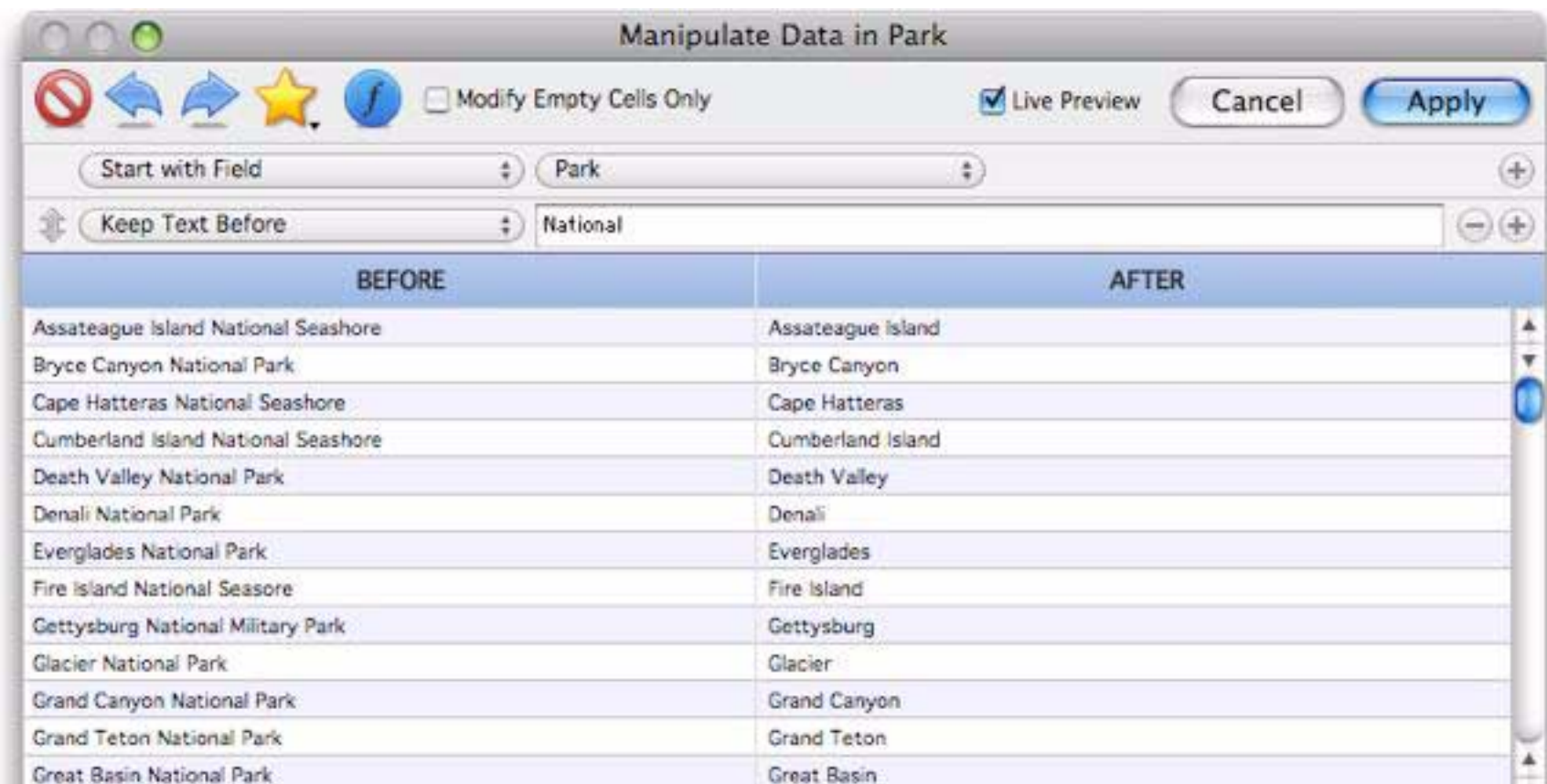


Keep Text Before

This option keeps the text before the specified matching text, discarding whatever is after. In this example only text before the comma is kept.

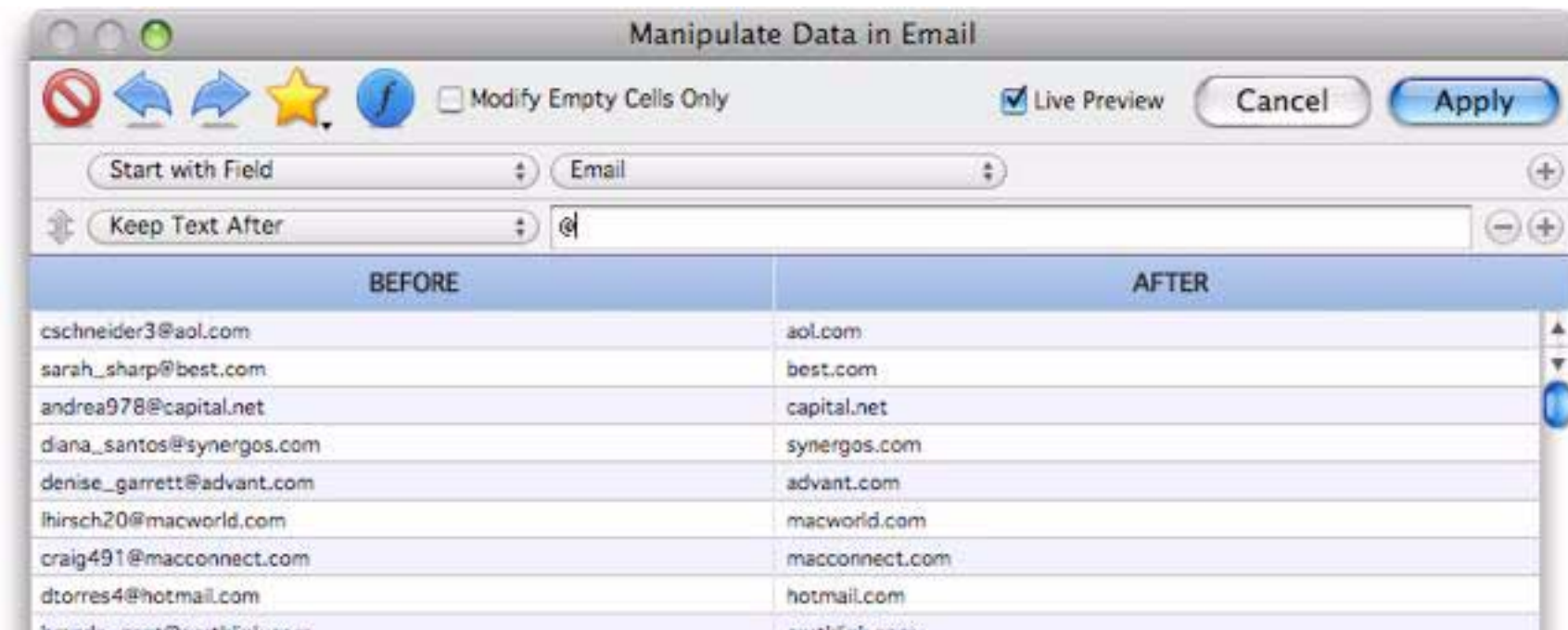


The matching text can be more than one character long, as shown here.

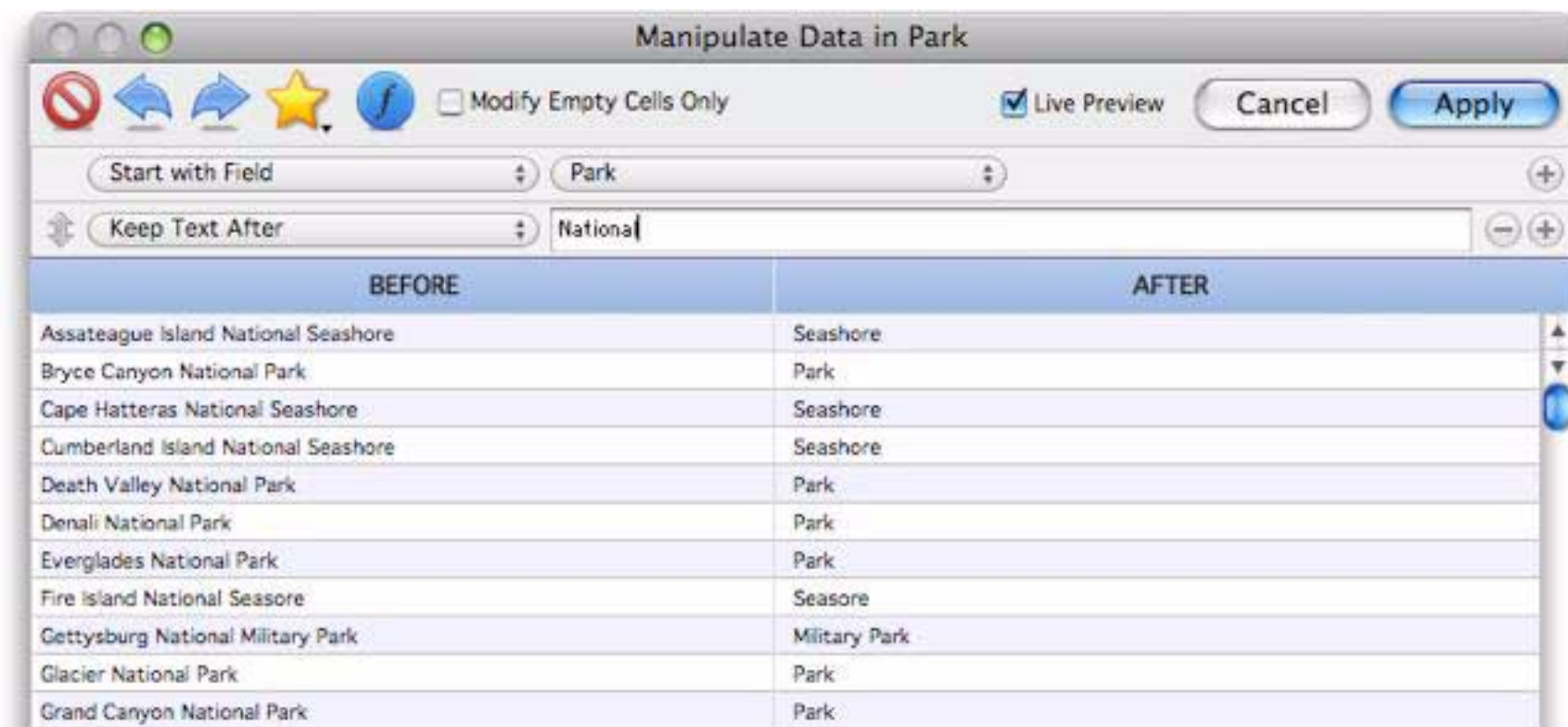


Keep Text After

This option keeps the text after the specified matching text, discarding whatever is after. In this example we're keeping the ISP name, while discarding the user name.

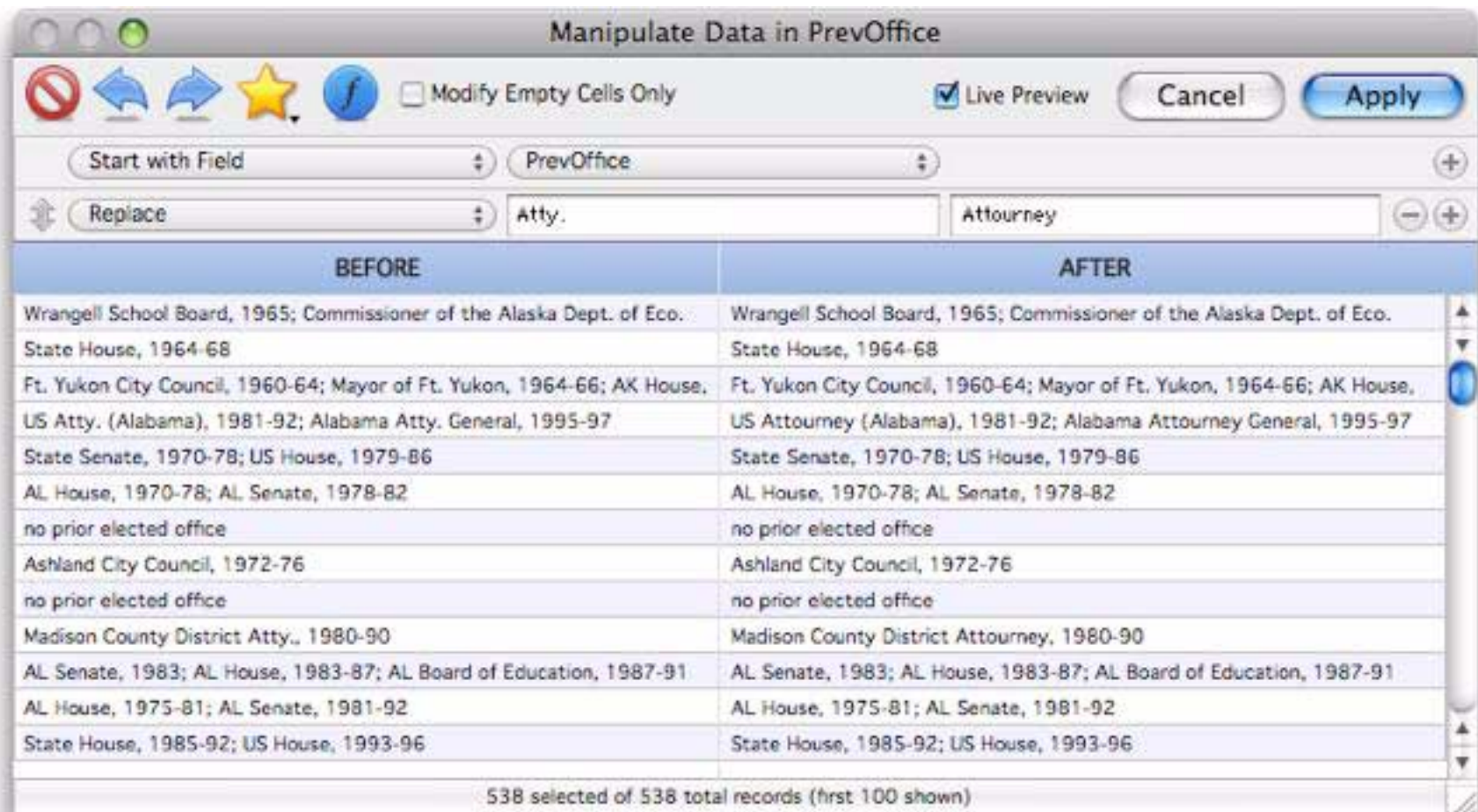


The matching text can be more than one character long, as shown here.



Replace

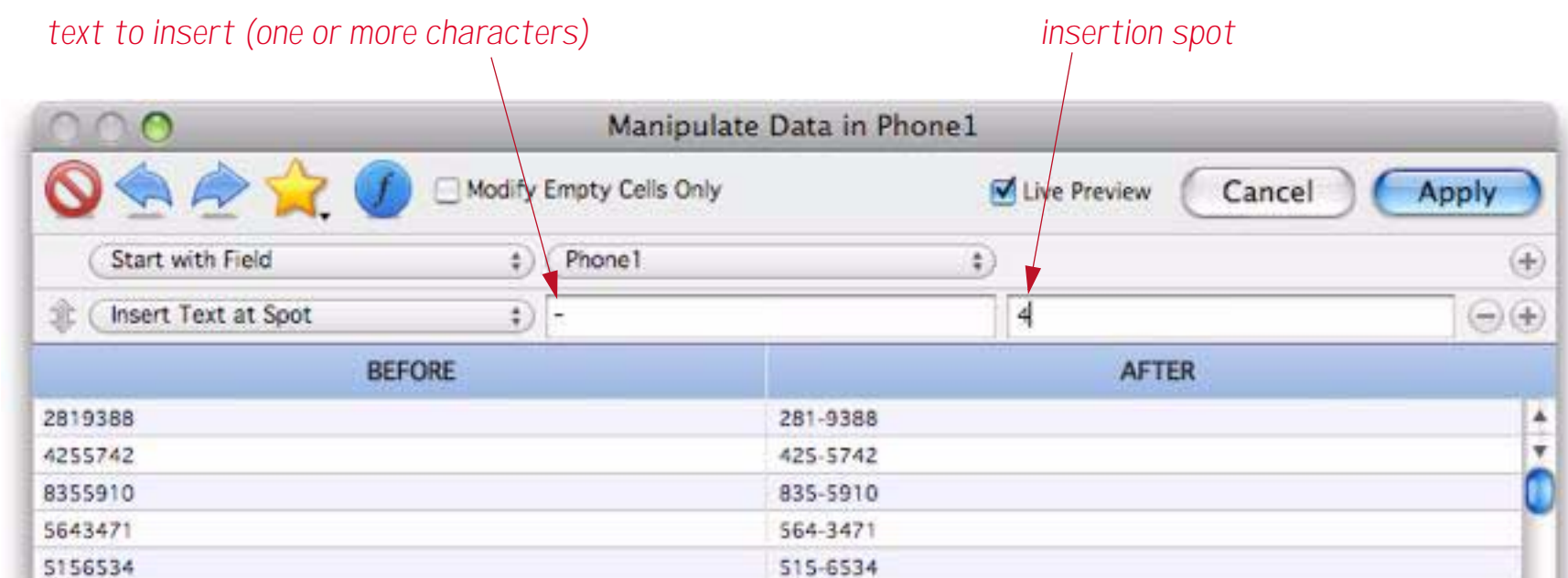
This option replaces a sequence of characters with another sequence of characters.



The original sequence of characters must match exactly, including upper and lower case. In the example above it means that only **Atty.** will be replaced, not **atty.** or **ATTY.** For more flexibility in replacing text see “[Change \(Find and Replace\)](#)” on page 472.

Insert Text at Spot

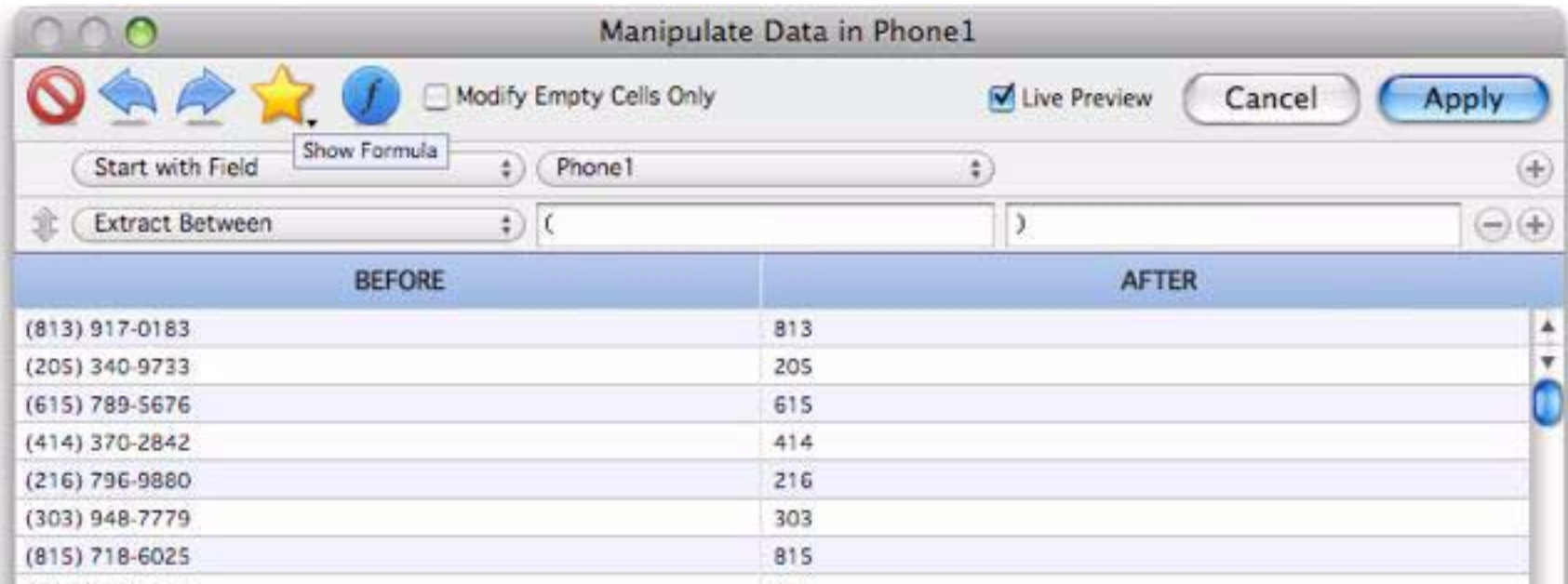
This option inserts one or more characters at a specified spot within the text. In this example we’re inserting a dash before the 4th character of the phone number.



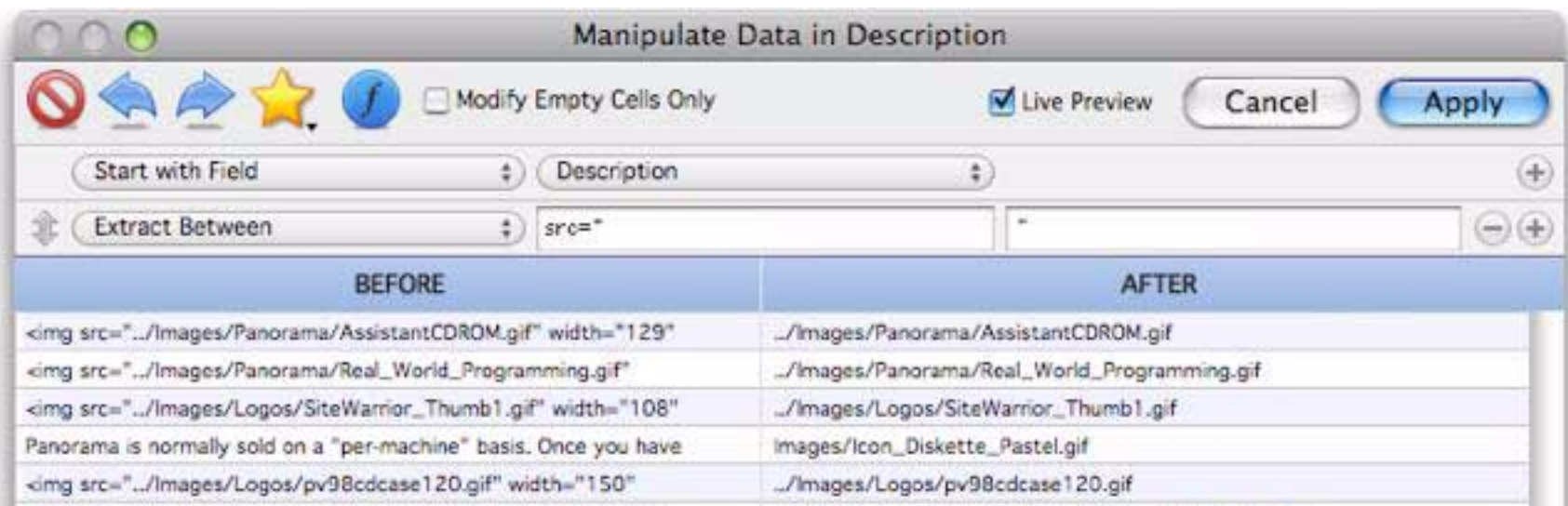
If the insertion spot is a negative number it is relative to the end of the text instead of the beginning.

Extract Between

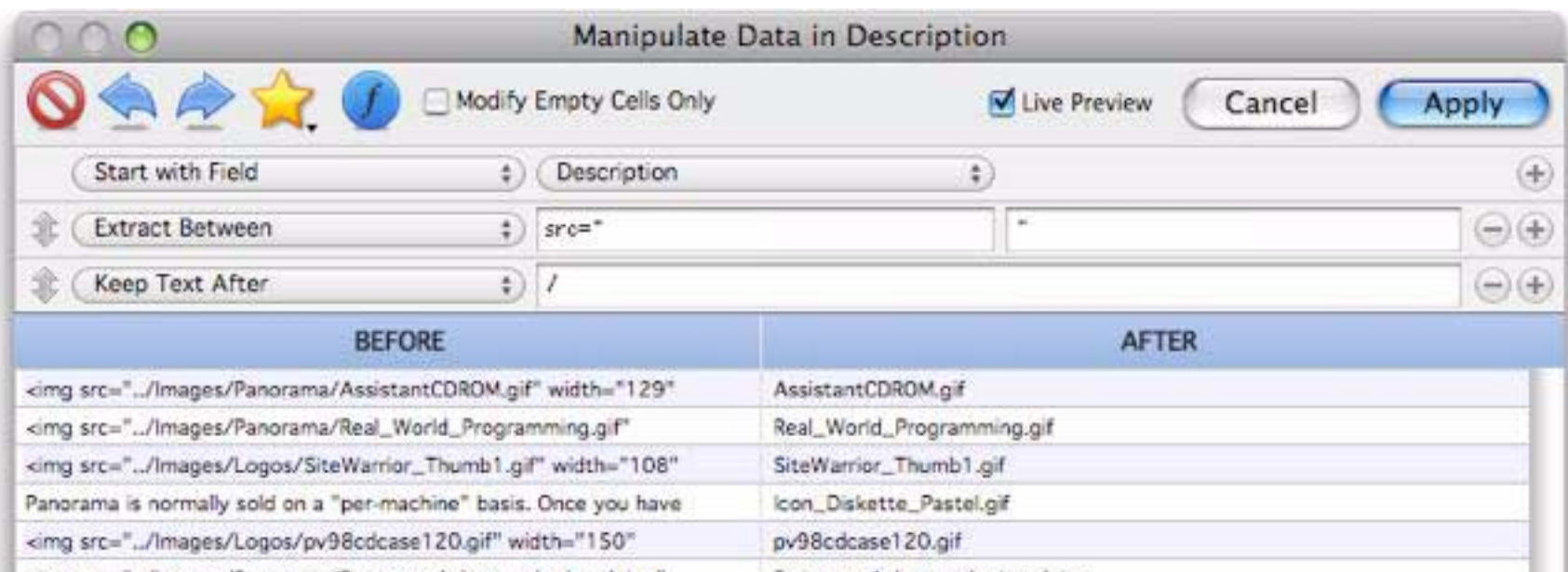
This option is like a combination of Keep After and Keep Before. It returns text that is after the first matching string and before the second matching string. In this example it is extracting the area code phone numbers.



The matching strings can be more than one character. This example extracts the name of the first image referenced in the text (in this case the text contains HTML markup).

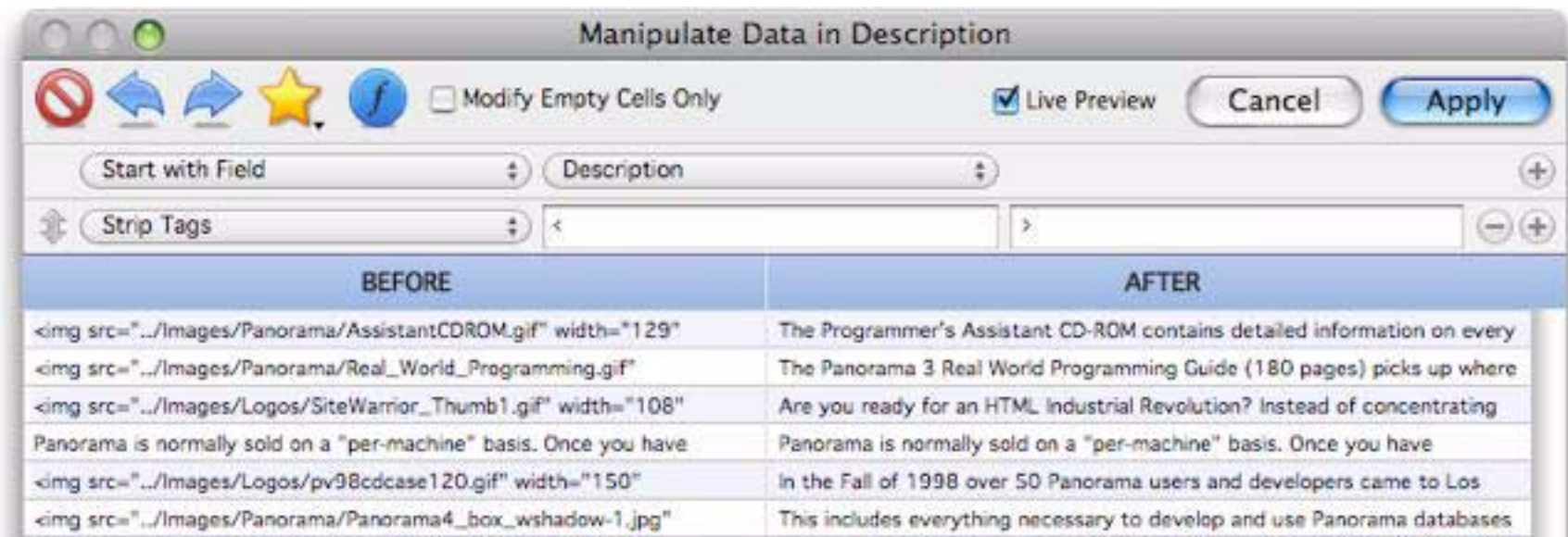


With one additional step I can extract just the name of the image, without the folder.

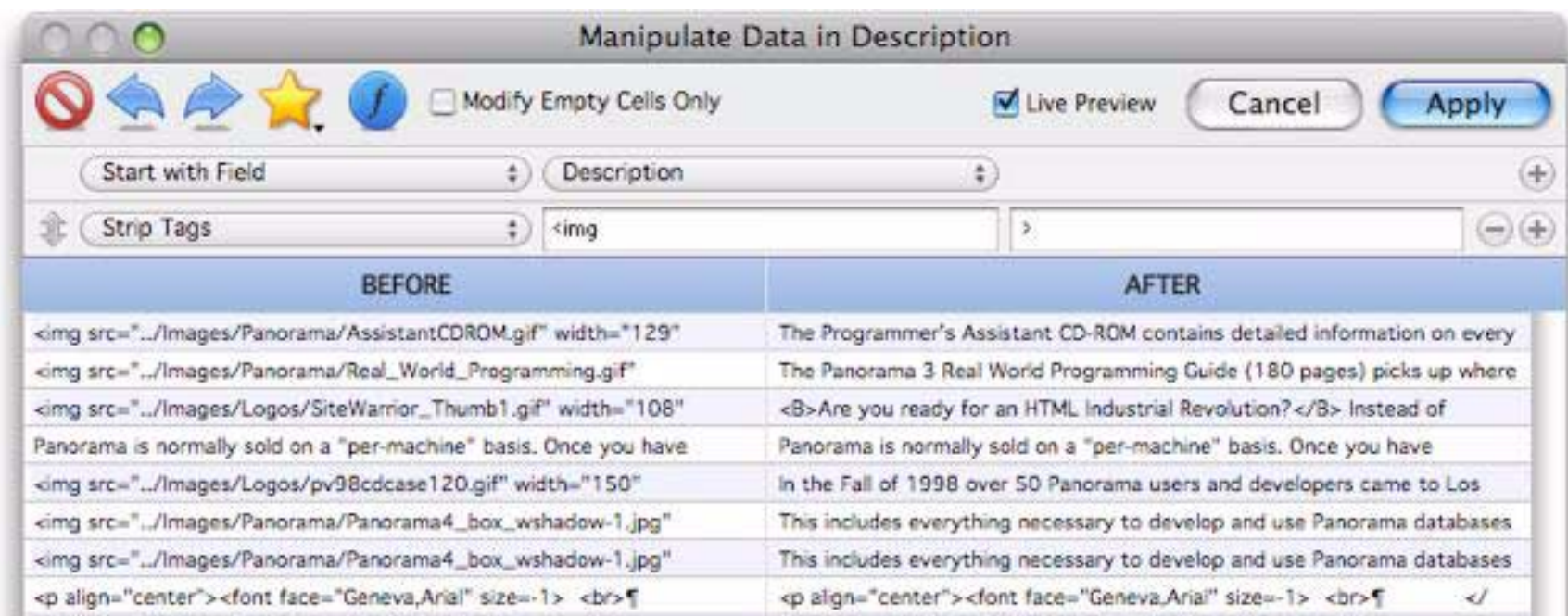


Strip Tags

This option strips out all text that appears between beginning and end tags. If the tags are < and >, this option will strip out all HTML markup from the specified text, leaving just the text itself.

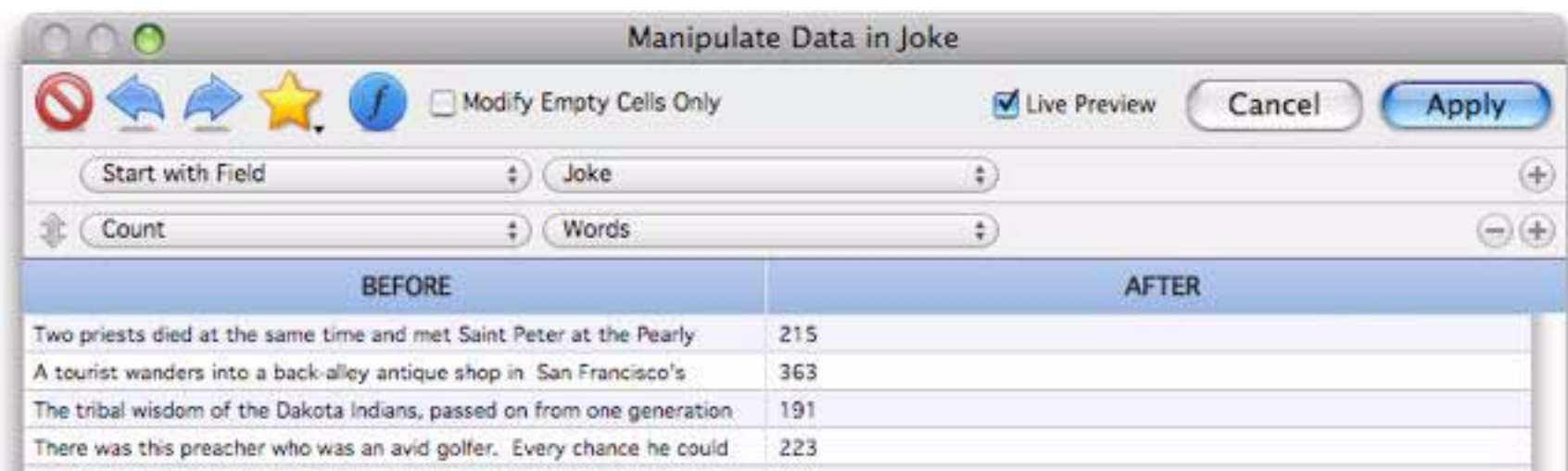


The tags don't have to be single characters. In this example only image tags are stripped out — all other HTML tags will be left in the text.



Count

This option counts the number of characters, words or lines in the text. (If you use the lines option, Panorama is actually counting the number of carriage returns in the text.)



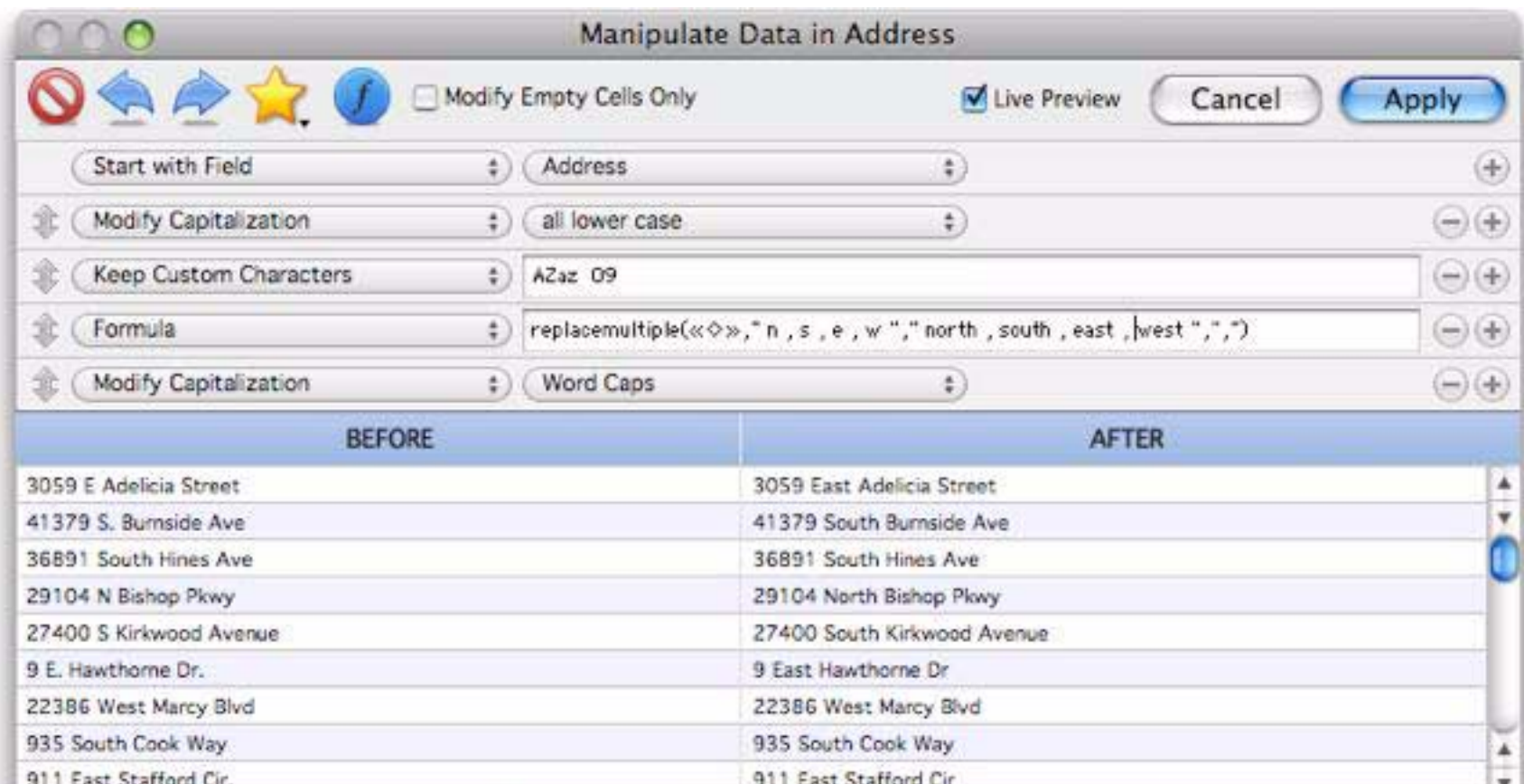
Add Sequence to End

This option adds a numeric sequence to the end of the text. You can specify the starting number and the amount to increase or decrease for each record.



Formula

If none of the option so far will do the job then it's time to pull out the big gun — a formula. You can use a formula all on its own (see “[Starting with a Formula](#)” on page 439) but you can also use a formula in combination with other manipulations. When used this way, the « \diamond » symbol will expand into the text produced by the previous manipulations. Then the result of the formula will be fed into any additional manipulations below it. This example expands the abbreviations for North, South, East and West in an address.



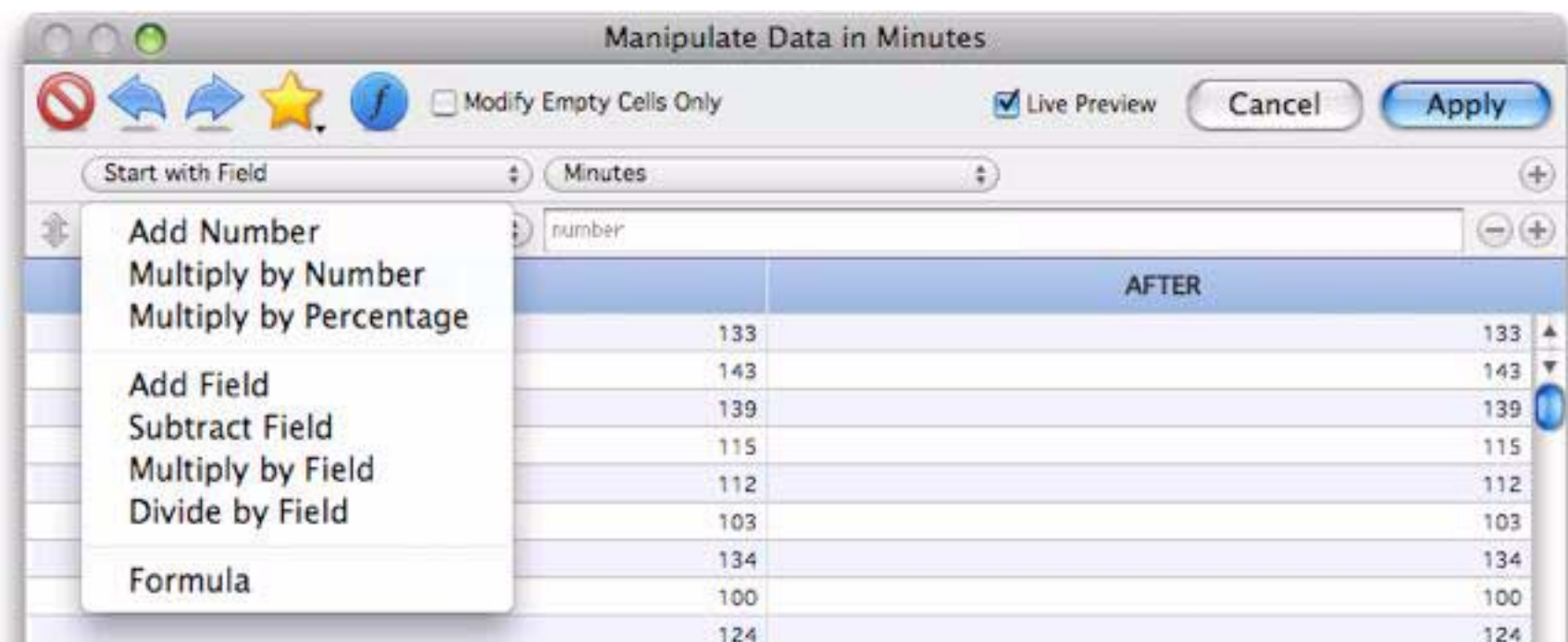
The « \diamond » symbol can be used more than once in the formula. This formula checks to see if the text contains a comma, and if so, swaps it.



As you can see, formulas are very powerful, but there's also a lot to learn. To find out more about the details, see "[Formulas](#)" on page 19 of *Formulas & Programming*.

Manipulating Numbers

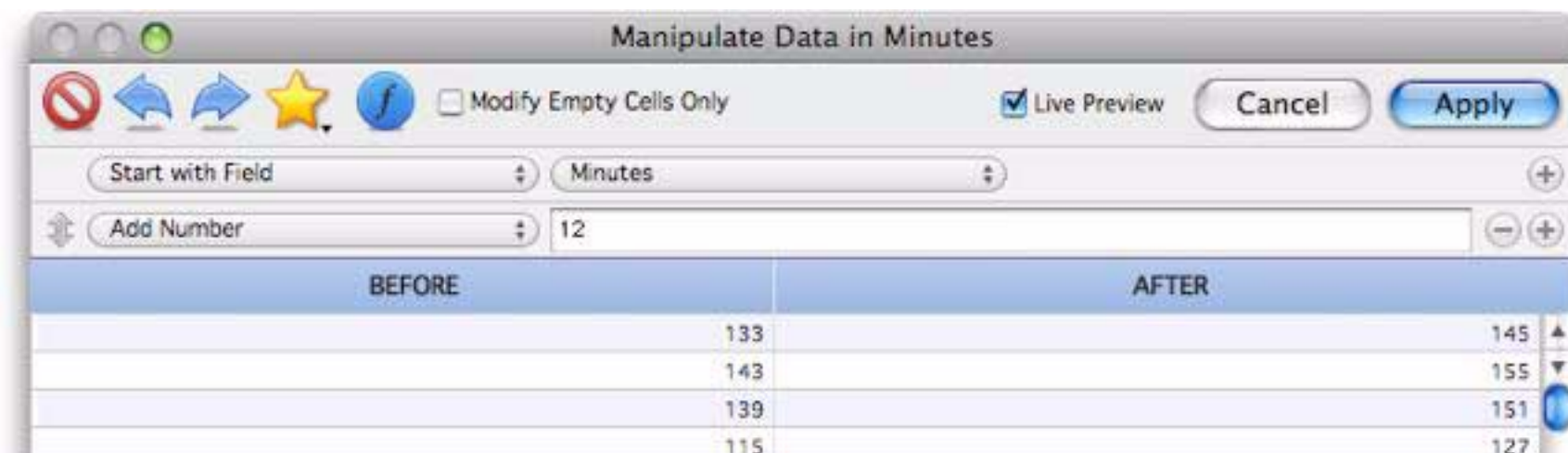
There are about a half dozen different manipulations available for numbers.



The following sections discuss each of these manipulation options.

Add Number

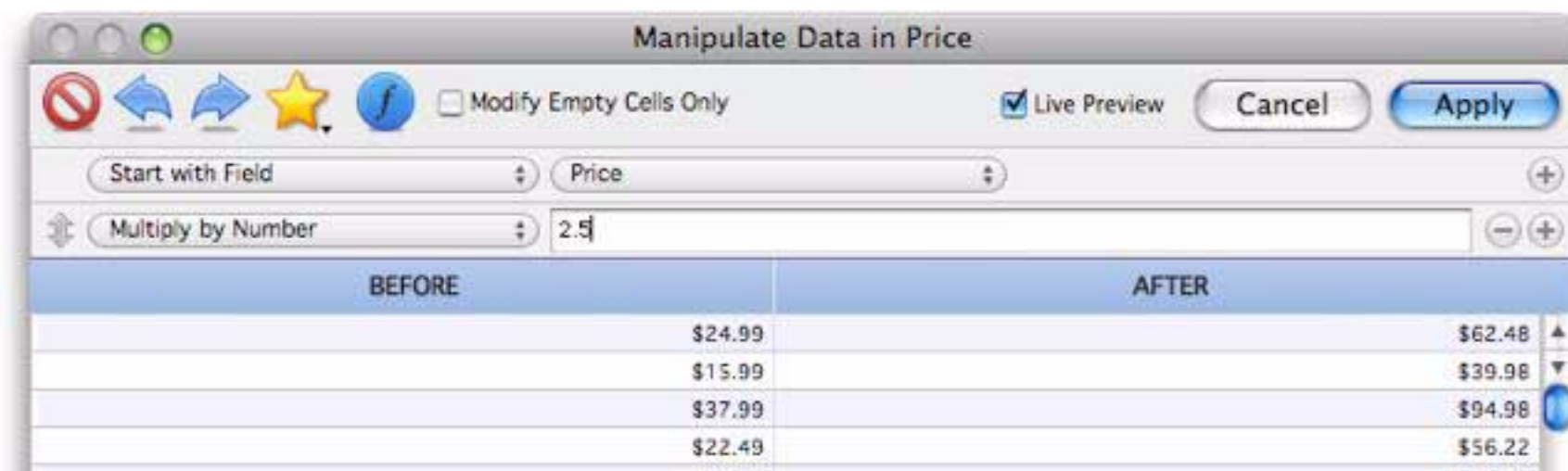
This option adds a fixed value to each cell.



If you want to subtract, use a negative number.

Multiply by Number

This option multiplies each number by a fixed amount.



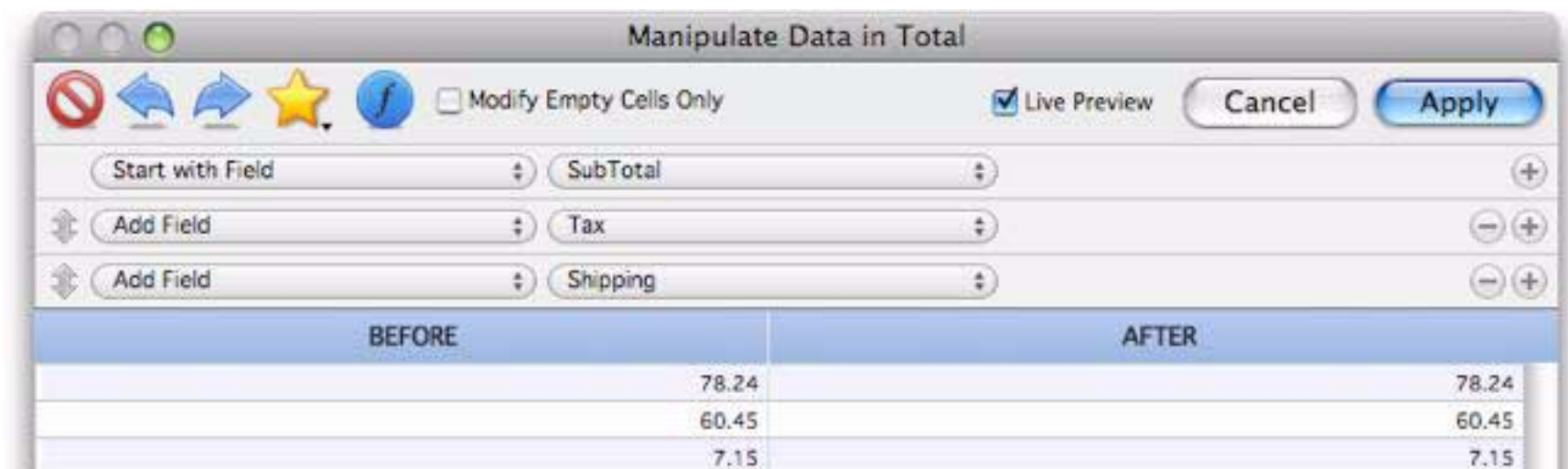
Multiply by Percentage

This option multiplies each number by a percentage.



Add Field

This option adds another numeric field to the data source.

**Subtract Field**

This option subtracts another numeric field from the data source.

Multiply by Field

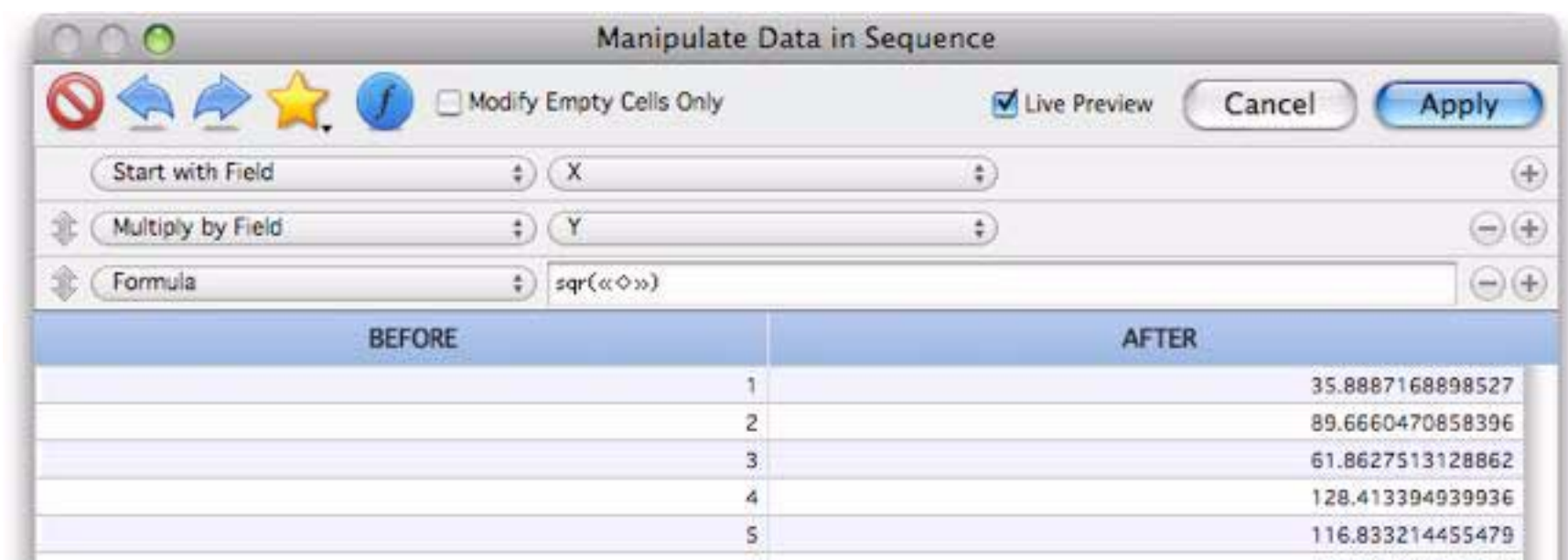
This option multiplies the data source by a numeric field.

Divide by Field

This option divides the data source by a numeric field.

Formula

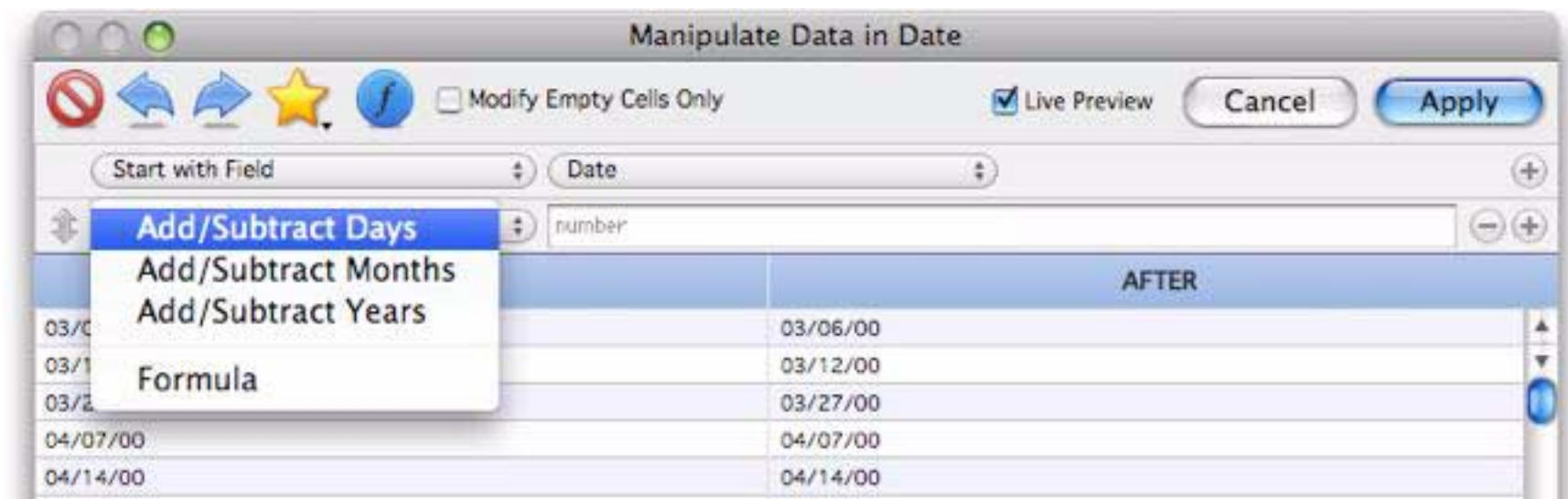
For more complex calculations you can use a formula. You can use a formula all on its own (see “[Starting with a Formula](#)” on page 439) but you can also use a formula in combination with other manipulations. When used this way, the « \diamond » symbol will expand into the number produced by the previous manipulations. Then the result of the formula will be fed into any additional manipulations below it. The example below calculates the square root of X*Y.



To learn more about numeric formulas see “[Arithmetic Formulas](#)” on page 60 of *Formulas & Programming*.

Manipulating Dates

There are about a just a handful of manipulations available for dates.



The following sections discuss each of these manipulation options.

Add/Subtract Days

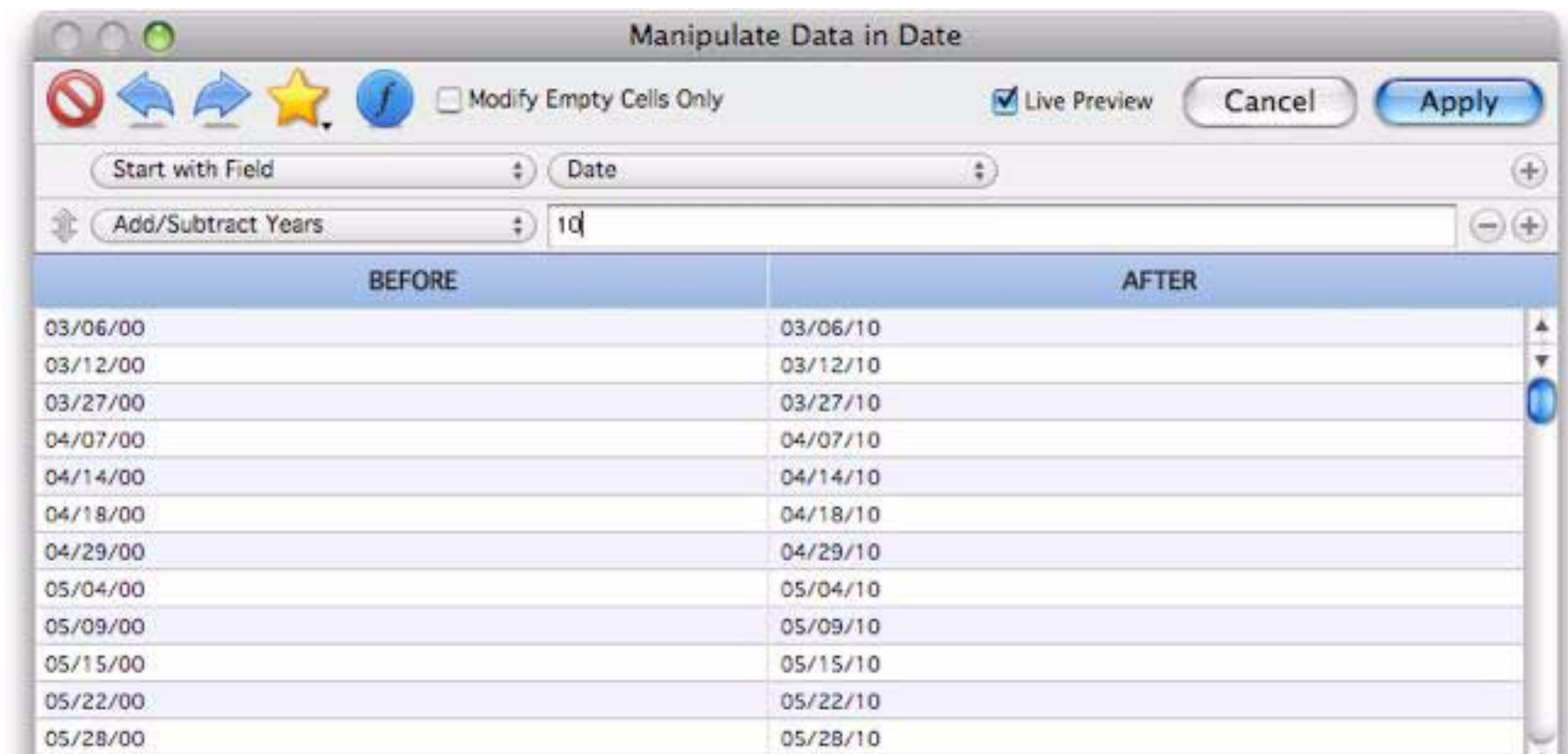
This option adds or subtracts a fixed number of days to the data source.

Add/Subtract Months

This option adds or subtracts a fixed number of months to the data source.

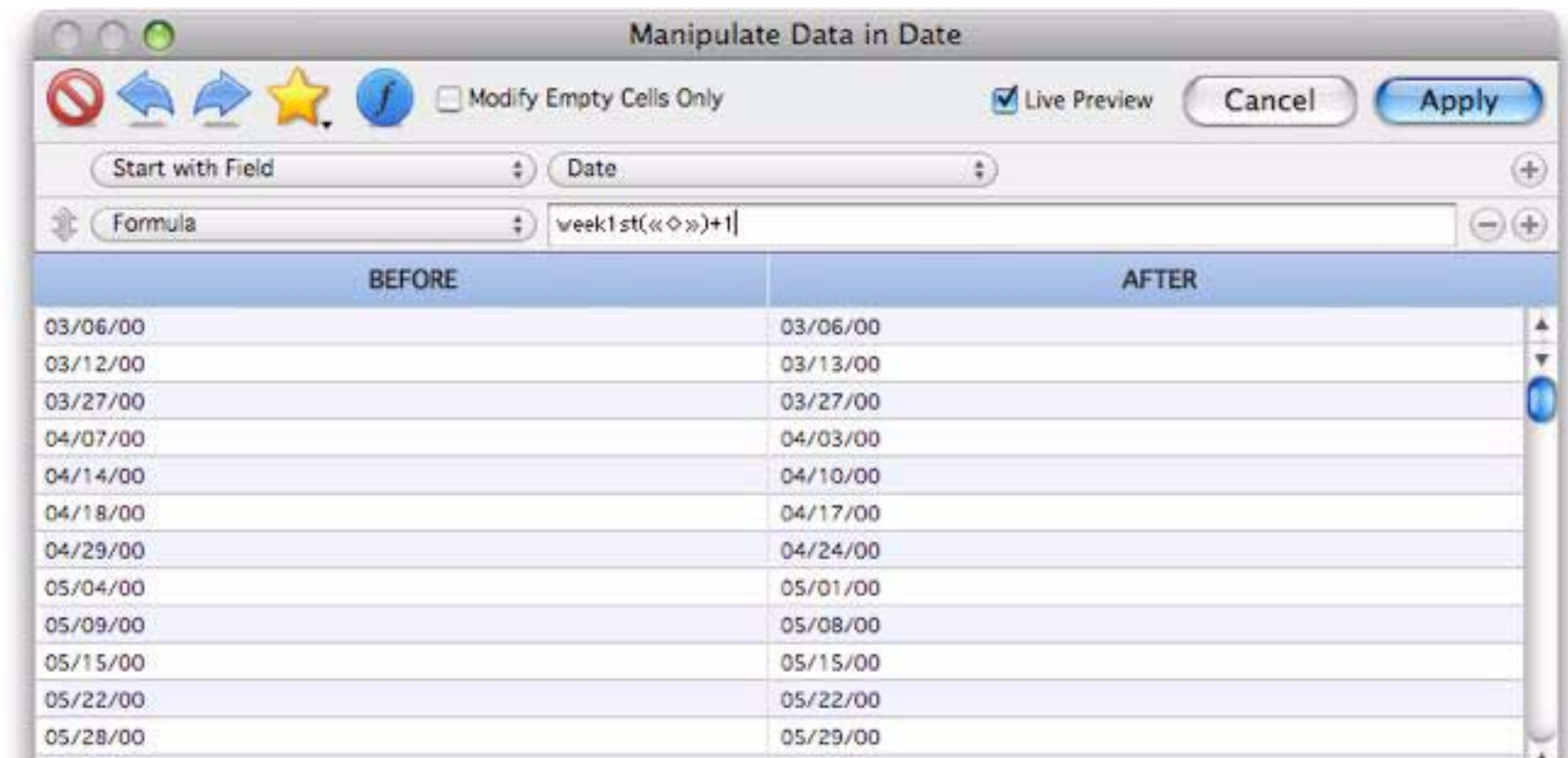
Add/Subtract Years

This option adds or subtracts a fixed number of years to the data source. For example, I can easily bring this sample data forward ten years.



Formula

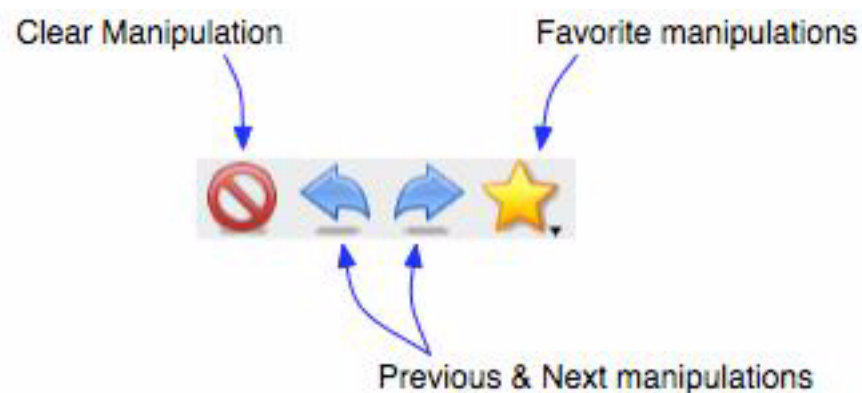
For more complex calculations you can use a formula. You can use a formula all on its own (see “[Starting with a Formula](#)” on page 439) but you can also use a formula in combination with other manipulations. When used this way, the « \diamond » symbol will expand into the number produced by the previous manipulations. Then the result of the formula will be fed into any additional manipulations below it. For example, this formula turns all dates into Mondays.



To learn more about date calculations see “[Date Arithmetic](#)” on page 106 of *Formulas & Programming*.

Managing Manipulations

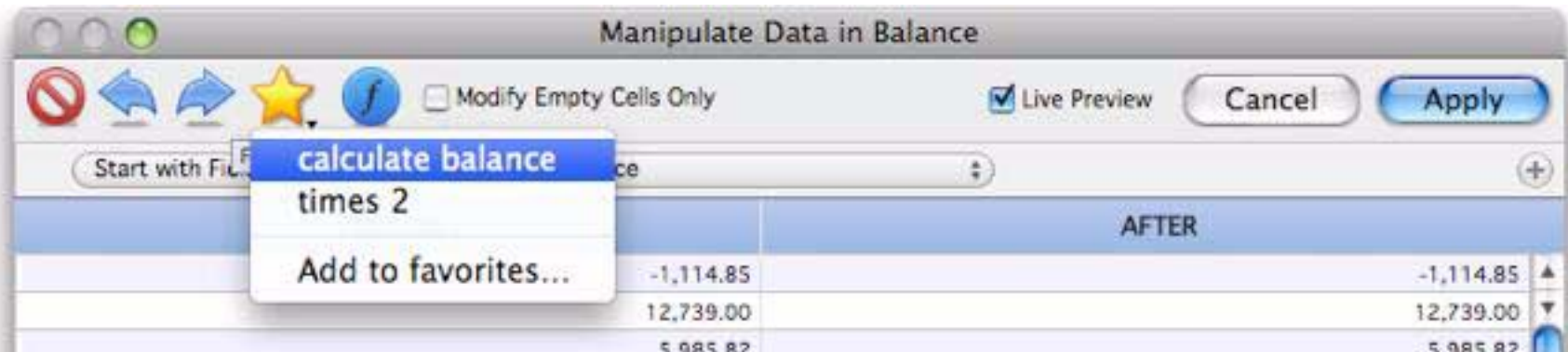
The tools in the upper left corner of the **Manipulate Data** dialog allow you to manage and easily re-use previous manipulations.



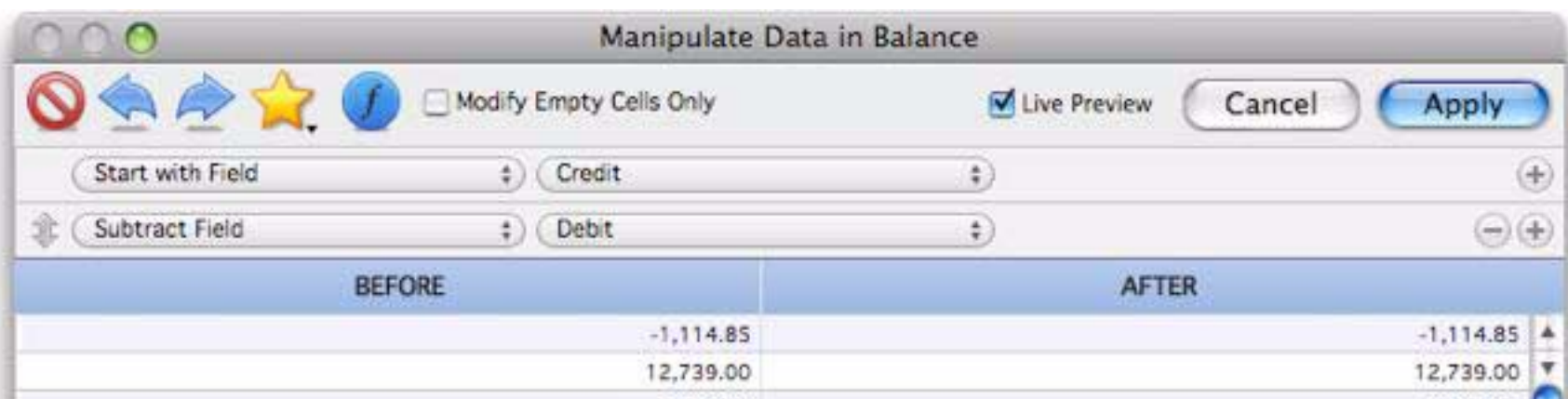
Clear Manipulation — This button clears the current manipulation, resetting the dialog. (If you press **Clear Manipulation** by mistake you can press **Previous Manipulation** to go back.)

Previous Manipulation, Next Manipulation — This pair of buttons allows you to go back to previously used manipulations. (Note: Only manipulations that you actually “finalized” by pressing the **Apply** button are included in the list of previously used manipulations.)

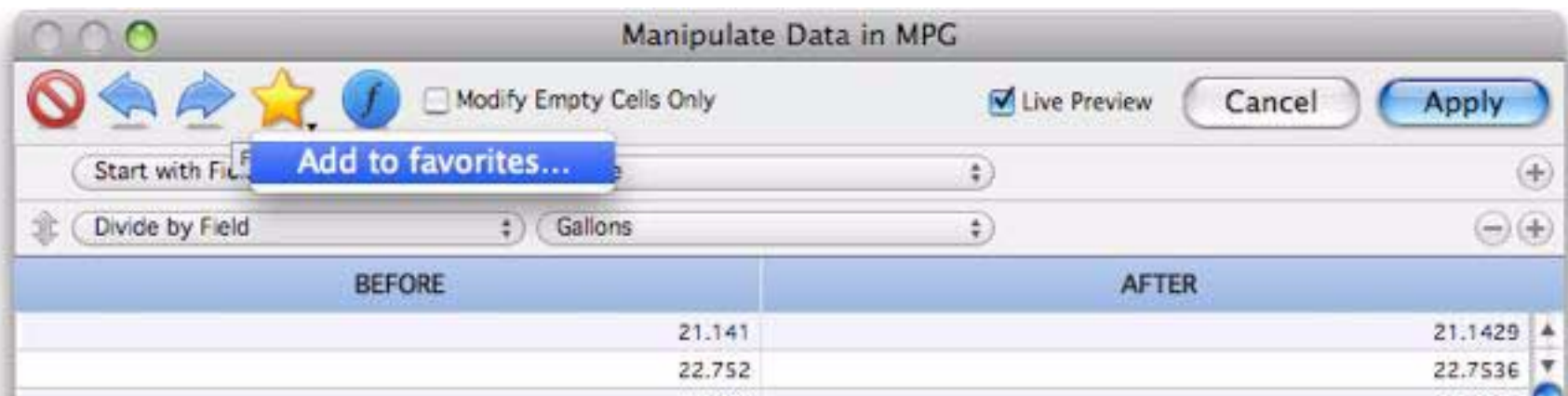
Favorites — This button displays a pop-up menu of favorite manipulations, along with options for adding and removing favorites. To select a favorite you've saved previously, just click on the star and choose the favorite from the menu.



The manipulation is restored just as it was saved. You can use it as is by pressing **Apply**, or you can modify it first.



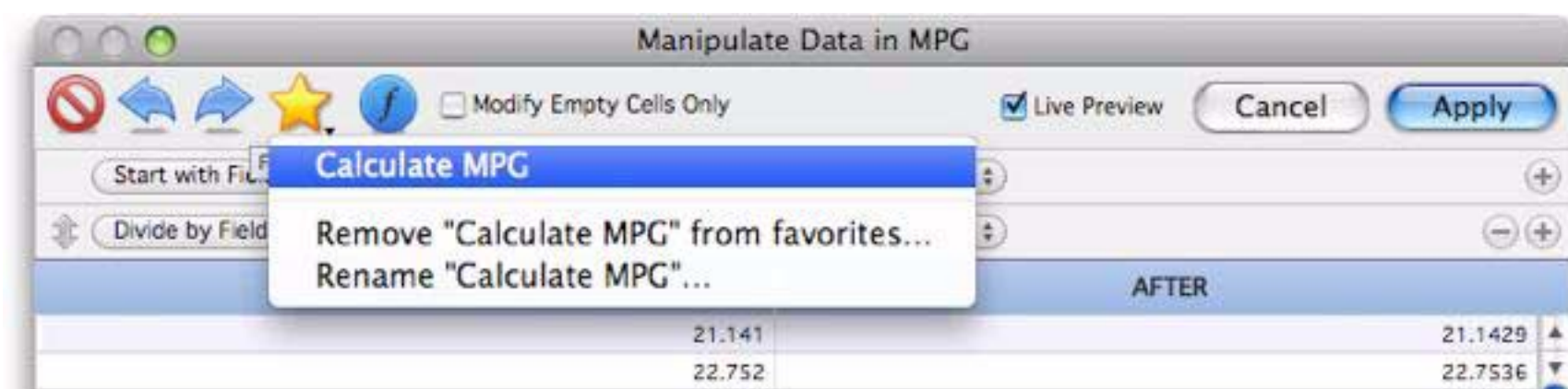
To save a new favorite, first set up the query specification, then click on the star and choose **Add to favorites...**



Enter a name for the new favorite.



Your new favorite now appears in the pop-up menu.



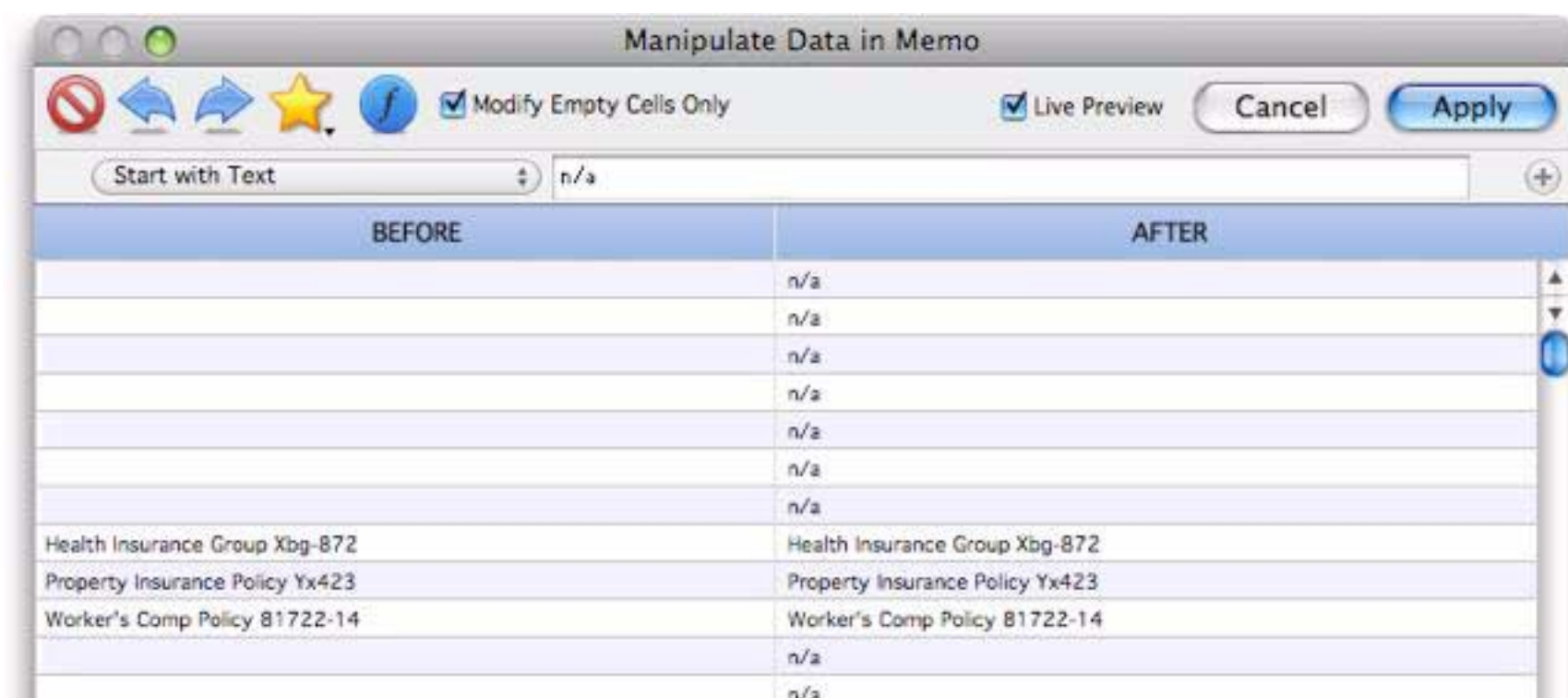
To delete or rename a favorite, first select the favorite from the pop-up menu. Then choose Remove or Rename, as shown above.

Note: In addition to saving favorites, you can also include a manipulation in a procedure by using Panorama's recorder (see “[Creating a Procedure with the Recorder](#)” on page 212 of *Formulas & Programming*).

Show Formula — This button opens a small window that shows the internal formula associated with the current query. Normally you would never need to use this, but it can be handy if you want to copy the formula for use in a procedure.

The *Modify Empty Cells Only* Option

The Manipulate Data dialog normally modifies all selected cells when you press the **Apply** button. However, if the **Modify Empty Cells Only** box is checked, only empty cells will be modified. Any cells that already contain a value will not be changed. In the example below all empty cells are changed to n/a, while cells that contain memos are left untouched.



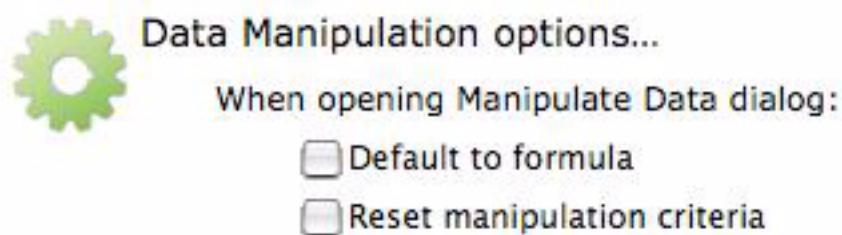
Live Preview

The bottom section of the **Manipulate Data** dialog shows a live preview of the manipulations you have specified. (For speed, only the first 100 records are shown.) The preview is divided into two sections. On the left is the original data in the field you are manipulating. On the right is the manipulated version of data. The preview updates instantly as you modify the manipulation options, making it easy to see the effects of the options you choose.

Note: If your data contains carriage returns, they will be displayed using the ¶ symbol.

Customizing the Manipulate Data Dialog

The **Manipulate** dialog has several options that can be customized. To access these options, open the **Preferences** dialog, then click on the **General Preferences** button. This opens a window with many types of preferences, but at the moment we're only interested in the Data Manipulation options.



The first option is **Default to formula**. If this option is checked, the dialog will initially default to **Start with Formula** (instead of **Start with Field**) when it is first opened. If you are a formula wizard you may find this option more convenient. This essentially makes this dialog default to behaving like the **Formula Fill** command in earlier (5.5 and before) versions of Panorama.

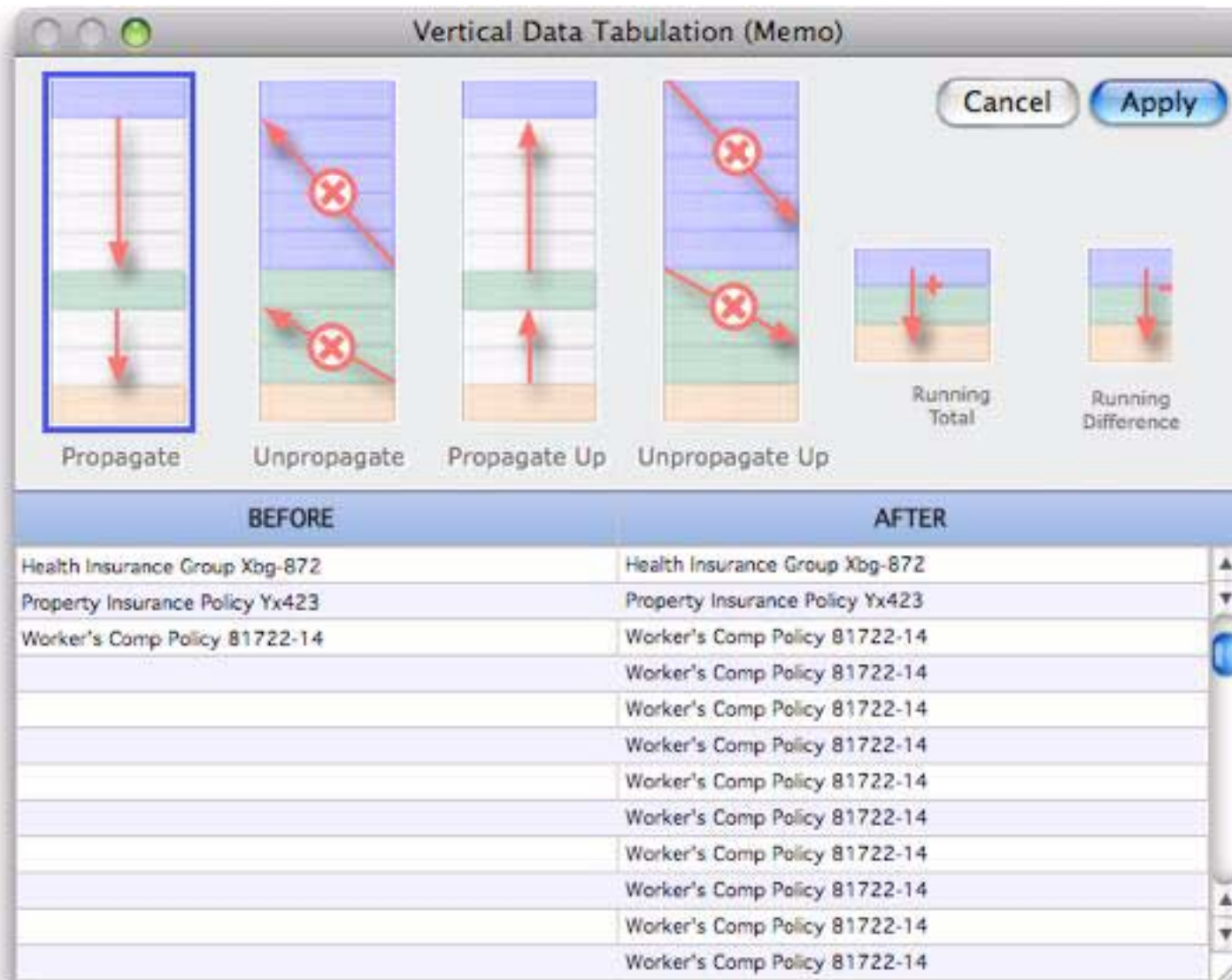
The **Reset manipulation criteria** option controls whether the **Manipulate Data** dialog starts fresh each time it opens. If this option is checked, the dialog will always start empty when it opens, ready for a new manipulation (you can recall the previous search by pressing the **Previous Manipulation** icon, see “[Managing Manipulations](#)” on page 461). If this option is *not* checked, the dialog will start out with the previous manipulation. You can then modify the manipulation, or you can start over by pressing the **Clear Manipulation** icon (see “[Managing Manipulations](#)” on page 461).

Using the “Classic” Manipulation Dialogs

If for some reason you want to use the older (pre-Panorama 6) manipulation dialogs (**Fill**, **Formula Fill**, etc.), open the **Preferences** dialog, then click on the **General Preferences** button. Then check the **Use “Classic” menus (Search, Sort, Math)** option. This also enables the older search wizards: *Live Clairvoyance*, *Search All Fields*, and *Quick Search*. For more information on these “classic” dialogs and wizards see the Panorama 5.5 documentation (available from the ProVUE web site).

Vertical Data Tabulation

The **Manipulate Data** dialog manipulates each record independently. The **Vertical Data Tabulation** dialog, on the other hand, manipulates data vertically across multiple records.

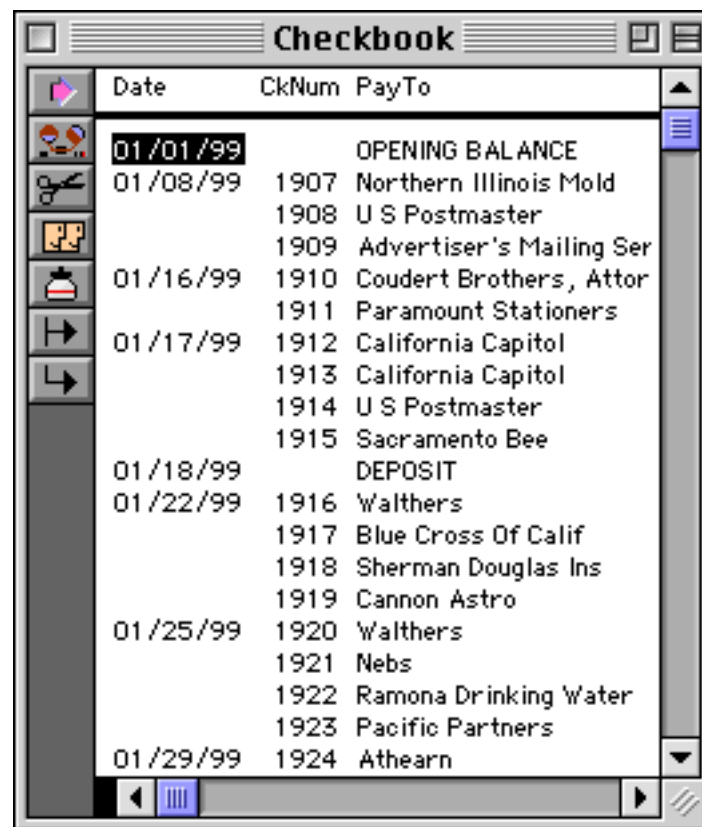


The dialog contains six vertical data manipulations options. Choose the option you want, then press the **Apply** button.

Propagate

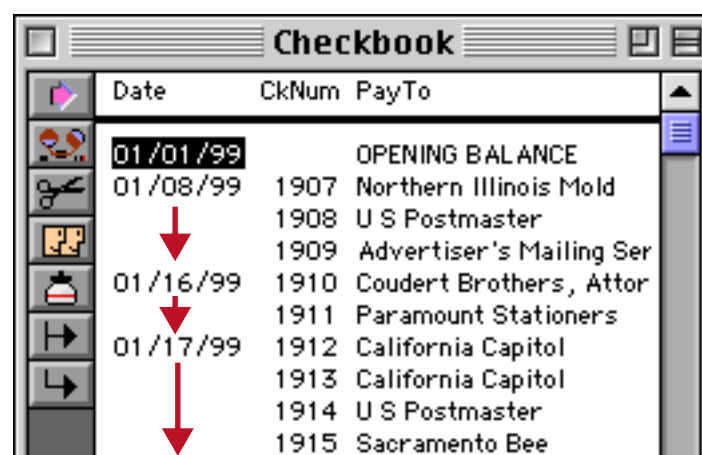
The **Propagate** option fills all the empty cells in the current field, leaving the previously filled cells untouched. The **Propagate** option propagates filled data cells into the empty data cells (if any) below them.

To illustrate, here is a database where the date was only entered for the first check written each day. For example, checks 1907, 1908 and 1909 were all written on January 8th, but the date has only been filled in for check 1907.



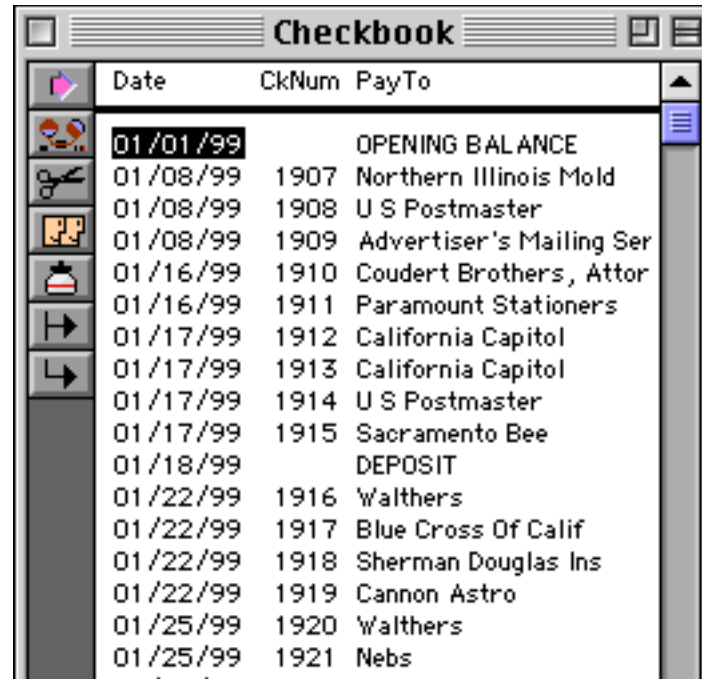
Date	CkNum	PayTo
01/01/99		OPENING BALANCE
01/08/99	1907	Northern Illinois Mold
	1908	U S Postmaster
	1909	Advertiser's Mailing Ser
01/16/99	1910	Coudert Brothers, Attor
	1911	Paramount Stationers
01/17/99	1912	California Capitol
	1913	California Capitol
	1914	U S Postmaster
	1915	Sacramento Bee
01/18/99		DEPOSIT
01/22/99	1916	Walthers
	1917	Blue Cross Of Calif
	1918	Sherman Douglas Ins
	1919	Cannon Astro
01/25/99	1920	Walthers
	1921	Nebs
	1922	Ramona Drinking Water
	1923	Pacific Partners
01/29/99	1924	Athearn

The **Propagate** command will fill in the empty cells, as shown by the arrows in this illustration.



Date	CkNum	PayTo
01/01/99		OPENING BALANCE
01/08/99	1907	Northern Illinois Mold
	1908	U S Postmaster
	1909	Advertiser's Mailing Ser
01/16/99	1910	Coudert Brothers, Attor
	1911	Paramount Stationers
01/17/99	1912	California Capitol
	1913	California Capitol
	1914	U S Postmaster
	1915	Sacramento Bee

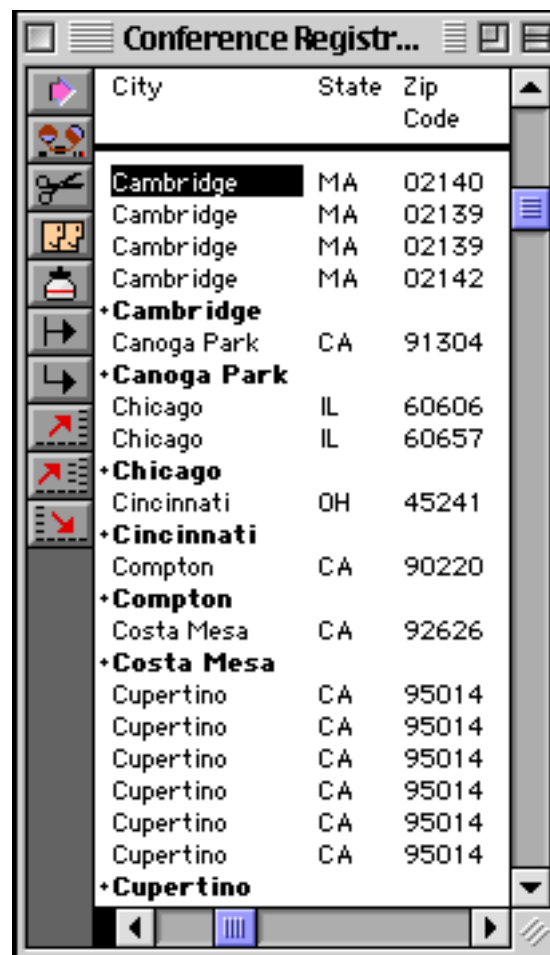
Here is the actual result after the **Propagate** has completed.



Date	CkNum	PayTo
01/01/99		OPENING BALANCE
01/08/99	1907	Northern Illinois Mold
01/08/99	1908	U S Postmaster
01/08/99	1909	Advertiser's Mailing Ser
01/16/99	1910	Coudert Brothers, Attor
01/16/99	1911	Paramount Stationers
01/17/99	1912	California Capitol
01/17/99	1913	California Capitol
01/17/99	1914	U S Postmaster
01/17/99	1915	Sacramento Bee
01/18/99		DEPOSIT
01/22/99	1916	Walthers
01/22/99	1917	Blue Cross Of Calif
01/22/99	1918	Sherman Douglas Ins
01/22/99	1919	Cannon Astro
01/25/99	1920	Walthers
01/25/99	1921	Nebs

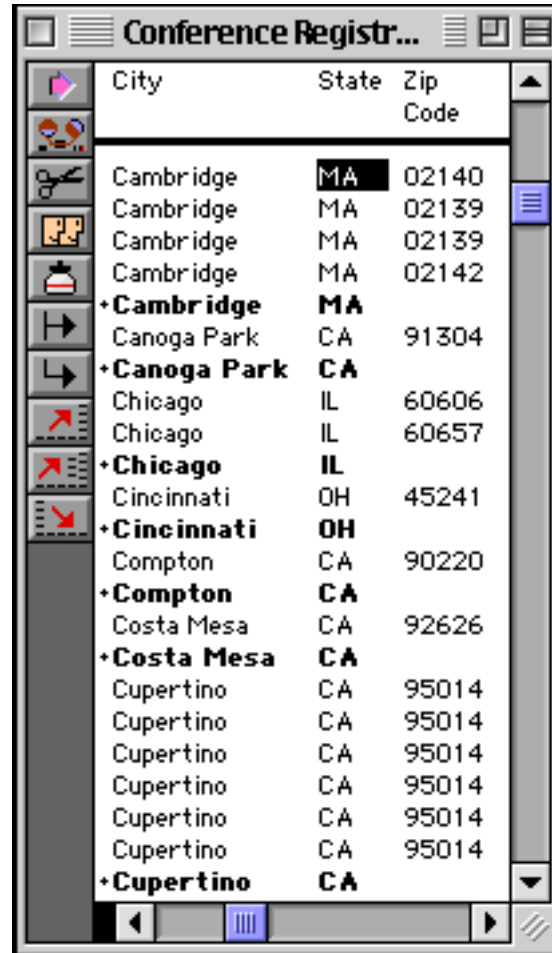
The **Propagate Up** command performs the same operation upside down, propagating filled data cells into the empty data cells above them.

The **Propagate** command can be used to copy information into newly created summary records. The **Group Up** command creates summary records but leaves all but one field blank. (see “[STEP 1 - GROUP](#)” on page 394 for more information on the **Group Up** command.) Use the **Propagate** command to copy other fields from the data records into the summary records. In this example the database has been grouped by city, but not by state. This means that the State field in each summary record is blank.



City	State	Zip Code
Cambridge	MA	02140
Cambridge	MA	02139
Cambridge	MA	02139
Cambridge	MA	02142
+Cambridge		
Canoga Park	CA	91304
+Canoga Park		
Chicago	IL	60606
Chicago	IL	60657
+Chicago		
Cincinnati	OH	45241
+Cincinnati		
Compton	CA	90220
+Compton		
Costa Mesa	CA	92626
+Costa Mesa		
Cupertino	CA	95014
Cupertino	CA	95014
Cupertino	CA	95014
Cupertino	CA	95014
Cupertino	CA	95014
Cupertino	CA	95014
+Cupertino		

To fill in the state, click on the state field and choose the **Propagate** command.



You could repeat this process to fill in the zip code. (However, this may not generate the results you want since some cities have multiple zip codes, as shown by Cambridge and Chicago in this example.)

UnPropagate

This command performs the exact inverse of the **Propagate** command. If the same value appears in two or more consecutive data cells, the **Unpropagate** command empties the second and subsequent data cells. Here is a database that has been sorted by city.

City	State	Zip Code
San Diego	CA	92126
San Diego	CA	92108
San Diego	CA	92109
San Francisco	CA	94114
San Francisco	CA	94104
San Francisco	CA	94104
San Francisco	CA	94107
San Mateo	CA	94404
San Mateo	CA	94404
San Mateo	CA	94404
San Mateo	CA	94404
San Rafael	CA	94912
San Rafael	CA	94901
San Rafael	CA	94903
San Rafael	CA	94903
San Rafael	CA	94901
San Rafael	CA	94903
San Rafael	CA	94903
San Ramon	CA	94583
Santa Ana	CA	92705
Santa Ana	CA	92704
Santa Ana	CA	92705
Southport	CT	06490

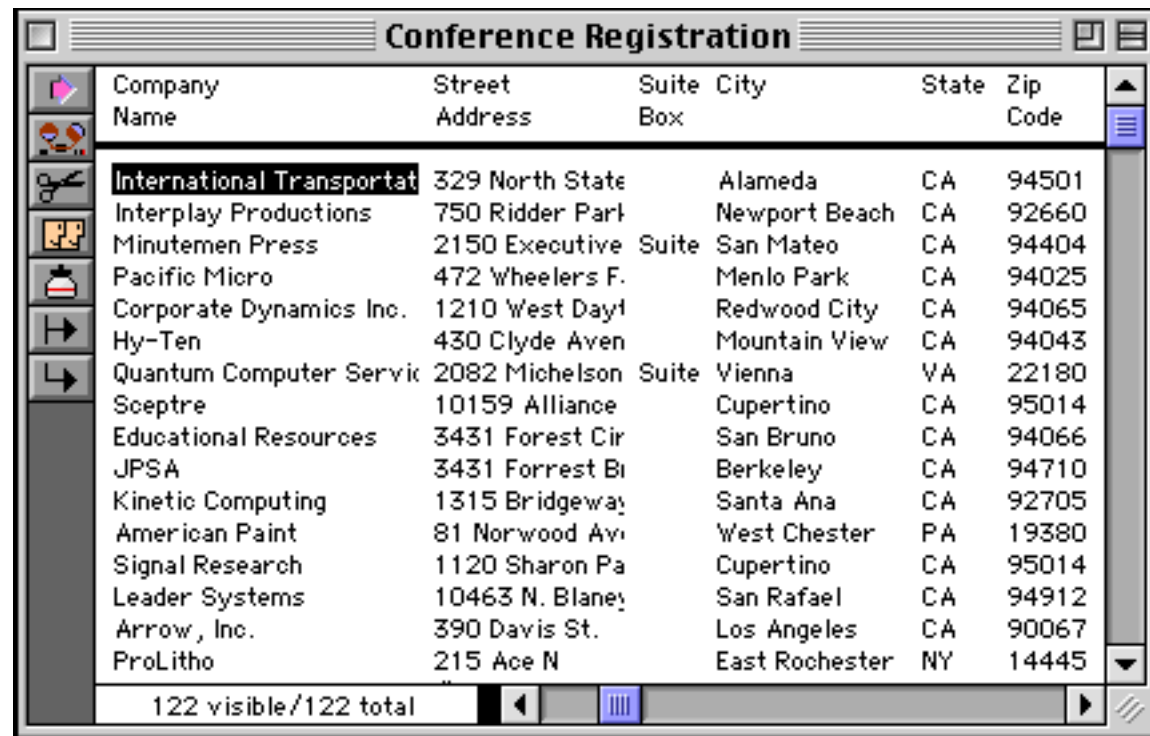
The **Unpropagate** command eliminates all but the first entry for each city.

City	State	Zip Code
San Diego	CA	92126
	CA	92108
	CA	92109
San Francisco	CA	94114
	CA	94104
	CA	94104
	CA	94107
San Mateo	CA	94404
	CA	94404
	CA	94404
	CA	94404
San Rafael	CA	94912
	CA	94901
	CA	94903
	CA	94903
	CA	94901
	CA	94903
	CA	94903
San Ramon	CA	94583
Santa Ana	CA	92705
	CA	92704
	CA	92705
Southport	CT	06490

The **Unpropagate Up** command performs the same operation upside down, leaving the last of several duplicate values while clearing the others.

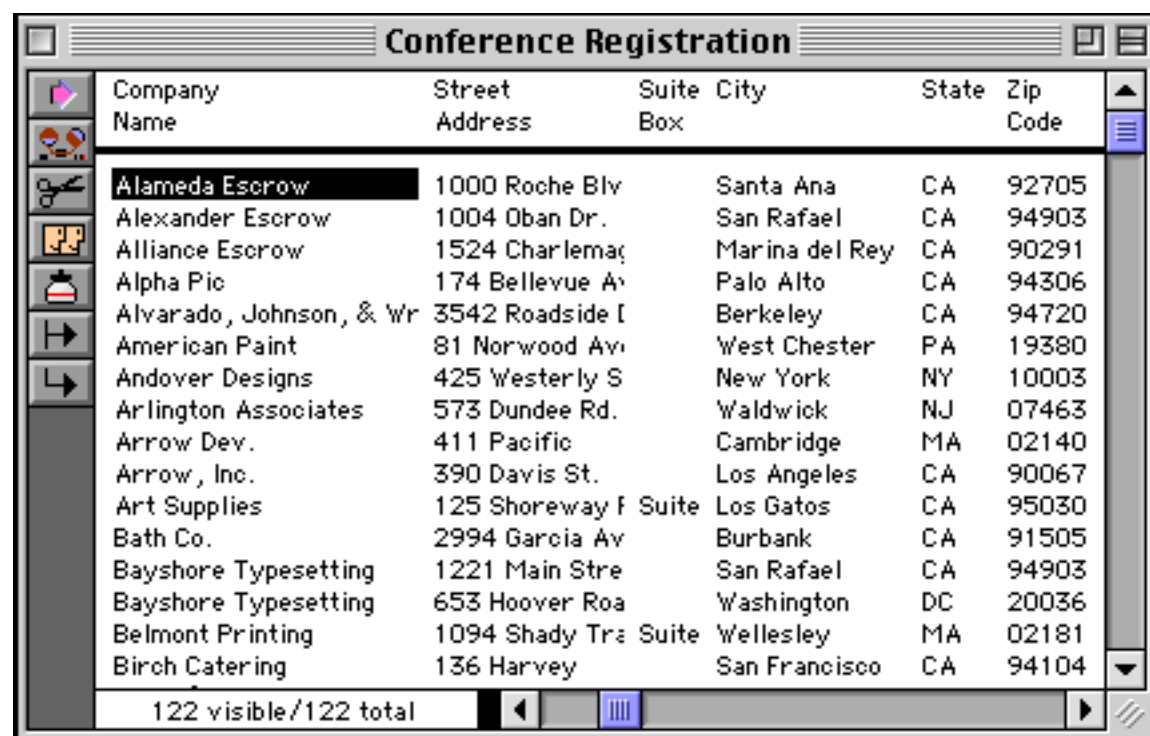
Using UnPropagate to Eliminate Duplicates

The **UnPropagate** command can be used to eliminate duplicate values in a database. The first step is to click on the field that contains the potentially duplicate values, for example **Name** or **Company**. If you want to eliminate duplicates over multiple fields (for example an entire address) you must create a new field and use the **Manipulate Data** dialog to combine the data into a single field.



Company Name	Street Address	Suite Box	City	State	Zip Code
International Transportat	329 North State		Alameda	CA	94501
Interplay Productions	750 Ridder Park		Newport Beach	CA	92660
Minutemen Press	2150 Executive	Suite	San Mateo	CA	94404
Pacific Micro	472 Wheelers F.		Menlo Park	CA	94025
Corporate Dynamics Inc.	1210 West Dayl		Redwood City	CA	94065
Hy-Ten	430 Clyde Aven		Mountain View	CA	94043
Quantum Computer Servic	2082 Michelson	Suite	Vienna	VA	22180
Sceptre	10159 Alliance		Cupertino	CA	95014
Educational Resources	3431 Forest Cir		San Bruno	CA	94066
JPSA	3431 Forrest Bl		Berkeley	CA	94710
Kinetic Computing	1315 Bridgeway		Santa Ana	CA	92705
American Paint	81 Norwood Av		West Chester	PA	19380
Signal Research	1120 Sharon Pa		Cupertino	CA	95014
Leader Systems	10463 N. Blaney		San Rafael	CA	94912
Arrow, Inc.	390 Davis St.		Los Angeles	CA	90067
ProLitho	215 Ace N		East Rochester	NY	14445

The next step is **SortUp** the database. This brings all the duplicate values together. For example, there are two **Bayshore Typesetting** entries in this database.



Company Name	Street Address	Suite Box	City	State	Zip Code
Alameda Escrow	1000 Roche Blv		Santa Ana	CA	92705
Alexander Escrow	1004 Oban Dr.		San Rafael	CA	94903
Alliance Escrow	1524 Charlemaç		Marina del Rey	CA	90291
Alpha Pic	174 Bellevue Av		Palo Alto	CA	94306
Alvarado, Johnson, & Wr	3542 Roadside I		Berkeley	CA	94720
American Paint	81 Norwood Av		West Chester	PA	19380
Andover Designs	425 Westerly S		New York	NY	10003
Arlington Associates	573 Dundee Rd.		Waldwick	NJ	07463
Arrow Dev.	411 Pacific		Cambridge	MA	02140
Arrow, Inc.	390 Davis St.		Los Angeles	CA	90067
Art Supplies	125 Shoreway F Suite		Los Gatos	CA	95030
Bath Co.	2994 Garcia Av		Burbank	CA	91505
Bayshore Typesetting	1221 Main Stre		San Rafael	CA	94903
Bayshore Typesetting	653 Hoover Roa		Washington	DC	20036
Belmont Printing	1094 Shady Tra Suite		Wellesley	MA	02181
Birch Catering	136 Harvey		San Francisco	CA	94104

The next step is to **UnPropagate** with the Vertical Data Tabulation dialog. Whenever a duplicate value appears in the data cell, the **UnPropagate** option clears the cell.

Company Name	Street Address	Suite Box	City	State	Zip Code
Alameda Escrow	1000 Roche Blv		Santa Ana	CA	92705
Alexander Escrow	1004 Oban Dr.		San Rafael	CA	94903
Alliance Escrow	1524 Charlemaç		Marina del Rey	CA	90291
Alpha Pic	174 Bellevue A		Palo Alto	CA	94306
Alvarado, Johnson, & Wr	3542 Roadside I		Berkeley	CA	94720
American Paint	81 Norwood Av		West Chester	PA	19380
Andover Designs	425 Westerly S		New York	NY	10003
Arlington Associates	573 Dundee Rd.		Waldwick	NJ	07463
Arrow Dev.	411 Pacific		Cambridge	MA	02140
Arrow, Inc.	390 Davis St.		Los Angeles	CA	90067
Art Supplies	125 Shoreway F Suite		Los Gatos	CA	95030
Bath Co.	2994 Garcia Av		Burbank	CA	91505
Bayshore Typesetting	1221 Main Stre		San Rafael	CA	94903
Belmont Printing	1094 Shady Tra Suite		Wellesley	MA	02181
Birch Catering	136 Harvey		San Francisco	CA	94104

Now use the Find/Select dialog to select the non-empty data cells.

Find/Select Records in Conference Registration

ALL of the following are true: Live Preview

Company Name Is Not Empty

T	First	Last	Company Name	Street Address	Suite	City	State	Zip	Job Title	Type of	Comp
Ms.	Christy	Alpert	Signal Research	1120 Sharon		Cupertino	CA	95014	Consultant	Communication	1C
Mr.	Arthur	Clairmont	South Coast Office	4390 Kaiser Dr.		Cupertino	CA	95014	President	Retail	1C

All of the duplicate records will disappear when you press the **Select** button. In this database there were two duplicate companies, so there are now 120 selected (non-duplicate) records.

Company Name	Street Address	Suite Box	City	State	Zip Code
Alameda Escrow	1000 Roche Blv		Santa Ana	CA	92705
Alexander Escrow	1004 Oban Dr.		San Rafael	CA	94903
Alliance Escrow	1524 Charlemaç		Marina del Rey	CA	90291
Alpha Pic	174 Bellevue A		Palo Alto	CA	94306
Alvarado, Johnson, & Wr	3542 Roadside I		Berkeley	CA	94720
American Paint	81 Norwood Av		West Chester	PA	19380
Andover Designs	425 Westerly S		New York	NY	10003
Arlington Associates	573 Dundee Rd.		Waldwick	NJ	07463
Arrow Dev.	411 Pacific		Cambridge	MA	02140
Arrow, Inc.	390 Davis St.		Los Angeles	CA	90067
Art Supplies	125 Shoreway F Suite		Los Gatos	CA	95030
Bath Co.	2994 Garcia Av		Burbank	CA	91505
Bayshore Typesetting	1221 Main Stre		San Rafael	CA	94903
Belmont Printing	1094 Shady Tra Suite		Wellesley	MA	02181
Birch Catering	136 Harvey		San Francisco	CA	94104
Black & Sons	5674 Corrida C		Northbrook	IL	60062

The final step is to permanently remove the duplicate records with the **Remove Unselected** command.

It's possible to create a procedure that will automatically perform all of these steps for you. This procedure will remove all of the duplicate entries in the current field.

```
sortup
unpropagate
select «» <> ""
removeunselected
```

Tip: One possible problem with this technique is that all cells that start out empty will be removed. For example if you are removing duplicate company names but some records don't contain company names, the records without company names will be removed. To fix this problem, use the **Empty Fill** command to fill the empty names with a unique value like **n/a** before you start, then use **Find/Select** to select all values not equal (**≠** or **<>**) to **n/a**. Then perform the rest of the steps listed above. Here is a revised version of the procedure that takes care of this problem.

```
emptyfill "!empty!"
select «» <> "!empty!"
sortup
unpropagate
select «» <> ""
removeunselected
formulafill ?(«» = "!empty!" , "" , «»
```

Warning: Keep in mind that all of these techniques will blindly remove all but the first duplicate entry. In this example, there were two entries for **Bayshore Typesetting**. However, they were probably not really duplicates, since one was in **Washington, DC** and the other in **San Rafael, CA**. There is no way for an automatic technique like this to know which of these is really correct, or even if they are really duplicates at all. If you want to manually examine duplicate records instead of blindly deleting them, use the **Select Duplicates** command in the Search Menu. See "[Select Duplicates](#)" on page 362 for more information on this command.

Change (Find and Replace)

The **Change** command (in the Search menu) finds and replaces a word or phrase in the current field. For example, you can use the **Change** command to replace every occurrence of **Inc.** to **Incorporated**, or every occurrence of **Purchase Order** to **P.O.**

The **Change** dialog allows you to specify the original (From) and the new (To) word or phrase.

The **Adjust Capitalization** option allows you to specify whether you want capitalization to be adjusted as the word or phrase is replaced. If you check this option, Panorama will automatically adjust the capitalization of the new word or phrase as it is inserted into the database. If you leave this option off, capitalization is not adjusted. In fact, if the **Adjust Capitalization** option is off, only words or phrases that exactly match the capitalization typed into the dialog will be replaced. The table below shows the result of replacing **Inc.** with **Incorporated** with **Adjust Capitalization** both off and on.

Original	Adjust Capitalization OFF	Adjust Capitalization ON
Inc.	Incorporated	Incorporated
INC.	INC.	INCORPORATED
inc.	inc.	incorporated

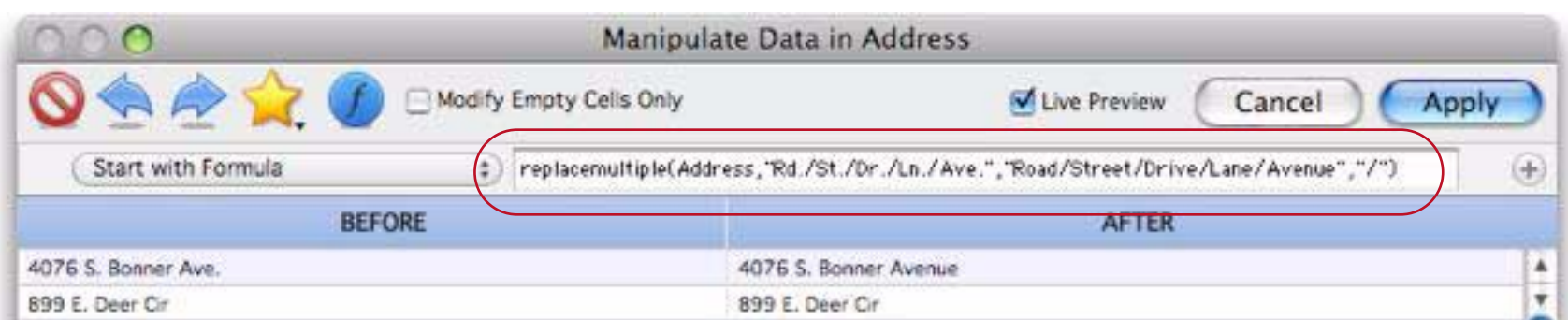
The **Replace Entire Words Only** option tells Panorama to replace only entire words, not sections of words. For example, if you ask Panorama to change **is** to **was**, it will also change **this** to **thwas**. This is, of course, wrong. To prevent this, just check the **Replace Entire Words Only** option.

Changing with the Replace(Function

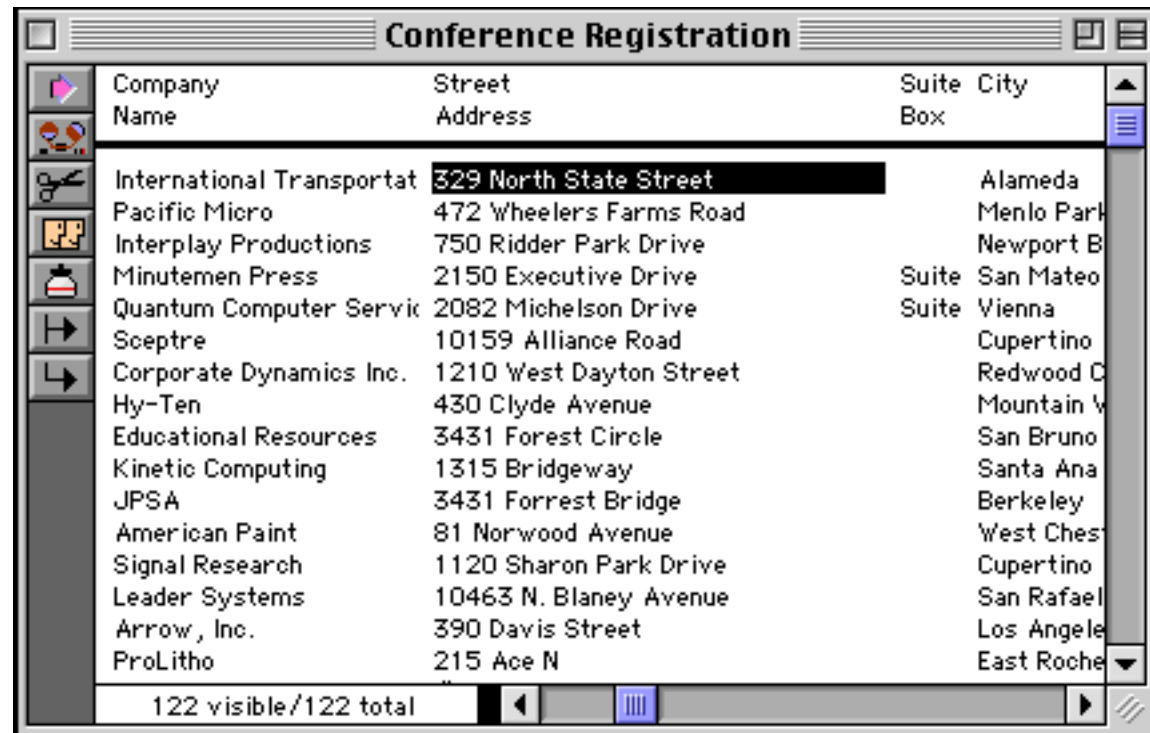
The **Change** command is not the only way to replace words or phrases. You can also use the **Manipulate Data in Field** command and the `replace(` or `replacemultiple(` functions (see “[String Modification Functions](#)” on page 80 of *Formulas & Programming*). This technique is especially handy if you need to replace several words or phrases at once. For example, consider the addresses in the database below.

Company Name	Street Address	Suite Box	City
International Transportat	329 North State St.		Alameda
Pacific Micro	472 Wheelers Farms Rd.		Menlo Park
Interplay Productions	750 Ridder Park Dr.		Newport B
Minutemen Press	2150 Executive Dr.	Suite	San Mateo
Quantum Computer Servic	2082 Michelson Dr.	Suite	Vienna
Sceptre	10159 Alliance Rd.		Cupertino
Corporate Dynamics Inc.	1210 West Dayton St.		Redwood C
Hy-Ten	430 Clyde Avenue		Mountain W
Educational Resources	3431 Forest Circle		San Bruno
Kinetic Computing	1315 Bridgeway		Santa Ana
JPSA	3431 Forrest Bridge		Berkeley
American Paint	81 Norwood Ave.		West Ches
Signal Research	1120 Sharon Park Dr.		Cupertino
Leader Systems	10463 N. Blaney Ave.		San Rafael
Arrow, Inc.	390 Davis St.		Los Angele
ProLitho	215 Ace N		East Roche

Suppose you wanted to expand the abbreviations in these addresses: **St.** to **Street**, **Dr.** to **Drive**, etc. You could do this by using the **Change** command over and over again. Or you can simply use the `replacemultiple(` function to replace all of the abbreviations in one fell swoop.



Press **Apply** to replace all of the abbreviations at once:

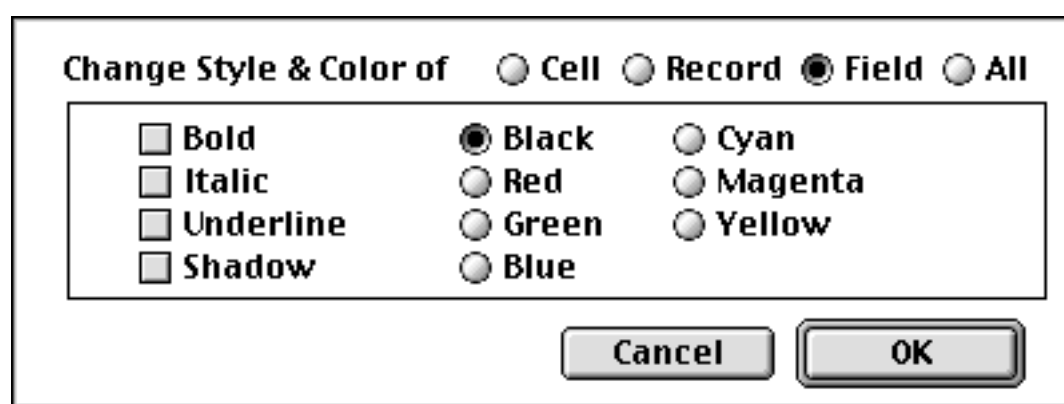


See “[Starting with a Formula](#)” on page 439 for more information on using formulas to modify data.

Data Style and Color

In addition to the data stored in each cell, Panorama also keeps track of the style (plain, bold, italic, etc.) and (to a limited extent) color (red, green, etc.) of each cell. Use the **Style & Color** command (Math menu) to change the style or color of one or more data cells.

The **Style & Color** dialog allows you to specify what cells to change and what style or color to use.



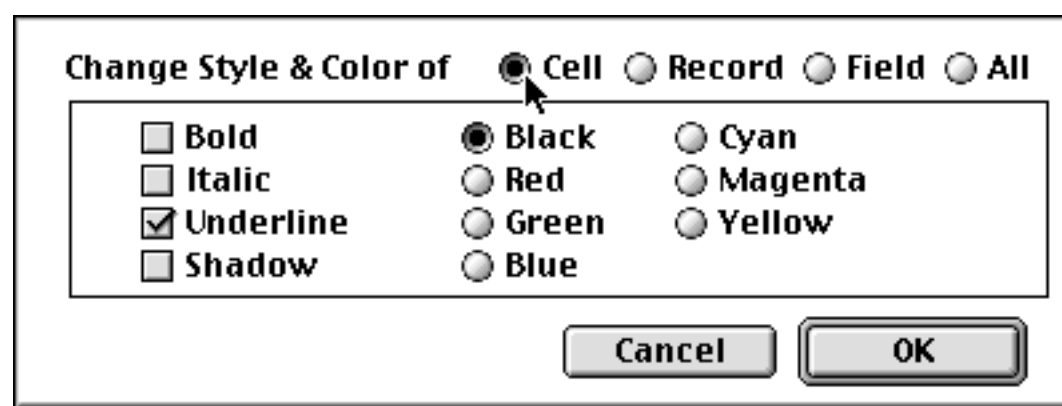
Choose **Cell** to change the style or color of the current cell, **Record** to change the style or color of all the cells in the current record, **Field** to change the style or color of all the selected cells in the current field, or **All** to change the style or color of every selected data cell in every field.

Let's see how to underline an individual cell. Start by clicking on the cell you want to underline.

Hotel	City	Rate	Units	Phone	Star
General Palmer House	Durango	34.00	35	247-4747	4
Georgetown Motor Inn	Georgetown	24.50	32	569-3201	3
Glen Buff Motor Lodge	Boulder	30.00	75	442-7450	4
Glenwood Hot Springs Lodge	Glenwood Springs	32.00	71	945-6571	3
Greeley Lamplighter	Greeley	25.00	46	352-7070	3
Greenhorn Inn	Colorado City	30.00	59	279-2333	4
Greystone Guest Ranch	Evergreen	53.00	9	674-3328	2
Guest House Motel	Grand Junction	30.00	22	242-9571	3

439 visible/439 total

Now choose the **Style & Color** command, and click on **Cell** and **Underline**.



When you press **OK**, the cell will be underlined.

Hotel	City	Rate	Units	Phone	Star
General Palmer House	Durango	34.00	35	247-4747	4
Georgetown Motor Inn	Georgetown	24.50	32	569-3201	3
Glen Buff Motor Lodge	Boulder	30.00	75	442-7450	4
<u>Glenwood Hot Springs Lodge</u>	Glenwood Springs	32.00	71	945-6571	3
Greeley Lamplighter	Greeley	25.00	46	352-7070	3
Greenhorn Inn	Colorado City	30.00	59	279-2333	4
Greystone Guest Ranch	Evergreen	53.00	9	674-3328	2
Guest House Motel	Grand Junction	30.00	22	242-9571	3

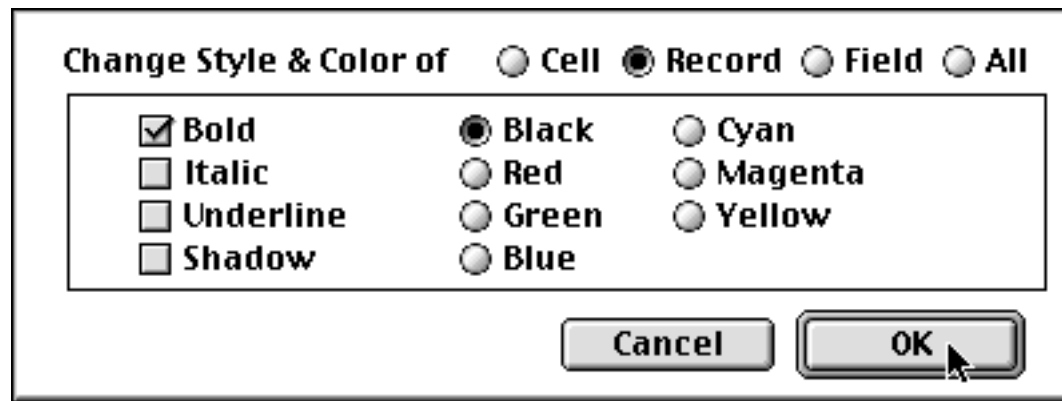
439 visible/439 total

It's easier to see the underline if you click on another cell.

Hotel	City	Rate	Units	Phone	Star
General Palmer House	Durango	34.00	35	247-4747	4
Georgetown Motor Inn	Georgetown	24.50	32	569-3201	3
Glen Buff Motor Lodge	Boulder	30.00	75	442-7450	4
<u>Glenwood Hot Springs Lodge</u>	Glenwood Springs	32.00	71	945-6571	3
Greeley Lamplighter	Greeley	25.00	46	352-7070	3
Greenhorn Inn	Colorado City	30.00	59	279-2333	4
Greystone Guest Ranch	Evergreen	53.00	9	674-3328	2
Guest House Motel	Grand Junction	30.00	22	242-9571	3

439 visible/439 total

Using an almost identical process we can make an entire line bold. In the Style & Color dialog, choose **Record** and **Bold**.



Press **OK** to make the record bold.

Hotel	City	Rate	Units	Phone	Star
The Lodge At Georgetown	Georgetown	32.00	54	569-3211	3
The Lodge At Purgatory	Durango	40.00	50	247-9669	3
The Molly Gibson Lodge	Aspen	75.00	20	925-2580	4
The Nordic Lodge	Steamboat Springs	48.00	40	879-0531	3
The Raintree Inn	Colorado Springs	40.00	204	471-8680	4
The Stanley Sheraton Hotel	Estes Park	55.00	150	586-3371	3
The Swiss Chalet	Aspen	22.00	9	925-7146	2
The Victorian Inn	Telluride	60.00	20	728-3684	3

439 visible/439 total

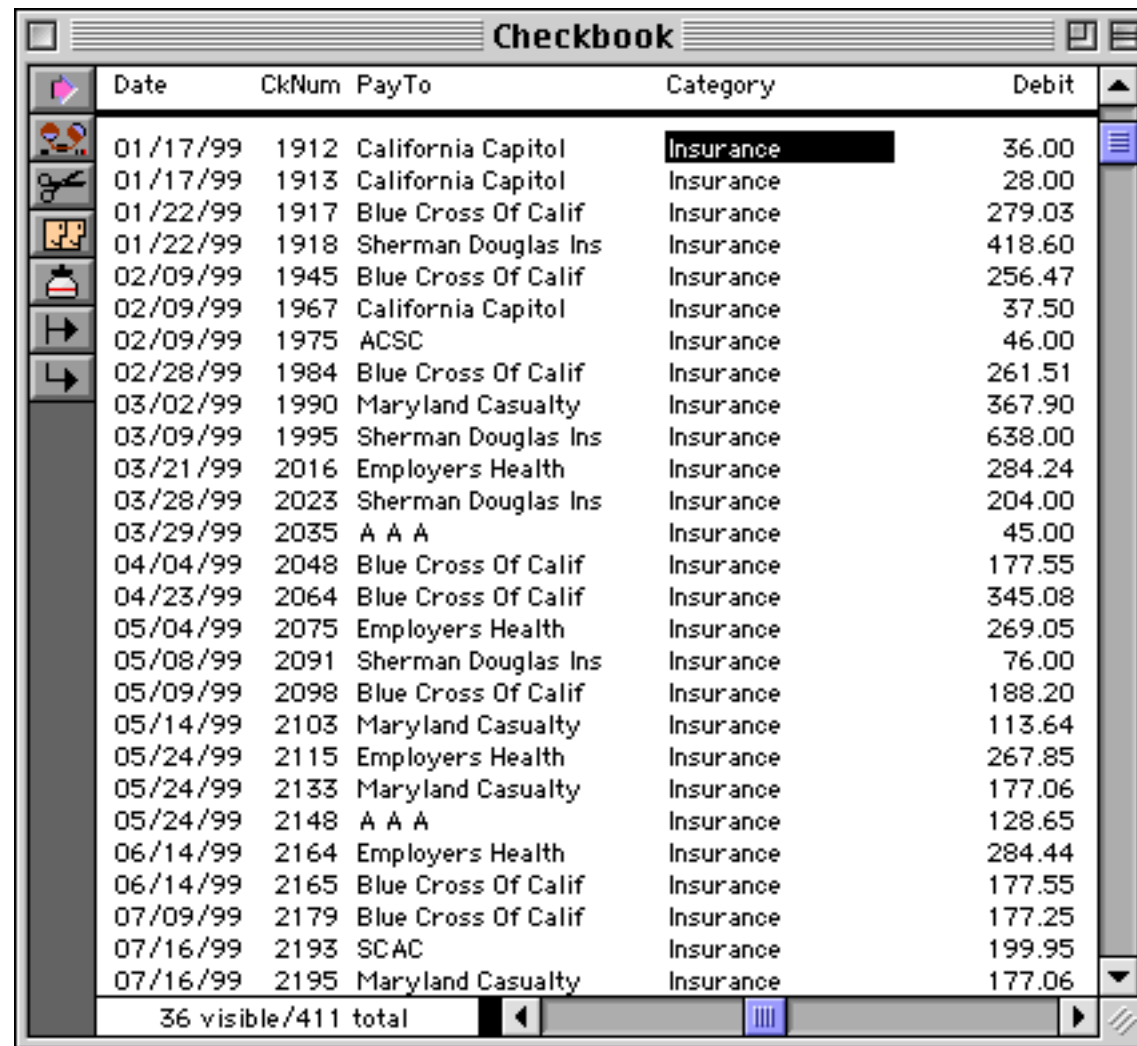
By choosing **Field**, **Blue** and **Italic** we can make all Phone Numbers appear in italic blue, as shown here.

Hotel	City	Rate	Units	Phone	Star
The Lodge At Georgetown	Georgetown	32.00	54	<i>569-3211</i>	3
The Lodge At Purgatory	Durango	40.00	50	<i>247-9669</i>	3
The Molly Gibson Lodge	Aspen	75.00	20	<i>925-2580</i>	4
The Nordic Lodge	Steamboat Springs	48.00	40	<i>879-0531</i>	3
The Raintree Inn	Colorado Springs	40.00	204	<i>471-8680</i>	4
The Stanley Sheraton Hotel	Estes Park	55.00	150	<i>586-3371</i>	3
The Swiss Chalet	Aspen	22.00	9	<i>925-7146</i>	2
The Victorian Inn	Telluride	60.00	20	<i>728-3684</i>	3

439 visible/439 total

Notice that the italic blue has overridden the bold applied in the previous example.

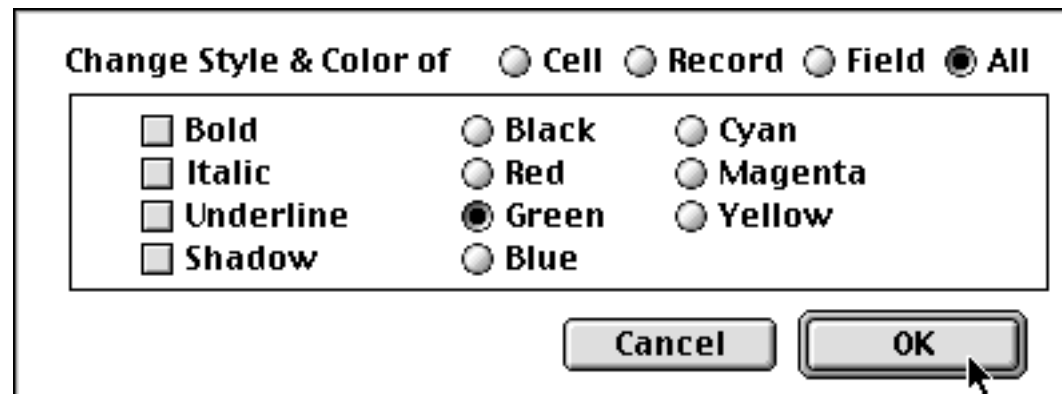
For our final example we will go to a checkbook database and mark all insurance payments in green. Start by selecting **Insurance** from the **Category** field. (See “[The Find/Select Dialog](#)” on page 336 for more information on the Find/Select command.)



Date	CkNum	PayTo	Category	Debit
01/17/99	1912	California Capitol	Insurance	36.00
01/17/99	1913	California Capitol	Insurance	28.00
01/22/99	1917	Blue Cross Of Calif	Insurance	279.03
01/22/99	1918	Sherman Douglas Ins	Insurance	418.60
02/09/99	1945	Blue Cross Of Calif	Insurance	256.47
02/09/99	1967	California Capitol	Insurance	37.50
02/09/99	1975	ACSC	Insurance	46.00
02/28/99	1984	Blue Cross Of Calif	Insurance	261.51
03/02/99	1990	Maryland Casualty	Insurance	367.90
03/09/99	1995	Sherman Douglas Ins	Insurance	638.00
03/21/99	2016	Employers Health	Insurance	284.24
03/28/99	2023	Sherman Douglas Ins	Insurance	204.00
03/29/99	2035	A A A	Insurance	45.00
04/04/99	2048	Blue Cross Of Calif	Insurance	177.55
04/23/99	2064	Blue Cross Of Calif	Insurance	345.08
05/04/99	2075	Employers Health	Insurance	269.05
05/08/99	2091	Sherman Douglas Ins	Insurance	76.00
05/09/99	2098	Blue Cross Of Calif	Insurance	188.20
05/14/99	2103	Maryland Casualty	Insurance	113.64
05/24/99	2115	Employers Health	Insurance	267.85
05/24/99	2133	Maryland Casualty	Insurance	177.06
05/24/99	2148	A A A	Insurance	128.65
06/14/99	2164	Employers Health	Insurance	284.44
06/14/99	2165	Blue Cross Of Calif	Insurance	177.55
07/09/99	2179	Blue Cross Of Calif	Insurance	177.25
07/16/99	2193	SCAC	Insurance	199.95
07/16/99	2195	Maryland Casualty	Insurance	177.06

36 visible/411 total

Now click on the **Debit** field, and choose the **Style & Color** command. Click on **All** and **Green**.



Change Style & Color of Cell Record Field All

<input type="checkbox"/> Bold	<input type="radio"/> Black	<input type="radio"/> Cyan
<input type="checkbox"/> Italic	<input type="radio"/> Red	<input type="radio"/> Magenta
<input type="checkbox"/> Underline	<input checked="" type="radio"/> Green	<input type="radio"/> Yellow
<input type="checkbox"/> Shadow	<input type="radio"/> Blue	

Cancel OK

When you press **OK** everything visible will turn green.

Date	CkNum	PayTo	Category	Debit
01/17/99	1912	California Capitol	Insurance	36.00
01/17/99	1913	California Capitol	Insurance	28.00
01/22/99	1917	Blue Cross Of Calif	Insurance	279.03
01/22/99	1918	Sherman Douglas Ins	Insurance	418.60
02/09/99	1945	Blue Cross Of Calif	Insurance	256.47
02/09/99	1967	California Capitol	Insurance	37.50
02/09/99	1975	ACSC	Insurance	46.00
02/28/99	1984	Blue Cross Of Calif	Insurance	261.51
03/02/99	1990	Maryland Casualty	Insurance	367.90
03/09/99	1995	Sherman Douglas Ins	Insurance	638.00
03/21/99	2016	Employers Health	Insurance	284.24
03/28/99	2023	Sherman Douglas Ins	Insurance	204.00
03/29/99	2035	A A A	Insurance	45.00
04/04/99	2048	Blue Cross Of Calif	Insurance	177.55
04/23/99	2064	Blue Cross Of Calif	Insurance	345.08
05/04/99	2075	Employers Health	Insurance	269.05
05/08/99	2091	Sherman Douglas Ins	Insurance	76.00
05/09/99	2098	Blue Cross Of Calif	Insurance	188.20
05/14/99	2103	Maryland Casualty	Insurance	113.64
05/24/99	2115	Employers Health	Insurance	267.85
05/24/99	2133	Maryland Casualty	Insurance	177.06
05/24/99	2148	A A A	Insurance	128.65
06/14/99	2164	Employers Health	Insurance	284.44
06/14/99	2165	Blue Cross Of Calif	Insurance	177.55
07/09/99	2179	Blue Cross Of Calif	Insurance	177.25
07/16/99	2193	SCAC	Insurance	199.95
07/16/99	2195	Maryland Casualty	Insurance	177.06

36 visible/411 total

Use the **Select All** command to see all of the records. The green insurance records are mixed in with the others.

Date	CkNum	PayTo	Category	Debit
01/01/99		OPENING BALANCE		
01/08/99	1907	Northern Illinois Mold	Equipment Rental	96.05
01/08/99	1908	U S Postmaster	Postage	75.00
01/08/99	1909	Advertiser's Mailing Ser	Advertising	390.80
01/16/99	1910	Coudert Brothers, Attor	Legal Fees	223.52
01/16/99	1911	Paramount Stationers	Office Supplies	105.84
01/17/99	1912	California Capitol	Insurance	36.00
01/17/99	1913	California Capitol	Insurance	28.00
01/17/99	1914	U S Postmaster	Postage	75.00
01/17/99	1915	Sacramento Bee	Advertising	795.00
01/18/99		DEPOSIT		
01/22/99	1916	Walthers	Purchases	12,463.00
01/22/99	1917	Blue Cross Of Calif	Insurance	279.03
01/22/99	1918	Sherman Douglas Ins	Insurance	418.60
01/22/99	1919	Cannon Astro	Office Supplies	145.72
01/25/99	1920	Walthers	Purchases	1,885.40
01/25/99	1921	Nebs	Office Supplies	77.27
01/25/99	1922	Ramona Drinking Water	Office Supplies	98.10
01/25/99	1923	Pacific Partners	Rent	4,070.83
01/29/99	1924	Athearn	Purchases	1,906.32
01/29/99	1925	Advertiser's Mailing Ser	Advertising	860.22
01/29/99	1926	PacTel Cellular	Telephone	141.09
01/30/99	1927	State Board Of Equalizat	Taxes	549.00
01/30/99	1928	Walthers	Purchases	828.70
01/30/99	1929	Federal Express	Shipping	178.75
01/31/99	1930	U P S	Shipping	52.97
01/31/99	1931	Sacramento Bee	Advertising	795.00

411 visible/411 total

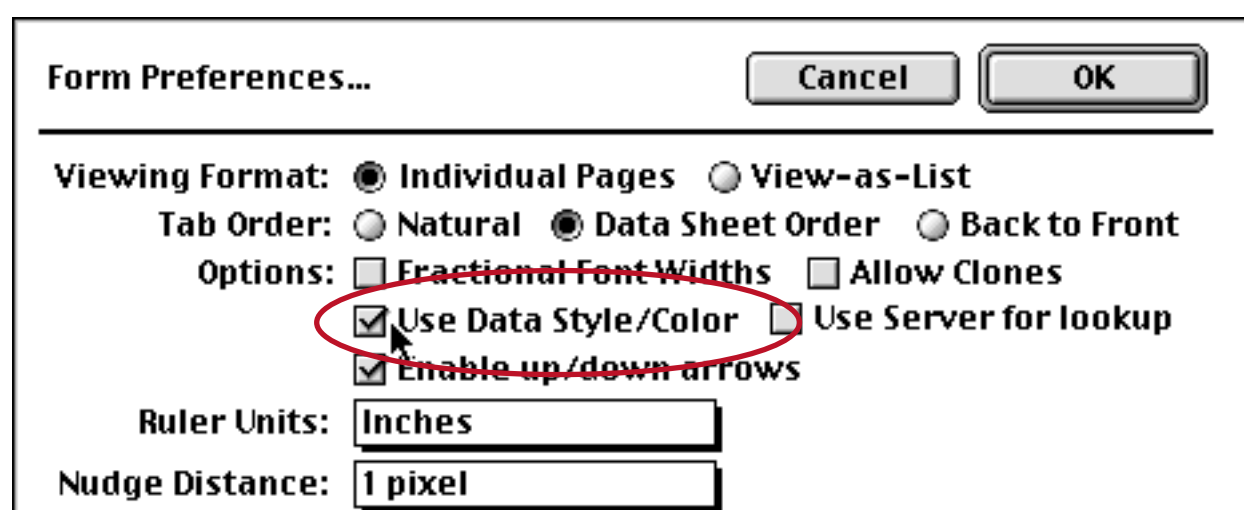
A cell retains its style and color until the data is modified. Any data modification (editing, formula fill, etc.) will cause the cell to revert to plain black.

Every data cell that is not plain black takes up an extra byte of storage. For example a database with 10 fields and 500 records will expand by 5K bytes if you change every data cell to blue or italic (or both).

Displaying Data Style and Color in Forms

Panorama always keeps track of the style and color of every data cell. However, Panorama does not always display a cell using its style and color! Why not? In a form, you can specify the permanent style and color of any object using the Text and Graphics Menus. This permanent style and color usually overrides the style and color of individual data cells.

If you want the style and color of data cells to override the permanent style and color, open the **Form Preferences** dialog (Setup Menu) and check the **Use Data Style/Color**. When this option is checked, the style and color of the each data cell overrides the permanent style and color specified in graphic design mode. Note: This option works only with data cells, it does not work with Text Editor SuperObjects. (See “[Text Editor SuperObject](#)” on page 639 for more information on Text Editor SuperObjects.)



When you are using the data sheet, Panorama always displays the style and color of each individual data cell.

Accessing Style and Color in a Formula

Panorama formulas can use the `fieldstyle()` function to access both the style and color of individual data cells. When combined with the **Formula Find/Select** command, these functions allows you to select data based on its style or color. (See “[The Select Summaries Command](#)” on page 361 for more information on this command.)

The basic syntax for the `fieldstyle()` function is:

```
fieldstyle(fieldname)
```

This function returns the style and color of a data cell— bold, italic, etc. The fieldname parameter is a string, so it should usually be in quotes—for example `fieldstyle("Price")="bold"`. If the data cell has more than one style or color, this function will return all of them, for example `red bold italic`. Use the `contains` operator (see “[String Testing Functions](#)” on page 78 of *Formulas & Programming*) to check for a specific style or color, for example

```
select fieldstyle("Name") contains "italic"
```

To check if a cell is plain, use a formula like this

```
fieldstyle("Address")=""
```

For more information on this function see “[FIELDSTYLE\(\)](#)” on page 5221 of the *Panorama Reference*.

Chapter 13: Introduction to Forms



Panorama has two interfaces for displaying and editing data — the data sheet and forms. So far most of this manual has concentrated on using the data sheet. Starting with this chapter we'll introduce a much more flexible way to display and edit data: the form.

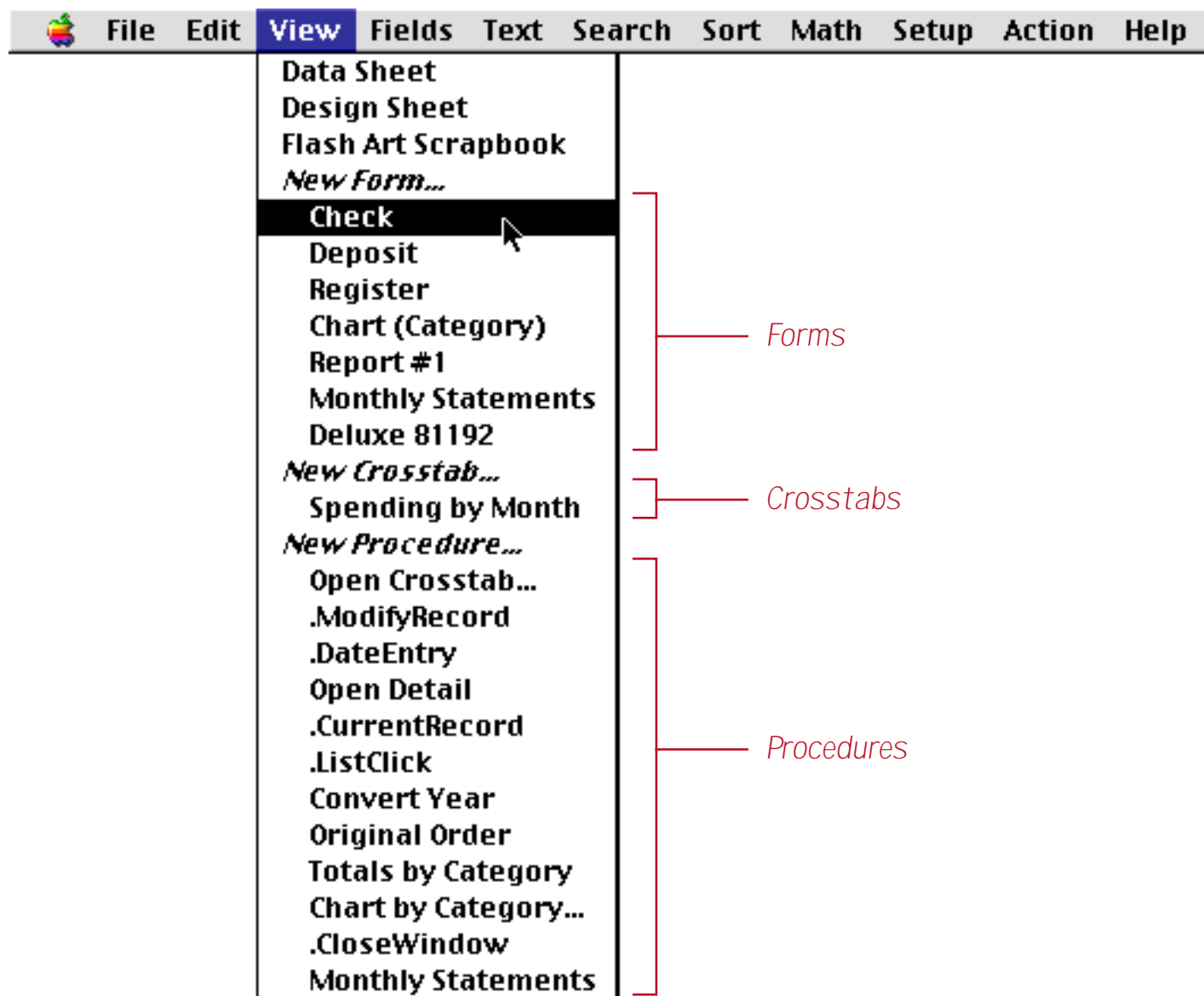
A single database only has one data sheet but it may contain many forms. You can design each form for a specific purpose, for example entering data, printing a mailing label, or printing a report.

The data sheet displays a fixed format of rows and columns. You can change the text font and the width of the columns, but beyond that you don't have any control over the data sheet's appearance. Each form, on the other hand, is completely customizable. You can (and in fact must) set up the placement of each item on the form, including data, text and artwork. The form view is much more flexible than the data sheet view, but it is also more work to set up. Here is a typical example of a form. Notice that the window name shows the database name, [Checkbook](#), followed by the form name, [Plain Checks](#).

Ck #	Date	Amount
2239	08/20/90	85.00
2186	07/16/90	75.00
2104	05/22/90	115.00
2013	03/20/90	85.00
2012	03/20/90	25.00
1980	02/20/90	80.00
1979	02/15/90	125.00
1943	02/07/90	35.00
1942	02/07/90	75.00
1914	01/17/90	75.00
1908	01/08/90	75.00

Opening a Form

The **View** Menu lists all the views in a database, including forms. The pre-defined views appear at the top—data sheet, design sheet, and flash art scrapbook. Next come the views you've created—forms, crosstabs, and procedures. The **View** Menu also contains commands for creating your own new views—new form, new crosstab, and new procedures.

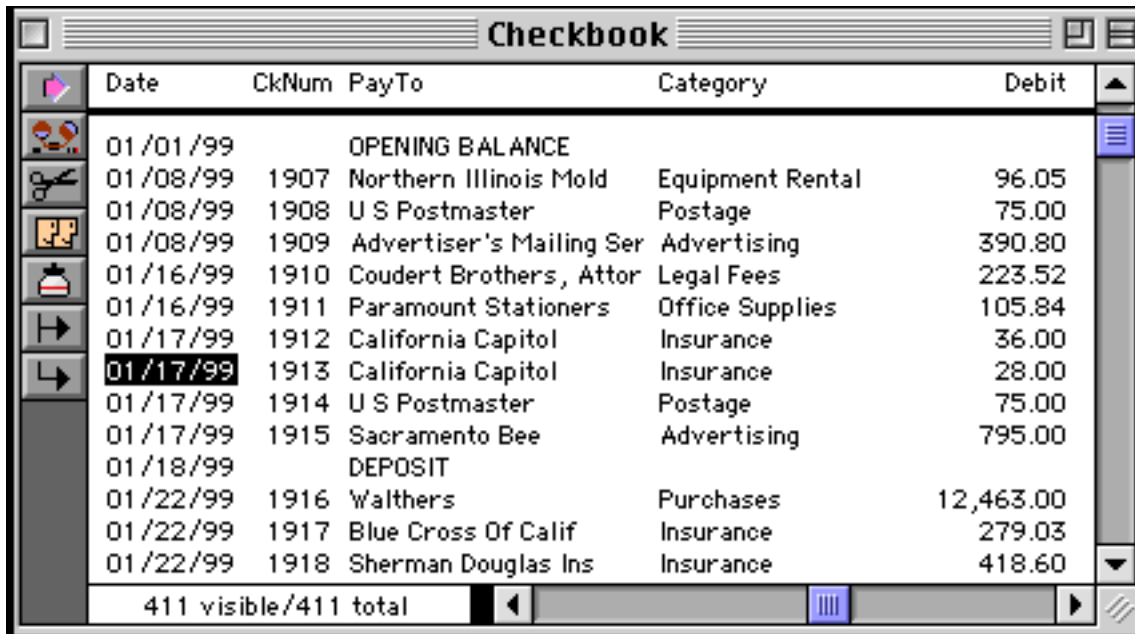


To open a form within the current window, simply choose the form from the menu. You can flip back and forth between different forms (or other views, like the data sheet) at any time.

Opening A Form in a New Window

If you wish, you can open a form in a new window, allowing you to see two different views of the database at once. To open a form in a second window the same size as the current window, hold down the **Alt** key while you select from the View Menu. (If you are using a Macintosh, hold down the **Control** key.) The new window will appear slightly below and to the right of the original window.

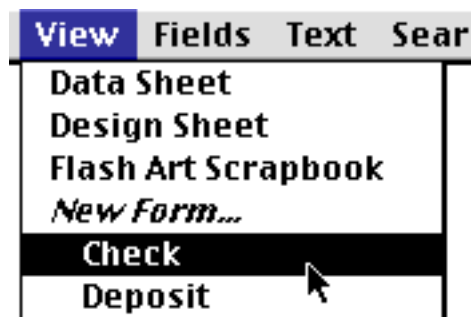
1) Start with one window



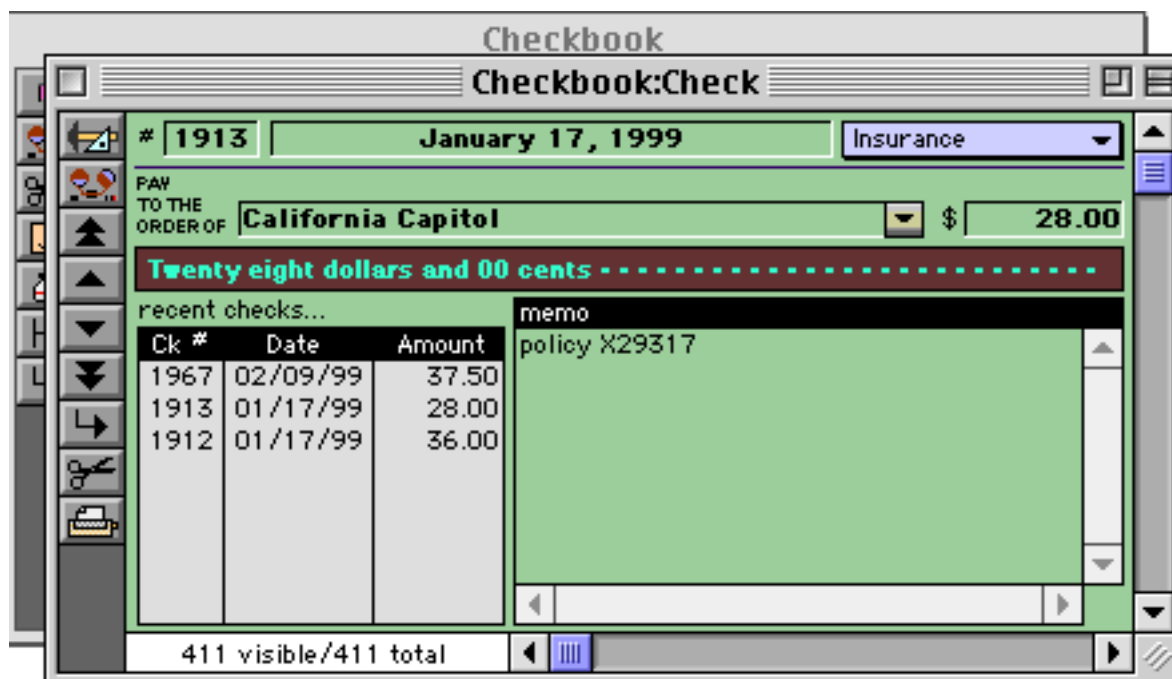
Date	CkNum	PayTo	Category	Debit
01/01/99		OPENING BALANCE		
01/08/99	1907	Northern Illinois Mold	Equipment Rental	96.05
01/08/99	1908	U S Postmaster	Postage	75.00
01/08/99	1909	Advertiser's Mailing Ser	Advertising	390.80
01/16/99	1910	Coudert Brothers, Attor	Legal Fees	223.52
01/16/99	1911	Paramount Stationers	Office Supplies	105.84
01/17/99	1912	California Capitol	Insurance	36.00
01/17/99	1913	California Capitol	Insurance	28.00
01/17/99	1914	U S Postmaster	Postage	75.00
01/17/99	1915	Sacramento Bee	Advertising	795.00
01/18/99		DEPOSIT		
01/22/99	1916	Walthers	Purchases	12,463.00
01/22/99	1917	Blue Cross Of Calif	Insurance	279.03
01/22/99	1918	Sherman Douglas Ins	Insurance	418.60

411 visible/411 total

2) While holding down the **Alt** key (PC) or the **Control** key (Mac), make a selection from the View menu.



3) The new window appears slightly below and to the right...



Checkbook:Check

1913 January 17, 1999 Insurance

PAY TO THE ORDER OF California Capitol \$ 28.00

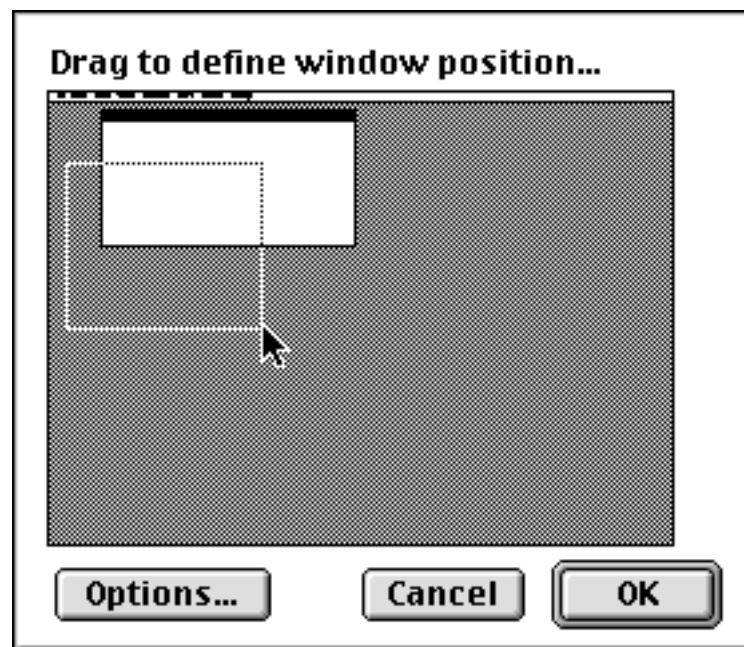
Twenty eight dollars and 00 cents

recent checks...	memo		
Ck #	Date	Amount	
1967	02/09/99	37.50	policy X29317
1913	01/17/99	28.00	
1912	01/17/99	36.00	

411 visible/411 total

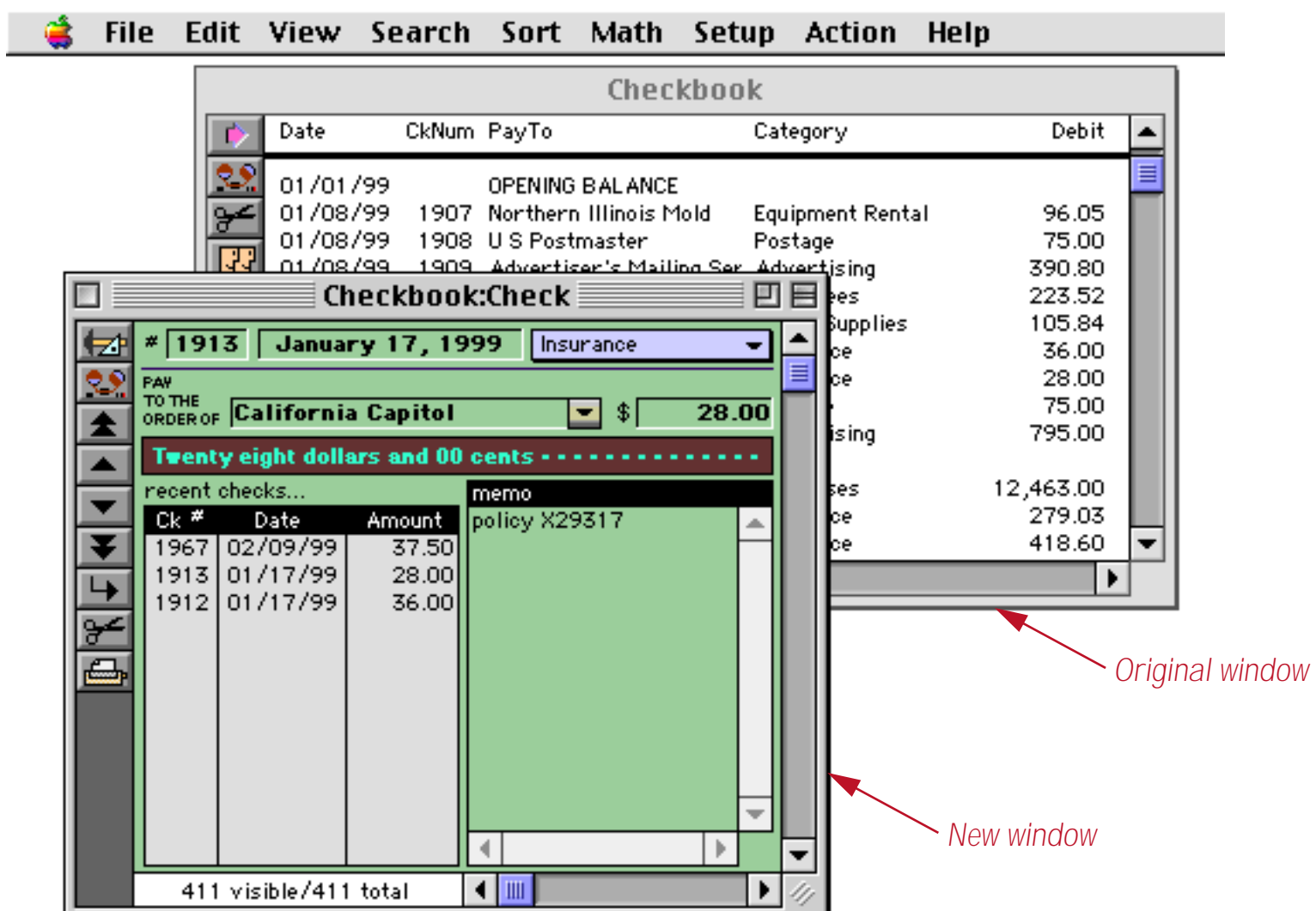
The new window will track the original window. Any changes made in this new window automatically appear in all other windows, and when any navigation is done in one window (moving up or down within the database) all of the other windows will follow along.

Another technique allows you to control the exact size and position of the new window in advance. To use this technique, hold down the **Control** key while you select from the View Menu. (If you are using a Macintosh, hold down the **Command** key.) After you choose the view you want to open, the **Window Options** dialog will appear shown below. This dialog shows a miniature view of the entire computer screen, along with the positions of every window.



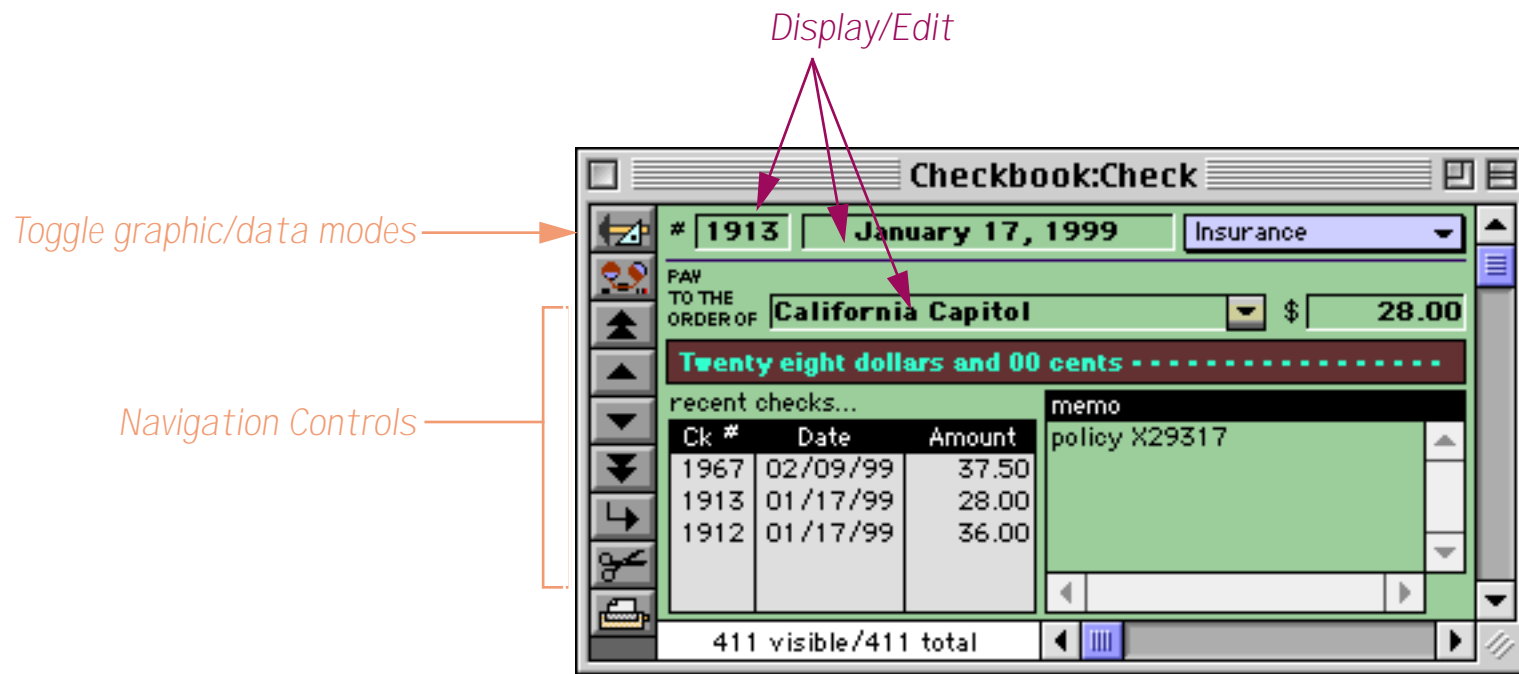
The **Options** button in the Window Options dialog allows you to selectively eliminate up to four components from a new window—the tool palette, scroll bars, and drag bar. See “[Window Options](#)” on page 172 for more information about eliminating these components.

To define the position and size of the new window, simply drag a rectangle across the miniature screen, as shown above. If you don’t get the position quite right, simply drag again. When you press the **Ok** button the new window will open in the location you have specified.

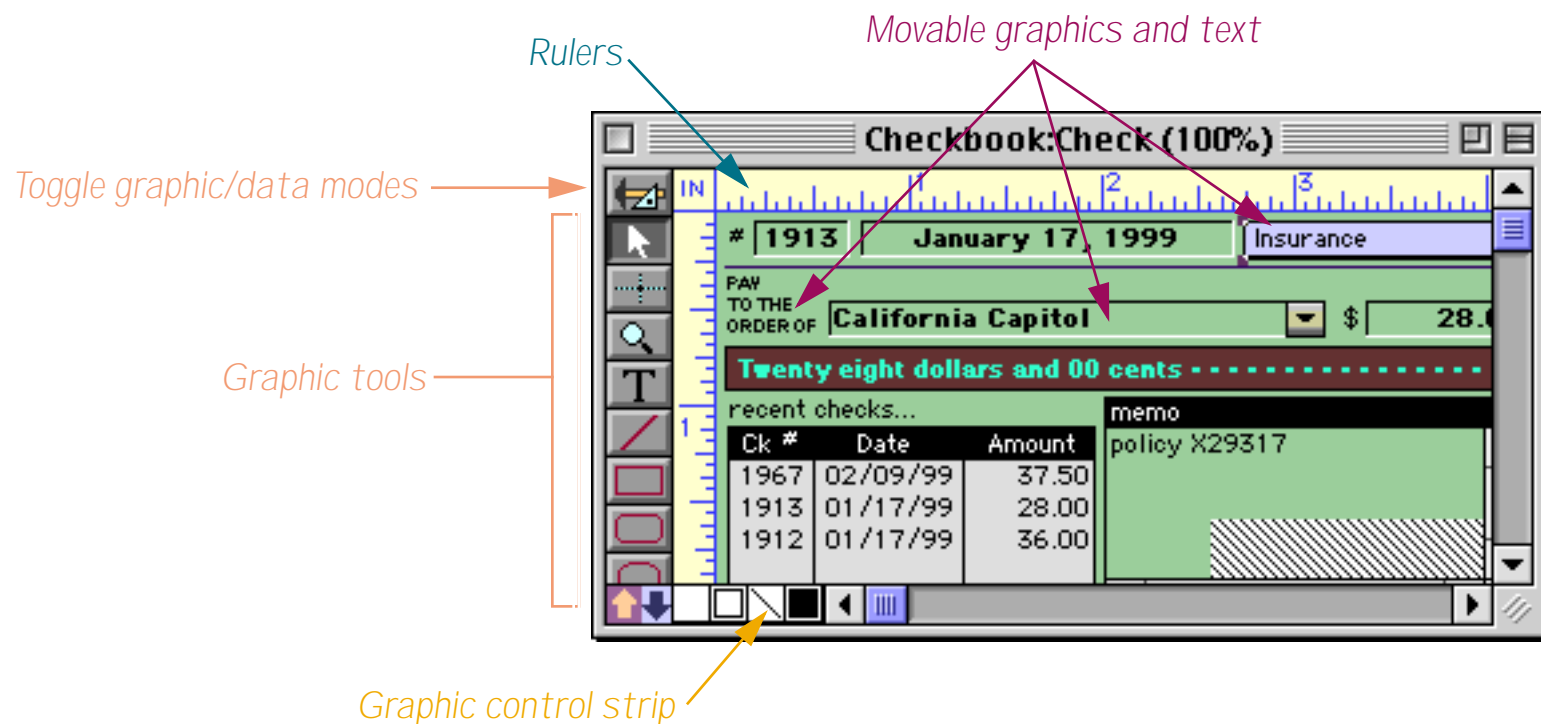



Form Modes: Data Access vs. Graphic Design

Unlike other views, the Form View operates in two distinct modes—data access and graphic design. **Data access mode** (also called “data mode”) is the default mode. In this mode you can view and display data, and navigate through the database.



Graphic design mode (also called “graphics mode”) functions like an electronic drafting table. In this mode you design the form by drawing lines, boxes, and other graphic elements. This mode is very similar to many drawing and page layout programs. Graphic design mode is easily recognized by the rulers that appear at the top and left edges of the windows.



To switch between data access and graphic design modes, click on the  tool. Each click on this tool toggles the window between the two modes.

Form Operation: Individual Pages vs. View-As-List

Panorama allows you to set up blank forms as individual pages or as a continuous sheet (**view-as-list**). When forms are set up as individual pages you see one record at a time. You can flip through the records just as you would shuffle through a stack of paper forms. All of the examples of forms you've seen so far are individual page forms.

A **view-as-list** form displays data as a continuous sheet, as shown below. Instead of flipping from record to record, you scroll up and down through the data in a manner similar to the data sheet. However, unlike the data sheet, a view-as-list form allows you to arrange the data any way you like, and even include graphics in the display. On the other hand, view-as-list forms are slower than the data sheet (because of the overhead in displaying the graphics) and they are much more work to set up.

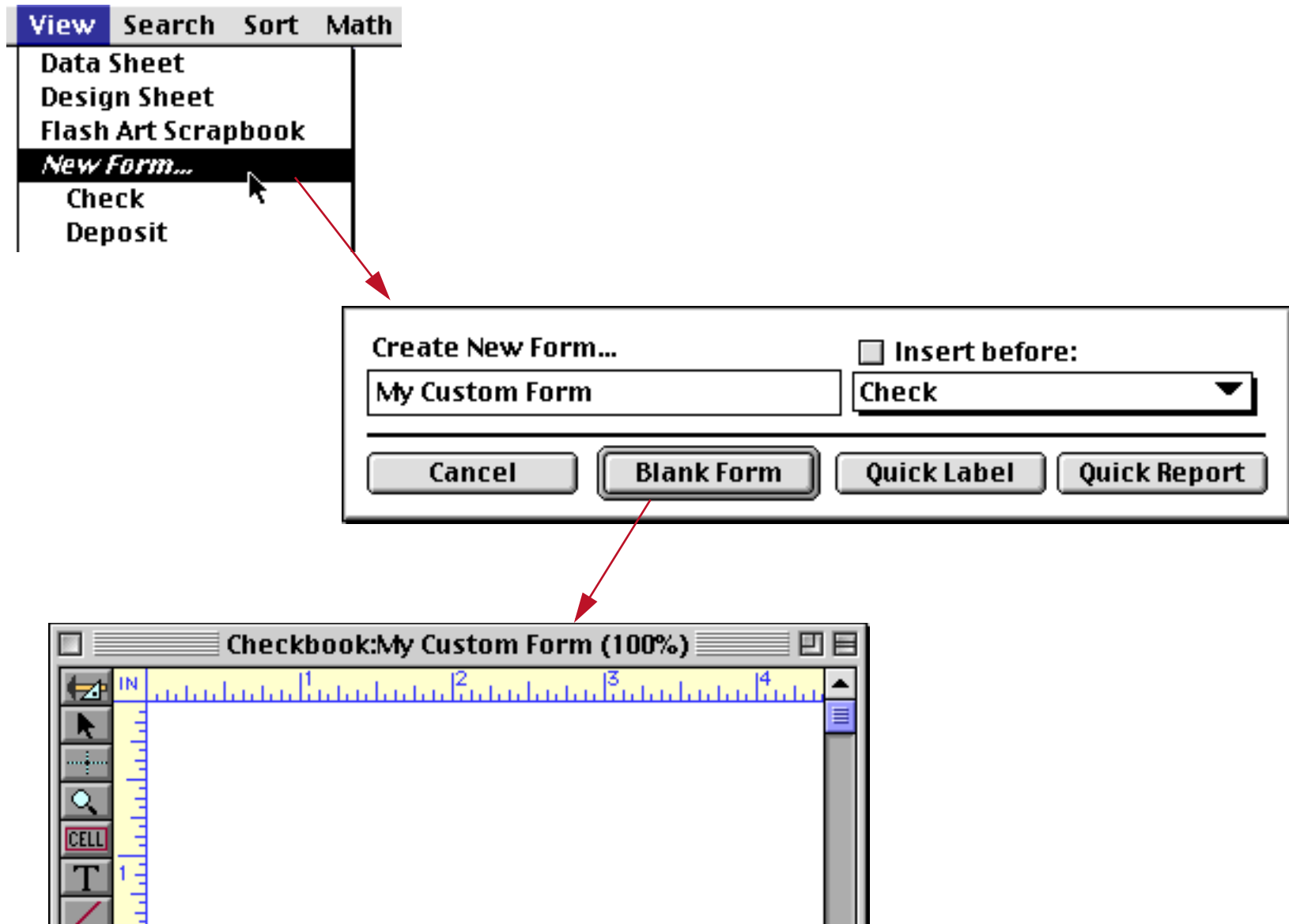
Date	Num/Pay To (Category)	Amount	Balance
01/17/99	1913 California Capitol (Insurance)	28.00	35,023.26
01/17/99	1914 U S Postmaster (Postage)	75.00	34,948.26
01/17/99	1915 Sacramento Bee (Advertising)	795.00	34,153.26
01/18/99	DEPOSIT	+3,846.32	37,999.58
01/22/99	1916 Walthers (Purchases)	12,463.00	25,536.58
01/22/99	1917 Blue Cross Of Calif (Insurance)	279.03	25,257.55
01/22/99	1918 Sherman Douglas Ins (Insurance)	418.60	24,838.95
01/22/99	1919 Cannon Astro (Office Supplies)	145.72	24,693.23
01/25/99	1920	1,885.40	22,807.83

411 visible/411 total

Unless you tell it otherwise, Panorama sets up a new form as individual pages. To convert the form to a continuous sheet you must use the **Form Preferences** command (Setup menu) to set the **View-as-List** option. You will also have to define the boundaries of the form by setting up a data tile (and optional header tile, see [“Adding a View-As-List Header”](#) on page 909). For more information about setting up view-as-list forms see [“Creating a View-As-List Form”](#) on page 902.

Creating a New Form

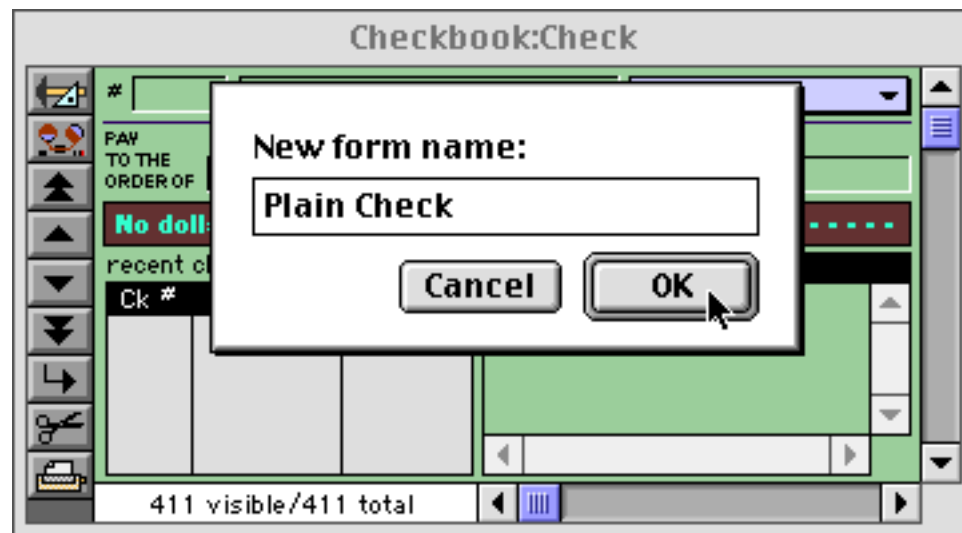
To create a new view, choose **New Form** from the **View Menu**. A dialog box will appear asking you to name the new form. A form name may be up to 25 characters long and can contain any letter, number or punctuation.



When you create a new form, it usually becomes the last form in the **View Menu**. If you wish, you can insert the new view into the middle of the **View Menu**. To do this, check the **Insert before** button and use the pop-up menu directly below the **Insert before** button to specify the position of the new view. You can also rearrange the order of the forms using the **Re-Arrange Forms** command in the **Setup menu**. See [“Changing the Order of Forms, Crosstabs or Procedures”](#) on page 183 for more information on this process.

Renaming a Form

To rename the currently visible form choose **Rename Form** from the Setup Menu. Type in the new name (limit 25 characters) and press **Ok**.



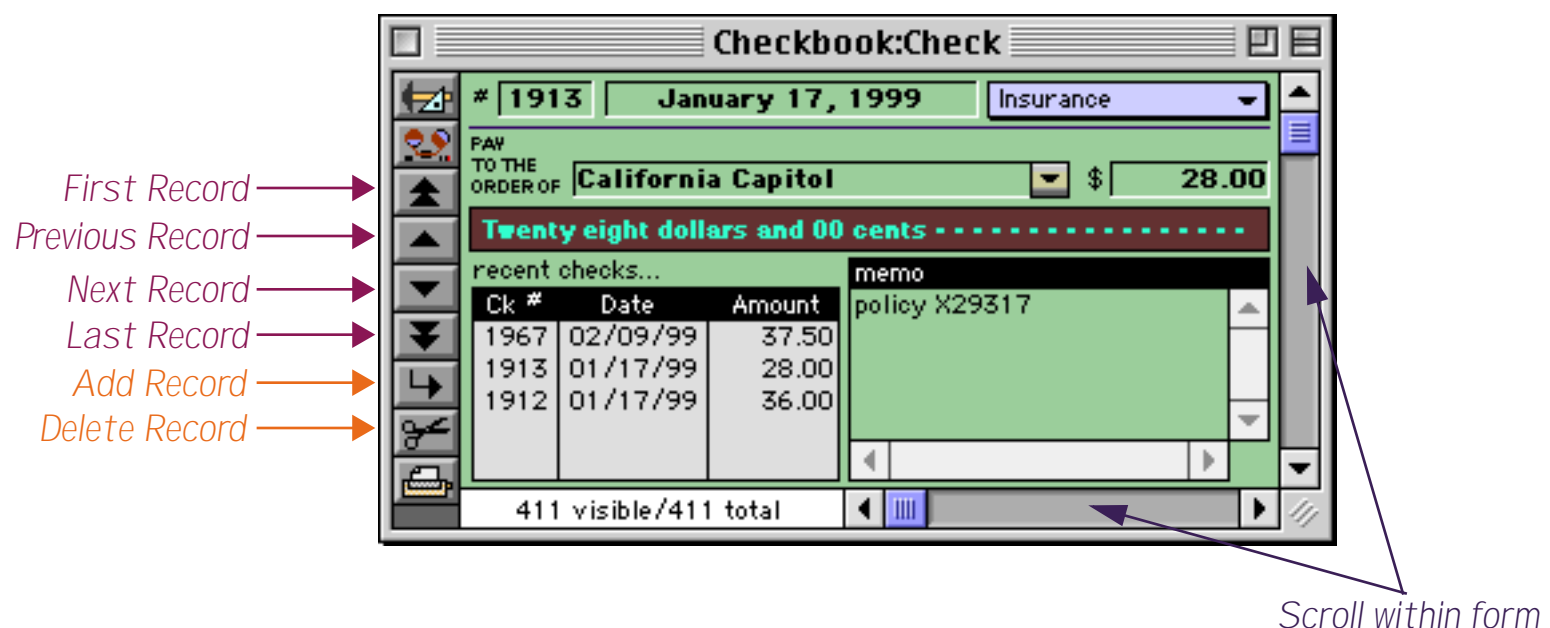
Deleting a Form

To delete a form choose **Delete Form** from the Setup Menu. Since you cannot undo after you delete a view, Panorama will ask you if you are sure before it actually deletes the form. Note: If the form is the only window open for this database, Panorama will close the entire file when it deletes the form. To avoid this, open an additional window (the data sheet or another form) before you delete the form.

You can also delete forms with the **Re-Arrange Forms** command in the Setup menu. This is the fastest way to remove several forms at once. See [“Changing the Order of Forms, Crosstabs or Procedures”](#) on page 183 for more information on this process.

Browsing the Database With a Form

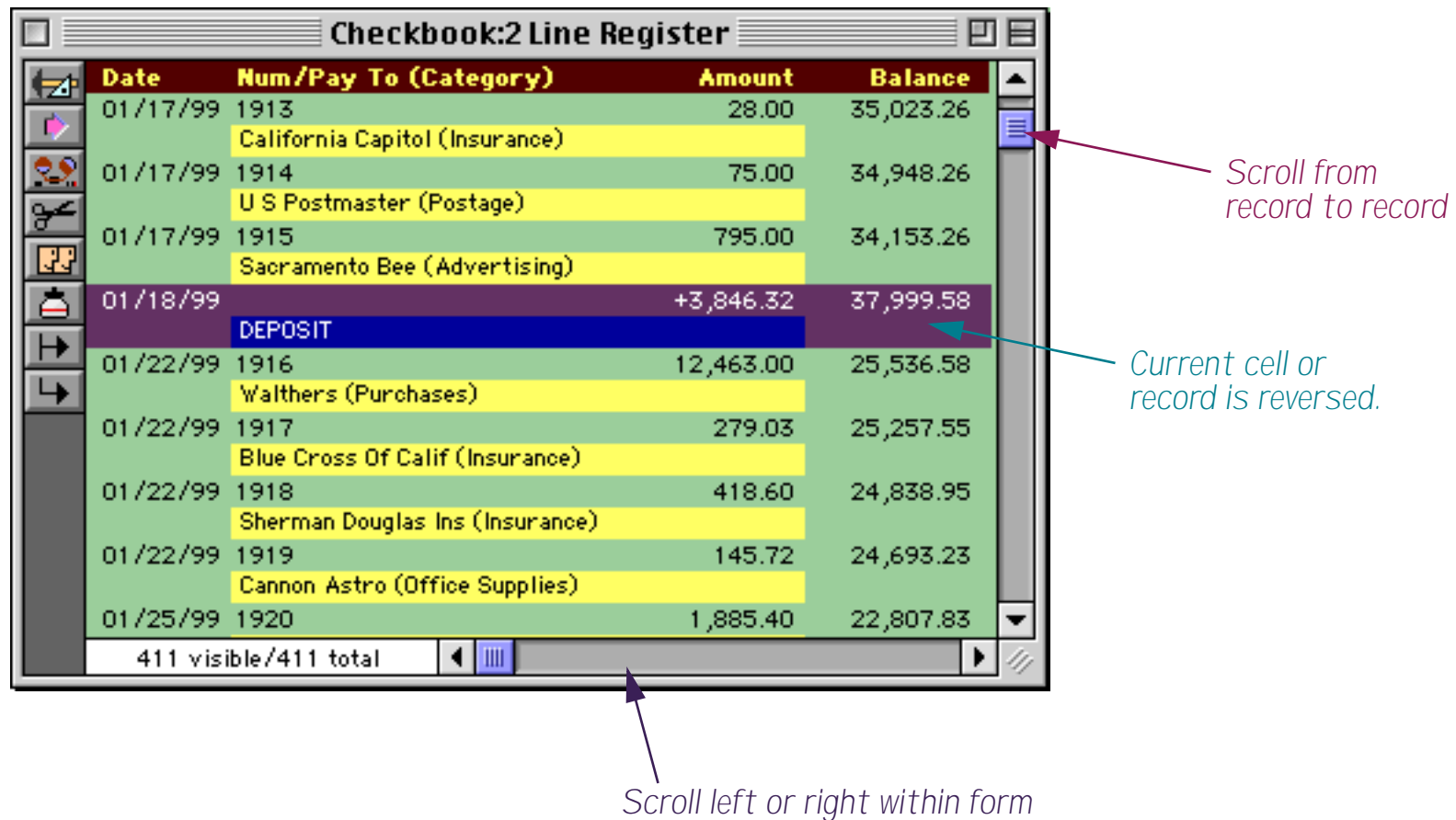
When working with a normal form (as opposed to a view-as-list form) Panorama displays one record at a time. You can navigate from record to record using the VCR style buttons in the tool palette.



If the form is taller and/or wider than the current window, you can use the scroll bars on the bottom and right to slide the form around within the window. The form can also slide automatically as you tab from cell to cell within the form.

Browsing the Database With a View-As-List Form

When working with a view-as-list form, Panorama display several records at a time — one row per record. You can click on any visible record to make it active, or use the vertical scroll bar to move to any record within the database (just like the vertical scroll bar in the design sheet). You can also use the up and down arrow keys to move up or down one record at a time.



If the form is wider than the window, you can use the horizontal scroll bar at the bottom of the window to slide the form left or right within the window. See "[View-As-List Forms](#)" on page 899 to learn how to create view-as-list forms.

Chapter 14: Graphic Design



Panorama has a built in graphic editor for creating and modifying the layout of forms and reports. If you've used an object oriented graphic editor before you will find many familiar features.

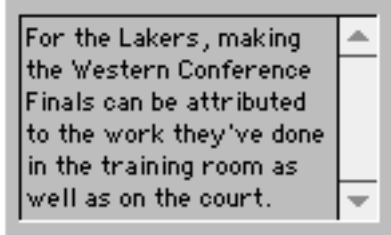











Graphic Objects















Panorama forms are built with **graphic objects** (also called simply **objects**). Each object is treated as a unit (rather than as a collection of dots), and each object has a specific shape, position, size, and color. You can easily modify an object without disturbing the other objects—for instance sliding a rectangle to a new position or changing the diameter of a circle. Most of the next few chapters deals with techniques and shortcuts for arranging graphic objects on the surface of the form.

Types of Graphic Objects

Panorama has over two dozen different types of graphic objects. Objects fall into five classes: Shapes, Text, Multi-Media, Buttons, and Layout. Each type of object has its own characteristics and appearance, as shown in the following table.

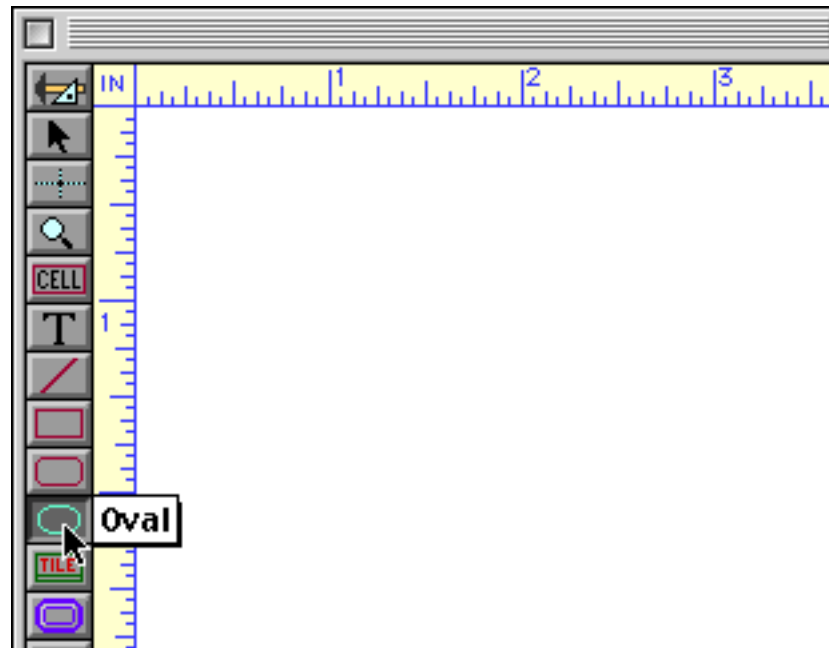
Class	Samples	Object	Tool	Description
Shapes		Line		Simple line at any angle.
		Rectangle		Simple rectangle, may be filled or transparent.
		Round Rectangle		Rectangle with curved corners.
		Oval		Oval (or circle), may be filled or transparent.

Class	Samples	Object	Tool	Description
Text	<p>Quantity</p> <p>All prices are F.O.B. Los Angeles, California. Terms are 30 days on approved credit, with a 2% discount for payment within 10 days.</p> <p>Name</p> 	Click Text		Displays simple text captions.
		Auto Wrap Text		Displays one or more paragraphs of text. May contain fields or variables merged within the text.
		Text Display		Displays text based on a formula. The text can scroll within the object, may be aligned in 9 different positions within the object, and can scale based on the size of the form.
		Data Cell		Used for editing fields. When double clicked, an expandable pop-up editing box appears (similar to editing in the data sheet).
		Text Editor		Used for editing fields or variables. Unlike the Data Cell, there is no pop-up editing box (more like other software applications).
		Word Processor		Used for editing a field or variable containing stylized text. The text may contain different fonts, sizes, styles, margins and tab stops.
Multi-Media		Picture	none	Displays a fixed image. May be used for backgrounds, logos, etc.
		Flash Art		Displays changing images (PICT format) based on a formula. Images may be part of the database or stored as separate files on the disk.
		Super Flash Art		Displays images or QuickTime movies with advanced features like scroll bars, advanced alignment and scaling, and hypertext.
		Chart		Displays column, bar, line, area, scatter and pie charts.
		Flash Sound		Automatically plays sound (Macintosh only).

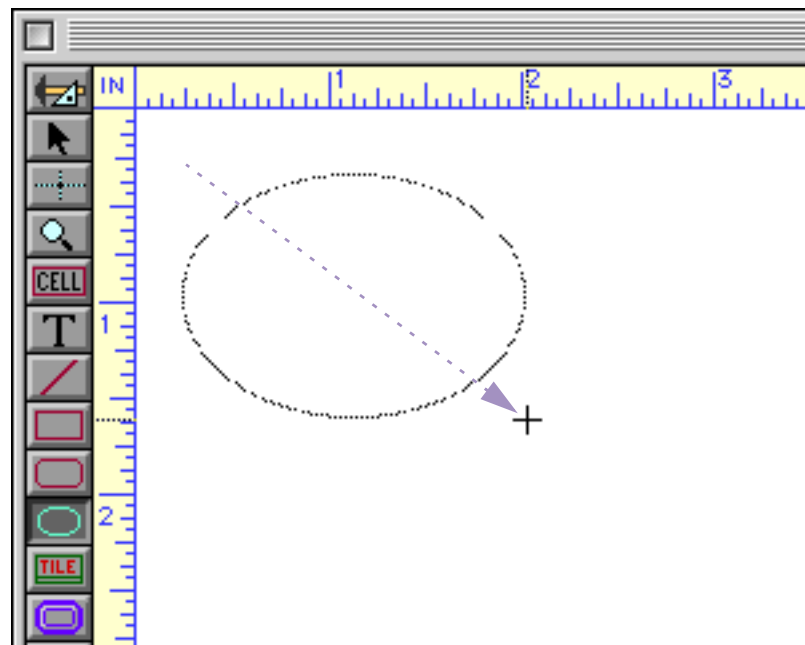
Class	Samples	Object	Tool	Description
Buttons		Button		Generic button tool for creating push buttons, radio buttons and checkboxes (fields only). (For new applications we recommend the new button tools listed below.)
		Push Button		2 and 3 dimensional push buttons in a variety of styles.
		Data Button		2 and 3 dimensional checkboxes and radio buttons in a variety of styles. These buttons may be tied to a field or a variable.
		Sticky Push Button		2 and 3 dimensional buttons that look like push buttons but act like checkboxes or radio buttons.
		Pop-Up Menu		Pop-up menu tied to a field or variable. May use any font, text size, color, or number of columns.
		List		Scrollable list.
		Flash Art Push Button		Push button with custom artwork.
		Flash Art Data Button		Checkbox or radio button with custom artwork.
		Scroll Bar		Standalone scroll bar.
Layout		Tile		Used for report and view-as-list layout.
		Super Matrix		Display a repeating matrix that may contain graphics and data. Options include grid lines and the number of rows and columns.
		Auto Grow		Adjusts other objects as window size changes, making the form "elastic."

Creating a Graphic Object

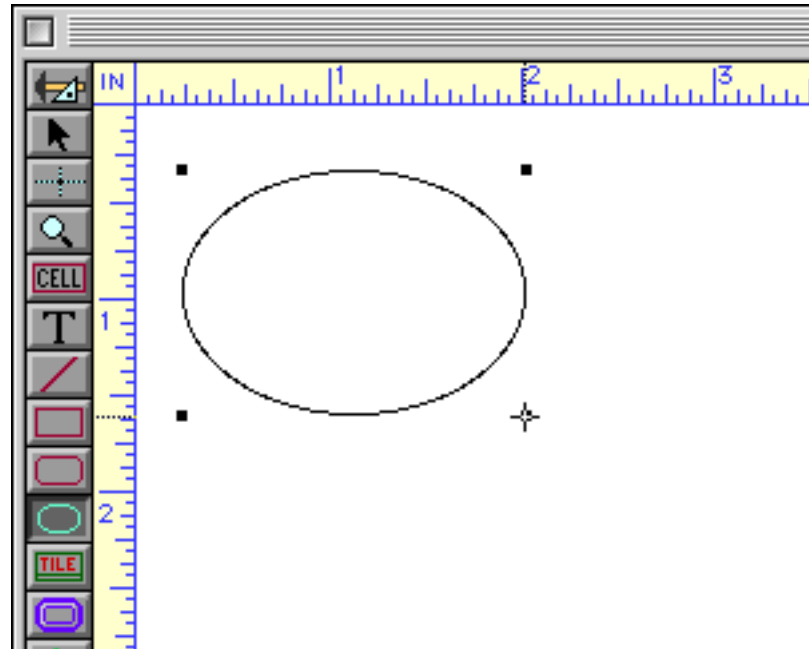
To create a new graphic object, first click on the appropriate tool in the tool palette. For example, to draw an oval you would click on the **Oval** tool.



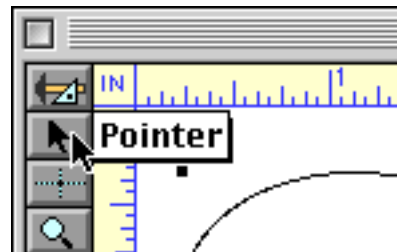
Then move the cursor onto the form and drag the mouse across the surface of the form to define the location and size of the new object (the dragging motion is shown by the dashed arrow in the illustration below). A gray outline of the new object will follow the mouse.



When you release the mouse, the new object will appear.

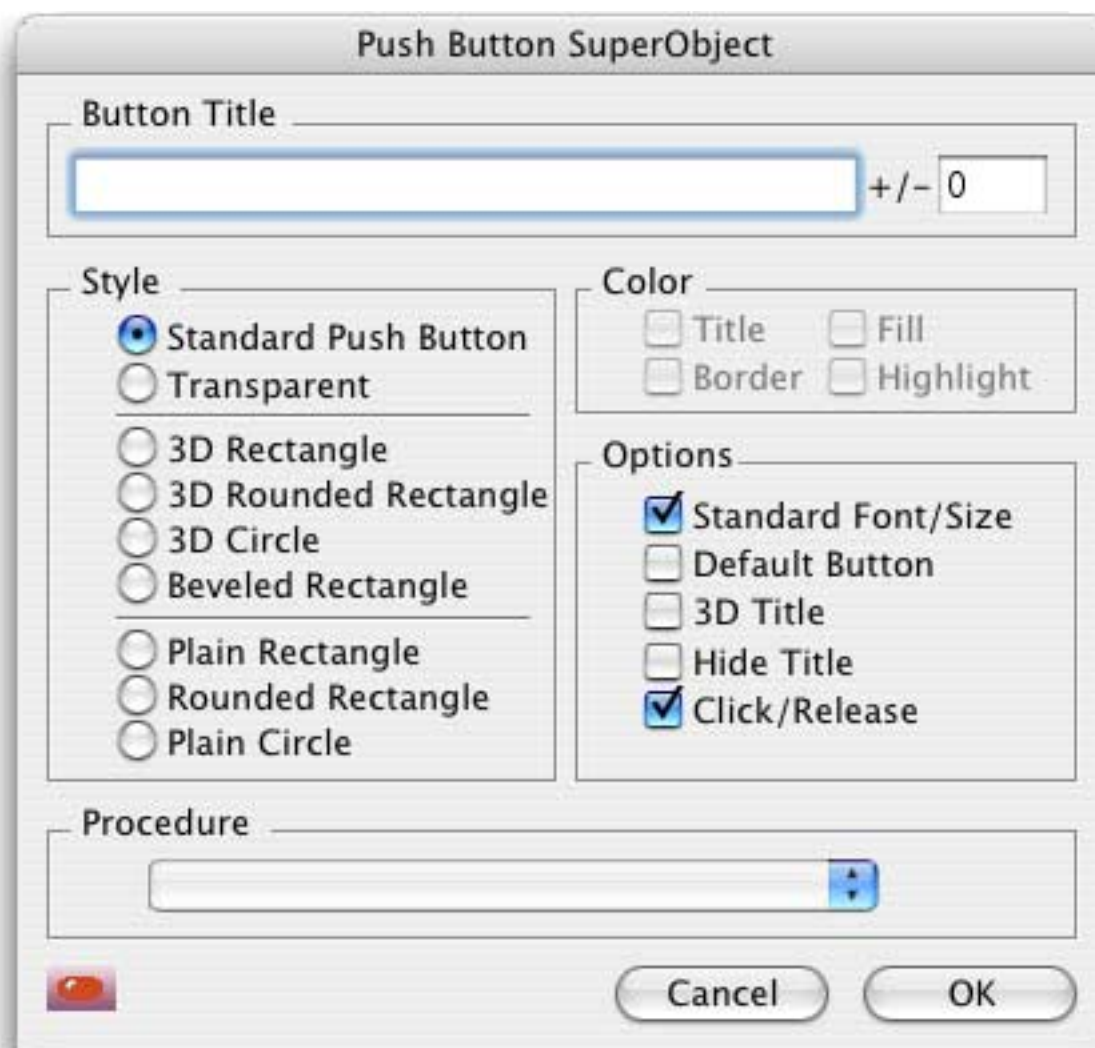


Each time you drag across the form you will create a new shape. When you are finished creating shapes, click on the **Pointer** tool.



Don't forget to click on the Pointer tool when you are done! If you don't, the next time you click you will create another graphic object.

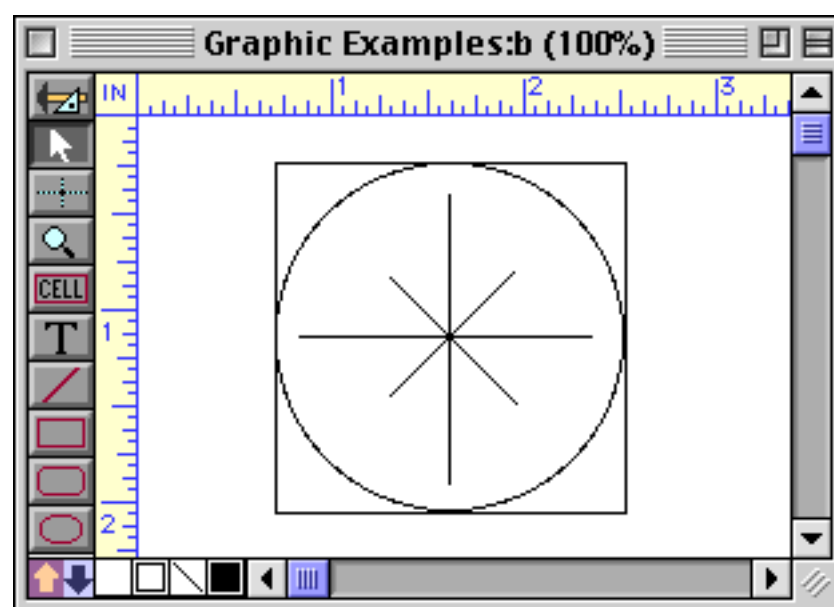
The procedure for creating more complex objects is the same as for simple objects: 1) select the tool, 2) drag the mouse across the form. However, when you release the mouse after creating a more complex object a dialog will appear allowing you to configure the new object. Each type of complex object has its own dialog. For example, here is the dialog for creating a push button.



Rather than describing the dialog for each type of item here, each will be described in detail later along with the corresponding objects.

Creating Perfect Squares, Circles and Lines

If you press the **Shift** key while you create a rectangle or oval, Panorama will automatically force the new shape to be a perfect square or circle. The **Shift** key was used to create the illustration below.

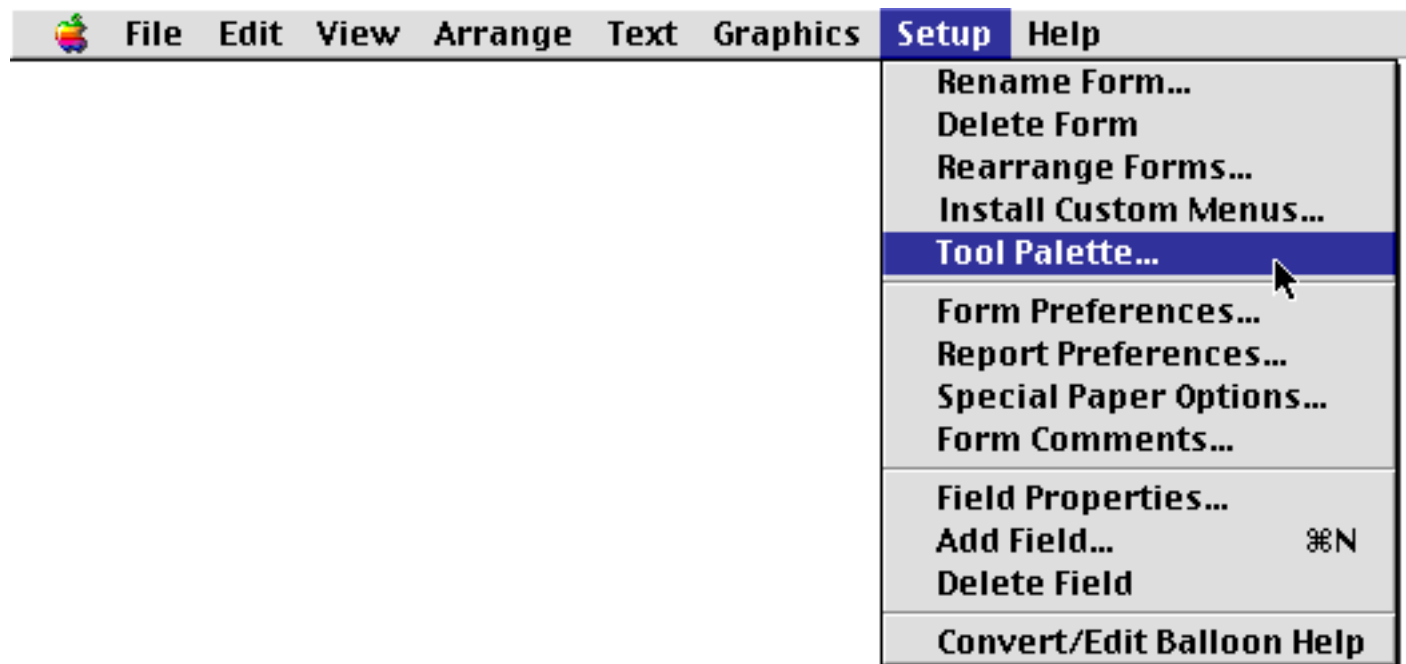


If you press the **Shift** key while creating a line Panorama will force the alignment of the new line to a multiple of 45 degrees (0°, 45°, 90°, 135°, etc.).

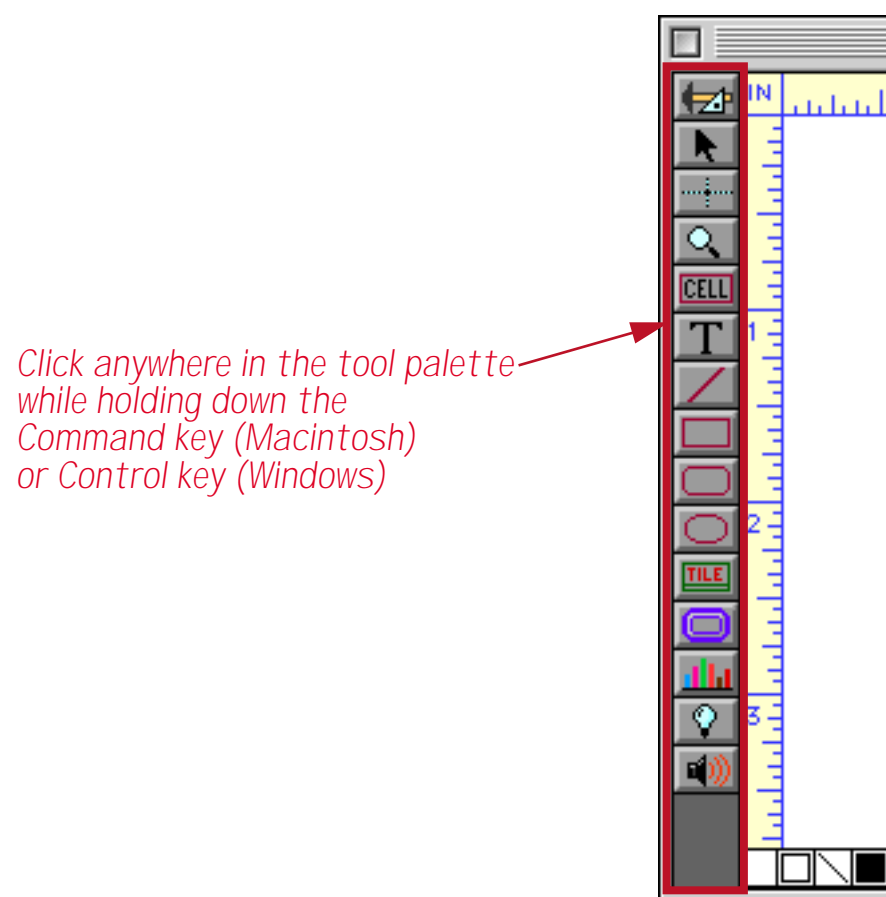
Customizing the Tool Palette

There are a total of 29 graphic tools available for use in Panorama. Many computer screens are not large enough to handle this complete palette of tools (and we expect the number of tools to increase in future versions). To get around this problem, Panorama allows you to customize the graphic tool palette on the fly. You can configure the palette to contain only the tools that you need right now in any order you want. If your needs change later, you can simply reconfigure the palette at any time.

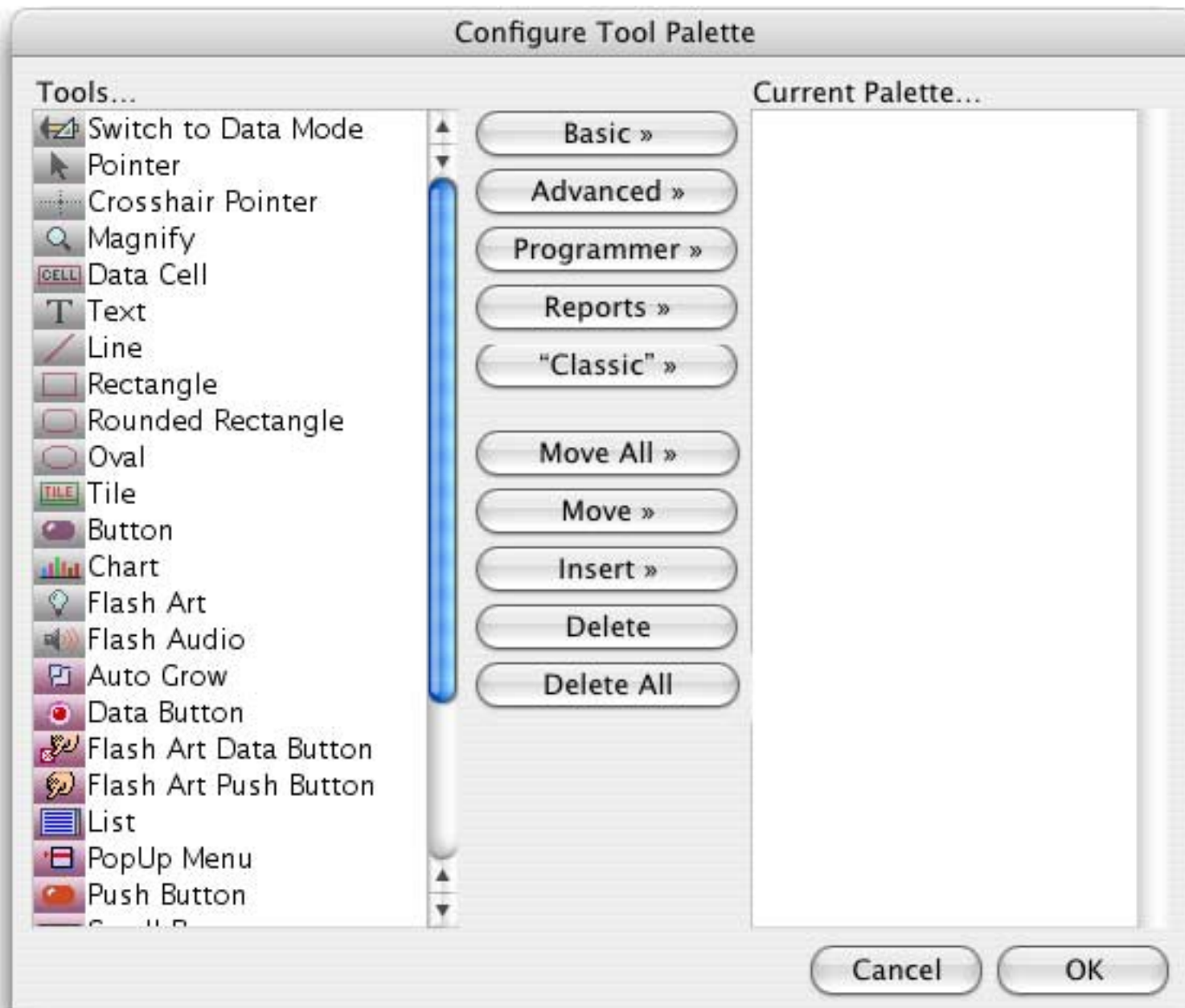
To customize the graphics tool palette, choose **Tool Palette** from the Setup menu.



Tip: You can also open this dialog by holding down the **Command** key (Macintosh) or **Control** key (Windows) and clicking anywhere in the graphic tool palette.



The Configure Tool Palette dialog contains two lists of tools. On the left is a list of all tools available.



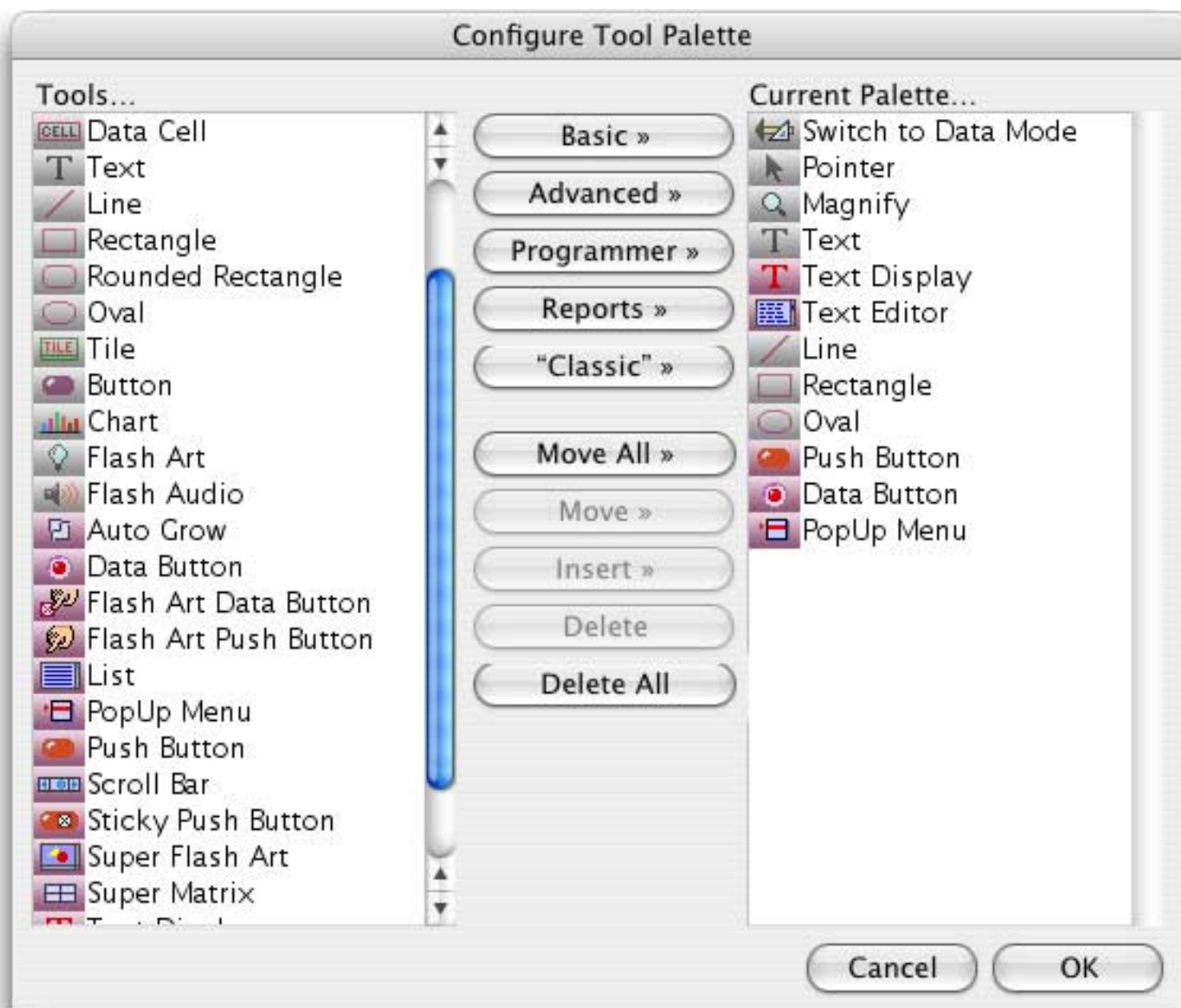
On the right is a list of the tools you currently have installed. If this list is empty, Panorama will use the default tool palette (which is the original tool palette from Panorama II). Tools can be moved into the palette on the right either individually (one at a time) or in groups. To move an individual tool from the left to the right, double click on the tool in the left. Or you can select the tool (or tools) and press the **Move** or **Insert** button.

To move an entire group of tools at once press the **Basic**, **Advanced**, **Programmer**, **Reports** or **“Classic”** buttons. The table below shows the tools included by each of these options.

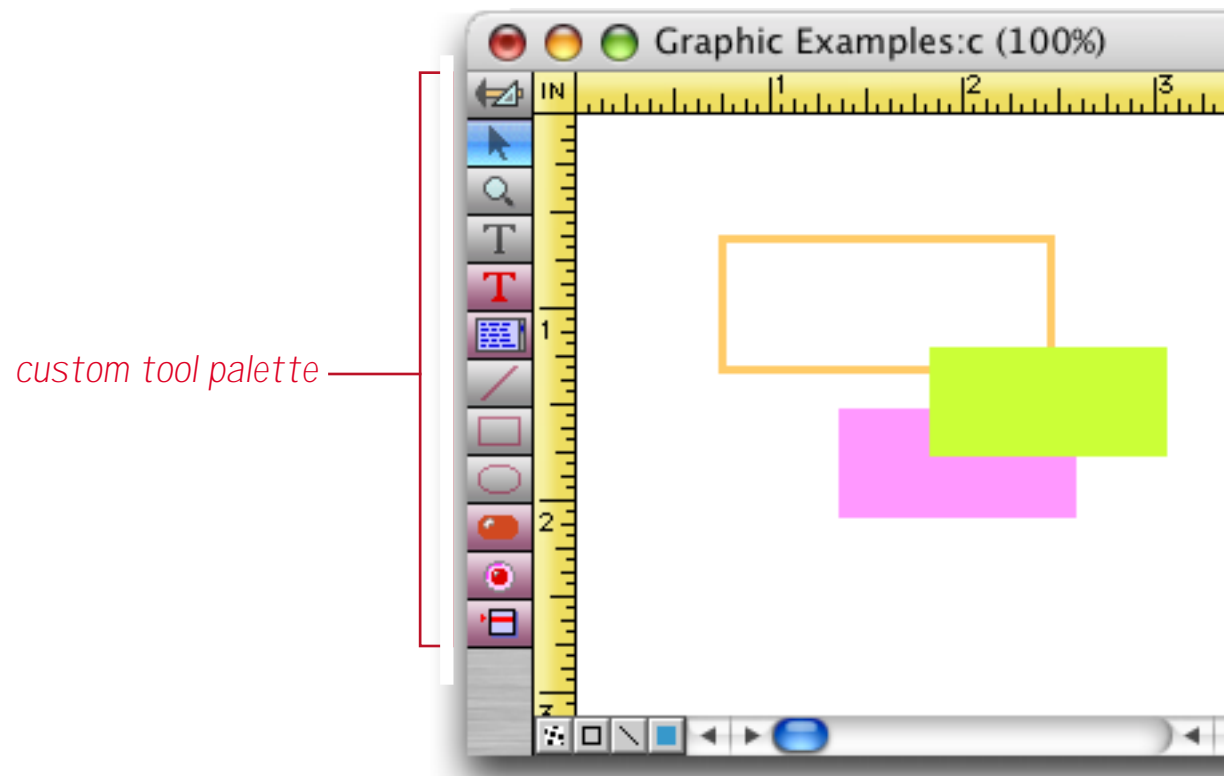
Basic	Advanced	Programmer	Reports	“Classic”
<ul style="list-style-type: none"> Switch to Data Mode Pointer Crosshair Pointer Magnify Data Cell Text Editor Text Text Display Line Rectangle Rounded Rectangle Oval Push Button Data Button 	<ul style="list-style-type: none"> Switch to Data Mode Pointer Crosshair Pointer Magnify Data Cell Text Editor Text Text Display Line Rectangle Rounded Rectangle Oval Tile Push Button Data Button Sticky Push Button PopUp Menu Super Flash Art Word Processor (Cell) 	<ul style="list-style-type: none"> Pointer Crosshair Pointer Magnify Text Editor Text Text Display Line Rectangle Oval Super Flash Art Word Processor (Cell) Button Push Button Data Button Sticky Push Button PopUp Menu List Flash Art Push Button Flash Art Data Button Scroll Bar Super Matrix Auto Grow 	<ul style="list-style-type: none"> Switch to Data Mode Pointer Crosshair Pointer Magnify Text Text Display Line Rectangle Rounded Rectangle Oval Tile Super Flash Art 	<ul style="list-style-type: none"> Switch to Data Mode Pointer Crosshair Pointer Magnify Data Cell Text Line Rectangle Rounded Rectangle Oval Tile Button Chart Flash Art Flash Audio

To delete one or more tools from the right hand list, select the tool(s) and press the **Delete** button. You can also delete a tool from the right hand list by double clicking on it. The **Delete All** button clears the list on the right so you can start over or go back to using the default tool palette.

Here is an example of a custom palette configuration:


















When you press the **OK** button the new palette configuration will become active, like this.



If you need to change the tool palette again later, just open the dialog again and make the necessary adjustments.

Using the Keyboard to Select Common Tools

Usually you will use the mouse to select the tool you want to use. The most common tools, however, can also be activated with the keyboard. This saves you a trip to the tool palette each time you want to select one of these tools. The table below lists the tools that can be selected with the keyboard. Note that these keys are pressed by themselves — not in combination with any other key.

Tool	Key	Notes
		Press the Escape key to toggle between Graphics Mode and Data Access Mode (disabled if tool palette has been disabled)
		Press the P key to select the Pointer tool (except when typing or editing text with the T tool).
		Press the Enter key to select the Pointer tool (at any time, even when typing or editing text with the T tool).
		Press the = key to toggle the crosshair cursor on/off (See " Nudging to the Crosshair Cursor " on page 515)
		Press the T key to select the Text tool
		Press the L key to select the Line tool
		Press the R key to select the Rectangle tool
		Press the O key to select the Oval tool

SuperObjects

The astute observer will notice that the list of tools in the configuration dialog is divided into two groups - gray tools and purple tools. The purple tools are actually not built in to Panorama, but are special plug-ins called **SuperObjects**. Because they are written as plug-in tools, ProVUE can develop new SuperObjects faster and with more capabilities than for standard objects. You can expect to see many more SuperObjects added to Panorama in the future. You may also notice that some SuperObjects perform functions similar to regular objects, but with more features. However, as far as you, the user, are concerned, you don't really have to worry about whether an object is a SuperObject or not. The techniques for creating and modifying SuperObjects and regular objects are the same.

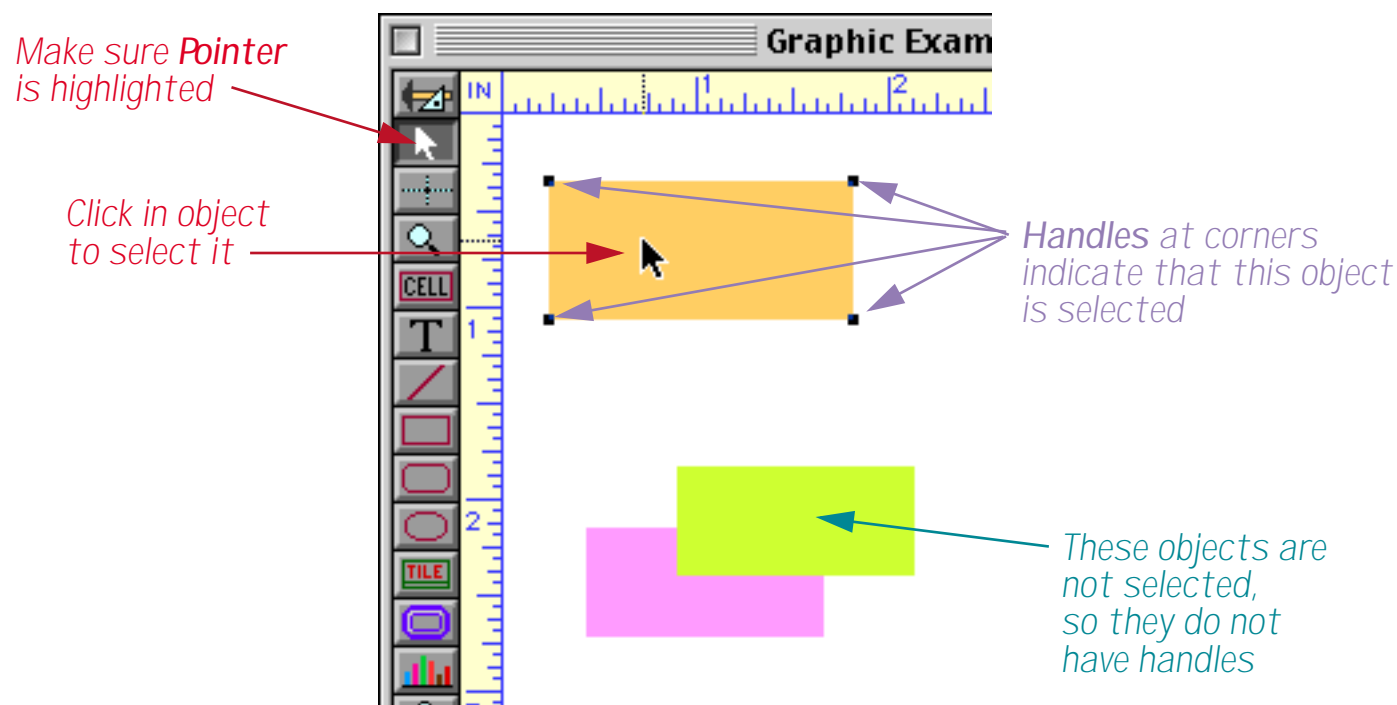
Modifying Objects

Once an object is created it is far from being cast in stone. At any time you can go back and move, resize, change the color, change the alignment, or make virtually any other change. You can change objects one at a time or in groups. About the only change you cannot make is changing an object into another type of object (for example, you cannot change a square into a circle or change a rectangle into a pop-up menu).

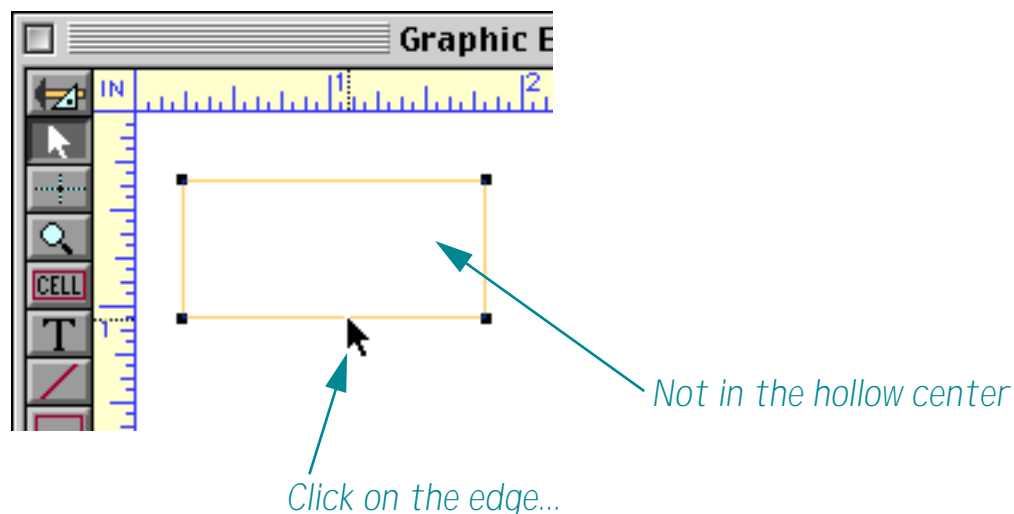
Selecting a Single Object

Before you can modify an object (change its size, color, pattern, etc.) you must select the object. Selecting an object (or objects) tells Panorama that you want to work with that object. The **Pointer** tool is used for selecting objects. If the **Pointer** tool is not highlighted, click on it before you try to select an object. One of the most common mistakes made by new users is to try to select an object when a tool other than the **Pointer** tool is highlighted.

There are two ways to select an object. The simplest is to click on the object. When an object is selected, **handles** appear at the corners of the object. The **handles** let you know the object is selected and waiting for you to do something with it.



If an object is hollow (transparent, or filled with NONE) you must click on the border of the object to select it. Objects with thin borders may be difficult to click on. If you find it too difficult, remember that you can also select an object by dragging a selection marquee around it (see the next section).

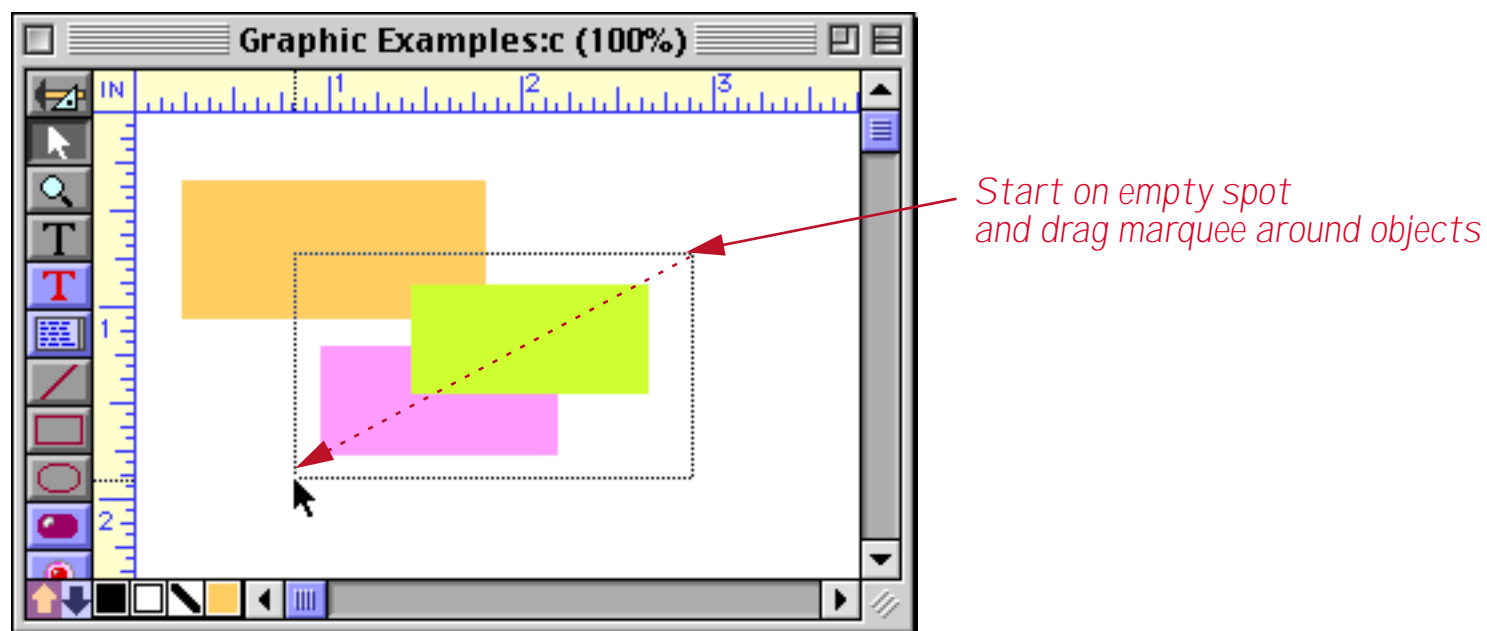


It's possible for one object to be hidden behind another object, making it impossible to click on. See "[Selecting a Completely Hidden Object](#)" on page 570 to learn how to select hidden objects.

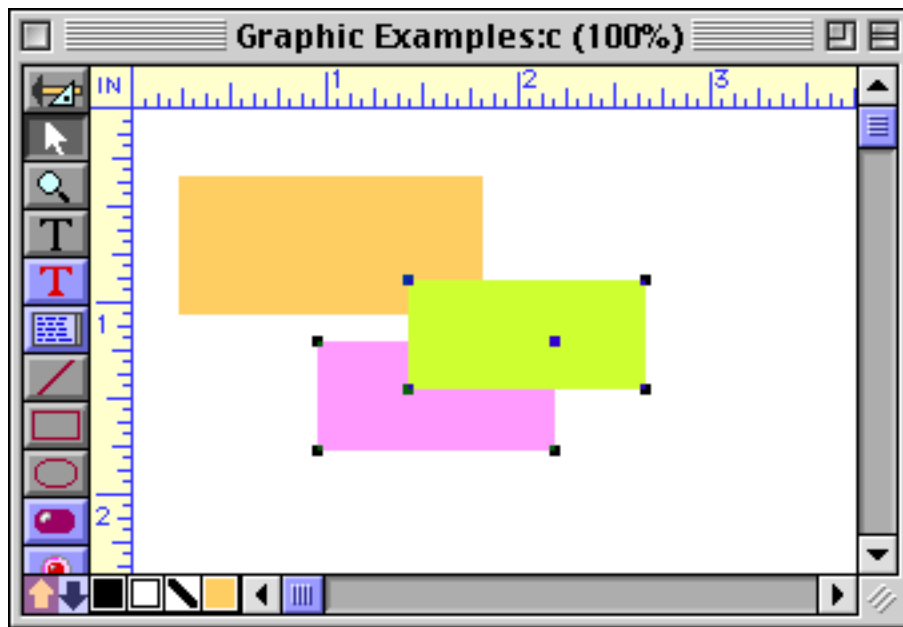
Selecting Multiple Objects at Once

Sometimes you may want to modify several objects at a time. You can select multiple objects by clicking on each object while holding down the **Shift** key, or by dragging a **selection marquee** around the objects. (You can also unselect an object that is already selected by holding down the **Shift** key and clicking on it.)

The selection marquee is simply a dotted line that appears when you drag the pointer across the surface of a form. The marquee is like a lasso—it selects any object that is completely enclosed within it. In this example the marquee is used to select two objects while leaving a third unselected.

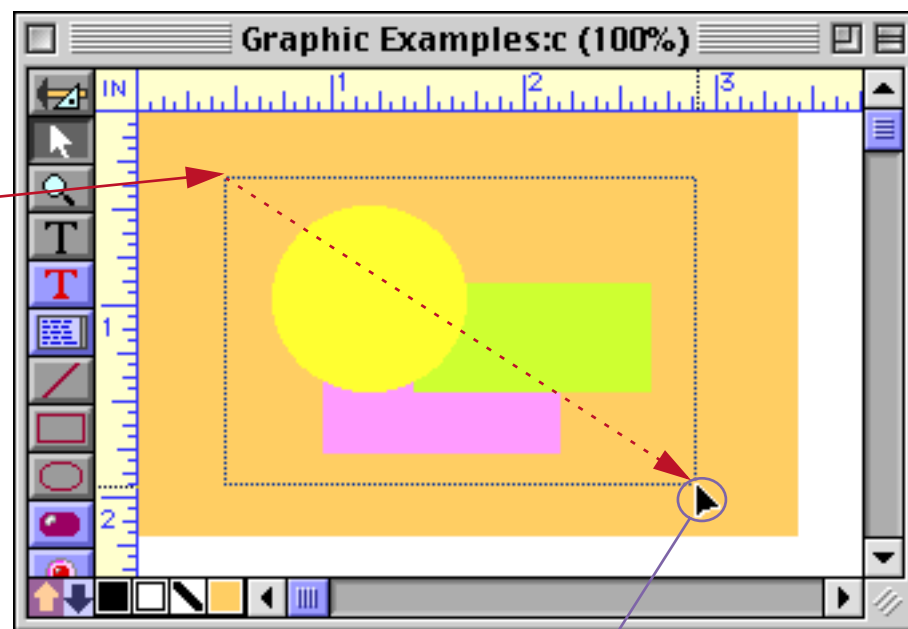


When you release the mouse the two rectangles will be selected.



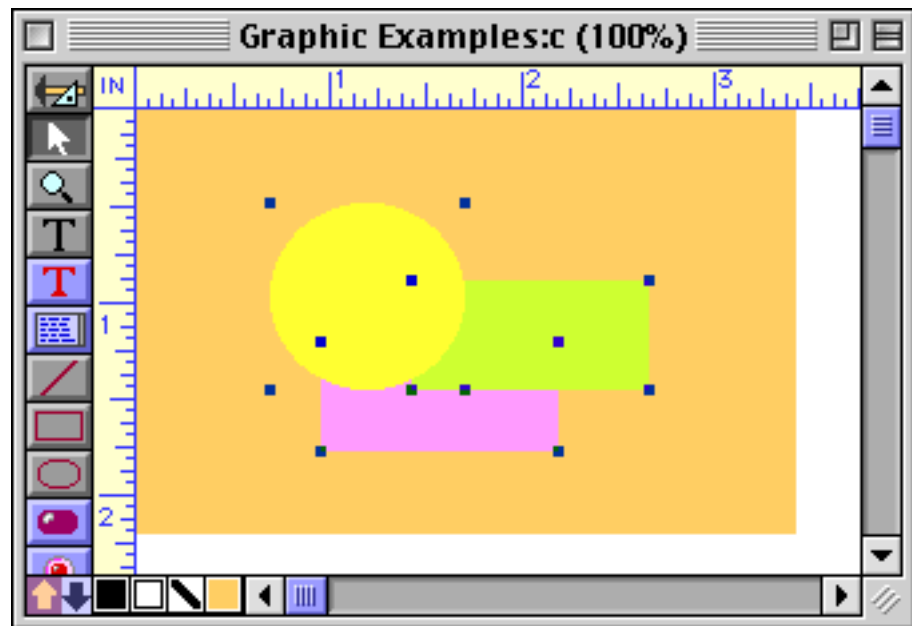
To drag a marquee you normally need to start on an empty spot on the form. If an empty spot isn't convenient, just hold down the **Space Bar** and drag the marquee. Holding down the **Space Bar** removes the stem from the cursor arrow and disables clicking on objects, allowing you to drag a marquee anywhere. Either way, drag the marquee all the way around the objects you want to select. Only objects that are completely inside the marquee will be selected. In this example we'll select the three smaller objects but not the large orange rectangle.

*Hold down Space Bar
and click anywhere to
start dragging,
even on top of an object*

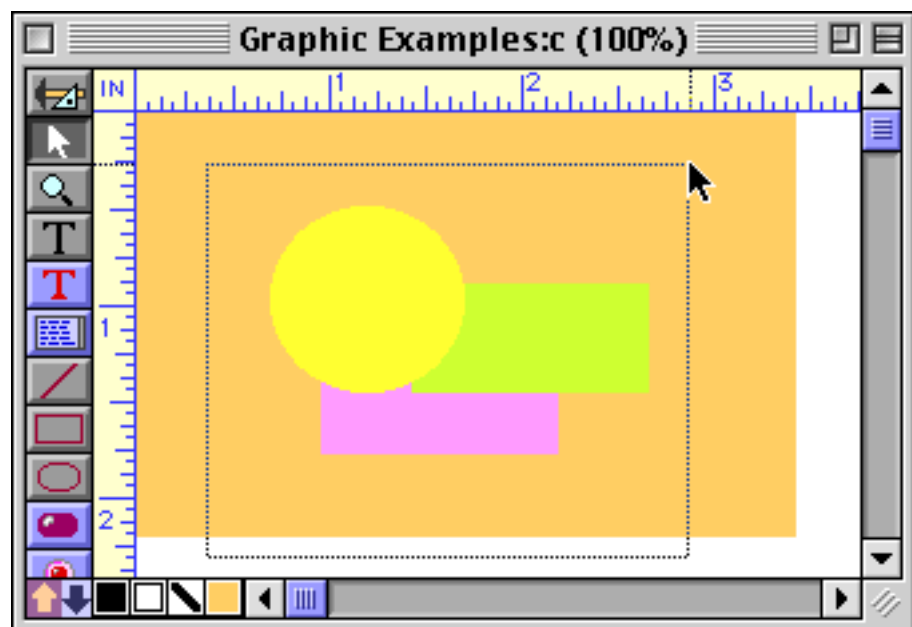


*When the Space Bar is pressed,
the cursor arrow loses its tail*

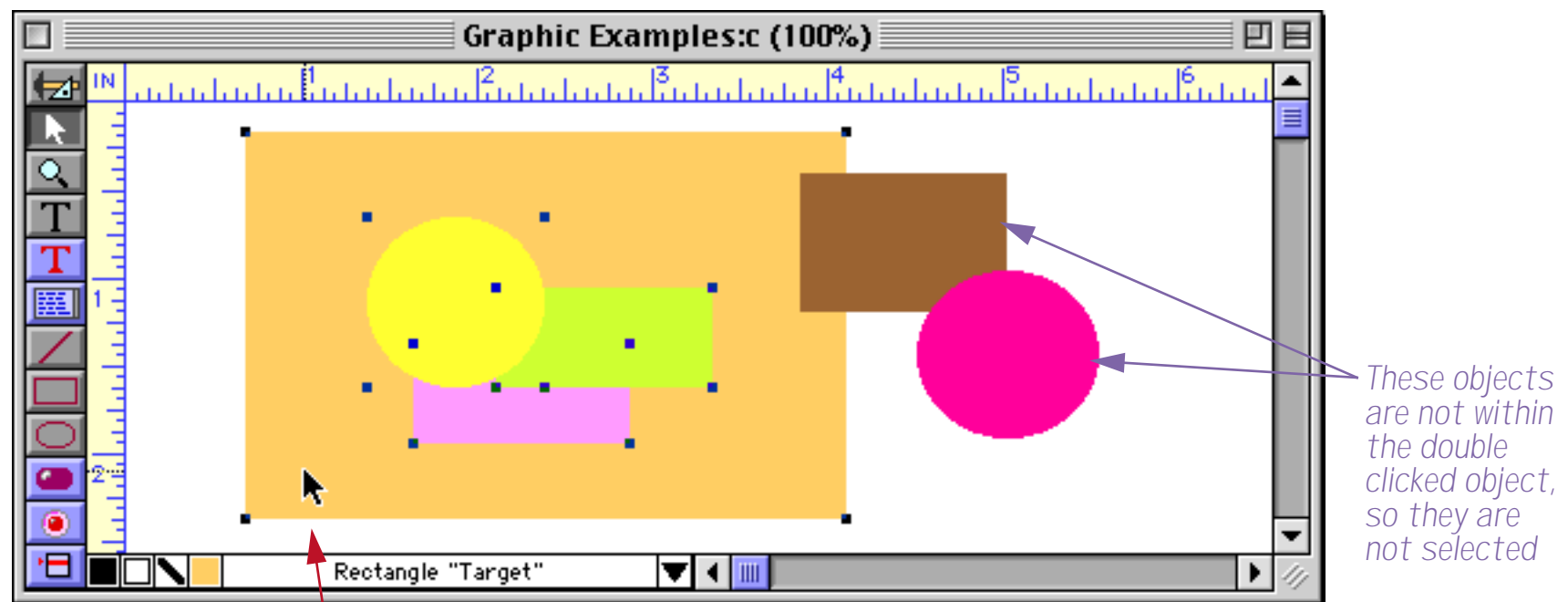
When you release the mouse, the three objects inside are selected. The large orange rectangle is not selected and has not moved.



Of course this is not the only way to select these three objects. You could hold down the **Shift** key while you clicked on each object, or in this case you could start dragging from the empty area at the bottom or right, like this.



Double-clicking is another shortcut for selecting multiple objects. Double-clicking on an object selects all the objects inside the object as well as the object itself.

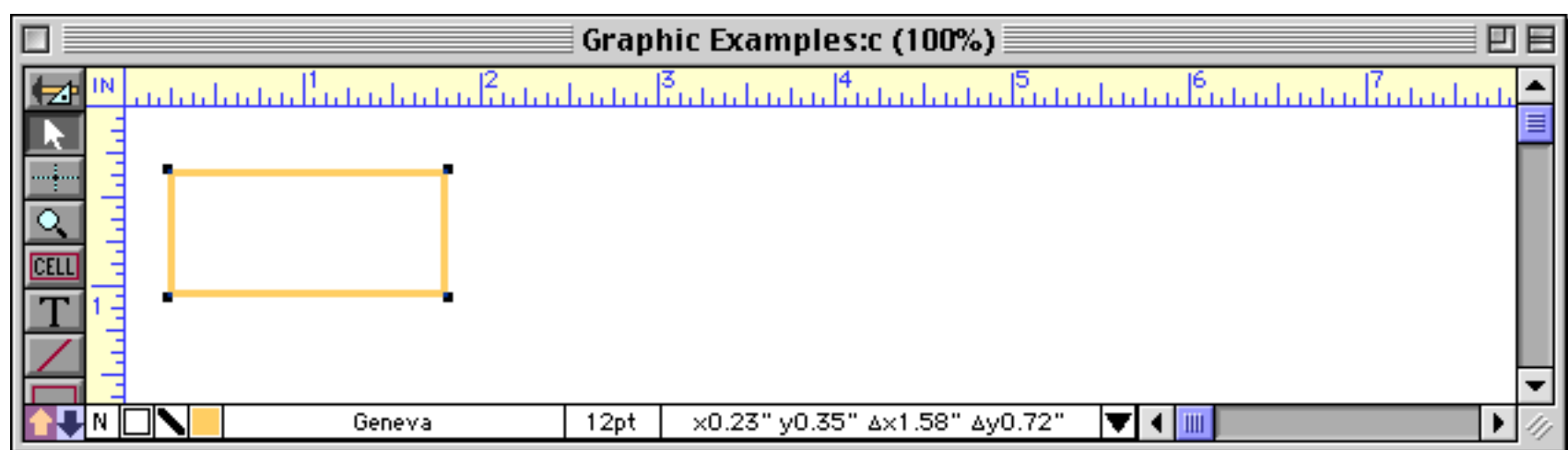


Double click anywhere within an object to select the object and any objects within the object

There's one more way to select multiple objects. The **Select All Objects** command in the Edit menu will select every object in the form. (To unselect all objects, click on an empty spot within the form.)

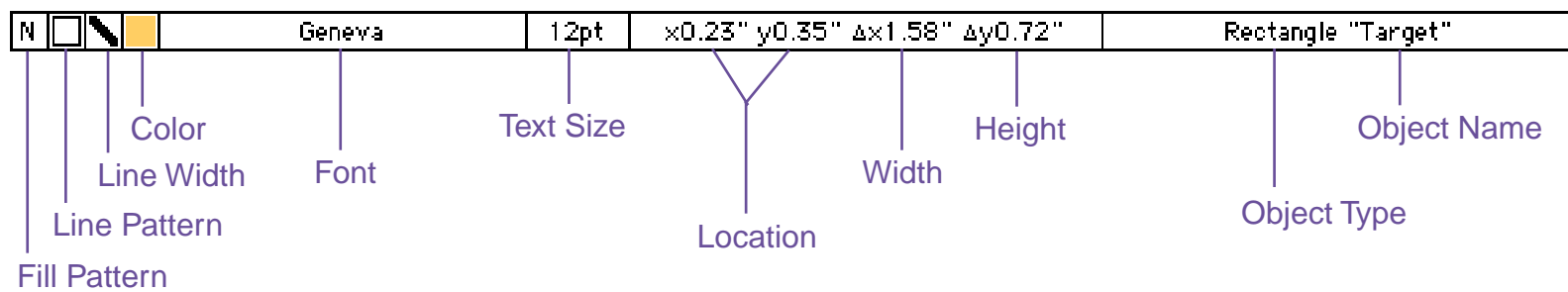
The Graphic Control Strip

When a Panorama form window is in graphic design mode, a **graphic control strip** usually appears along the bottom of the window. The graphic control strip occupies some of the space that is normally used by the horizontal scroll bar. (If the window is too narrow for both the horizontal scroll bar and the graphic control strip, the control strip will disappear.)

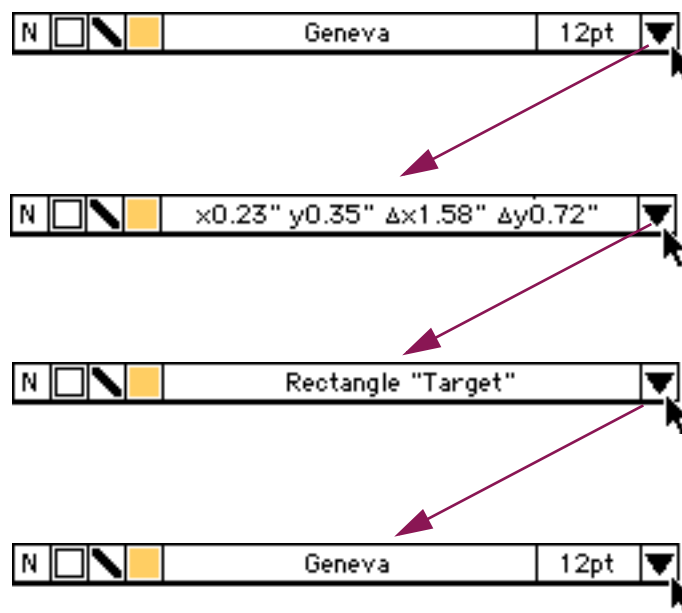


Graphic Control Strip

The graphic control strip displays information about the currently selected object or objects (if any), and also allows you to easily change some of the properties of the currently selected objects with pop-up menus and dialogs. The complete graphic control strip has eleven elements.



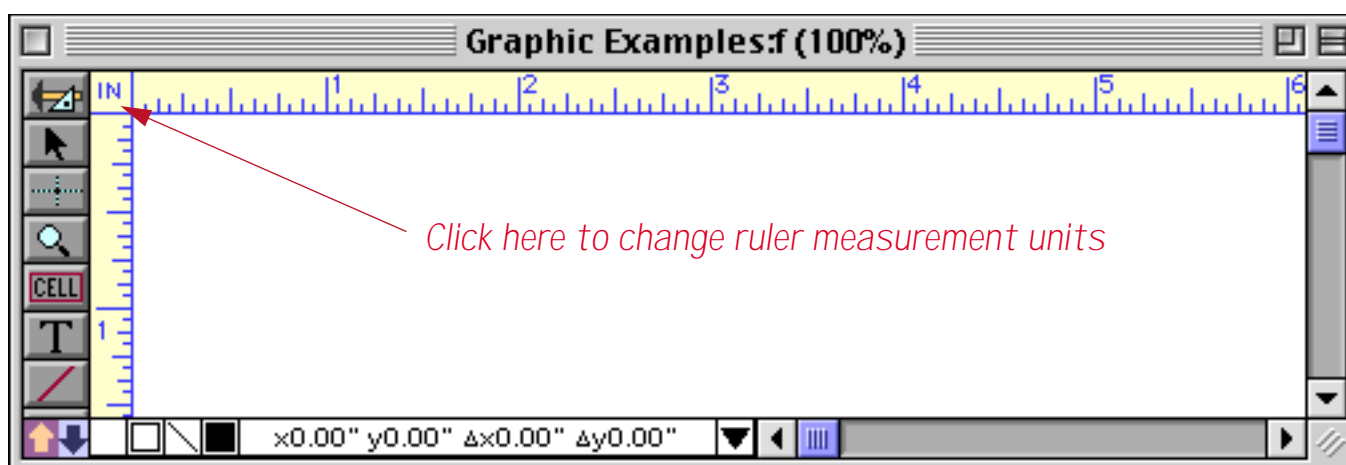
If the window is not wide enough for all seven of these elements, the control strip will automatically adjust to show fewer elements. When this happens, an extra triangle icon appears at the end of the control strip. Clicking on this icon cycles through the **Font/Text Size**, **Dimension**, and **Object Type/Object Name** control strip elements (the first four elements are always visible unless the window is extremely narrow).



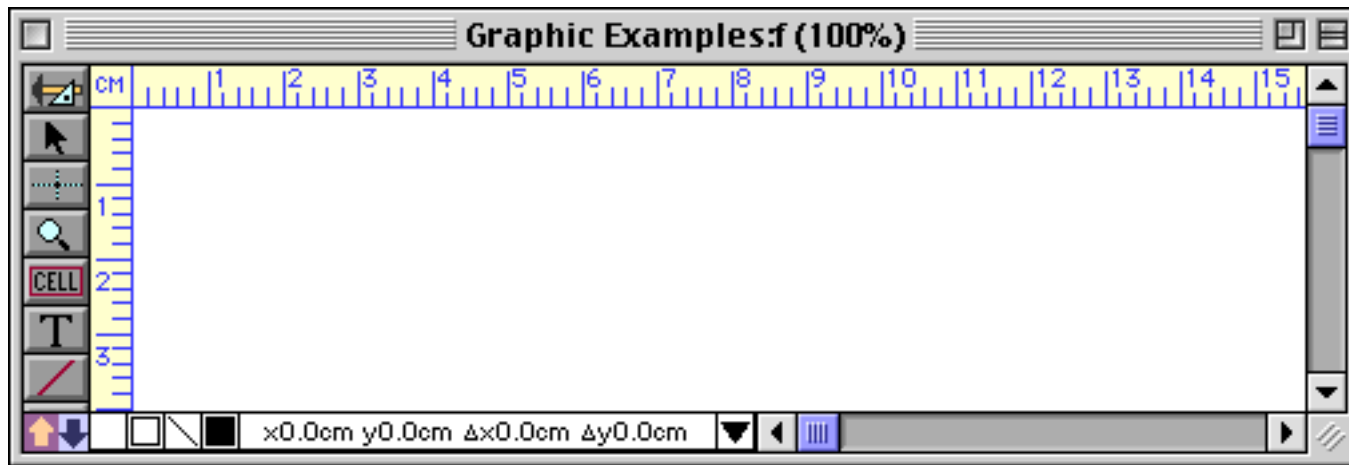
Rulers

The graphic editor always displays rulers along the top and left sides of the graphic window. The rulers always start from zero in the upper left hand corner of the entire form (not the window). An indicator in each ruler follows the mouse as you move it across the form. These indicators help you measure objects. Note: The rulers do not represent where an object will be printed on a piece of paper. They are only a convenience for sizing and positioning objects on the screen.

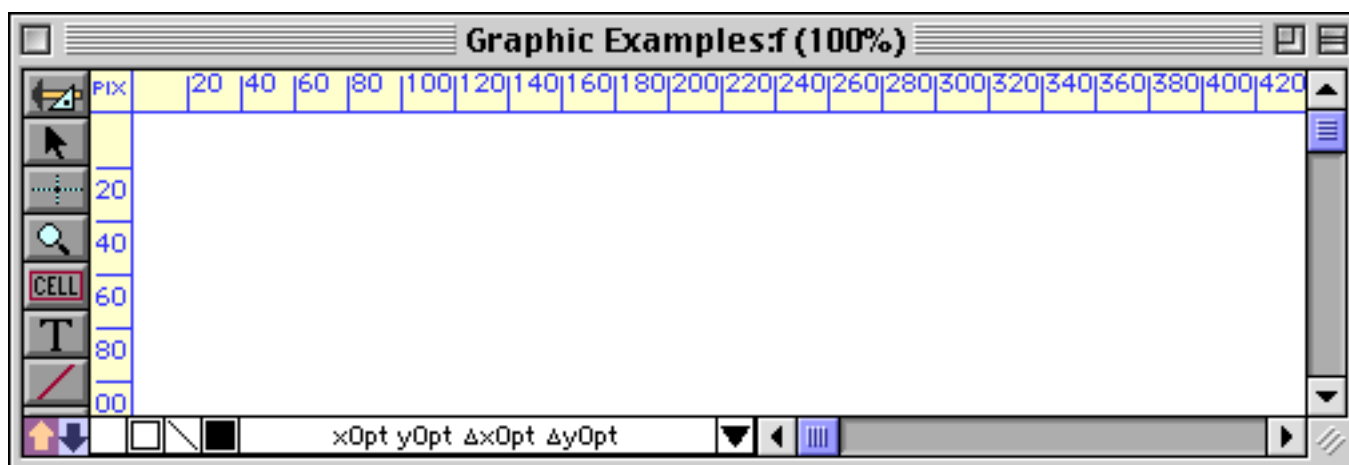
The rulers usually show measurements in inches. Click on the box in the upper left corner to toggle between different measurement units—inches, centimeters, pixels, pica and elite.



Clicking once changes the ruler to centimeters.

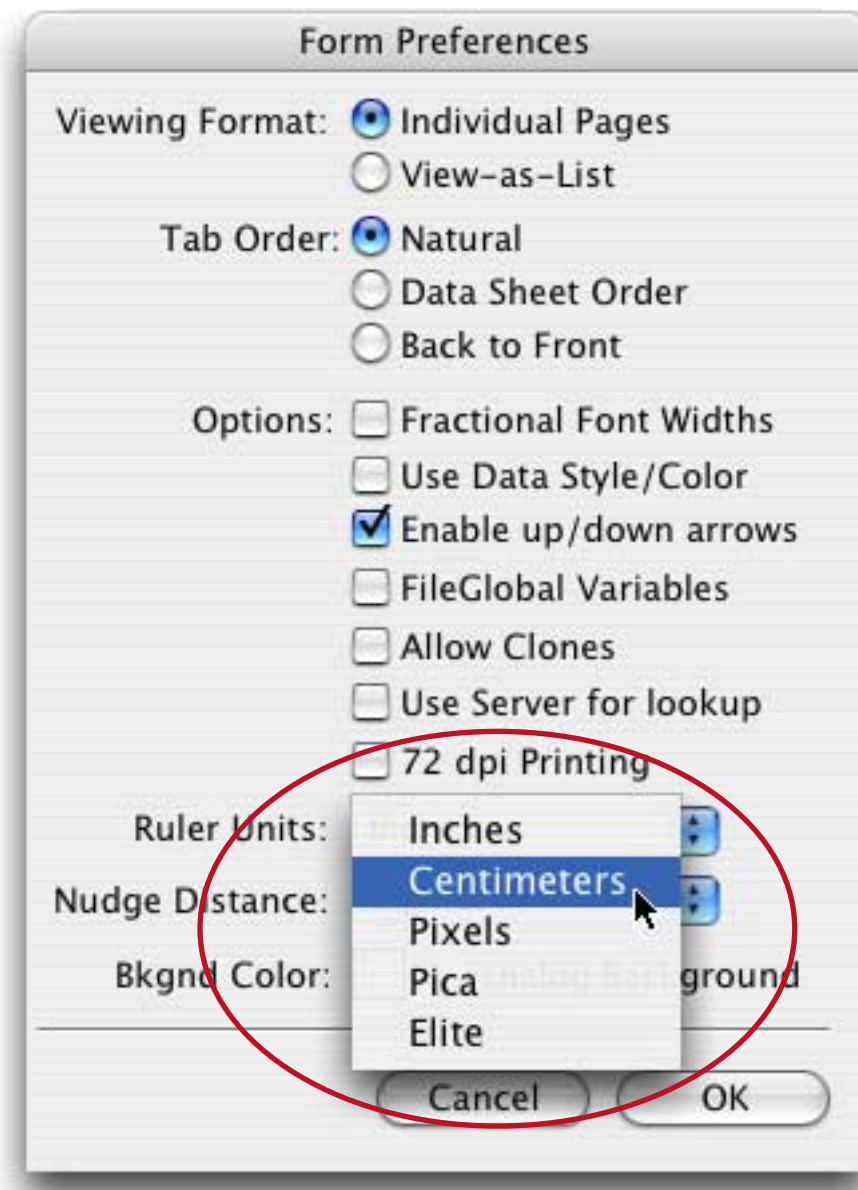


A second click changes the ruler to pixels. A pixel is one screen dot, or 1/72 inch.



Pica (1/6 inch) and elite (1/12 inch) rulers can be handy for designing graphics that need to be overlaid on pre-printed forms.

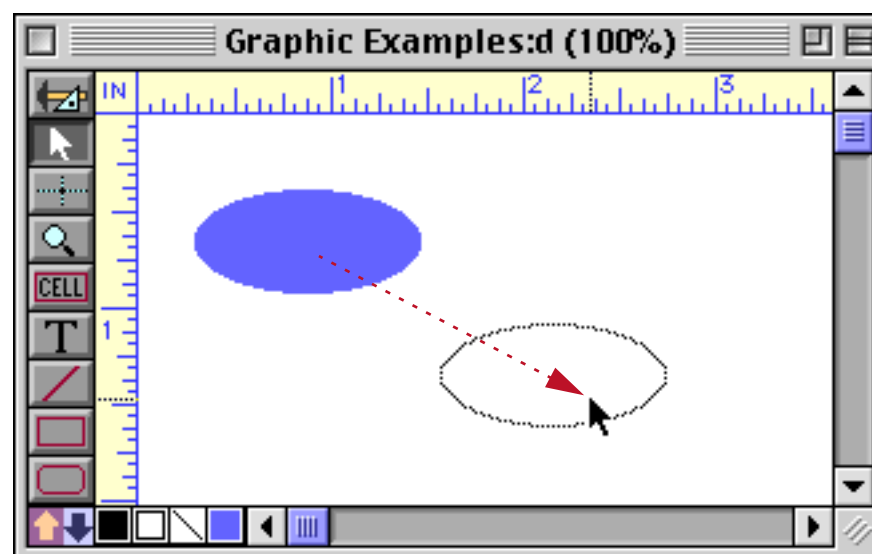
You can also change the measurement units with the Form Preferences dialog in the Setup menu.



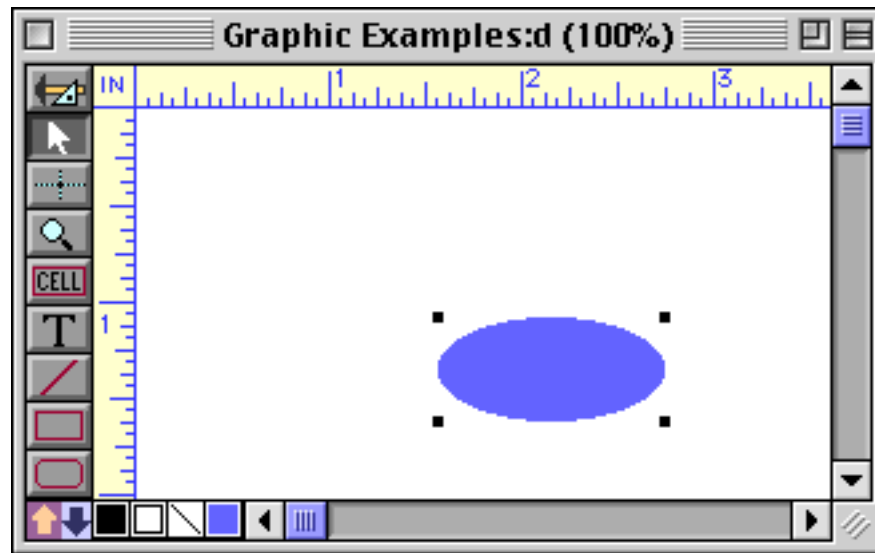
Use the Form Preferences dialog if you want to permanently change the default measurement units for this form.

Moving a Single Object

There are several ways to move a single object, including dragging, nudging, and using the dimensions dialog. To drag an object, the Pointer tool must be highlighted. Press on the object, then drag the object to its new position. If you drag the object near the edge of the window, the form will automatically scroll.

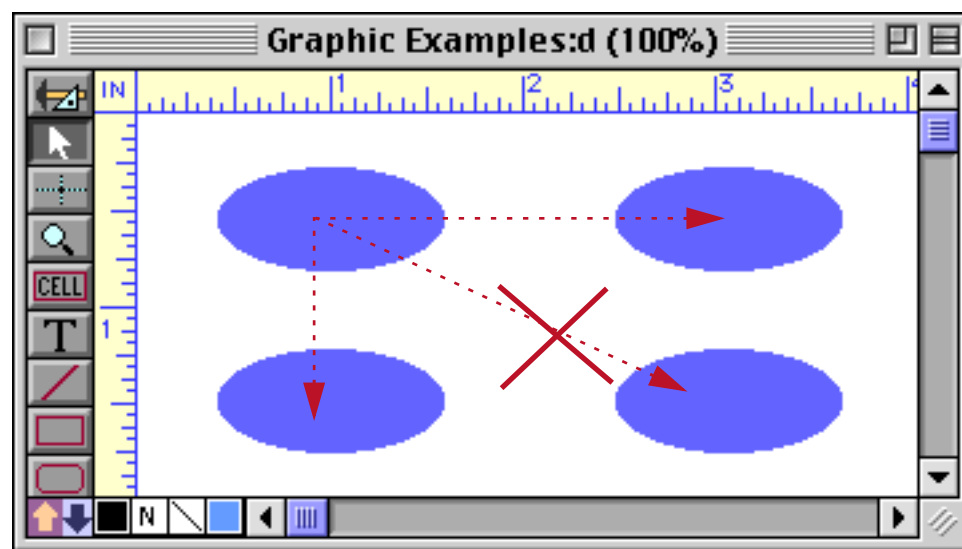


When you release the mouse, the object will move to the new position.



If an object is hollow (transparent, or filled with NONE), you must click on the border of the object to drag it.

If you want to move the object horizontally or vertically (but not diagonally), hold down the **Shift** key as you drag the object. When the **Shift** key is held down you won't be able to drag an object diagonally, as shown below.

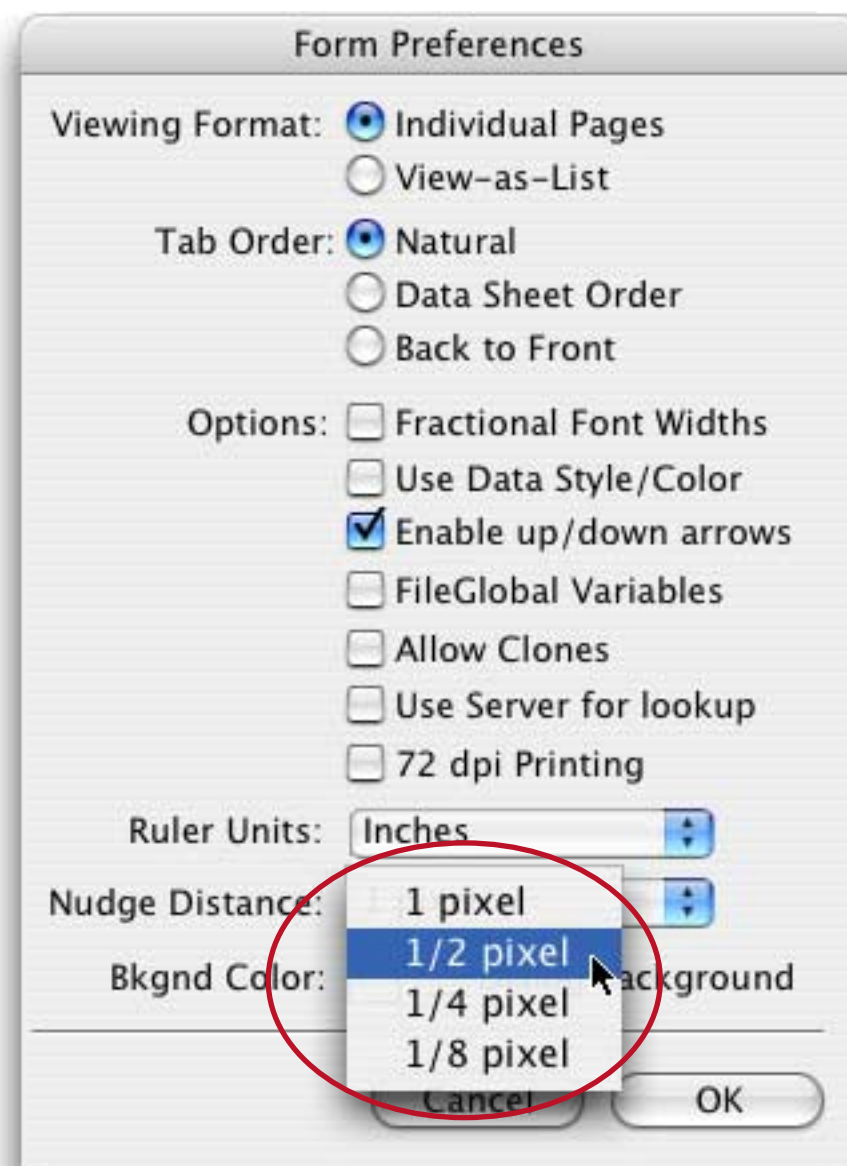


If you don't have far to go you might consider nudging the object instead of using the mouse (see below). This allows you to exactly position the object or handle in one pixel (or less) increments.

Nudging an Object (or Objects)

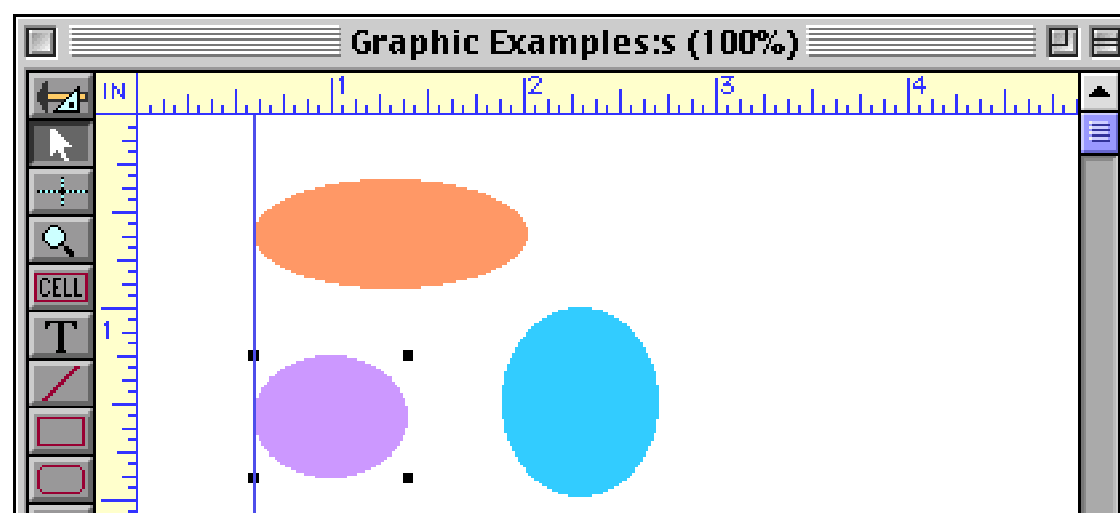
You can use the arrow keys (**←**, **→**, **↓**, **↑**) to nudge selected objects into position. Each time you press an arrow key, the object (or objects) moves one pixel in the direction of the arrow.

For even finer adjustments you can reduce the nudge distance using the **Forms Preferences** dialog. (Setup menu). Using this dialog you can set the nudge distance to 1/8, 1/4, 1/2, or 1 pixel.

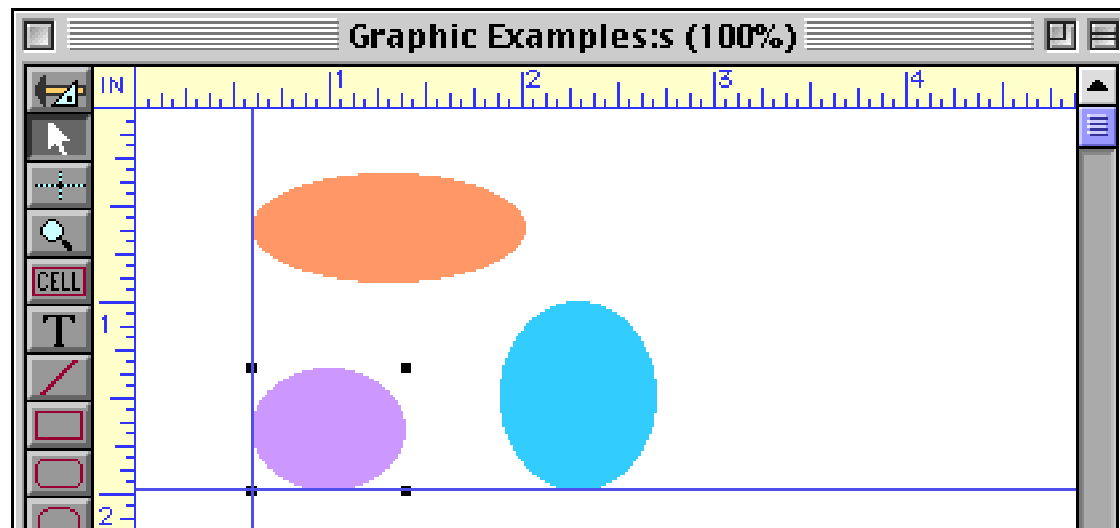


Nudge "Auto Guides"

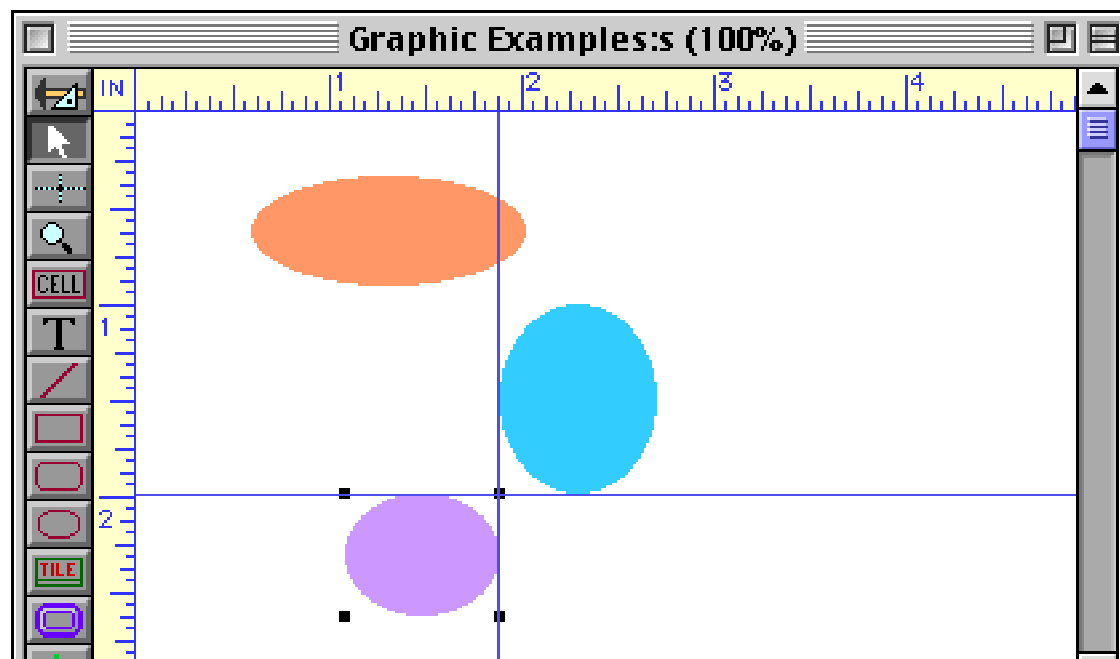
As you nudge an object (or objects) Panorama checks to see if the object is aligned with any other objects on the form. When an alignment occurs a blue guide line briefly appears. In this illustration the guide line appeared as the purple oval was nudged to the left, the guide automatically appeared when the left edge of the purple oval was aligned with the left edge of the pink oval.



The automatic guide will disappear when you click the mouse or press any key, or it will simply disappear by itself after a few seconds. If more than one edge is aligned the multiple guide lines will appear, like this.



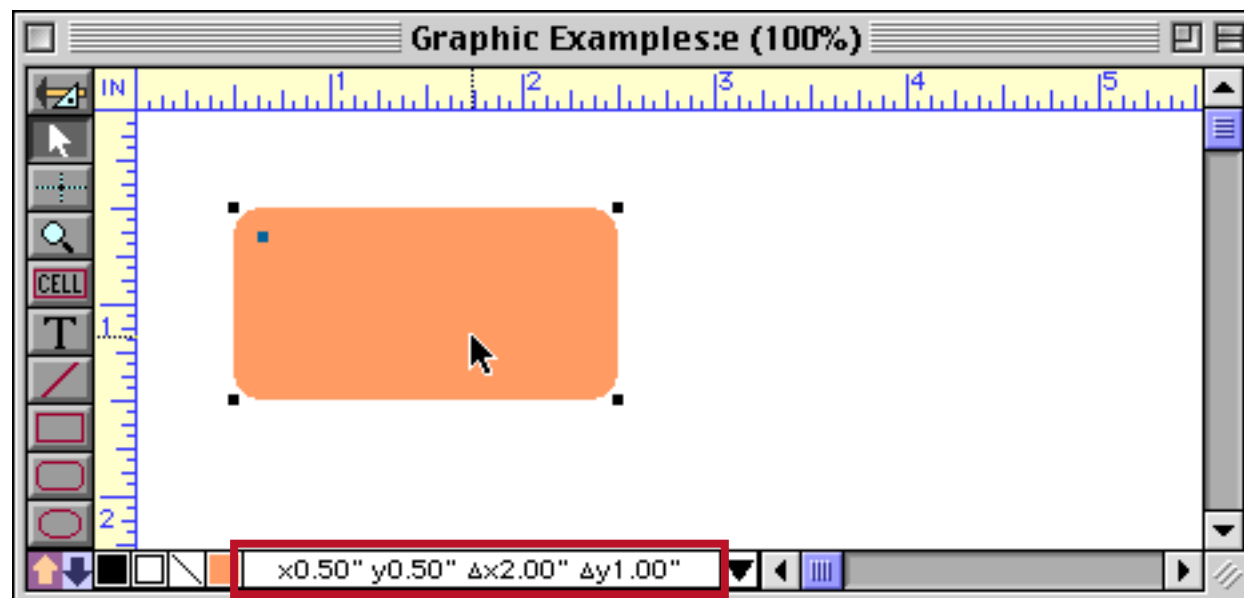
The alignment doesn't have to be top to top or left-to-left, if any edge of the nudged object(s) aligns with any edge of any other object the guides will appear.



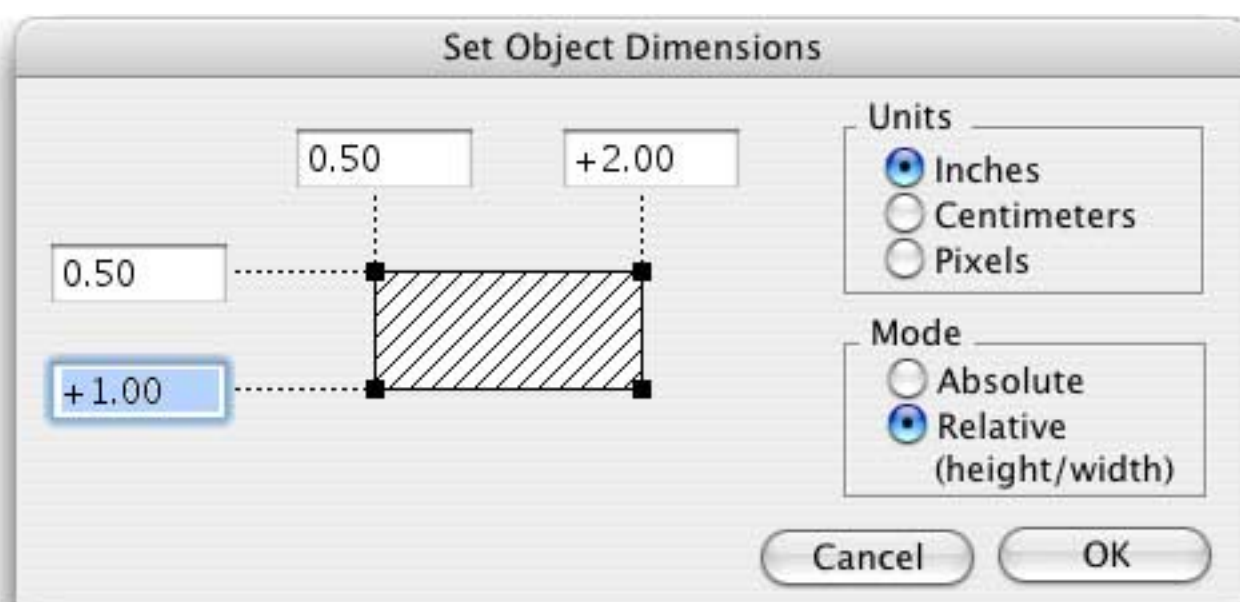
The guides can also appear when nudging an object's size, see "[Nudge Size "Auto Guides"](#)" on page 514.

Viewing and Setting Exact Object Dimensions

If the window is wide enough, the Graphic Control Strip will show the exact location and size of the currently selected object. (This is only valid if a single object is selected — it does not reliably display the location or size of multiple objects.) To see the exact location and size of any object, simply click on the object.



The Dimensions dialog allows you to display and change the exact dimensions of any object. To use this dialog, simply select an object and click on the dimensions in the Graphic Control Strip (you can also choose **Dimensions** from the Edit menu).

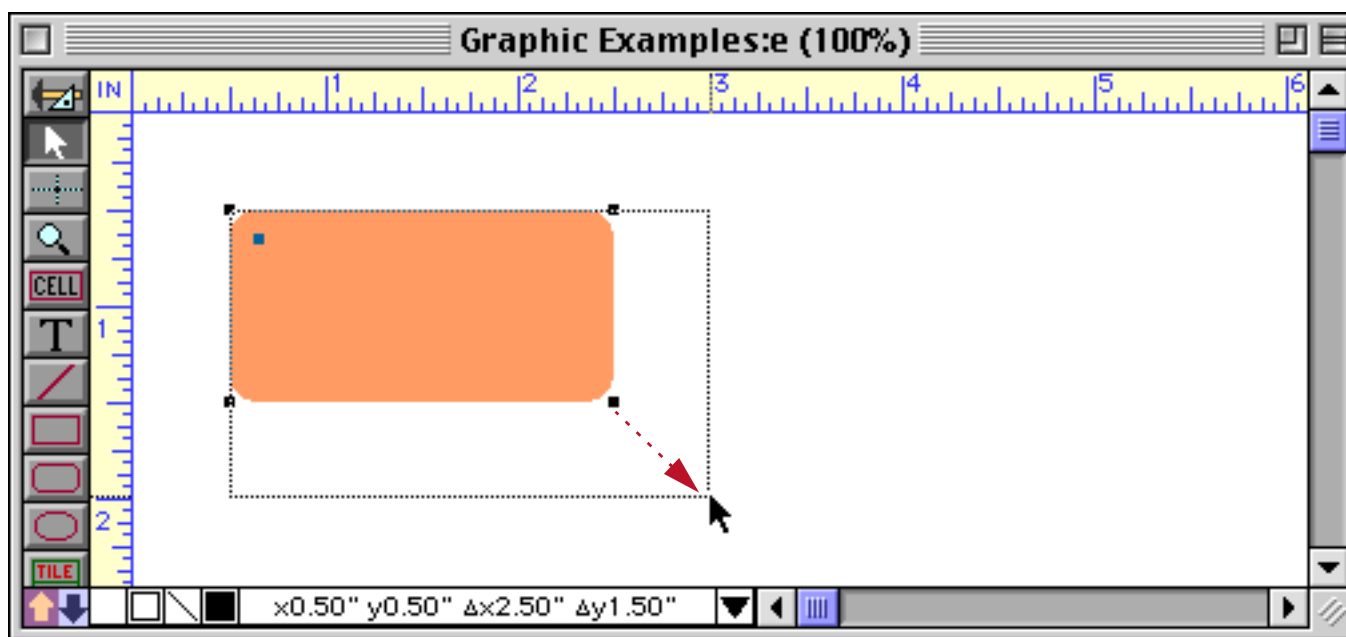


The **Dimensions** dialog gives you the choice of absolute or relative dimensions. **Absolute dimensions** display the position of all four corners of the object, that is each corner's position from the top left corner of the form. **Relative dimensions** display position of the top left corner of the object along with the size of the object; that is, the relative distance from the top left corner to the bottom right corner. Use relative dimensions when you want to move an object without changing its size, or change the size of an object without moving it. (Note: When using Relative dimensions, the object's height and width must have a + symbol in front of the number, as shown above.)

The **Dimensions** dialog can work with dimensions in inches, centimeters, or pixels. The dialog will default to the current ruler measurement units. (See "**Rulers**" on page 506 to learn how to set the ruler units.) Dimensions in inches or centimeters will be rounded to the nearest $\frac{1}{576}$ inch (0.017 inch).

Changing the Size of a Single Object

To change the size of an object, first select the object with the **Pointer** tool. Then use the mouse to drag one of the corner handles. As you drag the handle, an outline of the object will follow the mouse. Release the mouse when the corner is in the correct spot.

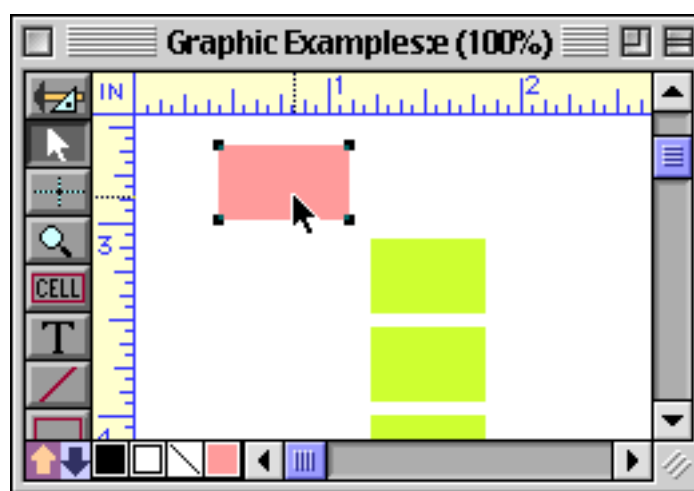


If you want to change the width or height of an object (but not both at once), hold down the **Shift** key while you change the size. Holding down the **Shift** key prevents the corner from moving diagonally.

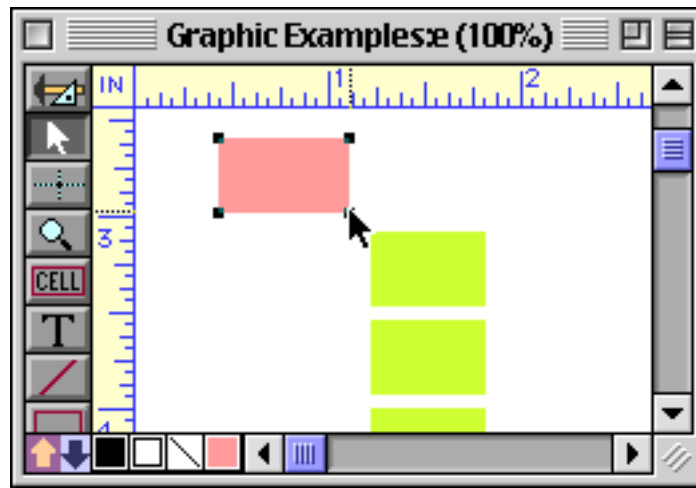
Nudging the Size of an Object



The arrow keys (**←**, **→**, **↓**, **↑**) usually nudge the entire object. However, after you click or drag a handle, the arrow keys will nudge just that handle. Each time you press an arrow key the handle will move one pixel in the direction of the arrow. In other words, each time you press an arrow key the object will grow (or shrink) one pixel in the direction of the arrow (or less than a pixel if you have changed the nudge distance using the **Form Preferences** dialog).

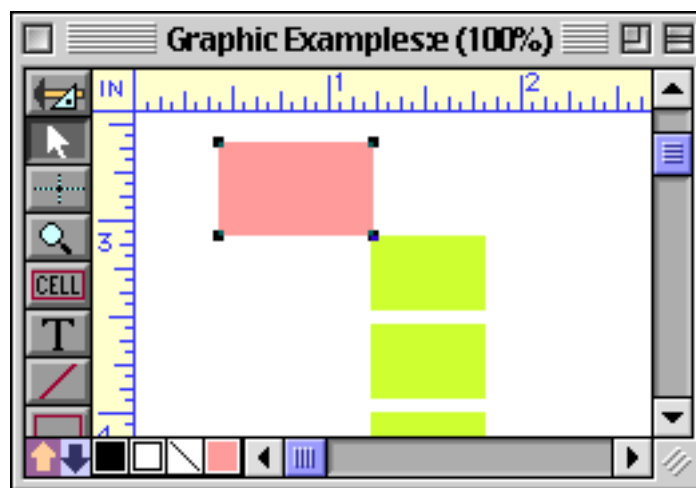
Let's look at the procedure step by step. Start by clicking on the object whose size you want to adjust.



Now click on the corner you want to adjust.



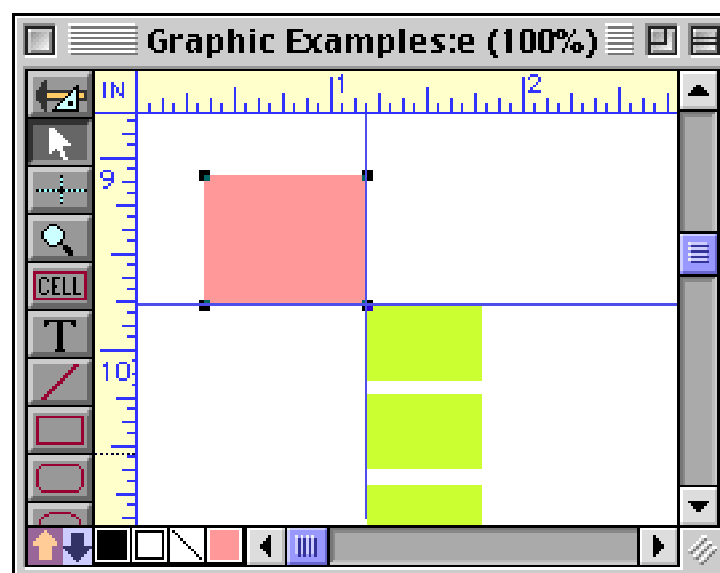
Use the arrow keys to adjust the size of the object in small increments. In this case we pressed the  and  keys about half a dozen times each.



As soon as you click on another object, the arrow keys go back to nudging the entire object instead of just the corner.

Nudge Size “Auto Guides”

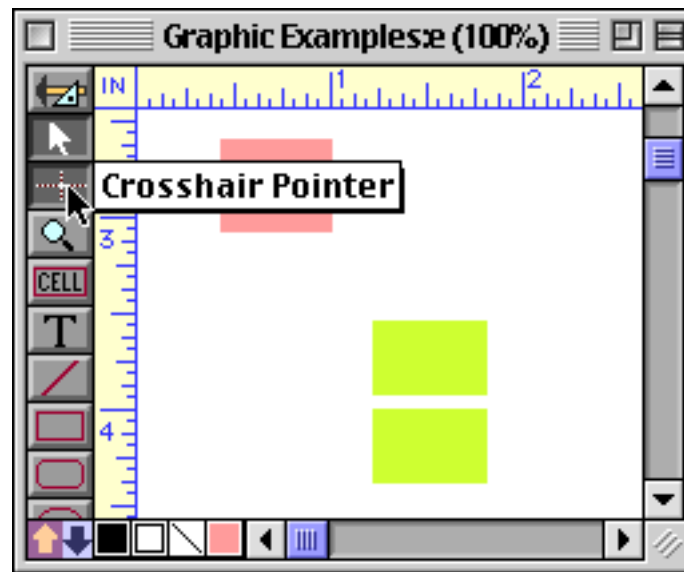
As you nudge the size of an object, Panorama checks to see if any of the edges of the resized objects are aligned with the edges of any other objects. If any edge is aligned a temporary blue guide appears. In this illustration the lower right hand corner of the pink square has been nudged, and is now aligned in two directions with the yellow rectangle.



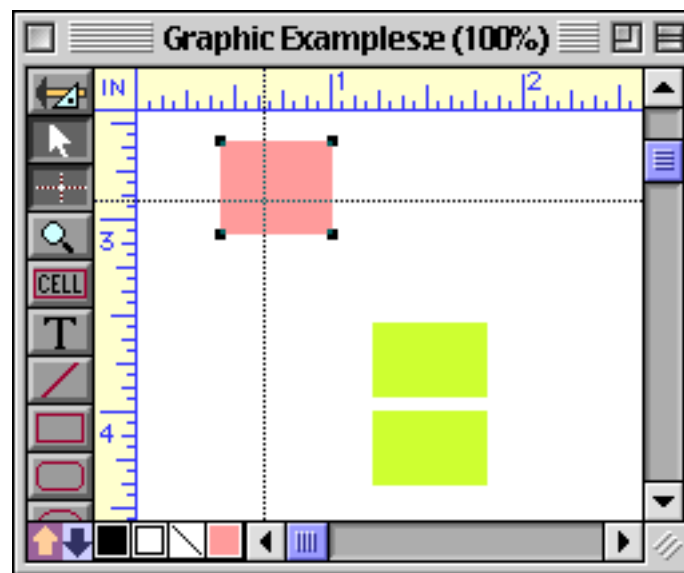
For more information on auto-guides, see [“Nudge “Auto Guides”](#)” on page 510.

Nudging to the Crosshair Cursor

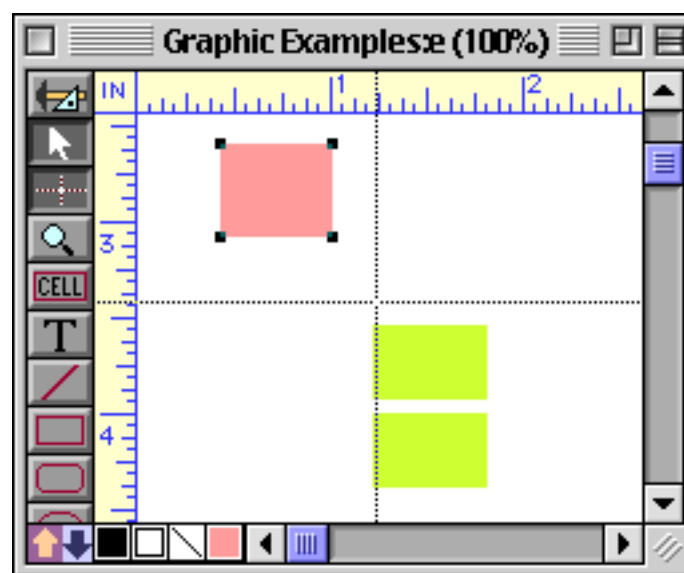
You can use the **Crosshair** cursor to help you nudge objects into alignment. (However, this technique is usually not necessary now that Panorama has automatic guides that appear when nudging (see “[Nudge “Auto Guides”](#)” on page 510) so you may want to simply skip this section.) Start by clicking on the **Crosshair** tool to turn on the crosshairs.



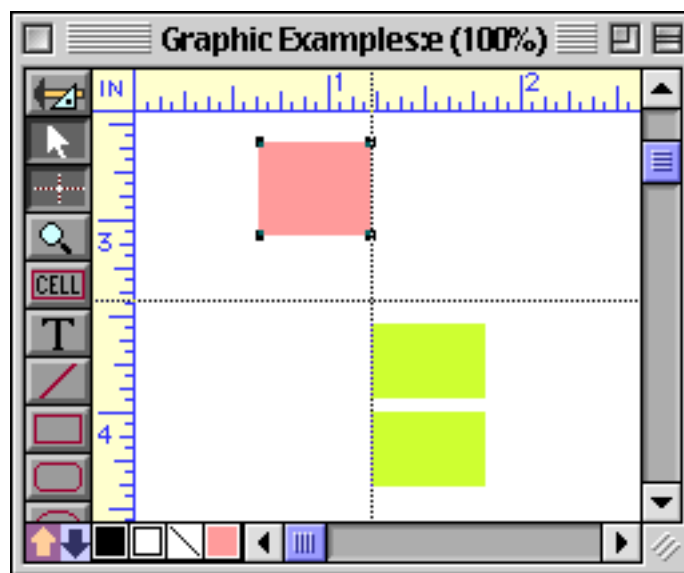
Select the object you want to nudge,



then move the crosshair to the desired spot.



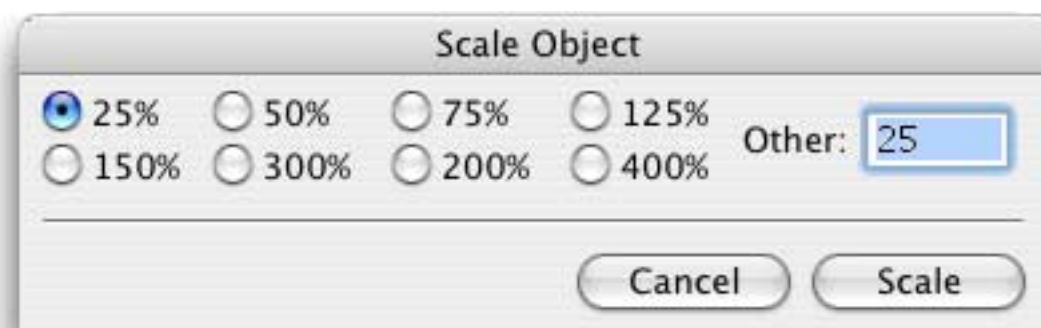
Use the arrow keys to nudge the object until it is aligned with the crosshair. In this case we nudged the entire object, but we could also adjust the size by clicking on the corner as described in the previous section.



Finally, turn off the crosshair by clicking on the **Crosshair** tool again.

Percentage Scaling

Use the **Scale** command (Arrange menu) to expand or shrink an object by an exact percentage.

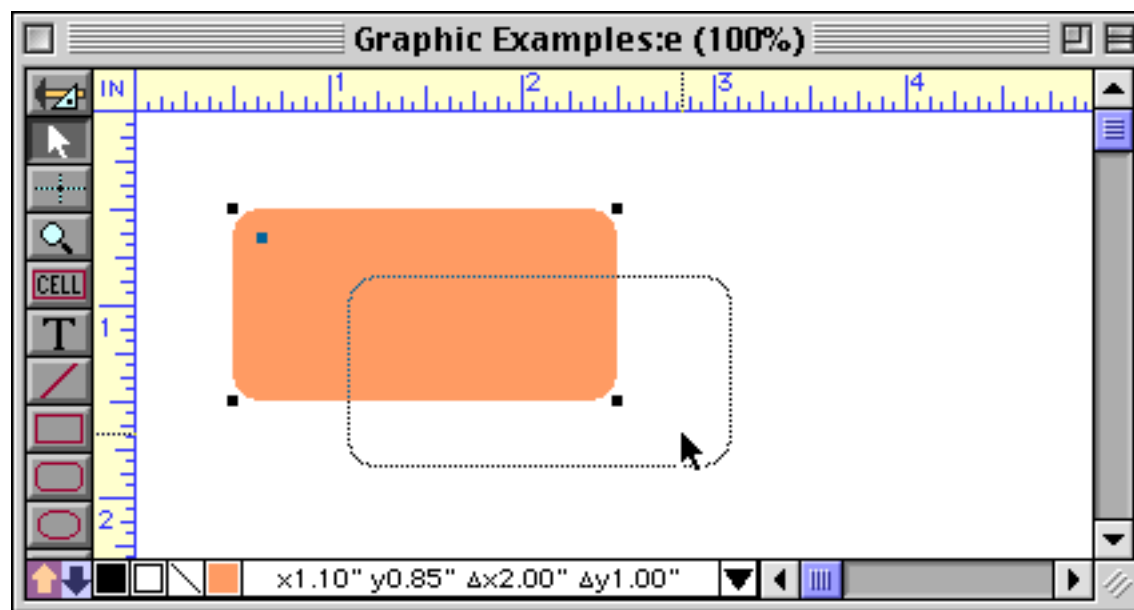


You can choose one of the pre-defined scales or type in any percentage between 1% and 999%.

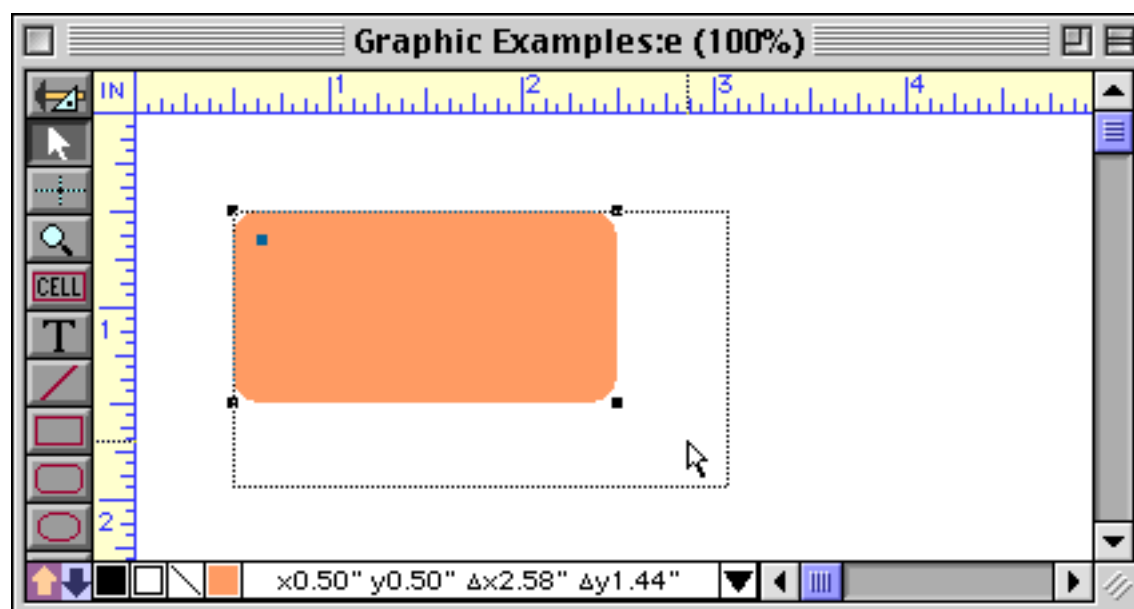
Resizing Without Handles

Dragging on the inside of an object normally moves the object. But if you hold down the **S** key (the letter S) while you drag, dragging on the inside of an object resizes the object—just like dragging on a handle. This feature can be very handy when you are working on a cluttered form—the handle you want may be hard to find. To remind you that the S key is pressed, the cursor turns into a hollow arrow. When you release the S key Panorama will go back to normal operation.

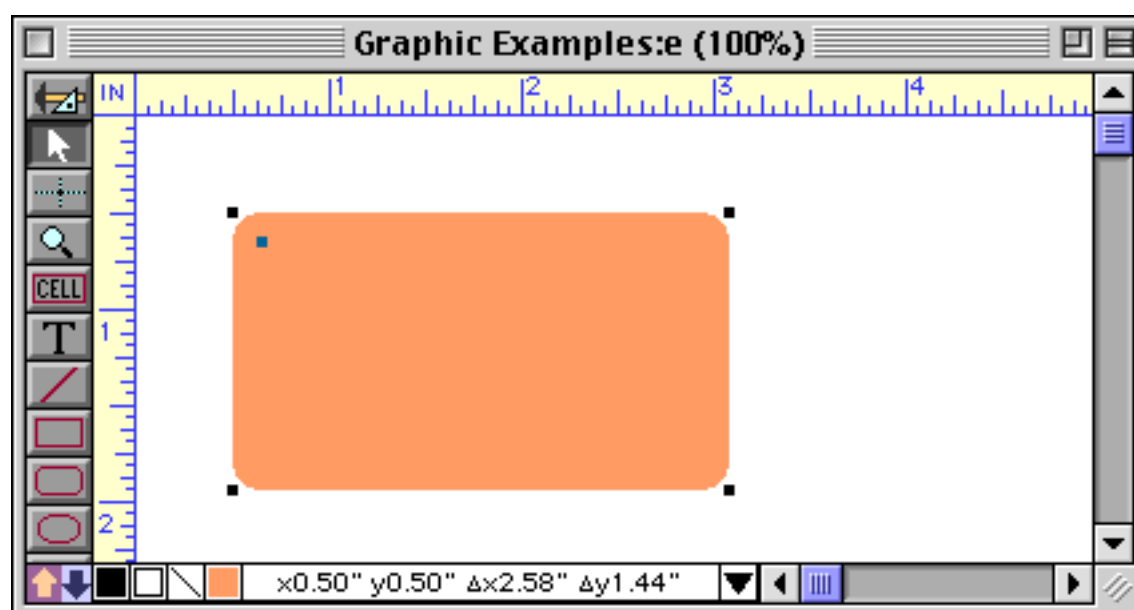
This operation is easier to see than to explain with words. Here's what happens when you drag on the object normally — it simply moves:



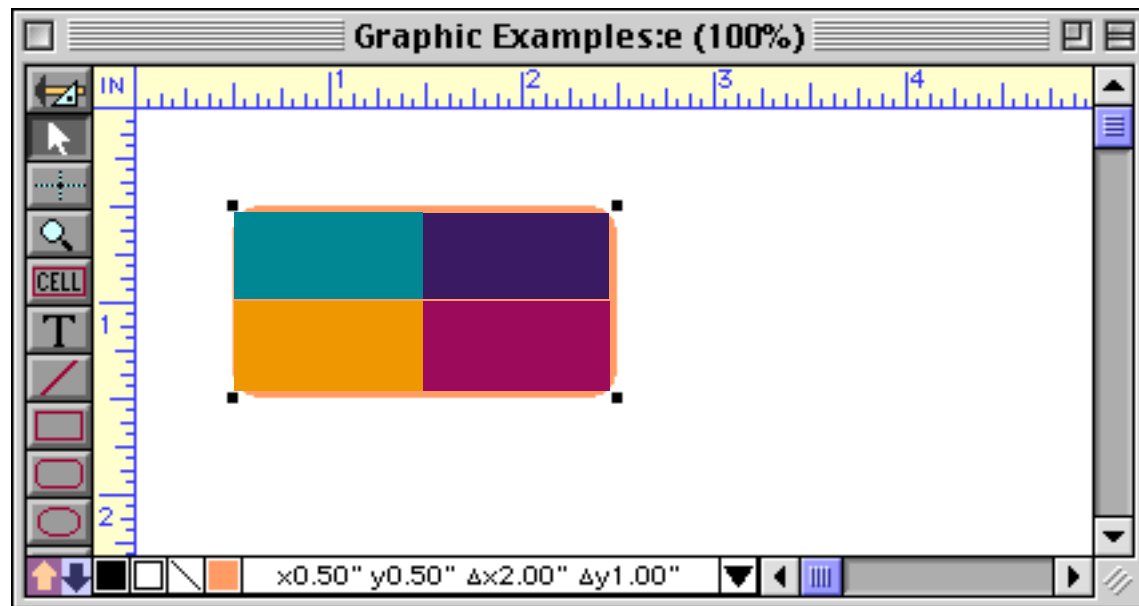
But if you hold down the **S** key (the letter S) while you drag, the object will change size instead of moving. (Notice the hollow mouse arrow.)



When you release the mouse the object will expand or shrink.



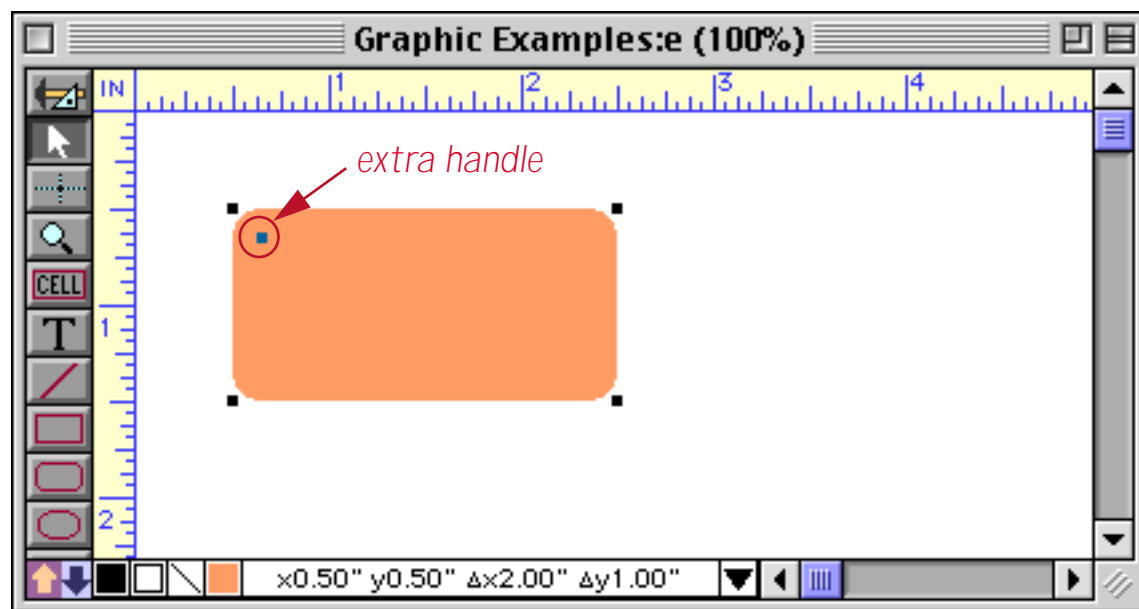
Here's another way to view the operation of the **S** key. When you press this key, Panorama behaves as if the handles at the corners of the object had expanded to fill the entire object. No matter where you click, you are clicking on a handle. Therefore, you cannot drag the object, but only resize it. The four colored rectangles in the illustration below symbolize the expanded handles (actually, they would be slightly bigger than this, so that they would cover the entire object).



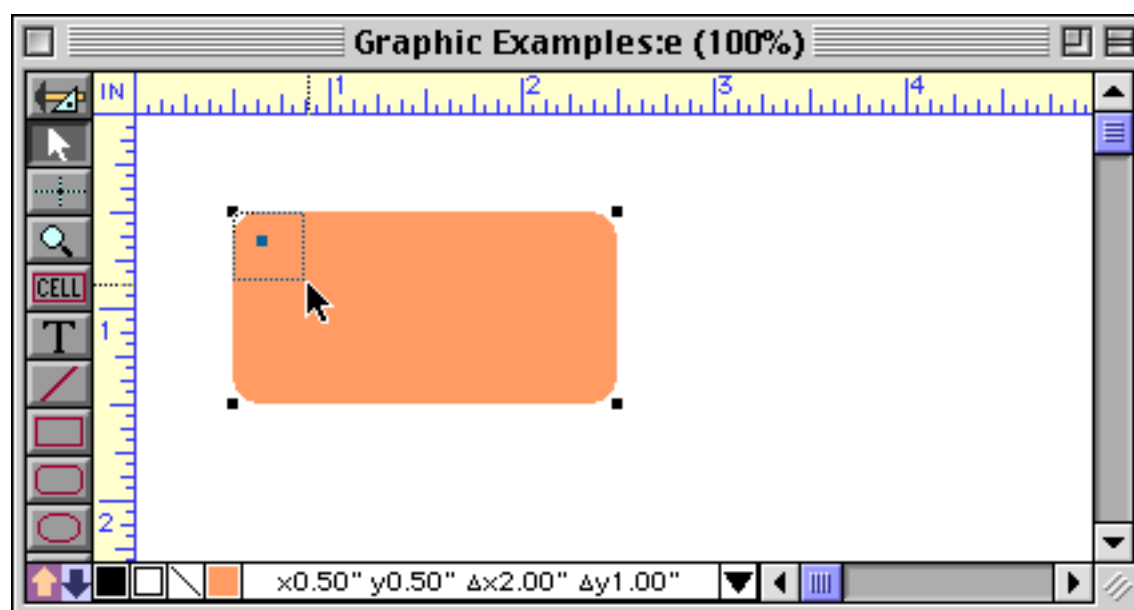
If you want to change only the width or height of the object, but not both, hold down the **Shift** key at the same time as you hold down the **S** key. This will prevent the object from changing size diagonally.

Changing the Radius of Round Corners

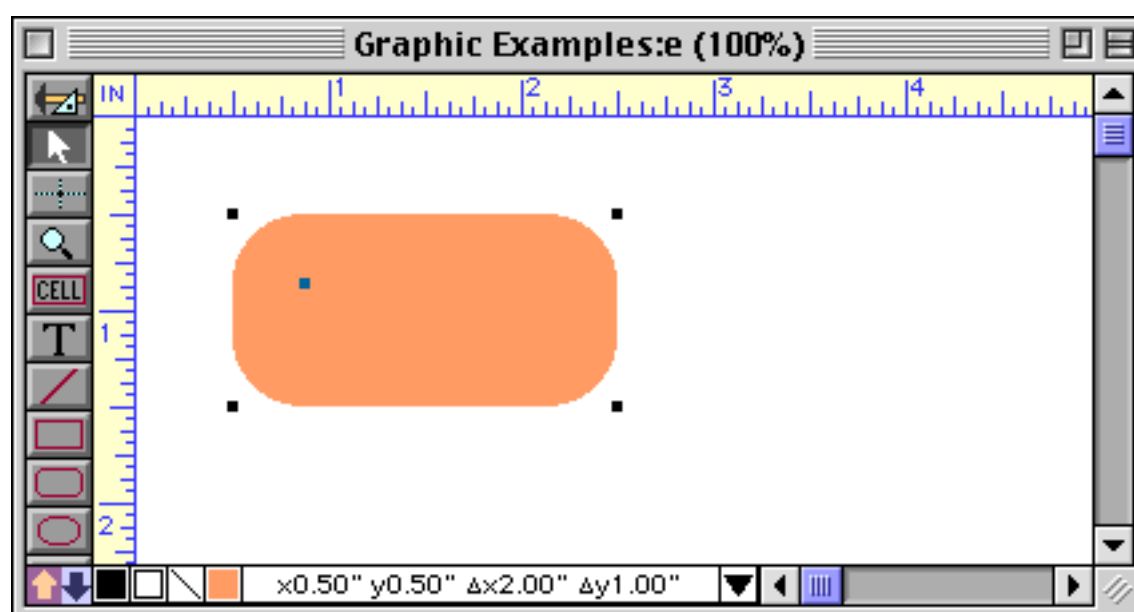
Rounded rectangles have an extra handle in the upper left hand corner.



This handle is used to adjust the radius of the corner. Drag the handle towards the center of the rectangle to increase the radius, drag it towards the corner to reduce the radius.



The new radius will appear when you release the mouse.



You can drag the corner diagonally if you want an elliptical corner. Hold down the **Shift** key if you want a circular corner.

Removing Objects

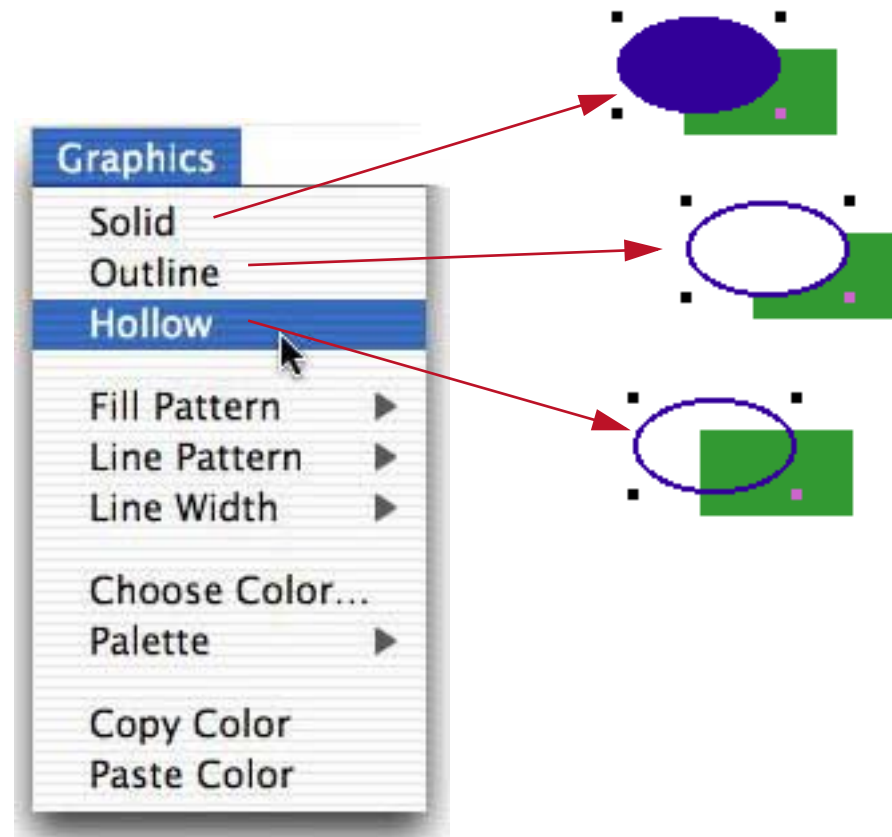
To completely remove one or more objects from the surface of the form first select the objects (See “[Selecting a Single Object](#)” on page 501 and “[Selecting Multiple Objects at Once](#)” on page 502). Then choose **Cut** or **Clear** from the Edit menu. **Cut** places the object on the clipboard so that it can be pasted back into the form in a new location. You can also remove the object by pressing the **Delete** or **Backspace** key (this is the same as choosing **Clear**).

Modifying Object Attributes

New objects are usually white with a thin black border. To customize an object you can change the fill pattern, border (pen) pattern, line thickness, and color. You can customize these with the Graphic Control Strip or the **Graphics** menu.

Solid, Outline and Hollow Objects

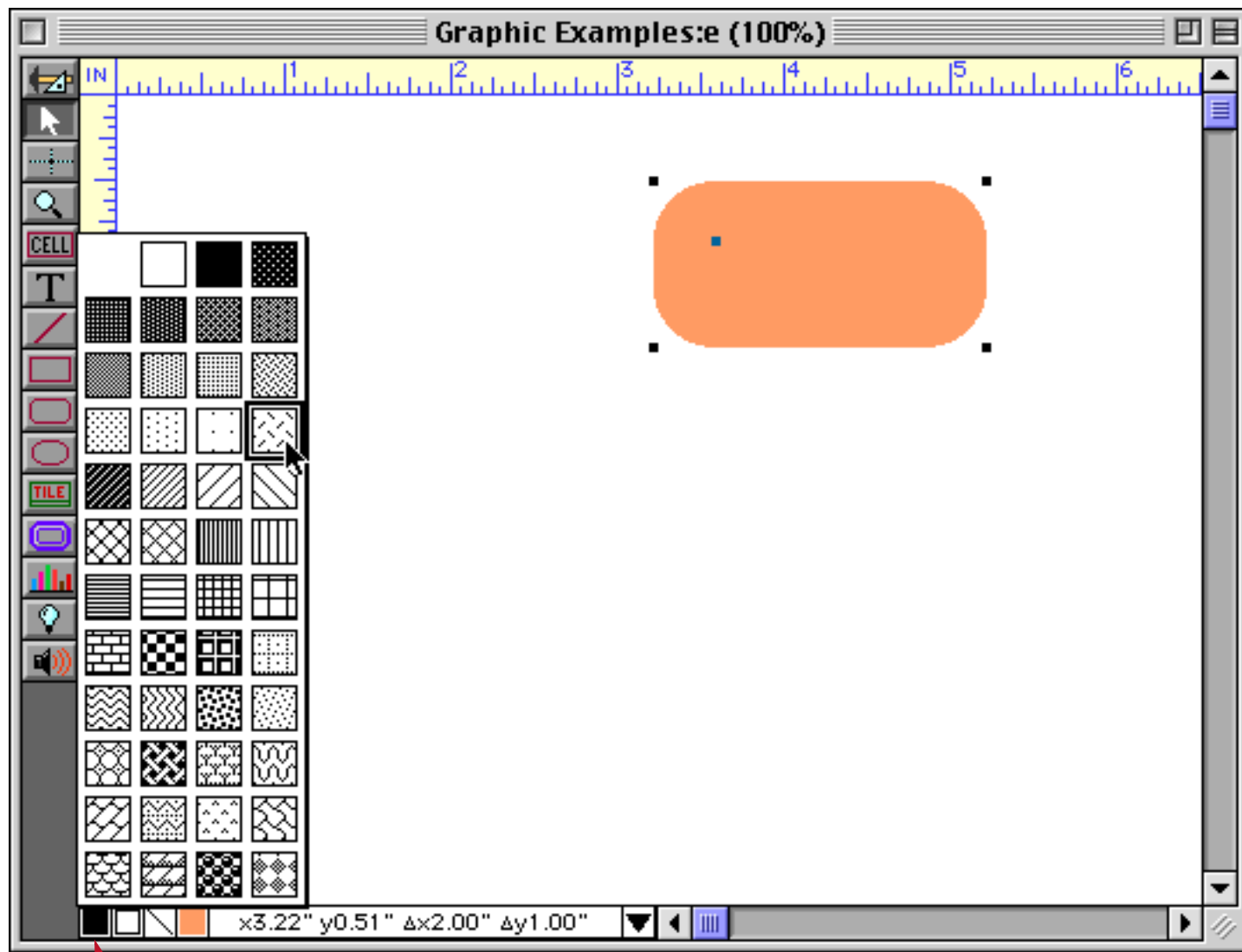
The first three choices in the Graphics menu, **Solid**, **Outline** and **Hollow**, set the fill and line patterns of the selected objects to their most common choices, as shown in the diagram below.



Solid objects are colored all the way through. Outline objects are filled with white with a colored border. Hollow objects have a colored border but a transparent center.

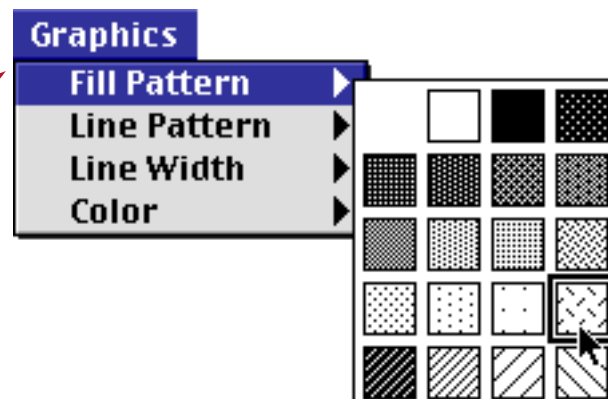
Fill Pattern

The Fill Pattern menu contains 40 different fill patterns.

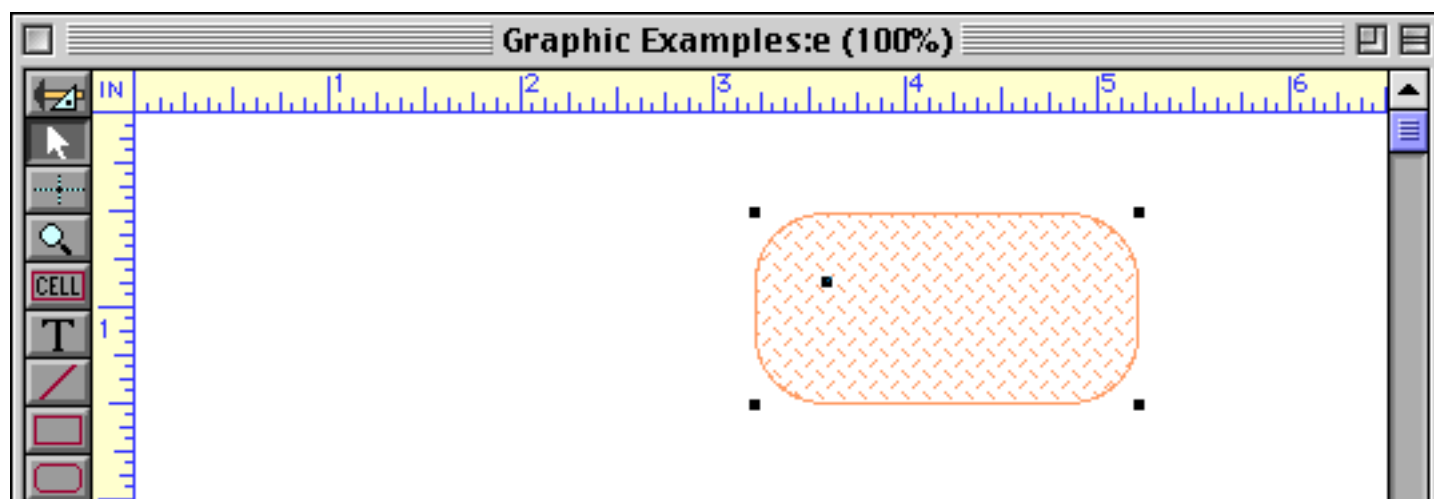


Click here to set the fill pattern

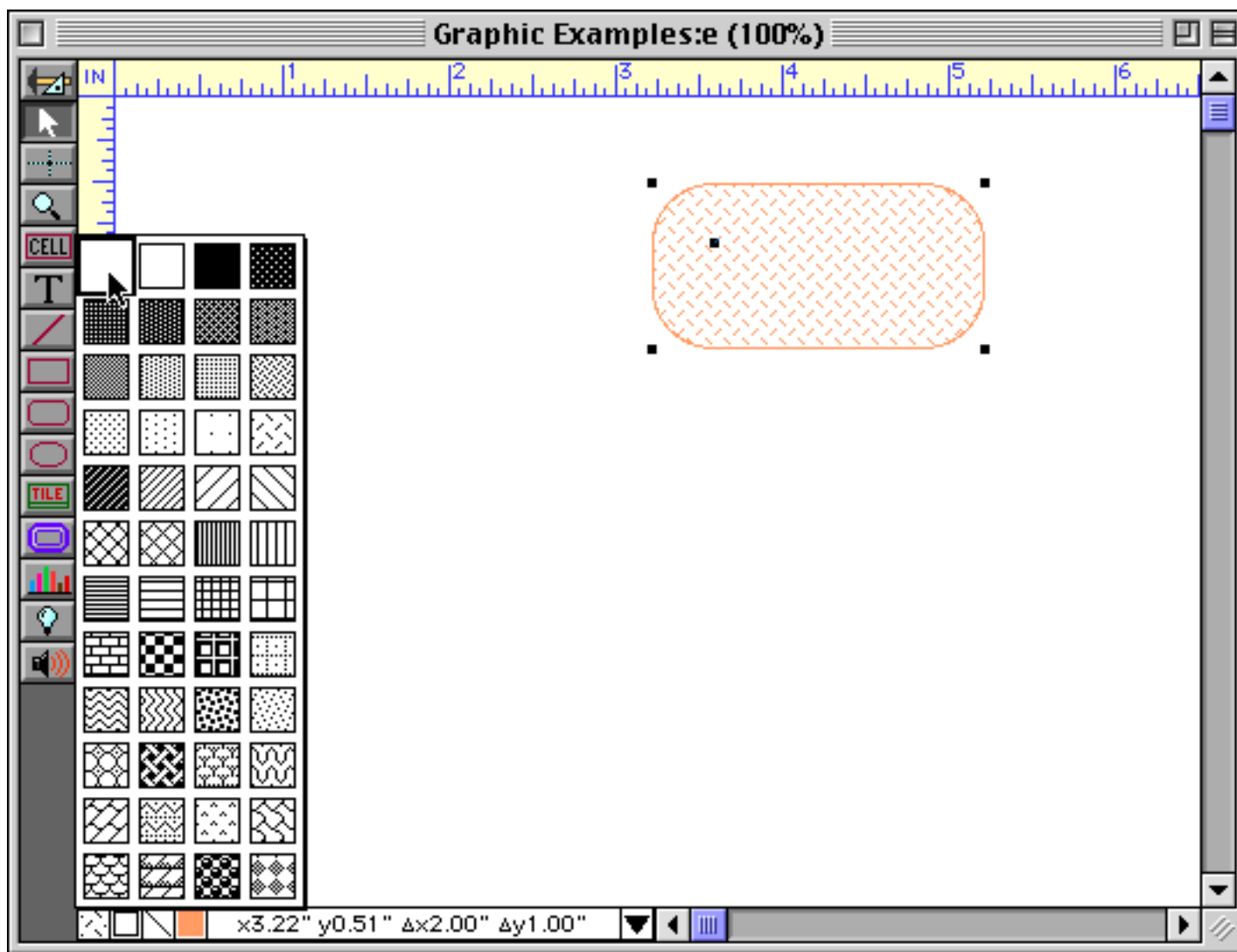
...or select from the Graphics Menu



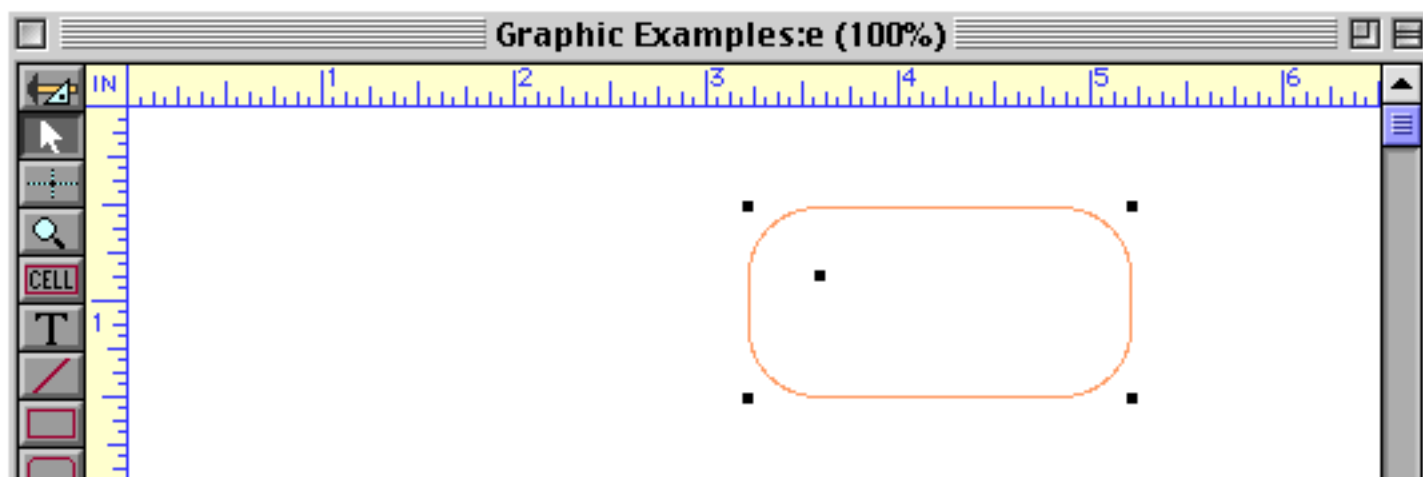
To fill the inside of an object with one of these patterns, first select the object (or objects), then choose the pattern from the **Fill Pattern** menu. When you release the mouse the object(s) pattern will change.



To make a hollow (transparent) object, choose the empty pattern in the top left corner of the Fill Pattern sub-menu.

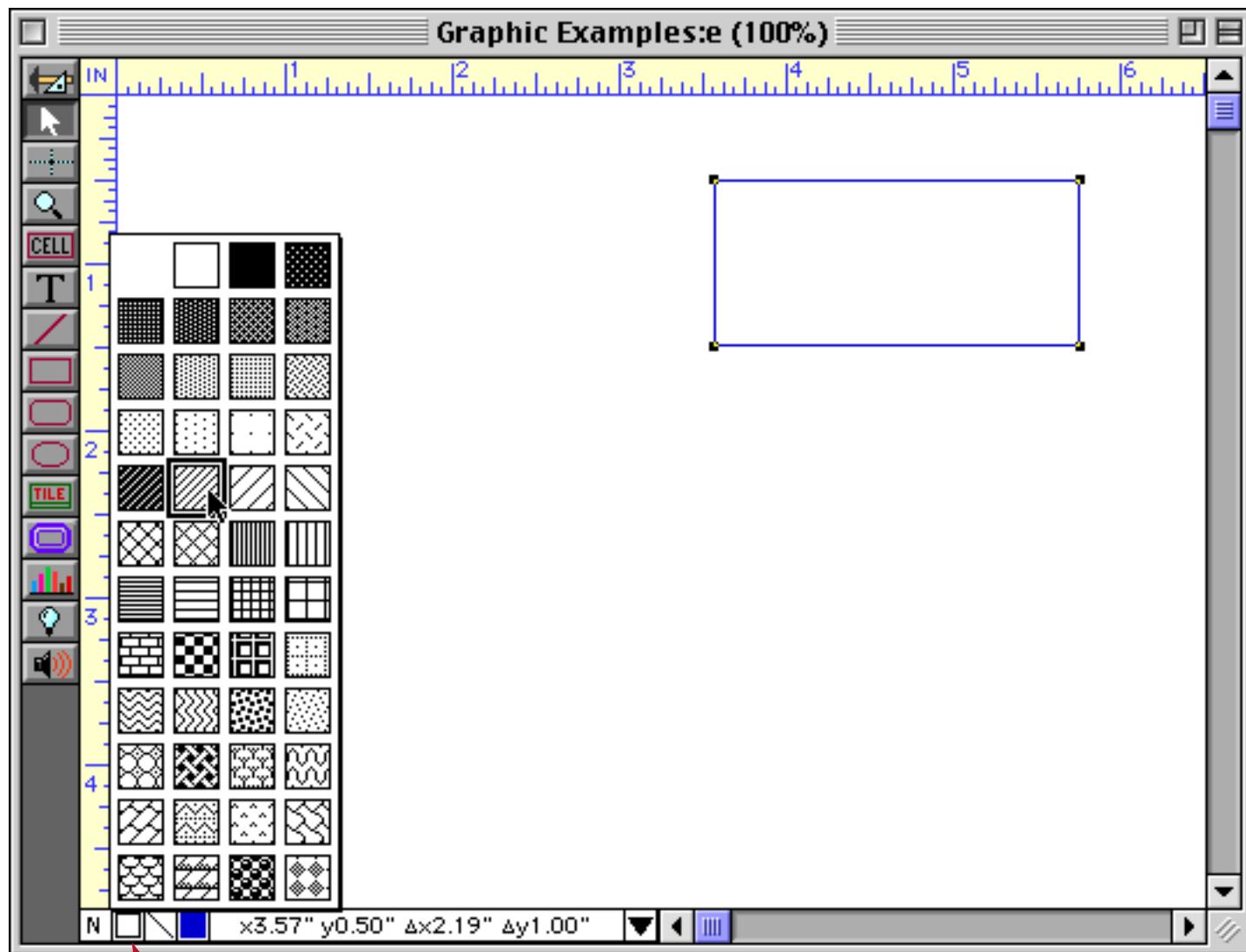


Here's the transparent object.



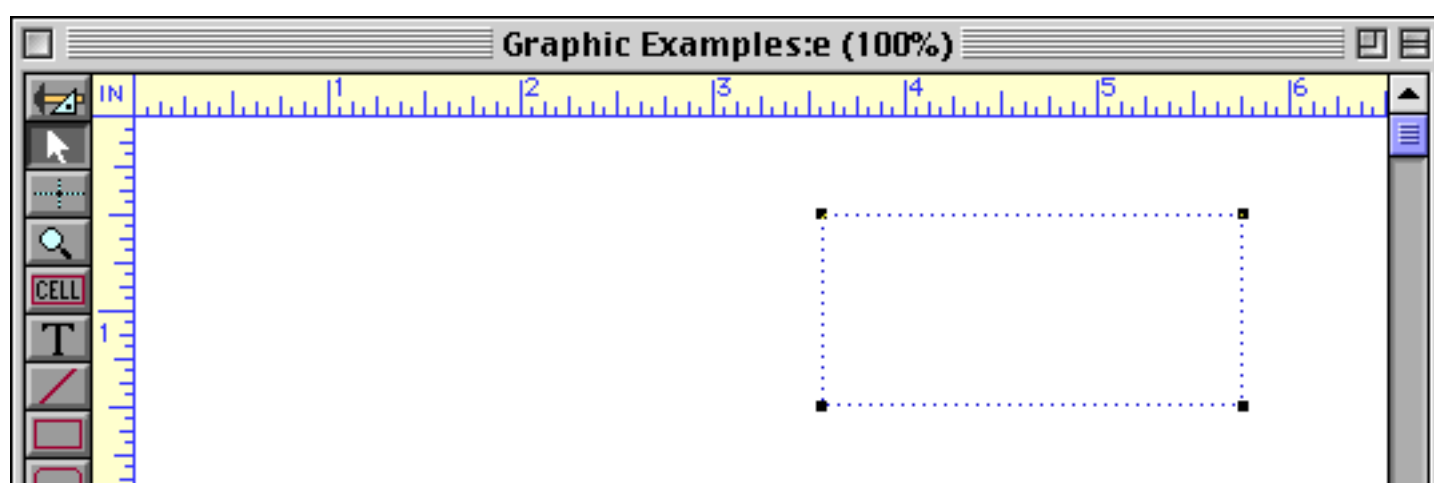
Line Pattern

The **Line Pattern** menu contains 40 different patterns that can be used to draw lines and borders. Only a few of these patterns are really useful for drawing lines.

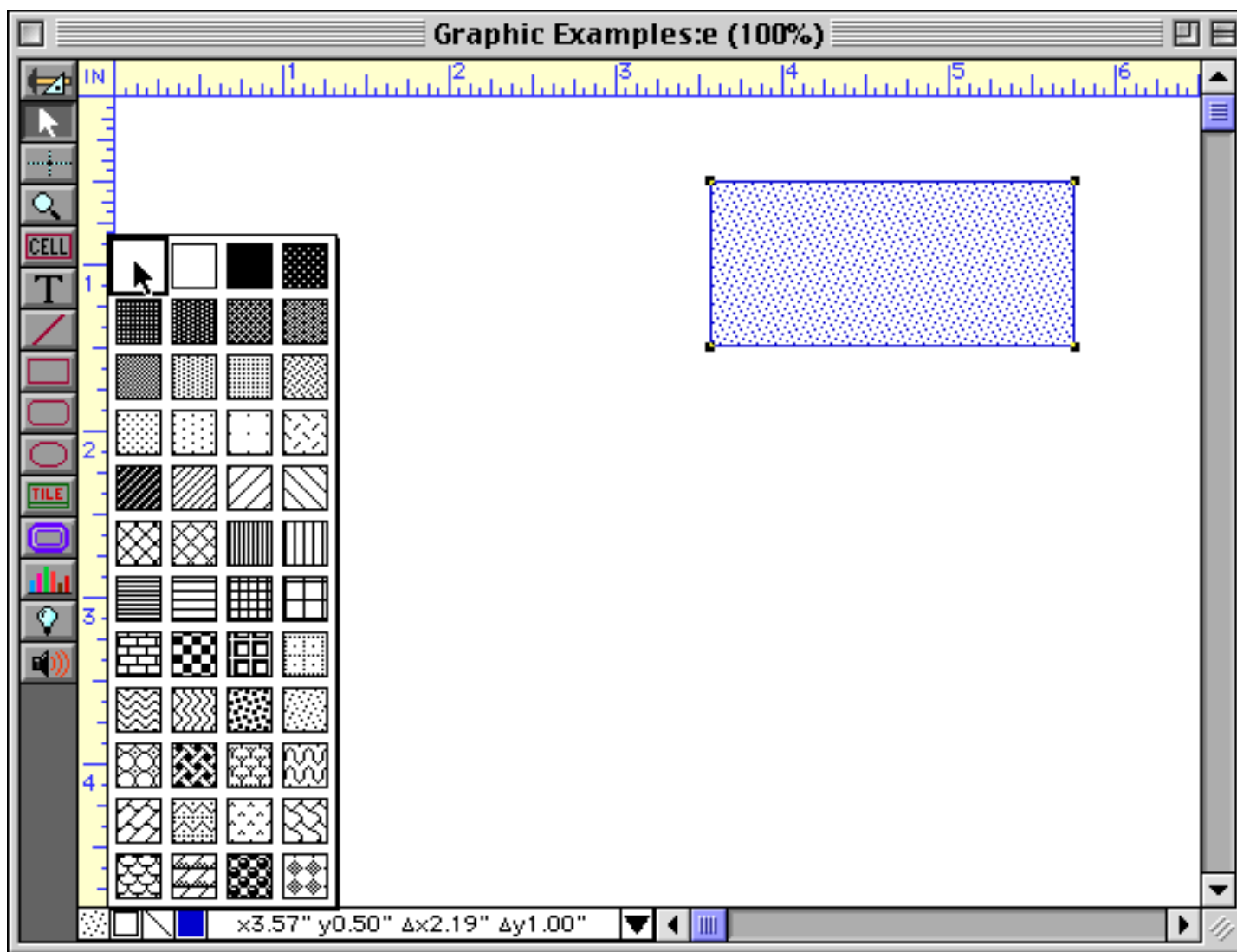


Click here to set the line pattern (or use the Graphics Menu)

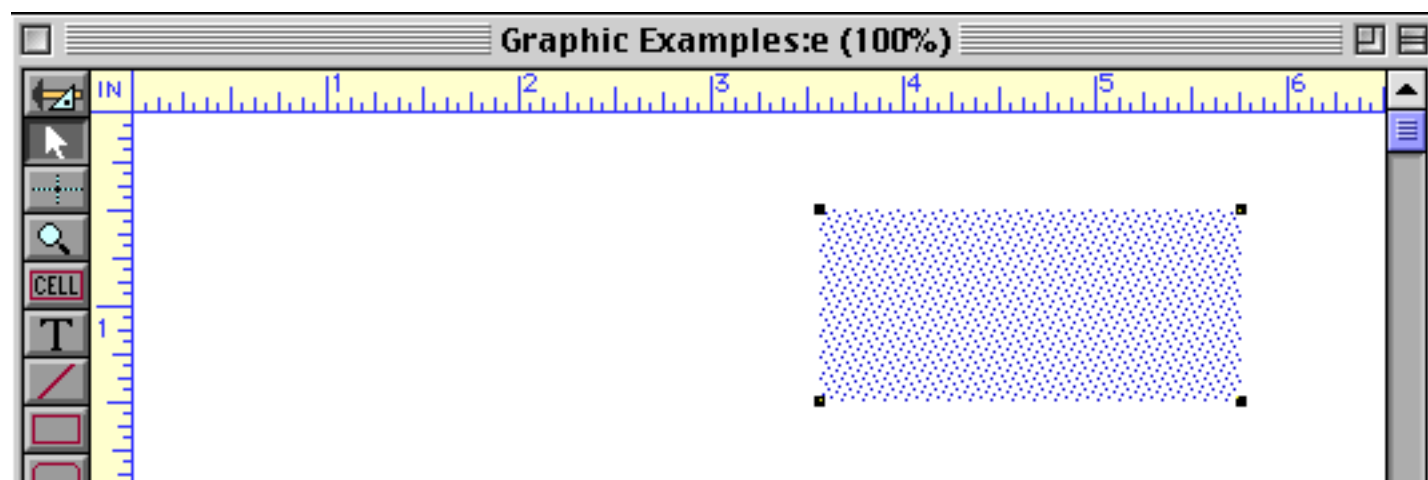
To create a dotted horizontal or vertical line choose one of the diagonal patterns.



The most common line pattern is basic black. If you want an object with no border at all, choose the empty pattern in the top left corner.

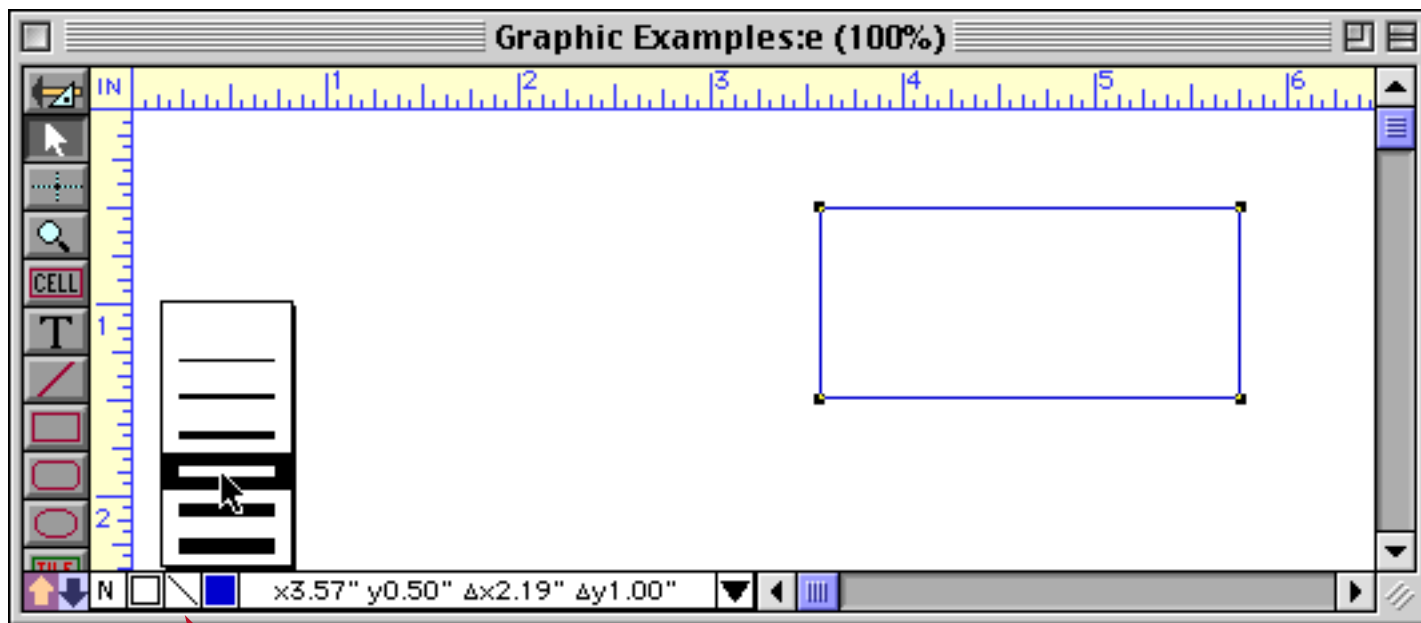


The result is an object without a border.



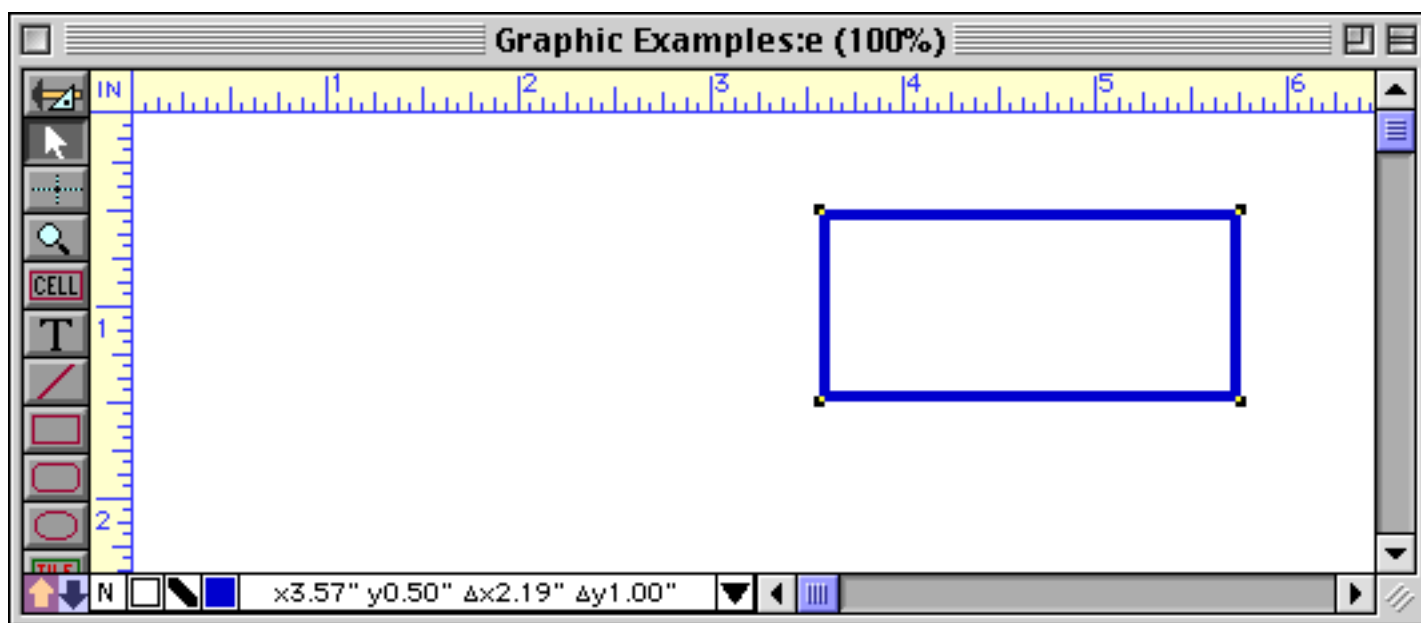
Line Width

The **Line Width** menu contains seven different line/border thicknesses from 1/4 to 6 points.

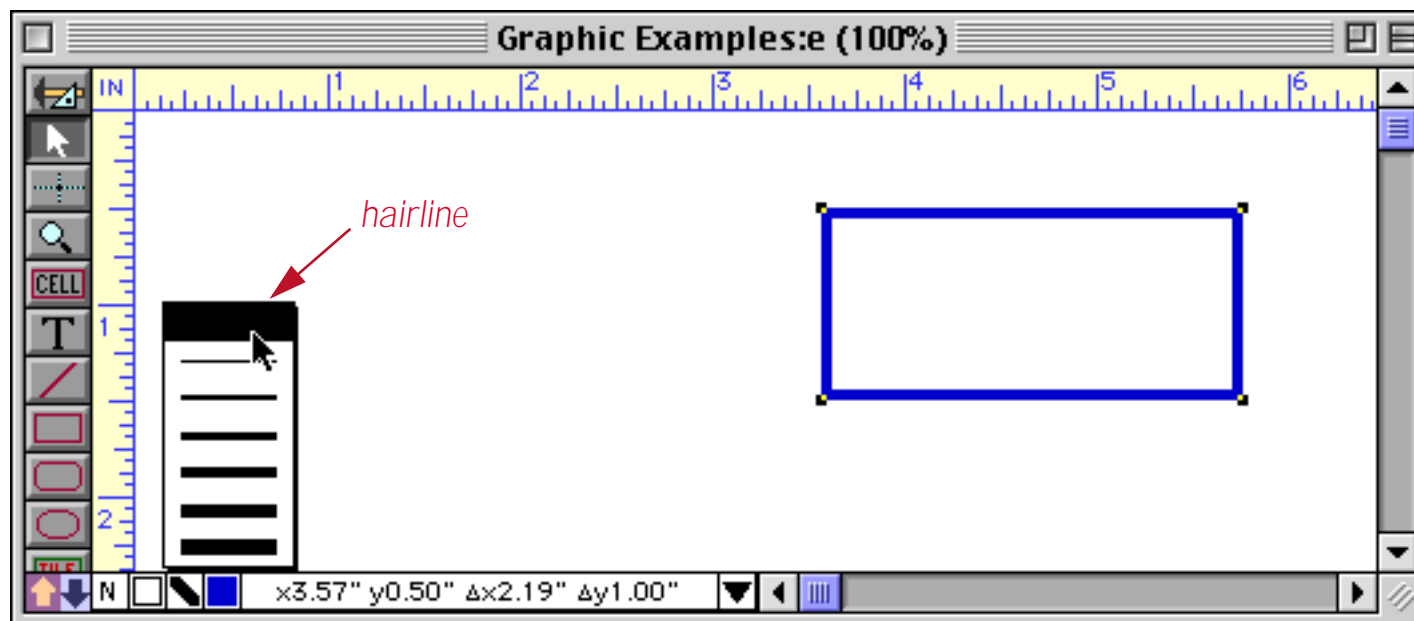


click here for line width menu (or use the Graphics Menu)

When you release the mouse the line width of the object will be updated. Notice that the object's line width also appears in the Graphic Control Strip.



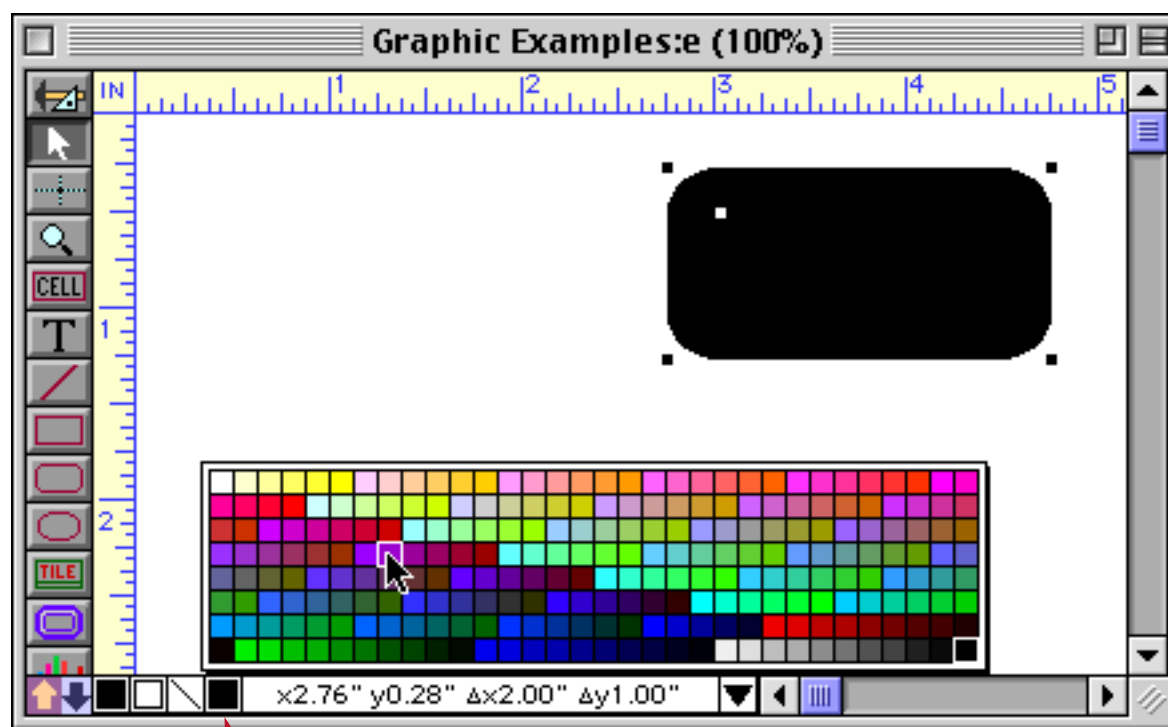
The top spot in the menu, which appears to be empty, actually represents a 1/4 point line (1/300 inch) hairline.



Hairlines can be printed on Postscript laser printers and imagesetters— on the screen and on other types of printers hairlines will appear as ordinary 1 point lines.

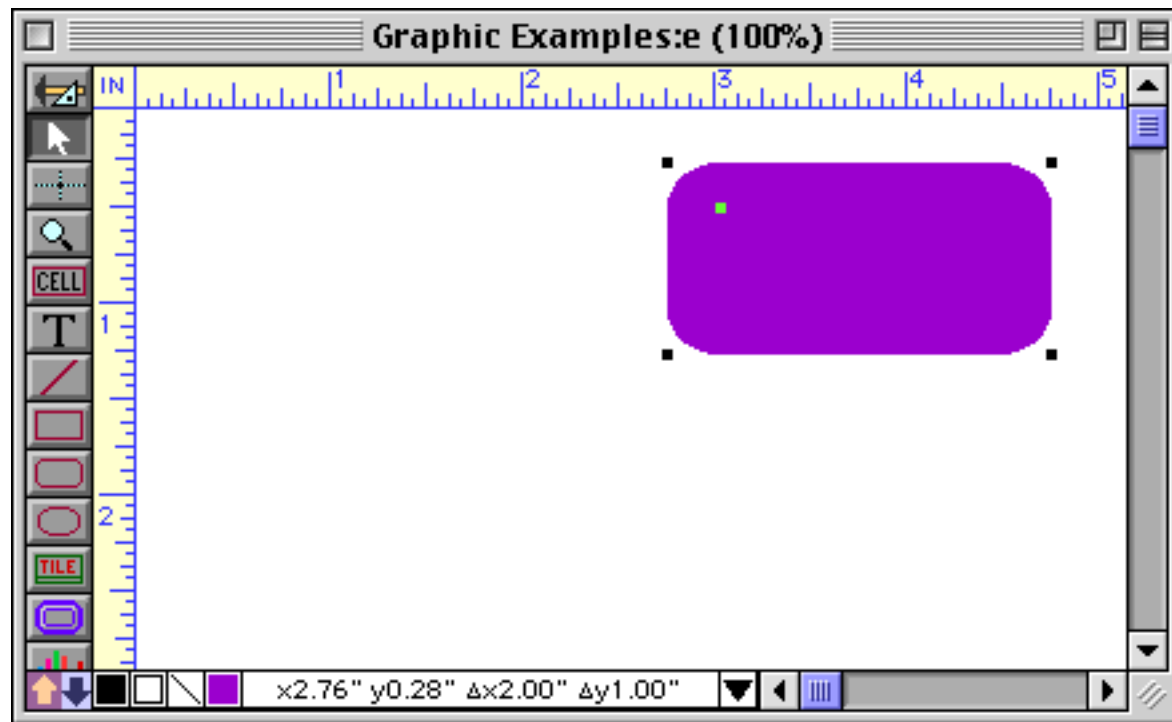
Color

The **Color** menu contains 256 colors. To color an object, first select the object with the **Pointer** tool, then pick the color from the menu.



click here to set the color (or use the Graphics Menu)

When you release the menu the object(s) will change color.



To choose a color that is not one of the 256 colors in the palette, use the **Choose Colors** command in the Graphics menu. The system's standard Color selection dialog will appear, allowing you to choose any of millions of colors.



You can also open this dialog by holding down the Control key (Mac) while clicking the color swatch in the Control strip. On PC systems you can right click the swatch.

Copying and Pasting Colors

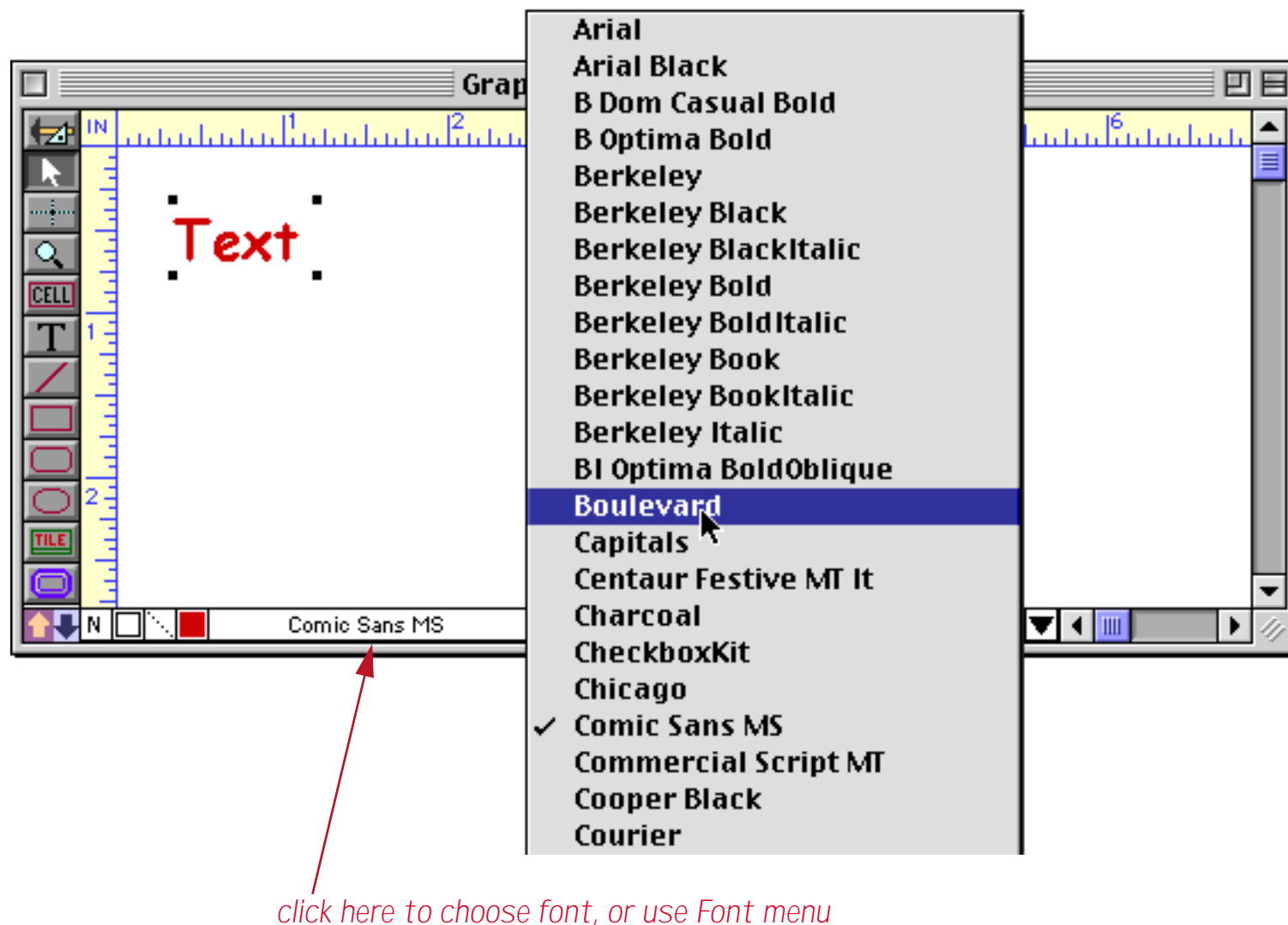
Sometimes you'll want one object to exactly match the color of another object. You can use the **Copy Color** and **Paste Color** commands to transfer a color from one object to one or more other objects.



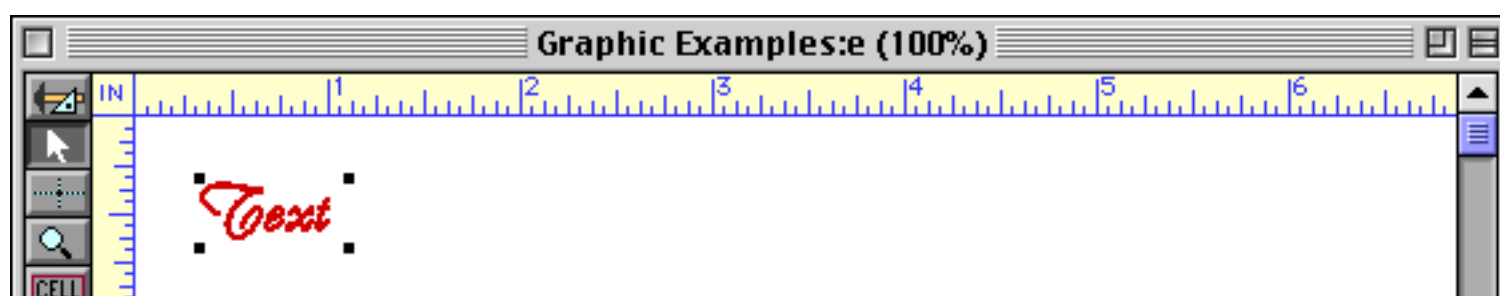
Start by selecting the object that has the color you want, then choose the **Copy Color** command. This copies the color into a special clipboard. Now select the other objects that you want to set to this color and choose the **Paste Color** command. The selected objects will change to the same color as the original object. (Note: The color clipboard is completely separate from the normal clipboard that is used for other copy and paste operations.)

Font

The **Font** menu lists all the fonts installed on your system. To change the font of an object that contains text, first select the object with the **Pointer** tool, then pick the font from the menu.



When you release the mouse the object will change to the new font.

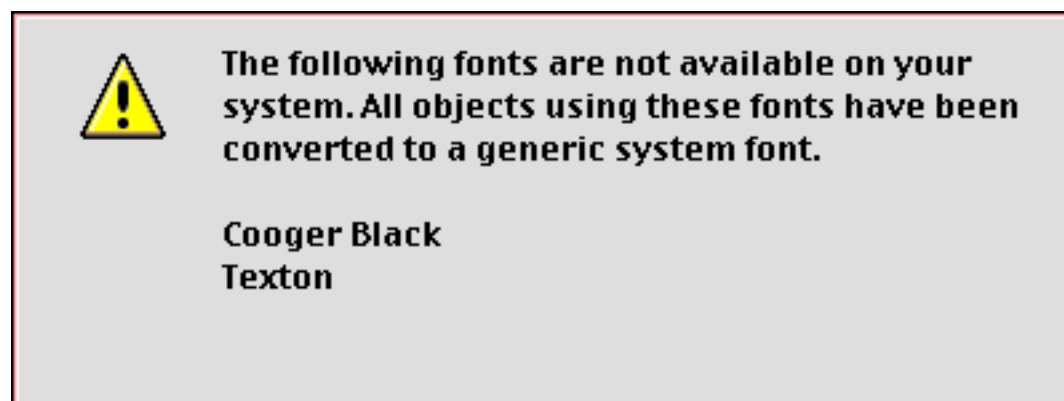


You can use the **Font Usage Wizard** to display a list of all the fonts used in every form in your database. See “[Font Usage](#)” on page 50.

Maintaining Fonts across Multiple Computers and Platforms

If a font has the same name on two different computers then it can be used in a database on either computer — even if they are different types of computers (Macintosh vs. Window PC). For example, suppose your database is created on a Macintosh and uses the Adobe fonts **Palatino** and **Optima**. If the database is transferred to a Windows PC system these fonts will continue to display properly if the **Palatino** and **Optima** are installed on the Windows PC.

No matter what type of computer you are using Panorama will check for the necessary fonts each time it opens a database. If a database uses one or more fonts that are not installed on this system an alert will appear listing the fonts that are not available on your system.



To allow you to continue to use the database the objects that use these fonts are switched either to **Geneva** (Macintosh) or **Alpine** (Windows). If you want to keep the original fonts you must close the database without saving it, install the necessary fonts, then re-open the database. Once the database has been saved you cannot go back to the original fonts except by manually setting up the fonts again, object by object.

Universal Fonts

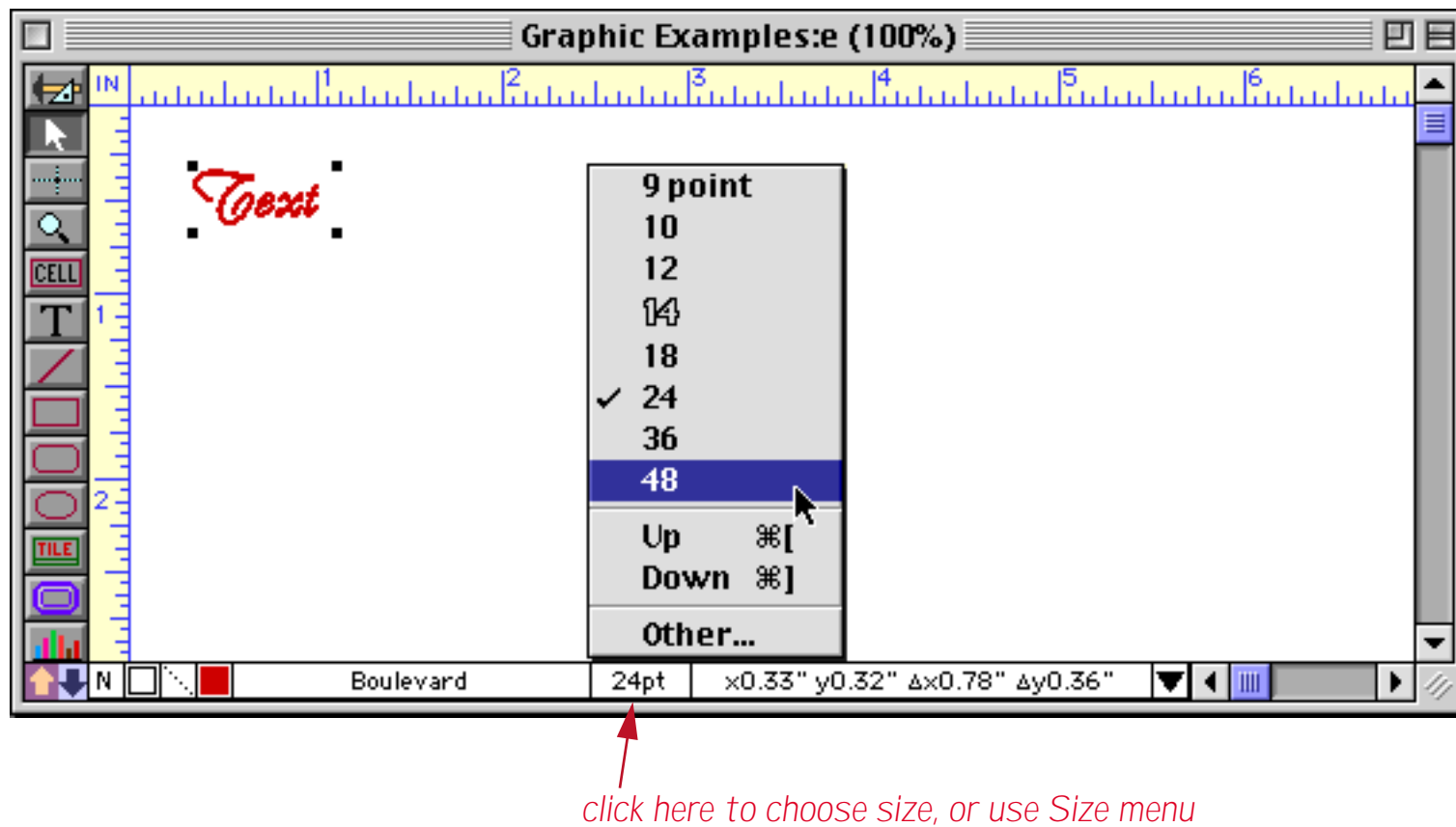
Panorama has special handling for four special fonts.

Macintosh	Windows
Geneva	Alpine
New York	Yankee
Chicago	City
Monaco	Block

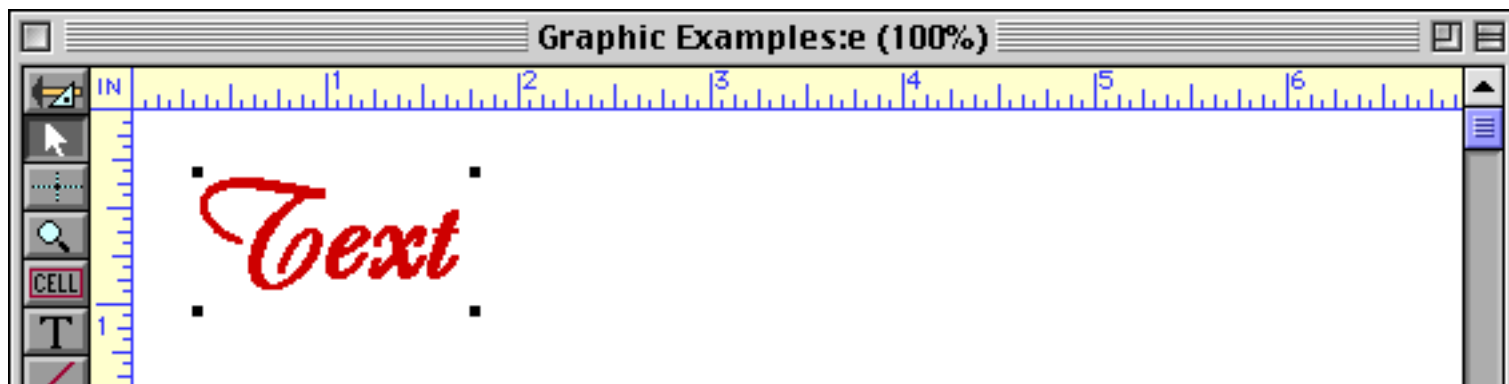
On the Macintosh these four fonts are always present as universal fonts, so you can rely on them always being available. We have created the four equivalent fonts for Windows computers to guarantee that these fonts are always available on any computer. For example, if you create an object using the **Geneva** font on a Macintosh computer it will automatically be translated to the **Alpine** font when displayed on a Windows PC computer. If you want to make sure that your database will display properly on any computer you should restrict yourself to using only these four fonts.

Text Size

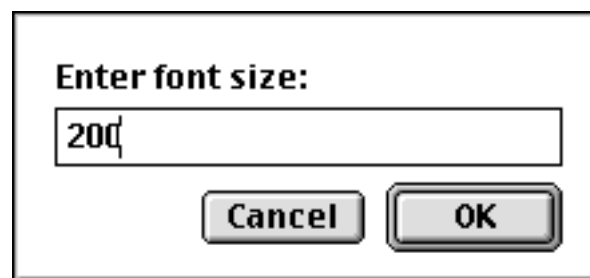
The **Size** menu allows you to adjust the text size of an object. To change the text size, first select the object with the **Pointer** tool, then pick the size from the menu.



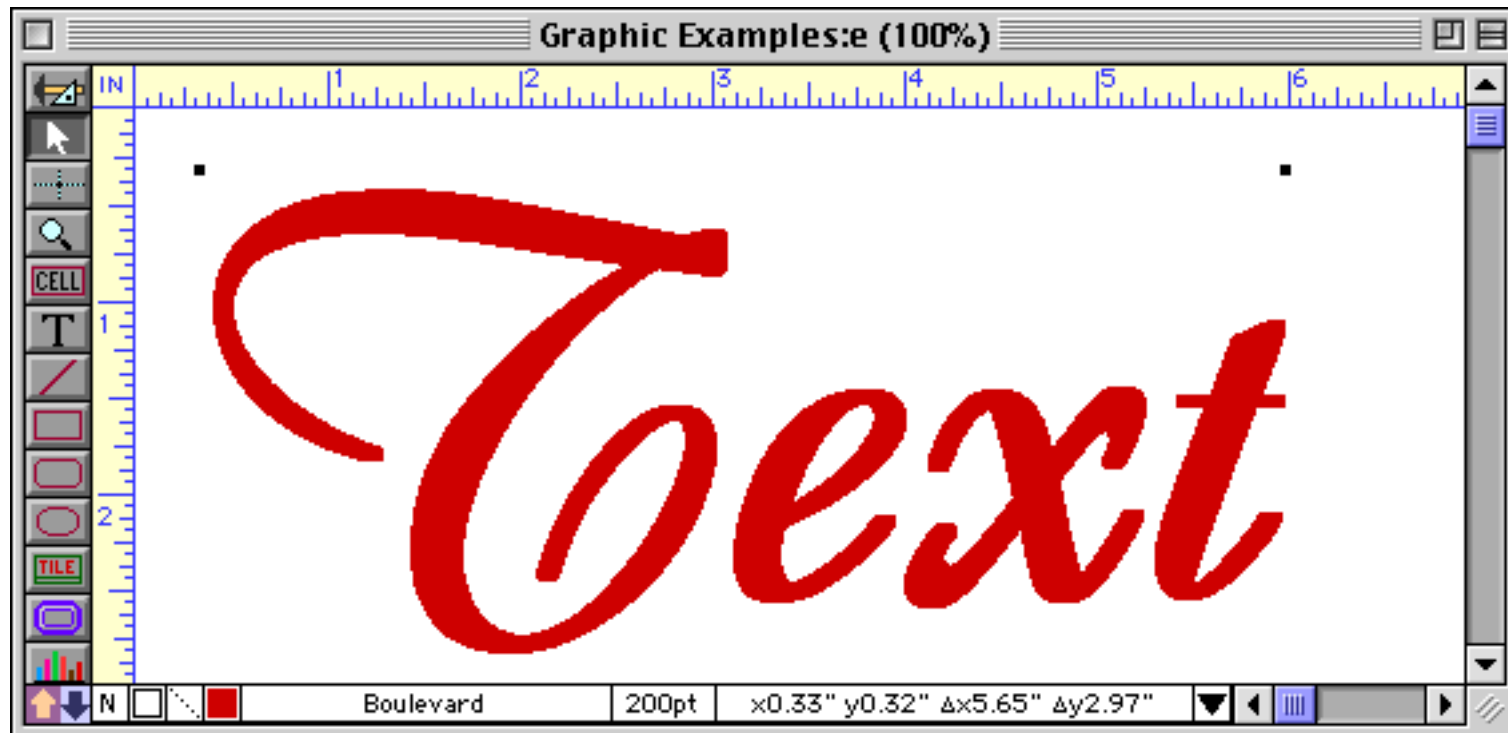
When you release the mouse, the size of the text will change.



If the size you want is not listed in the menu, choose **Other**. A dialog will appear asking for the new font size.



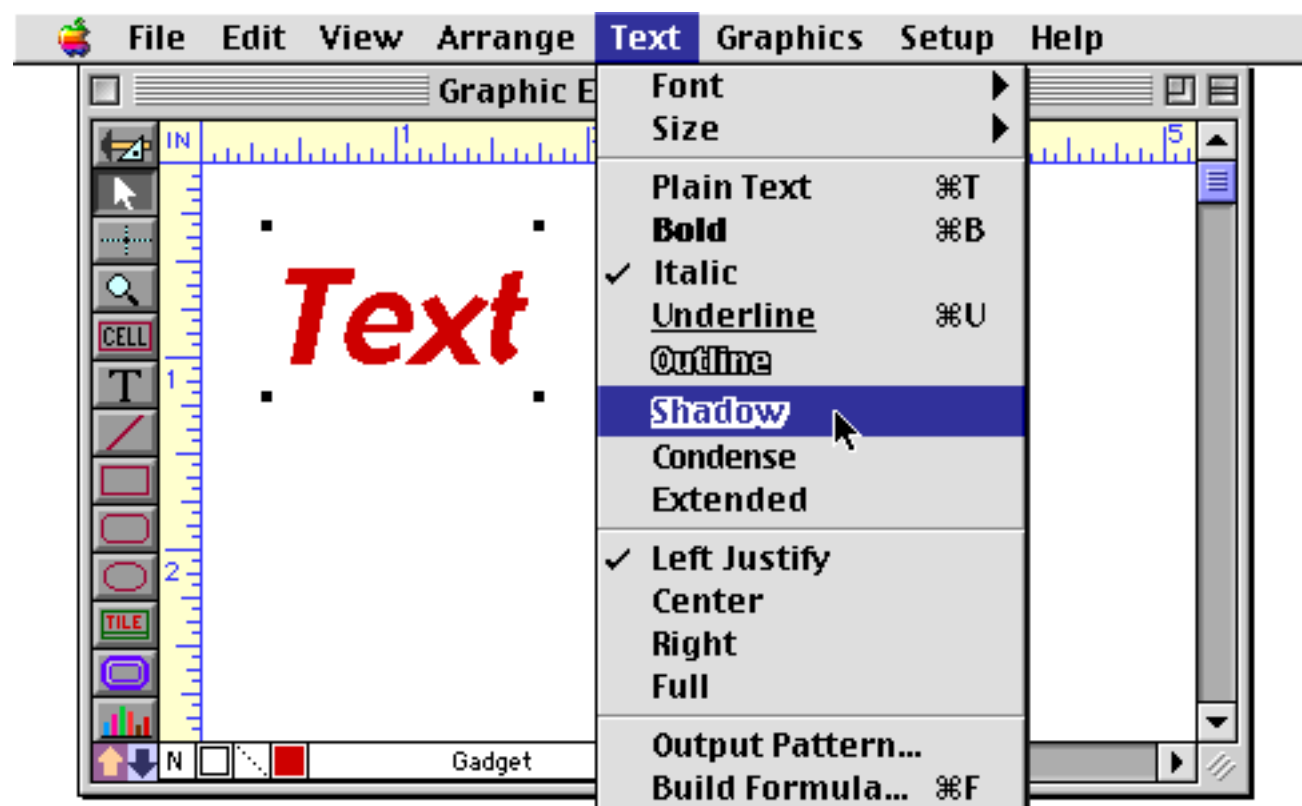
You can type in any integer font size you like — big or small.



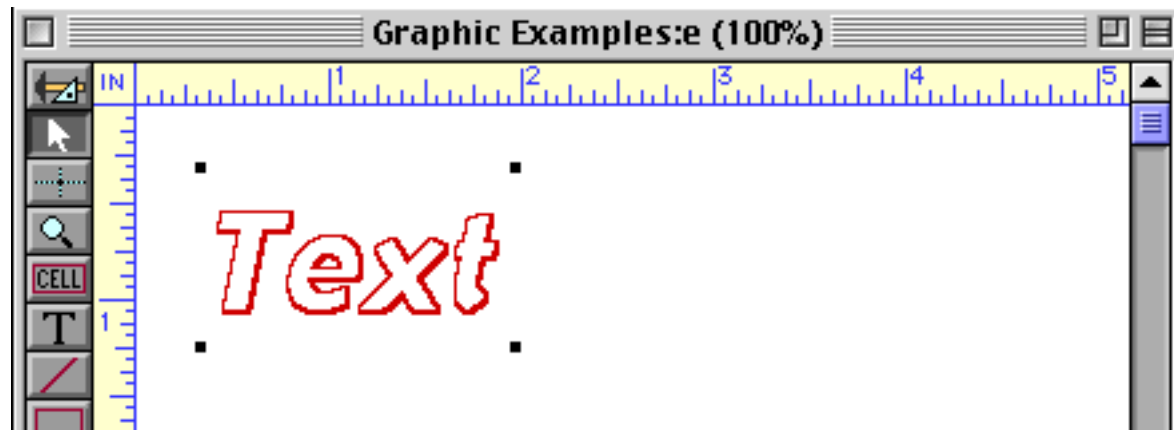
You can also make small adjustments to the text size by selecting **Up** or **Down**. These commands increase or decrease the text size by one point.

Text Style

The **Text** menu allows you to change the style of an object containing text.



You must change the style of the entire object — all the characters in the object must have the same style.

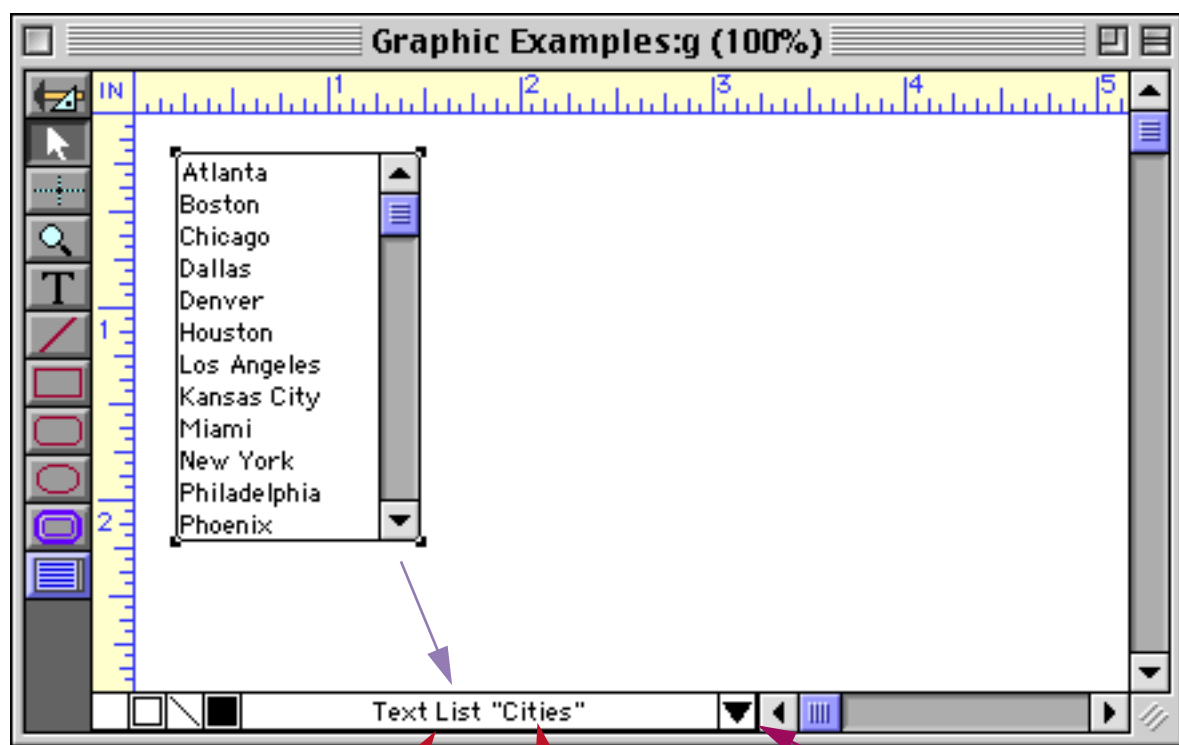


The only exception to this rule is the Word Processor SuperObject, which allows different styles, fonts, sizes and colors to be mixed. See “[Word Processor SuperObject](#)” on page 673 for more information.

Object Type/Object Name

Panorama allows a name to be assigned to any graphic object. The name can be used to identify the object when programming. If an object has a name, a program can get information about the object, or even modify the object on the fly. If you are not planning to do any programming with an object, there is no need to assign a name to it.

The **Graphic Control Strip** can display the type of the currently selected object, along with its name (if it has a name). Object types describe what the object is: Rectangle, Oval, Line, Button, Data Cell, etc.

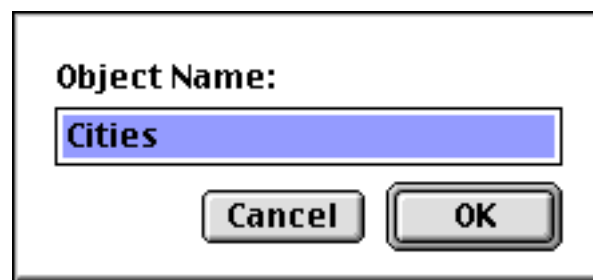


type of object

name of object

click here to toggle between dimensions, font/size and type/name of object

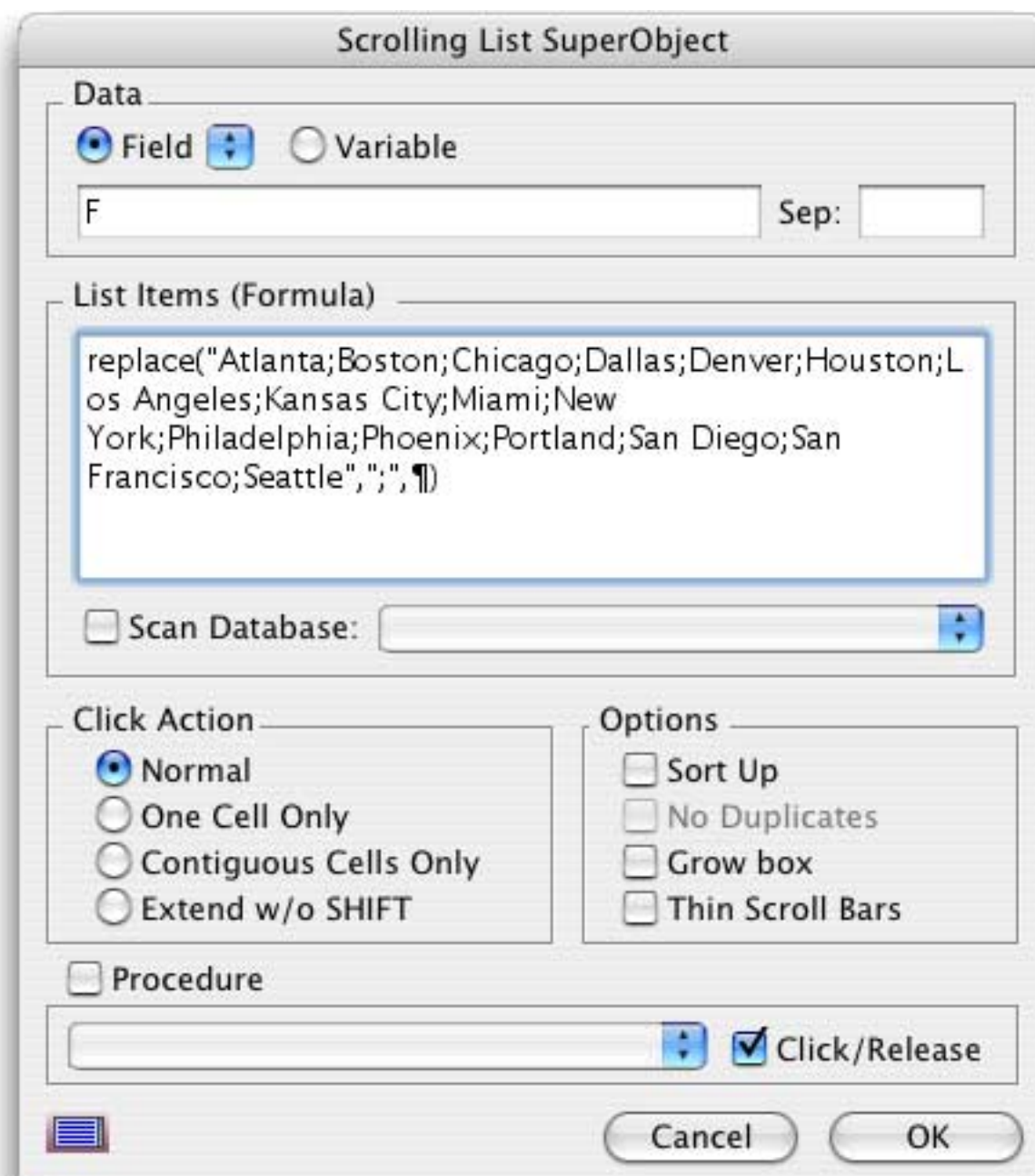
You cannot change the type of an object, but you can change its name. To do so, either click on the object type or name in the Graphic Control Strip, or choose **Object Name** from the Edit menu.



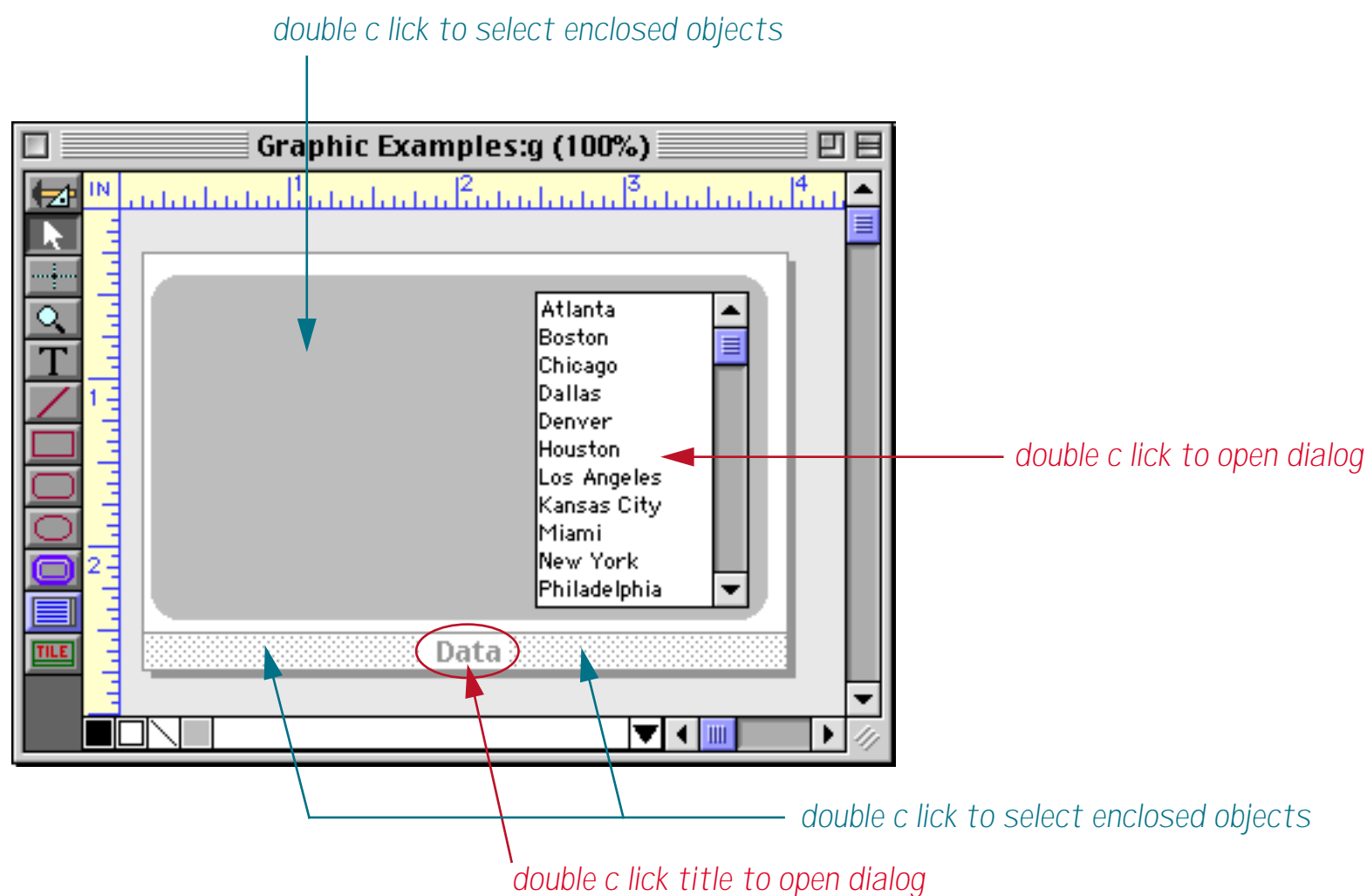
You can use any name you want for the object. You can even have two objects with the same name, which can be handy if you always want to program them the same way. For more information on programming objects via their name see "[Programming Graphic Objects on the Fly](#)" on page 633 and "[Program Control of Super-Objects™](#)" on page 666 of *Formulas & Programming*.

The Object Properties Dialog

Many graphic objects have dialogs that control various options for the object. To open the dialog for a particular object, first select the object and then choose the **Object Properties** command in the Edit menu. This command will work for data cells, tiles, buttons, flash art, flash sound and all SuperObjects. There is no dialog for basic shapes like rectangles, ovals, etc. The Object Properties dialog is the same dialog that appears when you create the object. Here is a typical Object Properties dialog.



Another way to open the **Object Properties** dialog is to simply double click on the object in question. In fact, this is the most common way to open this dialog. With most types of objects you can double click anywhere in the object. For a report tile, however, you must double click on the name of the tile. If you double click on the drag bar of the tile (outside the name), Panorama will not open the Object Properties dialog, but instead will select all the objects inside the tile. (See “[Working with Tiles](#)” on page 1062 to learn more about report tiles.) The illustration below shows a report tile with two other objects, a list and a rounded rectangle.



If an object doesn't have an **Object Properties** dialog (for example basic shapes like rectangles and ovals) then double clicking on the object will select all of the object inside the object. “[Selecting Multiple Objects at Once](#)” on page 502 for more information about this technique.

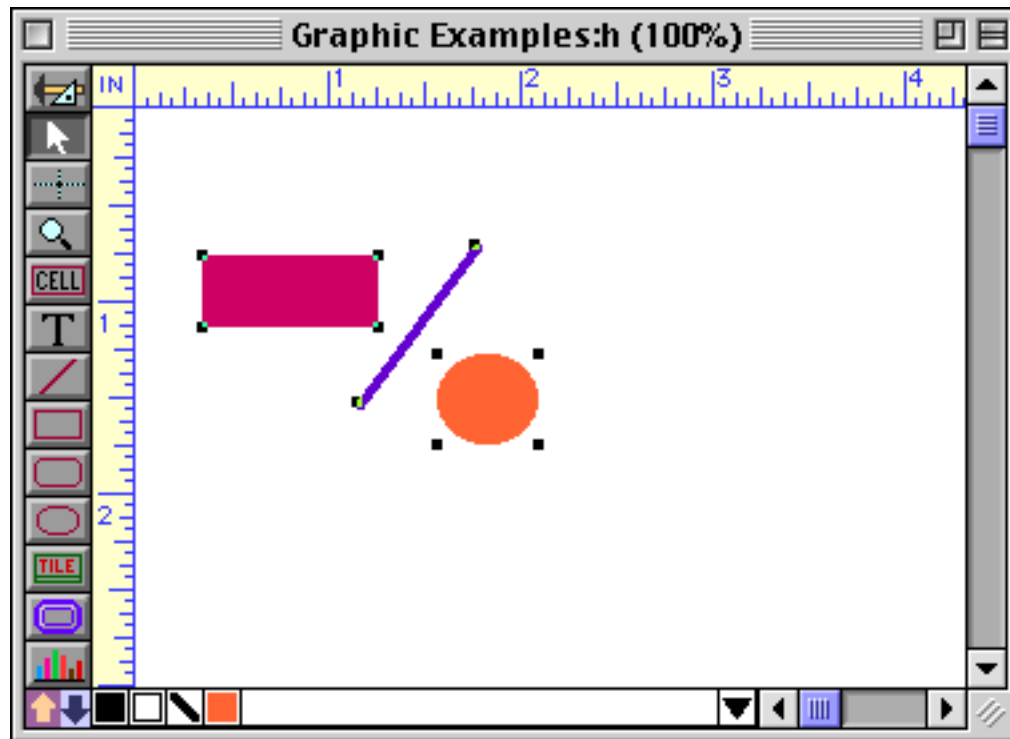
Note: In older versions of Panorama (Panorama 2.x) you needed to click on the object with the corresponding tool to open the Object Properties dialog. For example to open the Object Properties dialog for a button you needed to select the **Button** tool, then click on the button. This will still work, but is no longer necessary with the **Object Properties** command in the Edit menu and the double clicking (with the pointer) shortcut.

Working With Multiple Objects

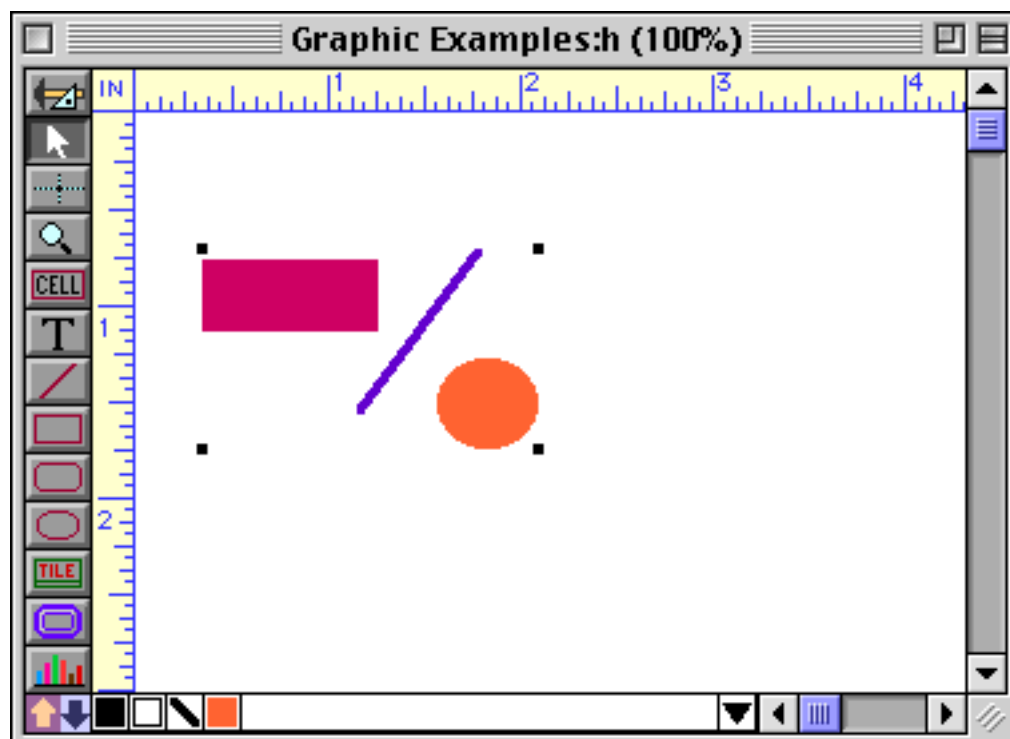
Most forms contain dozens or even hundreds of objects. Often you'll need to move, resize, or align several objects at once. Panorama has a number of tools to make these kinds of tasks easier.

Grouping Objects Together

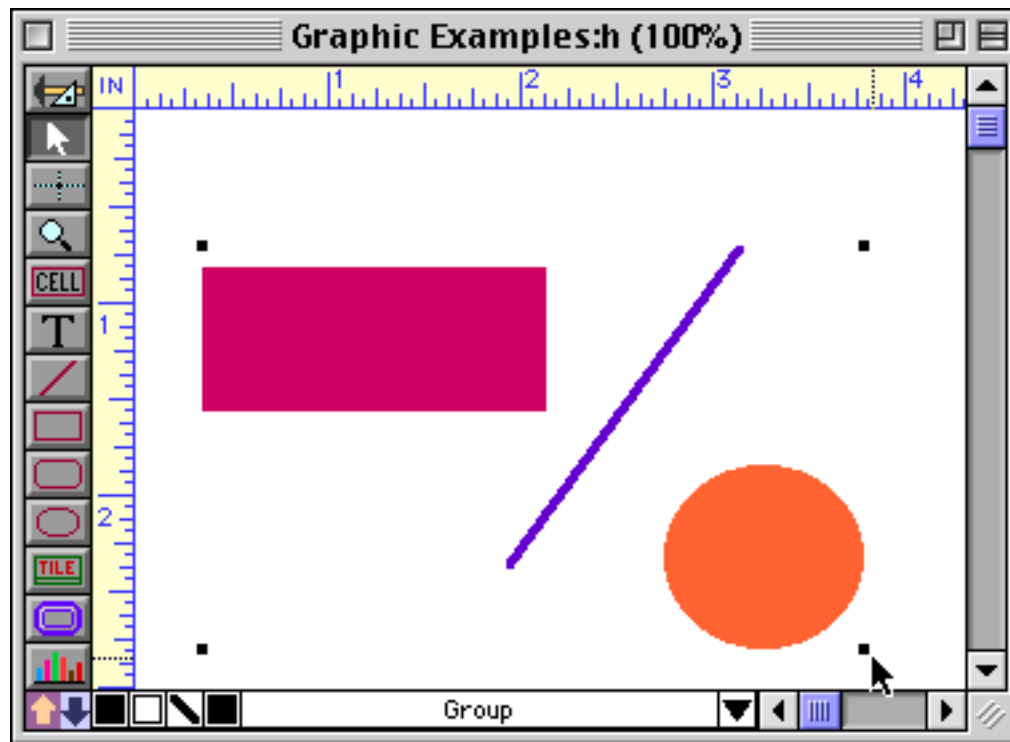
The **Group** command (in the Arrange menu) gathers several objects together and combines them into a single object. Once the objects are grouped together, they act as a single unit. The group can be selected, moved, copied, or resized just as if it was a single object. To group several objects together, first select the objects.



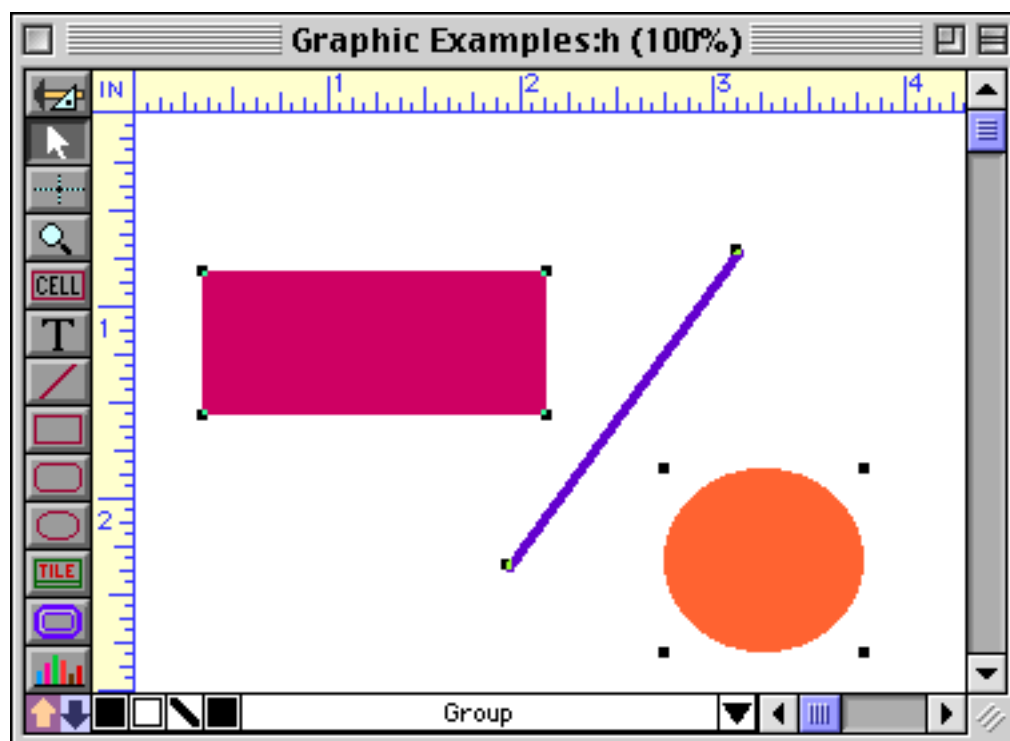
Once the objects are selected, choose the **Group** command in the Arrange menu. The handles at the corners of each individual object will disappear, while new handles appear at the corners of the new composite object.



The group now acts as if it was a single object. You can move it, resize it, copy it or delete it, all as a single entity. For example if you expand the group object, all of the component objects within the group will expand proportionally.



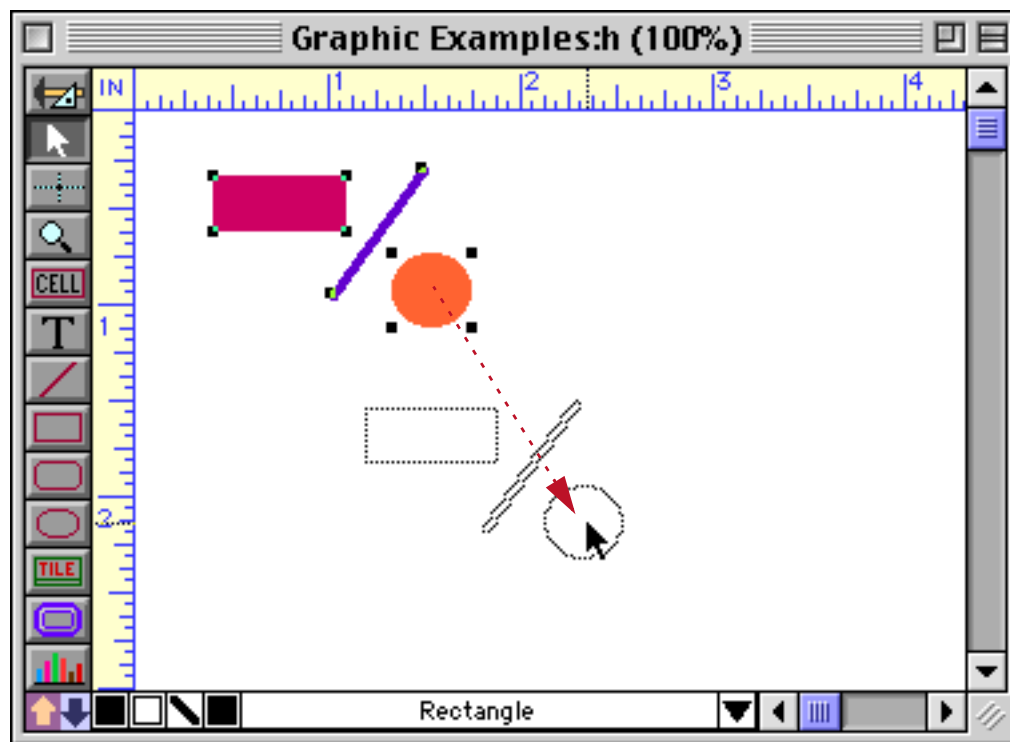
If you want to manipulate one of the individual objects within a group you must reverse the process with the **Ungroup** command. This command splits a group back into the original separate objects.



Tip: Don't confuse the **Group** command in the Arrange menu with the **Group** command in the Sort menu. The **Group** command in the Sort menu is used to collect data into groups, while the **Group** command in the Arrange menu is used to collect graphic objects into groups. See "[STEP 1 - GROUP](#)" on page 394 for more information about the other **Group** command.

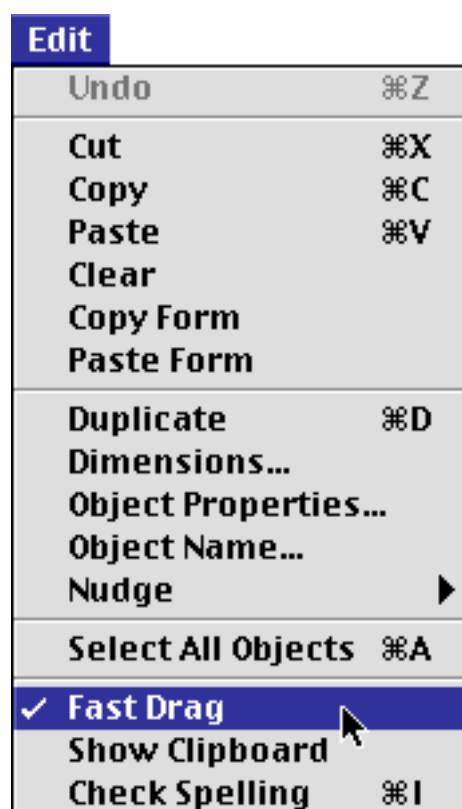
Moving Multiple Objects

You can move several objects at once by selecting the objects and then dragging one of them. The other selected objects will follow as you drag. You can also nudge the selected objects with the arrow keys (see [“Nudging an Object \(or Objects\)”](#) on page 509).

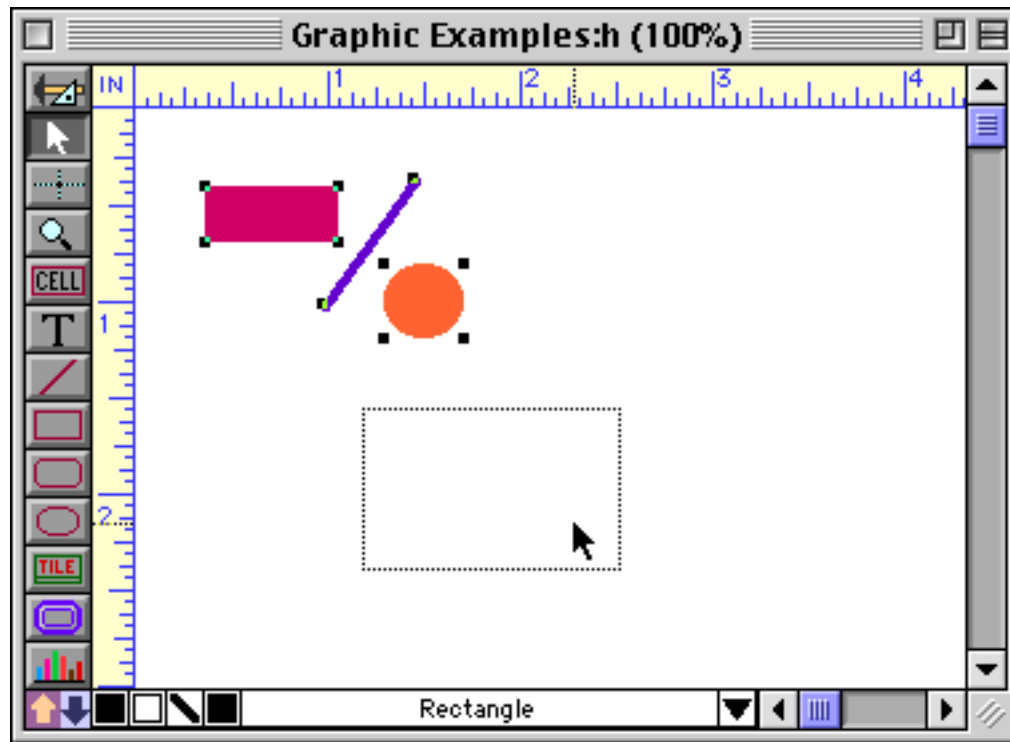


Fast Drag

As you drag multiple objects, a gray outline of the objects follows the movements of the mouse (as shown in the previous illustration). If you have a very slow computer and are dragging a large number of objects, there may be a delay while Panorama creates this gray outline. You can eliminate this delay by checking the **Fast Drag** option in the Edit menu.



When this option is checked the delay is reduced, but the gray outline may be less detailed.

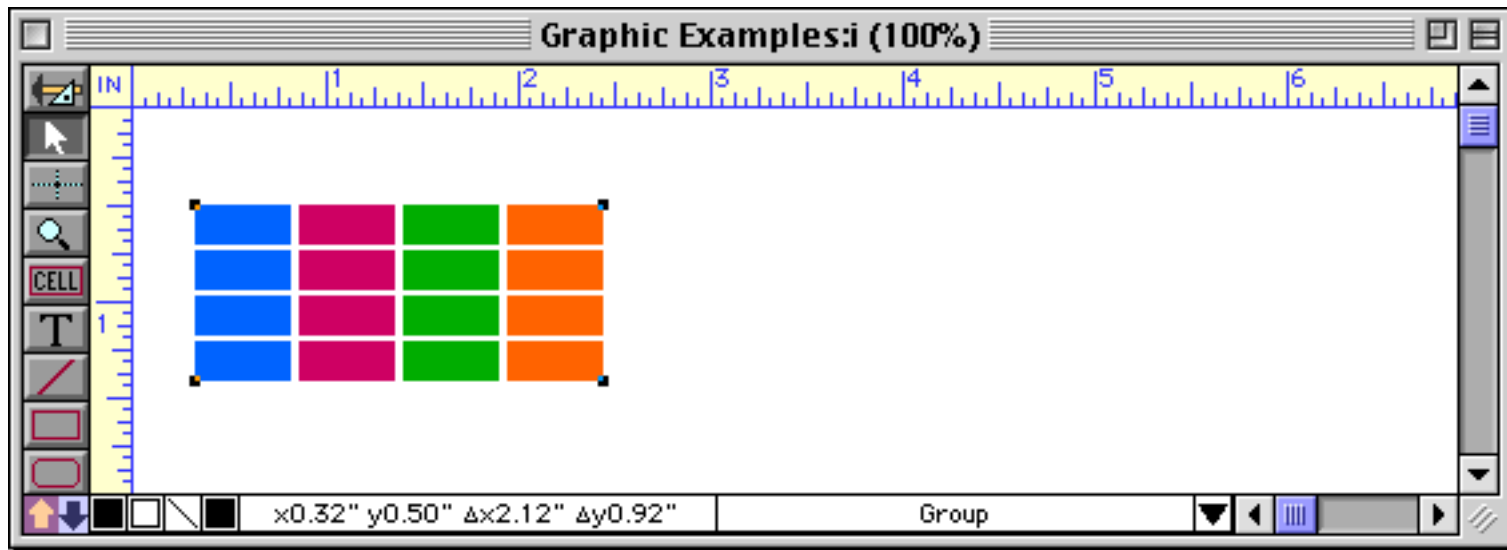


The **Fast Drag** option remains on until you turn it off or quit Panorama.

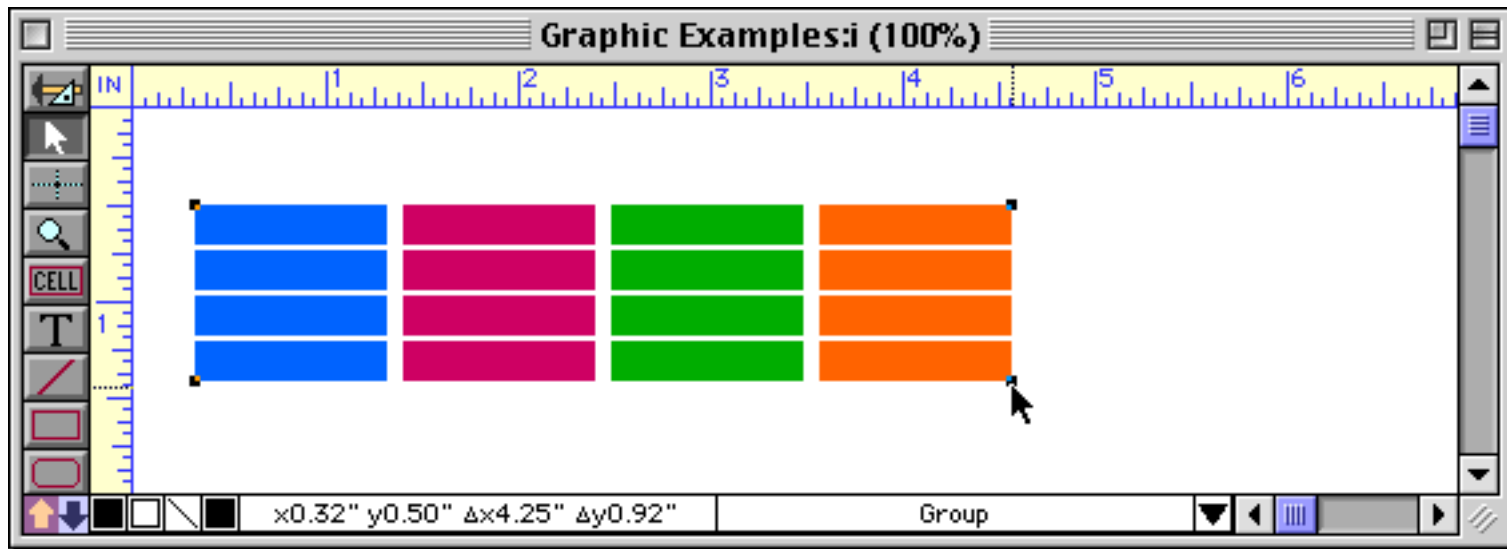
Resizing Multiple Objects

You have several choices available for resizing multiple objects. You can combine objects into a group and then change the size of the group. You can use the **Dimensions** dialog to make each selected object a fixed height or width, or to increase or decrease the size of each selected object. Finally, you can use **cluster resize** to change the width of a column within a table, or the height of a row.

When you change the size of a group object, all of the dimensions inside the group change as well. For instance, if you double the width of a group, all of the individual objects within the group will also double in width. The horizontal spacing between the groups will also double. Here is a group of objects before the width is adjusted...

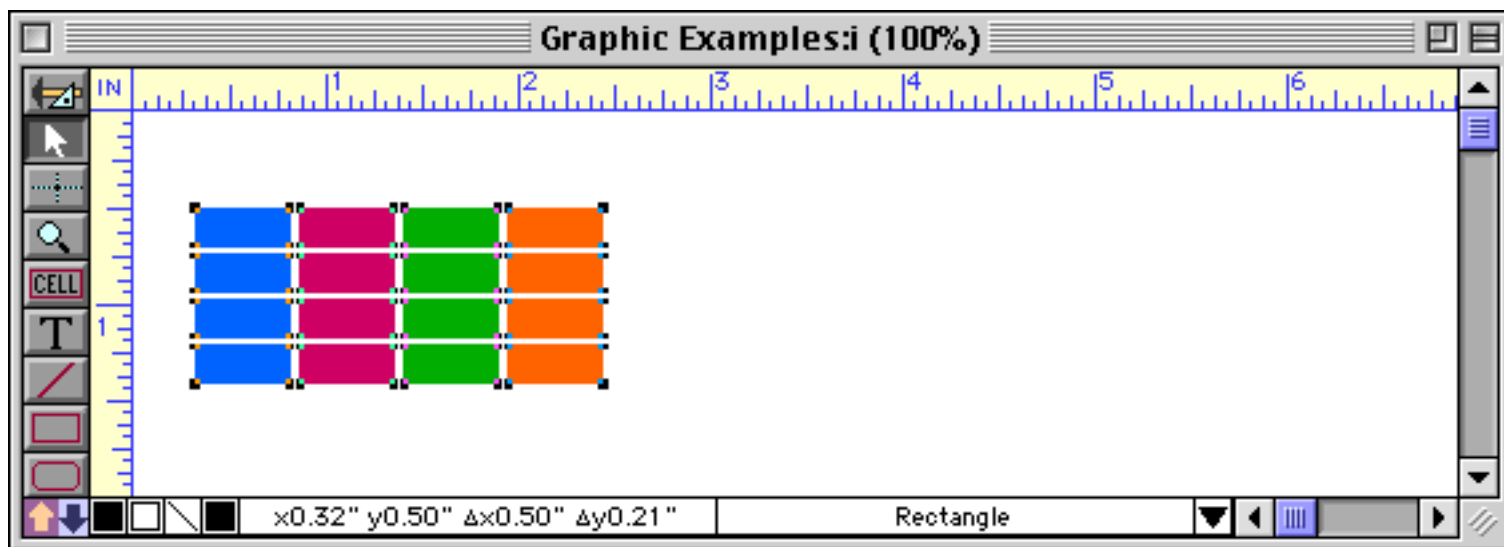


and after.

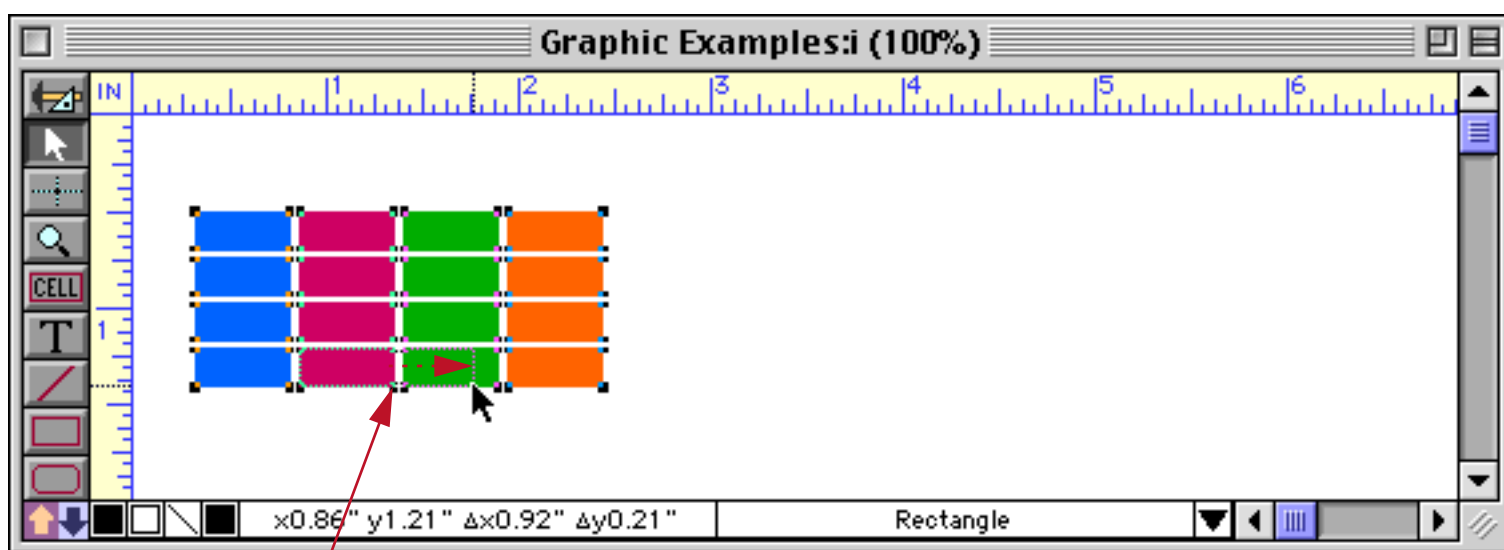


Cluster Resize

Panorama's **Cluster Resize** is automatically active whenever you select several objects and then change the size of one of them. Cluster resize adjusts the sizes and locations of the other selected objects to match the change. For instance, suppose you have a matrix of boxes, and you want to increase the width of one column.

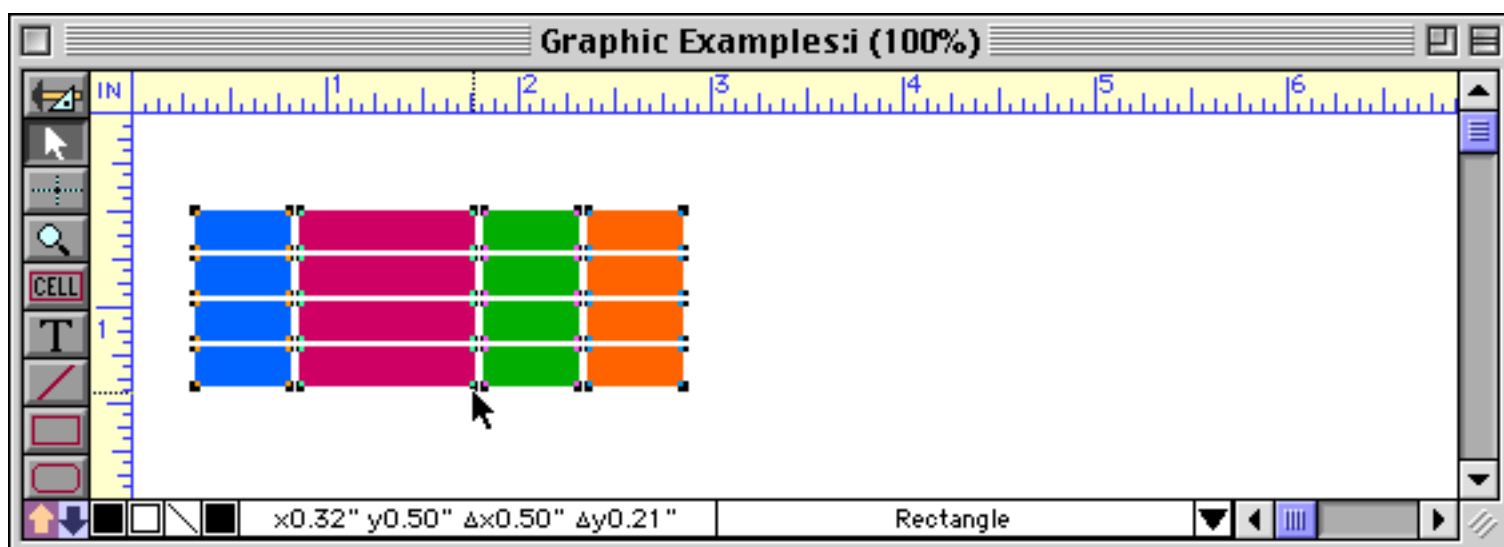


Start by selecting all of the objects (see “[Selecting Multiple Objects at Once](#)” on page 502). Then grab one of the handles in the column you want to make wider and drag it to expand the box.



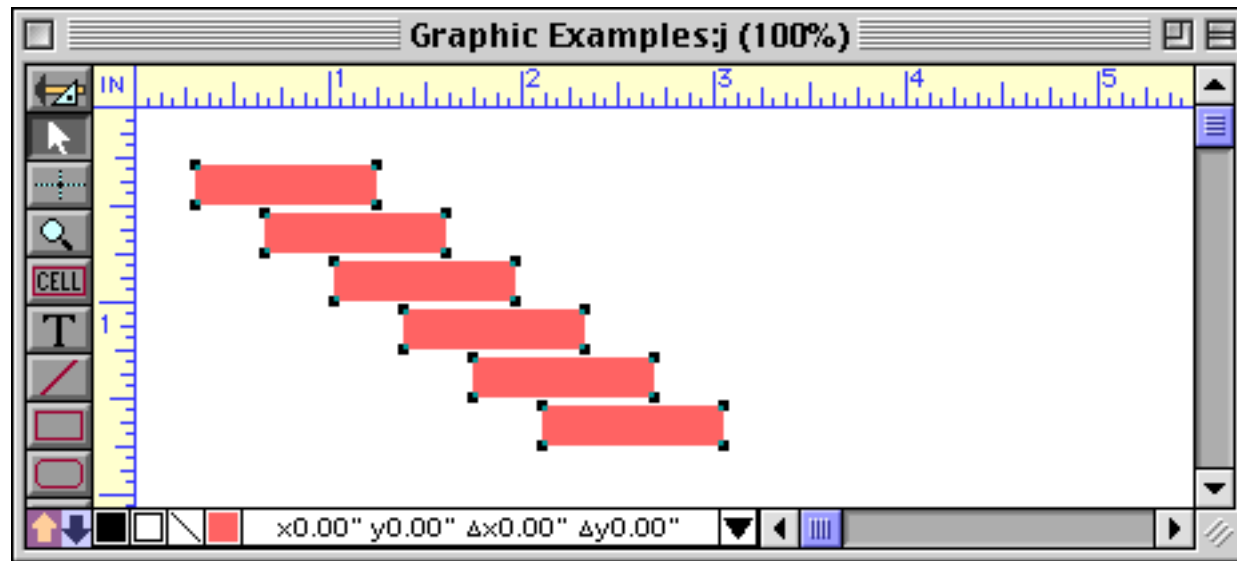
drag to change the size of one object

When you release the mouse, cluster resize will kick in. In this case, it will automatically increase the width of all the other boxes in the same column. It will also shift the boxes on the right to make room for the expansion.

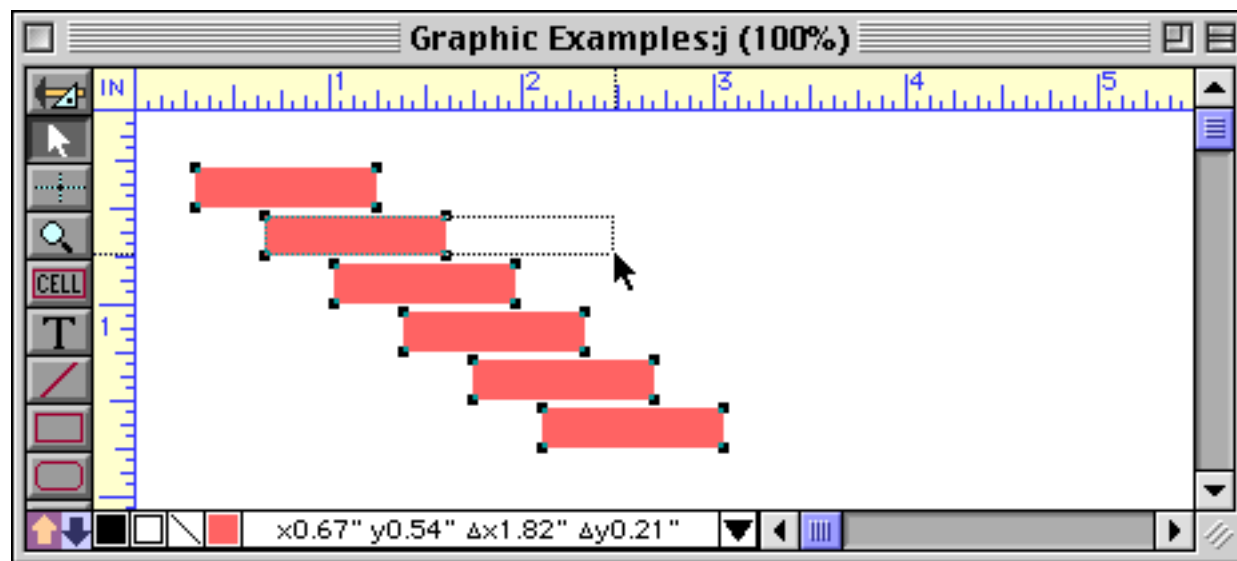


At first glance cluster resize may look a little bit like magic, but actually it is quite simple. After you change the size of any object, Panorama checks to see which edge (or edges, for diagonal moves) of the object you moved—top, bottom, left, or right. It then adjusts the corners of any other selected objects that are in that direction. For example, if you move the right edge of an object, any objects that are even with or to the right of that edge will be adjusted.

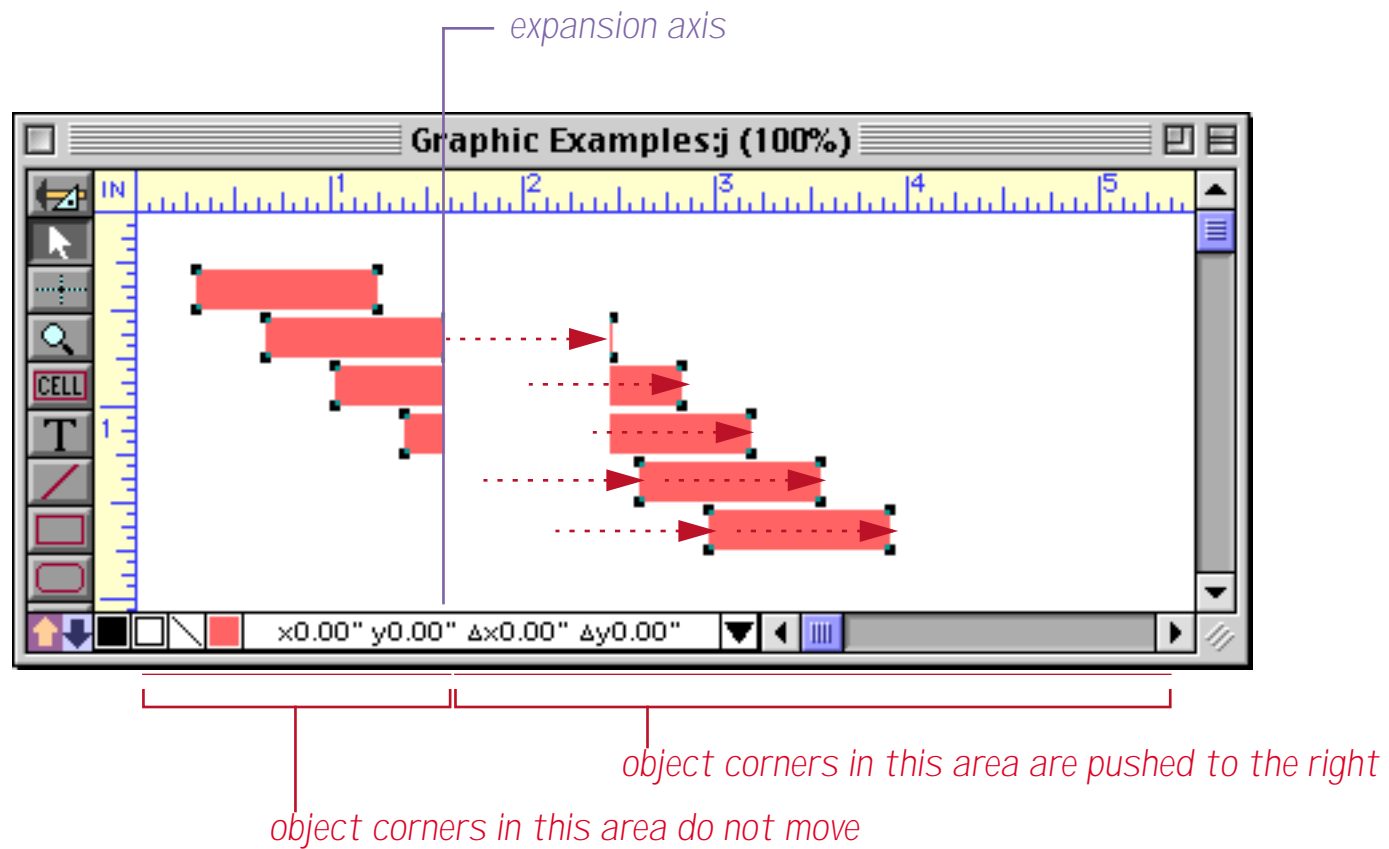
Here's another example. We'll start with six objects.



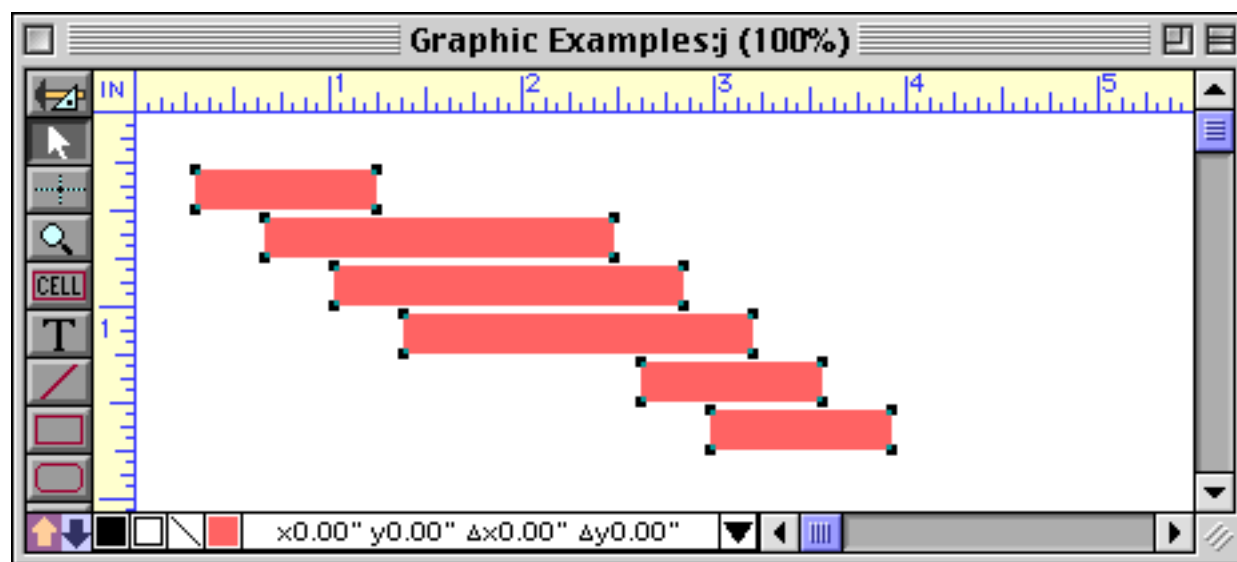
We'll slide the right edge of the second object to expand the object about an inch.



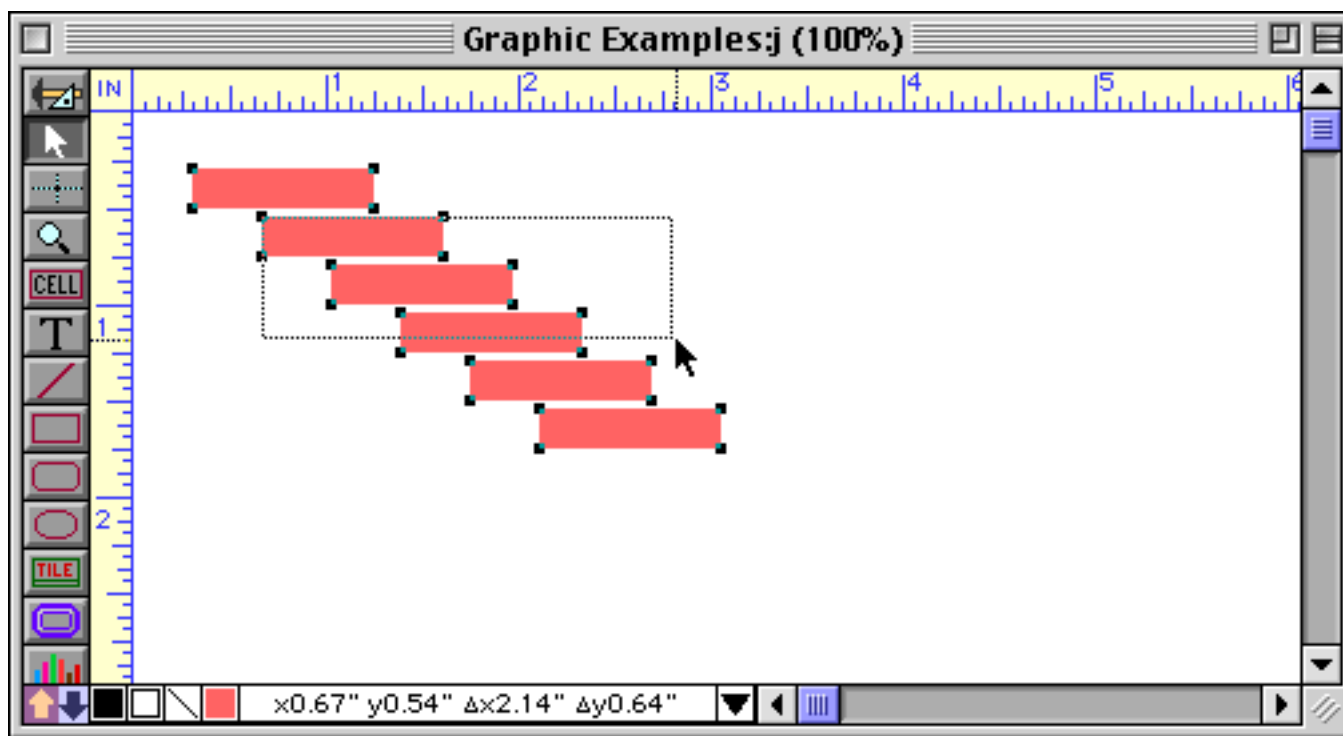
Here's how Panorama will adjust the other five objects.



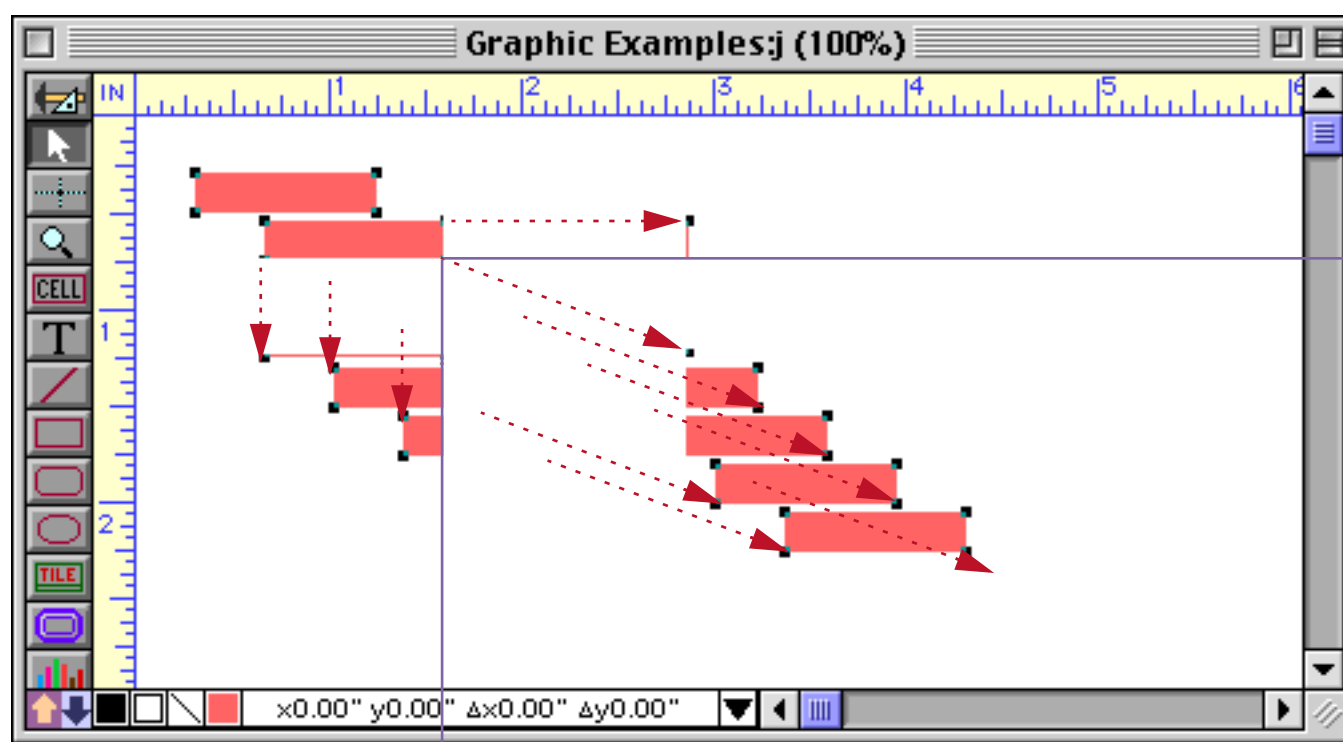
The first object is completely unaffected. This is because we expanded to the right and this object is completely to the left of the expansion axis. The third and fourth objects straddle the expansion axis. Therefore, they grow to match the growth of object number 2. The final two objects are completely to the right of the expansion axis. Therefore, they stay the same size and slide to the right. Here's the final result when you release the mouse.



Cluster resize isn't limited to horizontal expansion. In this example we'll stretch the second object both horizontally and vertically.



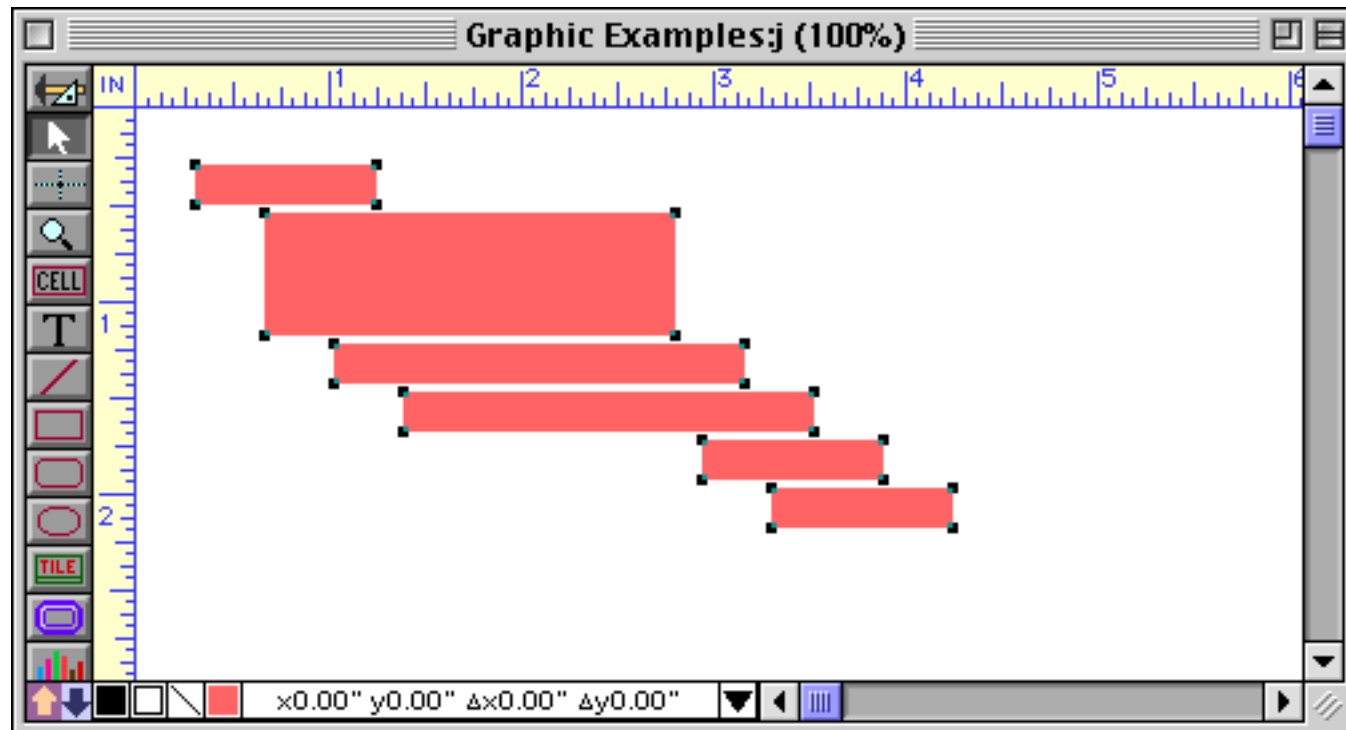
Now there are two expansion axis, one horizontal and one vertical. Depending on what quadrant they are in, a point will stay in place, move horizontally, move vertically, or move diagonally.



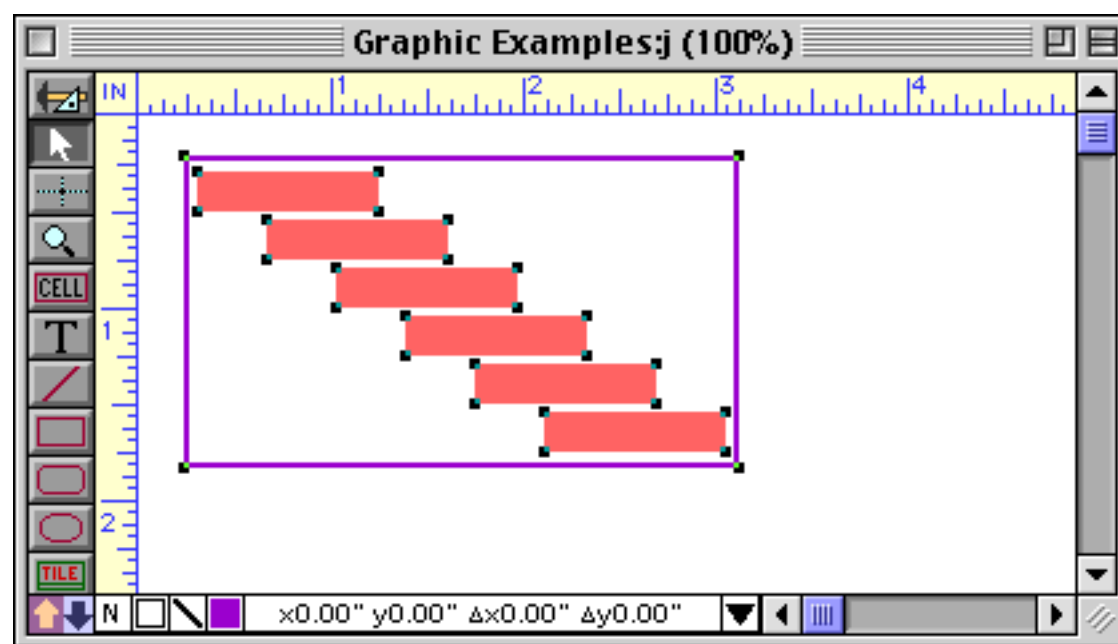
expansion axis

expansion axis

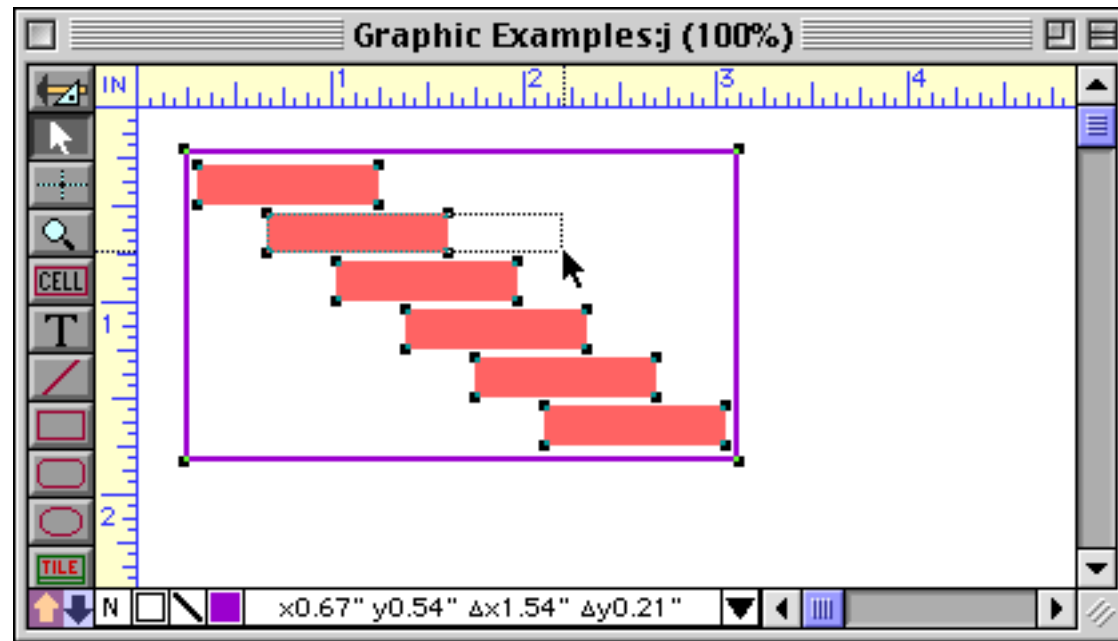
Here's the final result.



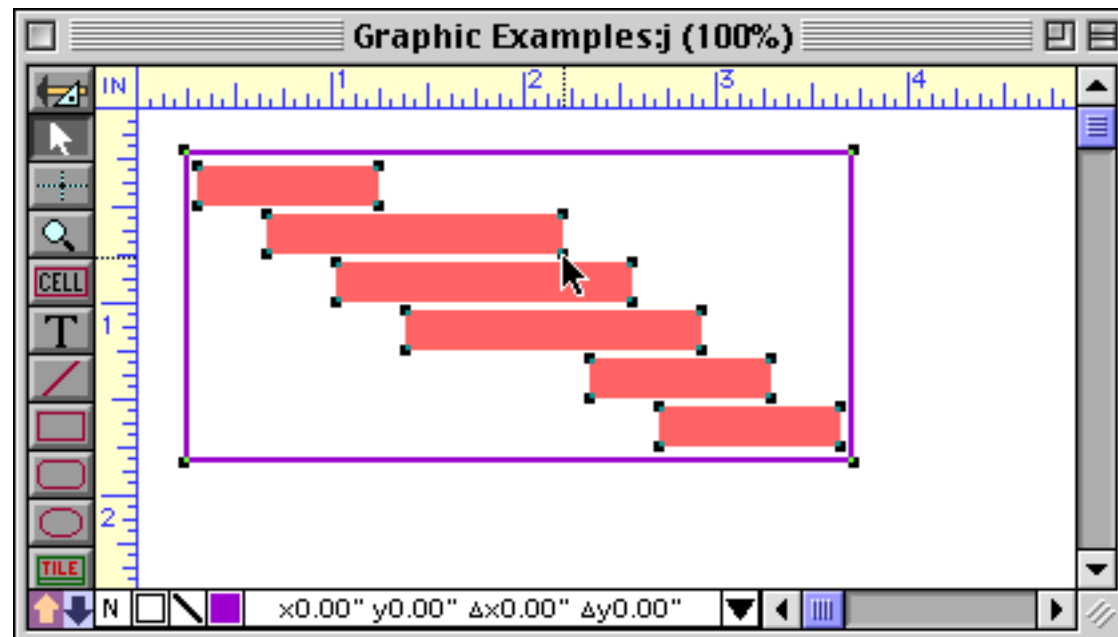
Cluster resize affects all selected objects, even when objects are nested inside each other. If you select nested objects and then change the size of the innermost object, cluster resize will adjust the size of the larger object. This makes sense because the right edge of the outer object is to the right of the right edge of the inner object (say that three times fast!). A real world example of nested objects is a border around a table (or borders around individual columns in a table). Cluster resize makes sure that if you resize one of the columns in the table the borders will adjust as well. Just make sure that you always change the innermost object, and cluster resize will take care of the rest. To illustrate cluster resize with nested objects we've added a border around our six objects.



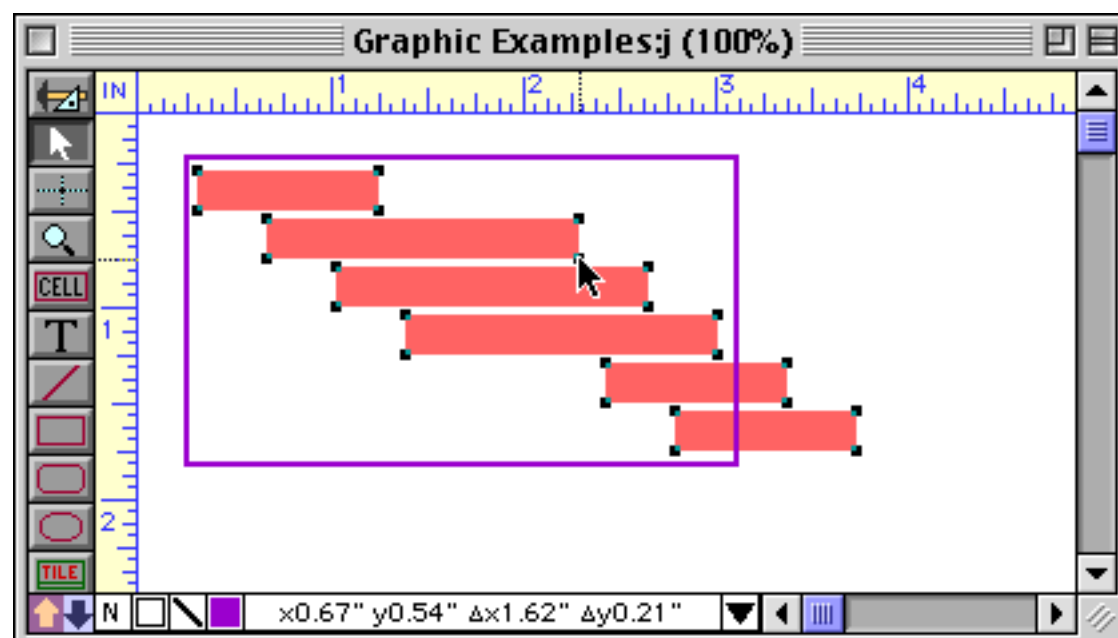
Once again we expand the second object.



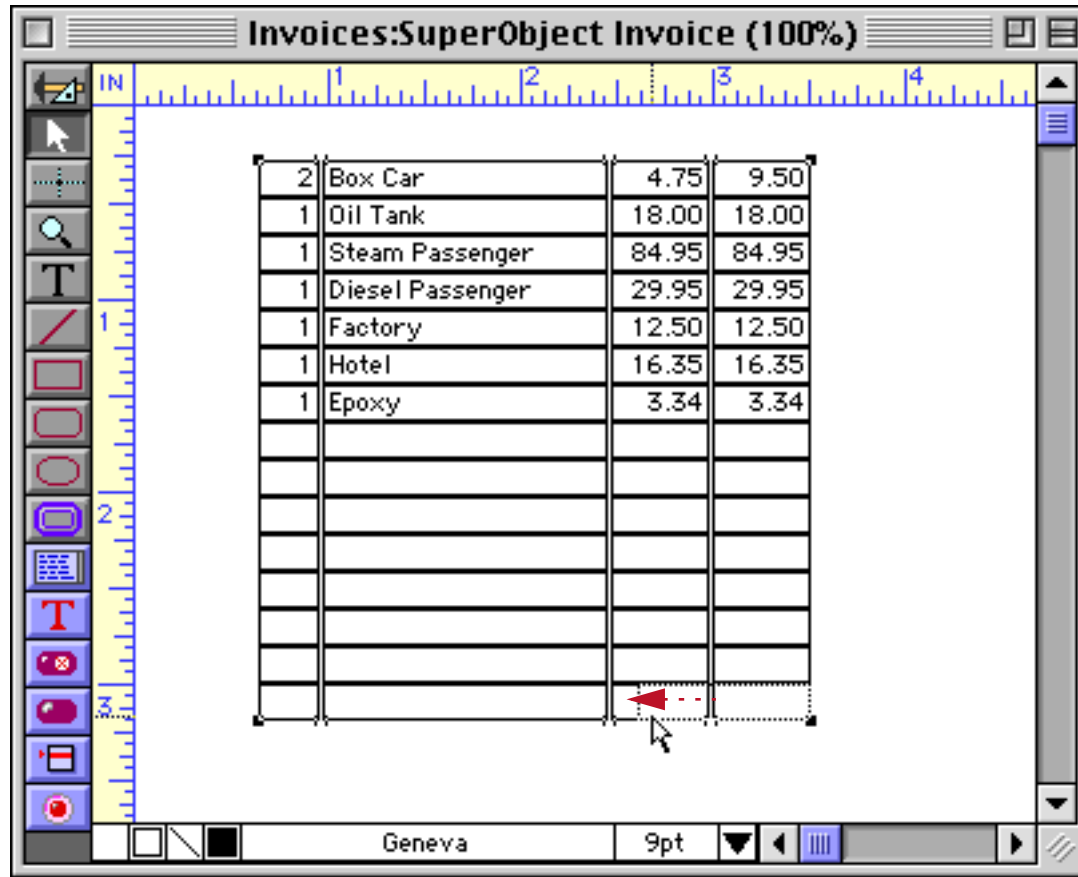
The border also expands. Since it straddles the expansion axis, the left side of the border stays put while the right side expands to fit the expanded objects inside it.



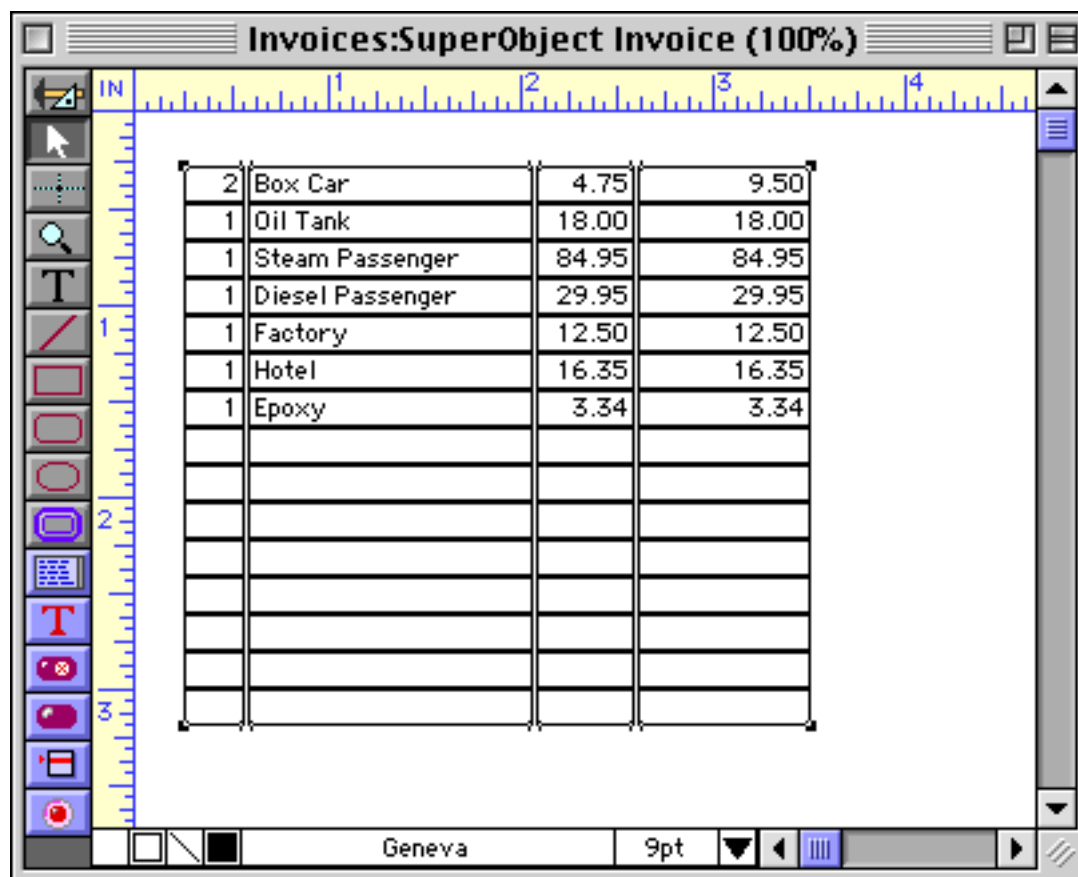
Only selected objects are affected. If the border is not selected, it won't expand.



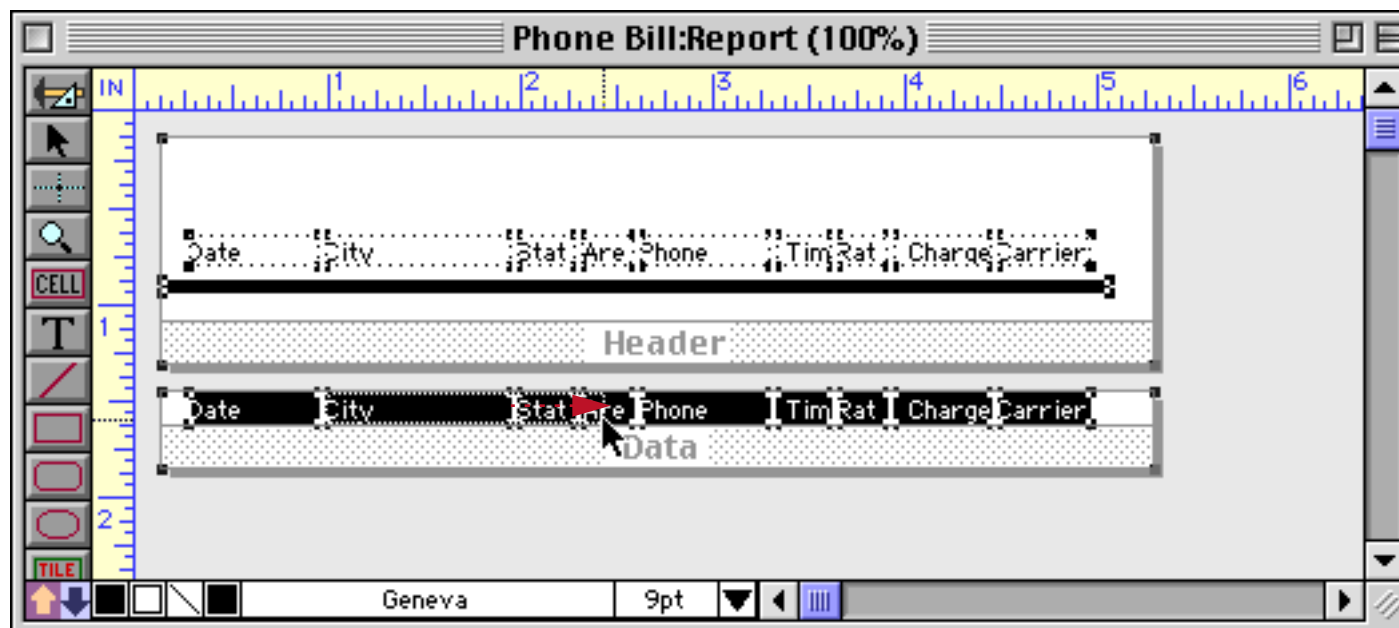
So far all of our examples have shown expanding to the right and/or down. However, you can also expand to the left, or shrink. In this case we'll expand the last column to the left. (When you have this many handles packed into a small area, it can be difficult to hit the one you want. To make it easier we held down the **S** key, which expands the handles. See "[Resizing Without Handles](#)" on page 516 for more information on this technique. We also held down the **Shift** key to make sure that the expansion was entirely horizontal and not diagonal.)



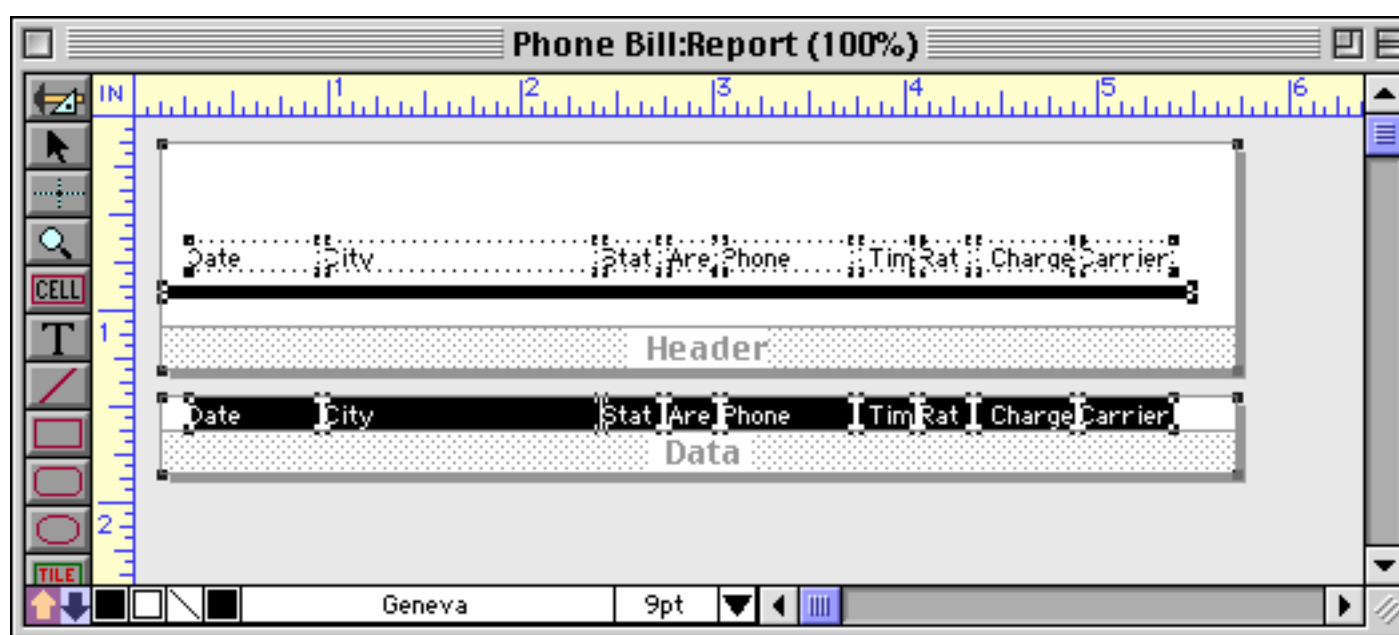
When the mouse is released the entire table is adjusted.



Cluster resize is also great for working with reports. If you keep your report tiles lined up, then changing the width of an item in the body of the report automatically adjusts the width of the same item in the report header. (Remember that all the objects must be selected. Only selected objects will be adjusted.) In this example all the objects are selected and we expand the width of the City field.



Cluster resize automatically adjusts all of the other objects, including the report tiles.



By the way, cluster resize also works when you nudge the size of an object using the arrow keys (see “[Nudging the Size of an Object](#)” on page 513). Select the objects, then click on the handle you want to nudge. As you use the arrow keys to resize the object, cluster resize will automatically adjust the other objects. You can combine this with the crosshair cursor (see “[Nudging to the Crosshair Cursor](#)” on page 515) to quickly and accurately nudge a collection of objects exactly into place.

Don't forget that when you are resizing an object you can use the **Shift** key to make sure that only the height or width changes, but not both. For example, if you are adjusting the width of a column using cluster resize, hold down the **Shift** key so that the height of the row doesn't change also. You can also hold down the **S** key to make sure that you are resizing, and not dragging. See “[Resizing Without Handles](#)” on page 516 for more details on this technique.

Cluster Resize Troubleshooting

Sometimes you may run across a situation where cluster resize doesn't seem to work. You change the width of a column, but some of the objects don't get adjusted. What's the problem?

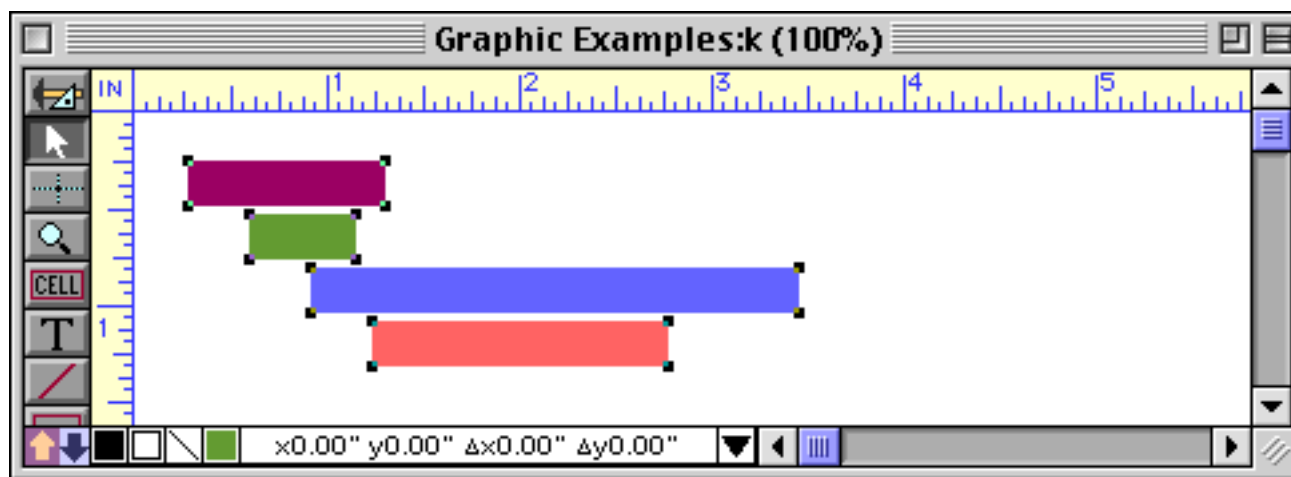
This problem occurs when not all the objects in the column are lined up on the right. Usually this is because the objects are not quite the same width. If one of the objects in a column is 1 or 2 pixels shorter than the other objects the short object won't get adjusted.

The solution is to make sure your objects are all lined up before you start. If necessary, you can use the **Align** command to force all the objects into alignment. See "[Aligning Objects](#)" on page 553 to learn about this command.

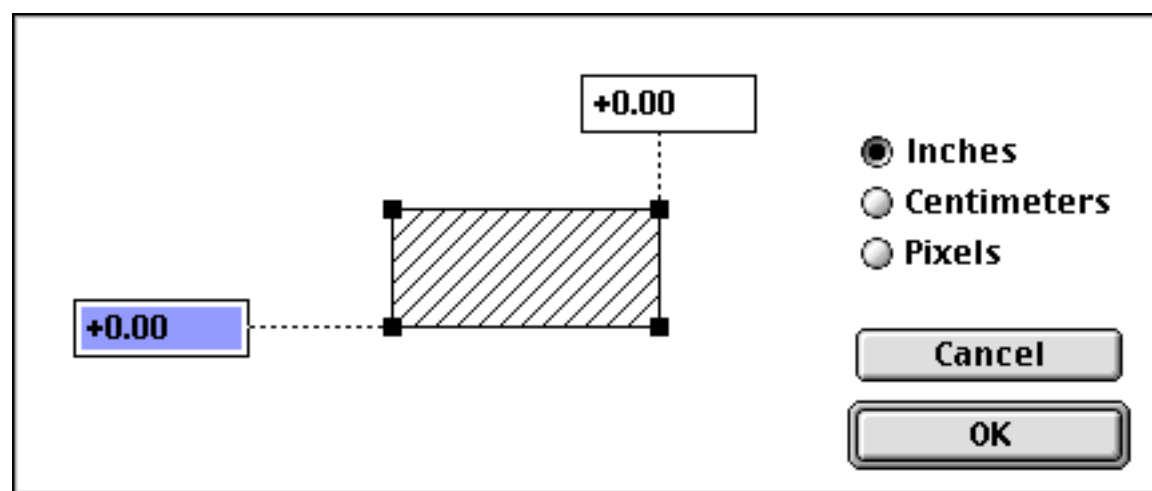
Setting Exact Dimensions of Multiple Objects

When the **Dimensions** dialog (in the Edit menu and the Graphic Control Strip) is used with a single object, you can specify both the position and size of the object. But if several objects are selected, the **Dimensions** dialog cannot specify the position—only the size of the object. You can use this dialog to set the width and/or height of all the selected objects—for example, you can make all the selected objects 2 inches wide. Or you can use the dialog to increase or decrease the size of each selected object—for example, you can make every selected object 1/2 inch wider.

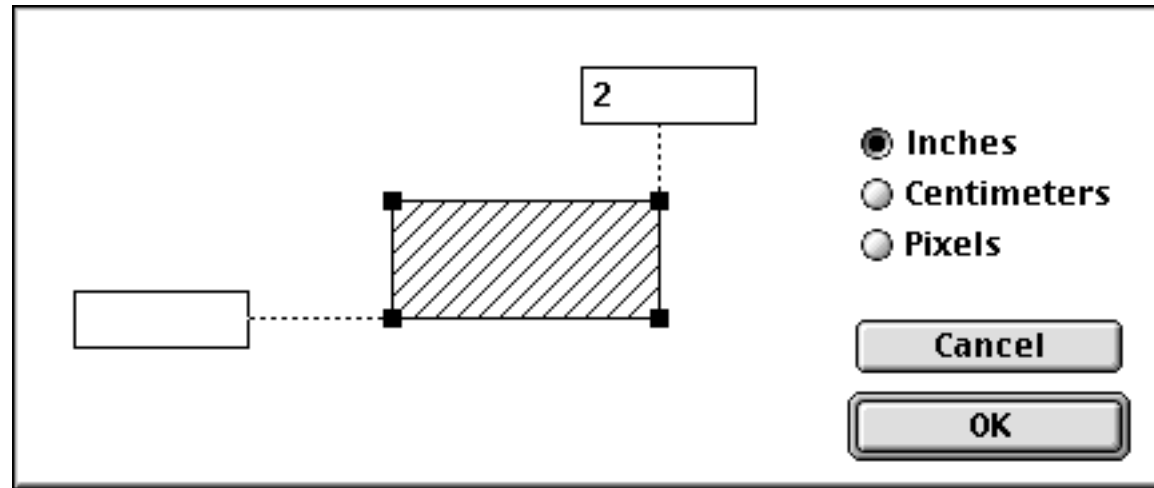
To set the height or width of several objects at once, first select the objects. Then open the **Dimensions** dialog. Type in the new height and/or width, then press **Ok**. All of the selected objects will be set to the specified height and/or width. For example, suppose you have a collection of miscellaneous objects like this:



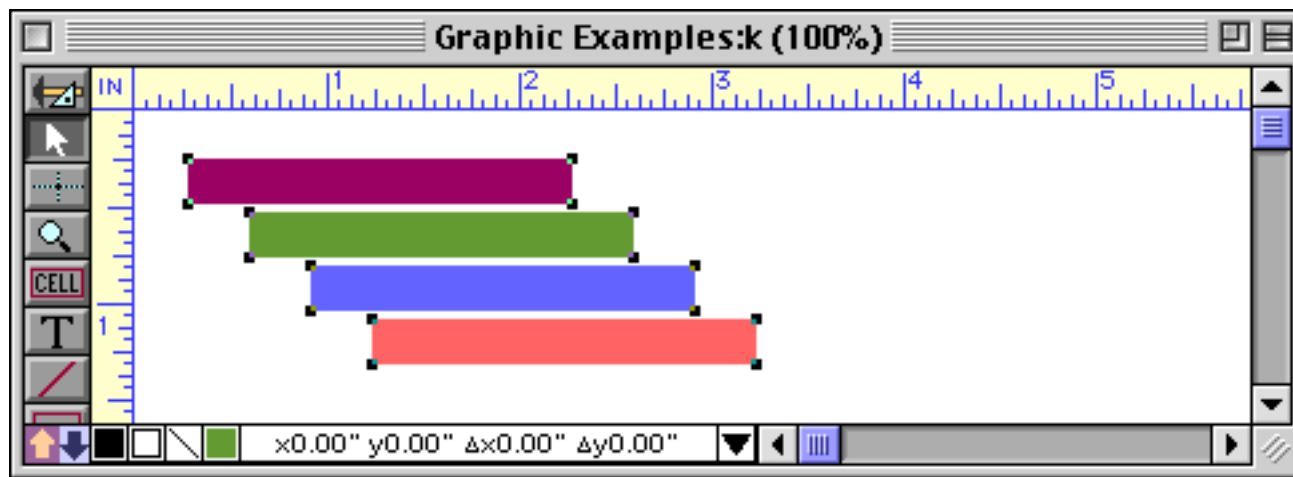
To make all these objects 2 inches wide, open the **Dimensions** dialog (either by clicking in the dimensions area of the Graphic Control Strip or by choosing **Dimensions** from the Edit menu).



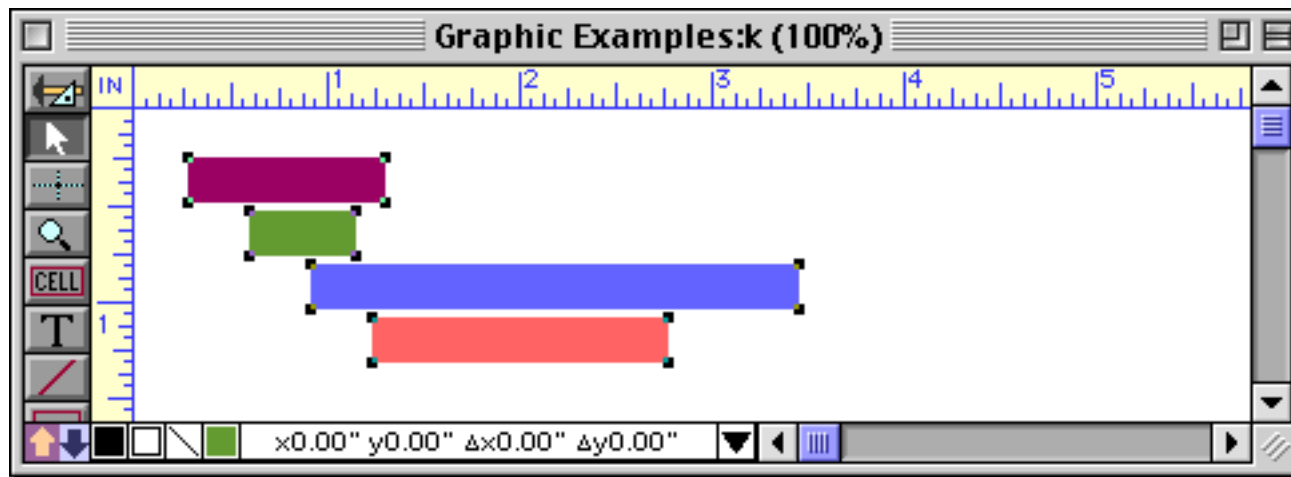
Set the width to 2 and erase the height.



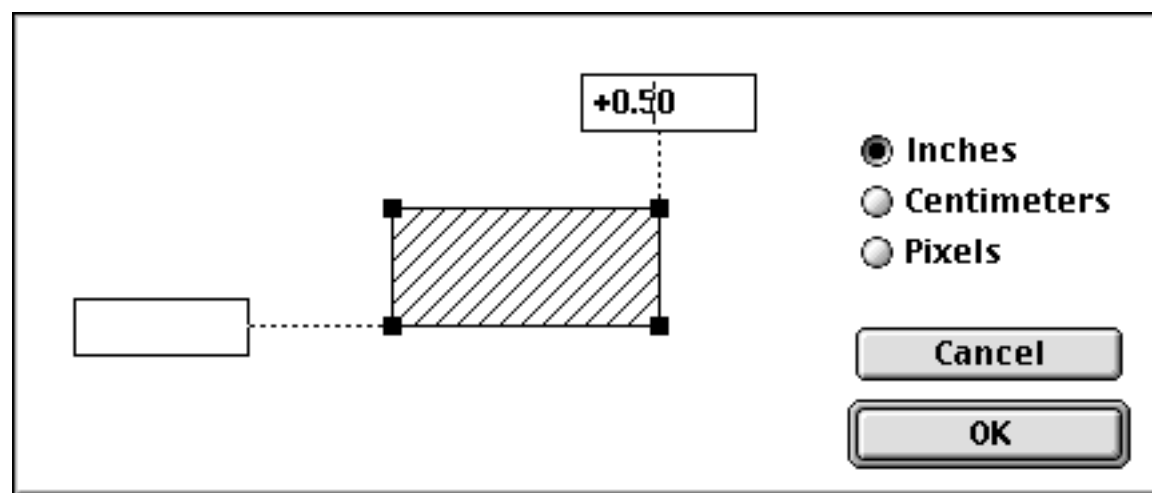
When the **Ok** button is pressed all of the selected objects will be changed to 2 inches wide while retaining their original locations and heights.



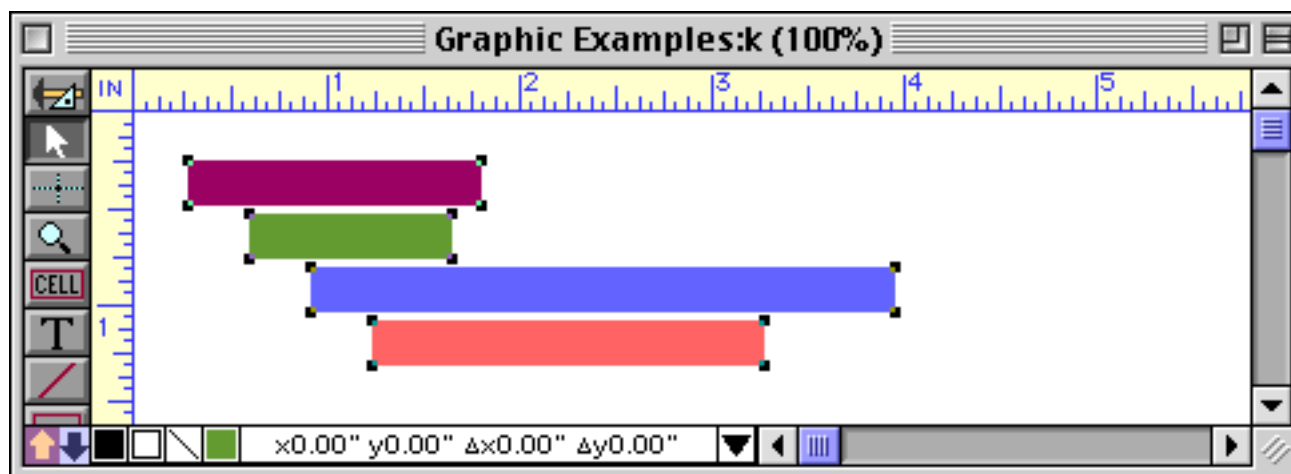
To increase or decrease the size of several objects at once, first select the objects.



Then open the **Dimensions** dialog. Type in the increase or decrease amount, with a + (increase) or - (decrease) sign in front of the number. For example, to make all selected objects 1/2 inch wider enter **+0.5**.



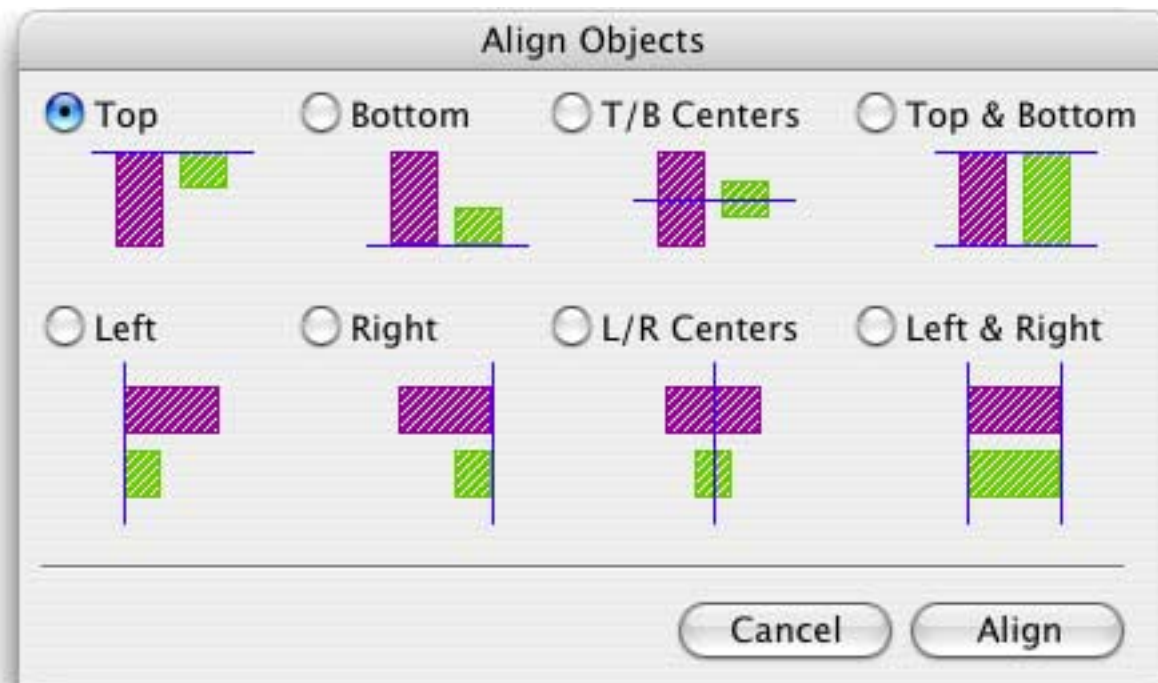
When the **Ok** button is pressed all of the objects will get 1/2 inch wider.



If you are not careful, the **Dimension** dialog can turn a form into a big mess in a hurry. If this happens, don't panic—just **Undo**!

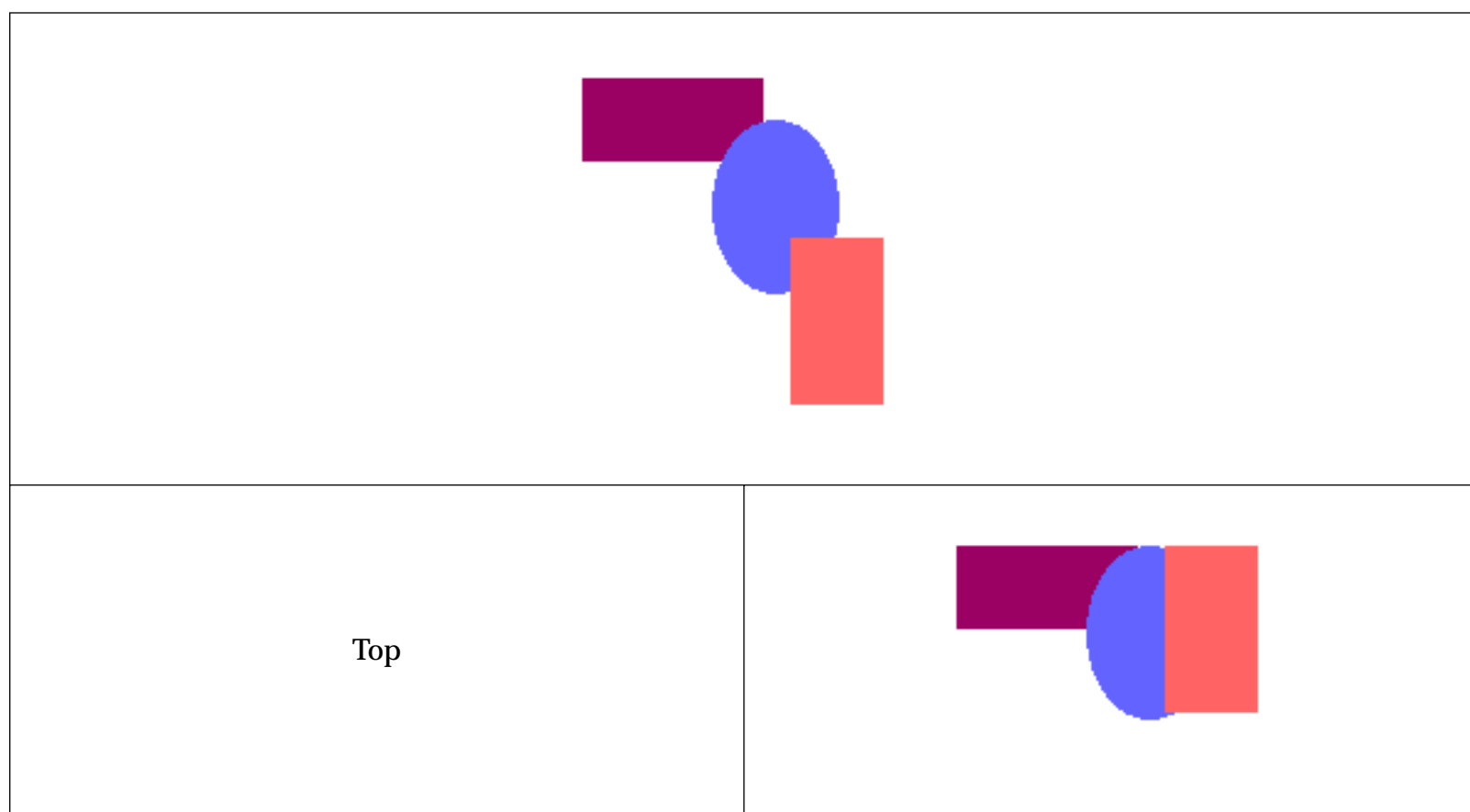
Aligning Objects


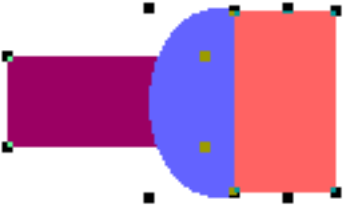



If you need to line up several objects, you can either do it by eye or you can let the **Align** command (in the Arrange menu) do it for you. The Align dialog gives you eight options for aligning objects in different directions.


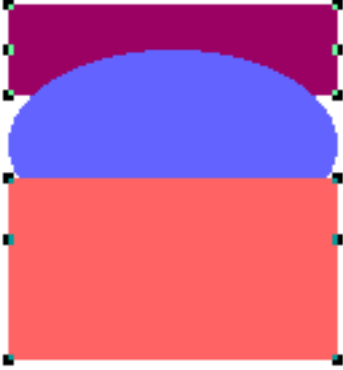


Most of the alignment options simply shift the objects to align them, but the **Left & Right** and **Top & Bottom** options actually change the sizes of the selected items. Instead of shifting the objects, these options actually expand the selected objects to make them all the same width or all the same height. If you ask for **Left & Right**, all the selected objects will be expanded to the width of the widest object. If you ask for **Top & Bottom**, all the selected objects will be expanded to the height of the tallest object.

This table shows how a collection of three objects is affected by the different alignment options.

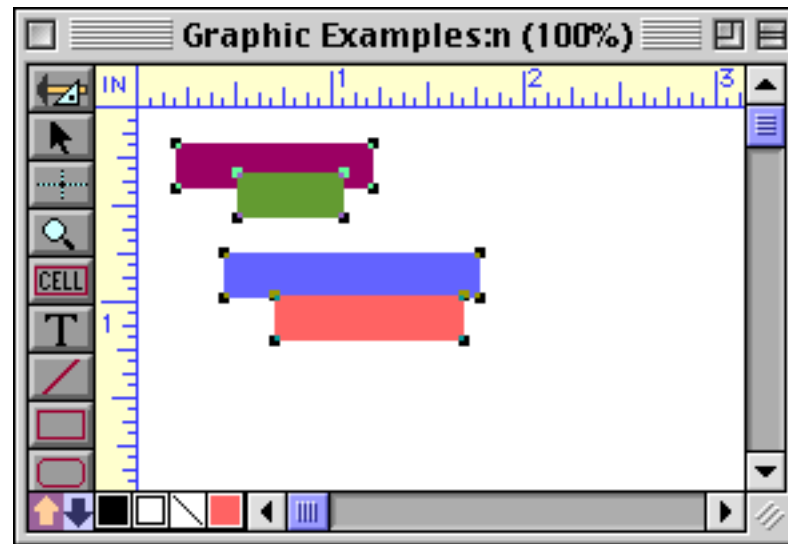


<p>Bottom</p>	
<p>T/B Centers</p>	
<p>Top & Bottom</p>	
<p>Left</p>	
<p>Right</p>	

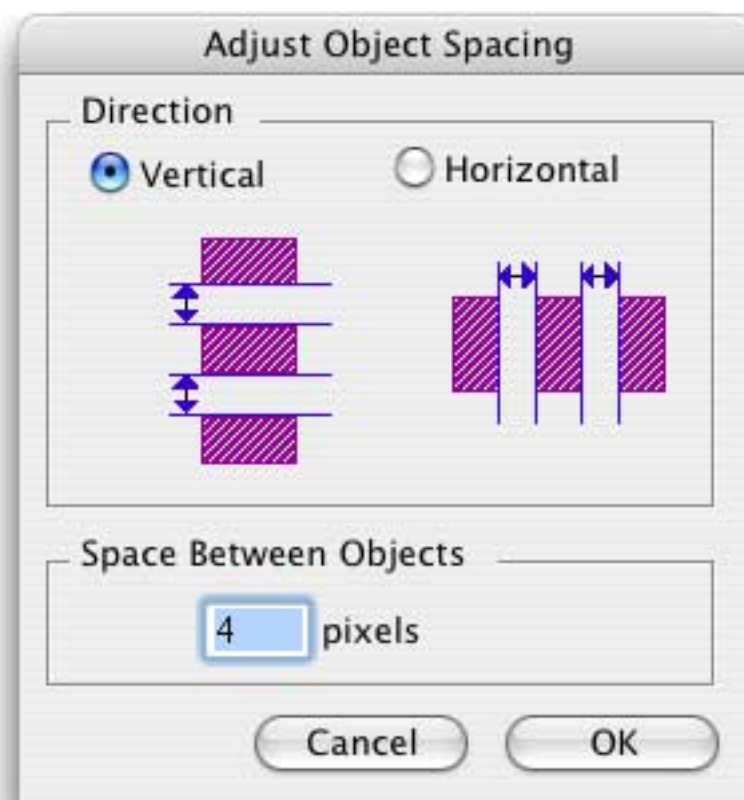
<p>L/R Centers</p>	 <p>The diagram shows three stacked shapes: a purple rectangle at the top, a blue circle in the middle, and a red rectangle at the bottom. The purple rectangle and red rectangle are horizontally centered relative to the blue circle. Small black squares at the corners of each shape indicate their bounding boxes.</p>
<p>Left & Right</p>	 <p>The diagram shows three stacked shapes: a purple rectangle at the top, a blue semi-circle in the middle, and a red rectangle at the bottom. The purple rectangle and red rectangle are aligned to the left edge of the blue semi-circle. Small black squares at the corners of each shape indicate their bounding boxes.</p>

Adjusting Spacing Between Multiple Objects

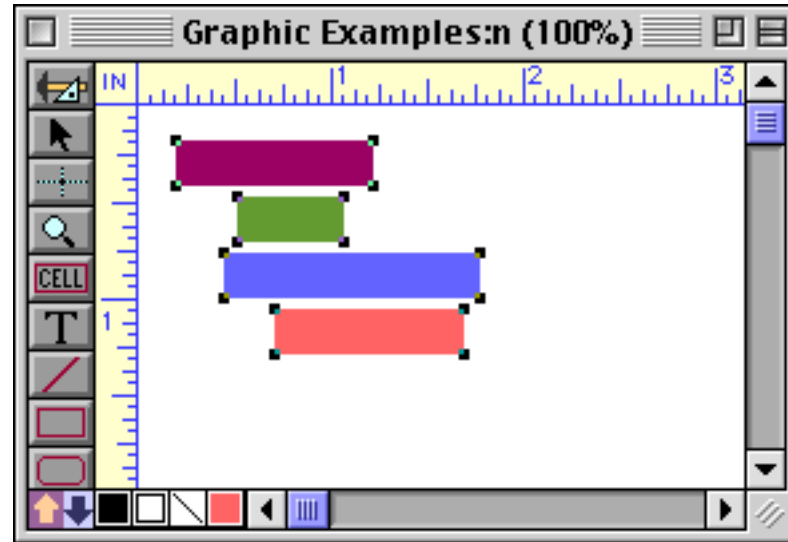
The **Spacing** command (in the Arrange menu) allows you to adjust the vertical or horizontal spacing between multiple objects. The dialog will shift the selected objects so that they are evenly spaced. For example, you could start with a somewhat random collection of objects like this.



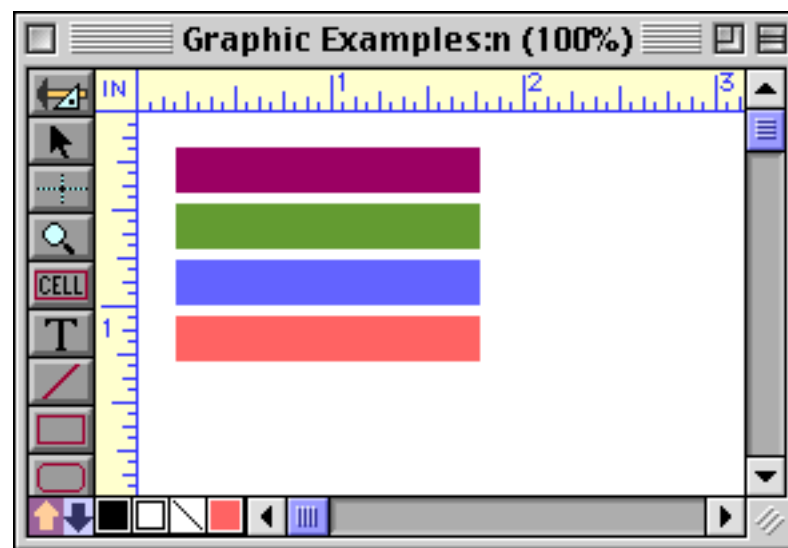
Open the **Spacing** dialog and set the spacing to 4 pixels between the objects.



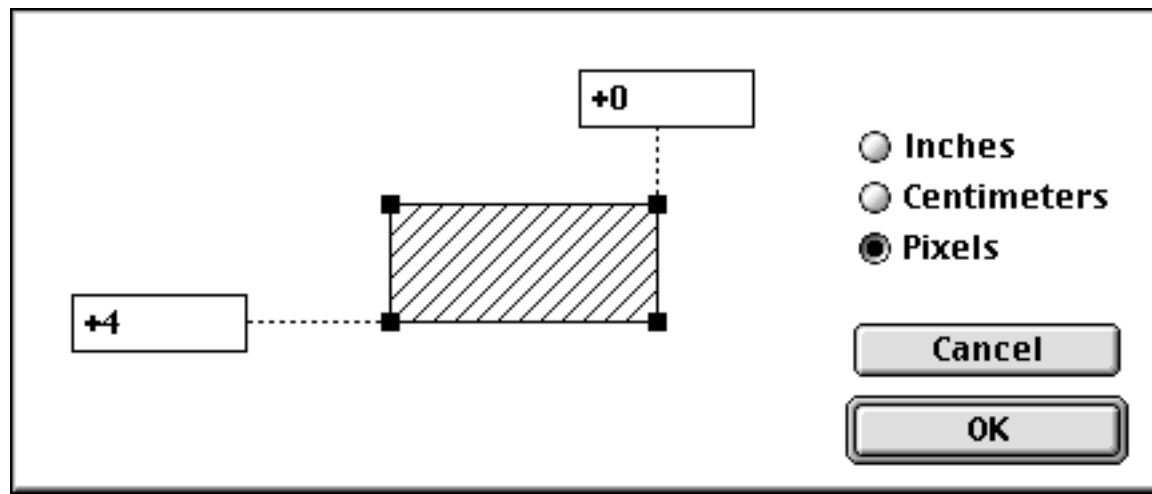
When the **Ok** button is pressed the objects will slide vertically into place.



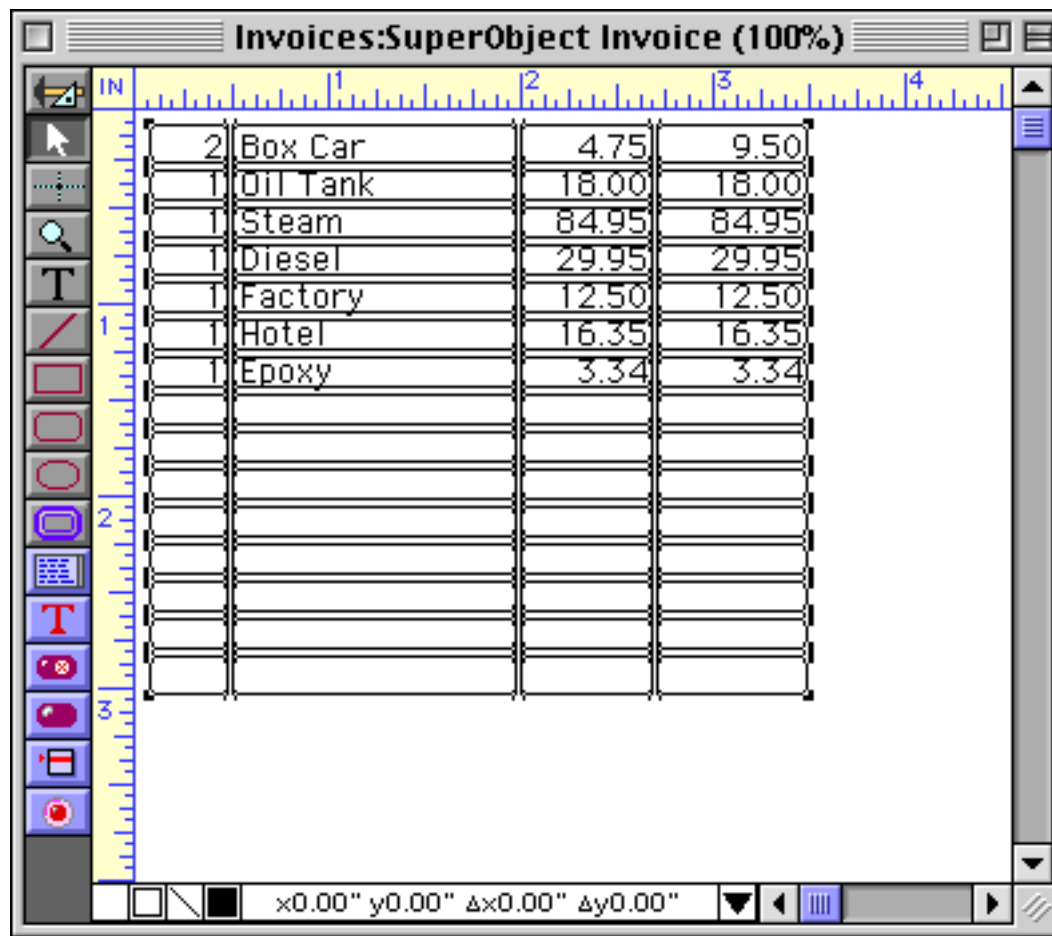
To finish our cleanup we'll use the **Align** command to make all of the objects the same width (by selecting **Align Left & Right**).



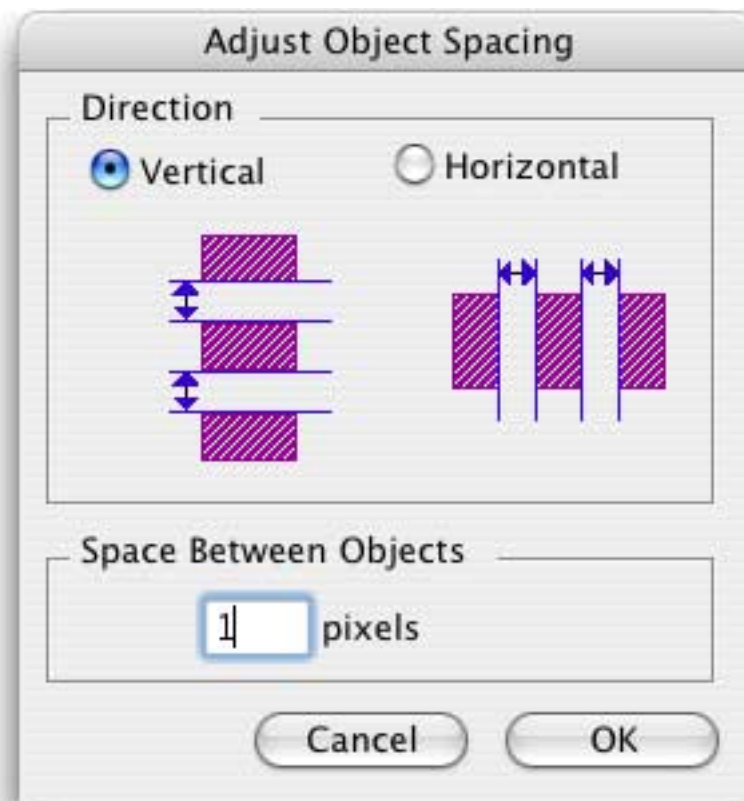
The next step is to use the **Dimensions** dialog to increase the height of each object by four pixels (see "[Setting Exact Dimensions of Multiple Objects](#)" on page 550).



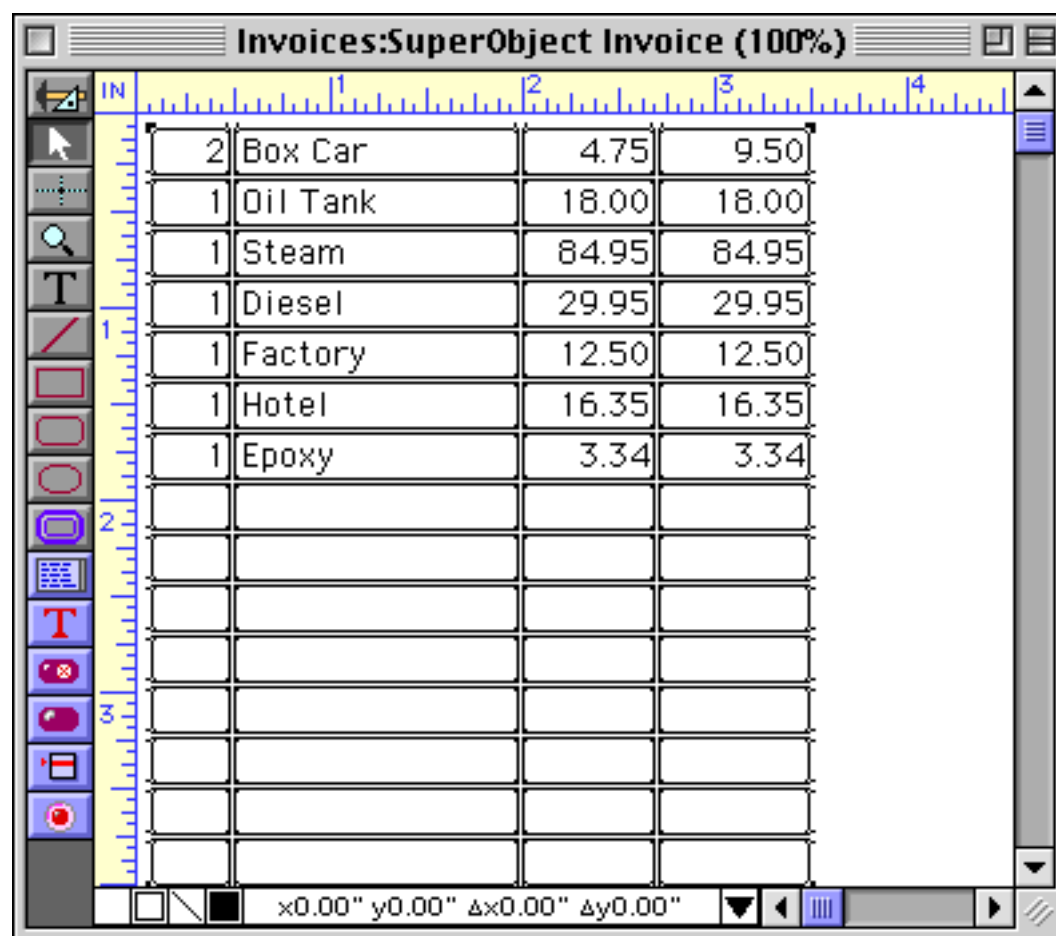
The table still doesn't look so hot.



The final step is to use the **Spacing** dialog to restore the vertical spacing between the rows.



When the **Ok** button is pressed, the table spread out and now looks great. This may have seemed like a fairly complex process, but it is much easier than manipulating all 60 of these objects individually!



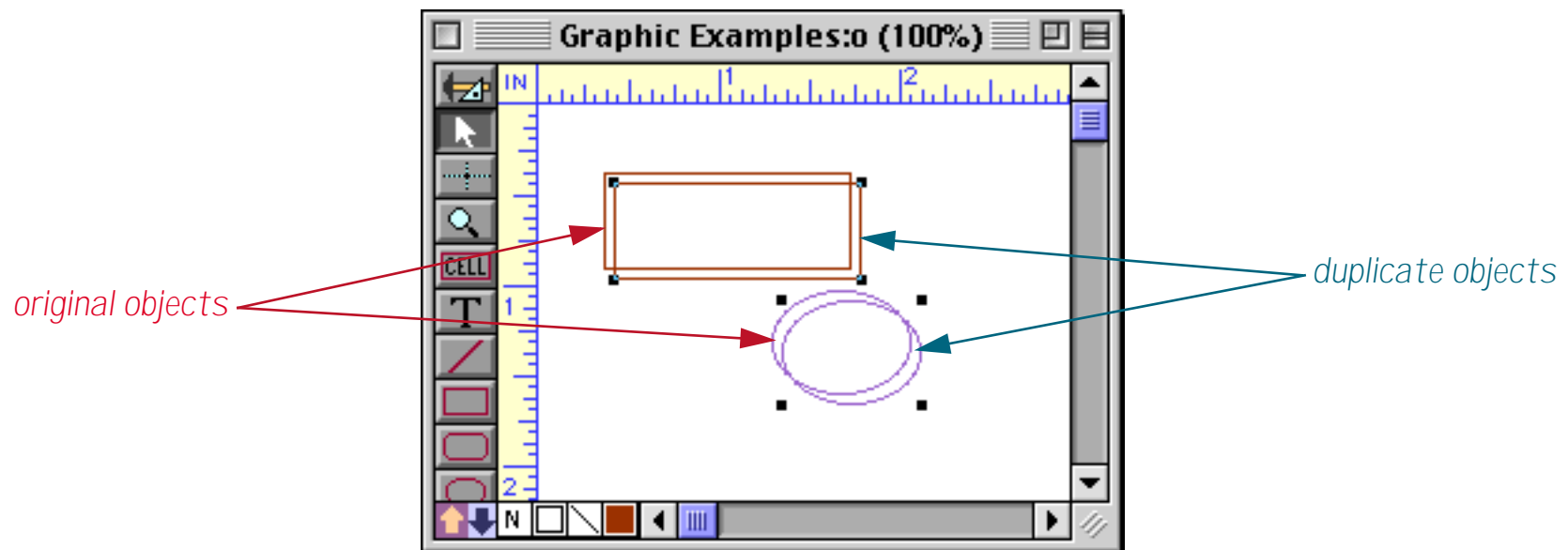
The **Spacing** dialog does not align the objects into neat rows or columns. If the objects need to be aligned use the **Align** dialog (see “[Aligning Objects](#)” on page 553).

Duplicating Objects

Why do the same work twice? Panorama has several methods for creating a duplicate of one or more objects.

Duplicate

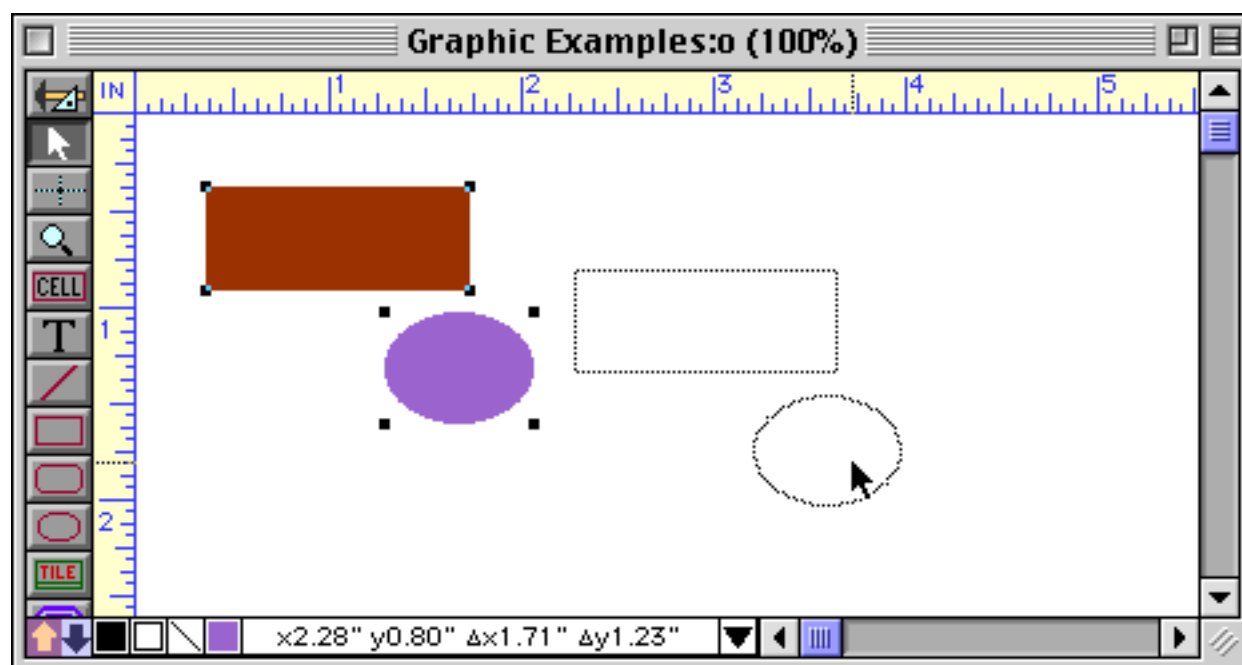
The easiest way to copy objects is with the **Duplicate** command. Just select the objects and choose **Duplicate** from the Edit menu. The new object(s) are placed just below and to the right of the originals.



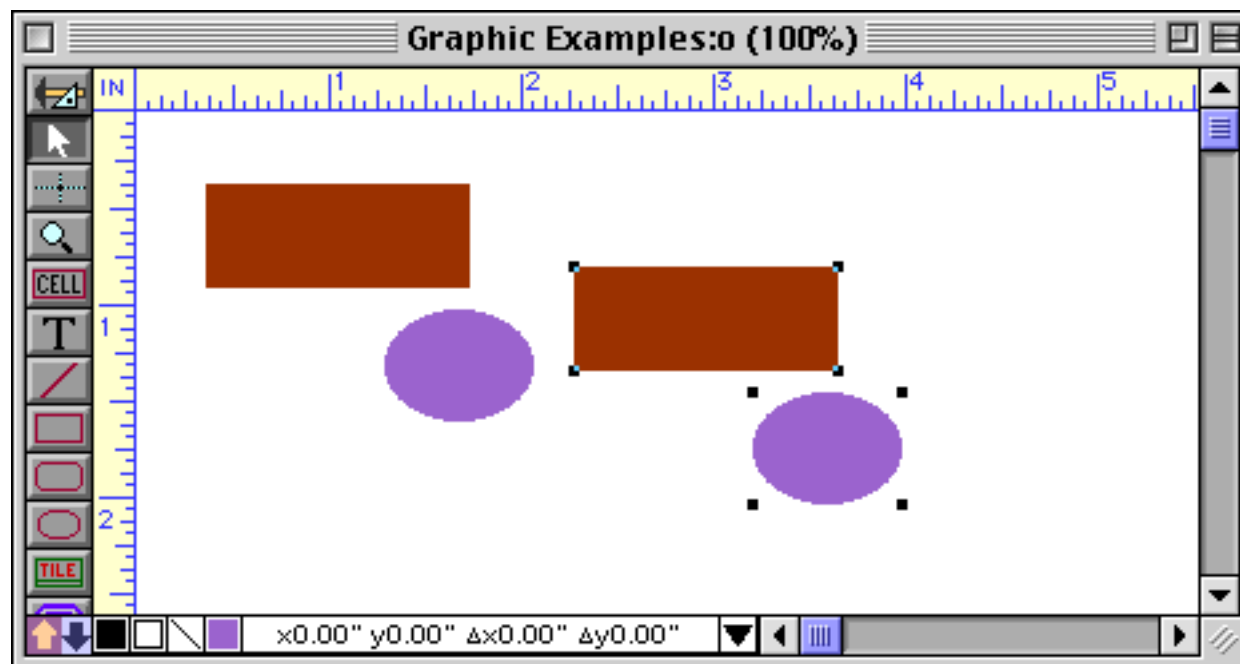
If you duplicate an object (or objects) and then immediately drag (and/or nudge) the copy to a new position, Panorama will memorize this position relative to the original object. Now if you duplicate the copy, Panorama will automatically place the copy of the copy in the same relative position.

Drag Duplicating

You can also duplicate an object by dragging the object with the a special key held down. On the Macintosh the special key is the **Option** key. On PC systems the special key is the **Alt** key. When the special key is held down you drag a copy of the object(s), instead of the original. Just hold down the key and drag the same way you would to move the object(s).



When the mouse is released a second copy of the object(s) appears at the new location.

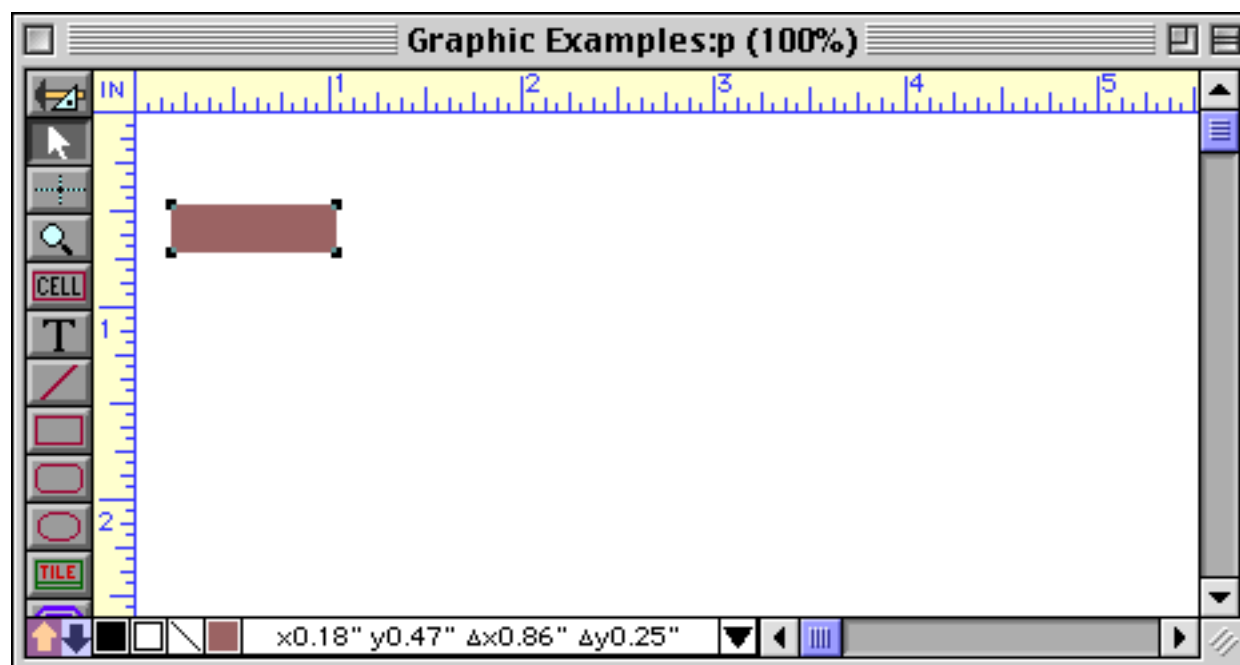


If you want the copy to line up with the original hold down **Shift** key and the **Option/Alt** key as you drag the object. The **Option/Alt** key tells Panorama to make copies, while the **Shift** key prevents you from dragging the copy diagonally.

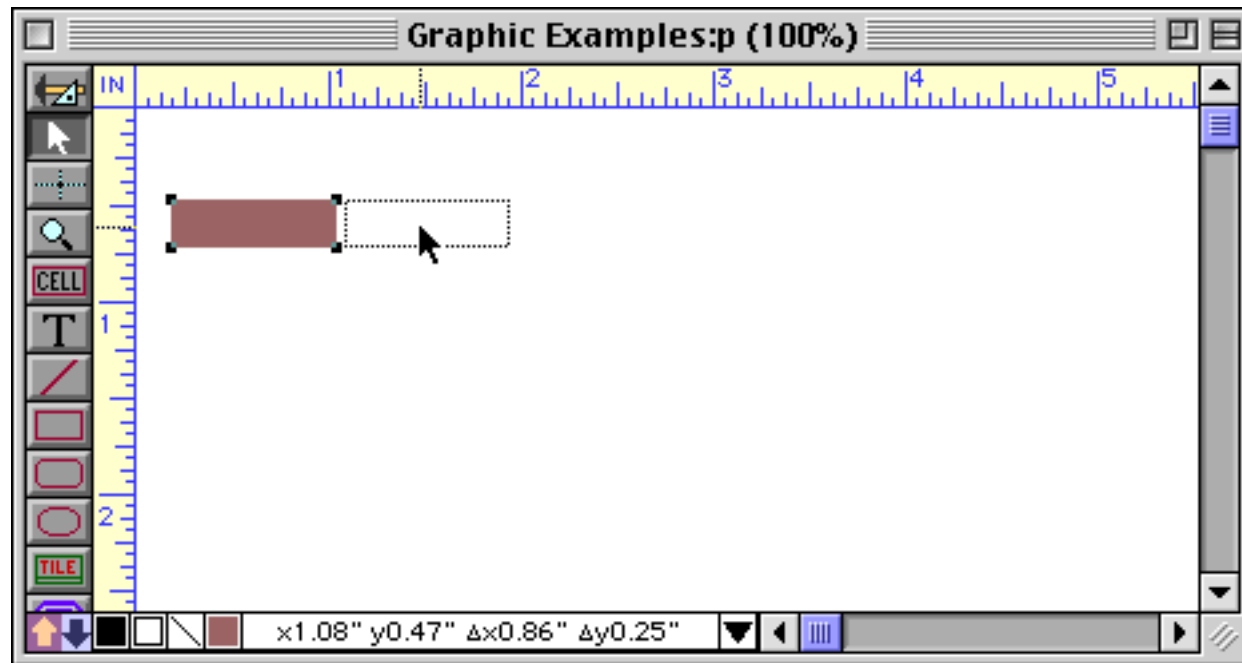
Once you have created a copy by **Option/Alt** dragging, you can make another copy with the **Duplicate** command. The **Duplicate** command will exactly mimic your **Option/Alt** drag, allowing you to quickly create an accurately spaced row or column of objects (see the next section for an example). **Warning:** If you want the **Duplicate** command to mimic your **Option/Alt** drag, you must not do anything in between dragging and pulling down the menu. If you click anywhere else in the form, the **Duplicate** command will not mimic the **Option/Alt** drag.

Step and Repeat

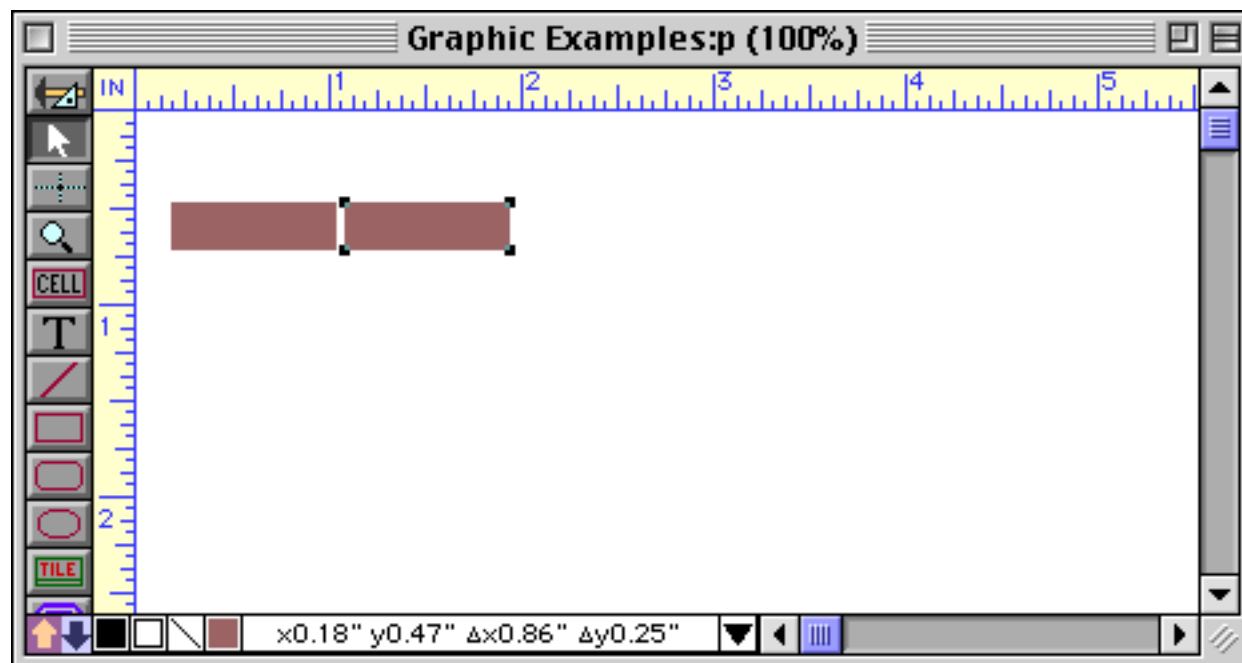
You can combine **Option/Alt** dragging (see previous section) with the **Duplicate** command to quickly step-and-repeat evenly spaced rows, columns, and complete tables of objects. To create a row of objects, start with just one object.



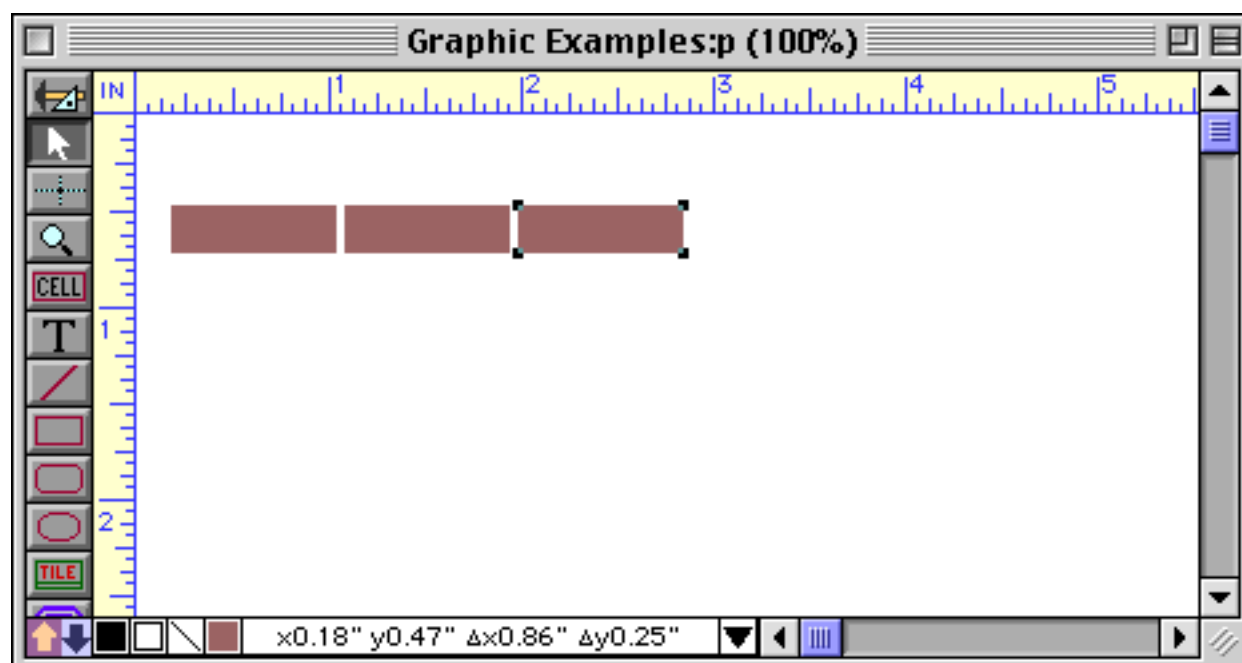
Hold down the **Shift** and **Option/Alt** keys and drag the object to the right.



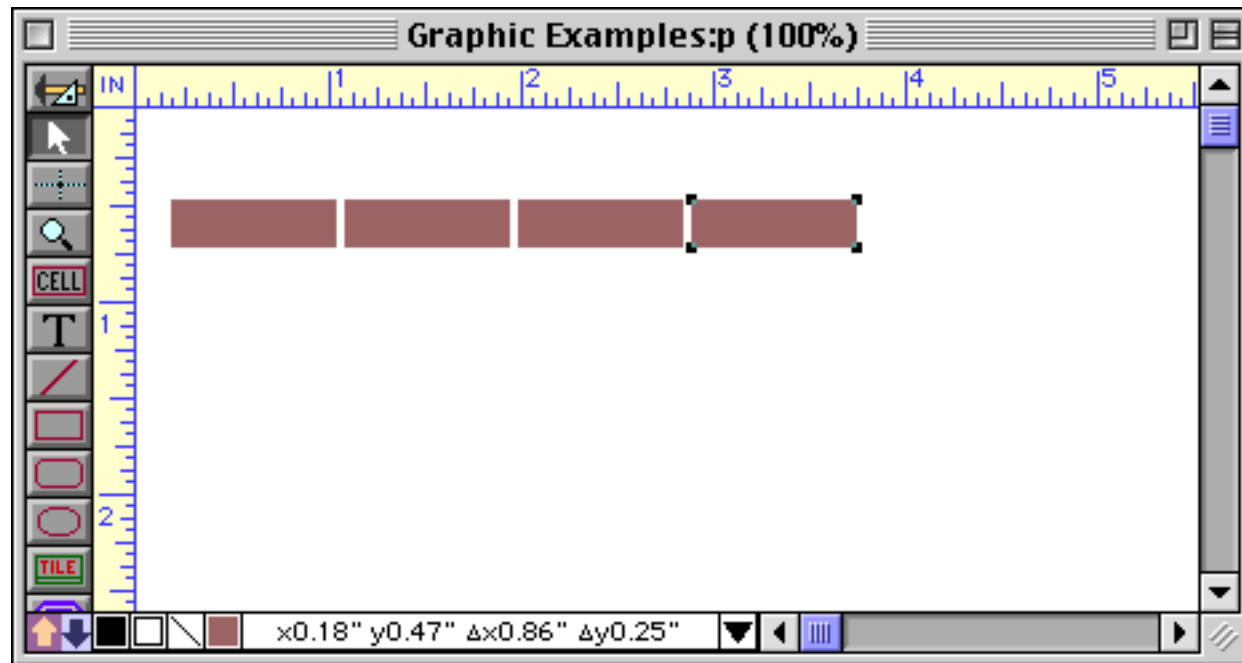
Release the mouse to create a copy.



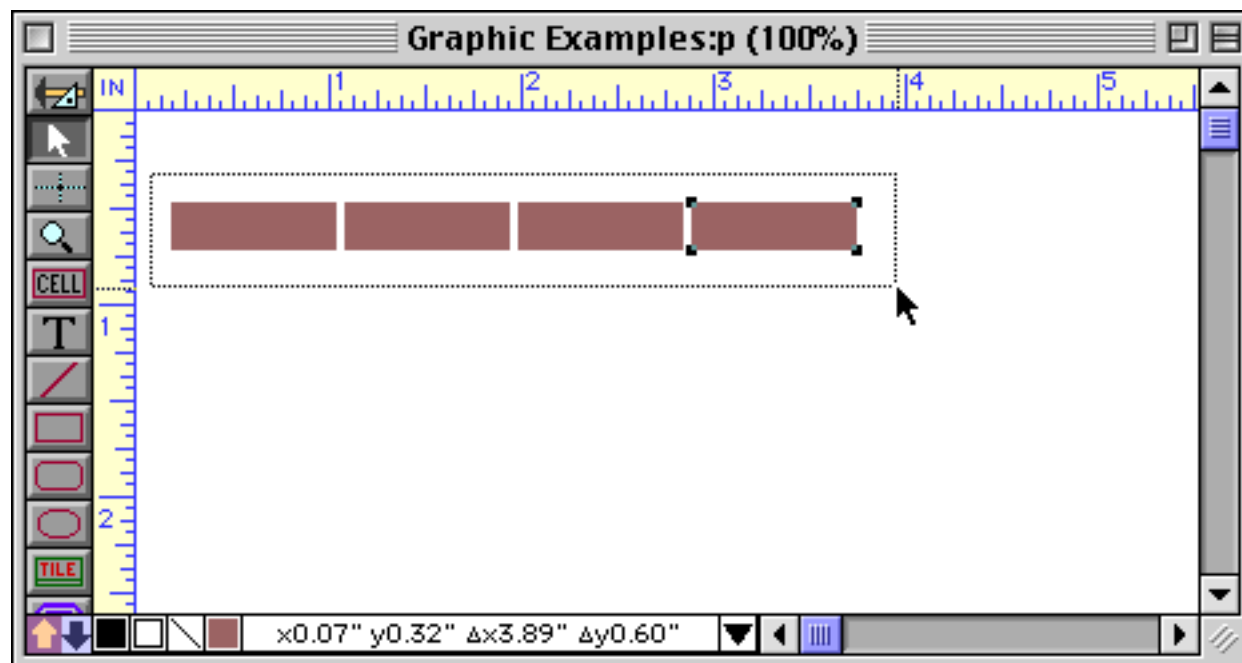
Then use the **Duplicate** command to create another copy of the object. The copy will automatically be placed at the same spacing as the first duplicate.



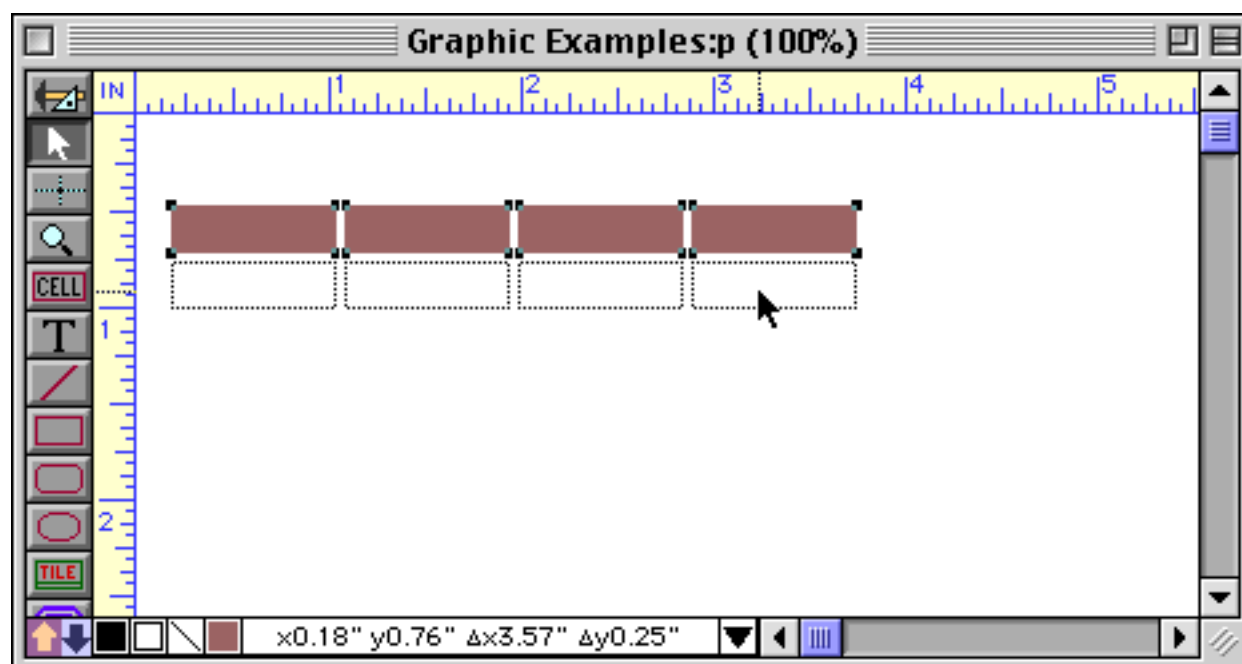
Repeat the Duplicate command until the row is complete.



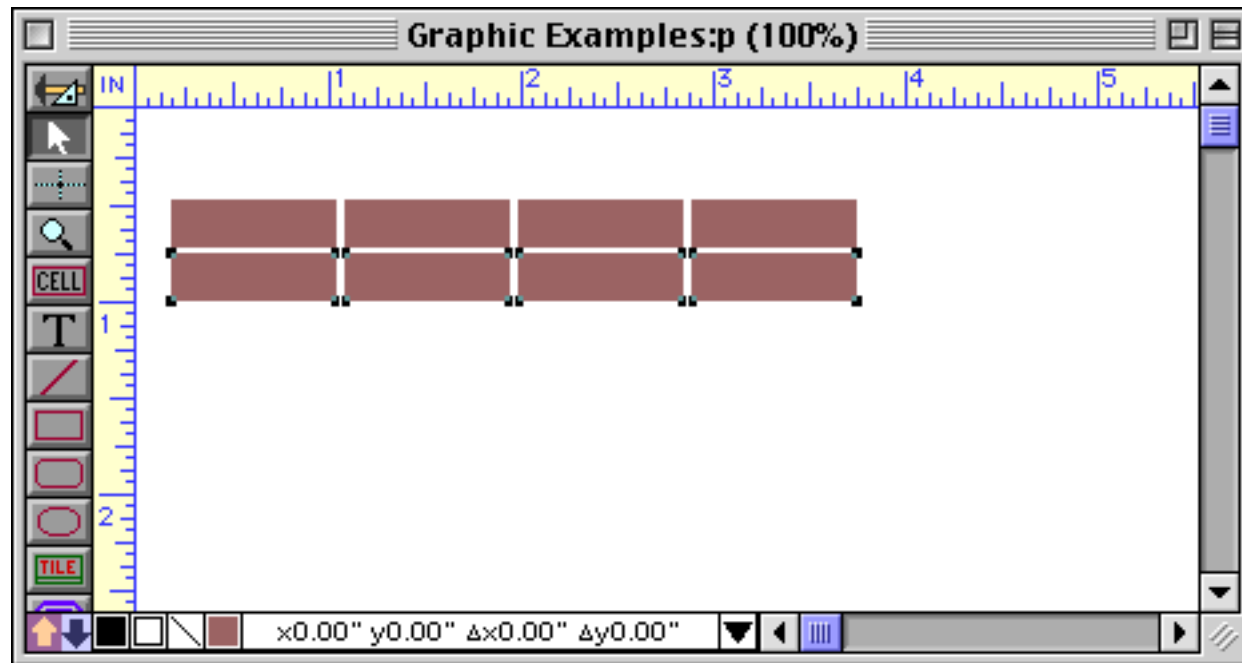
To create a complete table, select all of the objects in the row by dragging a marquee around them.



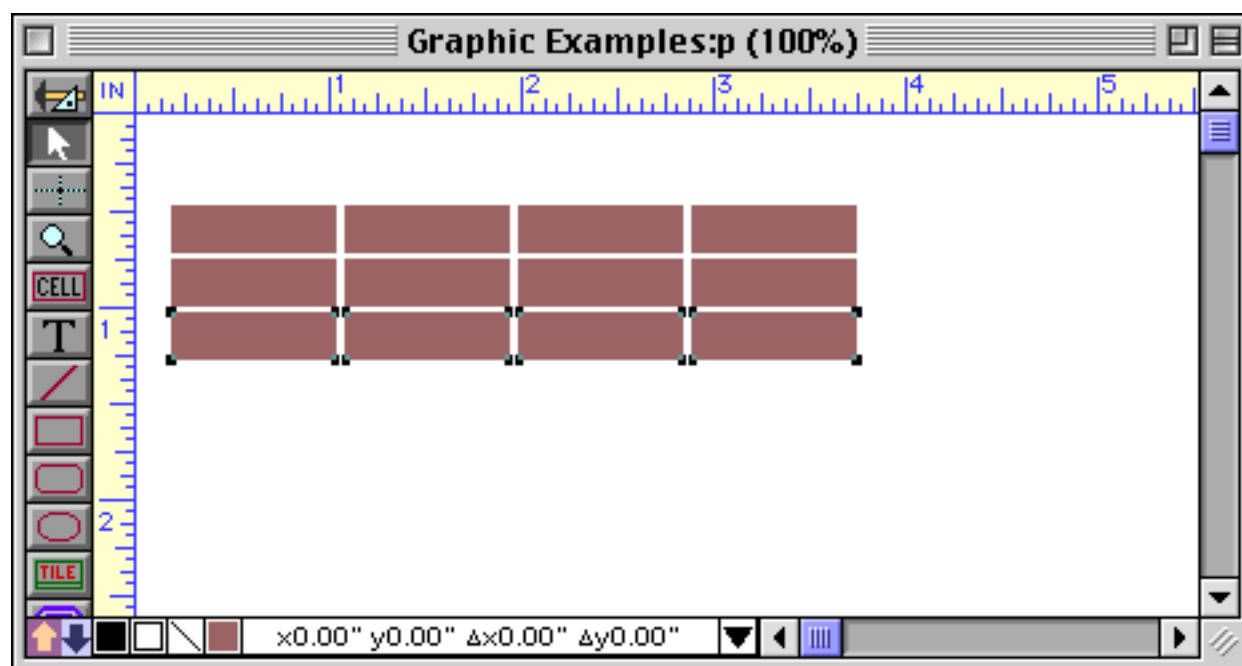
Hold down the **Shift** and **Option/Alt** keys and drag the row down, creating a copy of the row.



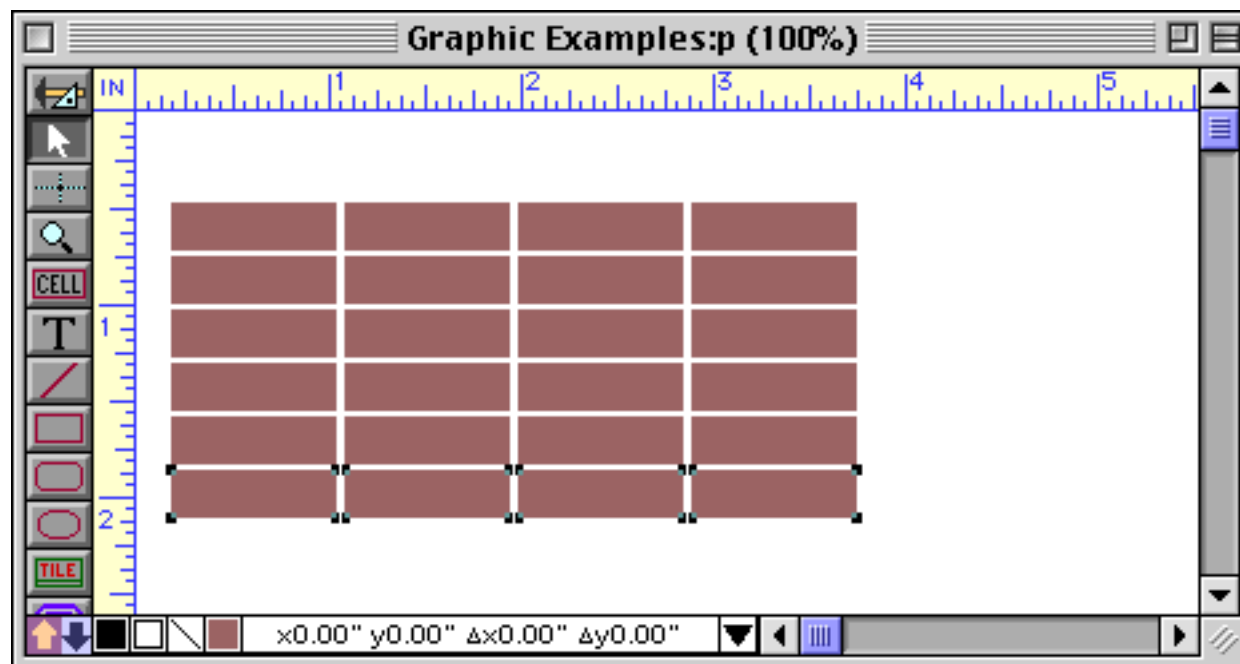
Release the mouse to create the new row.



If you don't get the spacing just right, you can nudge the row with the arrow keys (see "[Nudging an Object \(or Objects\)](#)" on page 509). Once the second row is in position, use the **Duplicate** command to step and repeat an additional copy of the row



Repeat the **Duplicate** command until the table is complete.



Once the table is complete, you can modify the width of columns within the table using cluster resize (see “[Cluster Resize](#)” on page 541). Or you can change the spacing between the rows and columns using the **Spacing** command (see “[Adjusting Spacing Between Multiple Objects](#)” on page 556).

Cut, Copy, and Paste

You can use the clipboard to copy objects and to transfer objects from one form to another form. The **Cut** and **Copy** commands copy the selected objects into the clipboard. **Cut** also removes the objects from the form.

The **Paste** command places a copy of the objects in the clipboard on to the form. The object (or objects) is placed into the middle of the current window.

You can also use the **Paste** command to paste in graphics created in another program. For more information see “[Fixed Images](#)” on page 741.

Copying Objects Between Forms

The **Copy** and **Paste** commands can be used to copy objects from one form to another. Just copy the objects from the original form, then switch to the second form and paste. **Tip:** Both forms must be in graphics mode to copy graphics between the forms.

Copying Objects Between Files

Using the **Copy** and **Paste** commands, you can easily copy graphic objects from one file to another. If you copy a data cell object to another file, the data cell field name may not match up with any of the fields in the second database. If this happens Panorama will automatically substitute the first field name in the second database. You can use the **Data Cell** tool to assign a different field to the cell.

Copying an Entire Form

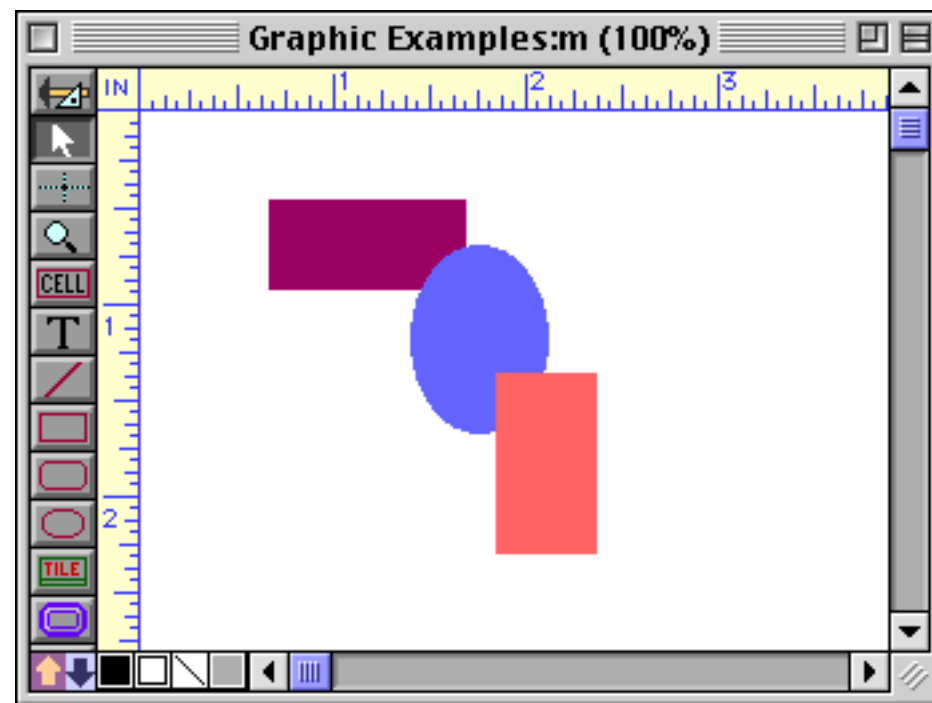
The **Copy Form** and **Paste Form** commands (in the Graphics Mode's Edit menu) allow an entire form to be copied at once -- including the form's Page Setup, custom menu setup, form comments -- everything!

To duplicate a form, start with the original form in Graphics Mode. Then choose the **Copy Form** command from the Edit menu. Then choose the **Paste Form** command. (If you want to duplicate the form in another database you must go that database, open a form and switch that form to Graphics Mode before using the **Paste Form** command.) The **Paste Form** command will ask you for the name of the new form. When you press the **Paste Form** button, Panorama will create the new form as an exact duplicate of the old form. (Notice that you do not create the new form in advance — the **Paste Form** command creates the new form for you.)

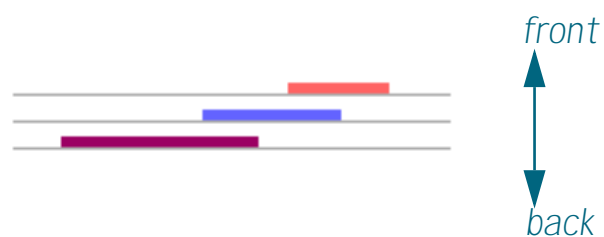
You can also use the **Copy Form** command with the regular **Paste** command to copy all the objects in a form into another form. When used this way, the **Copy Form** command is the same as choosing **Select All Objects** followed by **Copy** command. When used this way, only the objects are copied and not the Page Setup, custom menus, etc.

Overlapping Objects

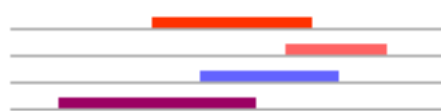
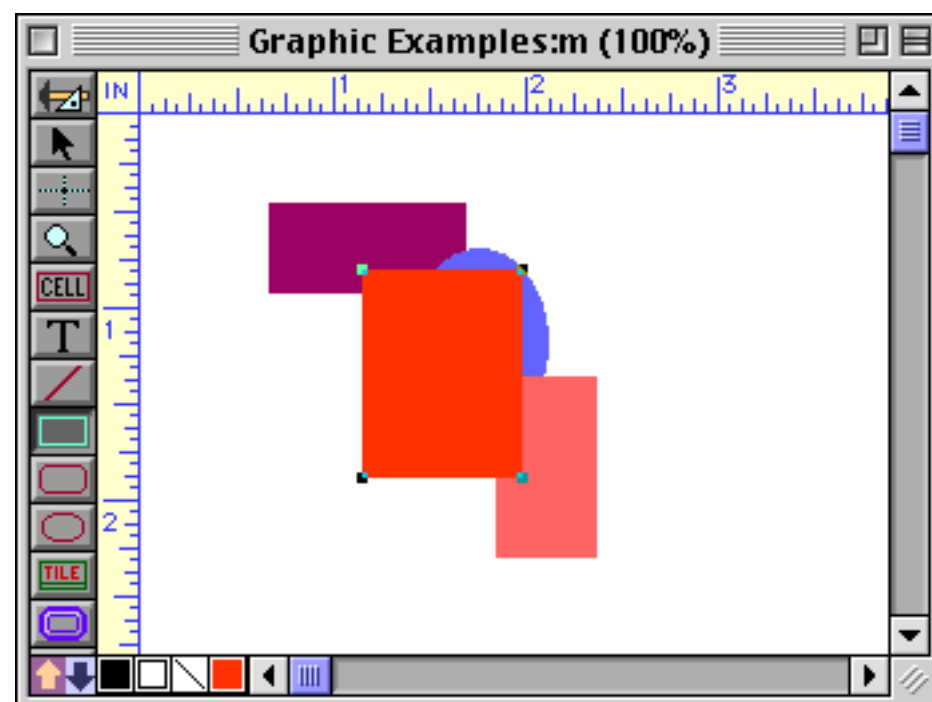
The computer screen is two dimensional, in other words, flat. So what happens if two objects overlap each other? To resolve this question, Panorama treats the objects as if they were placed on a stack of clear sheets. For example, consider the three overlapping objects in this form —



If you could look at this form on edge, it would look like this —



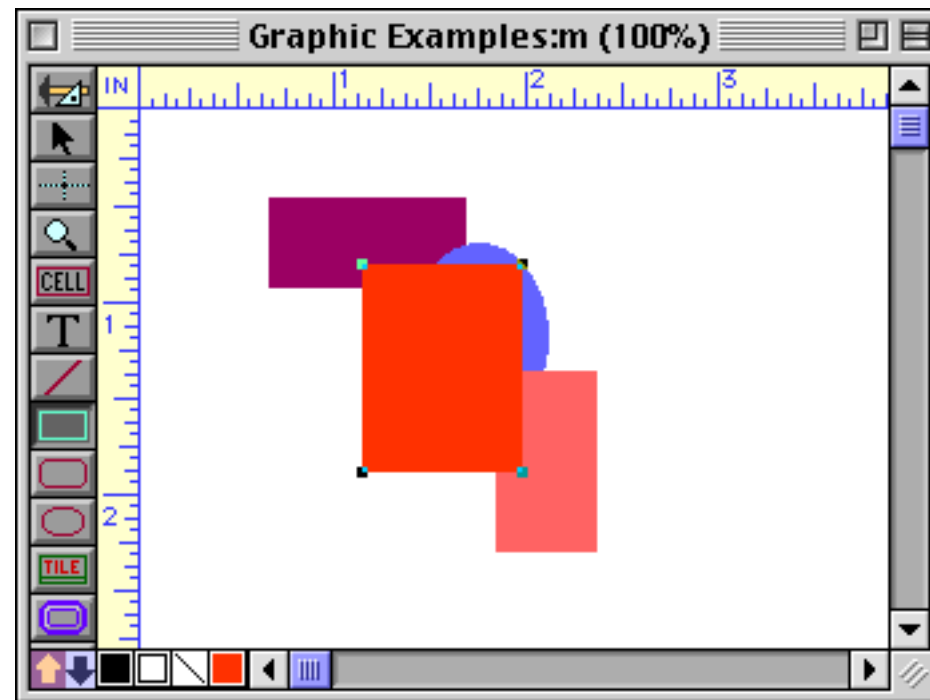
An object that is on top of another object is said to be **in front**. An object that is below another object is said to be **in back**. When you create a new object, the new object is placed in front of all other objects.



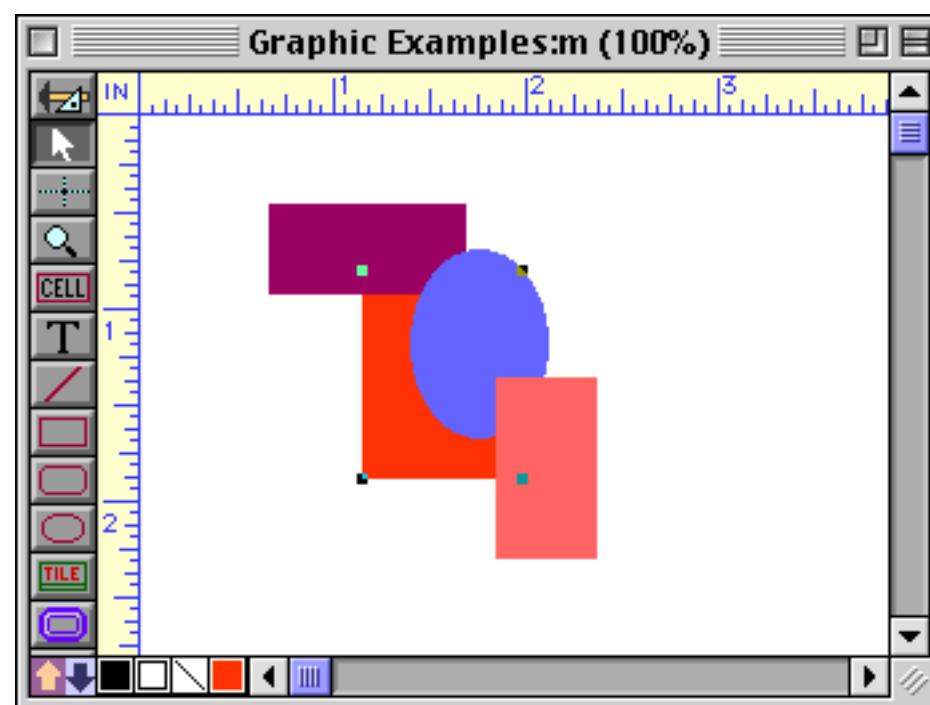
Objects that were created earlier will be partially or completely hidden if the new object overlaps them.

Changing the Stacking Order

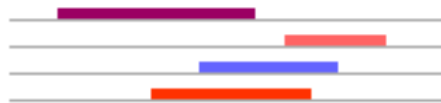
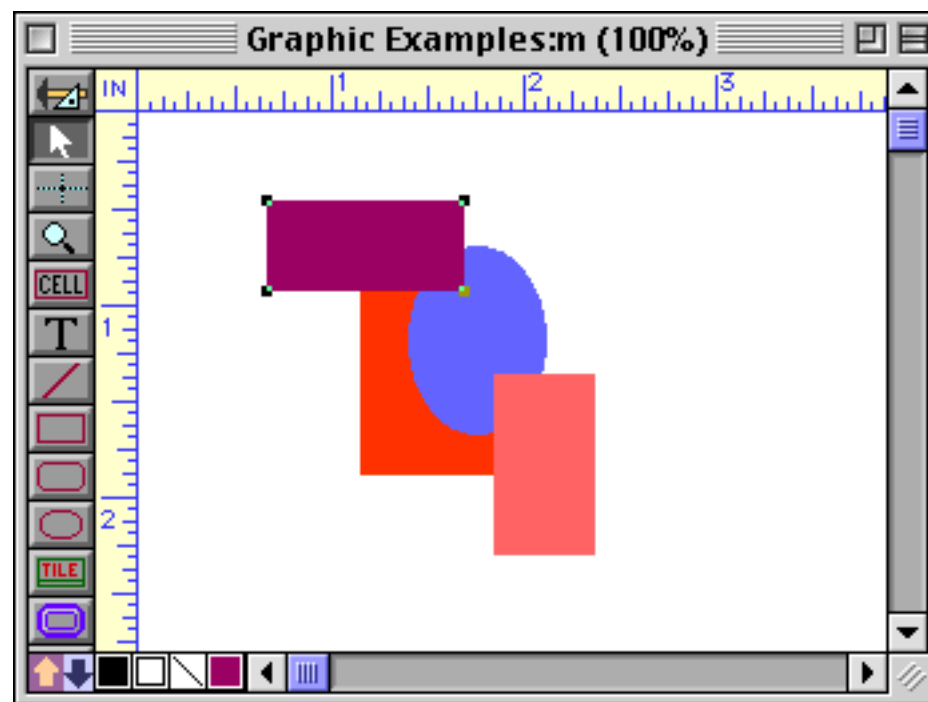
The **Bring to Front** and **Send to Back** commands (in the Arrange menu) change the stacking order of overlapping objects. To put an object behind everything else, select the object and then choose **Send to Back**. For example, suppose you wanted to move the red box behind the other three objects on this form. Here's the initial form, including the edge view.



The **Send to Back** command will move the red box behind the other objects.



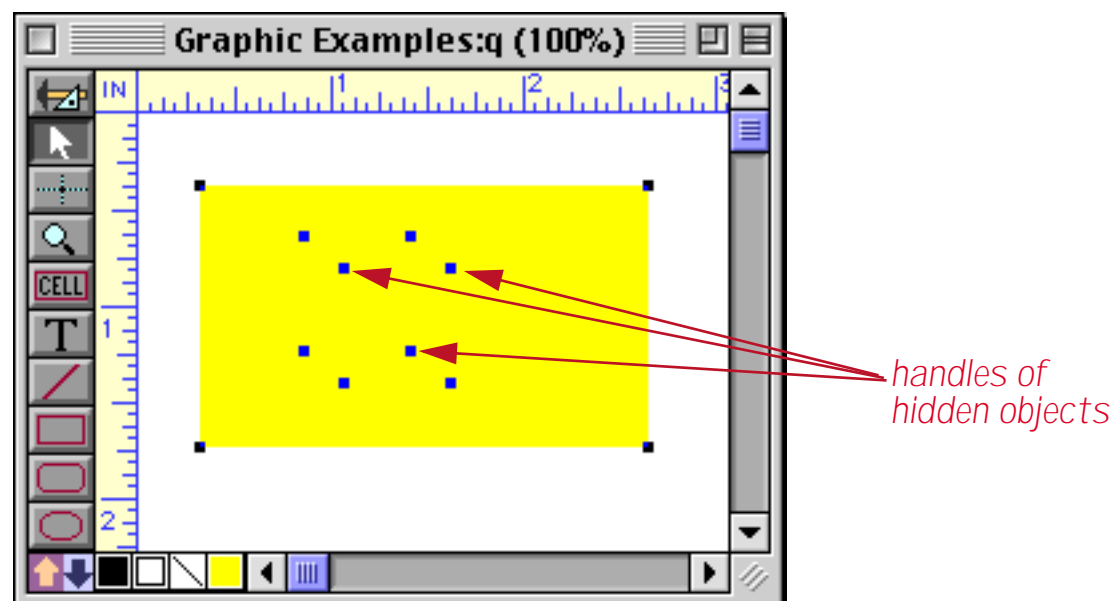
To bring an object to the front, select the object and then choose **Bring to Front**. For example, you could bring the purple box to the front (again showing the edge view).



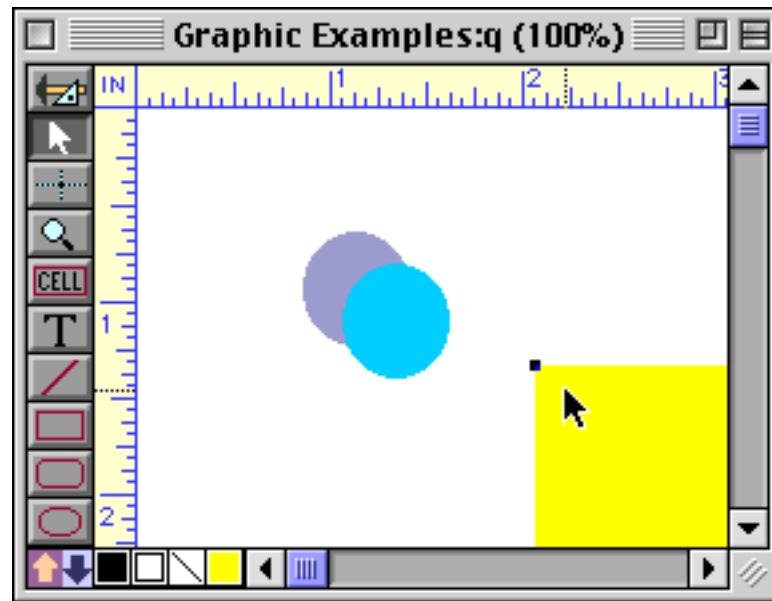
Selecting a Completely Hidden Object

If an object is completely hidden you can't click on it. However, there are several ways to select hidden objects.

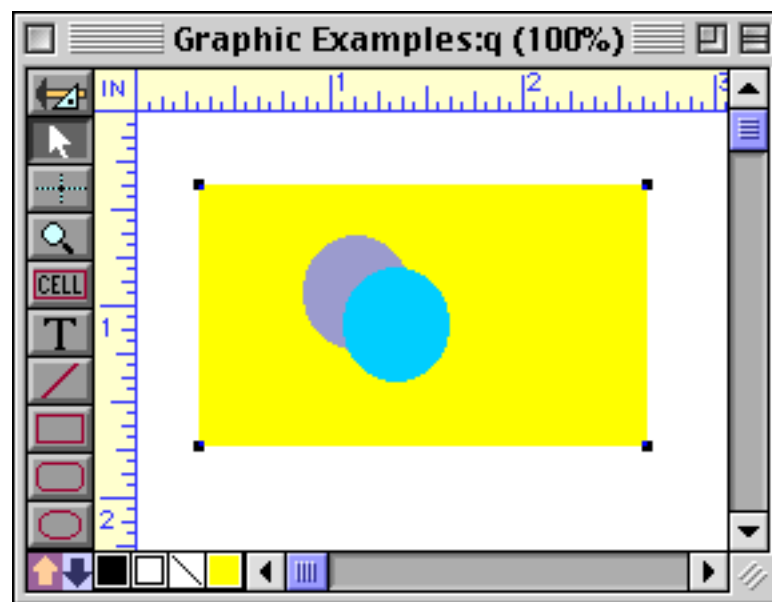
To find a hidden object, use the **Select All Objects** command (in the Edit menu). This command makes handles appear for every object, including hidden objects. For example, at first glance the form shown below would appear to have only one object — a yellow box. The **Select All Objects** command reveals that there are two hidden objects behind the yellow box.



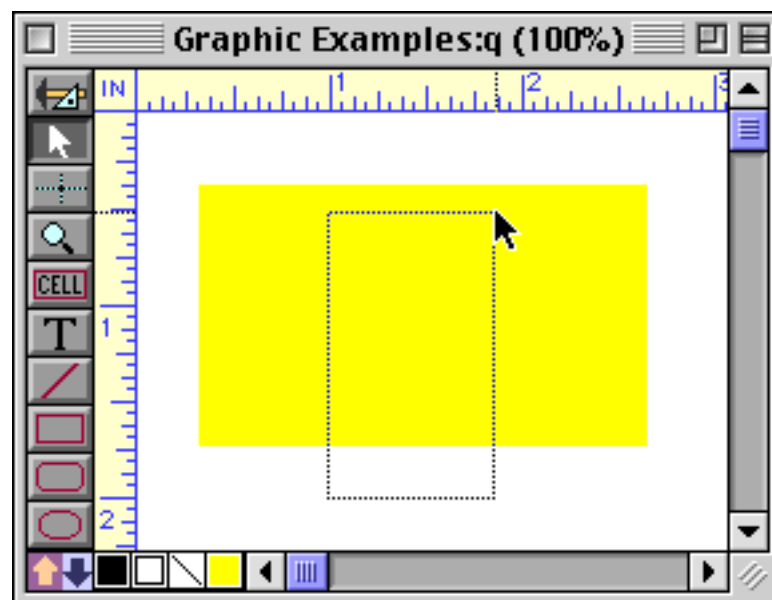
Of course, you can also find a hidden object by moving the objects in front of it out of the way —



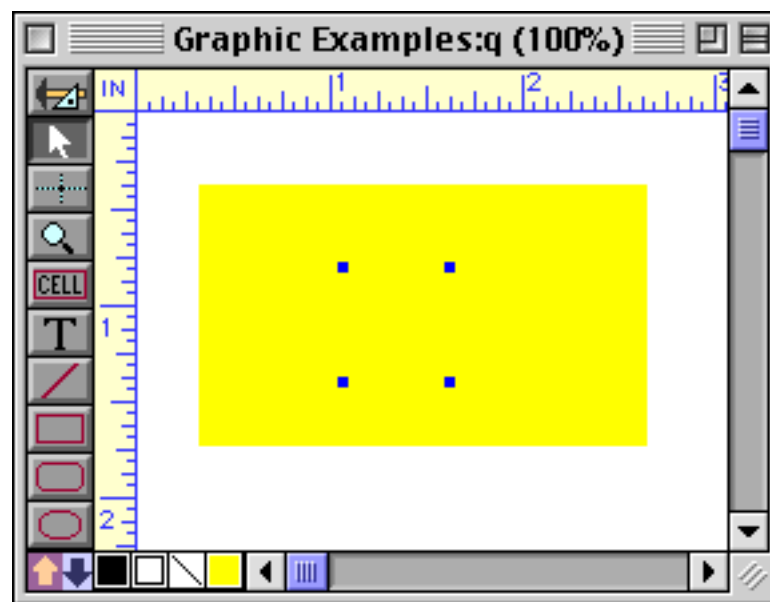
or by sending the object in front to the back.



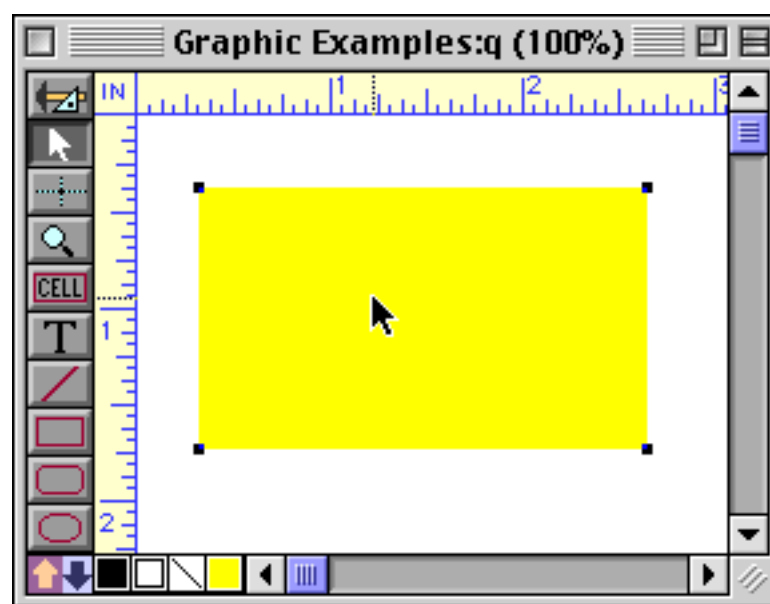
Sometimes you may be able to select a hidden object by dragging a marquee around the object.



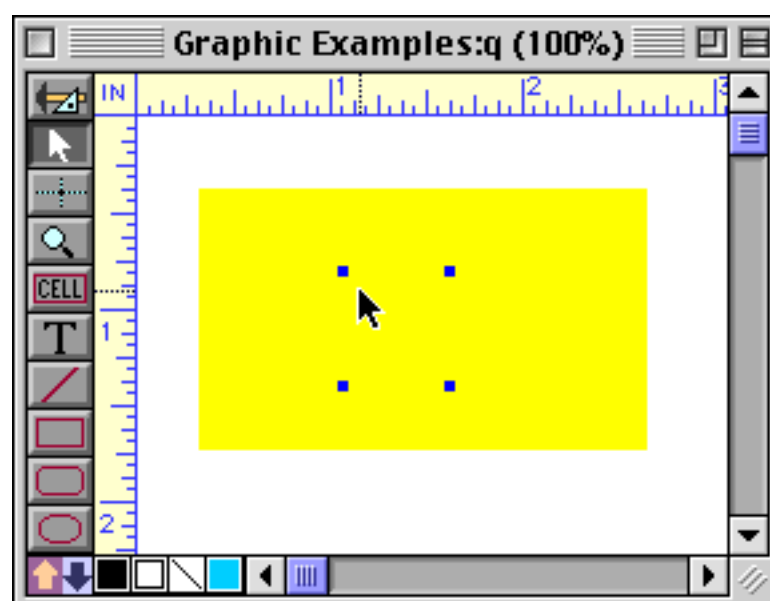
Once the object is selected you can bring it to the front, change the object properties, or nudge the object with the arrow keys.



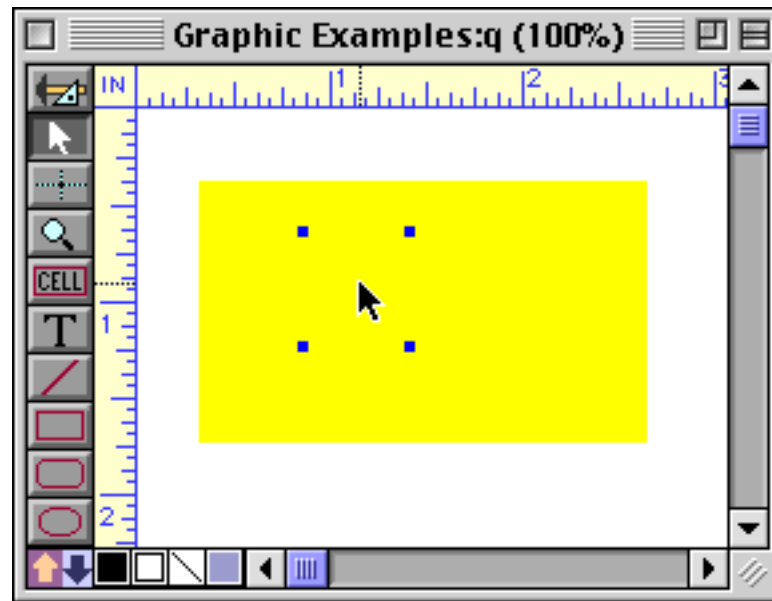
Another technique for selecting a hidden object is to hold down a special key while you click. On the Macintosh this special key is the **Command** key, on PC systems it is the **Control** key. The first time you click, the topmost object will be selected.



The next click will select the next object behind the top object (remember, you must hold down the **Command/Control** key).



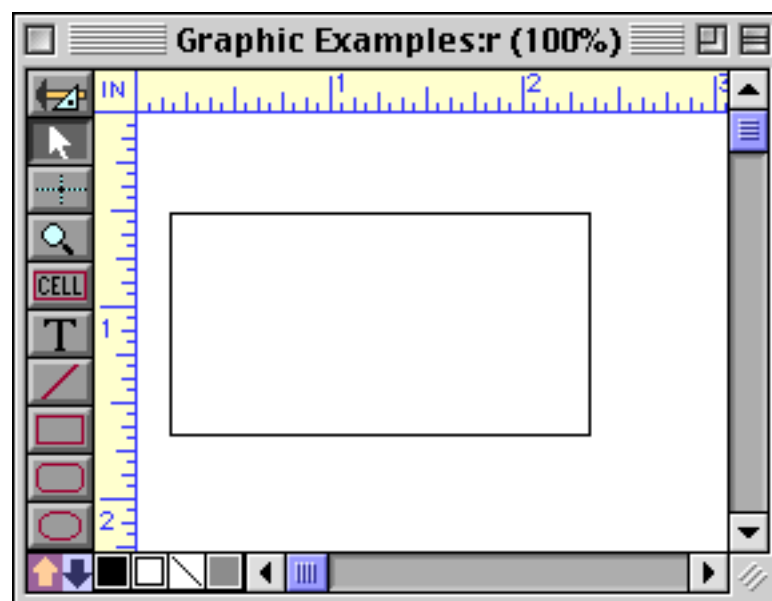
Each time you **Command/Control** click again the next object behind the current object will be selected



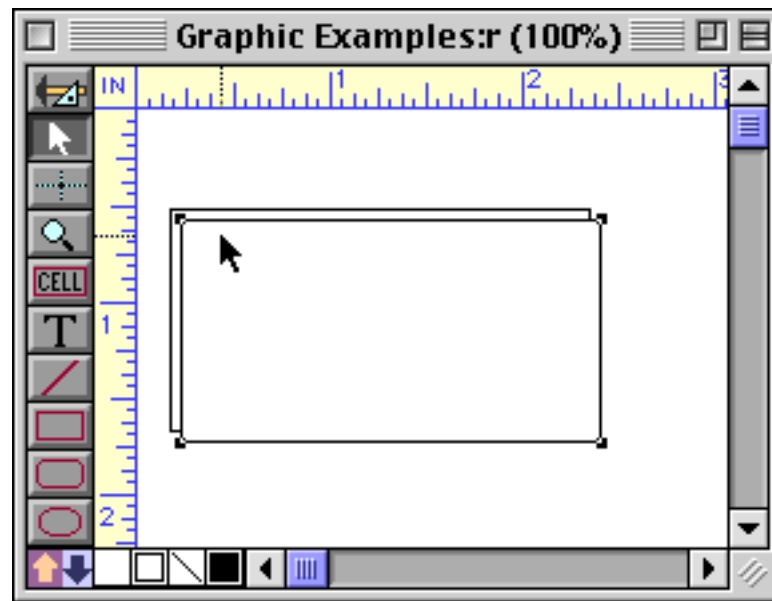
When you reach the bottom of the file Panorama will cycle back to the top and select the topmost object again. You can keep clicking around and around forever.

Making a Drop Shadow

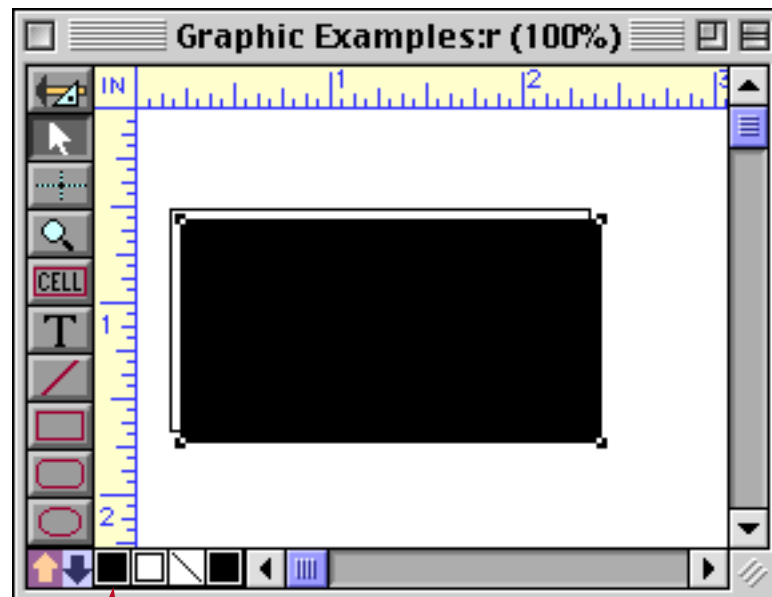
Use **Duplicate** and **Send to Back** to create a drop shadow for a box. Start with a basic box.



Use the **Duplicate** command to make a copy of the box (see “[Duplicate](#)” on page 561). (An alternate technique is to hold down the **Option/Alt** key and drag to create a copy of the box, see “[Drag Duplicating](#)” on page 561.)

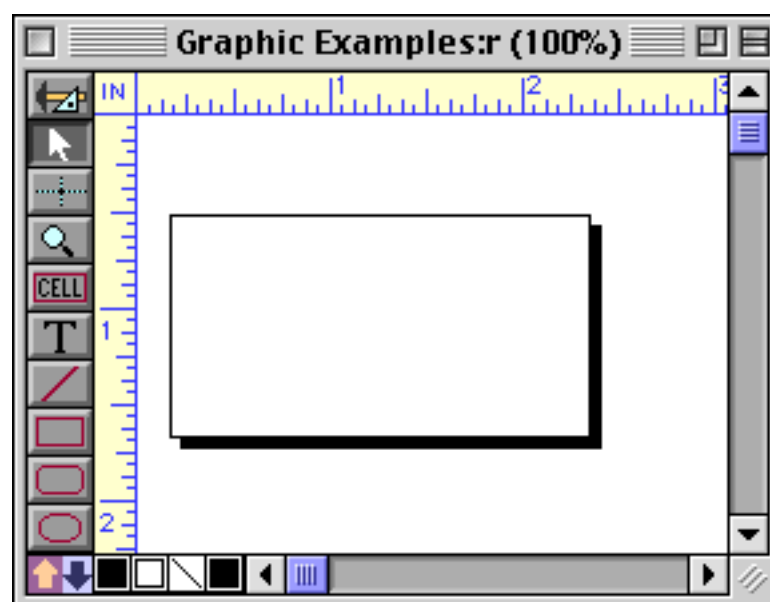


Next, use the Fill menu to make the new box black (see “[Fill Pattern](#)” on page 521).



click here to change fill pattern

Finally, use the **Send to Back** command to move the shadow behind the original object (see “[Changing the Stacking Order](#)” on page 569).

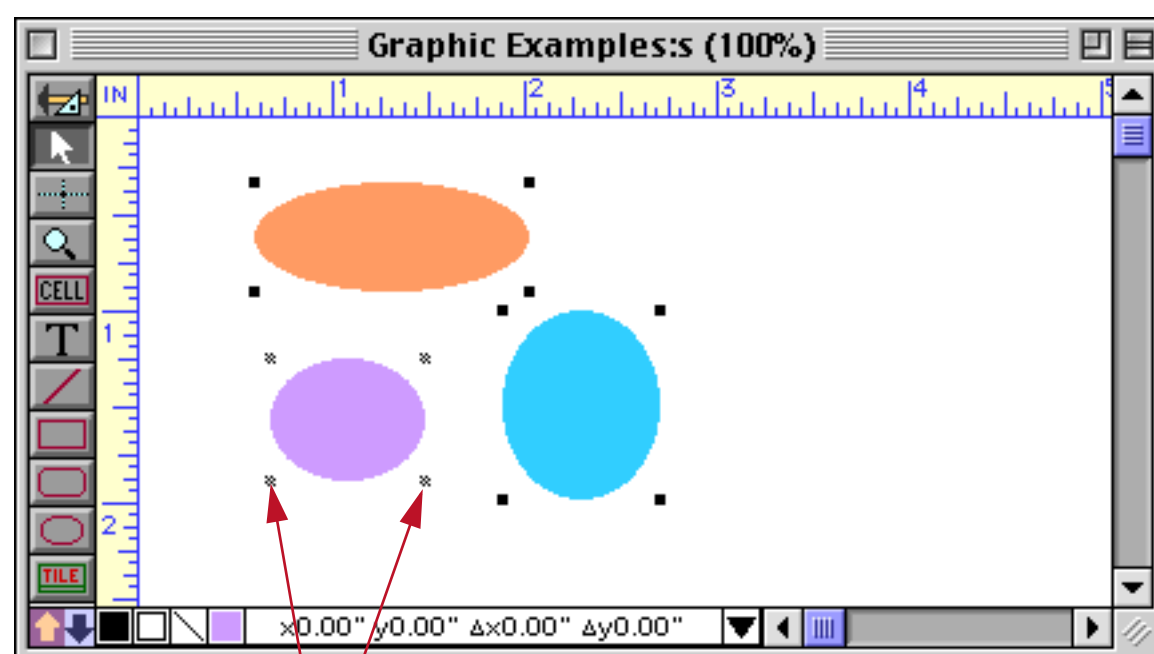


If the shadow is too large or too small, use the arrow keys to nudge it until it looks right (see “[Nudging an Object \(or Objects\)](#)” on page 509).

Locked Objects

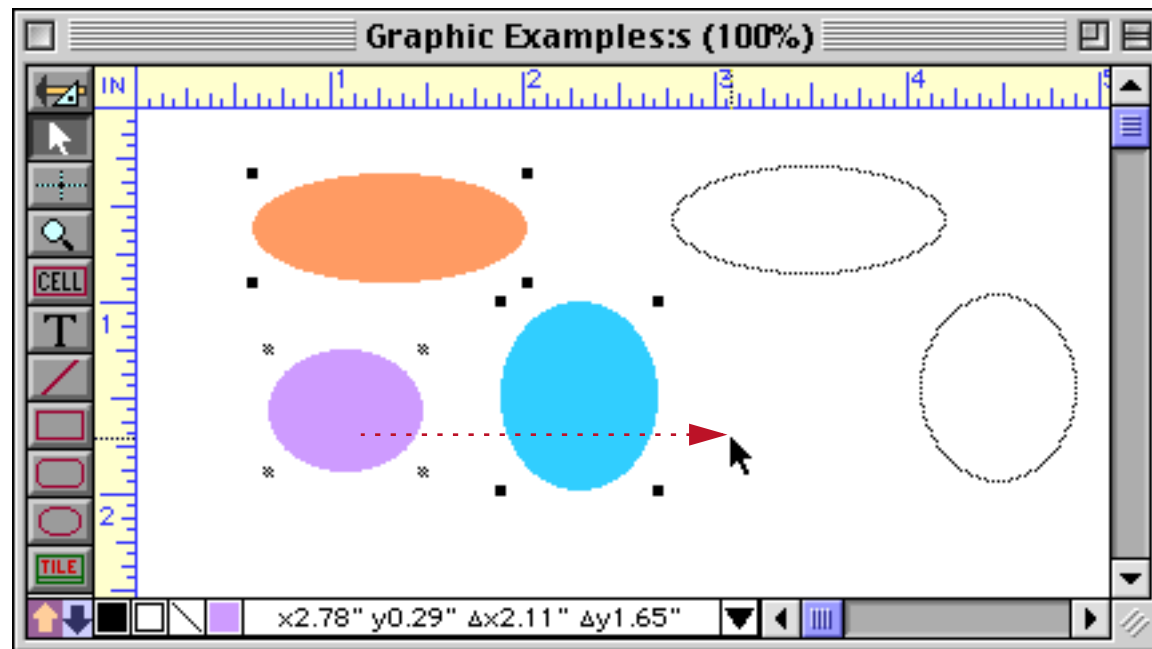
Use the **Lock** command to lock objects. Locked objects can't be moved or resized. Locking is convenient when you want to make sure the work you have already finished isn't disturbed as you continue working.

To lock one or more selected objects, choose **Lock** from the Arrange menu. The object handles will turn gray. This shows that the objects are locked. The illustration below shows three selected objects, one of which is locked.

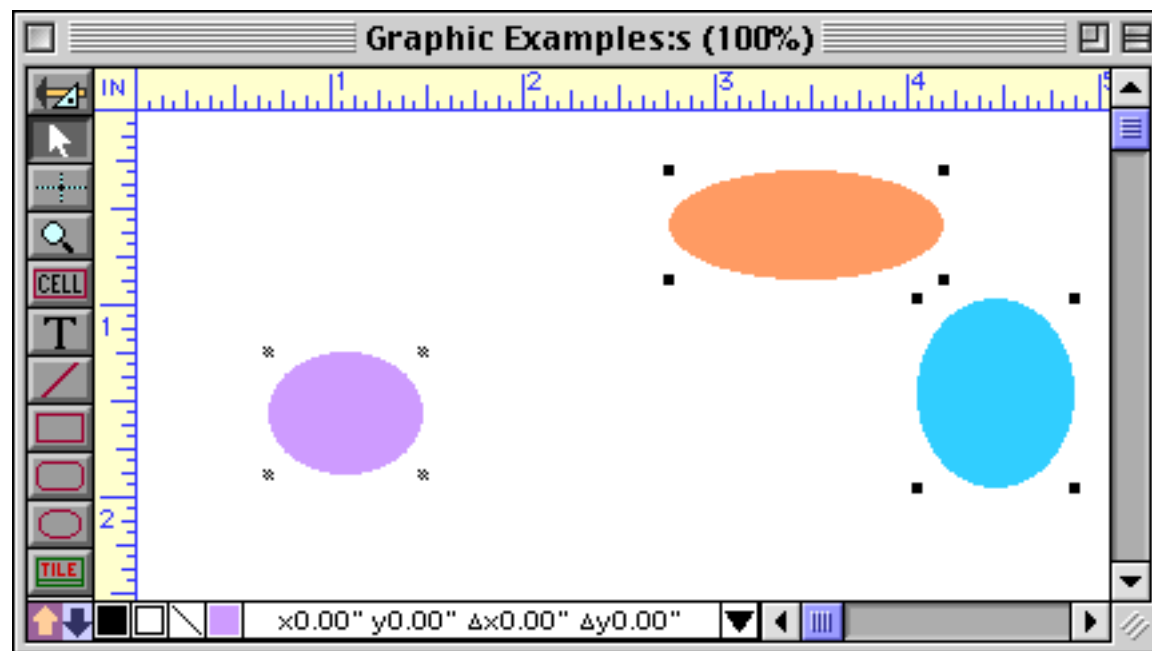


gray handles on locked object

If you attempt to drag these three objects, only the unlocked objects will actually move.



A locked object cannot be moved, resized, or have any of its attributes (color, fill pattern, etc.) changed. However, you can duplicate the object (the copy is not locked).



Use the **Unlock** command to release a locked object(s). Once they are unlocked the objects can be moved and resized normally.

Ignoring Locked Objects

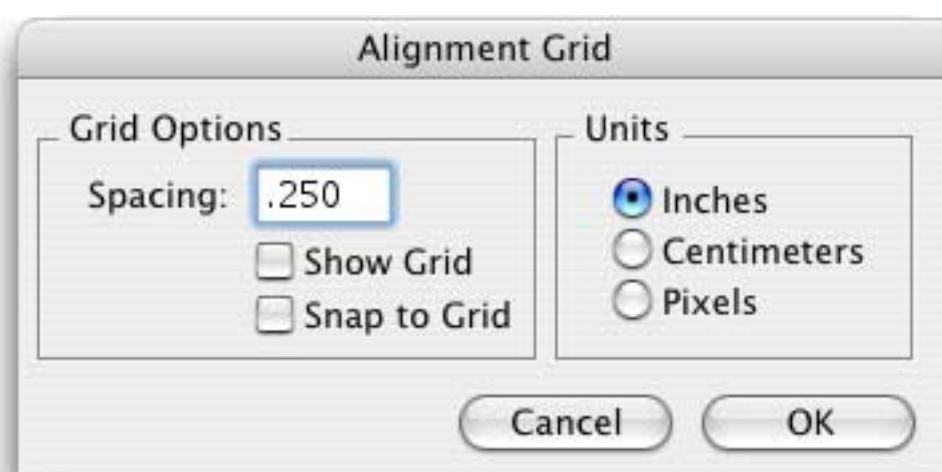
Although locked objects cannot be moved, they can still be selected by clicking on them. (Otherwise they could never be unlocked again!) However, if you check the **Ignore Locked Objects** option in the Arrange menu, you will not be able to select locked objects.



Tip: The **Ignore Locked Objects** option is useful for working on top of a large background covering the entire form. For example, you might paste a scanned image into the form, and then create data cells and other objects on top of the scanned background. By locking the scanned image and turning on the **Ignore Locked Objects** option, you won't have to worry about accidentally selecting and possibly moving the scanned background image.

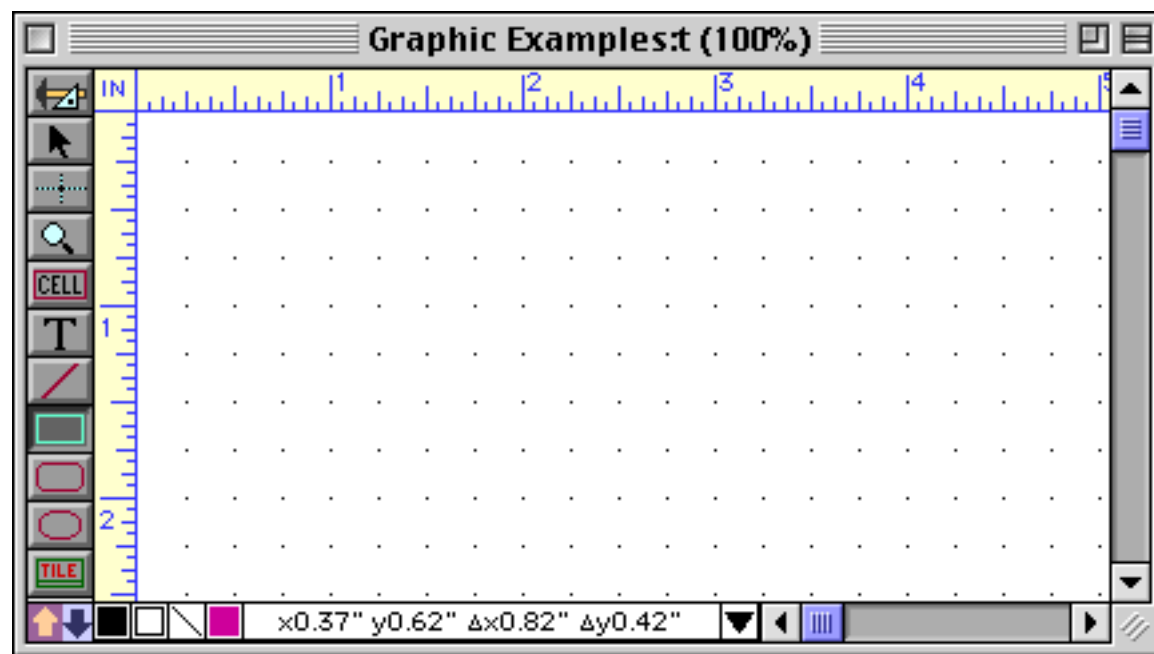
Alignment Grid

Panorama normally allows you to position objects freely anywhere on a form. The **Grid** dialog (in the Arrange menu) allows you to set up a grid that can help you arrange objects in neat rows and columns.

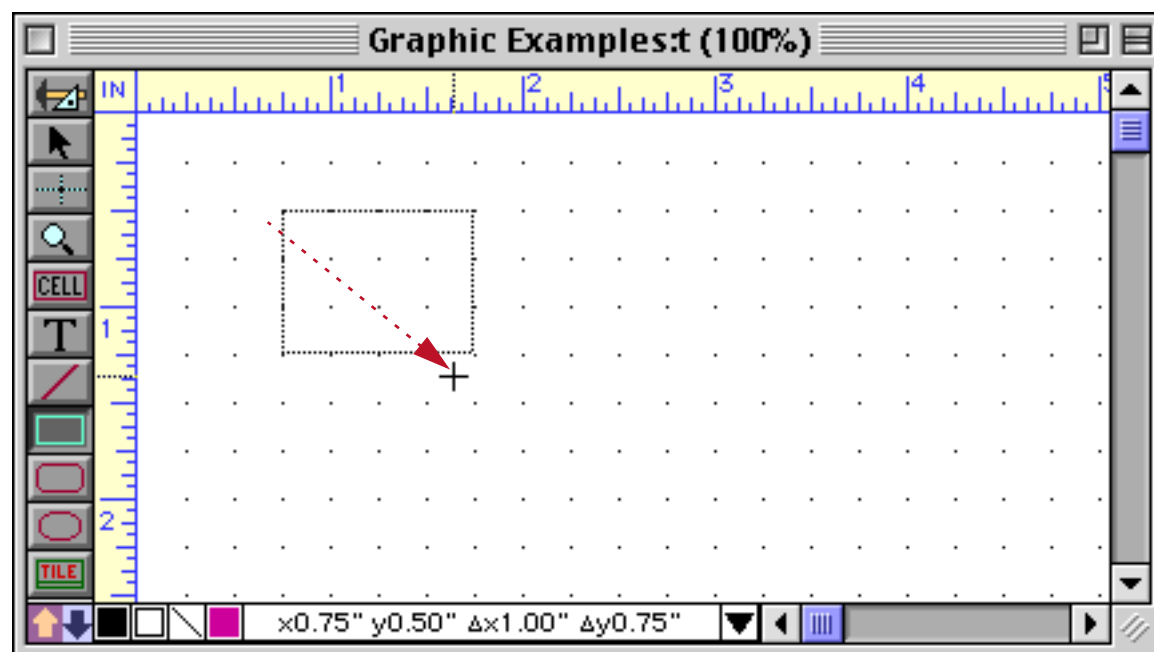


The grid spacing can be specified in inches, centimeters, or pixels. If you use inches or centimeters, the spacing will be rounded to the nearest 1/576 inch (For example a grid spacing of 0.1 inch will be rounded to 0.098 inches, or 7.25 pixels.)

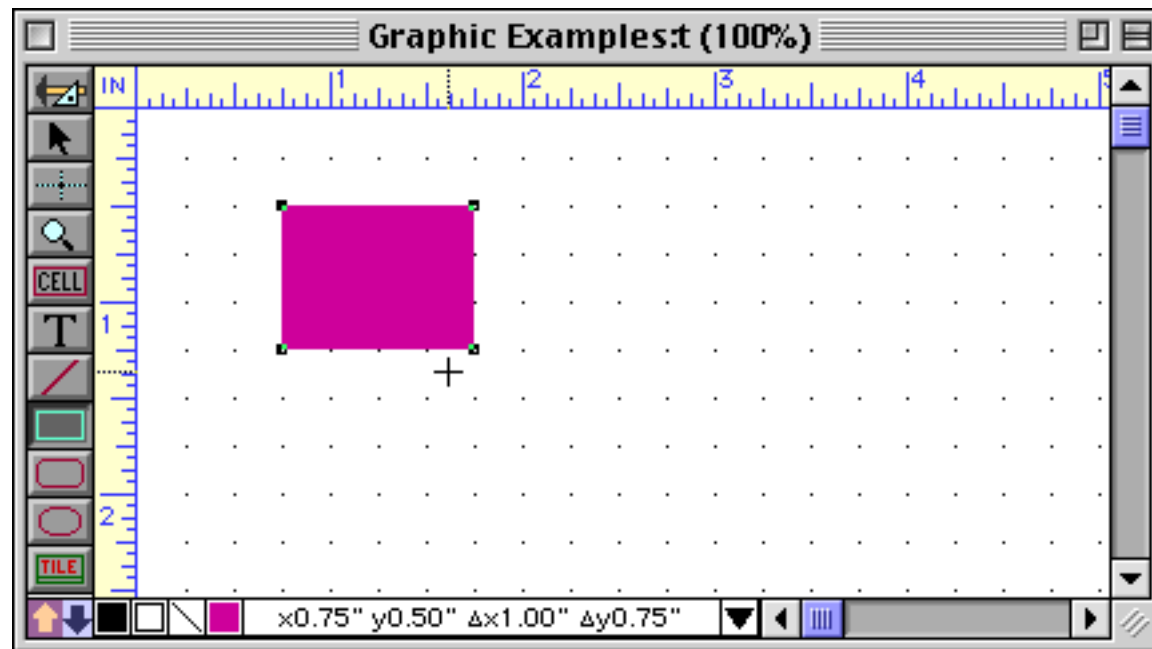
If you want to make the grid visible, check the **Show Grid** option. When this option is checked a dot appears at each grid point.



When the **Snap to Grid** option is checked, Panorama will automatically align objects to the grid. Objects are aligned to the grid whenever they are created, moved, or resized. This option does not affect objects already in the form (unless you modify them).



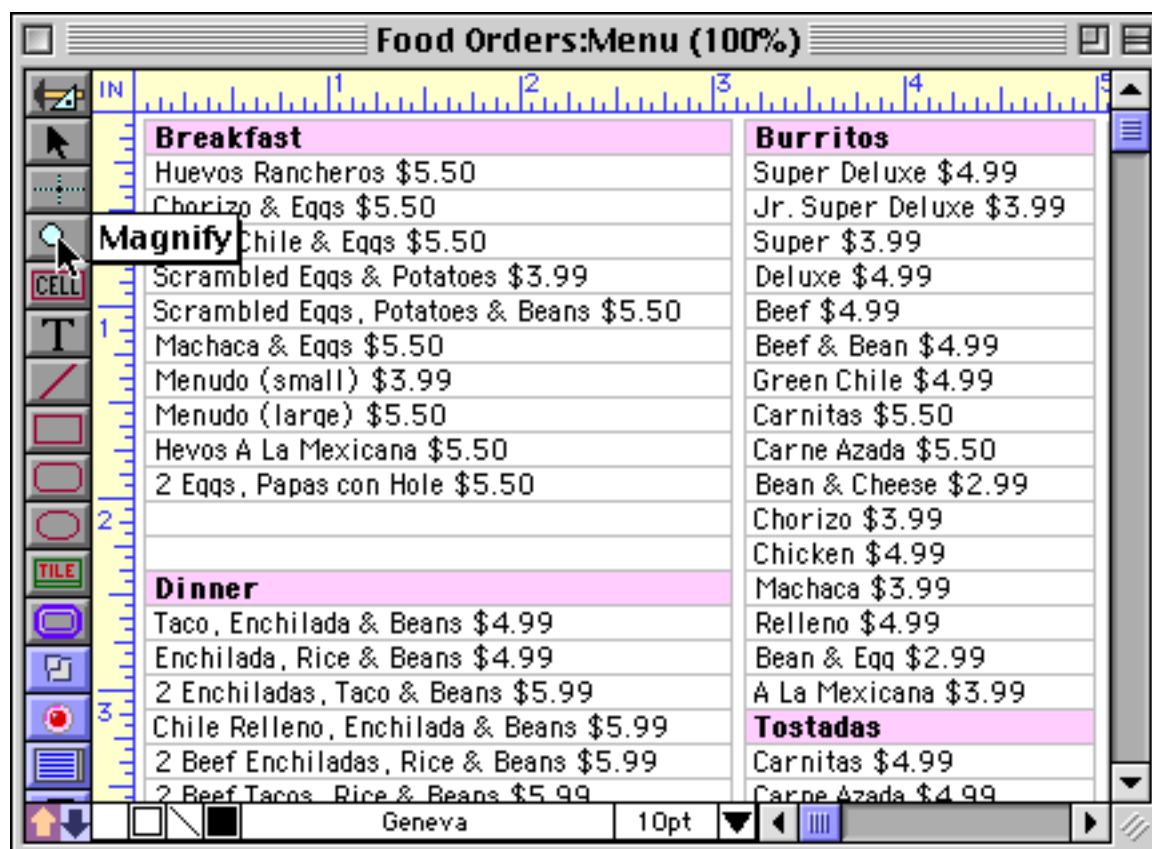
Panorama snaps the object into place as it is created.



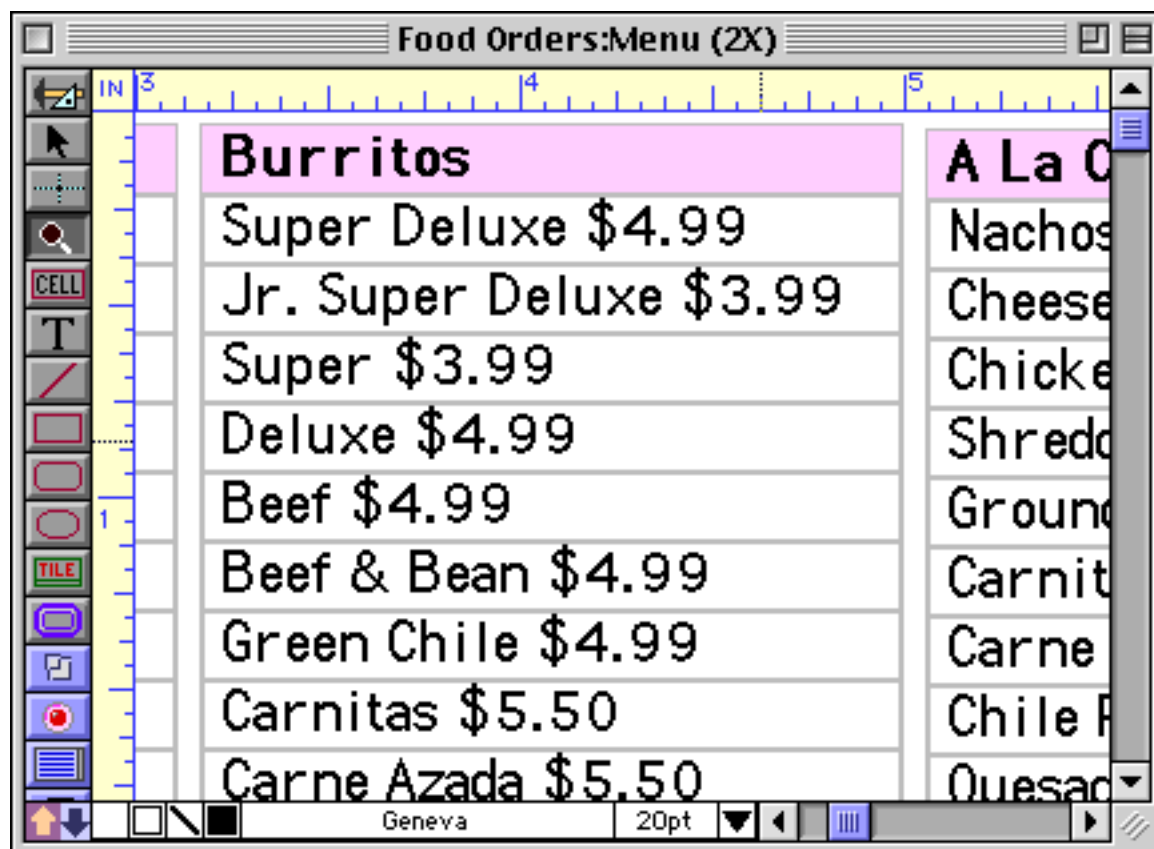
Tip: When **Snap to Grid** is on, every object you create is automatically aligned to the grid. But what if you need one or two objects that are not aligned to the grid? Instead of turning **Snap to Grid** off, you can nudge the object into place using the arrow keys. Both the position and size of the object can be adjusted with the arrow keys. See “[Nudging an Object \(or Objects\)](#)” on page 509.

Magnification and Reduction

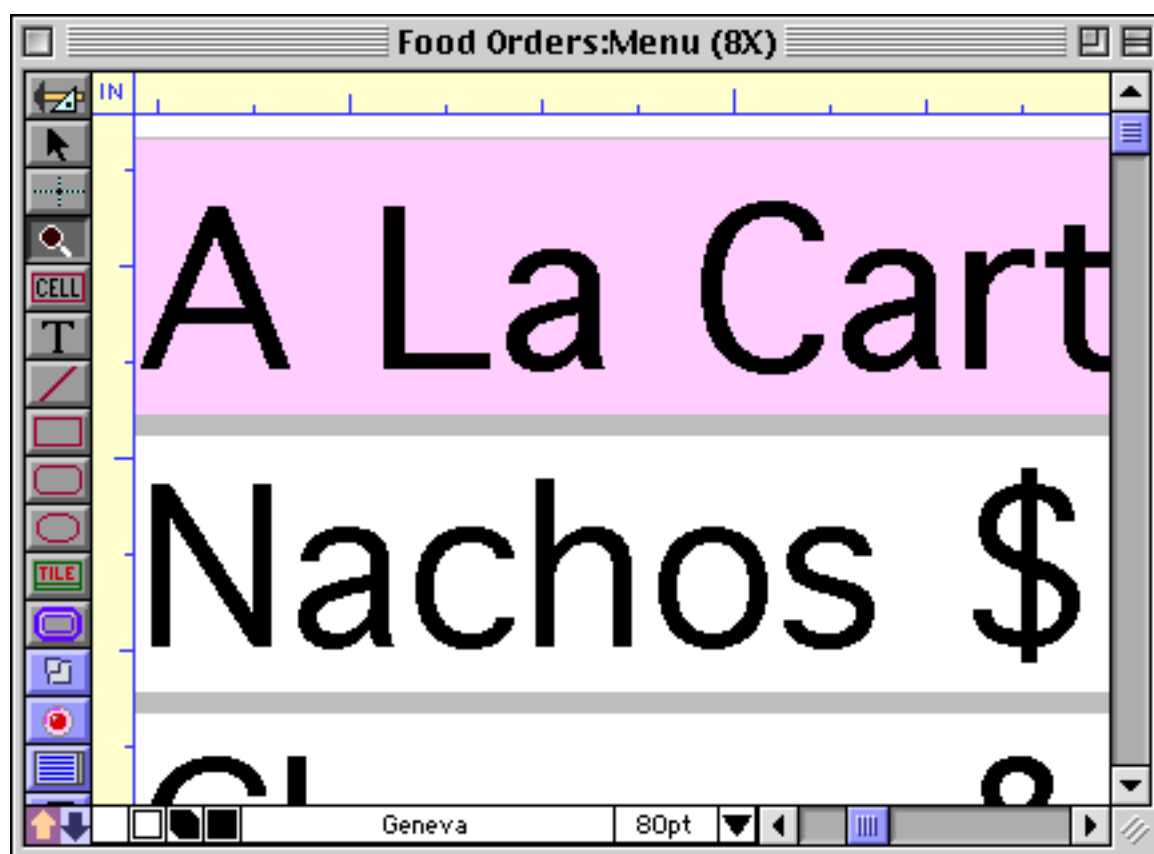
Panorama allows you to magnify the form for closer inspection, or for more accurate alignment of graphic objects. Use the **Magnify** tool to zoom in to 2x, 4x, or 8x magnification. When you select the **Magnify** tool, the cursor turns from an arrow into a magnifying glass.



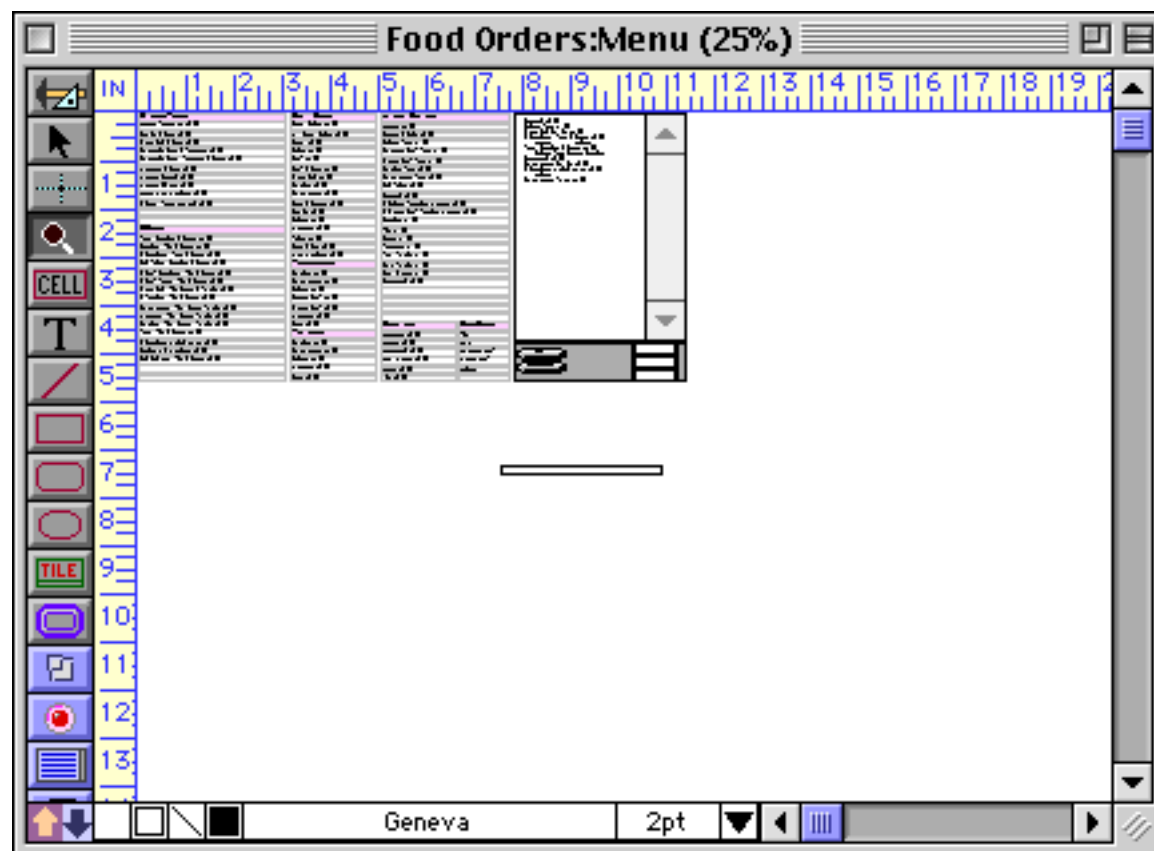
Move this magnifying glass to the spot you want to work on, then click the mouse to zoom in.



You can continue to zoom in up to 8X magnification.



Press the **Shift** key to turn the magnifying glass into a microscope. (If you are using a Macintosh pressing the **Option** key or **Space Bar** also converts the magnifying glass into a microscope. If you are using a Windows PC you can also press the **Alt** key or **Space Bar**.) When the **Shift** key is held down, each click reduces the magnification (zoom out). You can continue clicking until you get back to 1x magnification, or you can zoom out even farther and reduce to 50% or 25% magnification.



All of Panorama's graphic editing tools and menu commands work at any magnification level—all the way from 25% to 8x.

By holding down the **Command** key (Macintosh) or **Control** key (Windows) and clicking you can force Panorama to immediately return to the normal 100% view.

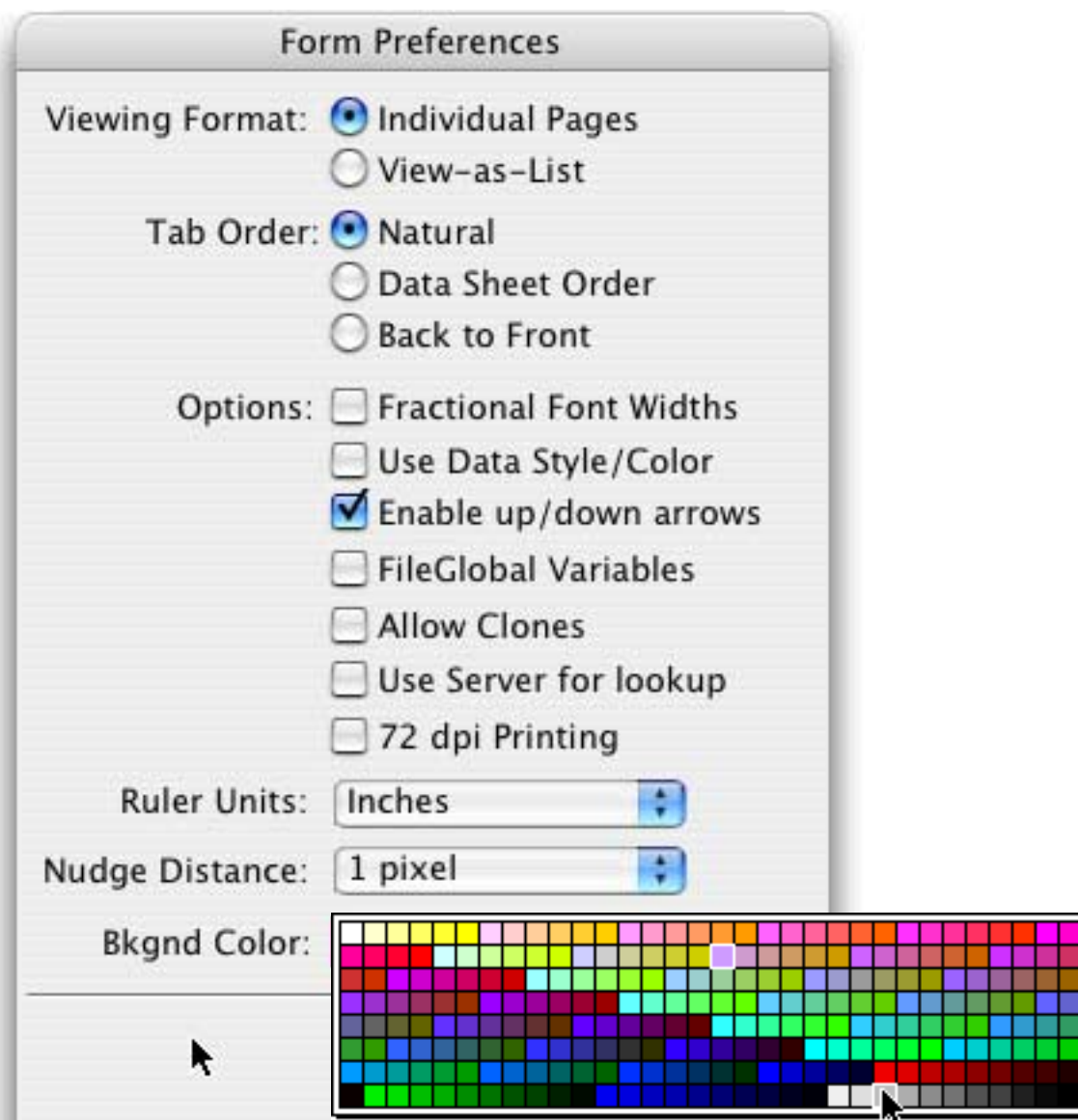
A Note About Measurement Accuracy

Panorama keeps track of the position and size of each object to an accuracy of 1/576 inch (1/8 pixel). However, this accuracy is only visible when you zoom in to 8x magnification (see previous section).

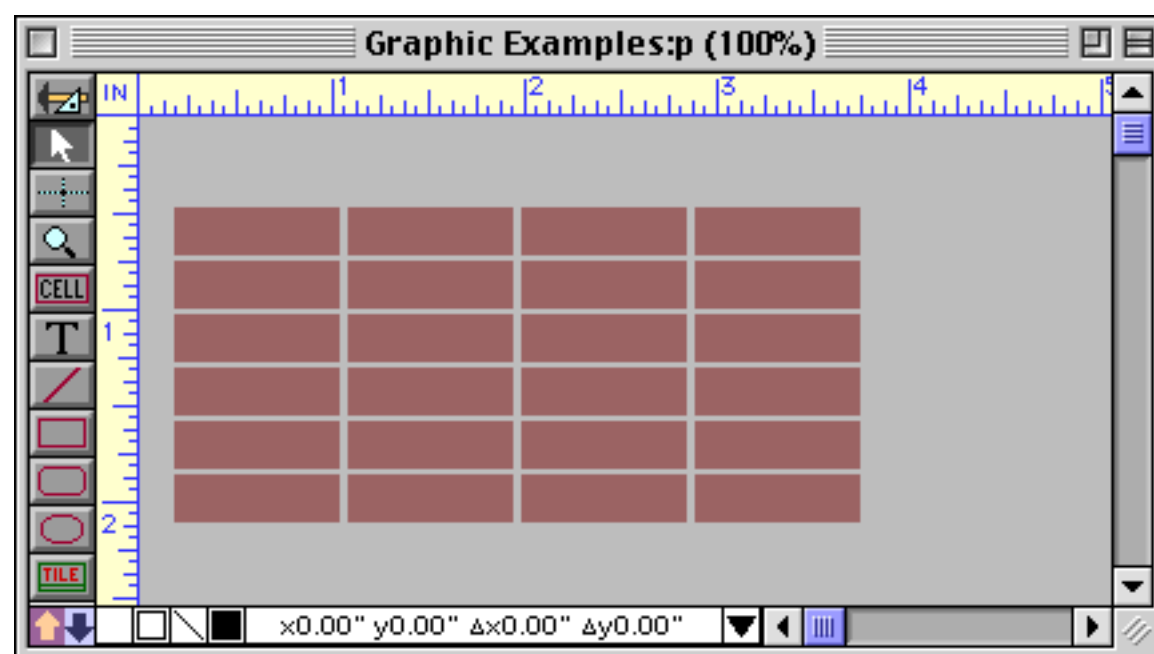
If you are going to print your form, keep in mind that printers are not 100% accurate. We have found that many printers can be up to 1/8 inch off over the length of a page. (For example, a 10 inch high line may actually print anywhere from about 9.9 to 10.1 inches.) This variation can cause problems if you are attempting to print unusually small labels or if you want to exactly match a pre-printed form. Most printers are more accurate horizontally rather than vertically—this is probably due to slight variations in drum speed as the paper feeds through the printer.

Form Background Colors

The default background for a form is white, but you may choose from 256 background colors for any form. To change the background color, open the **Form Preferences** dialog (in the Setup menu) and choose the background color from the pop-up menu.



Here is a typical form with a gray background color. (**Note:** If the form is displayed on a black and white monitor, Panorama will automatically use a white background even if you have specified another color.)



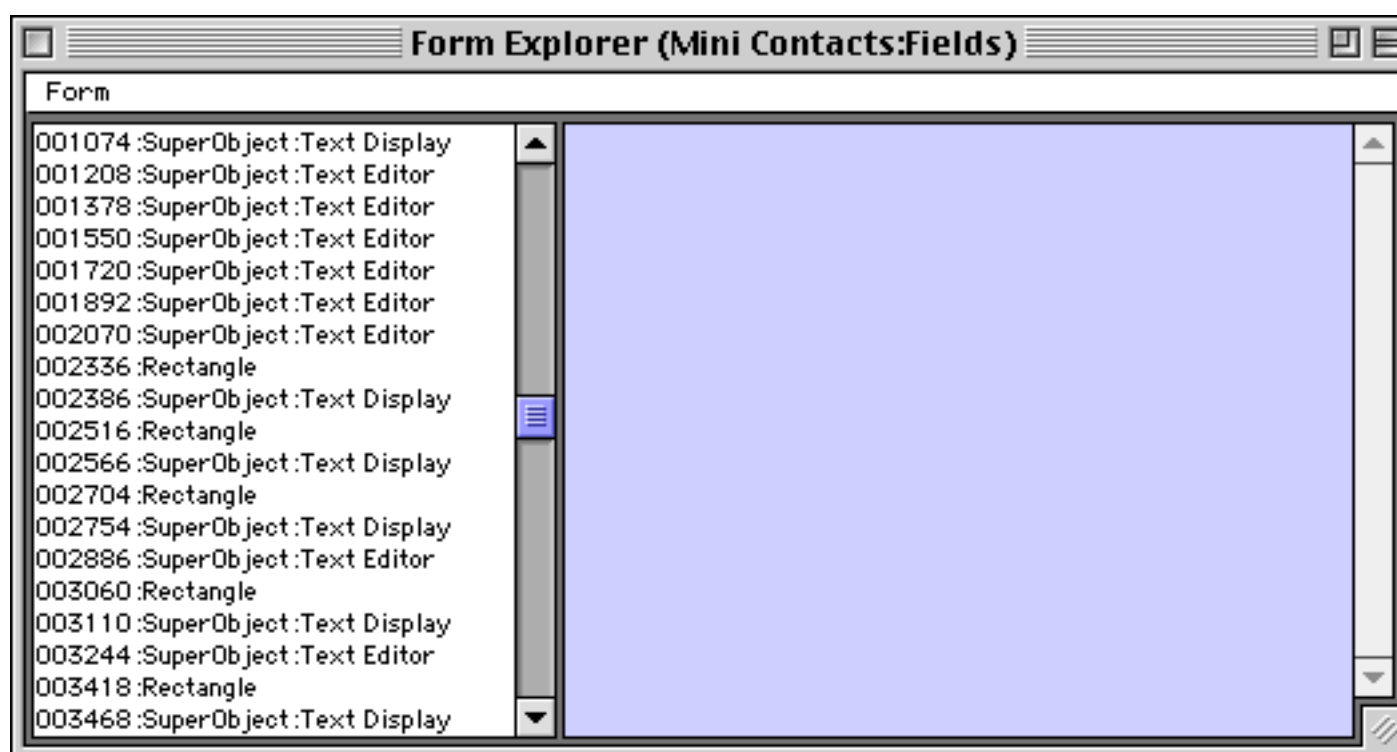
To set background colors for a view-as-list form, apply colors to the data tile and header tile. If these two tiles have different colors, the header and data sections of the form will also have different background colors. See “[View-As-List Background Colors](#)” on page 919 for more information on background colors in a view-as-list form.

It is possible to check and change the form background color from inside a procedure. See “[FORMCOLOR](#)” on page 5262 of the *Panorama Reference*.

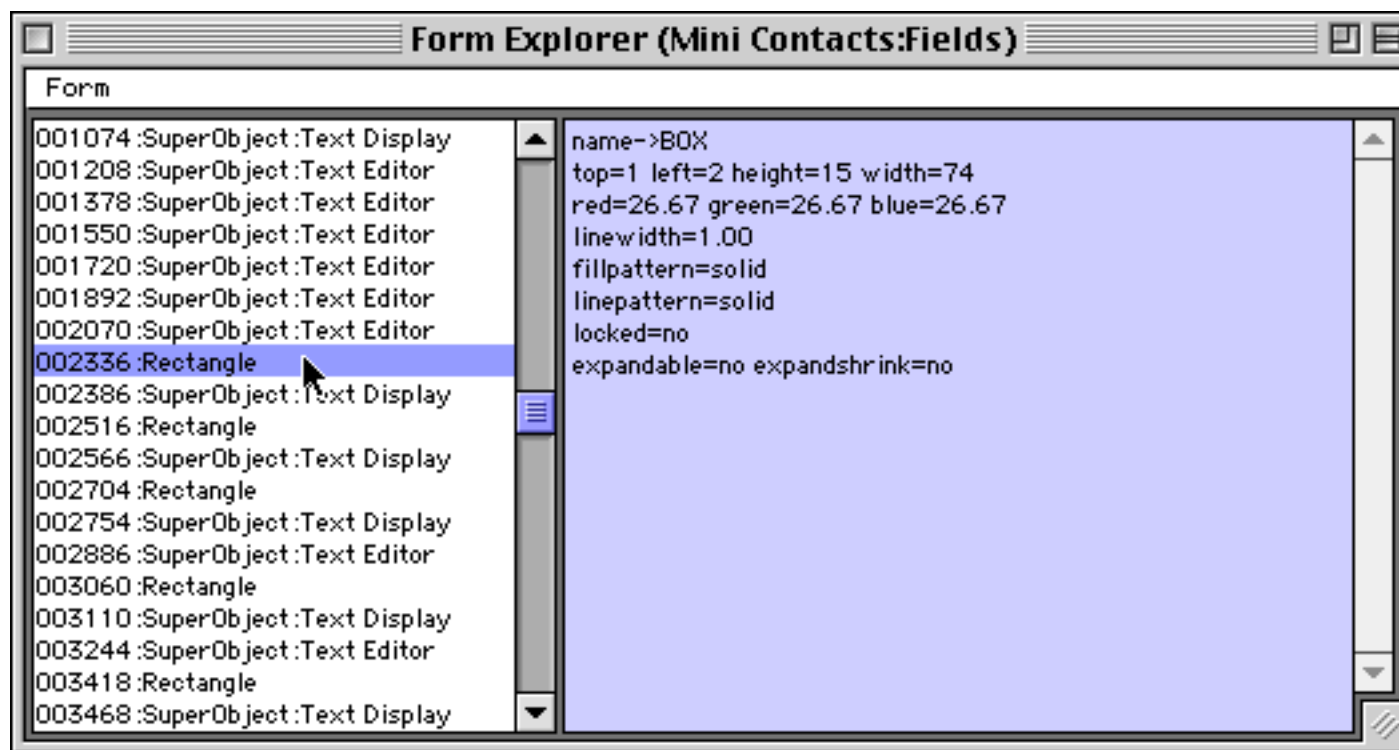
Using the Form Explorer Wizard

Panorama comes with a **Form Explorer** wizard that you can use as an alternative tool for examining and modifying (to some extent) forms. To use this wizard you must start with a form in Data Access Mode, not Graphics Mode. Choose **Form Explorer** from the Form Tools submenu of the Wizard menu.

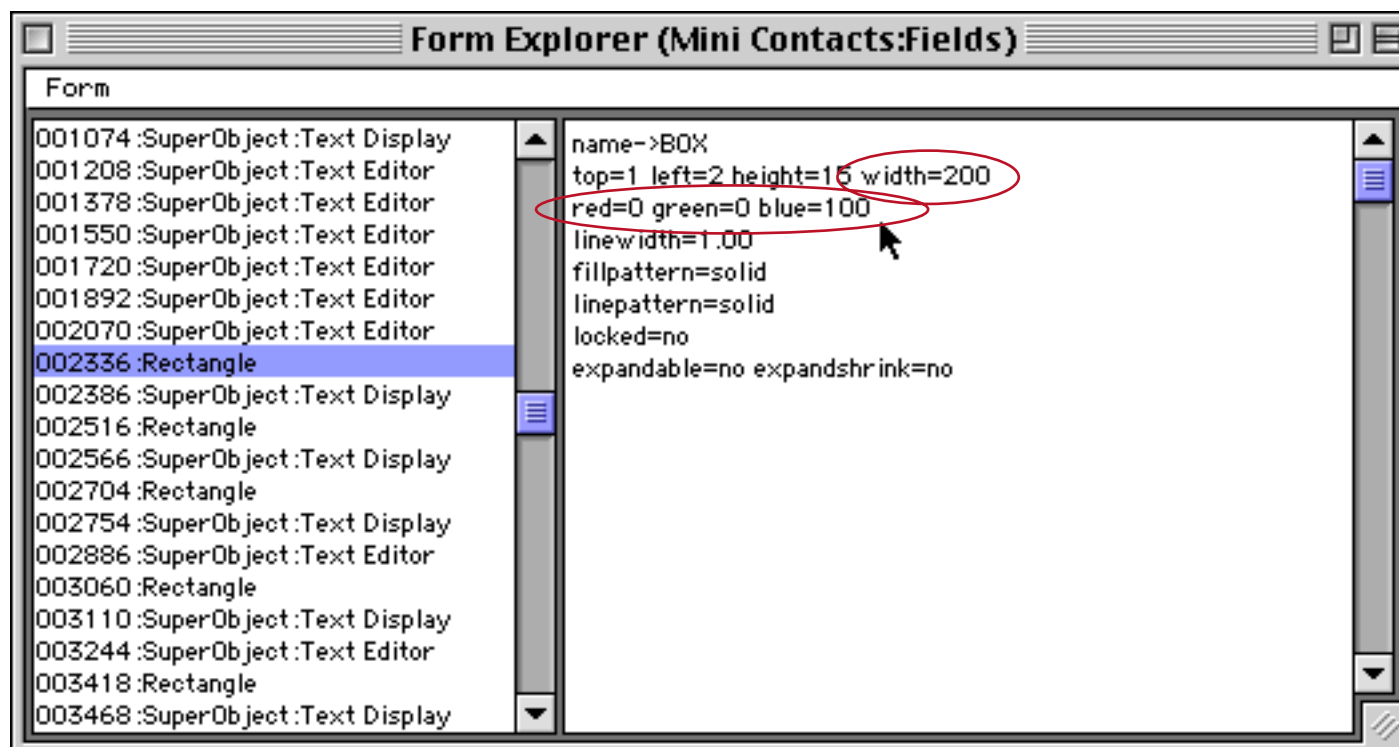
The **Form Explorer** window opens. The left hand side of this window contains a list of all of the objects in this form. The objects are listed from back (top of the list) to front (bottom of the list). The number for each object is relative to the front to back stacking order of the object - lower numbers are further towards the back.



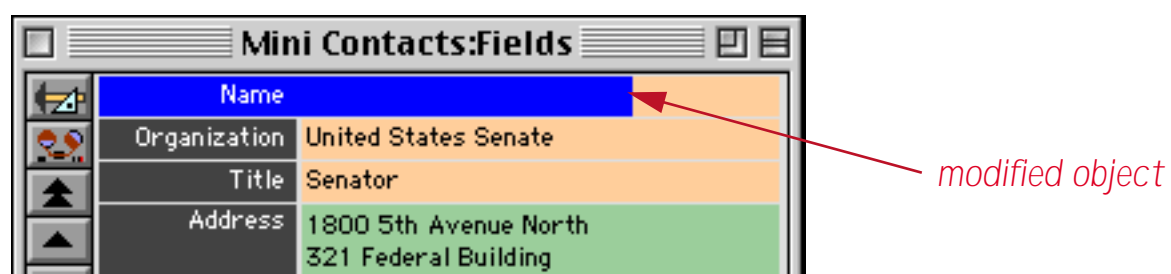
When you click on an object the object will flash on the original form (unless it is invisible). This will also cause a listing of all the object attributes to appear.



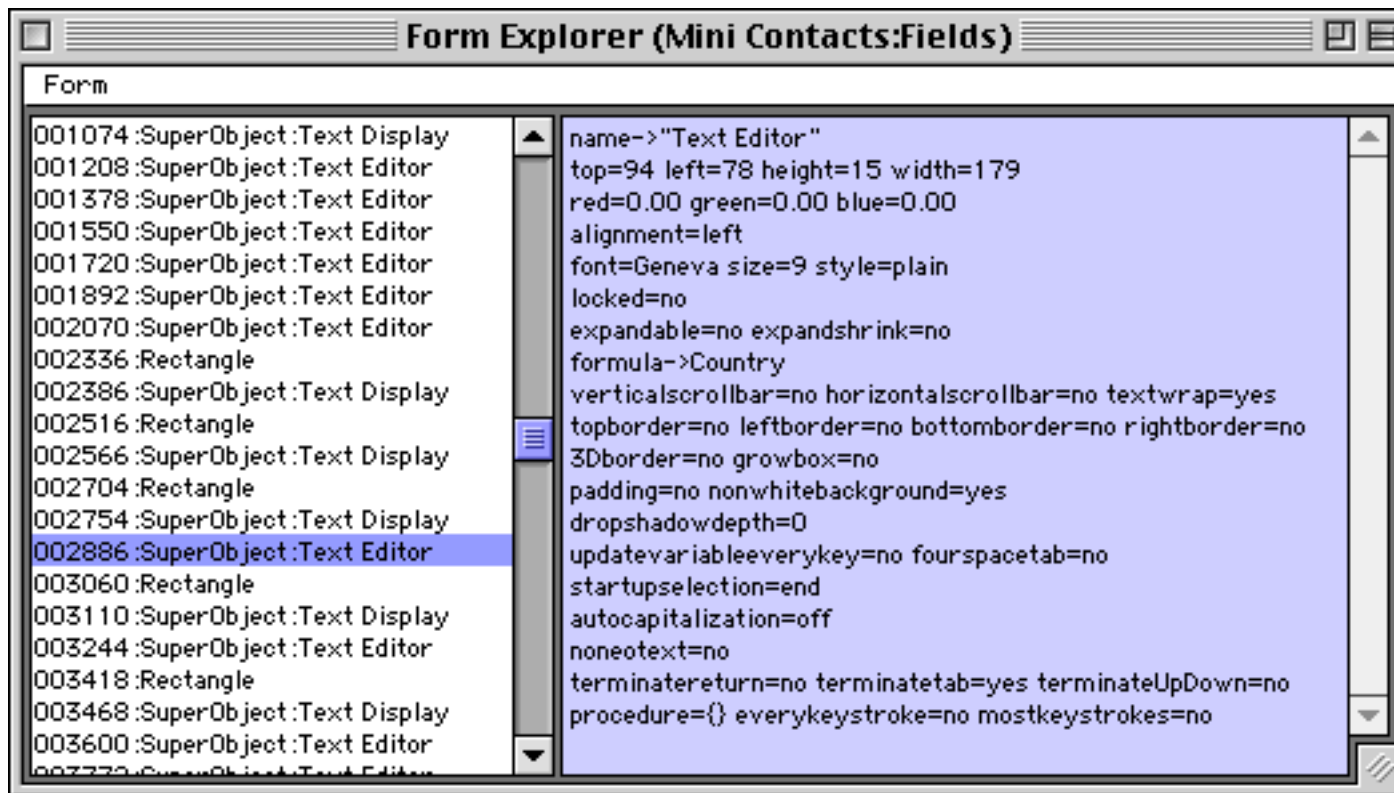
Each attribute is displayed as a name value pair, for example `name->BOX` or `width=74`. If a name/value pair is connected with an = sign then you can click on the text and modify the value. For example you can change the object width to 200 pixels and the color to solid blue.



When you press the **Enter** key the object will be modified with the new attributes.



Some objects have more attributes than others. This Text Editor SuperObject has over three dozen attributes. In general the attributes correspond to the options in the object's configuration dialog. You can edit most of these attributes with the **Form Explorer** if you wish.



You can use the Form menu to explore any open form. You should also use the menu to update the object list after you edit the form in Graphics Mode (or you can simply close and re-open the Form Explorer).



The **Form Explorer** wizard can be a great tool for deciphering a form created by another person. You can quickly zero in on which fields and procedures are used where.

Chapter 15: Displaying and Editing Text



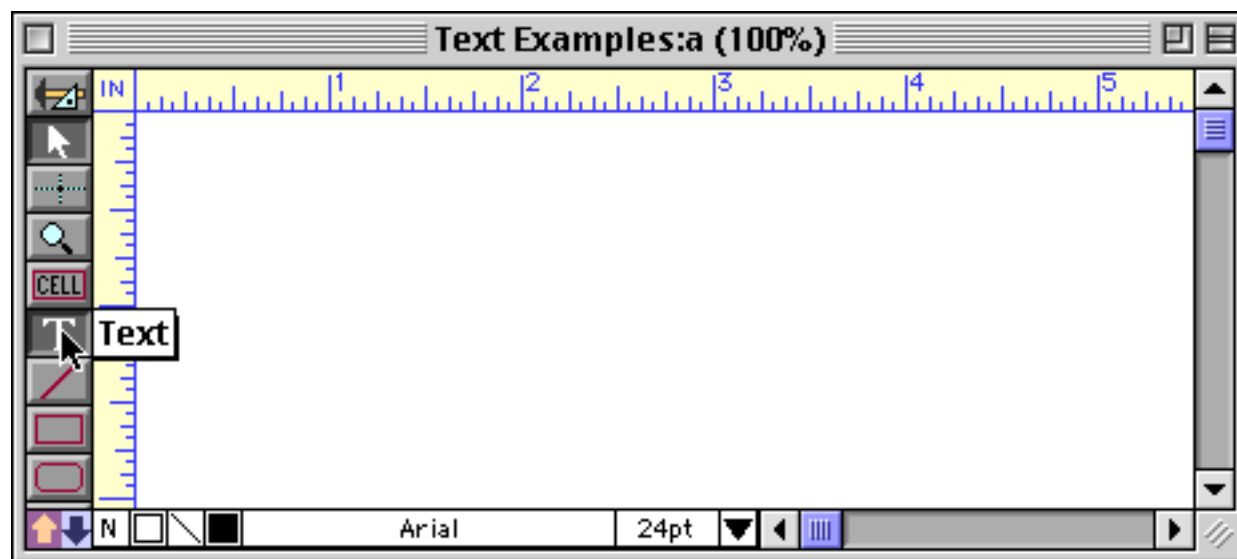
Graphics and icons are powerful tools, but written text is still the primary medium for communication and record keeping. Panorama forms can display both permanent text (for captions, titles, instructions, etc.) and textual information from the database.

Displaying Text

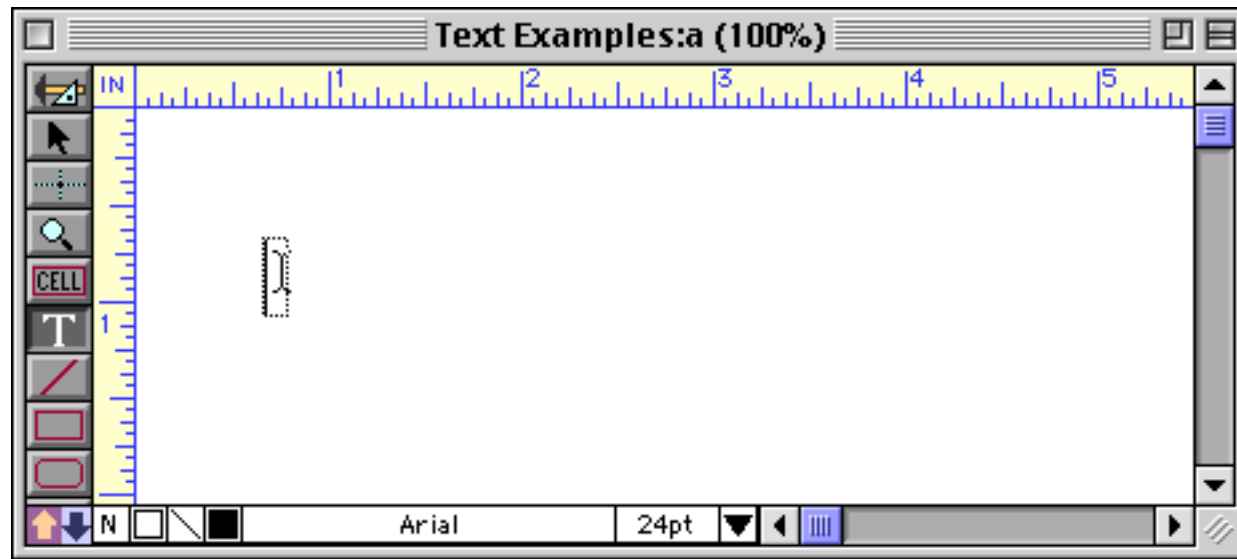
This chapter is divided into two sections, displaying text and editing text. In this first section we'll consider displaying text, both fixed text and text that changes depending on the information in the database or in a variable.

Fixed Text Objects

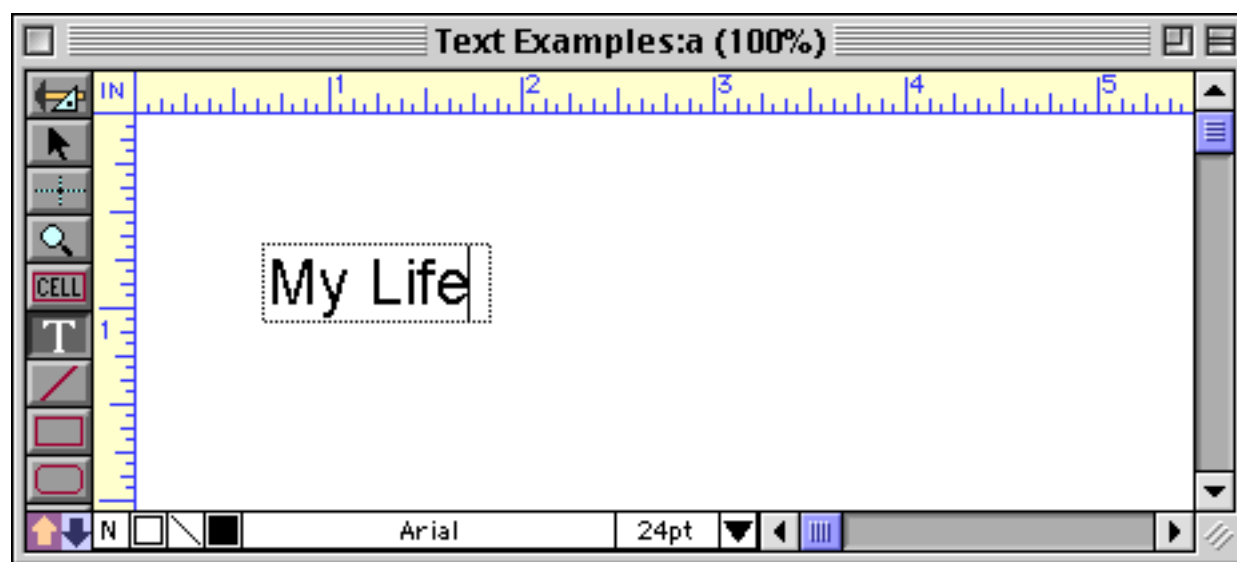
Panorama has two different kinds of fixed text, **click text** and **auto-wrap text**. Both types of fixed text are created with the **Text** tool.



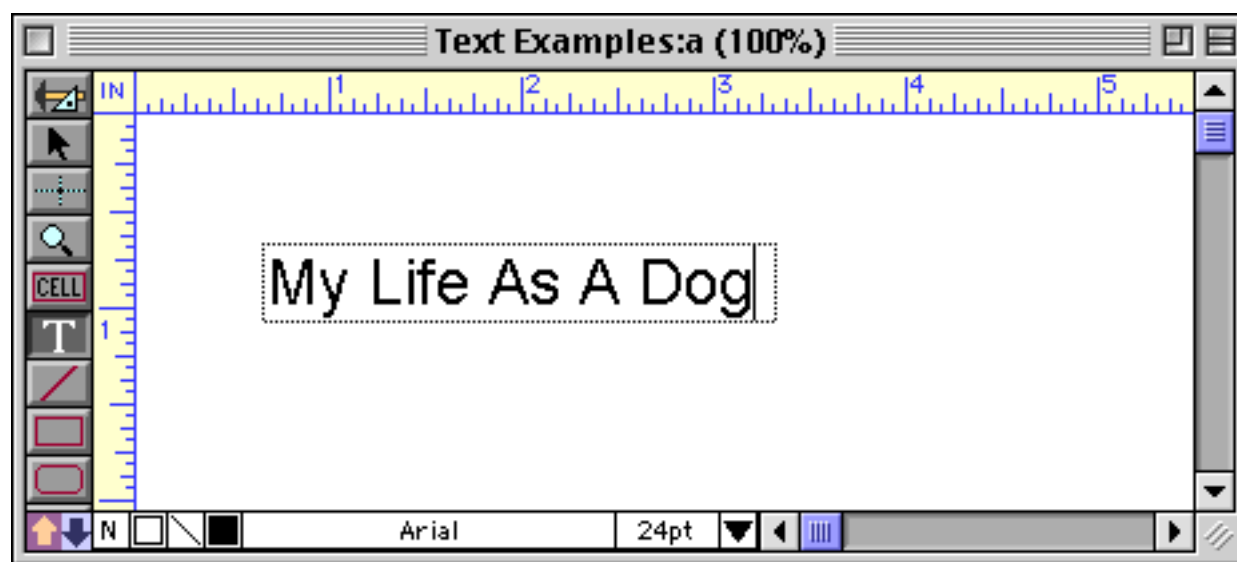
Once the Text tool is selected you can create click text simply by clicking on an empty spot on the form.



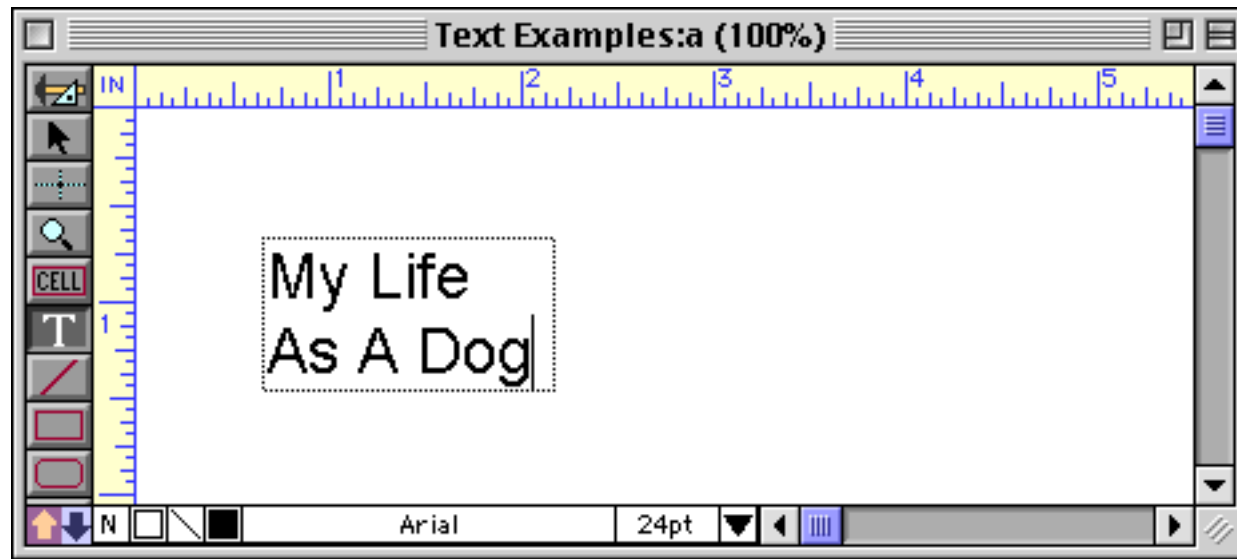
Now you can simply start typing.



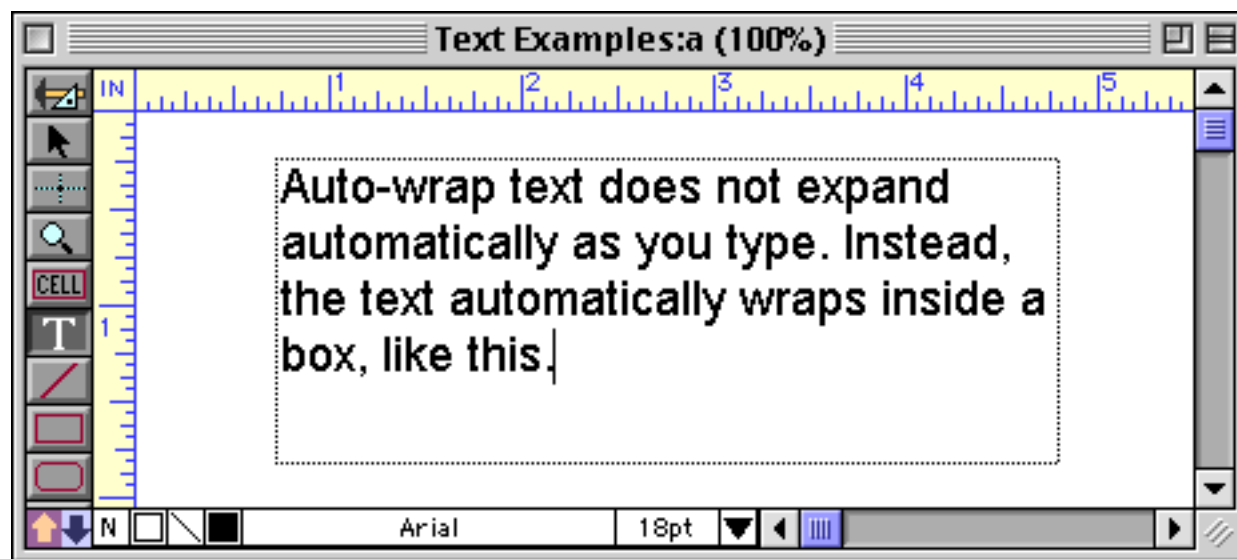
As you type each character, the click text object automatically expands.



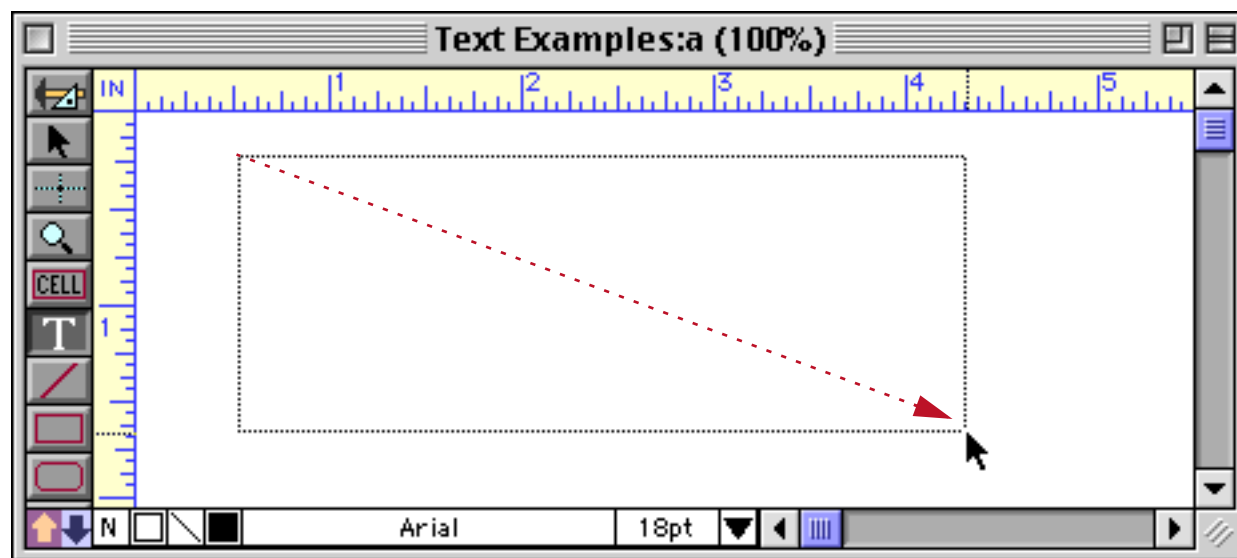
You can add additional lines to the click text by pressing the **Return** key.



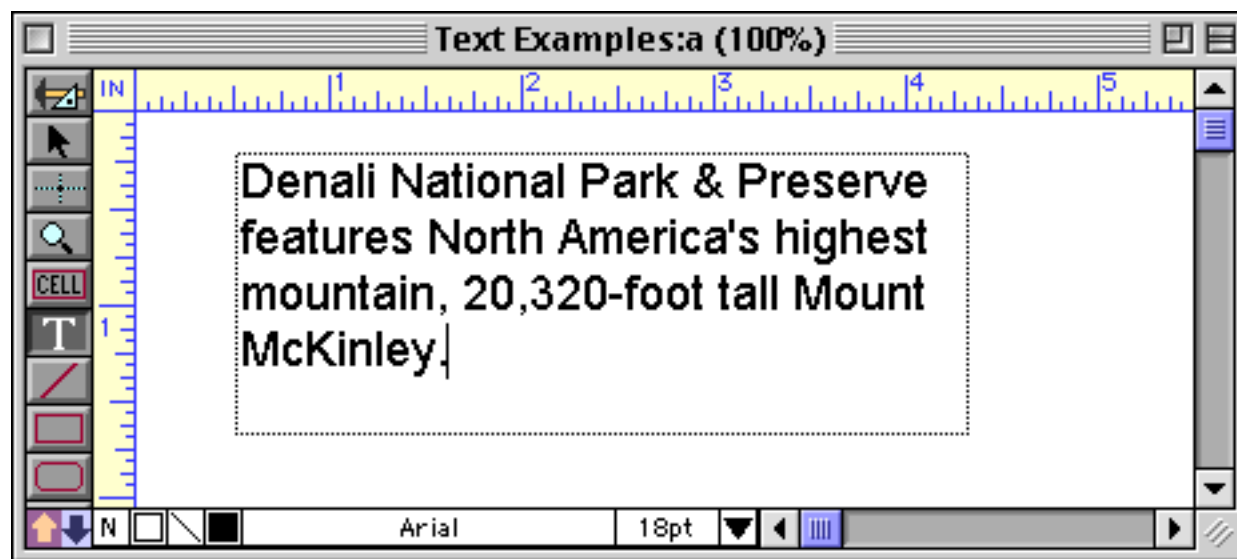
Auto-wrap text does not expand automatically as you type. Instead, the text automatically wraps inside a box.



To create **auto-wrap text**, start by selecting the **Text** tool, just like for **click text**. But instead of clicking on the form, drag the mouse to define the size and location of the box (don't worry about exact positioning, you can adjust it later).



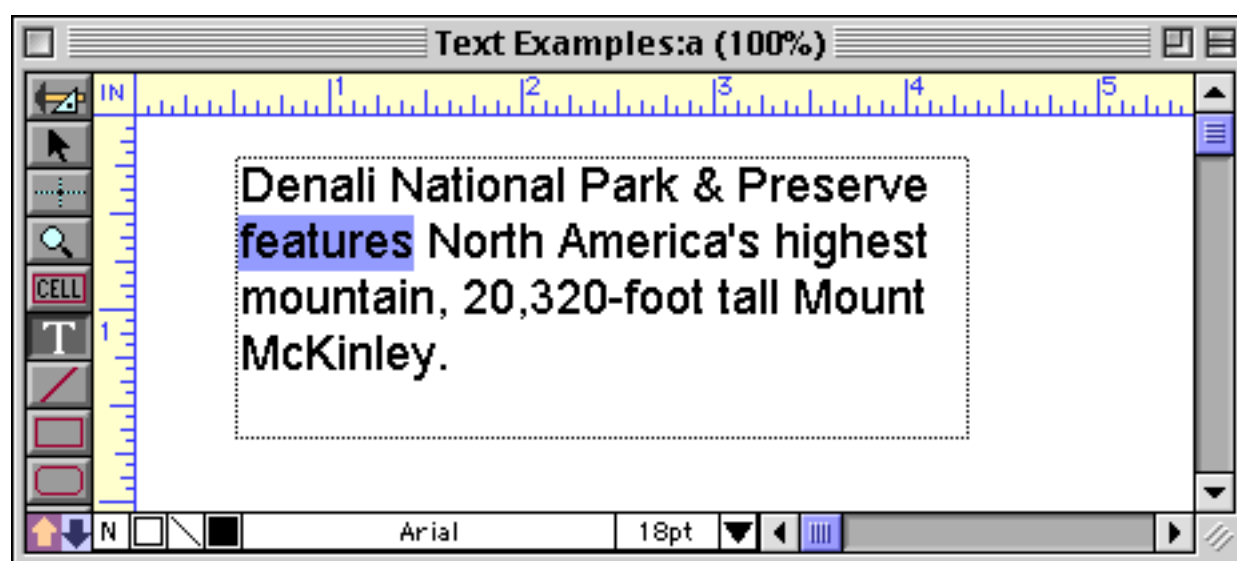
Once the box is defined you can start typing in text. The text will automatically wrap to the next line when it reaches the right edge of the box.



To help you keep track of the type of text you have created, the graphic editor displays a dotted border around all auto-wrap text objects. (This border disappears when the form is switched to data access mode.)

Editing Fixed Text

To edit text within an object, you must use the **Text** tool. Once this tool is selected, move the mouse over the text you want to edit. When the mouse moves over the text it changes from an arrow to an I-beam. Use the I-beam to edit the text—click to select an insertion point, drag to select a range of characters, or double-click to select a word.



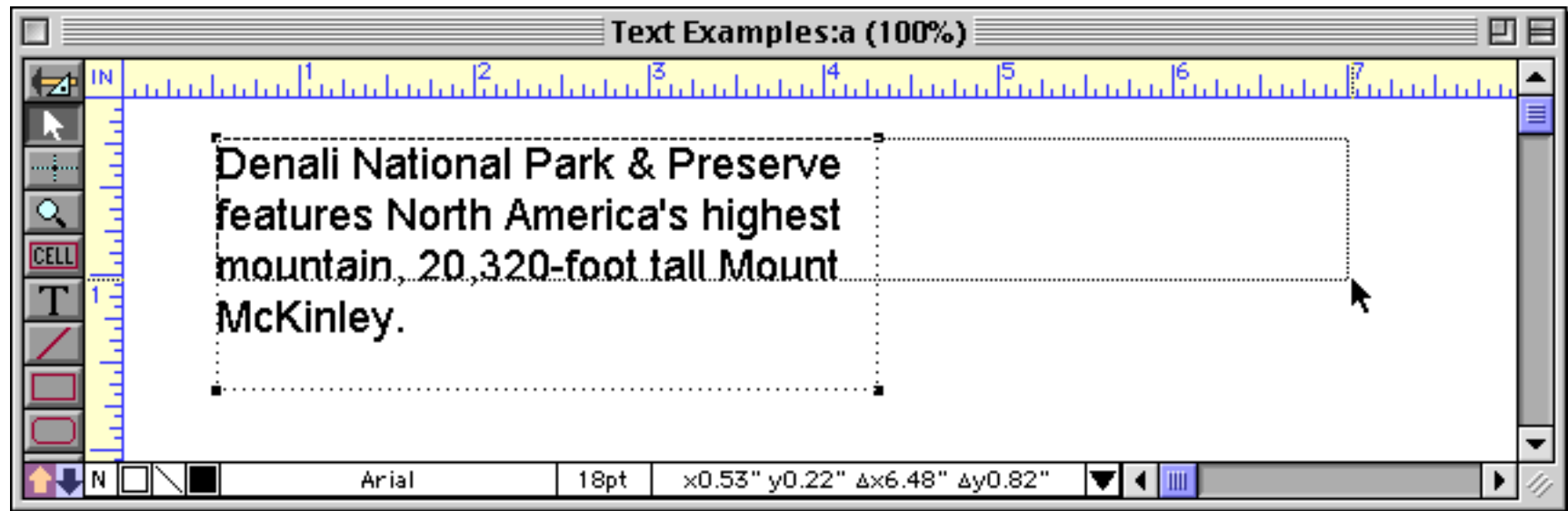
When you have finished editing the text, either click on the next text object you want to edit or click on the **Pointer** tool.

Note: If a text object doesn't contain any text at all, the entire object will be deleted from the form. The first thing you should do after creating a text object is to type at least one character into it.

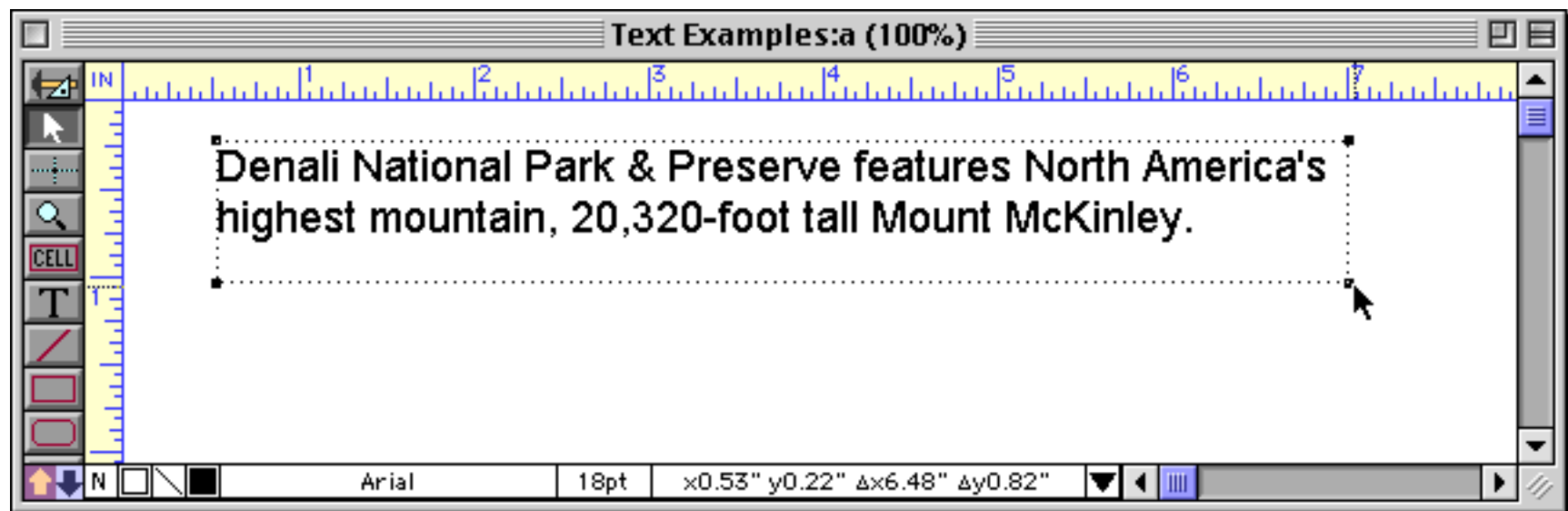
Moving and Resizing Fixed Text Objects

Text objects can be moved just like any other shape. Use the **Pointer** tool to drag the text to the new location.

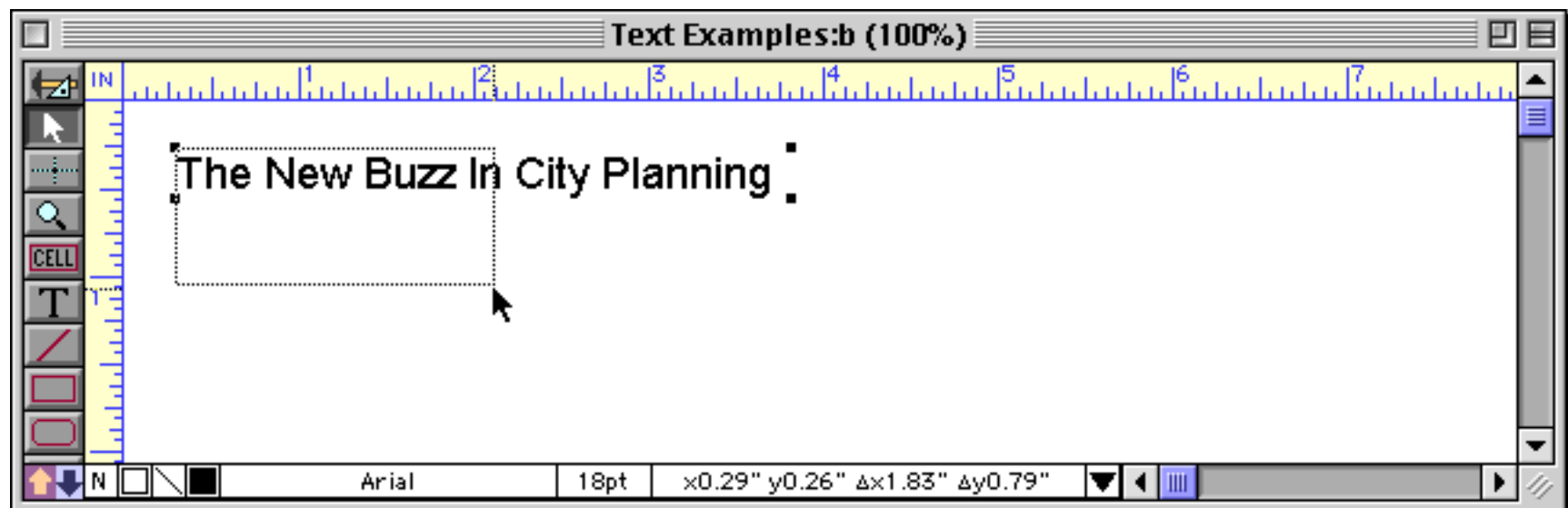
The size and shape of a text object can be changed by dragging one of the handles to a new position.



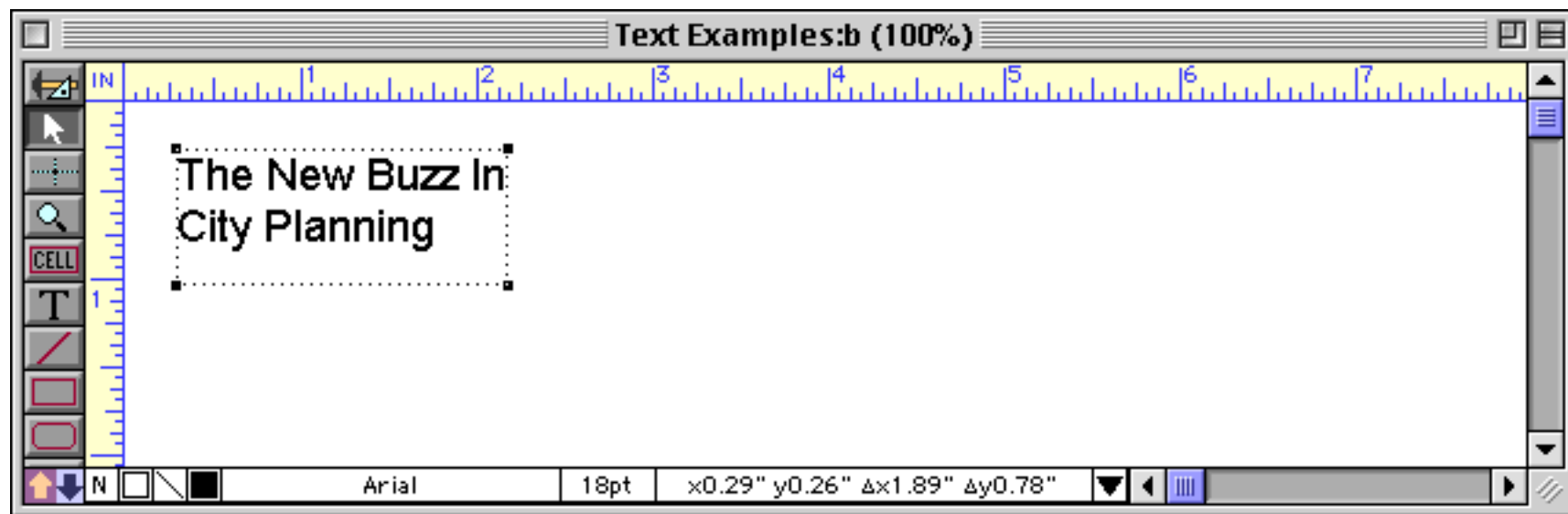
If this is done to auto-wrap text, the text will re-flow into the new size.



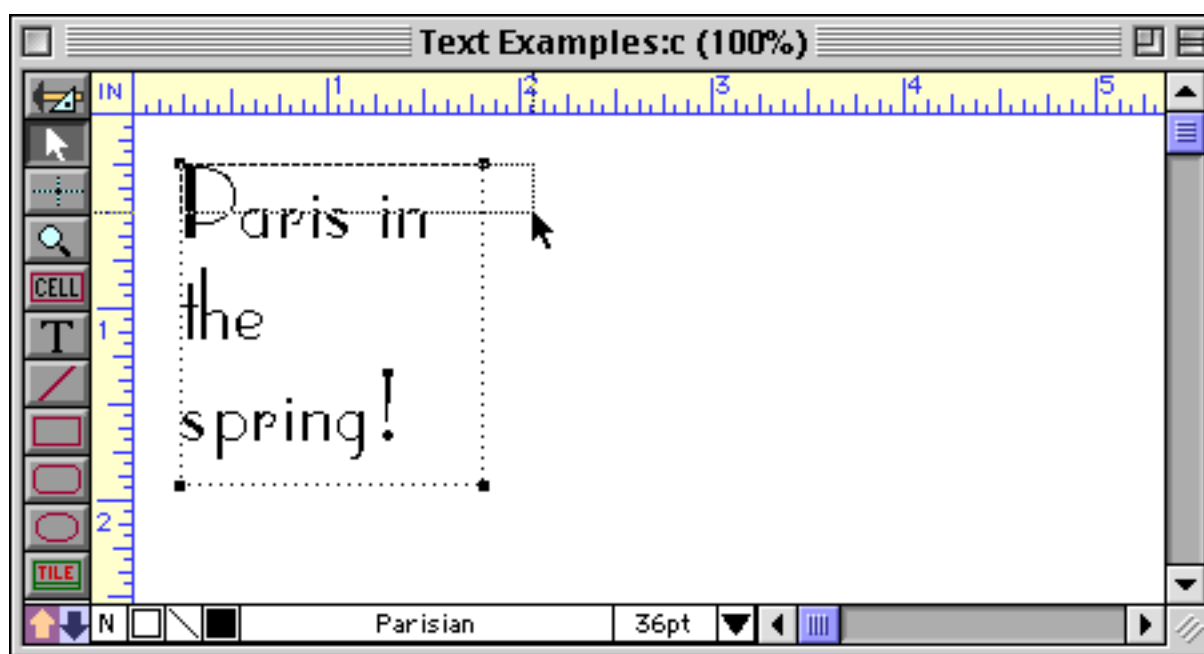
If you change the size of click-text, it will be converted into auto-wrap text.



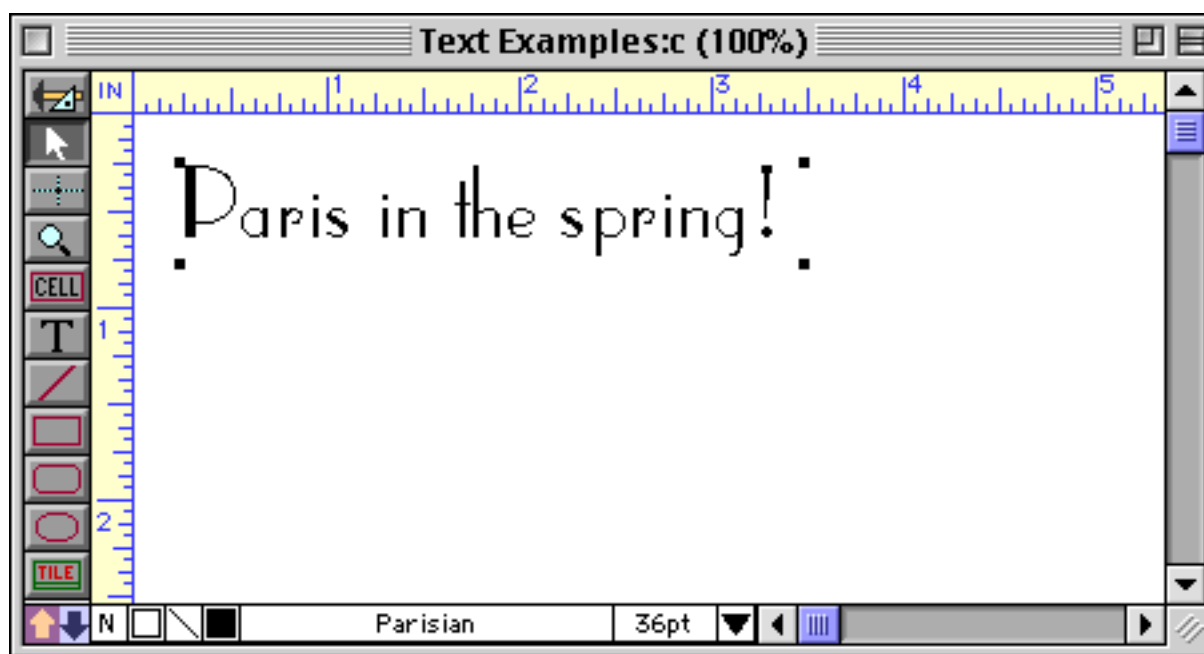
Once the click-text is converted to auto-wrap text it will re-flow into the new size.



To convert auto-wrap text into click text, resize the object so that it is less than one line high or less than one character wide.



Panorama converts the auto-wrap text into click text.



Later the text can be converted back into auto-wrap text simply by expanding the height again.

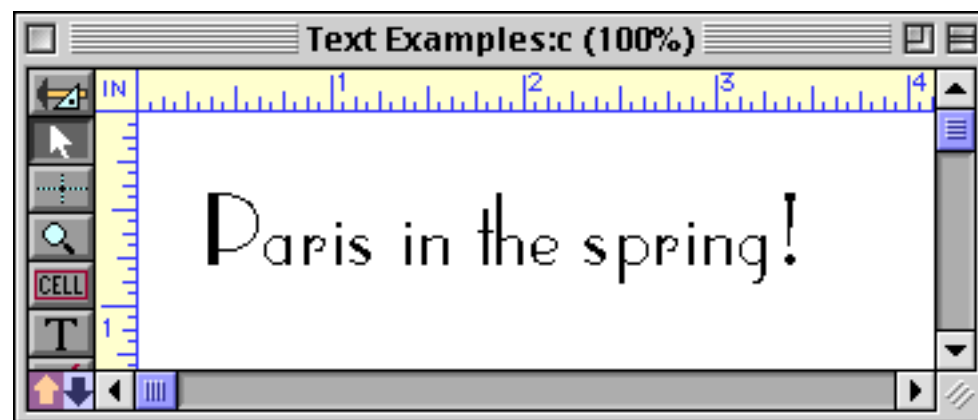
Text Font, Size and Style

Text in a form may be displayed using any font installed in your system. However, you cannot mix different text styles, sizes, or fonts within a piece of text. To change the font, size, or style of an entire text object, use either the **Pointer** or the **Text** tools to select the object (or objects), then change the text appearance by choosing from the **Font**, **Size**, and **Style** Menus. You can also change the color of the entire text object with the **Color** menu (in the Graphics menu or the Graphic Control Strip).

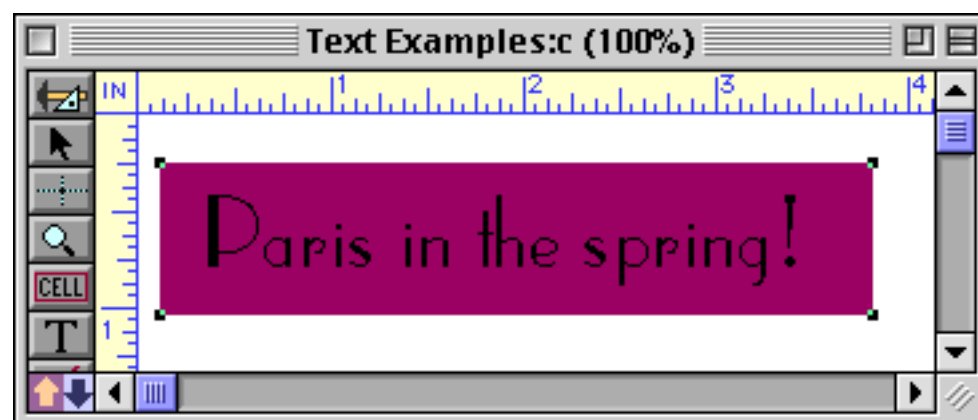
If you need a size that is not listed in the **Size** menu pick **Other**. You can also change the text size in 1 point increments by choosing **Up** or **Down** from the **Size** menu.

Creating Reverse Type (White on Black)

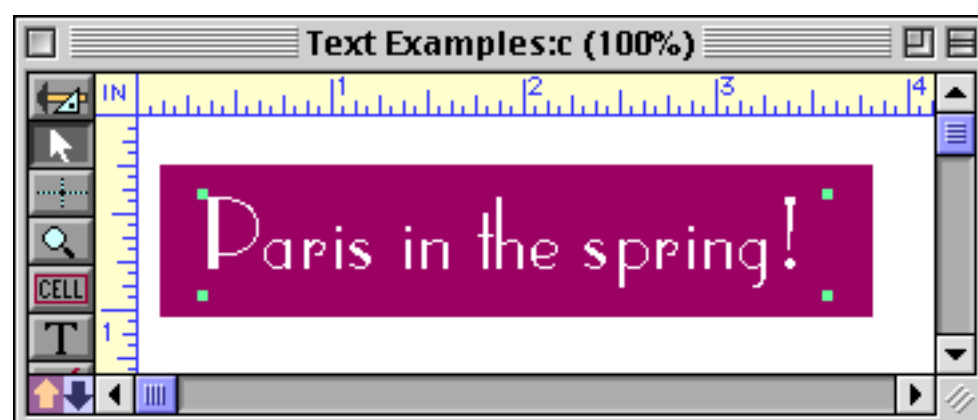
To print reverse type, start with regular text.



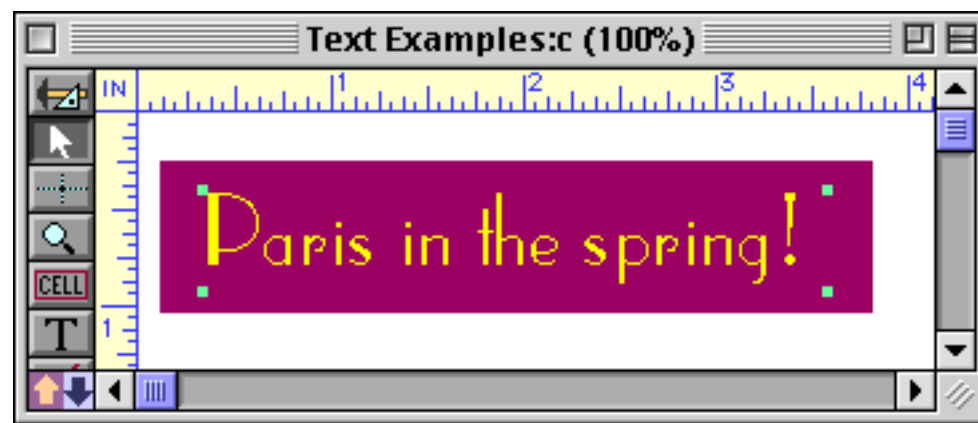
Next, put a black object (or any dark color) behind the type. Use **Send To Back** to send the dark object to the back (see "[Changing the Stacking Order](#)" on page 569).



Select the text object, then use the **Line Pattern** menu (see "[Line Pattern](#)" on page 523) to set the text to white.

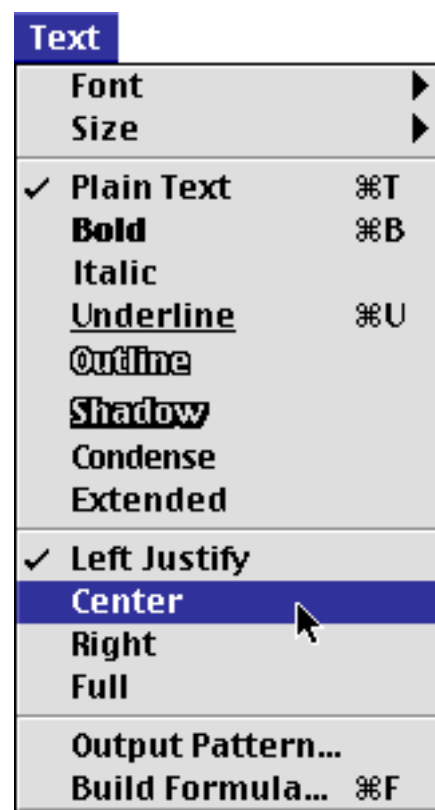


An alternative technique is to leave the Line Pattern alone and use the Color menu (see “[Color](#)” on page 526) to set the text to white or some other light color.



Text Alignment

Text is usually aligned flush left within the text object. Use the Left Justify, Center, and Right commands (Text menu) to change the alignment of the text.



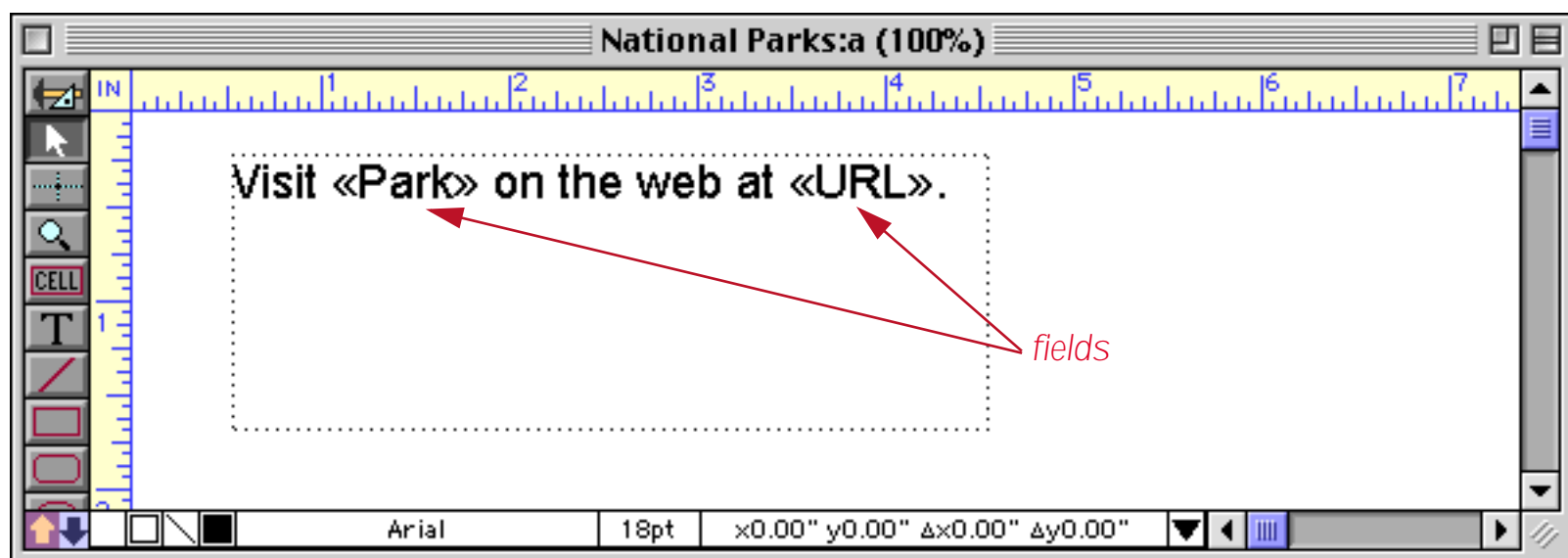
Displaying Data in Auto-Wrap Text

Auto-wrap text objects are not limited to fixed text. They can also be used to display data, either alone or in combination with fixed text.

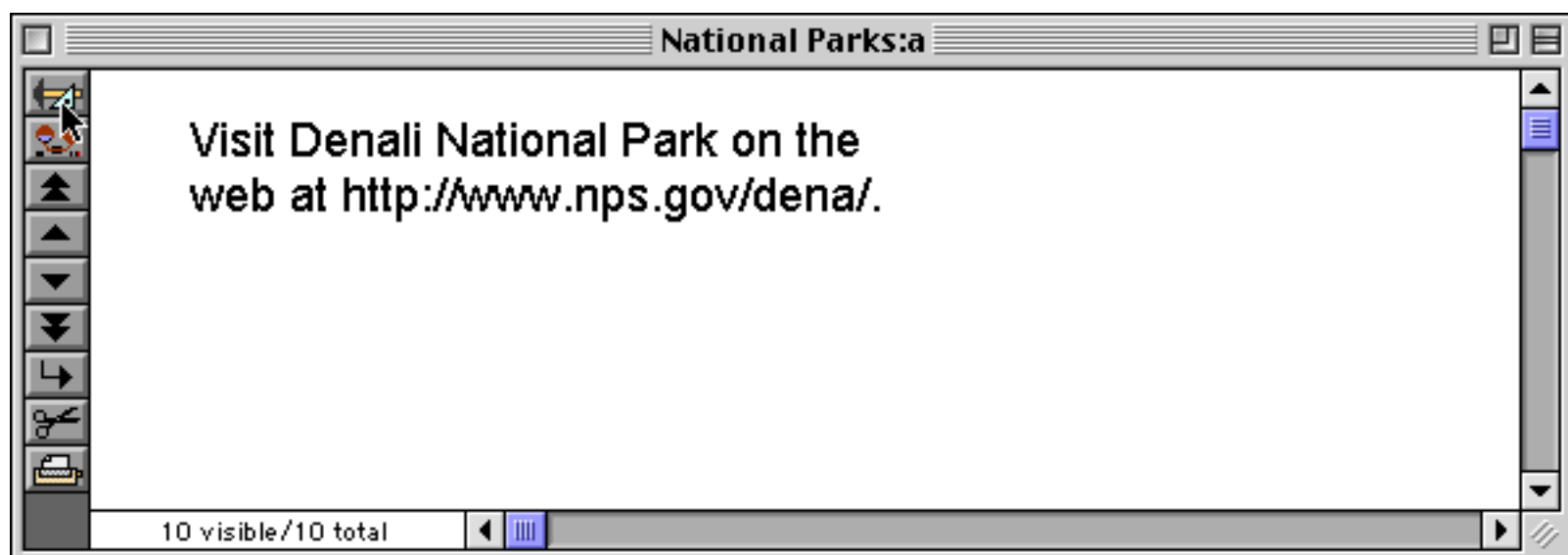
To display a field into the middle of an auto-wrap text object, type the name of the field into the text. Surround the name with the « and » chevron characters (for example «First Name» or «Zip Code»). On a Macintosh the « chevron is **Option-\<** and the » chevron is **Shift-Option-\<**. On Windows systems the « chevron is **Alt-0171** and the » chevron is **Alt-0187**. To illustrate this technique, suppose you had a database of national parks like this.

Park	Address	City	Sta	Zip	Phone	Fee	URL
Cumberland Island National Seast	P.O. Box 806	St. Marys	GA	31558	(912) 882-4336	\$4.00	http://www.nps.gov/cuis/
Death Valley National Park	P.O. Box 579	Death Valley	CA	92328	(760) 786-2331	\$10.00	http://www.nps.gov/deva/
Denali National Park	P.O. Box 9	Denali Park	AK	99755	(907) 683-2294	\$5.00	http://www.nps.gov/dena/
Everglades National Park	40001 State R	Homestead	FL	33034	(305) 242-7700	\$10.00	http://www.nps.gov/ever/
Fire Island National Seasore	120 Laurel Str	Patchogue	NY	11772	(631) 289-4810	\$0.00	http://www.nps.gov/fiis/
Gettysburg National Military Par	97 Taneytown l	Gettysburg	PA	17325	(717) 334-1123	\$0.00	http://www.nps.gov/gett/
Glacier National Park	P.O. Box 128	West Glacier	MT	59936	(406) 888-7800	\$5.00	http://www.nps.gov/glac/
Grand Canyon National Park	P.O. Box 129	Grand Canyo	AZ	86023	(520) 638-2631	\$10.00	http://www.nps.gov/grea/
Grand Teton National Park	P.O. Drawer 17	Moose	WY	83012	(307) 739-3300	\$20.00	http://www.nps.gov/grte/
Great Basin National Park		Baker	NV	89311	(775) 234-7331	\$0.00	http://www.nps.gov/grba/

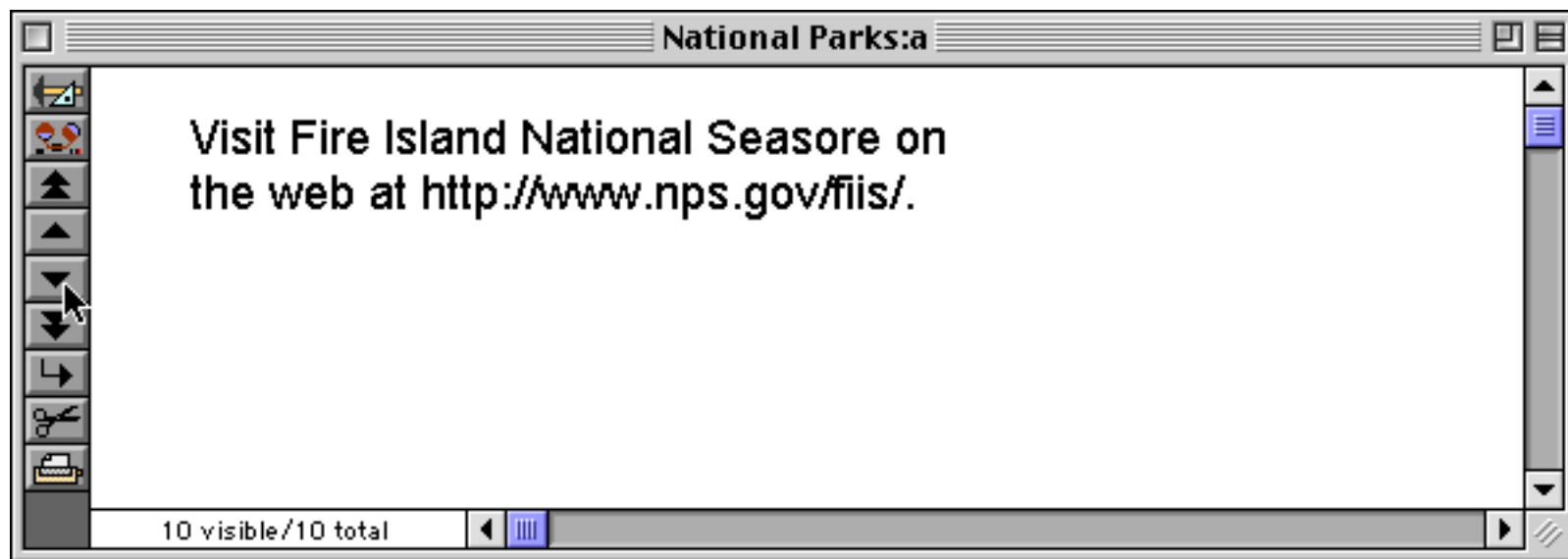
Now you can create an auto-wrap text object that contains fields, like this.



When the form is switched to Data Mode (see “[Form Modes: Data Access vs. Graphic Design](#)” on page 485) Panorama will substitute the actual data in this fields, like this.



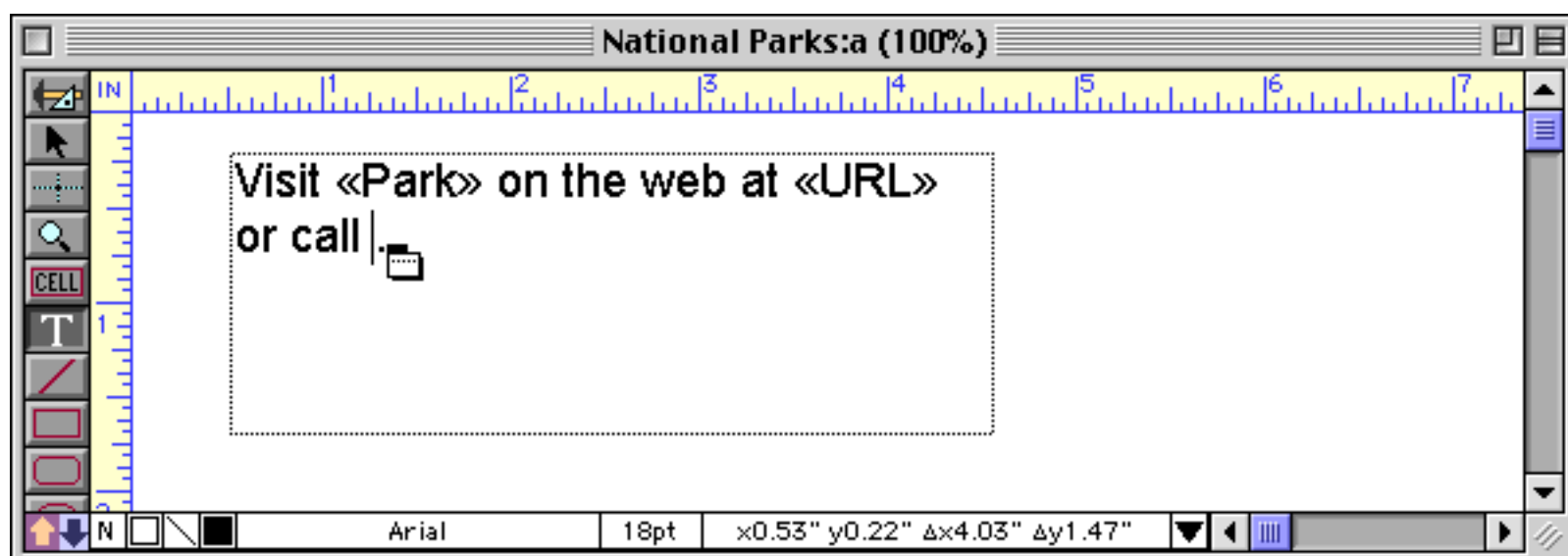
As you move from record to record, the substituted text will change appropriately.



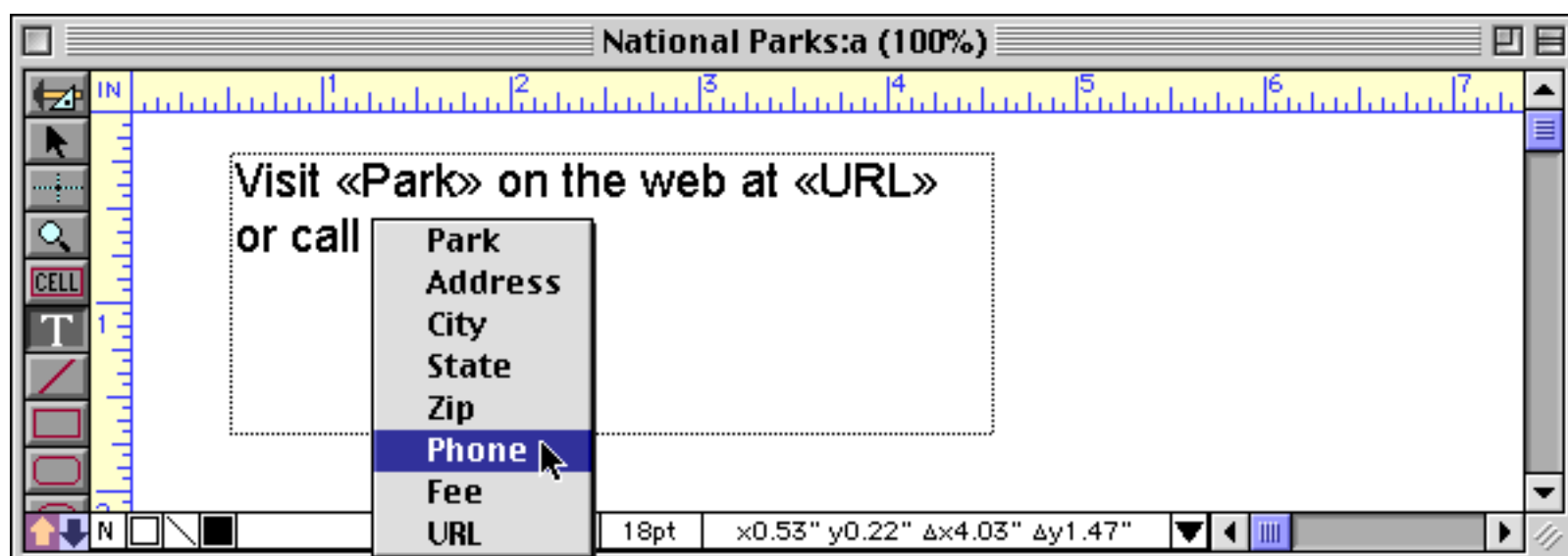
Since this technique “merges” the database information with the fixed text, it is sometimes called **data merging**.

Data Merge Pop-Up Menu

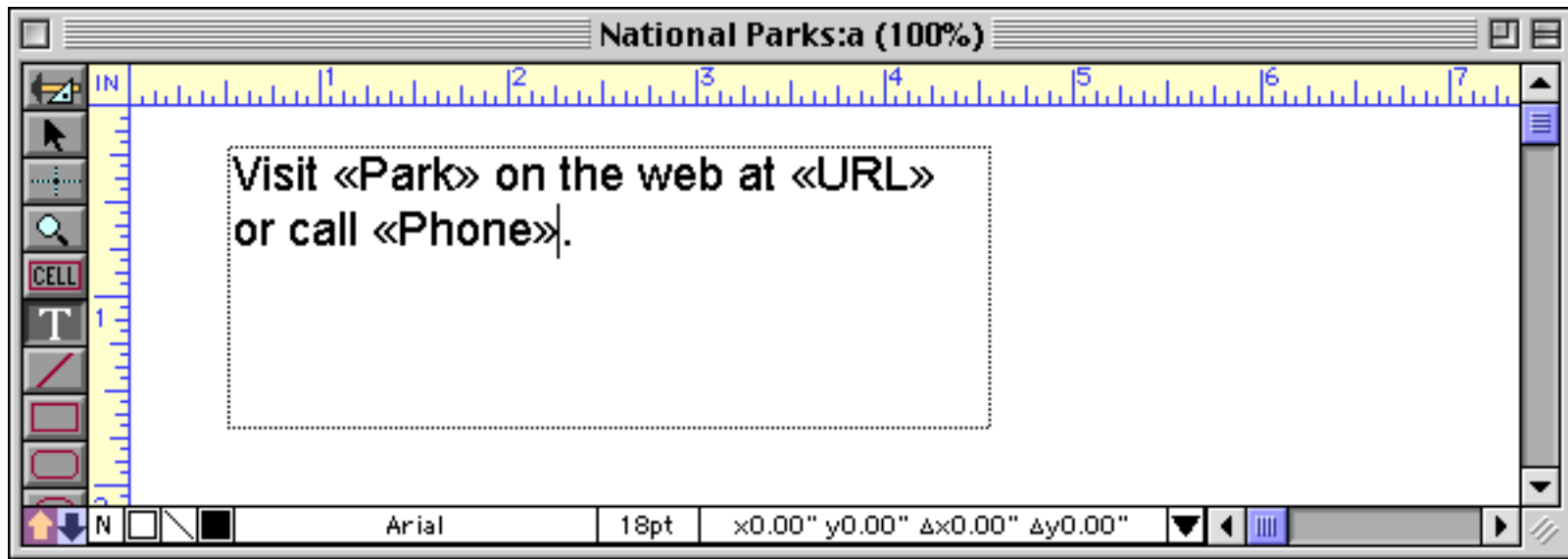
Typing in exact field names with chevrons can be a pain, so Panorama has a pop-up menu that can type in the field names for you, including the « and » chevrons. To use this menu, first select the **Text** tool. Then click on the text to create an insertion point. Once the insertion point is set, press either the **Command** key (Macintosh) or **Control** key (Windows) to change the cursor from an I-beam to a tiny menu icon.



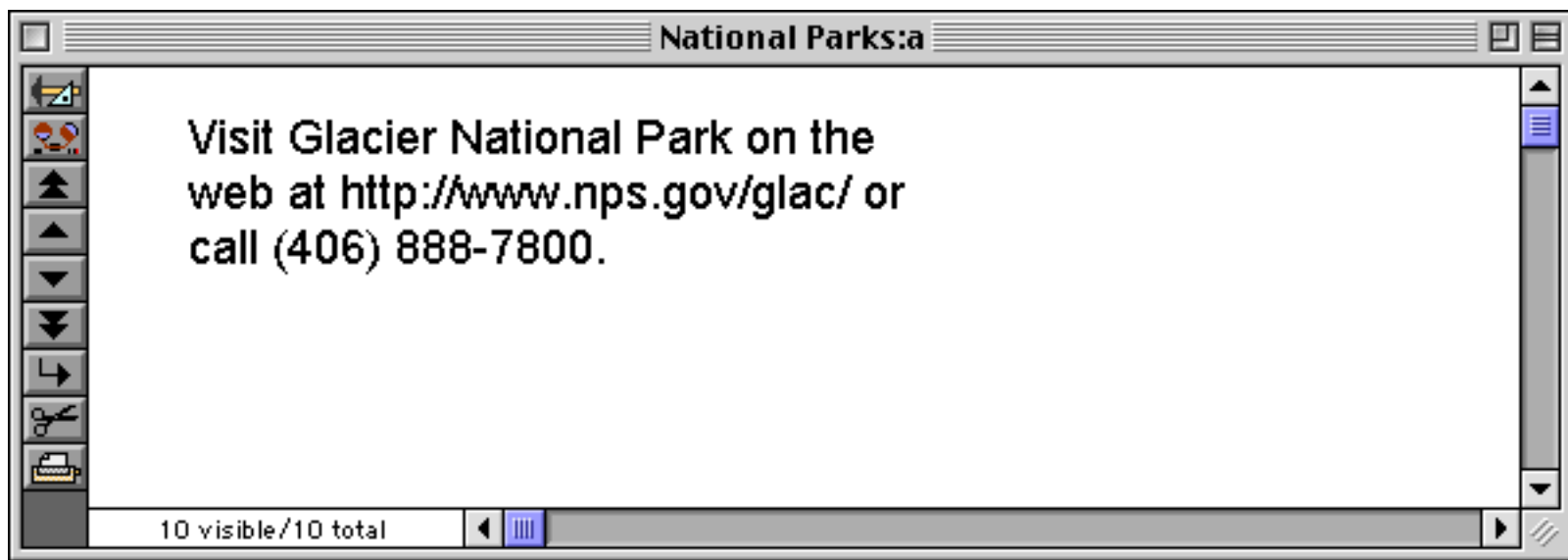
With the **Command/Control** key still held down, press the mouse to activate the pop-up menu



then pick the field name you want to insert.

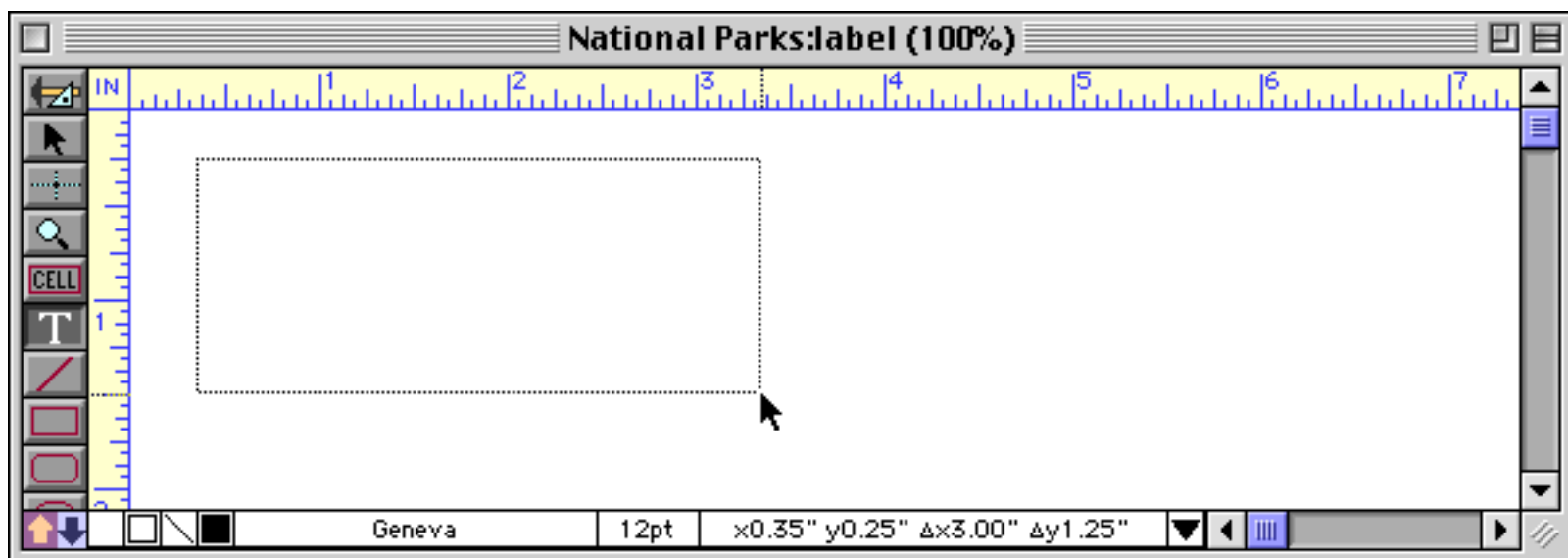


Switch back to Data Access Mode to see the final result.

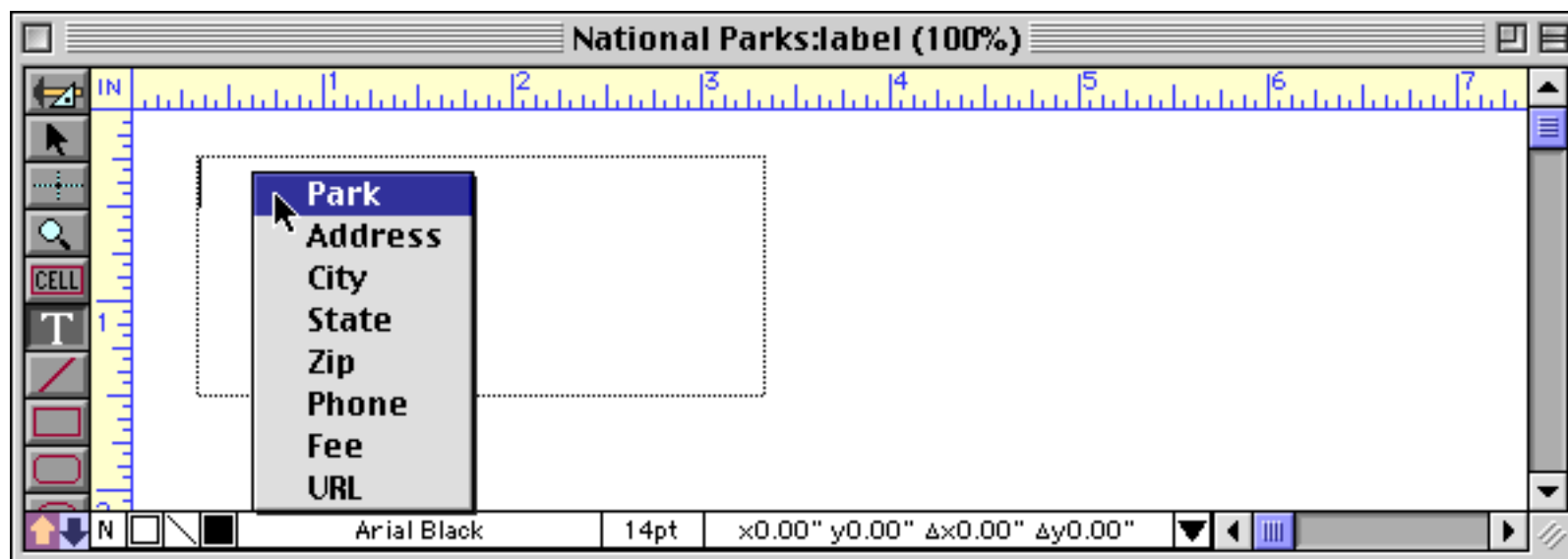


Using Data Merge to Create Address Labels

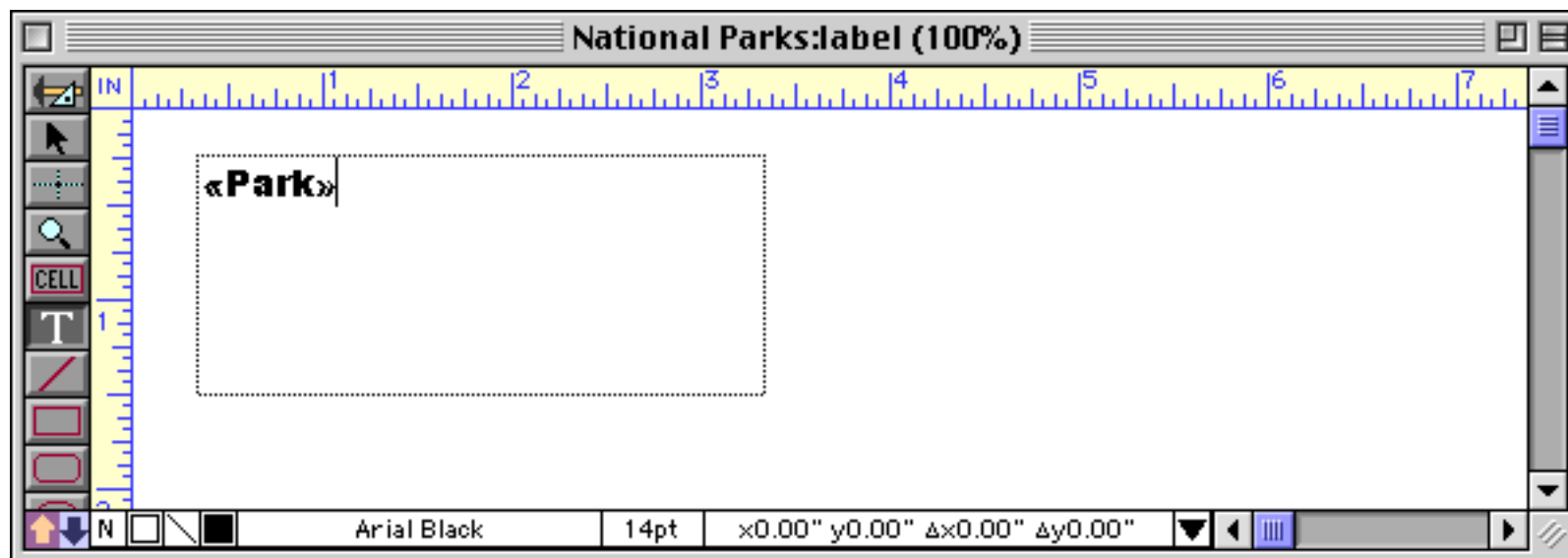
Data merge is an excellent way to create address labels. To create an address label using data merge, start by creating an auto-wrap text object the size of the label.



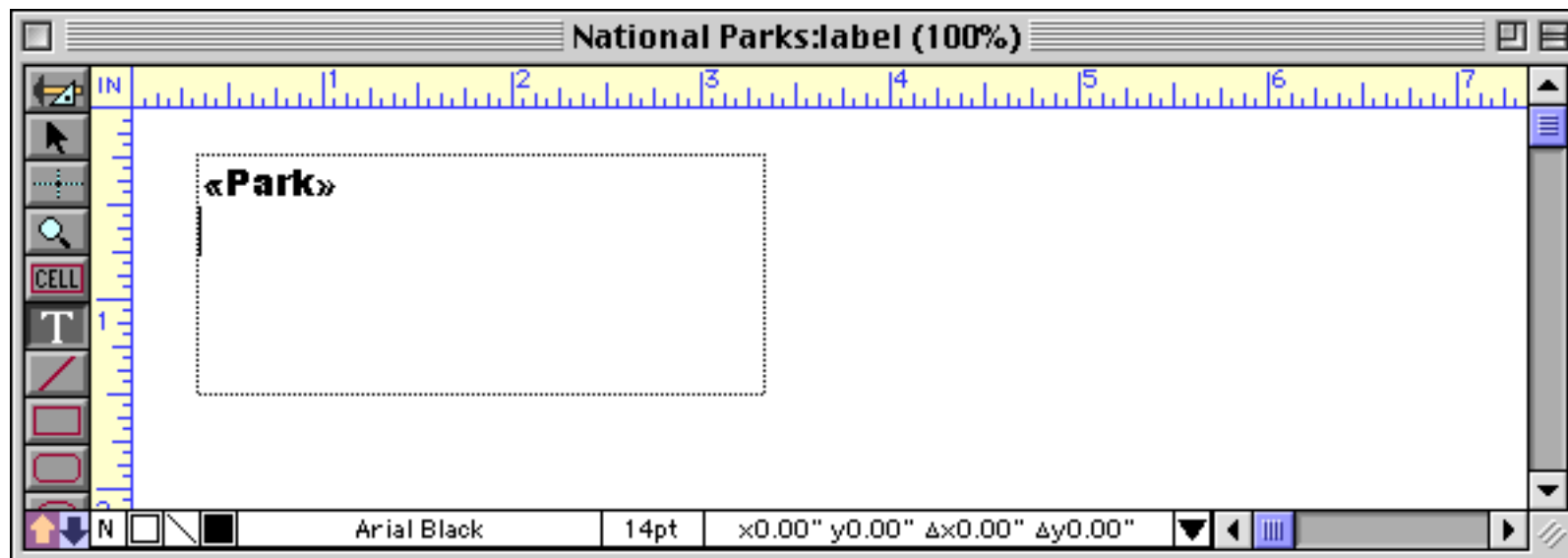
Hold down the **Command** key (Mac) or **Control** Key (Windows) and select the first field name from the pop-up menu.



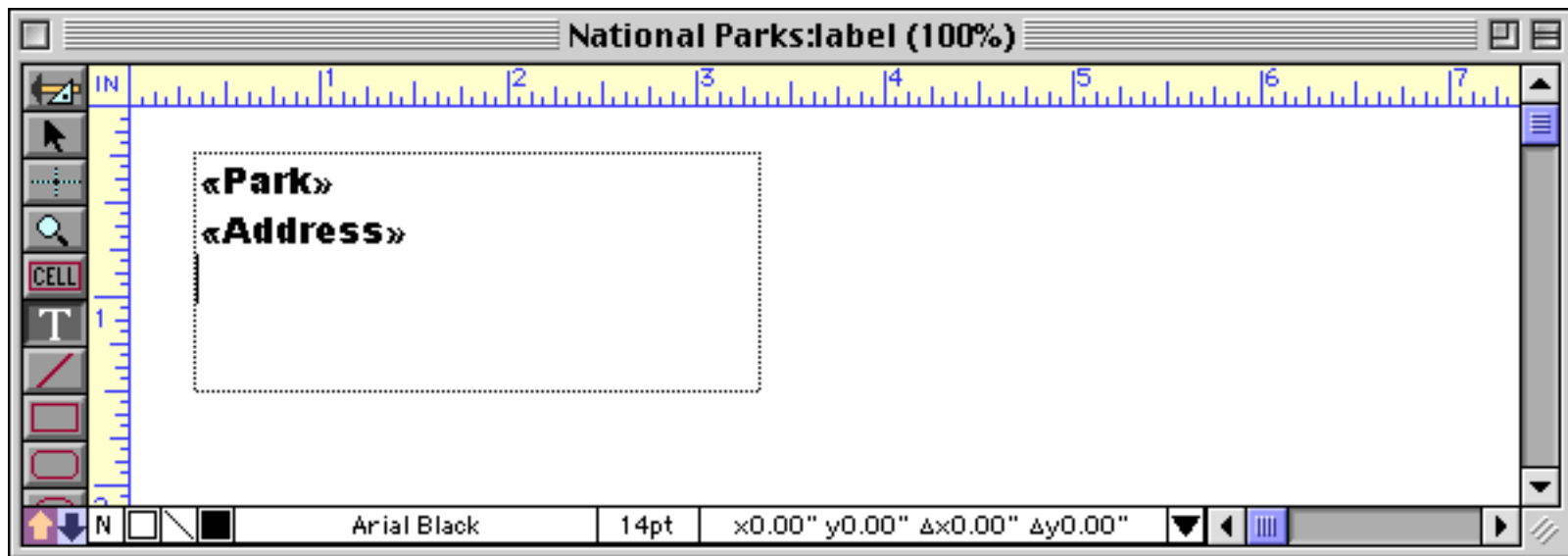
When you release the mouse button Panorama will insert the field name. The insertion point is at the end of the line.



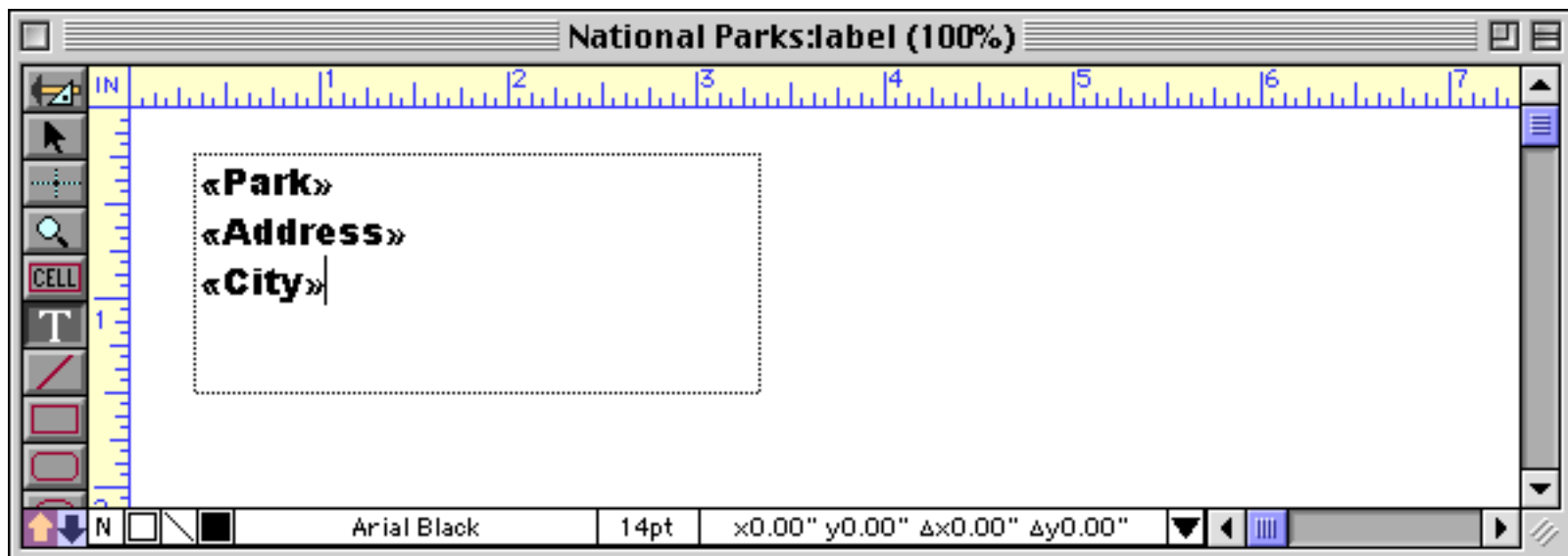
The first line is complete, so press **Return** to advance to the second line.



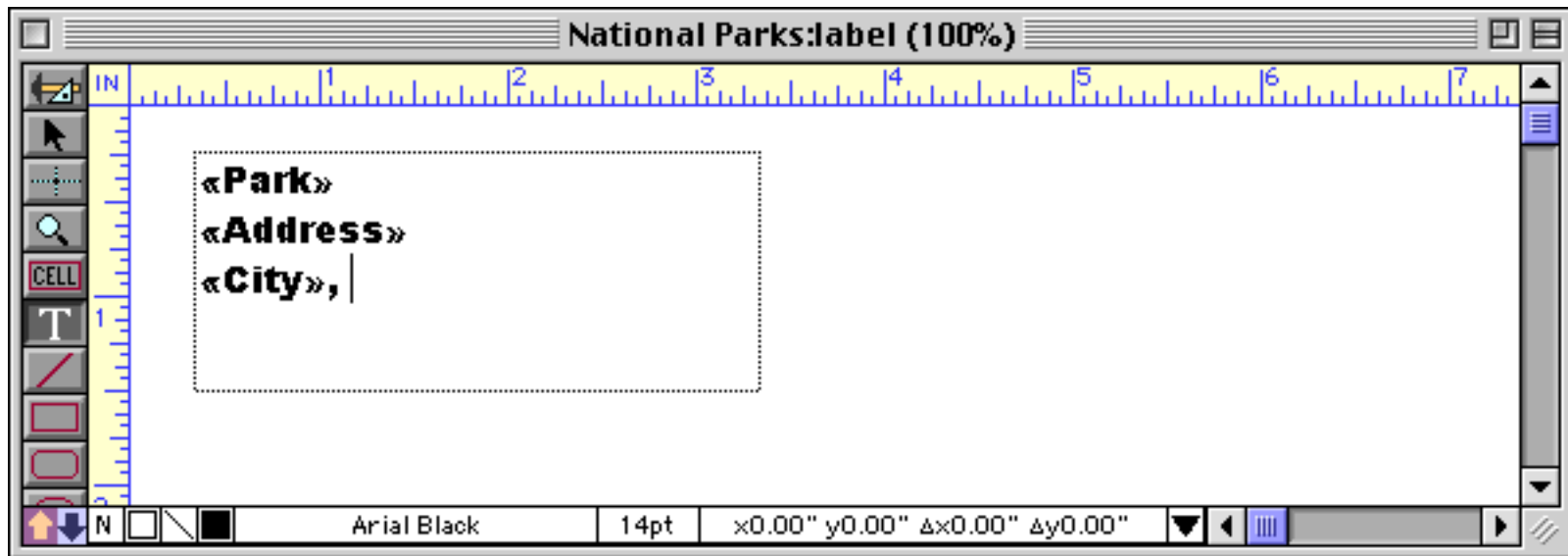
Repeat the same steps for the second line: hold down the **Command/Control** key, select **Address** from the pop-up menu, and press **Return**.



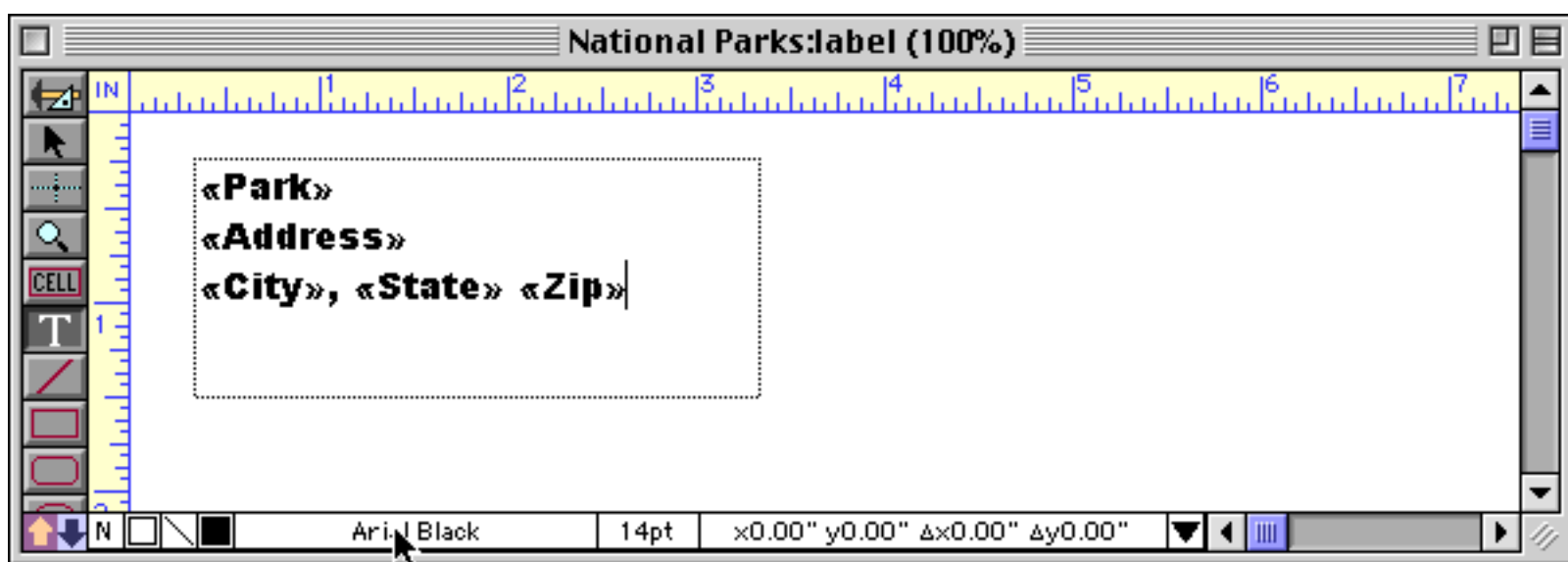
The third line contains three fields: City, State and Zip. Start by using the pop-up menu to enter the City field.



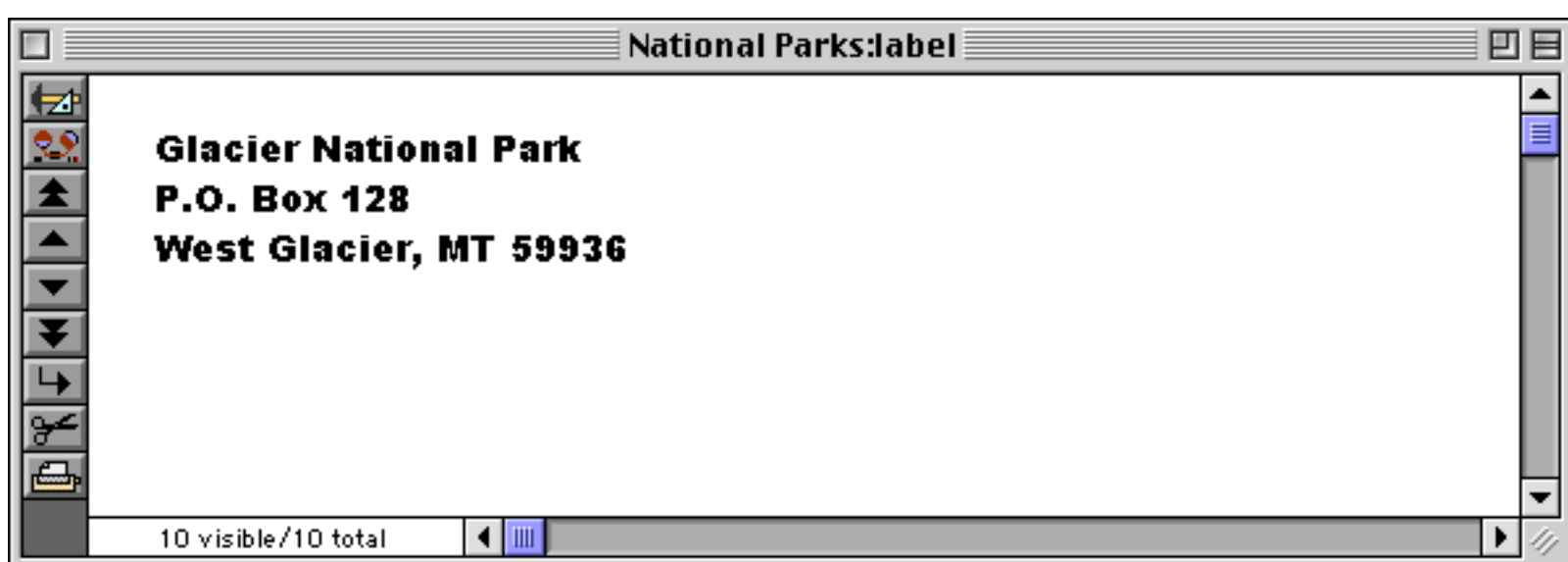
Now press the **Comma** and **Space Bar** keys.



Finish the label by inserting the State field using a pop-up menu, typing a **Space** and then inserting the Zip field.



When you switch back to Data Access Mode Panorama will substitute the actual data. Voila! A label!

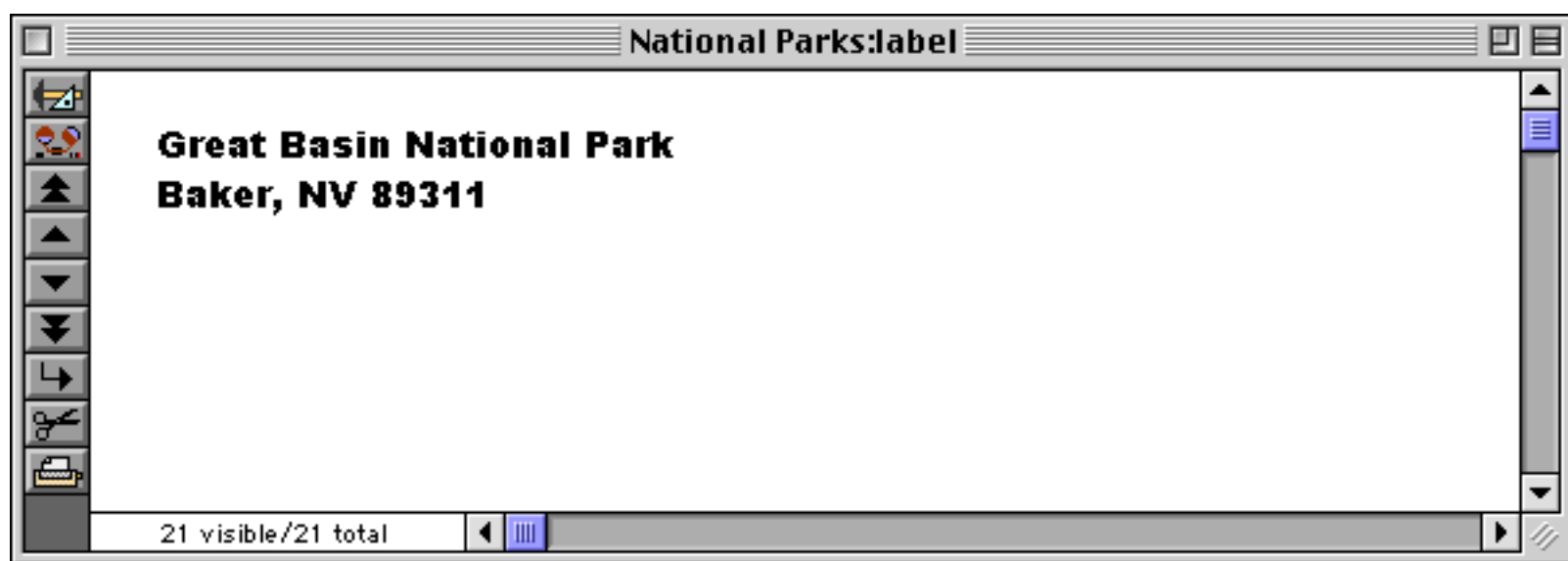


Panorama will automatically wrap the text within the rectangle you provided. It will start a new line whenever you have typed a **Return** (or when a line becomes too long to fit).

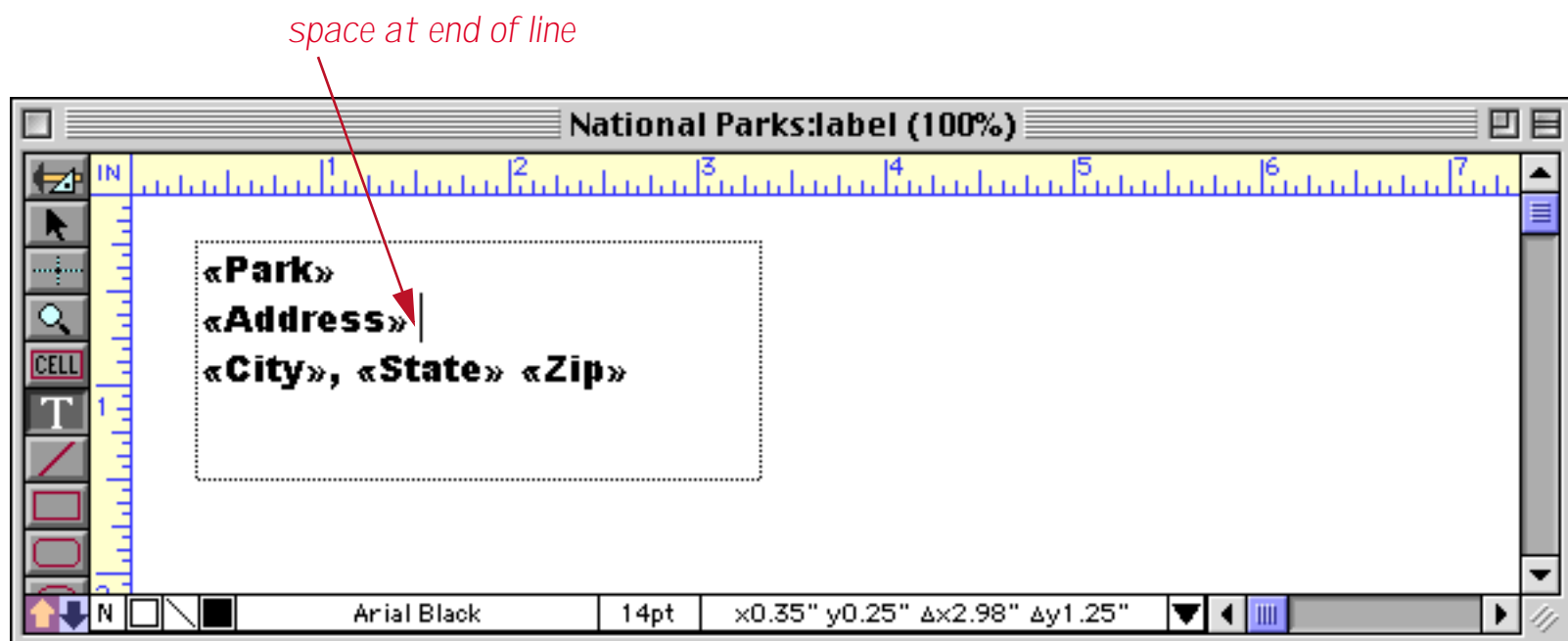
If a field is empty and that causes the entire line to be empty, Panorama will completely remove the line. For example, Great Basin National Park doesn't have a street or P.O. Box, as you can see in the data sheet.

Park	Address	City	Sta	Zip	Phone	Fee	URL
Death Valley National Park	P.O. Box 579	Death Valley	CA	92328	(760) 786-2331	\$10.00	http://www.nps.gov/deva/
Denali National Park	P.O. Box 9	Denali Park	AK	99755	(907) 683-2294	\$5.00	http://www.nps.gov/dena/
Everglades National Park	40001 State R	Homestead	FL	33034	(305) 242-7700	\$10.00	http://www.nps.gov/ever/
Fire Island National Seashore	120 Laurel Str	Patchogue	NY	11772	(631) 289-4810	\$0.00	http://www.nps.gov/fiis/
Gettysburg National Military Park	97 Taneytown I	Gettysburg	PA	17325	(717) 334-1123	\$0.00	http://www.nps.gov/gett/
Glacier National Park	P.O. Box 128	West Glacier	MT	59936	(406) 888-7800	\$5.00	http://www.nps.gov/glac/
Grand Canyon National Park	P.O. Box 129	Grand Canyon	AZ	86023	(520) 638-2631	\$10.00	http://www.nps.gov/grca/
Grand Teton National Park	P.O. Drawer 17	Moose	WY	83012	(307) 739-3300	\$20.00	http://www.nps.gov/grte/
Great Basin National Park		Baker	NV	89311	(775) 234-7331	\$0.00	http://www.nps.gov/grba/
Great Smoky Mountains National Park	107 Park Head	Gatlinburg	TN	37738	(865) 436-1200	\$0.00	http://www.nps.gov/grsm/

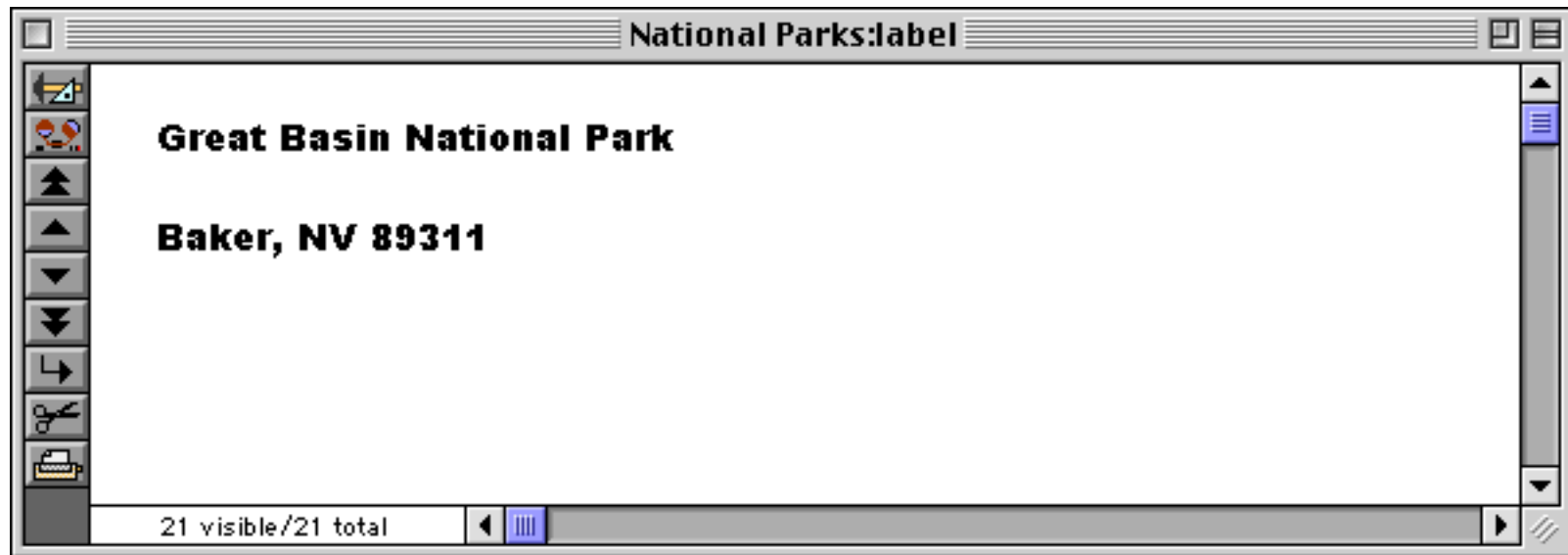
In the label, Panorama will remove the completely blank line.



If you don't want the blank line removed, put a space at the end of the line.



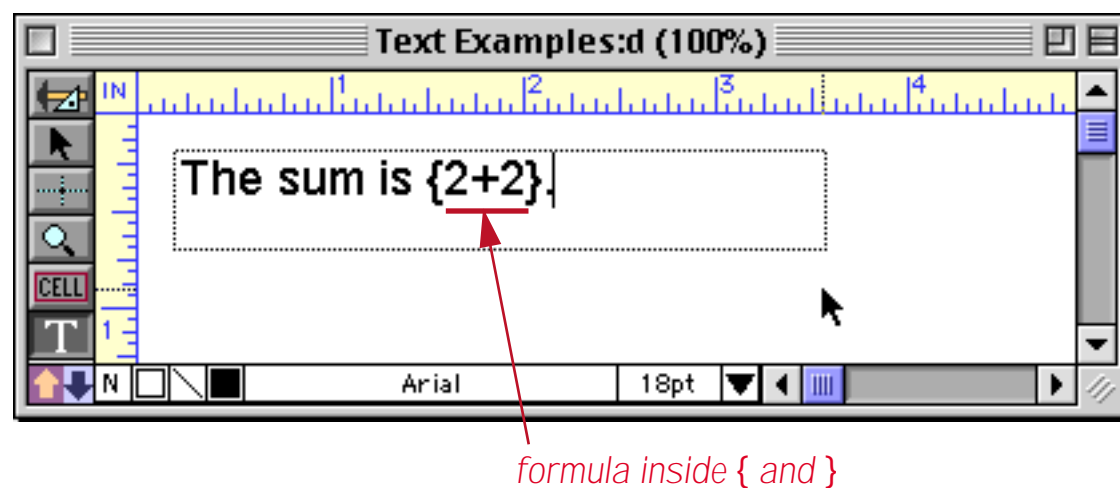
Now the line can never be completely empty, so Panorama will not remove it.



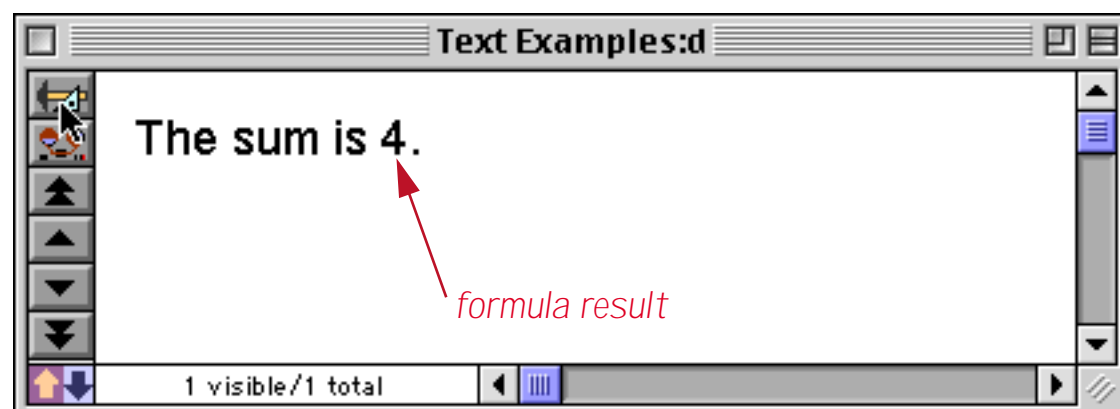
An address label can be used as part of a larger form (like an invoice), or it can be used by itself as a mailing label. If you wish to print a mailing label you must define the overall size of the label by creating one or more report tiles. Report tiles tell Panorama how to print a form. For more information on creating and printing mailing labels see “[Label Fundamentals](#)” on page 1169.

Displaying Formulas in Auto-Wrap Text

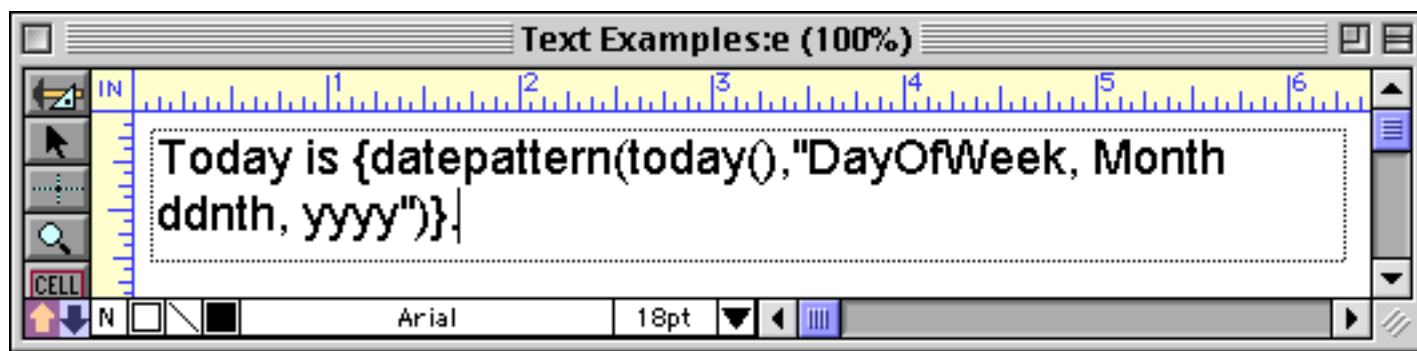
In addition to fixed text and fields, auto-wrap text can also contain complete formulas with text and numeric calculations. Simply type the formula into the text, surrounded by { and } curly brace characters. Here’s what a formula looks like in Graphics Mode.



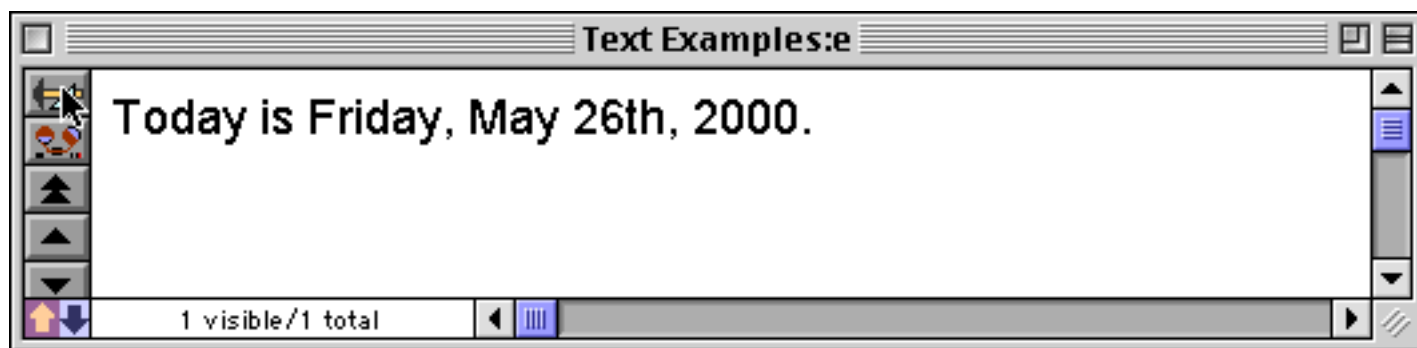
When the form is displayed in Data Mode Panorama substitutes the result of the formula instead of the formula itself.



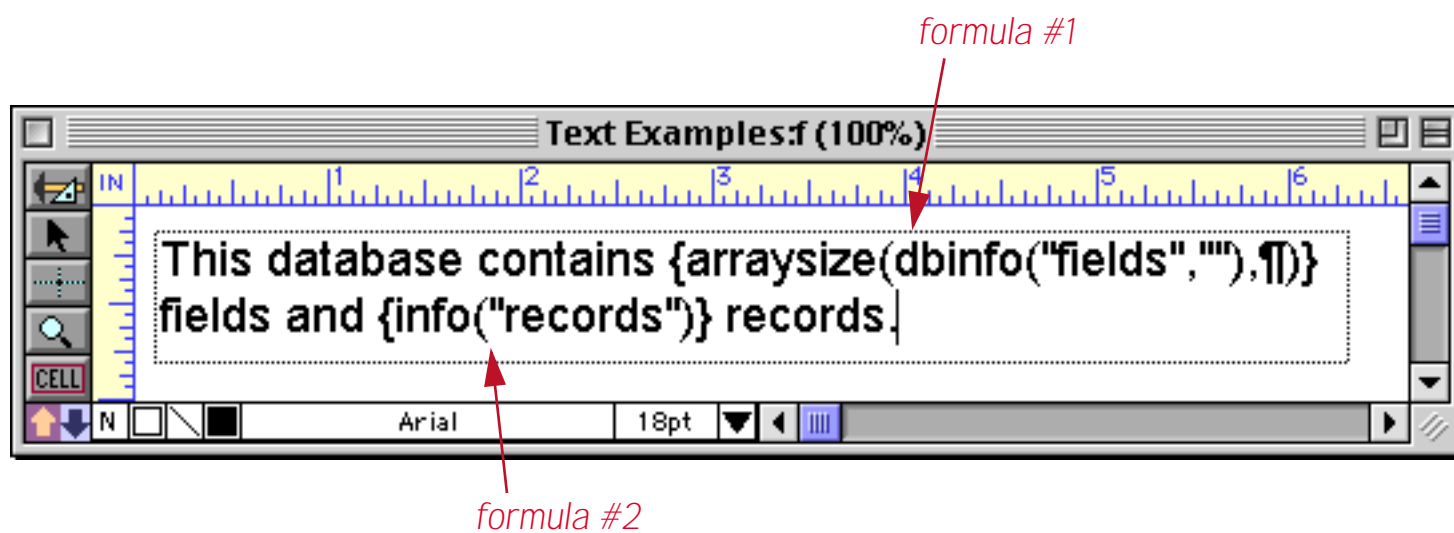
Of course 2+2 is a pretty silly formula. More useful formulas can be formed by combining fields, variables, and functions, like this.



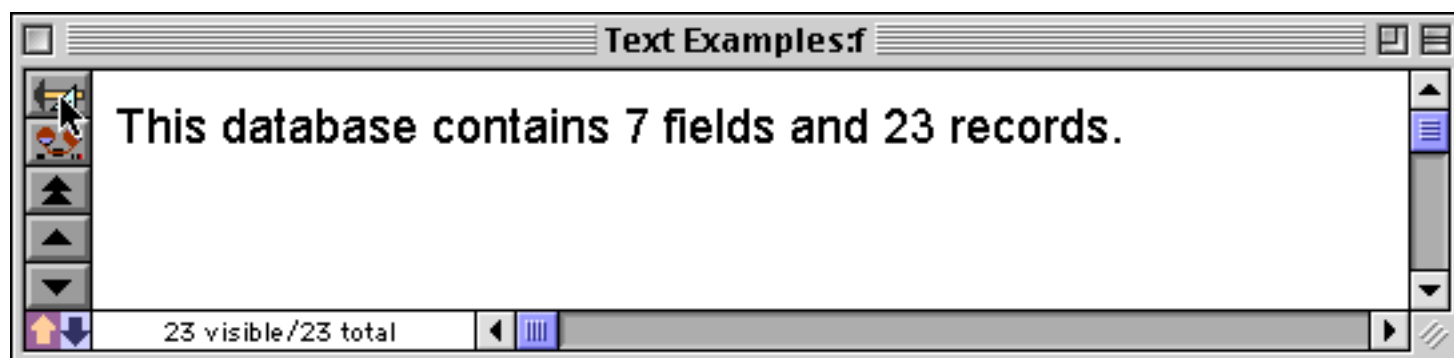
In Data Mode this auto-wrap text object looks like this:



An auto-wrap text object is not limited to a single formula. You can include as many formulas as you need.



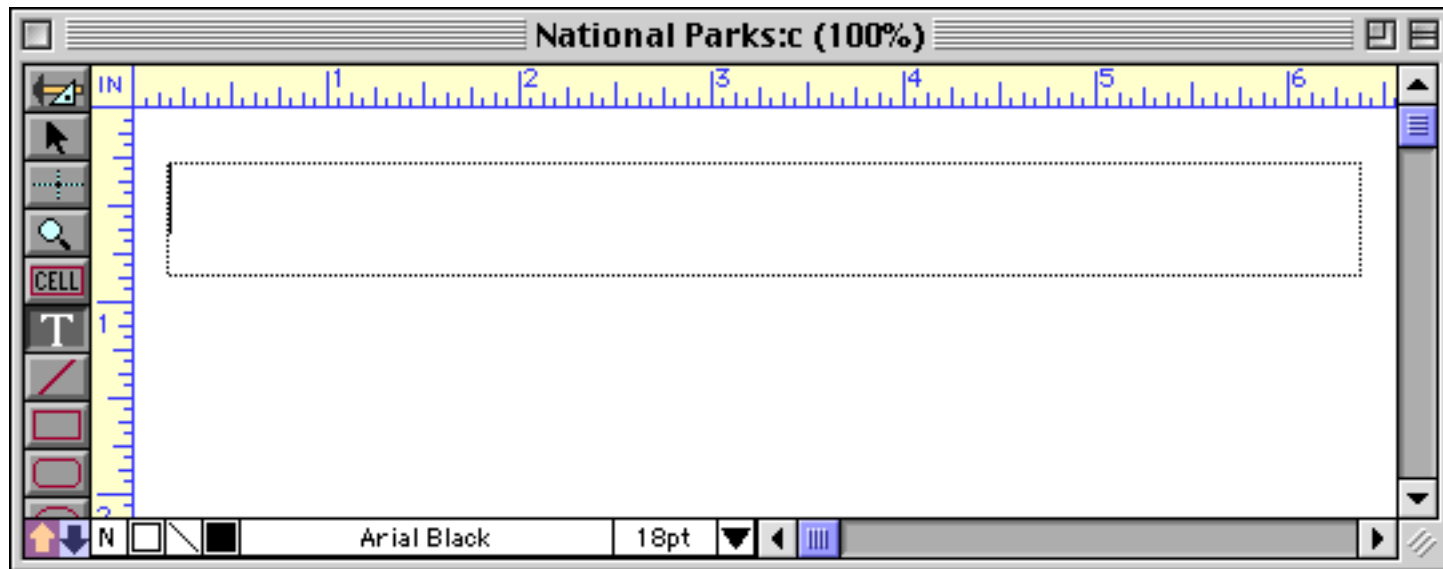
Here is the same auto-wrap text object in Data Mode. The formulas have been replaced with their results.



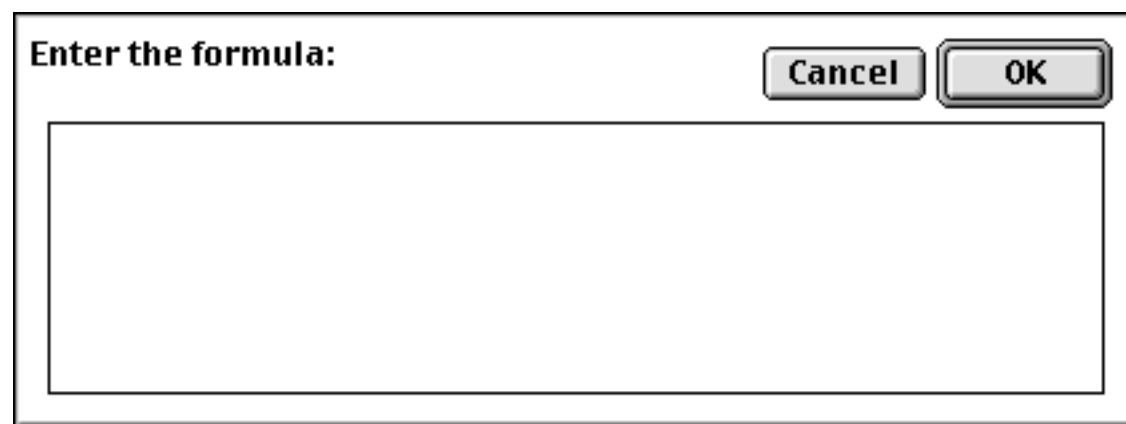
Using a formula gives you almost unlimited possibilities for combining and manipulating data on the fly as it is displayed or printed. By using formulas containing the lookup function you can display or print data from more than one database at once. You can use a formula to display or print computed information that is not stored in the database. You can use true-false formulas to display or print data only if a certain condition is met. The possibilities are almost endless. See “[Formulas](#)” on page 19 of *Formulas & Programming*.

The Build Formula Dialog

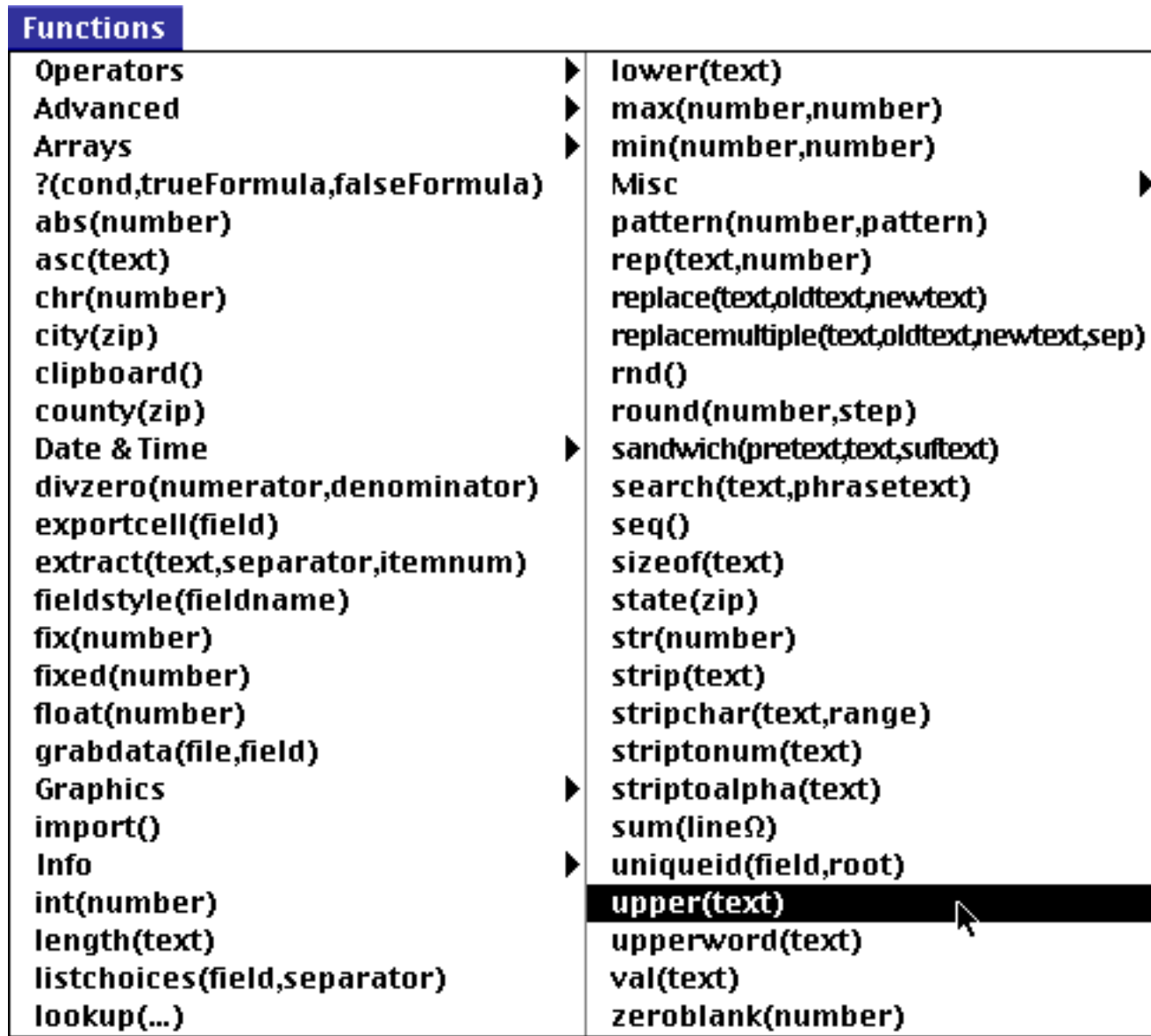
You can use the **Build Formula** dialog box to help you create formulas to merge into auto-wrap text. To create a new formula with this dialog, click on the **Text** tool, then click in the text to create an insertion point.



Now choose **Build Formula** from the **Text** menu. This causes a dialog to appear.



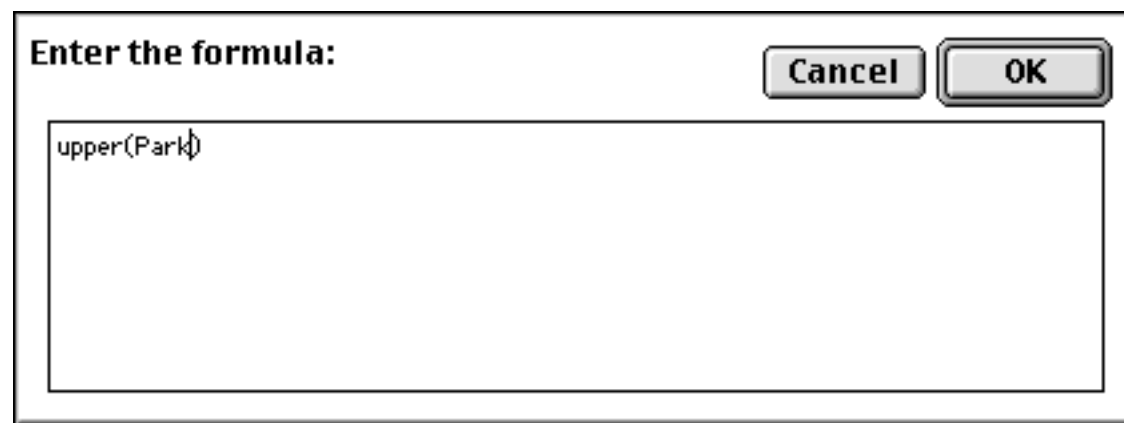
Once the **Build Formula** dialog is open, you can type in a formula using the keyboard. Or you can use the **Field** and **Function** menus to help enter the formula for you. The **Field** menu contains a list of all fields in the database; pick from this menu to type a field name into the formula. The **Function** menu contains a list of all the functions and operators available; pick from this menu to type a function or operator into the formula. For example, if you wanted to convert text to upper case, you would select the **upper()** function from the **Function** menu.



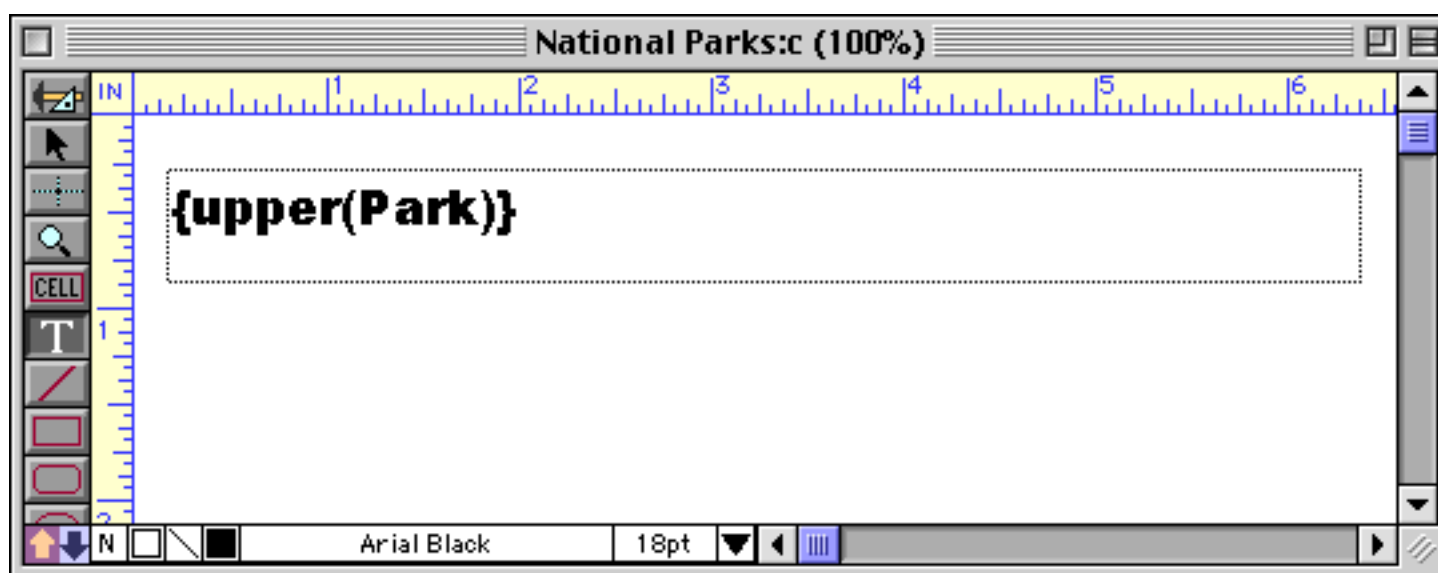
If you need to include a field name in your formula, select it from the **Field** menu.



As you select items from these menus, Panorama will insert them into the formula. (Of course you can also type text into the formula.)



When the formula is finished, press the **OK** button. Panorama will check the formula for errors. If the formula is correct, it will be inserted into the auto-wrap text (with the required { and } curly braces automatically added).

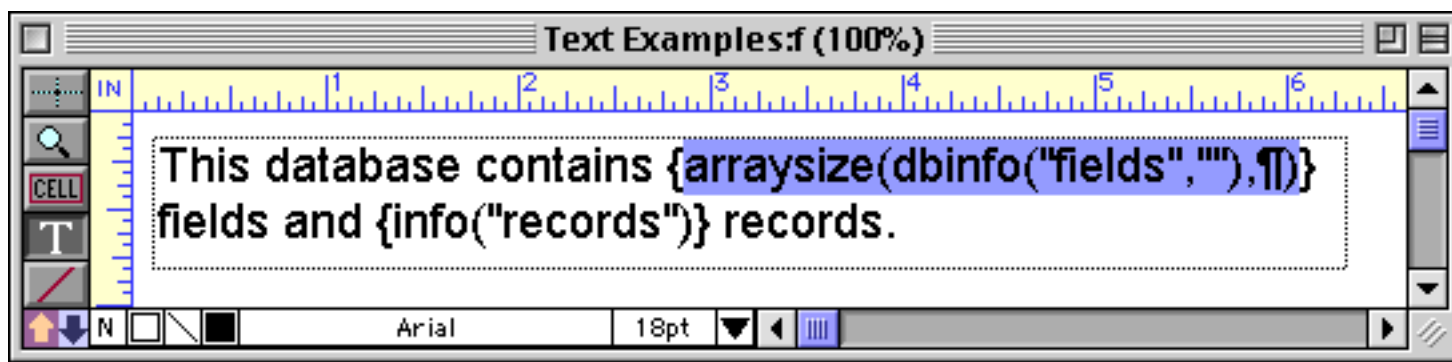


If the formula contains an error, Panorama will display an alert and highlight the location of the error. You won't be able to close the dialog until you correct the error (unless you press **Cancel**).

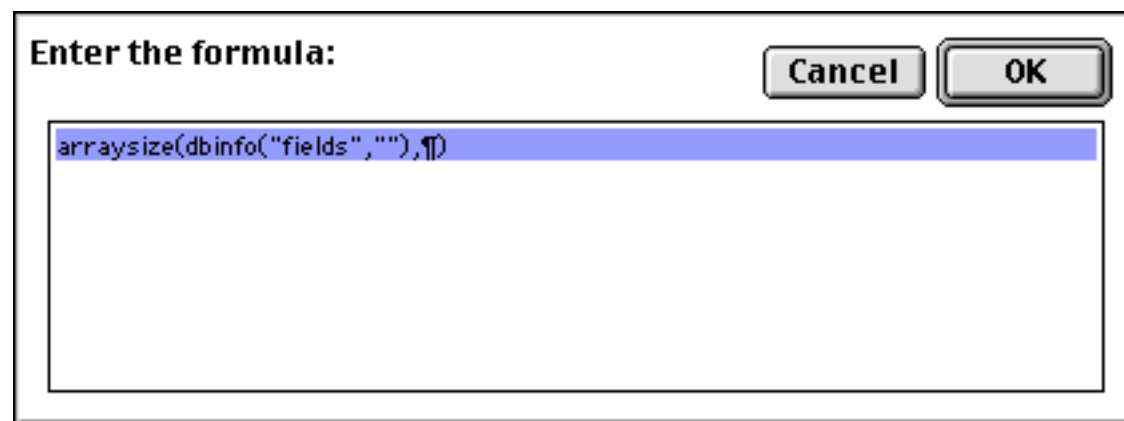
By the way, here's what our finished formula looks like in Data Mode. Notice that the Park name has been converted to all upper case (**YOSEMITE NATIONAL PARK** instead of **Yosemite National Park**).



You can also use the **Build Formula** dialog to edit a formula you have created earlier. To do this, start by dragging over the text of the formula to select it.



Once the text is selected, choose **Build Formula**.



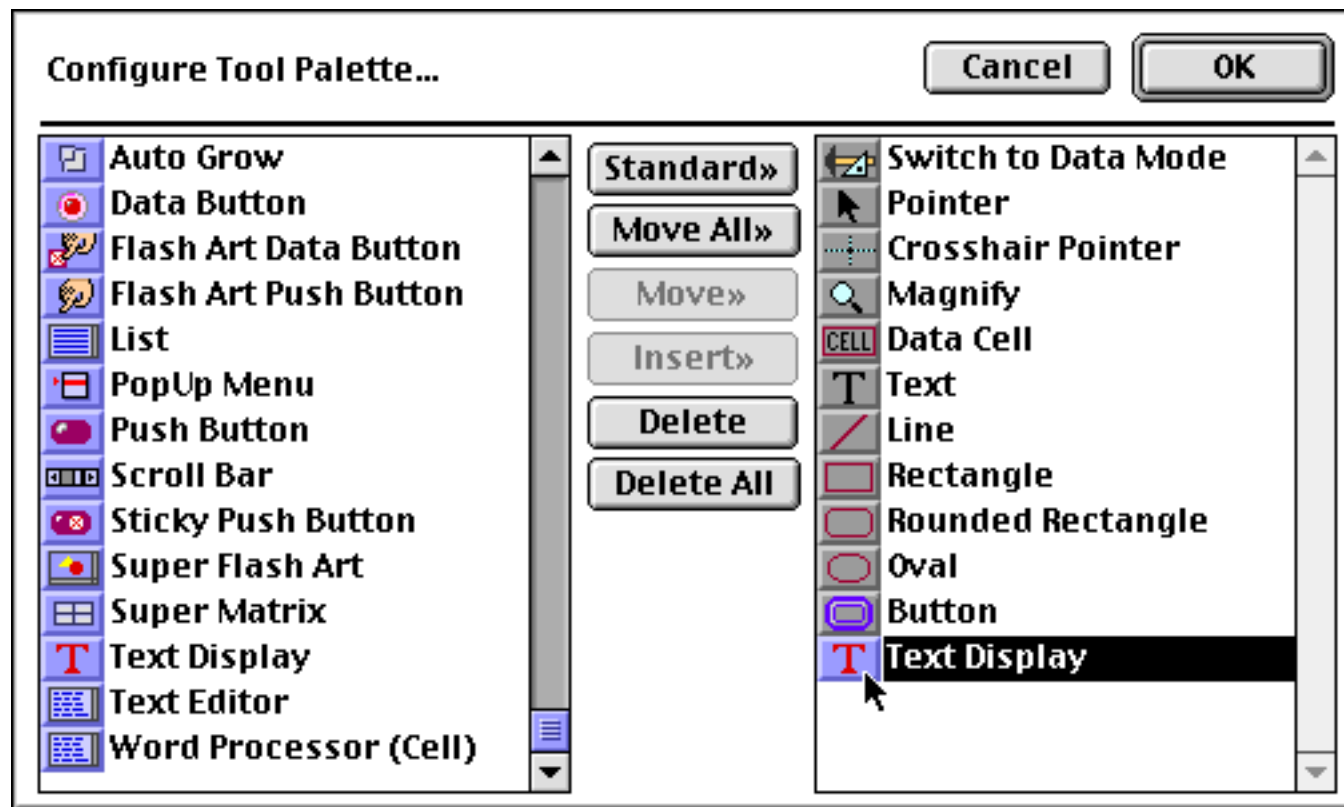
Now you can edit the formula by typing or choosing from the **Field** and **Function** menus, just like when you created a new formula.

Text Display SuperObjects™

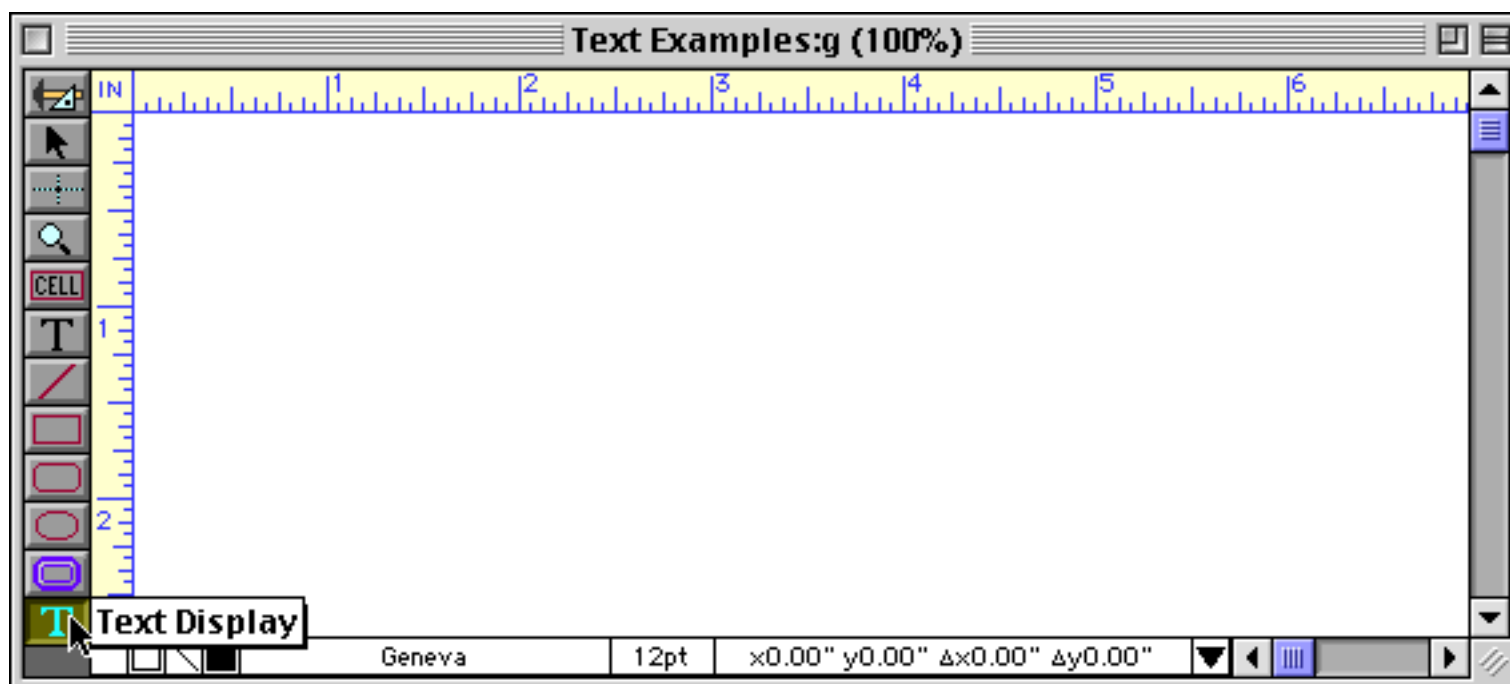
The **Text Display SuperObject** displays text based on a formula. In some ways, this is similar to an auto-wrap text, but there are many more options for calculating the formula and formatting the displayed text. You can store the formula itself in a variable (so it can be changed on the fly), align the text in any corner of the object, automatically scale the text for different size windows, and even change the color of the text on the fly.

Creating and Modifying Text Display SuperObjects

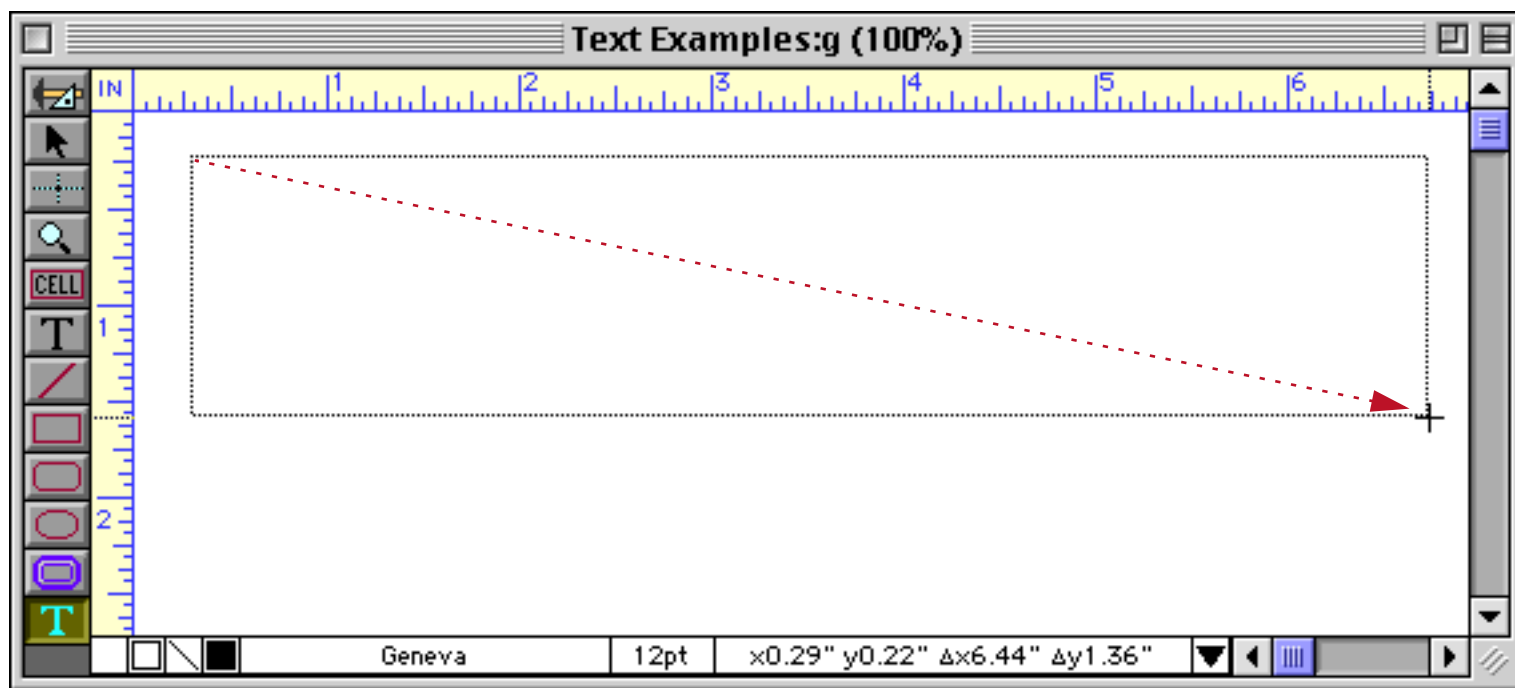
The Text Display SuperObject tool is not in the default tool palette, so you'll need to use the **Tool Palette** dialog to add this tool to the palette if it is not already there (see "[Customizing the Tool Palette](#)" on page 497).



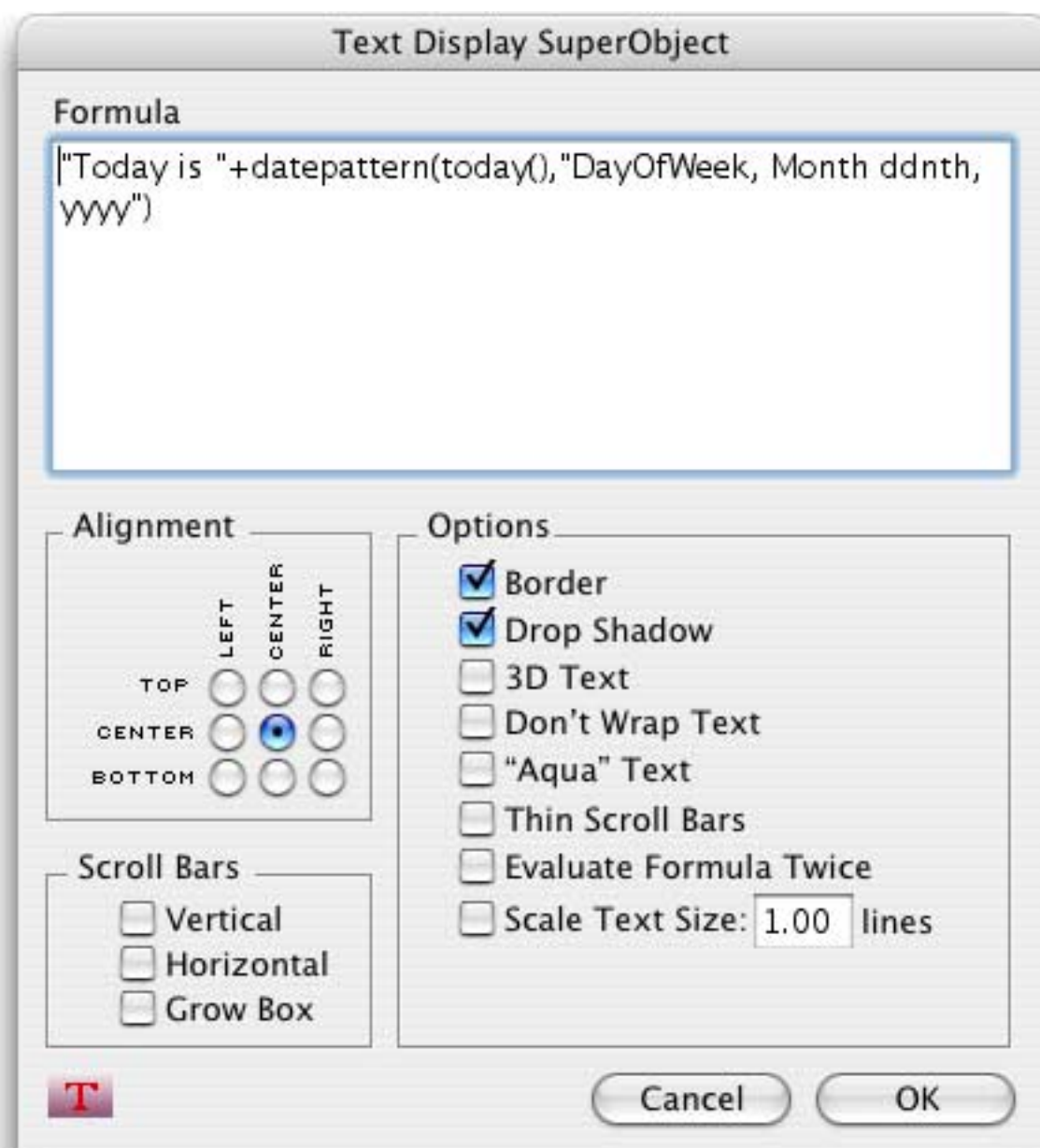
Now that the tool is added to the palette you can select it.



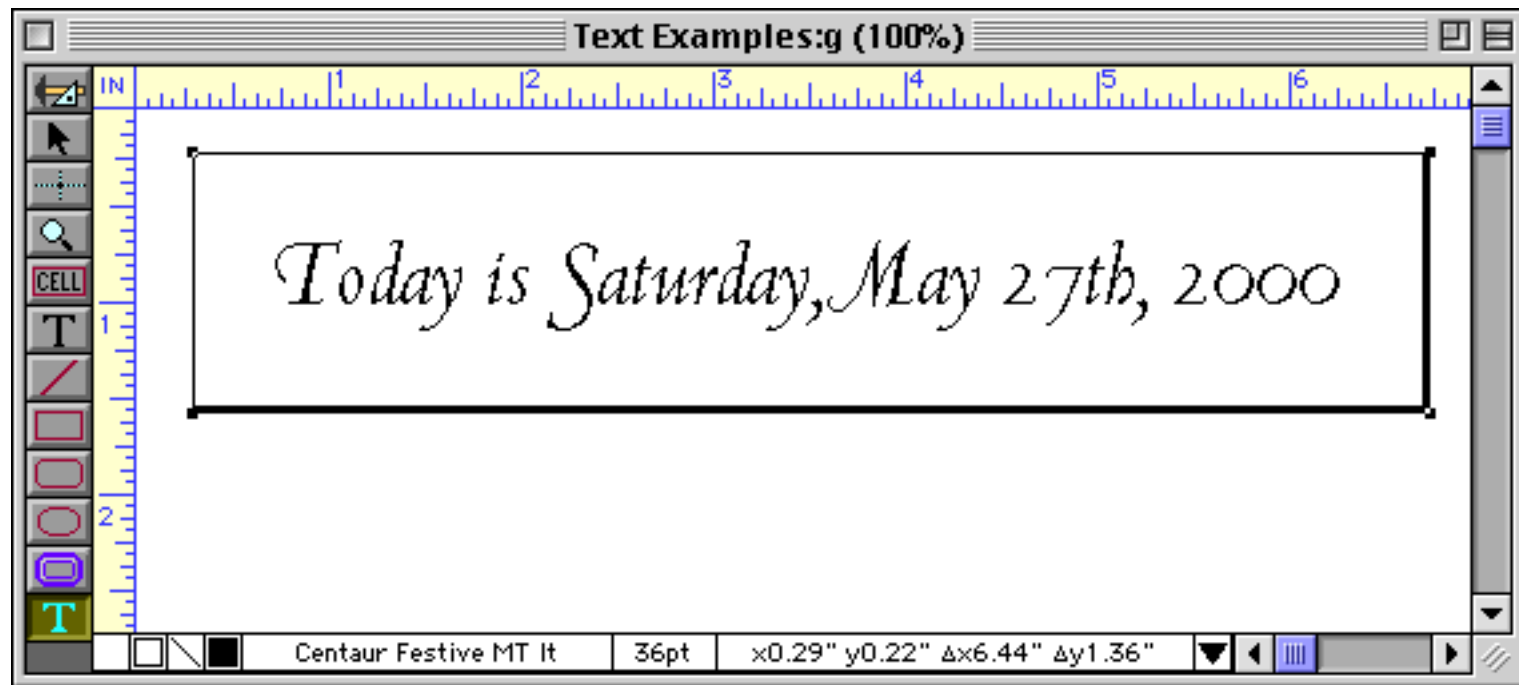
Once the tool is selected, drag the mouse across the form in the location where you want to create the Text Display SuperObject.



When you release the mouse, the Text Display SuperObject configuration dialog will appear.



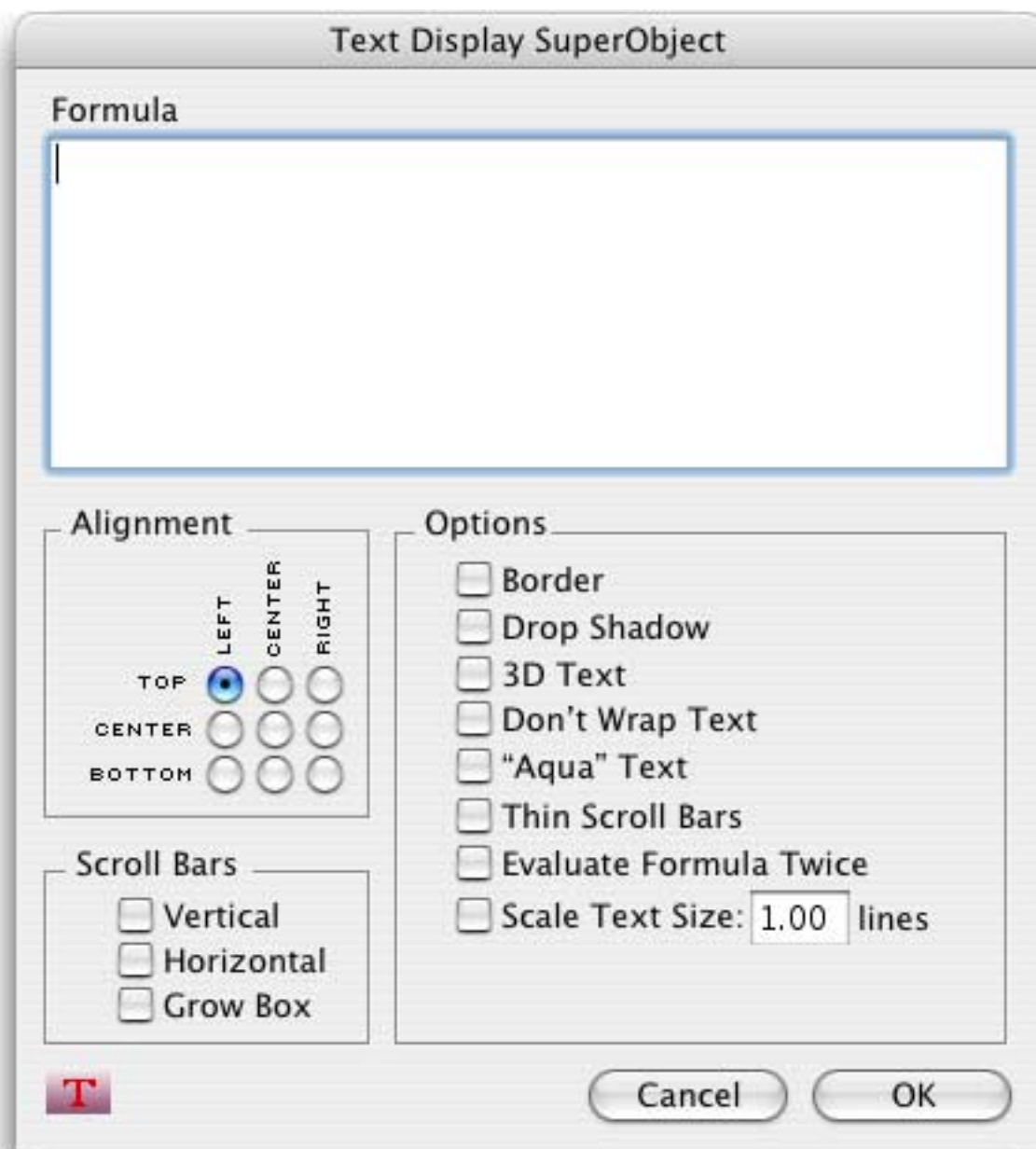
At a minimum you must enter a valid formula into the dialog. For this example we've also turned on the **Border** and **Drop Shadow** options and set the alignment to centered (these options are discussed in detail below). When the **OK** button is pressed the new object appears. (Notice that unlike the auto-wrap text object, the Text Display SuperObject shows the result of the formula in both Graphics Mode and Data Mode, not just Data Mode.)



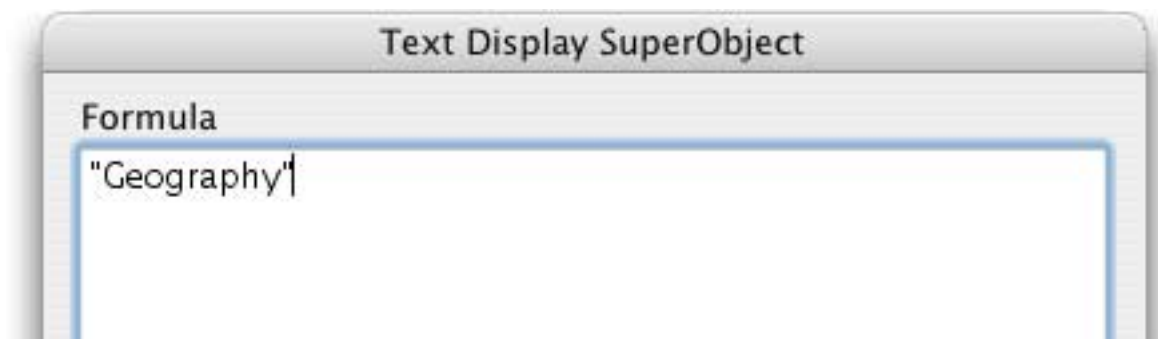
After it has been created you can modify the location, size, font, style and color of a Text Display SuperObject just like any other object. To change any of the object attributes (formula, border, alignment etc.) select the **Pointer** tool and double click on the object. The configuration dialog will appear again. Make your changes and press the **OK** button.

Text Display Options

The **Text Display SuperObject** configuration dialog is divided into several sections.



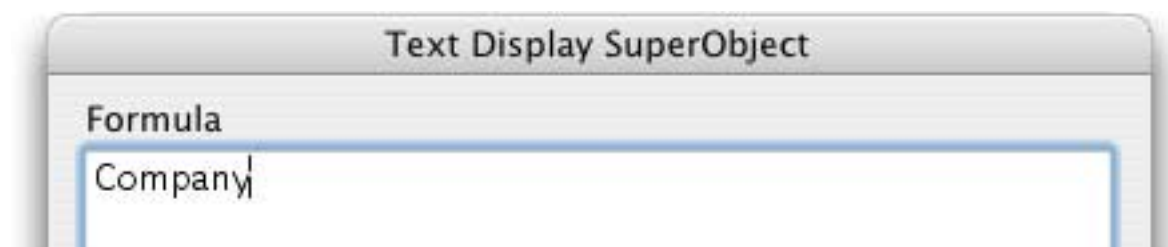
Formula: This section of the dialog specifies the formula for displaying text in this object. If you want to display fixed text, remember that you need to surround the text with quotes.



This object will always display the word **Geography**.

· *Geography* ·

To display a field or variable, type in the name of the field or variable. You can use the **Field** menu to type in the name of a field for you (that way you don't have to worry about misspellings. Here's the formula to display the Company field.



And here is the finished object.

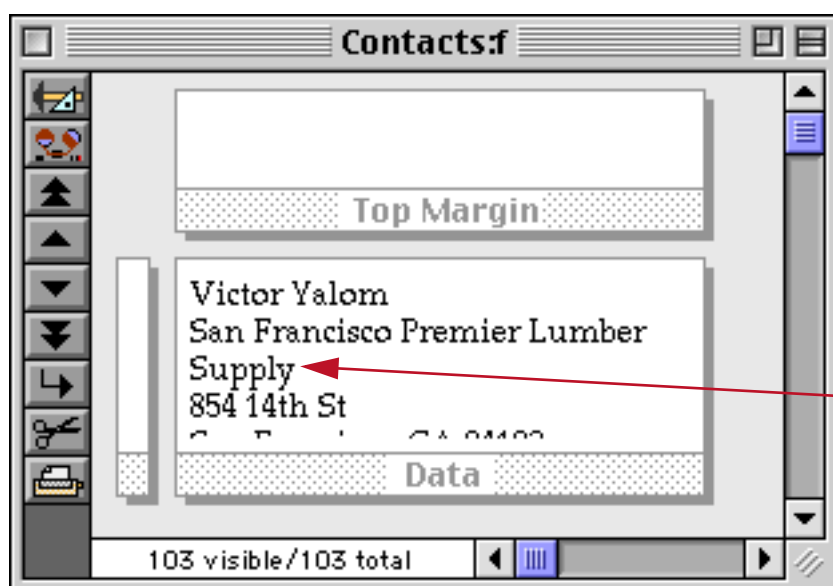
▪
Austin Lumber
 ▪

Panorama has hundreds of different functions that you can use to assemble your formula. See “[Using Formulas to Display Text](#)” on page 621 for some useful tips on building formulas for displaying text on a form. You'll find a complete description of formulas in “[Formulas](#)” on page 19 of *Formulas & Programming*.

Evaluate Formula Twice: If this advanced option is enabled, Panorama will calculate the formula, then treat that result as a new formula and calculate it again to get the final result. The purpose of this feature is to allow you to store the “real” formula separately in a global or permanent variable (see “[Variables](#)” on page 53 and “[Variables](#)” on page 247 of *Formulas & Programming* for more information about setting up and using variables).

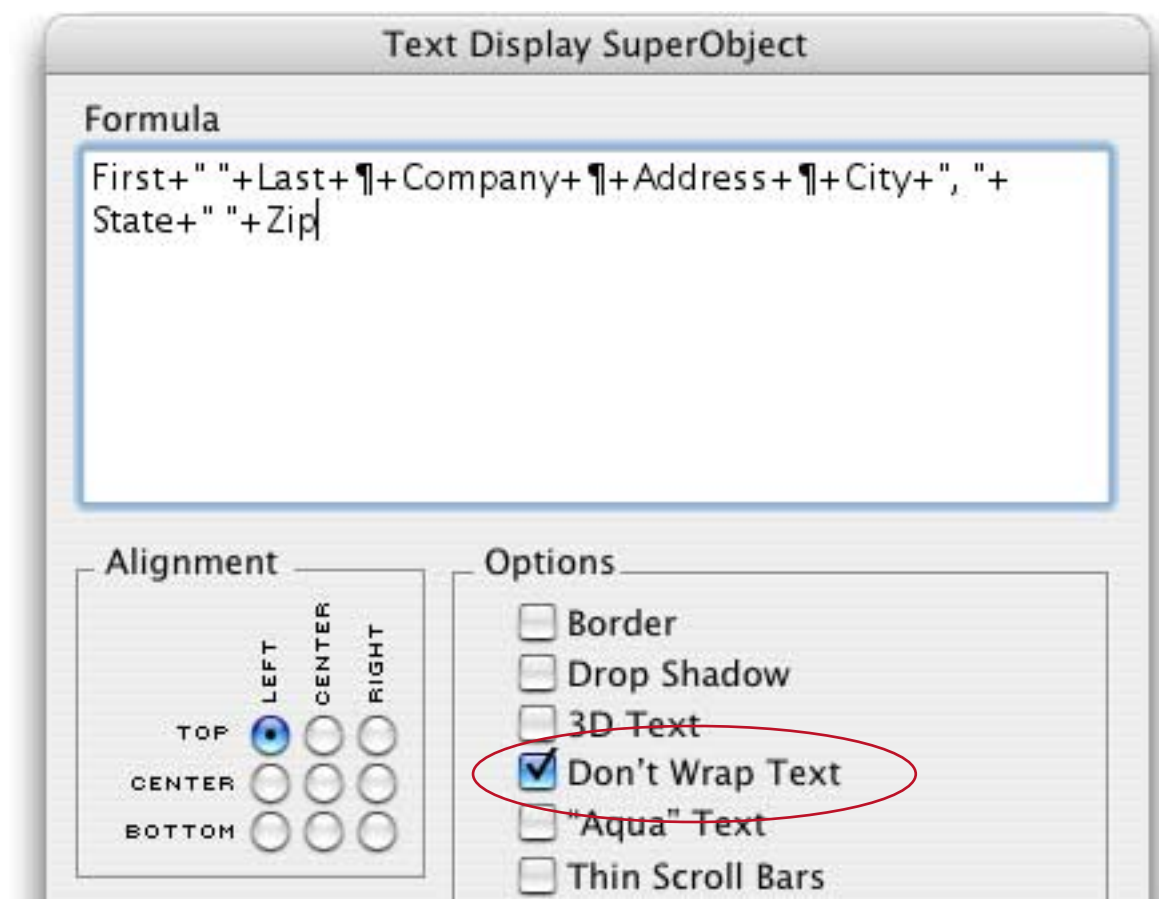
Don't Wrap Text: If text is too long to fit on a single line, it will usually “wrap” around to the next line. However, if the **Don't Wrap Text** checkbox is turned on, the text will not wrap. Instead, the text will be cut off.

For example, suppose you are constructing a mailing label. With the **Don't Wrap Text** option turned off, a long company name will wrap to a second line, messing up the label.

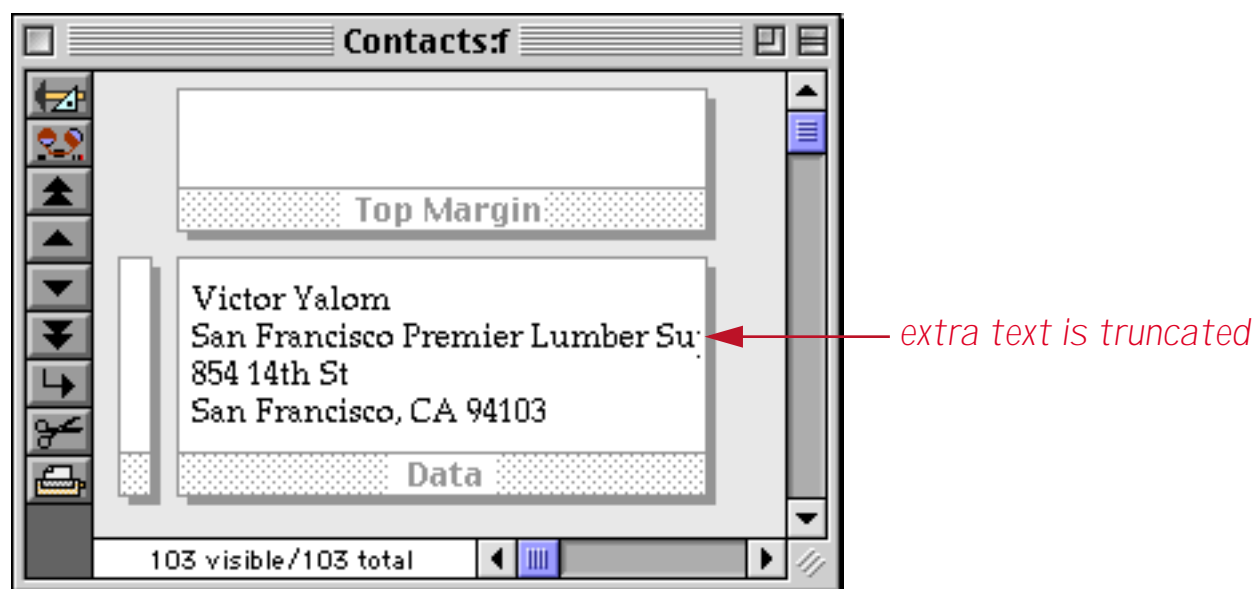


long company name wraps to second line

To fix this problem, go into Graphics Mode (see “[Form Modes: Data Access vs. Graphic Design](#)” on page 485), double click on the Text Display object, and turn on the **Don't Wrap Text** option.



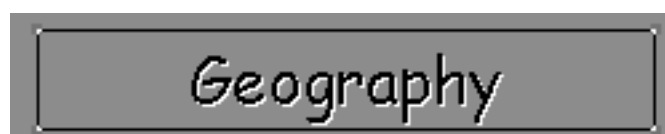
Now the long line will be cut off, and the remaining lines will stay in the correct position.



3D Text: If this option is turned on, a white shadow appears behind the text. This gives the text a "3D" effect if it appears over a colored background, like this.



Border: If this option is turned on, a one pixel border appears around the object, like this.



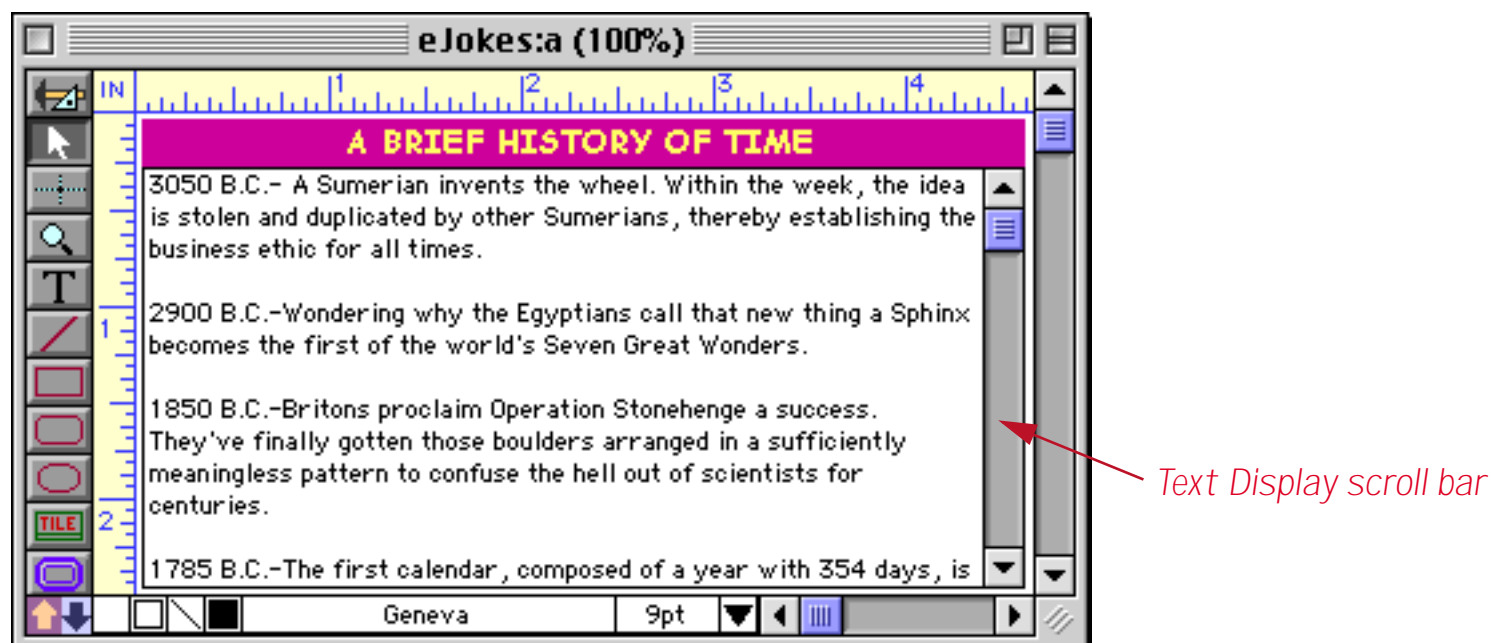
"Aqua" Text: If this option is turned on the text will be smoothed (anti-aliased) if the operating system supports that feature.



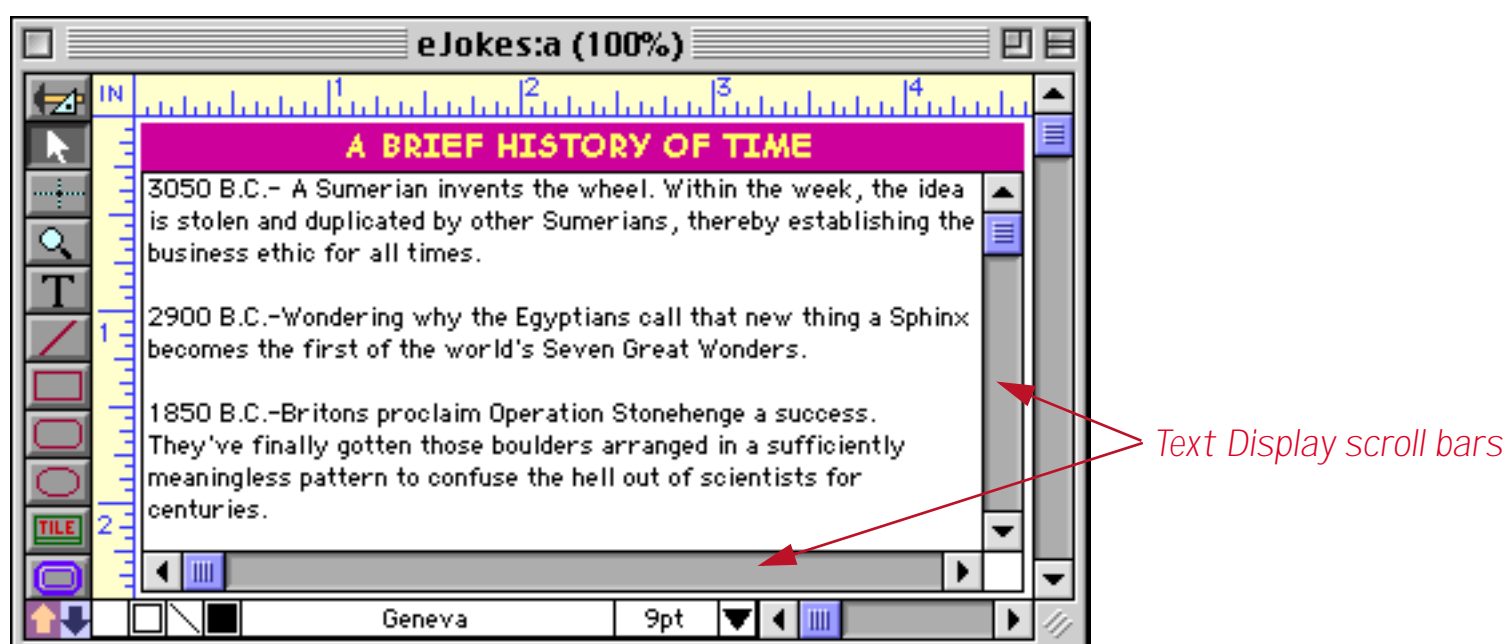
Drop Shadow: If this option is turned on, a black drop shadow appears "below" the object. This option is usually used in combination with the Border option, like this.



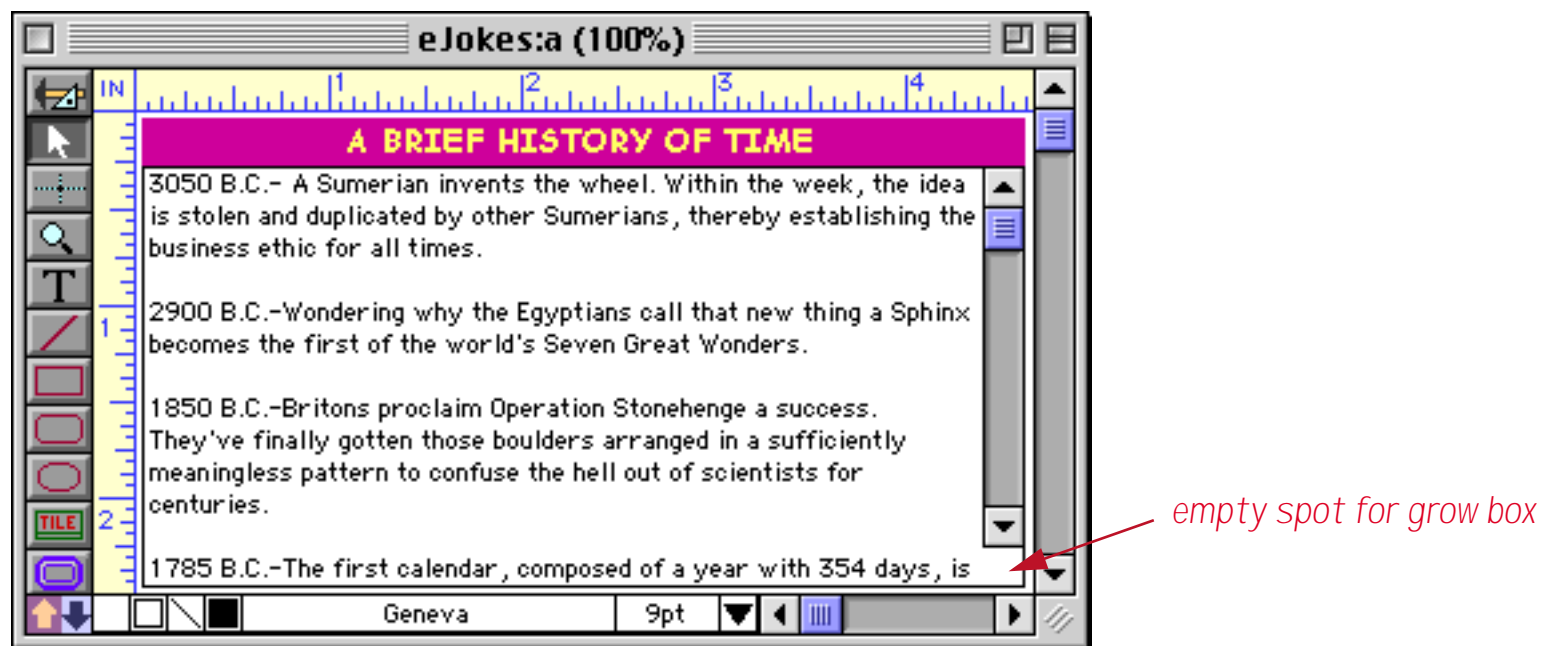
Scroll Bars: This section controls what scroll bars (if any) will be available when displaying this text, and whether space will be left for a grow box if only one scroll bar is used. Here is a Text Display SuperObject with the **Vertical Scroll Bar** enabled.



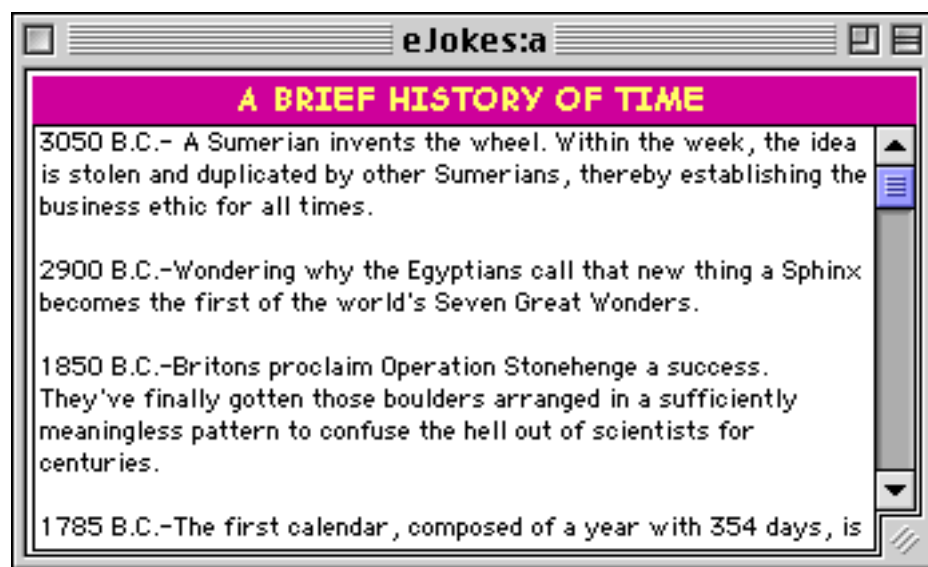
Here is the same object with both **Vertical** and **Horizontal** scroll bars.



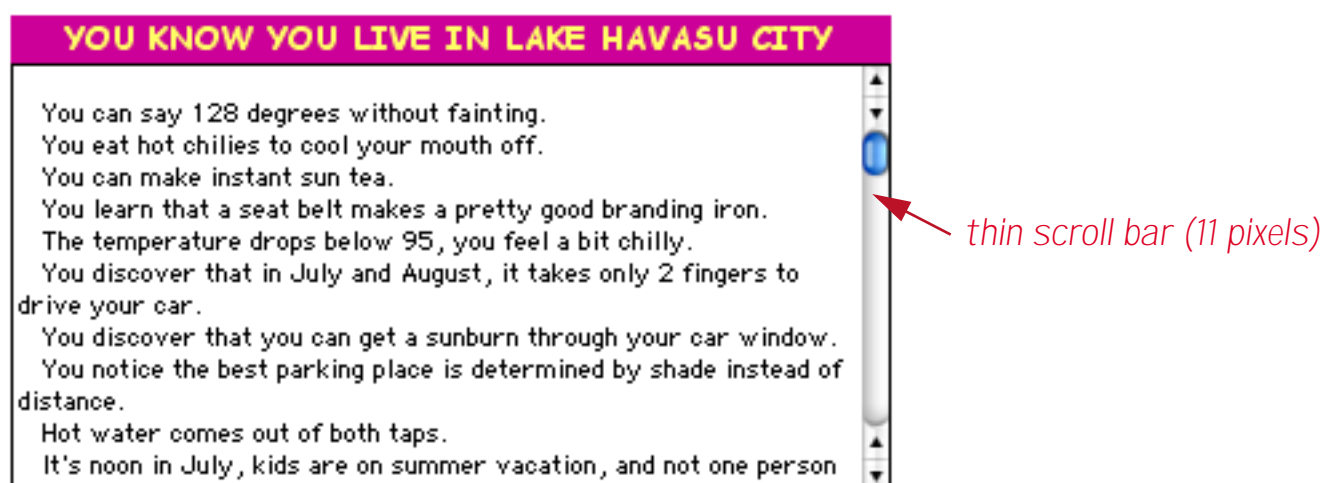
With the **Vertical** and **Grow Box** options turned on, Panorama leaves an empty spot for a grow box in the lower right hand corner.



Elsewhere in this manual you can learn how to turn off the form's scroll bars (see "[Window Options](#)" on page 172) and how to add your own custom grow box (see "[Elastic Forms](#)" on page 922), to make a final window that looks like this.












Thin Scroll Bar: Scroll bars are normally 16 pixels wide. When this option is checked the scroll bar will be only 11 pixels wide.



Align: This area contains nine radio buttons, allowing you to control the position of the text within the object.



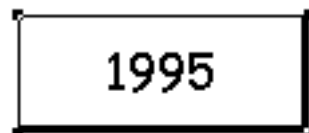
You have the choice of left, center, or right and top, middle, or bottom. (You can also choose left, center, or right from the **Text** menu.) This table illustrates the nine different alignment options.

 A rectangular box with the text 'TOP LEFT' positioned in the upper-left corner.	 A rectangular box with the text 'TOP CENTER' positioned at the top center.	 A rectangular box with the text 'TOP RIGHT' positioned in the upper-right corner.
 A rectangular box with the text 'MIDDLE LEFT' positioned on the left side, vertically centered.	 A rectangular box with the text 'MIDDLE CENTER' positioned in the center.	 A rectangular box with the text 'MIDDLE RIGHT' positioned on the right side, vertically centered.
 A rectangular box with the text 'BOTTOM LEFT' positioned in the lower-left corner.	 A rectangular box with the text 'BOTTOM CENTER' positioned at the bottom center.	 A rectangular box with the text 'BOTTOM RIGHT' positioned in the lower-right corner.

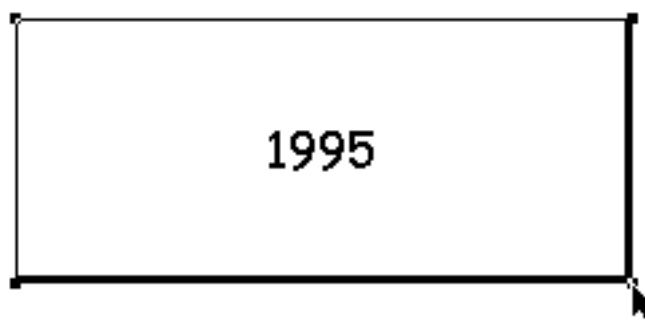
Note: If you have enabled the vertical scroll bar, you must choose one of the top three alignment buttons. If you have enabled the horizontal scroll bar, you must choose the top left alignment button.

Scale Text Size: Usually the Text Display SuperObject displays text in a fixed size, controlled by the Text menu or the Graphic Control Strip (see “Text Size” on page 531). However, if the **Scale Text Size** option is turned on, the text size will be proportional to the height of the Text Display SuperObject. The taller the object, the bigger the text. This option can be very useful when used with a form that adjusts as the window size changes.

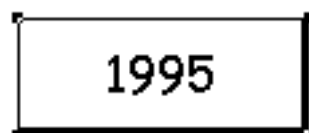
To illustrate this option, let’s first look at an ordinary object with this option turned off.



No matter how much we expand or shrink this object, the text size will always be 18 points.



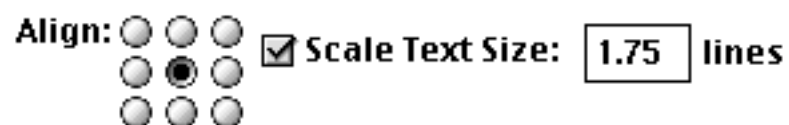
Now let’s turn on the **Scale Text Size** option. At a small size, the object looks pretty similar to the way it did before.



Check out what happens now when the object is expanded! The text size expands also, automatically and in exact proportion to the new height of the object.



When the **Scale Text Size** option is enabled, Panorama ignores the font size setting. Instead the value in the **Lines** box tells Panorama what ratio to use for scaling the text. If the value is 2, the text height will be one half of the object height. If the value is 3.5, the text height will be 1/3.5 of the object height.



You may need to play with the value to get the effect you want, and the value may need to change depending on the font you select. (Remember that when you use the **Scale Text Size** option, the text may be displayed in any size, so you should select a font that will look good in any size—either a True Type font or a PostScript font with ATM (Adobe Type Manager).)

As an example of a practical use for the **Scale Text Size** option, here is a calendar that uses this option so that the text gets bigger as the window get bigger. Here's the calendar viewed at minimum size.



When the window expands, all of the text in the calendar expands also.



In addition to **Text Display SuperObjects** this form also uses a **SuperMatrix** object (see "[Super Matrix Objects](#)" on page 939) and **Auto Grow SuperObject** (see "[Elastic Forms](#)" on page 922).

Controlling Text Display Color and Style on the Fly

Display text normally appears in the color and style you have selected for the object (see “[Color](#)” on page 526 and “[Text Style](#)” on page 532). If you are using a Text Display SuperObject, however, it is possible for the formula to change the color and style of the displayed text on the fly. For example you could set up the object so that positive numbers are black and negative numbers are in **red**. Or, you could make high priority items display in **bold italic**.

To control the color and style, you must use the `textdisplay()` function (see “[TEXTDISPLAY\(\)](#)” on page 5852 of the *Panorama Reference* for detailed information on this function). Warning: The `textdisplay()` function must be the very first item in the formula! If the `textdisplay()` function is not the first item in the formula, the display will be incorrect. (Advanced Note: The `textdisplay()` function actually generates a special header that is intercepted and removed by the Text Display SuperObject. This header contains special control characters that the object uses to determine what style and color to use.)

The `textdisplay()` function has two parameters: `color` and `style`. The color must be the result of the `rgb()` function (see “[Colors](#)” on page 154 of *Formulas & Programming* for detailed information on the use of color within Panorama formulas). Some useful colors are listed in the table below.

Formula	Color
<code>rgb(0,0,0)</code>	Black
<code>rgb(65535,65535,65535)</code>	White
<code>rgb(65535,0,0)</code>	Red
<code>rgb(0,65535,0)</code>	Green
<code>rgb(0,0,65535)</code>	Blue

Here is an example of the `textdisplay()` function in a formula.

Formula: `textdisplay?(Price>150000,rgb(65535,0,0),rgb(0,0,0)),"")+pattern(Price,"$#,")`

↑ *red* ↑ *black*

This formula causes Panorama to display any price over \$150,000 in red. Lower prices are in black.

Property	Price
33 Elm Street, Huntington Beach - 2 bedrooms/2 bath with a/c, fireplace, spa	\$175,500
525 Foxdale Avenue, Irvine - 2 Stories, 3 bedrooms/2 bath with a/c, fireplace, pool	\$210,000
1101 S. Meeker, Garden Grove - 2 bedrooms/1 bath	\$85,500
9631 Sailfish Drive, Huntington Beach - 2 bedrooms/1 bath	\$99,500
623 Geneva Street, Huntington Beach - 1 bedrooms/1 bath	\$115,000
8912 Shore Circle, Huntington Beach - 2 bedrooms/1 bath	\$110,000
735 Elliott Place, Santa Ana - 2 bedrooms/2 bath with fireplace, spa	\$164,900
12241 Fallingleaf, Westminster - 2 bedrooms/1 bath with a/c, fireplace	\$92,000
11112 Jerry Lane, Garden Grove - 2 bedrooms/2 bath with fireplace	\$94,000
7612 California, Westminster - 2 bedrooms/1 bath with fireplace	\$95,000
203 N. Walnuthaven Drive, Costa Mesa - 3 bedrooms/1 bath with a/c, fireplace	\$90,000
623 Geneva Avenue, Huntington Beach - 1 bedrooms/1 bath with fireplace, spa	\$115,000
7836 Connie Lane, Huntington Beach - 2 Stories, 4 bedrooms/3 bath with fireplace, community	\$152,000
14802 Adams Avenue, Midway City - 2 bedrooms/1 bath with a/c	\$119,000

The style parameter is a number that controls the style of the displayed text. For simple styles, simply use the name of the style: "Plain" "Bold" "Italic" "Underline" "Outline" or "Shadow". If you want to combine multiple styles together, you must specify the style numerically. Add up the number for the styles you want from the table listed below. For example, for bold italic text the style should be 3.

Style	Number
Plain	0
Bold	1
Italic	2
Underline	4
Outline	8
Shadow	16

This example uses the `textdisplay()` function to display numbers greater than 130 in bold.

Formula: `textdisplay("","?(BBLevel>130,"Bold","")+str(BBLevel)`

The formula is being used as part of a blood sugar log for a diabetes patient. Values over 130 are abnormally high and possibly indicate the need for a change in treatment.

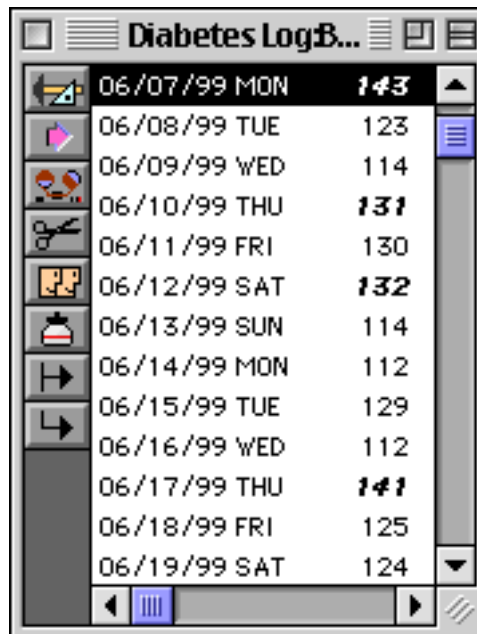
Date	Day	BBLevel
06/07/99	MON	143
06/08/99	TUE	123
06/09/99	WED	114
06/10/99	THU	131
06/11/99	FRI	130
06/12/99	SAT	132
06/13/99	SUN	114
06/14/99	MON	112
06/15/99	TUE	129
06/16/99	WED	112
06/17/99	THU	141
06/18/99	FRI	125
06/19/99	SAT	124

With a slight change this formula will display the abnormal values in bold italic.

Formula: `textdisplay("","?(BBLevel>130,3,"")+str(BBLevel)`

1 (bold) + 2 (italic) = 3 (bold italic)

Here's the final result.



Date	Day	Reading
06/07/99	MON	143
06/08/99	TUE	123
06/09/99	WED	114
06/10/99	THU	131
06/11/99	FRI	130
06/12/99	SAT	132
06/13/99	SUN	114
06/14/99	MON	112
06/15/99	TUE	129
06/16/99	WED	112
06/17/99	THU	141
06/18/99	FRI	125
06/19/99	SAT	124

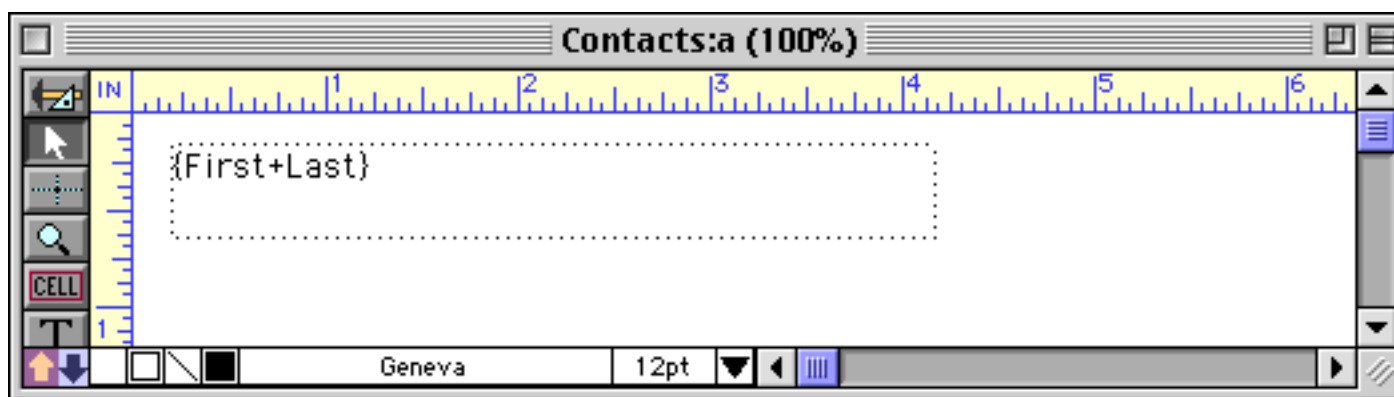
Using Formulas to Display Text

Panorama uses formulas to manipulate numbers and text. Using an auto-wrap text object (see “[Displaying Formulas in Auto-Wrap Text](#)” on page 602), a Text Display SuperObject (see “[Text Display SuperObjects™](#)” on page 608) or a Text Editor SuperObject (see “[Text Editor SuperObject](#)” on page 639) you can display the result of a formula on a form (and, since forms are used to produce reports, on a printed report).

There are an infinite number of ways to combine fields, variables and functions into useful formulas. In the following sections we will explore some of the more common types of formulas used to display information in forms.

Combining Multiple Text Items Into One

Many times you'll need to combine several different fields or variables together, usually with captions and punctuation (carriage returns, commas, spaces etc.) In a formula two text items can be combined with the + operator.



This formula probably isn't what you had in mind, because the result (seen below in Data Mode) doesn't have a space between the first and last name.

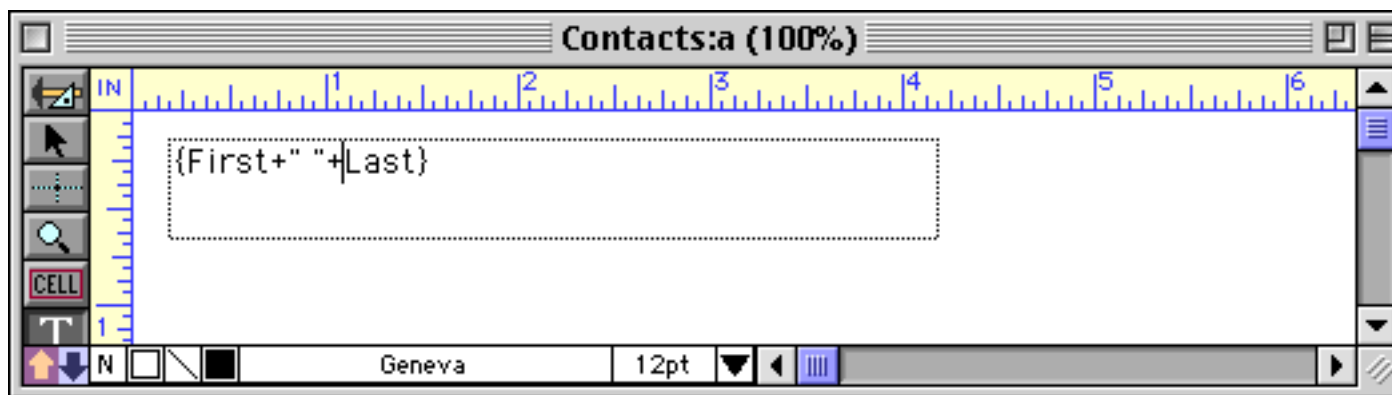


Fixed text items (like captions, spaces and other punctuation) must be enclosed in quotes. Panorama allows several different kinds of quotes, as shown in this table.

Type	Open	Close	Example
Double Quote	"	"	"January"
Single Quote	'	'	'Tuesday'
Curly Braces	{	}	{San Francisco}
Smart Double Quote	“	”	“Gothic”
Smart Single Quote	‘	’	‘Bohemian’

Curly braces cannot be used to quote text in an auto-wrap text object, because they are used to surround the entire formula. Other than that you can use any one of these pairs of quote characters whenever you want. See “[Constants](#)” on page 49 of *Formulas & Programming* for more information about quoting text.

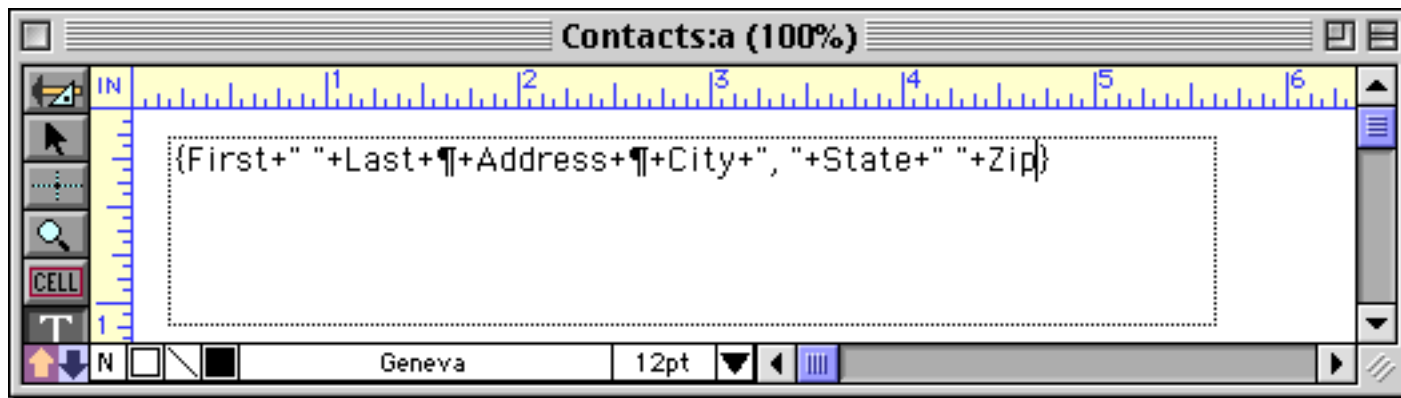
Now that we know how to quote a fixed text item we can add a space between the first and last names.



Switch to Data Mode (see “[Form Modes: Data Access vs. Graphic Design](#)” on page 485) and voila! The correctly formatted name appears.



In a formula a carriage return is represented by the ¶ symbol. On the Macintosh you can enter this by typing **Option-7**. On Windows systems press **Alt-0182**. We can use this symbol to help build a complete address label.



The formula appears all on a single line, but switching to Data Mode shows the finished label on three lines.



Our example used an auto-wrap text object, but the exact same formula could be used with a Text Display SuperObject. In Data Mode this object will look exactly like the previous example. (Of course, using a Text Display SuperObject would give you more options for aligning and scaling the text, see "[Text Display Options](#)" on page 611).

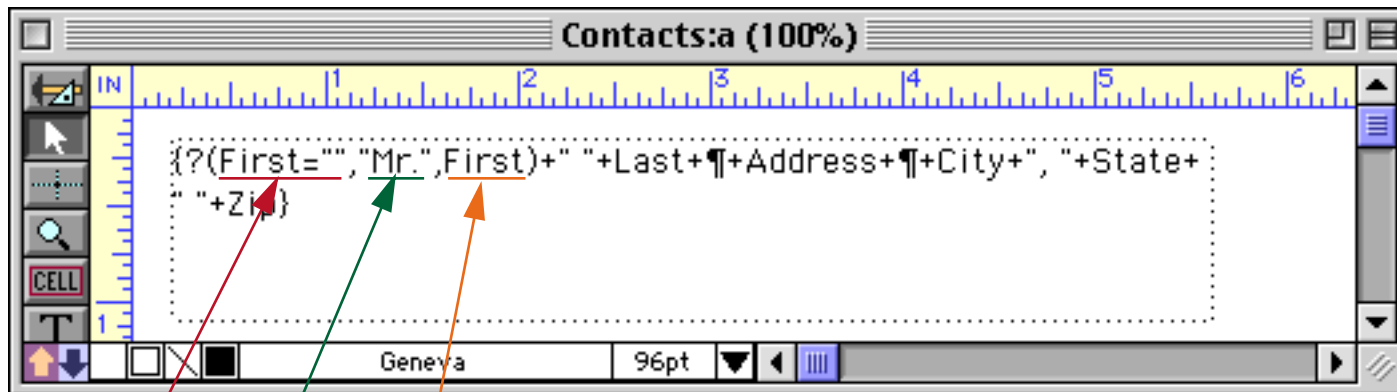
Formula: `First+" "+Last+¶+Address+¶+City+", "+State+" "+Zip`

Note: The alert reader will have noticed that it is possible to create a label like this using data merge in an auto-wrap text object, without using all of these quotes and ¶ and + symbols (see "[Displaying Data in Auto-Wrap Text](#)" on page 595). The data merge is simpler, so why bother with a formula? In this case there is no reason except to illustrate the ability to combine text items together. In the following sections, however, we will expand on this example to show applications that can only be done with a formula.

Creating a Smart Formula

In the real world, data often doesn't fit into neat little boxes. Some people will enter their middle initial, some won't. Some motels have off peak rates, some don't. Some countries measure temperature in Fahrenheit, some in Celsius. It takes a bit of work, but using the `IF()` and `sandwich()` functions you can set up formulas that display data correctly under changing, sometimes opposite circumstances.

The `IF()` function allows a formula to make a yes/no, either/or decision. For example, consider the address label created in the previous section. Suppose the first name is missing? Using the `IF()` function a formula can be constructed that substitutes **Mr.** for the missing first name.

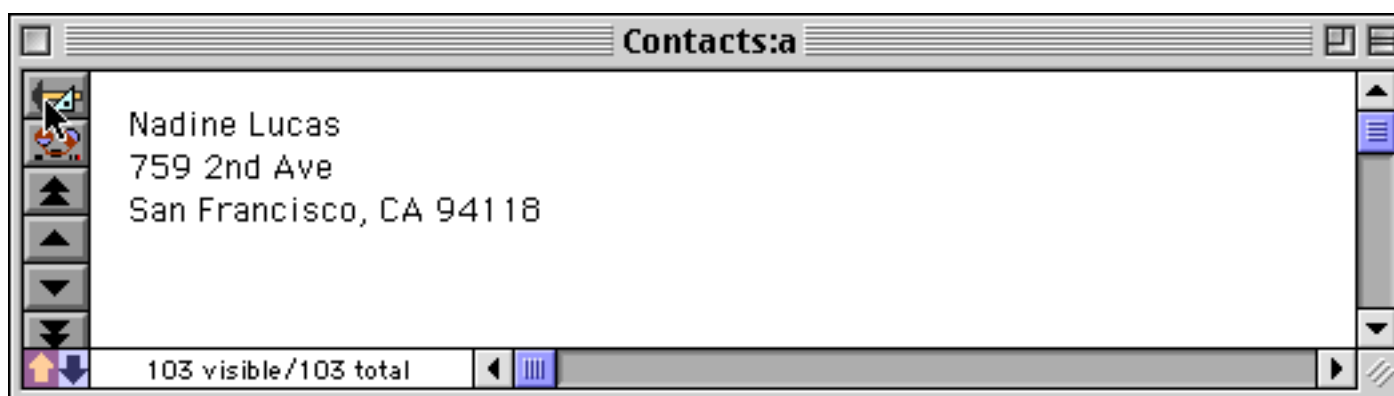


if First is not empty, then it will be included here

if First is empty, then "Mr." will be substituted where the first name normally goes

the function will make a decision based on whether First is empty (equal to "") or not empty

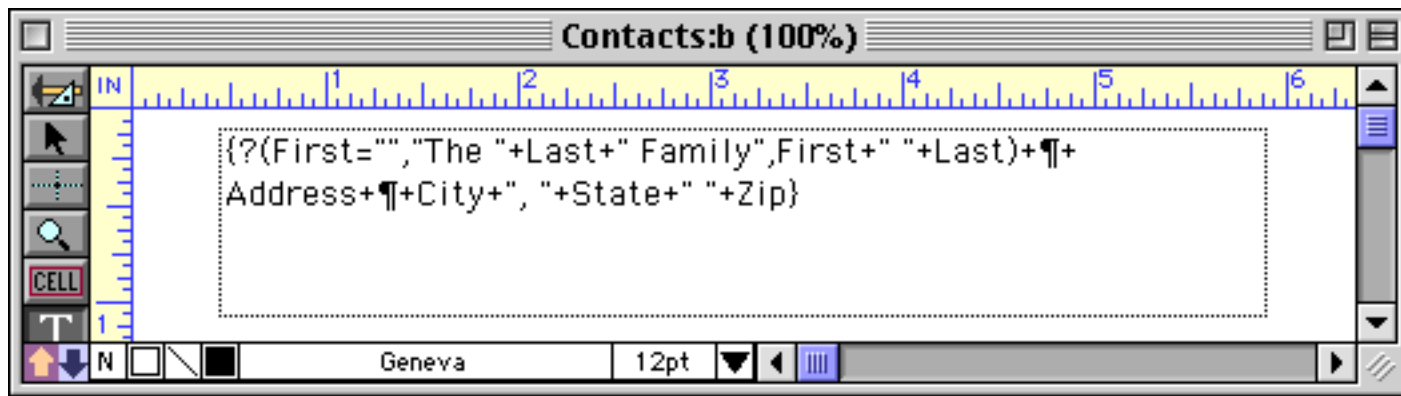
In data mode, anyone with a first name will simply display a standard label including the first and last names.



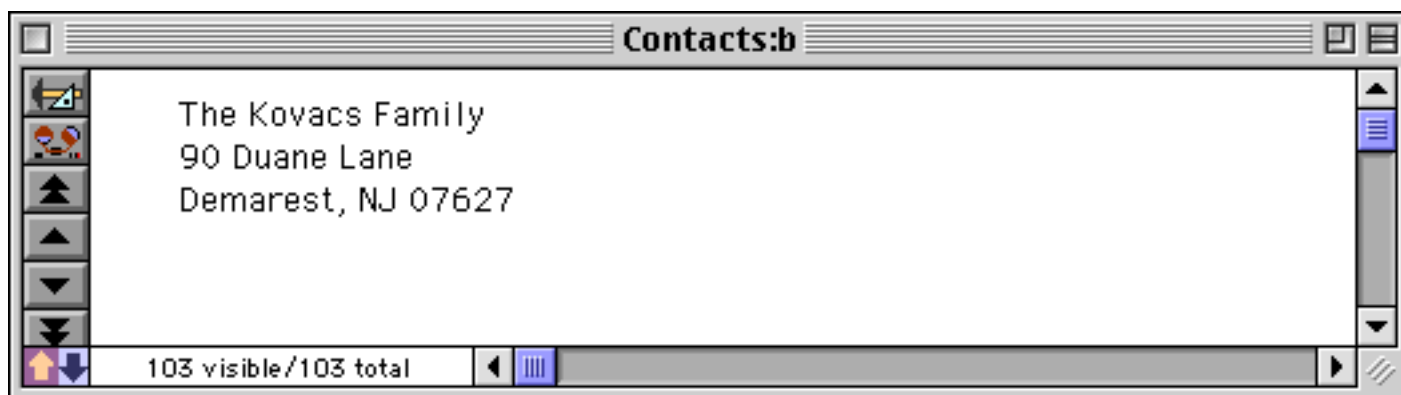
But if the first name is missing, Mr. will be substituted.



There are many ways you can use the `?(` function. Here is a slight re-arrangement of the previous example.



Here's what this formula produces if the first name is missing.



The `?(` function is a simple but very powerful tool. See "[The ? Function](#)" on page 130 of *Formulas & Programming* for more detailed information about this function.

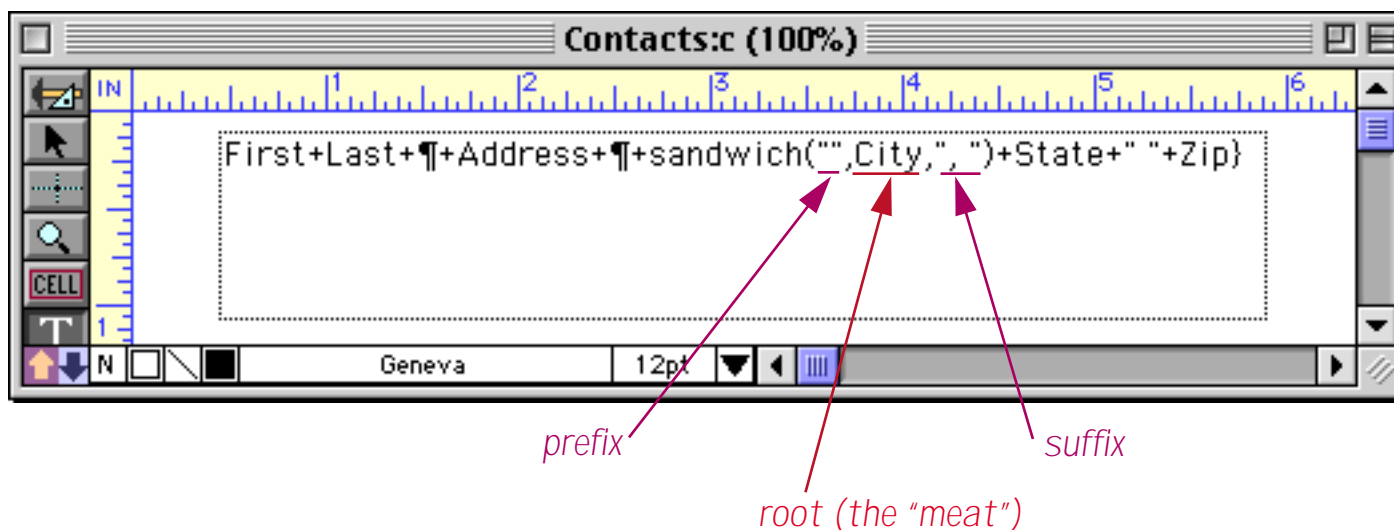
Eliminating Unnecessary Punctuation and Blank Areas With the Sandwich Function

Yes, Panorama actually has a function named `sandwich`! If an item of data is missing, you'll usually want to eliminate any punctuation that is associated with that item. For example, if the middle name is missing, you won't want to include the extra space. If the city is missing from an address, you'll want to leave off the comma afterwards, instead of leaving a comma hanging in the air like this.

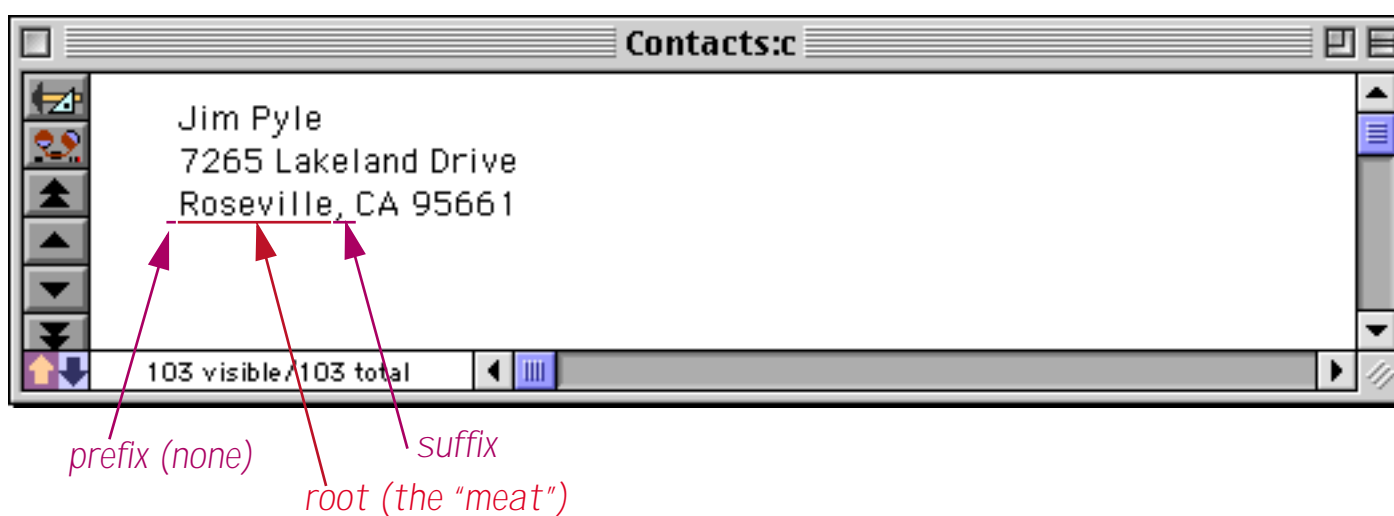


If the company name is missing from an address, you'll want to leave off the following carriage return so there won't be a blank line. All of these tasks can be performed with the `?(` function, but there's also an easier way: the `sandwich(` function.

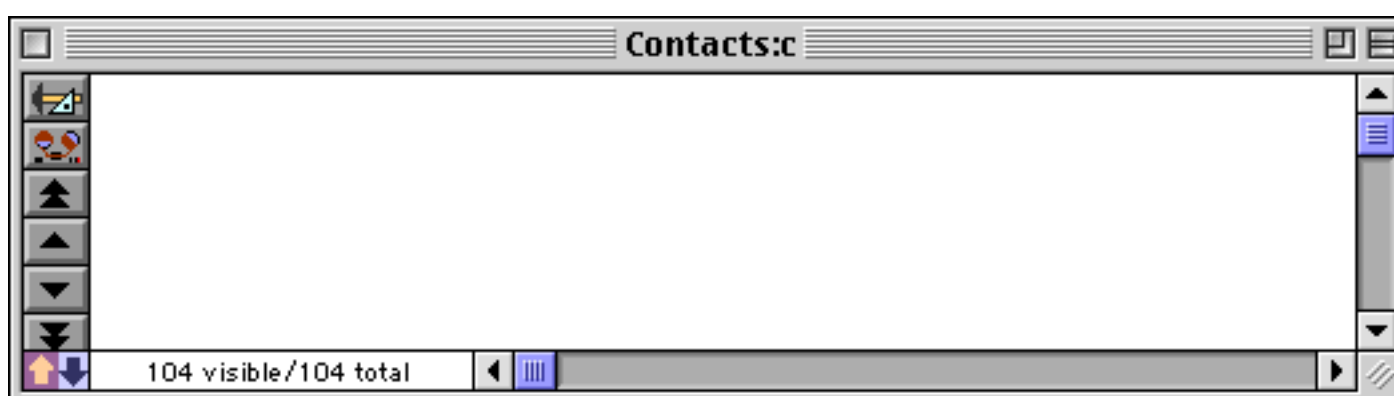
The `sandwich()` function has three parameters: `prefix`, `root` and `suffix`. The `root` is the main item of text you want to display. The `sandwich()` function will add the `prefix` and `suffix` to the beginning and end of the `root`, kind of like slapping bread around a slice of salami. However, if the `root` is empty, the `sandwich()` function won't "slap on the bread."



The results of this function depend on whether or not the `City` field contains any text. If it does, Panorama adds the `prefix` (which in this case is empty) and the `suffix`.



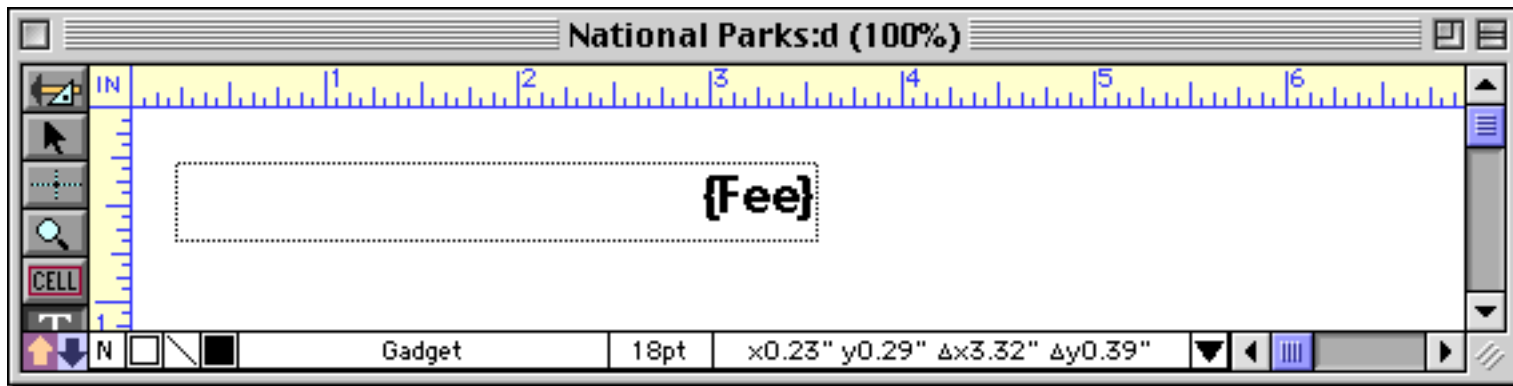
If the `City` field is empty, Panorama leaves out the `prefix` and the `suffix` also. Here's our empty record again, but this time, no comma hanging in the middle of the air!



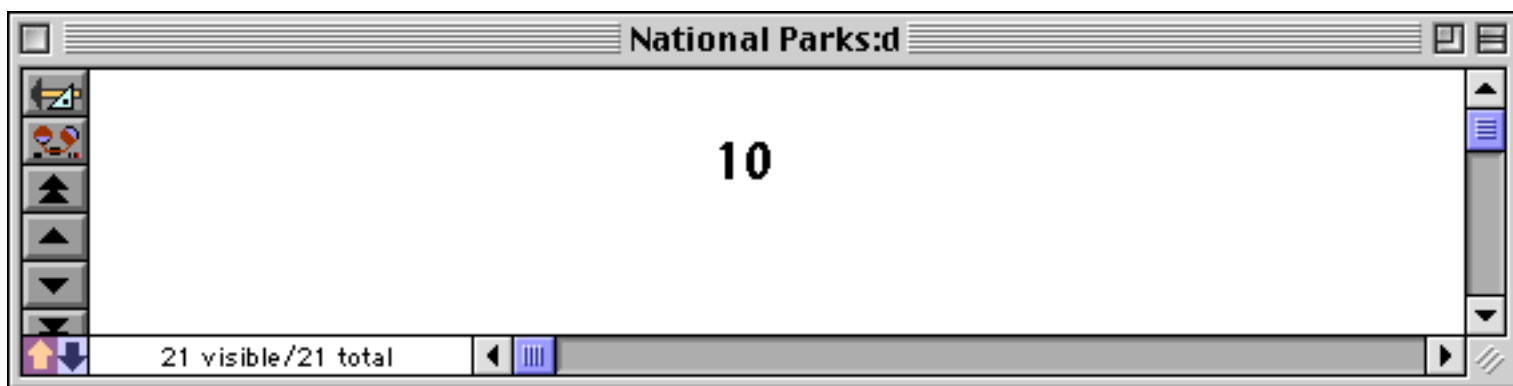
You'll find that the `sandwich()` function is very delicious any time you need to conditionally include spacing or punctuation around a field that might be blank. (Sorry, couldn't resist.)

Combining Numbers with Text

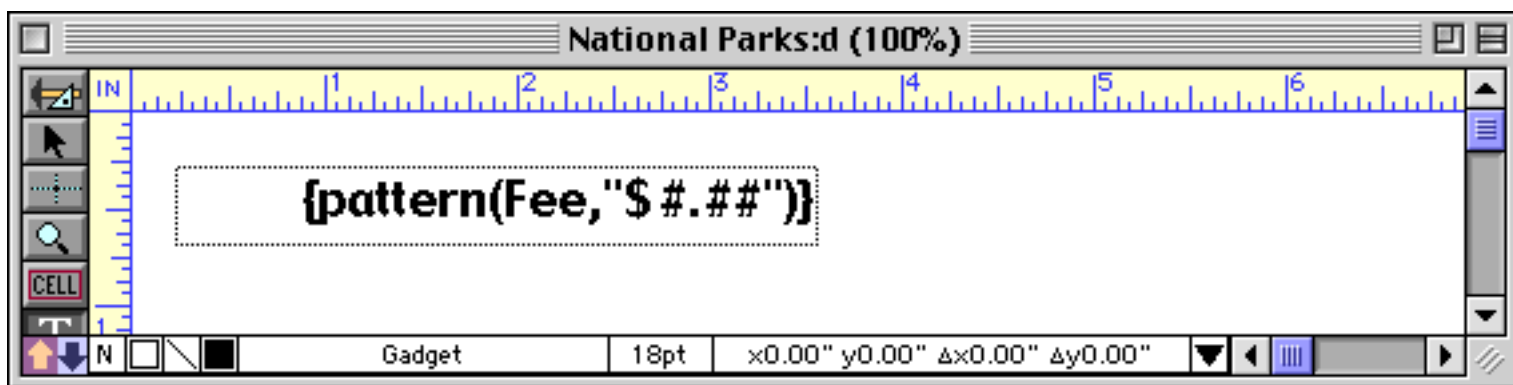
If a formula contains nothing but a single numeric value, Panorama will automatically convert the value to text for you, like this.



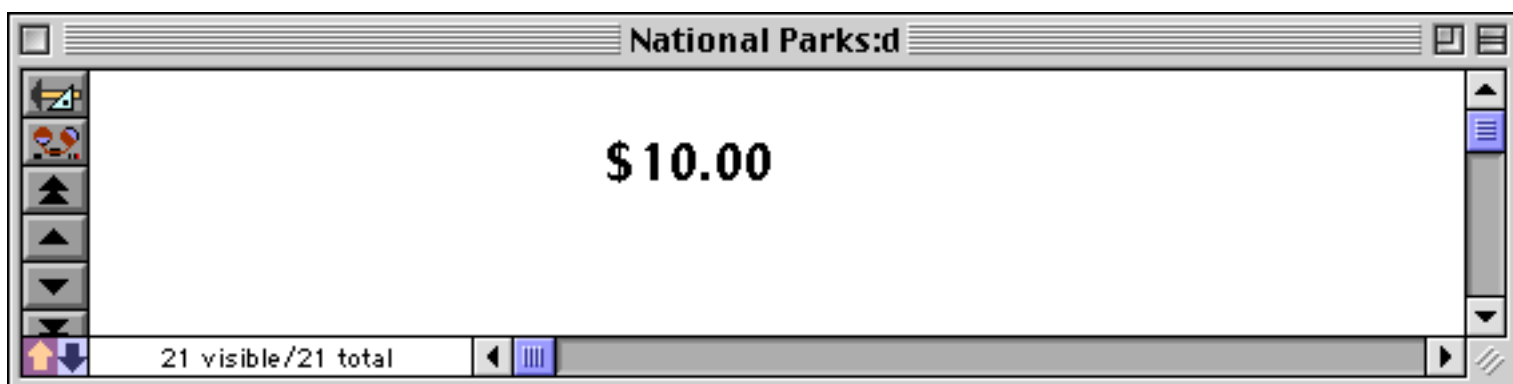
Panorama will decide for itself what format to use for the number.



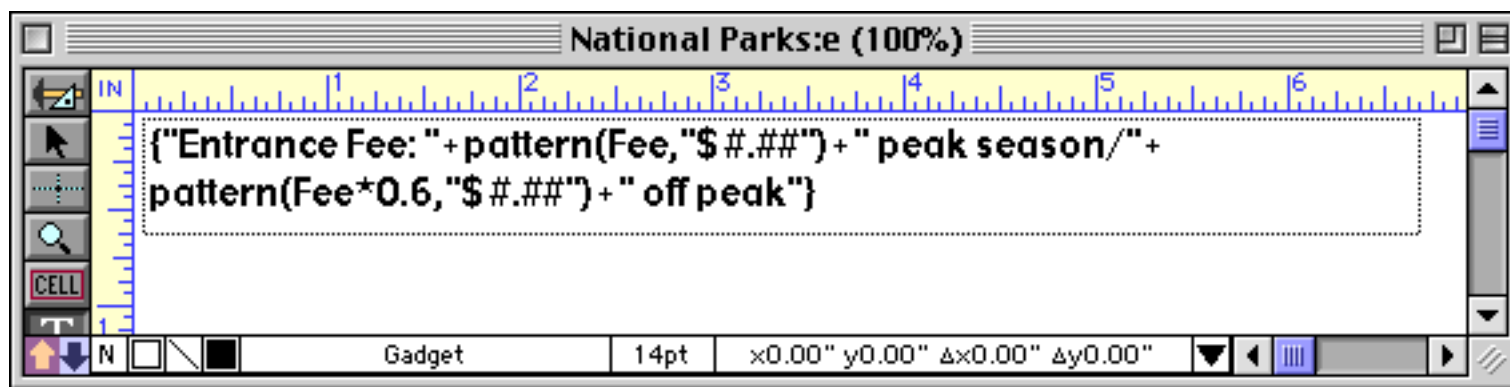
If you don't like the format that Panorama chooses you can use the `pattern()` function to specify the exact format you want to use.



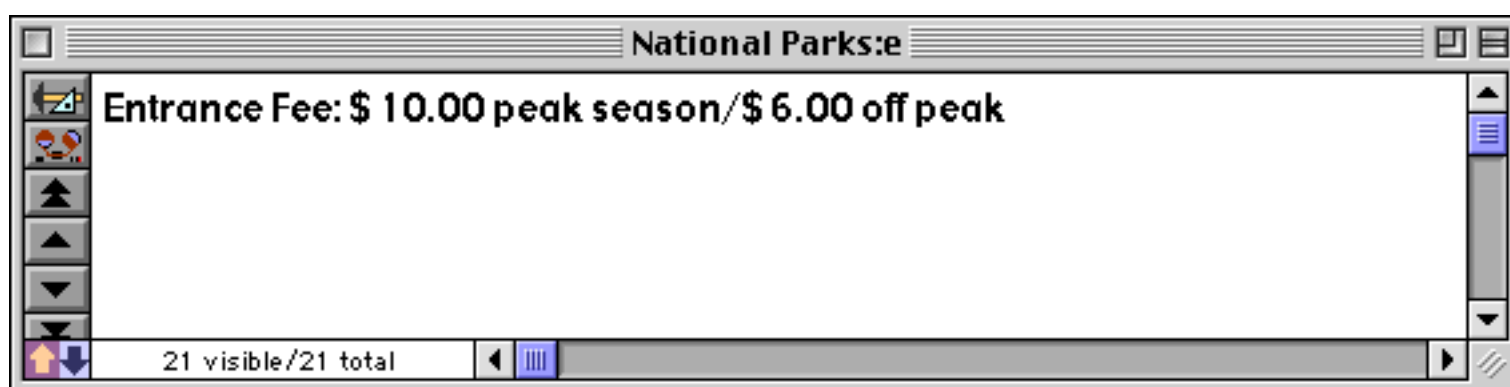
The `pattern()` function gives you total control over the format of the final number. See [“Converting Between Numbers and Strings”](#) on page 84 of *Formulas & Programming* for a complete description of this function.



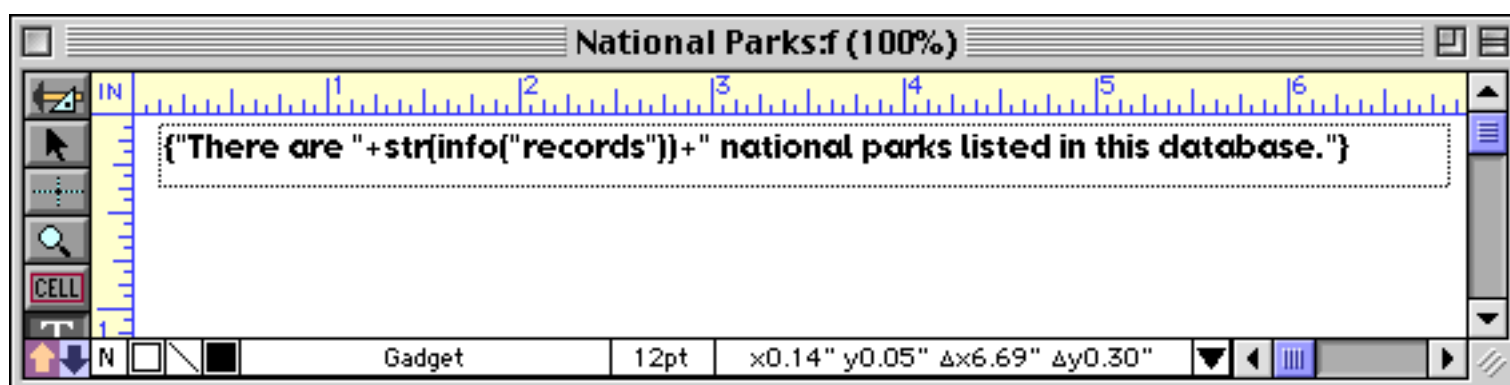
If your formula results in more than a single number (for example two numbers or text and a number) you must convert the numbers to text before they can be used in the formula. This must be done with the `str()` or `pattern()` functions as shown in this example.



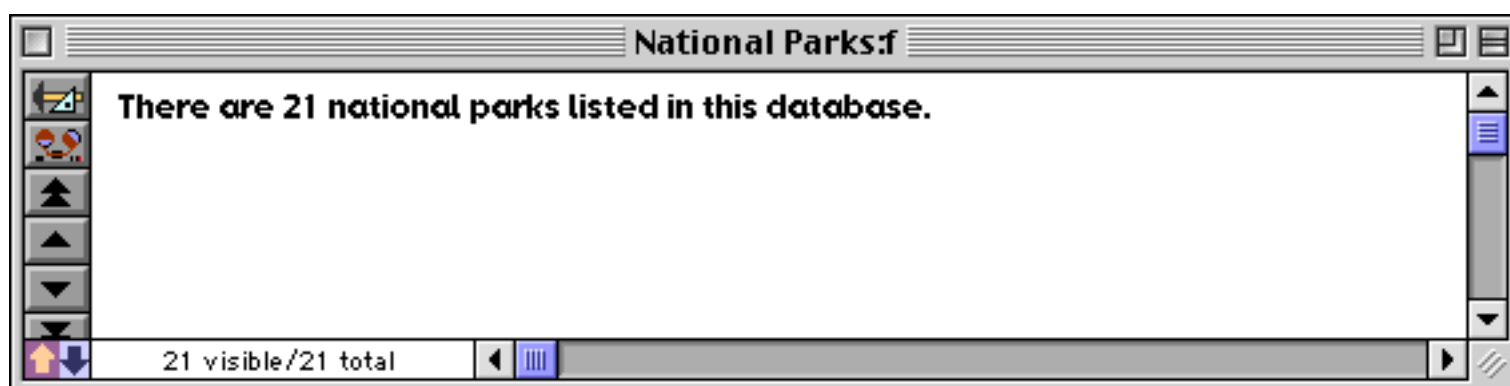
Here's the finished result in Data Mode.



The `pattern()` function gives you total control over the format of the number. Use the `str()` function if you are content to let Panorama decide what format to use.



In this case Panorama chose a simple integer format.



By the way, in case you haven't guessed, the `info("records")` function calculates the total number of records in the database. See "[INFO\("RECORDS"\)](#)" on page 5410 of the *Panorama Reference* for the complete details on this function. See "[Converting Between Numbers and Strings](#)" on page 84 of *Formulas & Programming* to learn more about the `str()` function.

Displaying Dates

To display a date in a field or variable you must convert that date to text with the `datepattern()` function (see “[Converting Between Dates and Text](#)” on page 107 of *Formulas & Programming* for all the gory details). Here’s a simple example that prints the current date and time on the top of each page of a report.

use datepattern() function to convert date to text

use today() function to calculate current day

this pattern specifies the date format

use now() function to calculate current time

use timepattern() function to convert time to text

this pattern specifies the time format

When this report is printed the date and time will appear at the top of the page, like this.

Park	Phone	Web Site
Assateague Island National	(410) 641-1441	http://www.nps.gov/asis/
Bryce Canyon National Park	(435) 834-5322	http://www.nps.gov/brcal/
Cape Hatteras National Seashore	(252) 473-2111	http://www.nps.gov/caha/
Cumberland Island National	(912) 882-4336	http://www.nps.gov/cuis/
Death Valley National Park	(760) 786-2331	http://www.nps.gov/deval/
Denali National Park	(907) 683-2294	http://www.nps.gov/dena/
Everglades National Park	(305) 242-7700	http://www.nps.gov/ever/
Fire Island National Seashore	(631) 289-4810	http://www.nps.gov/fiis/
Gettysburg National Military Park	(717) 334-1123	http://www.nps.gov/gett/

This example was created with an auto-wrap text object and two embedded formulas. You can create the same effect with a Text Display SuperObject, but in that case you must use a single formula like this.

```
"Printed on "+datepattern(today(),"Month ddnth, yyyy")+  
" at "+timepattern(now(),"hh:mm am/pm")
```

The end result is the same either way. (However, with the Text Display SuperObject you would have the option to center the text vertically or to scale the text automatically. See "[Text Display Options](#)" on page 611.)

Merging Images Into Text

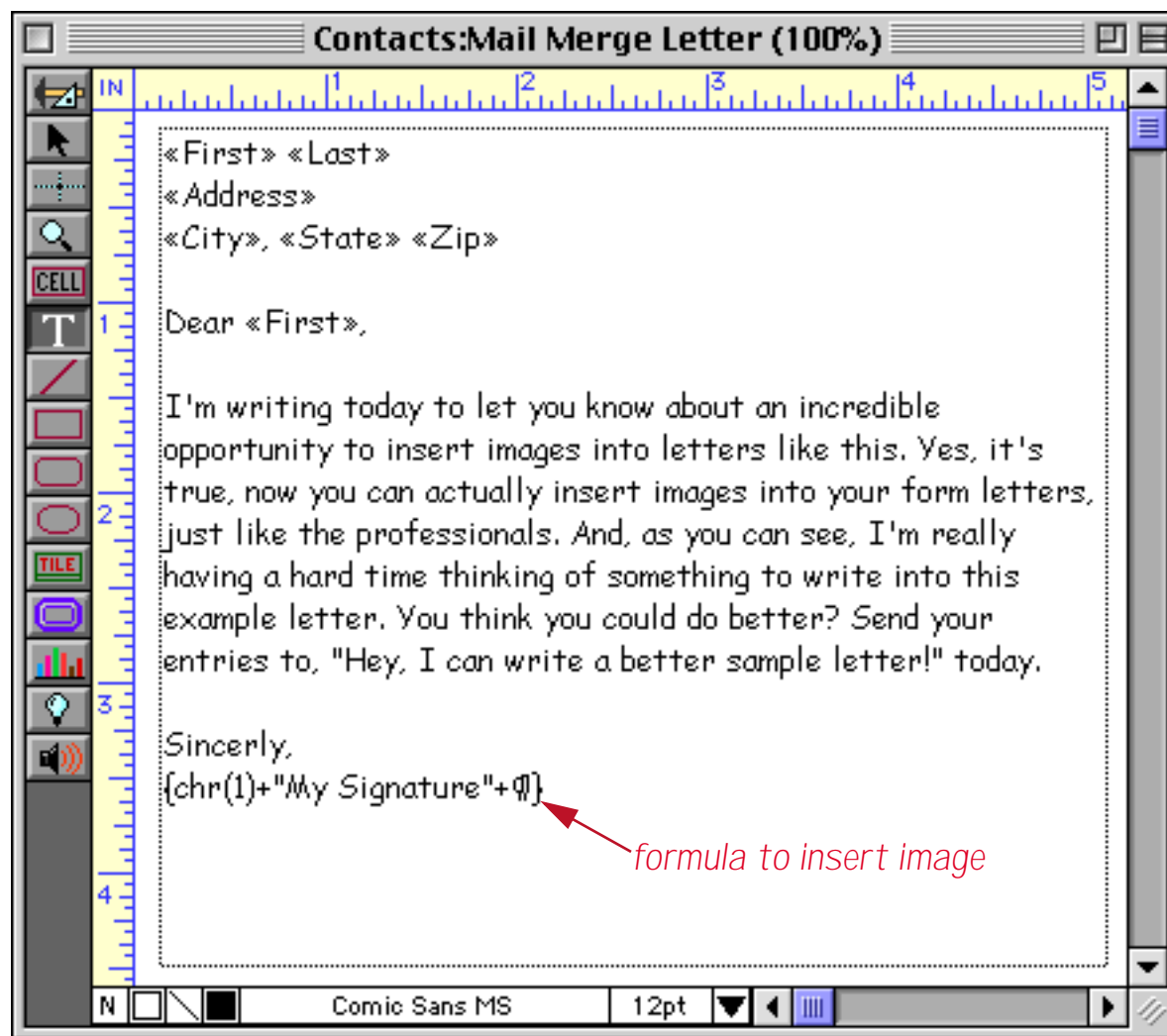
Panorama allows an image from the **Flash Art Gallery** (either stored in the database file itself or on disk) to be merged into the middle of an auto-wrap text object or Text Display SuperObject (see "[Flash Art™](#)" on page 750 for more information about this gallery). The image cannot be merged into the middle of a line, but simply replaces one line of text. The line will expand to the full height of the image. For example, this feature could be used to insert a logo or a signature in a letter. To illustrate this feature we'll assume you have an image in your Flash Art Gallery named [My Signature](#).



To insert an image into an auto-wrap text object you must use a special formula. The formula looks like this (Of course, you should insert the actual name of your image instead of [My Signature](#)).

```
{chr(1)+"My Signature"+¶}
```

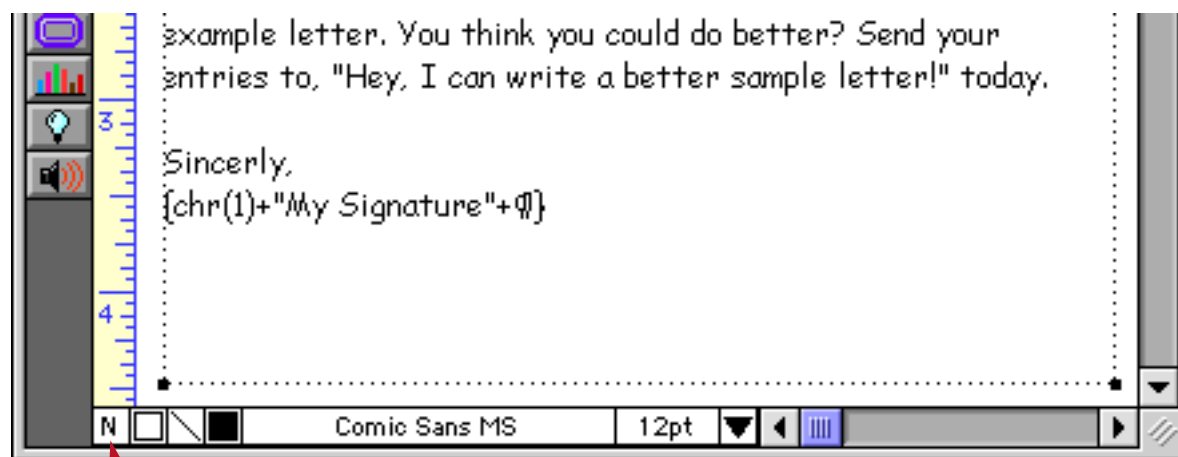

Here is a complete letter with the special formula for inserting the image at the bottom. The formula must be on a separate line all by itself, with nothing else on the line.



Switch to Data Access Mode to see the finished product.



Panorama can be a little bit picky about displaying an image in an auto-wrap text object. Remember, the image cannot be mixed in the middle of a line of text, but must be on a line all by itself. In addition, this feature only works if the auto-wrap text object is filled with NONE (see “[Fill Pattern](#)” on page 521). If the text object is filled with white or any other color, the image will not appear. Since NONE is the default for new text objects you probably won't have a problem, but if you do have difficulties getting the image to appear this is the first thing to check.



fill pattern must be NONE (N)

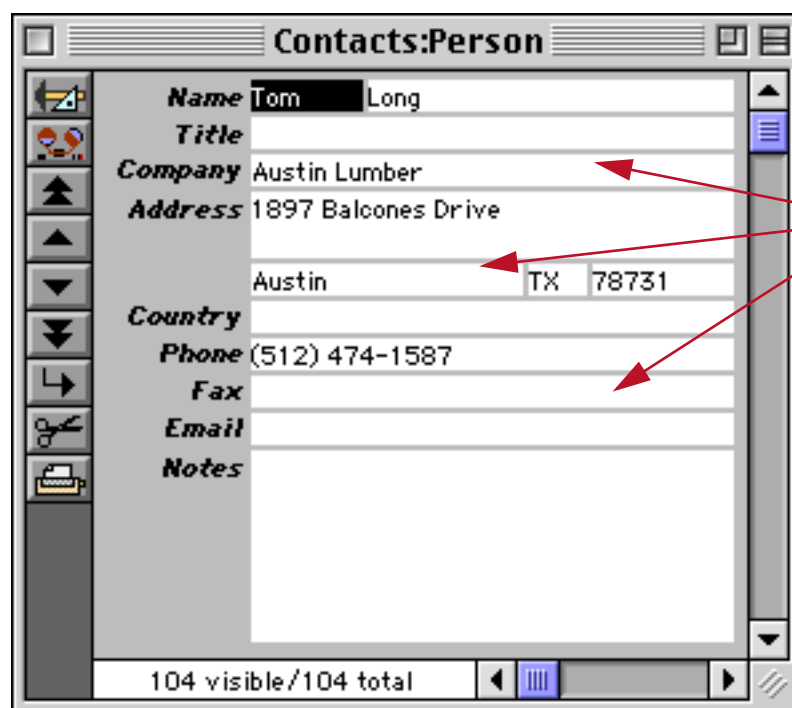
One final tip — this feature works with either an auto-wrap text objects or a Text Display SuperObject. (However, it does not work with Text Editor or Word Processor SuperObjects.)

Editing Text

Most data entry and editing is done with the keyboard. The rest of this chapter shows how to set up a form objects for editing text.

Types of Data Editing Objects

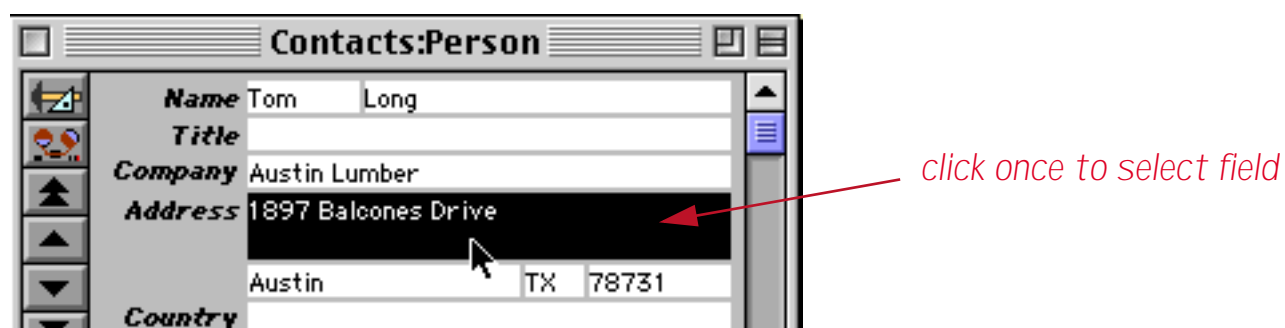
In a form data entry is done through objects (just like everything else in a form!). Each object allows a specific item of data to be edited (for example a person's first name or a phone number). A collection of data editing objects is assembled to create a complete data entry form.



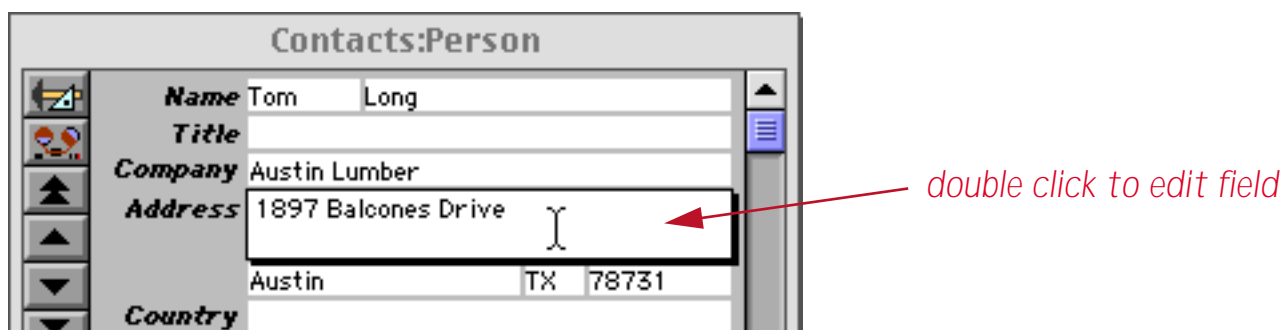
each object edits a single data item

Panorama has two primary types of objects for editing text: **data cell objects** (shown above) and **Text Editor SuperObjects**. You can mix these two types on a single form, but usually you'll want to choose one type per form and stick with it.

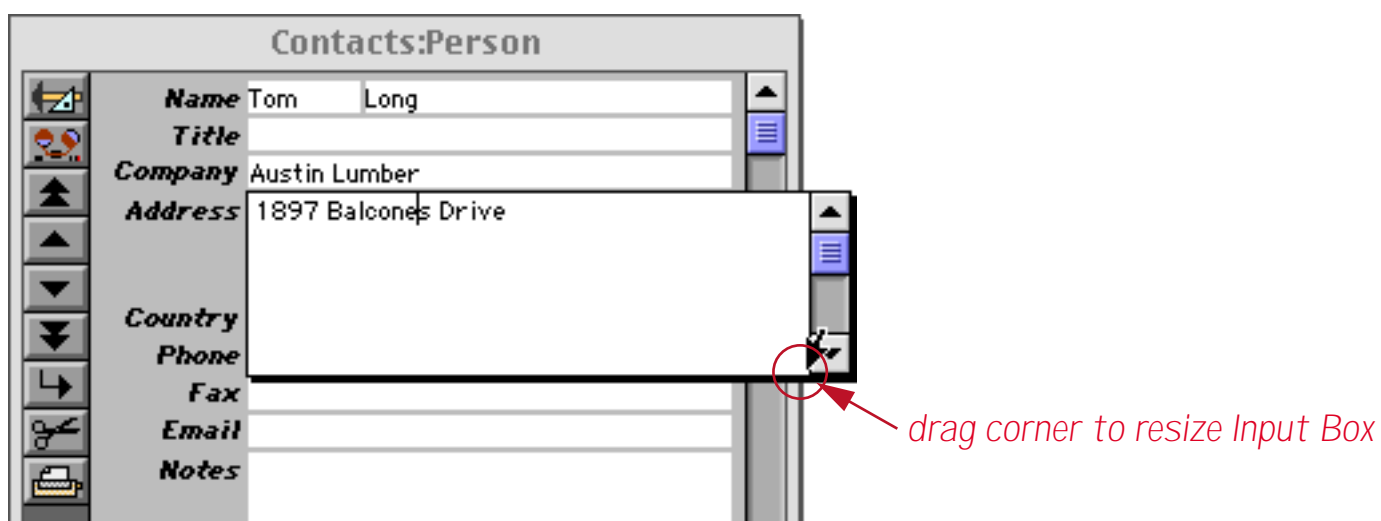
Data cell objects are the “classic” way to edit data in a Panorama form. In early versions of Panorama (before version 3) this was the only kind of text editing object available. Data cell objects are designed to mimic the way Panorama works in the data sheet. In Data Mode, clicking once on a data cell object selects the field, but does not open the field for editing.



Clicking twice on the object opens the pop-up data editing Input Box you are familiar with from the data sheet (see “[The Input Box](#)” on page 272).



Just as in the data sheet, the data cell object's Input Box can be expanded by dragging on the lower right hand corner (see “[Expanding the Input Box](#)” on page 273).



To learn how to add data cell objects to your form see “[Working with Data Cell Objects](#)” on page 635.

As an alternative to data cells, a form may be designed with **Text Editor SuperObjects**. Text Editor SuperObjects allow you to edit text right in the form window—no double click is required. You can simply click or drag on the text to begin editing. Press **Enter** when you are finished. The illustration below shows the effect of double clicking on the word **Harmony**. As you can see, instead of opening an Input Box this selects the word for editing.



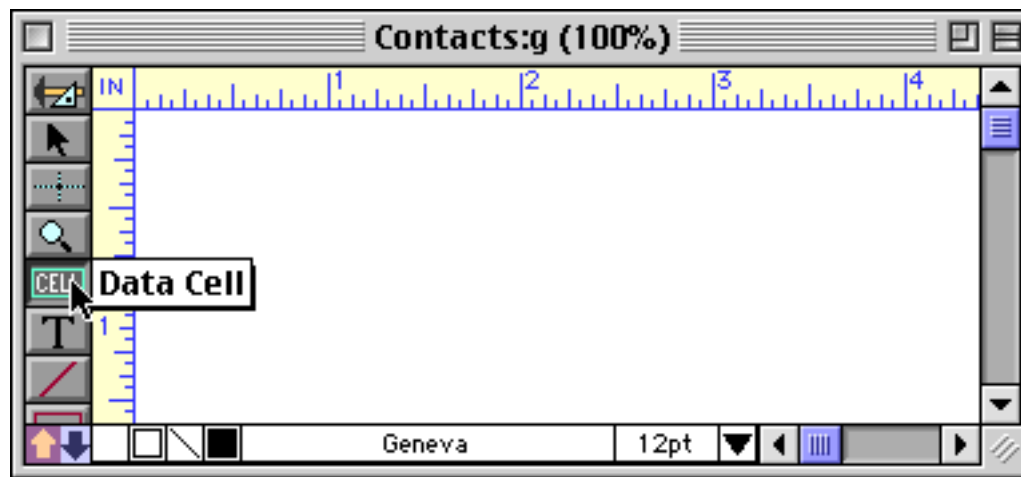
Since the Text Editor SuperObject doesn't use an Input Box, you cannot expand the size of the editing area "on-the-fly" the same way you can with data cells. The editing area must be defined in advance. On the other hand, the Text Editor SuperObject doesn't require the extra double click, and works more like other standard applications you may be used to. See "[Creating and Modifying Text Editor SuperObjects](#)" on page 639 to learn how to create a form with Text Editor SuperObjects.

The table below summarizes the differences between data cell objects and Text Editor SuperObjects. For many applications, either type will work all depending on your personal preferences. Some advanced features (for example editing variables, see next section) do require the use of Text Editor SuperObjects.

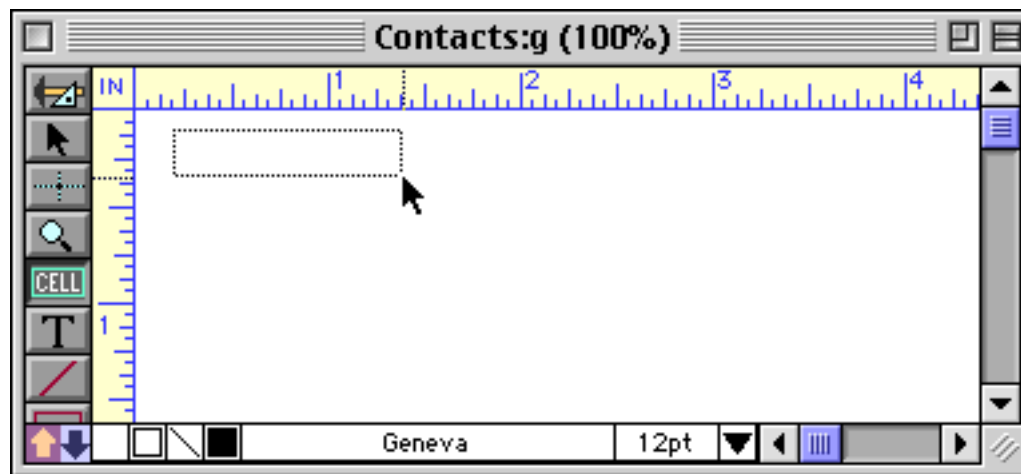
Feature	Data Cell	Text Editor SuperObject
Operation	Edit in pop-up Input Box (similar to data sheet)	Edit directly in form window
Expandable Editing Area?	Yes	No
Double Click before Editing?	Yes	No
Edit Fields?	Yes	Yes
Edit Variables?	No	Yes
Optional Borders?	No	Yes
Custom Object Pattern?	Yes	No

Working with Data Cell Objects

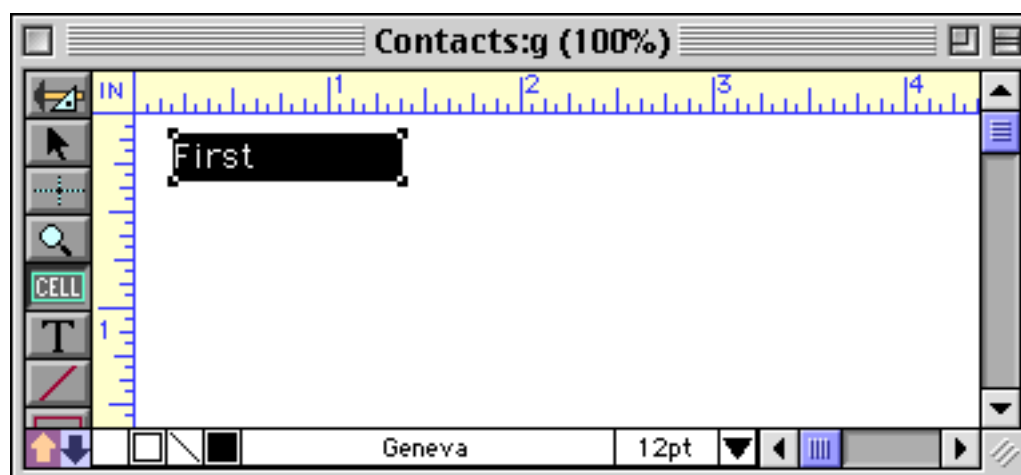
Data cells are created with the **Data Cell** tool. To create a data cell, start by selecting this tool.



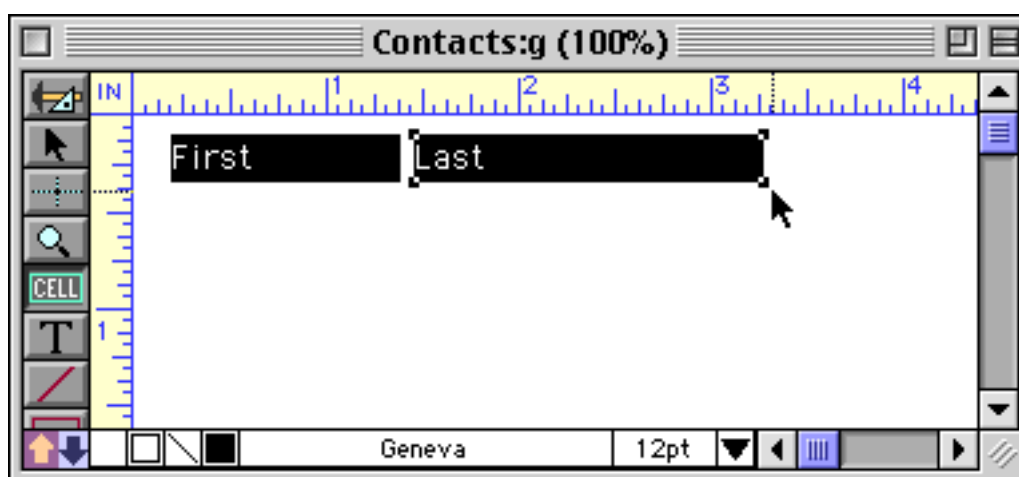
Next drag the mouse across the surface of the form. It's just like creating a rectangle.



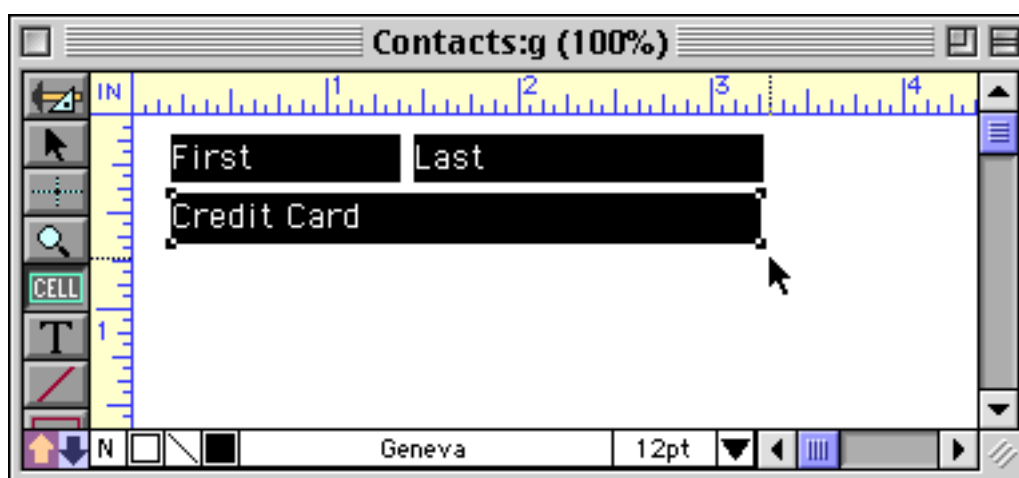
When you release the mouse, Panorama automatically assigns the first field from the database to the new data cell.



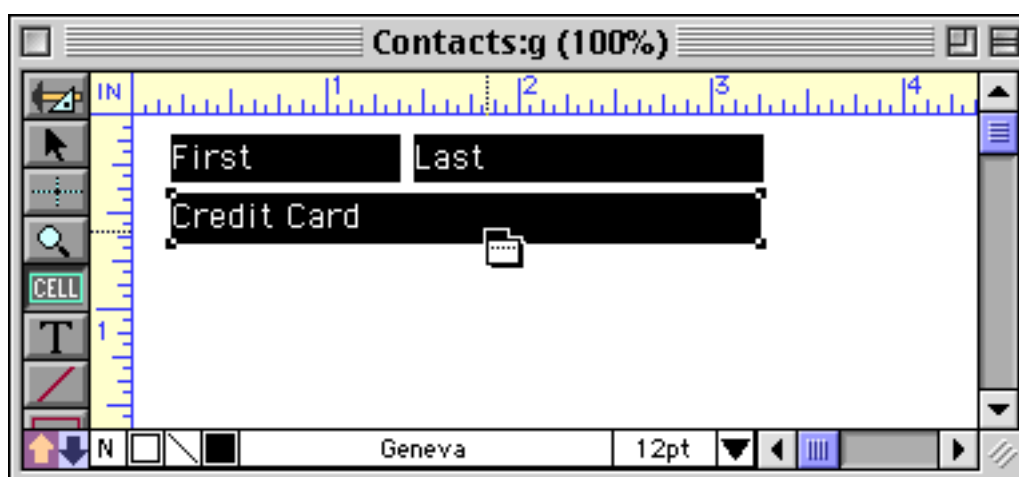
As you create additional cells, each cell is automatically assigned to the next field (using the same order that the fields appear in the data sheet). In this case the second field in the database is named **Last**.



You can continue to add cells to the form. The next field in this database is **Credit Card**.



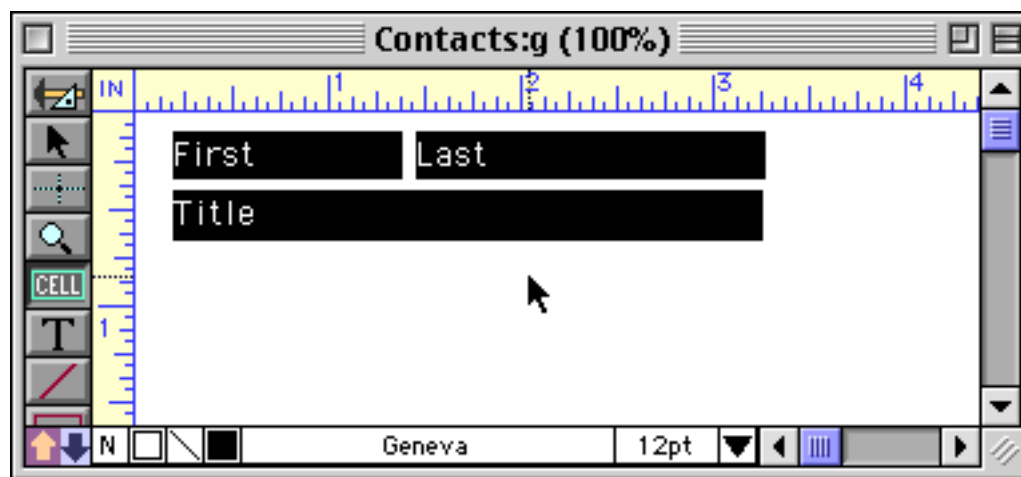
To change the field assigned to a data cell, move the mouse over the cell. The mouse arrow will change to a mini-menu icon.



When you see the mini-menu icon, press the mouse to activate a pop-up menu showing all the fields in the database.

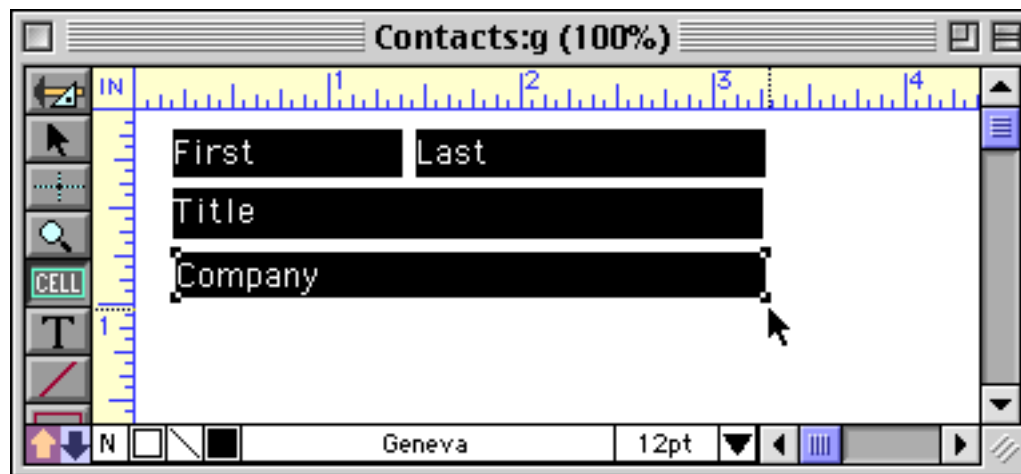


Select the field you want assigned to this data cell and release the mouse.

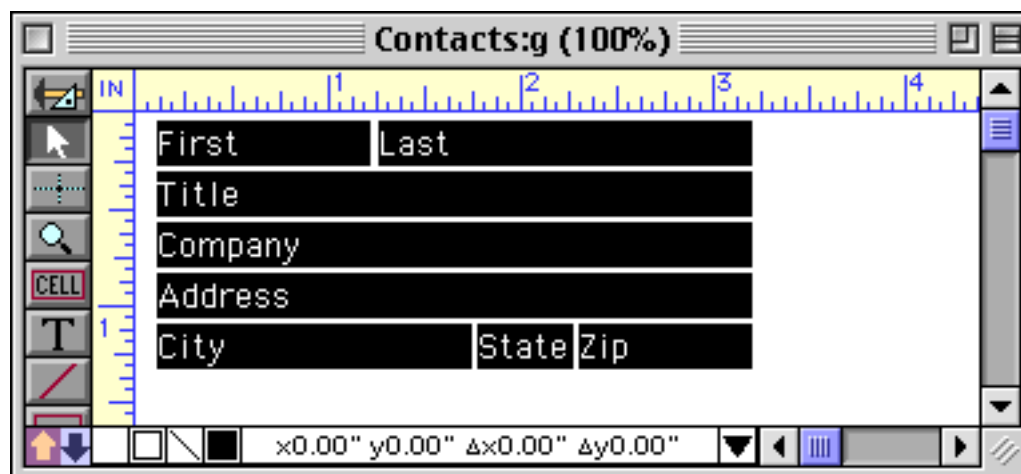


You can use this technique to change the field assigned to any data cell at any time. Remember, however, that you must have the **Data Cell** tool selected. You cannot change the field assignment when any other tool (including the **Pointer**) is selected.

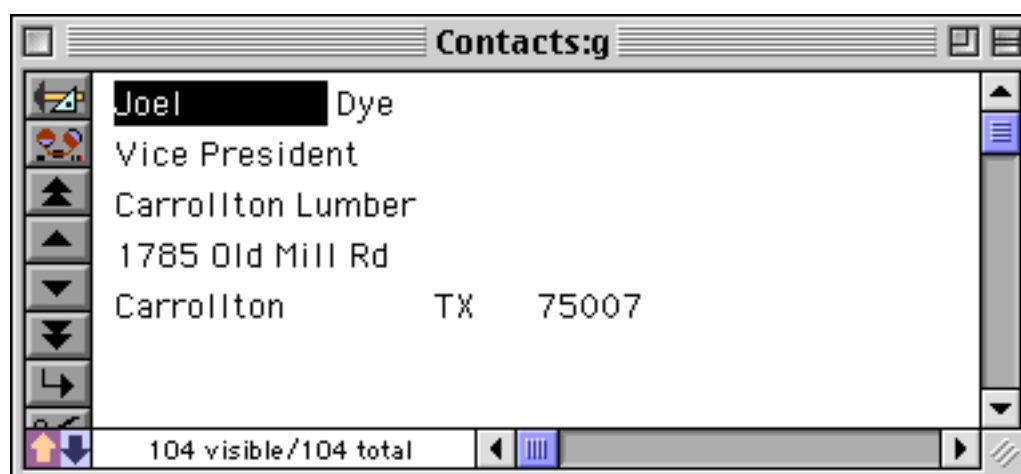
At this point we can continue making additional data cells. The next data cell will be assigned the next field after **Title** (in this case **Company**).



When you create data cells by hand like this, the result is likely to be a bit messy. After creating some more cells, we cleaned up this form using a combination of the Dimension dialog (see “[Setting Exact Dimensions of Multiple Objects](#)” on page 550) the Align dialog (see “[Aligning Objects](#)” on page 553), the Spacing dialog (see “[Adjusting Spacing Between Multiple Objects](#)” on page 556) and nudging with the arrow keys (see “[Nudging an Object \(or Objects\)](#)” on page 509).



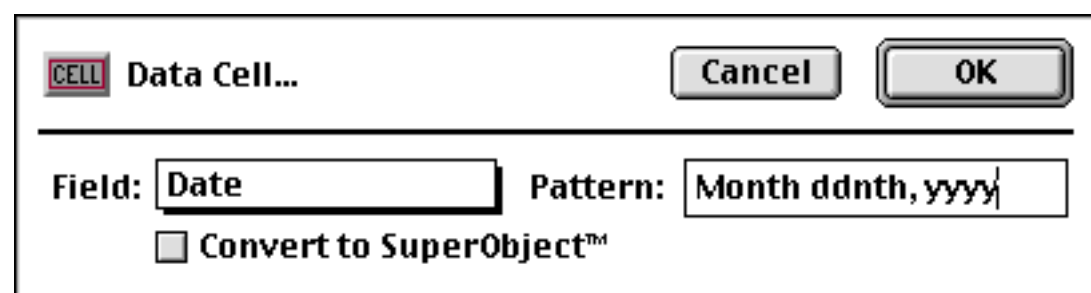
These data cells are ready to use. Simply click on the **Switch To Data Access Mode** tool and you are ready to start typing.



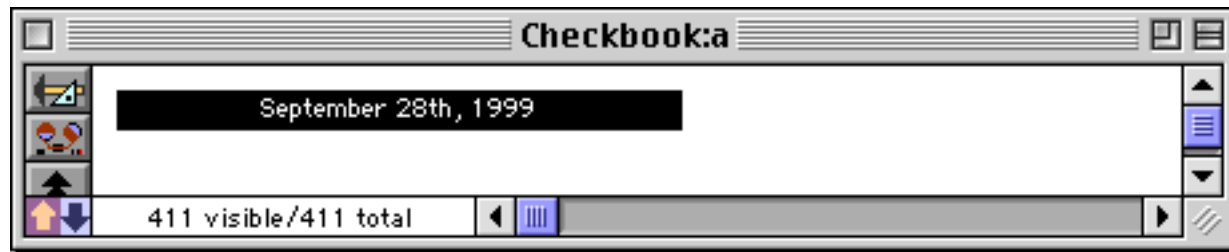
If you need to revise the data cells (or any other form object) later, click on the **Switch to Graphic Design Mode** tool.

Data Cell Custom Output Patterns

Numeric and date data cells are normally formatted using the master output pattern specified in the design sheet (see “[Field Properties](#)” on page 215). If you wish, you can override the design sheet output pattern for an individual data cell in the form. To do this, use the pointer tool to select the cell and choose **Output Pattern** from the Text menu. (Alternately, you can simply double click on the data cell.) Type the new output pattern into the dialog.



The data cell will now display the date using the output pattern you typed in.



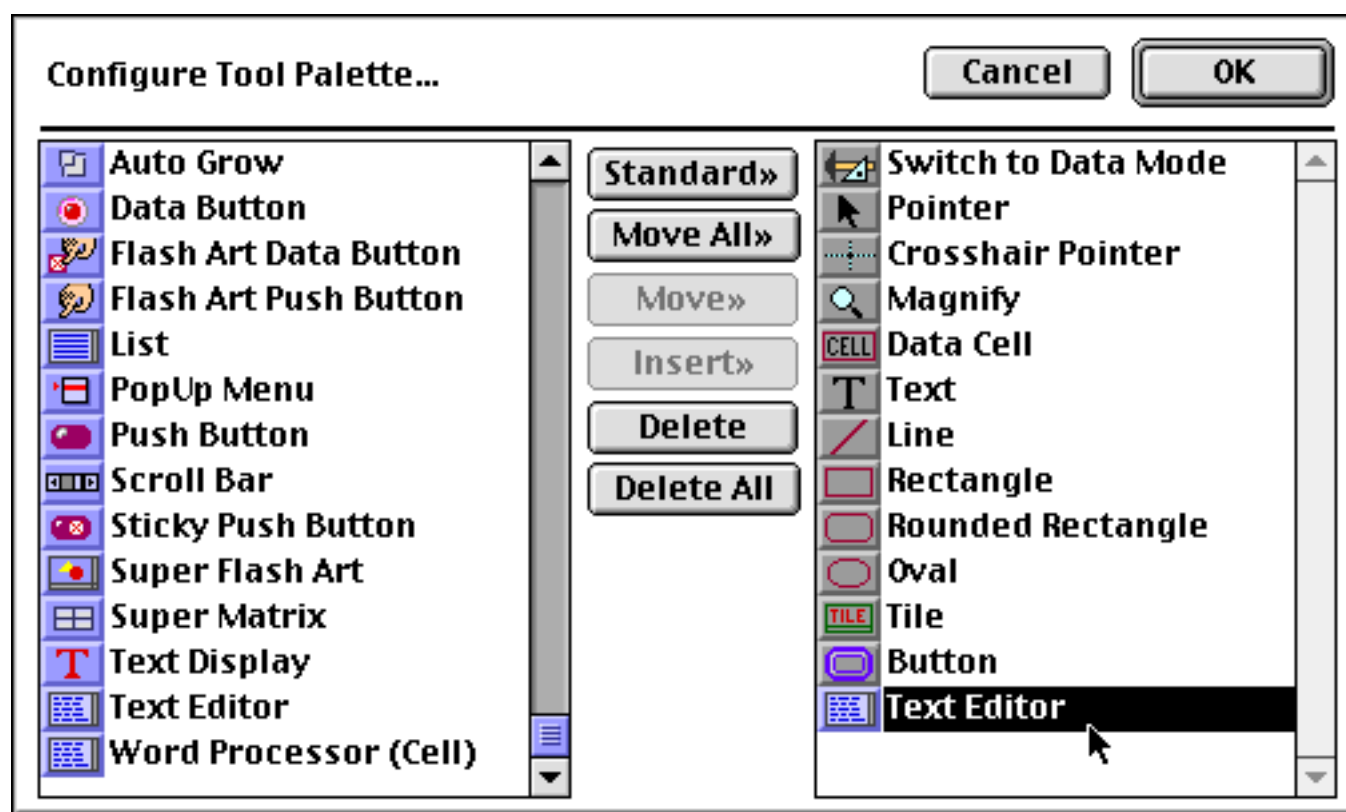
To review output patterns, see “[Numeric Output Patterns](#)” on page 250 and see “[Date Output Patterns](#)” on page 255.

Text Editor SuperObject

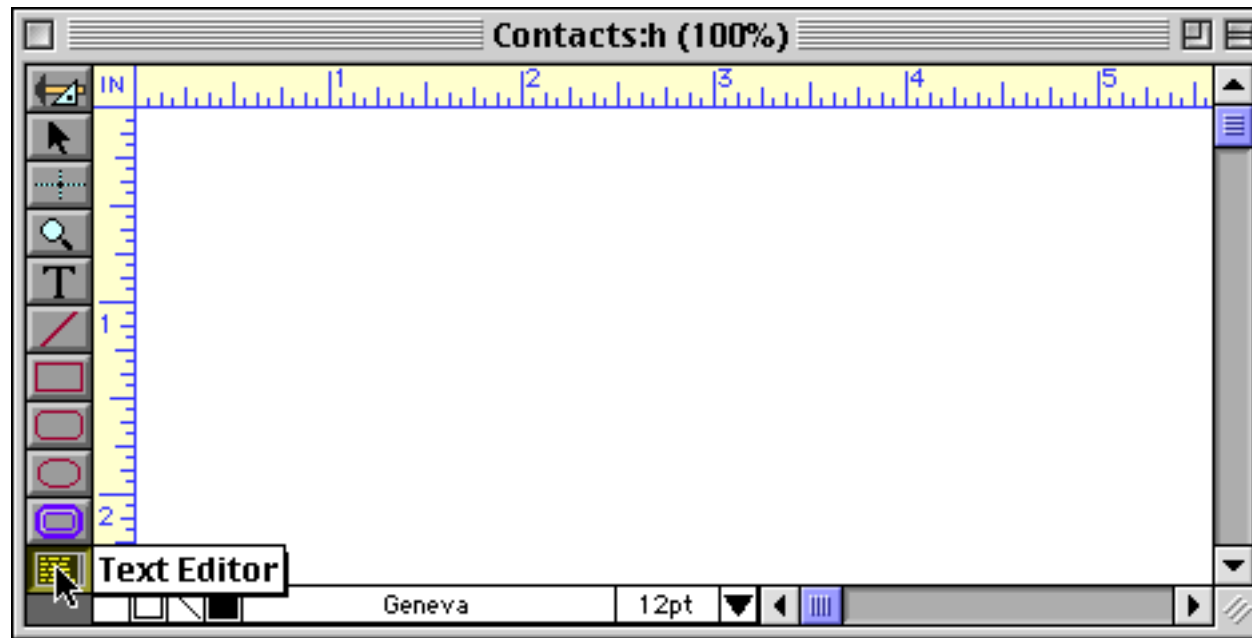
The Text Editor SuperObject is used to edit text in a field or variable. Unlike a data cell, the Text Editor SuperObject does not use a temporary pop-up window for editing. Instead, the user simply clicks and edits the text right in the form window, just as they do with most other applications (see “[Types of Data Editing Objects](#)” on page 632). (Of course the down side of this is that the area available for editing is fixed and can't be expanded except by changing the form layout in graphic mode, or with an Auto Grow SuperObject). Another difference from data cells is that Text Editor SuperObjects can edit variables as well as fields. They can automatically draw borders and include one or two scroll bars (or none). (If you wish, you can mix Text Editor SuperObjects with standard data cells objects on the same form).

Creating and Modifying Text Editor SuperObjects

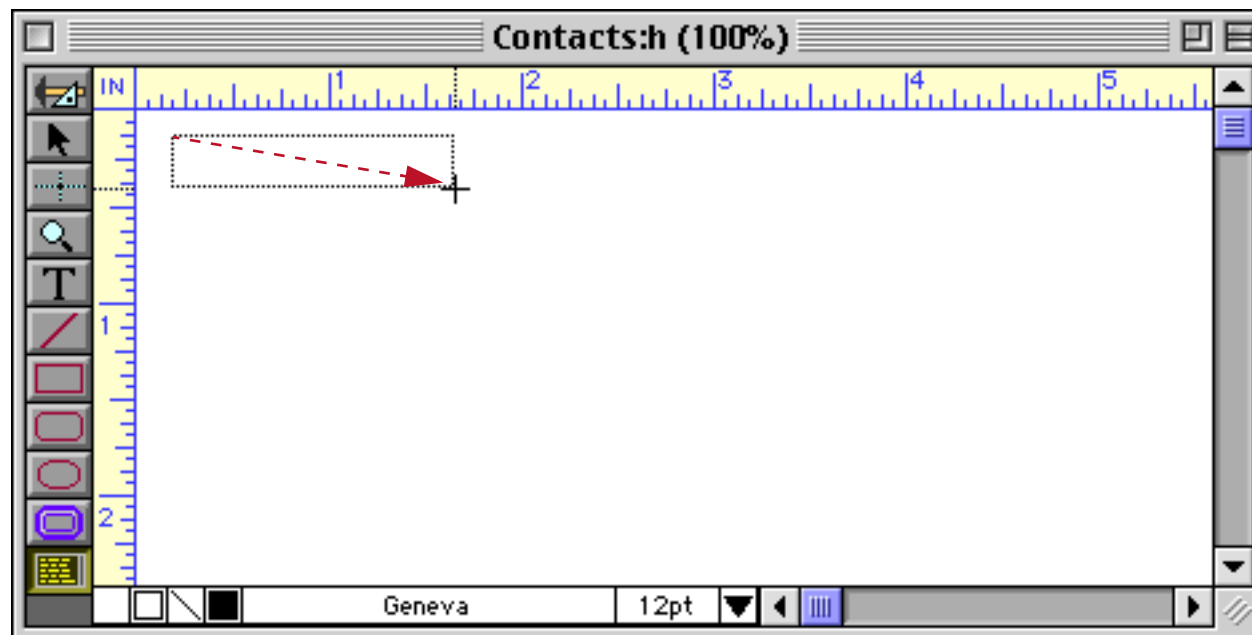
The Text Editor SuperObject tool is not in the default tool palette, so you'll need to use the **Tool Palette** dialog to add this tool to the palette if it is not already there (see “[Customizing the Tool Palette](#)” on page 497).



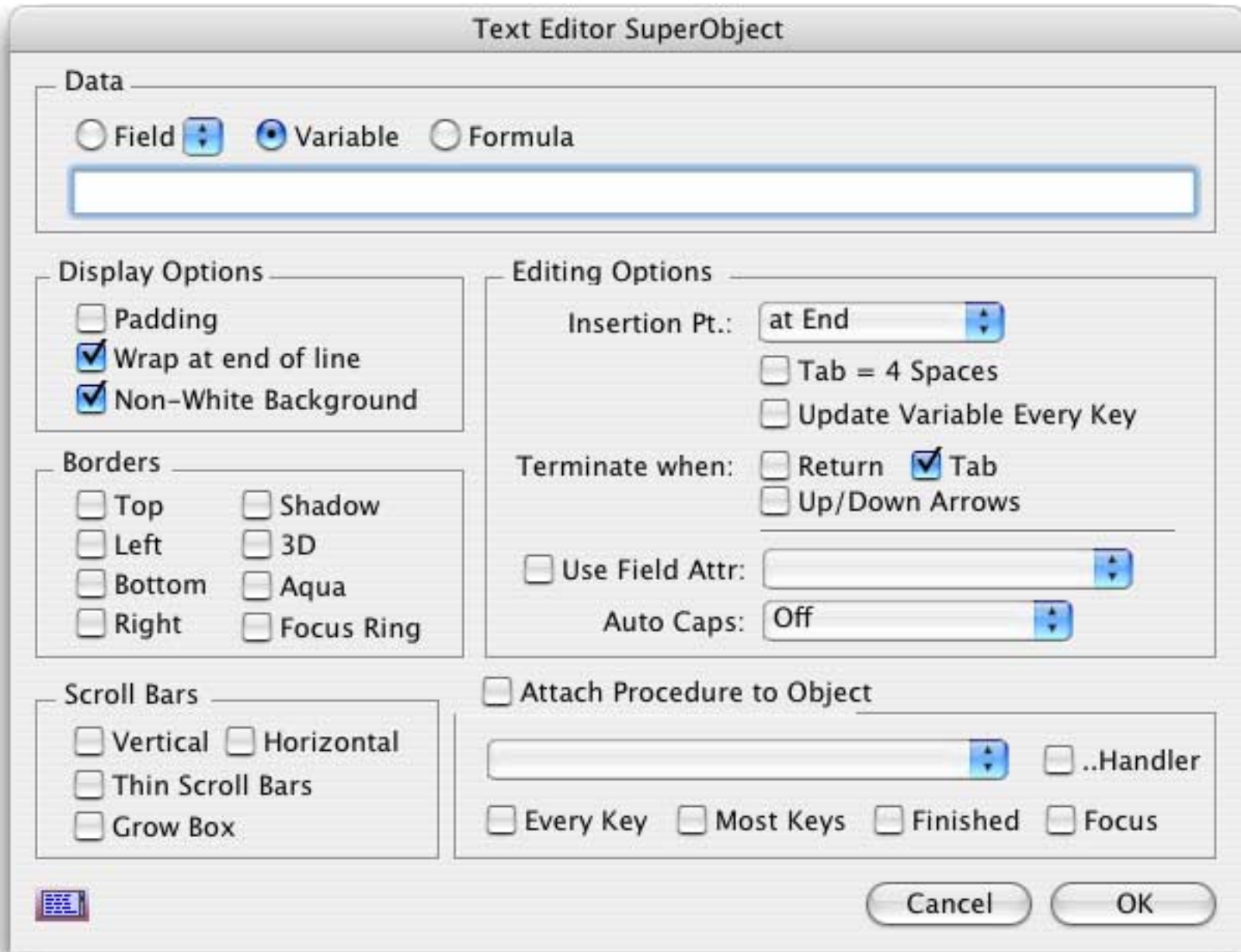
Now that the tool is added to the palette you can select it.



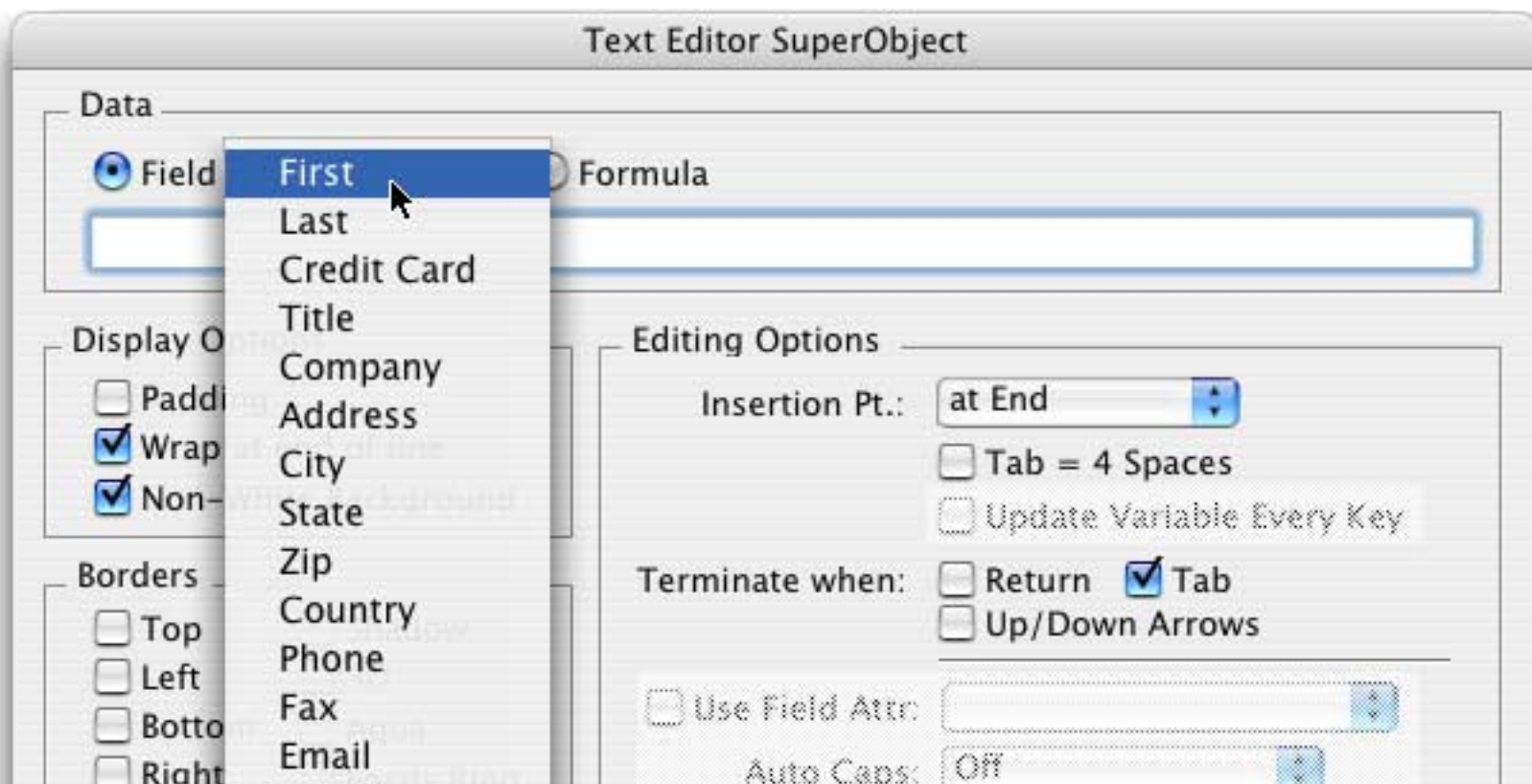
Once the tool is selected, drag the mouse across the form in the location where you want to create the Text Editor SuperObject.



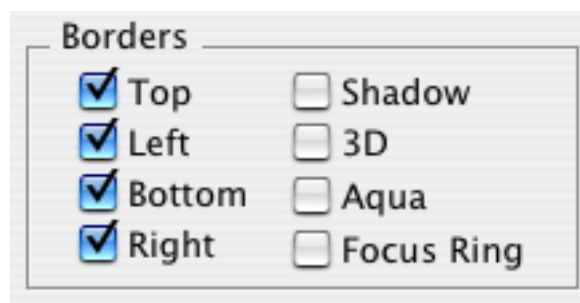
When you release the mouse, the Text Editor SuperObject configuration dialog will appear.



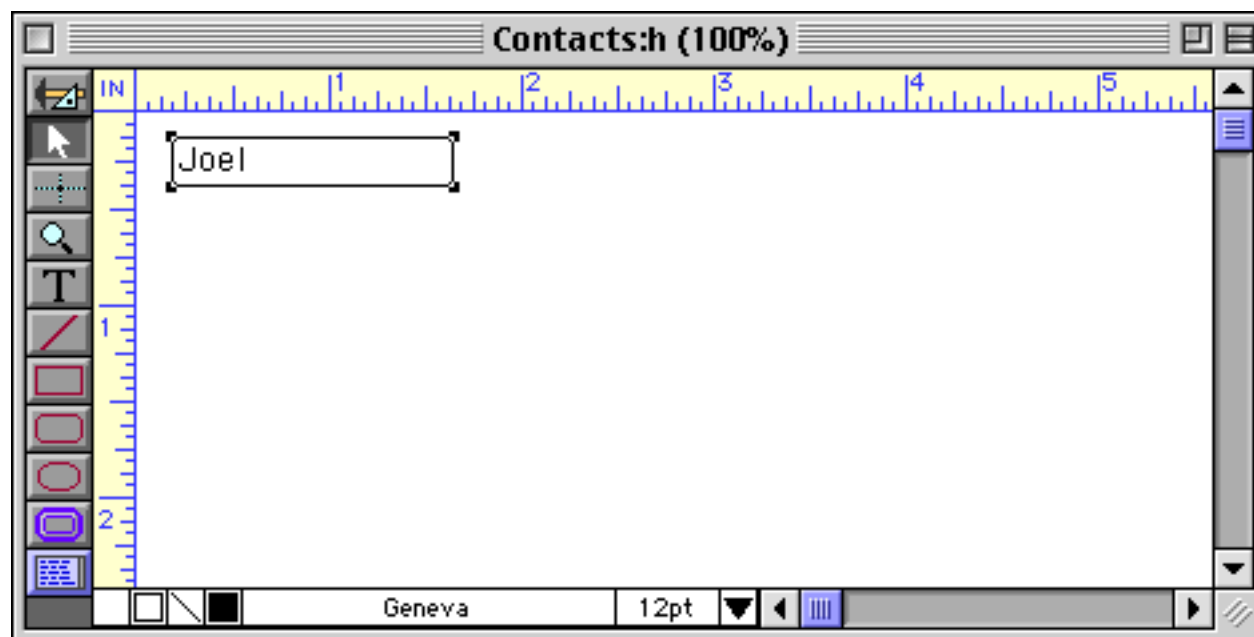
At a minimum you must enter a field name, variable or formula into the dialog. You can use the pop-up menu to select a field.



For this example we've also turned on the **Borders** options (all of the available options are discussed in detail in the next section).



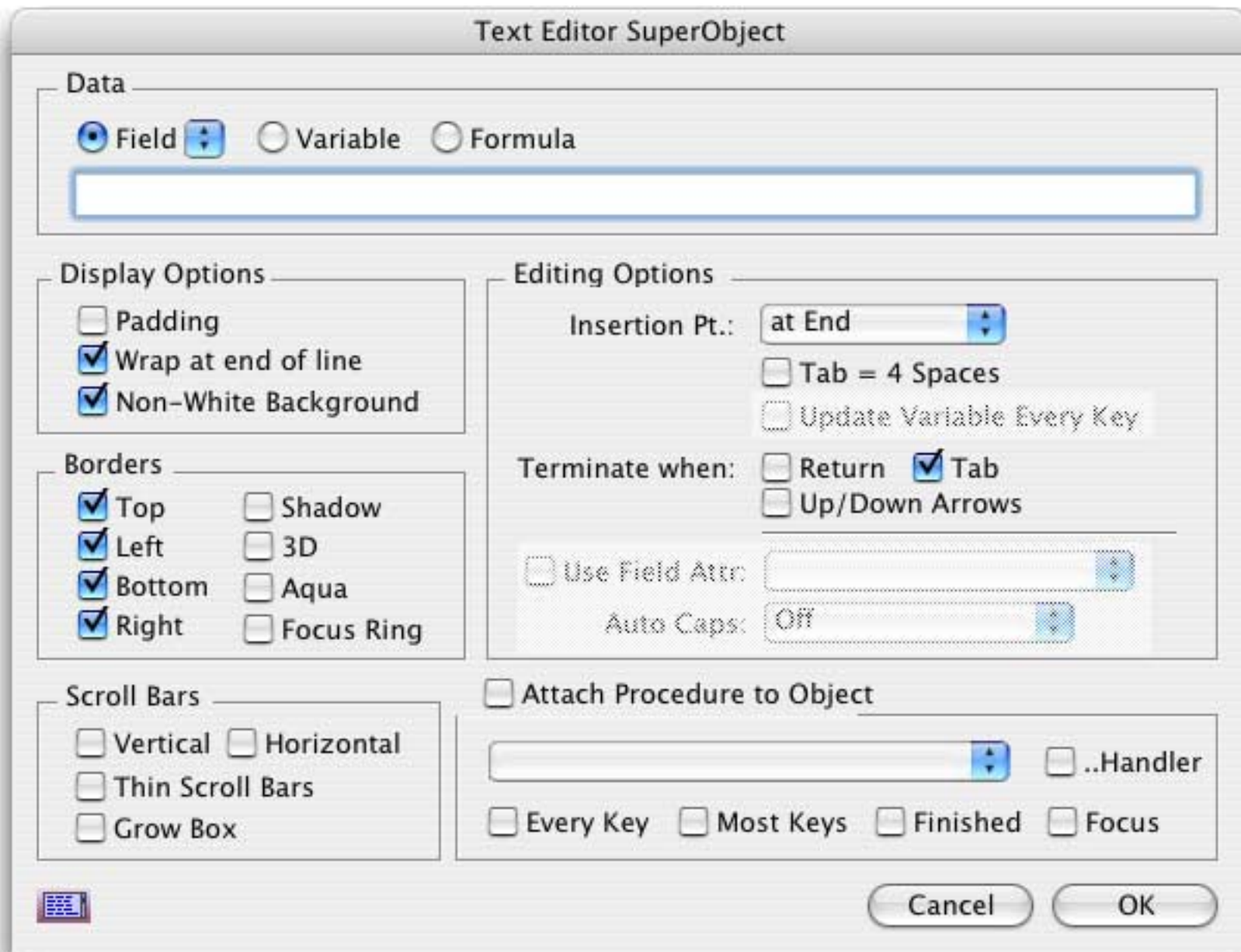
When the **OK** button is pressed the new object appears. (Notice that unlike the data cell object, the Text Editor SuperObject shows the actual data in both Graphics Mode and Data Access Mode, not just Data Access Mode.)



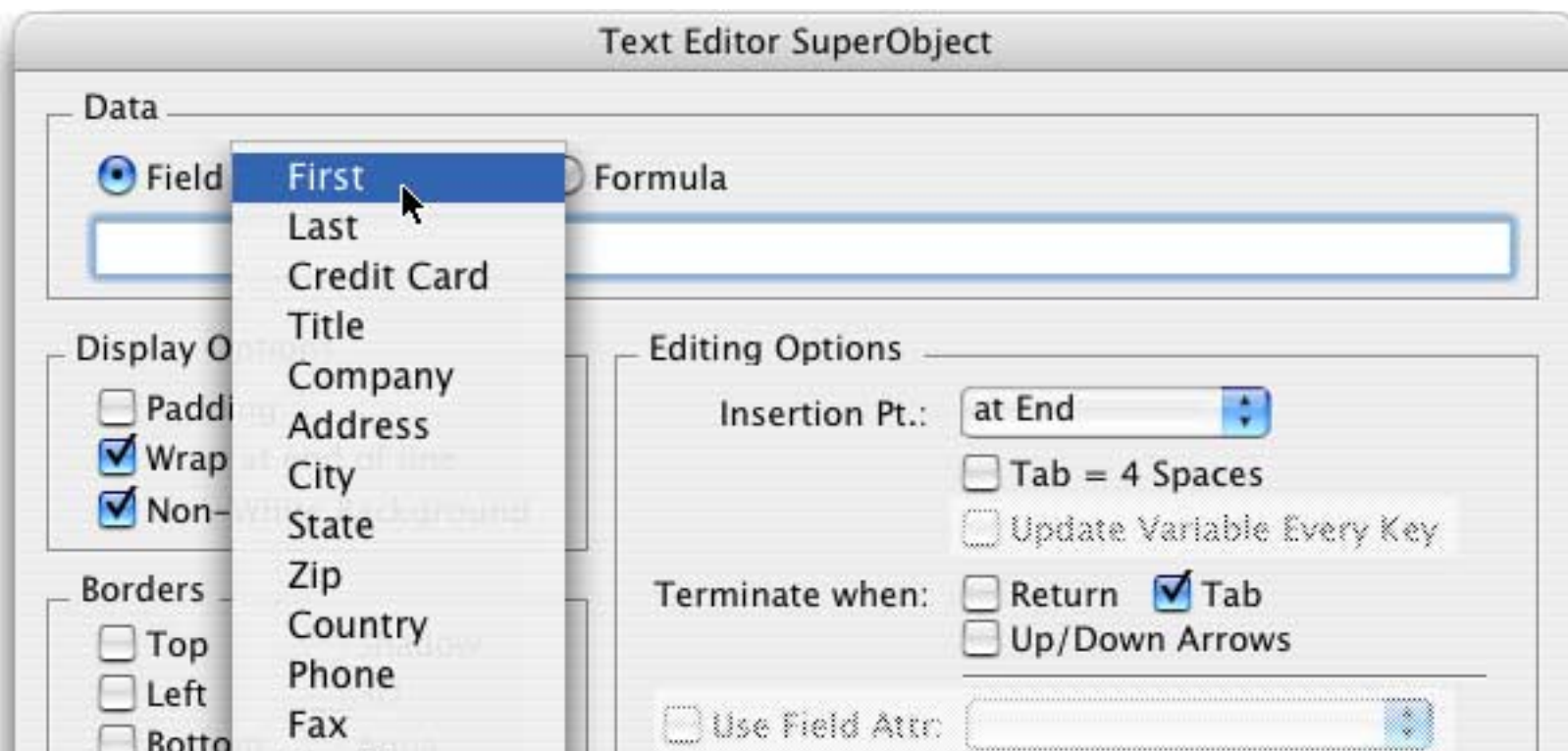
After it has been created you can modify the location, size, font, style and color of a Text Editor SuperObject just like any other object. To change any of the object attributes (scroll bars, border, formatting etc.) select the **Pointer** tool and double click on the object. The configuration dialog will appear again. Make your changes and press the **OK** button.

Text Editor Options

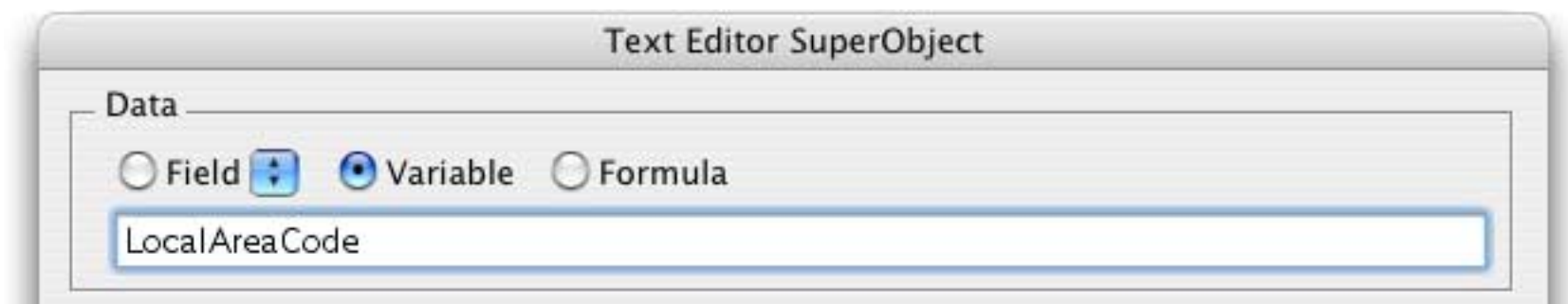
The SuperObject Text Editor Properties dialog is divided into several sections.



Data: Each Text Editor SuperObject edits a single data item, which may be a database field, a variable, or a formula. To edit a field, type in the name of the field or select the field name from the pop-up menu.



A **variable** is a place to store information independently of any database. The primary use for variables is as temporary storage for procedures (see “[Variables](#)” on page 53 and “[Variables](#)” on page 247 of *Formulas & Programming*). A variable can also be created and edited by a Text Editor SuperObject. Simply click on the **Variable** option and type in the name of the variable.

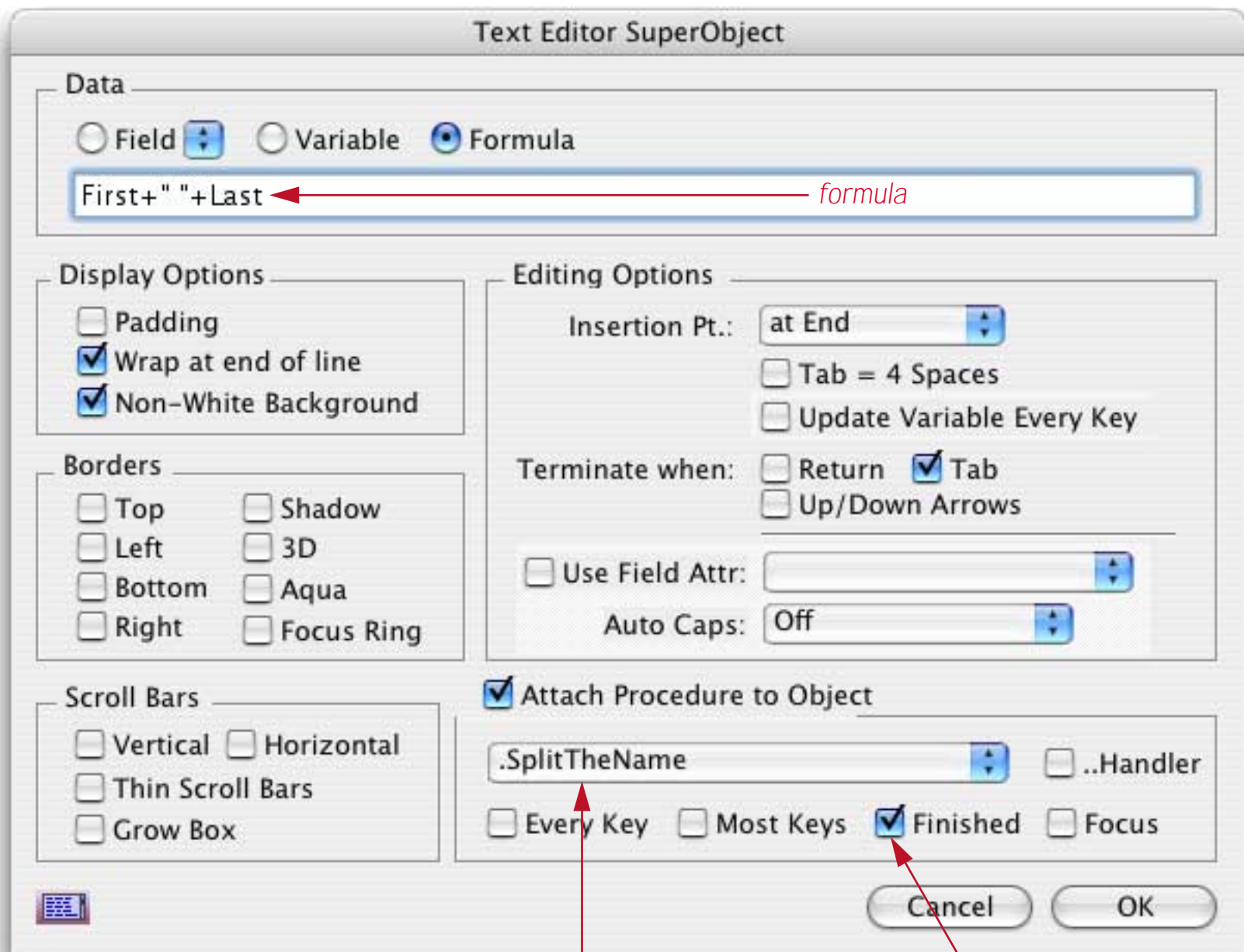


If you specify a variable that has not already been created with a procedure, Panorama will automatically create a global or fileglobal variable with this name the first time the form is displayed. (The default is a global variable unless the **FileGlobal Variables** option is set in the **Form Preferences** dialog, see “[Creating Variables with a SuperObject](#)” on page 251 of *Formulas & Programming*.) Once it has been created this variable can be used in formulas and procedures, just like any other variable. For example, suppose that your database has fields named **AreaCode** and **PhoneNumber**. The short procedure listed below will check the area code against the local area code entered by the user in the Text Editor SuperObject. If it is a local call, only the local number is dialed. If the number is out of the local area, Panorama will dial 1 plus the area code plus the phone number. (See “[Writing a Procedure from Scratch](#)” on page 216 of *Formulas & Programming* to learn how to create a procedure. See “[The ? Function](#)” on page 130 of *Formulas & Programming* and “[DIAL](#)” on page 5167 of the *Programming Reference* for more information about the specific statements and functions used in this procedure.)

```
dialdigits ?(AreaCode=LocalAreaCode,PhoneNumber,"1"+AreaCode+PhoneNumber)
```

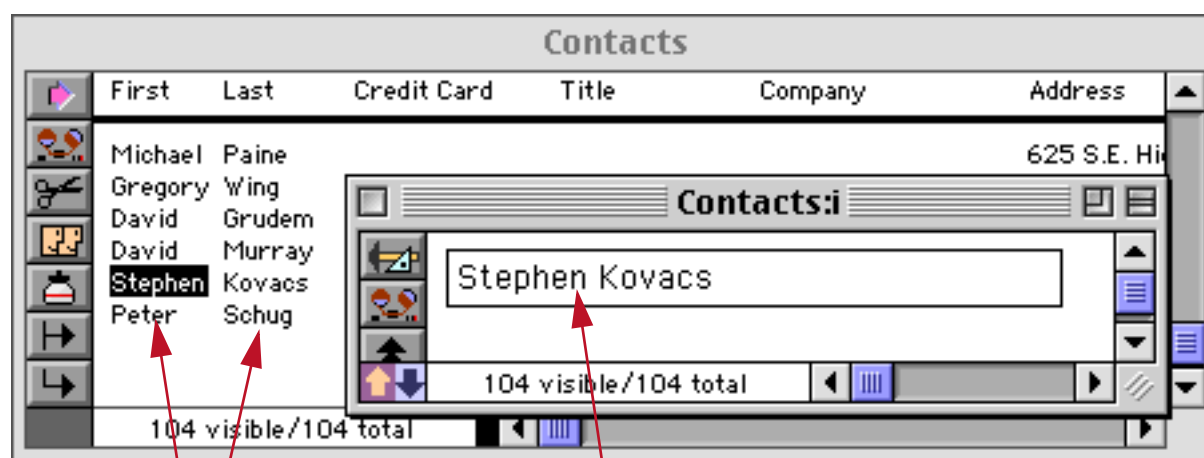
For an application like this you would probably want to make **LocalAreaCode** a permanent variable so that you don't have to re-enter it every time you open the database. See “[Creating a Variable](#)” on page 247 of *Formulas & Programming* to learn how to create a permanent variable.

The final data option is **Formula**. If you select this item the Text Editor SuperObject is not editing a real data item, but a temporary data item created “on-the-fly” using a formula. To illustrate this capability we’ll create an object that edits two database fields (first and last names) in a single Text Editor SuperObject. Select the **Formula** option and type in the formula — in this case a formula that combines the first and last names.



*this option must be set
procedure for splitting the result into two fields (see text)*

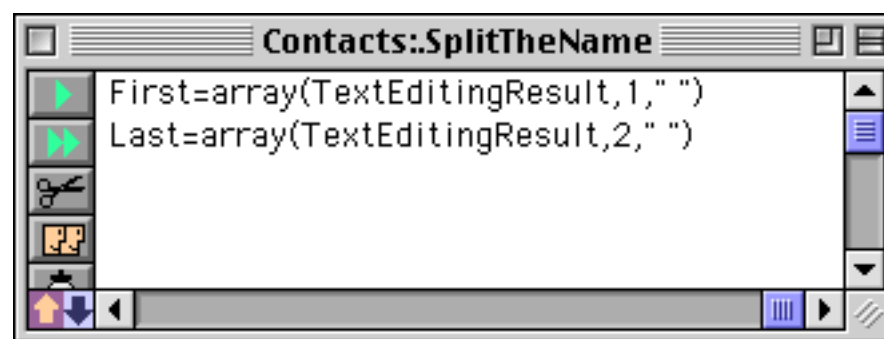
This illustration shows the finished object (in the front window). As you can see, the object combines the two separate fields into just one object.



First and Last name combined in one object

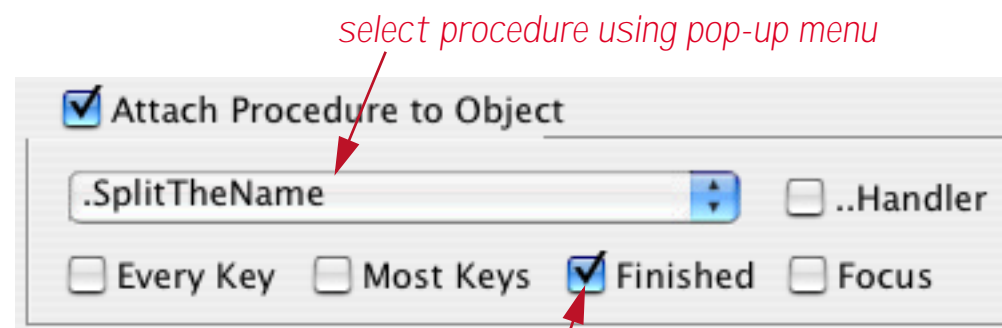
data sheet shows that First and Last are separate fields

There's only one problem — if you edit the name, how does Panorama know where to put the edited text? You can't store text in a formula! Since it doesn't know where else to put it, Panorama places the edited text in a variable called `TextEditingResult`. If you want to store this text somewhere else you'll need to create a procedure that takes this variable and stores the data somewhere (see "[Writing a Procedure from Scratch](#)" on page 216 of *Formulas & Programming* to learn how to create a procedure). The procedure can have any name you like. For this example we have created a procedure called `.SplitTheName`.



This procedure uses the `array()` function (see "[Text Arrays](#)" on page 93 of *Formulas & Programming*) to take the edited text and split it back into separate first and last names. Panorama has several statements and functions that are very handy for splitting data into multiple components, see "[Natural Data Display](#)" on page 528, "[Taking Strings Apart \(Text Funnels\)](#)" on page 69 and "[Text Arrays](#)" on page 93 of *Formulas & Programming*.

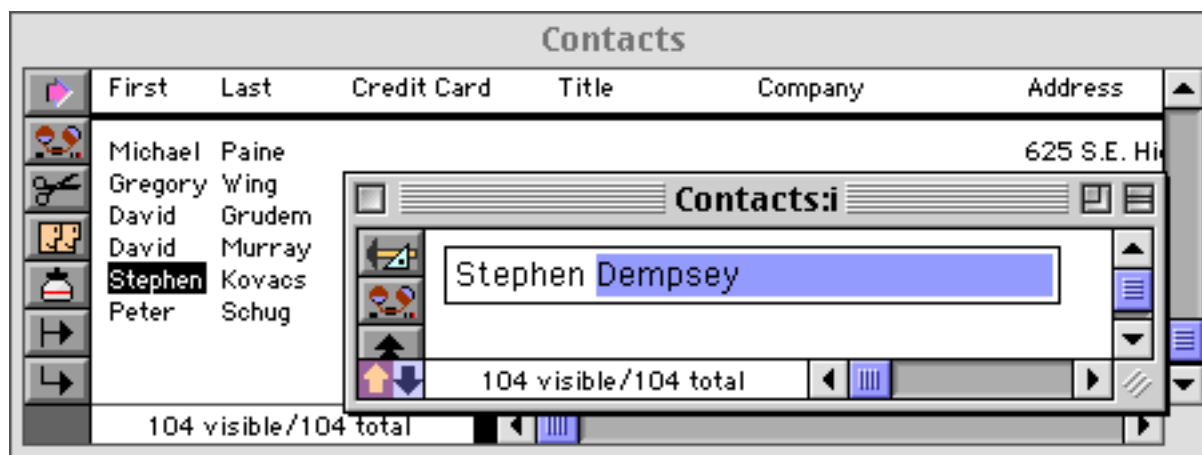
Once the procedure has been created you must select it in the Text Editor SuperObject configuration dialog (see below). You also need to make sure that the **Finished** option is turned on. The **Finished** option tells Panorama to trigger the procedure when editing is finished (when the **Enter** key is pressed or when you click on another object).



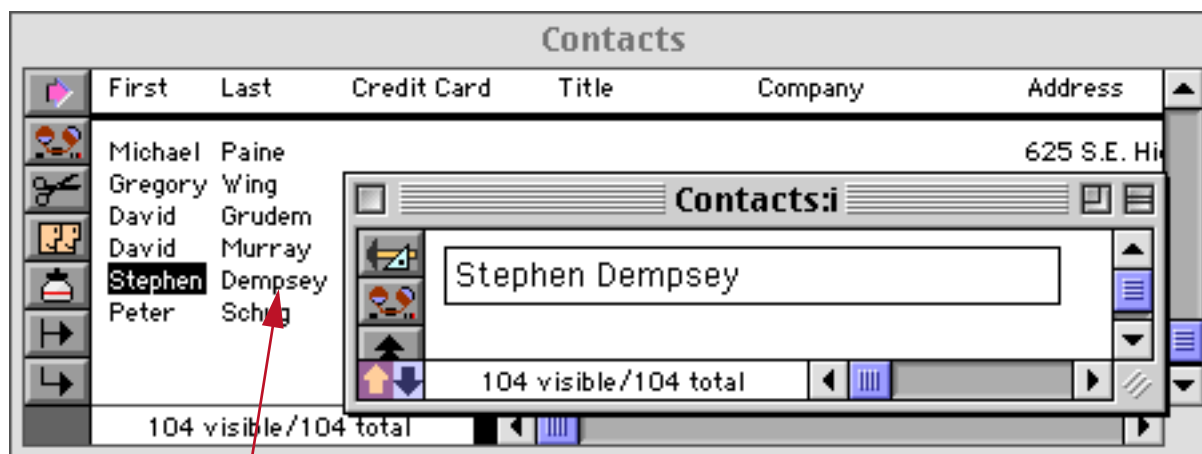
select procedure using pop-up menu

this option triggers the procedure when editing is finished

Once the procedure is set up and configured in the dialog you can use the Text Editor SuperObject to edit the name. In this case the last name is being changed from **Kovacs** to **Dempsey**.



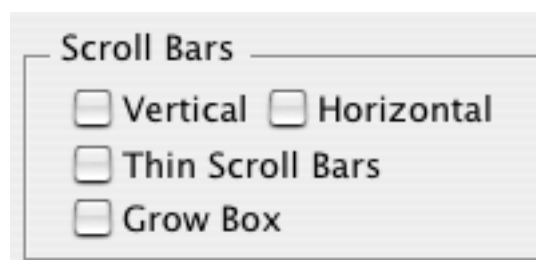
When the **Enter** key is pressed the **First** and **Last** name fields in the database are updated (in this case only the last name actually changed).



updated last name

As you can see, it takes a bit of work to set up the **Formula** option, but it does give you the power to set up a user interface that is independent from the data sheet structure.

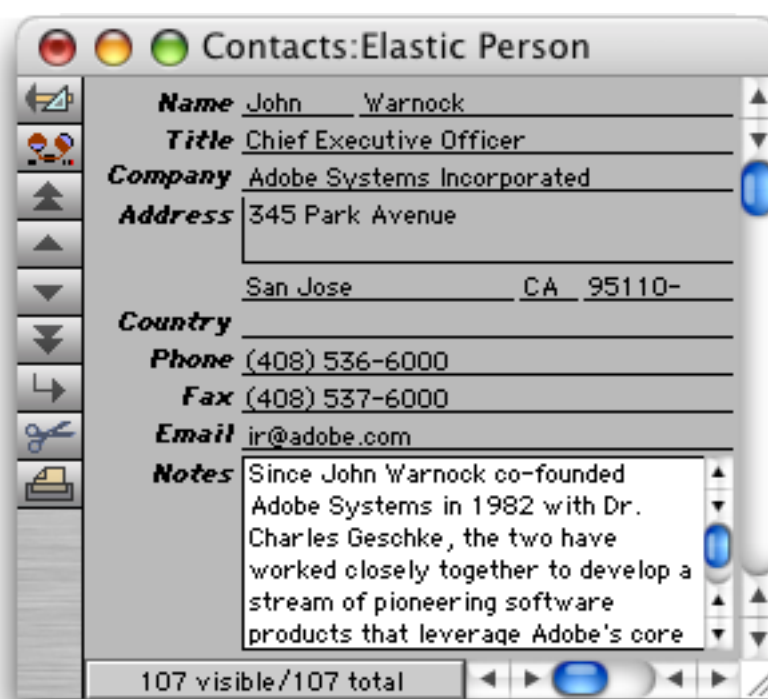
Scroll Bars: This section controls what scroll bars (if any) will be available when editing this text.



Here is a Text Display SuperObject with the **Vertical Scroll Bar** enabled.



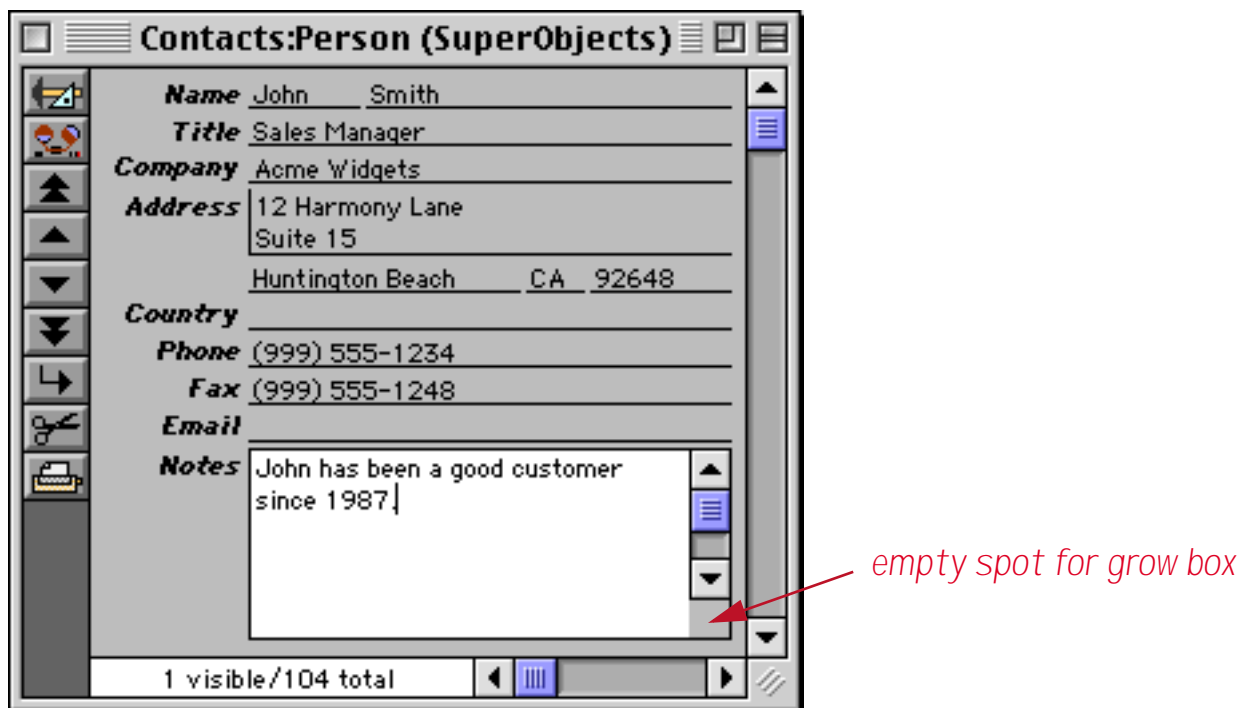
The **Thin Scroll Bar** option makes the scroll bar (or bars) 11 pixels wide instead of 16.



Here is the same object with both **Vertical** and **Horizontal** scroll bars.



With the **Vertical** and **Grow Box** options turned on, Panorama leaves an empty spot for a grow box in the lower right hand corner.



Elsewhere in this manual you can learn how to turn off the form's scroll bars (see "[Window Options](#)" on page 172) and how to add your own custom grow box (see "[Elastic Forms](#)" on page 922), to make a final window that looks like this.



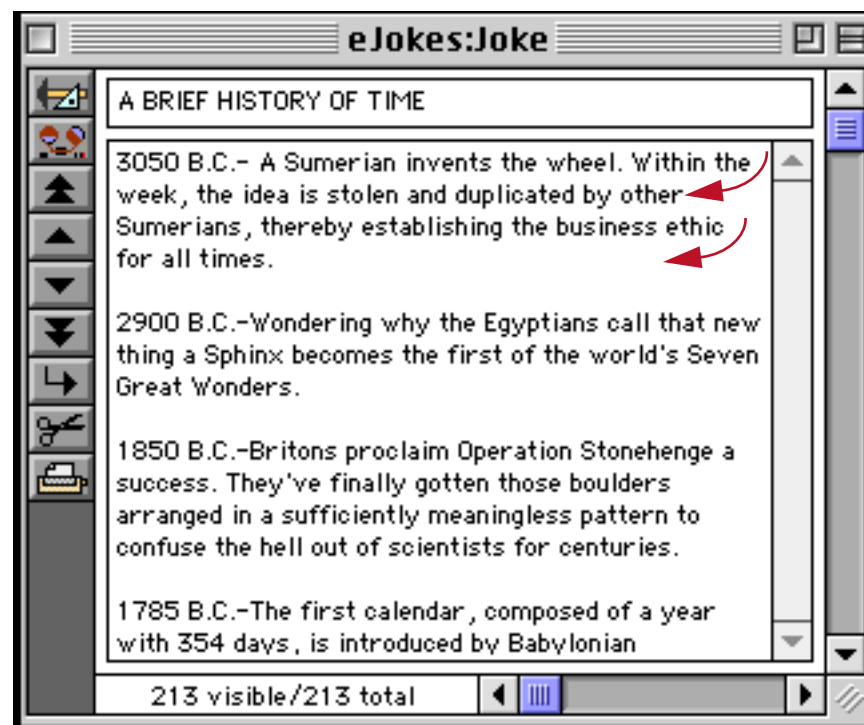
Padding: When this option is checked extra padding appears around the top, left and right sides of the text. Here is an example of an object **without** padding.



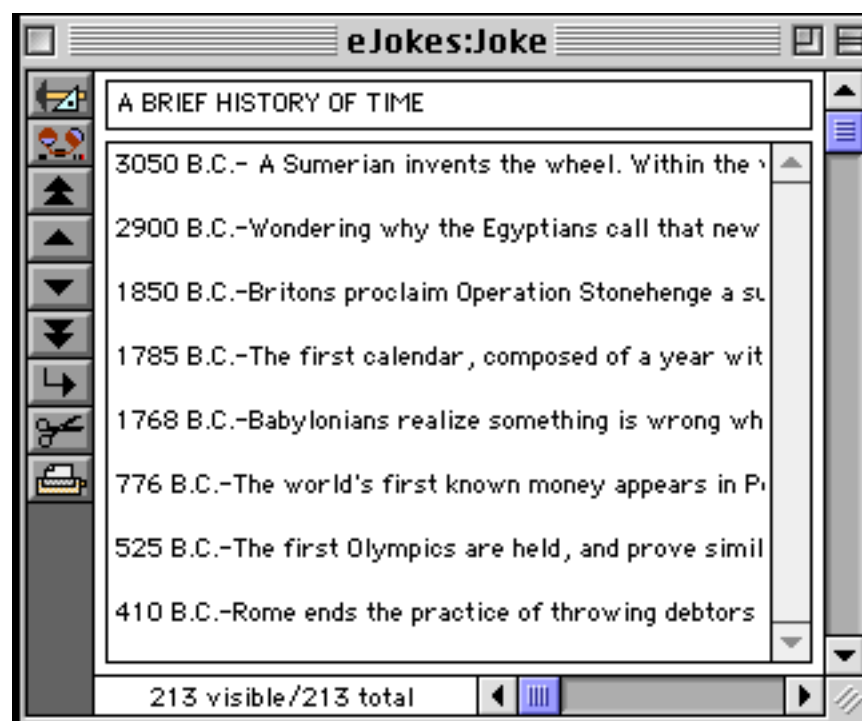
Here is the same object **with** padding.



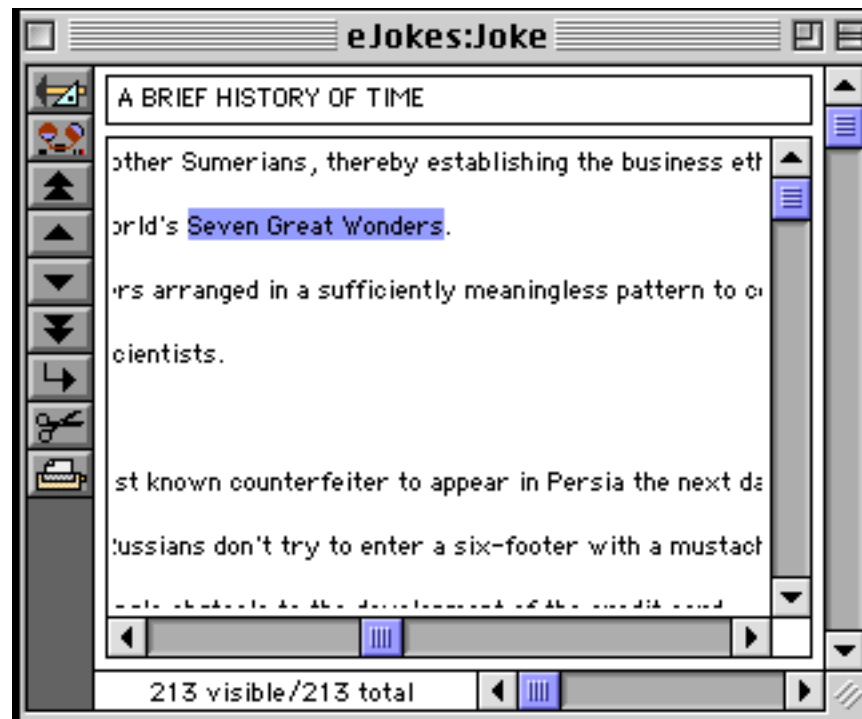
Wrap at End of Line: If text being edited is too long to fit on a single line, it will usually "wrap" around to the next line.



However, if the **Wrap at End of Line** checkbox is turned off, the text will not wrap. Instead, the text will continue off the right edge.



If the horizontal scroll bar is enabled, you can scroll over to see the rest of the text.



Non-White Background: We recommend that you use this option if the Text Editor SuperObject is placed over a color (non-white) background. If this option is turned on, Panorama will temporarily display a white background behind the text while it is being edited.



background of object turns white during editing

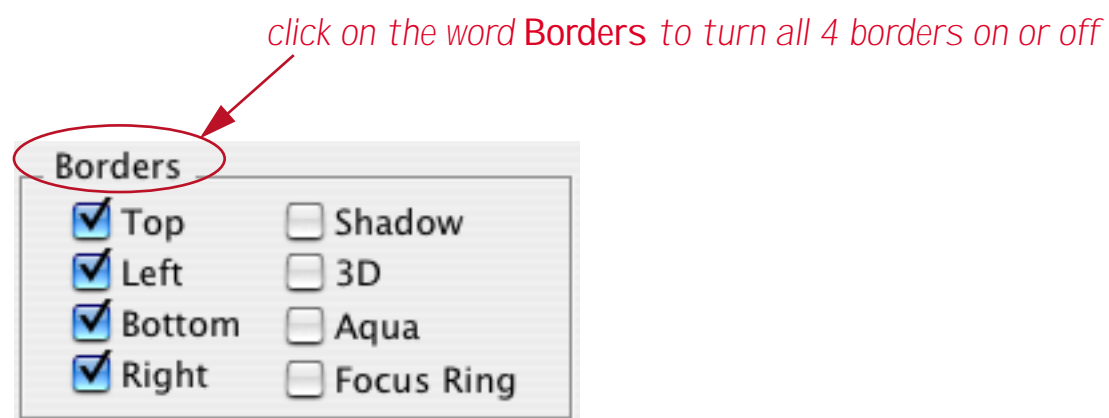
If you don't use this option, you'll find that portions of the background will turn white as you edit anyway. The result is ugly and possibly confusing.



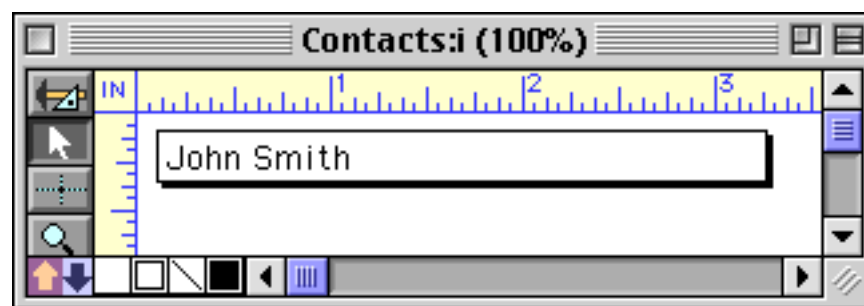
I think you can see why we recommend using the **Non-White Background** option!

Terminate When: You can always press the **Enter** key when you have finished editing a data item. Depending on the options set in this dialog other keys may also cause editing of this cell to finish, including the **Return**, **Tab**, **Up Arrow**, or **Down Arrow** keys. (Note: If you want to be able to tab from this item to the next, be sure to select the **Tab** key as one of the keys that causes termination. On the other hand, if you want to be able to use the **Tab** key inside this field or variable, **Tab** should not be checked.)

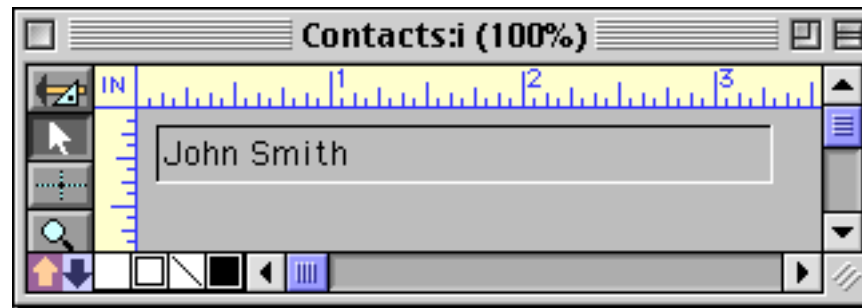
Borders: The options in this section control the borders that are displayed around the text (if any). You may separately control the top, bottom, left, and right borders or click on the word **Borders** to turn all four on or off at once.



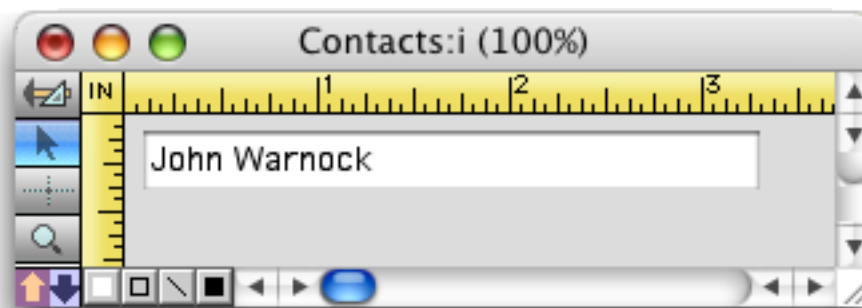
The **Shadow** option makes a drop shadow appear.



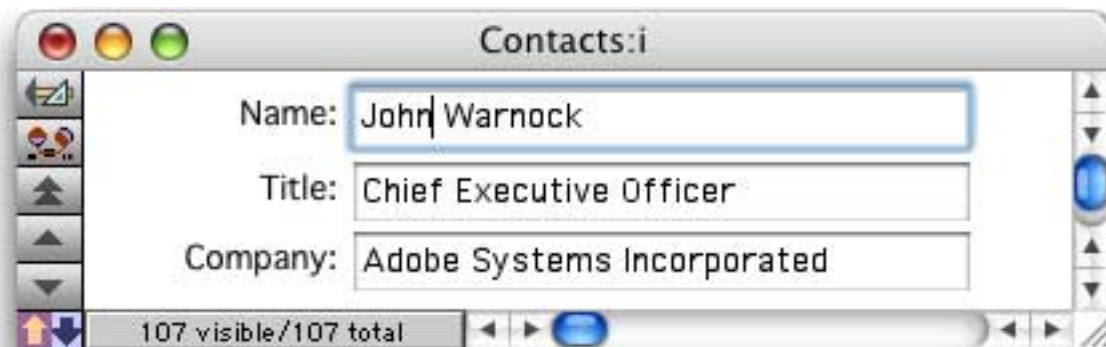
The **3D** border effect works best with a light gray background.



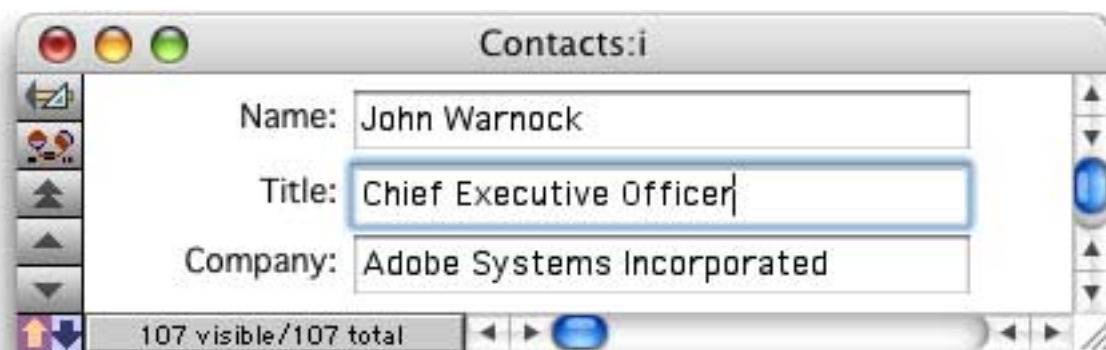
The **Aqua** border effect displays the same soft 3D borders that are used by most OS X applications. This option can work with a light gray or white background.



When the **Focus Ring** option is checked, Panorama will display a blue ring around the object when it is being actively edited.

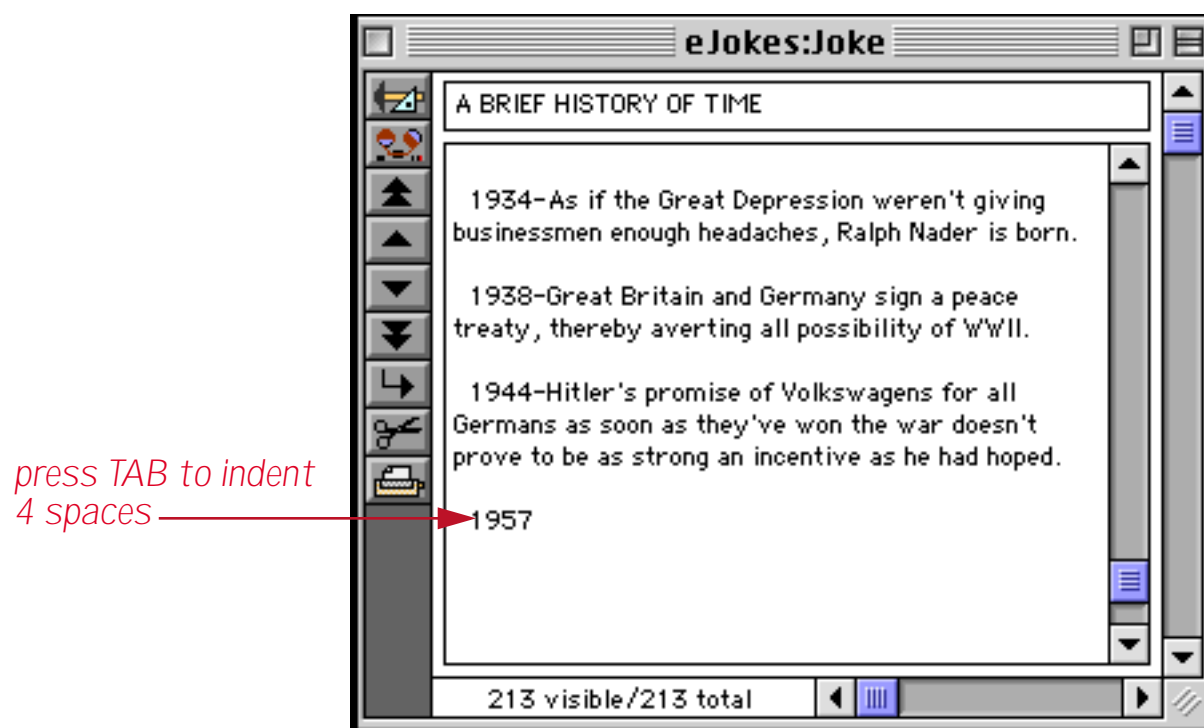


When you shift to editing a different object, the blue ring will move to this new object.



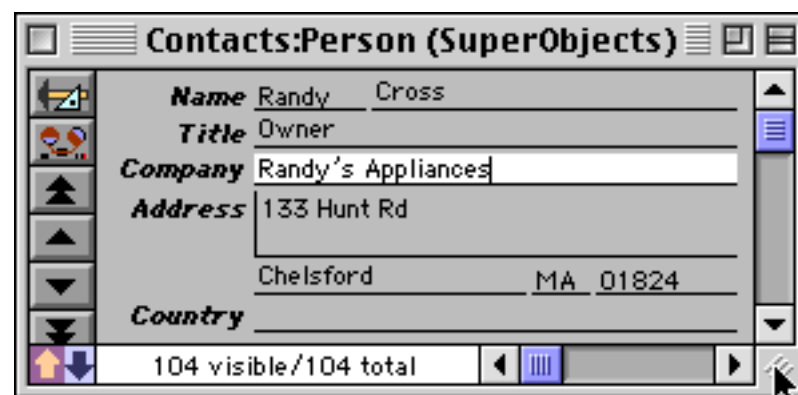
(Note: You can control the background color for the entire form with the **Form Preferences** command in the Setup menu. See [“Form Background Colors”](#) on page 582.)

Tab = 4 Spaces: If this option is enabled, pressing the **Tab** key will be the same as pressing the **Space Bar** four times.

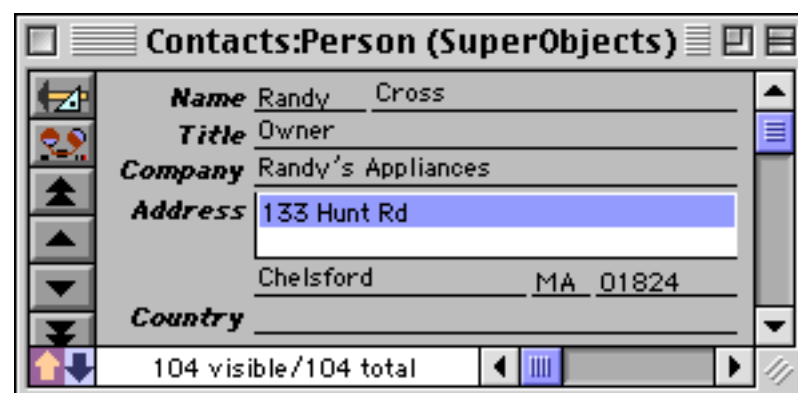


If this option is selected, the **Tab** checkbox (part of the Terminate line) should be turned off.

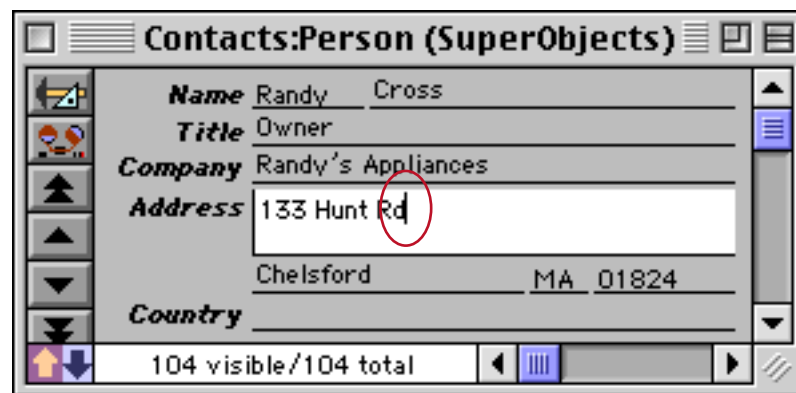
Insertion Point: This option gives you the choice of what text should be selected when you tab into this Text Editor SuperObject. (Of course when you click into a Text Editor SuperObject, the insertion point goes where you click.) The three options are: **At End**, **At Start**, and **ALL** (which selects all the text). In the example above, the **Address** object has the **Insertion Point** option set to **ALL**.



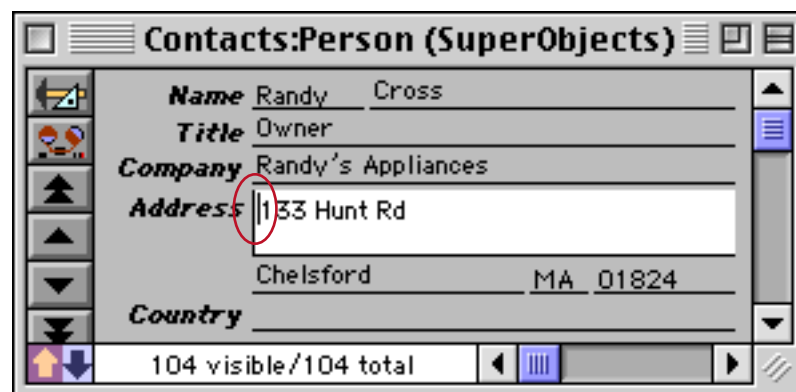
When you **Tab** from the **Company** into the **Address** field, all of the text is selected.



If the **At End** option had been selected, the insertion point would be at the end of the address.

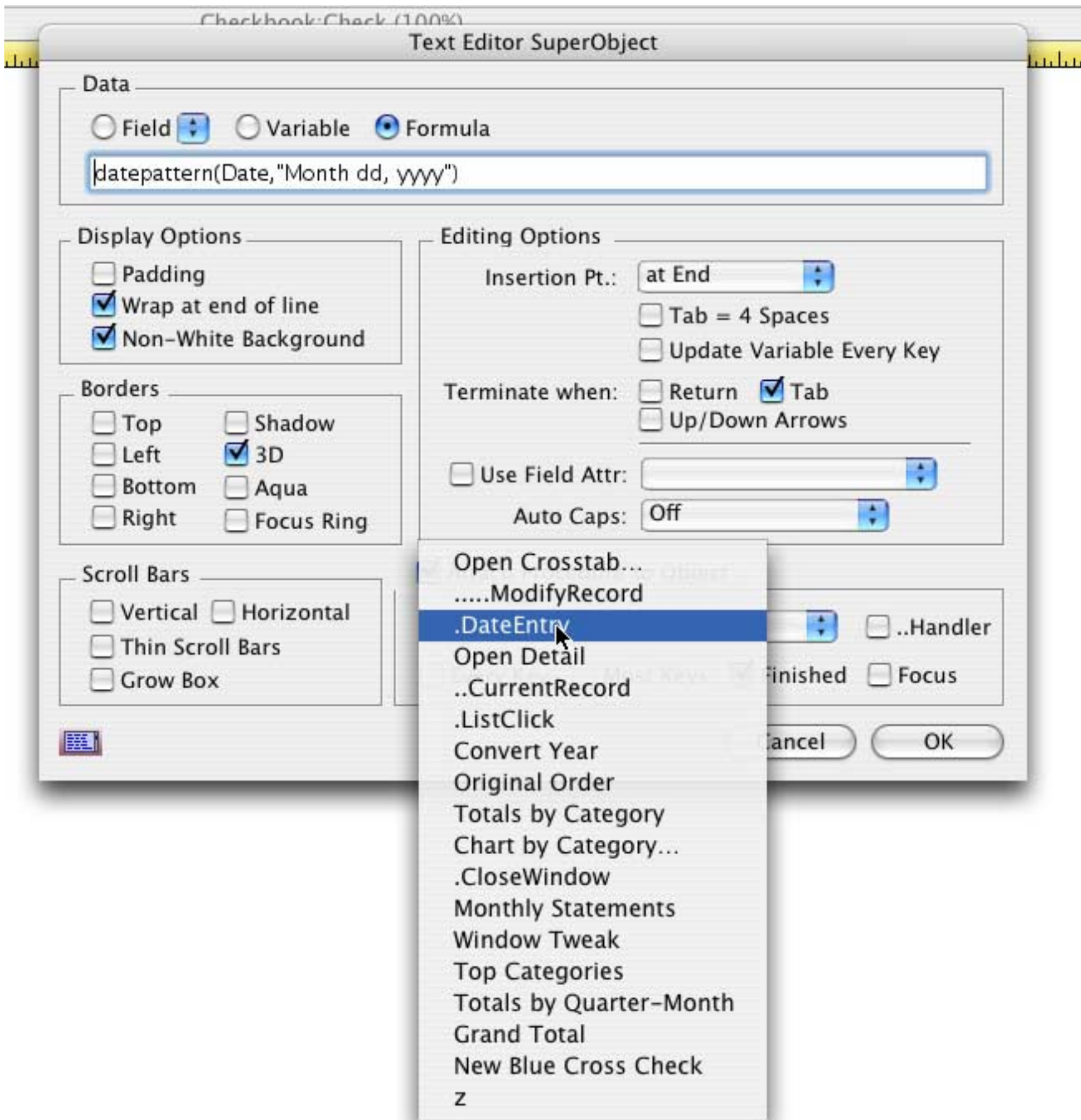


If the **At Start** option had been selected, the insertion point would be at the start of the address.

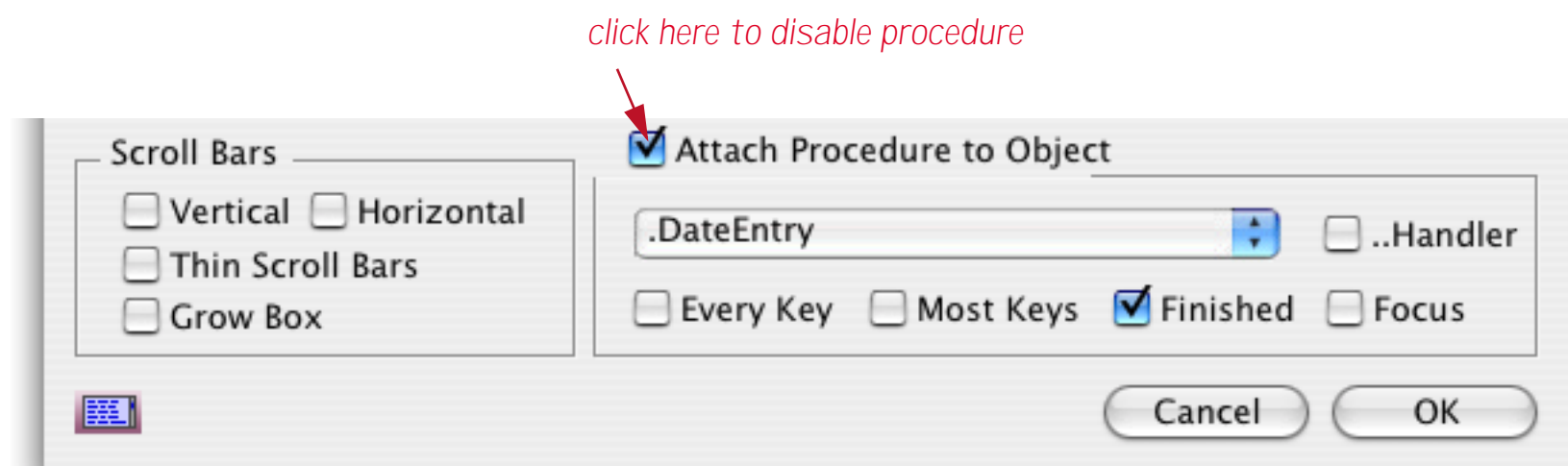


Update Variable Every Key: This option only works when editing variables, not fields. If this option is enabled, the Text Editor SuperObject will update the value of the variable immediately after every key is pressed. Otherwise the variable will not be updated until editing is finished. This mode is especially useful when the Text Editor SuperObject is set up to trigger a procedure after every key or most keys (see next section).

Procedure: This section specifies what procedure is associated with this Text Editor SuperObject (if any) and when that procedure will be triggered. To select or change the procedure associated with this object, use the pop-up menu.



If you later decided to disable the procedure, click on the checkbox (or simply select another procedure).

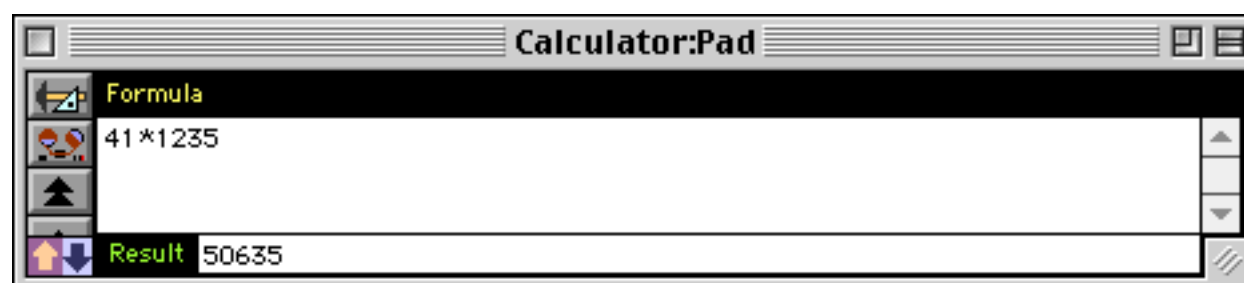


There are four choices for triggering a procedure: **Every Key**, **Most Keys**, **Finished** and **Focus**. **Finished** simply means that the procedure will be triggered when the user signals that he or she has finished editing the text by pressing **Enter**, **Return**, **Tab**, etc. (Note: If the Text Editor SuperObject is associated with a field, a procedure may also be triggered even if no procedure is assigned in the configuration dialog. If the field has a procedure assigned to it in the design sheet, it will be triggered (see “[Data Entry Triggers](#)” on page 387 of *Formulas & Programming*). If there is no Finish procedure selected and no design sheet procedure, the **.ModifyRecord** procedure (if any) will be triggered (see “[.ModifyRecord](#)” on page 383 of *Formulas & Programming*).)

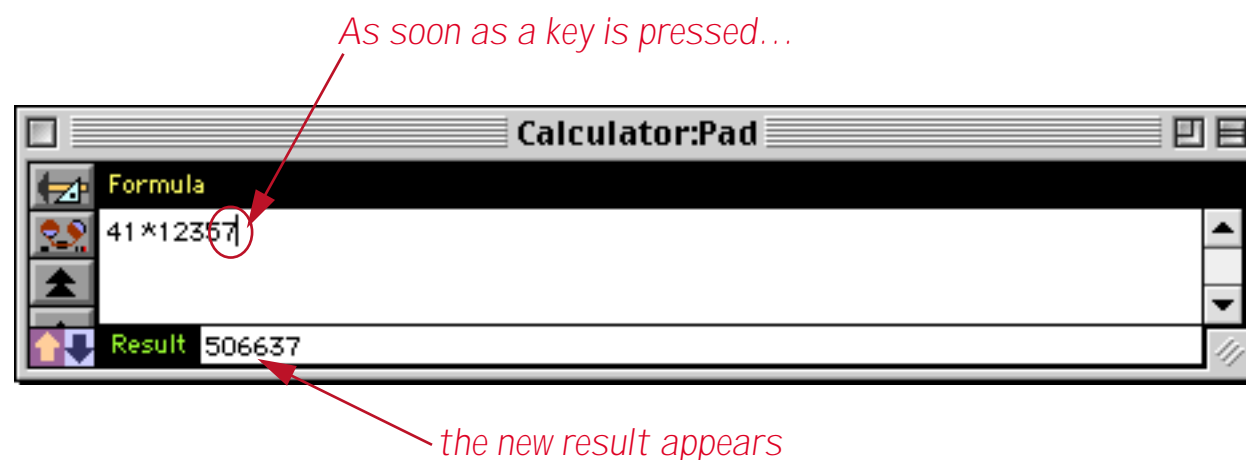
If the **Every Key** option is checked, the procedure will be triggered every time the user presses a key. For example, you might use this option if you wanted to count the user's key strokes.

If the **Most Keys** option is checked, the procedure will be triggered after every key when the user types slowly, but will not be triggered for each key when the user types several characters quickly in a row. The procedure will not be triggered until the user pauses in his or her typing. This option often works as well as the **Every Key** option but usually appears much smoother and faster to the user because the procedure is not being triggered as frequently while the user types. Possible applications for the **Most Keys** options include counting the characters or words being edited, performing a calculation (metric conversion, for example), checking spelling, etc.

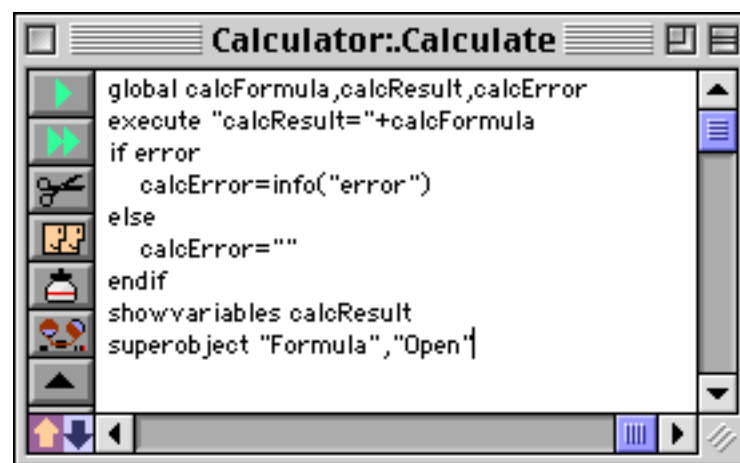
In this illustration the Text Editor SuperObject containing the formula has been set up with the **Most Keys** option.



When a key is pressed (most times) a procedure is triggered. This procedure calculates and displays the result of the formula. The new result appears immediately, as soon as the key is pressed. (If the **Finished** option was used instead of **Most Keys**, the result would not appear until you pressed the **Enter** key.)



If you want to duplicate this example yourself, here is the `.Calculate` procedure (see “[Procedures](#)” on page 203 of *Formulas & Programming*). This procedure relies on the `execute` statement to perform the calculation. See “[Building Subroutines On The Fly \(The Execute Statement\)](#)” on page 280 of *Formulas & Programming* to learn about this statement.



The last line of this procedure refers to the Text Editor SuperObject by the name `Formula`.

```
superobject "Formula","Open"
```

For this to work the SuperObject must be given this name with the Object Name dialog. See “[Object Type/Object Name](#)” on page 533 to learn how to give an object a name.

If the **Focus** option is checked, the procedure will be triggered every time editing starts to happen in this object. In other words, when you click on the field or tab into the field, the procedure will be triggered. It’s called **Focus** because this option is triggered whenever this object becomes the focus of attention.

One use for a focus procedure is to implement Undo for editing. Here is a procedure that saves the data in the field as the editing begins.

```
if info("trigger") beginswith "Focus."
  undoCell=«» /* «» is the current field */
  undoField=info("fieldname")
endif
```

The Undo procedure would look like this.

```
if undoField<>""
  set undoField,undoCell
endif
```

For completeness you may wish to add the following line to your **.CurrentRecord** procedure (see “**.CurrentRecord**” on page 381 of *Formulas & Programming*). This line ensures that you cannot undo after moving to a different record.

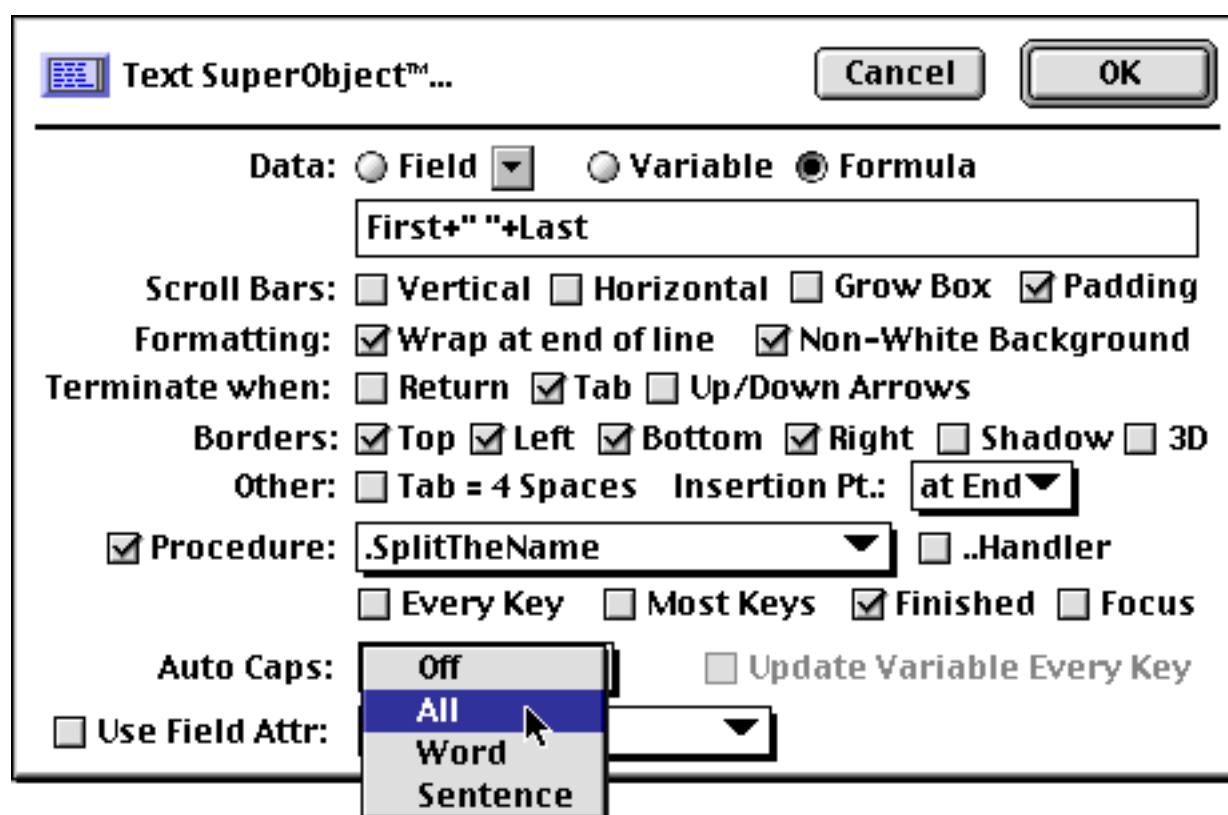
```
undoField=""
```

Another use for the **Focus** procedure is to memorize the selection point when editing was terminated and re-set the selection when editing resumes again. This example assumes that the database has two numeric fields named **textStart** and **textEnd**.

```
if info("trigger") contains "focus"
  activesuperobject "setselection",textStart,textEnd
else
  activesuperobject "getselection",textStart,textEnd
endif
```

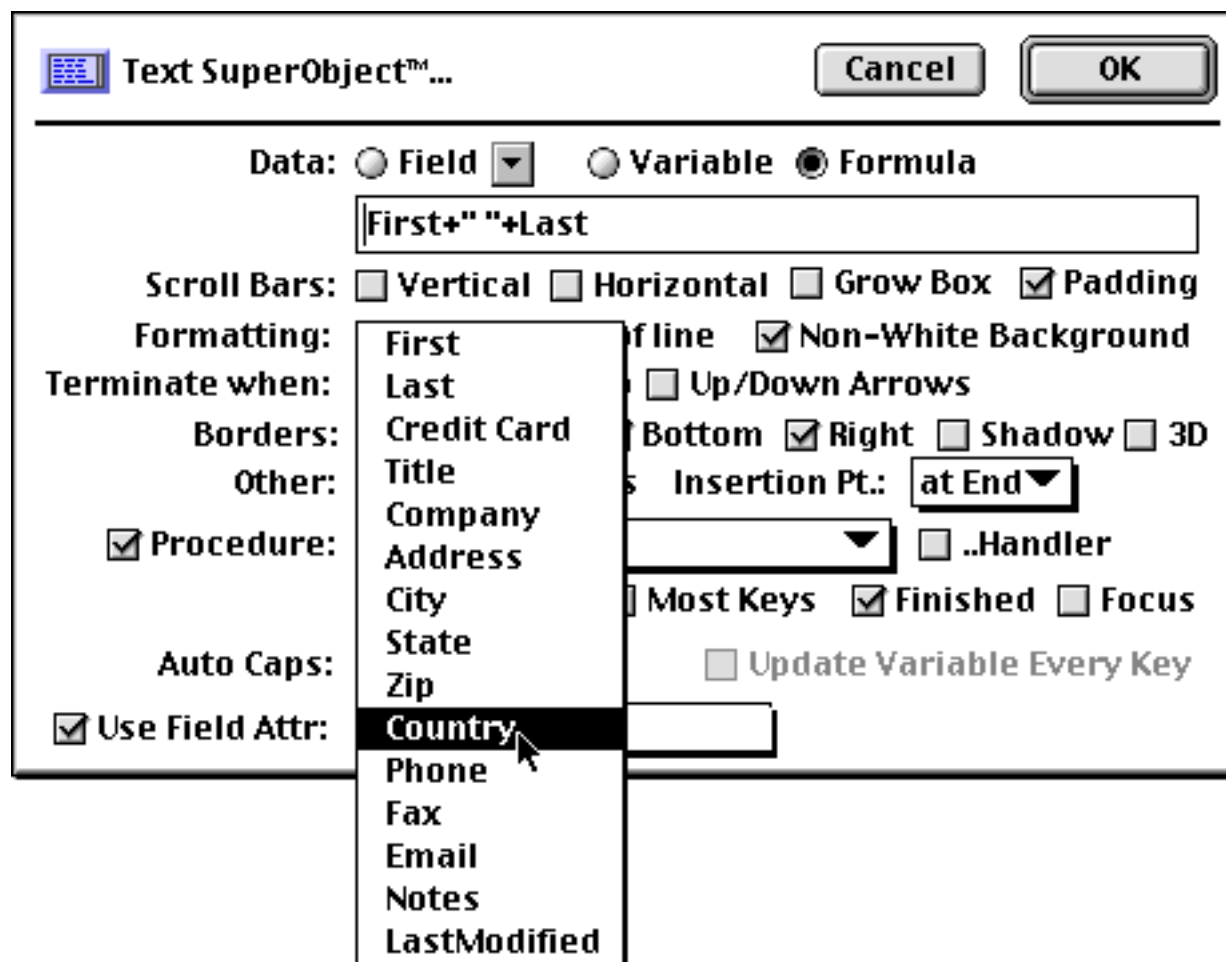
The **Focus** option must be used with the **..Handler** option turned on. When the **..Handler** option is turned on, all procedures triggered by the Text Editor SuperObject are treated as event handler procedures (see “**Event Handler Procedures**” on page 394 of *Formulas & Programming*). The benefit of using event handler procedures is that these procedures are guaranteed to trigger and work properly under all conditions, no matter how the user started or stopped editing and whether or not another procedure is currently running. The only downside is that event handler procedures cannot open or close windows. To retain compatibility with databases created with earlier versions of Panorama you are allowed to turn the **..Handler** option off. To learn more about this type of procedure see “**Event Handler Procedures**” on page 394 of *Formulas & Programming*.

AutoCaps: This option only appears if the Text Editor is associated with a variable or formula.



Use the pop-up menu to control automatic capitalization of the text as it is entered. You can force the text to all upper case (**ABC**), word caps (**Abc**), or capitalization of the first letter of each sentence. If the Text Editor SuperObject is associated with a field, the Text Editor SuperObject will automatically use the Auto Caps setting for that field (set in the design sheet or the Field Preferences dialog, see “**Field Properties**” on page 215.)

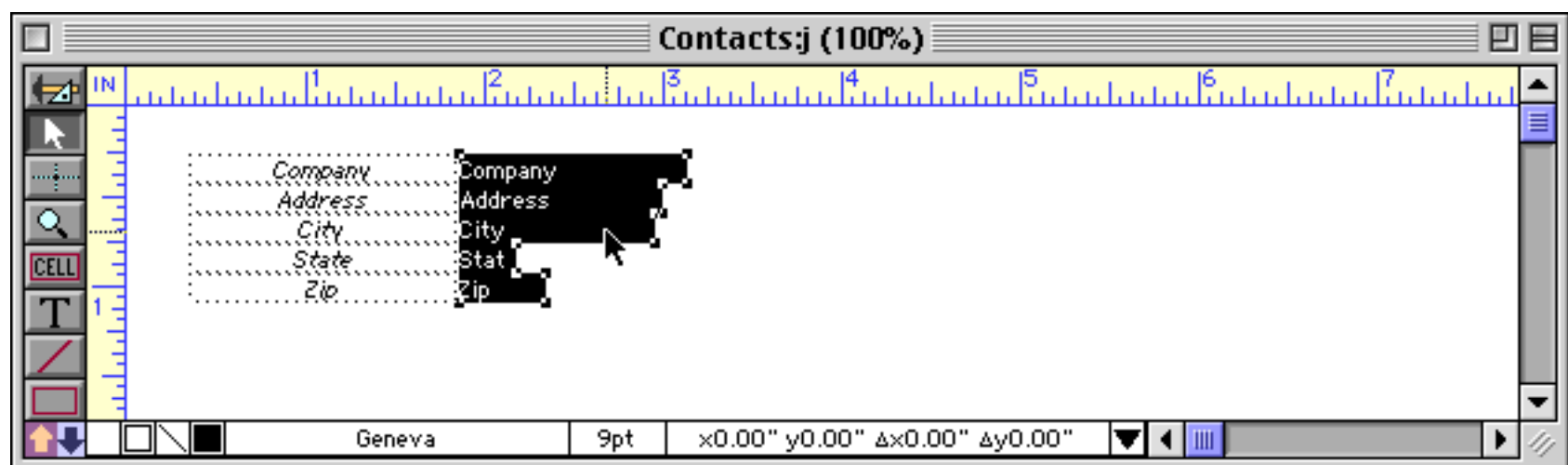
Use Field Attributes: This section only appears if the Text Editor SuperObject is associated with a variable or formula. You can use this if you would like the Text Editor SuperObject to use the attributes assigned to one of the fields in your database.



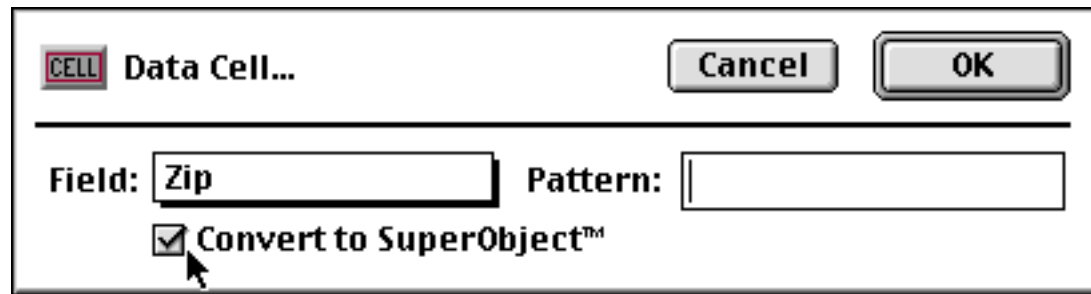
When you select a field with the pop-up menu, the Text Editor SuperObject will use that field's settings for Input Pattern, Range, Clairvoyance, Space Bar Tab, and Duplicates. (Of course, if the Text Editor is associated with a field, the text editor will always use the attributes of that field (set in the design sheet or the Field Preferences dialog.)

Converting Data Cells into a Text Editor SuperObjects

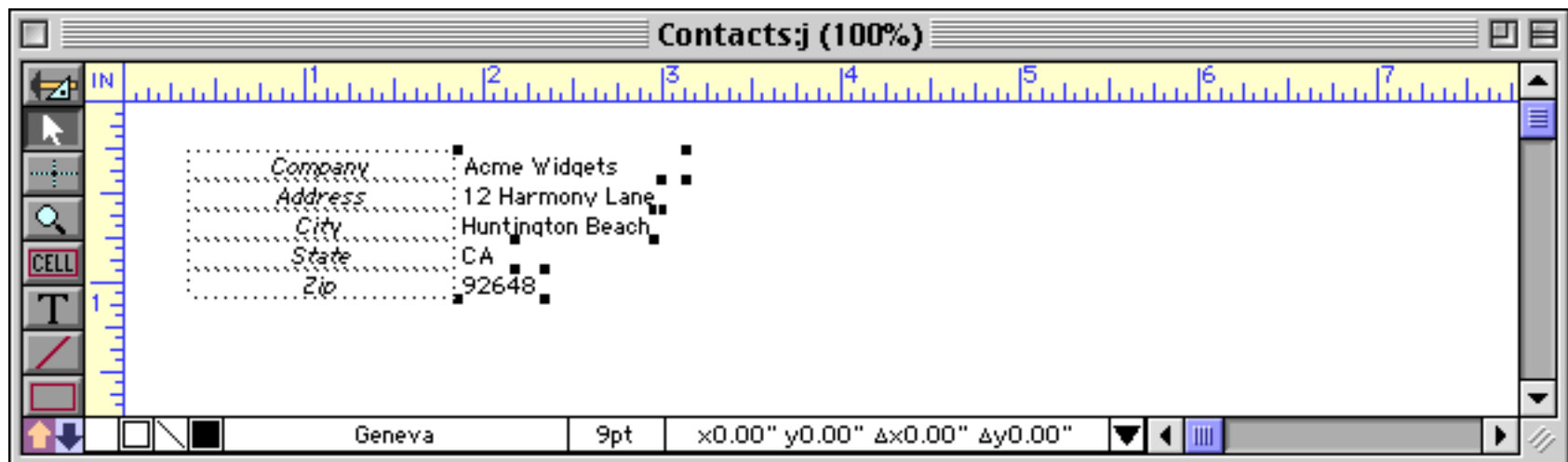
To convert one or more data cells into Text Editor SuperObjects, start by selecting the cells. Then double click on one of the selected cells.



When you double click the dialog shown below will appear.



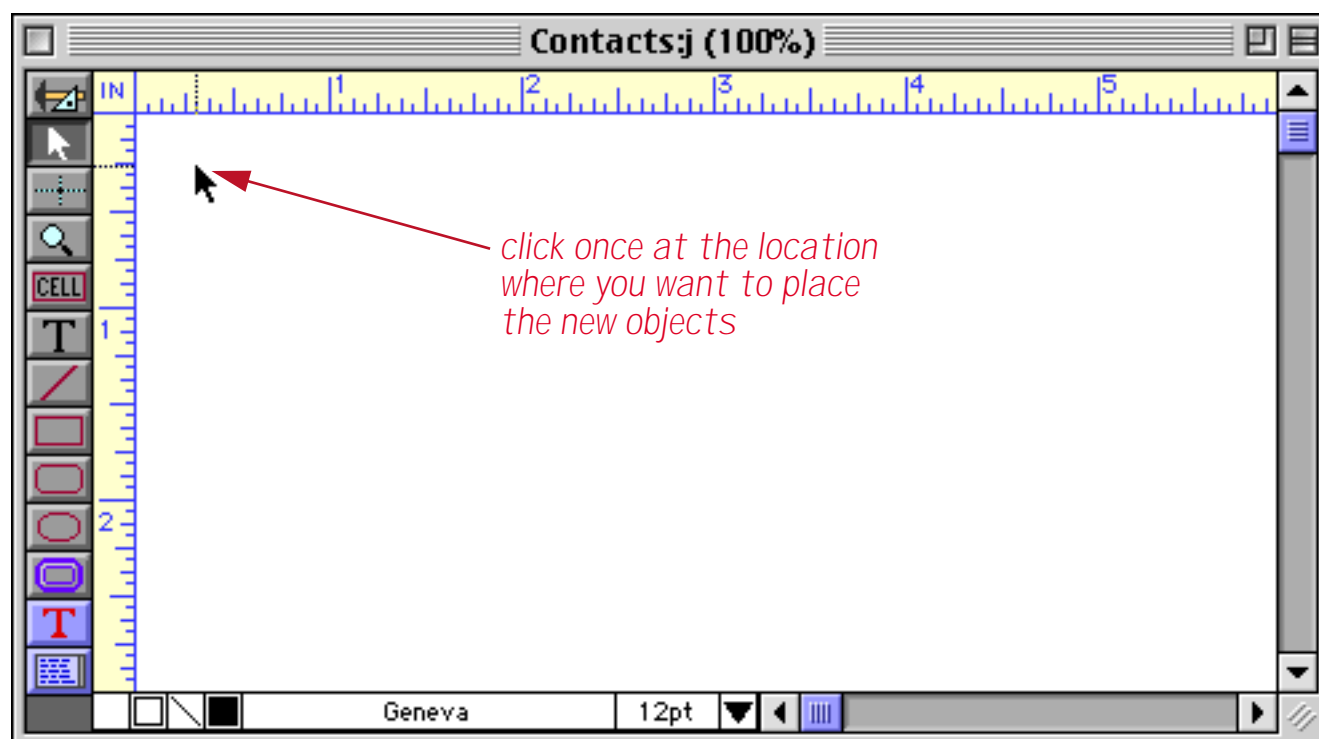
Check the **Convert to SuperObject** box and press **OK** to convert the selected data cells into Text Editor Super-Objects.



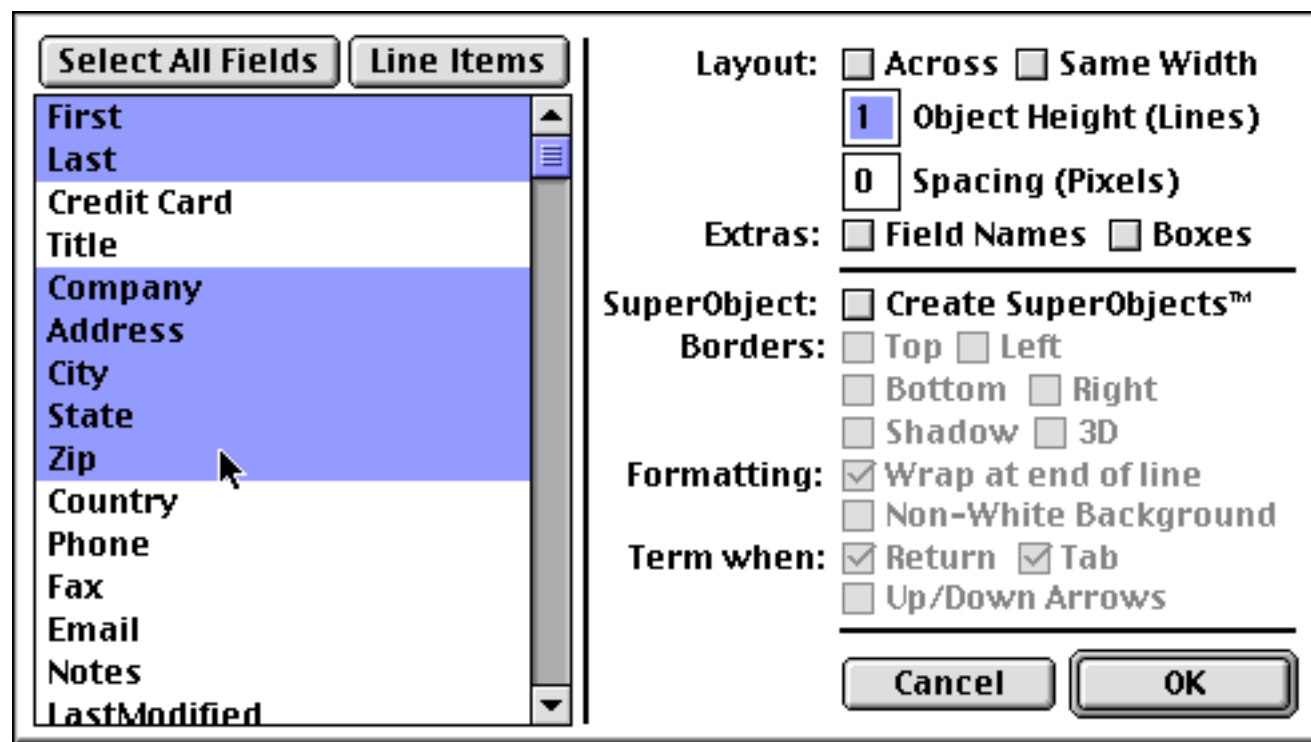
If you want to change the attributes of any of these new SuperObjects you must double click each object and set the attributes individually.

Automatically Creating Rows or Columns of Data Cells or Text Editor SuperObjects

Earlier in this chapter you learned how to create data cell objects and Text Editor SuperObjects one at a time. The **Auto Cell Layout** command (in the Arrange menu) can automatically generate an entire row or column of these objects. To use this command, first pick the font and size you want to use from the Graphic Control Strip or the Text sub-menus (see "[Font](#)" on page 529 and "[Text Size](#)" on page 531). Once the font is set, make sure the **Pointer** tool is selected and click on the spot where you want to place the new objects.

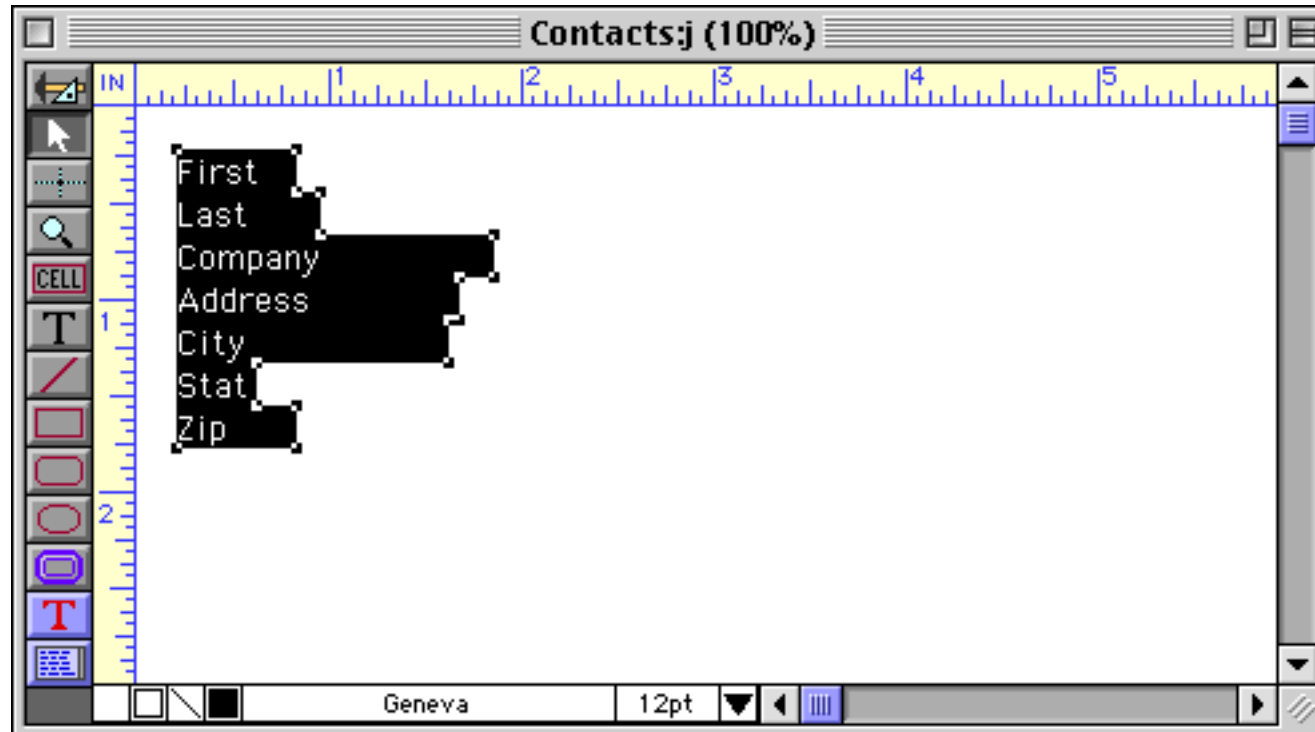


Then open the **Auto Cell Layout** dialog using the Arrange menu. This dialog allows you to choose the fields and arrangement you want.



The box on the left of the dialog lists all the fields in the database. Select each field you want to place in the form. There are several ways to select fields. You can select individual fields by clicking on them. You can select several fields at once by dragging the mouse across them. You can select all the fields by pressing the **Select All Fields** button. If you change your mind, you can de-select a field by clicking on it again.

Once you have selected the fields you want to create, press the **OK** button to place the fields into the form.

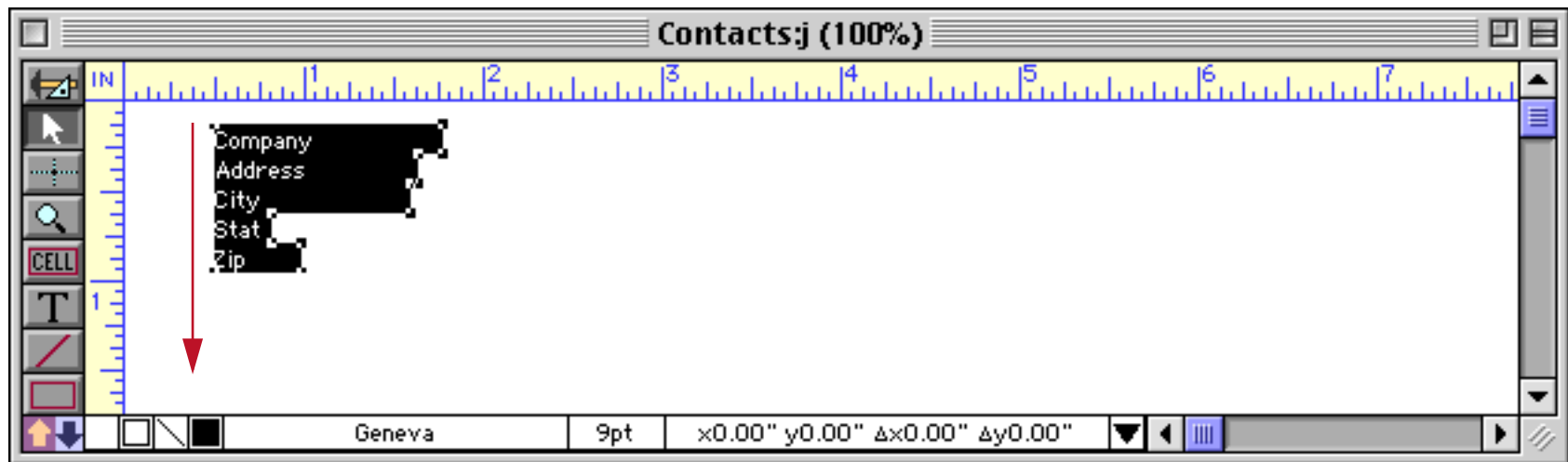


The new objects appear just below and to the right of the spot you originally clicked on.

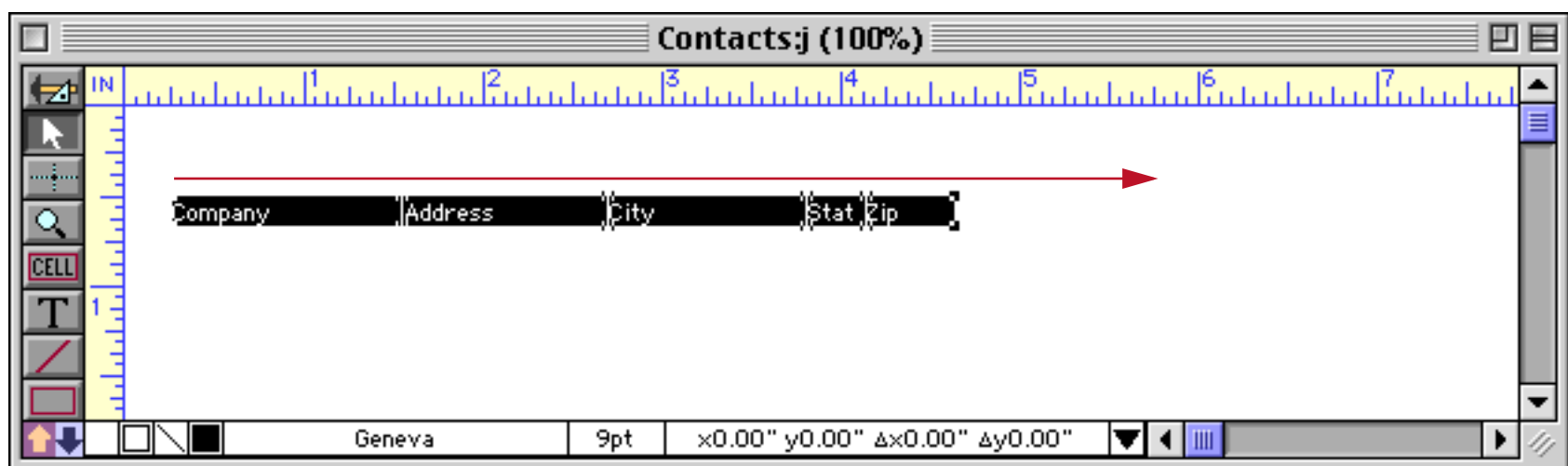
Automatic Layout Options

The right hand side of the Auto Cell Layout dialog contains options for varying the arrangement of objects that are created.

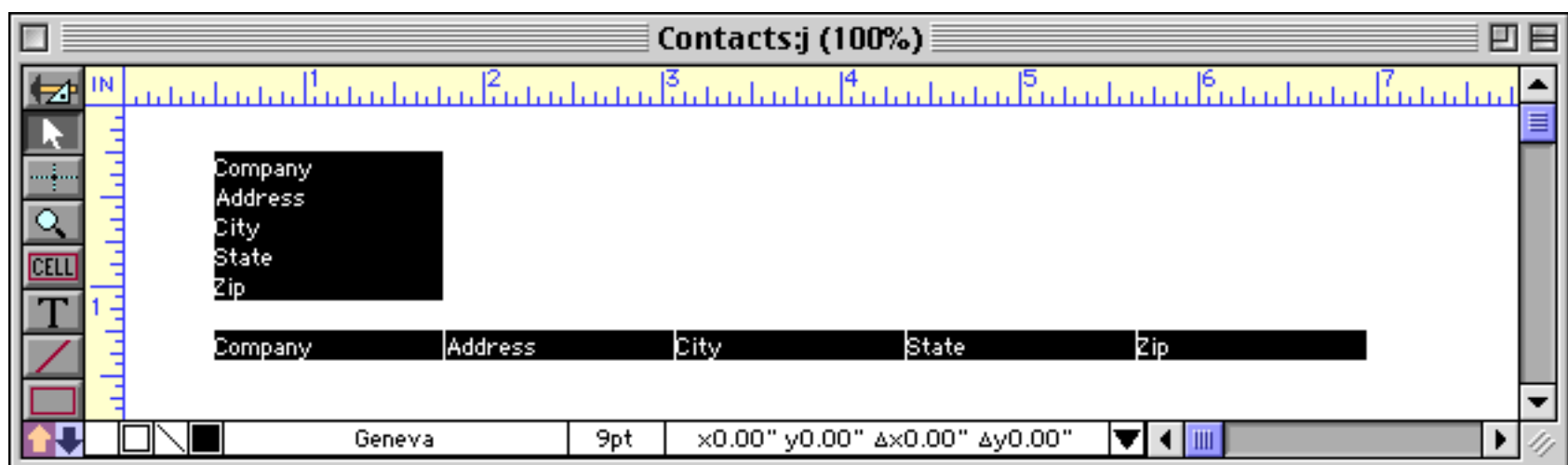
The **Across** option controls the direction of the generated objects. The normal direction is down.



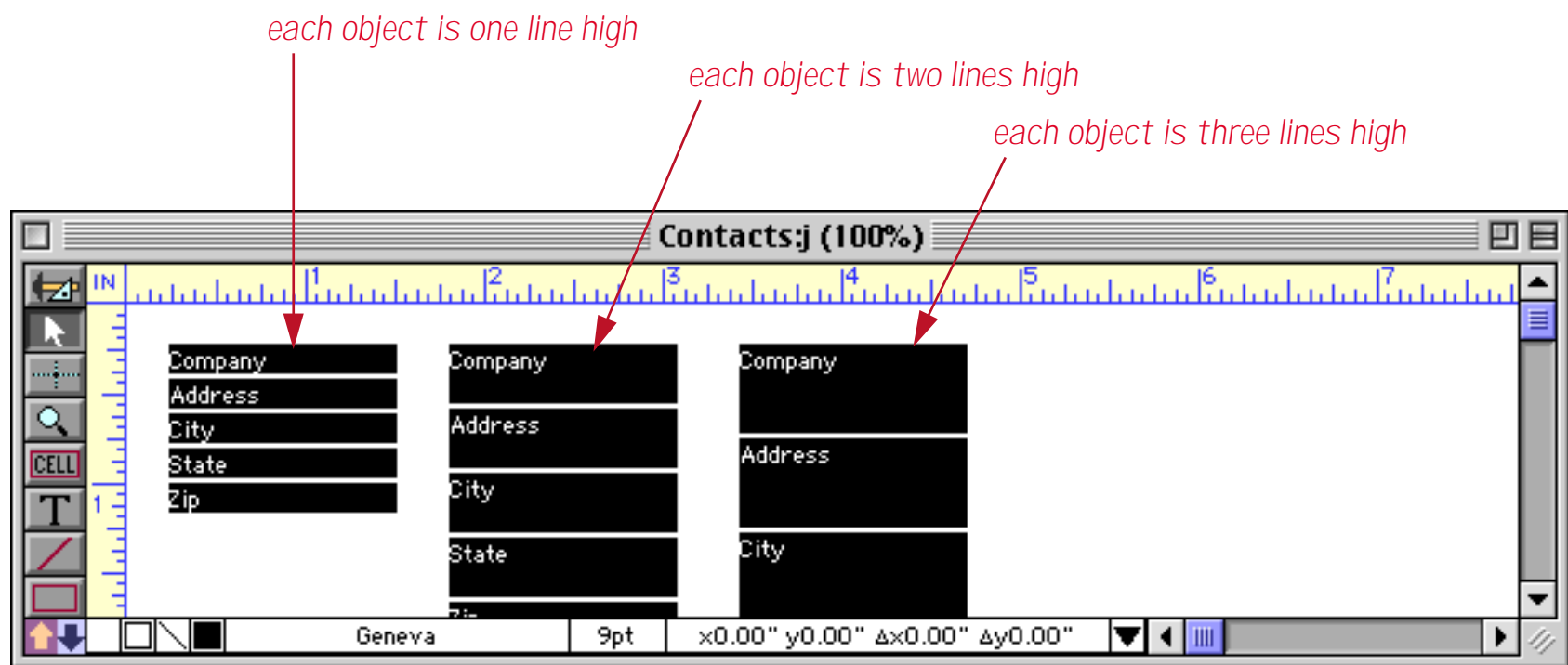
If the **Across** option is enabled the objects are generated horizontally, in a row.



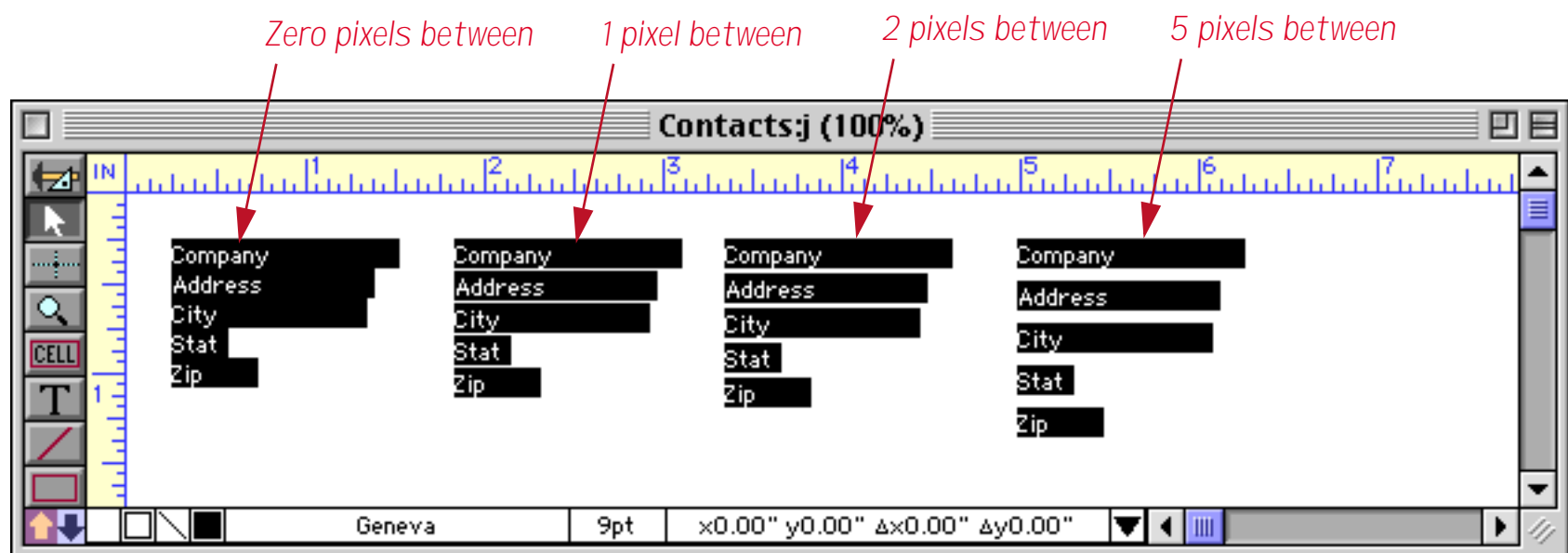
The **Same Width** option controls the width of the generated objects. If this option is off, the width of each object will be the same as the width of the corresponding column in the data sheet (see “[Changing the Width of a Field](#)” on page 199). If the **Same Width** option is enabled, all of the objects will have the same width. (Of course you can always change the width of any object after it has been generated — see “[Changing the Size of a Single Object](#)” on page 513.) This illustration shows what the end result of this option looks like both in normal mode and with the **Across** option enabled.



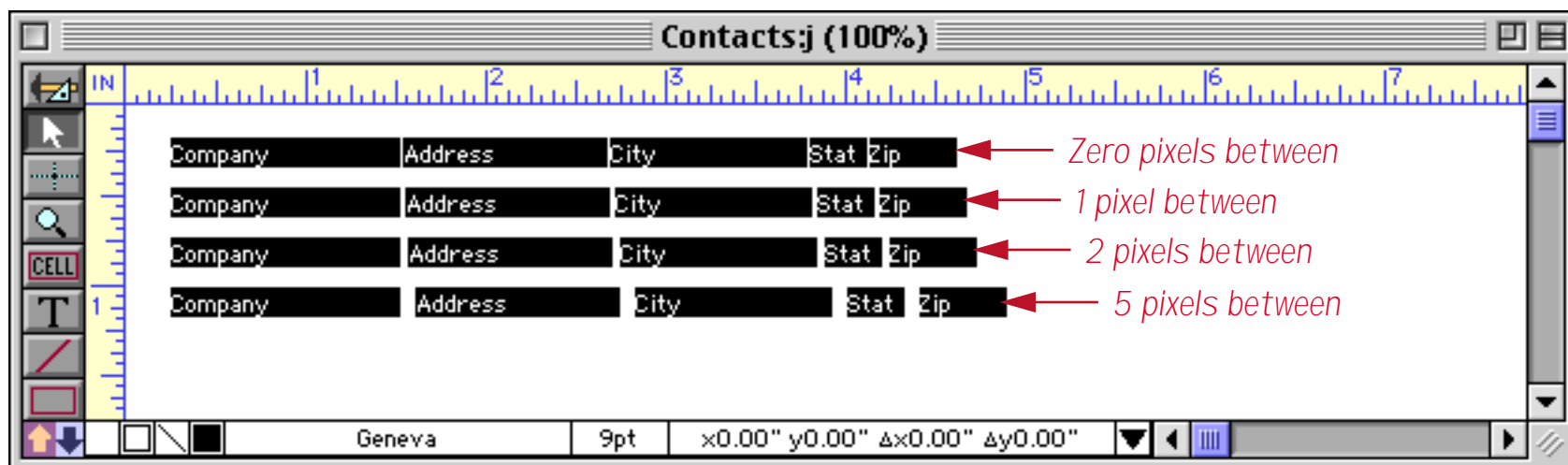
The **Lines High** option specifies the height of each object. Normally each object is one line high in the current font, but you can generate objects that are two lines high, three lines high, or more. Of course you can also change the height of any object after it has been generated (see “[Changing the Size of a Single Object](#)” on page 513).



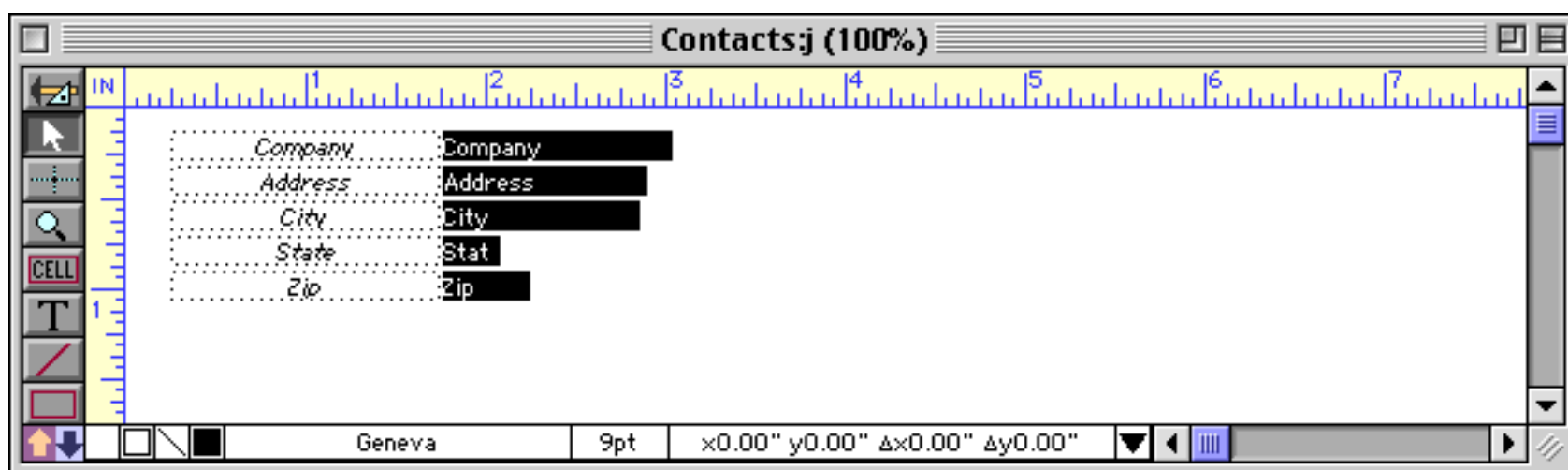
The **Pixels Between** option specifies the spacing between adjacent data cells. (A pixel is one dot on the screen at 100% magnification, or 1/72 inch.) When you create a column of data cells, this option specifies the vertical spacing between the cells.



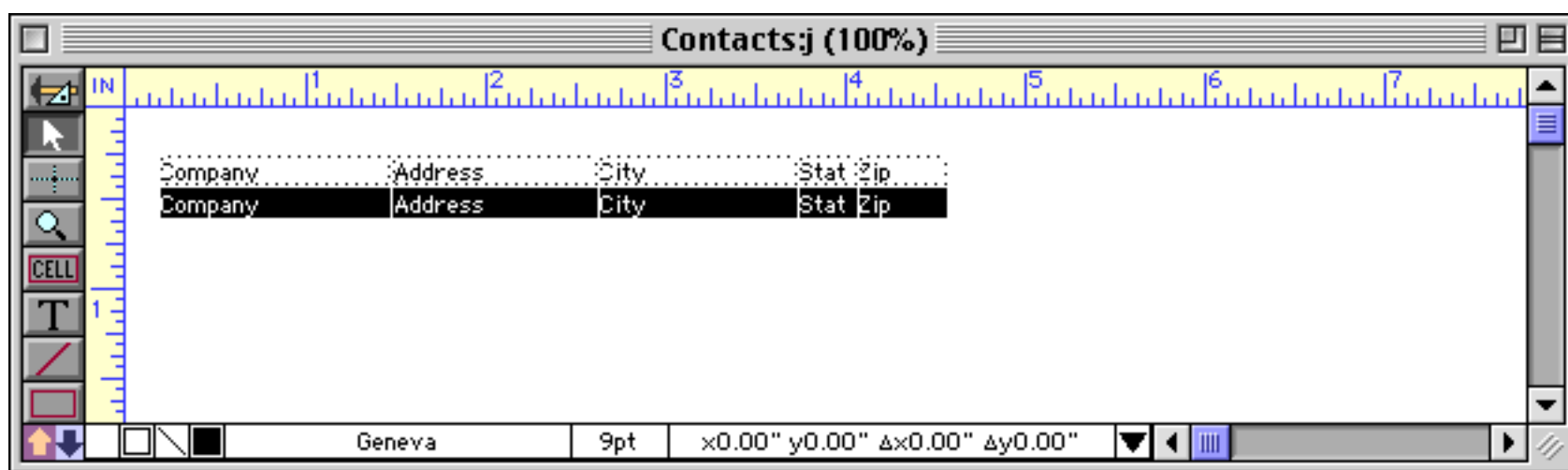
When you create a row of data cells (**Across**), this option specifies the horizontal spacing between the cells.



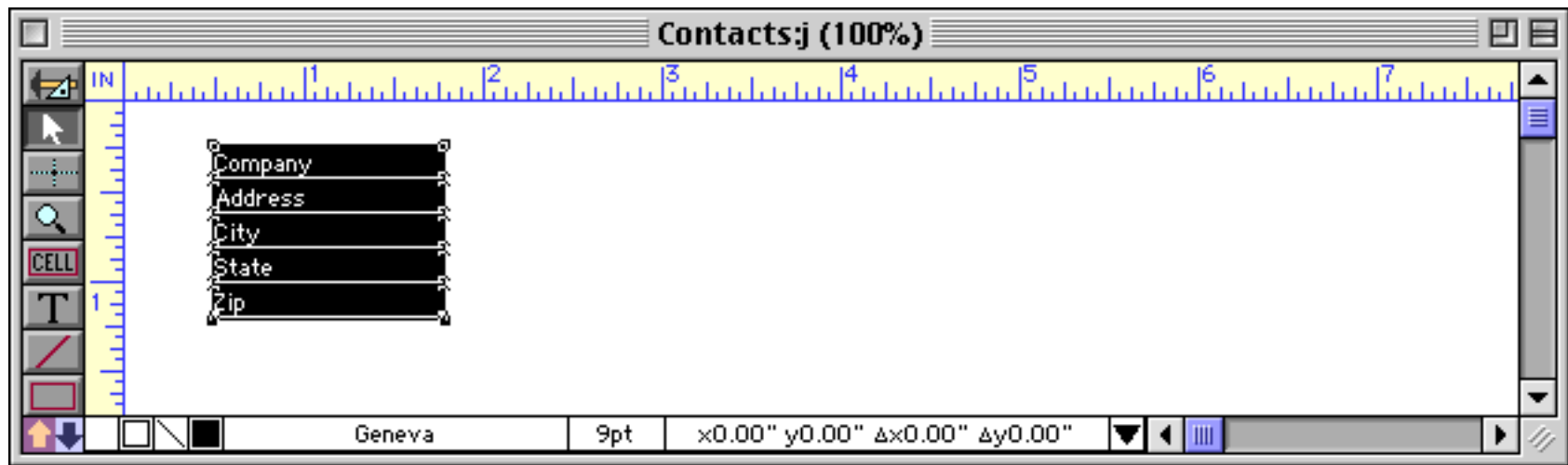
The **Field Names** option tells Panorama to create a field name next to each generated object. If you create a column of objects, the field names will be placed to the left.



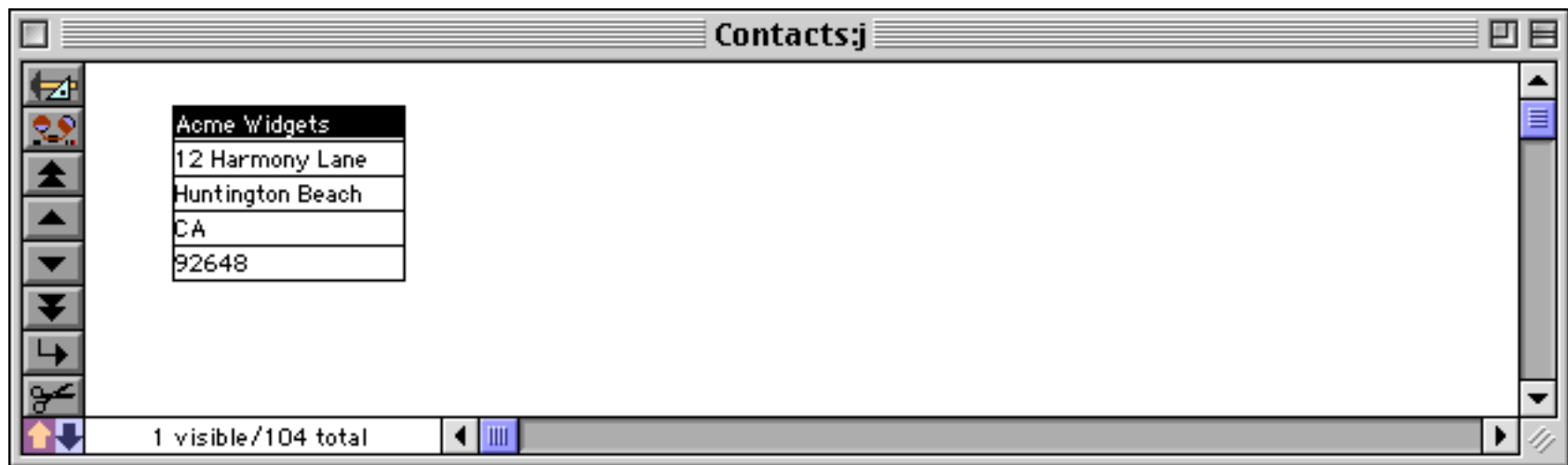
If you create a row of data cells (**Across**), the field names will be placed above the objects, like this.



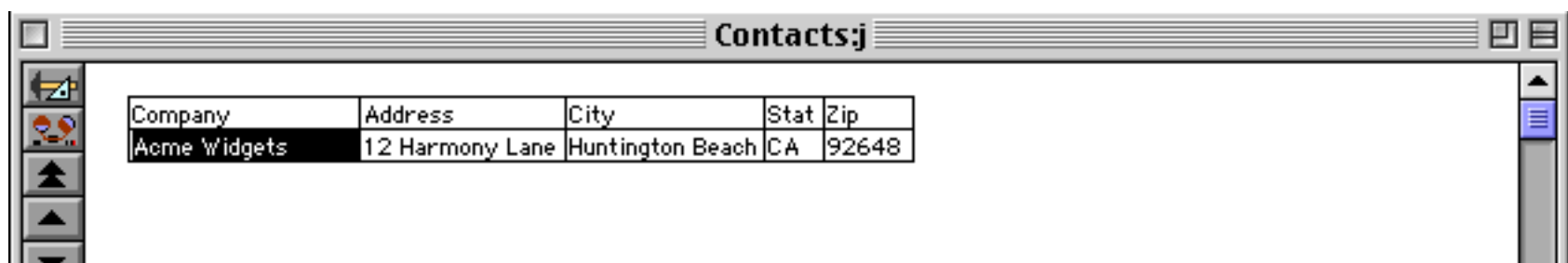
Use the **Boxes** option if you want Panorama to draw a box around each generated object. This usually makes sense only for data cells, since for Text Editor SuperObjects you can generate borders as part of the object itself. This illustration shows what the boxes look like when used with data cells.



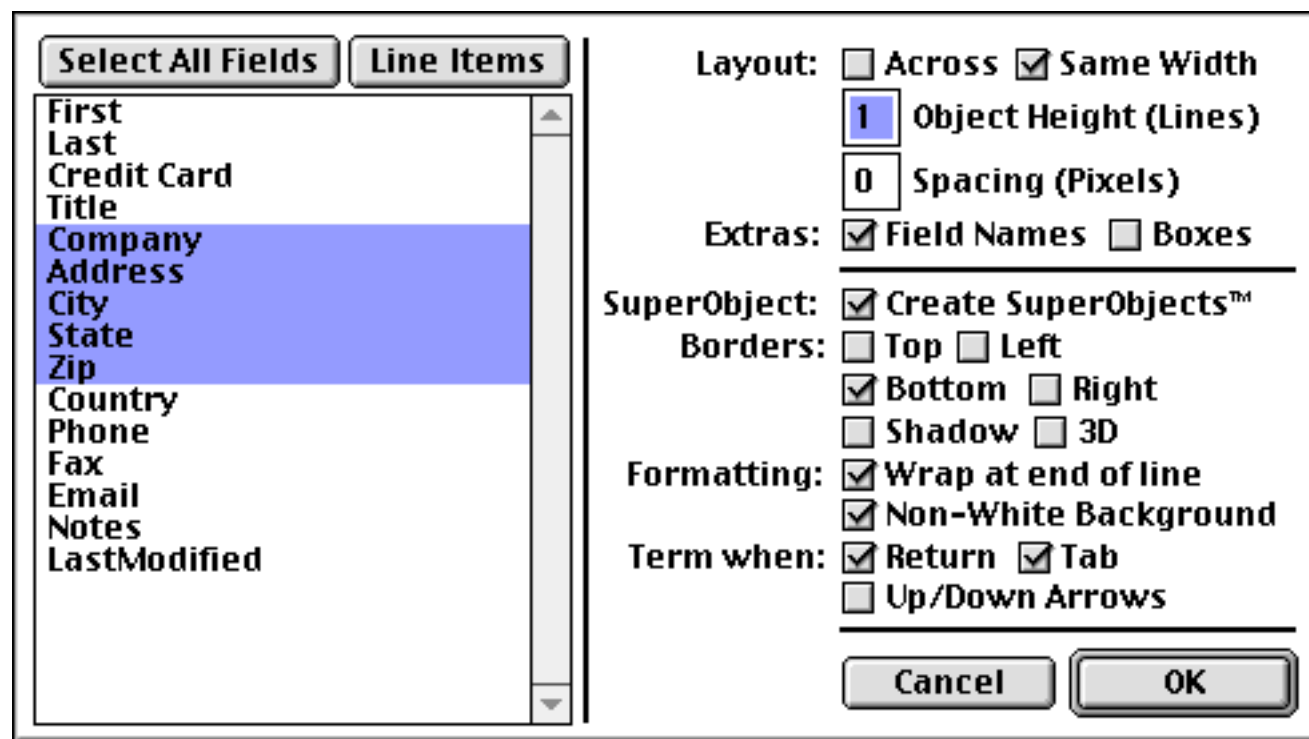
It's a bit easier to see what the boxes look like in Data Access Mode (see "[Form Modes: Data Access vs. Graphic Design](#)" on page 485).



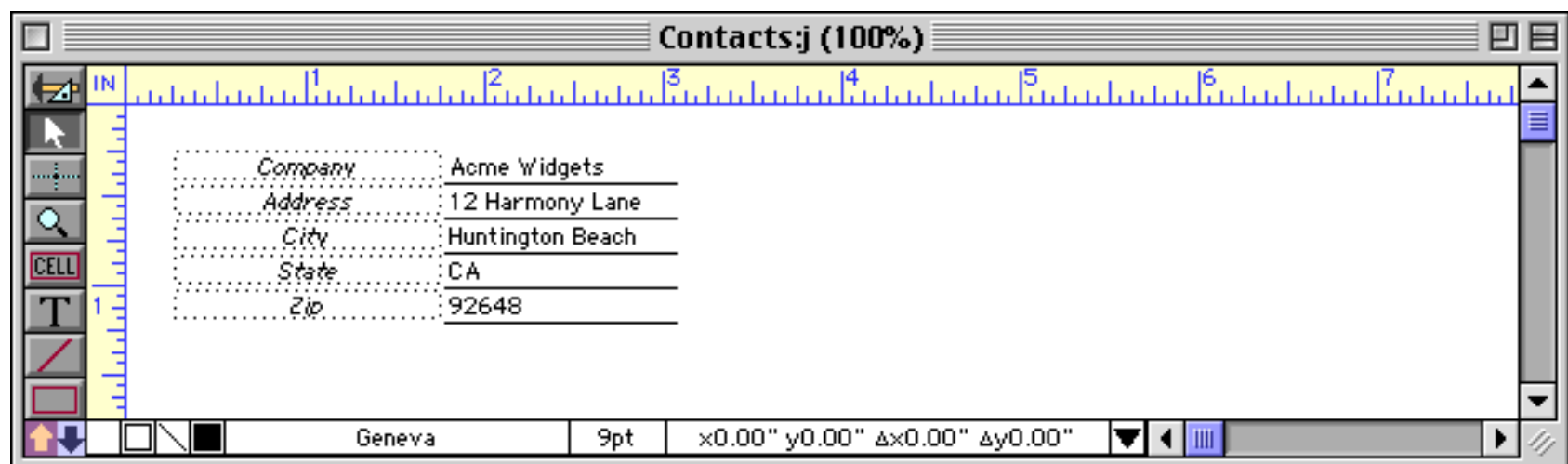
If **Field Names** option is checked Panorama will draw a box around the field names as well.



To create Text Editor SuperObjects instead of data cell, check the **Create SuperObjects** option. Once this option is turned on, you can select the options for the Text Editor SuperObjects you want to create — borders, formatting, etc. These options are the same as the options in the Text Editor SuperObject configuration dialog (see “[Text Editor Options](#)” on page 643).



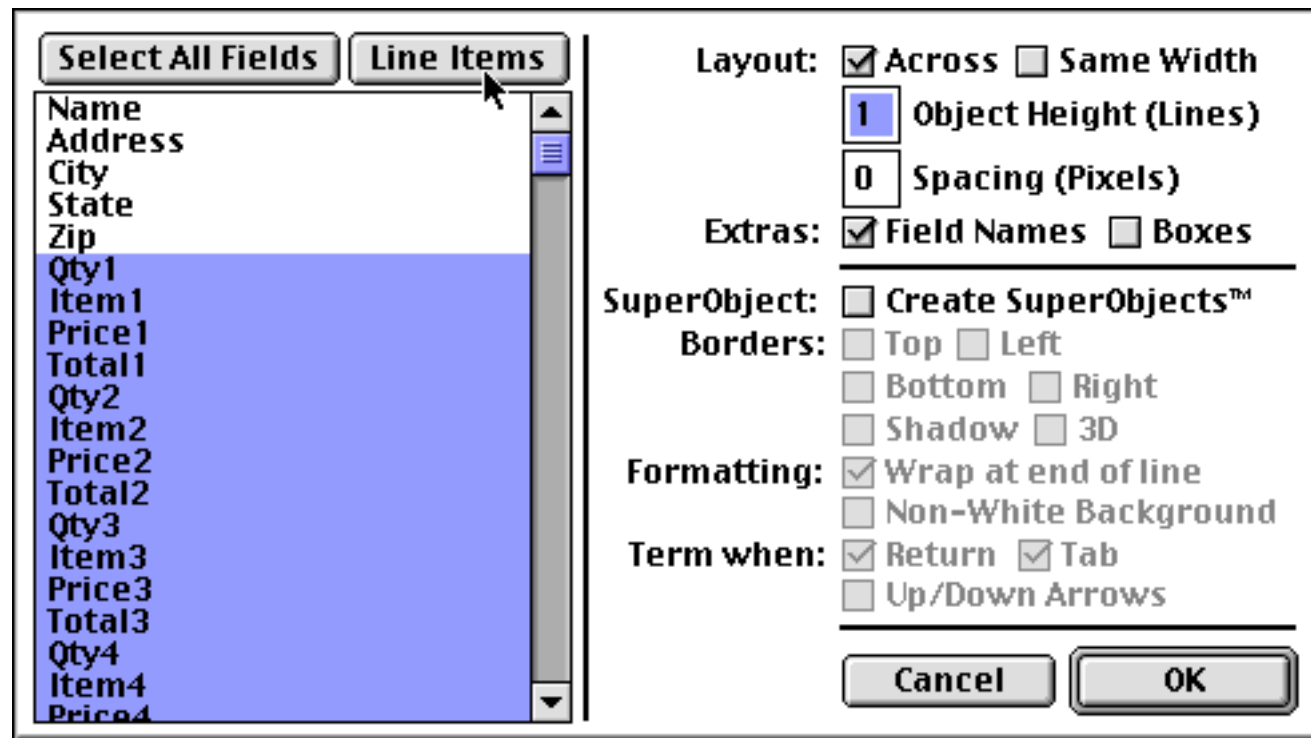
Pressing **OK** generates a column of Text Editor SuperObjects (instead of data cells).



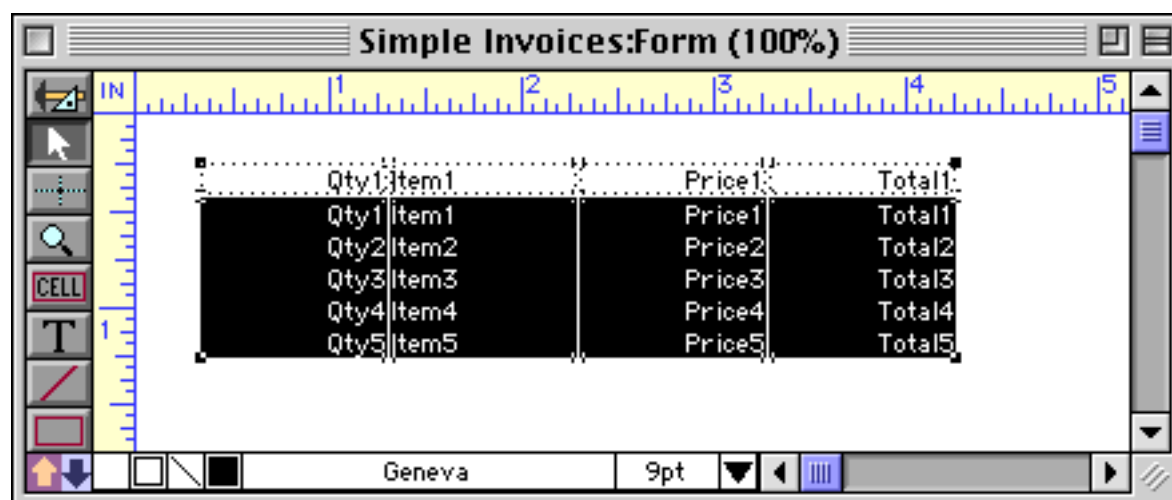
Clicking on the word **Borders** will turn all four borders on or off. If you use the Text Editor SuperObject borders your probably will not want to turn on the **Boxes** option, which adds an additional box around each object (see above).

Line Items in a Form

Line items are used for repeating items within a record (see “[Repeating Fields \(Line Items\)](#)” on page 222). The **Auto Cell Layout** command makes it easy to create a table of line items within a form. With the **Pointer** tool selected, click on the upper left hand corner of the spot where you want the line items to appear. Next choose the font and style you want to use. Now open the **Auto Cell Layout** dialog and press the **Line Items** button.



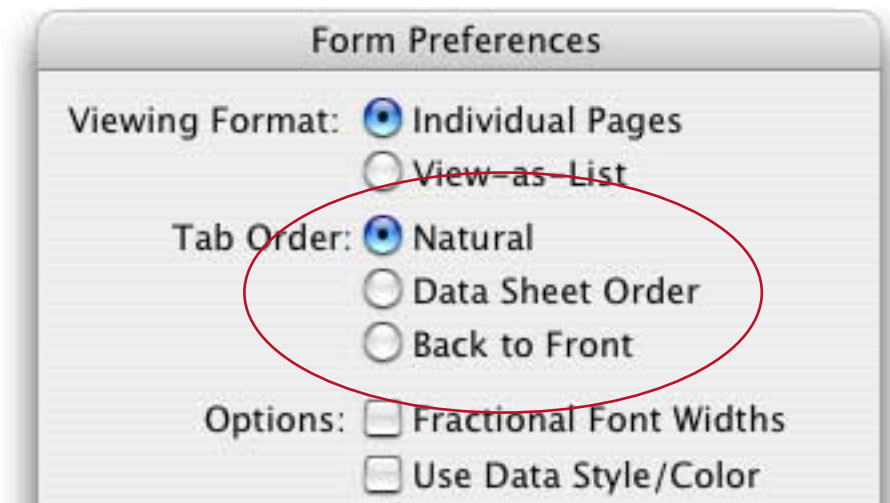
Pressing the **Line Items** button selects all the line item fields, and also checks the **Across** and **Field Names** options. You may also want to check the **Boxes** option and/or the **Create Superobjects** option (see “[Automatic Layout Options](#)” on page 663). When you press the **OK** button, Panorama will automatically create a table of line items formatted into rows and columns.



To learn how to adjust the width of an entire column in this table see “[Cluster Resize](#)” on page 541. To learn how to change the font size of this table (or the spacing) see “[Adjusting Spacing Between Multiple Objects](#)” on page 556.

Tab Order in Forms

Panorama has three tab order options for forms—**data sheet order**, **back to front order**, and **natural order**. Use the **Form Preferences** command (Setup menu) to specify the tab order option you want to use. (The form must be in graphic design mode.)

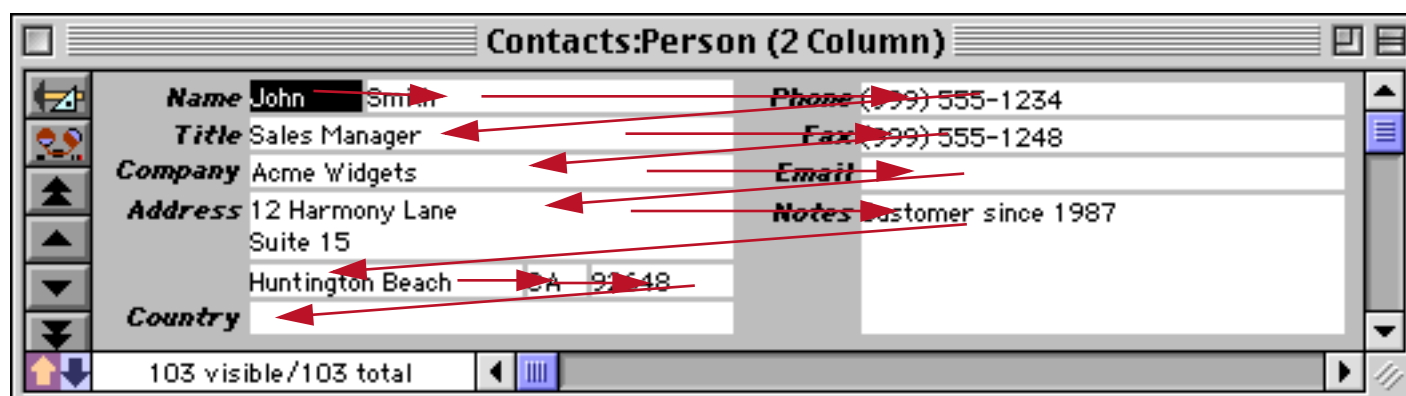


Data sheet order is exactly that—the **Tab** key moves from cell to cell in the same order as it would in the data sheet. However, data sheet order will not work if your form contains one or more variables in addition to fields to be edited (See “[Text Editor Options](#)” on page 643).

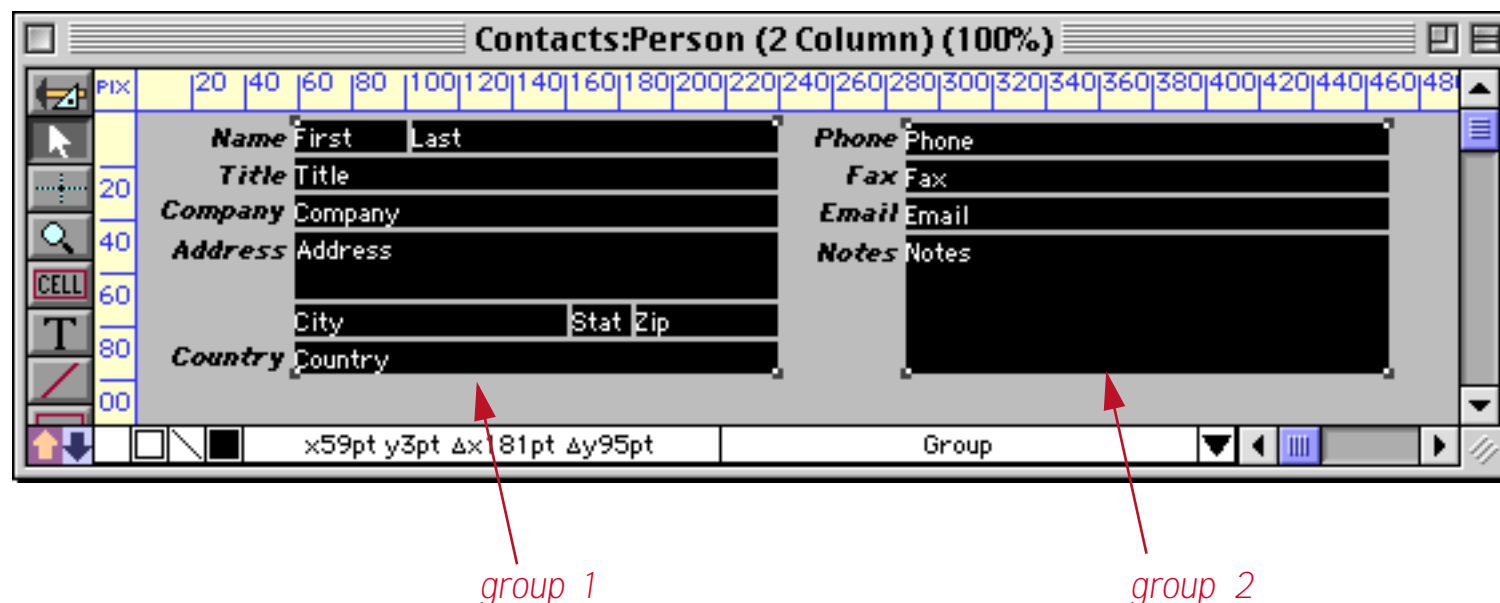
Natural order causes the **Tab** key to move from left to right, then from top to bottom.



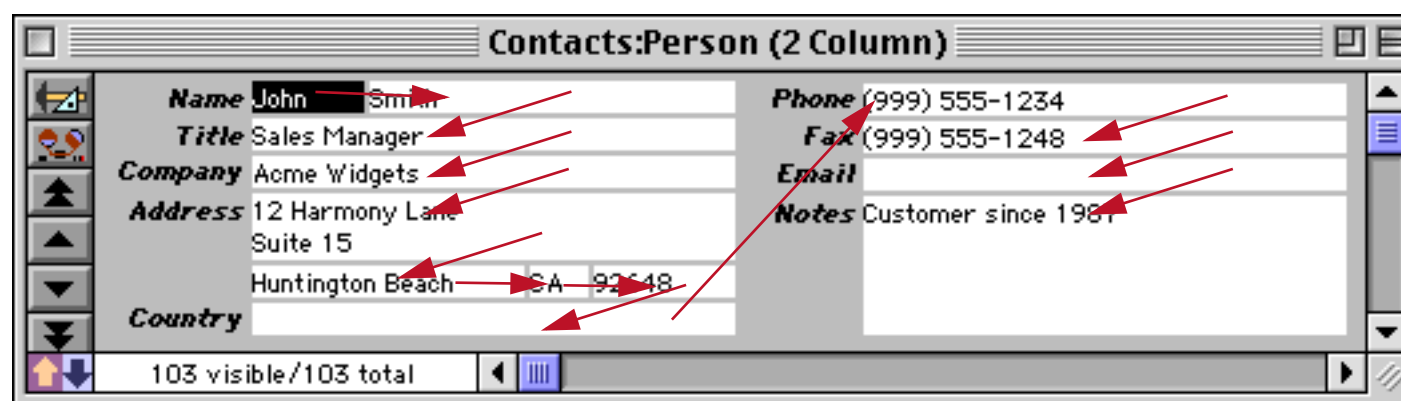
This usually works well (and is the default option), but in some cases isn't really what you want. This is especially true in forms with side by side columns of data.



To fix this you can alter the natural order by grouping data cells together—the **Tab** key will move through all the cells in the group of objects (in natural order) before it moves to the next cell. In this case the data cells need to be brought together into two groups using the **Group** command (see “[Grouping Objects Together](#)” on page 536.)



Now that the cells have been grouped together the tab order will tab through all of the cells in the left hand column before moving to the right hand column.



Back to Front order gives you the most control, but also takes the most work to set up. When this option is enabled the tab order depends on the back to front layering of the data cell objects in the graphic design mode. Use **Send to Back** to bring a data cell to the start of the tab order, and **Bring to Front** to send it to the end of the tab order. See “[Changing the Stacking Order](#)” on page 569 for more information on these commands.

For example, suppose your form contained three fields A, B, and C and you wanted to tab from field to field in the order B > A > C. To set up this order click on field B and use **Bring to Front** (the form must be in graphic design mode). Then click on field A and use **Bring to Front**. Finally click on field C and use **Bring to Front**.

Tab Order for Variables

The **Form Preferences** dialog (Setup menu) allows you to choose from three options — **Natural**, **Data Sheet Order**, and **Back to Front** (see previous section). All three options will work fine if you editing only fields. However, if a form allows the user to edit variables, the **Data Sheet Order** option will not work (because the data sheet does not contain variables, so they have no order!) Any form that contains Text Editor SuperObjects for variables should use **Natural** or **Back to Front** tab order.

Field Setup in Graphics Mode

As you are building a form, you may realize that the database needs another field for the form. You can use the Setup menu to add new fields to the database (or modify existing field properties) without having to leave graphic design mode.

To add a new field to the database from within graphic design mode, use the **Add Field** command in the Setup menu. Once the field is added to the database itself, you can create new data cell or Text Editor SuperObjects using the new field.

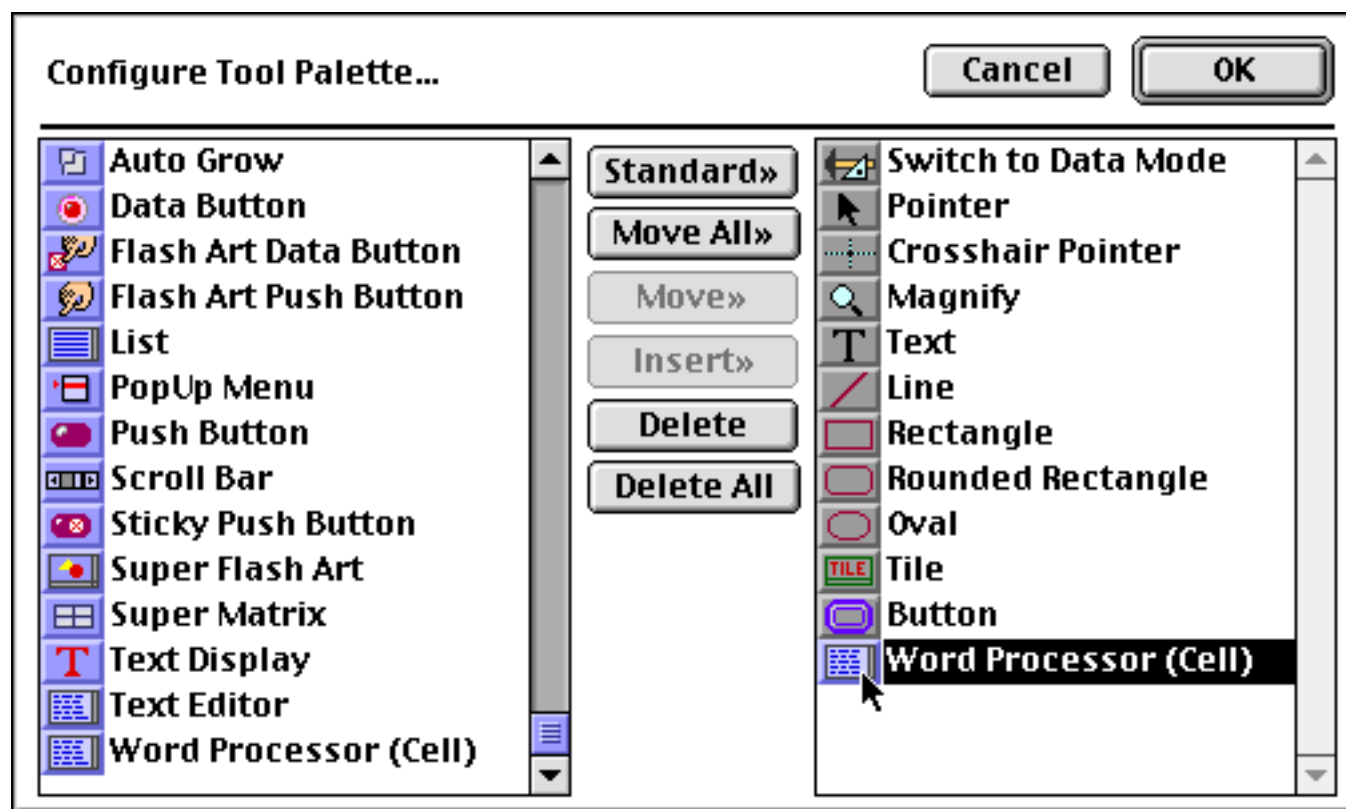
To modify an existing field, first use the **Pointer** tool to select a data cell assigned to the field you want to modify (only data cells work — you cannot click on a Text Editor SuperObject). Then use the **Field Properties** command (Setup menu) to modify the field. For more information on setting up fields see “[Field Properties](#)” on page 215.

Word Processor SuperObject

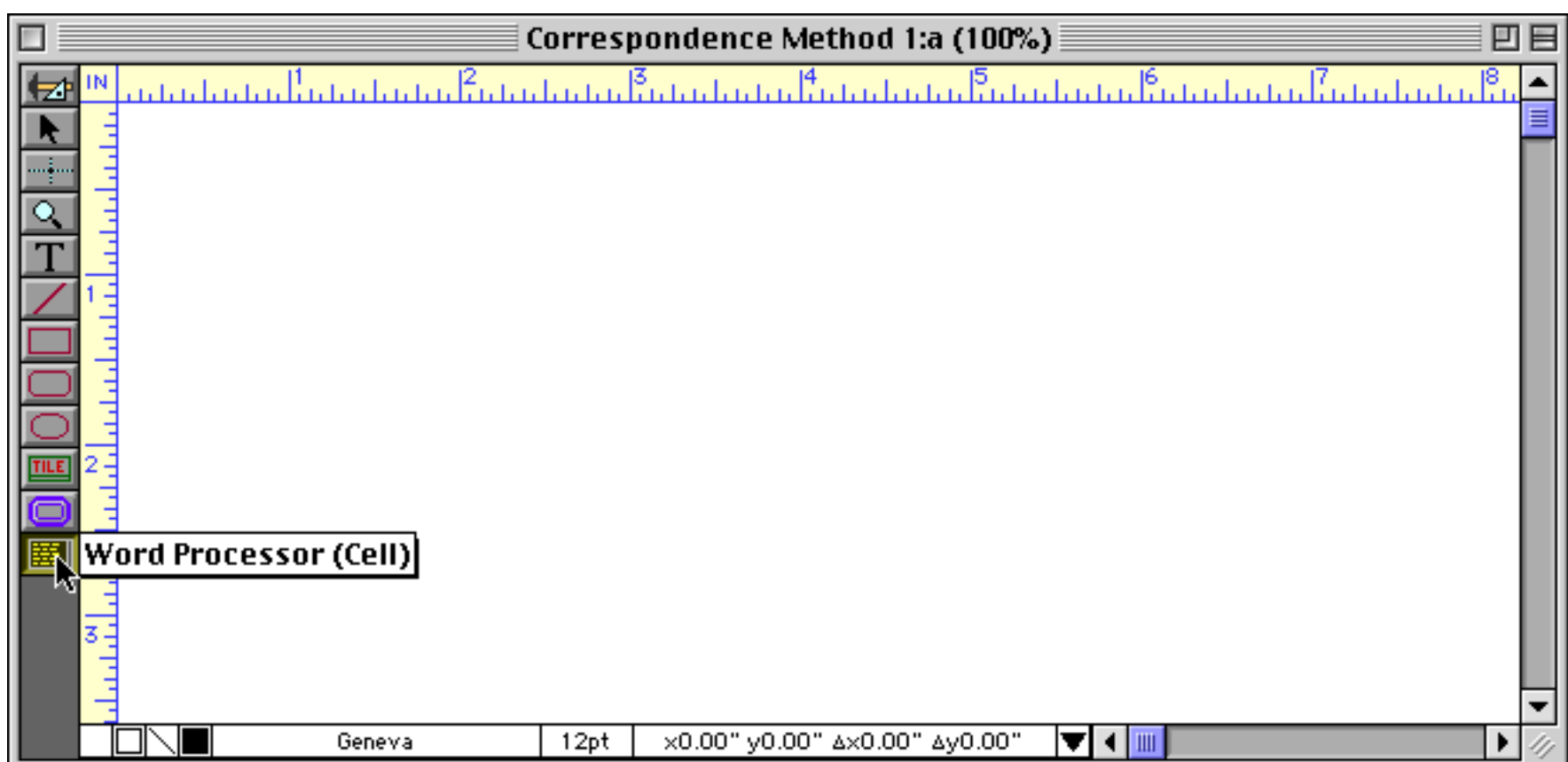
The Word Processing SuperObject™ allows you to include a complete word processor as part of a form. The word processor allows you to mix different fonts, sizes, styles (16 different styles) and colors in a single paragraph. Left, Right, and First Line margins may be set up separately for each paragraph, and you may set up left justified, right justified, center justified and decimal tabs with optional tab leaders. The merge option allows you to merge information from the database (or complete formulas) into the word processing text. The word processor SuperObject also includes most of the options available with the Text Editor SuperObject, including borders and a vertical scroll bar.

Creating and Working With Word Processor SuperObjects

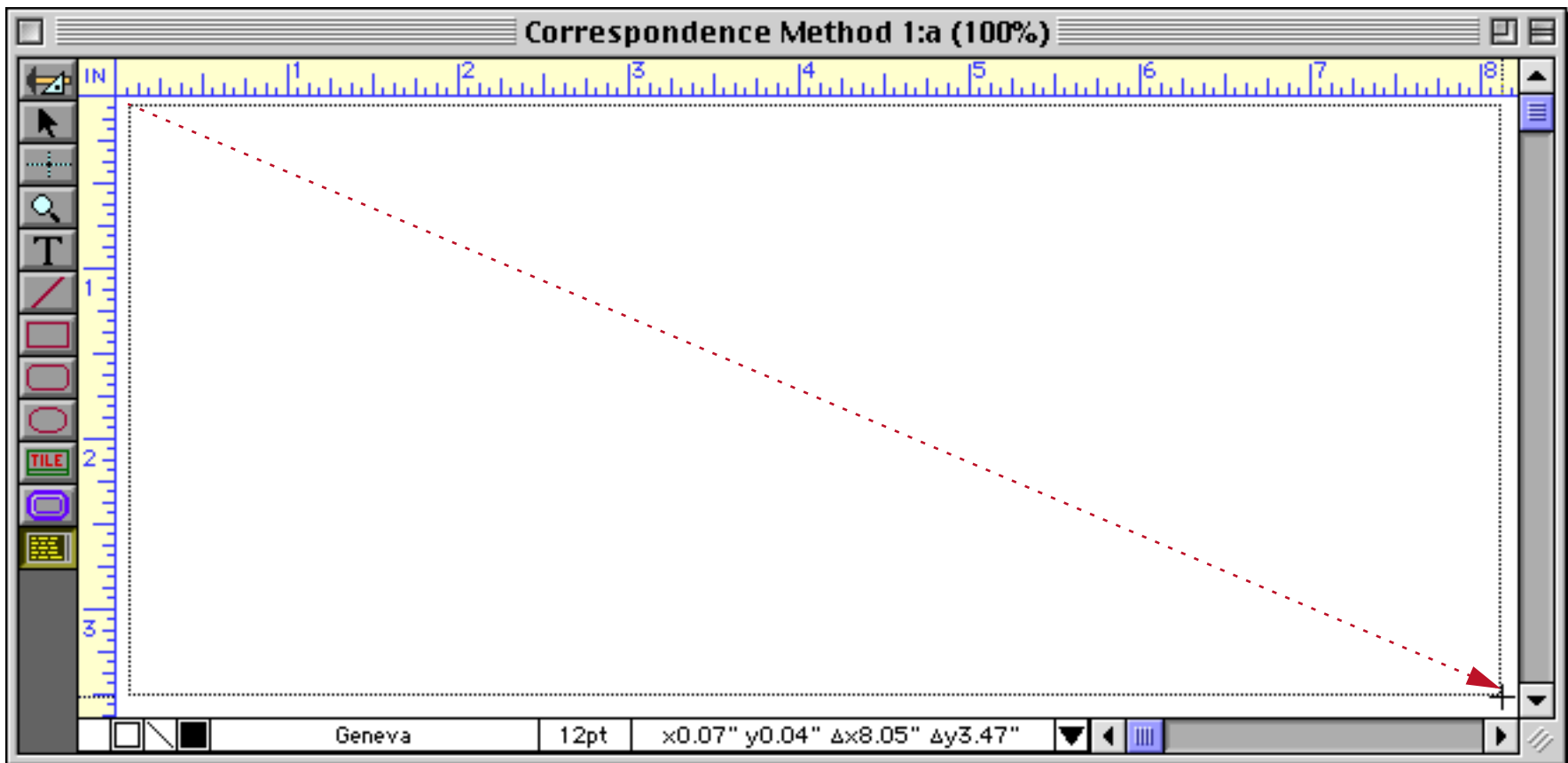
The Word Processor SuperObject tool is not in the default tool palette, so you'll need to use the Tool Palette dialog to add this tool to the palette if it is not already there (see "[Customizing the Tool Palette](#)" on page 497).



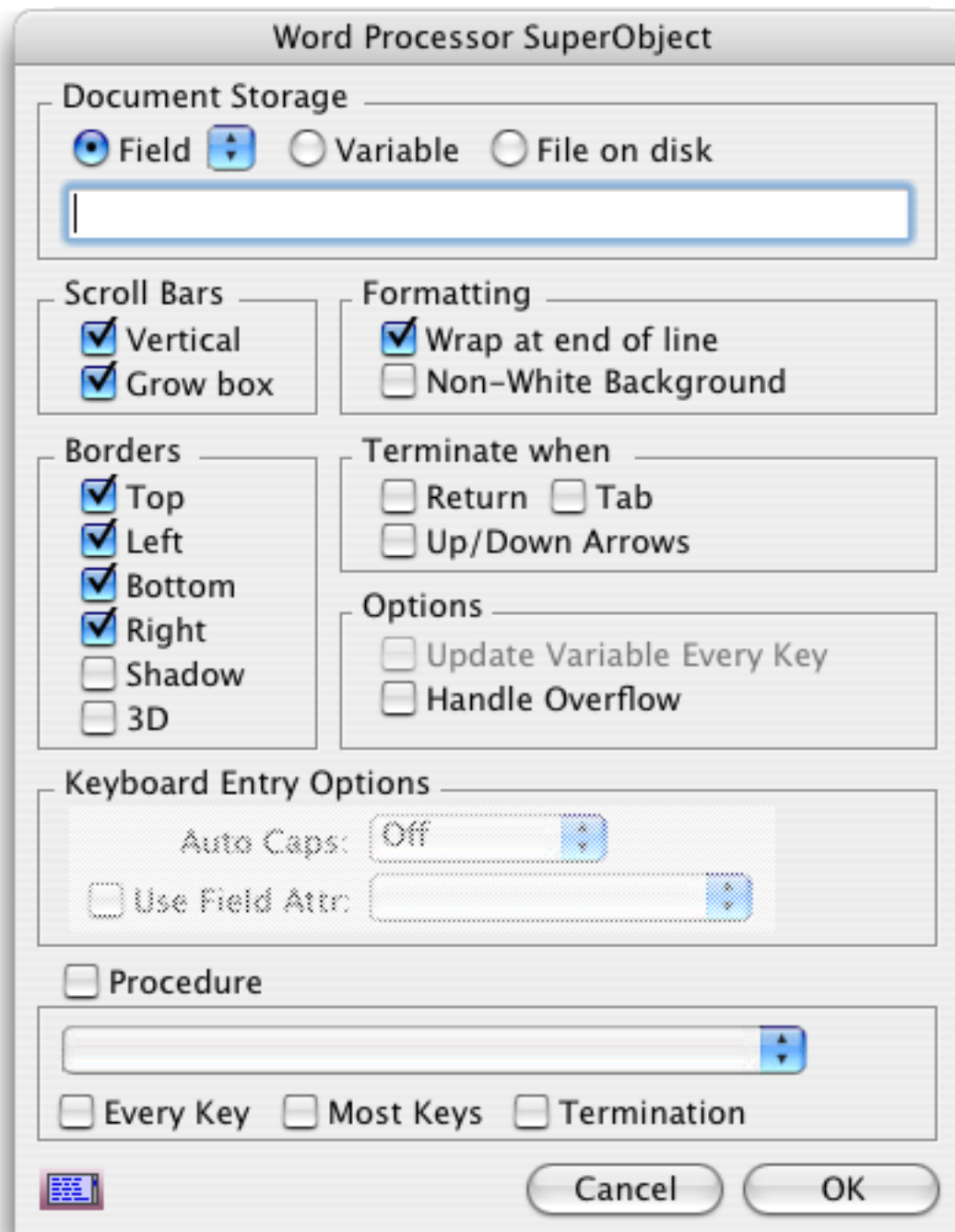
Now that the tool is added to the palette you can select it.



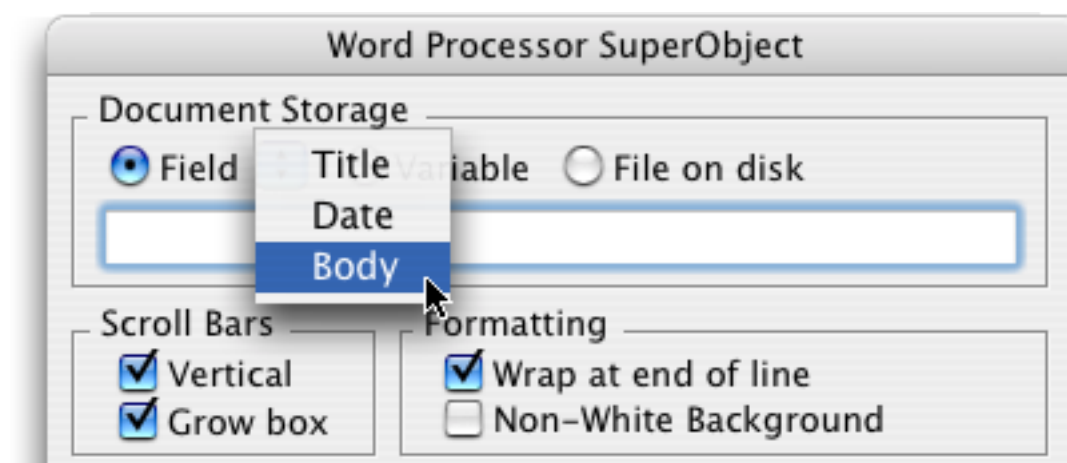
Once the tool is selected, drag the mouse across the form in the location where you want to create the Word Processing SuperObject.



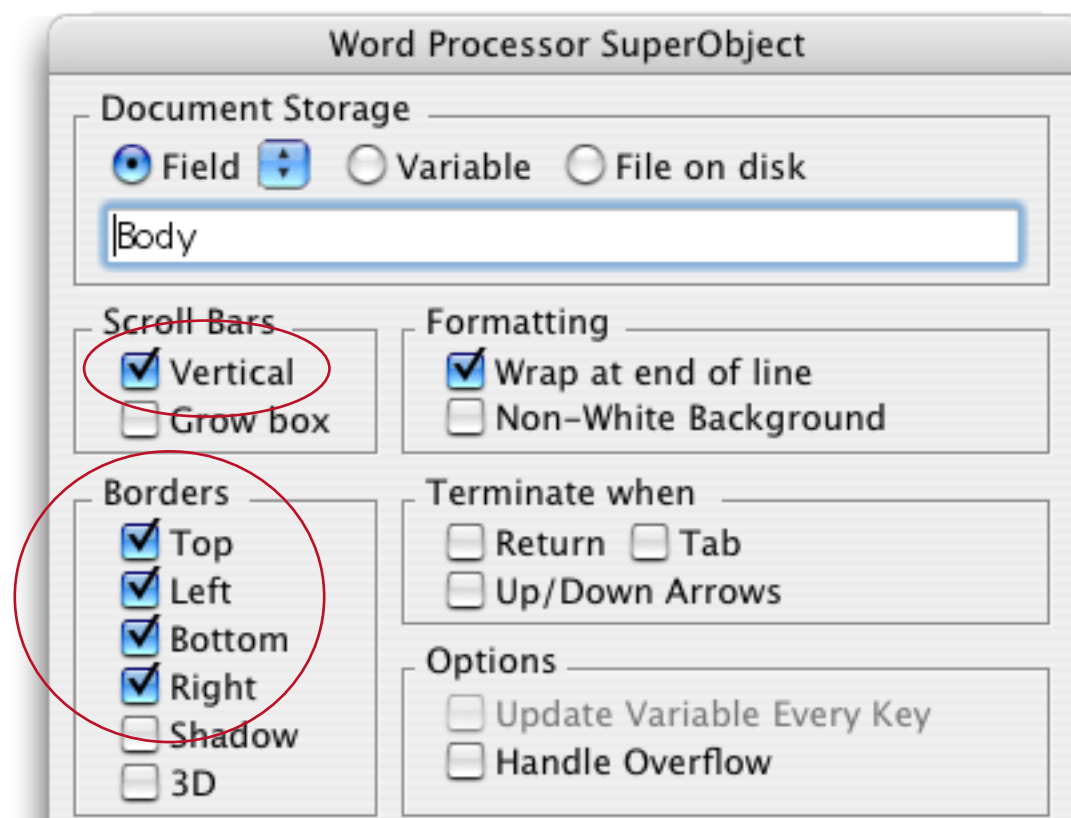
When you release the mouse, the Word Processor SuperObject configuration dialog will appear.



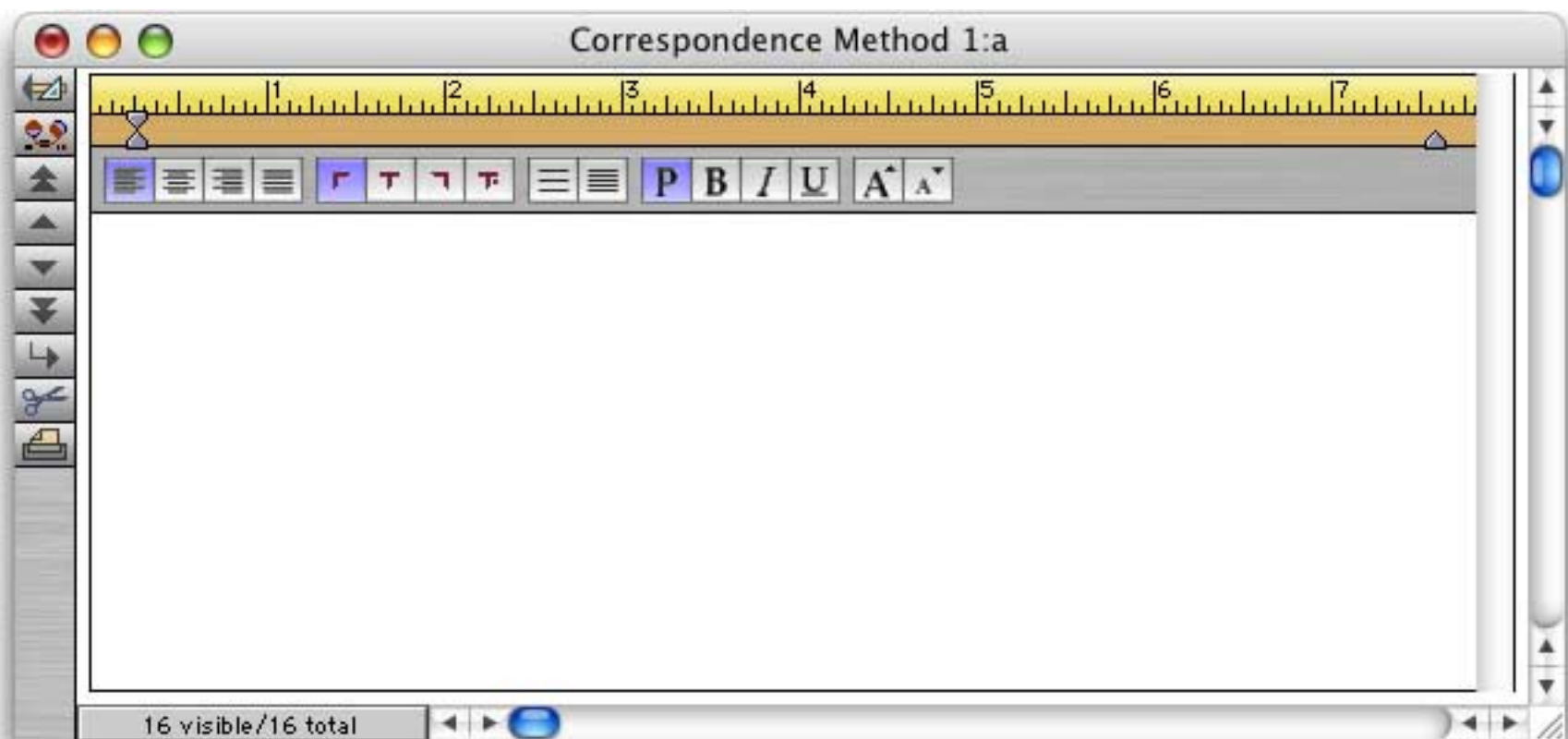
At a minimum you must enter a field name, variable or formula into the dialog. You can use the pop-up menu to select a field. In this database we've created a field, called **Body**, to hold the word processing information.



For this example we've also turned on the **Vertical Scroll Bar** and **Borders** options (all of the available options are discussed in detail later in this chapter).



When the **OK** button is pressed the new object appears. The top portion of the object contains a ruler that allows you to set tabs, alignment, line spacing and style.

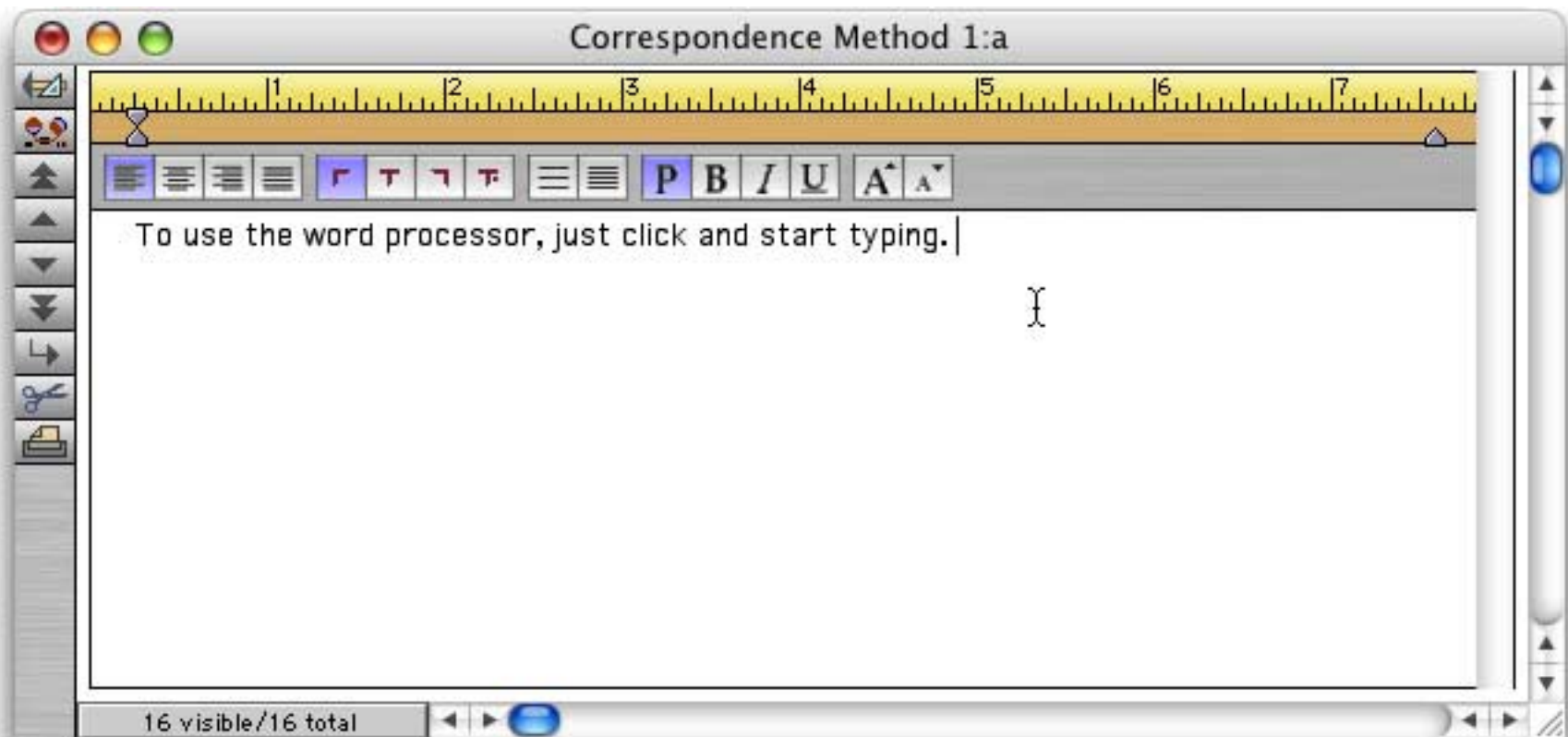


After it has been created you can modify the location and size of a Word Processing SuperObject just like any other object. To change any of the object attributes (scroll bars, border, formatting etc.) select the **Pointer** tool and double click on the object. The configuration dialog will appear again. Make your changes and press the **OK** button.

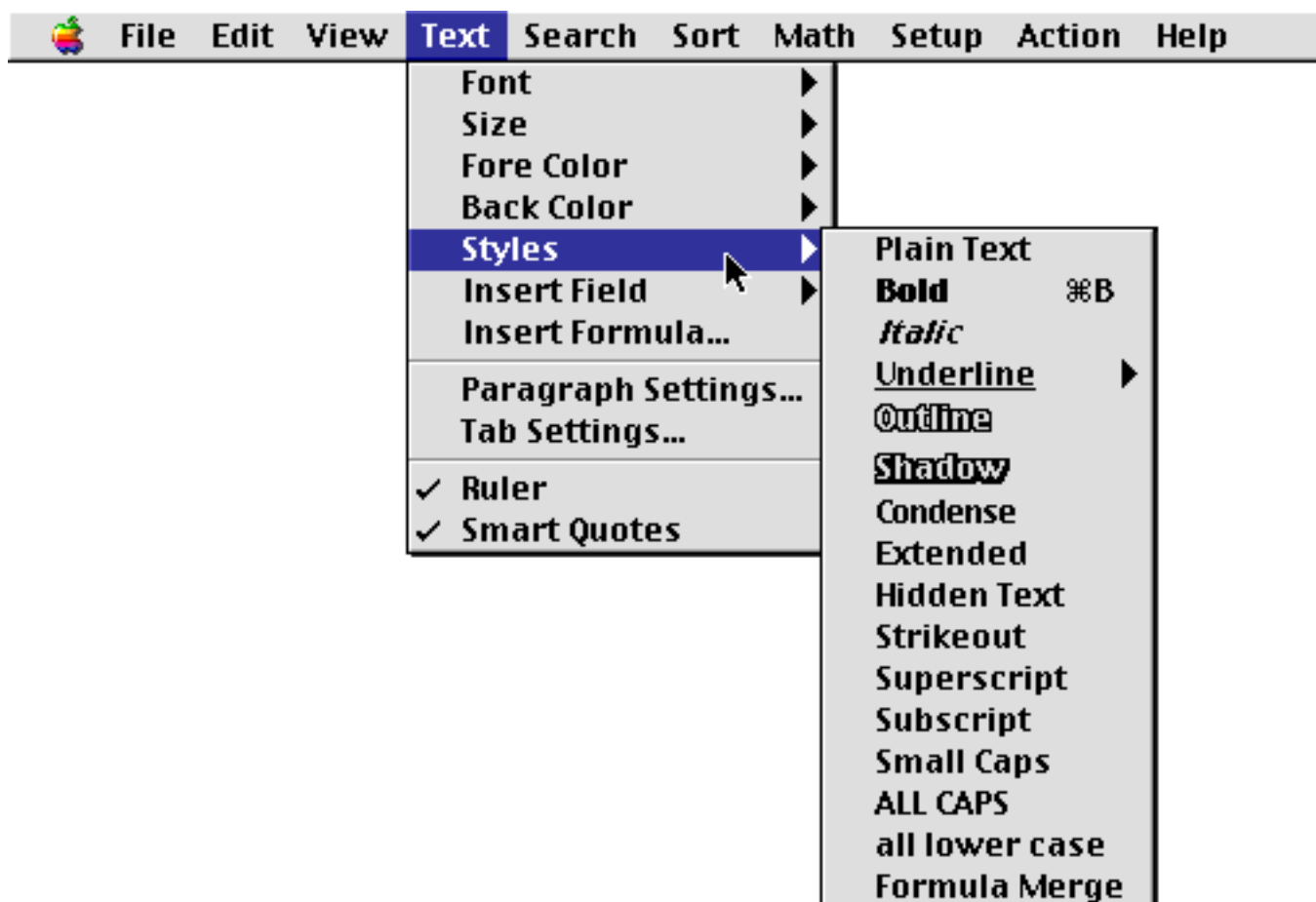
To actually use the word processor you need to switch to Data Access Mode (see "[Form Modes: Data Access vs. Graphic Design](#)" on page 485). To learn more about how to configure the Word Processor for your specific application see "[Configuring the Word Processor](#)" on page 696.

Using the Word Processor

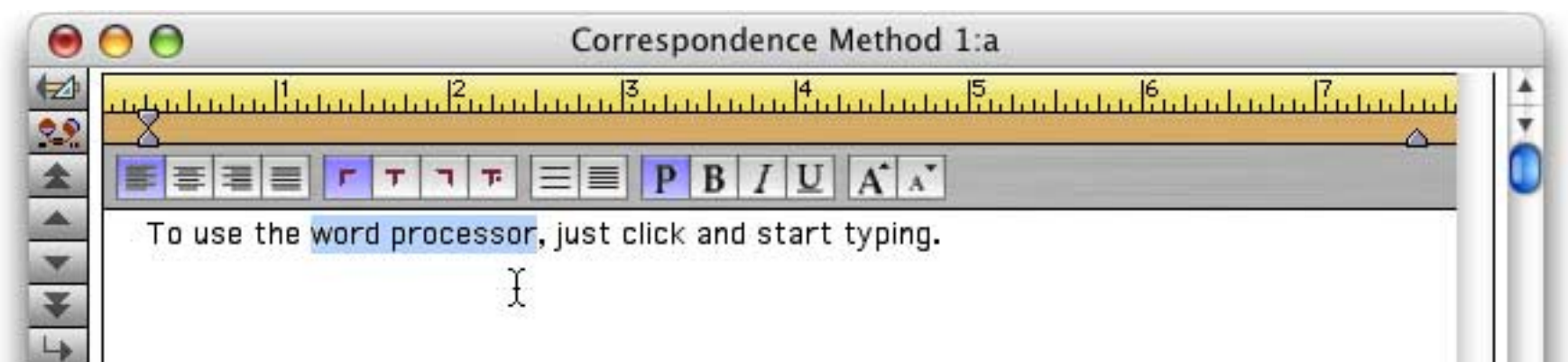
Once the word processing object is set up you can switch the form to Data Access Mode (see “[Form Modes: Data Access vs. Graphic Design](#)” on page 485) and start using the word processor. To start editing, simply click in the word processor object and start typing.



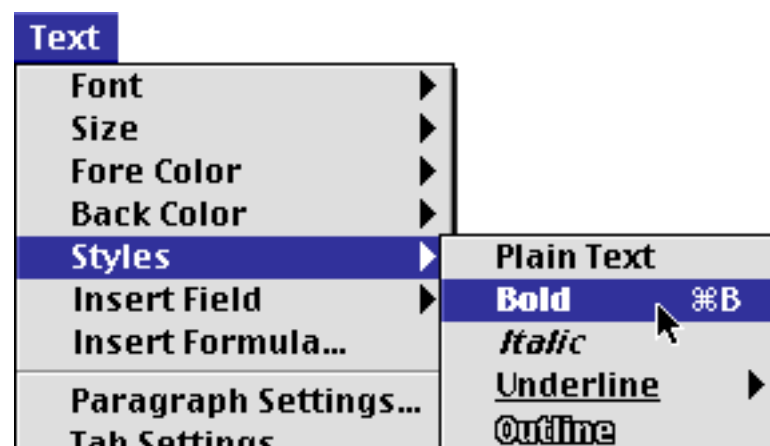
Whenever the word processor is active, an extra menu appears in the menu bar: the Text menu. This menu contains the options for formatting text and controlling the word processor.



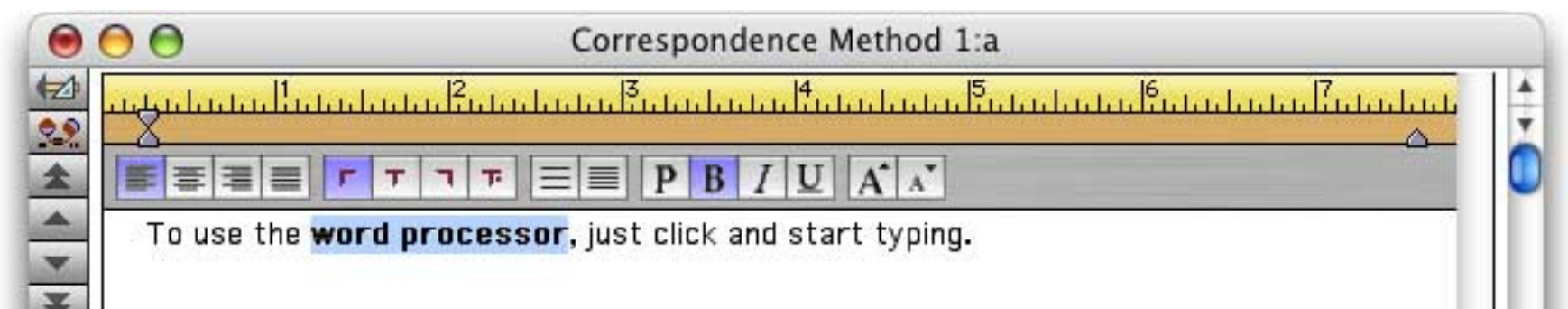
At the top of the Text menu are five submenus: Font, Size, Styles, Fore Color, and Back Color. To change the appearance of a section of text, start by selecting the text.



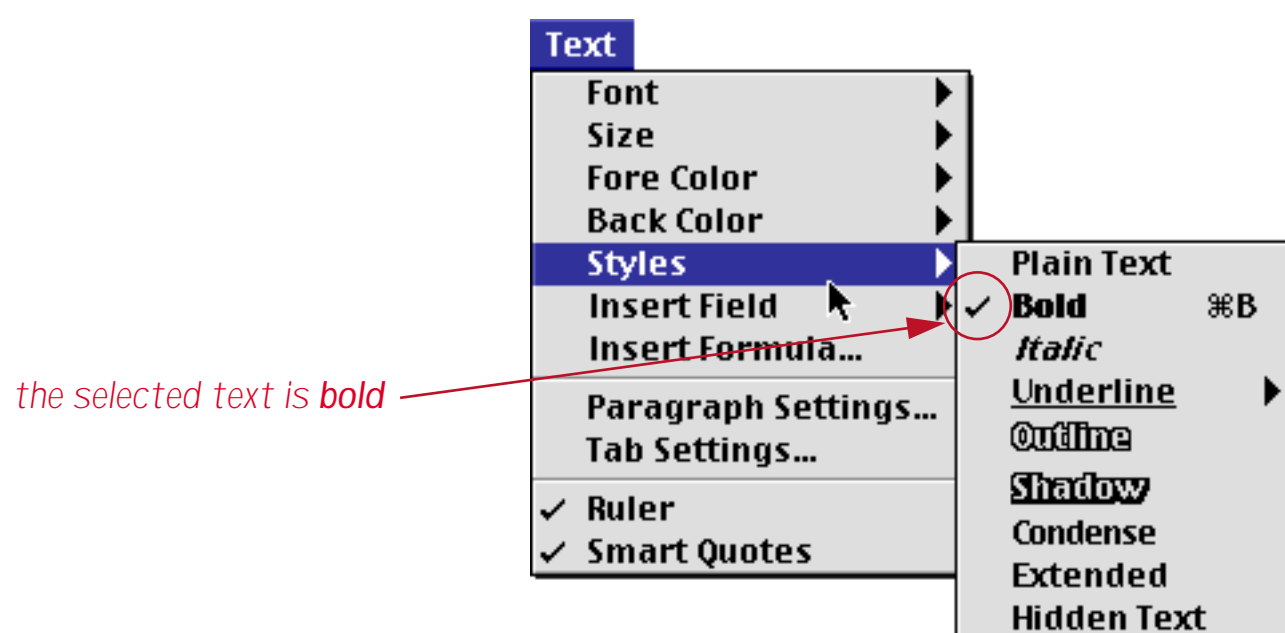
Next, choose the desired options from the Text menu.



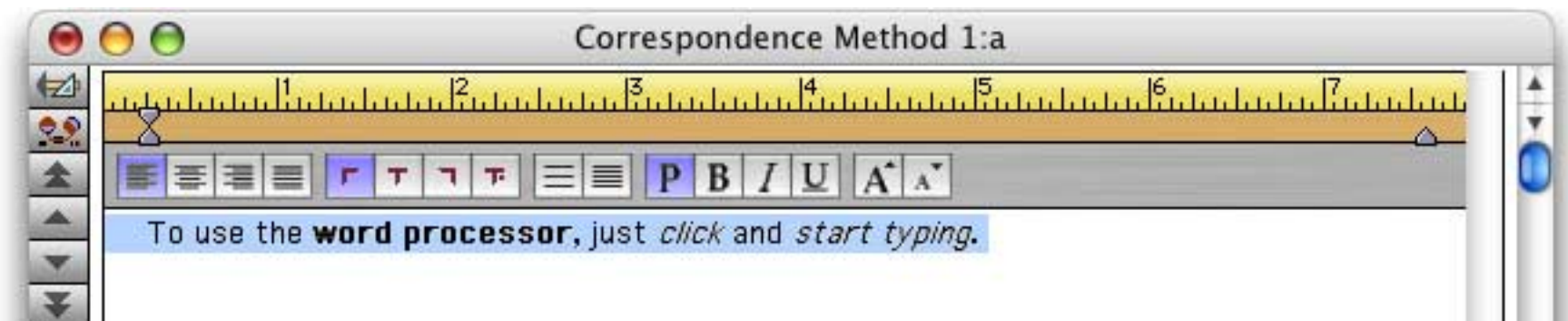
The selected text will take on the new font, size, color or style (in this case **bold**).



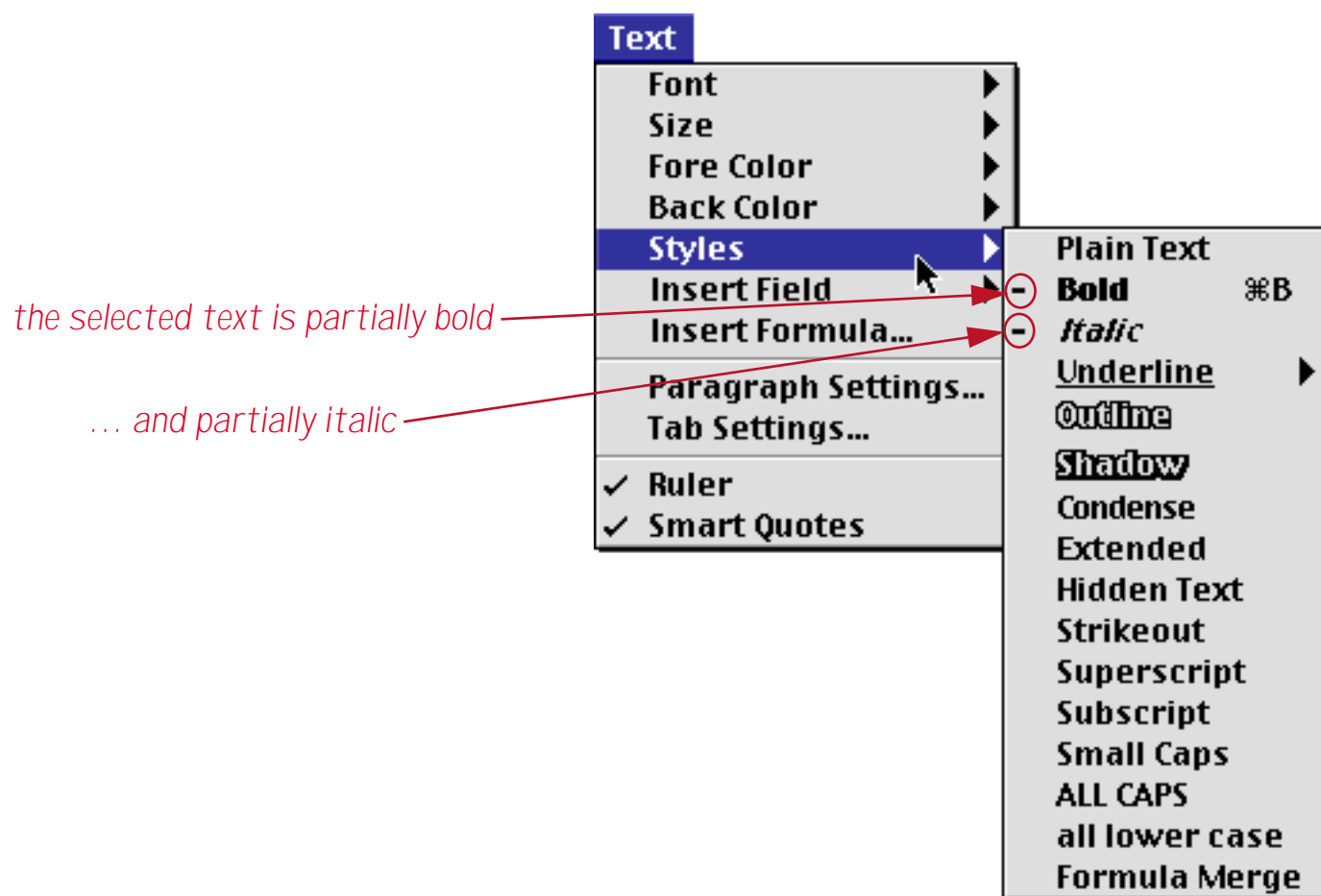
The submenus also display the status of the selected text. If the text is all the same, a checkmark will appear next to the font, size, or style.



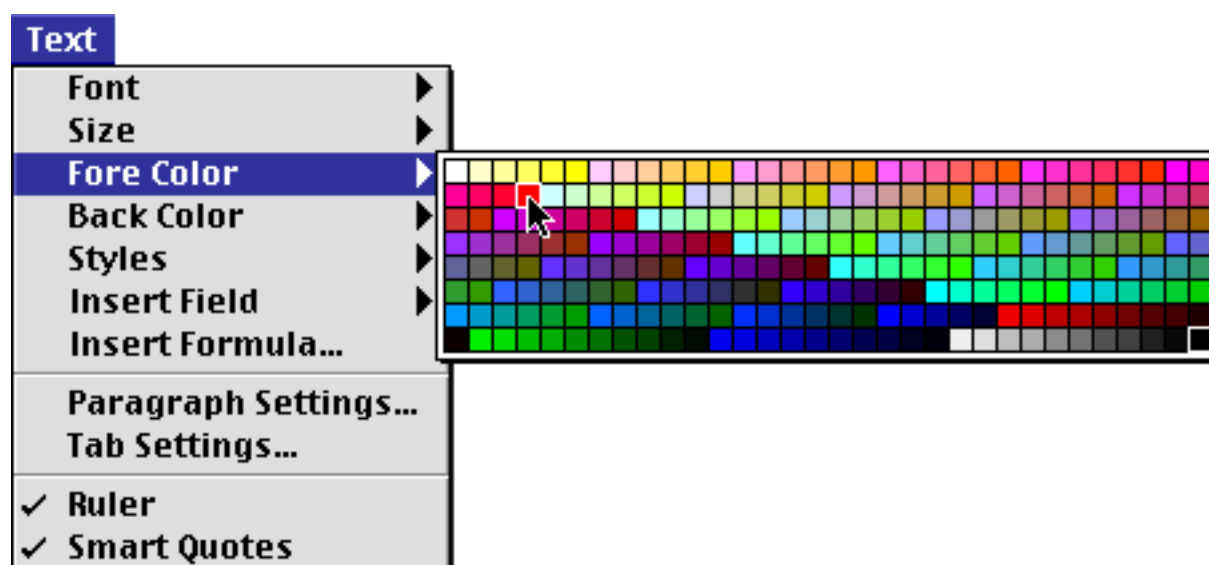
If the text contains several different styles in different parts of the text a dash will appear next to each font, size or style that is contained within the selection. For example, the selected text in the illustration below contains both bold and italic text.



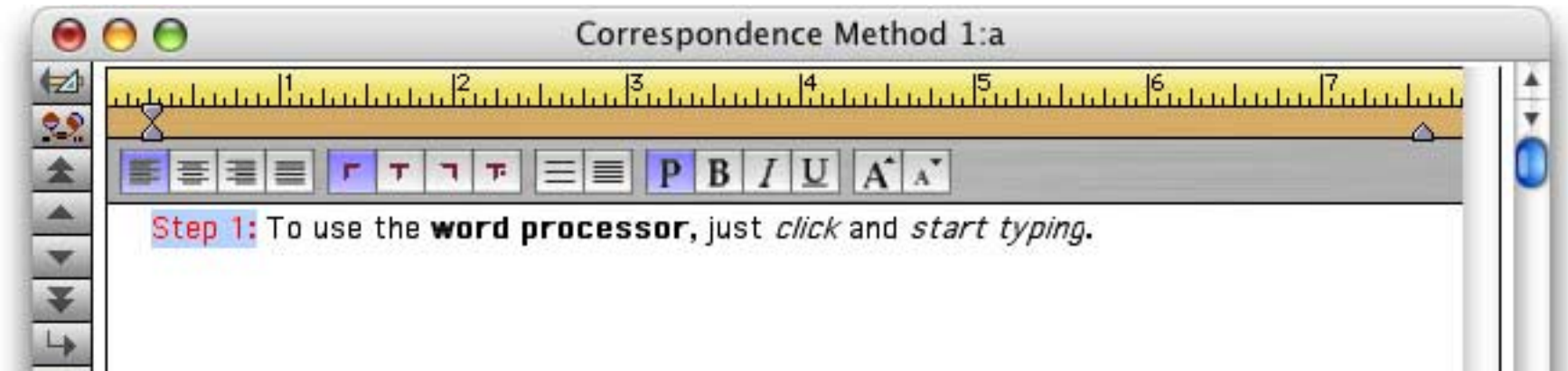
Pulling down the **Text** menu shows all of the different styles in the current selection. (The **Font** and **Size** submenus will also show all of the options used in the selection.)



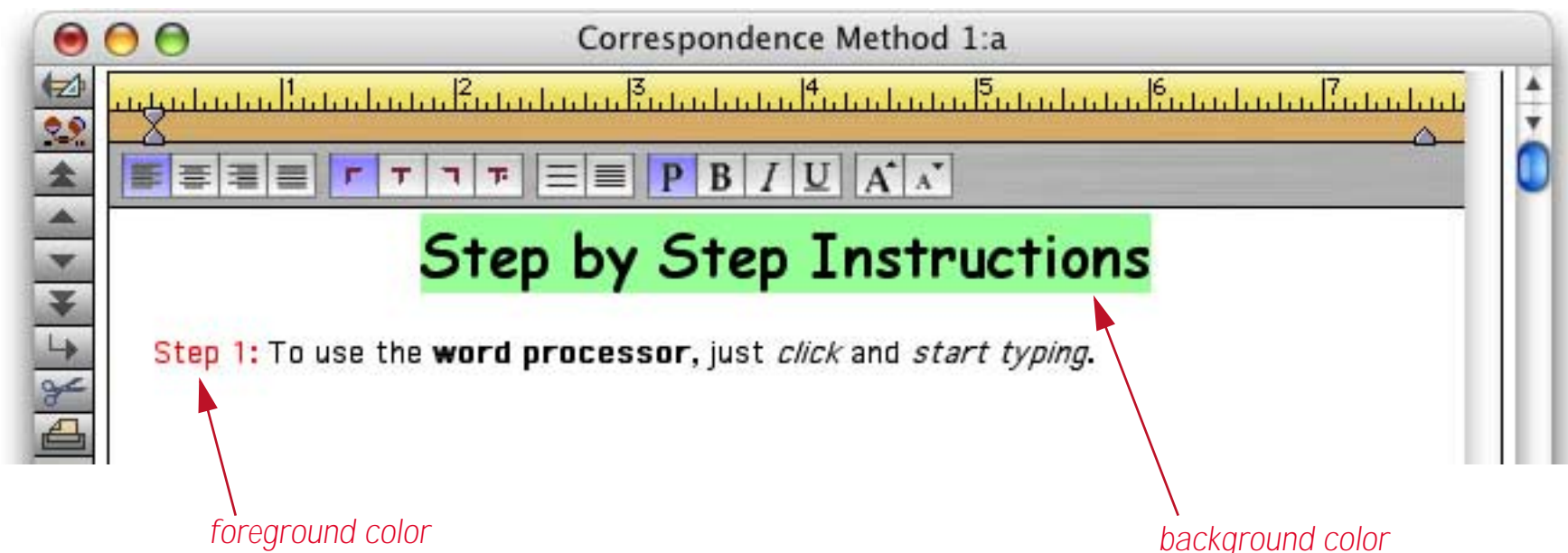
The **Fore Color** submenu changes the color of the text.



For example, you can make the selected text red. You can choose any color in the 256 color palette.



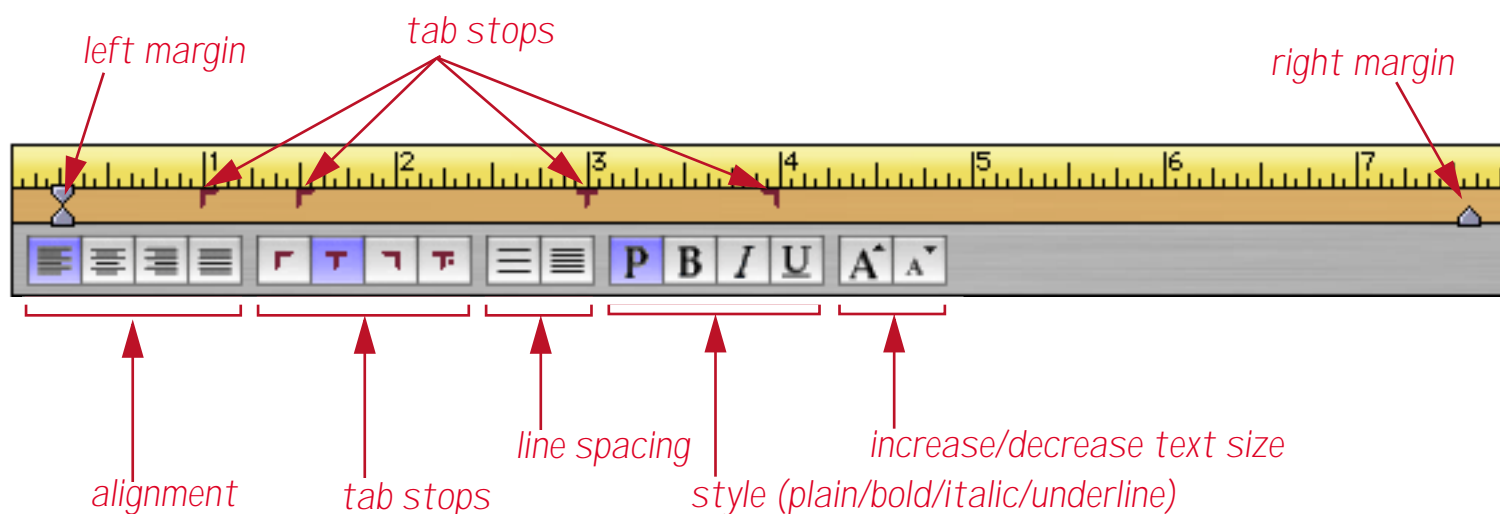
The Background Color submenu works the same way, but changes the background color of the text.



The Font and Size menus work the same way as the corresponding menus for other text objects (see “Font” on page 529 and “Text Size” on page 531). However, the Word Processor SuperObject allows multiple fonts and sizes within a single object (as shown in the illustration above). In addition, the Font and Size are set when in Data Access Mode, not Graphics Mode.

The Ruler

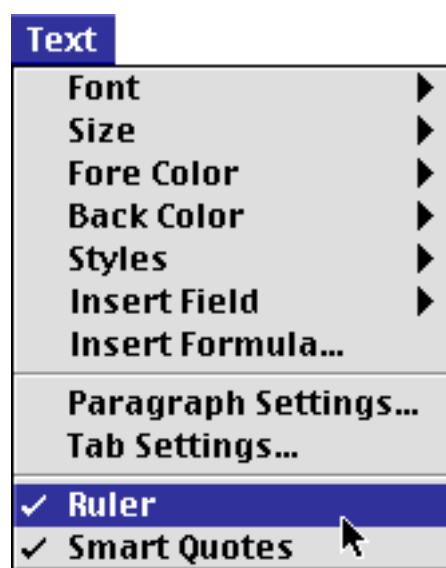
The ruler controls how paragraphs are formatted. The ruler allows you to set margins, tab stops, alignment, line spacing and style.



Since the ruler controls how paragraphs are formatted, the changes you make to the ruler are always applied to entire paragraphs. If you click on a paragraph and make a change to the ruler, the change will affect the entire paragraph. If you want to change the formatting of multiple paragraphs, select at least one character in all of the paragraphs you want to change before adjusting the ruler.

The word processing ruler always uses the same measurement system used by the form containing the word processor. If the form is set to inches, the word processing ruler will also work in inches. If the form is set to centimeters, the word processing ruler will also work in centimeters. To change the measurement system, switch into Graphics Mode (see “[Form Modes: Data Access vs. Graphic Design](#)” on page 485) and click on the box in the upper left hand corner of the ruler (see “[Rulers](#)” on page 506), then switch back to Data Access Mode.

To turn the ruler on or off, use the **Ruler** command in the Text menu (you must be in Data Access Mode and editing the text within the object to use this command).

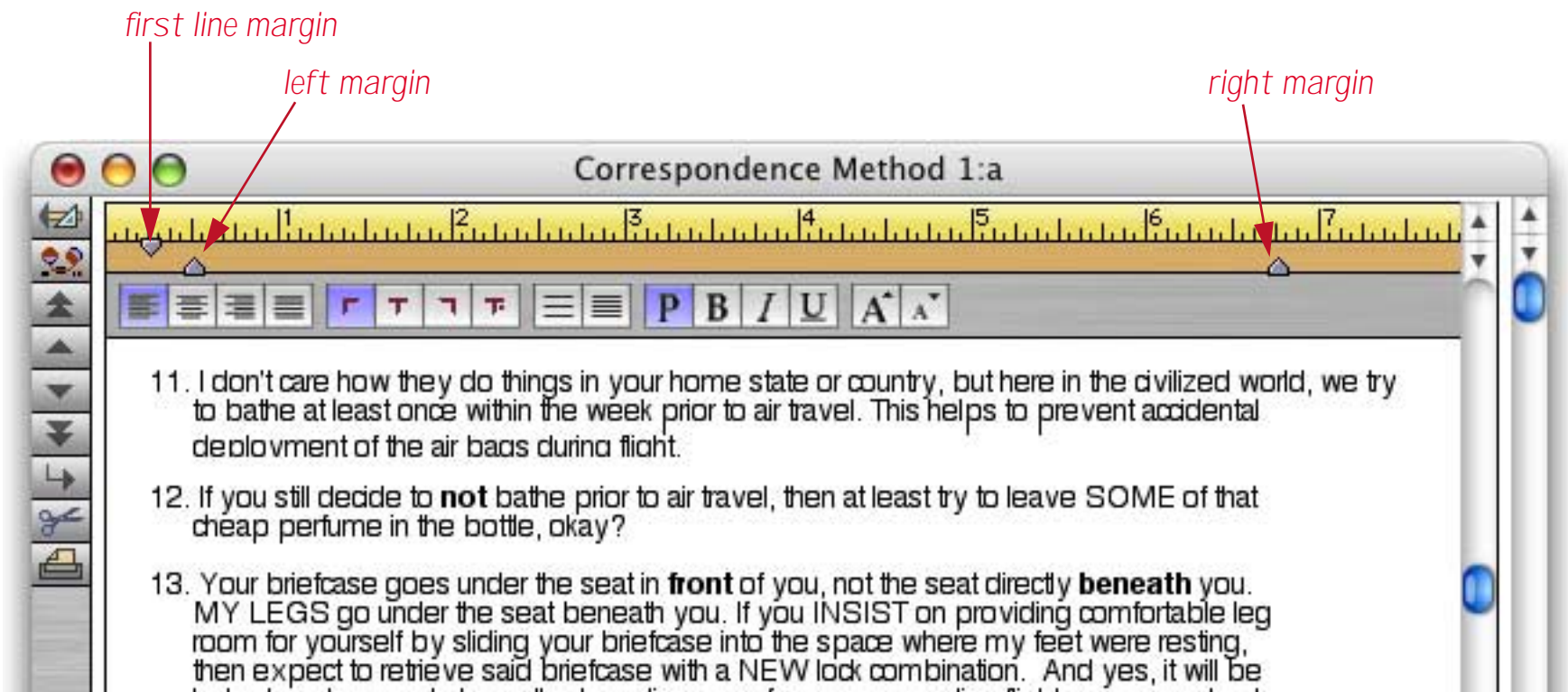


Here's what the word processor looks like with the ruler turned off.

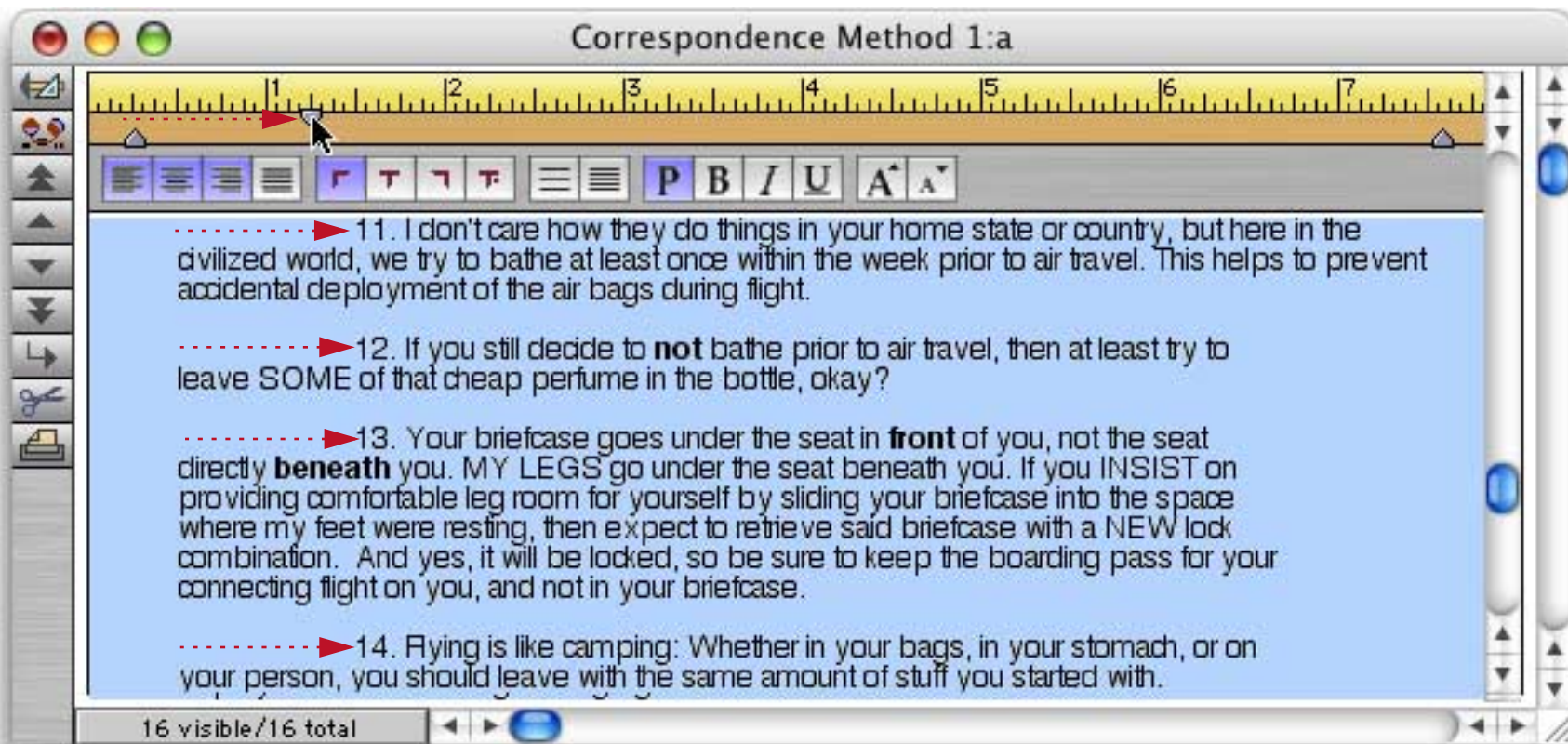


Margins (Indents)

Each paragraph has three margins: **First Line**, **Left**, and **Right**.

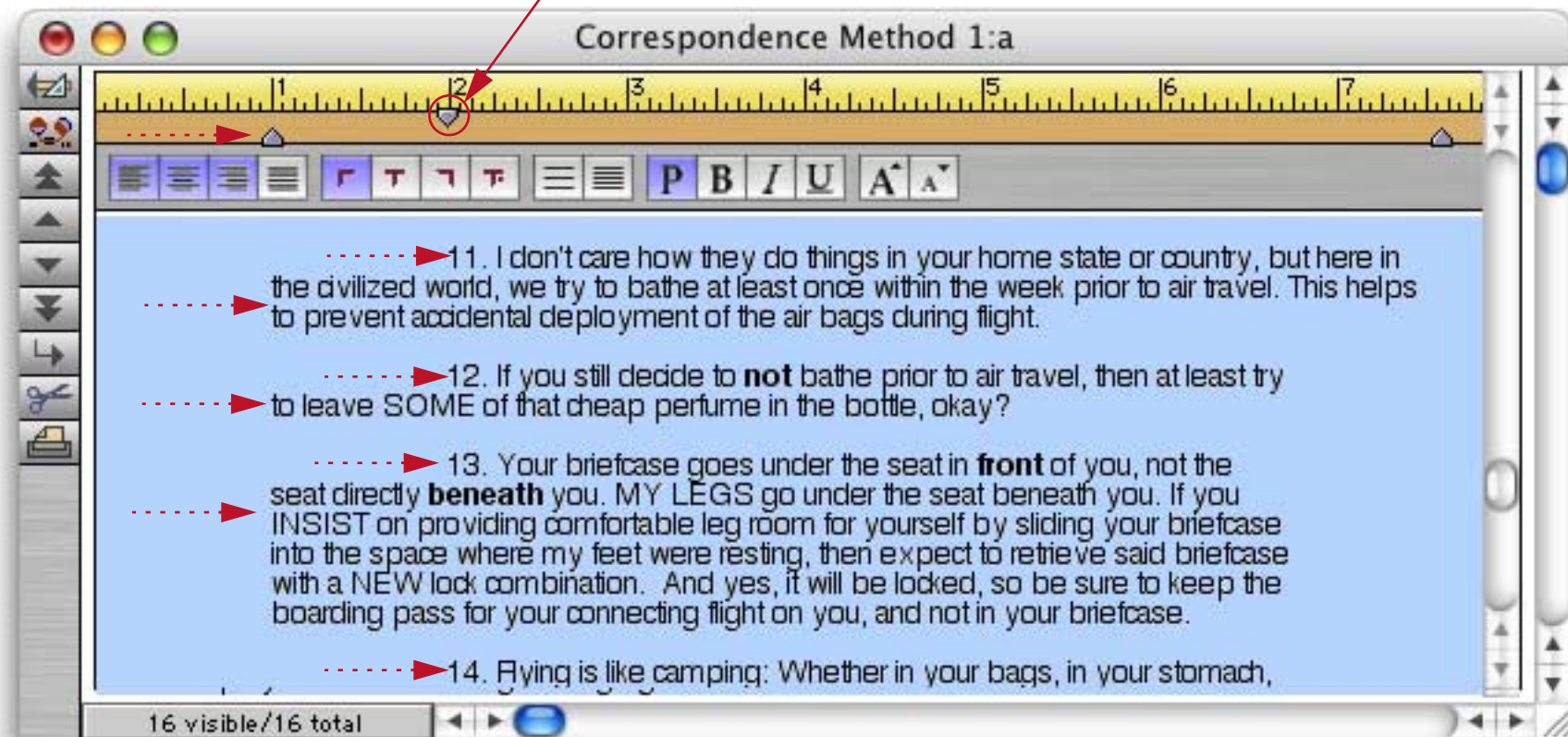


The **First Line** margin is the distance from the left side of the word processing object to the beginning of the first line in the paragraph. Drag the upper margin triangle to adjust the first line margin. The text itself will adjust dynamically as you drag.



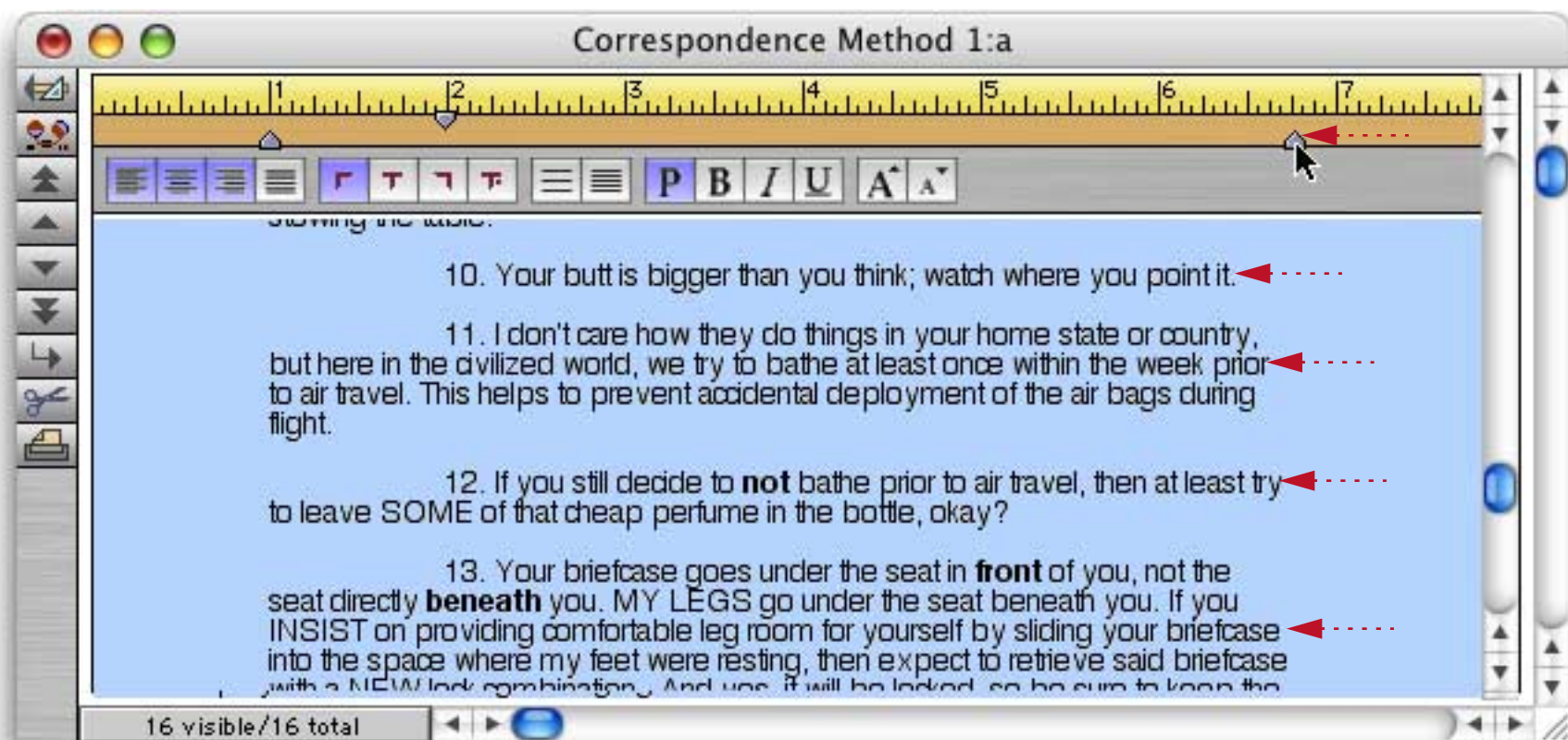
The **Left** margin is the distance from the left side of the word processing object to the beginning of the rest of the lines in the paragraph. Drag the lower margin triangle to adjust the left margin.

first line margin also moves when you change the left margin

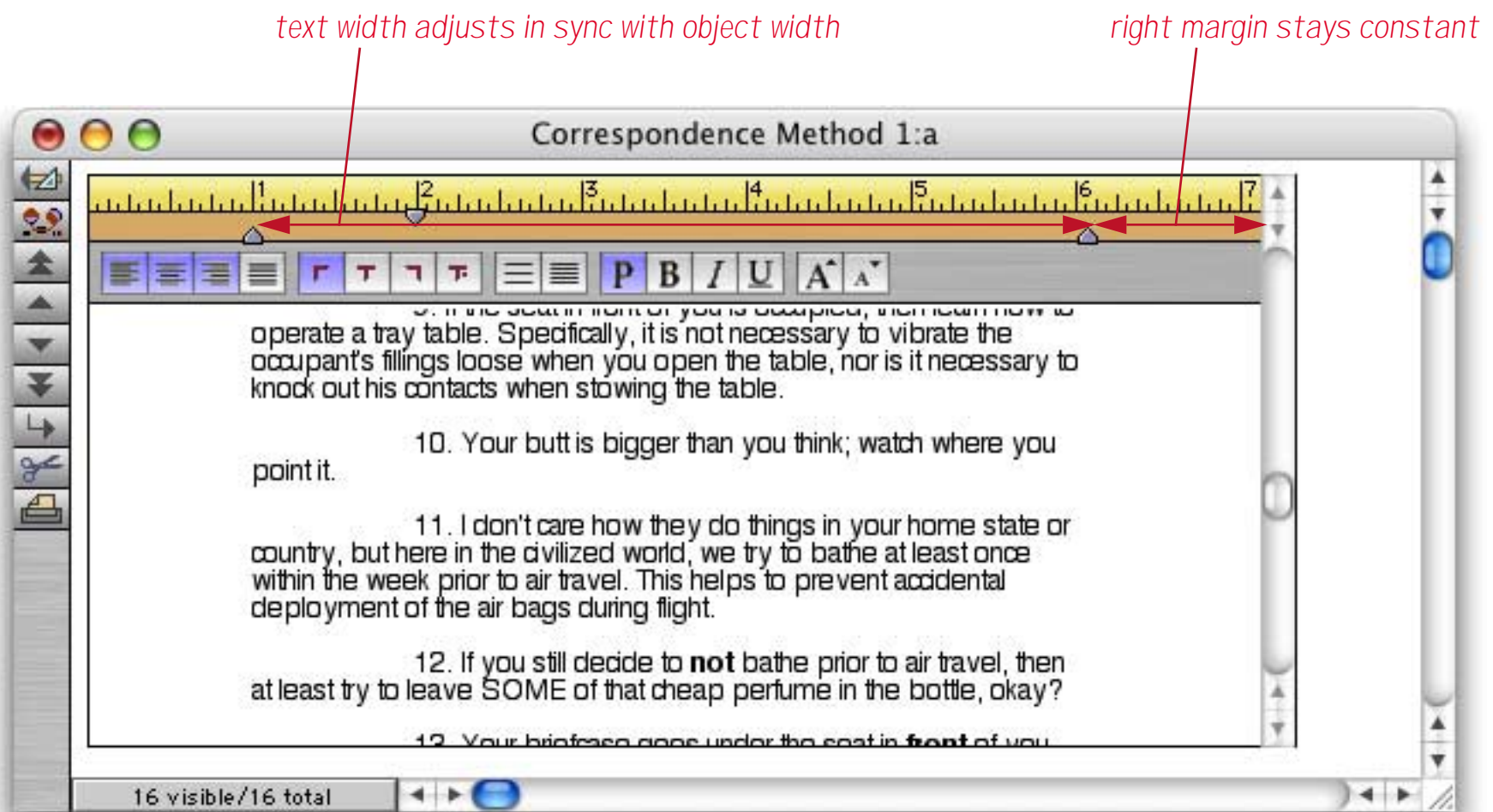


When you drag the left margin, the first line margin also moves to maintain the same spacing between the two margins as shown in the illustration above. It's usually best to set the left margin first, then set the first line margin.

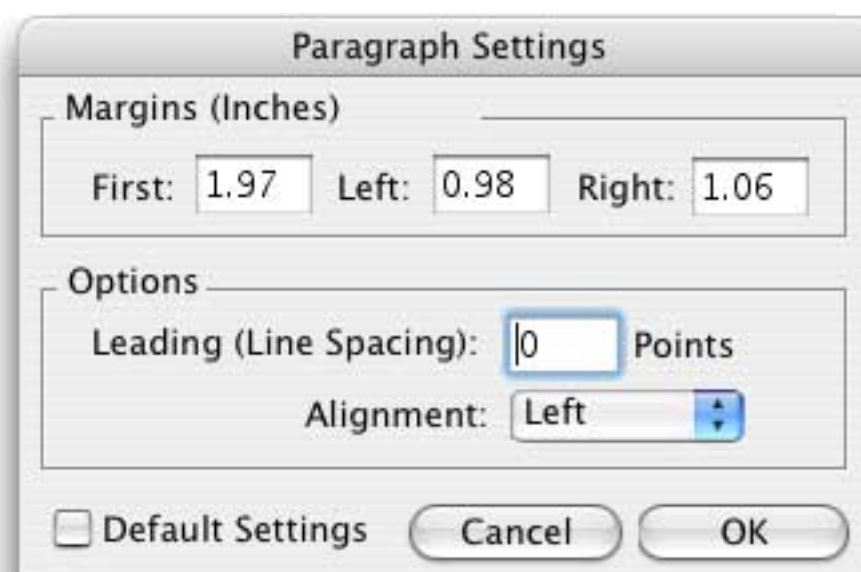
The **Right** margin is the distance from the right side of the word processing object to the end of the each line in the paragraph. Drag the triangle symbol to adjust the right margin.



If the width of the word processing object changes (for example if the form adjusts when the window size is changed or if the document is printed using a different form) the width of the paragraph may change. However, the margin from the right edge will not change.



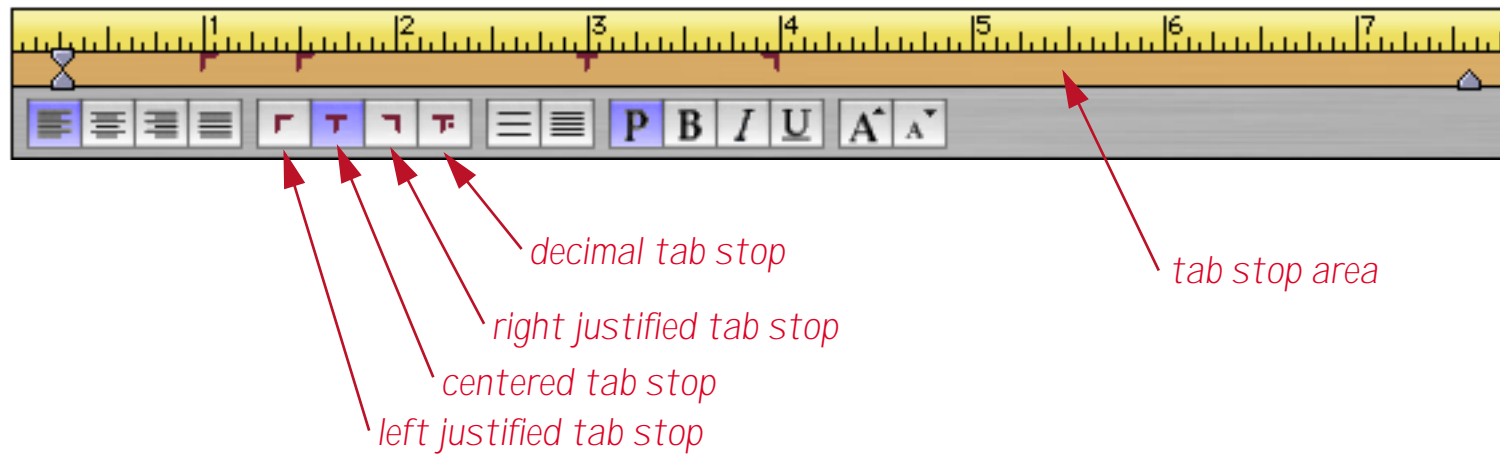
In addition to setting the margins with the ruler you can also set them numerically using the **Paragraph Settings** dialog. You can open this dialog from the Text menu or by double clicking anywhere in the ruler (except on a button or tab stop).



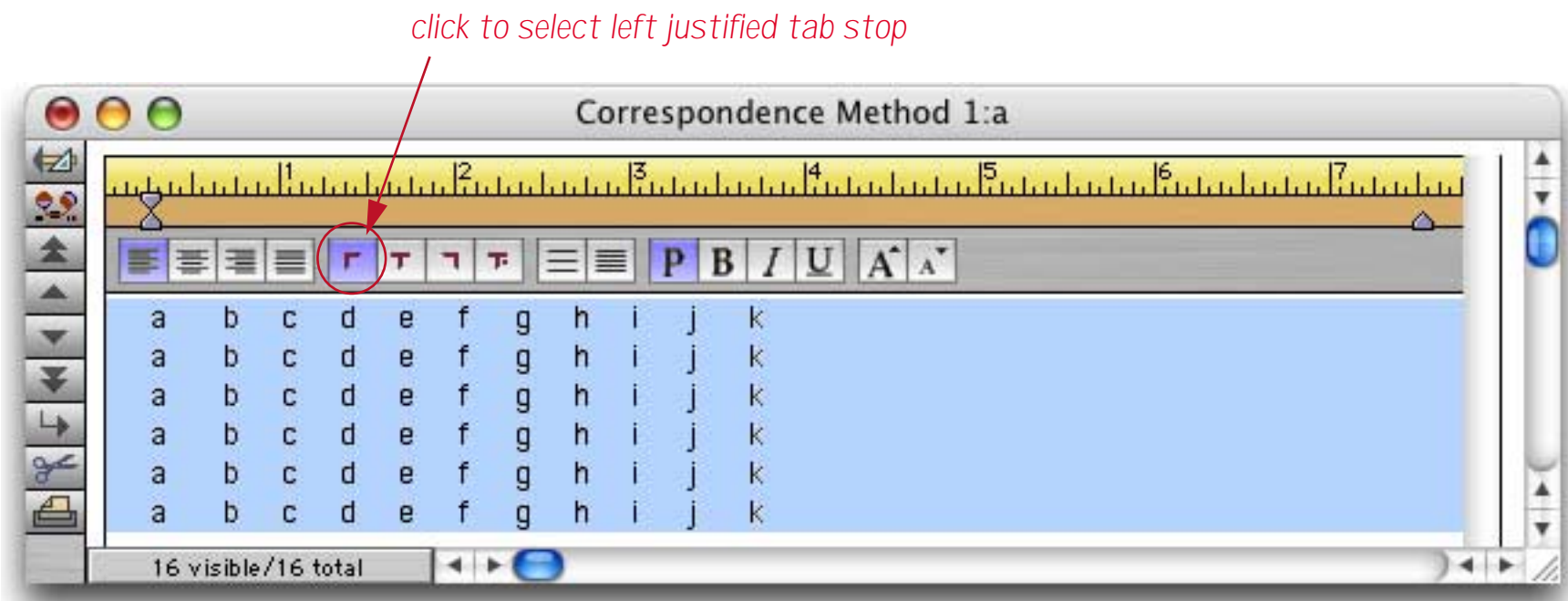
Simply enter the numeric values for each indent and press **OK** to change the paragraph formatting.

Tab Stops

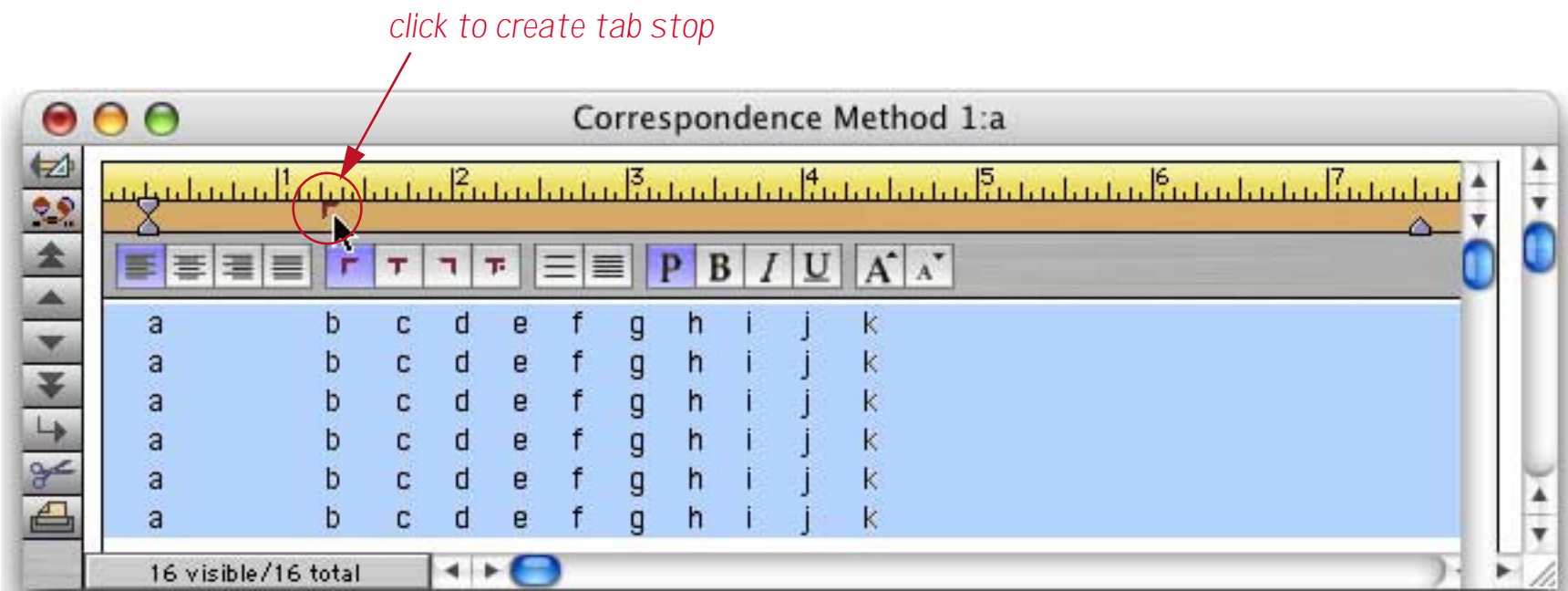
The word processor supports four types of tabs: **left**, **center**, **right**, and **decimal** tabs. There are four buttons in the ruler for selecting the type of tab you want to create.



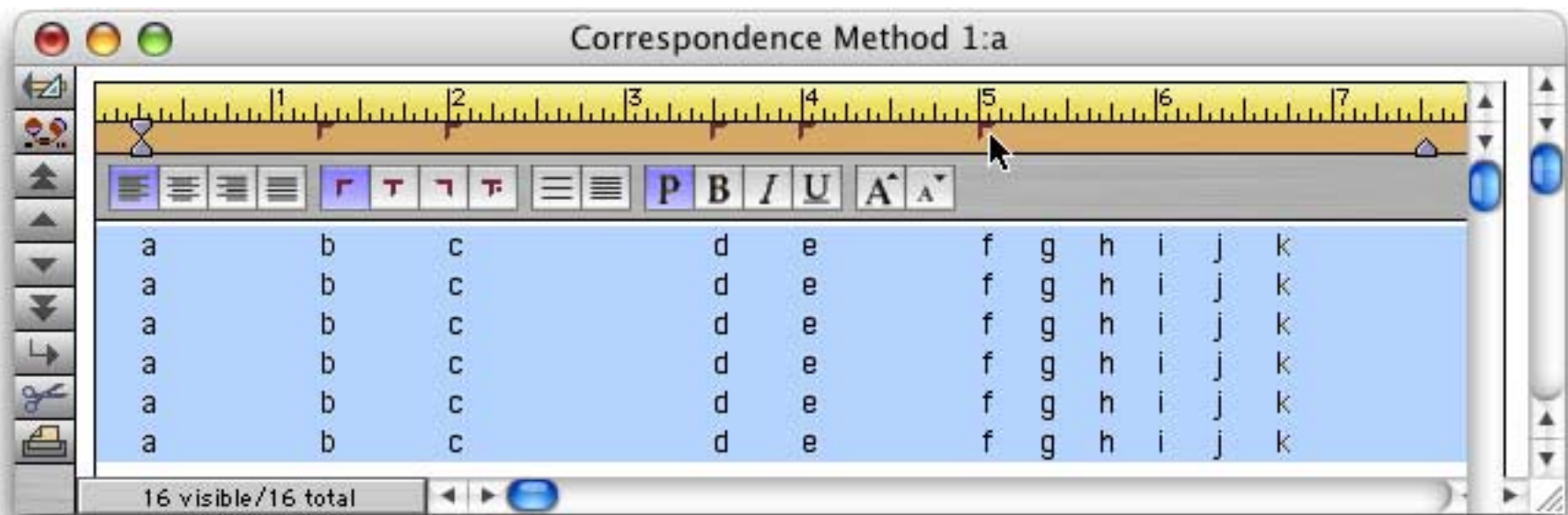
If there are no tab stops at all Panorama automatically creates 3 tab stops per inch, as shown below. To create a new tab stop, first select the type of tab stop by clicking on one of the four tab stop buttons.



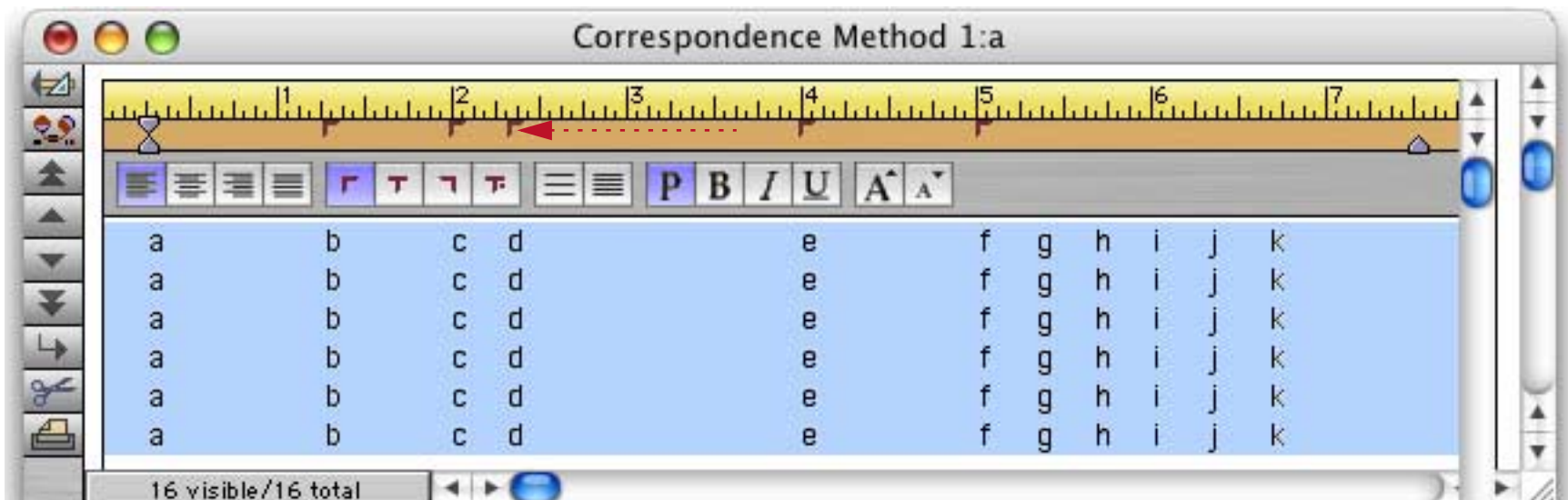
To create a tab stop, click anywhere in the tab stop area (just below the ruler itself).



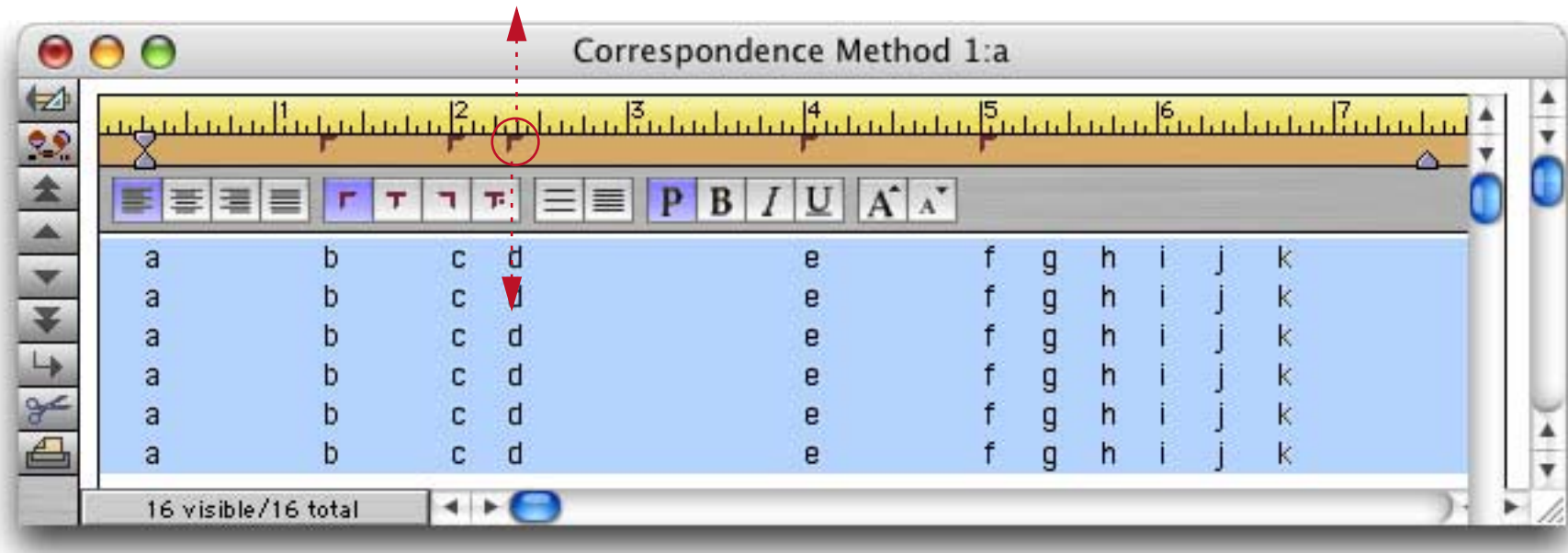
You can click additional times to create additional tab stops. Tab stops may be created in any order (not just left to right).



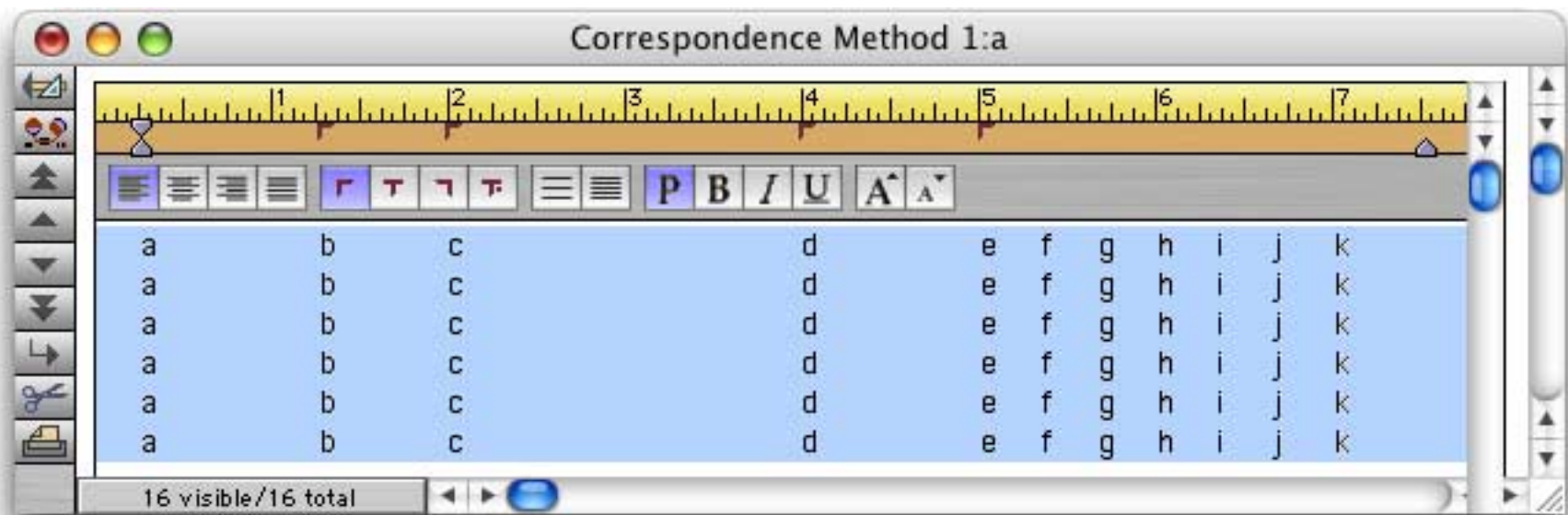
To move a tab stop, simply drag it to a new position.



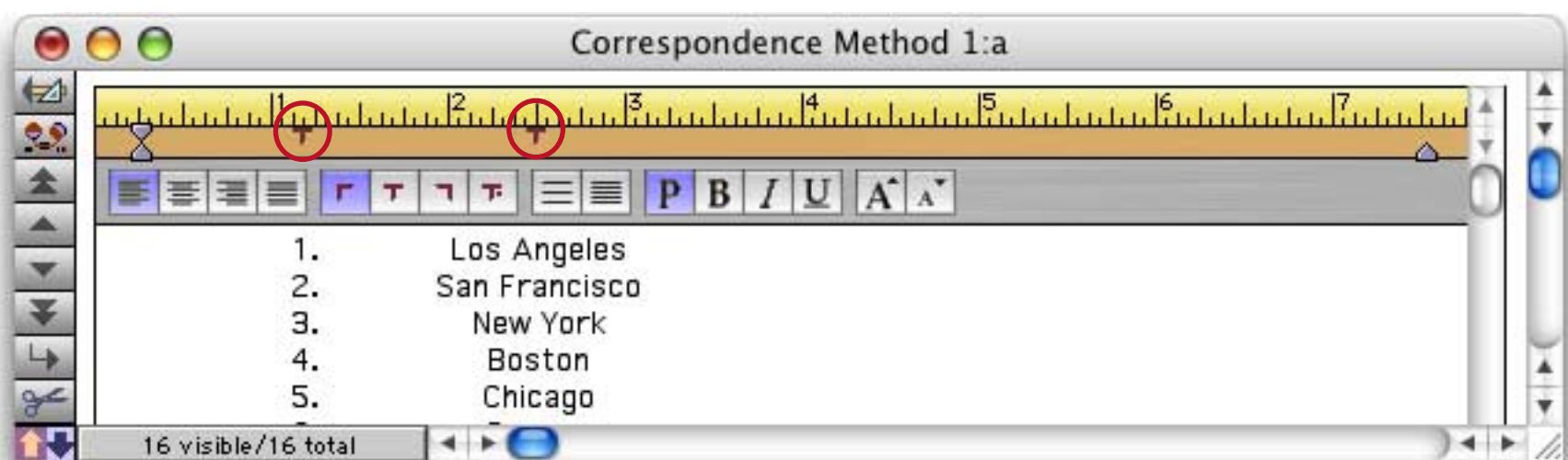
To delete a tab stop, drag it out of the tab area (either above or below).



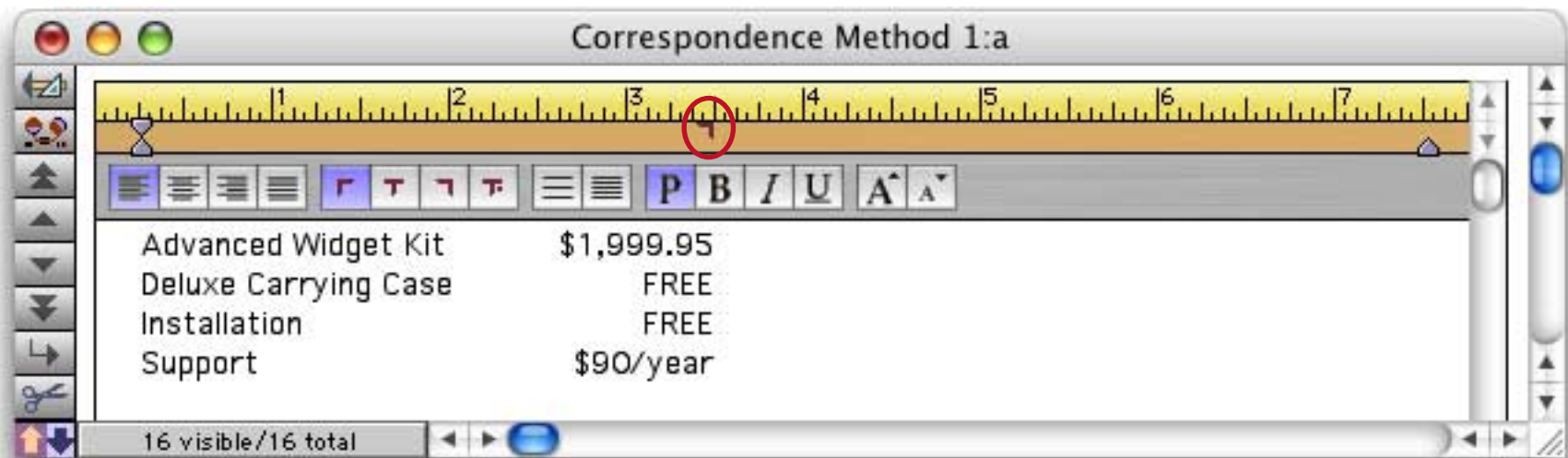
The tab stop disappears and the columns shift into their new positions.



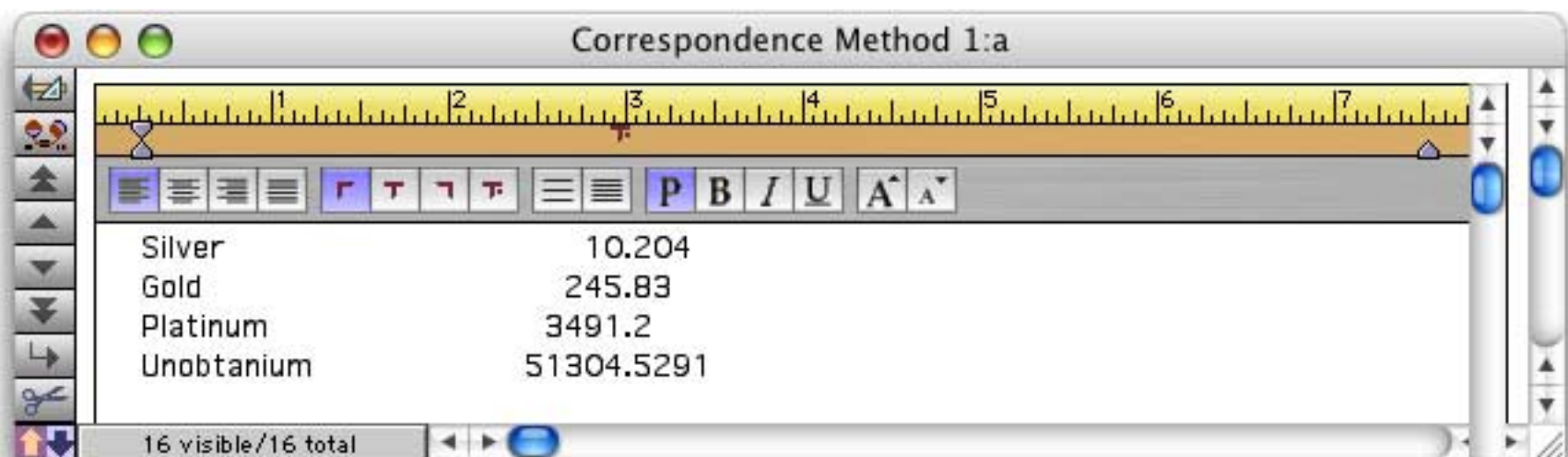
This illustration shows the use of a **centered tab**.



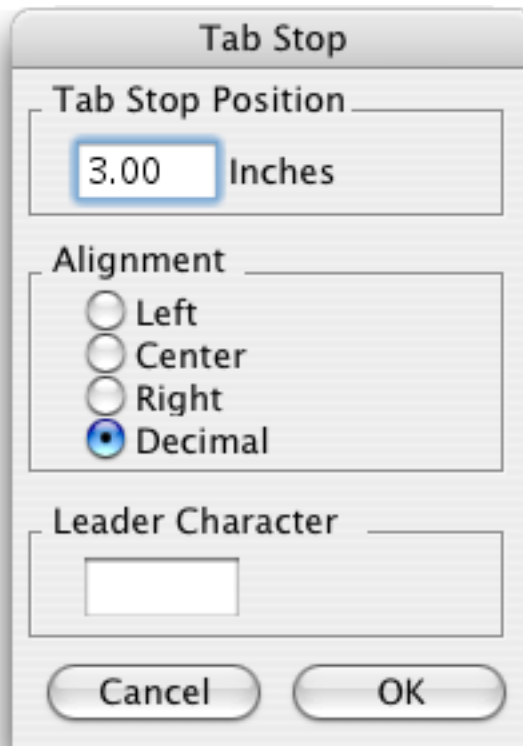
This illustration shows the use of a **right justified tab**.



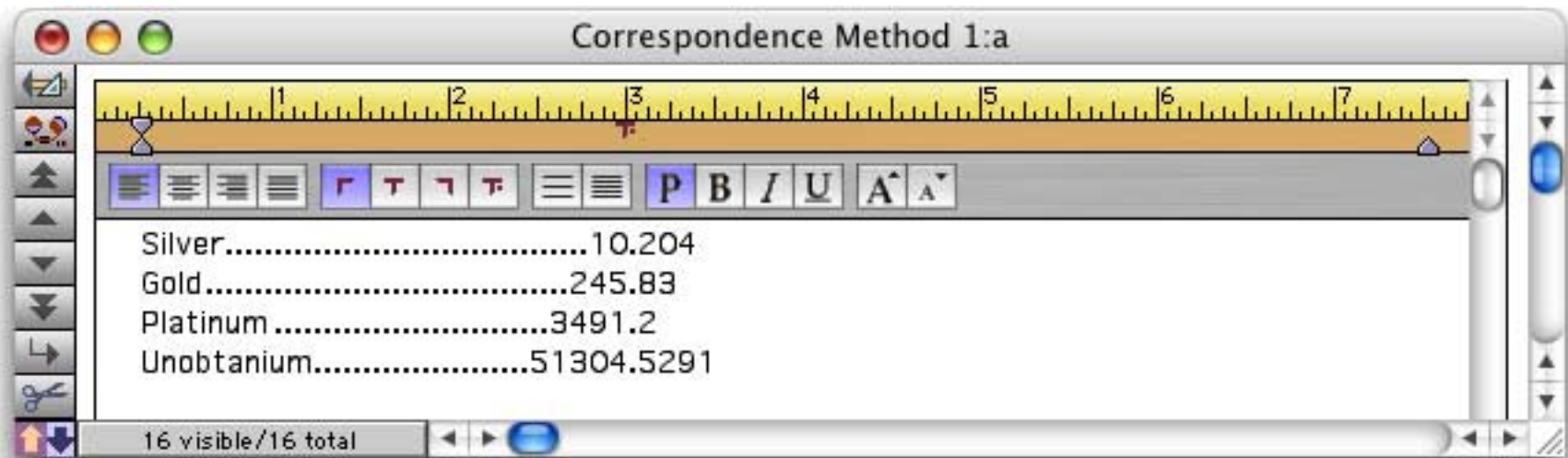
And finally, a **decimal tab stop**, so named because the decimal points line up no matter how many digits are to the left or the right.



For precise tab adjustments you can use the **Tab Settings** dialog. You can open this dialog three ways: 1) by double clicking on a tab stop, 2) by holding down the Command key (Mac) or Control key (PC) and clicking on a tab stop, or 3) using the **Tab Settings** command in the Text menu (in which case it will operate on the last tab that you adjusted). This dialog allows you to set the precise position of the tab, the type of tab (this is the only way you can change the type of an existing tab) and the tab leader.



The tab leader is a character that will automatically repeat to fill the space leading up to the tab. The tab leader helps draw the eye across the page. Common tab leaders include periods (shown below), dashes, and asterisks (but you may use any single character you want). Use the **Tab Settings** dialog to set the tab leader character. In this example the tab leader has been set to a period.



When you adjust a tab stop (either by dragging or with the **Tab Settings** dialog) don't forget that only selected text is affected by the change. Be sure to select the text you want to adjust before changing the tab.

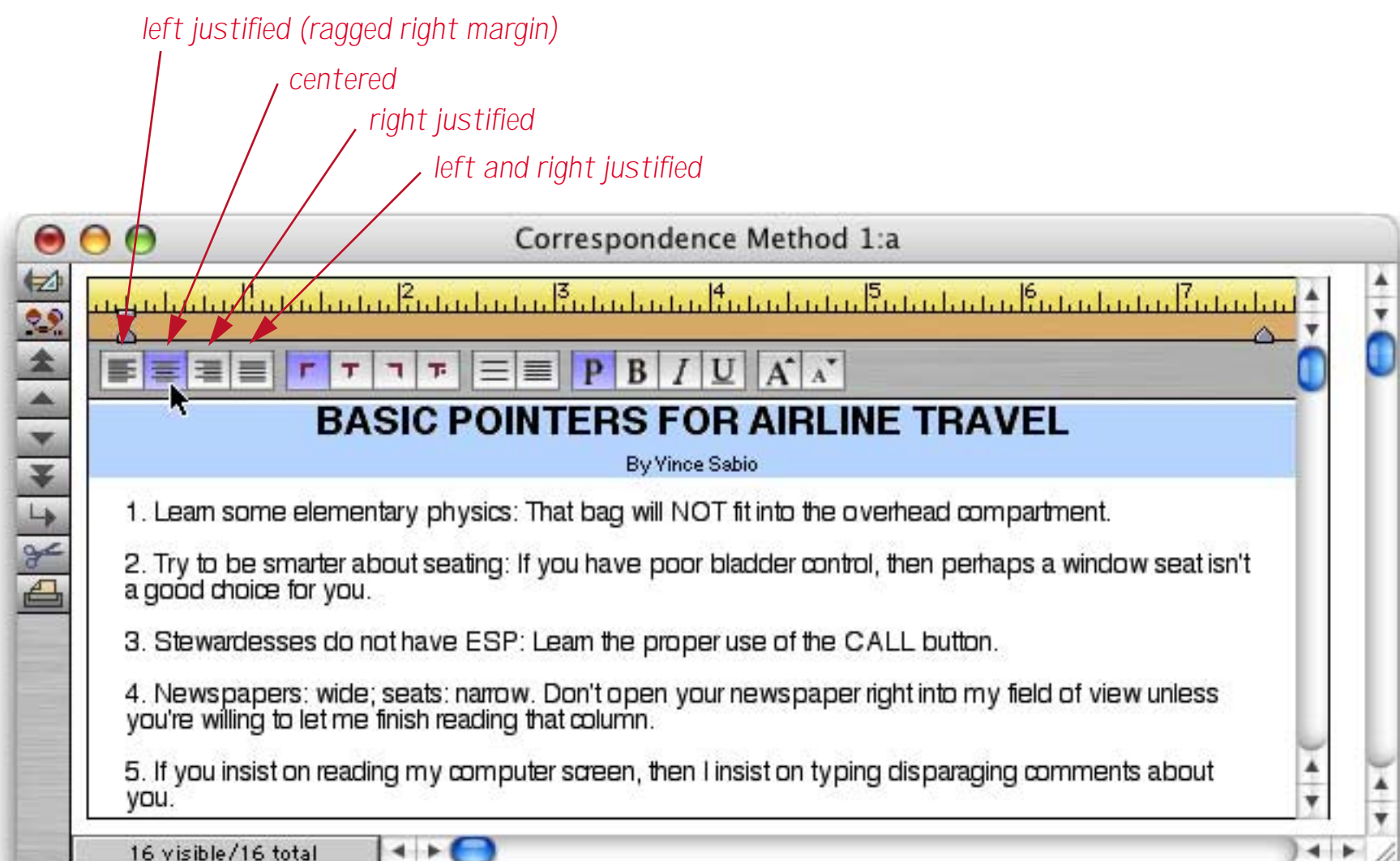


tab stops in unselected text are not affected changes in the ruler

The most common mistake is to click on the text instead of selecting it. In that case, only the line clicked on will change. Be sure you have selected all of the text containing the tab stops you want to modify.

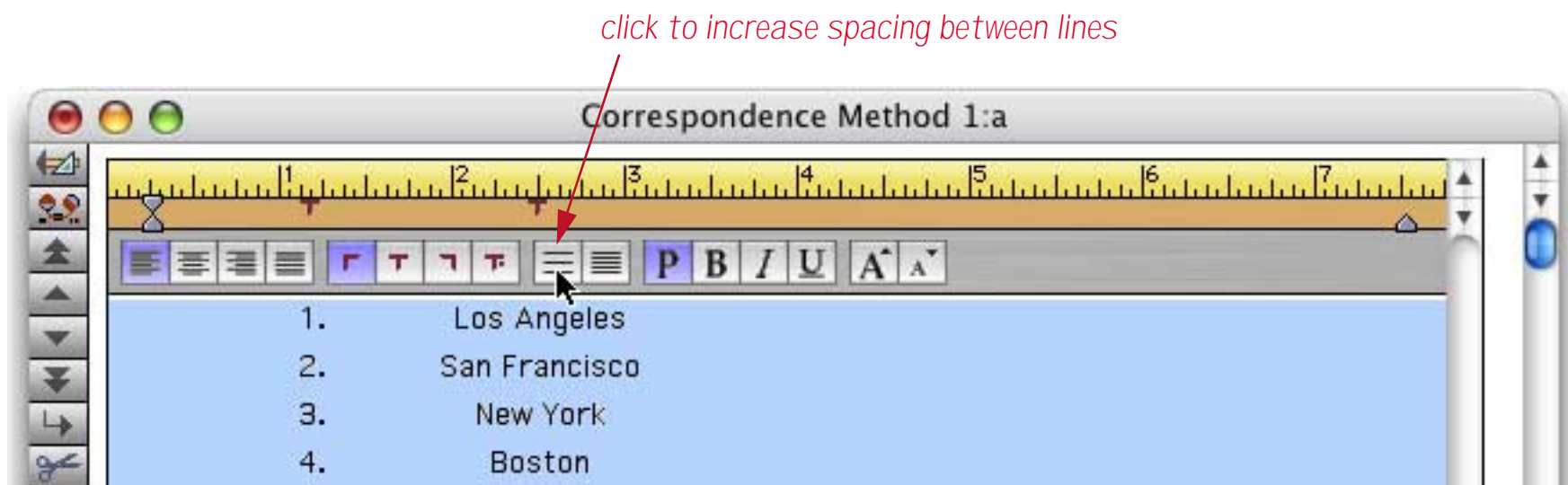
Alignment

For each paragraph, the alignment can be left flush, centered, right flush, or full (left and right flush). The four buttons on the left side of the ruler control the horizontal alignment of the text. For example to center one or more lines first select the lines, then click on the **center** button.

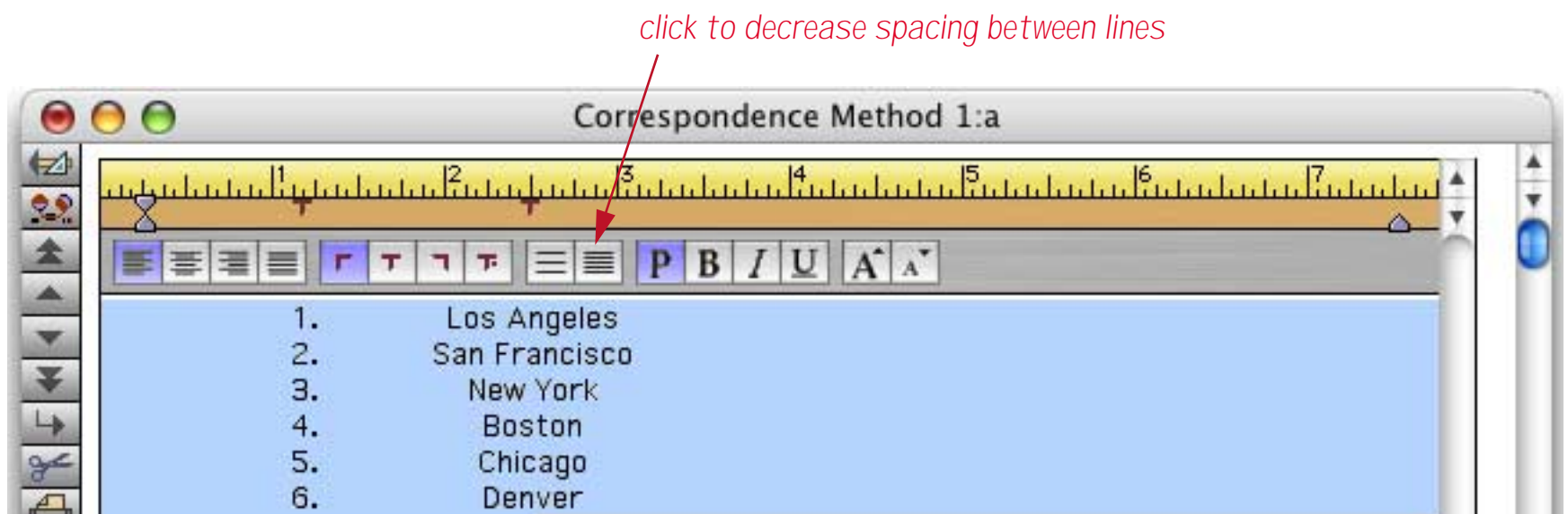


Line Spacing

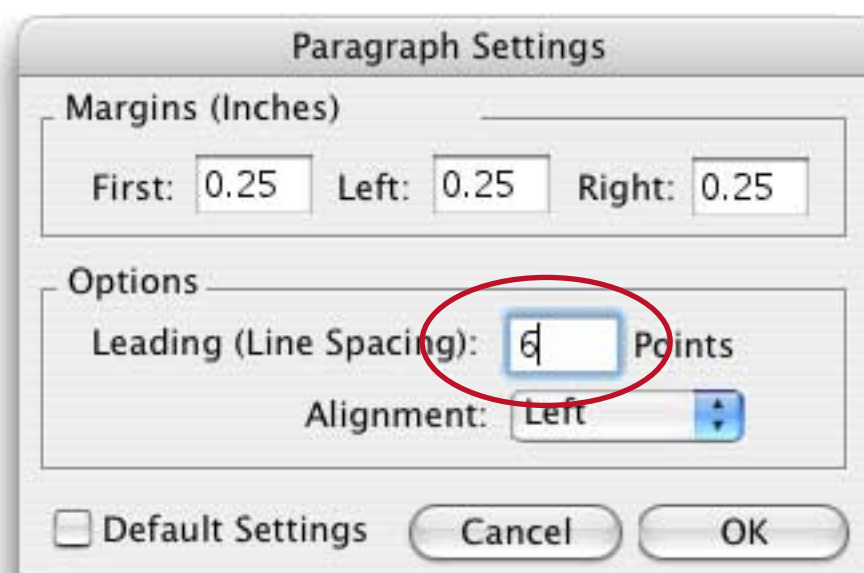
The spacing between each pair of lines is called the **leading**. (This is an old word going back to movable type days, when an actual piece of lead was inserted between each pair of lines.) The word processor normally sets the spacing for you automatically. However, you can adjust this spacing for unusual effects (double spaced text, for example). To increase the spacing between lines, press the button on the left.



To decrease the spacing between lines, press the button on the right.



You can also adjust the spacing with the **Leading** setting in the Paragraph Settings dialog.

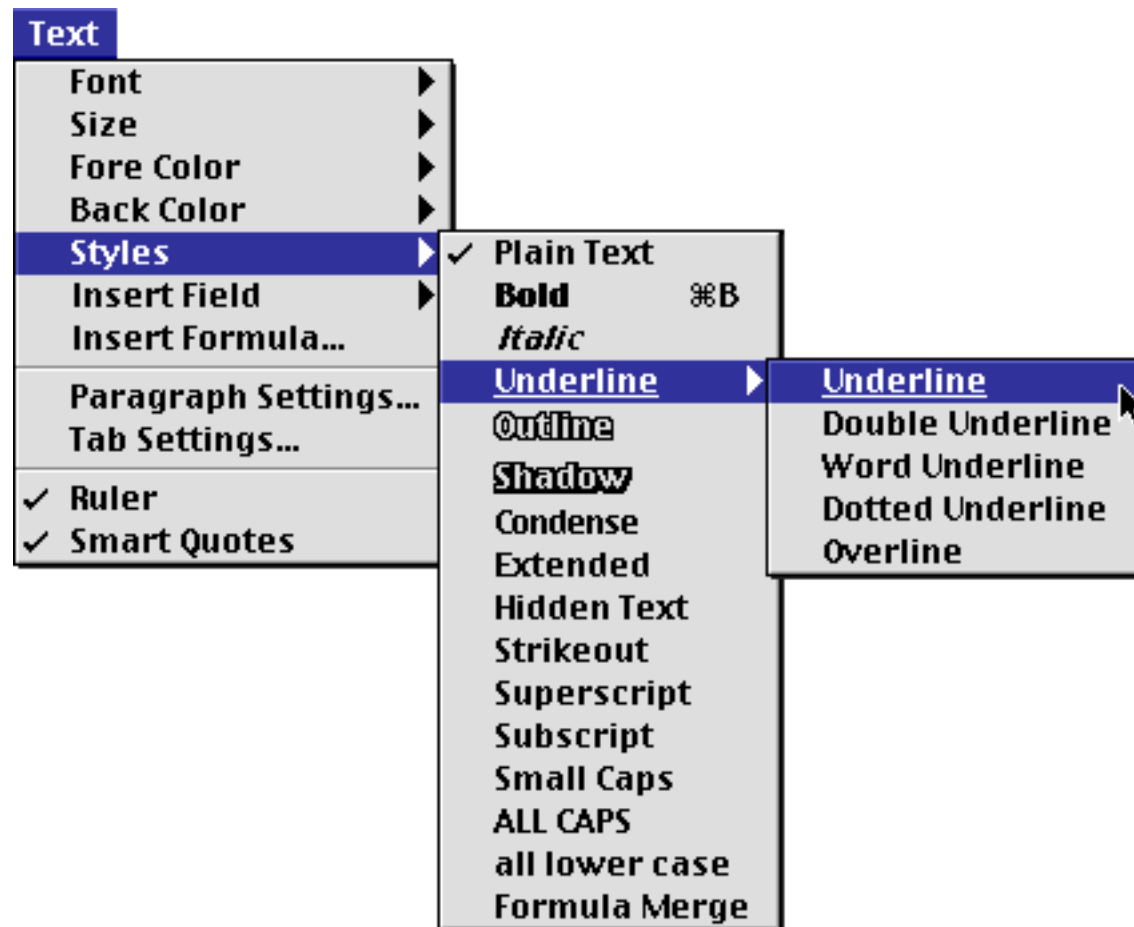


This setting specifies the amount of extra spacing desired between each line. For example, to add 6 extra points between each line, set the leading value to 6. (This value must be 0 or greater.)

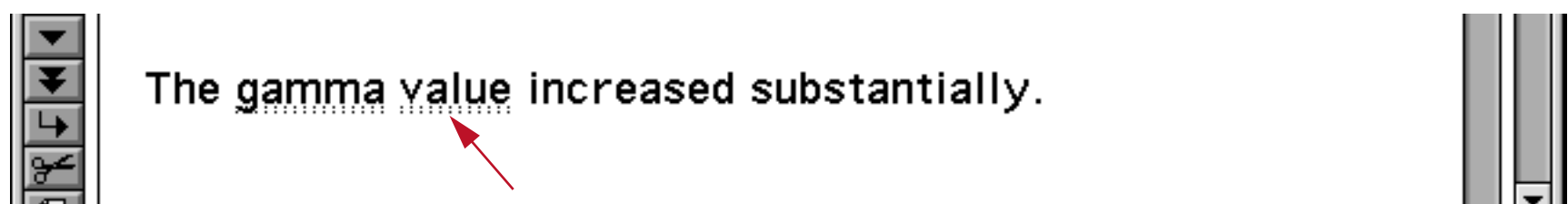
Styles

The Panorama word processor supports twenty different styles of text. Most of these styles are self explanatory, but a few unusual styles require some additional explanation.

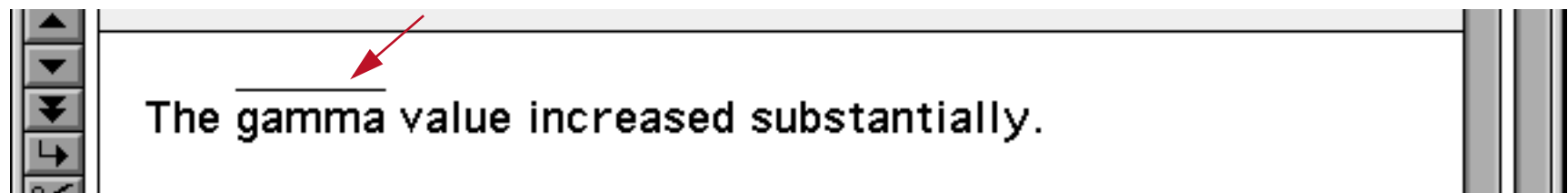
The Underline style can be modified with four different options: **Double Underline**, **Word Underline**, **Dotted Underline**, and **Overline**.



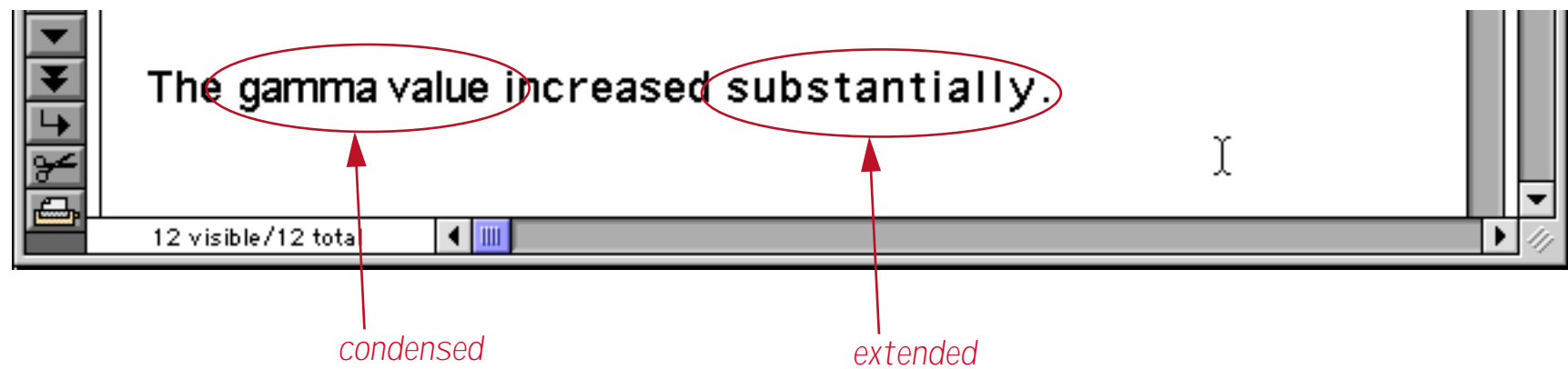
You can combine these options to produce 16 different underline styles, for example **Double Word Dotted Underline**.



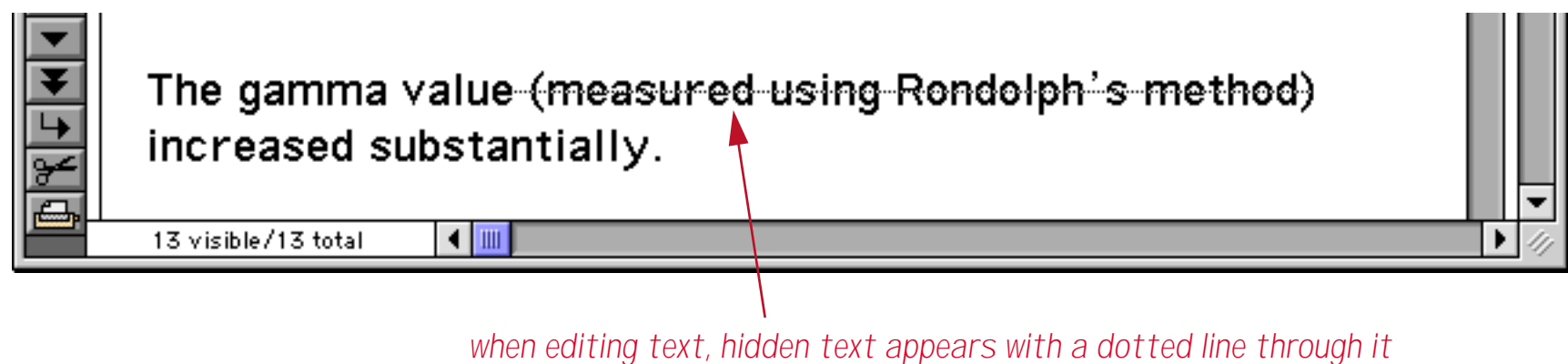
The **Overline** option draws the line above the text, instead of underneath.



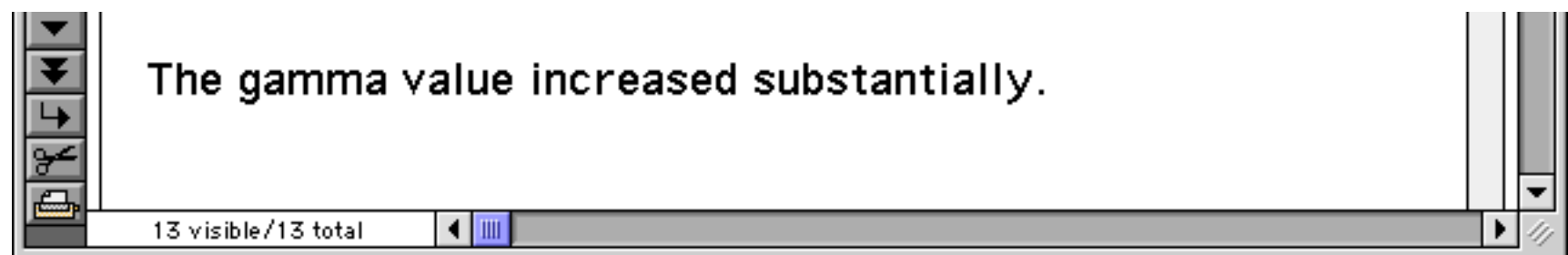
The **Condensed** and **Extended** styles change the letter spacing between the characters. The letters themselves do not change size. The condensed style pushes the letters closer together, while extended spreads them apart.



The **Hidden Text** style creates text that only appears when you are actually editing the document.



When the document is not being edited (only displayed or printed) the hidden text disappears.

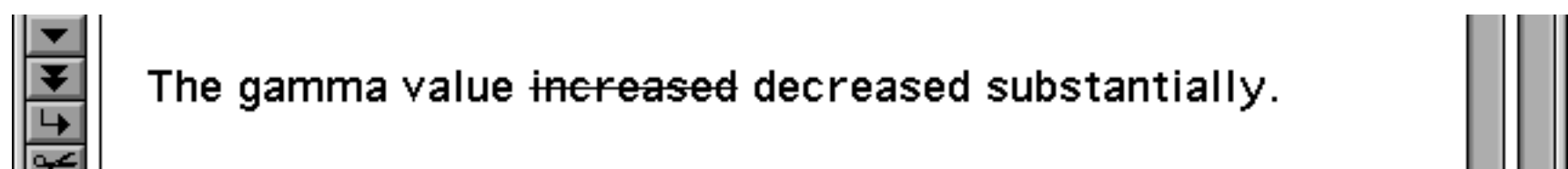


When you re-edit the document (by clicking on it), the hidden text re-appears.

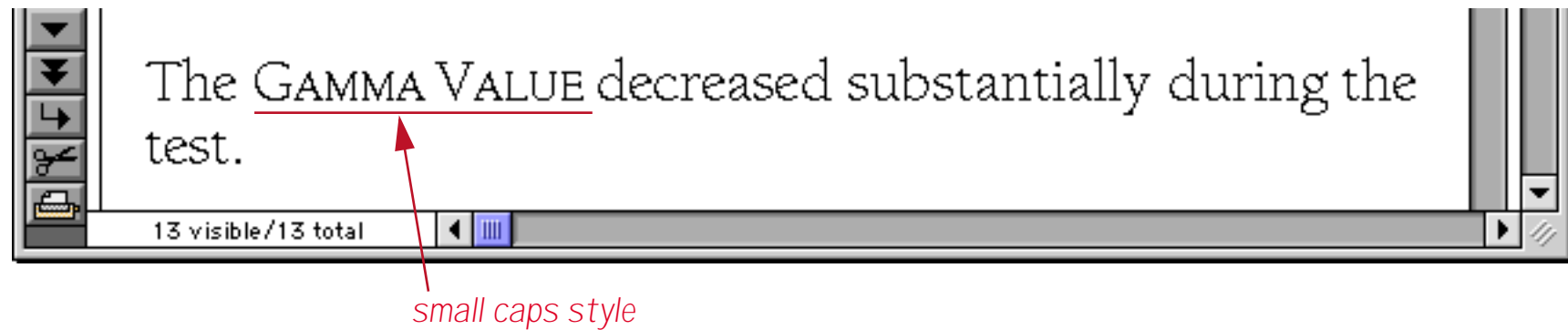


To remind you that this text is hidden, Panorama draws a dotted line through the text. **Tip:** If you have a line of hidden text and you want the entire line to disappear without leaving a blank line, make sure that the carriage return at the end of the line is part of the selection before selecting the **Hidden Text** style.

The **Strikeout** style draws a line through the middle of the text.



The **Small Caps** style draws lower case letters as miniature upper case letters.



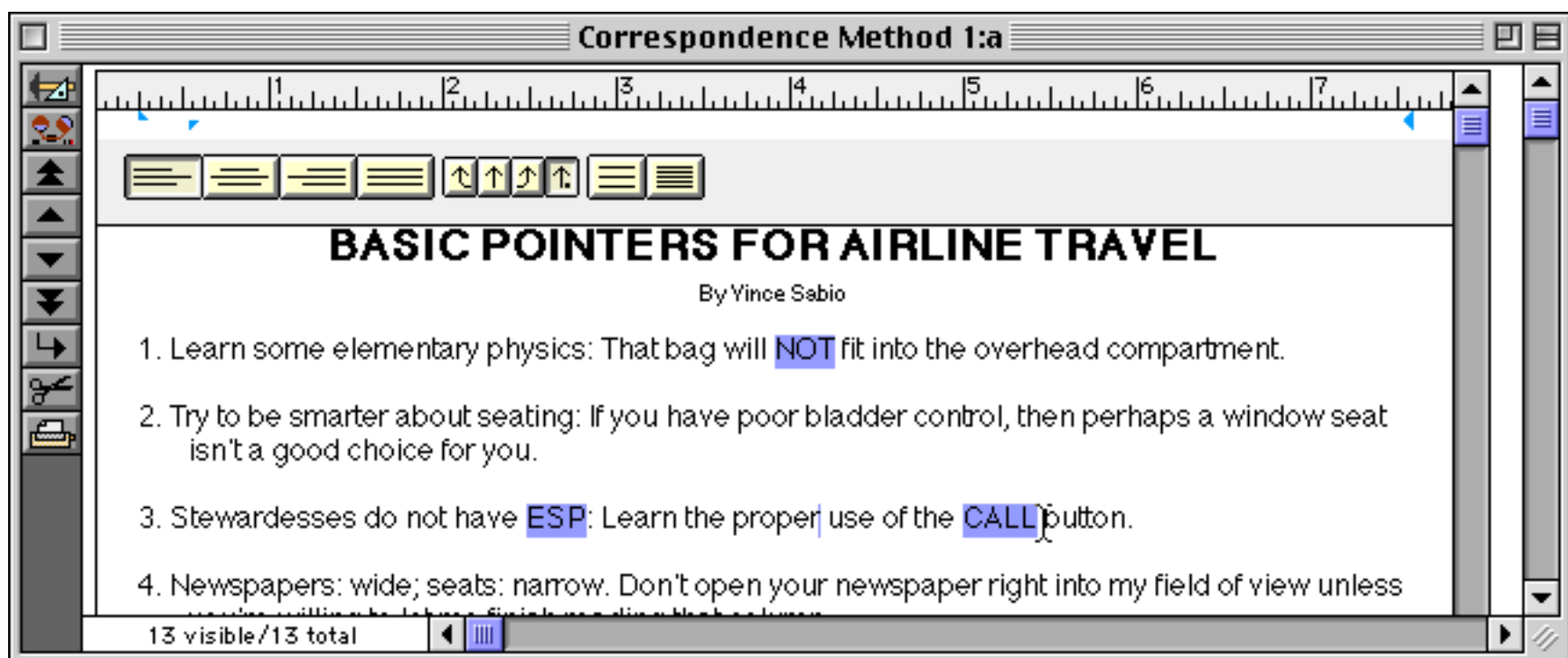
The **All Caps** style draws all text in UPPER CASE even if it was entered in lower case. The text is not actually modified, so you can cancel this style later to display the text normally. The All Lower Case style draws all text in lower case even if it was entered in UPPER CASE. Like the all caps style, the text is not actually modified, so you can cancel this style later to display the text normally.

See "[Merging Data into Word Processing Documents](#)" on page 707 for a description of **Formula Merge**, the final style option.

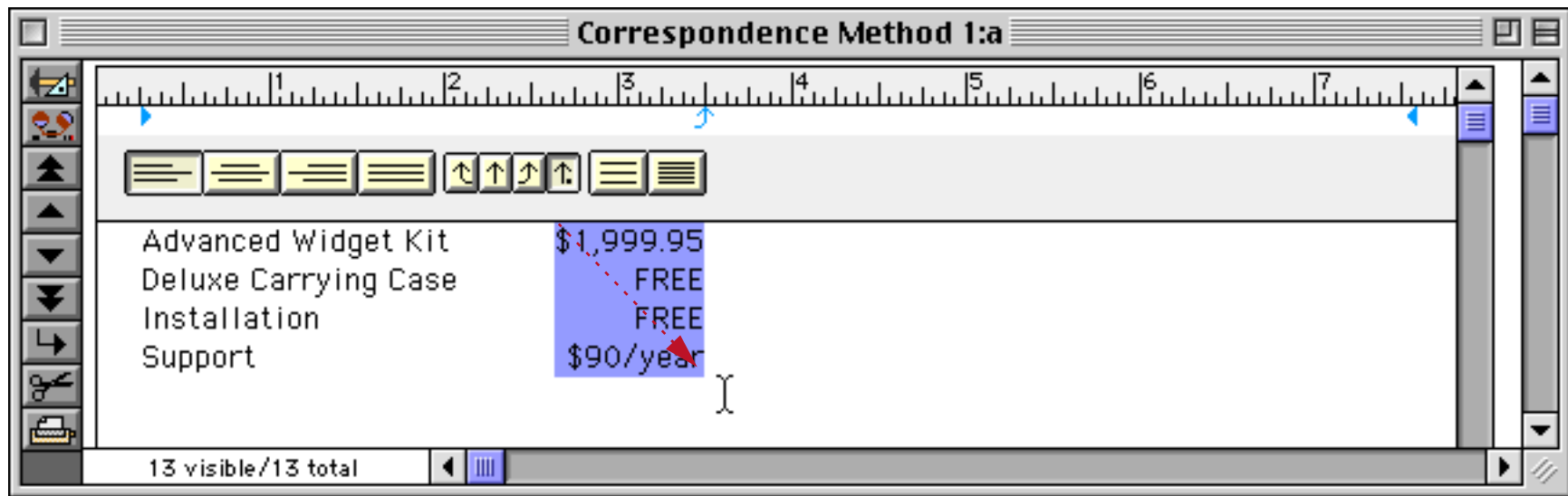
Selecting Text

The word processor allows you to select text by clicking, dragging, double clicking (to select a word), and triple clicking (to select a line). You can also select text by holding down the **Shift** key and using the arrow keys (hold down the **Shift** and **Option**(Mac)/**Alt**(PC) keys to select a word at a time).

To select non-contiguous selections, hold down the **Shift** key and the **Command** key (Mac) or **Control** key (PC) while you drag each selection (or double or triple click). Once you have multiple non-contiguous selections, you can change the appearance of all of the selections at once with the font, size, style, and color sub-menus.



To select a rectangular area on the Macintosh, hold down the **Control** key while you drag over the area you want to select. On the PC you can do this by holding down the right mouse button as you drag.



This option is especially handy for selecting one or more columns from a table. Once the columns are selected, you can change the appearance with the font, size, style, and color sub-menus.

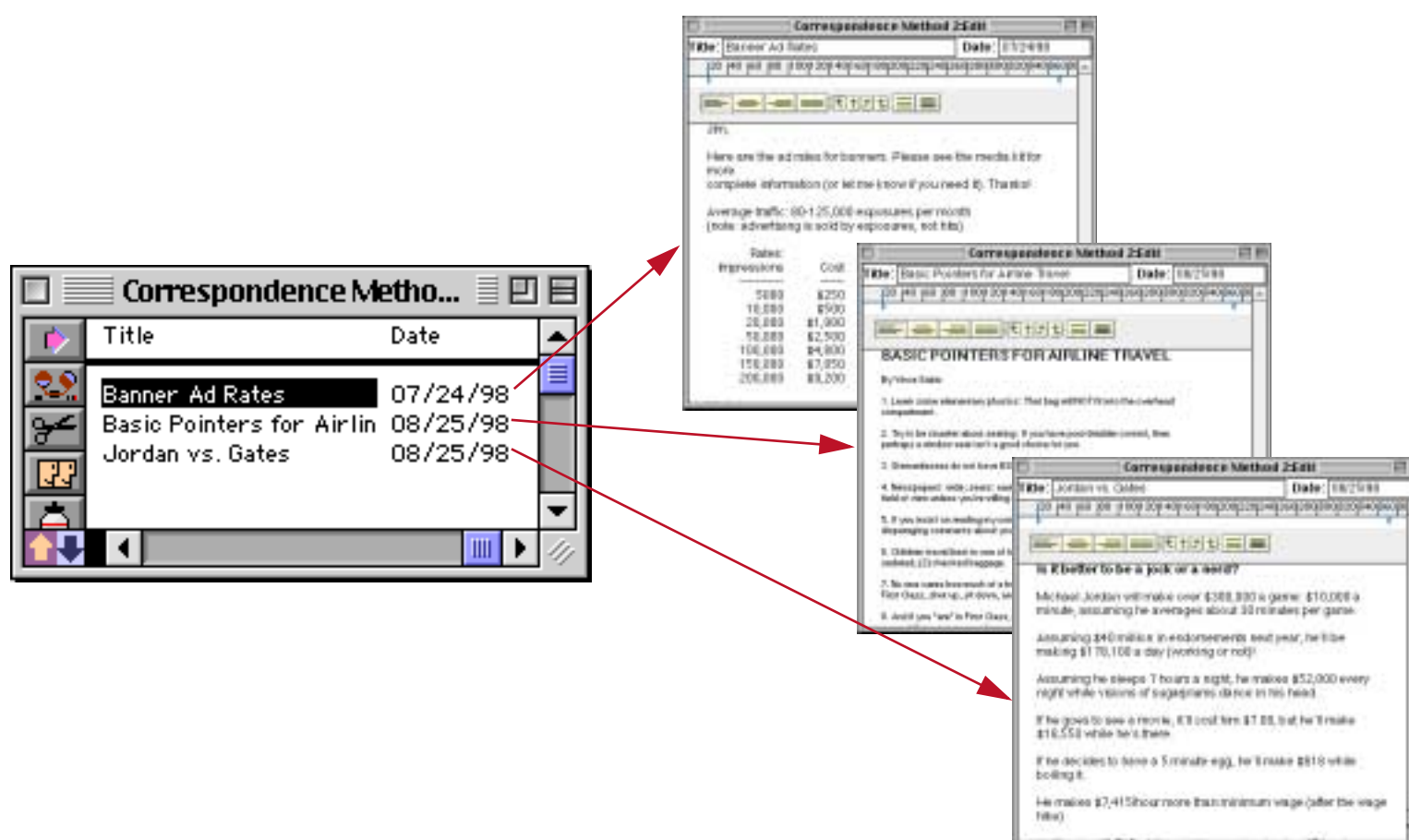
Configuring the Word Processor

The word processor can serve many uses — to store correspondence, to generate custom mail merge “bulk mail,” to create catalogs, etc. Different applications require different setups. The following sections explain the different configuration options that are available.

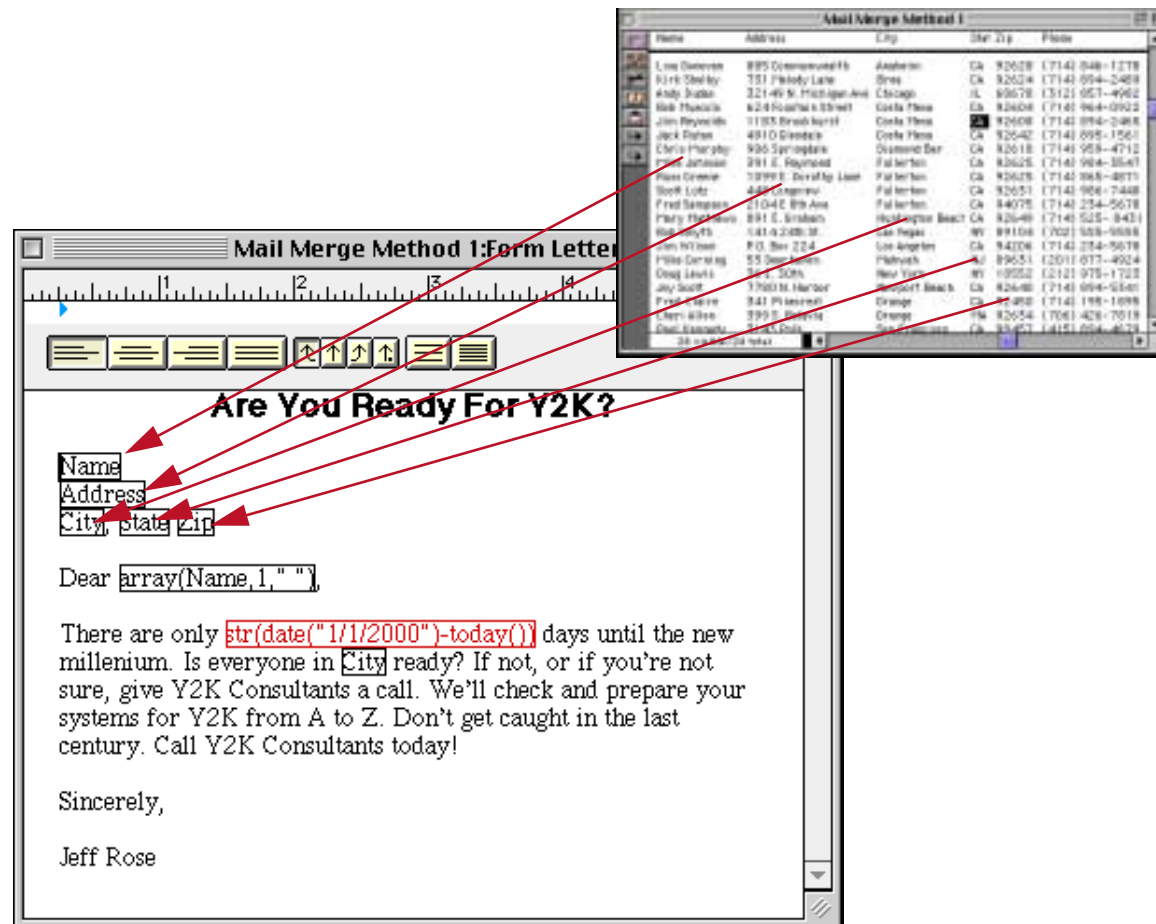
Word Processor Document Storage Strategies

Traditional word processors (Microsoft Word, WordPerfect, Nisus, etc.) store each word processing document in a separate self contained disk file. In Panorama word processing documents are not self-contained but part of a database. Panorama gives you flexibility in choosing how the document is related to the database.

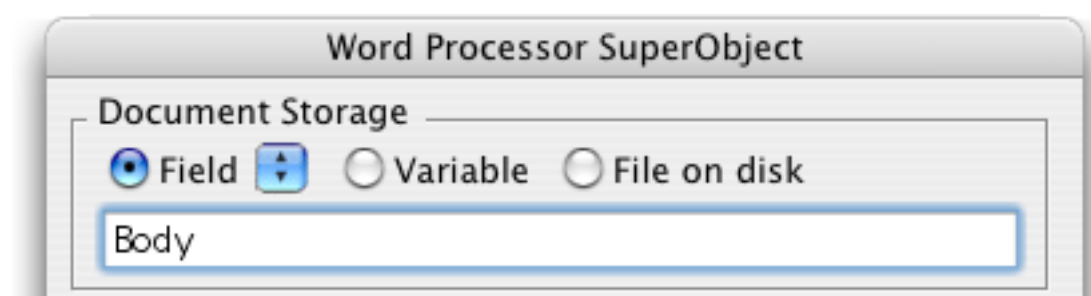
In Panorama the word processor can be used in two basic ways. The first way is to use it to create and organize a collection of documents. For example you might have a correspondence database that keeps all your letters and memos organized. When the word processor is used this way you will usually have one document for every record in your database. In addition to the documents themselves, the database might contain additional information like the date the letter was written, the subject, who it was written to, etc. Here is an example of a correspondence database that contains three records and three separate documents (pieces of correspondence).



The second way to use the word processor is as a template. When used this way there is a single document for the entire database. Panorama will combine this “template” document with information from the database to produce the final documents. For example, you can use this technique to send customized “form” letters to a group of people in your database.

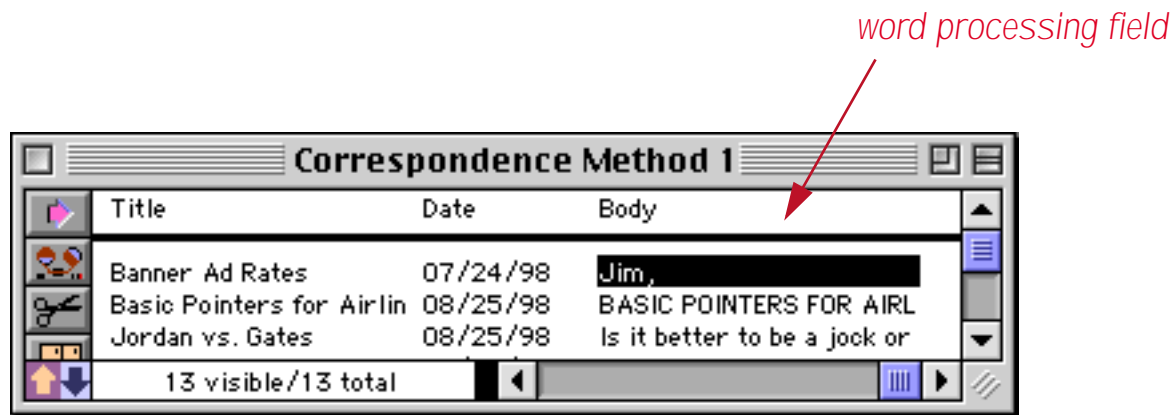


The Panorama word processor allows documents to be stored in three different places: 1) in a database field, 2) in a variable, or 3) in a disk file (see illustration below). Which one of these you choose will depend on several factors, including whether you need a collection of documents or a template, the number of documents involved, the amount of memory on your machine and whether or not the documents need to be searchable.



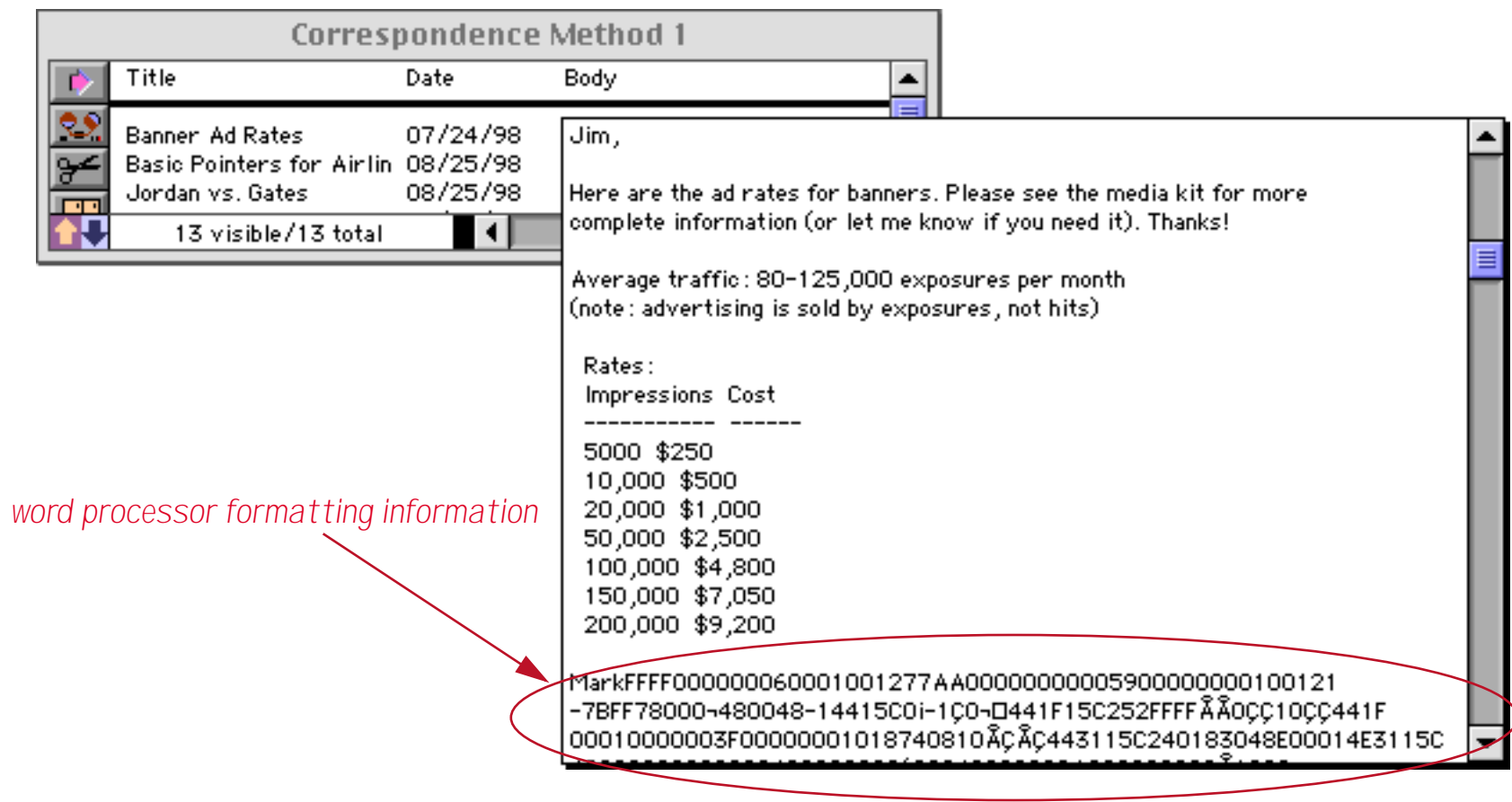
Storing a Collection of Documents

If you need to store a collection of documents the simplest approach is to store the documents in a database field. You'll need to set up a text field specifically for the word processor. In the database below a field name **Body** has been created for this purpose (the actual name isn't important, you can pick any name you like).

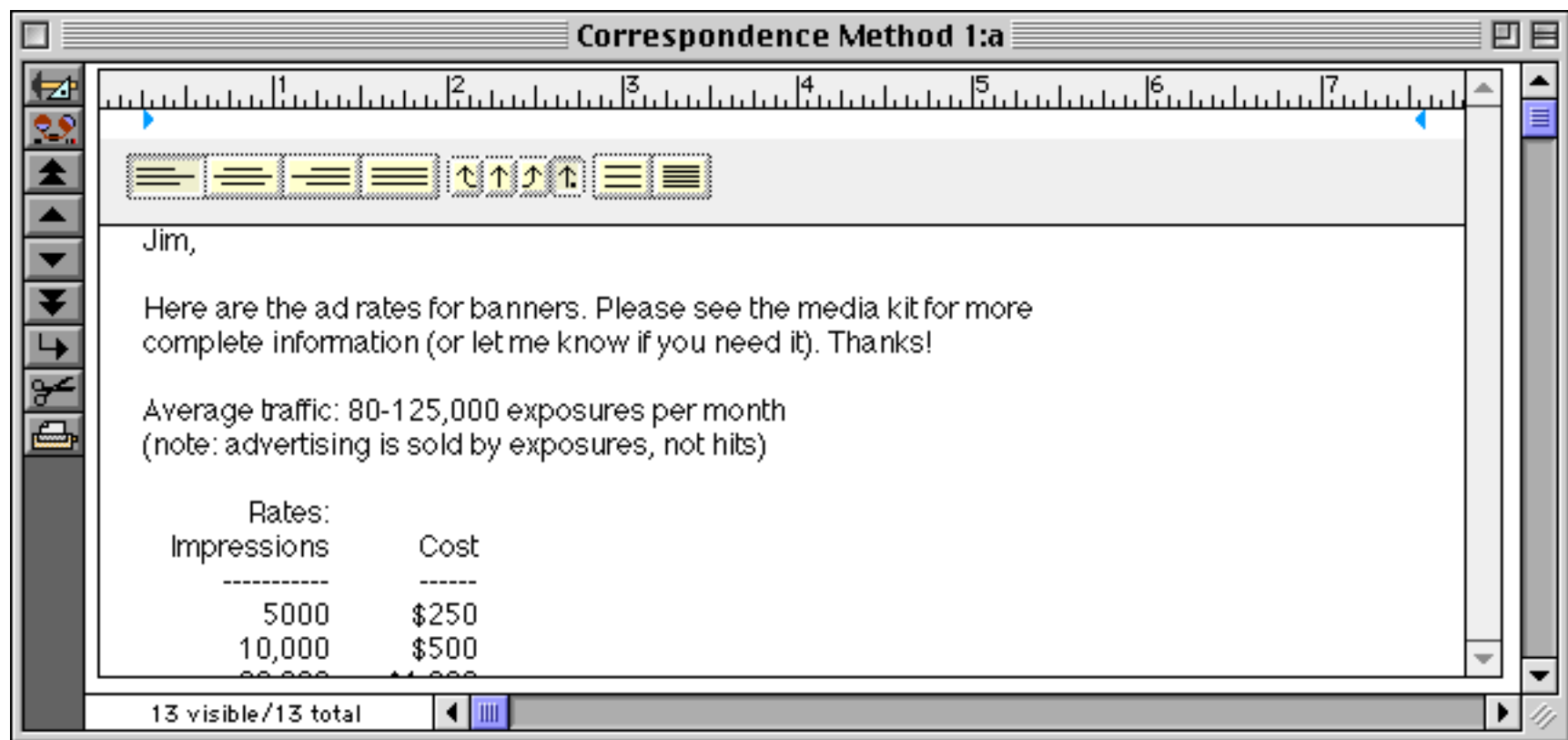


As you can see, the field you set up for the word processor is visible in the data sheet, and you can even double click on the field in the data sheet to edit it. However, you should **not** do this. If you scroll to the end of the Input Box you will see the special formatting information used to keep track of the font, style and other special word processing information. If you edit the field in the data sheet you will corrupt this information and the field will no longer format properly when used in the word processor.

Do Not Edit Word Processor Fields in the Data Sheet!

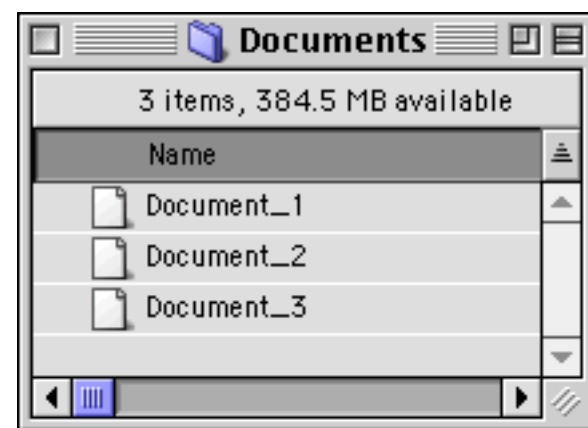
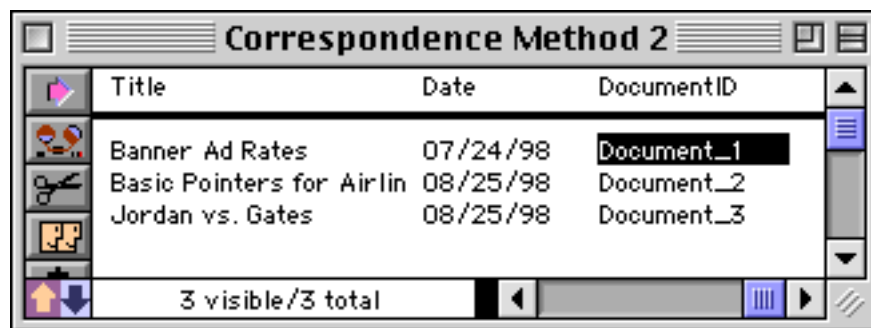


The correct way to display and edit this field is to create a form with a Word Processor SuperObject (see “[Creating and Working With Word Processor SuperObjects](#)” on page 673).

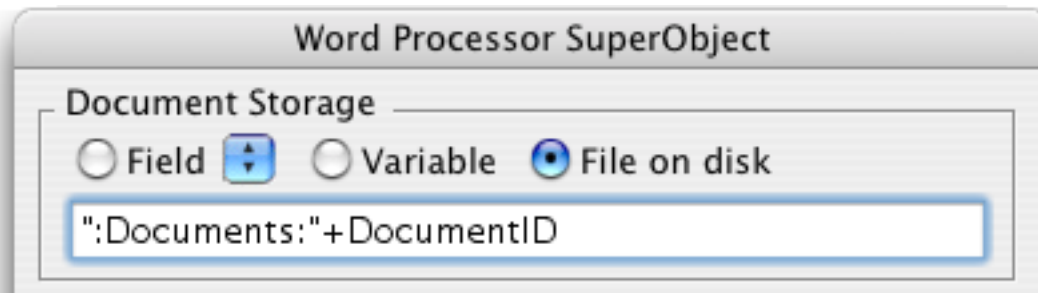


Storing the documents in a field is simple, but if you have a lot of documents (thousands or tens of thousands) these documents can consume a lot of memory. This isn't as much of a problem as it used to be, but if it does become a problem Panorama has an alternative — you can store the documents in separate disk files. If you do this you'll still need a field for the word processor, but instead of holding the entire document this field will only contain the name of the file that actually contains the document.

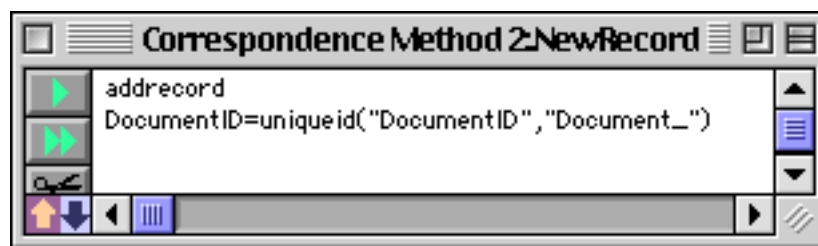
Here is a typical data sheet for a database with word processing documents stored in external files.



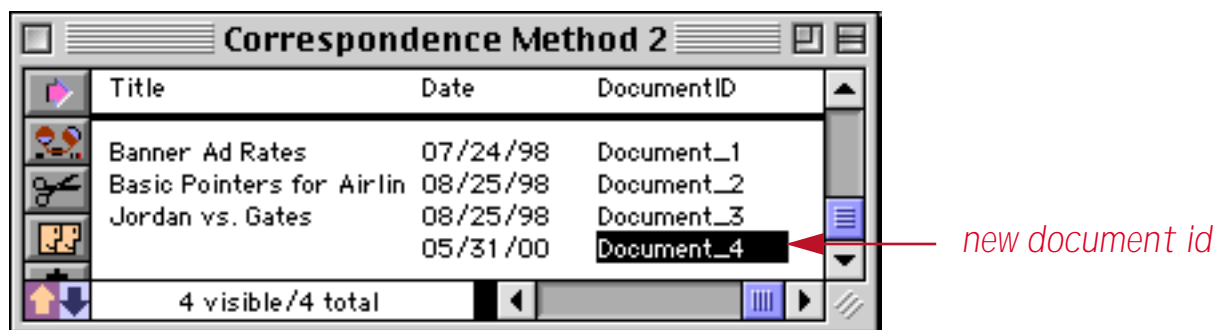
The **DocumentID** field contains a link to the external document. You must set up a formula in the configuration dialog that creates the actual name of the external file from the value in this field. In this example we have set up a formula that tells Panorama that the document is stored in the Documents subfolder (a folder within the folder containing the database). (On PC systems **.pwp** will automatically added to the end of each file name if no other extension is supplied, for example **Document_1.pwp**.)



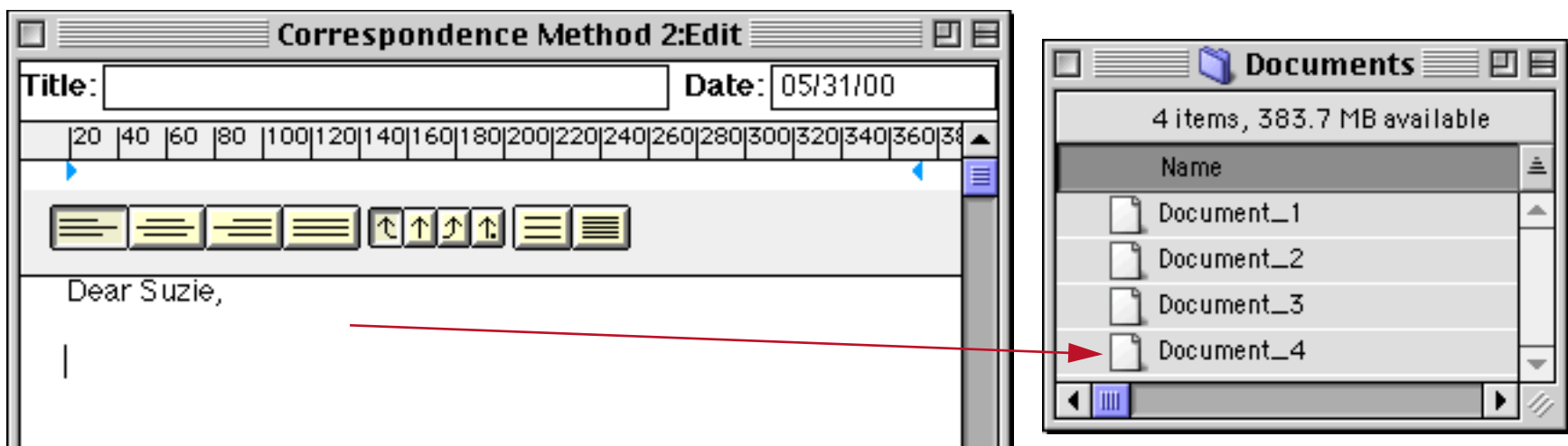
The **DocumentID** field must contain a unique value for each record, and that value must be a legal file name. In some cases you may be able to use data already in your database, for example the customer name. In this particular example file the unique value is created by a procedure each time a new record is created. See **“.NewRecord”** on page 386 of *Formulas & Programing* to learn about the automatic **.NewRecord** procedure, which is triggered whenever a new record is added to a database. The **uniqueid()** function is described in **“UNIQUEID”** on page 5870 of the *Panorama Reference*.



When a new record is added to the database, the **.NewRecord** procedure automatically assigns it a new Document ID.



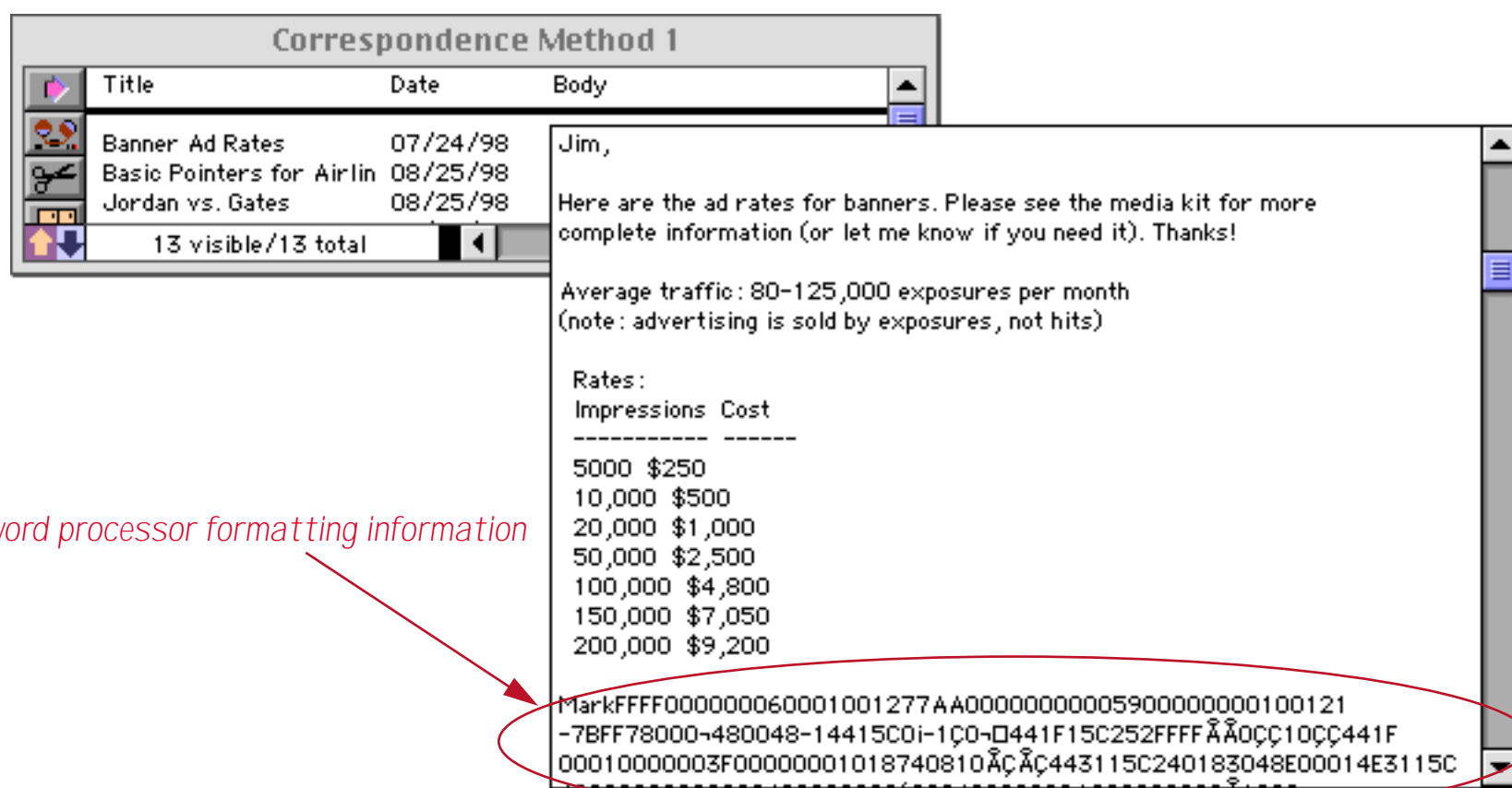
As soon as you start typing into the word processing document Panorama automatically creates the new file on the disk.



Storing the word processing documents allows you to build a large collection of documents without creating a huge memory hogging database. On the other hand, since the documents are not part of the Panorama database, they cannot be searched with the **Find/Select** command (see "[The Find/Select Dialog](#)" on page 336).

Searching for Text Within a Collection of Documents

If the documents are stored in a field (see previous section) you can perform normal database operations on them, including searching for text within the documents. However, word processor documents combine text with style information, as you can easily see if you edit a field containing a word processor document with the data sheet (or with an ordinary data cell in a form).



Remember, you should not edit any part of a word processing document with the data sheet or a data cell. Editing a word processing document this way will cause the document to lose its style information. Always use a word processing object to edit word processing documents.

Sometimes you may want to use the text contained in the word processor in a formula. For example, you may want to count the number of letters or words in a document, or search the document to see if it contains a particular word or phrase. To use the text in a formula, use the `documenttext()` function. This function has one parameter, a word processing document. The result is the text of the document with all of the style information removed. For example, suppose your database has a field called **Letter** that contains word processing documents. You can use the formula shown below with the **Formula Find/Select** command (see "[The Find/Select Dialog](#)" on page 336) to select all records with documents containing the word **Yosemite**.

```
select documenttext(Letter) contains "Yosemite"
```

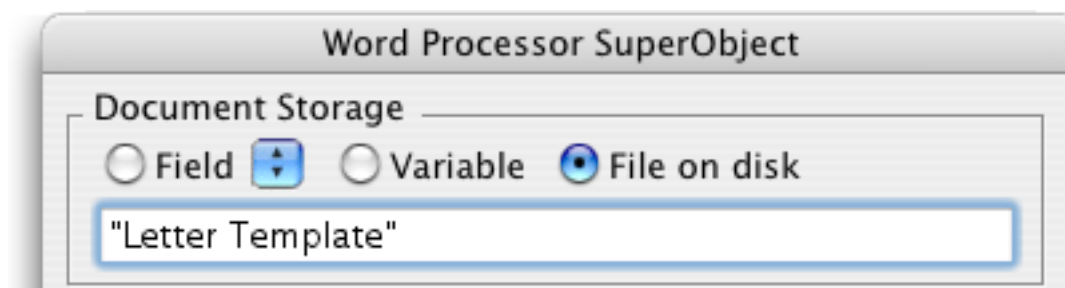
Here is another example that calculates the number of words contained in a letter.

```
message "This letter contains "+str(arraysize(documenttext(Letter)," ")+ " words."
```

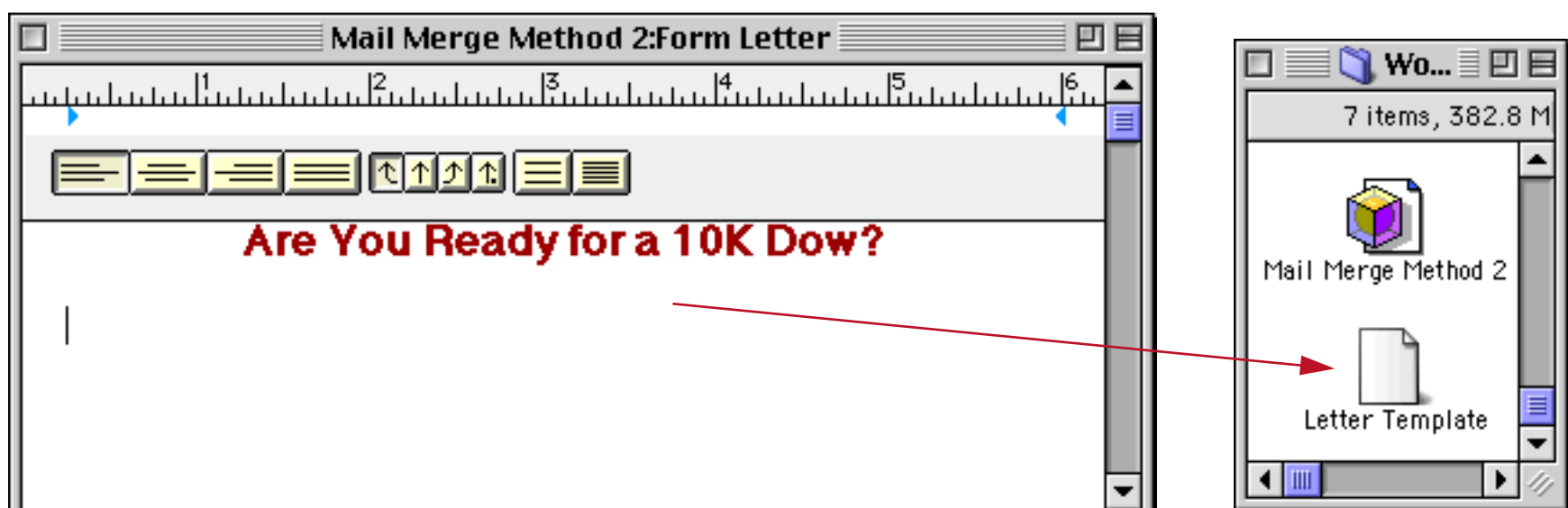
The word processor can also work with standard text. If you give the word processor standard text with no style information, it will use the default font, size, indents, tabs and line spacing until you specify otherwise.

Setting up Storage for a Template Document

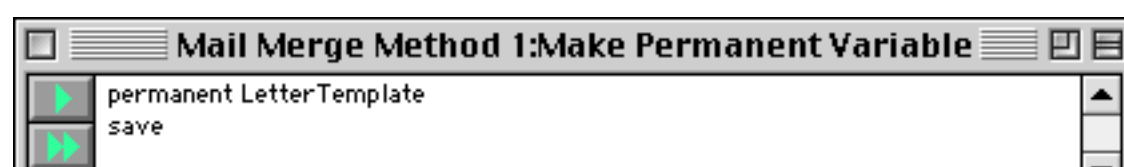
If you need a mail-merge template document the simplest approach is to store the document in a separate disk file.



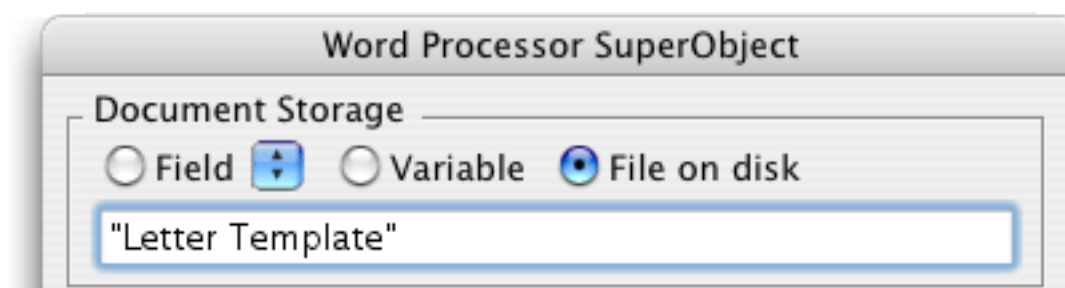
As soon as you begin typing into the word processor Panorama will automatically create a file named **Letter Template** (or **Letter Template.pwp** on PC systems). The file will be created in the same folder as the database.



An alternate method is to store the document in a variable. A permanent variable is recommended so that the document will be saved automatically when the database is saved (see "[Long Life Variables](#)" on page 249 of *Formulas & Programming*). Here is a procedure that creates a permanent variable named **LetterTemplate** (see "[Writing a Procedure from Scratch](#)" on page 216 of *Formulas & Programming* to learn how to create procedures). You only need to run this procedure once to create the permanent variable (that's why it's called permanent!).



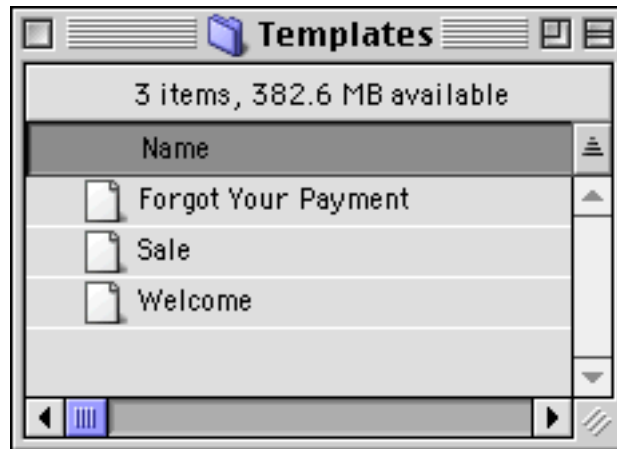
Once the permanent variable has been created you can go ahead and create the Word Processing SuperObject (see "[Creating and Working With Word Processor SuperObjects](#)" on page 673). Select the **Variable** option, and enter the name of the permanent variable you have created.



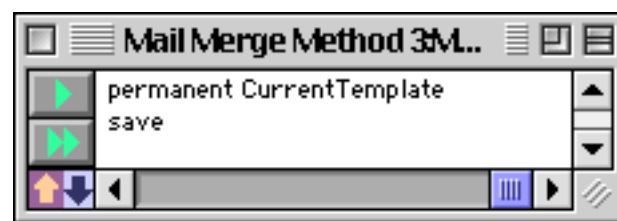
When you press the **OK** button your Word Processor SuperObject is ready to go. The document will be stored in the permanent variable, which is automatically saved as part of the database each time you use the **Save** command.

Setting up Storage for Multiple Template Documents

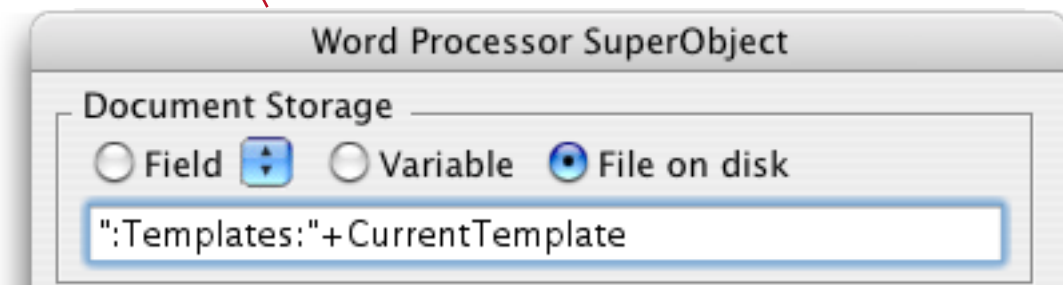
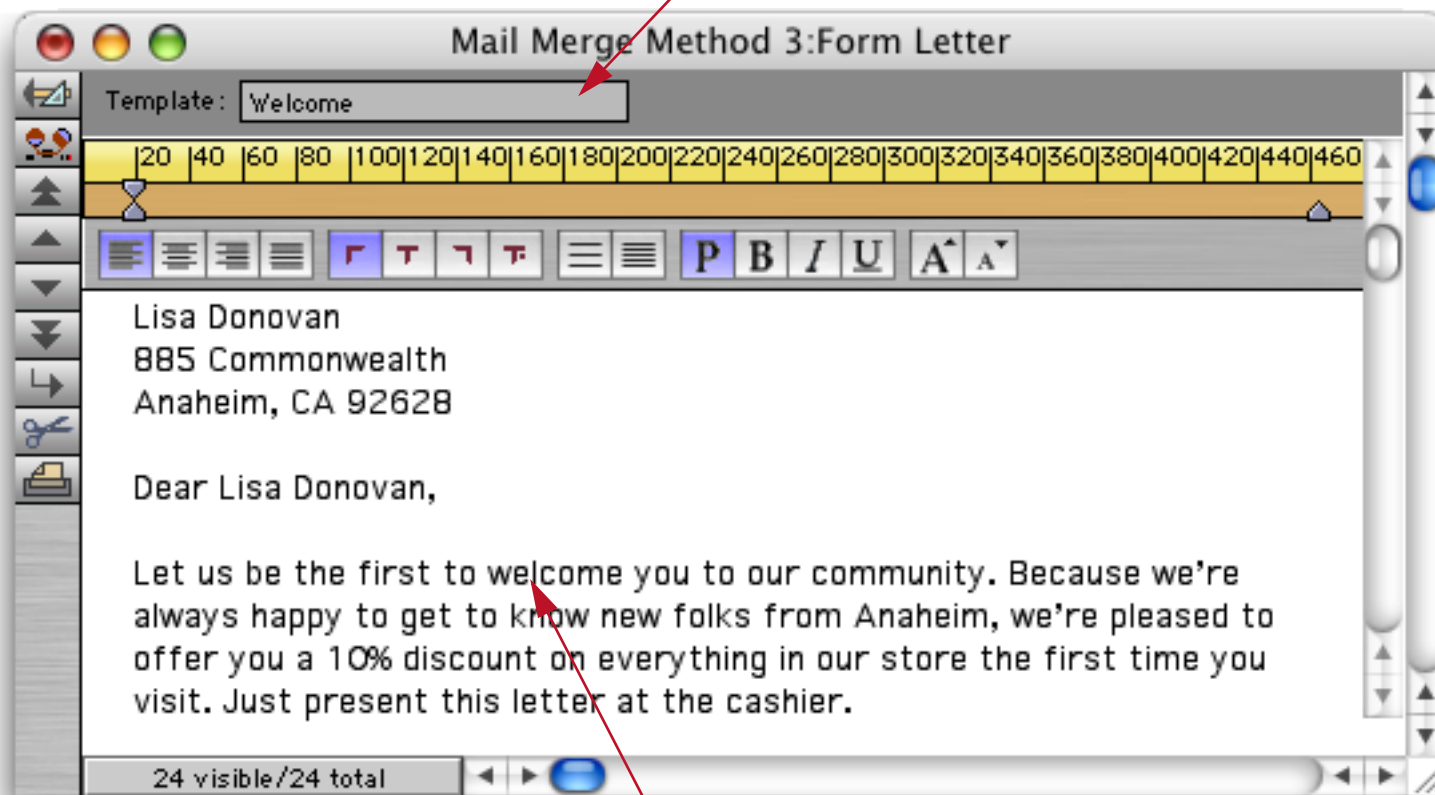
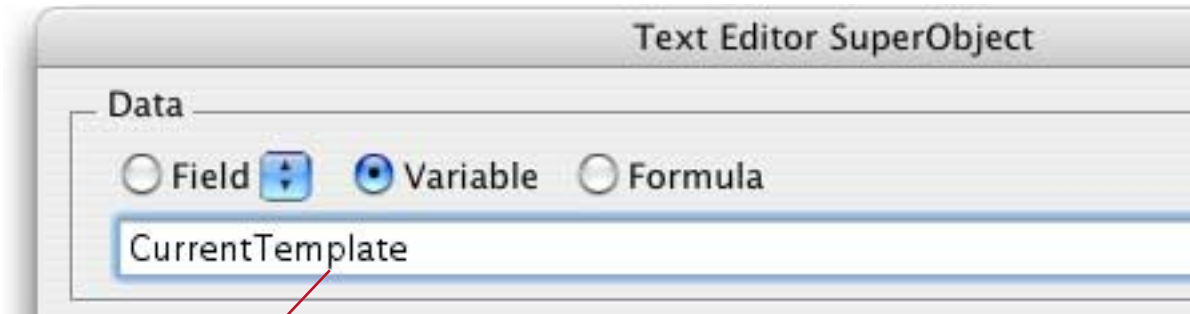
The techniques described in the previous section are fine if you want to use a single mail-merge template. In this section we'll show how to set up multiple mail-merge templates for a single database. For example, you might have different "form" letters that you want to send out at different times — to welcome a new customer, to announce a sale, or to ask about a missed payment. Each one of these templates will be stored in a separate file on the disk, like this.



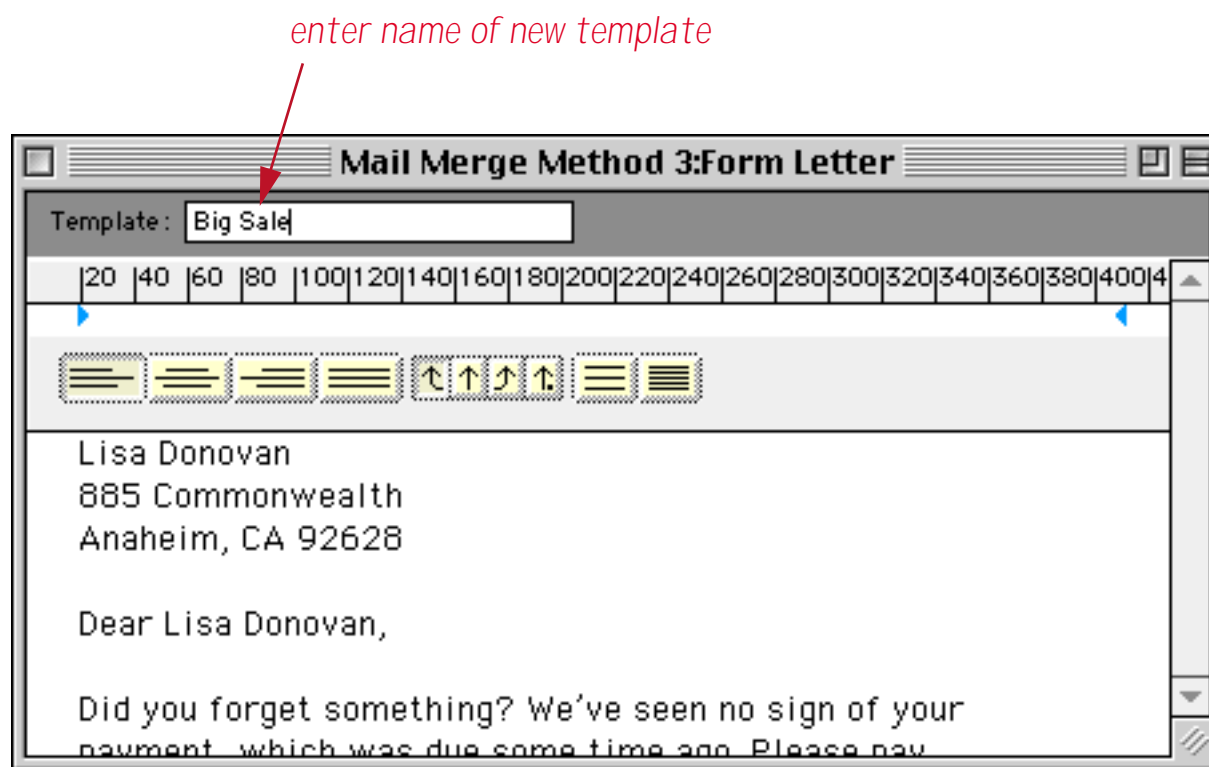
To start with you'll need to create a permanent variable. However, instead of using this variable to store the entire template document we'll only use it to store the name of the current template document. Here is a procedure that can create the permanent variable for us. Be sure to run this procedure at least once before you continue with the next step.



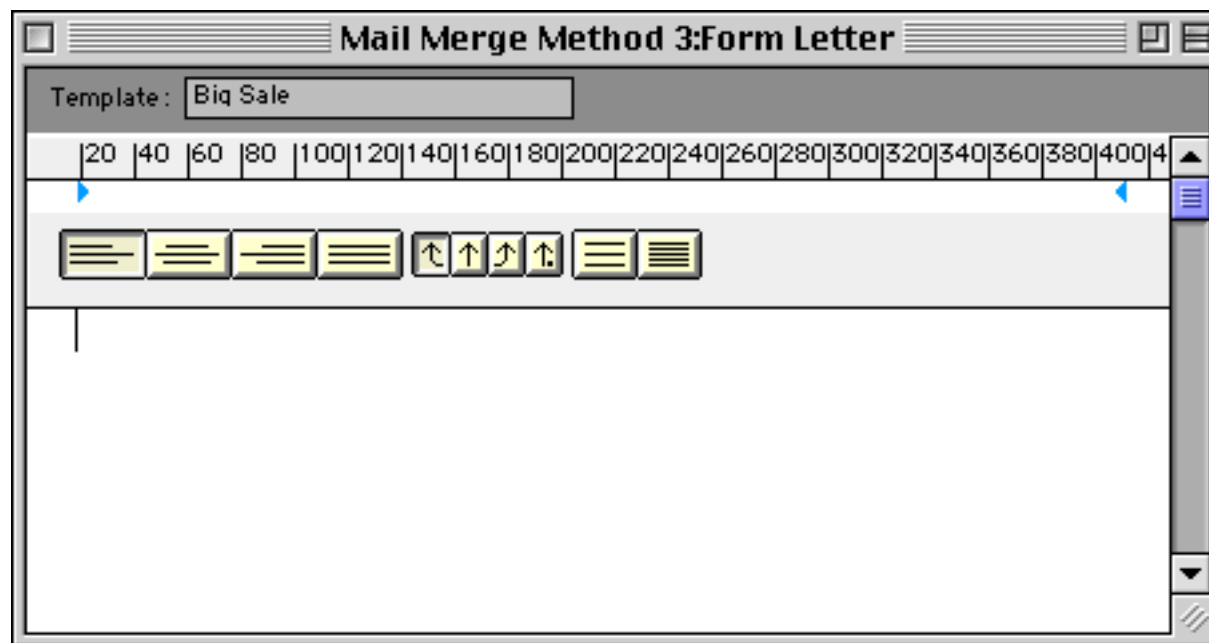
The form for this example requires two editing objects. First, you'll need a Text Editor SuperObject that will allow the name of the current template to be changed (see "Creating and Modifying Text Editor SuperObjects" on page 639). Of course a Word Processing SuperObject is also necessary. The text is stored as a **File on disk**, with a formula that tells Panorama to look in the folder **Templates** and to that the permanent variable **CurrentTemplate** contains the file name. (You'll need to create the **Templates** folder if it doesn't already exist. It should be in the same folder as the database itself.)



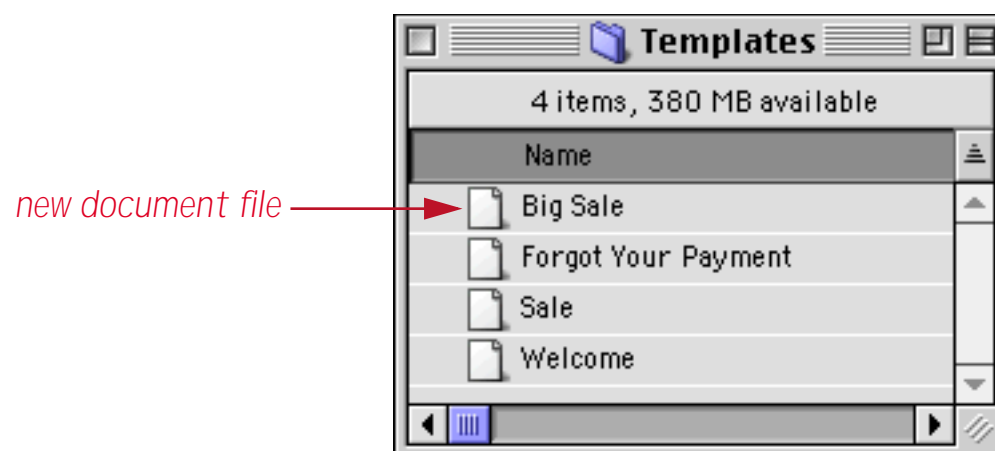
Once these objects are set up you can switch to Data Access Mode and start building templates. Start by entering the name of the new template.



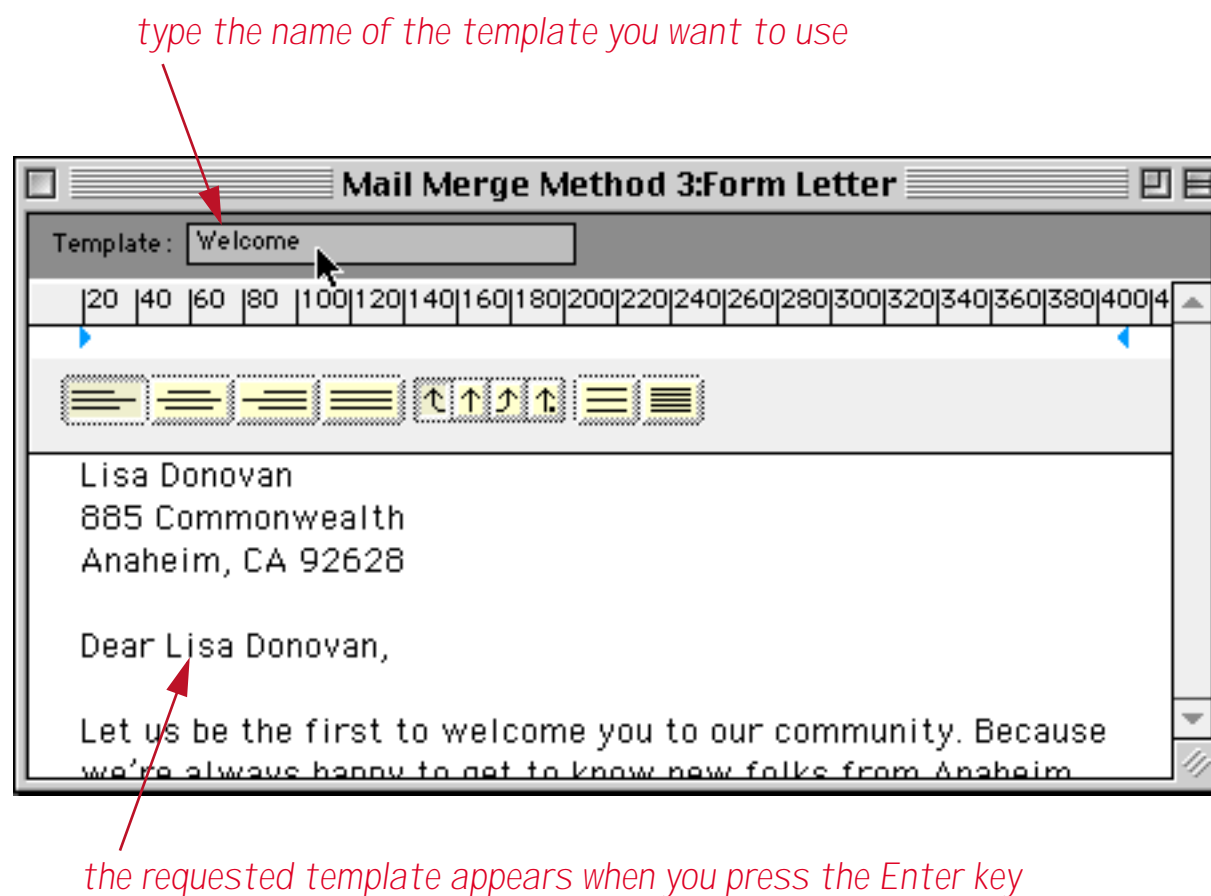
After you have entered the name of the new template, click on the word processor. Panorama will immediately create the new, blank template, which you can start filling in.



If you look on the hard disk you'll see that the new template has been created.



At any time if you want to re-use a previous template, just type the name of that template into the Text Editor SuperObject. As soon as you press the **Enter** key, the previous template is saved and the requested template is loaded in.

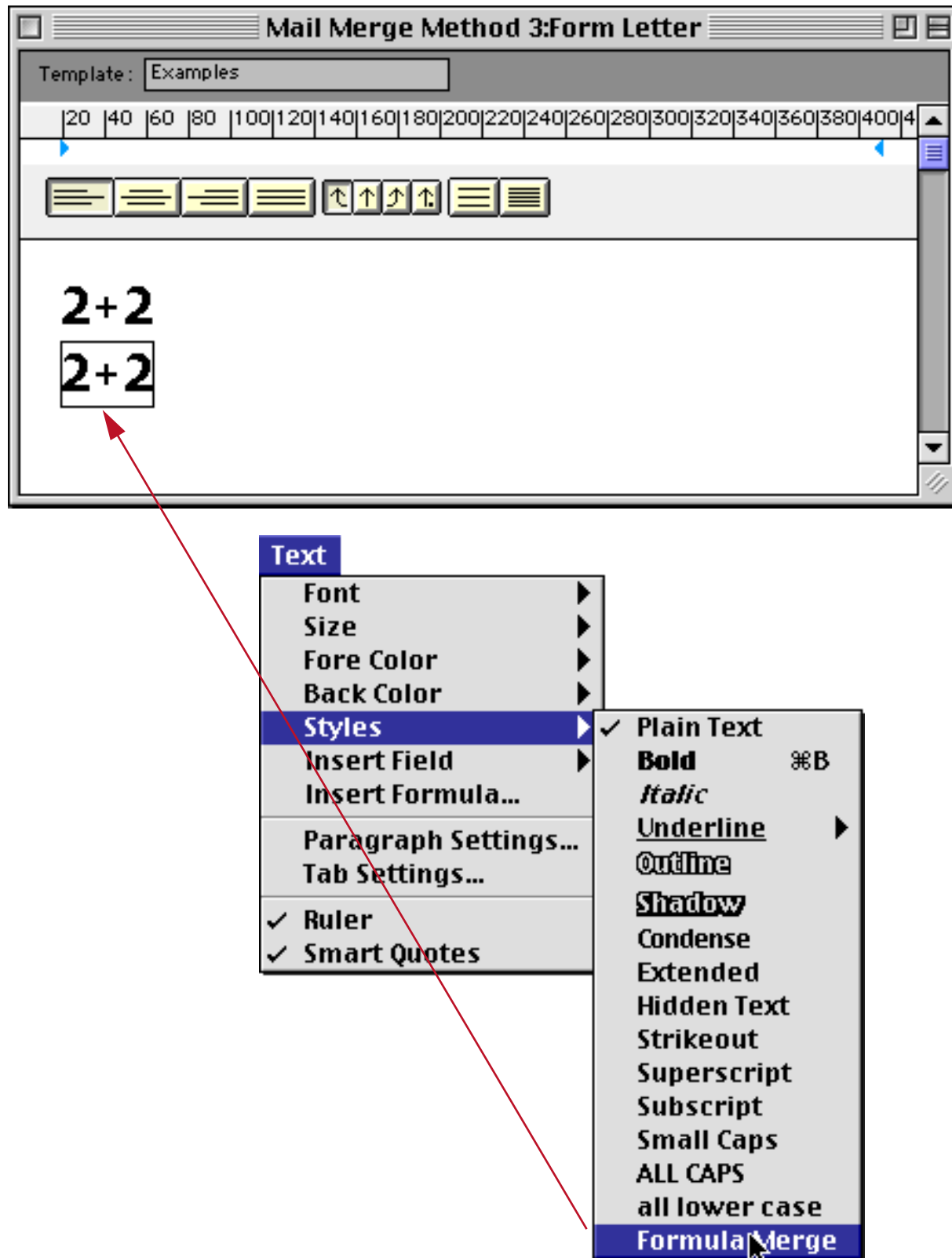


This simple example requires you to type in the name of the template you want to use. A more advanced database could use a pop-up menu (see “[Pop-Up Menus](#)” on page 860) or a scrolling list (see “[List SuperObjects](#)” on page 879) in combination with the `listfiles(` function (see “[Disk Files and Folders](#)” on page 165 of *Formulas & Programming*) to select the template.

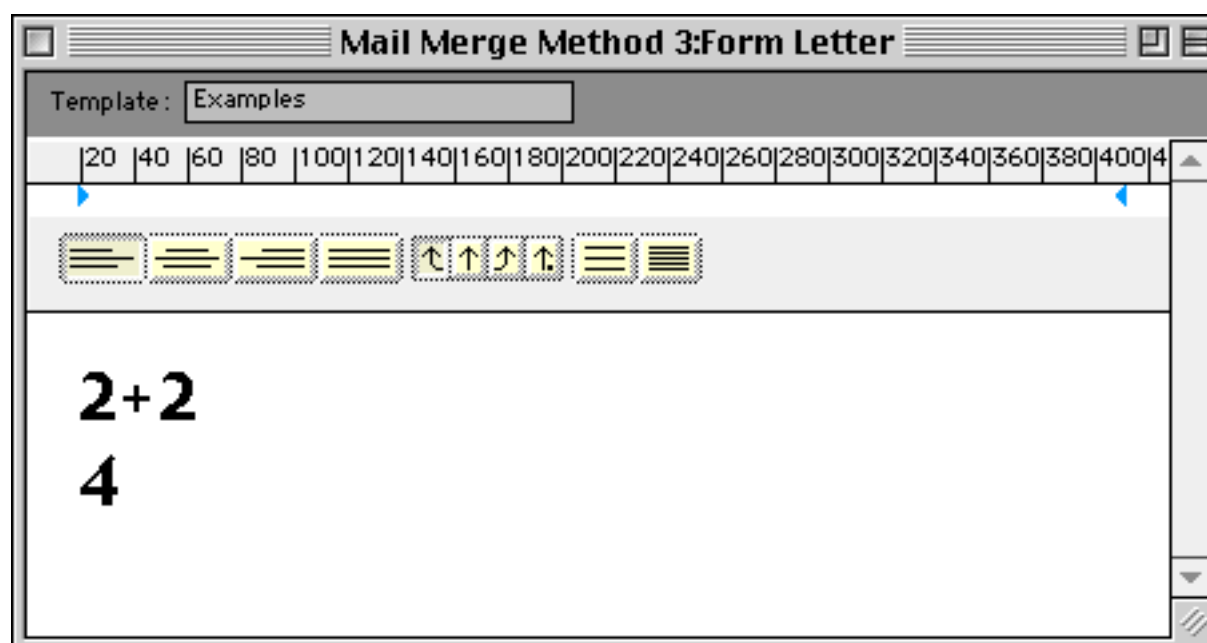
Merging Data into Word Processing Documents

Just as with an auto-wrap text object, Panorama can merge the result of a formula into the middle of a word processor document. The auto-wrap text editor does it with special characters around the formula (see “[Displaying Formulas in Auto-Wrap Text](#)” on page 602). The word processor does it with a special style, the **Formula Merge** style.

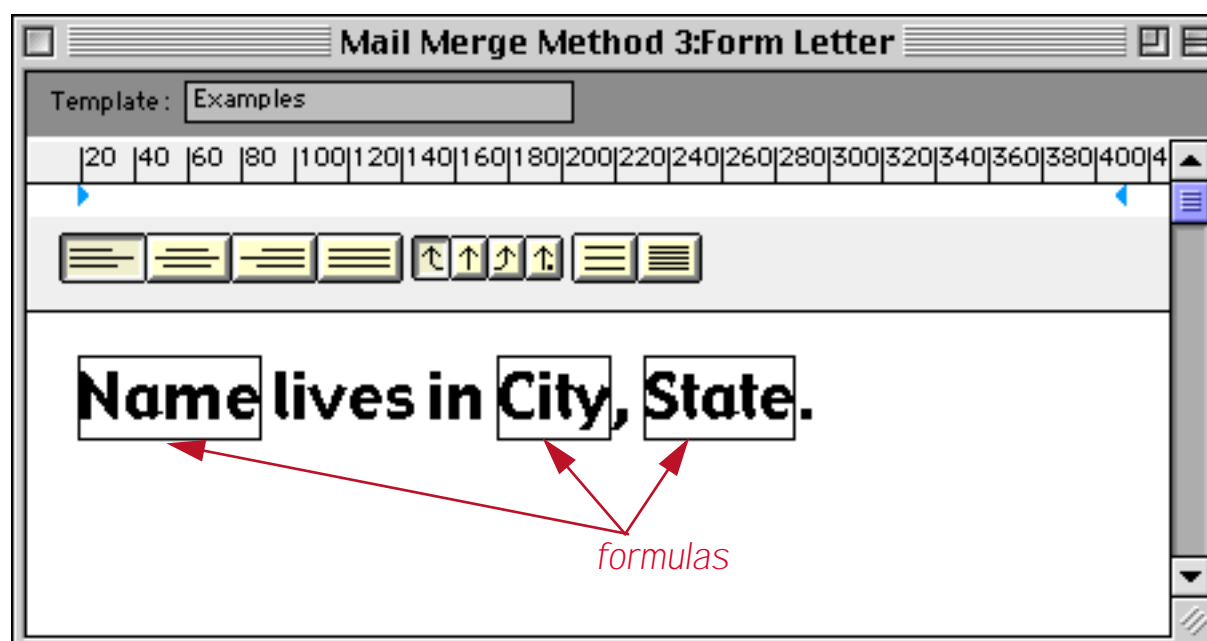
Let’s start with a simple example: $2+2$. We’ll type this formula in twice, the first time using the Plain style. The second time we’ll select the text and apply the **Formula Merge** style. Notice the box that appears around the formula.



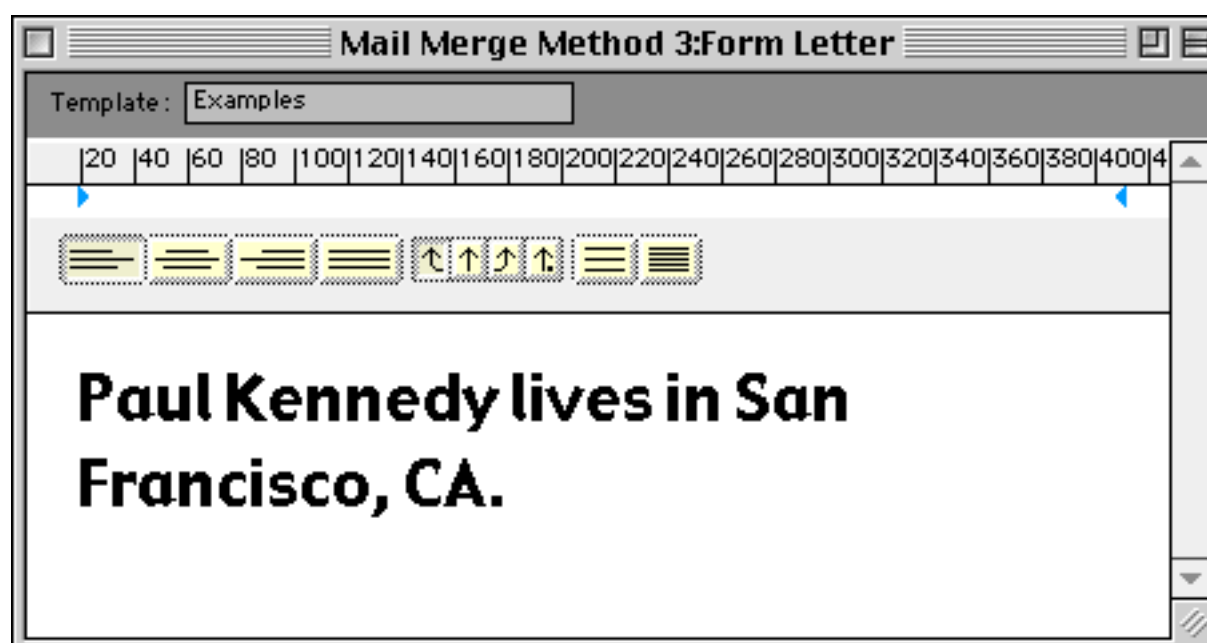
When the **Enter** key is pressed, the display changes. The second formula is now replaced by the result of the formula: 4.



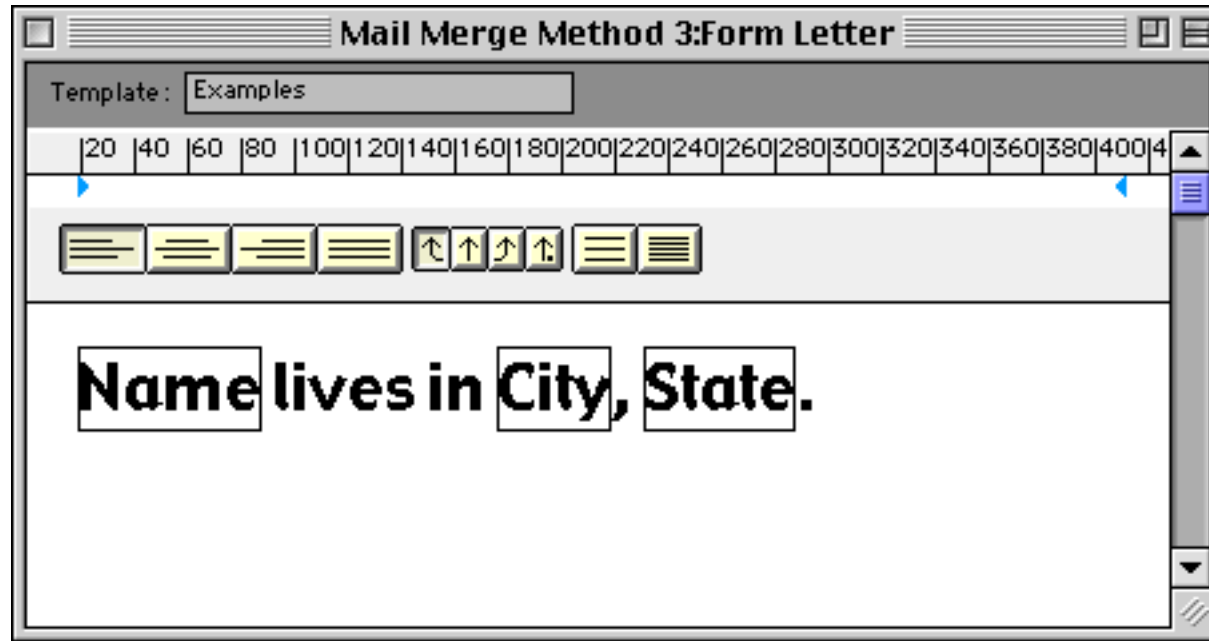
Any valid Panorama formula may be used. To merge in a data field, just type in the name of that field and apply the **Formula Merge** style.



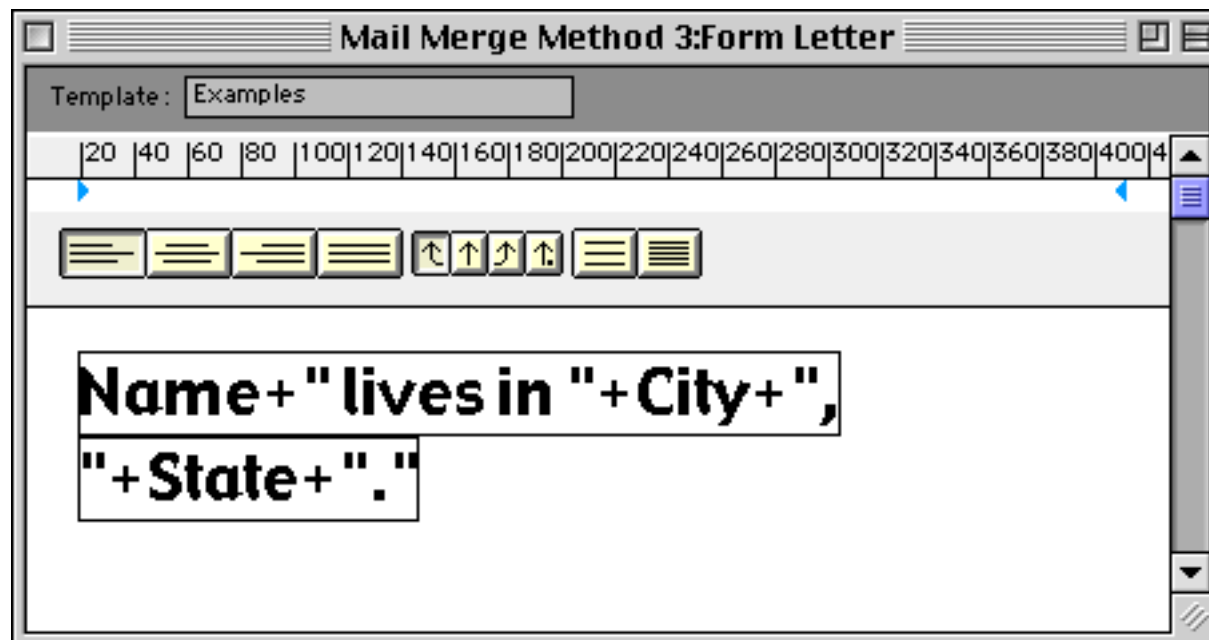
When the **Enter** key is pressed, the actual data appears.



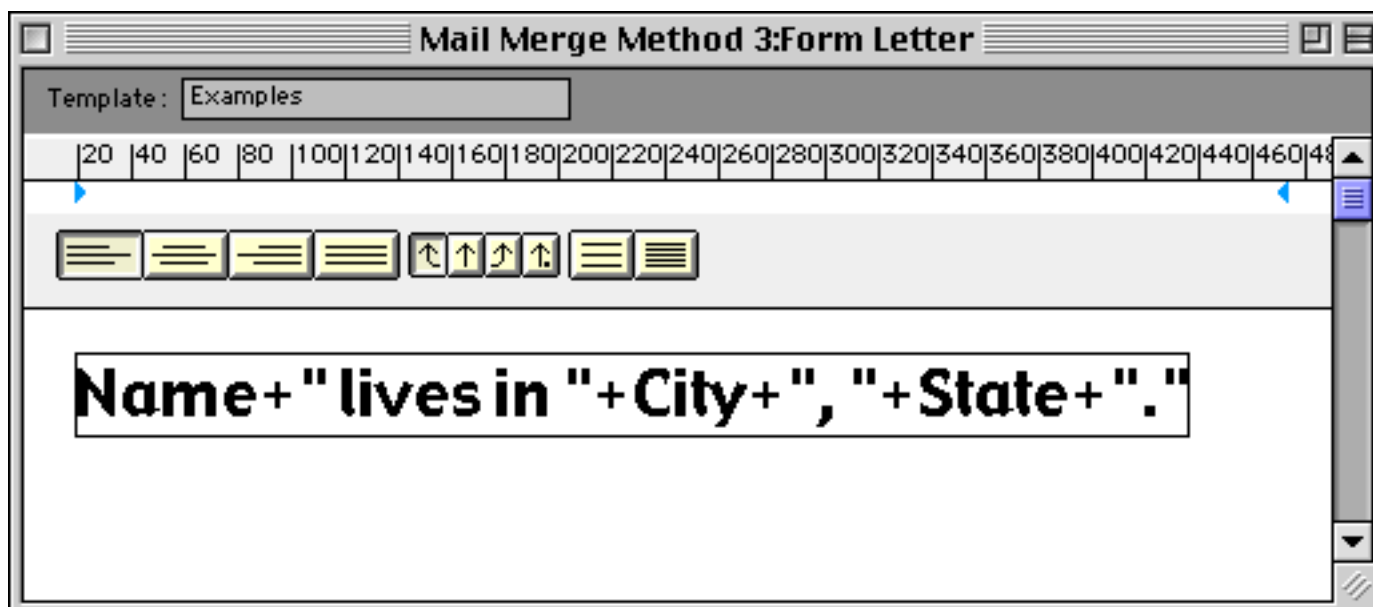
Click on the word processor to see the formulas again.



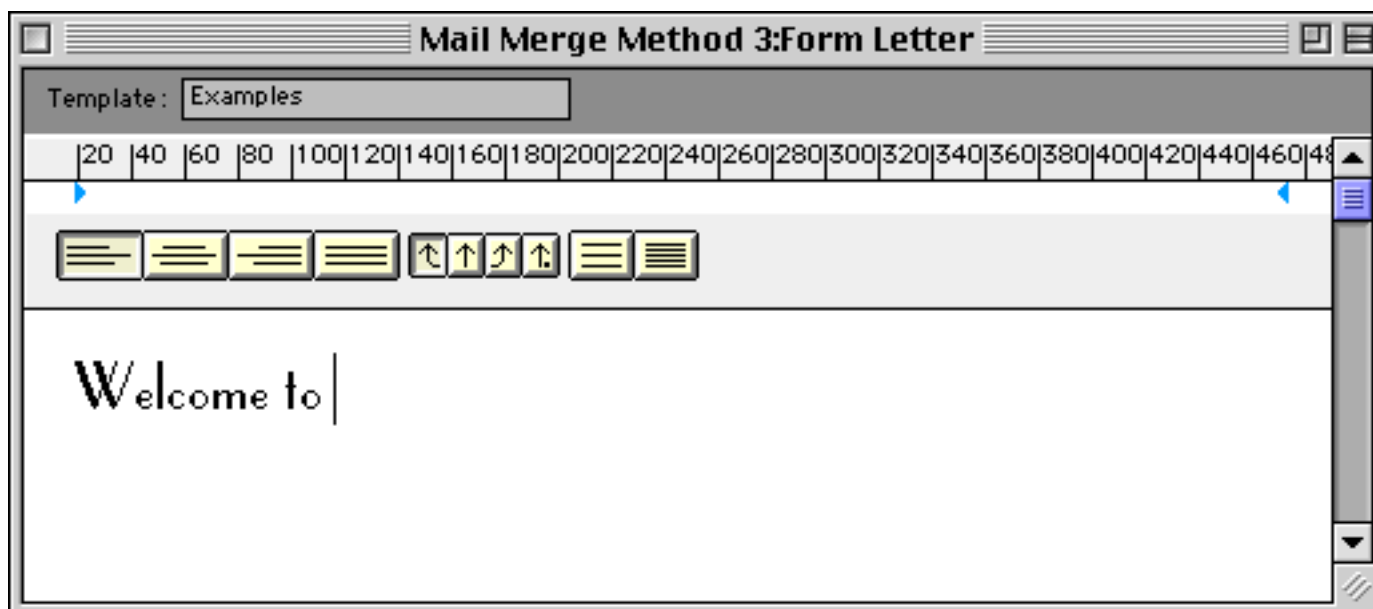
The previous example used three formulas, but it could be rewritten to use a single formula.



Since this formula wraps over two lines it looks like two formulas, but it is really one, as you can see by making the window wider.



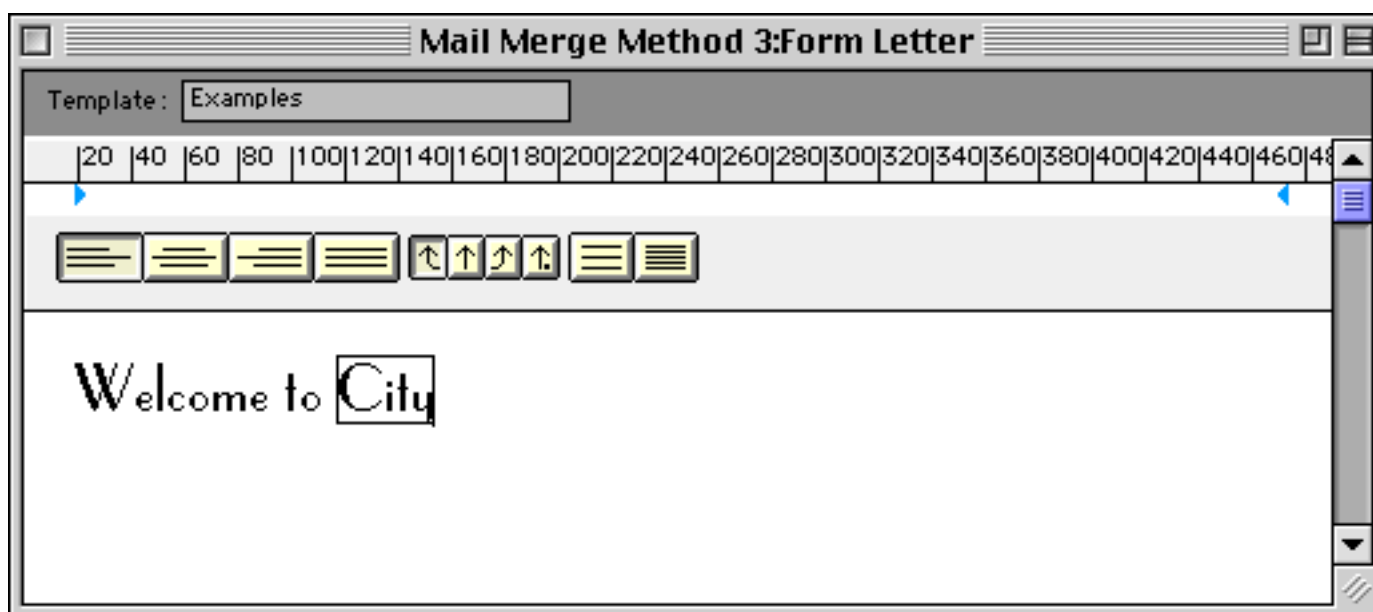
The **Text** menu contains two commands that can help you build formulas. The **Insert Field** submenu types in a field name and automatically turns on the **Formula Merge** style. For example, you can be typing in regular text, like this.



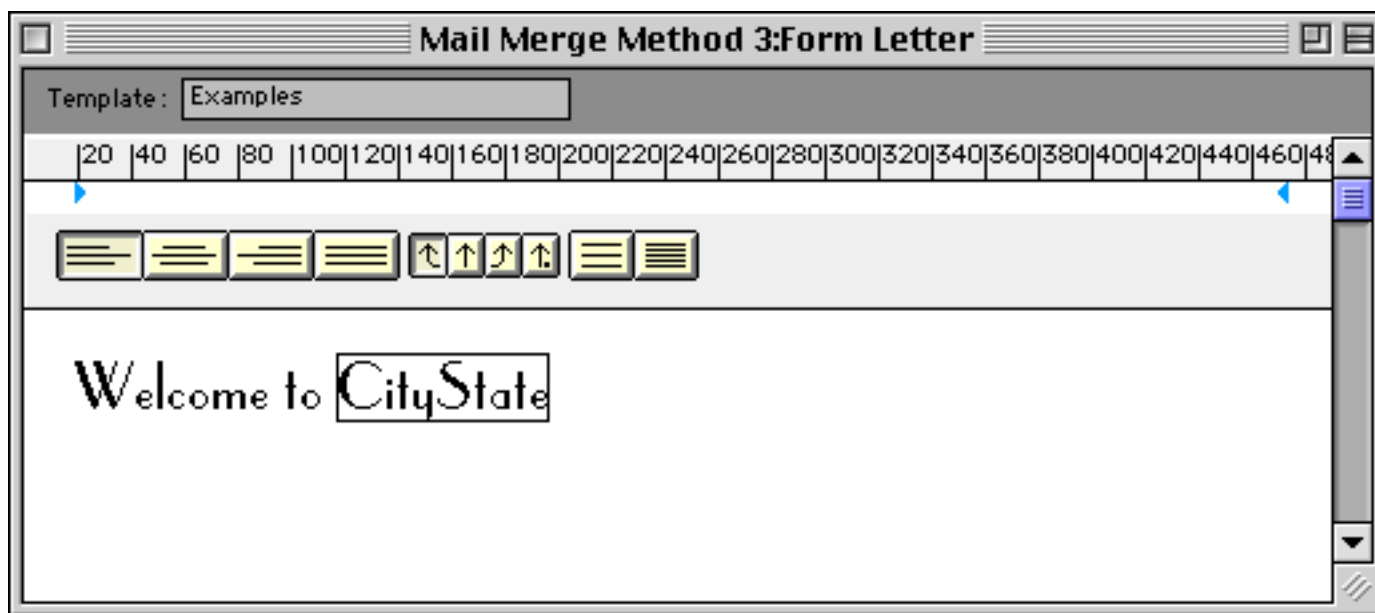
When you want to merge in a field, simply choose it from the menu.



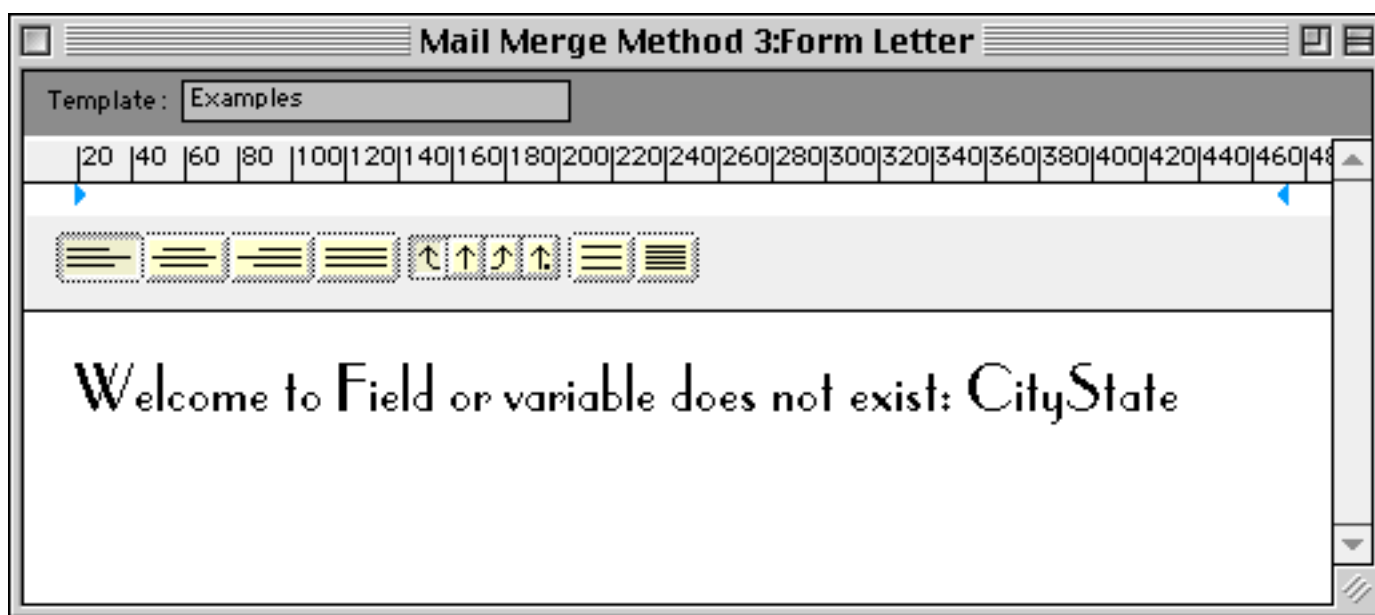
Panorama automatically inserts the field and selects the **Formula Merge** style.



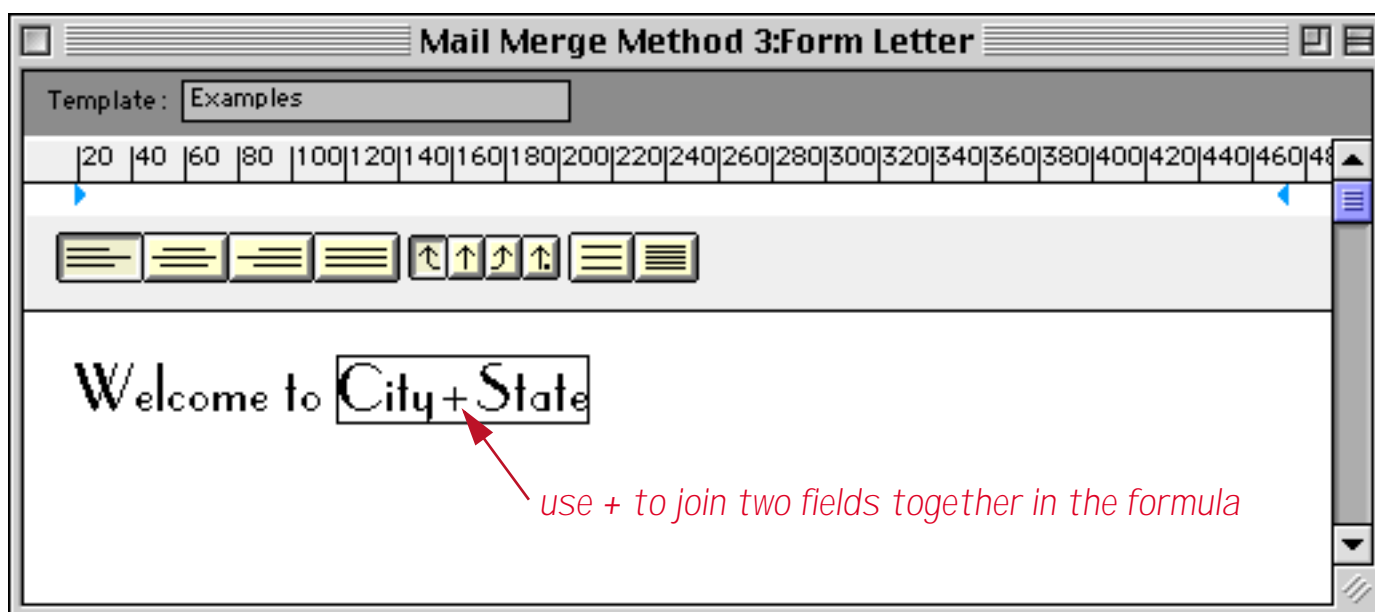
When you use the **Insert Field** menu you need to be careful not to insert two fields right next to each other. If you do, the two field names will merge together.



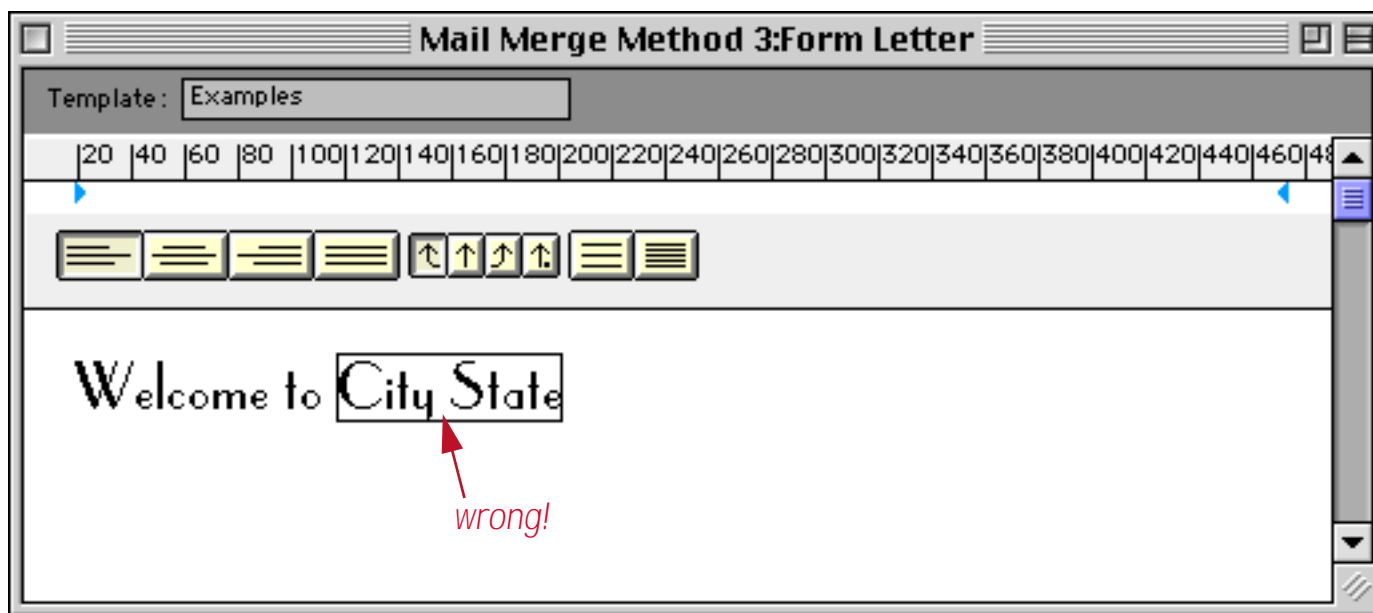
Since there is no field named **CityState**, this will produce an error when you press the **Enter** key.



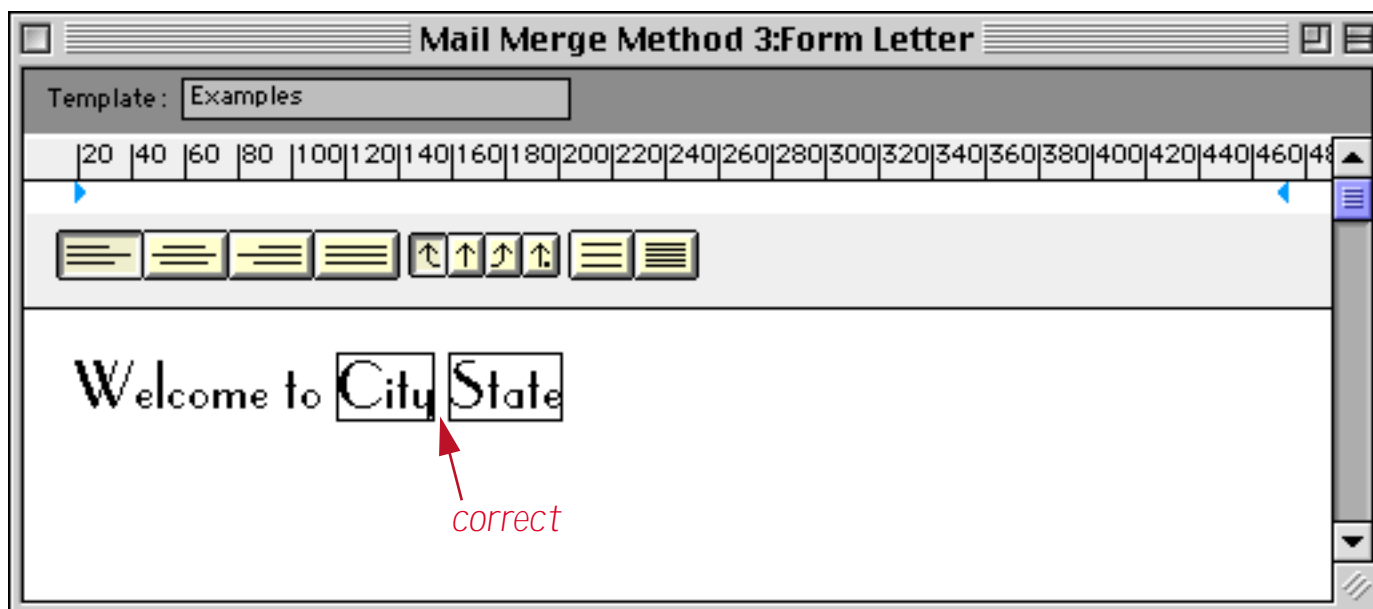
If you need the two fields to be adjacent to each other with no punctuation in between, you must use the **+** operator to make a valid formula.



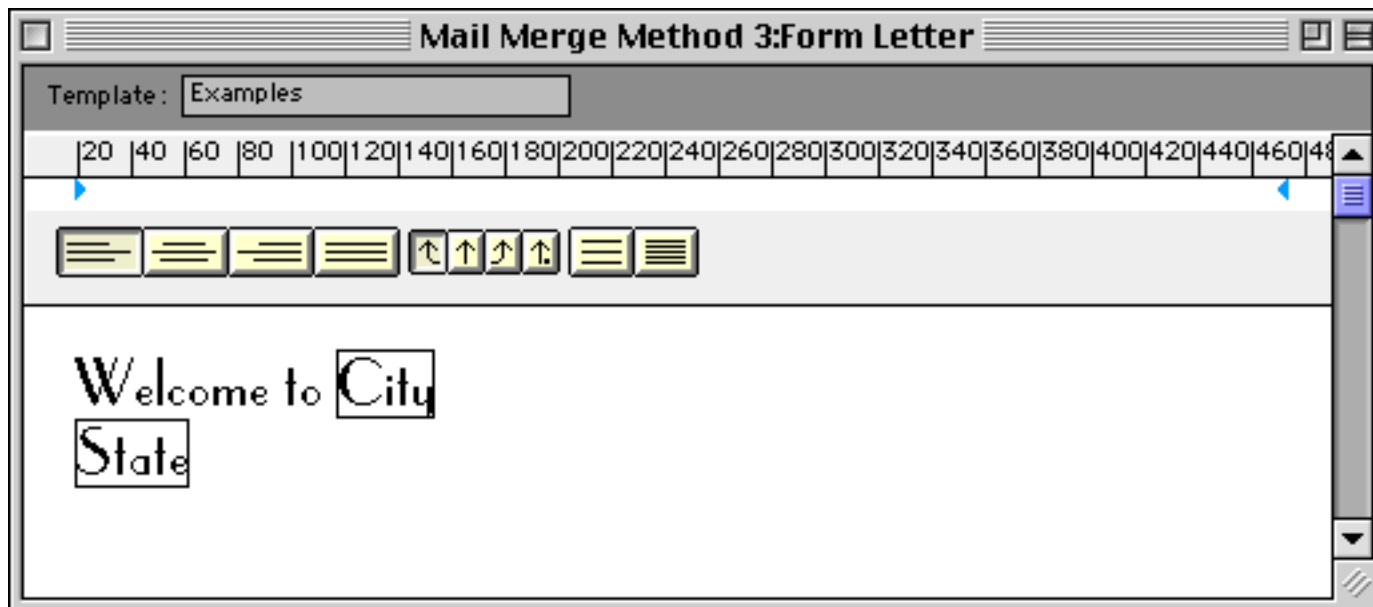
A more common solution is to put a space or other punctuation in between the fields. However, watch out! The punctuation character must not have the **Formula Merge** style selected.



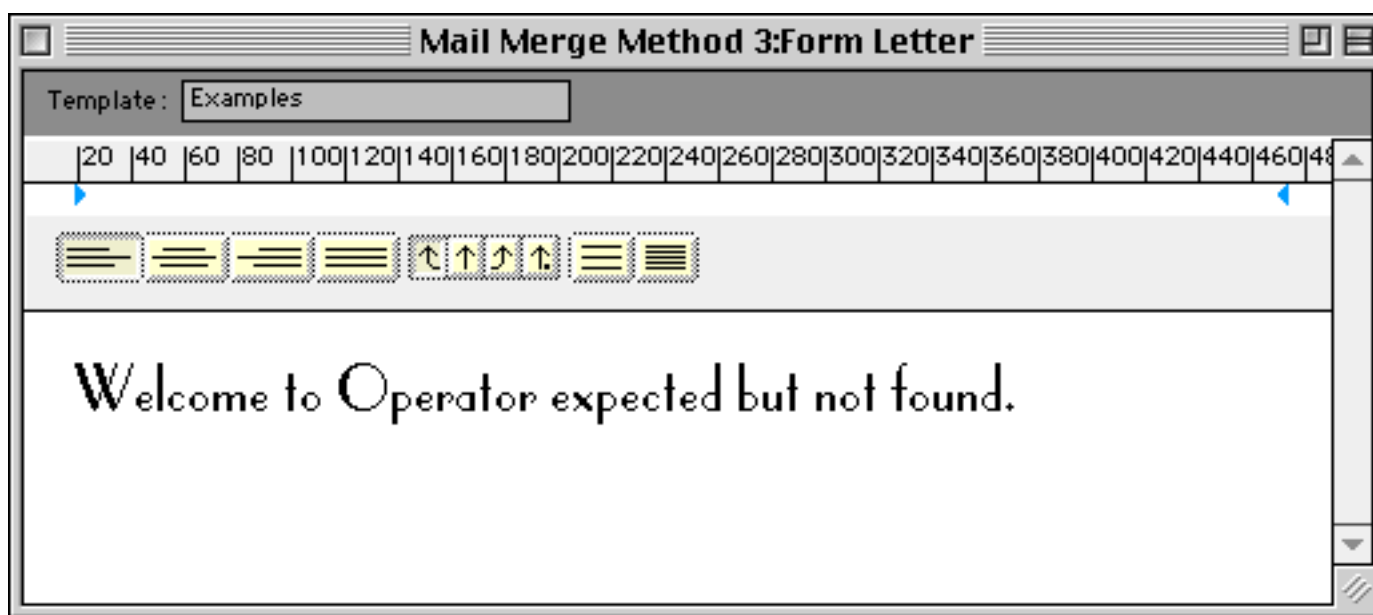
To make sure that the punctuation does not have the **Formula Merge** style selected, select the character and choose **Plain** from the style menu.



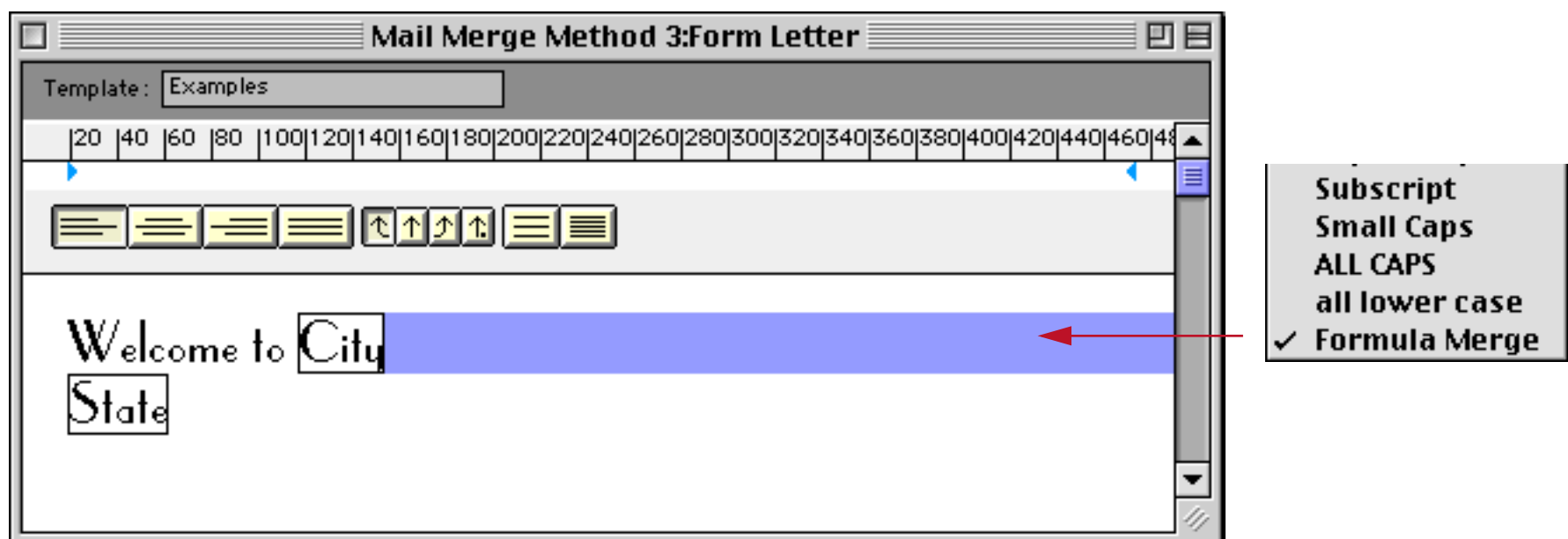
Here's a tricky problem. This looks like two fields in two separate formulas, which should be just fine.



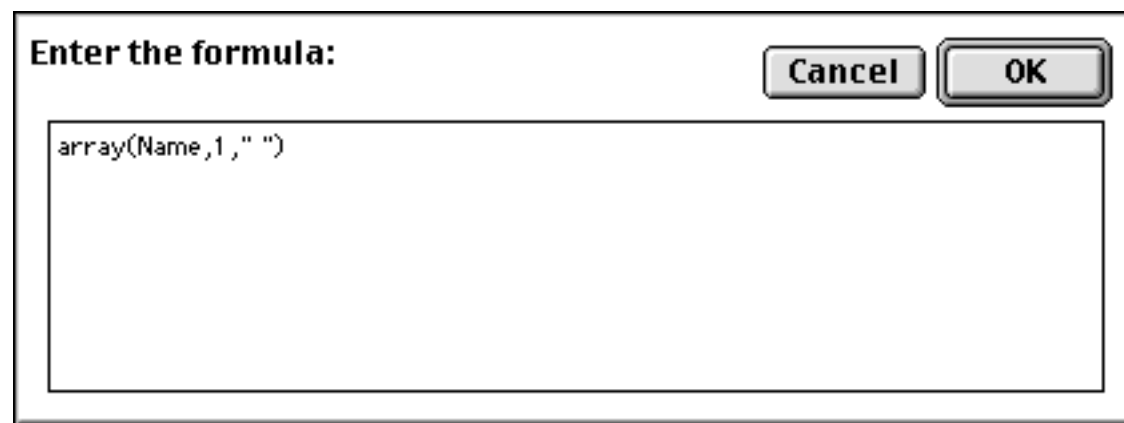
However, when **Enter** is pressed, an error message is displayed.



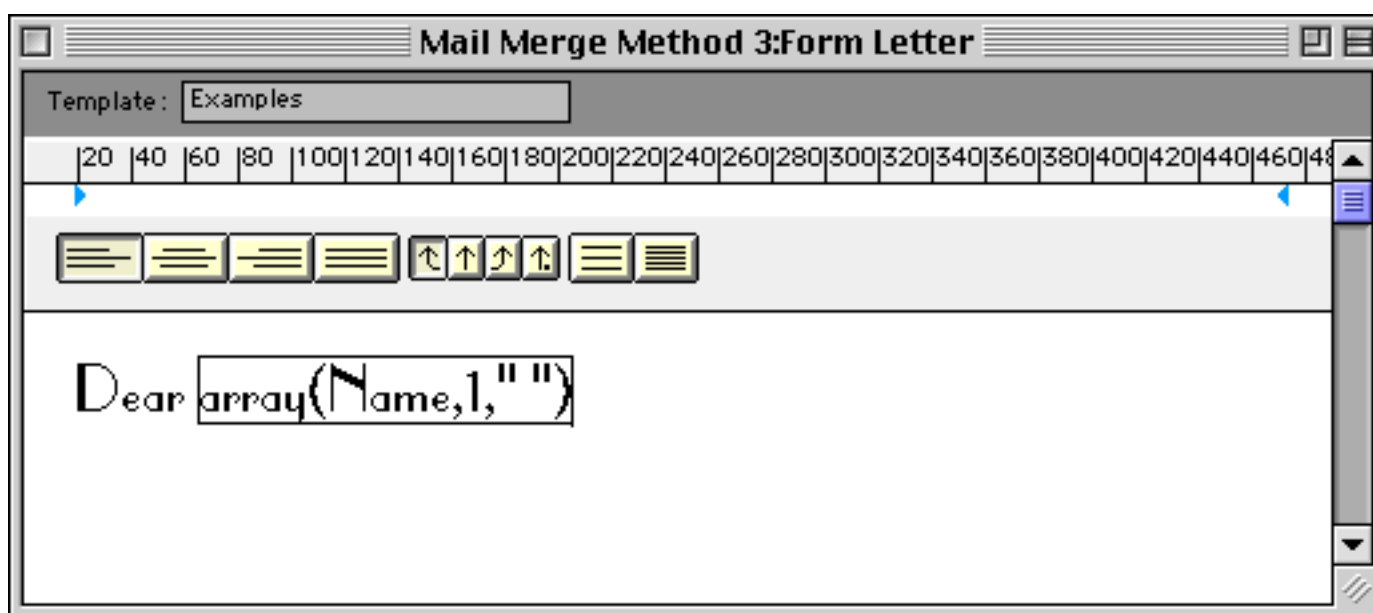
The problem is that it really is just a single formula, because the line break character has the **Formula Merge** style set. To fix this problem, select the line break character (as shown below) and un-check the **Formula Merge** style.



To insert a complete formula into the document, use the **Insert Formula** command in the Text menu. A dialog box appears allowing you to enter a formula.



Type the formula into the dialog. You can use the **Fields** and **Functions** menus to help you enter the formula. When you press **OK**, the formula will appear in the document, and it will already be in the **Formula Merge** style.



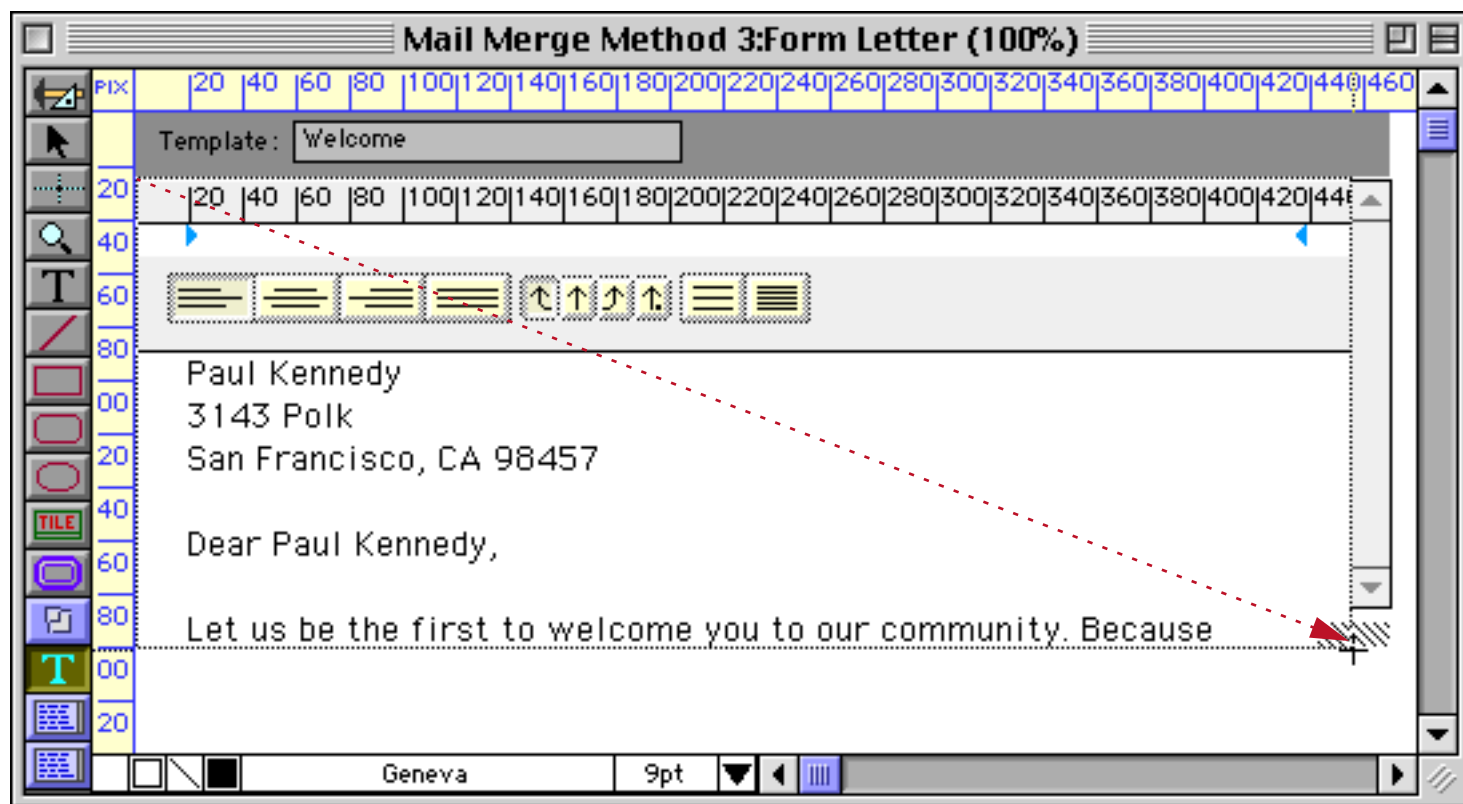
This particular formula extracts the first name from the **Name** field (to produce, for example, **Dear Mary**). The formula may use any field or function available in Panorama, including lookups to grab data from other databases. See "[Using Formulas to Display Text](#)" on page 621 to learn about some useful formulas for displaying text.

Forcing Merge Data to Update When Moving From Record to Record

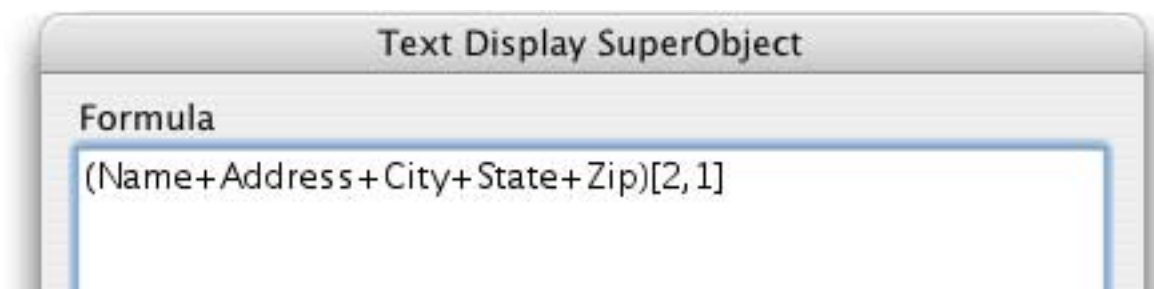
Mail merge documents are usually printed. If you display the document on the screen, you may think that it is broken because the merged data will not update as you move from record to record.

If displaying the merged data is important to you (as opposed to simply printing it) one solution is to overlay a Text Display SuperObject just underneath the Word Processor SuperObject. If it is configured in the way described below, the Text Display SuperObject will update whenever you move to a record. The Word Processing SuperObject will go along for the ride.

Start with the Word Processing SuperObject. Make sure it is positioned where you want it. Then select the Text Display tool and create a Text Display SuperObject on top. The new object should cover the entire Word Processor SuperObject except for the scroll bar.



The Text Display formula should be any text field followed by the text funnel `[2,1]`. This text funnel tells Panorama to take the field and extract the text from character 2 to character 1. Since character 2 is after character 1, the result is nothing, nada, zip. So our new Text Display SuperObject won't display anything, but it will try! In the process it will force the Word Processor SuperObject to update also.



There is one more step to complete this mini-project. Select the Text Display SuperObject and use the **Send To Back** command to move it behind the word processor (see "[Changing the Stacking Order](#)" on page 569). That's it. Now go to Data Access Mode and see that the data merged in the word processor updates as Panorama moves from record to record.

Word Processor Options

The SuperObject™ Word Processor Properties dialog is divided into several sections.



Document Storage: This section of the dialog specifies whether the document will be stored in a field, variable, or separate file that will be edited by this object. See [“Storing a Collection of Documents”](#) on page 698 and [“Setting up Storage for a Template Document”](#) on page 702 for more information about setting up these options.

Scroll Bars: This section controls whether the vertical scroll bar is displayed, and whether space is reserved for a grow box in the lower right hand corner of the object. The word processor object does not support a horizontal scroll bar. Instead, the margins automatically adjust to the width of the object.

Wrap at End of Line: If text is too long to fit on a single line, it will usually “wrap” around to the next line. However, if this checkbox is turned off, the text will not wrap. Instead, the text will be continue off the right edge.

Non-White Background: We recommend that you use this option if the Word Processor object is over a color (non-white) background. If this option is turned on, Panorama will temporarily display a white background behind the text while it is being edited. (If you don’t use this option, you’ll find that portions of the background will turn white as you edit anyway. The result is ugly and possibly confusing, so that’s why we recommend you use the **Non-White Background** option.)

Terminate When: This section controls which keys indicate that you have finished editing this item of text. The **Enter** key always indicates you are finished editing. You may also specify that the **Return**, **Tab**, **Up Arrow**, or **Down Arrow** keys terminate editing. Usually these options will be left disabled so that these keys may be typed into your word processing documents.

Borders: This section controls any borders that are displayed around the document. You may separately control the top, bottom, left and right borders, or click on the word **Borders** to turn all four on or off at once. If the **Shadow** option is checked a drop shadow will appear. If the **3D** option is checked a “three dimensional” border will appear around the object. The 3D border effect works best with a light gray background. (Note: You can control the background color for the entire form with the **Form Preferences** command in the Setup menu, see “[Form Background Colors](#)” on page 582.)

Update Variable Every Key: This option only works when the document is stored in a variable, not in a field or disk file. If this option is enabled, the Word Processor will update the value of the variable after every key is pressed. This is especially handy when the Word Processor is set up to trigger a procedure after every key or most keys (see next section).

Overflow: This option is used in conjunction with an overflow tile for printing documents that are more than one page long. See “[Printing Multiple Page Documents](#)” on page 724 for more information about this option.

Procedure: This section specifies what procedure is associated with this Word Processor object, and when that procedure will be triggered. To select or change the procedure associated with this object, use the pop-up menu. To disable the procedure, clear the checkbox.

There are three choices for triggering a procedure: **Every Key**, **Most Keys**, and **Termination**. The **Termination** option simply means that the procedure will be triggered when the user signals that he or she has finished editing the document by pressing the **Enter**, **Return**, **Tab**, **Up Arrow**, or **Down Arrow** keys. (Note: If the Word Processor is associated with a field, a procedure may be triggered even if no procedure is assigned in the Word Processor dialog. If the field has a procedure assigned to it in the design sheet, it will be triggered (see “[Automatically Triggering a Procedure](#)” on page 314). If there is no Termination procedure and no design sheet procedure, the **.ModifyRecord** procedure [if any] will be triggered. See “[.ModifyRecord](#)” on page 383 of *Formulas & Programming*.)

If the **Every Key** option is checked, the procedure will be triggered every time the user presses a key. For example, you might use this option if you wanted to count the user’s keystrokes.

If the **Most Keys** option is checked, the procedure will be triggered after every key when the user types slowly, but will not be triggered for each key when the user types several characters quickly in a row. The procedure will not be triggered until the user pauses in his or her typing. This option often works as well as the **Every Key** option but usually appears much smoother and faster to the user because the procedure is not being triggered as frequently while the user types. Possible applications for the **Most Keys** option include counting the characters or words being edited, performing a calculation (metric conversion, for example), checking spelling, etc.

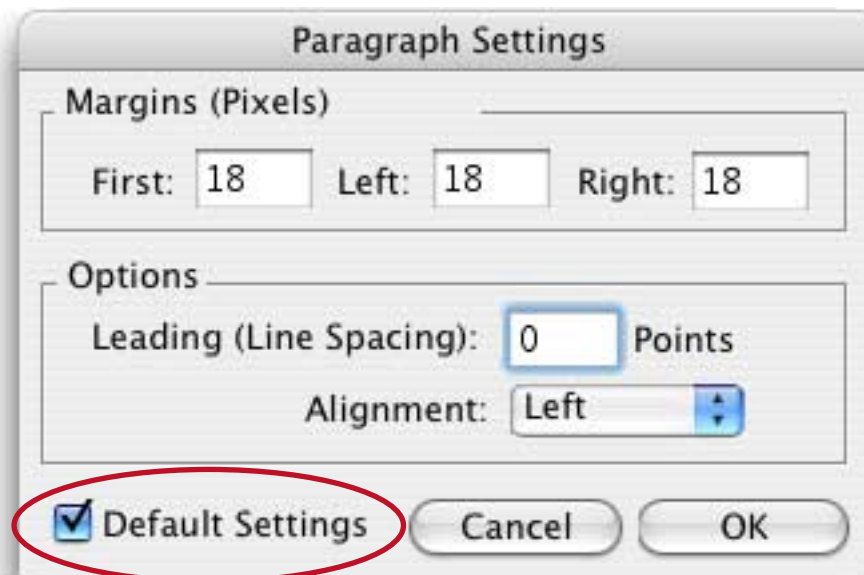
Auto Caps: This section only appears if the Word Processor is associated with a variable or file on disk. Use the pop-up menu to control automatic capitalization of the text as it is entered. You can force the text to all upper case (ABC), word caps (Abc), or capitalization of the first letter in each sentence. If the Word Processor is associated with a field, the Word Processor will use the Auto Caps setting for that field (set in the design sheet or the Field Preferences dialog.)

Use Field Attributes: This section only appears if the Word Processor is associated with a variable or file on disk. You can use this if you would like the Word Processor to use the attributes assigned to one of the fields in your database. If you select a field with the pop-up menu, the Word Processor will use that field’s settings for Input Pattern, Range, Clairvoyance, Space Bar Tab and Duplicates. Of course if the Word Processor is associated with a field, the Word Processor will always use the attributes for that field (set in the design sheet or the Field Preferences dialog.)

Default Font and Text Size for New Documents

When you create a new document, the font, size, indents, tabs and line spacing are all set to default values. The default values for the font and text size are set by setting the font and size of the object in graphics mode. For example, if you want new documents to default to 14 point Palatino, go to graphics mode, select the word processor object, and select Palatino from the **Font** submenu and 14 from the **Size** submenu (or use the Graphic Control Strip, see “[Font](#)” on page 529).

To set the default indents, tabs and line spacing, first set up these properties the way you want them (using the ruler). Once the indents, tabs and line spacing are set up, open the Paragraph Settings dialog (in the Text menu). Check the **Default Settings** checkbox, then press the **OK** button.



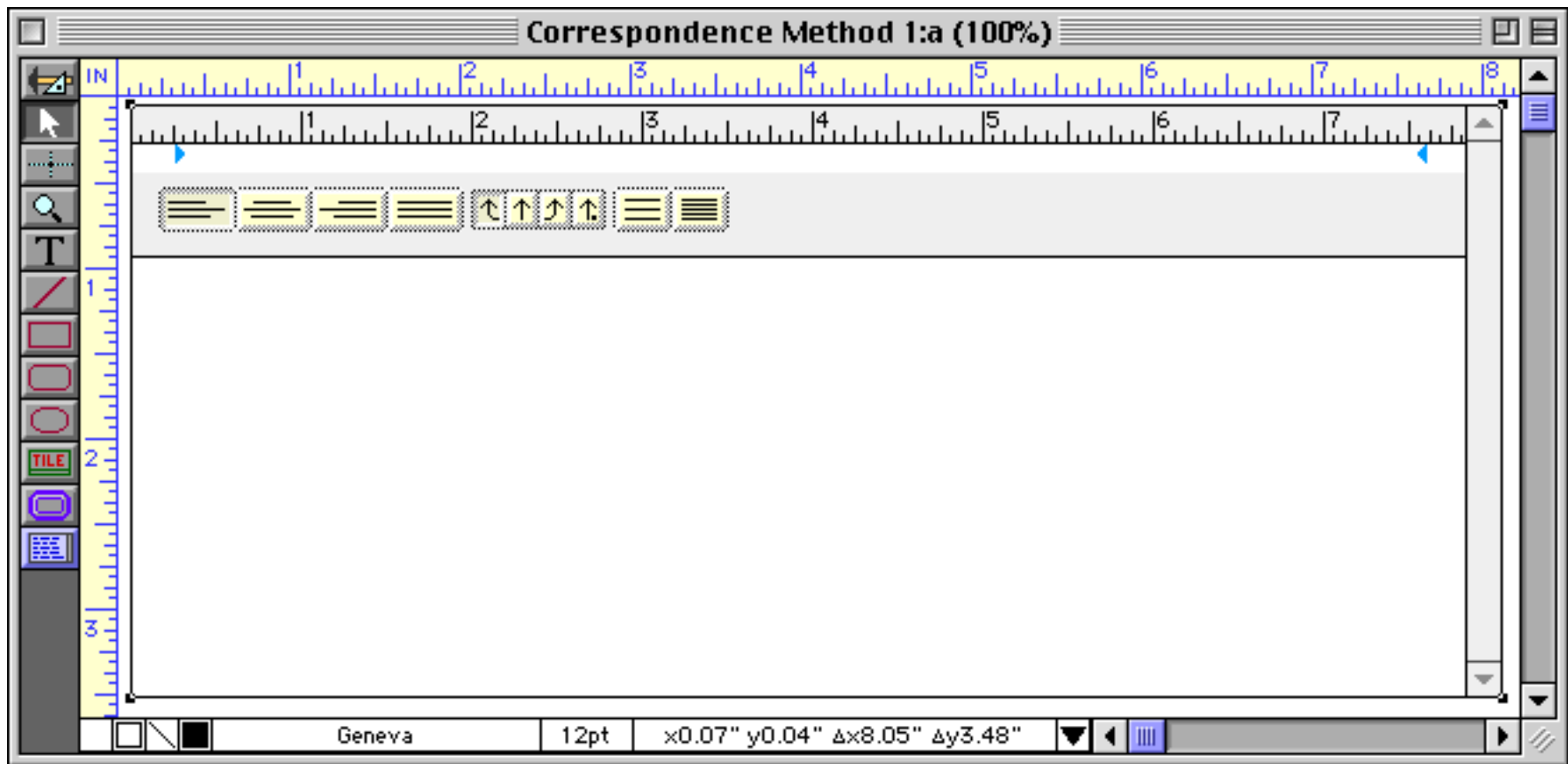
Note: If a document consists entirely of text using the default settings (no font changes, style changes, indent changes, etc.), Panorama will save only the text without any style information. This makes the document much smaller. If you later change the default settings, this document will reflect the new defaults the next time it is displayed or opened for editing.

Printing Word Processor Documents

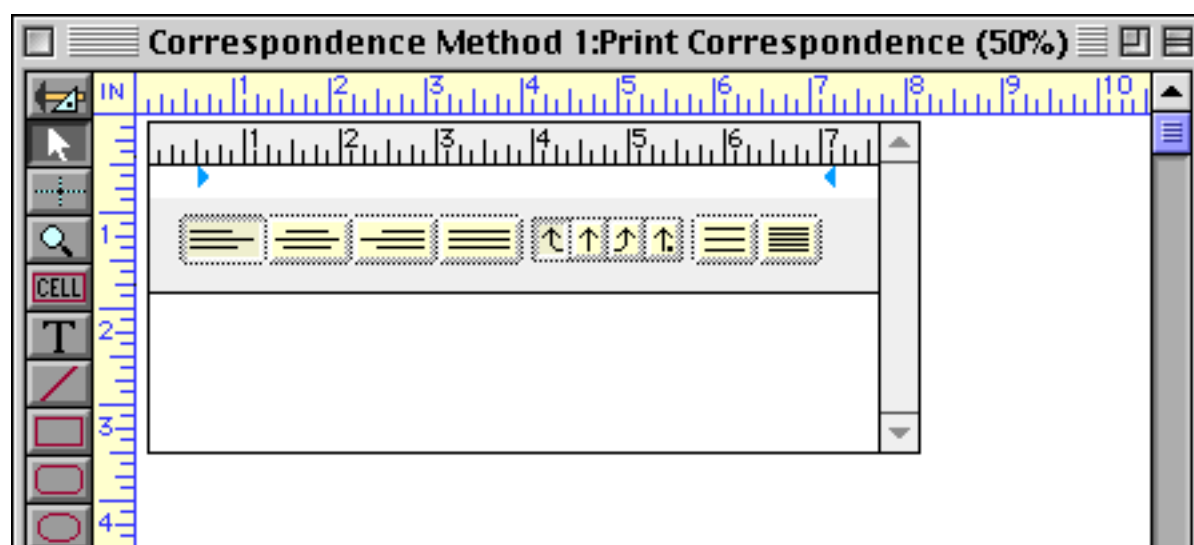
The primary use for the word processor is usually to create printed documents — letters, memos, correspondence etc. In this section we will cover some tips for printing these documents.

Normally when a document is printed you won't want any extra doo-dads — no ruler, no borders, no scroll bar. When you are displaying and editing the document, however, you need these. You could change these settings each time you want to print. A better method is to create two separate forms: one set up for editing documents, and one for printing.

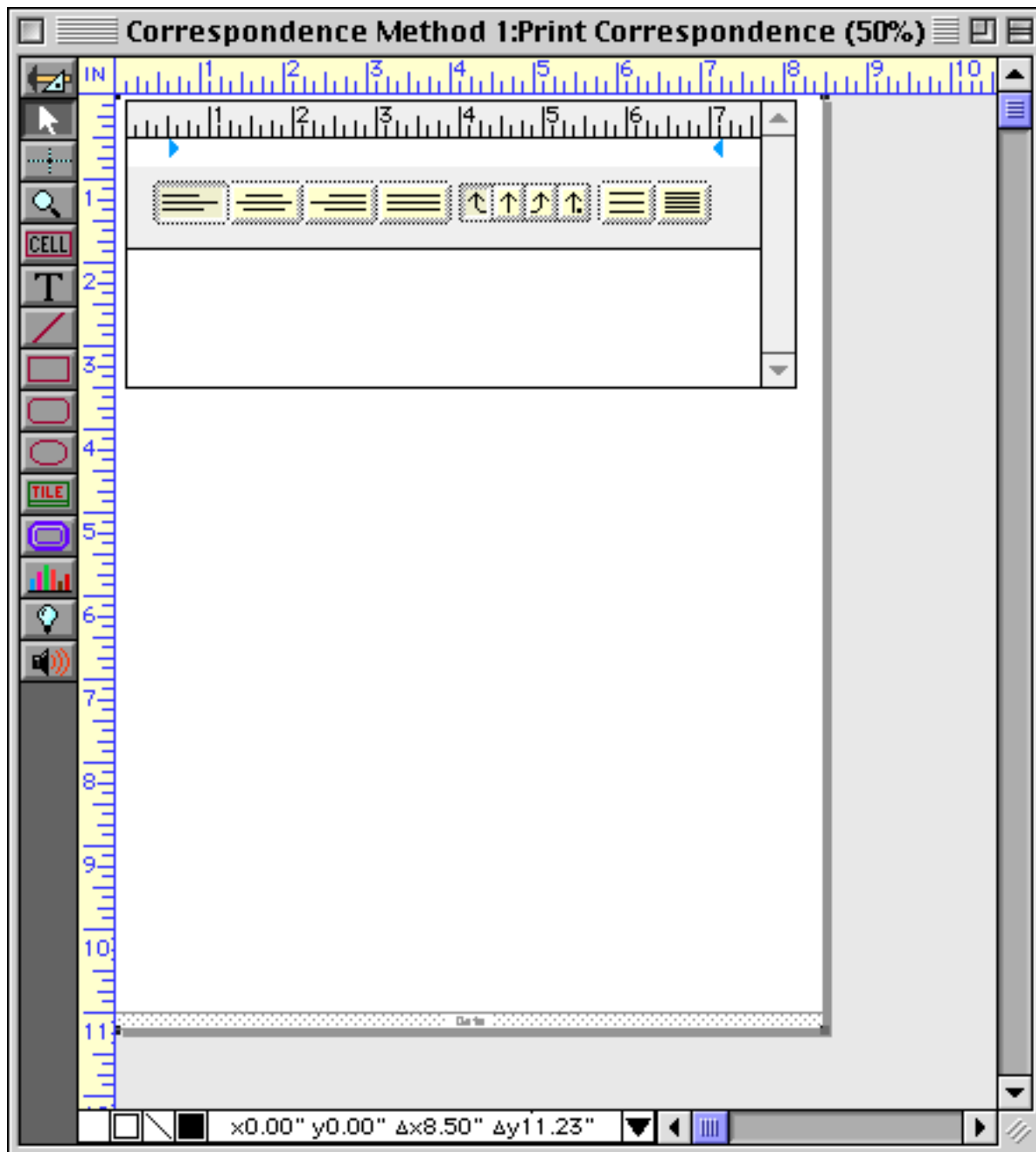
To illustrate this idea we'll start with a Word Processor SuperObject that has been set up for editing a document (see "[Creating and Working With Word Processor SuperObjects](#)" on page 673).



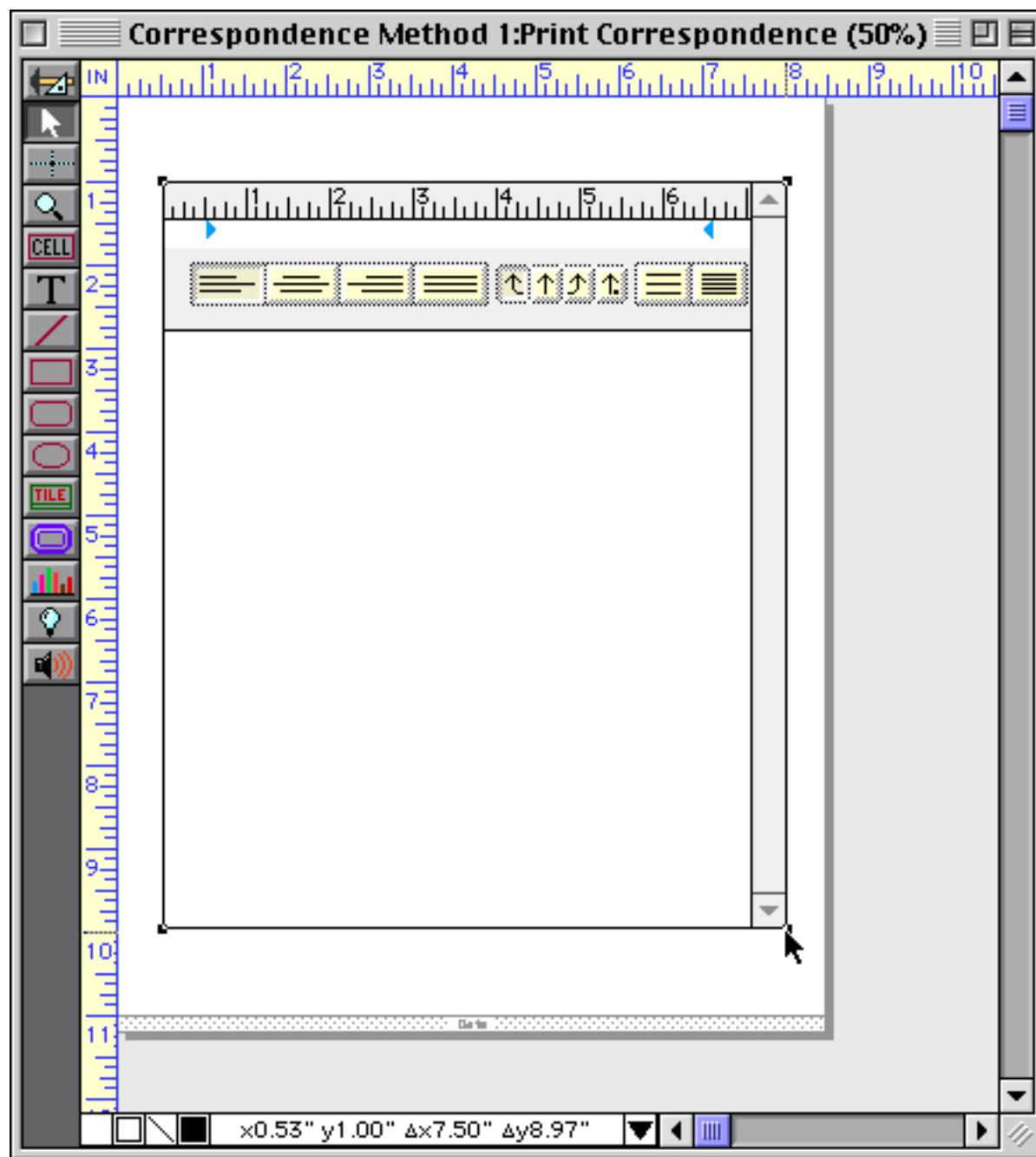
Select the object (as shown above) and use the **Copy** command to copy it onto the clipboard (see "[Cut, Copy, and Paste](#)" on page 566). Then use the **New Form** command in the View menu to create a new form (see "[Creating a New Form](#)" on page 487), and **Paste** the Word Processor SuperObject into the new form. Since you'll probably want the printed correspondence to fill an entire page, use the **Magnify** tool to zoom out and make the an 8 1/2 by 11 inch area visible (see "[Magnification and Reduction](#)" on page 579).



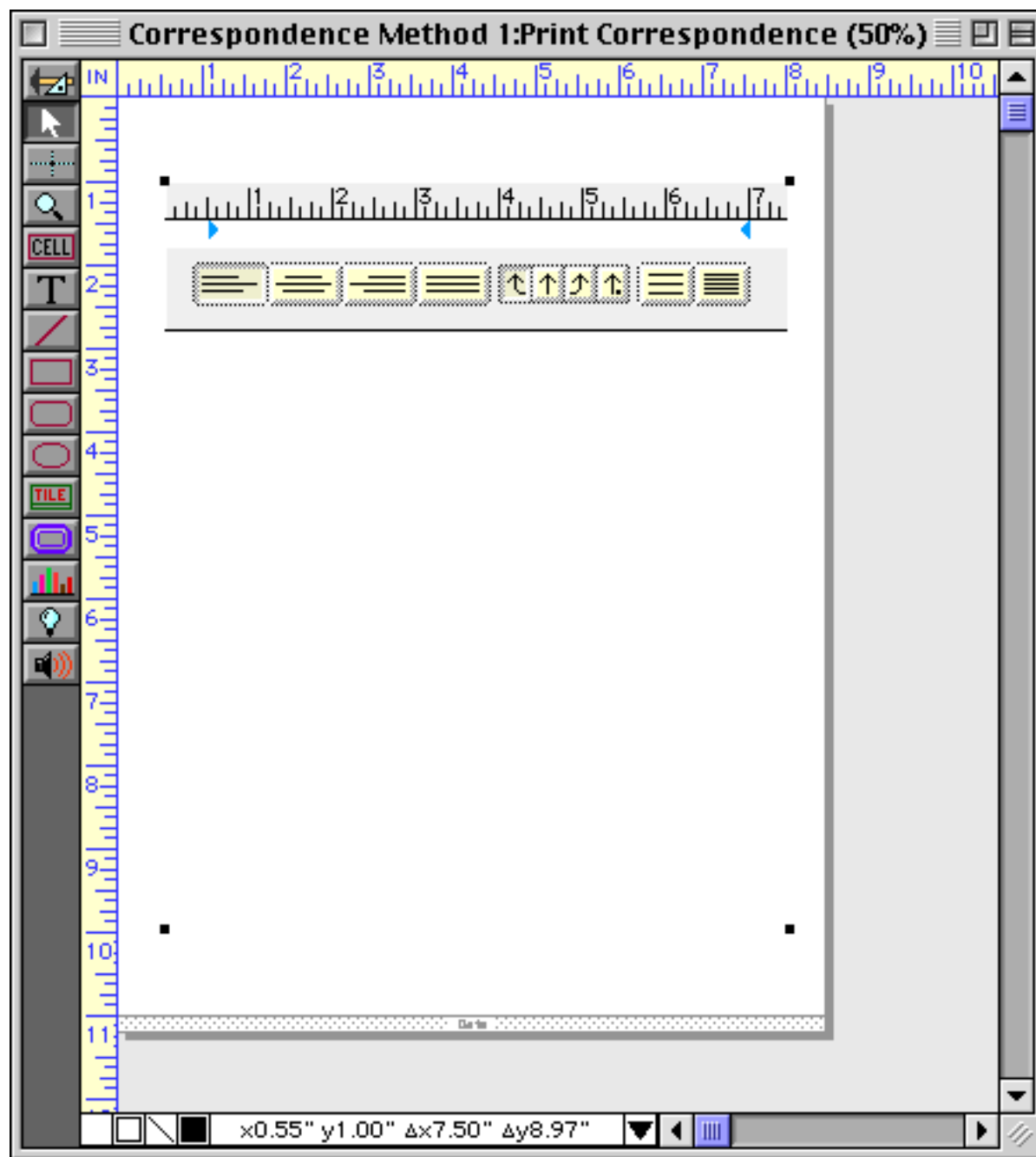
Next, use the **Tile** tool to create a data tile that is 8 1/2 by 11 inches (see “[Working with Tiles](#)” on page 1062). You can use the Dimensions dialog to help you set the exact dimensions (see “[Viewing and Setting Exact Object Dimensions](#)” on page 512). (You may need to adjust these dimensions later depending on your printer.)



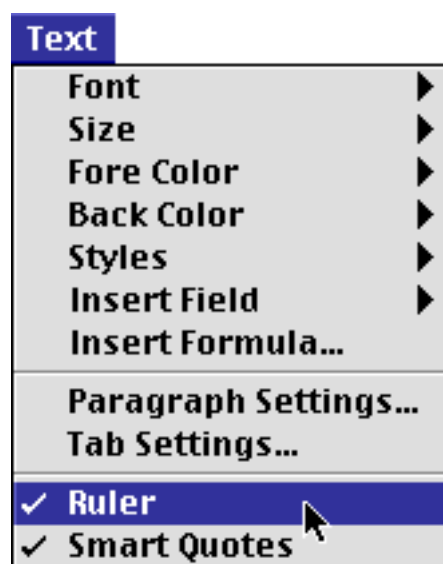
Now expand and position the Word Processor SuperObject on the data tile just as you would like the final correspondence to appear on the printed page.



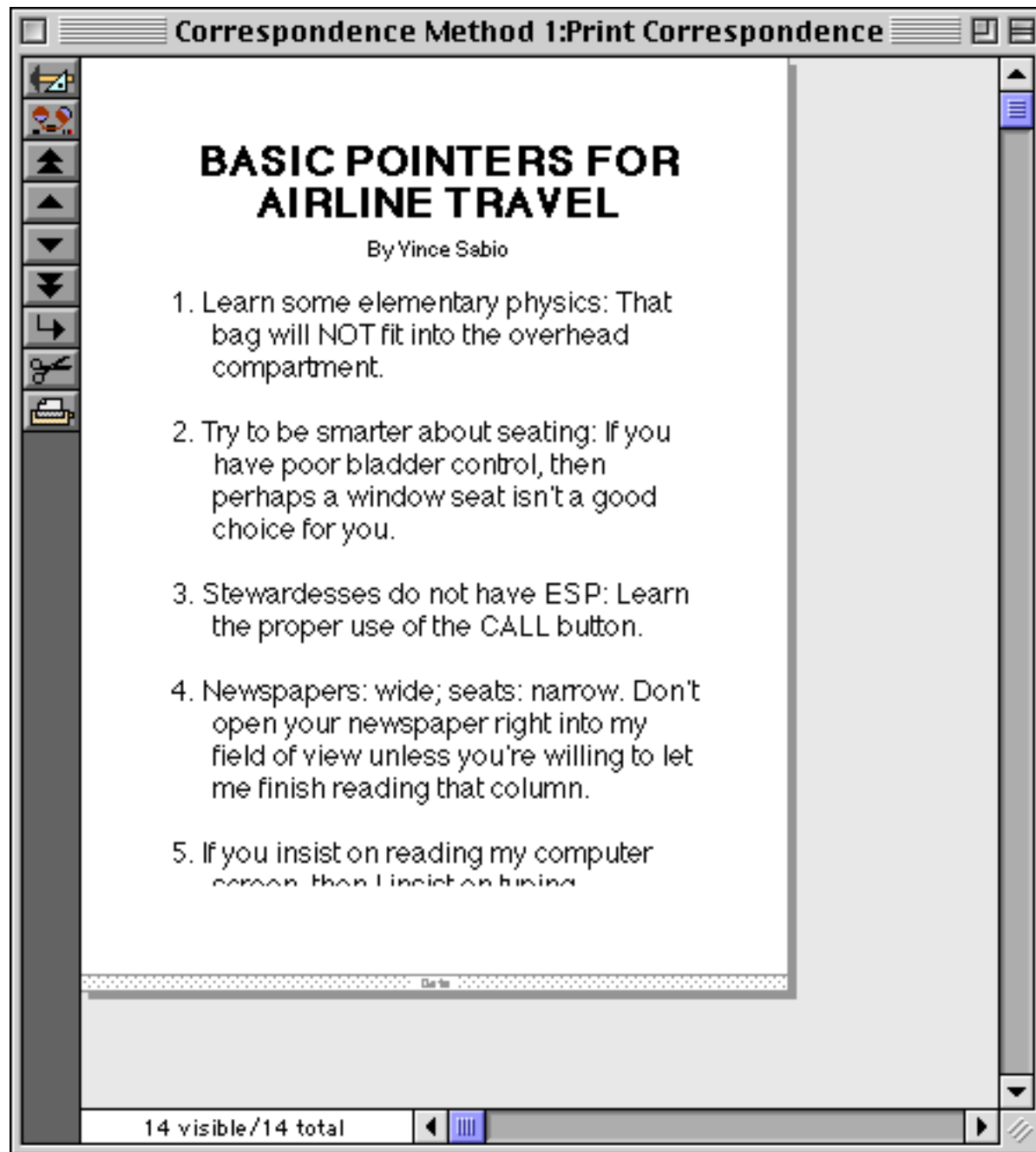
The next step is to double click on the word processor to open the configuration dialog. Use the dialog to turn off the borders and the scroll bar (see “[Word Processor Options](#)” on page 716).



The final step is to turn off the ruler. To do this, switch into Data Access Mode. Click on the word processor to edit the text, then use the **Text** menu to disable the ruler.



Voila! The form is now ready to print.



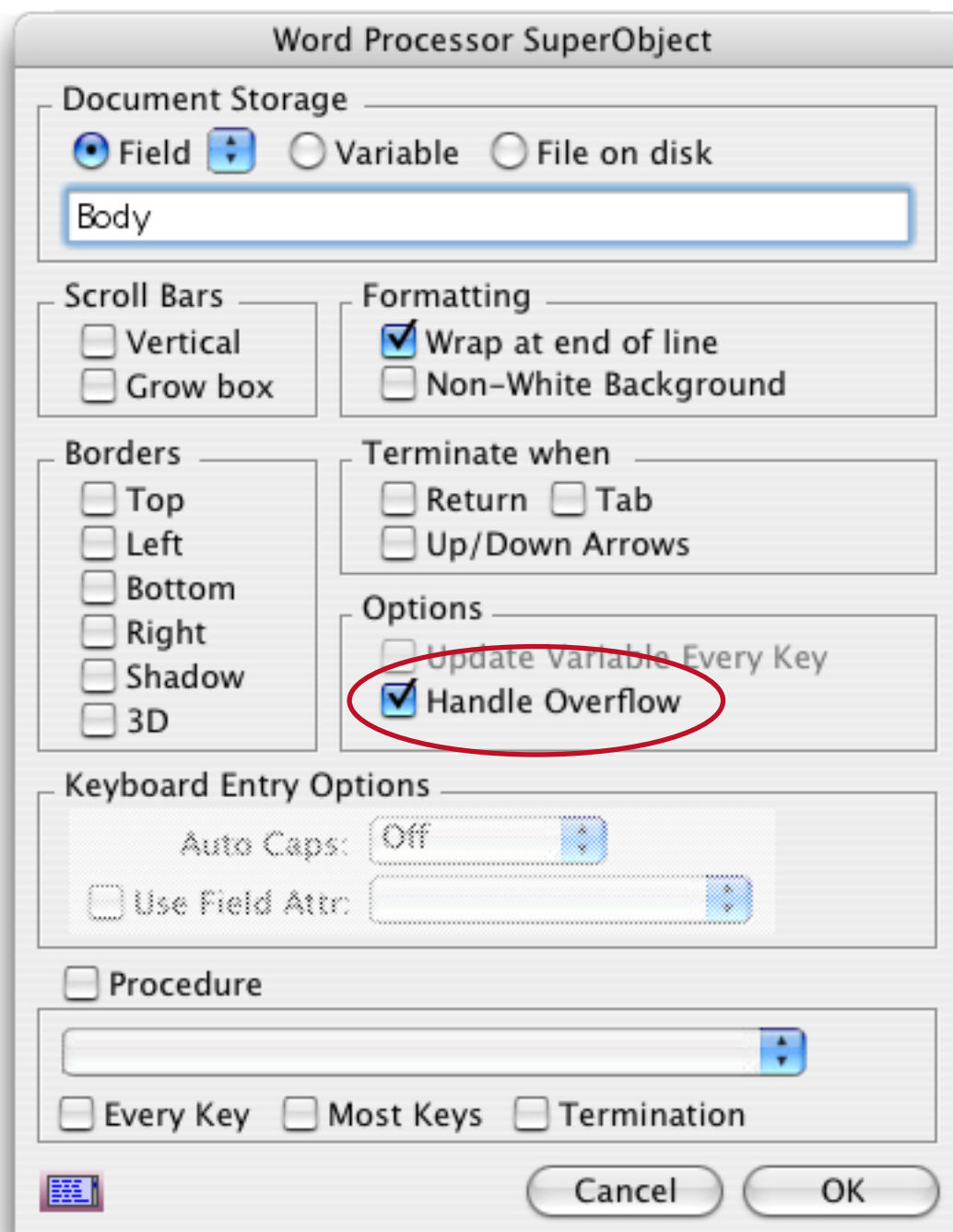
Edit all your documents in the original form, which still includes the ruler and scroll bar. When you need to print switch to the new form, which prints without these extra items. If you like, you can add a procedure to your database to automatically switch forms and print. Here's one way this procedure could be written.

```
local windowOne
windowOne=info("windowname") /* remember where we came from */
goform "Print Correspondence" /* switch windows */
printonerecord dialog /* or print, if you want to print all selected records */
goform windowOne /* switch back to original window */
```

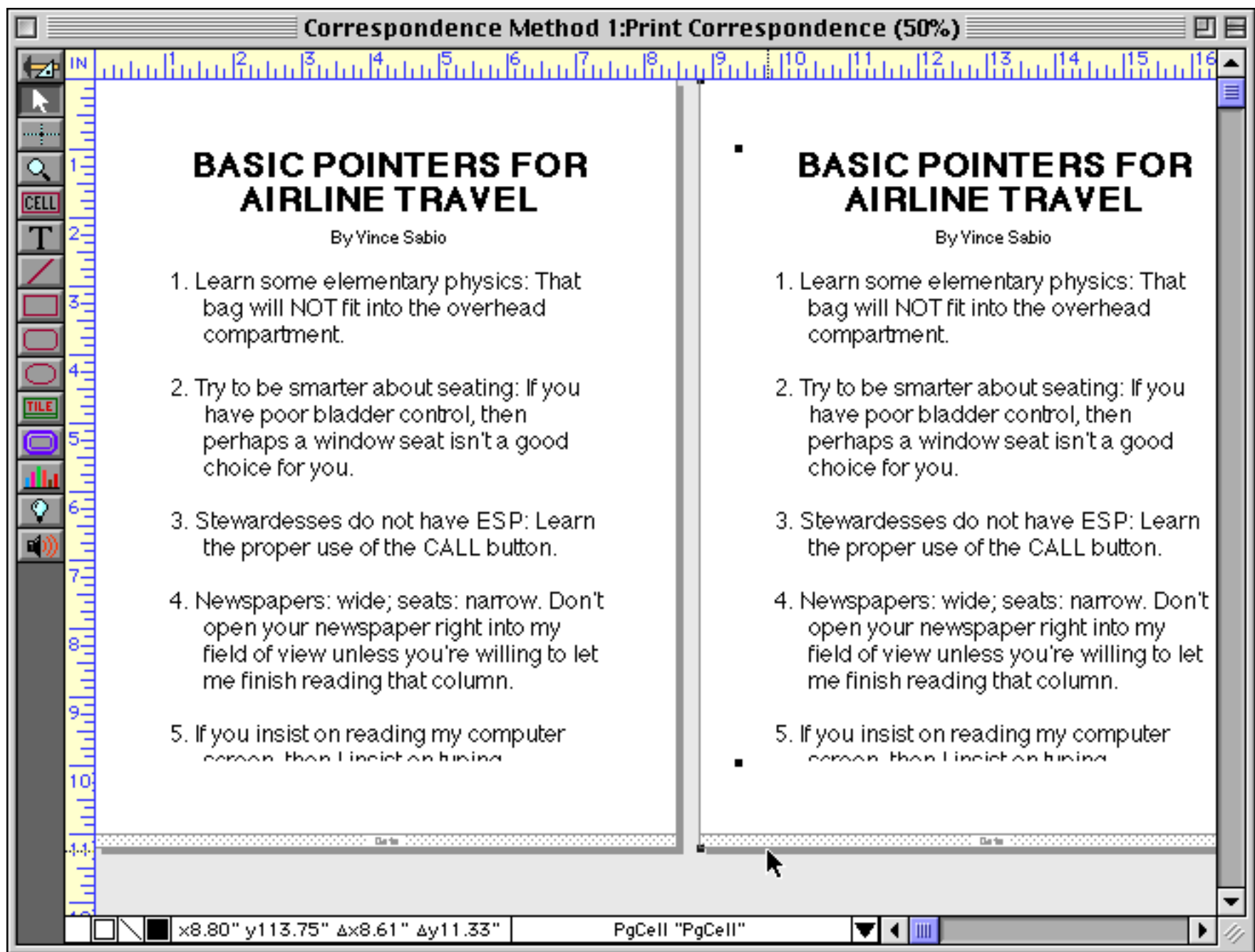
Printing Multiple Page Documents

The technique described in the previous section works fine for single page documents. Of course, many documents are more than one page long. In this section we will extend the example to allow the printing of multiple page documents.

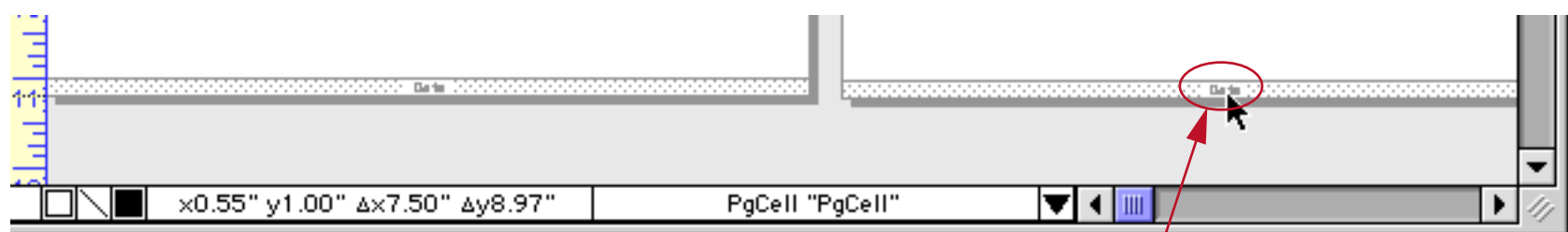
Start with the form created in the previous example, and switch back to Graphic Design Mode. Double click on the word processor. In the configuration dialog, enable the **Handle Overflow** option, then press **OK**.



Now choose **Select All Objects** from the Edit menu. While holding down the **Option** key (Macintosh) or **Alt** key (Windows), drag a copy of all the objects on the form to an empty spot (see “[Drag Duplicating](#)” on page 561).

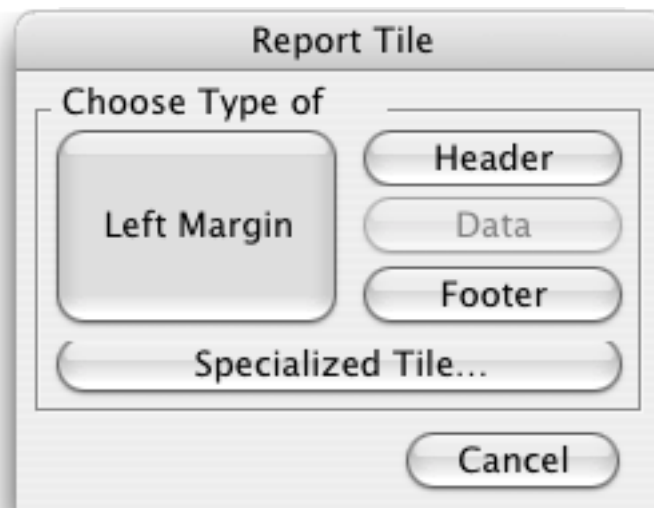


Now we need to turn the duplicate **Data** tile into an **Overflow** tile (see “[Printing Data that Overflows a Page](#)” on page 1116). To do that, double click on the word **Data** in the middle of the drag bar at the bottom of the tile.

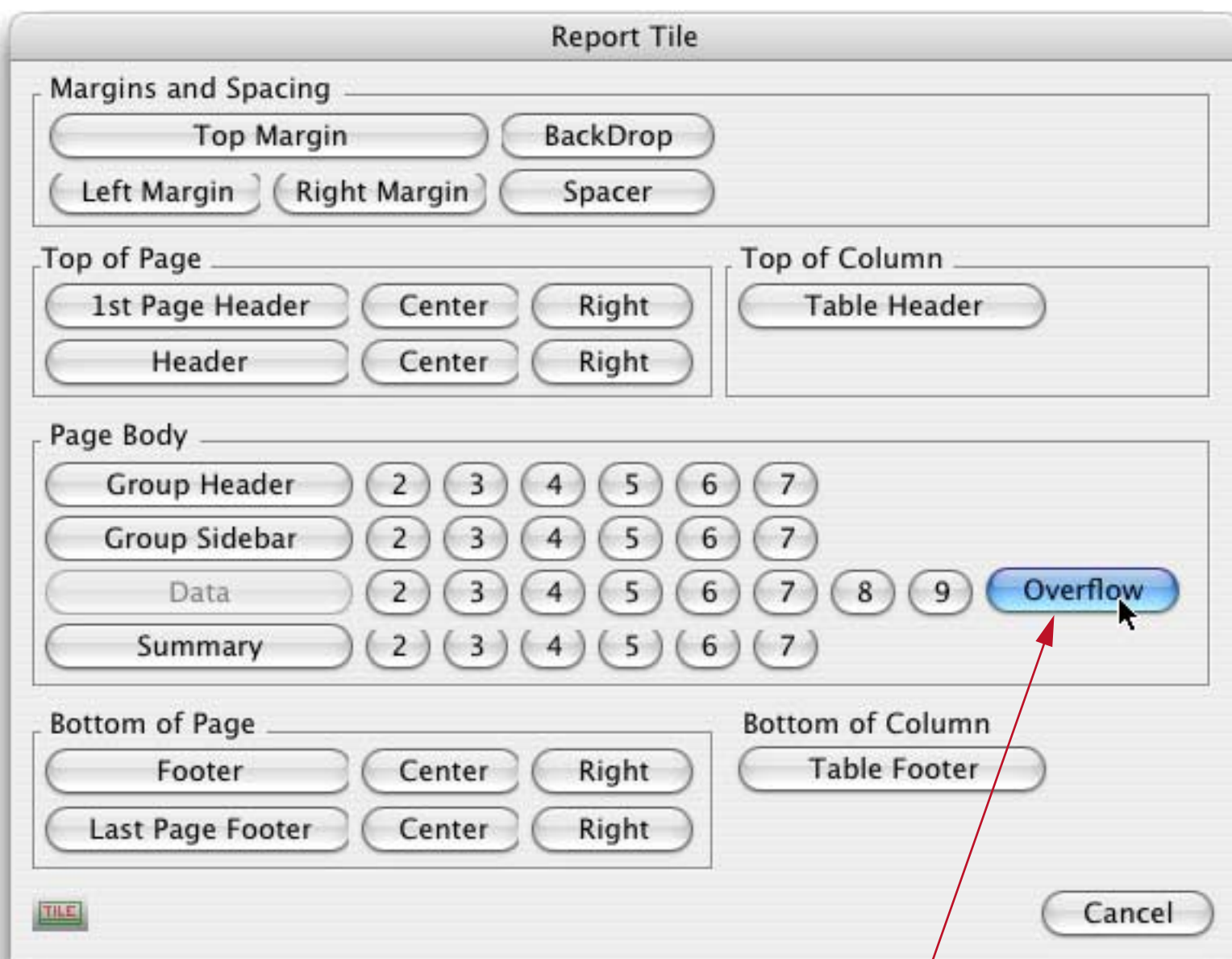


double click to configure tile

This opens the tile configuration dialog (see “[Working with Tiles](#)” on page 1062).



Click on the **Specialized Tiles** button to open a larger dialog. This dialog has over 40 different kinds of tiles to choose from. Pick the **Overflow** tile, which is activated with the button shown in the illustration below.



overflow tile

That’s all there is to it. The form will now automatically print as many pages as the document requires — 1, 2, 3, or 1,000! For more information on overflow printing see “[Printing Data that Overflows a Page](#)” on page 1116.

Using the Mini Correspondence Wizard

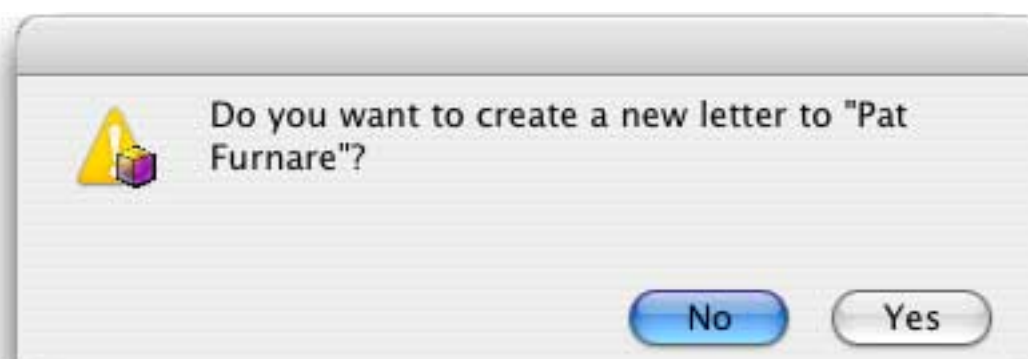
Panorama includes a pre-built database for handling general word processing chores — the **Mini Correspondence** wizard. This database may be used for general correspondence (letters, memos, etc.) and to create mail merge letters that are customized and sent to a group of recipients. You can use the **Mini Correspondence** wizard as is or you can modify it or even take components of the wizard and include them in your own databases.

Creating a New Letter

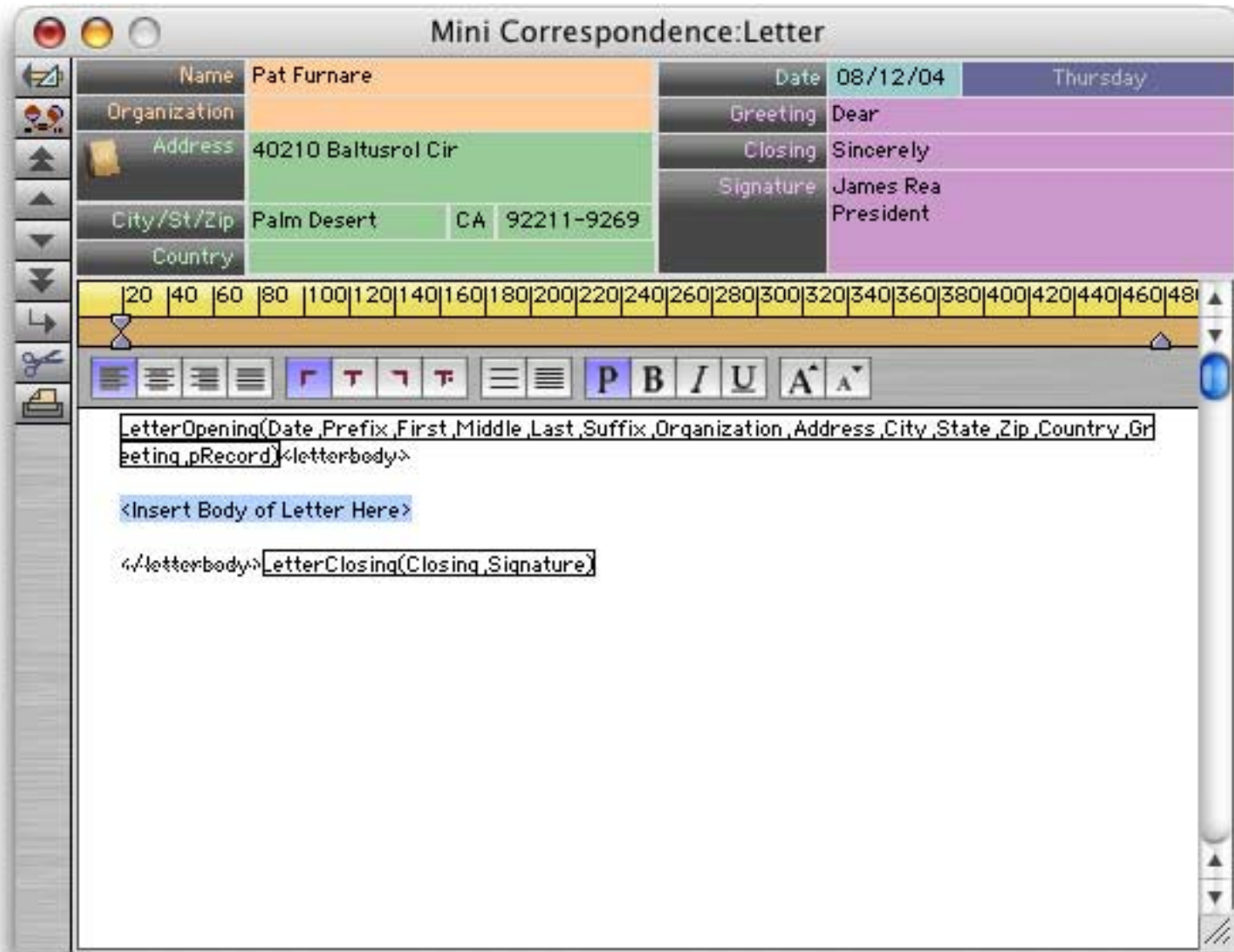
One of the most powerful features of the **Mini Correspondence** wizard is that using “Generic Fields” it can be linked with other databases that contain names and addresses (see “[“Generic” Fields](#)” on page 230). For example, suppose that you have looked up **Pat Furnare** using the **White Pages** wizard (see “[White Pages](#)” on page 73 of *Wizards & Demos*).



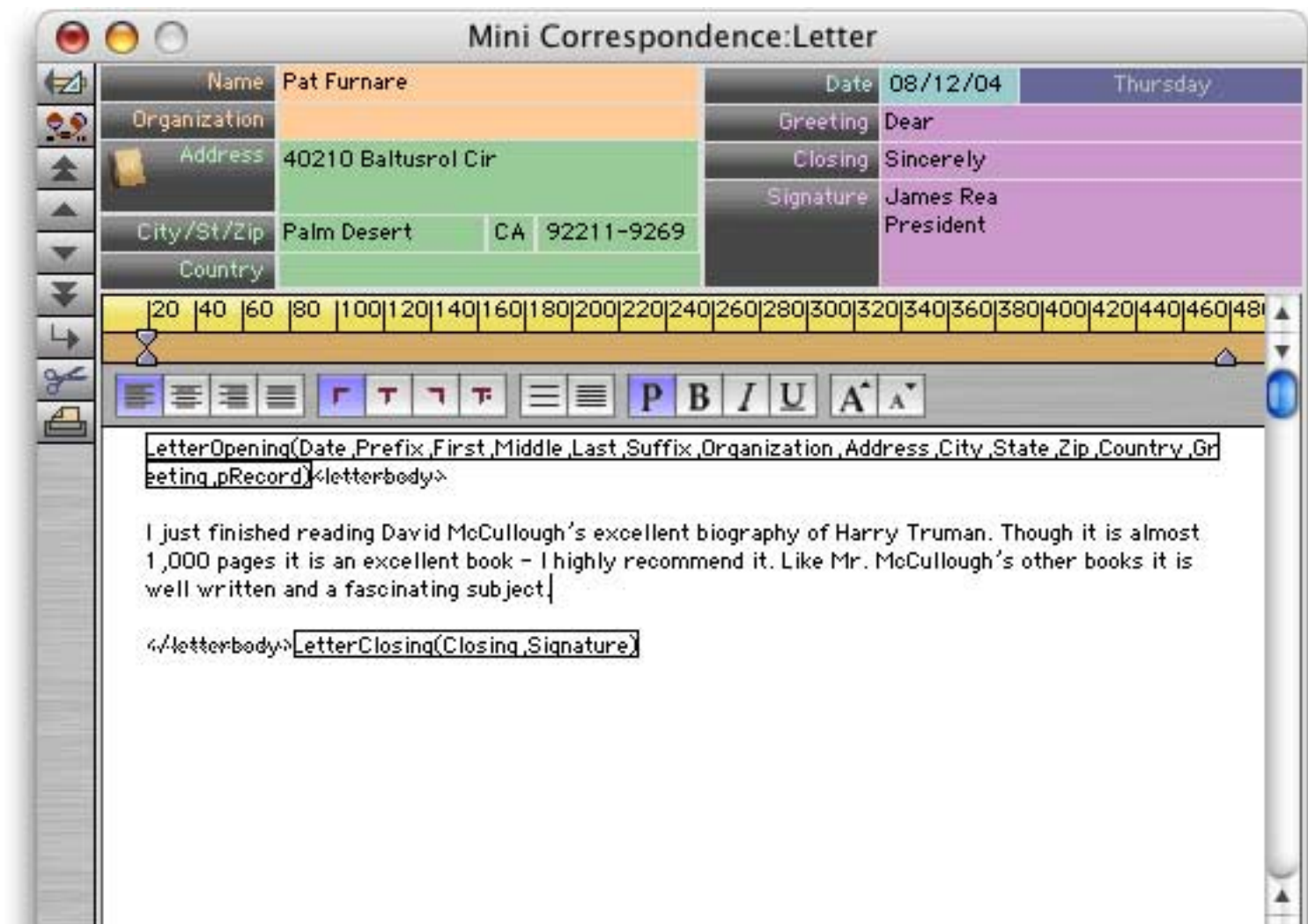
To write a letter to Pat, click on his entry in the **White Pages** window. Then choose **Mini Correspondence** from the **Mini Applications** submenu of the **Wizards** menu. The wizard will open and ask you if you want to write a letter to this person.



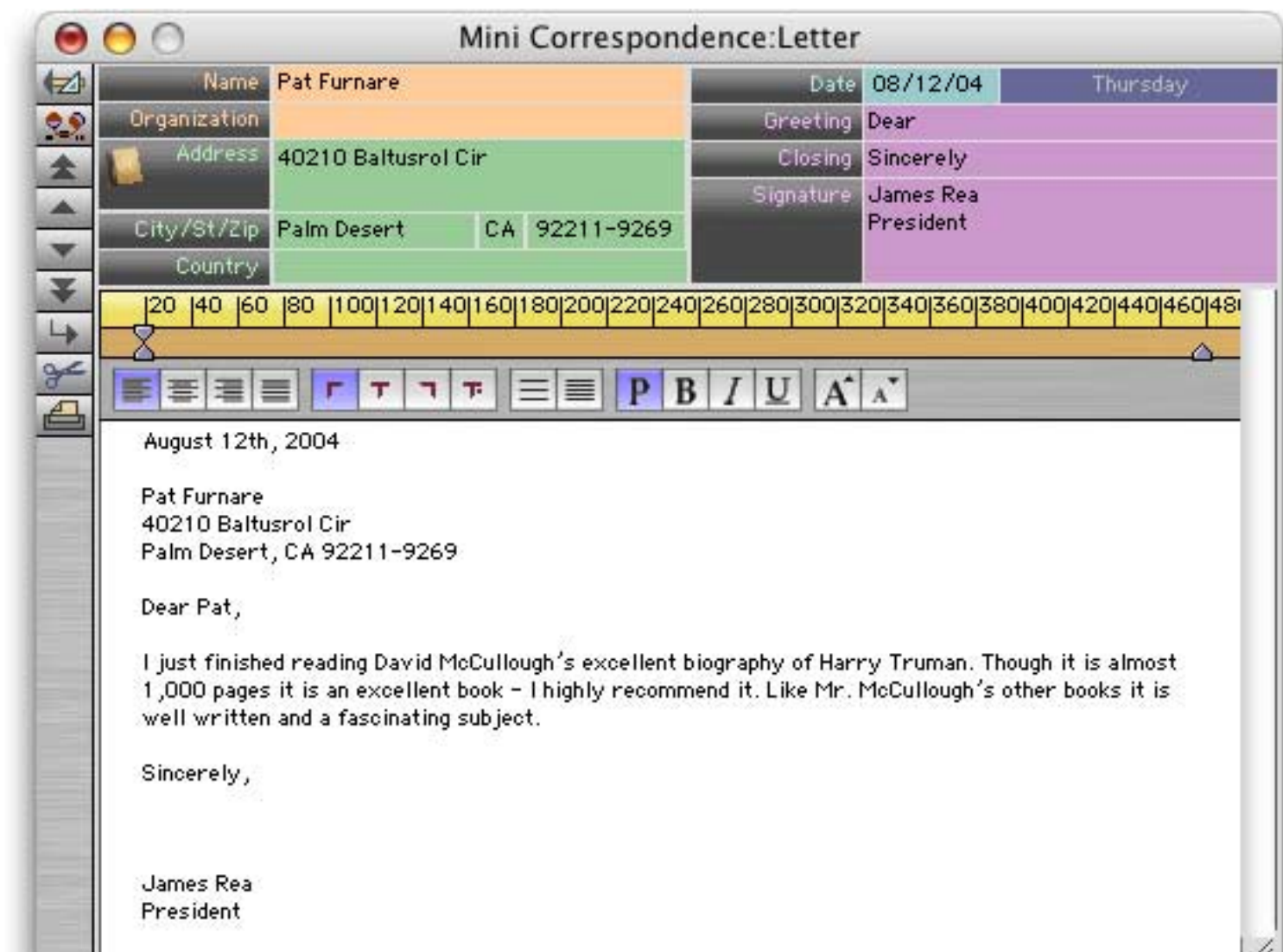
When you press **Yes**, the wizard will create a new letter with Mr. Furnare's name and address.



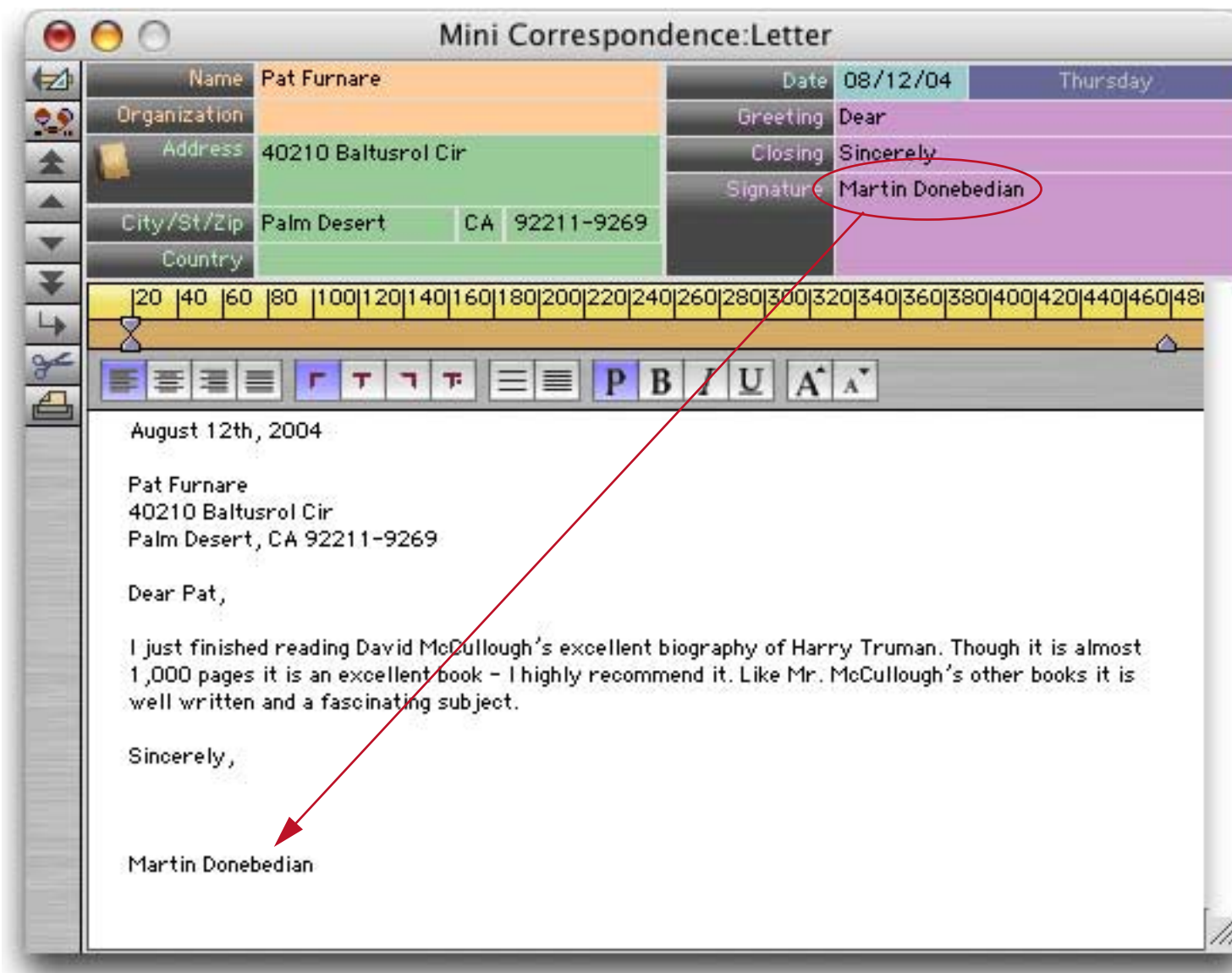
The opening and closing sections of the letter have been created with some incomprehensible looking formulas — just ignore those for now and start typing in the body of the letter.



When you press the **Enter** key you'll see the finished letter.

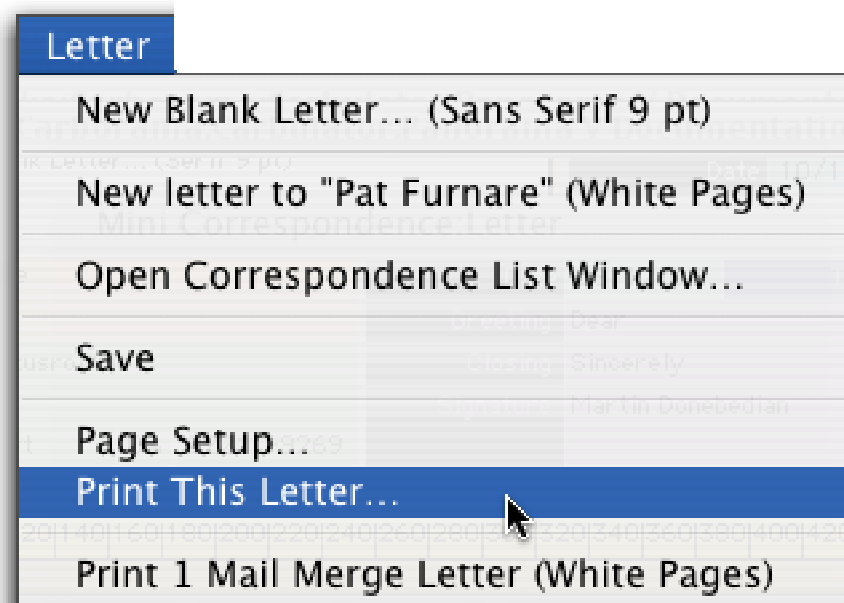


If this is the first letter you have created you'll probably want to customize the signature. When you enter the signature at the top of the window the wizard will automatically change the letter itself (in fact changing any of the fields at the top of the window will change the letter).

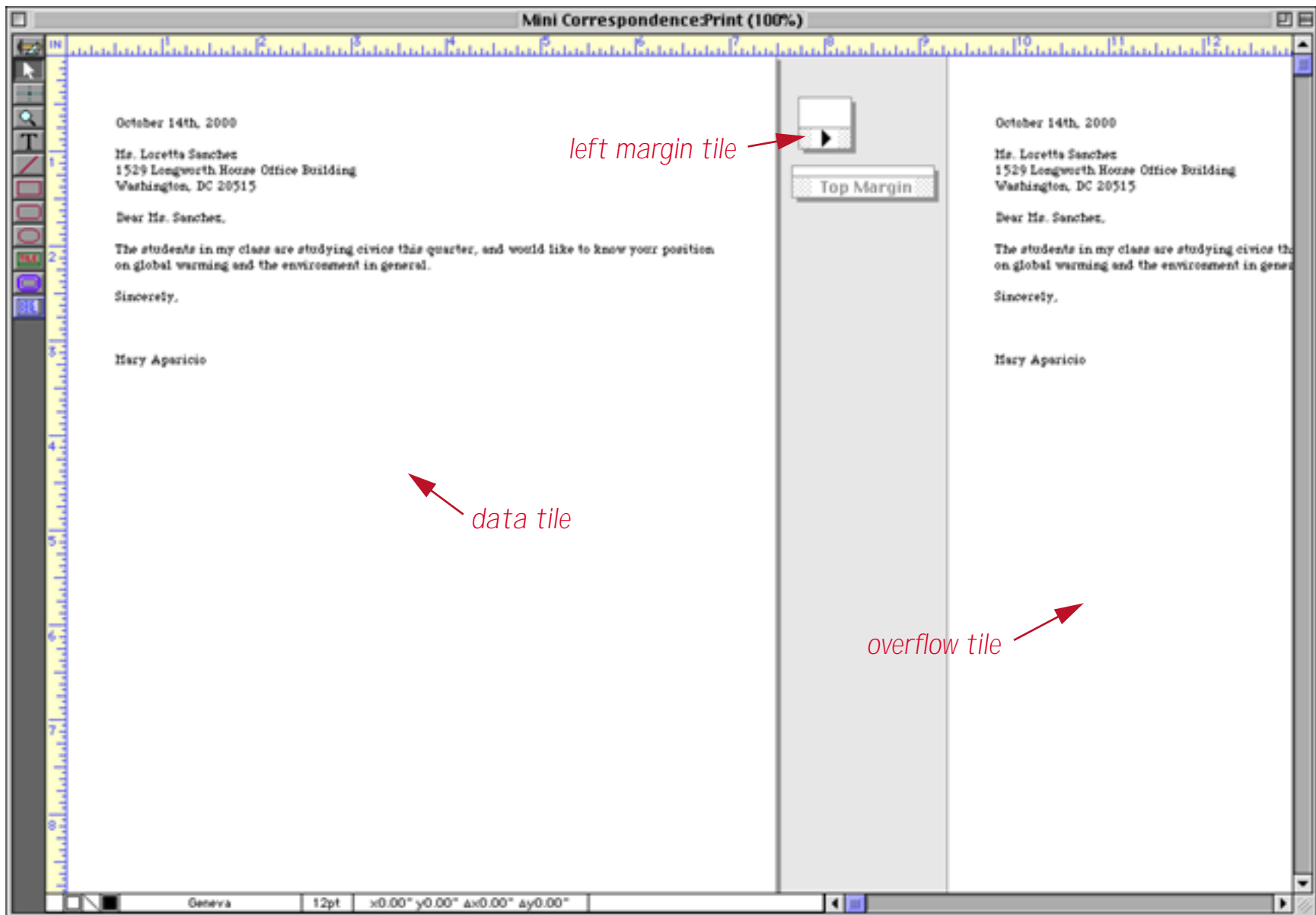


Printing a Letter

To print the letter choose **Print This Letter...** from the Letter menu. (You'll probably also want to save the letter at this point. You can use the **Save** command in the Letter menu or in the regular File menu. The **Save** command saves all of the letters in the entire database, not just the current letter.)



The wizard uses a form called **Print** to print the letter. You can customize this form by opening it with the **View** menu or by choosing **Edit Print Form** from the **Setup** menu. The **Print** form has a data tile and overflow tile to allow it to print multi page letters (see See “[Printing Multiple Page Documents](#)” on page 724). By editing this form you can adjust the margins and/or add your logo to the printed letter. When you are done be sure to close the form and save the database.

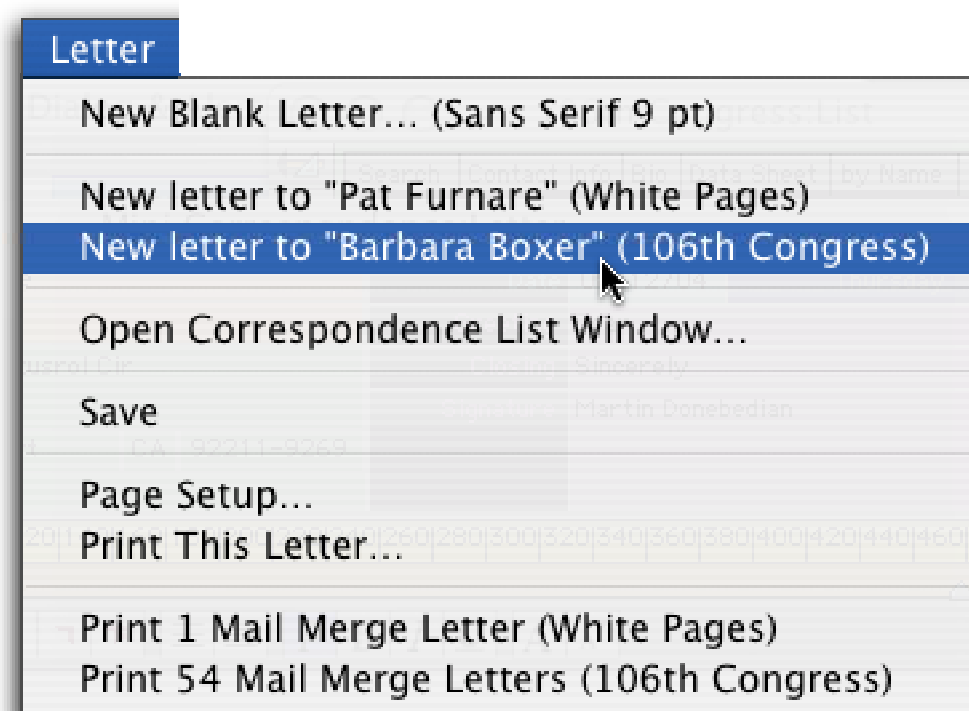


Printing a Mail Merge Letter

The wizard can also print a single letter over and over again for sending to multiple recipients — for example we could send a personalized letter to every congressional member from California. For this example we'll use the **106th Congress** database that is included in the Panorama example files. The first step is selecting the members of congress from California (see "[The Find/Select Dialog](#)" on page 336). As you can see there are 54 members in the California delegation.



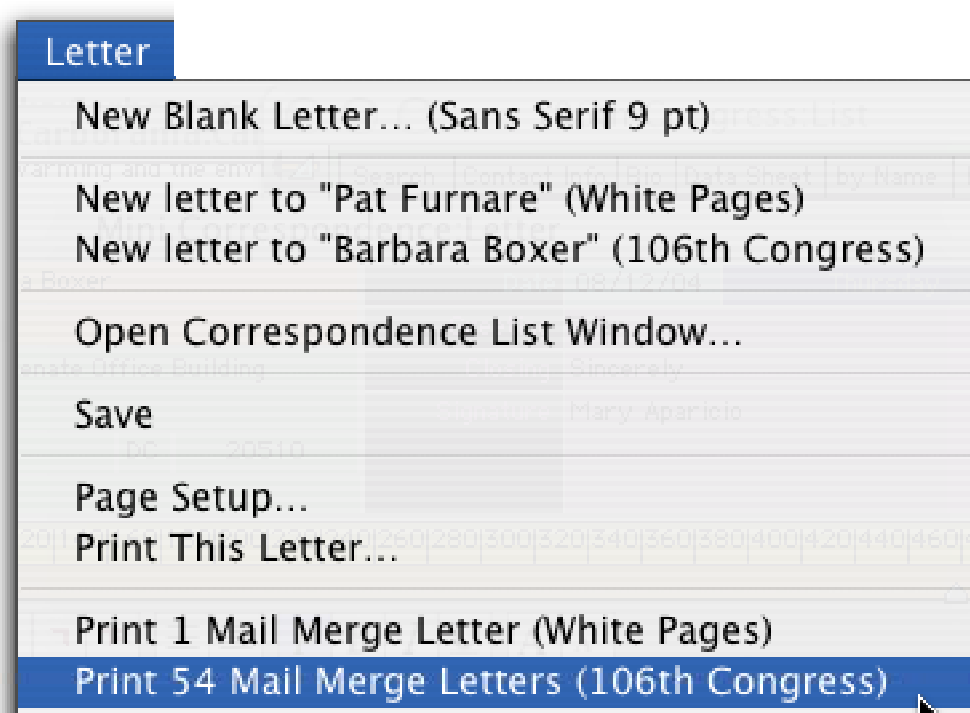
Now go back to the **Mini Correspondence** wizard, then pull down the Letter menu and create a new letter to Barbara Boxer.



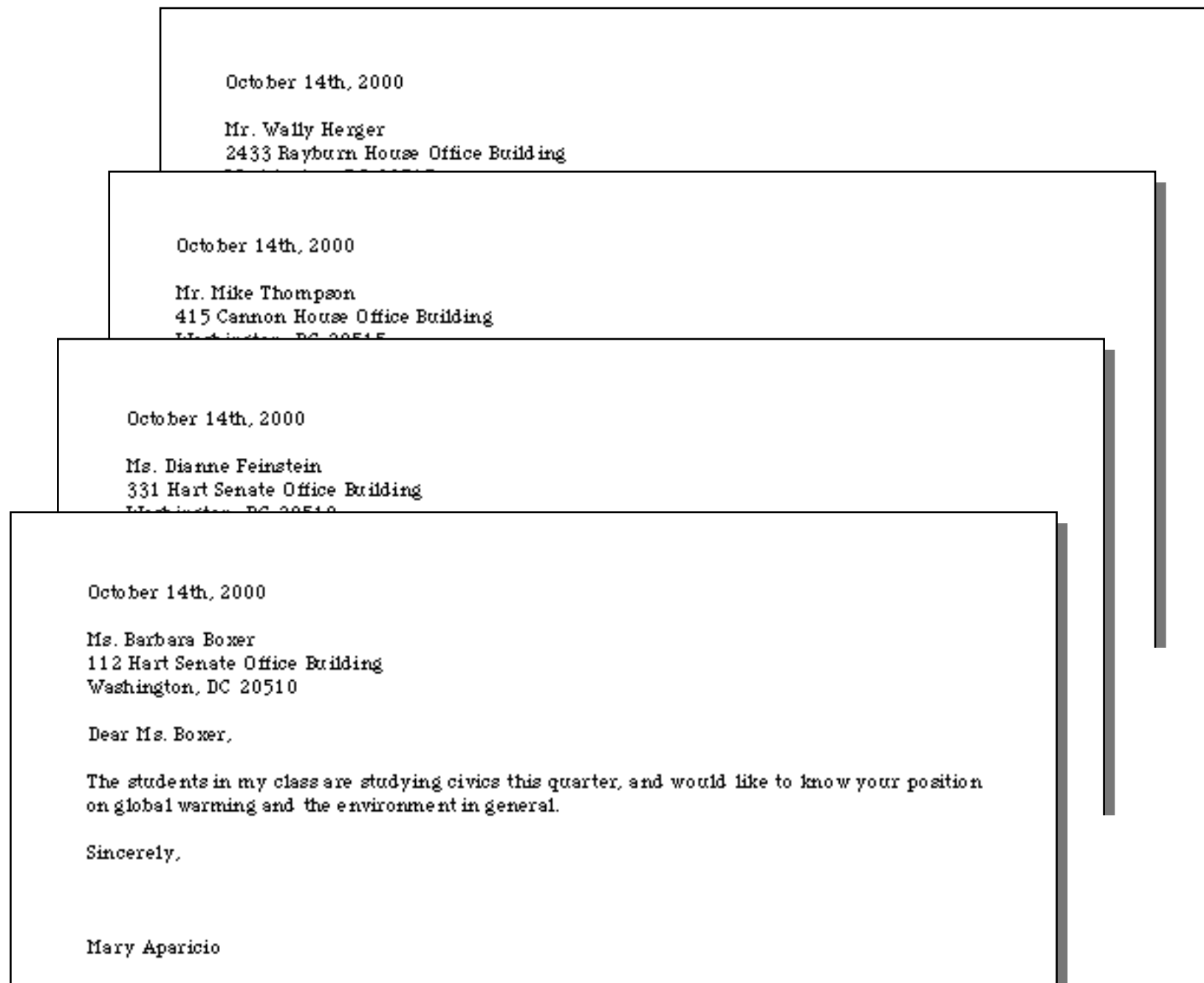
Type in the body of the letter and press **Enter**. The result should look like this:



The last item in the **Letter** menu will print a customized letter to each selected person in the [106th Congress](#) database.



The wizard will print 54 personalized letters.



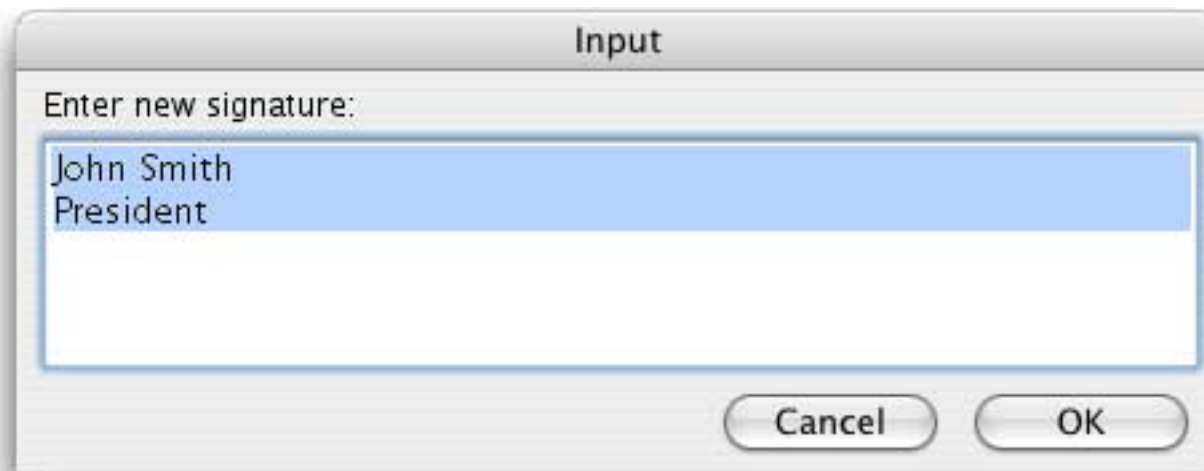
Viewing a List of Letters

The **Mini Correspondence** wizard normally displays only one letter at a time. To see a list summarizing all of your correspondence choose **Open Correspondence List Window...** from the Letter menu. This window shows a list of the letters you have created.



Changing the Default Greeting, Closing and Signature

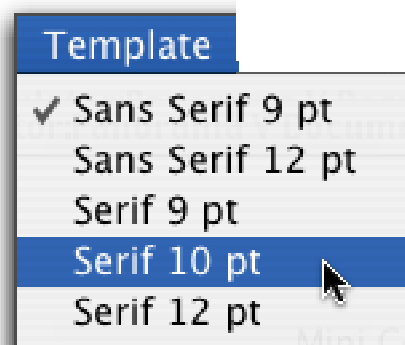
To change the default greeting, closing or signature choose the corresponding command from the **Setup** menu. The wizard will prompt you to enter the new text.



This change will affect all templates (see below).

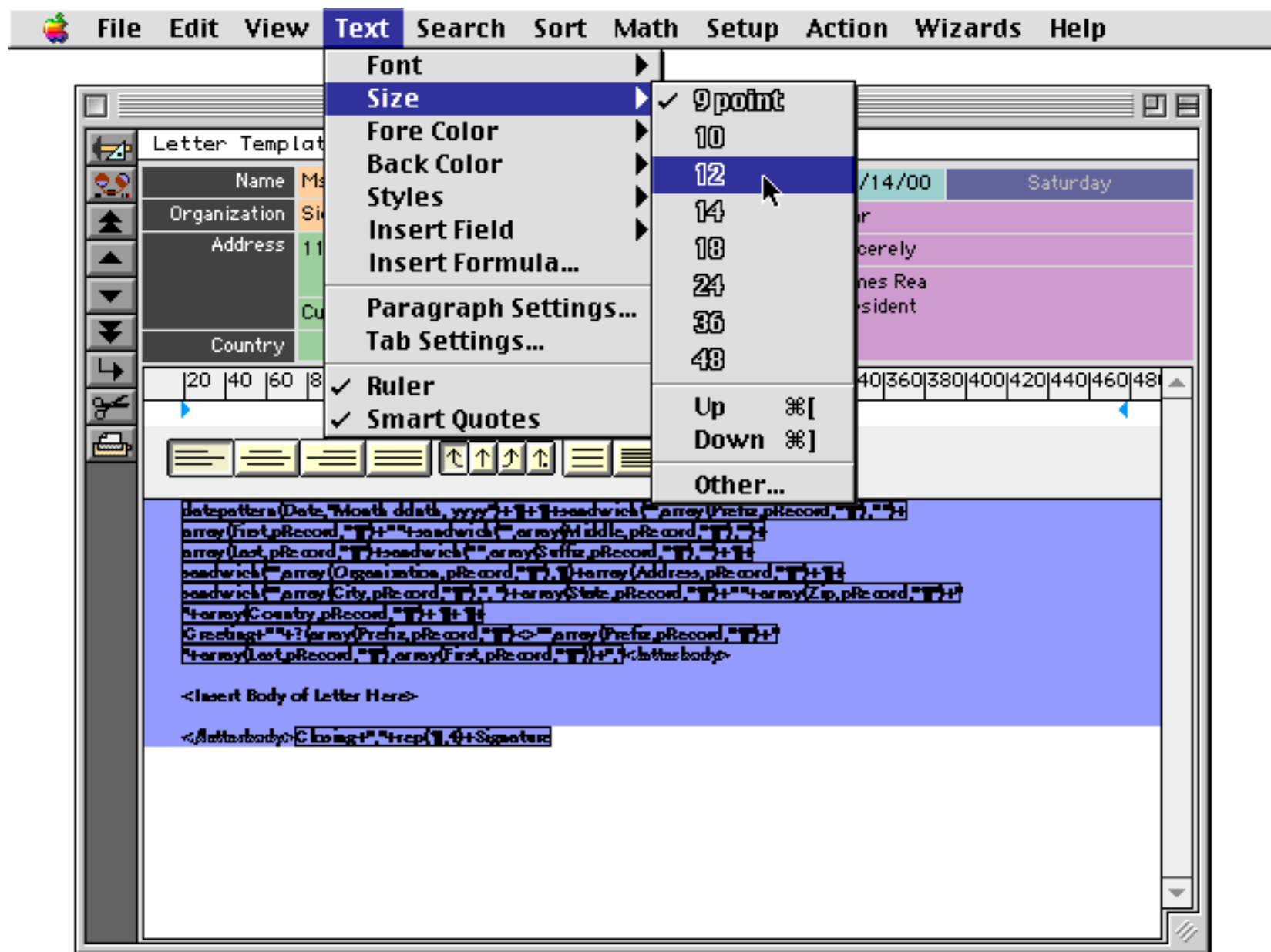
Correspondence Templates

When you create a new letter the wizard uses a template to set up the heading, closing, and font. You may choose from pre-built templates and you can also create your own templates. After you create a new letter you can use the **Template** menu to change the template used for this (and subsequent) letters.



The wizard updates the letter with the new template, which in this case uses a different font and font size. (Warning: If you change the template after you have written the letter, the body of the letter will be changed to the template body! Be sure to change the template *before* you write the letter body.)

To create your own template you should first create a new letter with one of the existing templates. Then select all of the text and adjust the font and size (see “[Styles](#)” on page 692).

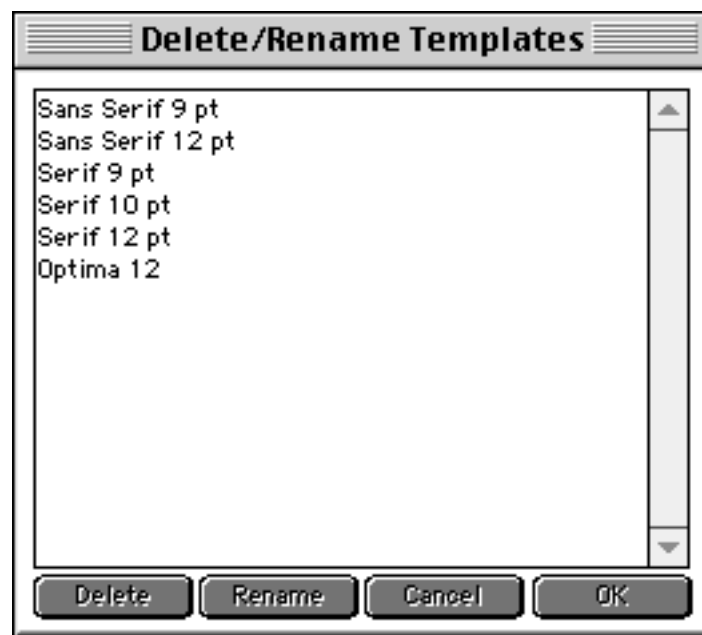


Once you have the font and size you want select the phrase [<Insert Body of Letter Here>](#), then choose **Save Template** from the Setup menu inside the window. The wizard will prompt you to enter a name for the new template.



The new template is added to the **Template** menu.

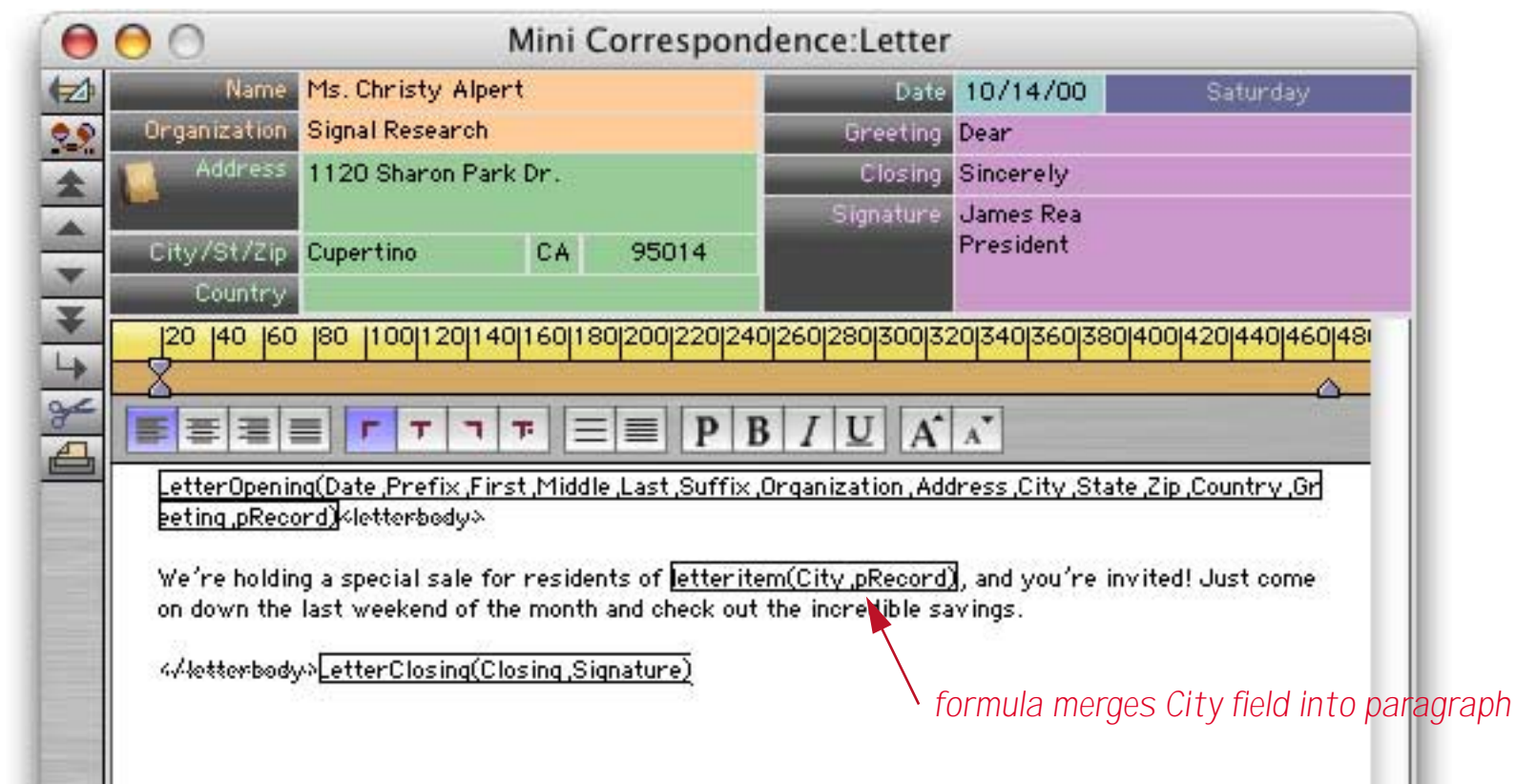
If you later decide you want to rename or delete a template use the **Delete/Rename Template...** command in the Setup menu. This command opens this dialog.



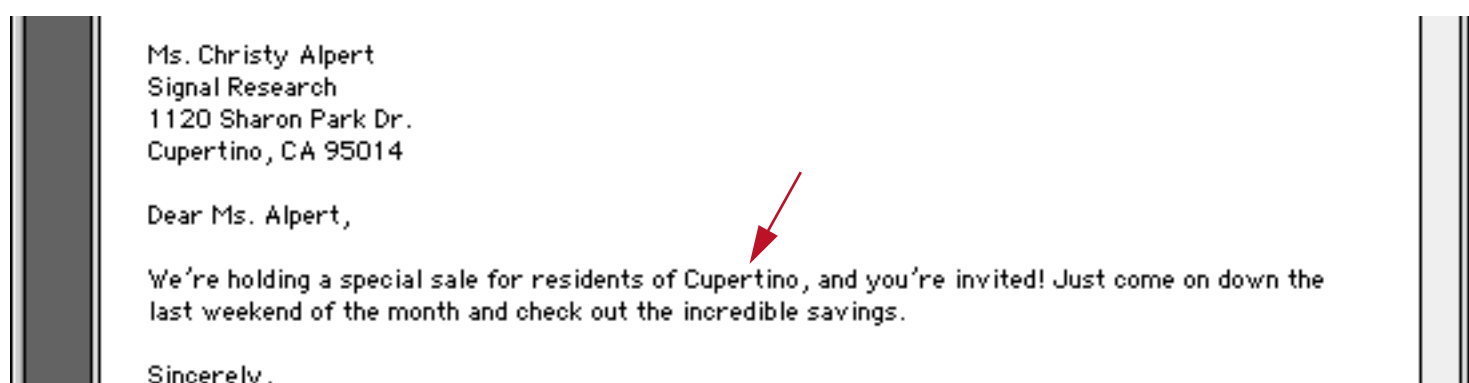
To delete a template simply select it and press the **Delete** button. To rename a template select it and press the **Rename** button. The wizard will prompt you for the new template name. When you are finished press **OK** to finalize all of the changes.

Merging Data into the Body of a Letter

In addition to setting the default font and text size the letter templates also contain all of the formulas needed to merge the database information into the header and closing section of the letter (see “[Merging Data into Word Processing Documents](#)” on page 707). Using the Formula Merge style you can also merge data into the body of the letter itself (see “[Merging Data into Word Processing Documents](#)” on page 707). To merge data into the body of the letter you must use the `letteritem()` function. The first parameter of this function is the name of the item you want to merge. The possible choices are: Prefix, First, Middle, Last, Suffix, Organization, Address, City, State, Zip or Country. The second parameter must be `pRecord`. This is an internal variable used by the wizard for printing. Once you type in this function, you must set the style to Formula Merge (use the Style menu). The example below shows how to merge the City into the body of the letter.



When you press the **Enter** key you'll see the actual data merged into the body of the letter.



This technique will work correctly even if you print multiple letters using the mail merge feature.

(Advanced Note: If you are curious about the `pRecord` variable it is used for printing mail merge letters. When the wizard prints a mail merge letter it temporarily saves the name and address stored in the current record. It then scans the linked database and builds an array in each of these fields. For example, the `City` field will contain an array that contains the city name for each person that will be receiving this letter. The wizard prints each letter using the `printonemultiple` statement (see “[Printing Data in an Array](#)” on page 726) and it increments the `pRecord` variable as it does it (1, 2, 3, etc.). If only a single letter is being printed the formula still works because `pRecord` is set to 1 so the `array()` function simply grabs all of the text in the field.)

Chapter 16: Images & Movies



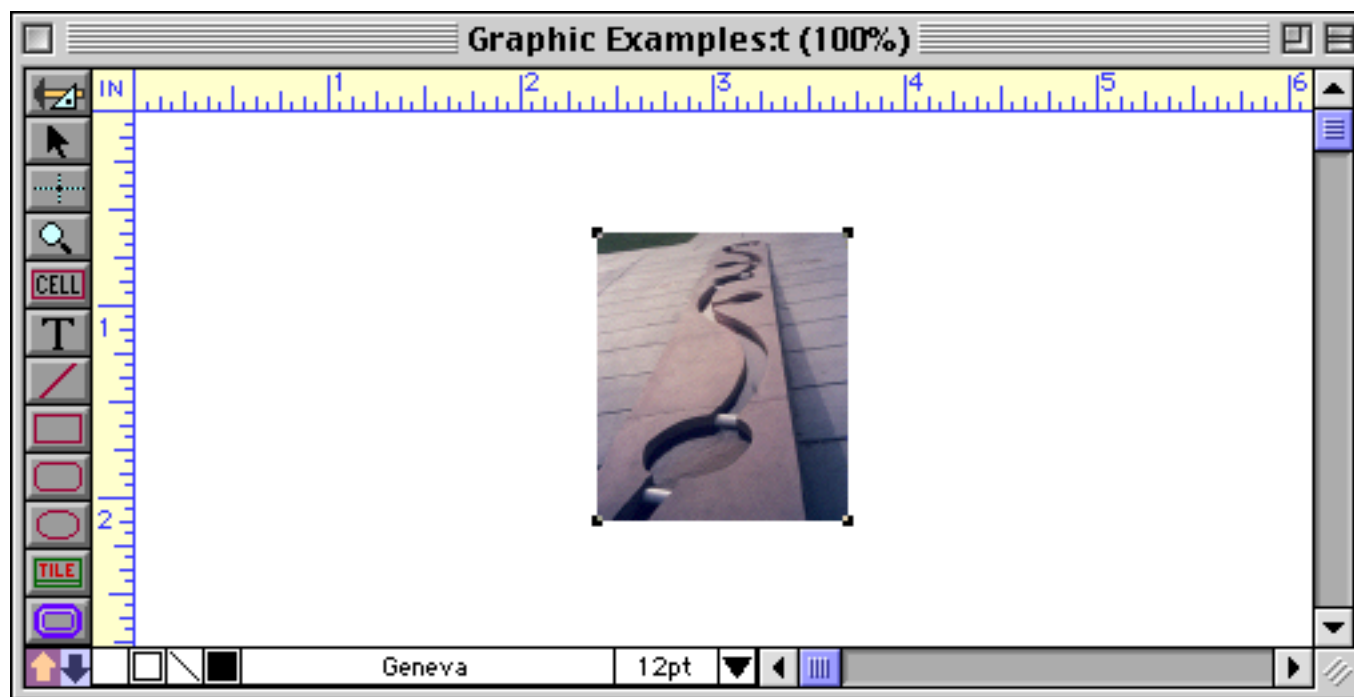
A Panorama form can display images and movies from a wide variety of sources. An image may be fixed (for example a logo or background) or variable (changing from record to record - for example personnel photos or maps associated with individual records). Variable images may be included in the database or (more commonly) displayed directly from files on the disk. Images that are displayed from disk are called **Flash Art™**. Flash Art allows any image to be displayed according to its name.

Fixed Images

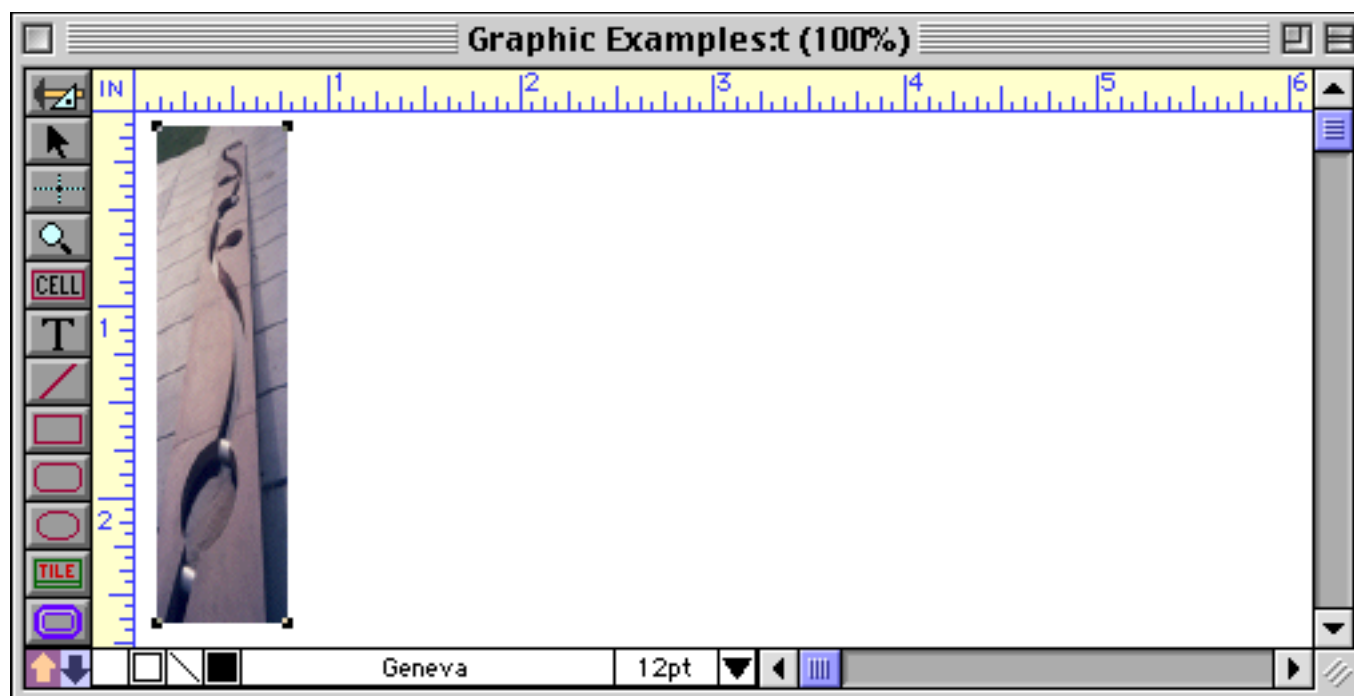
Fixed images are imported into Panorama with the **Paste** command. Before you use the **Paste** command, the graphic picture you want to import must be placed on the clipboard. Most paint and drawing programs allow you to select the graphic elements you want to use and then use the **Copy** command to place the graphics on the clipboard. This illustration shows an image being transferred to the clipboard in Adobe Photoshop.



Once the image has been transferred to the clipboard, switch to Panorama. The form you want to place the image into must be open and in Graphic Display Mode (see “[Form Modes: Data Access vs. Graphic Design](#)” on page 485). Then choose **Paste** from the Edit menu to import the image.

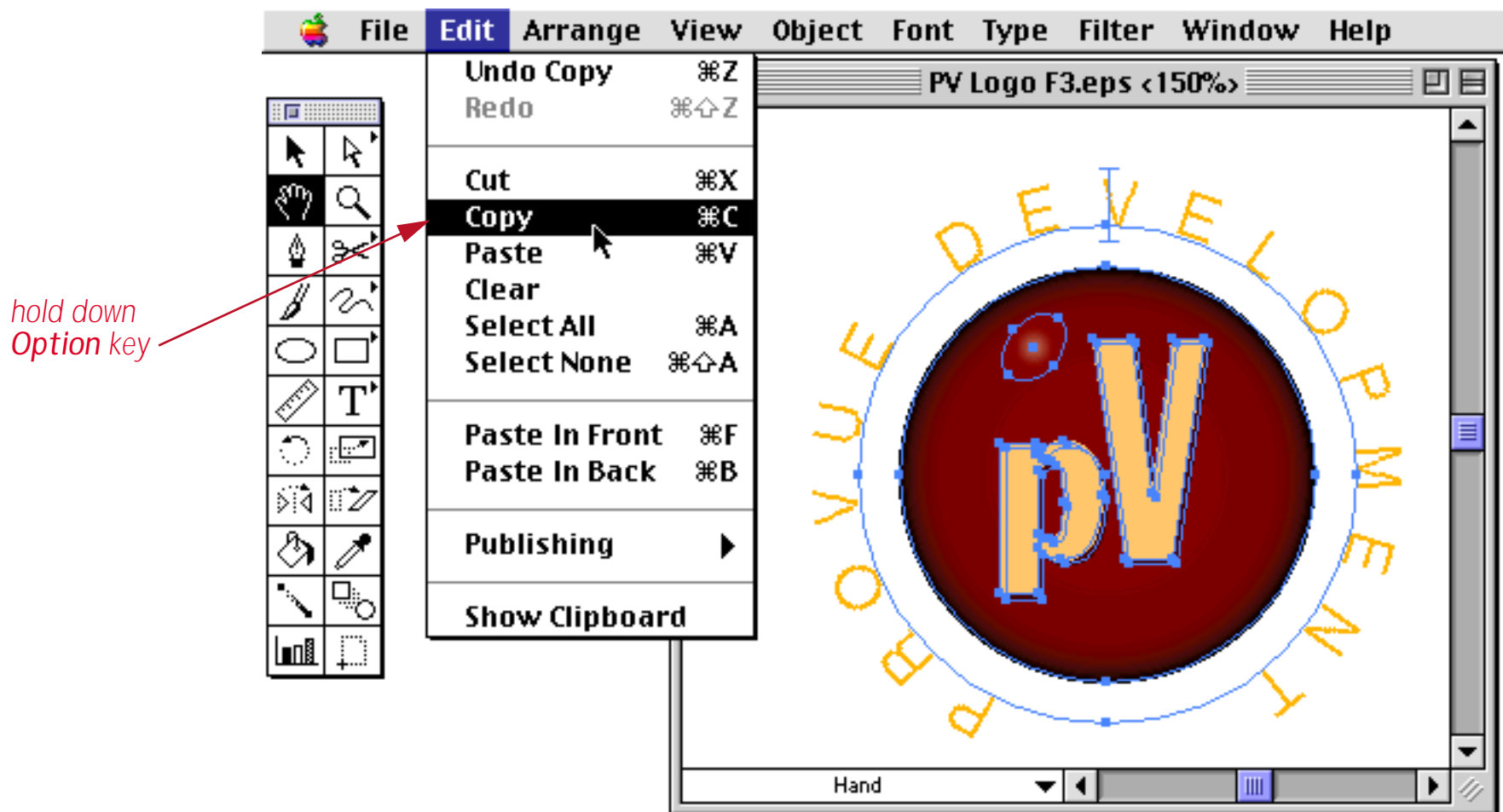


The image will be imported into the center of the window. Like any other object, you can move the picture by dragging it or adjust the size by dragging the handles on the corners (or with the **Dimensions** or **Scale** dialogs).

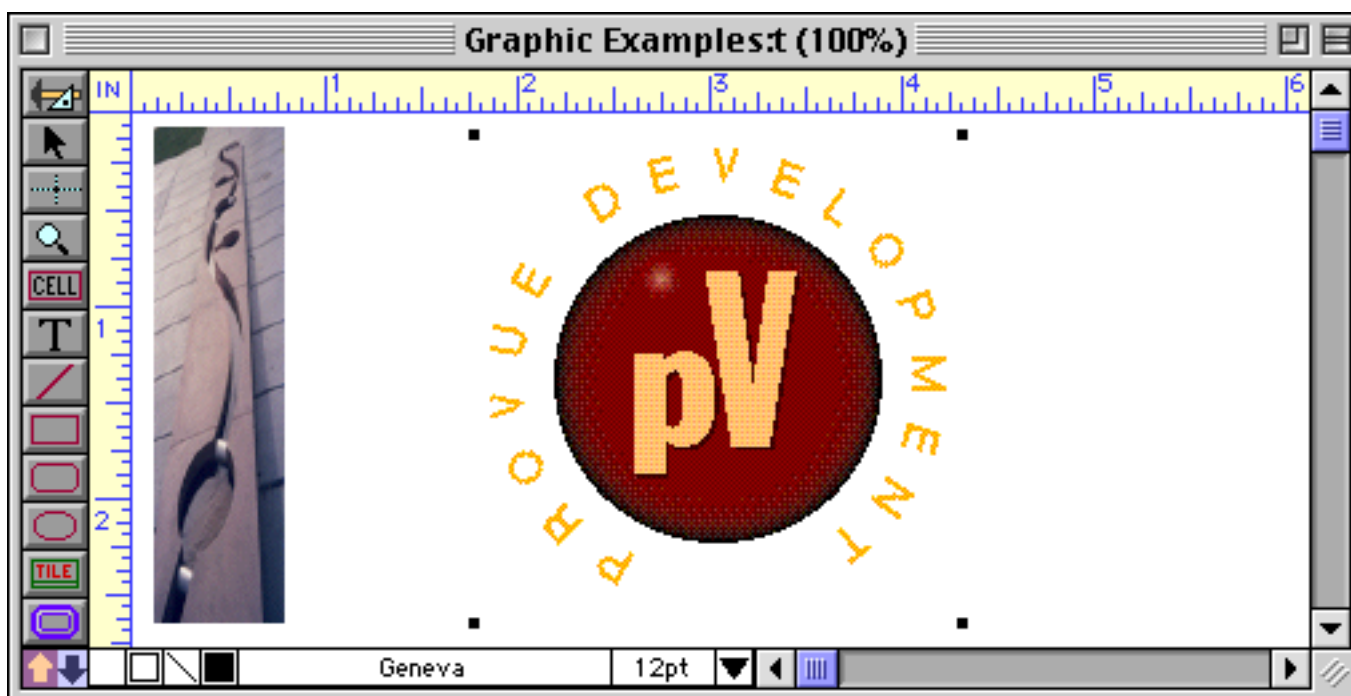


Displaying and Printing EPS Images

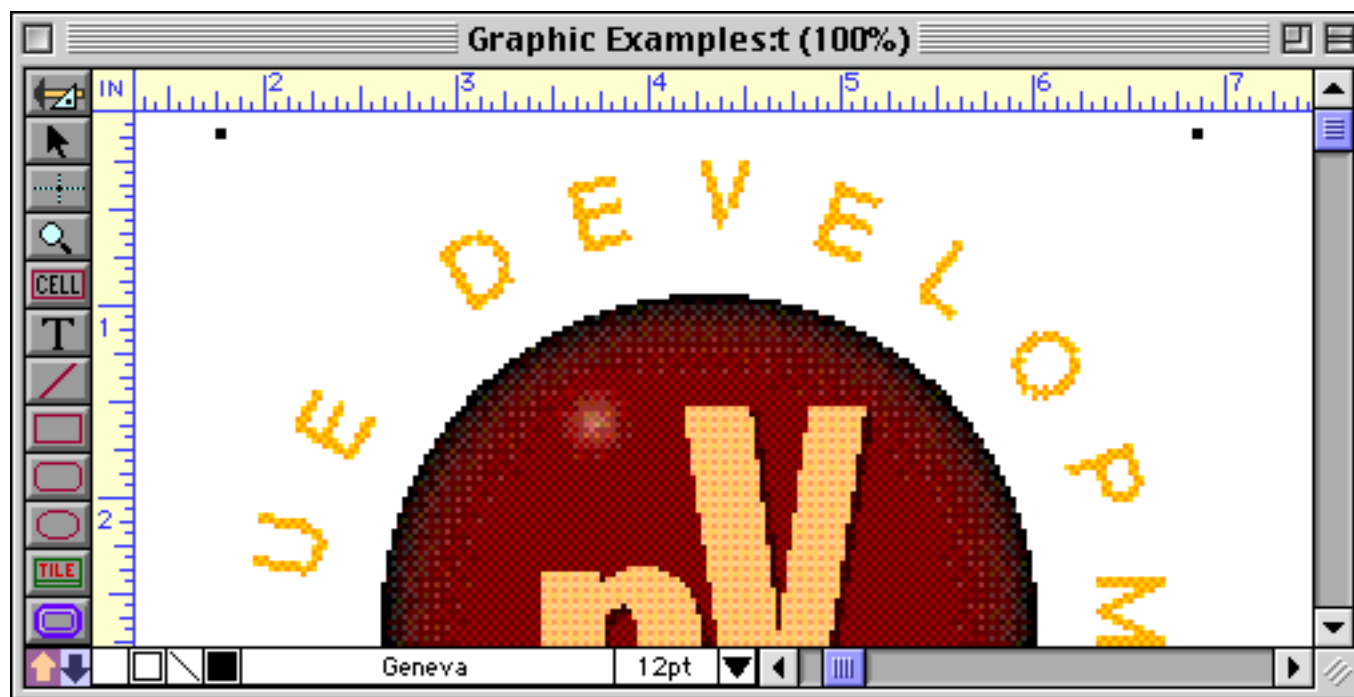
On Macintosh systems you can place EPS images on the clipboard when using Adobe Illustrator, Macromedia Freehand and many other programs. To place an EPS image on the clipboard, hold down the **Option** key while you use the **Copy** command.



Once the EPS image has been placed on the clipboard you can switch to Panorama and Paste it into your form, just like any other image.



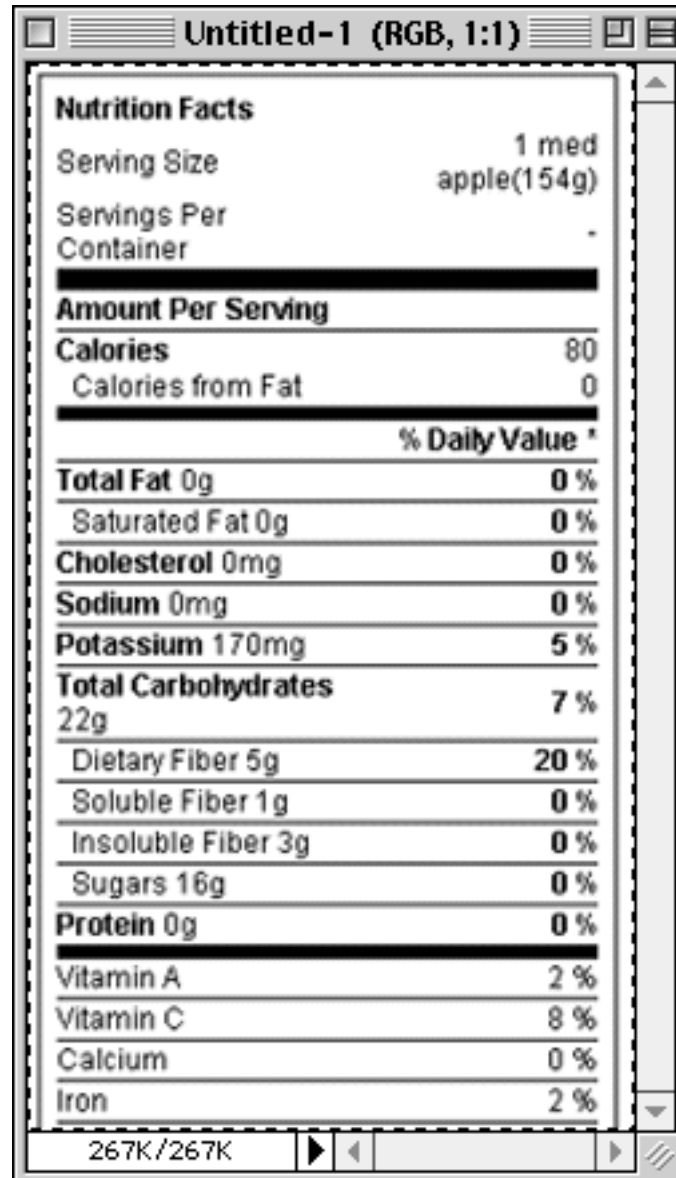
You may notice that the image appears a bit “grainy.” You’re actually seeing a bitmap image that was created by Illustrator when you placed the image on the clipboard. If you enlarge the image it will get even more “jaggy.”



Although the image appears jaggy on the screen, it won't look jaggy if you print the form on a PostScript™ printer. When printing, Panorama uses the EPS and ignores the jaggy bitmap so you get a nice clean image on the paper.

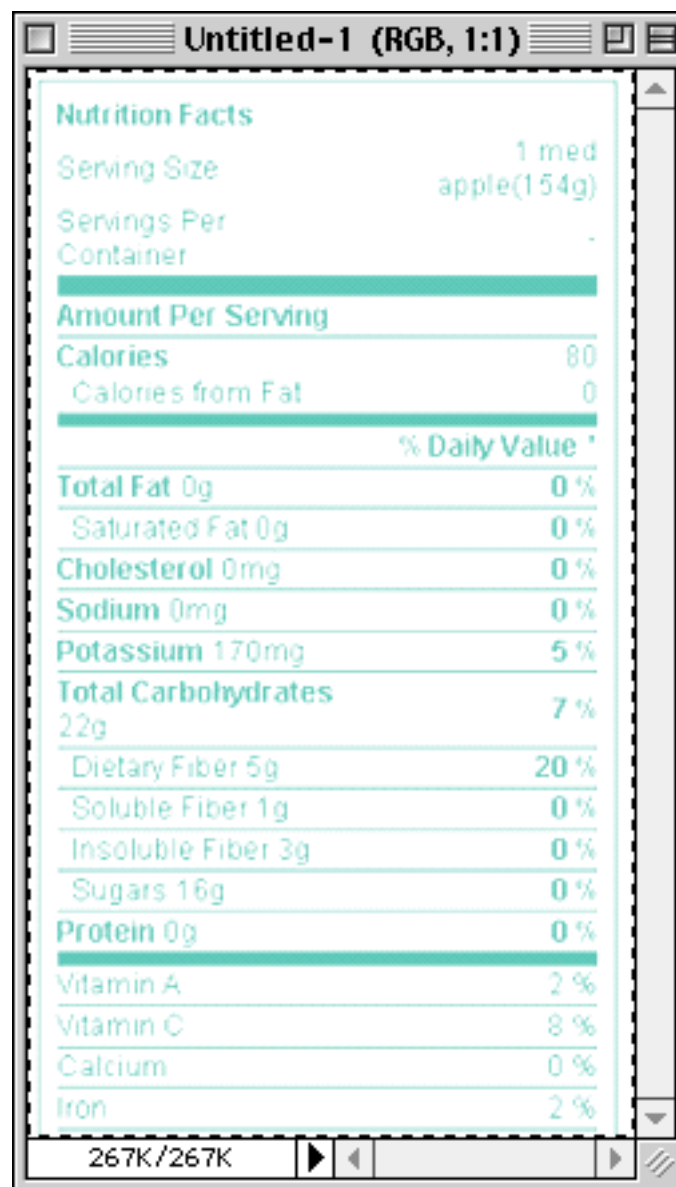
Tracing a Scanned Form

You can use a scanner to digitize a form and then paste the image into Panorama. The scanned image can either be used as is, or you can use it as a template to create a form using Panorama graphic objects. (If you trace the image using Panorama's box and line tools, the form will print faster and with better quality.) Start by scanning the form you want to duplicate. For example, we've scanned our Nutrition Information form into Adobe PhotoShop.

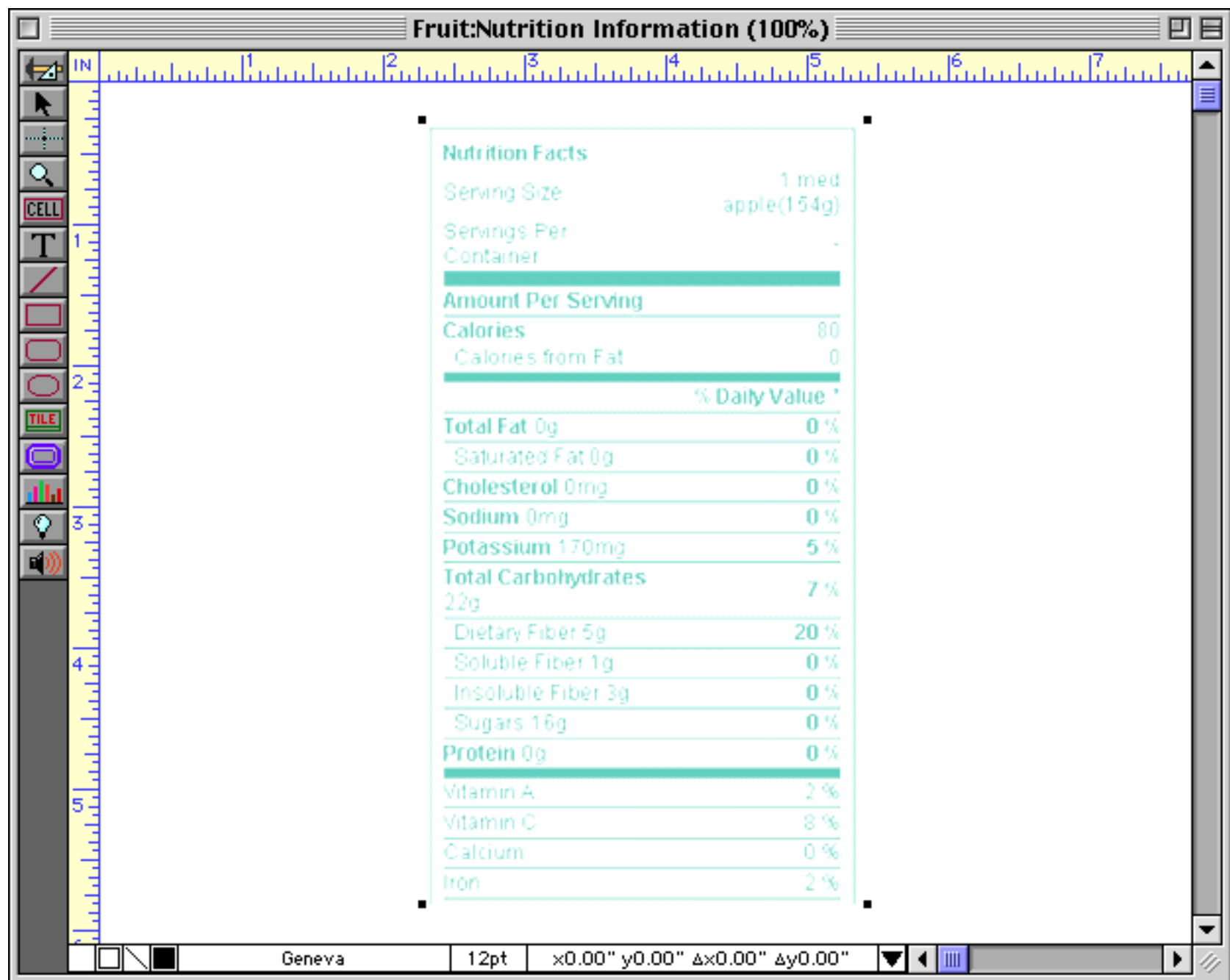


Nutrition Facts	
Serving Size	1 med apple(154g)
Servings Per Container	-
Amount Per Serving	
Calories	80
Calories from Fat	0
% Daily Value *	
Total Fat 0g	0 %
Saturated Fat 0g	0 %
Cholesterol 0mg	0 %
Sodium 0mg	0 %
Potassium 170mg	5 %
Total Carbohydrates 22g	7 %
Dietary Fiber 5g	20 %
Soluble Fiber 1g	0 %
Insoluble Fiber 3g	0 %
Sugars 16g	0 %
Protein 0g	0 %
Vitamin A	2 %
Vitamin C	8 %
Calcium	0 %
Iron	2 %

To make it easier to use this form as a template for tracing, we'll increase the brightness, reduce the contrast, and change the color. See the documentation for your photo editing software to learn how to do this.



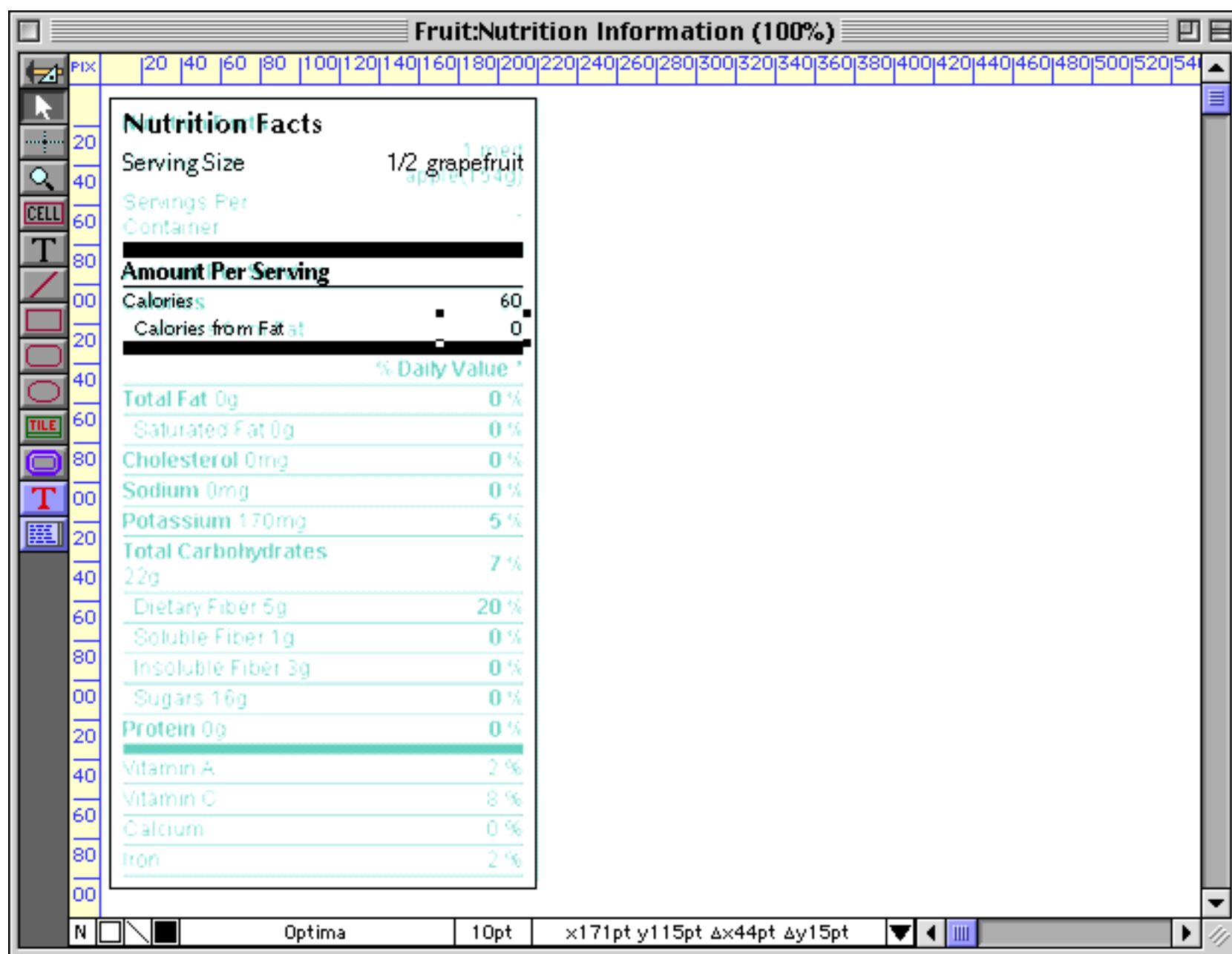
Now the image can be copied into your Panorama form. Simply **Copy** the image in your photo editing application, then switch to Panorama and **Paste** into the form.



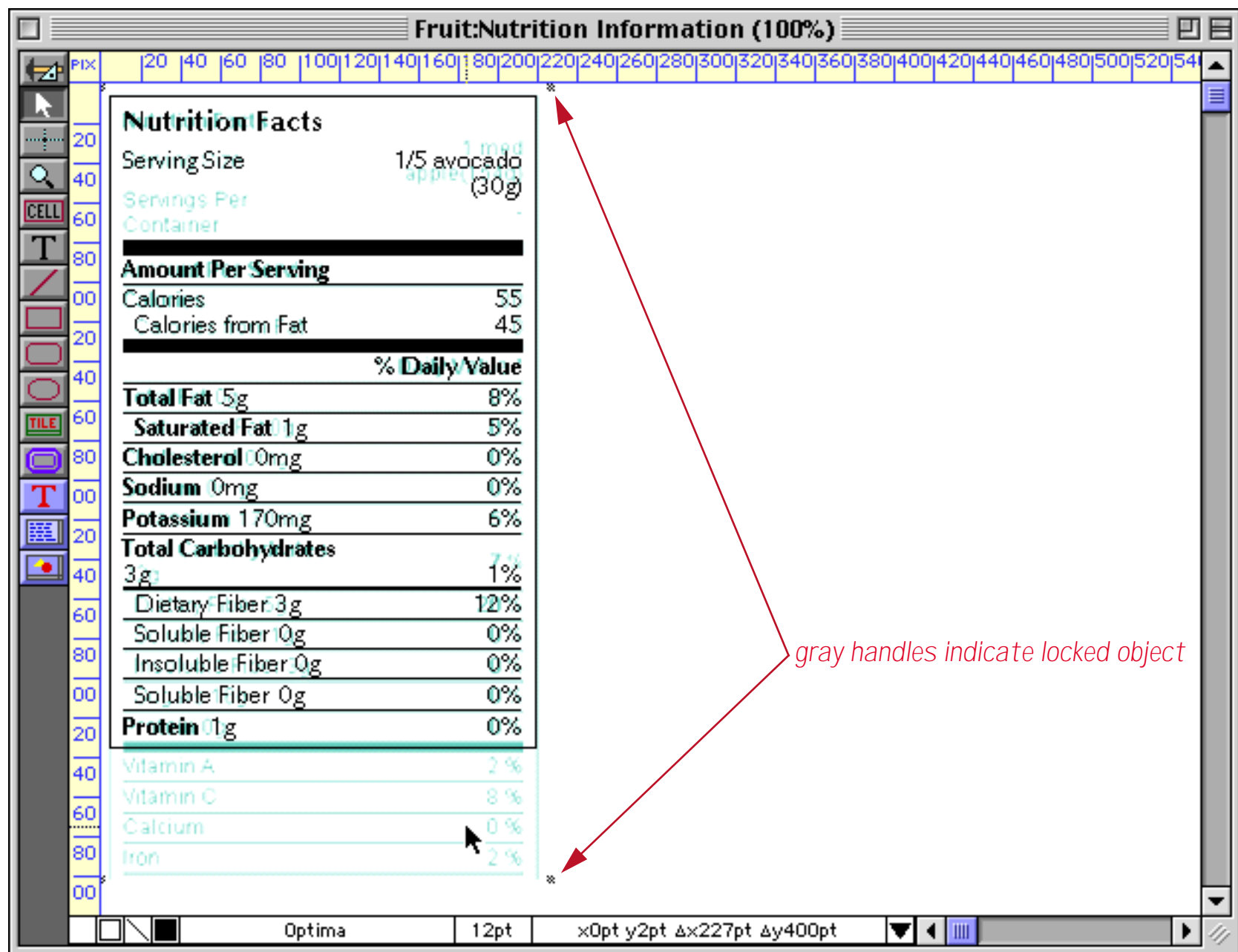
Move the template into position, then freeze the template with the **Lock** command in the Arrange Menu (see “[Locked Objects](#)” on page 575). Once the image is locked, check the **Ignore Locked Objects** menu option (see “[Ignoring Locked Objects](#)” on page 577). This option allows you to work on top of the scanned image without having to worry about accidentally clicking on and dragging the scanned image.



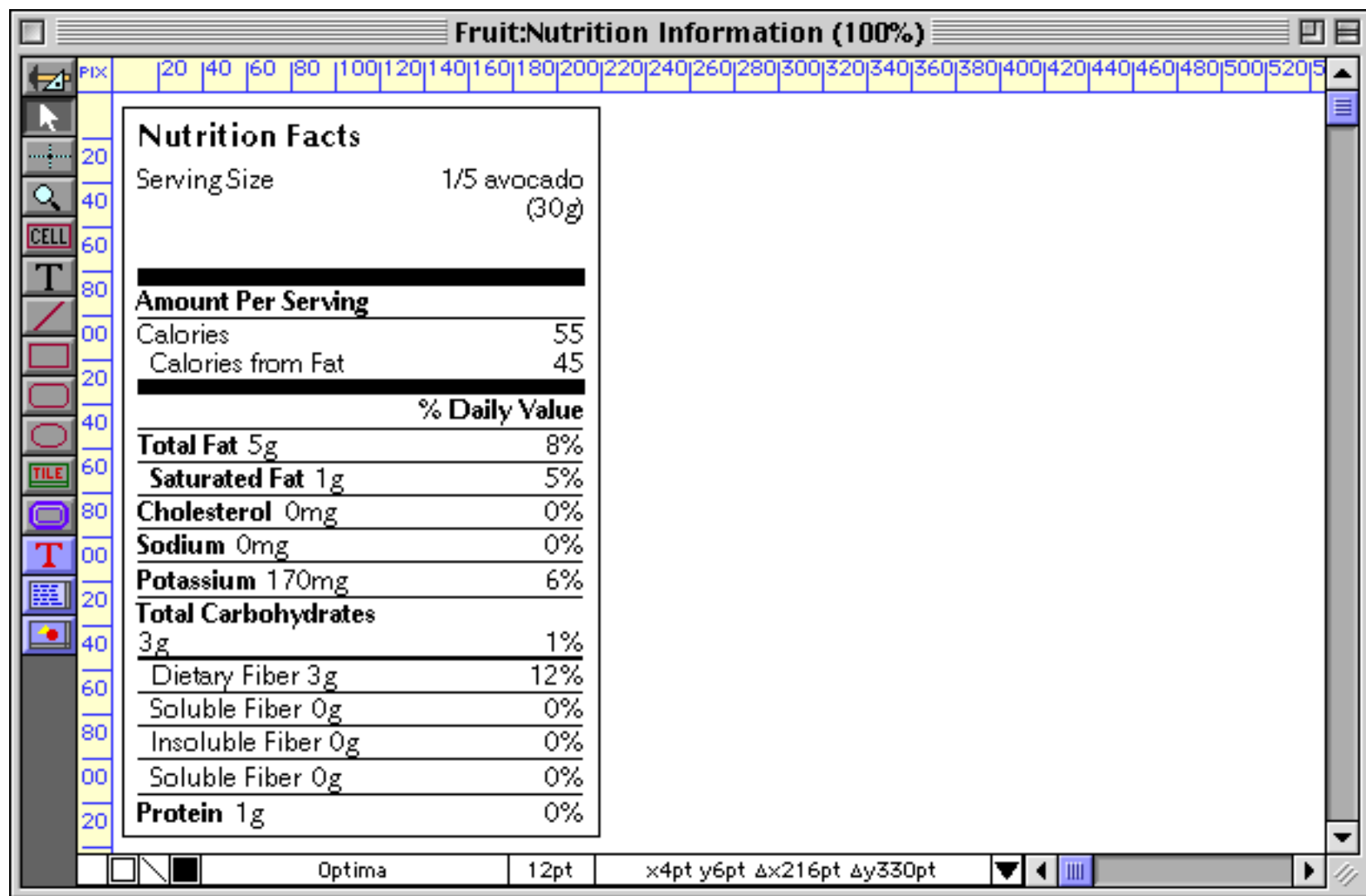
Now you can begin to trace over the scanned template to create Panorama objects like rectangles and text objects.



When the tracing is complete, the final step is to delete the scanned image you used as a template. Start by disabling the Ignore Locked Objects option. Then click on the scanned image.



Once the object is selected, choose the **Unlock** command to unlock the image (see “[Locked Objects](#)” on page 575). Once the object is unlocked you can use the **Cut** or **Clear** commands to delete the image from your form, leaving only the new objects you have created.



Flash Art™

Panorama employs a technique called **Flash Art™** to display non-fixed images. Using Flash Art you can display images that are not fixed but change depending on circumstances—for example photos of each person in a personnel database, maps in a contact database or product photos in a catalog database.

When Flash Art displays an image, it does so by name. The actual image may be stored in the database itself (in the Flash Art Gallery, see “[The Flash Art Scrapbook \(Gallery\)](#)” on page 764), or in separate disk files (see “[Displaying Images Directly From Disk Files](#)” on page 769). You set up a formula that controls what image to display. When the formula matches the name of an image, that image is displayed.

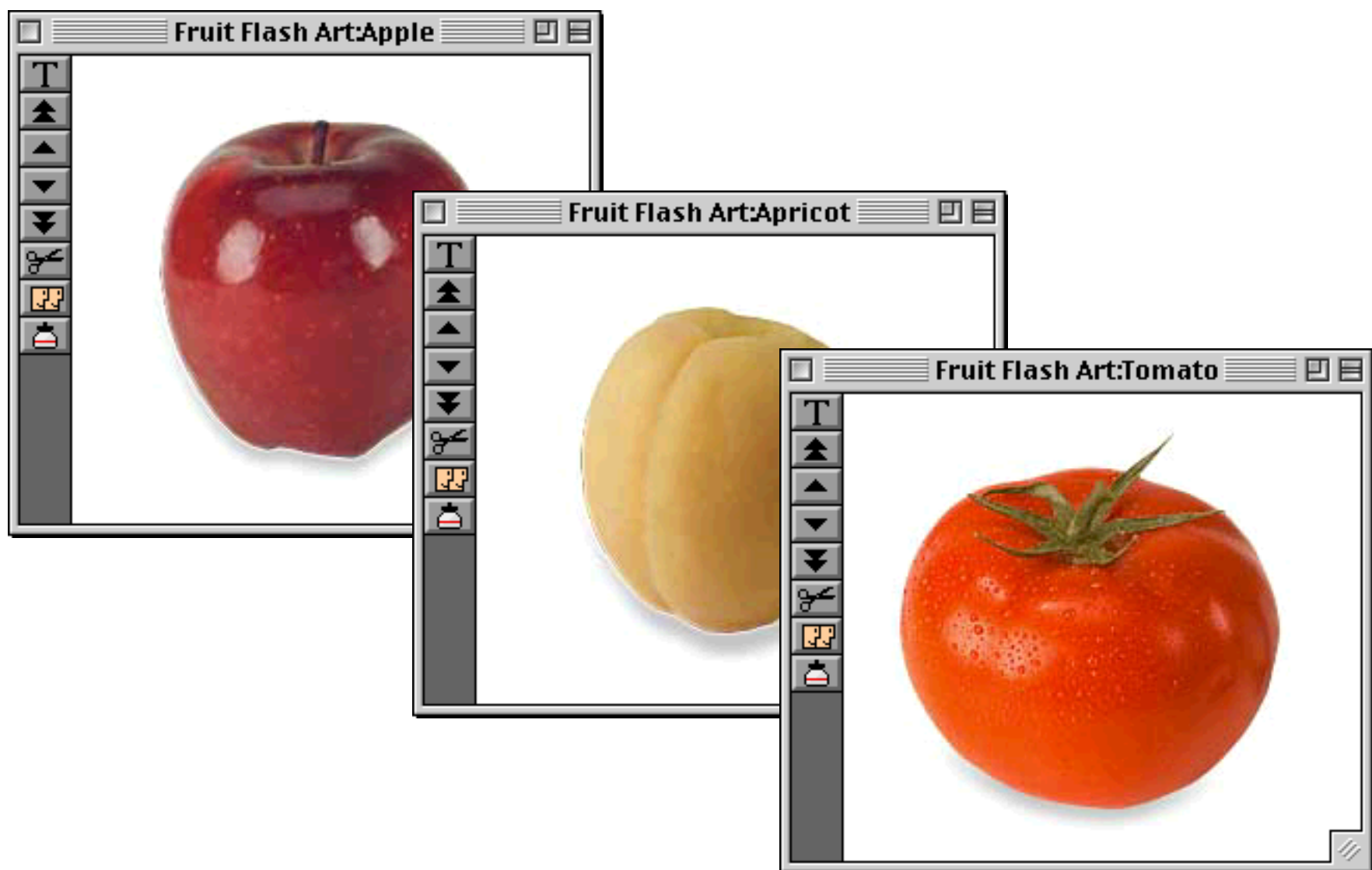
Panorama actually has several different types of objects for displaying images by name. The standard Flash Art object (see “[“Classic” Flash Art Objects](#)” on page 815) has been standard from the earliest versions of Panorama, and is retained for compatibility with older databases. The newer Super Flash Art object (see “[Creating Super Flash Art Objects](#)” on page 751) is more customizable (more alignment and scaling options, scroll bars, etc.) and should usually be used for new applications. In addition, the Flash Art Push Button (see “[Flash Art™ Push Button SuperObjects™](#)” on page 833) and Flash Art Data Button (see “[Flash Art Data Button SuperObjects™](#)” on page 852) allow you to create custom buttons from any image.

Creating Super Flash Art Objects

To illustrate the creation of a Super Flash Art object within a form we'll use a database of nutritional information for fruits. This database contains about a dozen different fruits, including the name of the fruit and the FDA nutritional information.

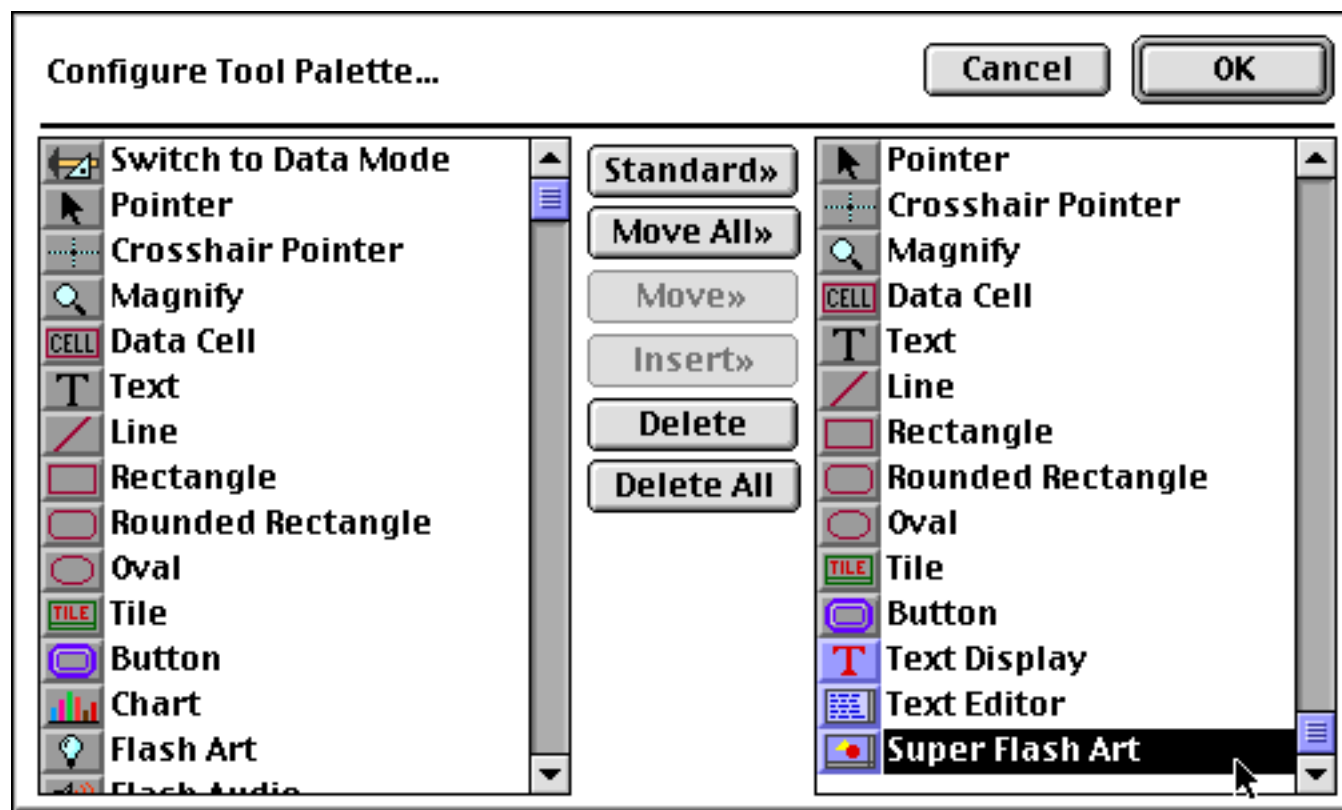
Fruit	Serving Size	Calories	Fat (	Total Fat	Saturated	Cholesterol	Sodium	Potassium	Carbc
Apple	1 med apple (154g)	80	0	0g	0g	0mg	0mg	170mg	22g
Apricot	2 apricots (114g)	60	10	1g	0g	0mg	0mg	0mg	11g
Avocado	1/5 avocado (30g)	55	45	5g	1g	0mg	0mg	170mg	3g
Banana	1 med banana (126g)	110	0	0g	0g	0mg	0mg	400mg	29g
Strawberr	8 medium berries	45	0	0g	0g	0mg	0mg	27mg	12g
Grapes	1-1/2 cups grapes	90	10	1g	0g	0mg	0mg	270mg	24g
Lemon	1 med lemon (58g)	15	0	0g	0g	0mg	0mg	0mg	5g
Lime	1 medium (67g)	20	0	0g	0g	0mg	0mg	75mg	7g
Cantaloupe	1/4 melon (134g)	50	0	0g	0g	0mg	25mg	280mg	12g
Honeydew	1/10 melon	50	0	0g	0g	0mg	35mg	310mg	13g
Orange	1 med orange (154g)	70	0	0g	0g	0mg	0mg	260mg	21g

We've also prepared a collection of photographs of fruit. Each photograph has a name, and the photo name matches the name of the fruit in the database, from [Apple](#) to [Tomato](#).

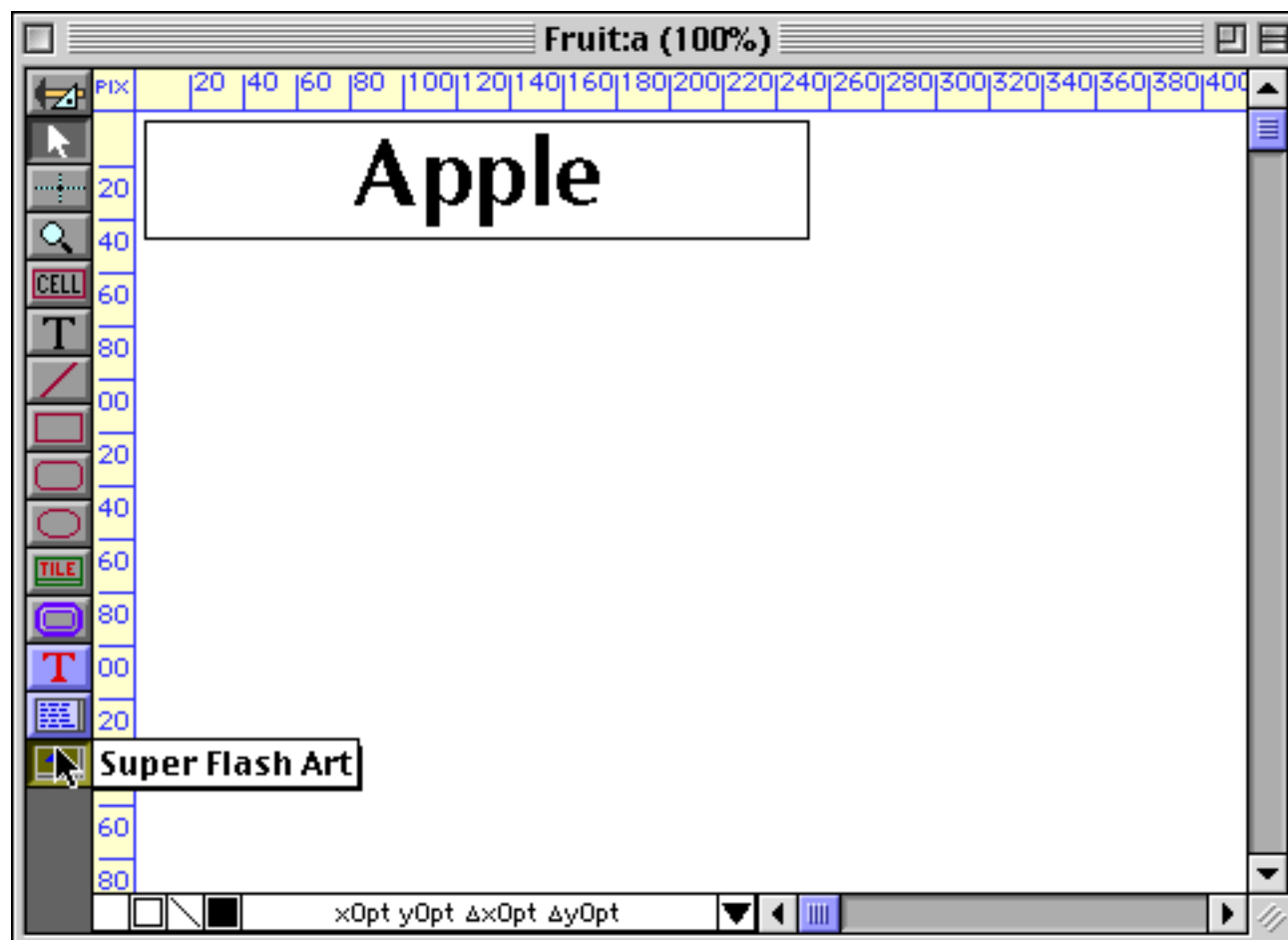


In this case the images are stored in the database in the Flash Art Gallery (see [“The Flash Art Scrapbook \(Gallery\)”](#) on page 764), but they could also be stored in files on the disk (see [“Displaying Images Directly From Disk Files”](#) on page 769). For now, don't worry about how the images are set up, let's just continue to see how the images can be used in a form.

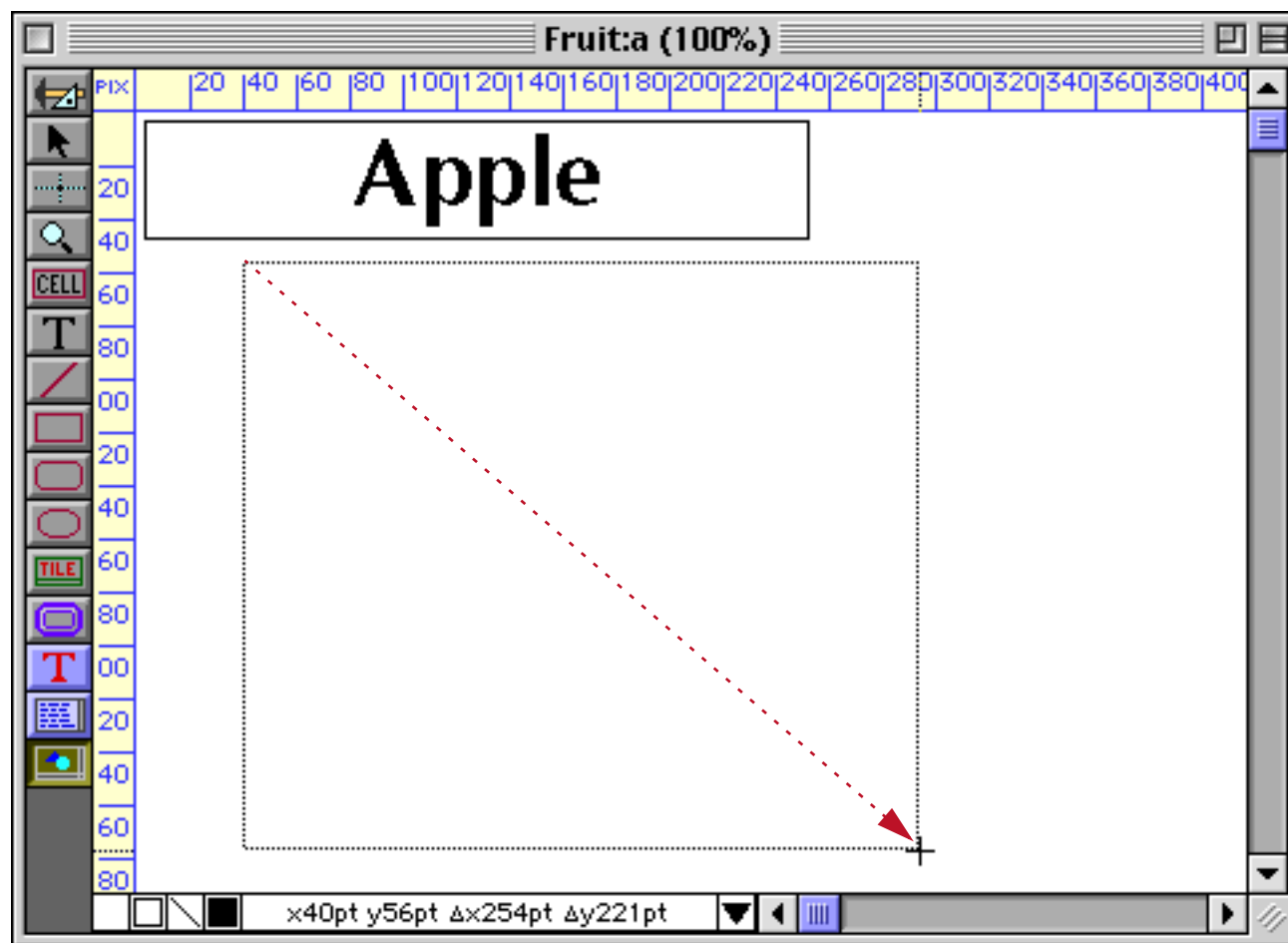
The Super Flash Art tool is not in the default tool palette, so you'll need to use the **Tool Palette** dialog to add this tool to the palette if it is not already there (see "[Customizing the Tool Palette](#)" on page 497).



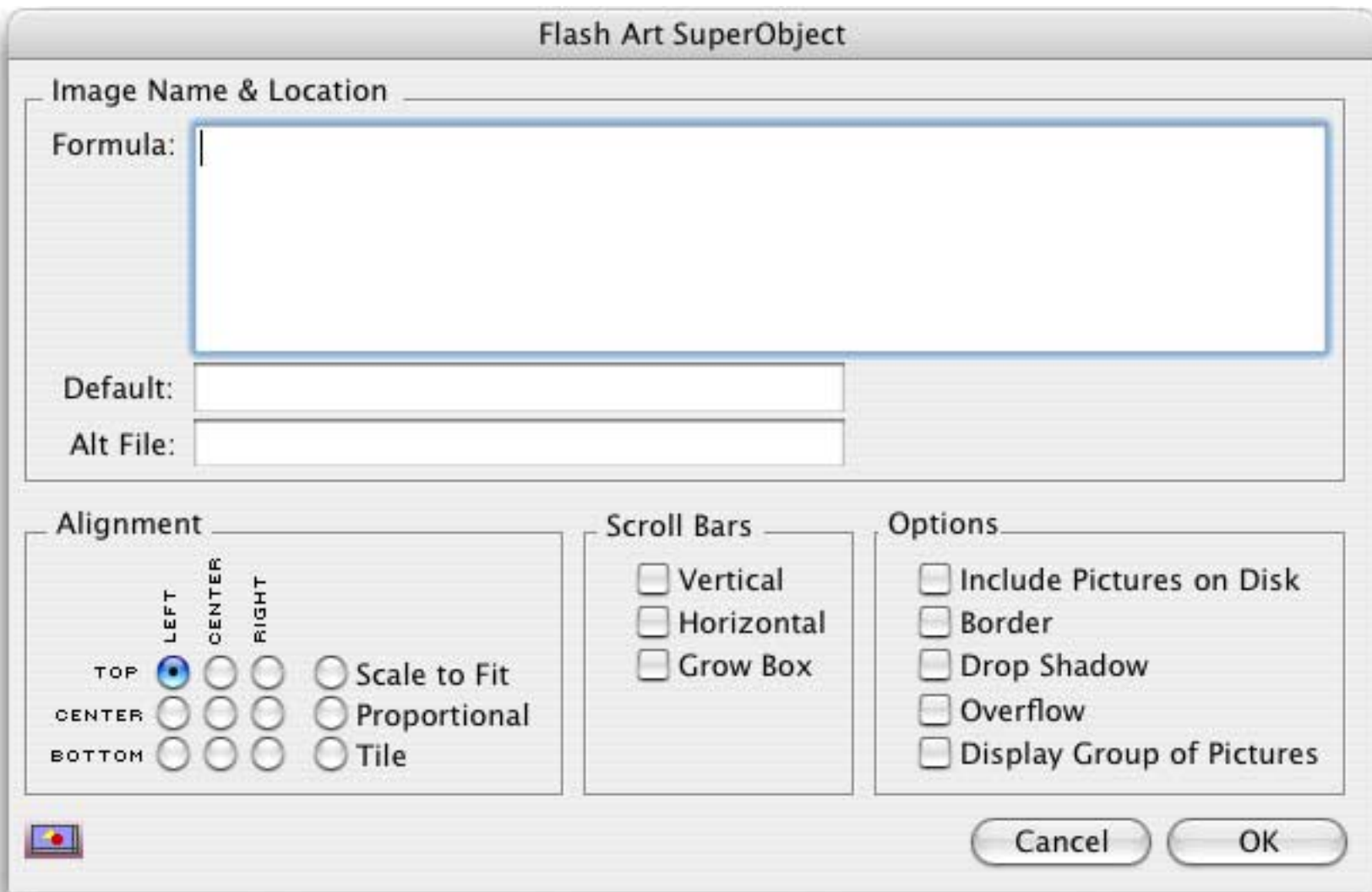
Now that the tool is added to the palette you can select it. Notice that we've set up a Text Editor SuperObject (see "[Text Editor SuperObject](#)" on page 639) to allow the name of the fruit to be displayed and edited.



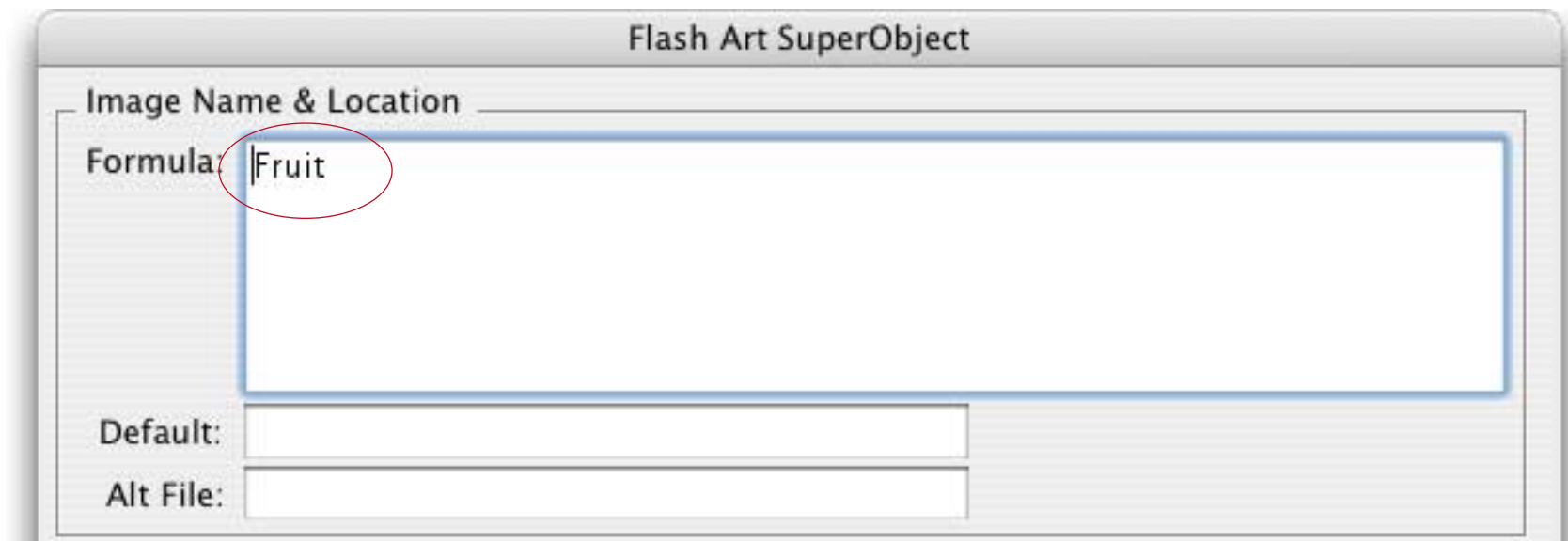
Once the tool is selected, drag the mouse across the form in the location where you want to create the Super Flash Art object.



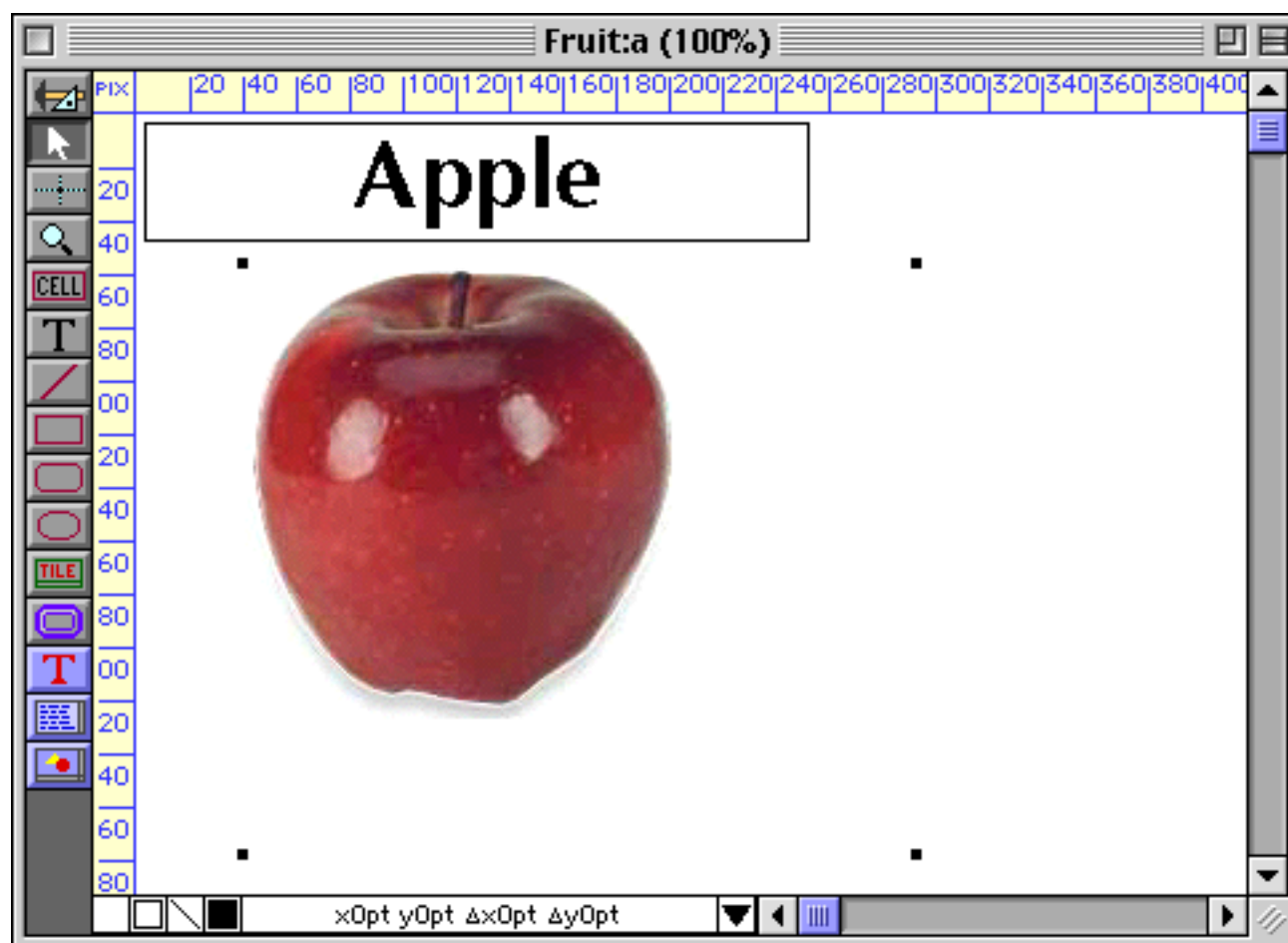
When you release the mouse, the Super Flash Art configuration dialog will appear.



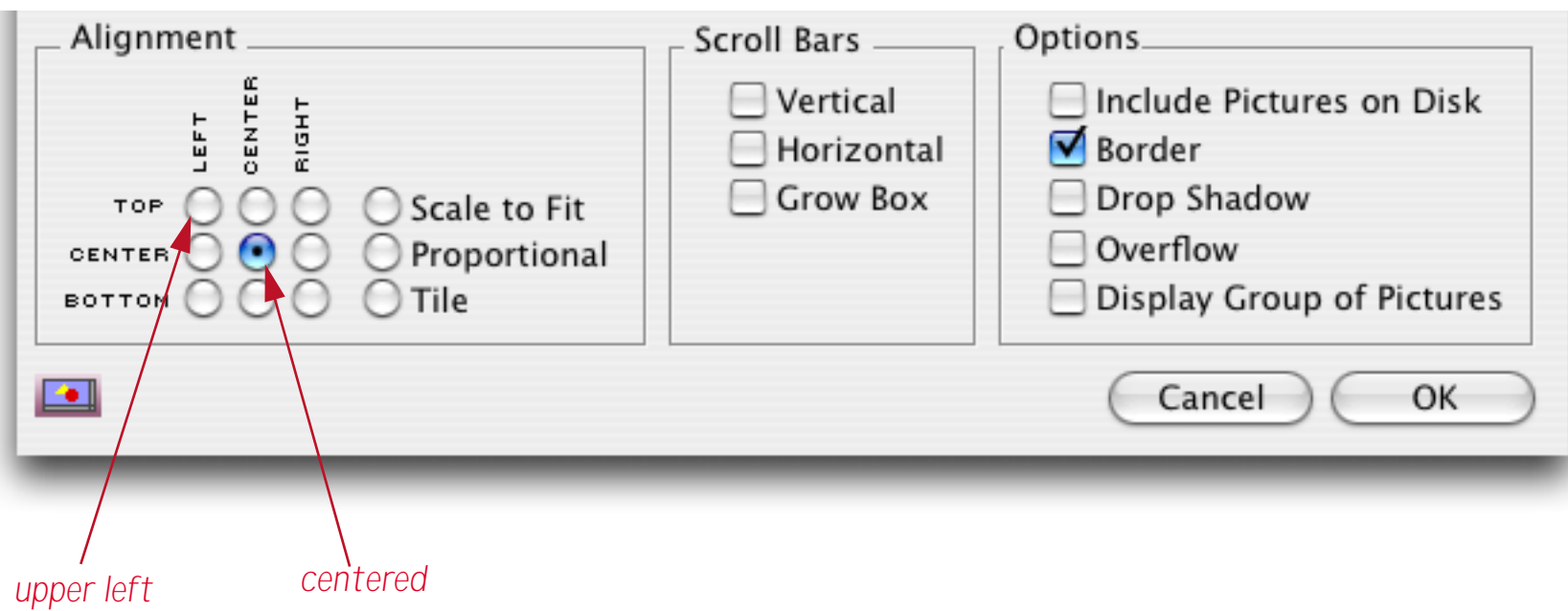
At a minimum you must enter a valid formula into the dialog. In this case the formula is simply **Fruit**.



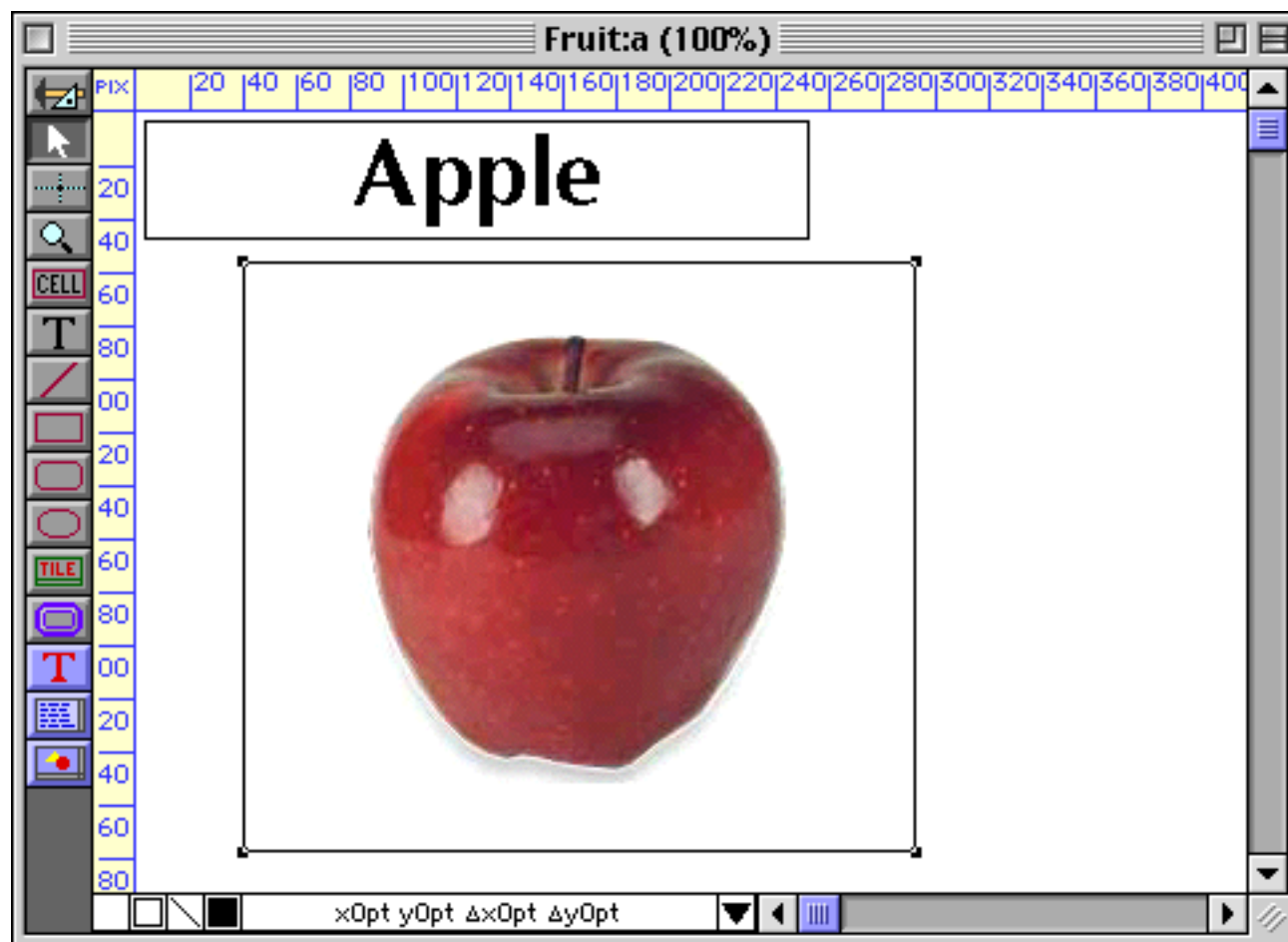
Since the **Fruit** field contains the name of each fruit, this will automatically display the image for the correct fruit, in this case an apple.



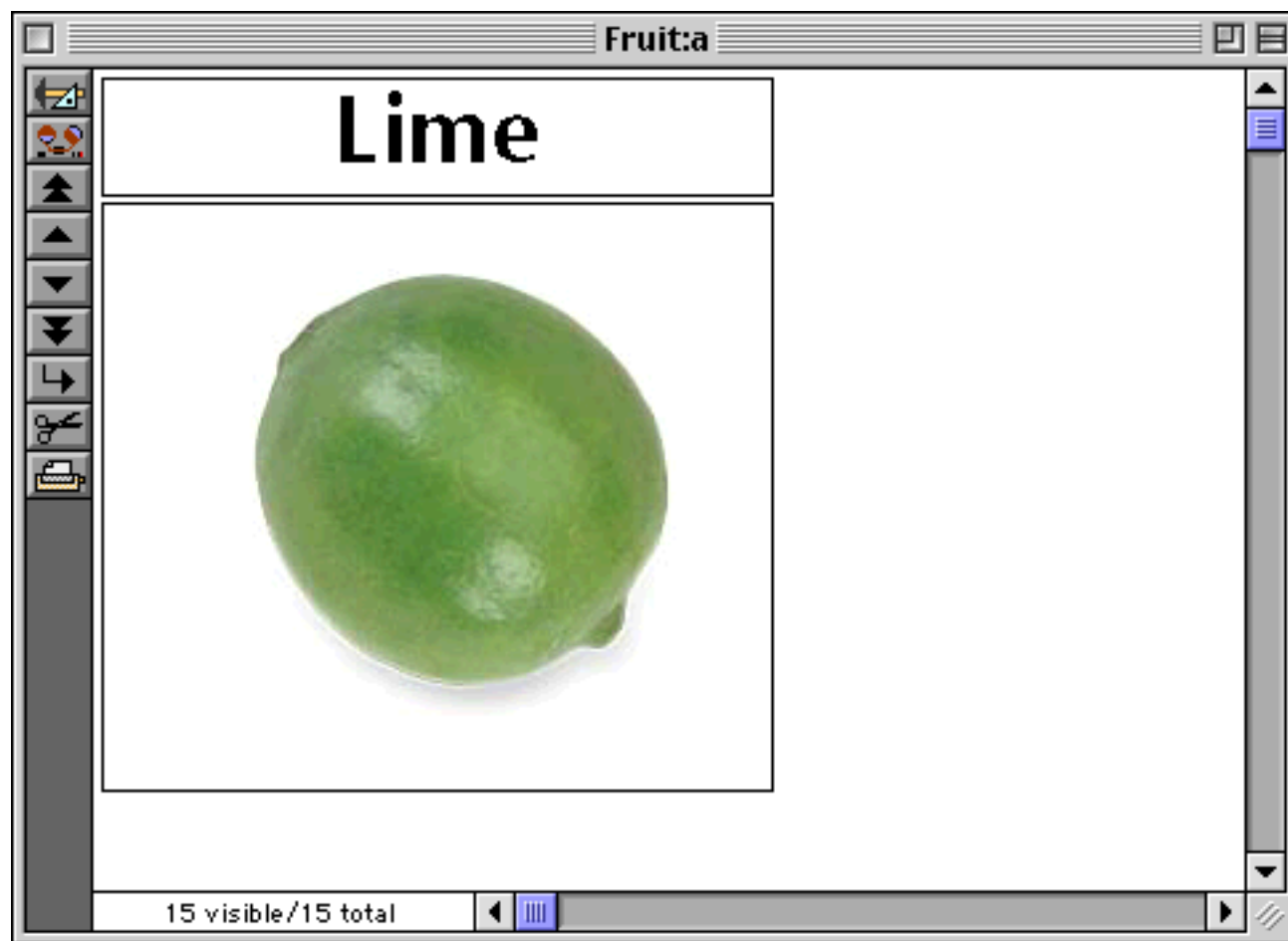
Notice that the apple is displayed in the upper left hand corner of the Super Flash Art object. You can also center the image. To do this, first click on the **Pointer** tool, then double click on the object. This re-opens the configuration dialog, allowing you to change the alignment.



We've also turned on the border for this object.



With a few adjustments the form is ready to use. As long as you have a photo with the correct name available, the correct photo will appear for each fruit.



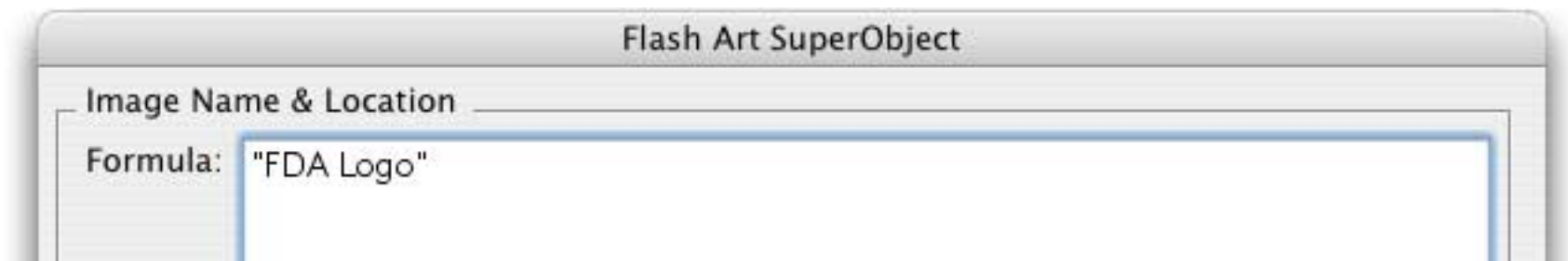
Using Flash Art to Display a Fixed Image

Flash art is usually used to display an image that changes, like the fruit in the previous example. However, it can also be used to display a fixed, unchanging image like a logo or a background. Of course you can also use a standard picture object (see "[Fixed Images](#)" on page 741) to display a fixed image, so why use Flash Art? The primary advantage is that using Flash Art a single image can be displayed over and over again without taking up any additional memory or disk space. Only one copy of the image is needed, which can be used multiple times in the database (or even multiple databases).

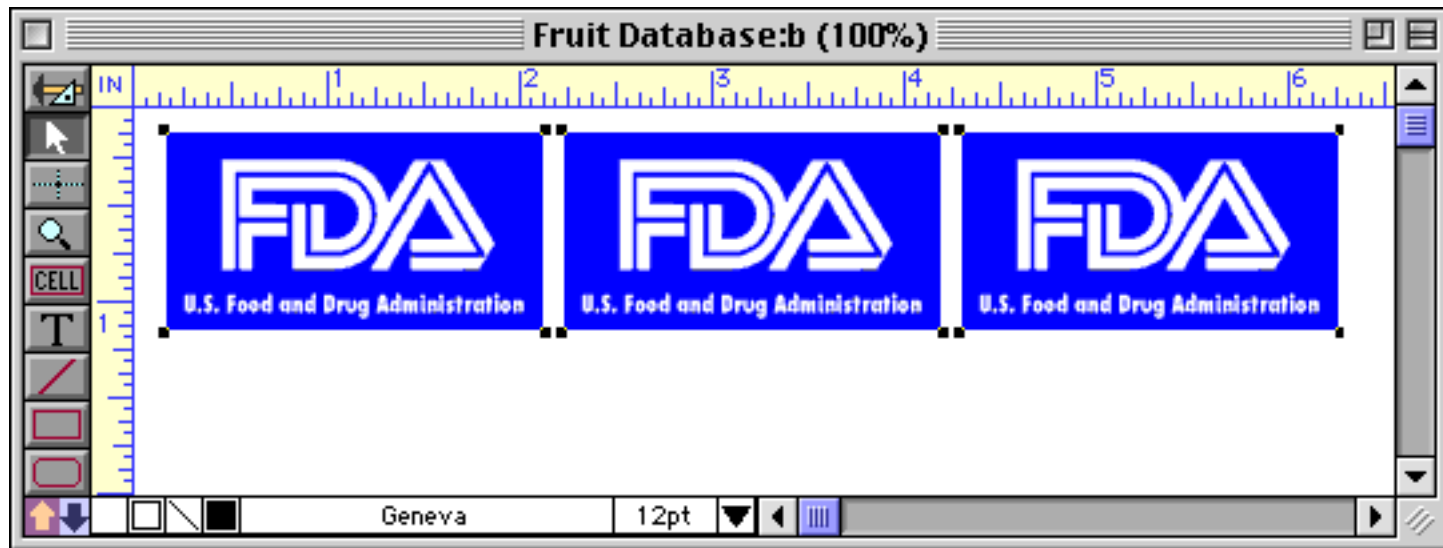
To display a fixed, image, simply enter the name of the image into the Flash Art formula, surrounded by quotes ("). For example, suppose you have an image named [FDA Logo](#).



You can display this image in any form or report by using this formula in a Flash Art or Super Flash Art object.



You can use this logo as many times as you like within a single form or across multiple forms.



As an added bonus, if you ever need to modify the logo it only needs to be modified in one place.

Using Flash Art to Display a Smart Background

Flash Art isn't just for displaying pictures. It can also be used to display a border or background that changes depending on the data in the database. To illustrate this we'll use this database of hotel listings.

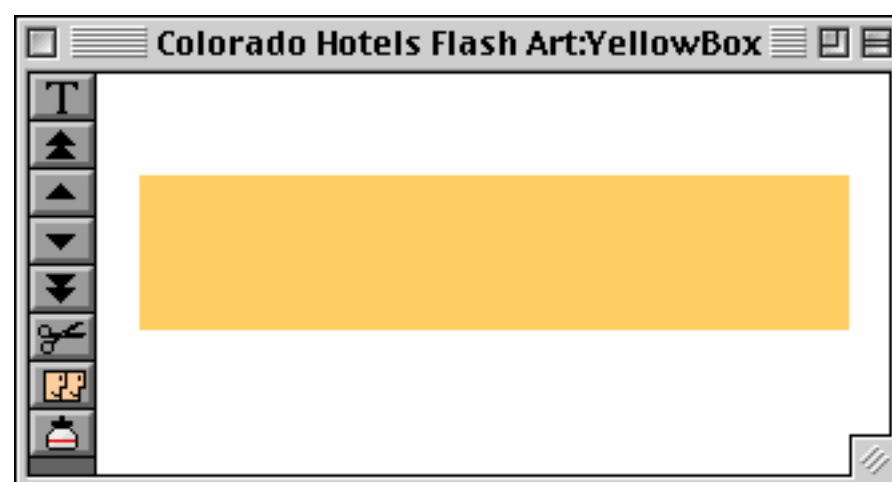
Hotel	City	Rate	Units	Phone	Stars
Apache Court	Colorado Springs	17.00	13	471-9440	1
Argo Motor Inn	Idaho Springs	36.00	17	567-4476	3
Aspen Lodge	Estes Park	74.00	23	586-4241	4
Aspen Motel	Loveland	24.00	16	667-0725	1
Aspen Square	Aspen	85.00	105	925-1000	4
B'n B Motel	Colorado Springs	19.00	17	598-3816	3
Beavers Village Ski Chal	Winter Park	128.00	148	726-5741	3
Bel Air Motel	Colorado Springs	20.00	18	598-7057	1
Bel Mar Motel	Pueblo	28.00	23	542-3268	3
Bel Rau Lodge	Cortez	26.00	1	565-3738	2
Bella Vista Court	Colorado Springs	20.00	13	633-4655	1

439 visible/439 total

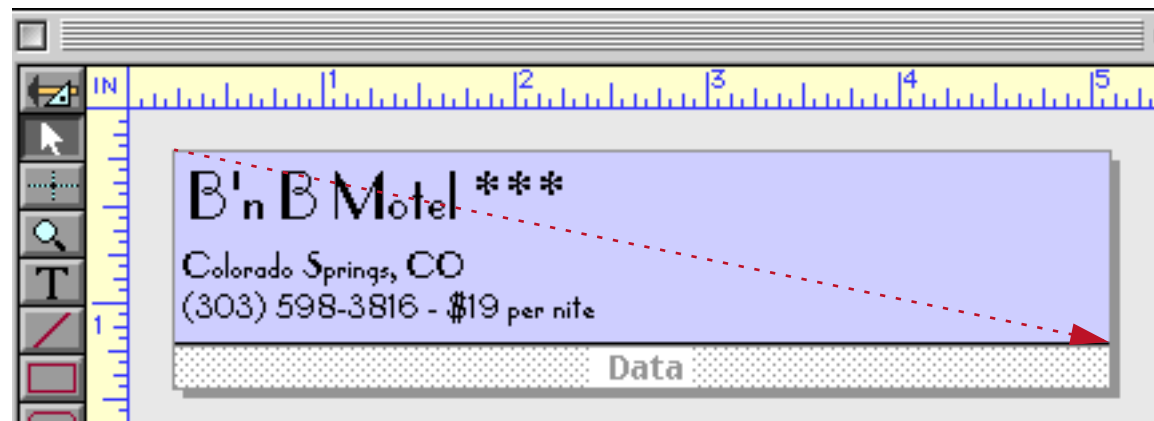
We've created a view-as-list form to display this data (see "[View-As-List Forms](#)" on page 899).



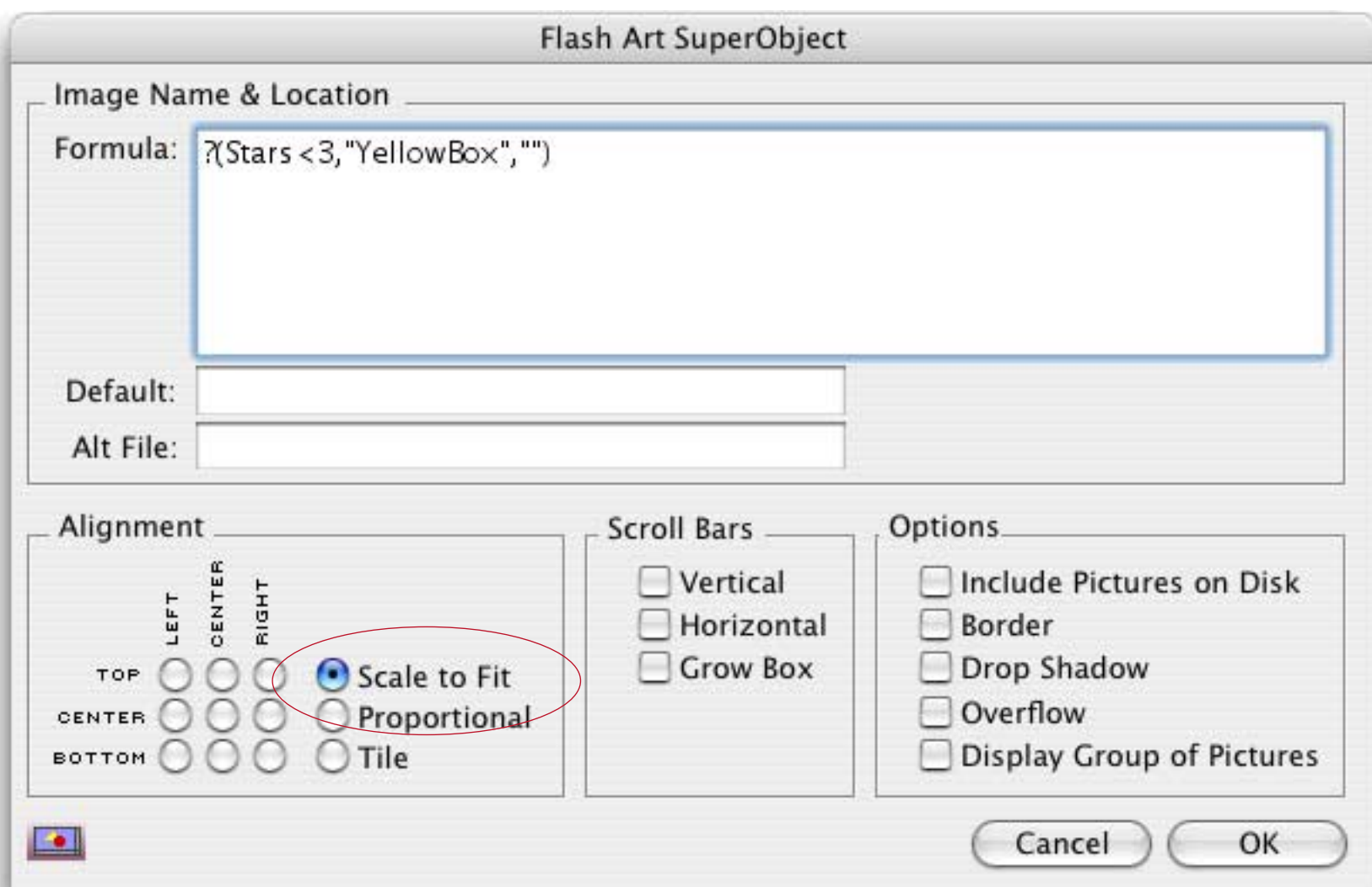
Our goal will be to display a yellow background if the hotel has a rating of 1 or 2 stars. The first step is to create a yellow box. You can do this with a graphics program or with Panorama itself ("[Creating a Graphic Object](#)" on page 494). Paste the yellow box into Panorama's Flash Art Scrapbook (see "[Adding a New Image to the Scrapbook](#)" on page 765) with the name **YellowBox**.



Now switch to Graphics Mode and create a Super Flash Art object that exactly covers the data tile. You may need to nudge the object precisely into place after you have created it (see “[Nudging an Object \(or Objects\)](#)” on page 509 and “[Nudging the Size of an Object](#)” on page 513).



Set up the Flash Art formula so that the yellow box will be displayed only if the number of stars is 1 or 2 (in other words, less than 3). You'll also want to make sure that the **Scale to Fit** option is checked. This ensures that the yellow box fills the entire area.



Once the object is created, use the Send To Back command to move it behind the other objects on the data tile (see “[Changing the Stacking Order](#)” on page 569). Finally, switch back to Data Access Mode to see the finished result. Voila! Hotels with less than 3 stars have a yellow background, while 3 stars and up have a blue background. (The first line, the **B'n B Motel**, is actually blue, but is currently highlighted to indicate that it is the current record. If you move to another record you will see that this record is actually blue also.)

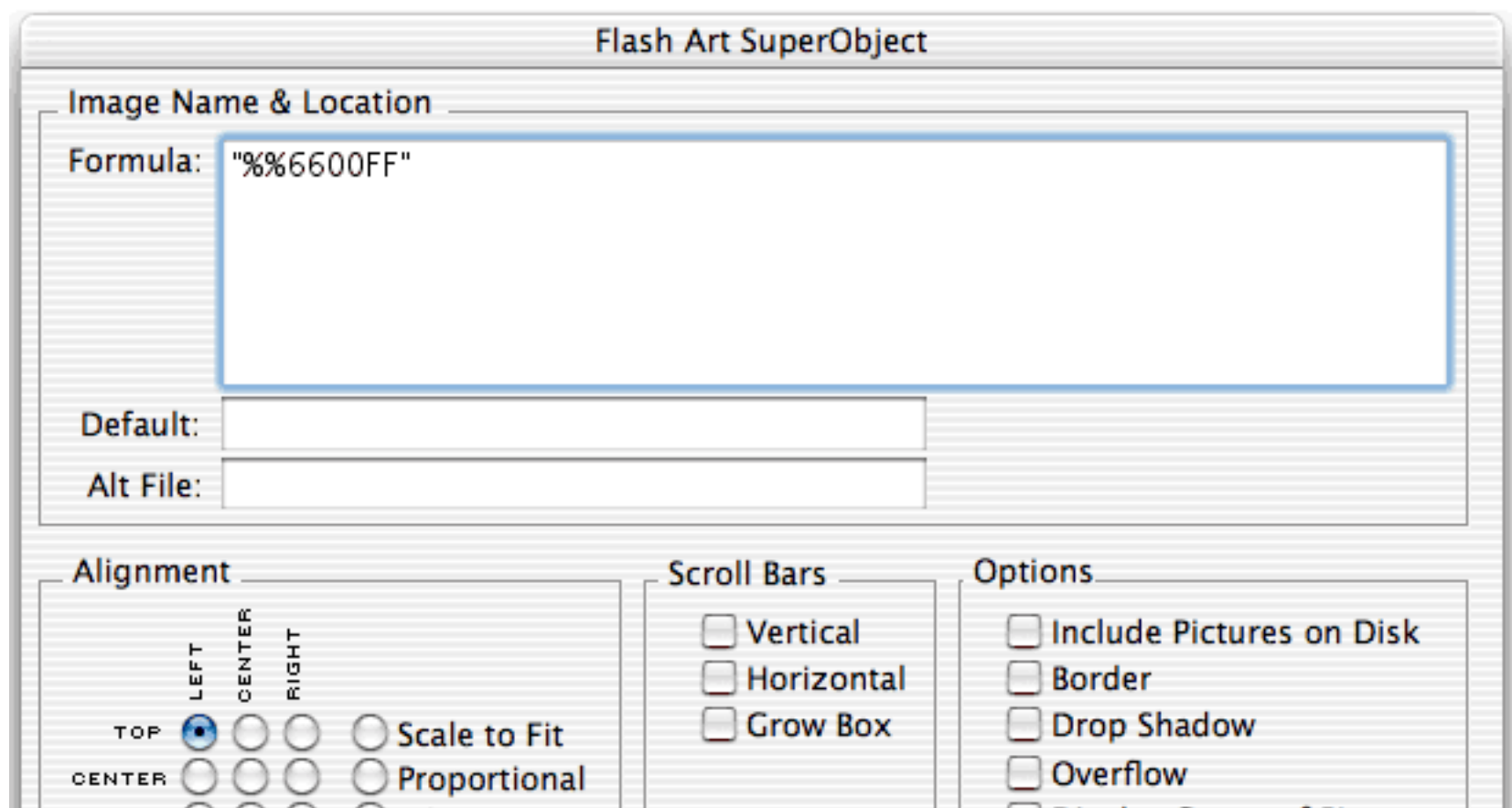


The **?(** function is the heart of this formula. See “[The ? Function](#)” on page 130 of *Formulas & Programming* to learn more about it.

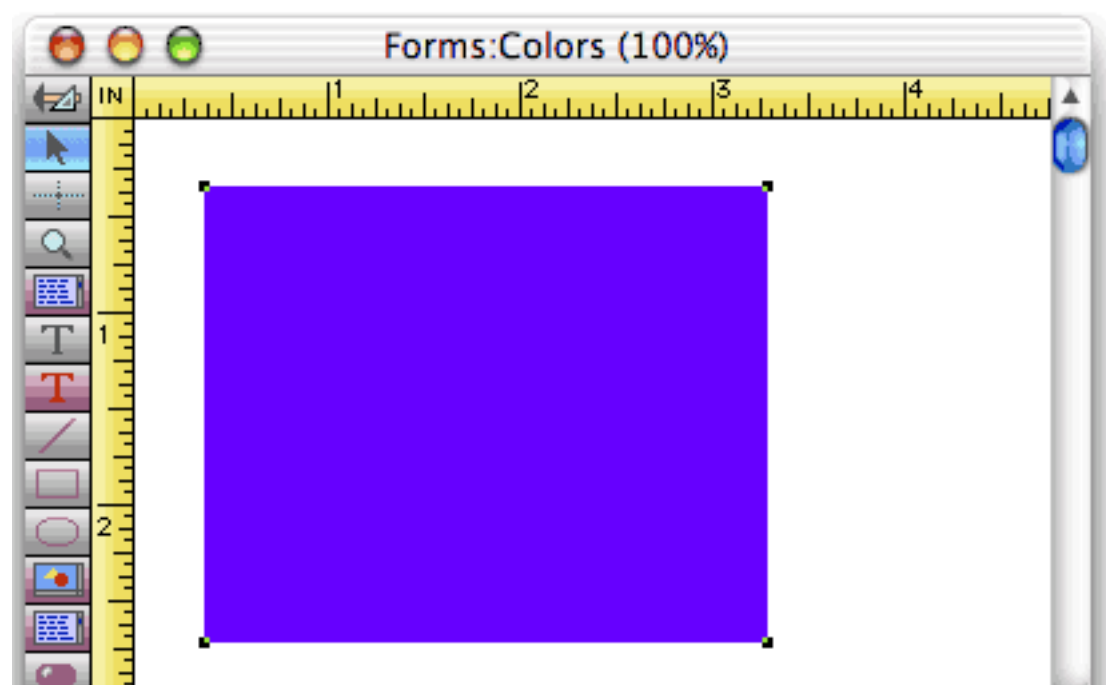
Using Flash Art to Display a Color

In the previous example the Super Flash art object was used to display a simple color. Instead of preparing a color object in advance, the Super Flash art object can also simply display any color you want on the fly. No image is required - the object generates the color on it's own.

To display a color the formula must calculate a text value that starts with two percent signs in a row (%%). This is followed by six hexadecimal characters that specify the color exactly the same way that colors are specified in HTML. The first two hexadecimal digits specify the red component of the color (from 00 to FF), the next two digits specify the green component, and the final two digits specify the blue component. For example, %%FFFFFF is white, %%000000 is black, %%00FF00 is green, etc. Of course if you are displaying a fixed color you'll need to include quotes around these values so that the formula will work correctly, in other words "%%FFFFFF", "%%000000" and "%%00FF00" etc. Here is an example of how to set up a solid color.



In graphics mode, this object will appear as a purple box.



Although this feature can be used to display virtually any fixed color, what makes this feature really interesting is the ability to change the color on the fly. For example, you can set up a Super Flash Art object with the formula "%%" + SuperColor. You can set this object to red with a procedure, like this:

```
fileglobal SuperColor
SuperColor="FF0000"
showvariables SuperColor
```

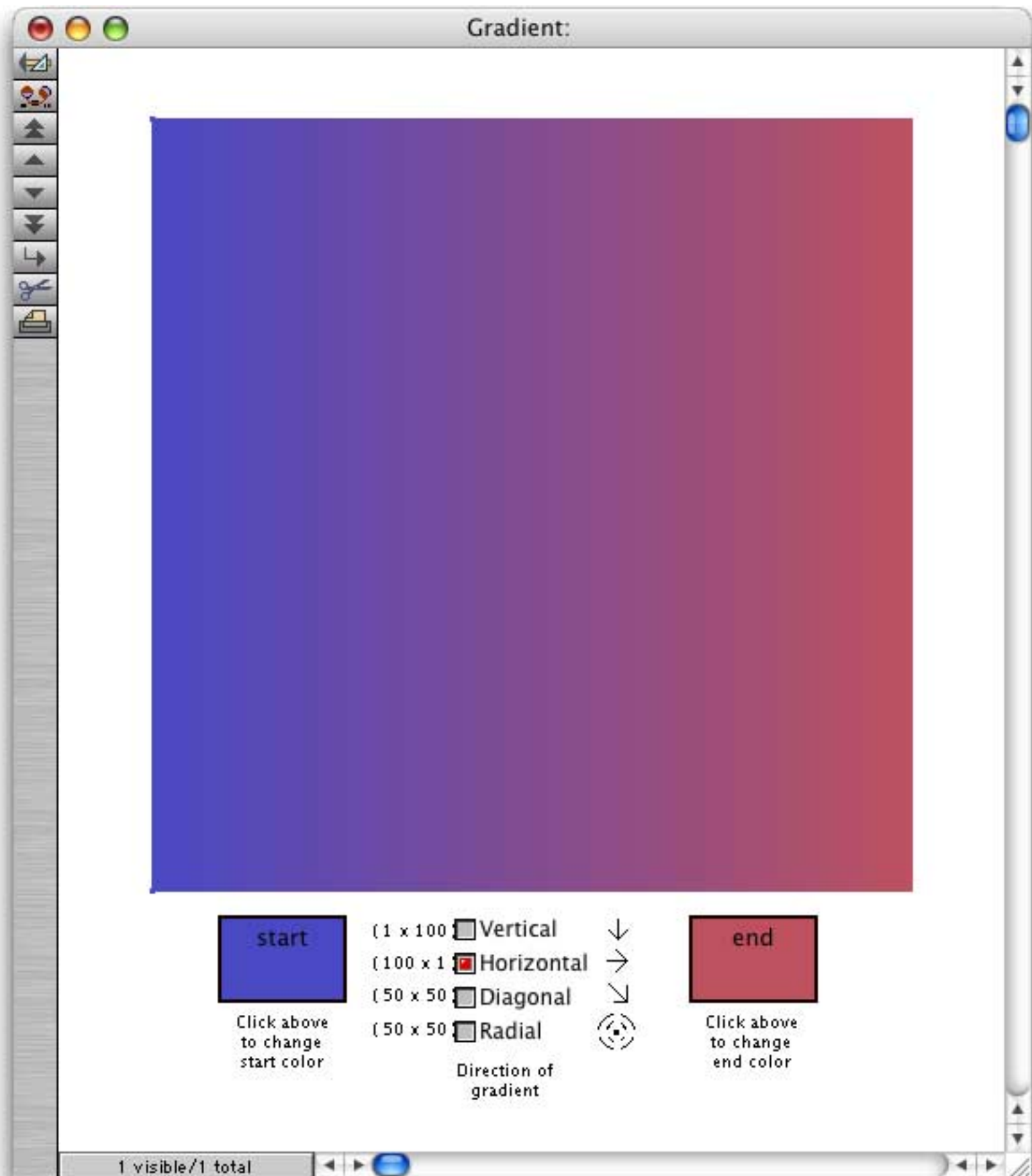
Later if you want to change the color to yellow this can be done on they fly with another procedure.

```
SuperColor="FFFF00"
showvariables SuperColor
```

Here is a procedure that gradually fades the object from black to blue.

```
local bluecolor
bluecolor=0
loop
    SuperColor="0000"+radixstr("hex",bluecolor)[-2,-1]
    showvariables SuperColor
while bluecolor<256
```

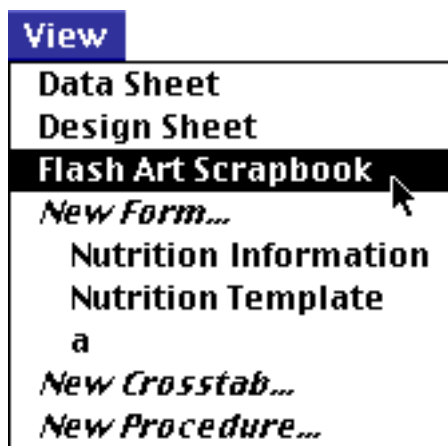

Panorama customer Gary Yonaites has created a cool demo that uses the solid color feature in combination with a Super Matrix object to create blends. This demo database, called Gradient, has been included with the Panorama example files.



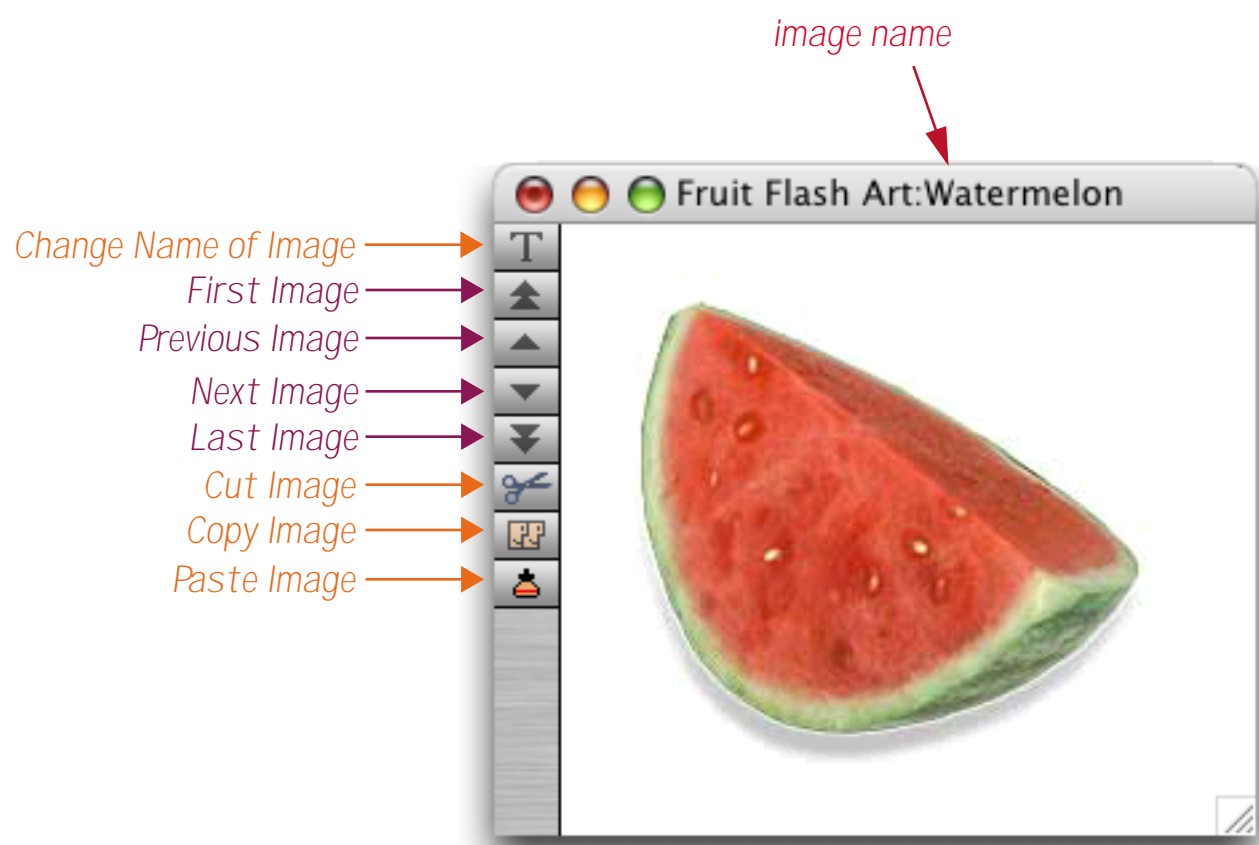
The gradient above was not created in PhotoShop or some other graphics program, but within Panorama itself. By clicking on the check boxes and color selections you can change the gradient on the fly. Thanks Gary!

The Flash Art Scrapbook (Gallery)

Every Panorama database has its own Flash Art Scrapbook, a collection of images that can be displayed within the database. (You can also display images directly from disk files without installing them in the database — see “[Displaying Images Directly From Disk Files](#)” on page 769.) Use the View menu to open the Scrapbook.



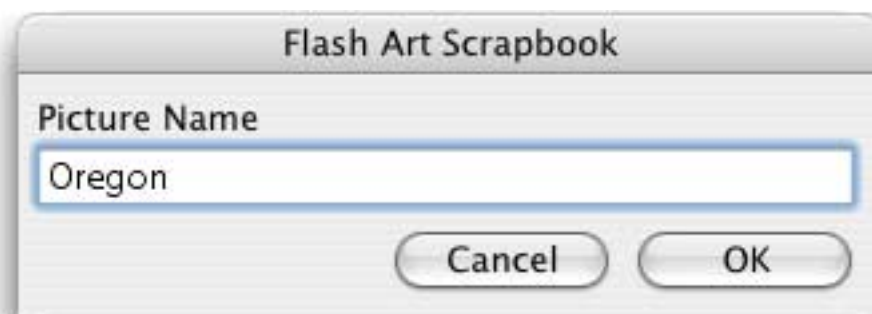
The Flash Art Scrapbook window displays one picture at a time. The name of the picture appears in the window's title bar (for example, the image in the window below is named [Watermelon](#)). You can use the Previous Picture and Next Picture tools to flip through the pictures in the Scrapbook.



You can fill the Flash Art Scrapbook with images you want to use in the database (up to the amount of memory available in your computer). Once a picture is pasted into the Flash Art Scrapbook, it can be used over and over again.

Adding a New Image to the Scrapbook

To add a new picture to the Flash Art Scrapbook, use the **Paste** command or **Paste** tool. Before it adds the picture to the Flash Art Scrapbook, Panorama will ask you for the name of the picture.



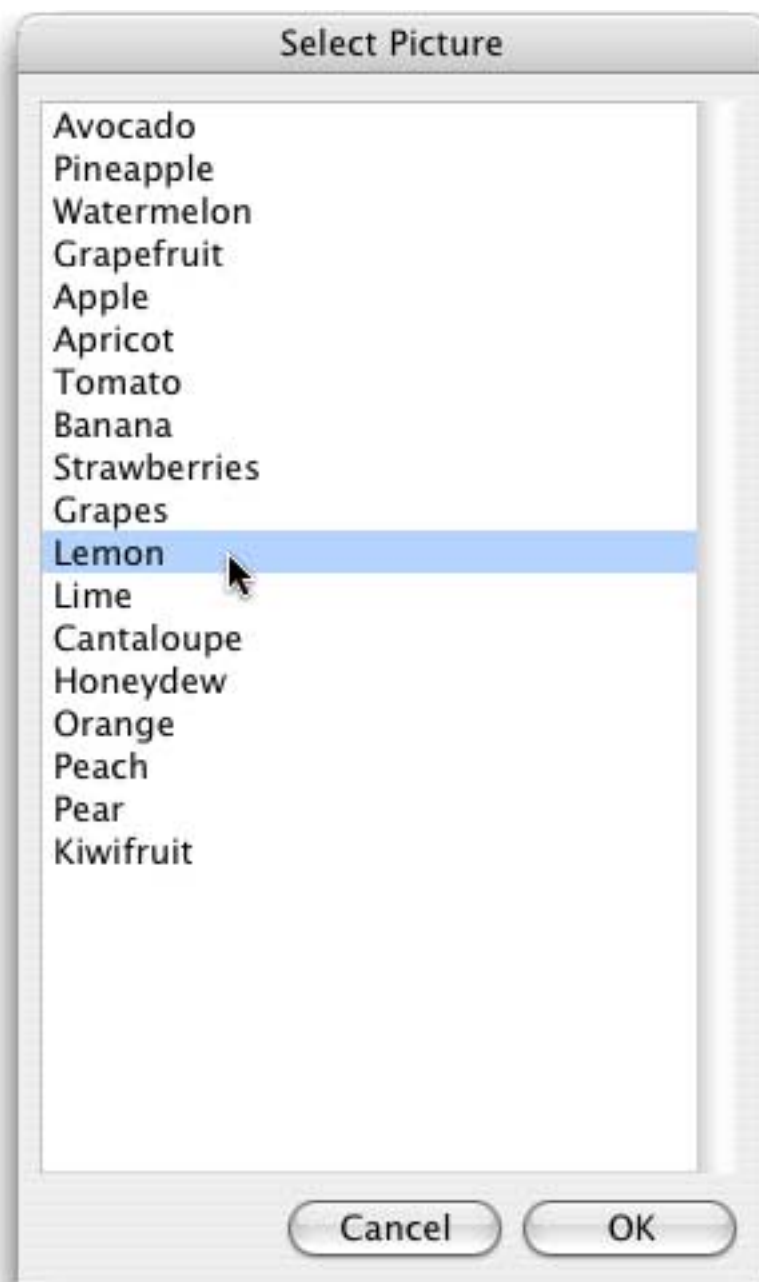
It's a good idea to think about image names before you start. Usually the picture names should correspond to the data in the database. For example if the picture is a map of Oregon, you might name the picture Oregon or OR, depending on how you have entered the state name in your database. If the picture is a photograph of an employee named Bob, you might name the picture Bob or use Bob's initials. Again it depends on how you have entered the information in the database. Keep in mind that the image names do not have to exactly match the data in the database — but you must be able to write a formula that can convert the database information into the image name. For example, suppose you had an employee database with fields for first, middle and last names. The images could be named according to the employees initials, for example **CSL** or **SLE**. In the Flash Art object you would then need to use the formula

```
First[1,1]+Middle[1,1]+Last[1,1]
```

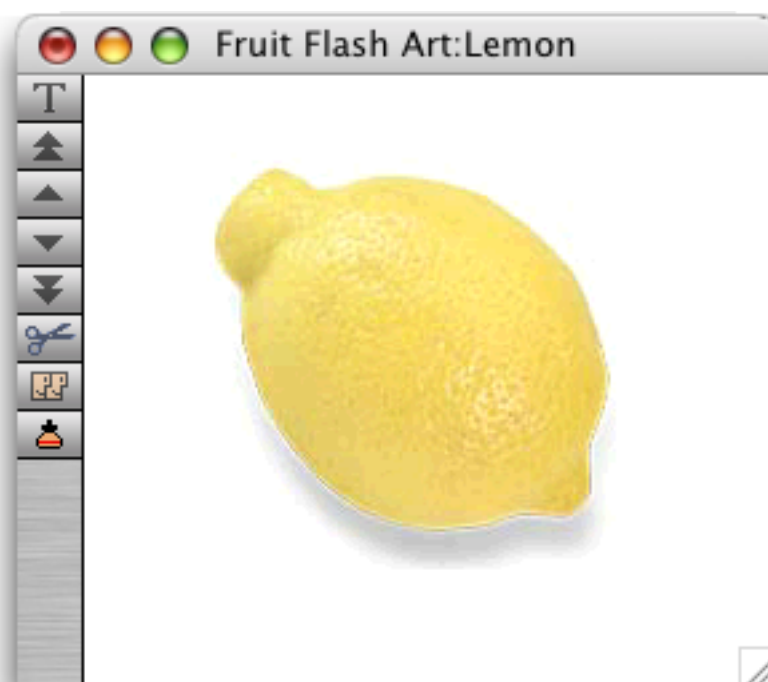
This formula uses text funnels (see “[Taking Strings Apart \(Text Funnels\)](#)” on page 69 of *Formulas & Programming*) to extract the initials from the full name, automatically displaying the correct image.

Locating an Image in the Flash Art Scrapbook

The **Find Picture** command (in the Picture Menu) displays a list of all the images in the Flash Art Scrapbook



Choose the image you want to see and press **OK** (or double click on the name) to see the image.

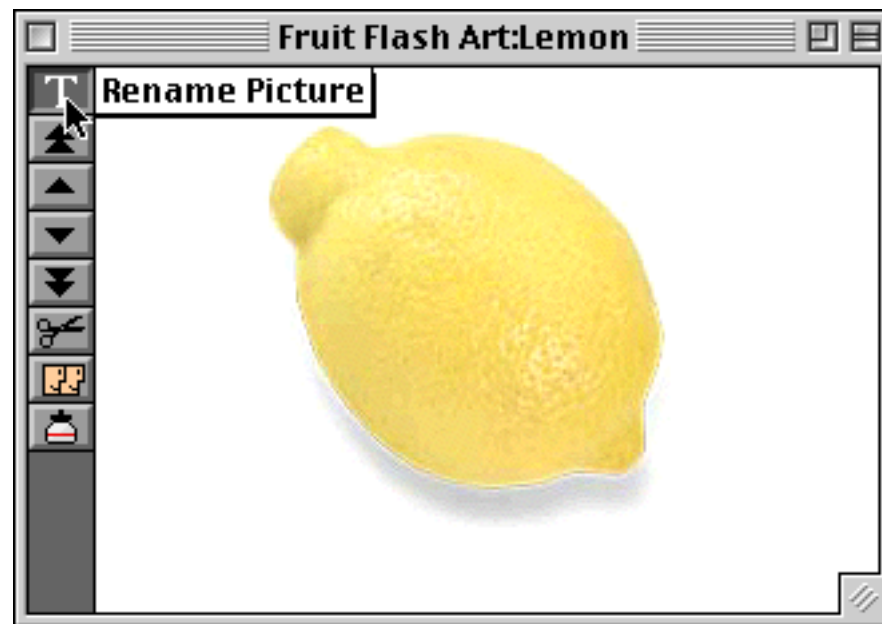


Removing an Image from the Flash Art Scrapbook

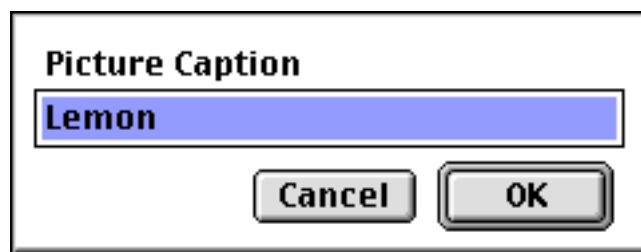
To remove an image from the Flash Art Scrapbook, first locate the image and then use the **Cut** tool or choose **Cut** from the Edit Menu.

Renaming an Image

To give an image a new name use the **Rename Picture** tool.

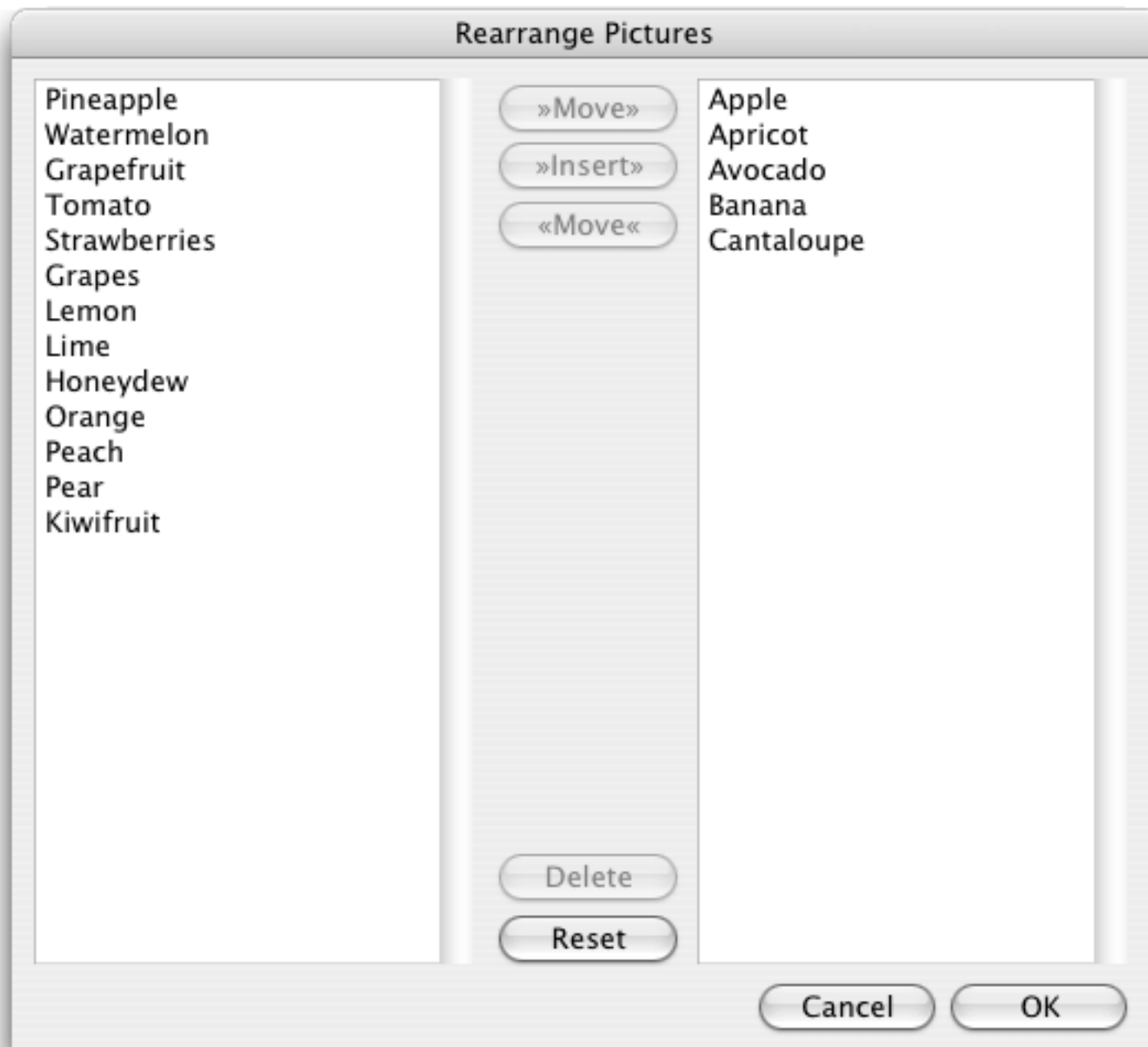


This tool opens a dialog box that allows you to change the name of the currently visible picture.



Re-Arranging the Image Order

You can use the **Re-Arrange Pictures** command in the Picture Menu to change the order of the images within the Flash Art Gallery.



Simply copy the images from the left to the right in the new order. Double click on an image to copy it to the right. (Note: There's really no reason to ever re-arrange the order of the images, since Panorama doesn't care what the order is. The only exception is if you have two images with the same name. In that case, Panorama will always display the first image in the list and ignore the rest.)

Printing the Flash Art ScrapBook

You can use the Print command to print all the pictures in the Flash Art Scrapbook. Panorama will print as many pictures per page as it can fit.

Importing PICT Files into the Flash Art Scrapbook

Many graphic applications can save pictures as PICT files. The **Import PICT** command in the Picture Menu allows you to add these files to the Flash Art Scrapbook directly, without having to go through the clipboard.

To import a single PICT file into the Flash Art Scrapbook, open the **Import PICT** dialog (Picture Menu), then choose the file and press the **Load** button. Panorama will use the name of the PICT file as the picture name.

You can import every PICT file in a folder by pressing the **Load All** button. All the pictures in the folder will be added to the Flash Art Scrapbook, using the names of the files as the names of the pictures.

A Flash Art object can also display PICT files directly from disk without loading them into memory. This saves memory, but is slower than displaying pictures actually loaded into the gallery. To learn how to use PICT files directly see “[Displaying Images Directly From Disk Files](#)” on page 769.

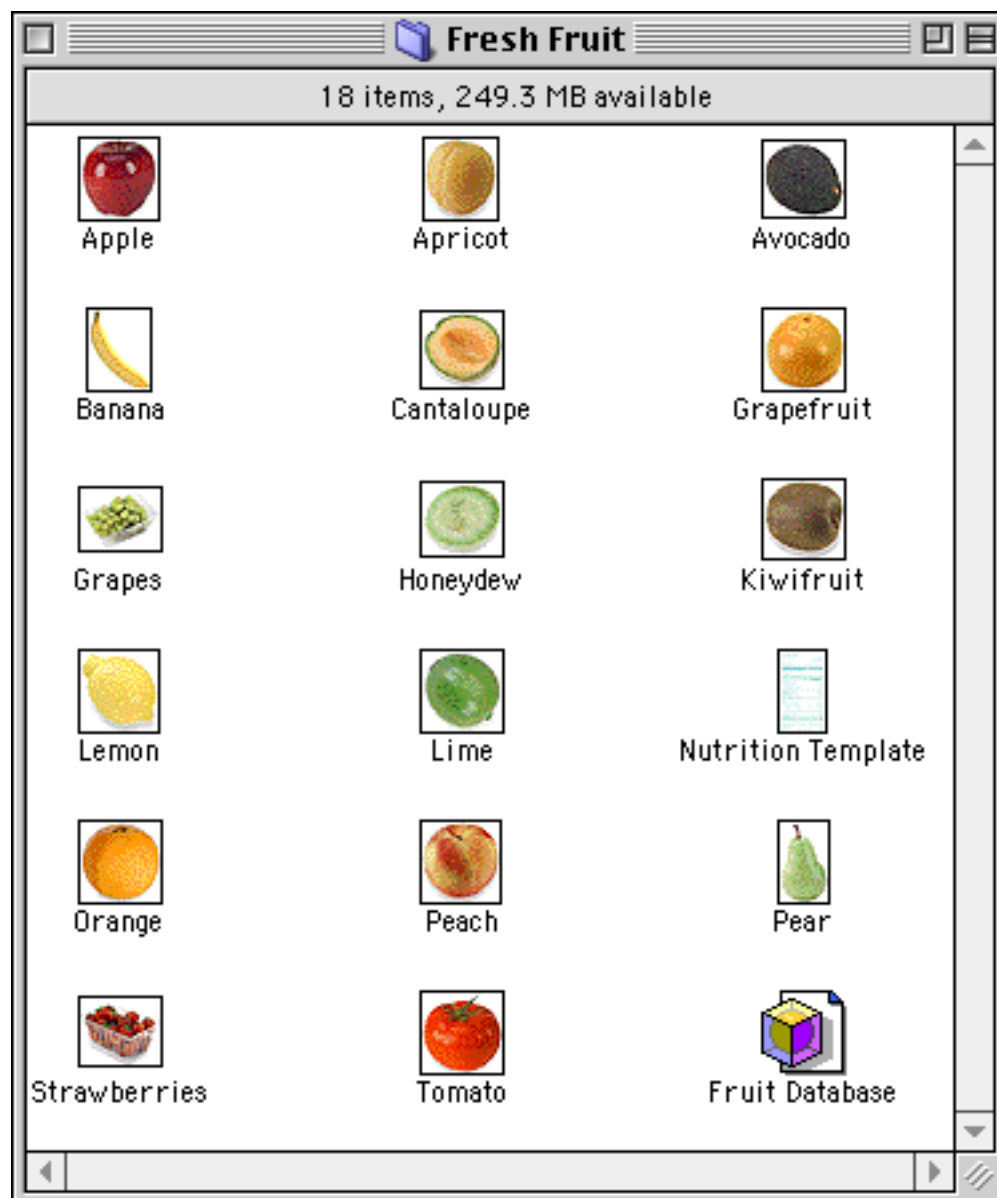
Transferring the Flash Art Scrapbook to Another Database

You can use the **Save Flash Art Scrapbook** and **Import Flash Art Scrapbook** commands to copy the pictures in a Flash Art Scrapbook from one database to another. The **Save Flash Art Scrapbook** command saves the entire Scrapbook in a separate file. The **Import Flash Art Scrapbook** command imports the saved pictures into the current Flash Art Scrapbook.

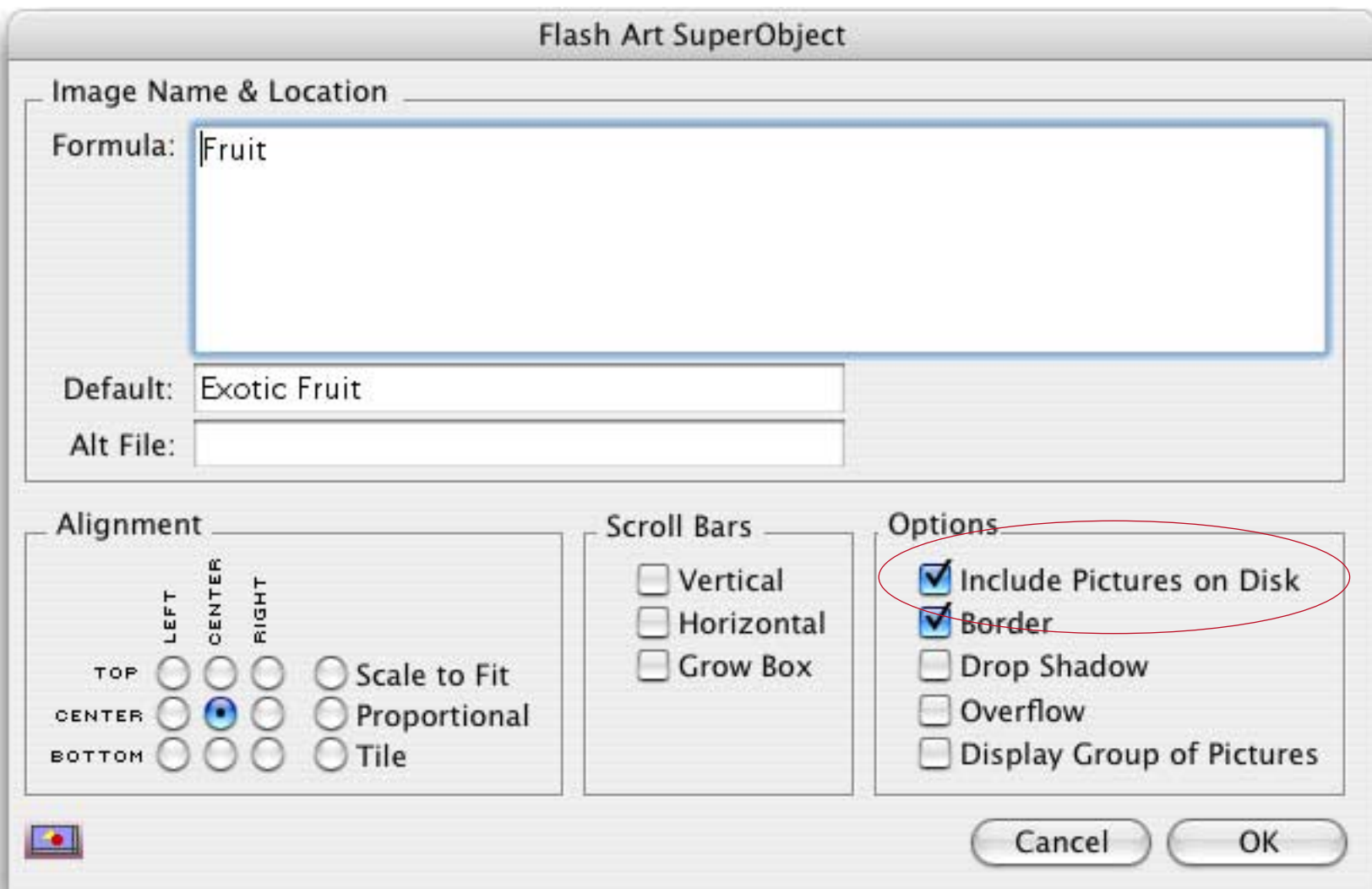
To transfer all the pictures in database A to database B, first open the Flash Art Scrapbook in database A and choose the **Save Flash Art Scrapbook** command (Picture Menu). Type in a name for the exported Flash Art Dialog, and press **Save**. Now open the Flash Art Scrapbook in database B and choose the **Import Flash Art Scrapbook** command. All of the pictures will be added to database B.

Displaying Images Directly From Disk Files

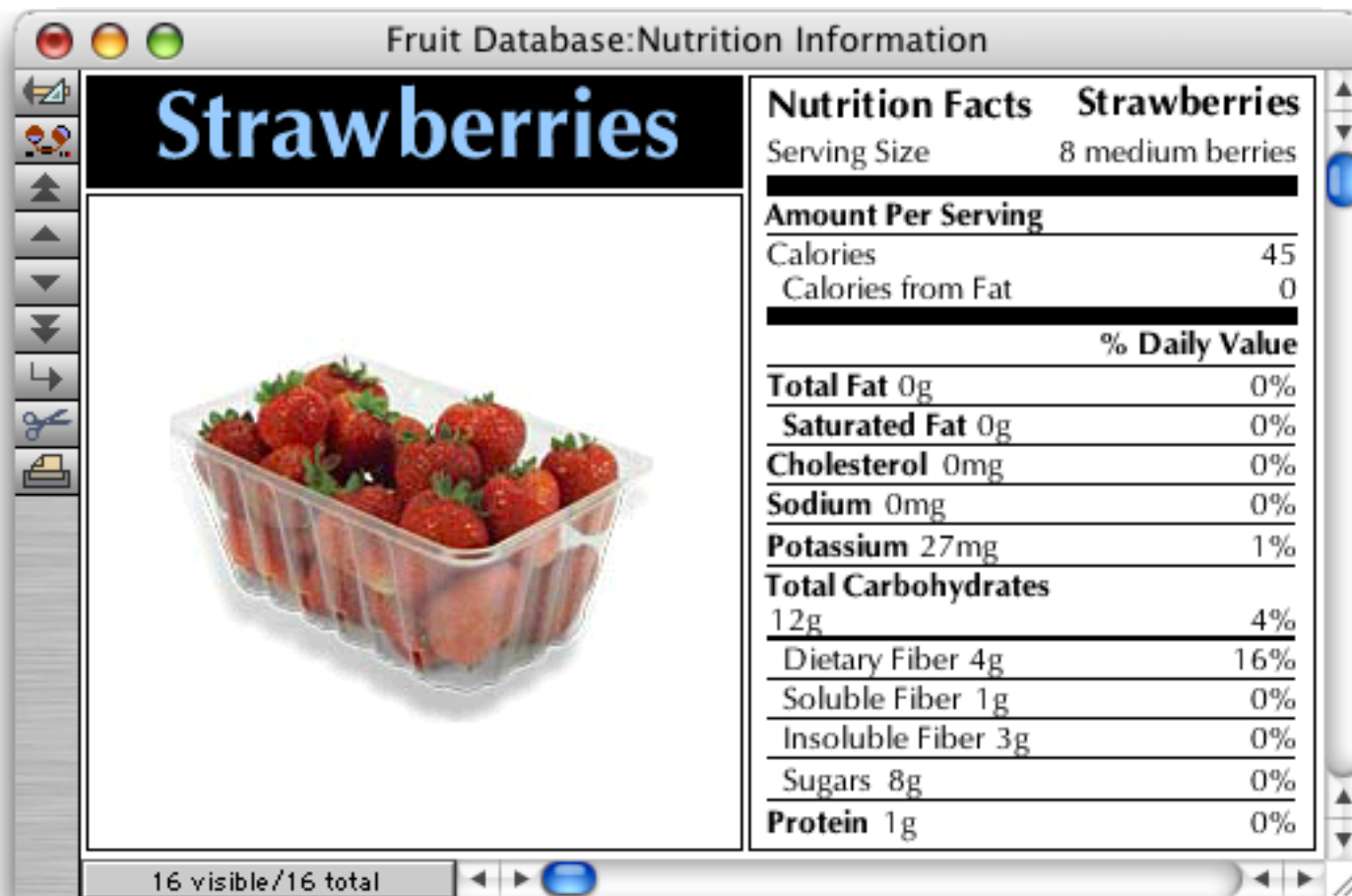
In addition to displaying images from the Flash Art Scrapbook, Panorama can also display images directly from disk files. If the images are large, this can save a tremendous amount of memory. It also makes it easier to edit the images. The downside is that if you move or copy the database to a new location you’ll have to make sure to move or copy all of the images also. Here is a typical folder full of image files.



To allow Panorama to display images directly from disk files you must enable the **Include Pictures on Disk** option.



Since the images are in the same folder as the database itself, only the image name is needed as the formula (in this case the image name is in the field **Fruit**). All of the images have been removed from the Flash Art Scrapbook in the database shown below (saving 782 kilobytes of memory - almost a megabyte!), so now the images are displayed directly from the disk files.

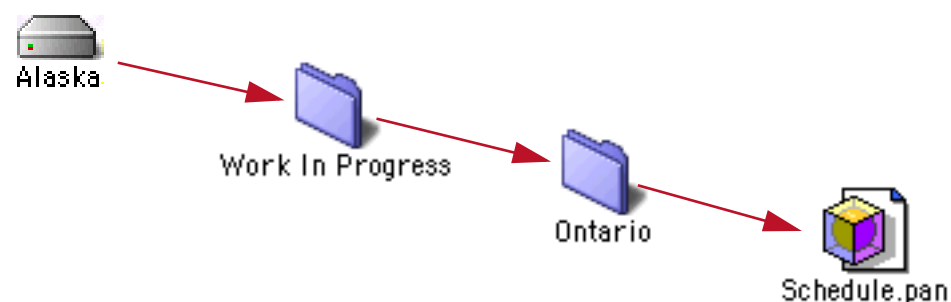


Note: If the Flash Art Scrapbook is not empty, Panorama will look there first when trying to locate an image. If the Flash Art Scrapbook contains an image with the correct name, it will be displayed, and Panorama will ignore any disk file with the same name.

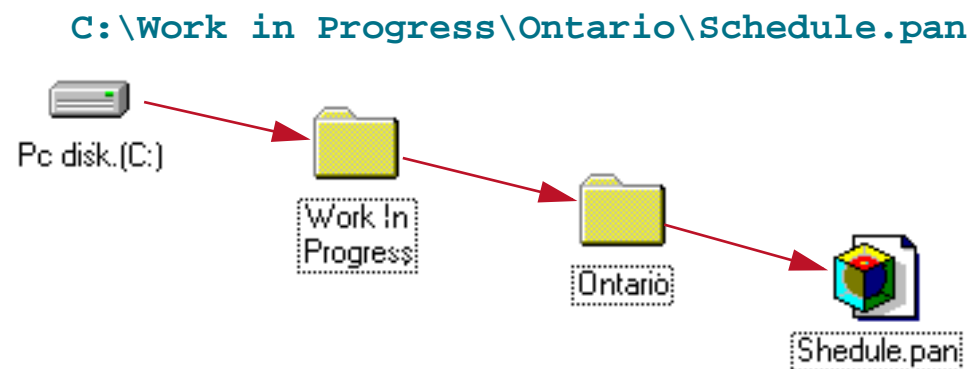
Displaying Images in a Different Folder (Directory)

Flash Art images don't have to be in the same folder as the database—they can be in any folder (directory) on your hard disk, or even on a removable media like a CD-ROM or a Zip disk. On the Macintosh, the exact location of any file can be specified by stringing together the name of the volume (disk) and the folders, each separated by a colon.

`Alaska:Work in Progress:Ontario:Schedule.pan`



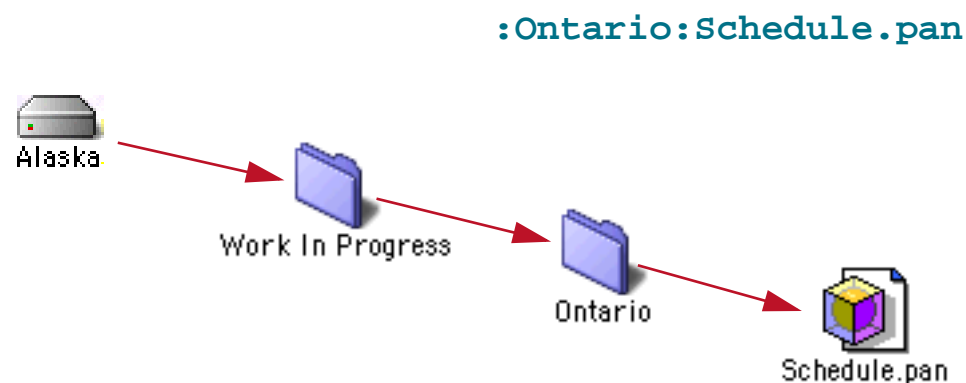
Windows systems are similar, but backslashes (\) are used instead of colons, and drive names always consist of letters followed by a colon (A:, B:, C:, etc.).



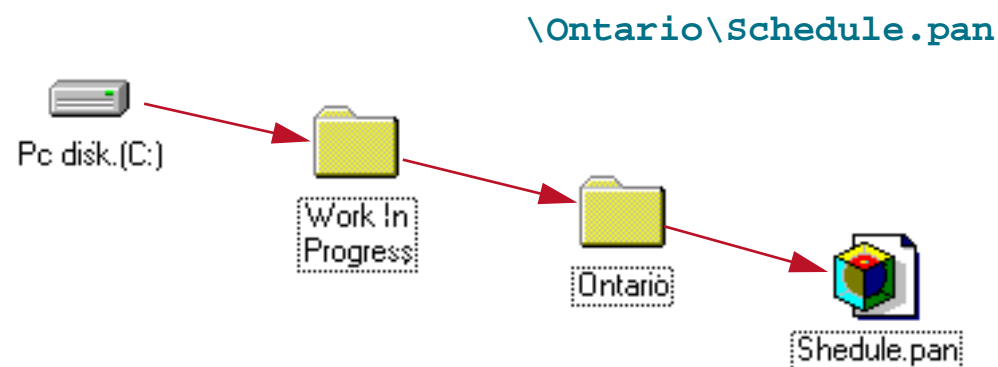
For cross platform compatibility, Panorama also allows you to use colons when using Panorama for Windows, like this:

`C::Work in Progress:Ontario:Schedule.pan`

A file's location may also be specified relative to the current database. For example, suppose the current database was in the `Work in Progress` folder. In that case you could specify the location of the `Schedule.pan` file by simply leaving off left hand portion of the specification. The specification must begin with a colon or backslash to indicate that it is relative to the current folder and not an absolute location.



On PC systems you can specify this relative location like this:

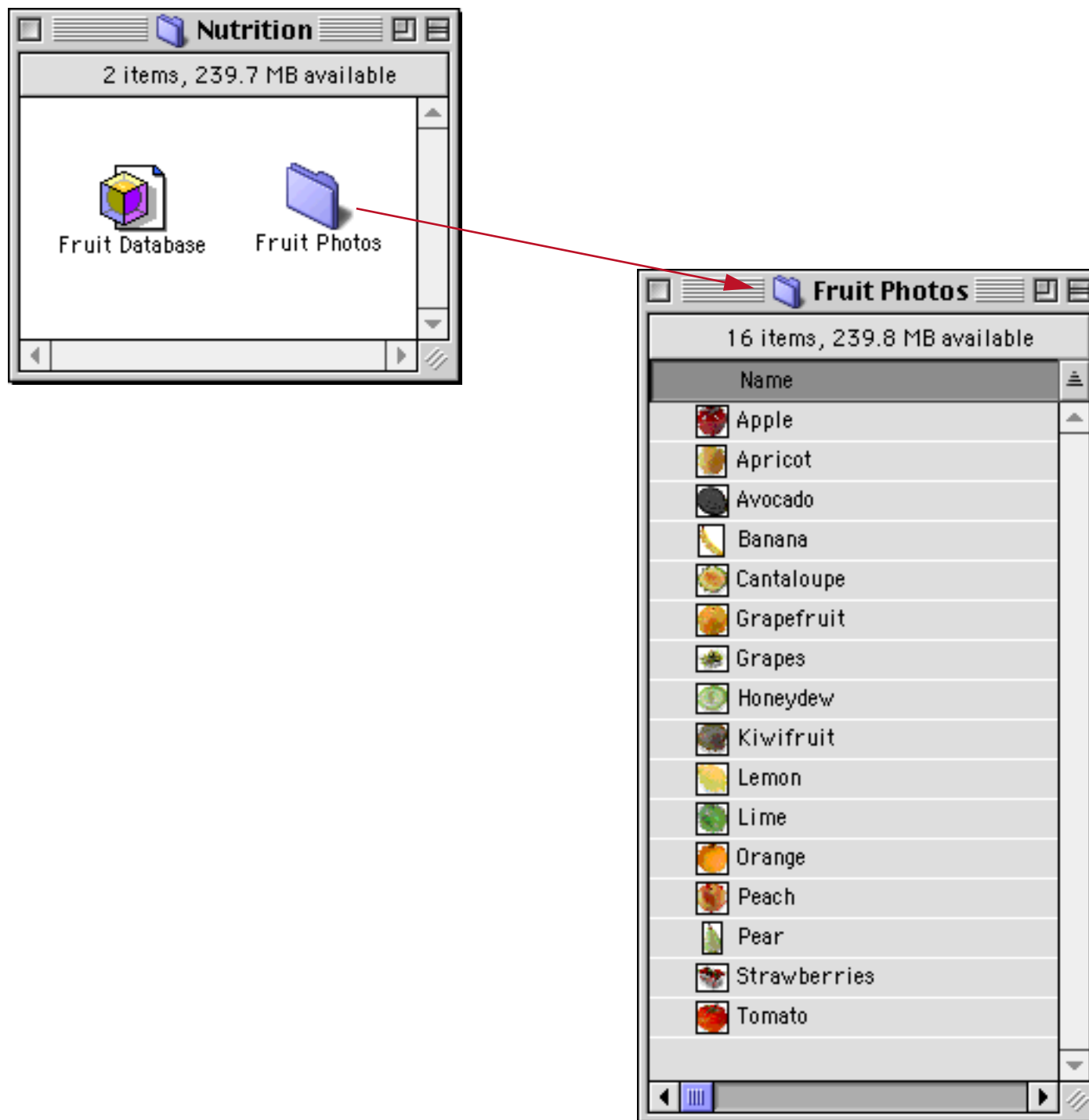


However, keep in mind that on PC systems Panorama will accept `:` instead of `\`. Therefore, the specification

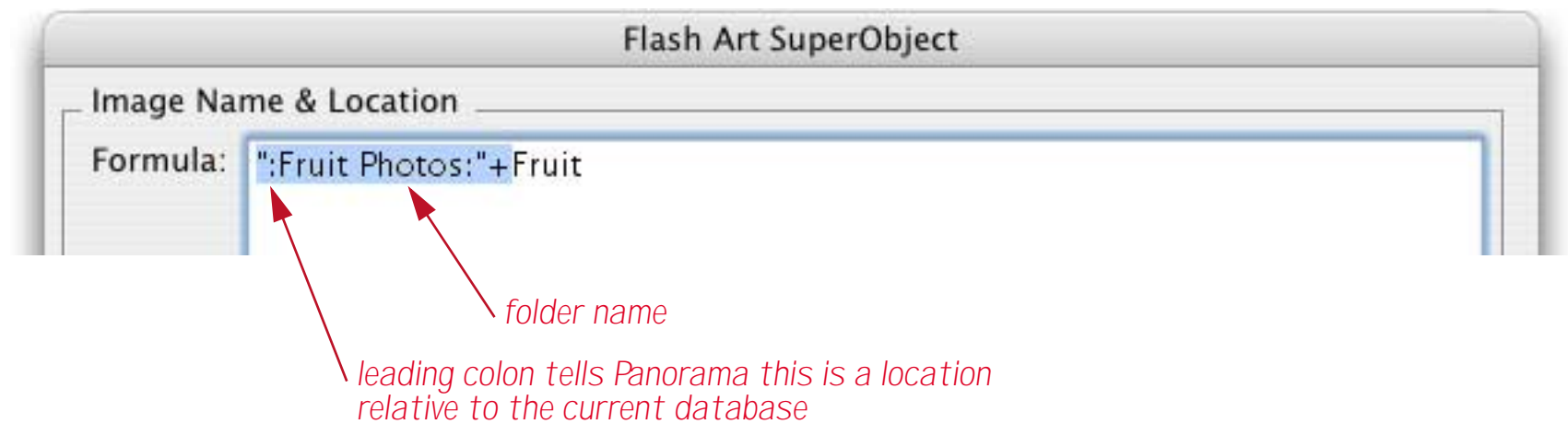
`:Ontario:Schedule.pan`

will work on both Windows and MacOS based computers. You should use colons if your database might ever be used on both Macintosh and Windows computers.

To illustrate all of this with a real-world example, let's revise the Fruit Nutrition database from the previous section. Instead of placing all of the image files in the same folder as the database, we will move them to their own folder, with that folder in the same folder as the database itself.

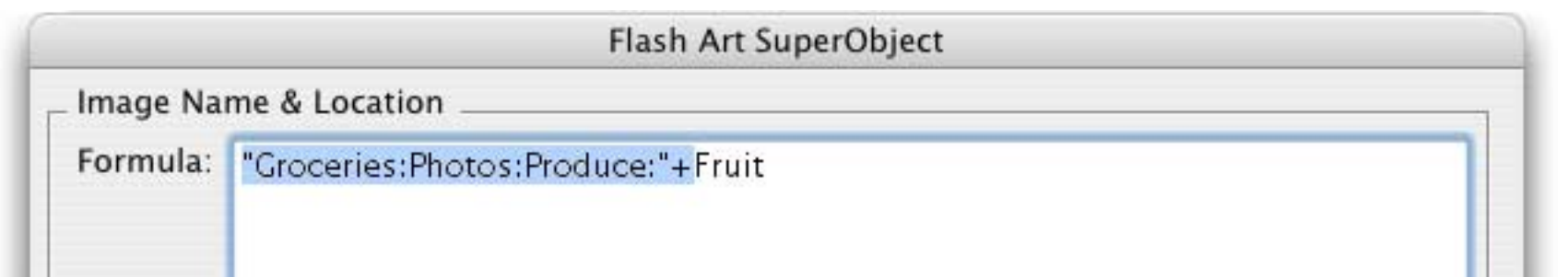


The **Fruit Photos** folder is said to be **nested** inside the **Nutrition** folder, which is the folder that actually contains the database. To display the photos, the formula in our Super Flash Art needs to be modified.

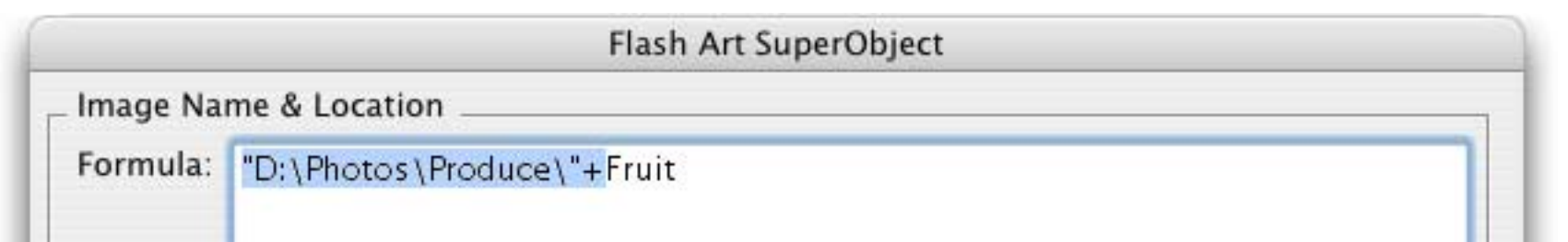


The new formula combines the fruit name with the folder location. For example, if the fruit name is **Apricot**, the result of the formula will be **:Fruit Photos:Apricot** — the exact location for the image.

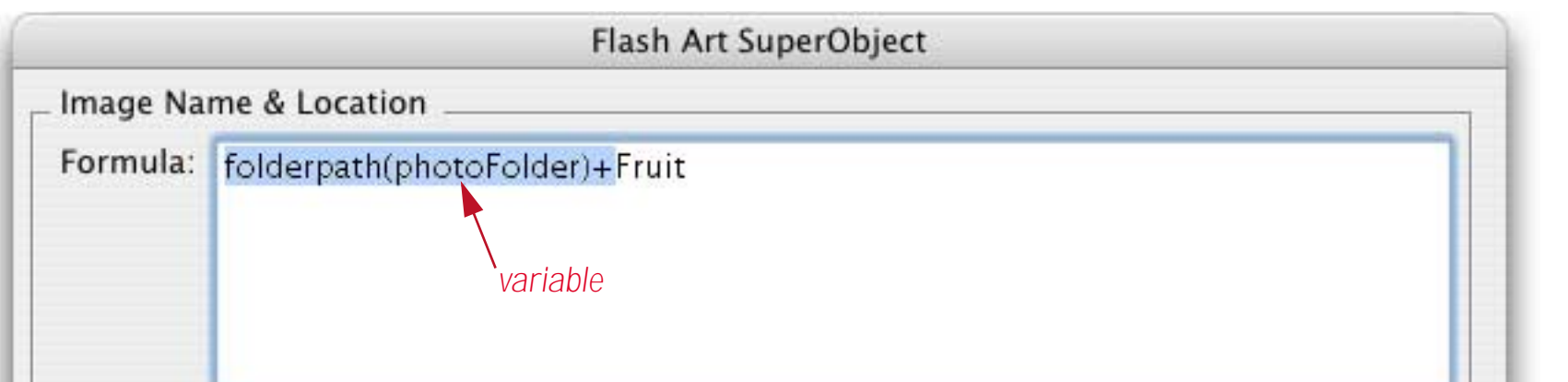
A similar technique can be used to specify an absolute location for the image. Suppose you have a CD-ROM named **Groceries** that contains the images nested within the **Produce** folder within the **Photos** folder. The formula below could be used to display the images.



On the PC the CD-ROM drive is usually **D:**, so this would be the formula.



The photos do not have to be in a fixed location. Using a variable (see "[Variables](#)" on page 53 and "[Variables](#)" on page 247 of *Formulas & Programming*) and the `folderpath()` function (see "[Disk Files and Folders](#)" on page 165 of *Formulas & Programming*) you can allow the folder to be moved around.



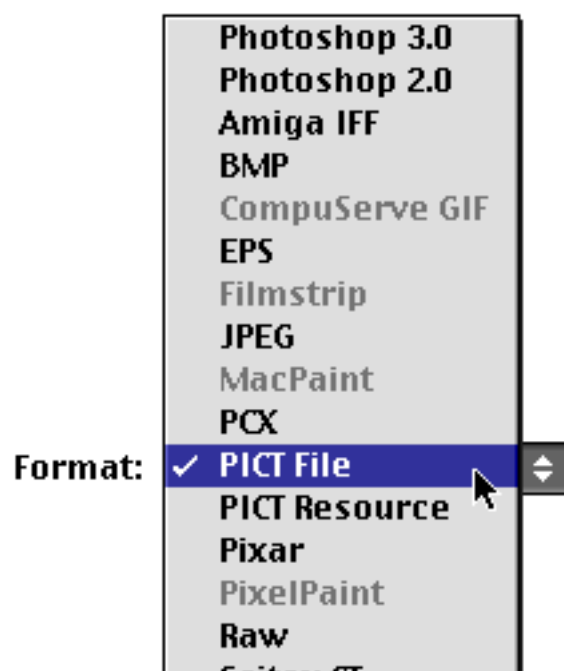
Elsewhere in your database you can include a procedure (see “[Procedures](#)” on page 203 of *Formulas & Programming*) like this to allow the database user to select the folder containing the images.

```
local xFile,xFolder,xType
openfiledialog xFolder,xFile,xType," "
if xFile=""
    stop /* stop because the Cancel button was pressed */
endif
photoFolder=xFolder /* update location of photos */
showvariables photoFolder /* make sure new photos are displayed immediately */
```

All of the previous examples have assumed that the images are all in the same folder. However, that is not necessary. If you wish, the folder location may be included in the database itself, allowing different images to be in different folders. The folder location may be combined in with the image name in a single database field, or they may be stored in separate fields and combined in the Flash Art formula.

Displaying Non PICT Images (Enhanced Image Pack)

The standard configuration allows Panorama to display images in PICT format. This is the standard format for images on Mac OS computers, and is easily created using graphics programs on both Macintosh and Windows computers. This illustration shows how the PICT format may be selected when saving a file in Adobe Photoshop.

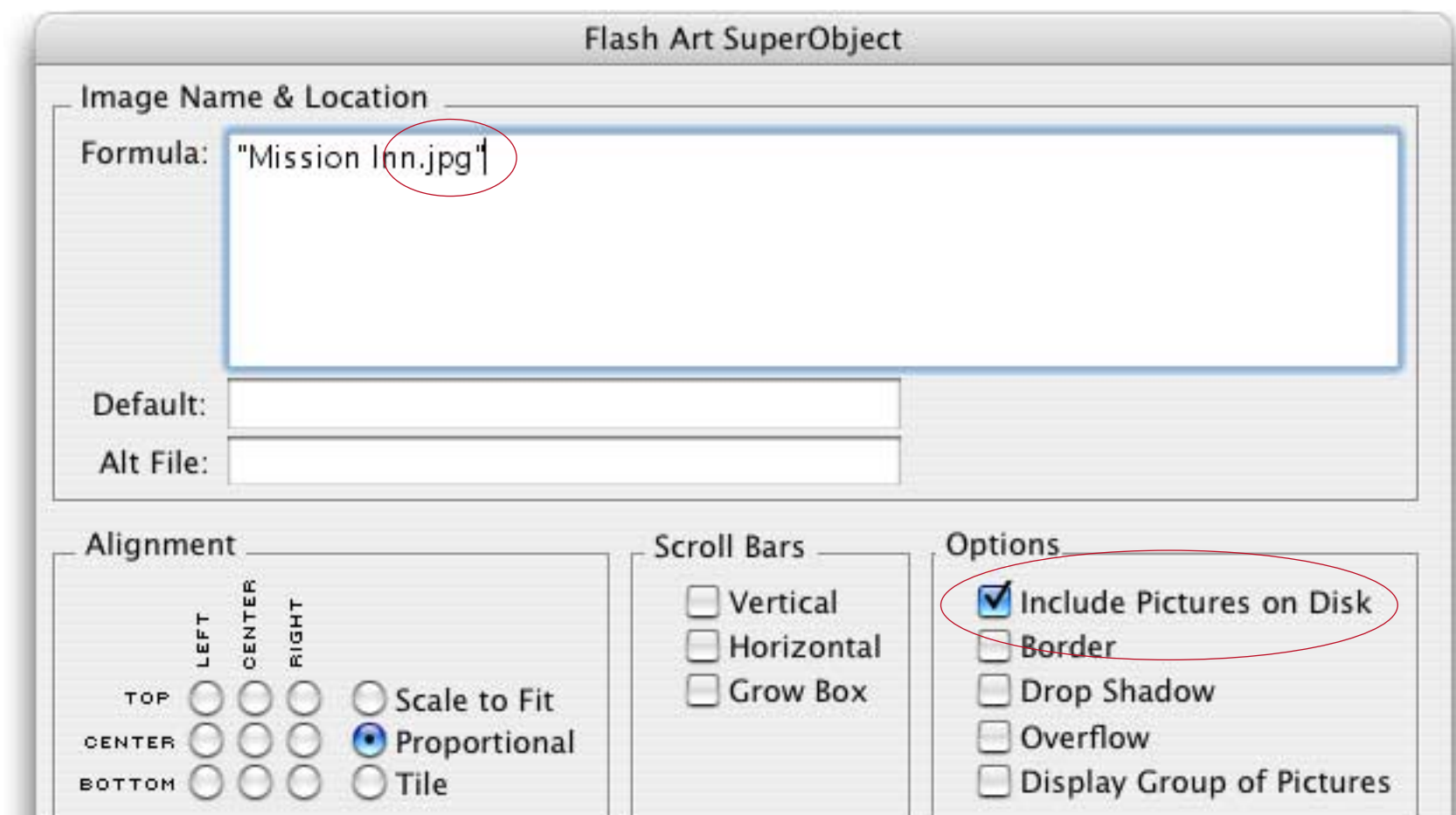


The optional **Enhanced Image Pack** gives Panorama the ability to display a wide variety of other image formats. This table lists some of the most popular image formats that can be displayed with this option.

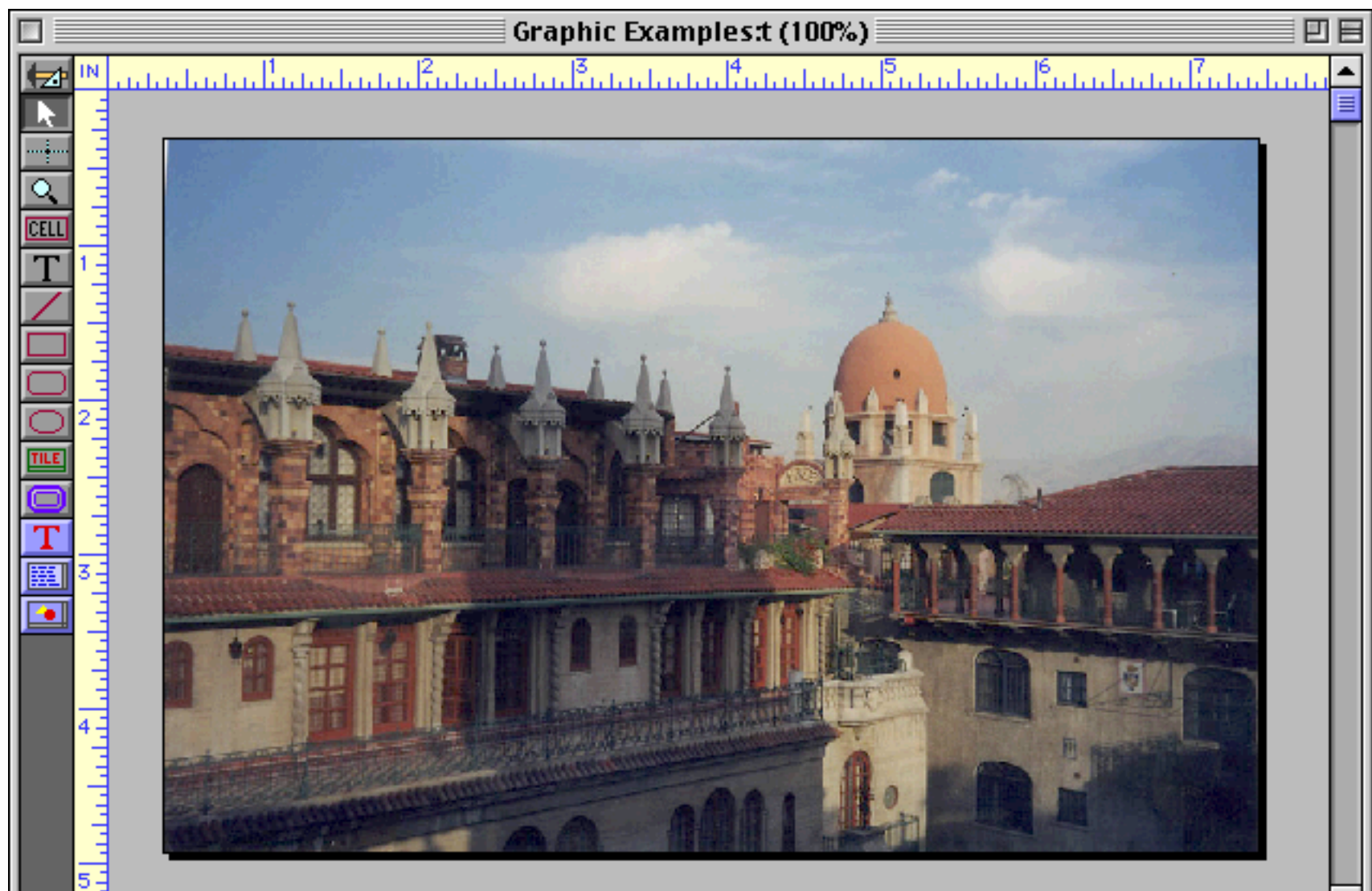
Image Type	PC Extensions	Notes
BMP	.bmp	Windows and OS/2 bitmap
JPEG	.jpg .jpeg	JPEG compressed image
PNG	.png	Portable Network Graphics bitmap
TIFF	.tif .tiff	Tagged Image Format
GIF	.gif	Common web format
PHOTOSHOP	.psb	Adobe Photoshop
FLASHPIX	.fpx	FlashPix bitmap
TARGA	.targa	

The **Enhanced Image Pack** requires that Apple Quicktime 4.0 or later be installed on your computer. If Quicktime is not already installed on your system you can download it from www.apple.com.

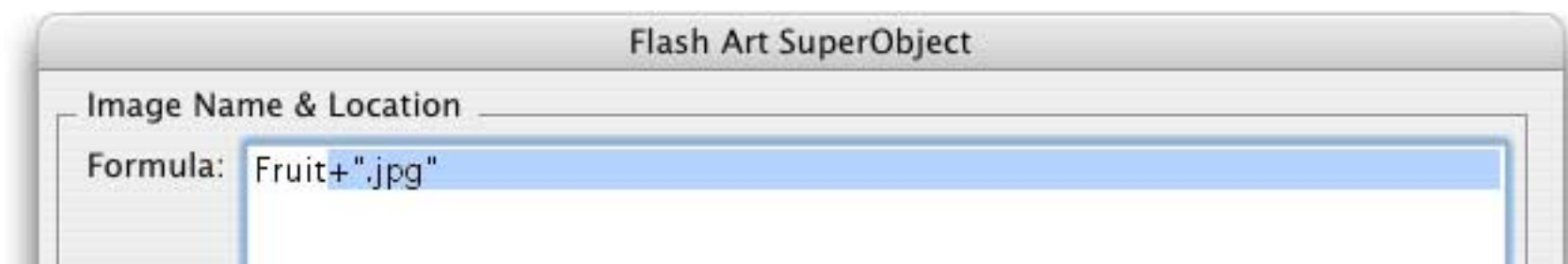
Once the **Enhanced Image Pack** is installed on your system you can display any of these image formats by name, just as with PICT images. This illustration shows how to display a fixed JPEG image.



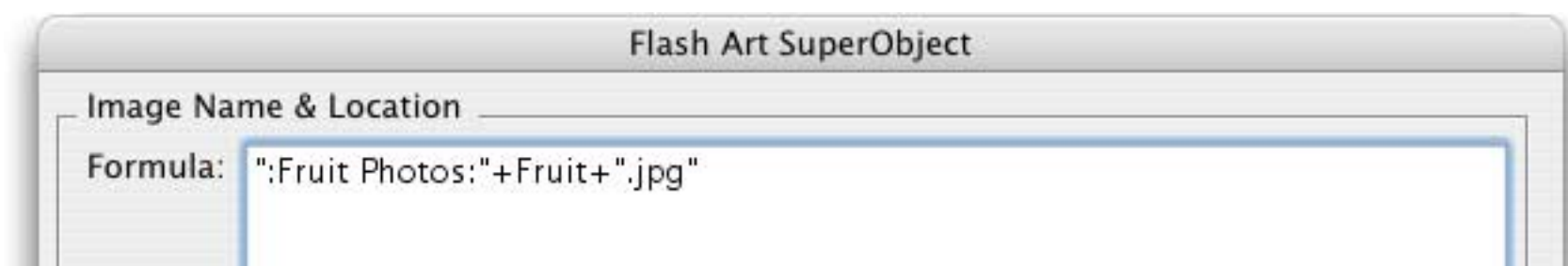
Make sure you enable the **Include Pictures on Disk** option, as shown above. Here is the actual JPEG image being displayed in the form.



Of course usually the images you display will be variable, not fixed. For example, suppose the fruit images used in the previous examples were JPEG images instead of PICT format. In that case you could display the images using this formula.



Or, if the images were nested in a different folder you could use a formula like this (see “[Displaying Images in a Different Folder \(Directory\)](#)” on page 771).



In addition to displaying images the Enhanced Image Pack can also convert an image from one format into another (see “[Converting Between Image Formats](#)” on page 694). For more information on ordering the **Enhanced Image Pack** visit our website at <http://www.provue.com>.

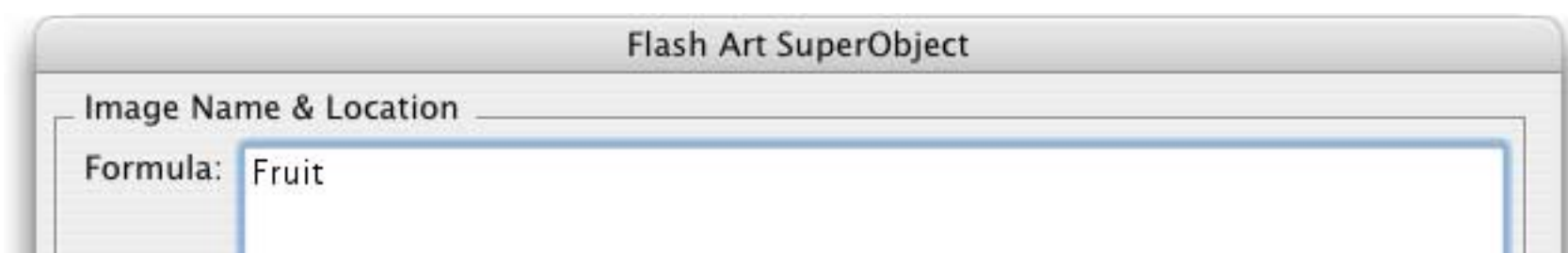
Image File Extensions in a Cross Platform Environment (MacOS and Windows)

On Windows systems all files have a three or four letter “extension” based on the type of data in the file. For example, all Panorama databases end with **.pan**, all text files end with **.txt**, all PICT image files end with **.pct** and all JPEG image files end with **.jpg** or **.jpeg**.

On Macintosh systems this extension is not necessary because the file itself contains information about what type of data it contains. (However, for a few file types it is traditional to include the extension anyway, for example JPEG or HTML files.)

For most databases you don’t need to worry about whether or not to use file extensions. If the database will be used on a PC system, you use an extension, if it will be used on a Macintosh, you don’t. But what about cross-platform databases that may be used on both platforms? Panorama is designed so that you can build a single database that will automatically display images correctly on both platforms. Let’s see how it’s done.

As you learned earlier, Panorama uses the Flash Art formula to generate the name of the image to display (see “[Displaying Images Directly From Disk Files](#)” on page 769). On Windows systems, this file name **must** include an extension (**.pct**, **.bmp**, **.jpg** etc.). If it doesn’t, Panorama will automatically add **.pct** to the end of the name. (Remember, **.pct** is the extension for PICT images, Panorama’s standard image format.) To illustrate this, let’s go back to the fruit example we saw earlier. Here’s the formula:



On a Macintosh system this formula will simply generate the names of the fruits: [Apple](#), [Apricot](#), [Avocado](#), etc. But on a Windows computer the Panorama will automatically add the [.pct](#) extension: [Apple.pct](#), [Apricot.pct](#), [Avocado.pct](#) etc. Therefore the same formula will automatically work on both Macintosh and PC computers. (If you use the **Panorama Platform Converter** to convert your database from Mac to PC it will automatically add the [.pct](#) extension to all of your image files for you, or remove the extension when moving from PC to Mac. See “[Platform Converter Wizard](#)” on page 800 of *Formulas & Programming* for more information on the Platform Converter.)

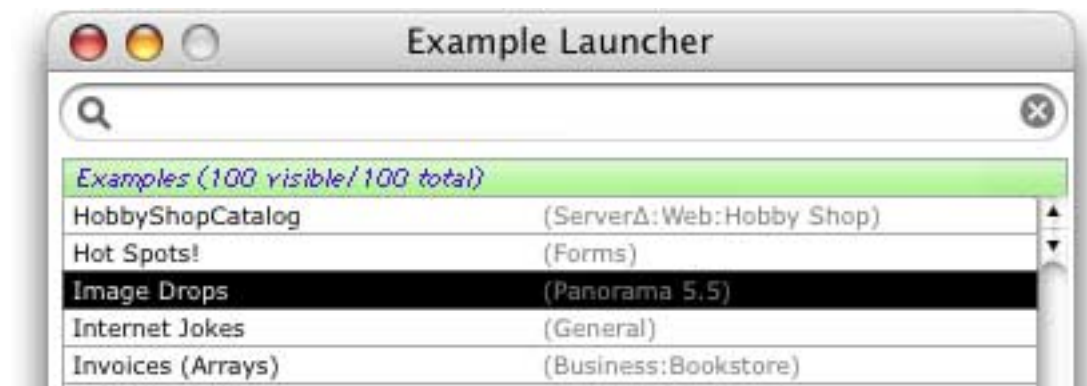
When you use Panorama on a Macintosh system it doesn't normally add the [.pct](#) extension. However, there is one exception. If the name of the database ends with [.pan](#), Panorama will automatically add the [.pct](#) extension to any image file name that does not already include an extension. This allows you to create a database that may be shared on a server between Mac and PC systems. The same database can be used on either system with no conversion. However, this also means that when the database name ends with [.pan](#) images that do not have any extension (for example [Apple](#) or [Tomato](#)) cannot be displayed, only images that do have extensions (for example [Apple.pct](#) or [Tomato.pct](#)). (This restriction does not apply, however, to images in the Flash Art Scrapbook, see “[The Flash Art Scrapbook \(Gallery\)](#)” on page 764.)

Flash Art Image Drag and Drop

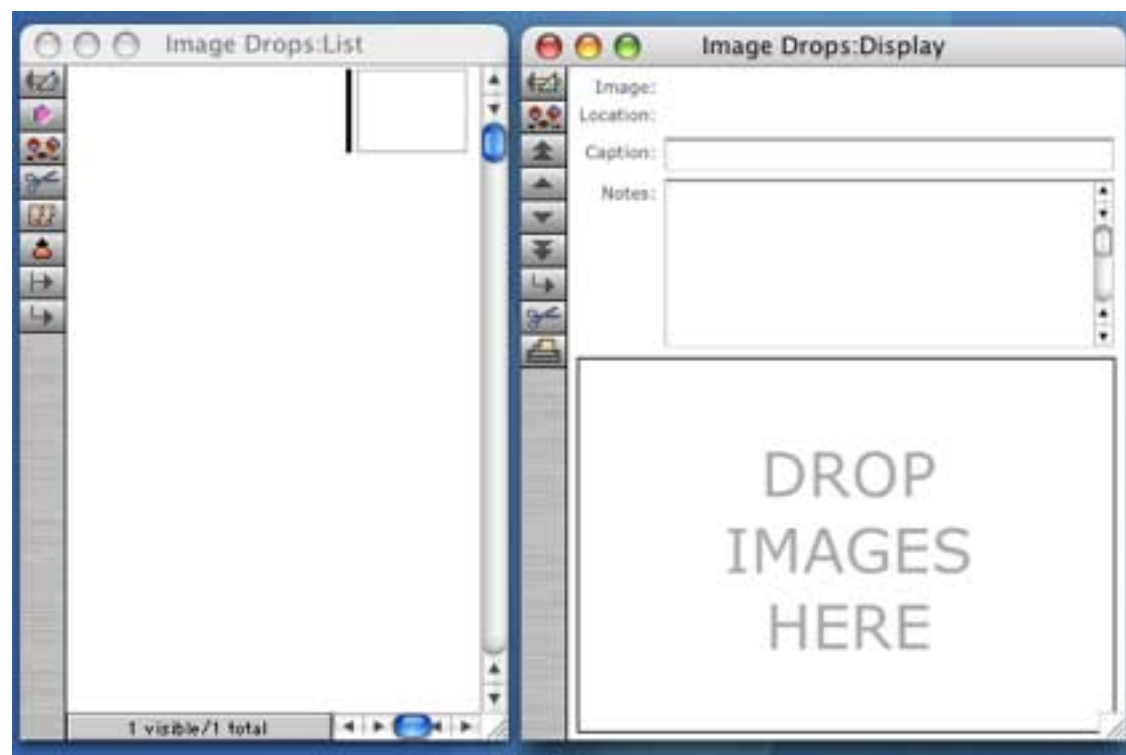
If you have a collection of image files on the hard drive the simplest way to get them into a database may be to simply drag them from the Finder onto your database (Macintosh only). You can add this feature to your existing databases or you can start with the **Image Drops** example database that comes with Panorama.

The Image Drops Example Database

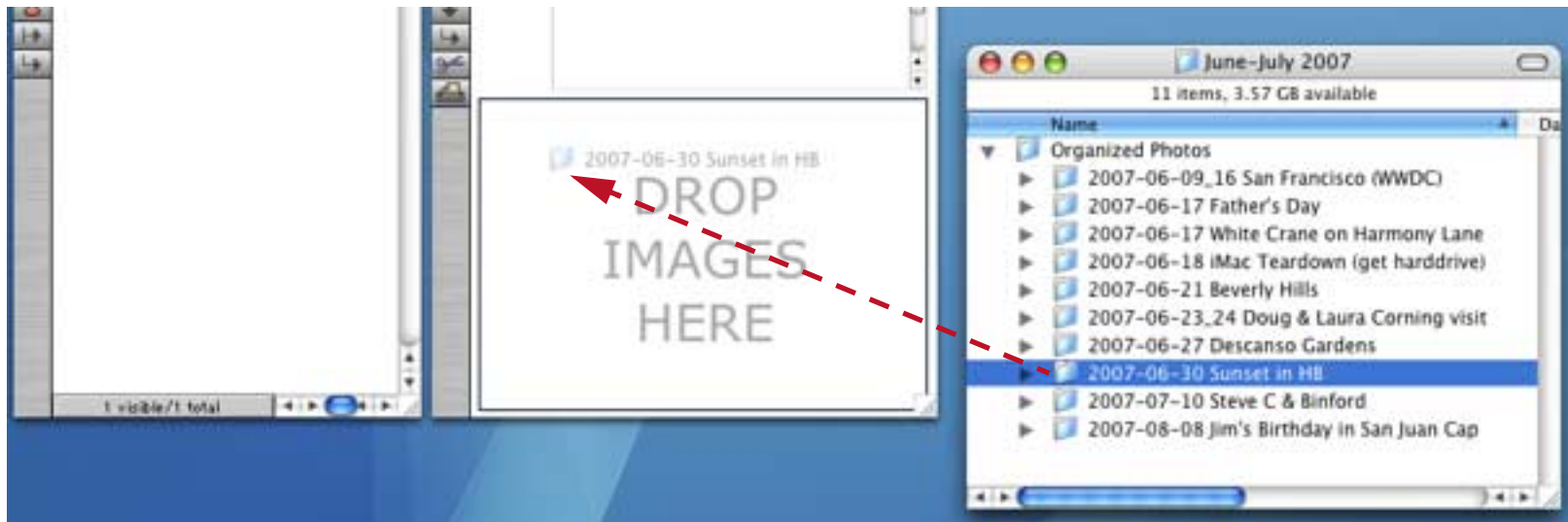
To try out the **Image Drops** example start by opening the **Example Launcher** wizard (in the **Demos** submenu of the **Wizard** menu). Scroll down and find **Image Drops**, then double click to open it.



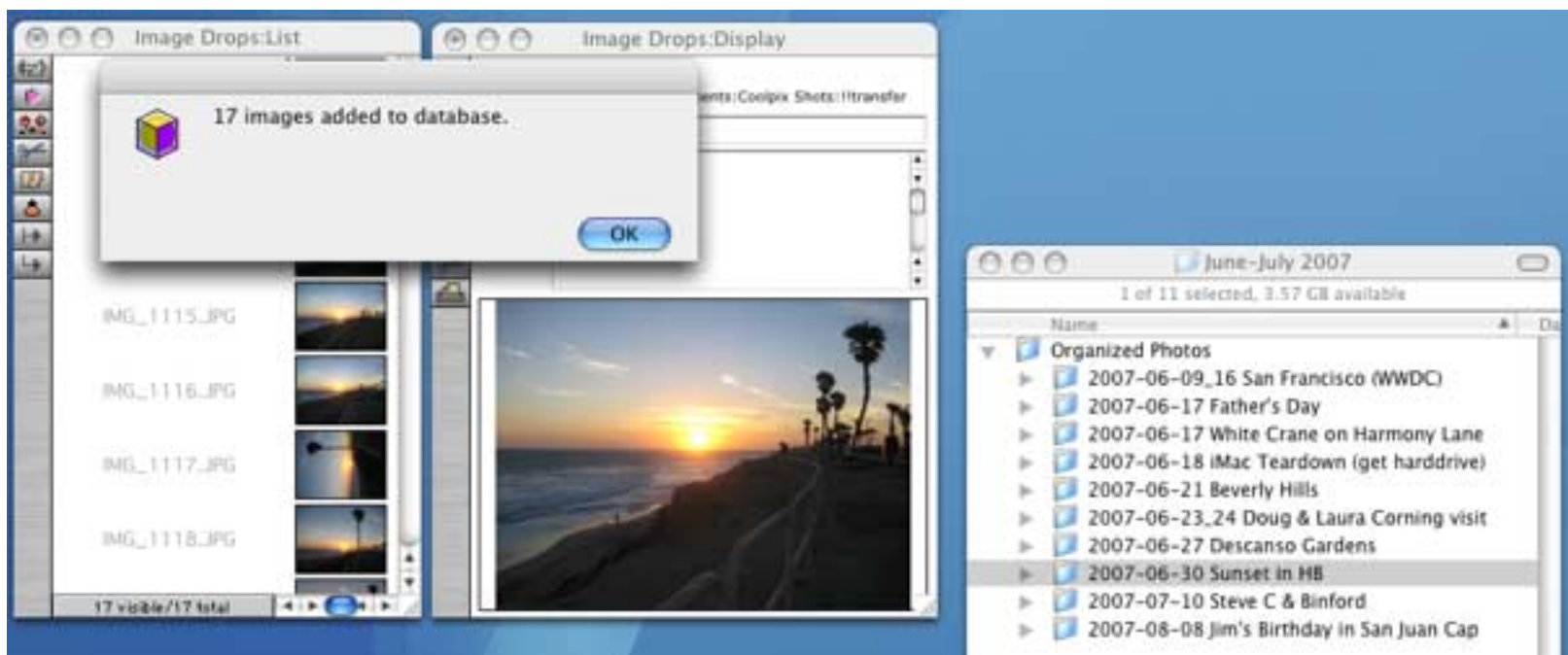
This example initially opens with two windows — a list of images on the left and a detailed image form on the right.



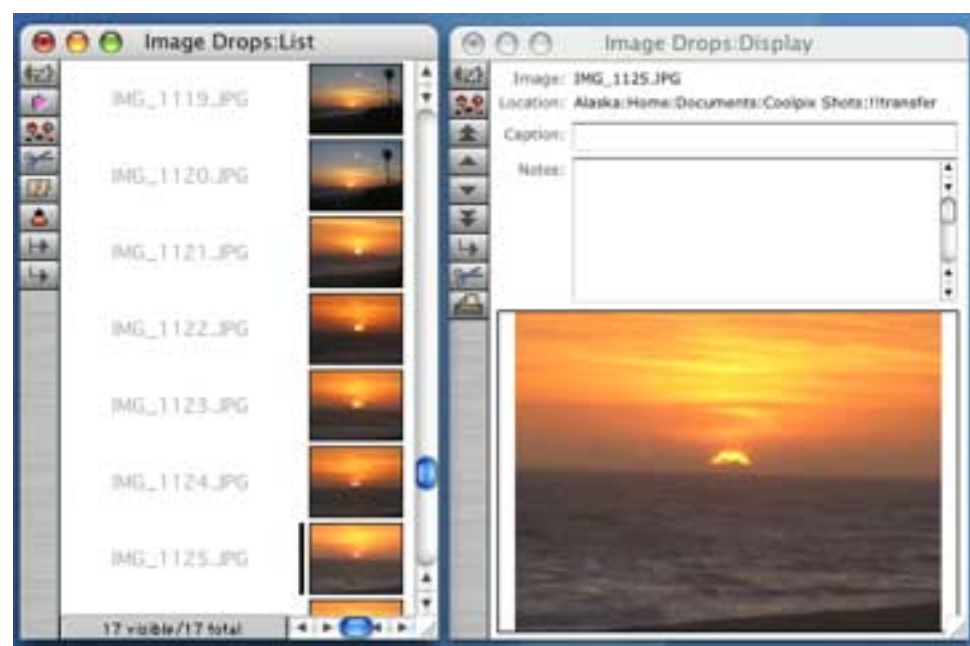
To add images to this database simply drag one or more image files (or even a folder that contains images) from the Finder into the area marked **DROP IMAGES HERE**. (Note: If the images are JPEG, TIFF, or other non PICT images you must have the Enhanced Image Pack installed, see [“Displaying Non PICT Images \(Enhanced Image Pack\)”](#) on page 775).



After a short delay Panorama will report the number of images added to the database.



I can move from record to record to see the different images that have been added.



Of course the images themselves haven't been brought into the database — just the names and locations, as we can see by opening the data sheet.



In this database the image location (path) and name are stored in a field called **Image**. The other fields in the database can be used for anything you want.

Adding Drag and Drop Images to a Database

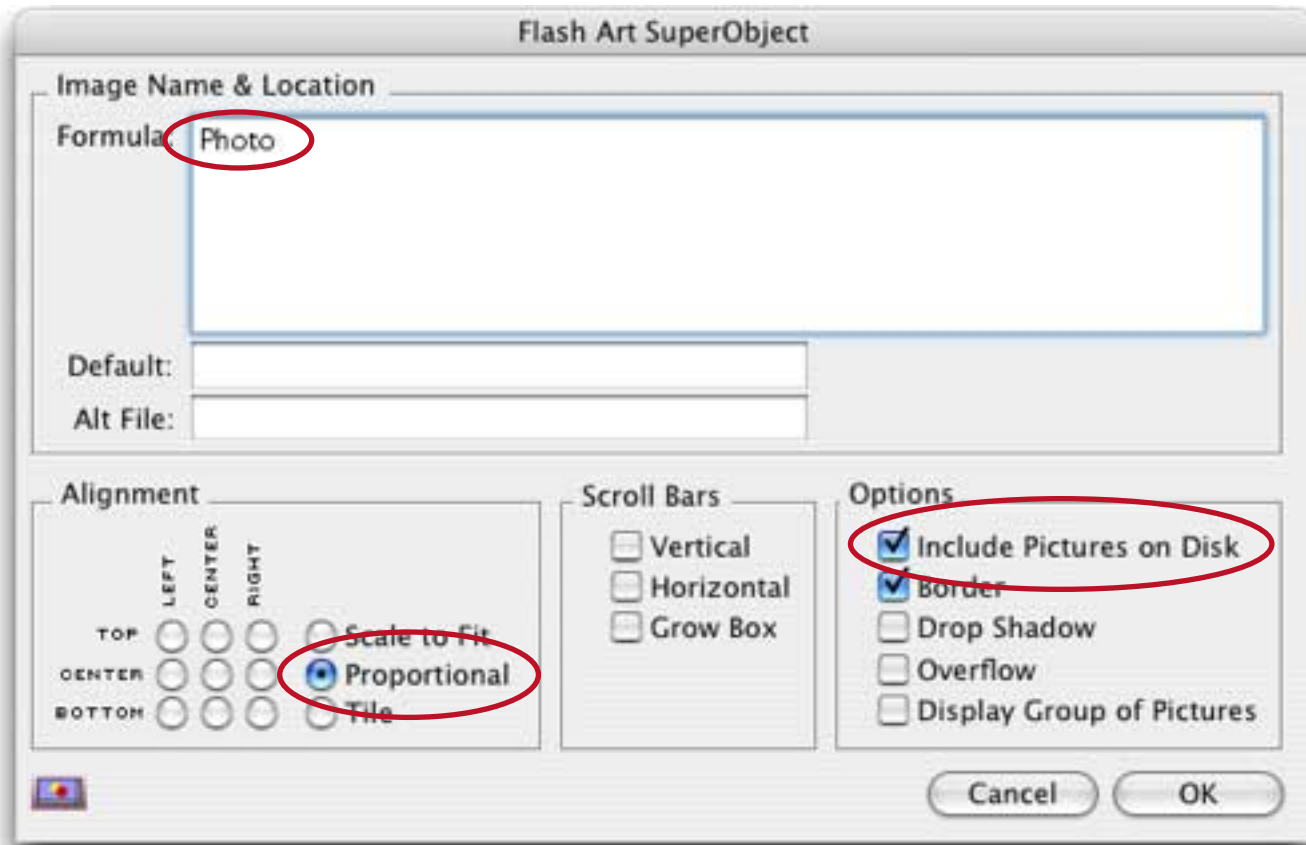
If you are starting from scratch one easy way to make an image database is to start with the example Image Drops database. Simply open this database, use the **Reveal in Finder** command to locate the file on the hard drive and make a copy for your own use. Add whatever fields, forms and procedures you need.

It's also relatively easy to add image drag and drop to an existing database. The first step is to add a field to the database to hold the image path and name. To illustrate this I'll use the design sheet to add a field named **Photo** to a contacts database (you can also use the **Add Field** command in the **Setup** menu).

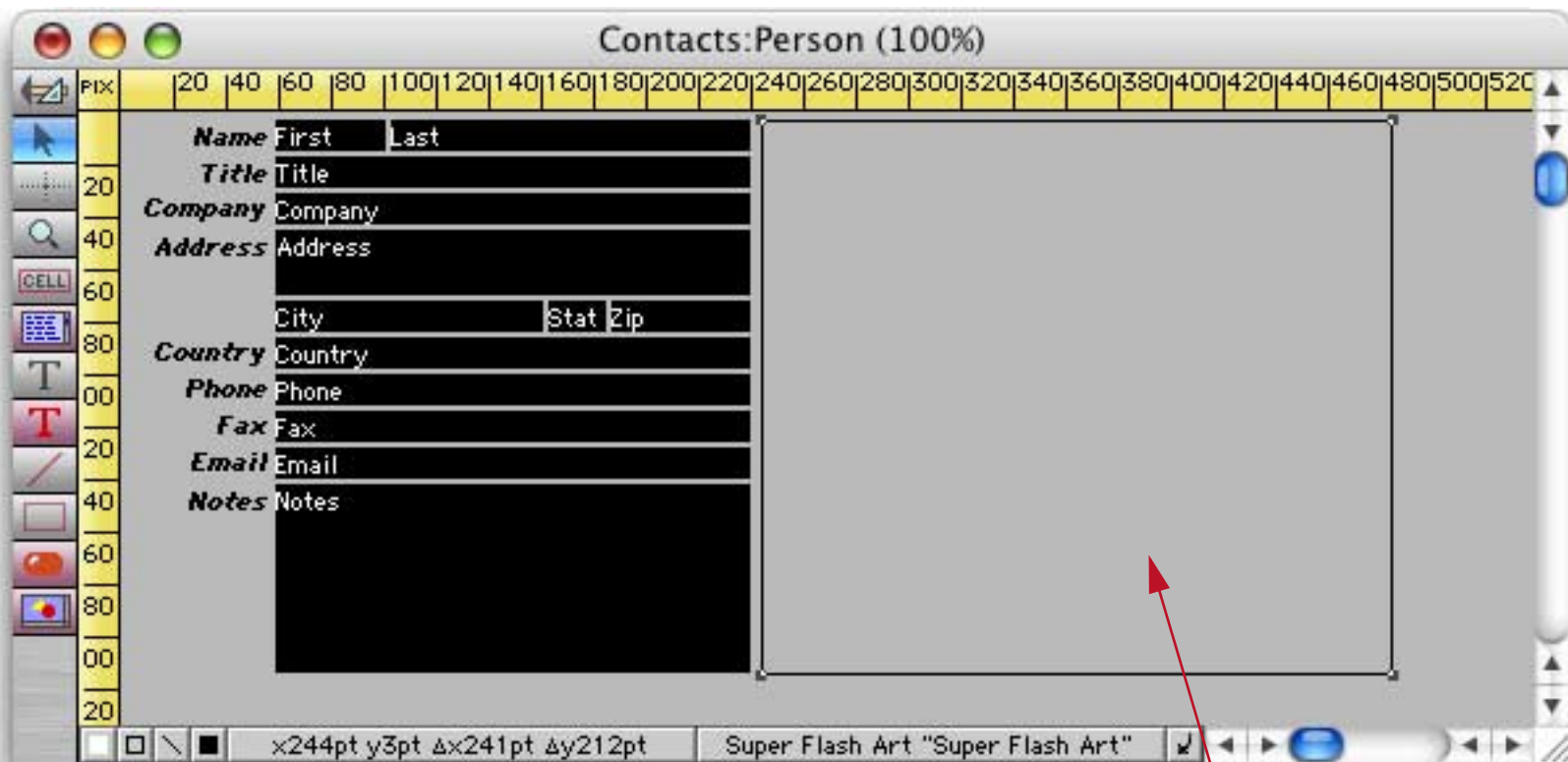
The screenshot shows a window titled "Contacts:DESIGN" with a design sheet table. The table has columns for field properties and a new "Photo" field highlighted in red.

Field Name	Type	Digits	Align	Output Pattern	Input Pattern	Range	Choices	Link	Clair	Tab	Caps
First	Text	0	Left			Alphabetic			Off	1 Sj	Word
Last	Text	0	Left			Alphabetic			Off	1 Sj	Word
Credit Card	Text	0	Left			Any	Cash Ch		Off	Off	Off
Title	Text	0	Left			AZ az			On	2 Sj	Word
Company	Text	0	Left			AZ az			Off	2 Sj	Word
Address	Text	0	Left			AZ az09			Off	2 Sj	Word
City	Text	0	Left			AZaz			On	2 Sj	Word
State	Text	0	Left			Alphabetic			Off	1 Sj	All
Zip	Text	0	Left			09AZ			Off	1 Sj	Off
Country	Text	0	Left			AZaz			Off	2 Sj	All
Phone	Text	0	Left		() _ - _	Numeric			Off	Off	Off
Fax	Text	0	Left		() _ - _	Numeric			Off	Off	Off
Email	Text	0	Left			AZaz09@@..			Off	Off	Off
Notes	Text	0	Left			Any			Off	Off	Off
Photo	Text	0	Left			Any			Off	Off	Off
Sequence	Numeric	0	Right			Any			Off	Off	Off
LastModified	Numeric	0	Right			Any			Off	Off	Off

The next step is to add a Super Flash Art object to one or more forms in the database (see “[Creating Super Flash Art Objects](#)” on page 751). The **Formula** for this object must be set to the name of the field you just set up, in this case **Photo**. Make sure that the **Include Pictures on Disk** option is set (see “[Include Pictures on Disk](#)” on page 789). For most photographic applications you’ll also want to set the **Proportional** alignment option (see “[Align](#)” on page 797).

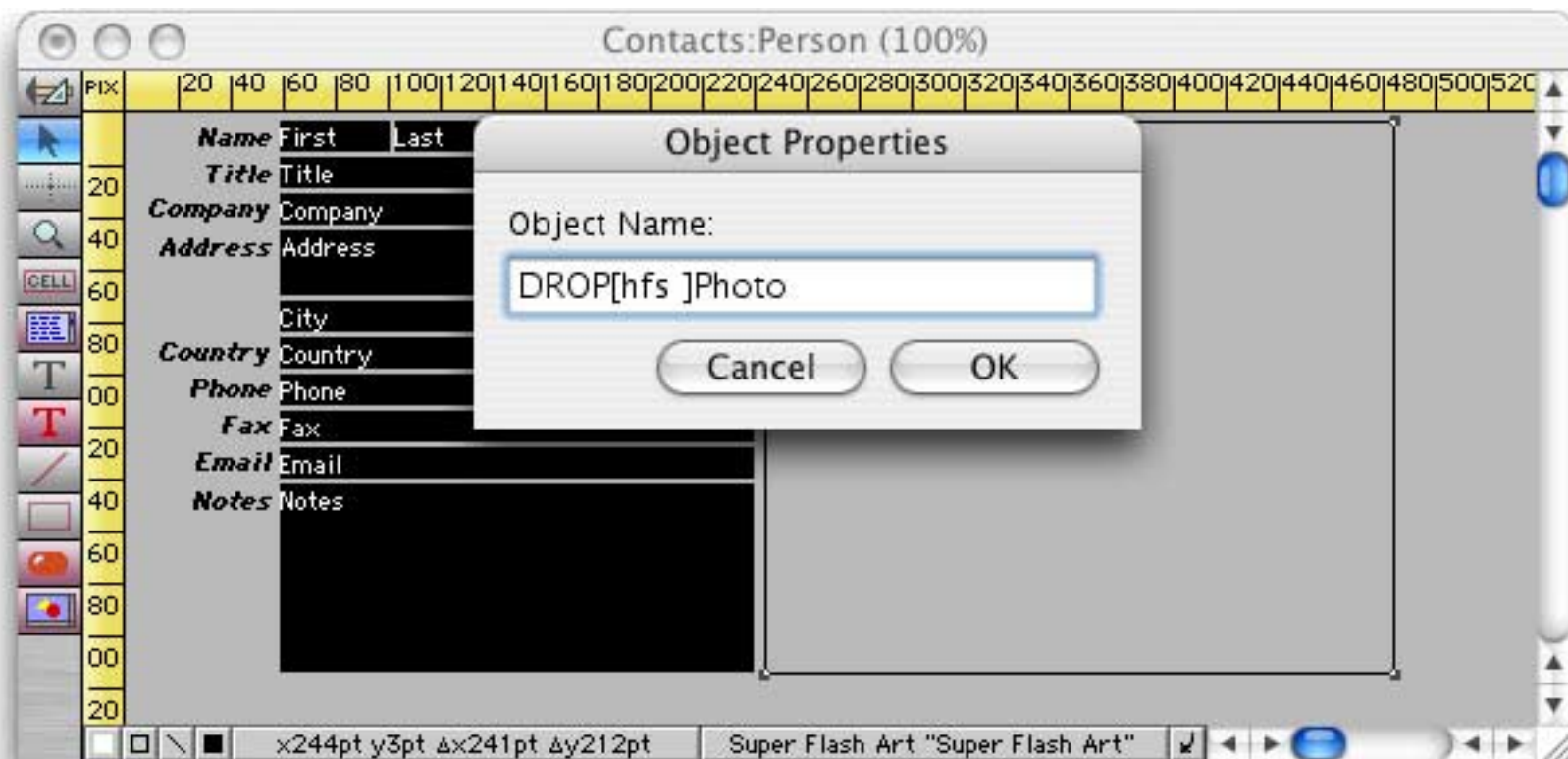


I’ve set up the super flash art object next to the contact information on the form.

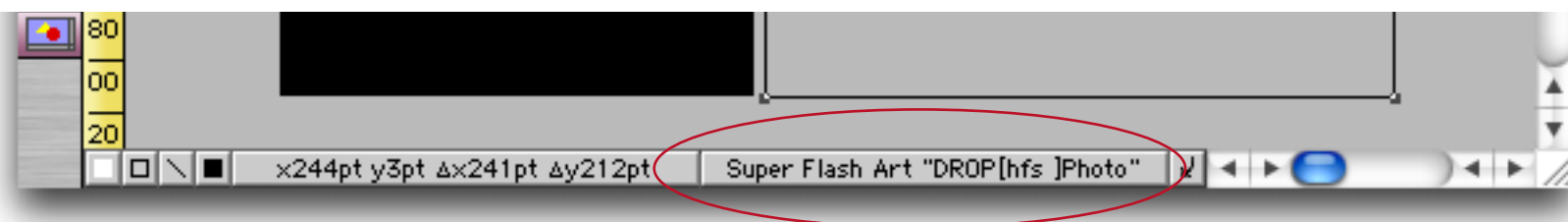


super flash art object

However, I'm not quite done with this object yet — I need to give it a special name. To give an object a name select the object and choose **Object Name** from the **Edit** menu (or click on the object name area in the Graphic Control Strip, see "[Object Type/Object Name](#)" on page 533). I'll set the object name to **DROP[hfs]Photo** (more on this in a moment).



When I'm done selecting the object again (by clicking on it) should show the name in the Graphic Control Strip (if that section of the strip is visible — see "[The Graphic Control Strip](#)" on page 505).

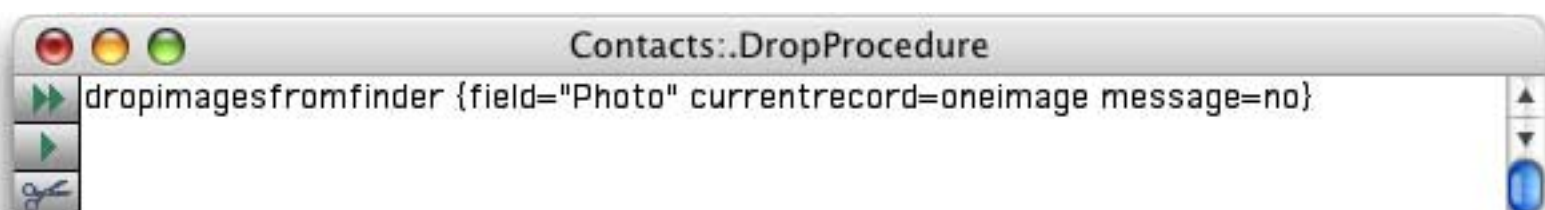


So why does the object name need to be **DROP[hfs]Photo**? The name is divided into three portions.

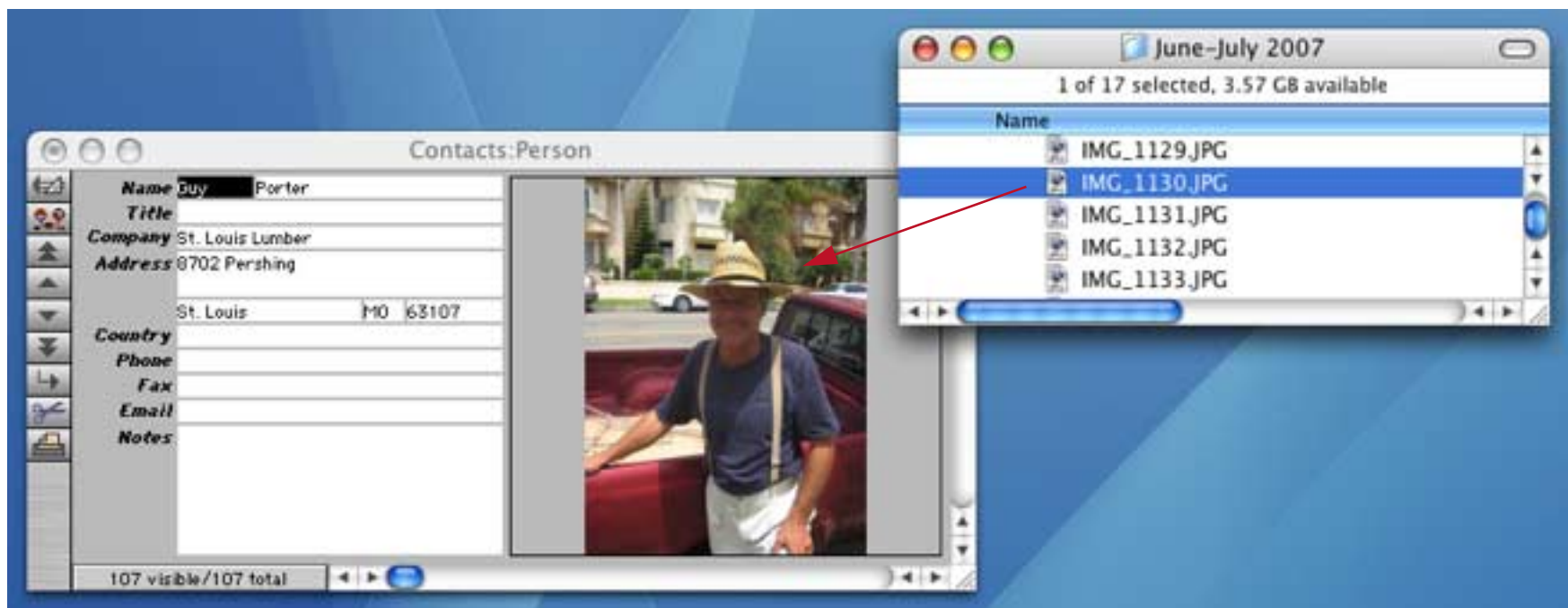
DROP	This portion of the name tells Panorama that data can be dropped on this object
[hfs]	This portion tells Panorama what kinds of data can be dropped on this object, in this case files or folders (hfs stands for heiarchial file system, the original file system used by the Macintosh). If this section of the object name is [] then any type of data can be dropped on the object.
Photo	This final portion is optional. If you have multiple objects in a database that can have items dropped on them you can use this final portion to determine what object was dropped on.

To learn more about this topic see "[Receiving Dragged Data](#)" on page 654 of *Formulas & Programing*.

The final step is to set up a special procedure to handle the dropped files. This is easy, because the procedure only needs one line of code! The procedure must be named **.DropProcedure** — here it is:



Now I'm ready to drag an image from the Finder onto my form. Voila! The image appears.



Because I programmed this option with the `currentrecord=oneimage` option the photo appears in the current record instead of being added to a new record. (This also means that you can only drop one image at a time — if you drop more than one image only the first one will be used). To add an image to a different record simply move to that record and then drag the image onto the form.

DropImagesFromFinder Options

The key to image drag and drop is the `DropImagesFromFinder` statement. This statement takes the dropped files and adds their name and location to the database. The operation of this statement can be customized with a list of options. Each option must be specified using the format `optionname="value"` (the quotes may be omitted if there is no special characters or punctuation in the value).

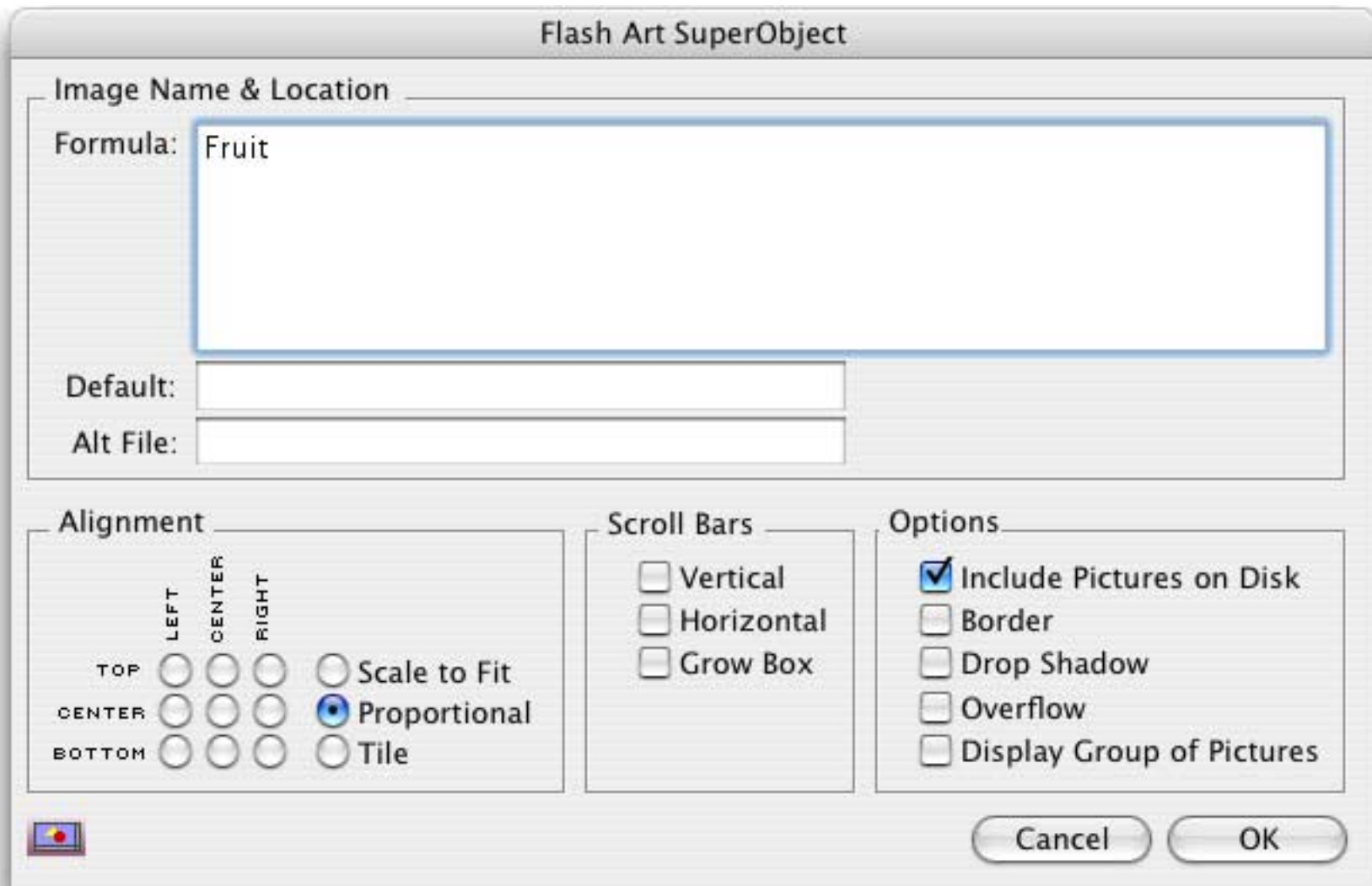
Option	Description
<code>field=fieldname</code>	This option specifies what field the image paths and names should be placed into. If this option is omitted the image path & name will be placed in the current field.
<code>type=imagetype</code>	<p>This option specifies a type of image that will be allowed. You may choose from <code>jpeg</code>, <code>tiff</code>, <code>png</code>, <code>pict</code>, <code>bmp</code>, <code>pdf</code>, <code>gif</code>, <code>photoshop</code>, <code>mov</code>, <code>mpeg</code>, <code>wav</code>, <code>aiff</code>, <code>aac</code>, <code>mp3</code>, and <code>sd2</code>. (Note that some of these are movie types, you can drag and drop movies in addition to still images.) You can explicitly specify multiple types by using multiple <code>type=</code> options, for example:</p> <pre>type=jpeg type=tiff type=png</pre> <p>You can also specify “composite” types: <code>image</code> for all image types, <code>movie</code> for all movie types, or <code>sound</code> for all sound types, or <code>all</code> for all media types (including image, movies and sound) , for example:</p> <pre>type=image</pre> <p>If no type is specified the statement defaults to all image types (but not movie or sound).</p>

Option	Description
<p><code>currentrecord=oneimage</code></p> <p><code>currentrecord=yes</code></p> <p><code>currentrecord=no</code></p>	<p>If this option is oneimage the dropped image will replace the current image in the database. If multiple images are dropped only the first image will be used, any others will be ignored.</p> <p>If this option is yes all dropped images will be added to the current record only (as a carriage return delimited array). This allows multiple images per record (which could be displayed with a super matrix).</p> <p>If this option is no dropped images will be added to new records at the end of the database (unless they are duplicates and the skipduplicate option has been set to no).</p>
<p><code>skipduplicates=yes/no</code></p>	<p>If this option is yes, images that are already in the database will not be re-added. The default if this option is not included is yes</p>
<p><code>relativepaths=yes/no</code></p>	<p>If this option is yes, only images that are in the same folder or in subfolders of the database will be added. Any images in other locations will be ignored. Instead of storing the absolute location of the image (starting with the disk name) relative paths will be used. The advantage of relative paths is that the database and images can be moved to a different location or even a different computer and the images will display correctly without adjustment. The disadvantage is that images that are not in the same folder as the database (or subfolders of that folder) cannot appear in the database. The default for this option is no.</p>
<p><code>message=yes/no</code></p>	<p>If this option is yes, the statement will display an alert with the results (how many images added and skipped). The default is yes.</p>
<p><code>dictionary=yes/no</code></p>	<p>If this option is yes, the statement will create a fileglobal variable named <code>_DropImageResults</code>. This variable will contain a dictionary (see “Data Dictionaries” on page 602 of <i>Formulas & Programming</i>) with three elements: <code>NEWIMAGES</code>, <code>DUPLICATEIMAGES</code> and <code>OUTSIDEIMAGES</code>. You can use the <code>getdictionaryvalue()</code> function to extract the elements from this dictionary to do your own custom reporting of the results from the <code>DropImagesFromFinder</code> statement. For example you could use these results to create a log of images added to the database.</p> <p><code>NEWIMAGES</code> is a carriage return delimited list of the new images that have been added to the database, including full paths.</p> <p><code>DUPLICATEIMAGES</code> is a carriage return delimited list of images that were dropped but were not added because they were duplicates of existing records.</p> <p><code>OUTSIDEIMAGES</code> is a carriage return delimited list of images that were not added because relative paths were specified and these images were outside of the database folder (so no relative path could be used).</p>

By combining these options you can add dropped images to the database just about any way you want to.

Super Flash Art™ Options

The SuperObject™ Flash Art configuration dialog has numerous options for customizing each object you create.



Formula

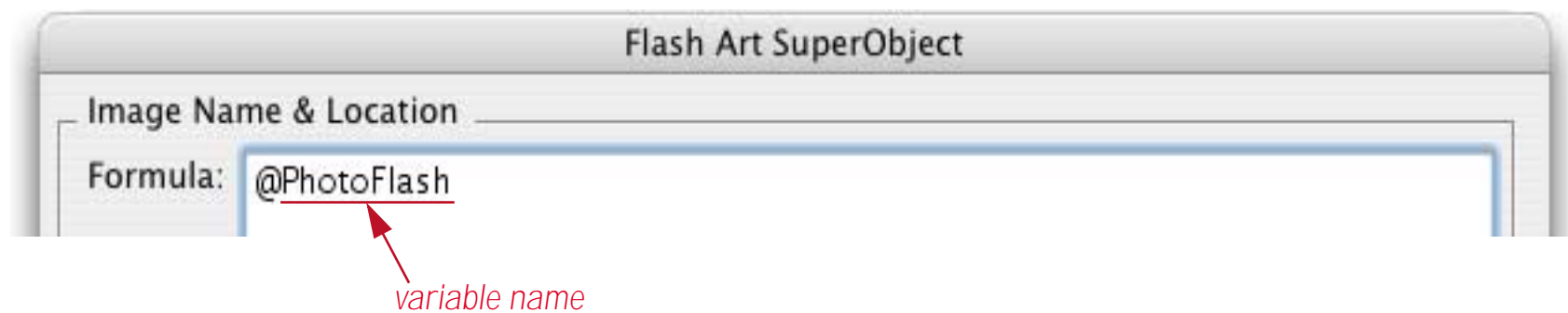
This section of the dialog contains the formula that calculates the image name. The formula may be up to 255 characters long (to create longer formulas, see the next paragraph). Use this formula to combine one or more fields and/or variables into a picture name. See “[Formulas](#)” on page 19 of *Formulas & Programming* to learn more about Panorama’s formula capabilities.

Formula in a Variable. If the first character of the formula is @ Panorama treats the rest of the line as a variable name instead of a formula. This variable must contain the actual formula for calculating the image name. Using this technique if your formula is over 255 characters (a variable may contain an unlimited number of characters) or if the formula needs to change under different conditions. See “[Variables](#)” on page 53 of *Formulas & Programming* and “[Variables](#)” on page 247 of *Formulas & Programming* to learn more about variables.

Before you can use this feature you must set up a variable that contains the actual formula you want to use. Here’s an example that set’s up a variable named **PhotoFlash** to display JPEG images.

```
fileglobal PhotoFlash
PhotoFlash={PhotoName+".jpg" }
```


The Super Flash Art formula would be set up to use this variable. Remember, to use this option the first character must be the @ symbol.

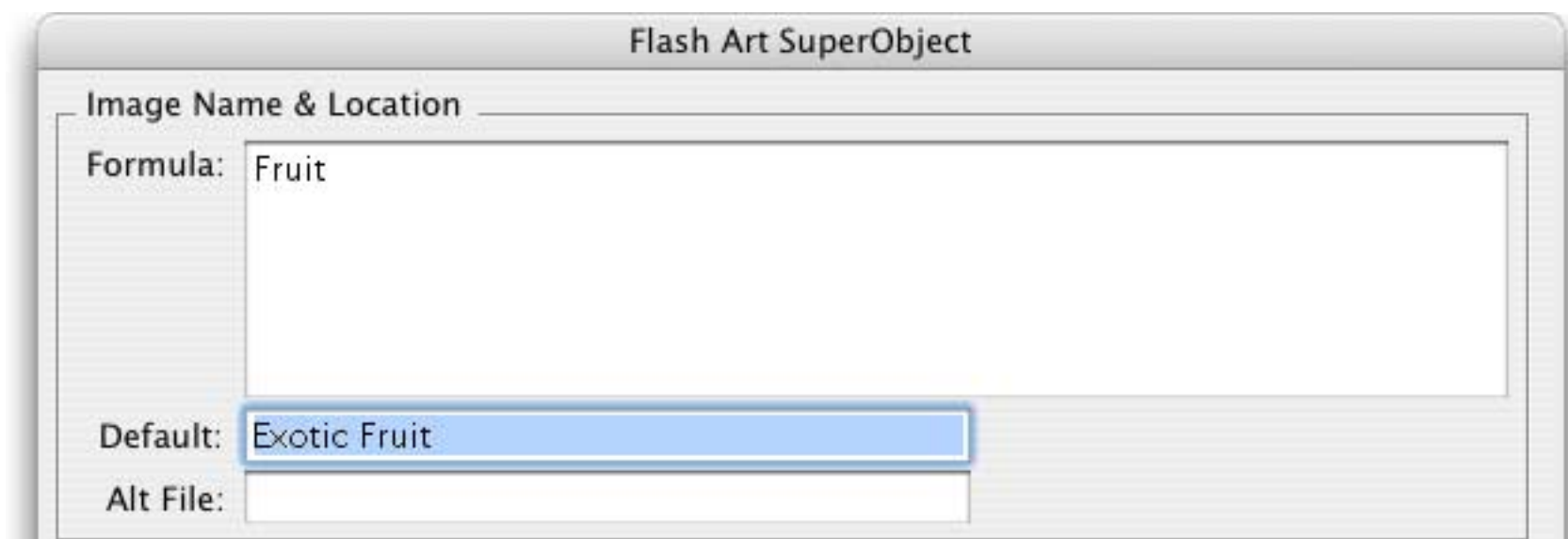


Later you could change the formula to display PICT files like this.

```
PhotoFlash={PhotoName+".pct"}
```

Default

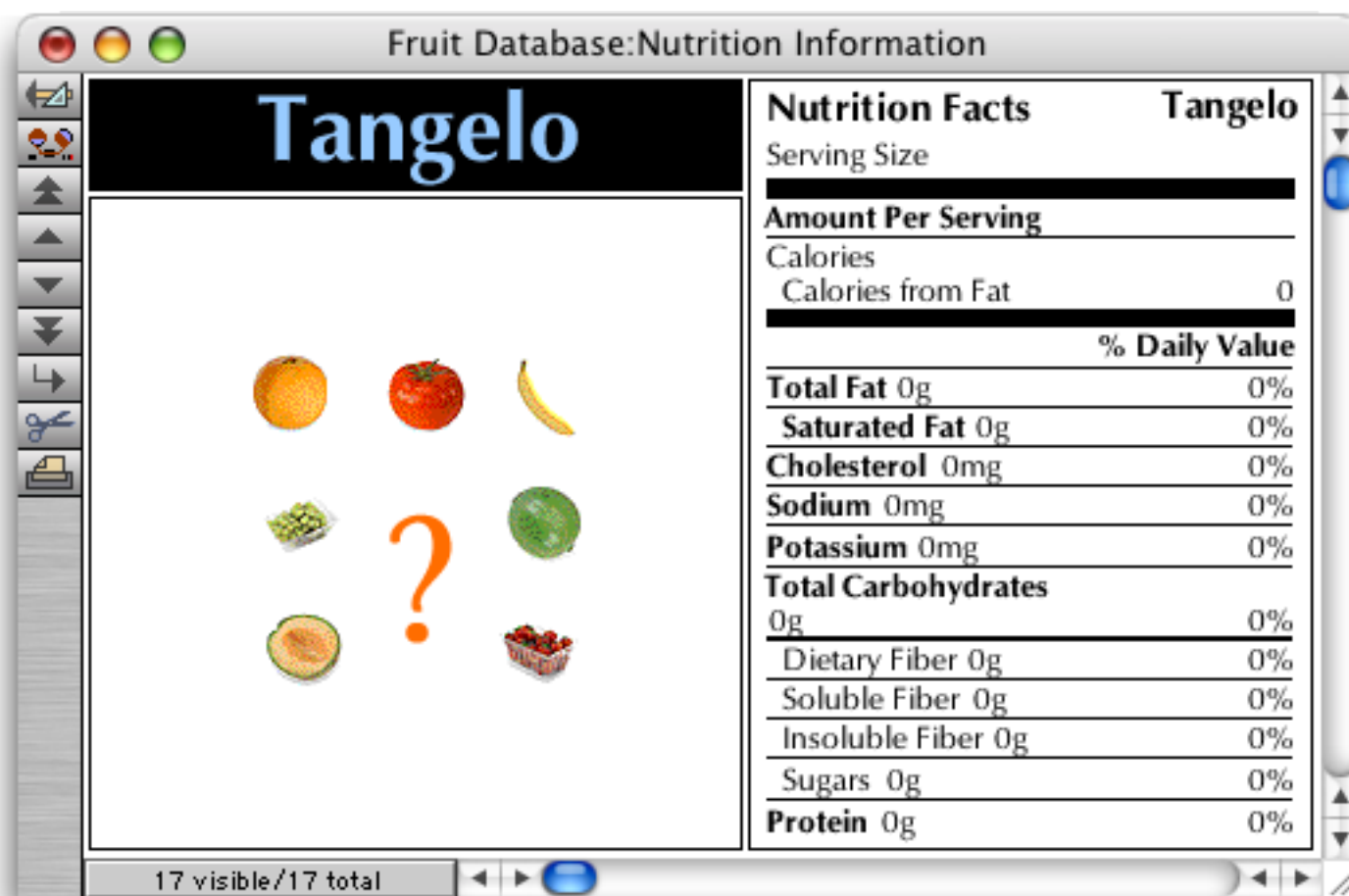
This is the name of the default image that should be displayed if Panorama cannot locate an image with the name specified by the formula. For example, consider the Fruit database used in the previous example. Suppose you encounter a new type of fruit for which you don't have a picture? You could simply leave the image blank. Or, you could create a default image that will be used in these situations, like this.



Now you can specify this image as the default. Notice that no quotes are needed (or allowed!). The default image cannot be changed on the fly — it is not specified by a formula like the main image.



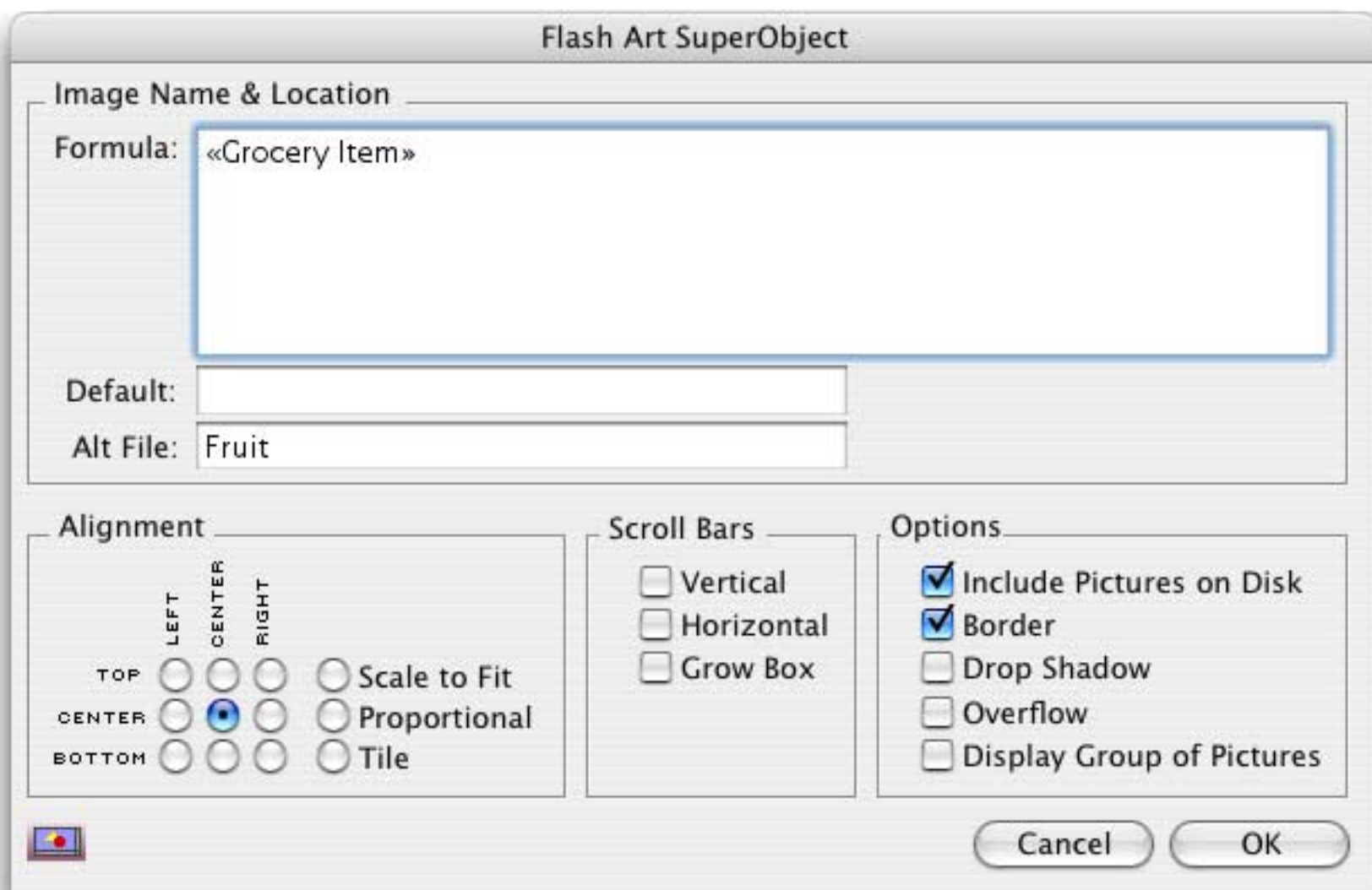
Now if you add a new fruit to the database for which there is no picture, the default image, [Exotic Fruit](#), will be displayed.



Alt File

This option allows one database to share the images in its Flash Art Scrapbook with another database. Both databases must be open for this to work. Usually you would use this option when you have a group of databases that are always used together. All the images could be stored in a single database, saving memory. (This option only applies to images in the Flash Art Scrapbook (see "[The Flash Art Scrapbook \(Gallery\)](#)" on page 764). Images in separate disk files (see "[Displaying Images Directly From Disk Files](#)" on page 769) can be accessed by any database at any time.)

For example, suppose you had a **Grocery** database that was always used with the **Fruit** database created earlier. A flash art object in the **Grocery** database can display fruit images in the **Fruit** database, as long as the **Fruit** database is open.



Even if the database containing the images is in a different folder, you should only type in the name of the database. Since the database must be open in memory, Panorama doesn't need to know the location of the database on the disk.

Include Pictures on Disk

Check this option if you want images in separate disk files to be displayed. Panorama will check the Flash Art Scrapbook first, then check to see if there is a PICT file with the name specified by the formula. For more information on this option see "[Displaying Images Directly From Disk Files](#)" on page 769.

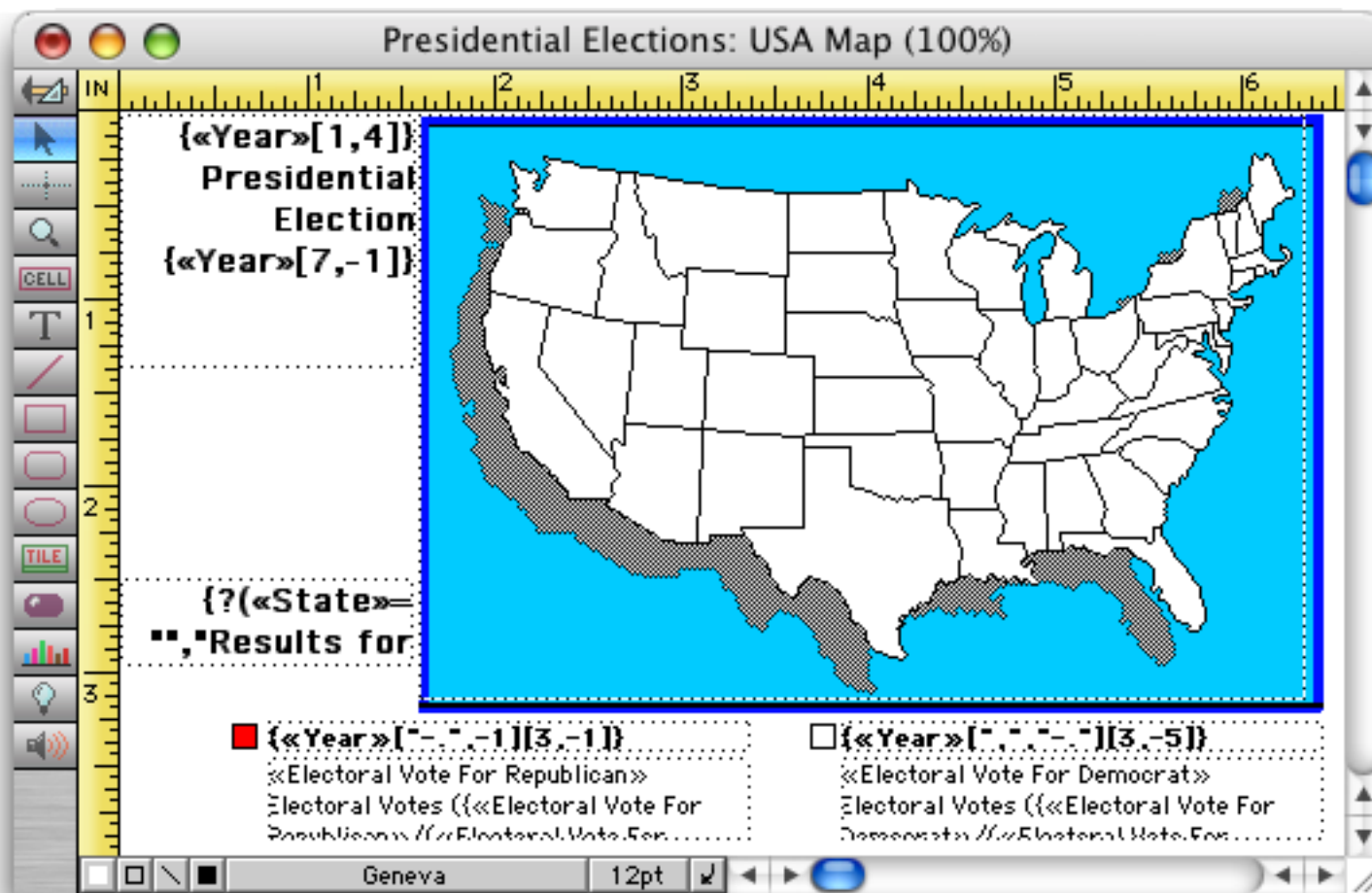
Display Group of Pictures

Enabling this option allows multiple images to be displayed in one spot. The images must be designed to overlay on top of each other. The most common application for this option is to display a map. You start with a base map, then overlay information on top of it. The Display Group option is designed to be used with a summary record (see "[3-Step Summarizing](#)" on page 365). It will automatically display all of the images belonging to the data records above the summary record.

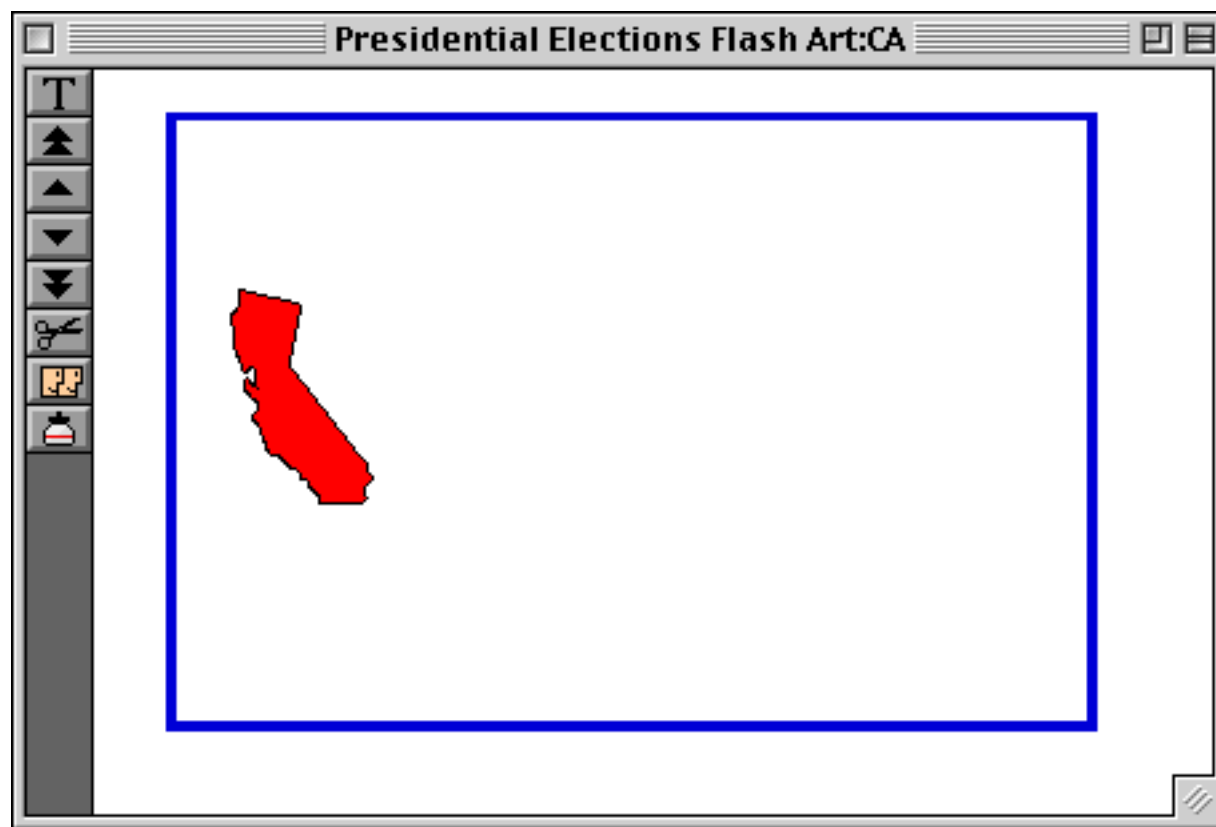
To illustrate this option we'll use a database with presidential election data. The database has been grouped to total up the electoral votes for each state, and for each election.

Year	State	Electoral Vote For Democrat	Electoral Vote For Republican	Popular Vote For Democrat	Popular Vote For Republican
1976, Carter vs. Ford	OH	25	0	2,011,621	2,000,505
1976, Carter vs. Ford	OK	0	8	532,442	545,708
1976, Carter vs. Ford	OR	0	6	490,407	492,120
1976, Carter vs. Ford	PA	27	0	2,328,677	2,205,604
1976, Carter vs. Ford	RI	4	0	227,636	181,249
1976, Carter vs. Ford	SC	8	0	450,807	346,149
1976, Carter vs. Ford	SD	0	4	147,068	151,505
1976, Carter vs. Ford	TN	10	0	825,879	633,969
1976, Carter vs. Ford	TX	26	0	2,082,319	1,953,300
1976, Carter vs. Ford	UT	0	4	182,110	337,908
1976, Carter vs. Ford	VA	0	12	813,896	836,554
1976, Carter vs. Ford	VT	0	3	78,789	100,387
1976, Carter vs. Ford	WA	0	8	717,323	777,732
1976, Carter vs. Ford	WI	11	0	1,040,232	1,004,987
1976, Carter vs. Ford	WV	6	0	435,864	314,726
1976, Carter vs. Ford	WY	0	3	62,239	92,717
1976, Carter vs. Ford		297	240	40,828,929	39,148,940

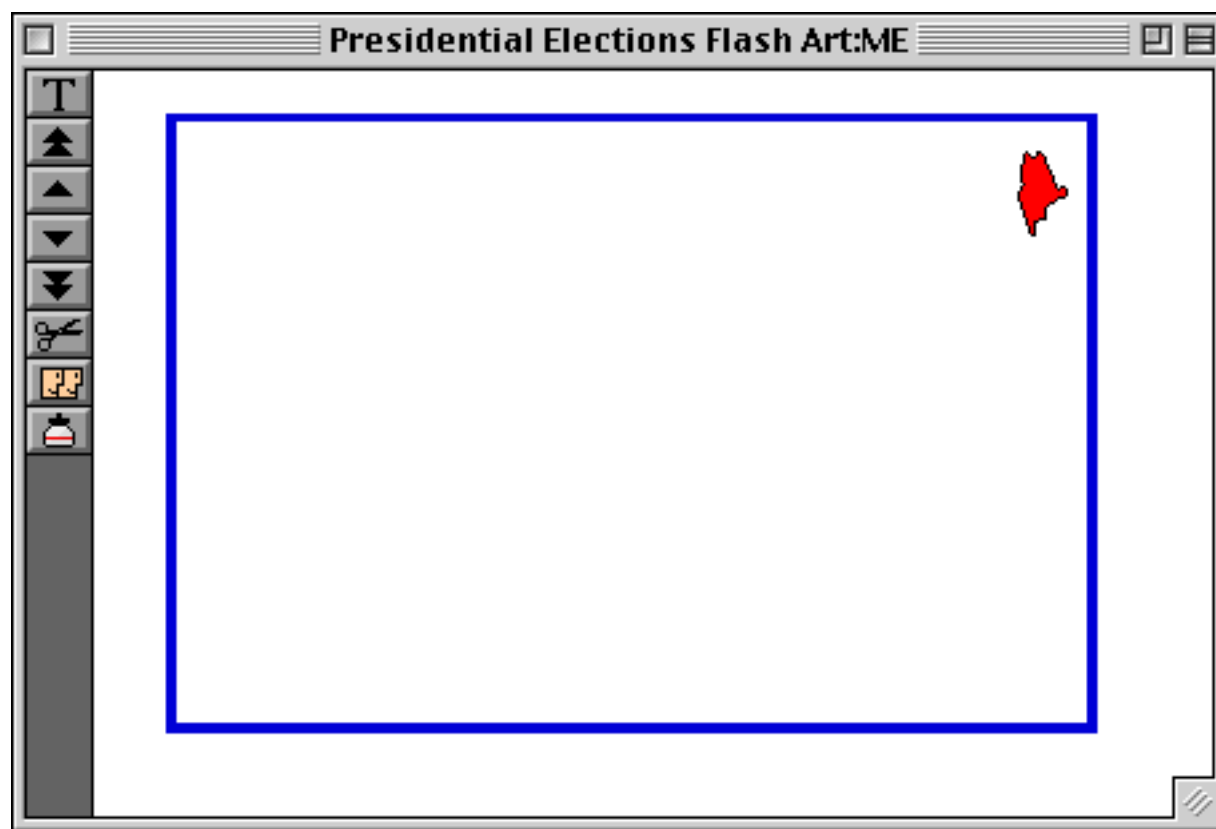
We'll start with a base map of the United States, as shown in the illustration below. This base map is simply a fixed image that has been pasted into the form (see "Fixed Images" on page 741).



To create our final map we'll need an overlay map for each of the 50 states. The overlay map must be designed to fit right on top of the base map. Here's the overlay map for California.

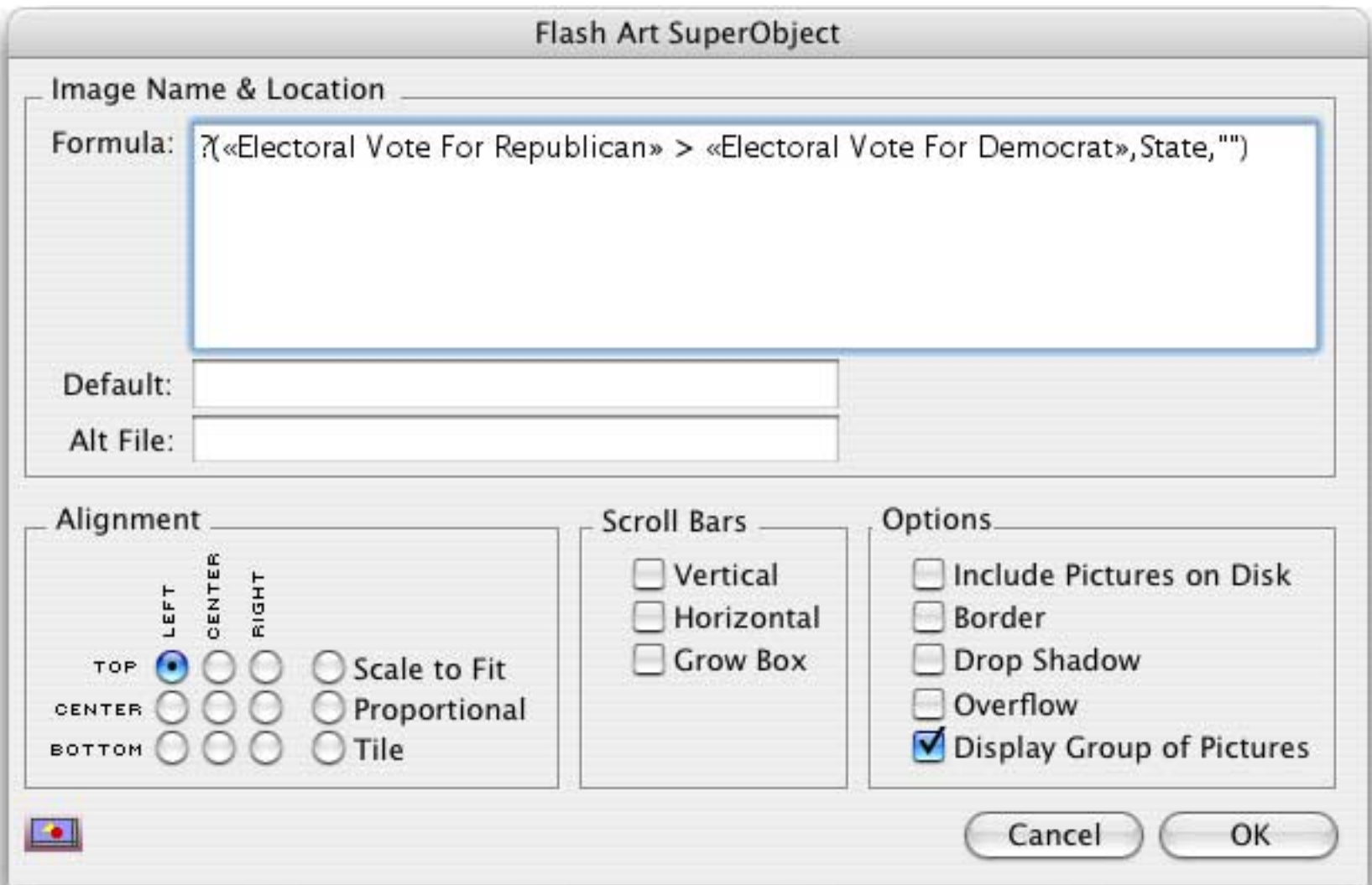


Here's the overlay map for Maine.

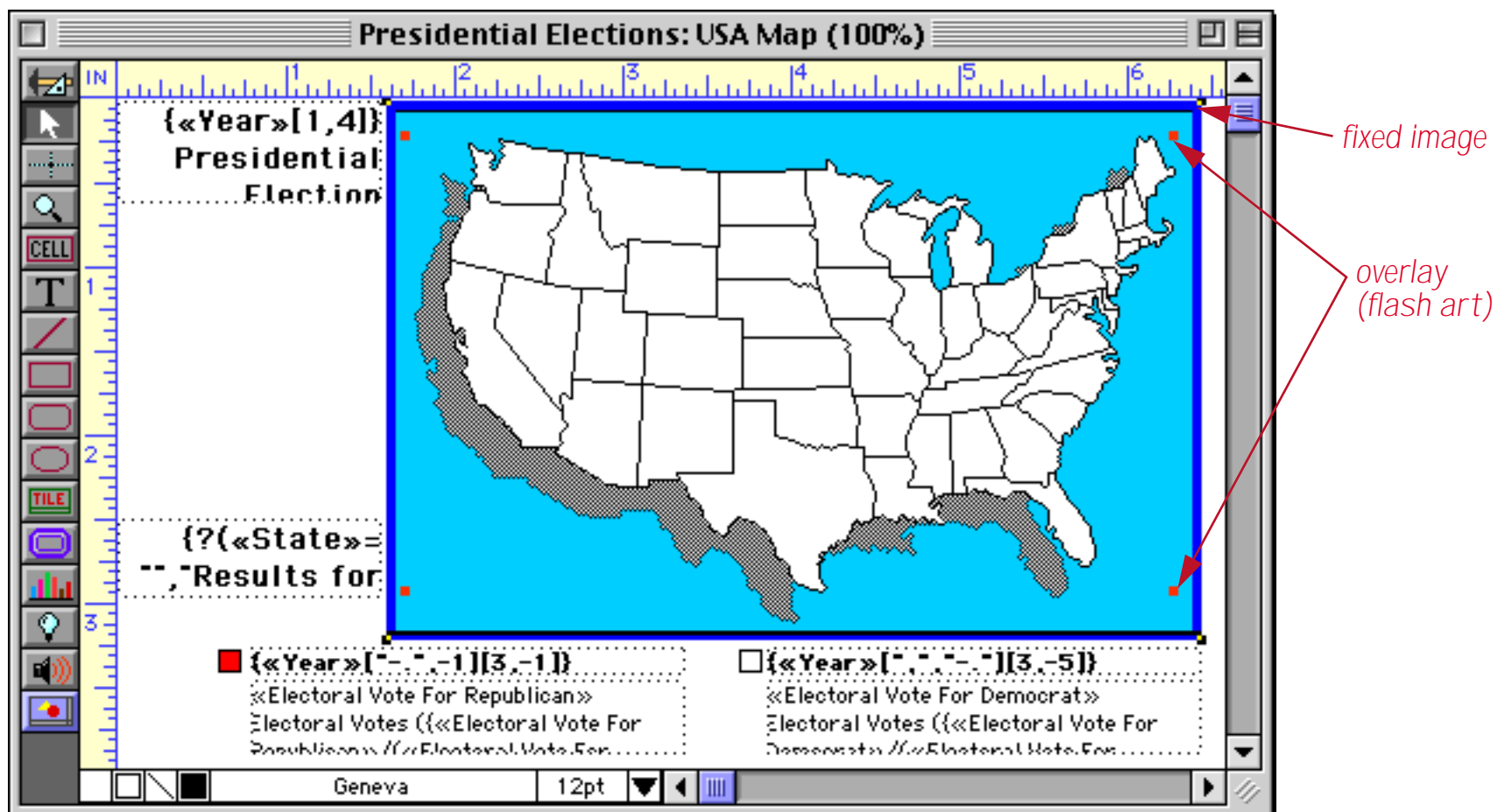


It can take a lot of work to set up the overlay maps! Once they are complete, you are ready to build a composite map — in this case showing the results of the presidential election.

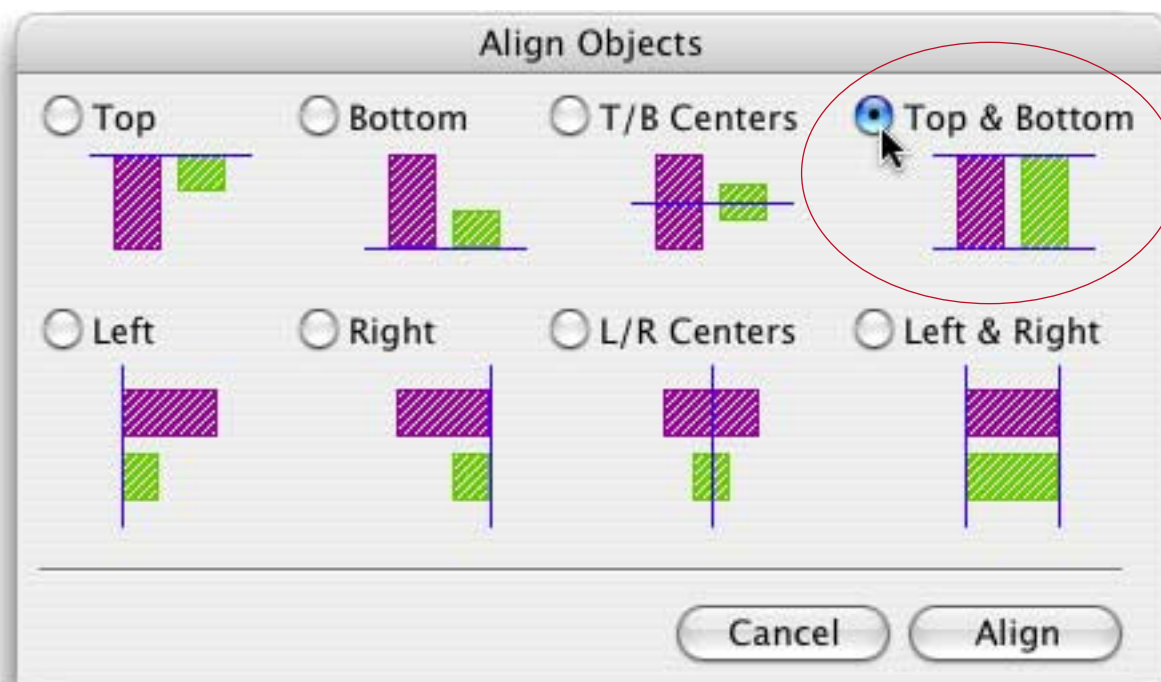
To build the composite map you need to create a Super Flash Art object directly on top of the base map. The Super Flash Art Object must exactly match the position and size of the base map, so that the overlay maps will line up with the base map. Here's the configuration dialog for this Super Flash Art object. The formula uses the ?(function to decide whether or not to display the overlay map for a particular state (see "The ? Function" on page 130 of *Formulas & Progaming*). If the electoral vote for the Republicans is greater than the vote for the Democrats, the overlay is displayed (so in this case the state will be displayed in red). If the Democrat vote is larger, the overlay is not displayed (so the state remains in white).



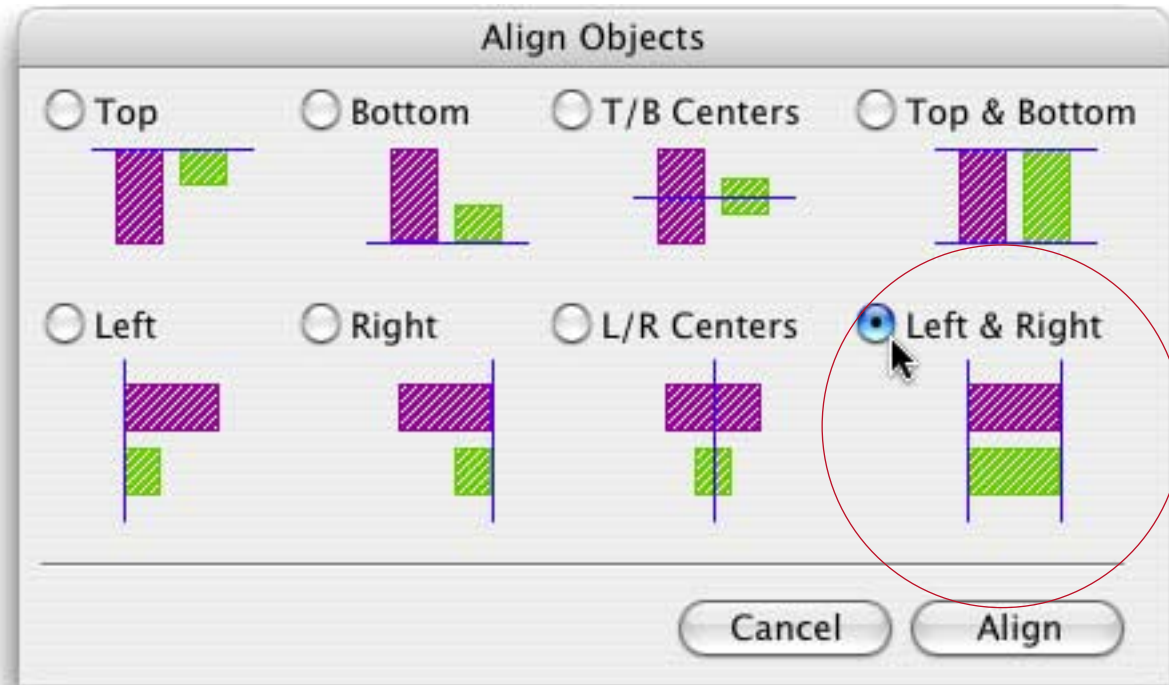
It can be tricky to get the overlay Flash Art SuperObject to line up exactly with the fixed map. Here's an easy way to do it. Start by selecting both of the objects (see "[Selecting Multiple Objects at Once](#)" on page 502).



Now use the **Align Objects** command to line up the objects (see "[Aligning Objects](#)" on page 553). Start by aligning the top and bottom...



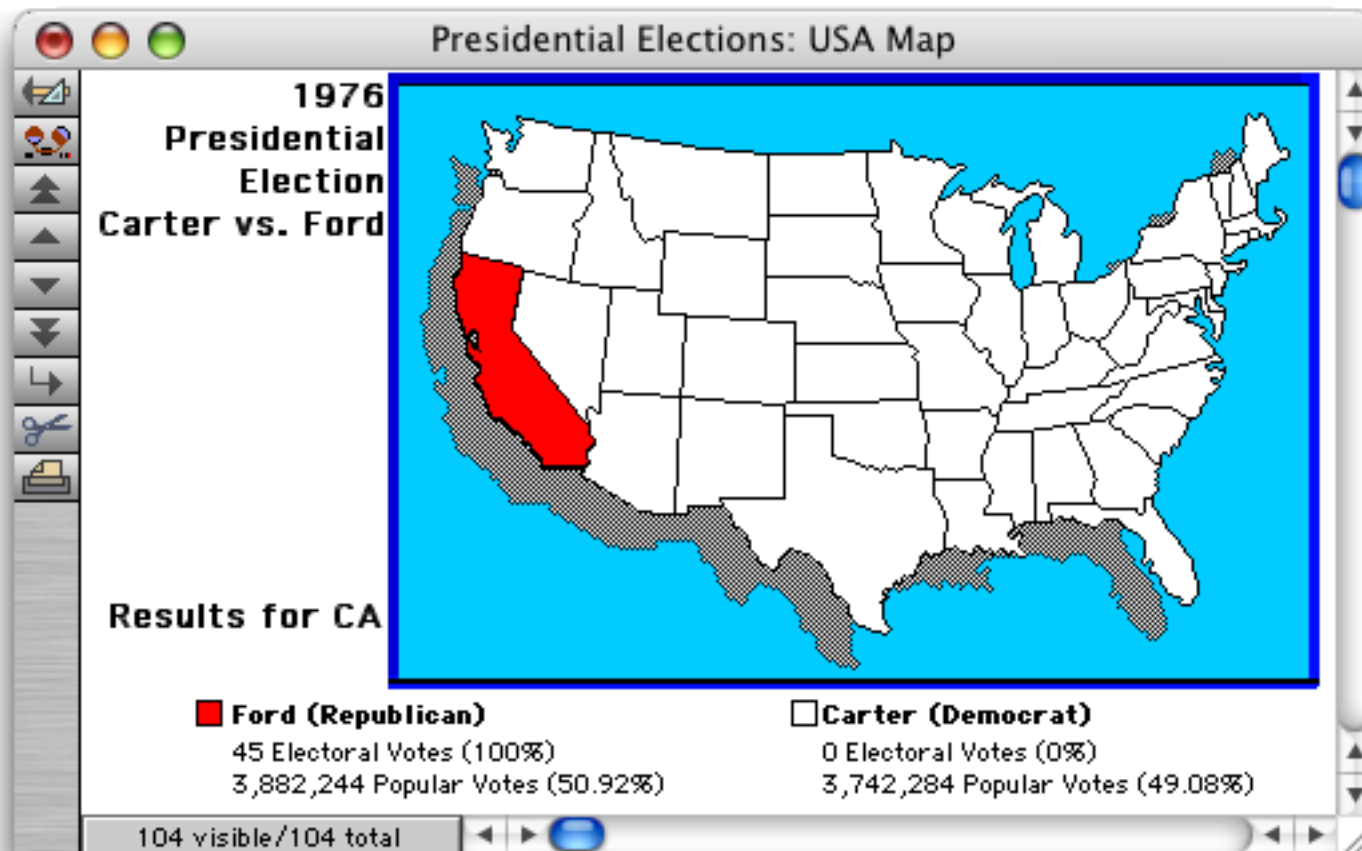
Then repeat the **Align Objects** command to line up the left and right edges.



Now let's see what our composite map looks like. Using the data sheet, we move to a state that was won by the Republicans.

Year	State	Electoral Vote For Democrat	Electoral Vote For Republican	Popular Vote For Democrat	Popular Vote For Republican
1976, Carter vs. Ford	AL	9	0	659,170	504,070
1976, Carter vs. Ford	AR	6	0	498,604	267,903
1976, Carter vs. Ford	AZ	0	6	295,602	418,642
1976, Carter vs. Ford	CA	0	45	3,742,284	3,882,244
1976, Carter vs. Ford	CO	0	7	460,353	584,367
1976, Carter vs. Ford	CT	0	8	647,895	719,261
1976, Carter vs. Ford	DC	3	0	137,818	27,873
1976, Carter vs. Ford	DE	3	0	122,596	109,831
1976, Carter vs. Ford	FL	17	0	1,636,000	1,469,531
1976, Carter vs. Ford	GA	12	0	979,409	483,743
1976, Carter vs. Ford	HA	4	0	147,375	140,003

The formula tells Panorama to display the overlay map for this state.

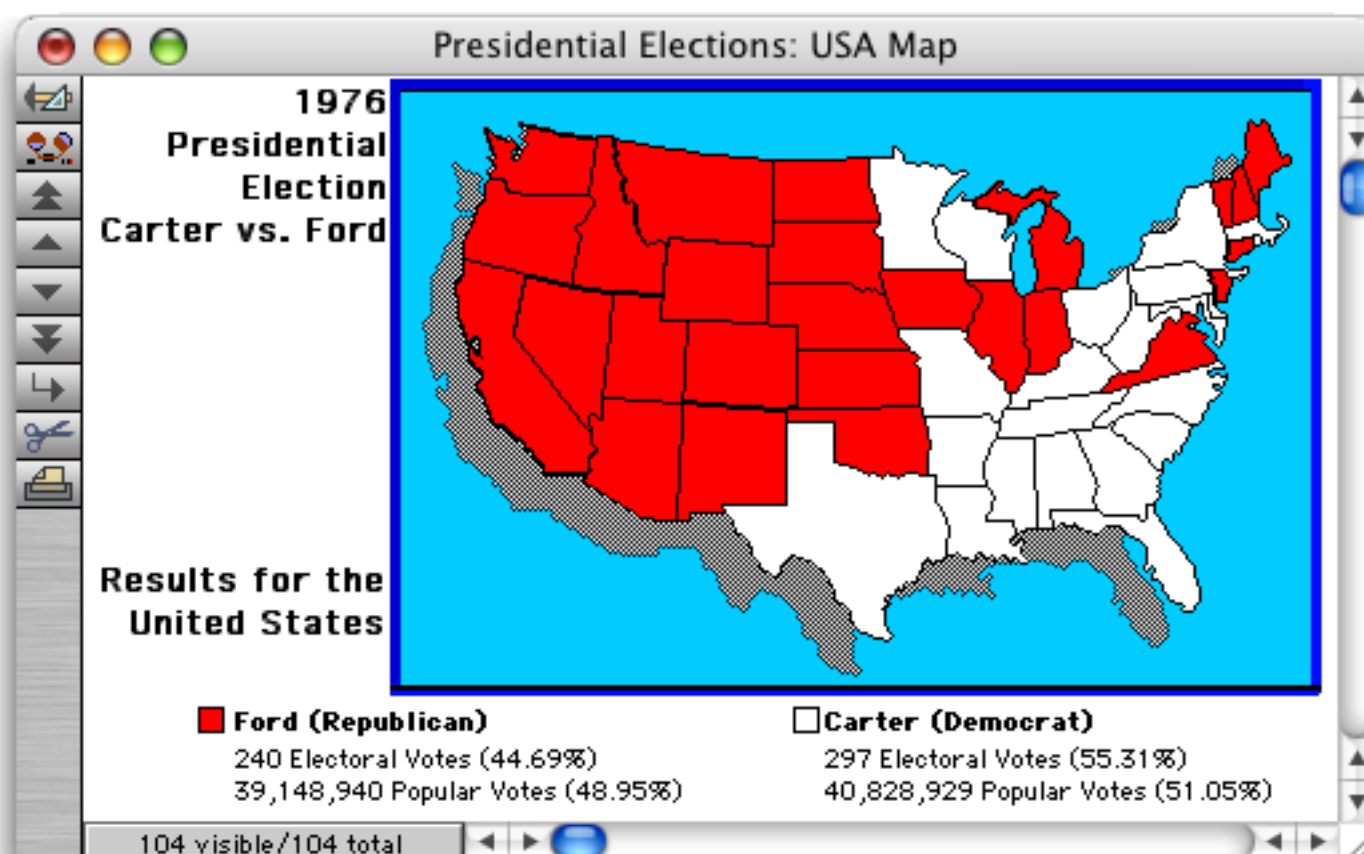


You can move from state to state, viewing the results for each state. When you get to the summary record, however, something different happens. Here's the summary record.

Presidential Elections						
Year	State	Electoral Vote For Democrat	Electoral Vote For Republican	Popular Vote For Democrat	Popular Vote For Republican	
1976, Carter vs. Ford	WI	11	0	1,040,232	1,004,987	
1976, Carter vs. Ford	WV	6	0	435,864	314,726	
1976, Carter vs. Ford	WY	0	3	62,239	92,717	
1976, Carter vs. Ford		297	240	40,828,929	39,148,940	
1988, Dukakis vs. Bush	AK	0	3	62,205	102,381	
1988, Dukakis vs. Bush	AL	0	9	546,786	809,450	
1988, Dukakis vs. Bush	AR	0	6	344,741	463,377	
1988, Dukakis vs. Bush	AZ	0	7	446,261	692,139	

104 visible/104 total

Now here's the map. Because the **Display Group of Pictures** option is enabled, Panorama displays the overlay map for every state with a Republican victory that year. You can easily see that Gerald Ford swept the west, while Jimmy Carter took the South.



A really powerful combination is to create multiple overlay maps with different colors and/or gray levels, and then select the appropriate color using the formula. For example you could use different colors to indicate different market penetration levels, or pollution levels, etc.

Border

If this option is enabled, Panorama will draw a 1 pixel border around the Super Flash Art object.

Drop Shadow

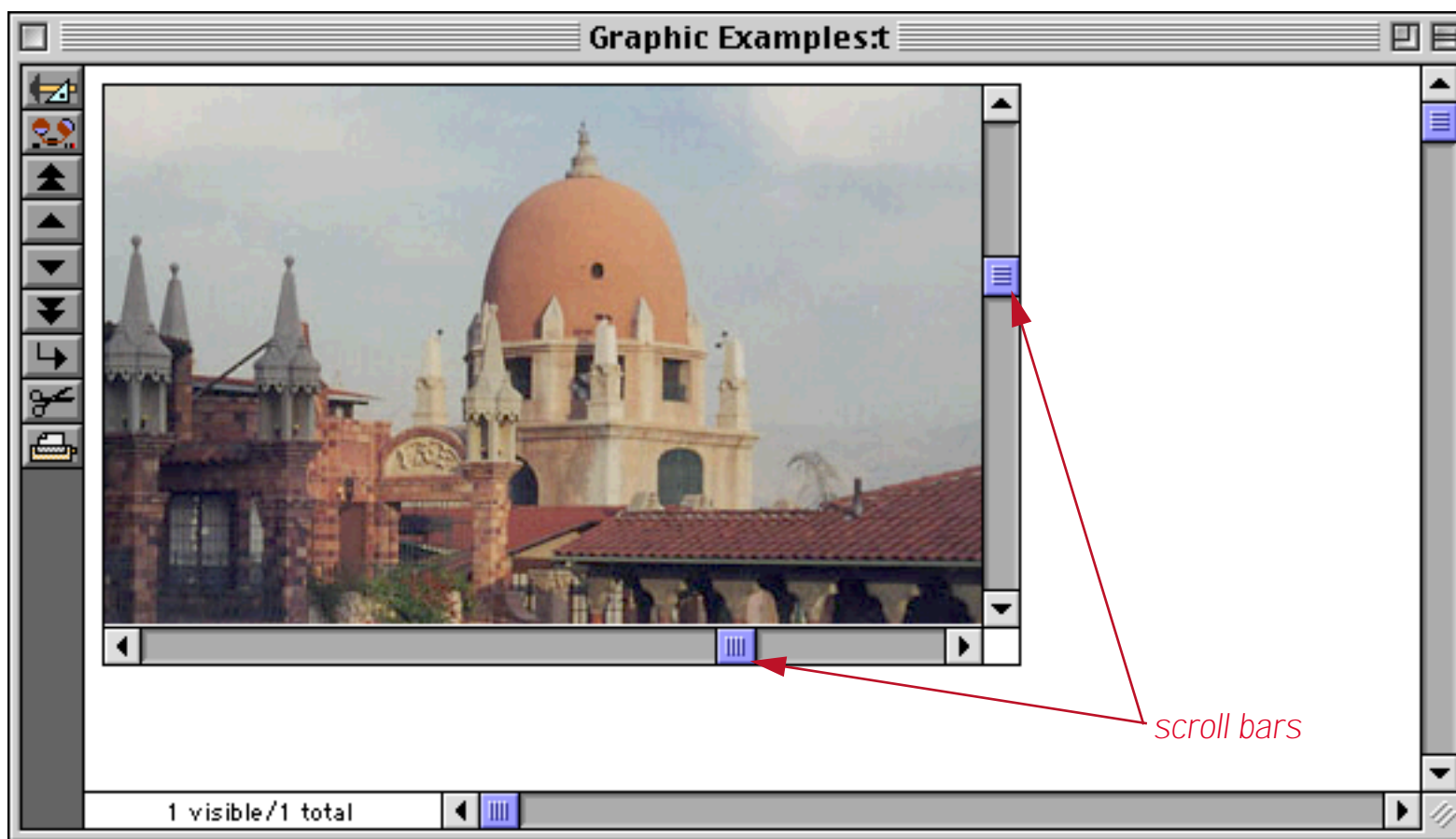
If this option is enabled, Panorama will draw a simulated drop shadow slightly below and to the right of the Super Flash Art object.

Overflow

This option is used in conjunction with an overflow tile for printing images that are more than one page high. See “[Printing Data that Overflows a Page](#)” on page 1116 for more information on multi-page overflow printing.

Scroll Bars

If you expect that the images you will be displaying may be too large to fit into the dimensions of the Super Flash Art object, you can enable scroll bars that will allow the user to shift around and view different parts of the picture. You can enable a Vertical scroll bar, a Horizontal scroll bar, or both.



You also have the option of leaving space for a Grow Box in the lower right hand corner of the Super Flash Art object. The Grow Box is simply a 16 by 16 pixel box that is left empty. It's up to you to draw an icon in this area (if you want). If the bottom right hand corner of the Super Flash Art object is in the same position as the bottom right hand corner of the window, you can disable the window's normal scroll bars and use the Super Flash Art object's scroll bars and Grow Box instead (see “[Elastic Forms](#)” on page 922).

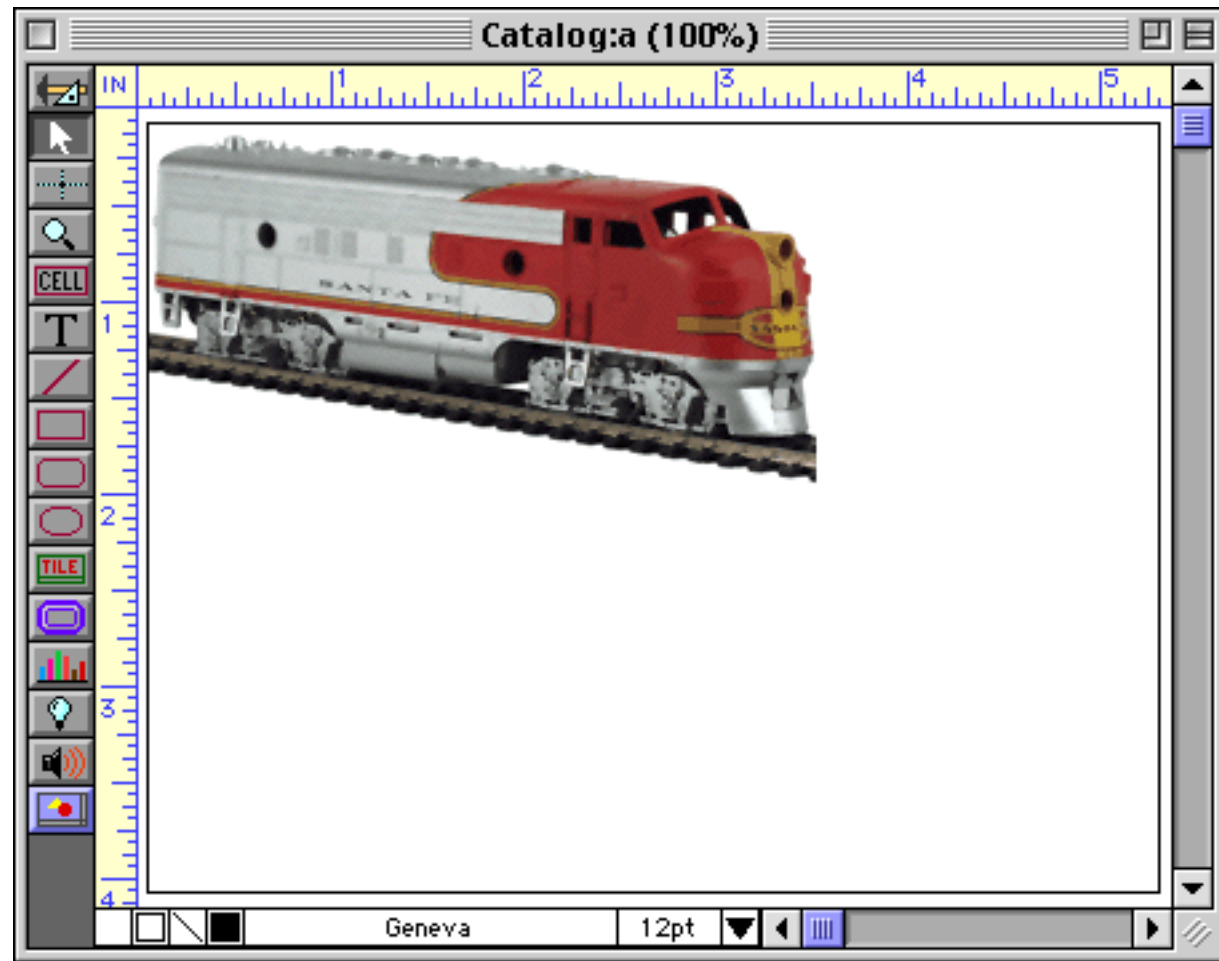
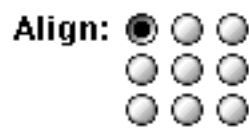
Align

The dimensions of the picture being displayed often do not exactly match the size of the Super Flash Art object. This section of the dialog specifies how the picture should be adjusted if it is too large or too small for the Super Flash Art object.

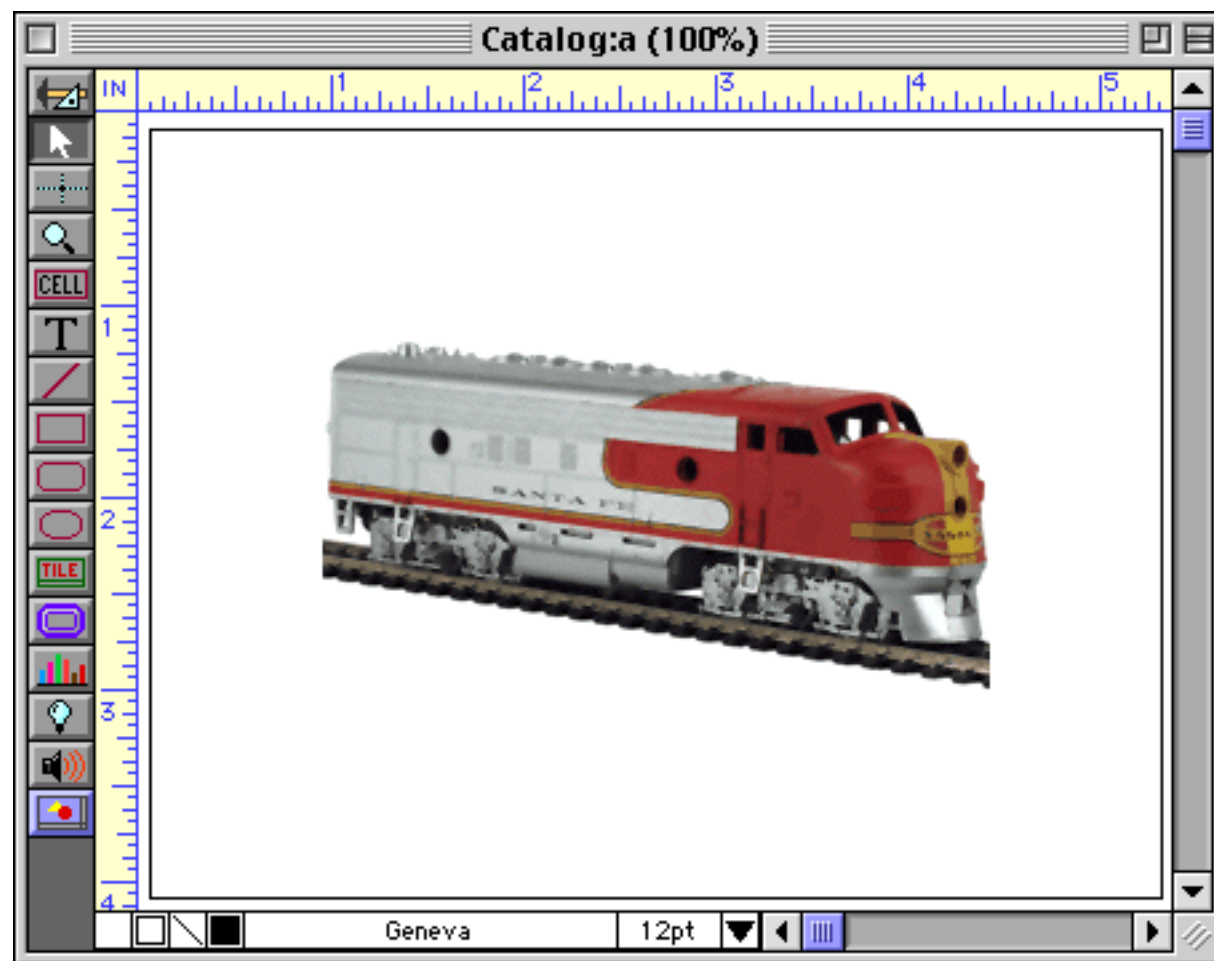
Align:

Scale to Fit
 Proportional
 Tile

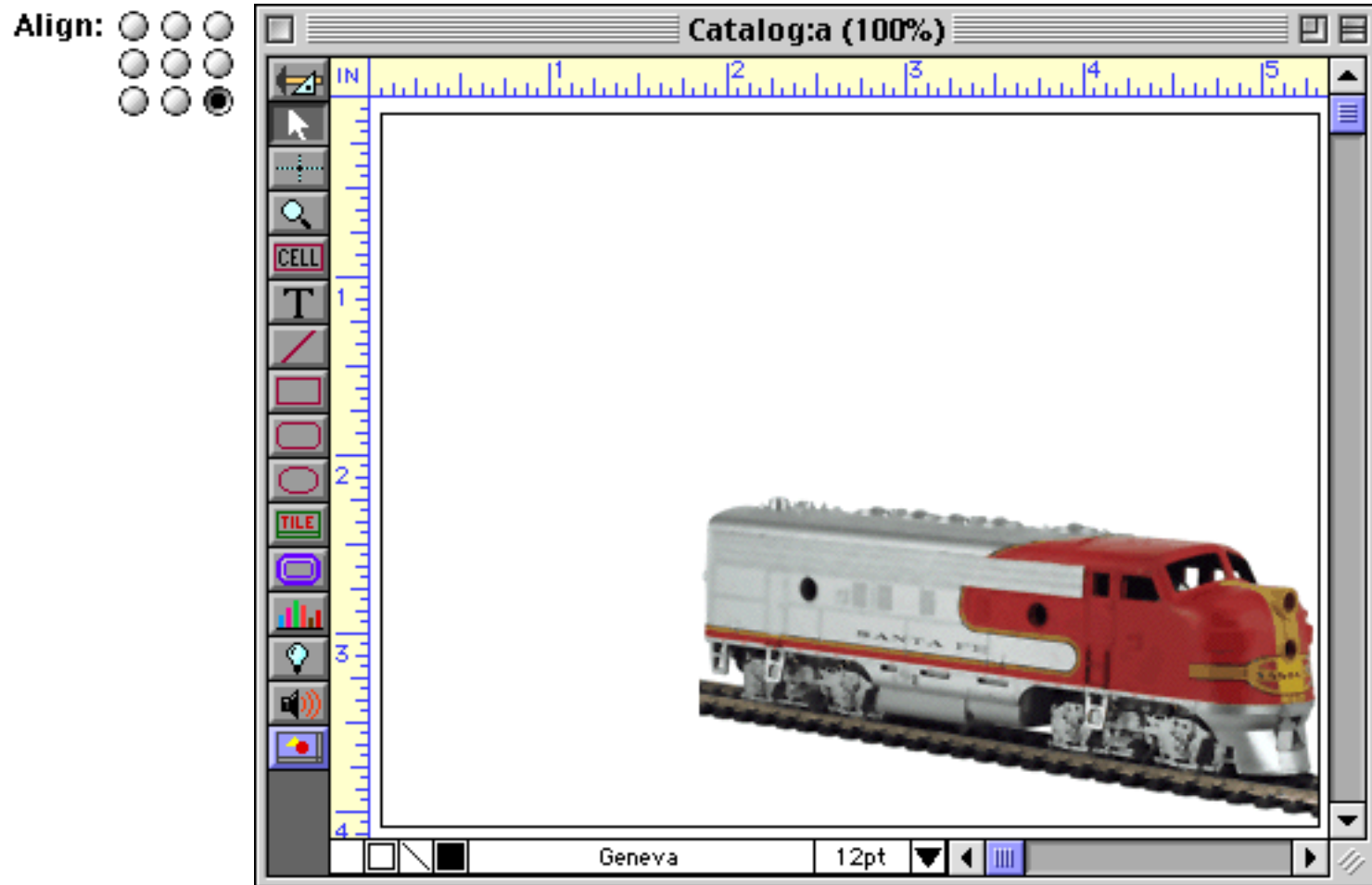
The left side of this section contains nine radio buttons in a tic-tac-toe arrangement. These buttons allow the picture to be aligned within the Super Flash Art object. The picture can be aligned with any corner, centered on any side, or centered in the middle of the object. Wherever the object is aligned, it will be displayed actual size; i.e. it will not be enlarged or reduced. For example, here is an image displayed in the top left corner.



Here is the same image displayed in the middle center.

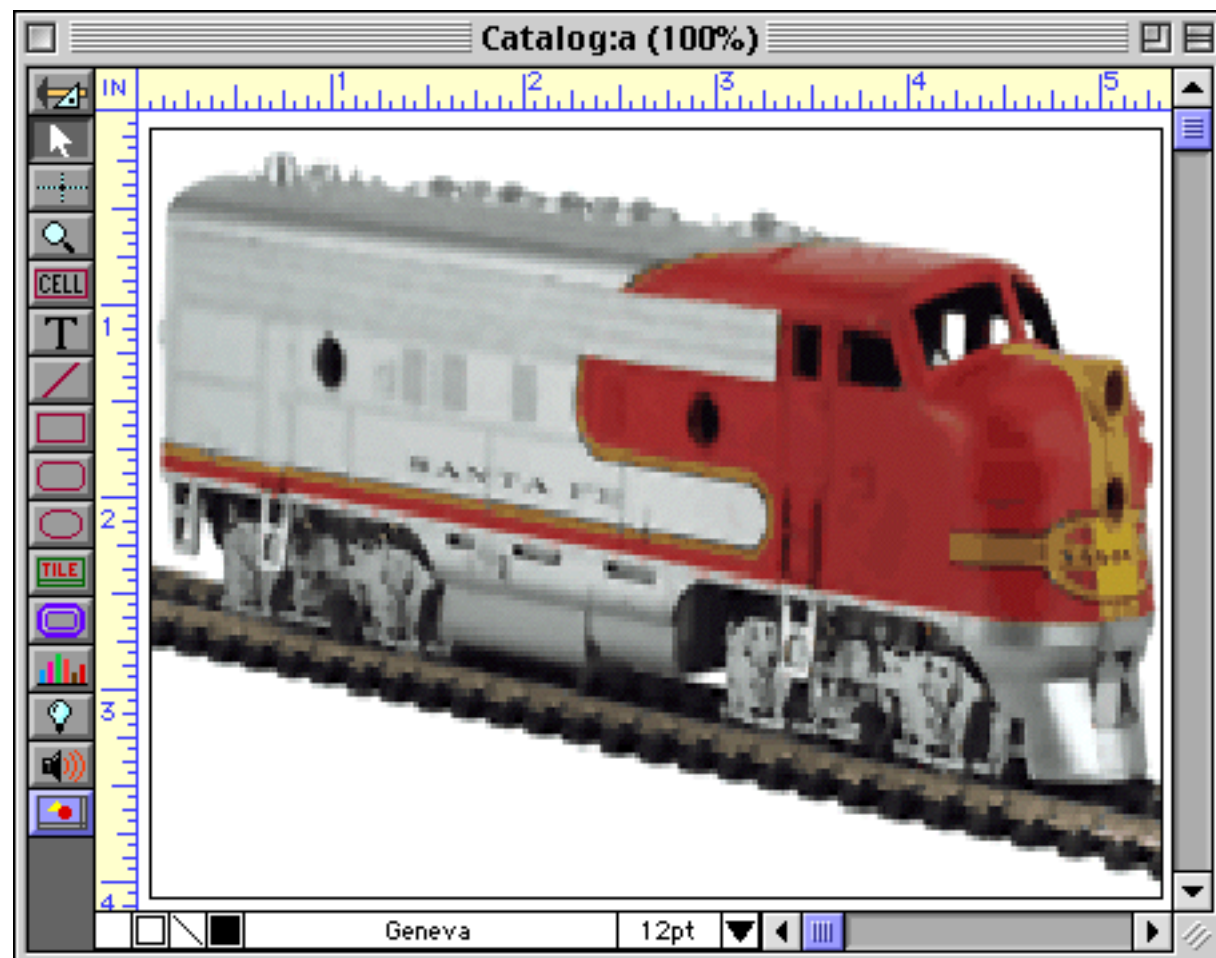


And again in the bottom right.



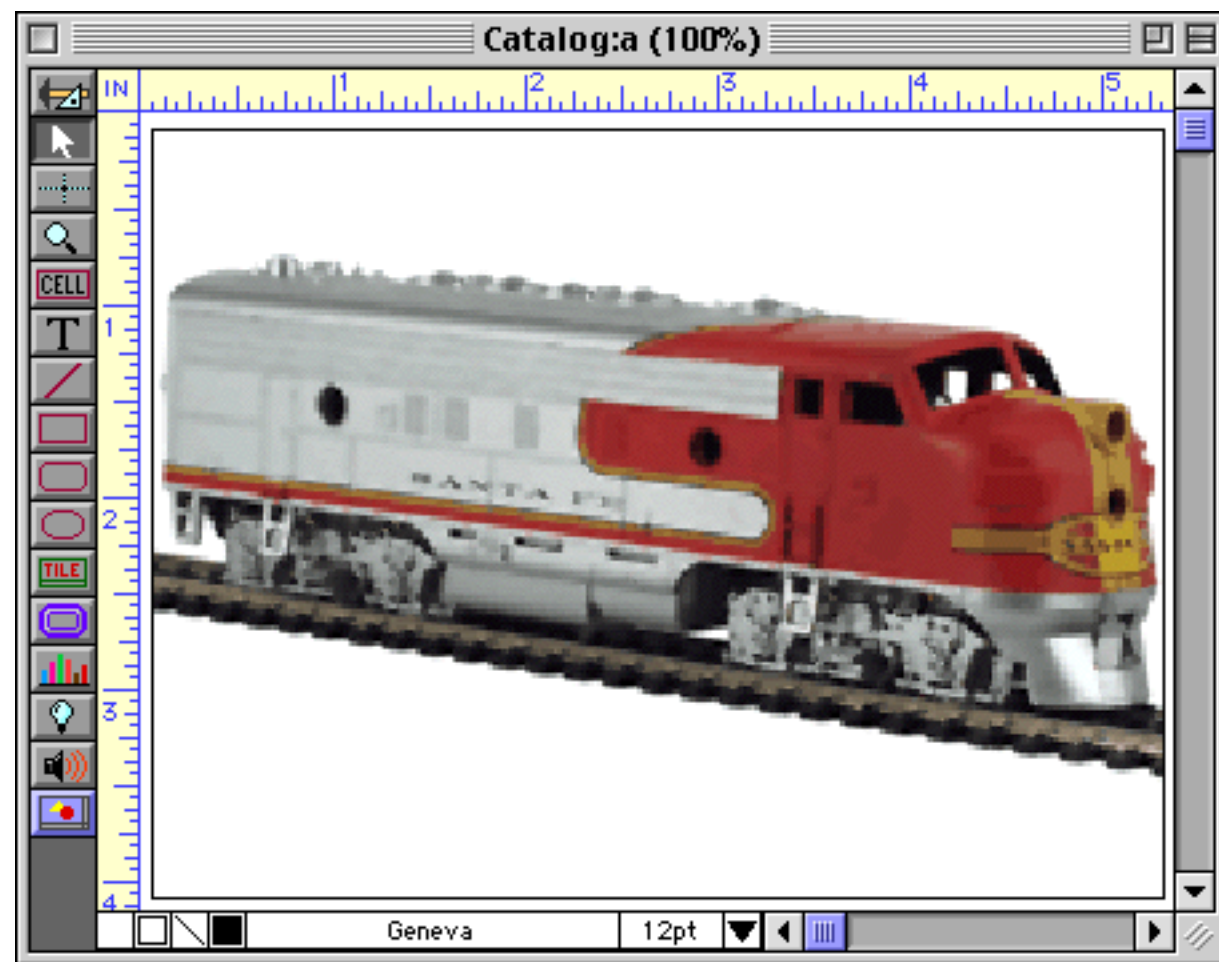
The **Scale to Fit** option will enlarge, reduce, and/or stretch the picture so that it exactly fits in the Super Flash Art object. The picture may be distorted to make it fit, as you can see in this illustration.

- Scale to Fit**
 Proportional
 Tile

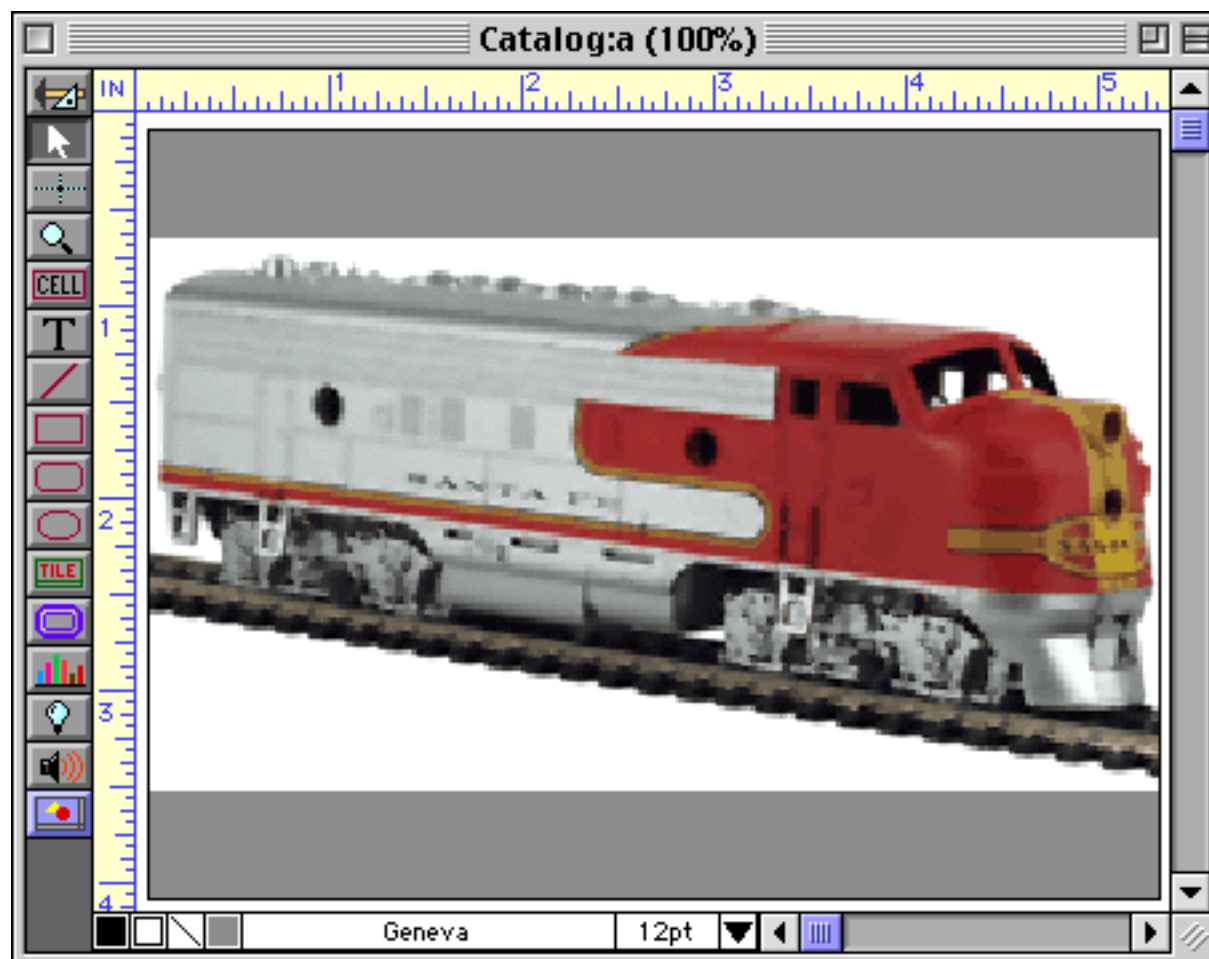


The **Proportional** option will enlarge or reduce the object as much as possible so that it will fit into the object, but it will not distort the picture. In other words, it will not change the proportions of the picture.

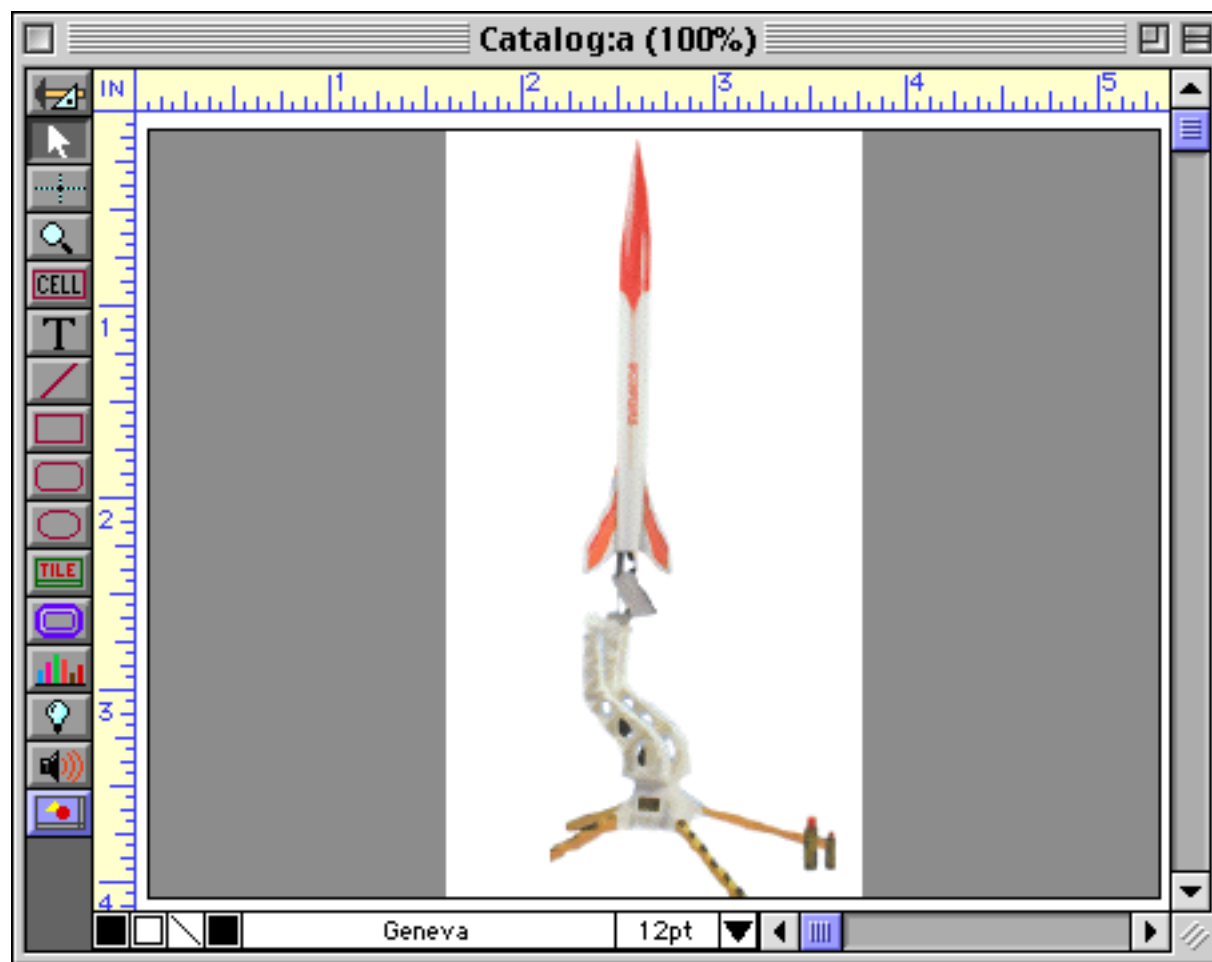
- Scale to Fit
- Proportional
- Tile



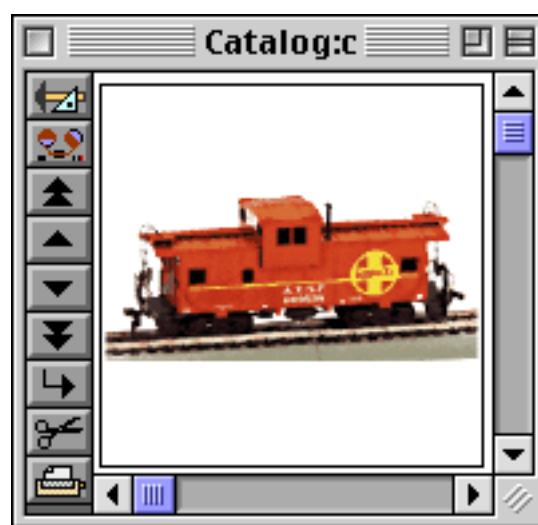
If the proportions of the original picture do not match the proportions of the Super Flash Art object, Panorama will leave a border along the top and bottom or left and right. We've added a gray background to this example so you can clearly see the borders. (The gray background is simply a solid rectangle object placed behind the Flash Art SuperObject.)



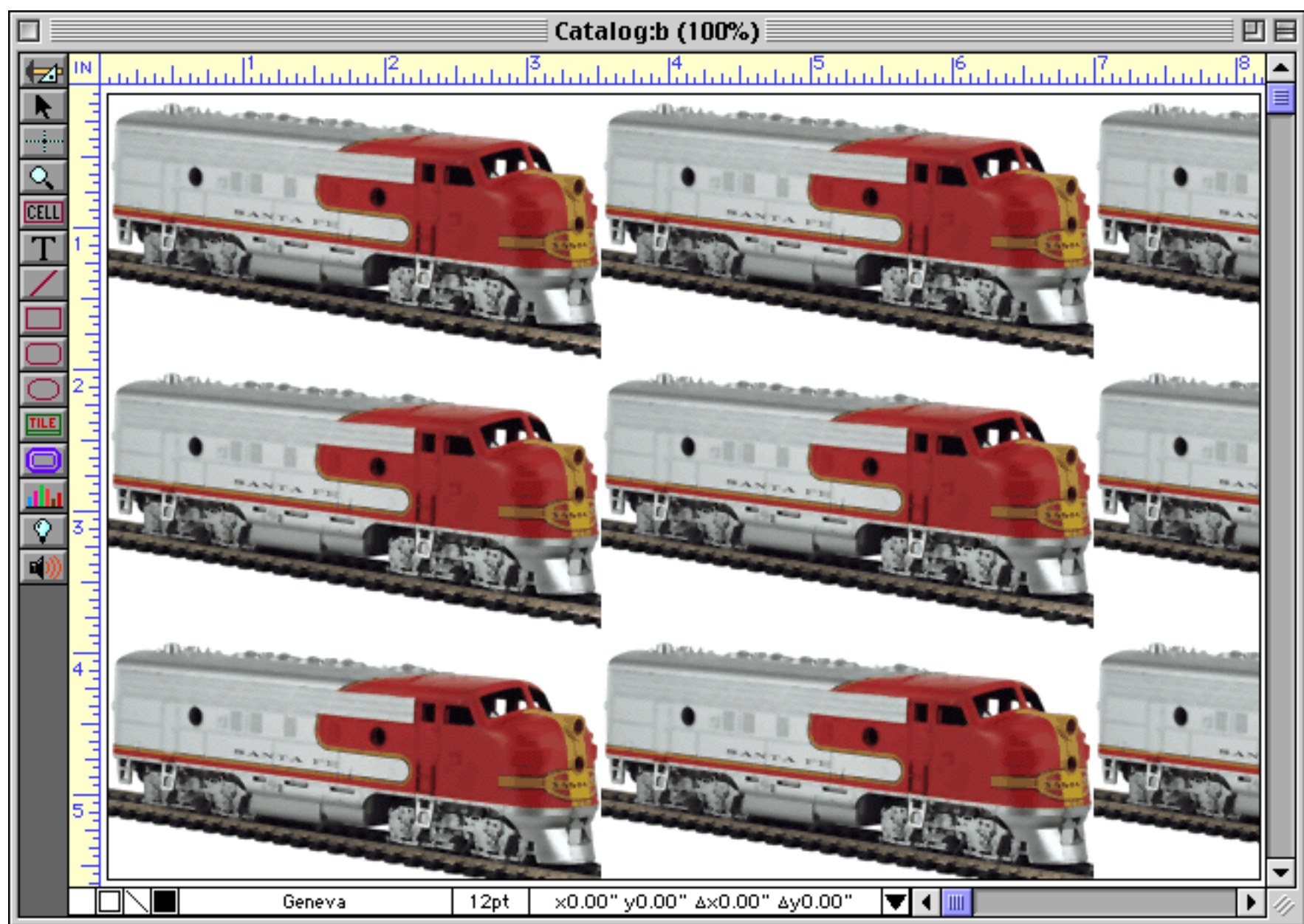
Depending on the aspect ratio of the image (width vs. height) the borders may also be on the sides instead of the top and bottom, like this.



Keep in mind that the **Scale to Fit** and **Proportional** options may be used to reduce an image as well as to enlarge it. Here's a typical reduced image that has been scaled down with the **Proportional** option.



The **Tile** option displays the picture over and over again in a tile arrangement, starting from the upper left. This option allows you to cover a large area with a small picture.



The only disadvantage of this technique is that if the original picture is really small there will be a perceptible delay as the tile pattern is drawn.

Displaying Images from Resource Files

Super Flash Art normally displays images from the Flash Art Gallery or directly from disk files. However, images can also be displayed from resource files. An image can be placed in a resource file using a program like ResEdit or Resourcerer. Before an image can be displayed from a resource file the file must be opened with the **openresource** statement. "[Working with Resources](#)" on page 433 of *Formulas & Programming* to learn how to do this.

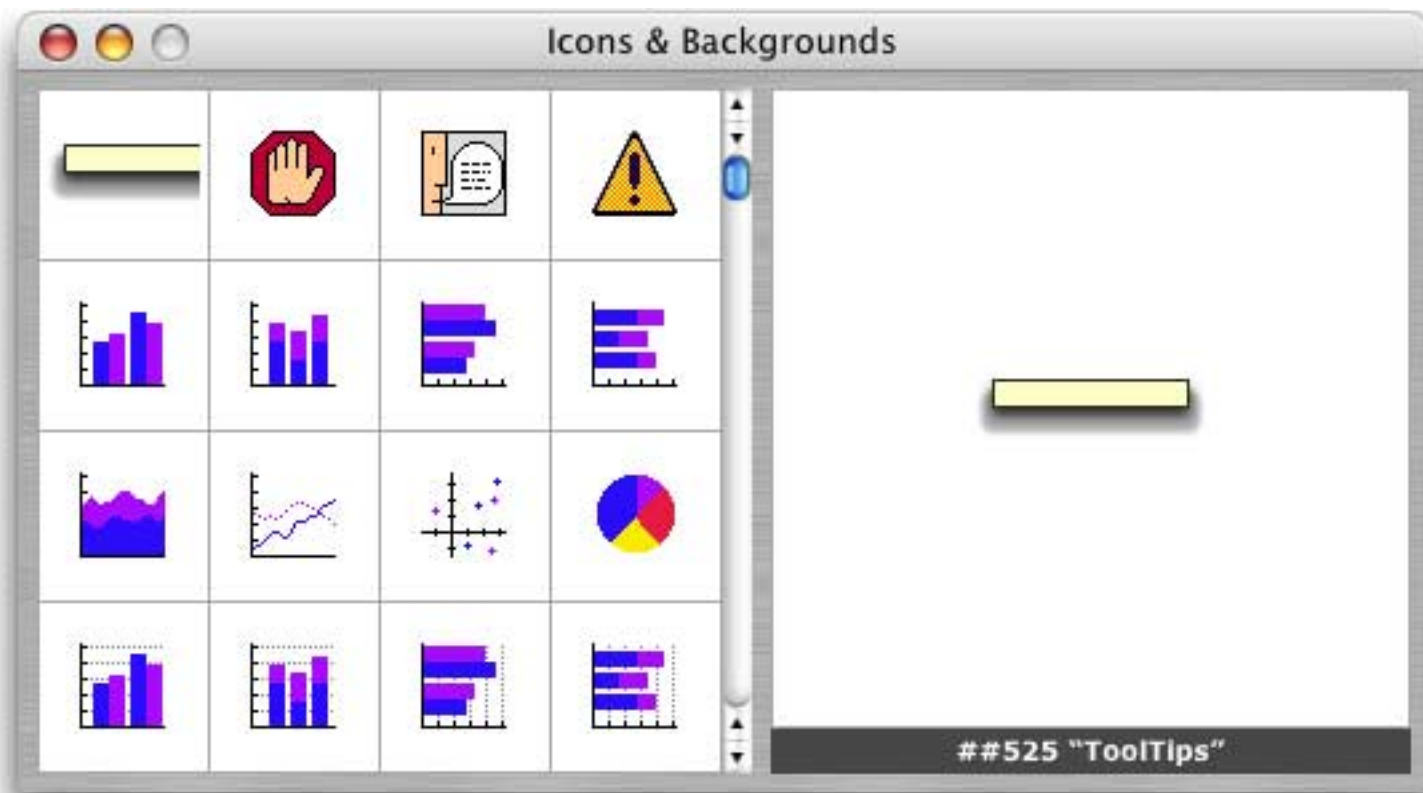
To display an image from a resource file you must use a special prefix as part of the Super Flash Art formula. If the formula begins with **//**, the rest of the formula is treated as the name of the resource to be displayed. For example, this formula would display the resource picture named **Blue Sky**.

```
"//Blue Sky"
```

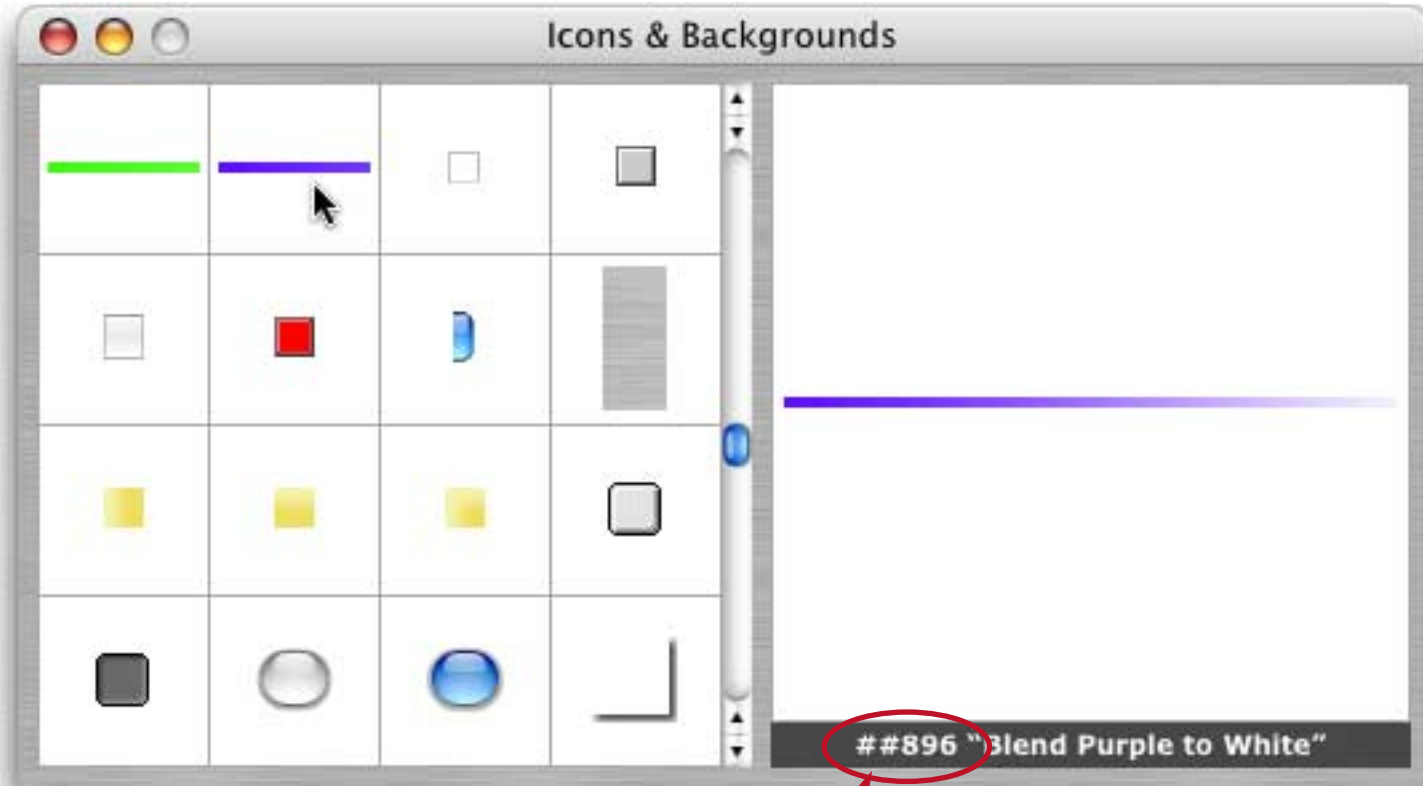
If the formula begins with **##**, the rest of the formula is treated as the number of the resource to be displayed. For example, this formula would display the resource picture number **4387**.

```
"##4387"
```


Panorama itself includes a number of resource based images. Most of these are used by Panorama itself in various windows and dialogs, but they are available for use in your databases also. To see a list of these images open the **Icons & Backgrounds** wizard in the **Form Tools** submenu of the **Wizard** menu.

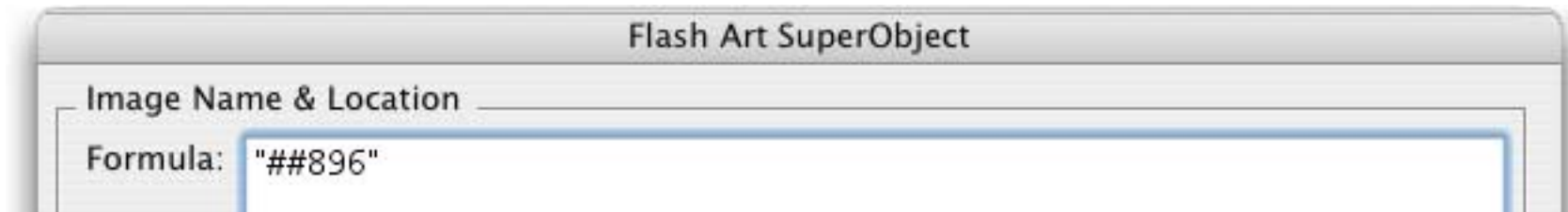


On the left is a thumbnail matrix of images. Click on any image to see an enlarged view on the right, along with the resource number.

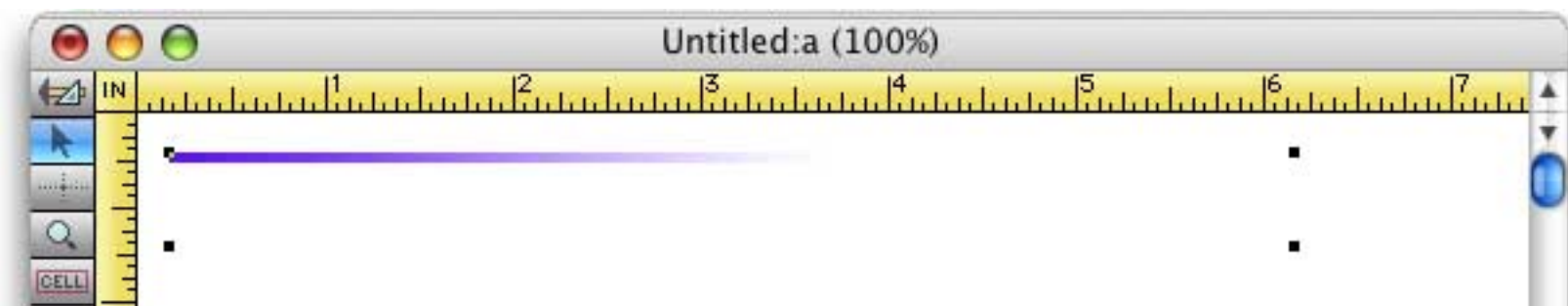


resource number to use in Flash Art Formula

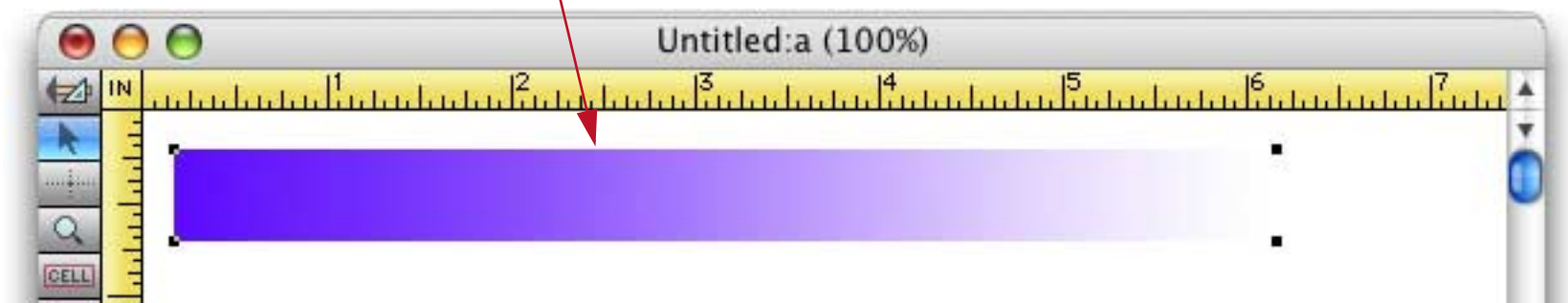
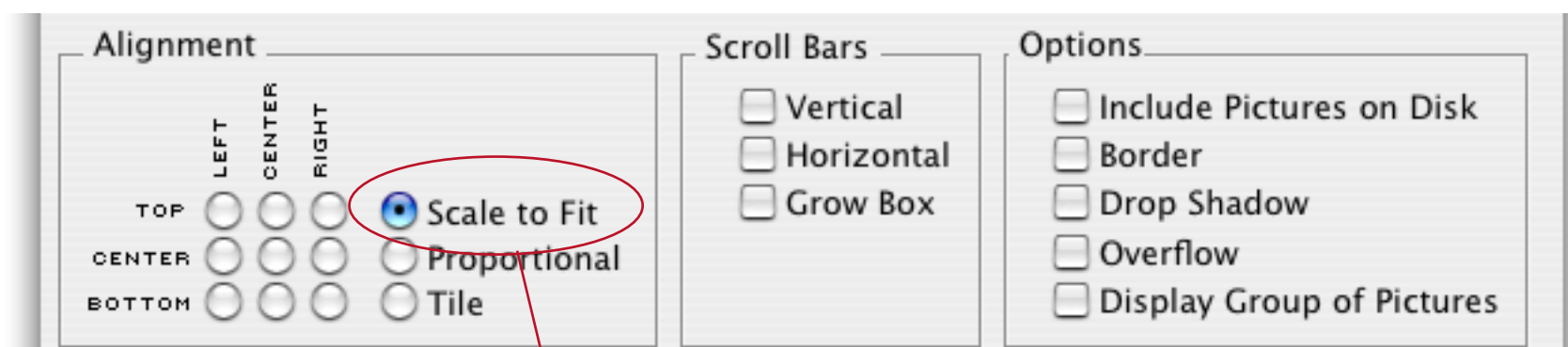
Here is the formula for displaying this purple to white blend:



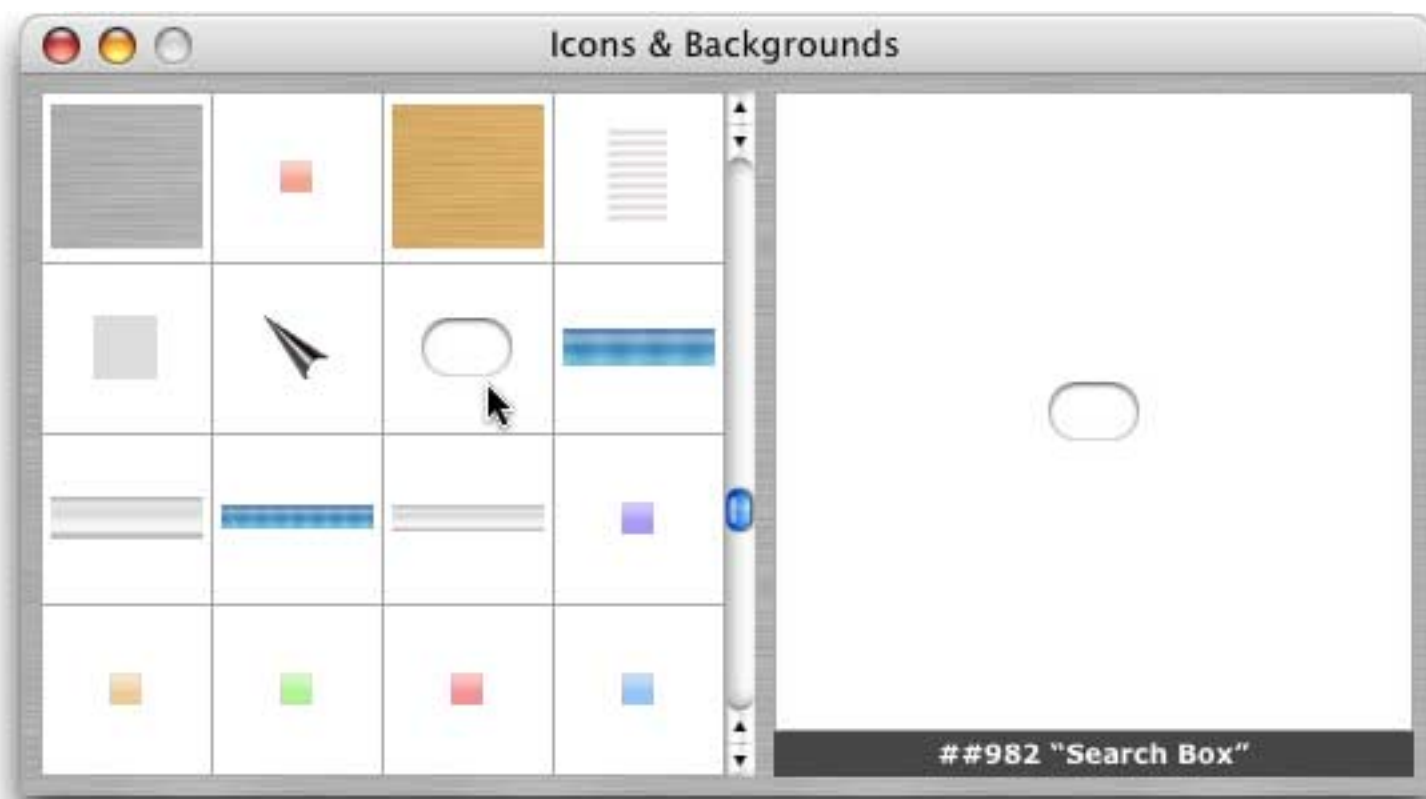
Here's what this image looks like in a form.



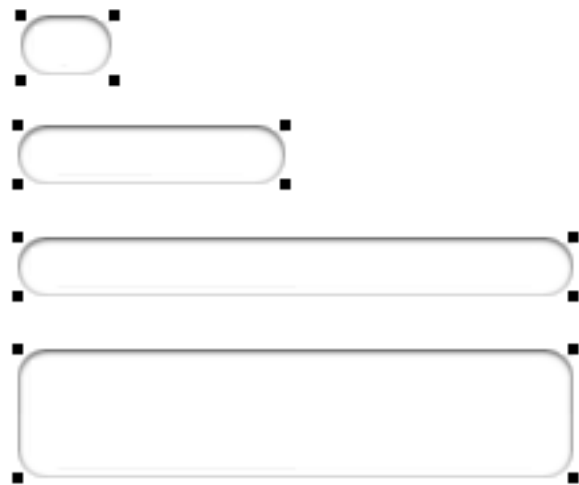
Many of these standard images can be stretched to fit different sizes. The object above is displayed with the alignment set to top left. Changing the alignment to **Scale to Fit** gives a expands the blend to fit a larger area.



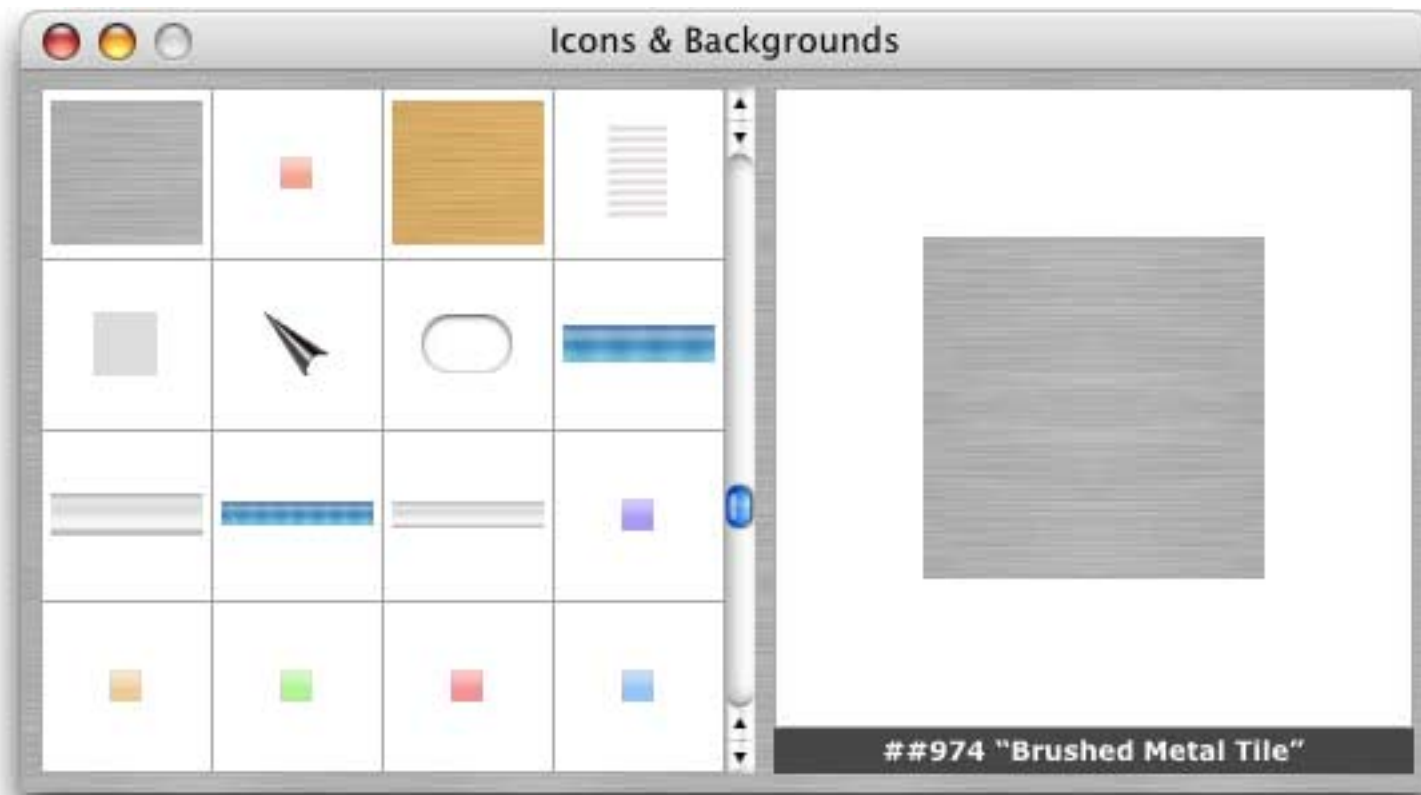
Some of the standard images are elastic (see “[Elastic Pictures](#)” on page 809). This means that they can be stretched without distortion. For example, consider this search box image (##982).



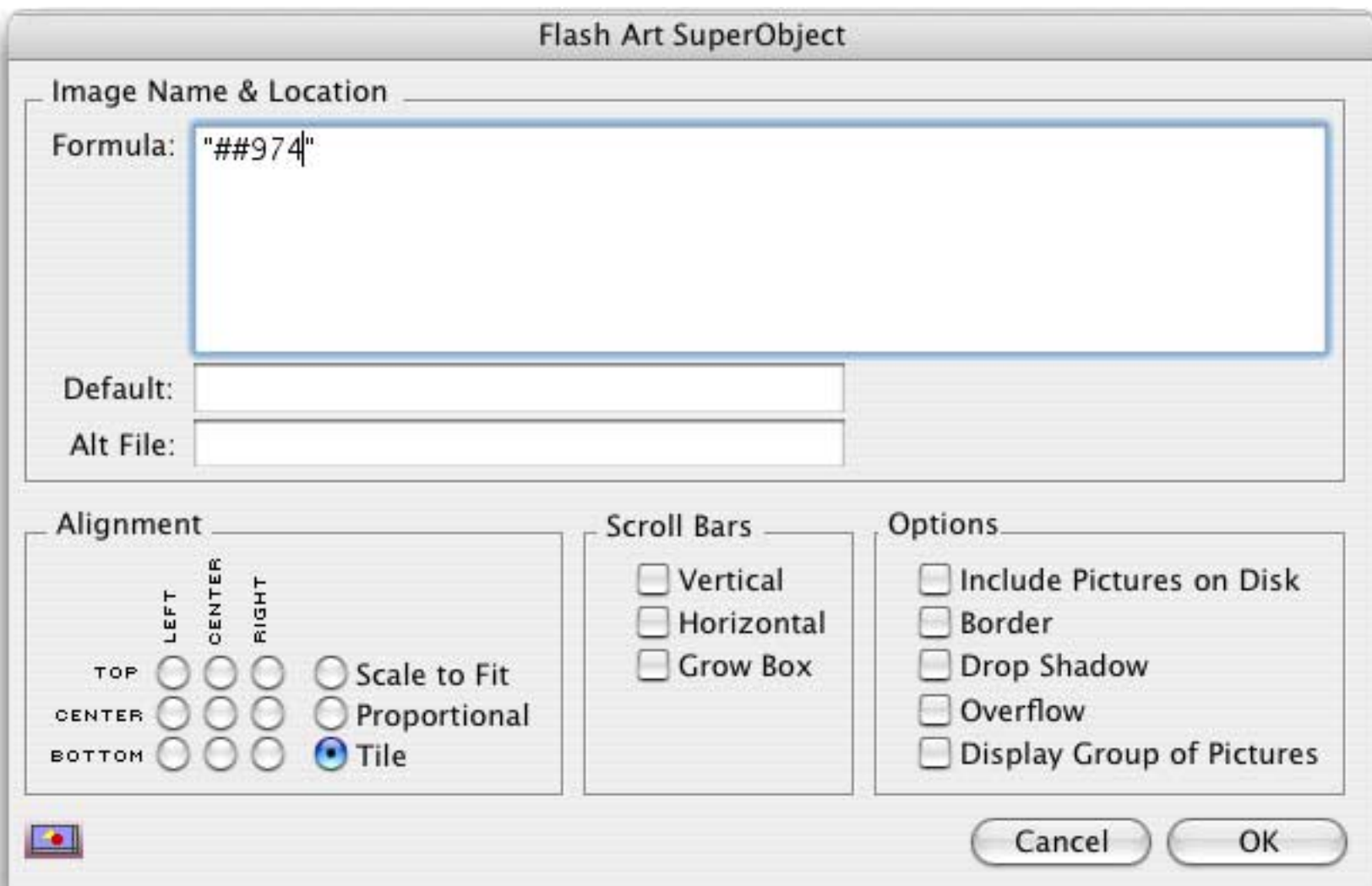
Because this image is elastic you can stretch it without distorting the corners.



Panorama also includes several background images that are designed to be tiled, like this [Brushed Metal Tile](#).



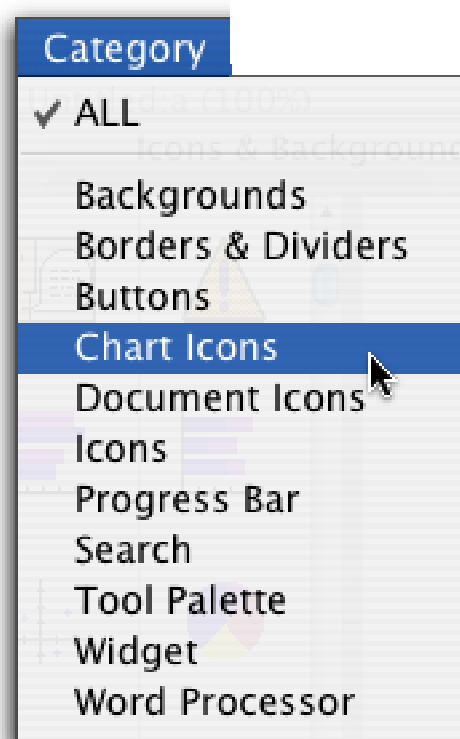
When displaying these background images we recommend that you set the Alignment to **Tile**.



This option will display a seamless brushed metal surface no matter how large your object is.



The Icons & Backgrounds wizard normally displays all of the available images. If you want to see just a particular subset you can choose from the **Category** menu.



The wizard will respond by displaying the selected images.

Displaying Icons from Resource Files

To display an icon (ICON or CICON resource) use the prefix `#*`. Icon resources can be created with ResEdit or Resourcer. Unlike a picture, an icon definition includes a mask that allows the image to have an irregularly shaped edge (not just rectangular). This allows the icon to display correctly on a colored background. Here is a formula that will display ICON 3981.

```
"#*3981"
```

Displaying Form Preview Pictures

Panorama allows you to attach a special preview picture to any form (see “[Form Comments](#)” on page 732 of *Formulas & Programming*). This picture can be displayed with a Super Flash Art object. To display the preview picture for any form in the current database use a formula with the format `;;<form name>`. For example, this formula will display the preview picture for the form named [Avery 4932](#) (if any).

```
";;Avery 4932"
```

To display the preview picture for a form in another database use a formula with the format `;;<database>:<form name>`. For example, this formula will display the preview picture for the form named [Avery 4932](#) in the [Mailing Labels](#) database (if any).

```
";;Mailing Labels:Avery 4932"
```

The database containing the form (in this case [Mailing Labels](#)) must be open to display the picture.

Elastic Pictures

Many forms require borders, buttons and widgets need to be used over and over again but with different sizes. Any image can be stretched with the **Scale to Fit** option, but the result is often a distorted image. For example, consider this bevel button, which looks good at 32 by 32 pixels.



Using the **Scale to Fit** option to stretch this image to 64 by 128 pixels doesn't look good because the corners and bevels are stretched as well.



What we would really like is for the object to stretch intelligently, with the corners and bevels remaining tight while the interior of the object stretches, as shown below.

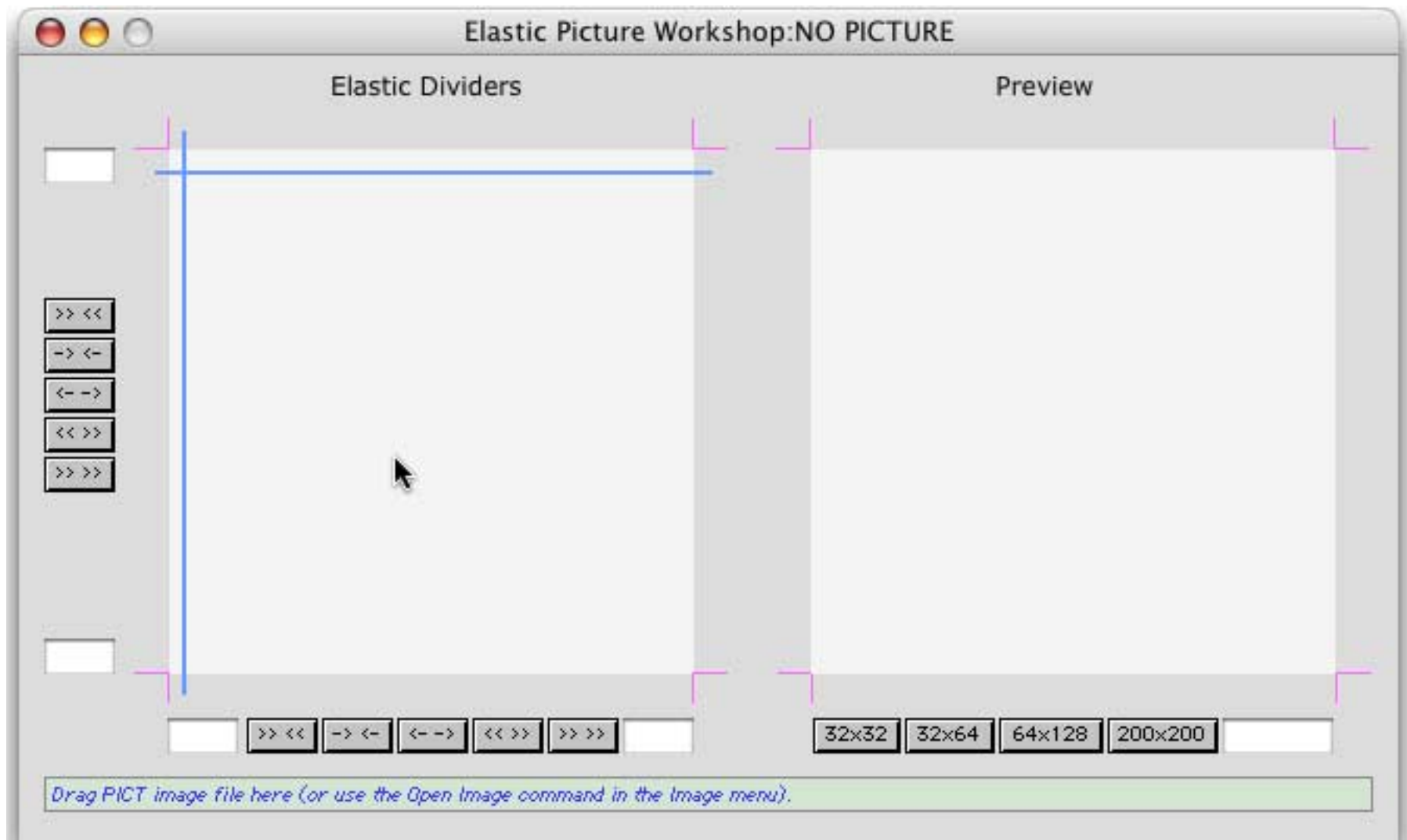


Panorama's **Elastic Picture** feature allows you to take any PICT image and enhance it so that it can be stretched at will without disturbing the corners and bevels. The image above was not customized in PhotoShop – it's the same image displayed in Panorama using the **Scale to Fit** option, but after it has been enhanced with the **Elastic Picture Workshop**.

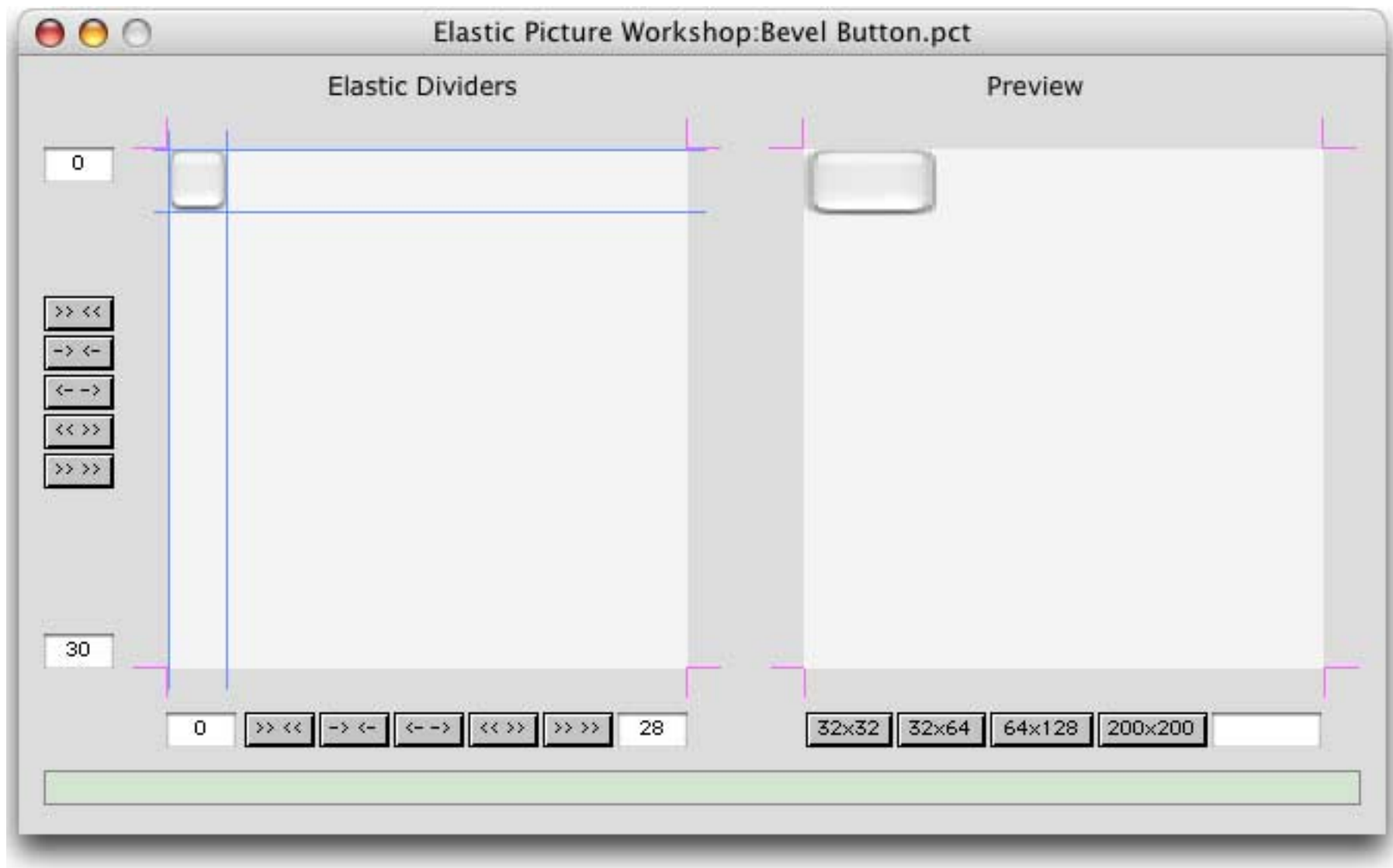
(Note: Only images in Apple's PICT format can be made elastic. Panorama takes advantage of the extensibility of the PICT format to add additional stretching information into the picture. This information cannot be added to other formats like JPEG, TIFF or BMP, so they cannot be made elastic. Fortunately many graphics programs can convert from these formats into the PICT format (even on the PC) so you will be able to make any image elastic after converting it to this format.)

Using the Elastic Picture Workshop

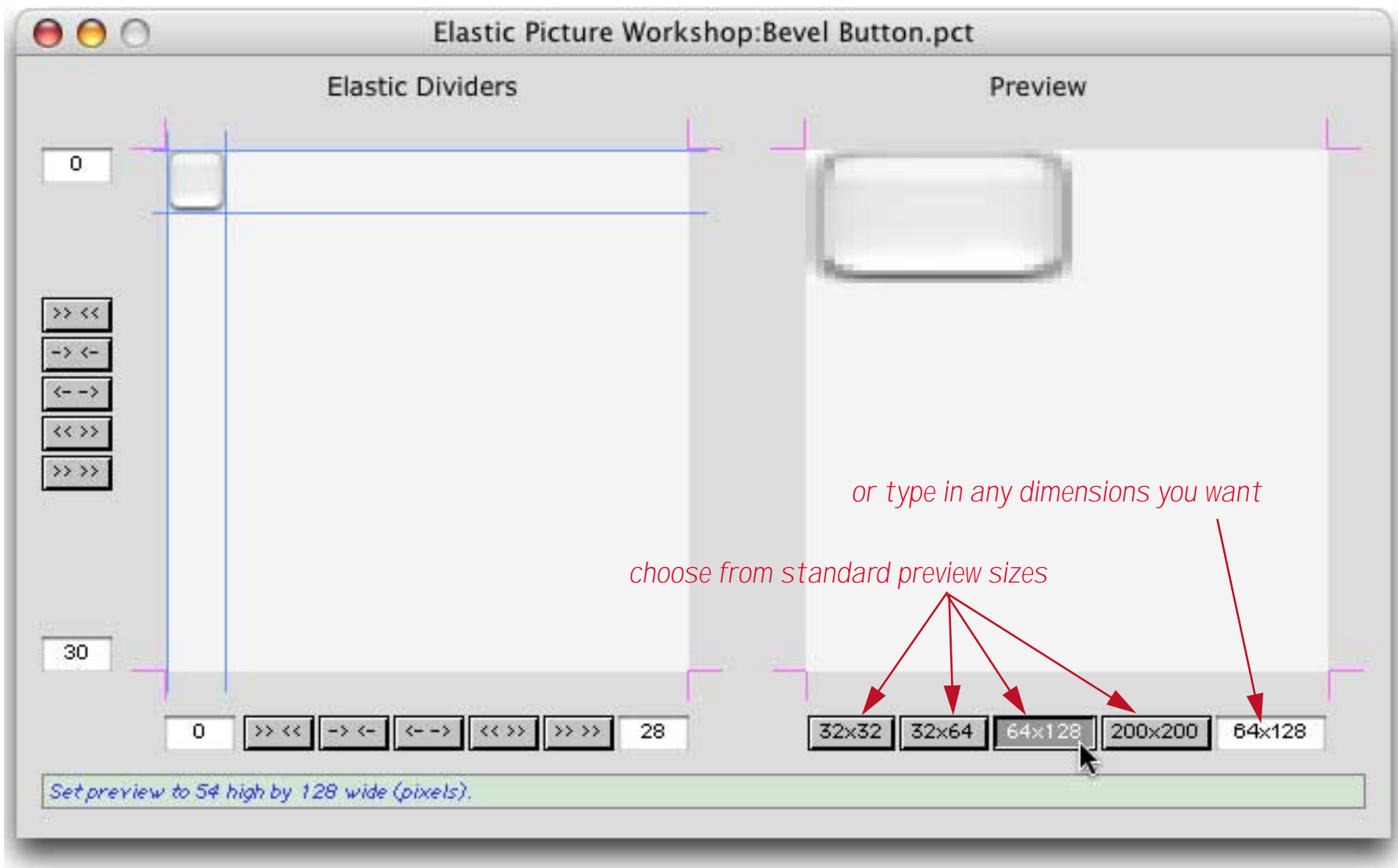
You'll use the **Elastic Picture Workshop** wizard to add the stretching information to an image. You'll find this wizard in the Developer Tools submenu of the Wizard Menu.



The first step is to open the wizard. You can either drag the image file onto the [Elastic Dividers](#) area or use the [Open Image](#) command in the Image menu. In the example below an image named [Bevel Button.pct](#) has been dragged onto the wizard.

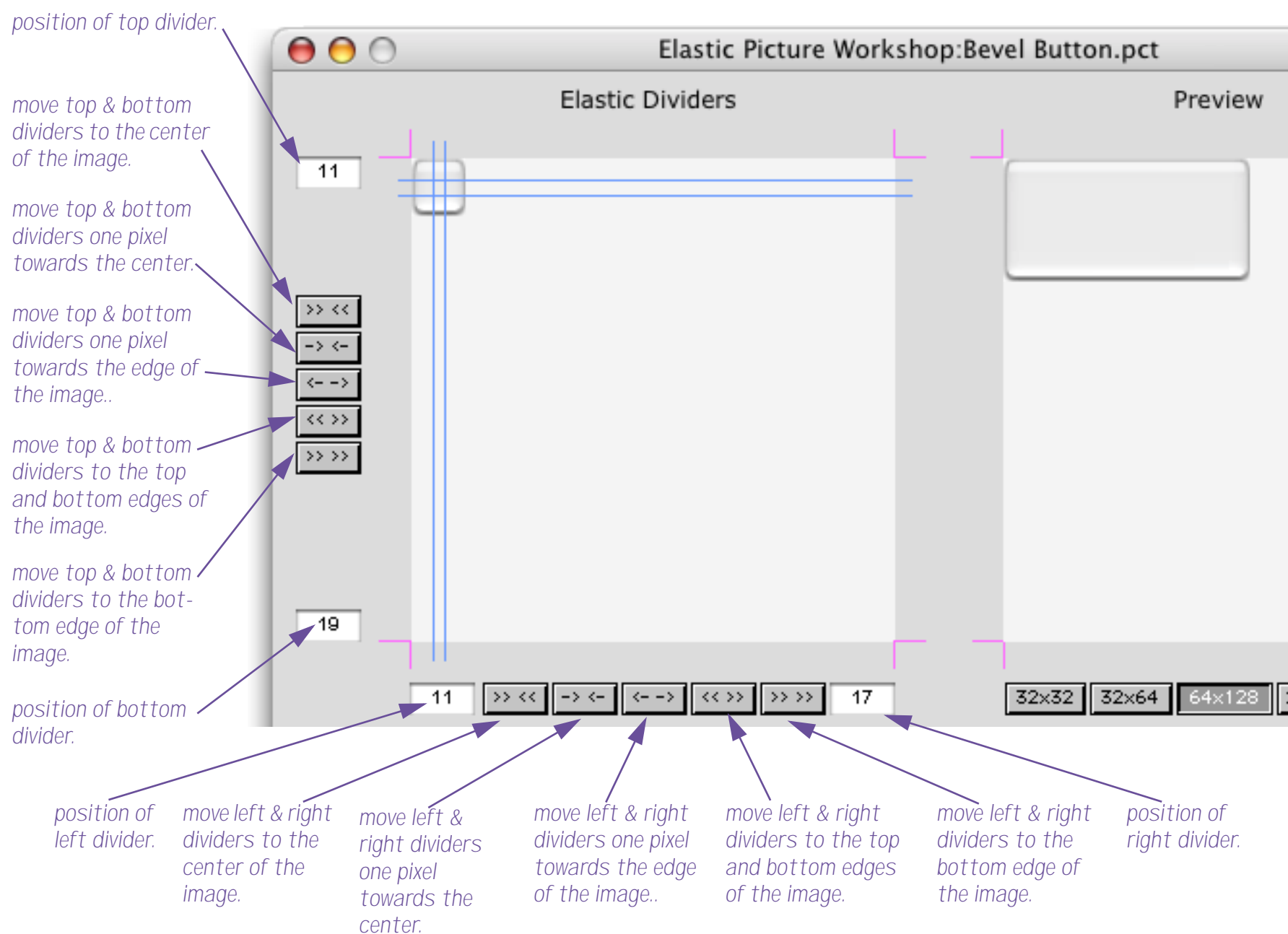




The wizard is divided into two sections. The left section, **Elastic Dividers**, displays the original size object. The right section, **Preview**, displays a stretched version of this object. You can use the buttons along the bottom of this section to control how much the image is stretched, you can also type in any stretch size you want in the dimension box on the right.



Since the image isn't elastic yet, the preview shows the stretched corners and bevels that we want to get rid of. Let's do that now.

The left side of the wizard displays four light blue elastic dividers around the edges of the original image. You can manipulate these dividers with the buttons along the left and bottom edges. The buttons along the left hand side control the position of the top and bottom dividers, while the buttons on the bottom control the position of the left and right dividers. The goal is to position the dividers so that the edges and bevels are divided from the main body of the image. As you adjust the dividers into place you'll see the edges and bevels in the preview magically clean up.



Tip: When you press the  or  buttons the dividers will normally move one pixel. However, if you hold down the **Shift** key the dividers will move five pixels in the specified direction.

Saving the Elastic Picture

When the dividers are in place use the **Save Image** or **Save Image As** commands in the Image menu to save the elastic image. The wizard will save an adjusted version of the picture. (Technical Note: The information necessary to allow the image to be displayed elastically is stored in the picture itself in a PICT comment. The image can still be edited with PhotoShop or another image editing program, but doing so will remove the PICT comment and the image will no longer be elastic.)

The picture can also be saved directly into a resource file with the **Save in Resource** command. This command will prompt you to locate an existing resource file (you must create this file in another application) and then prompt you for the resource number.

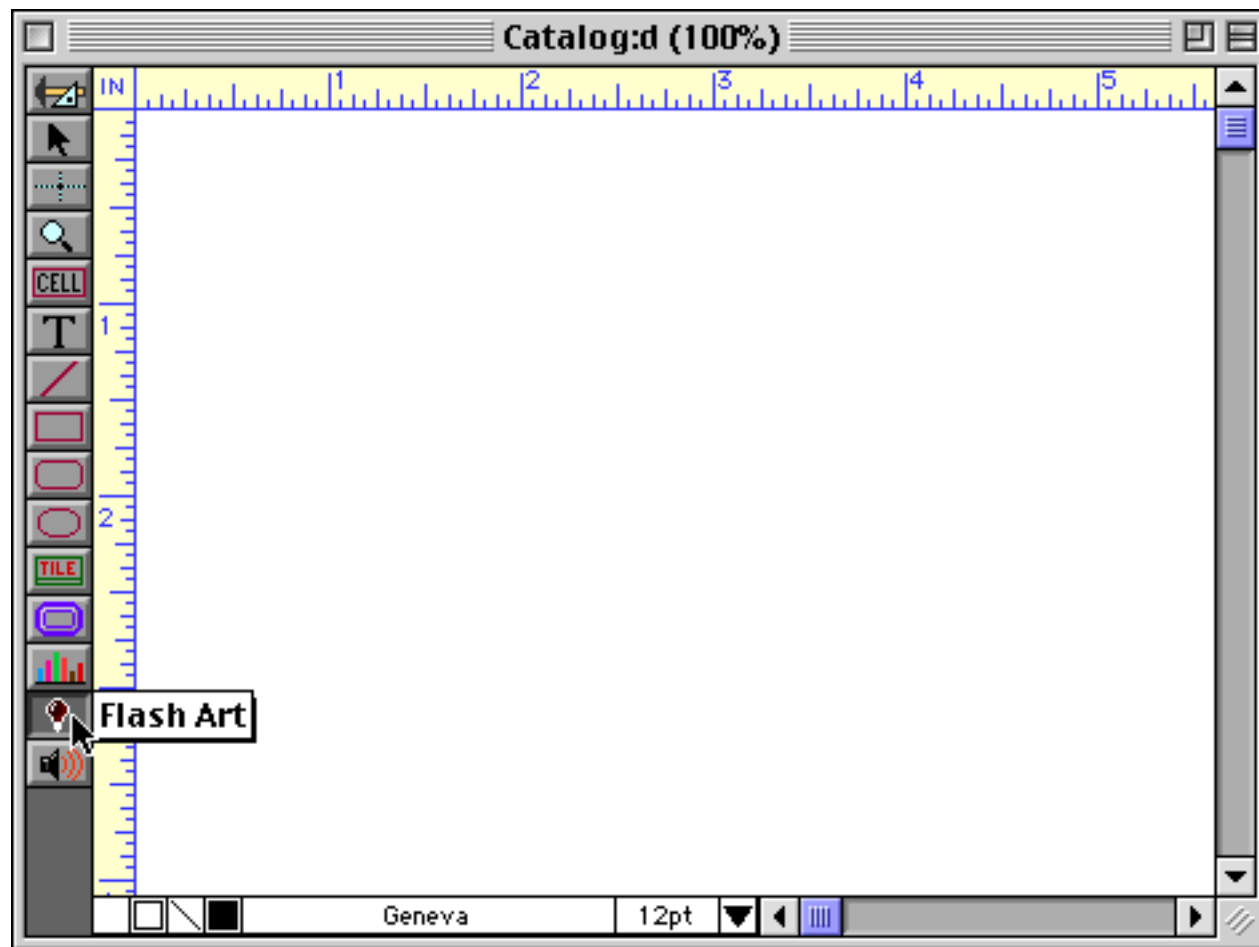
Using the Elastic Picture

To display an Elastic Picture on a form you'll need to use the Flash Art SuperObject. Set up the options just as you would for any other PICT file (make sure the **Include Files on Disk** option is checked). You'll also want to make sure that the **Scale to Fit** option is checked. That's all there is to it. You can also use elastic pictures with any SuperObject that displays PICT files – Flash Art Push Buttons, Flash Art Data Buttons, etc.

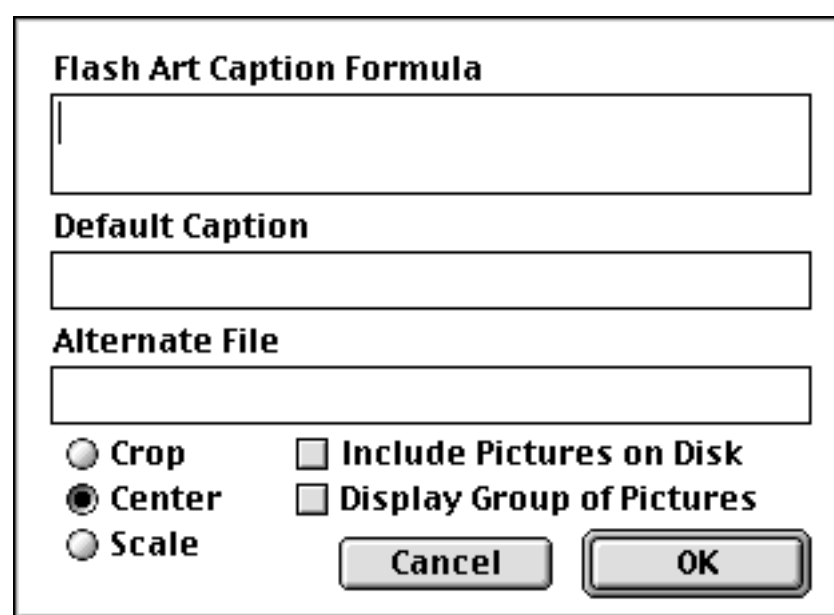
“Classic” Flash Art Objects

In addition to the Super Flash Art object described throughout most of this chapter Panorama also has a “classic” Flash Art object. When Super Flash Art objects were added as part of Panorama 3.0, “classic” Flash Art objects were retained for compatibility with older databases. We recommend that you use Super Flash Art for new applications.

Using “classic” Flash Art objects is very similar to working with Super Flash Art objects. The Flash Art tool looks like a lightbulb and is part of the standard Panorama tool palette.



To create a “classic” Flash Art object select this tool and drag the mouse across the form (see “[Creating Super Flash Art Objects](#)” on page 751). The configuration dialog for a “classic” Flash Art object looks like this.

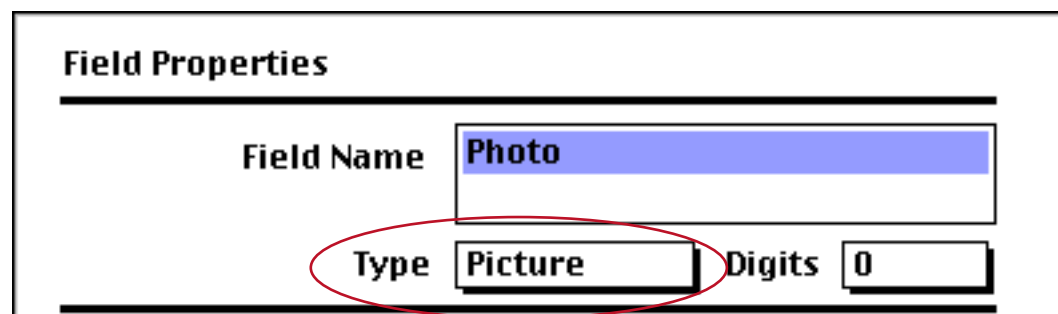


The options in this dialog are a subset of the options in the Super Flash Art object. See “[Super Flash Art™ Options](#)” on page 786 for a description of each option. Note: The “classic” Flash Art formula is limited to 30 characters, not 255 like the Super Flash Art version.

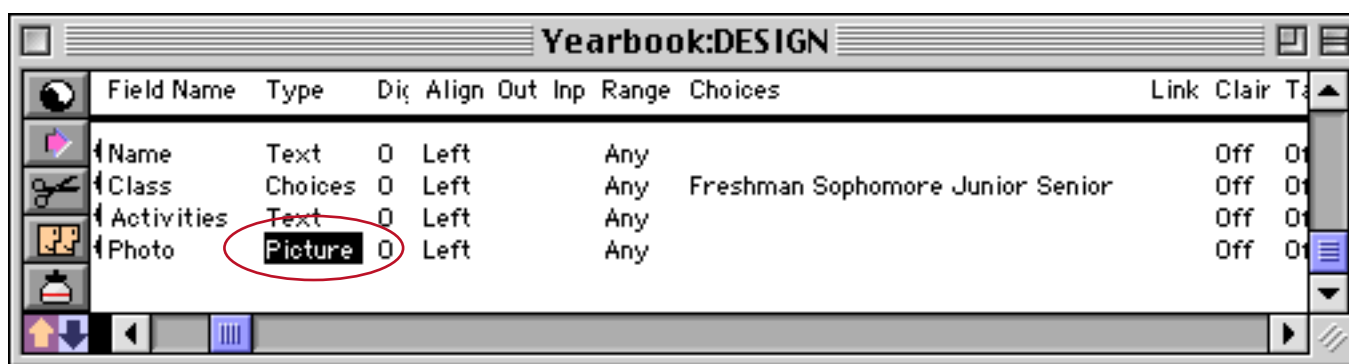
Storing Images in a Field

Flash Art is the recommended method for displaying images in a Panorama database. Panorama does, however, have another method for storing and displaying images. Instead of using Flash Art you can actually set up a **Picture** field and store the images directly in the database. This has many disadvantages—it uses up gobs of memory and you have no control over the alignment or scaling of the image. Nevertheless, this has been an option since the first version of Panorama and is retained for compatibility with databases that may use this feature.

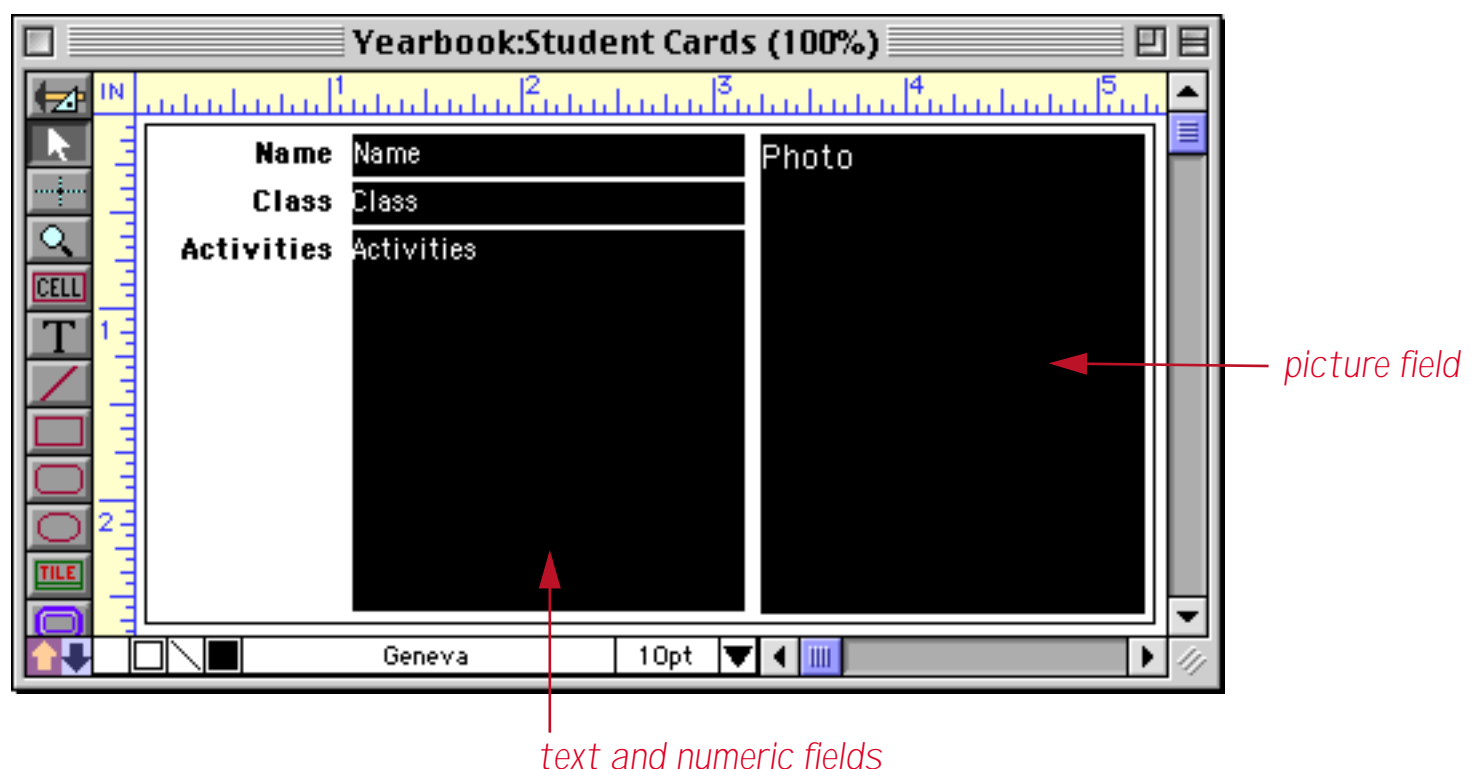
To store images directly in the database, the database must contain a field that is set up using the picture data type. You can set up this data type using the **Field Properties** dialog (see “[Setting Up a Field’s Data Type](#)” on page 246).



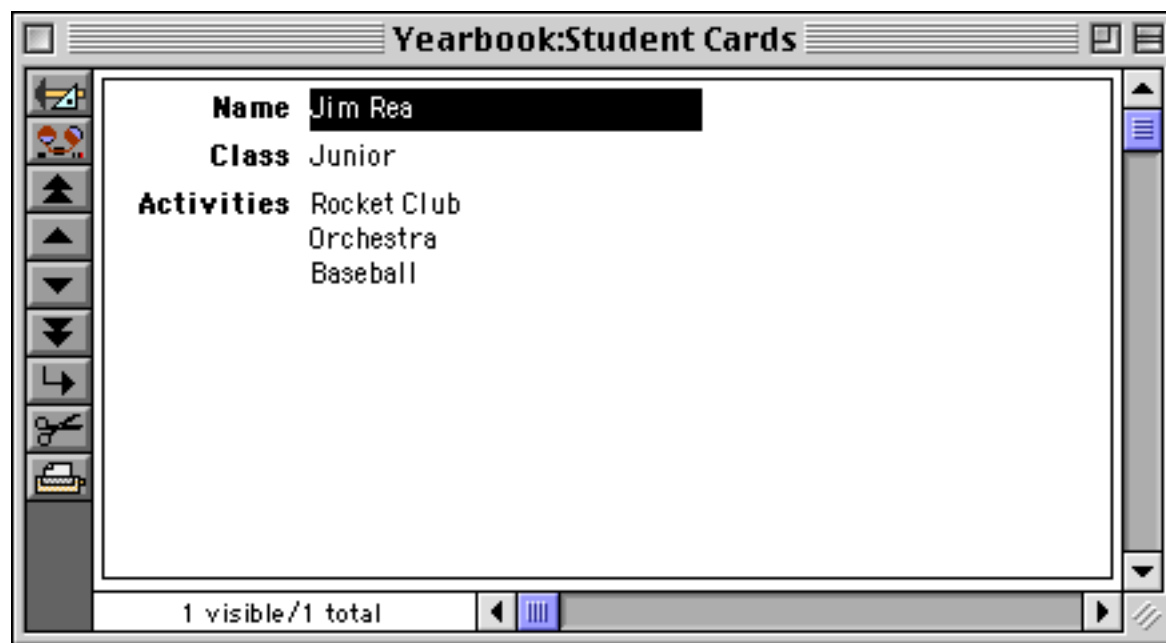
You can also set up a Picture type field with the design sheet (see “[The Design Sheet](#)” on page 212).



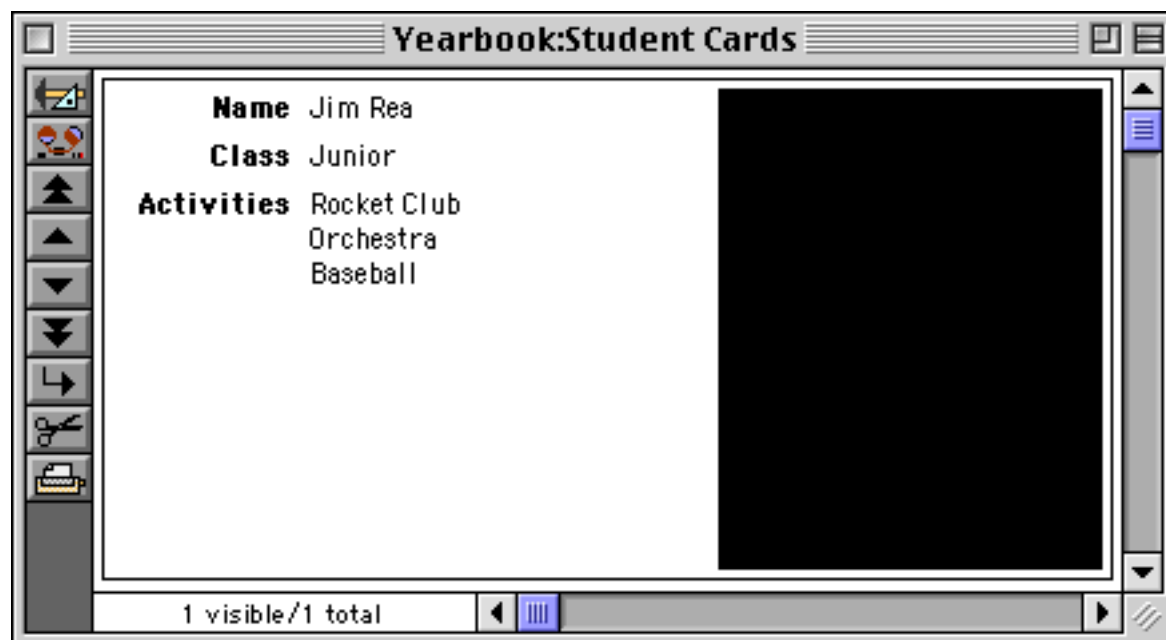
The Picture data type cannot be used in the data sheet—you must set up the form. Create a **Data Cell** object for the picture field (see “[Working with Data Cell Objects](#)” on page 635). The Text Display Object should be large enough to display the largest picture you want to use. For other fields you may use either Data Cells, Text Editor SuperObjects, Text Display SuperObjects or Auto-Wrap text objects.



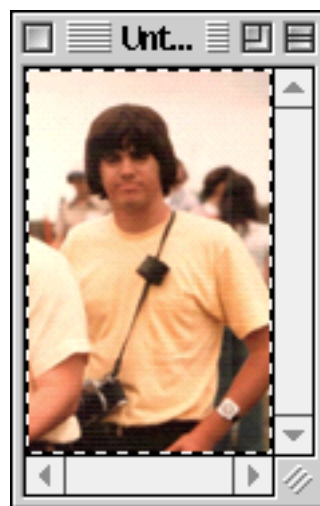
Once the form is set up, switch to Data Access Mode. The text and numeric fields can be filled in using the normal techniques (i.e. the keyboard).



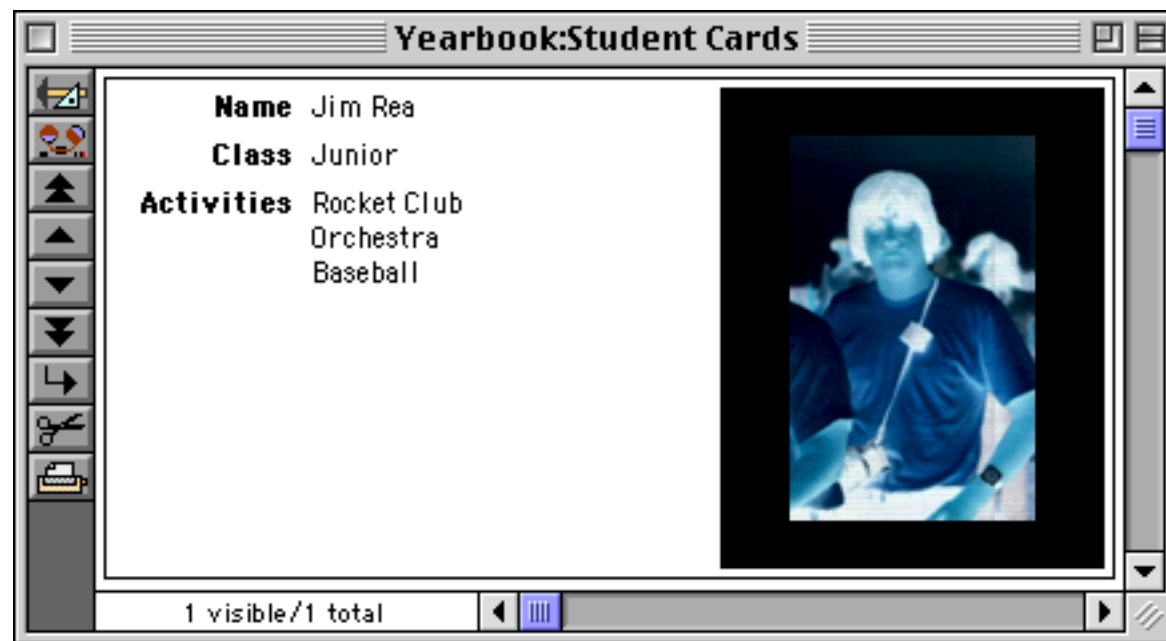
Now for the picture. Start by clicking on the picture cell to select it.



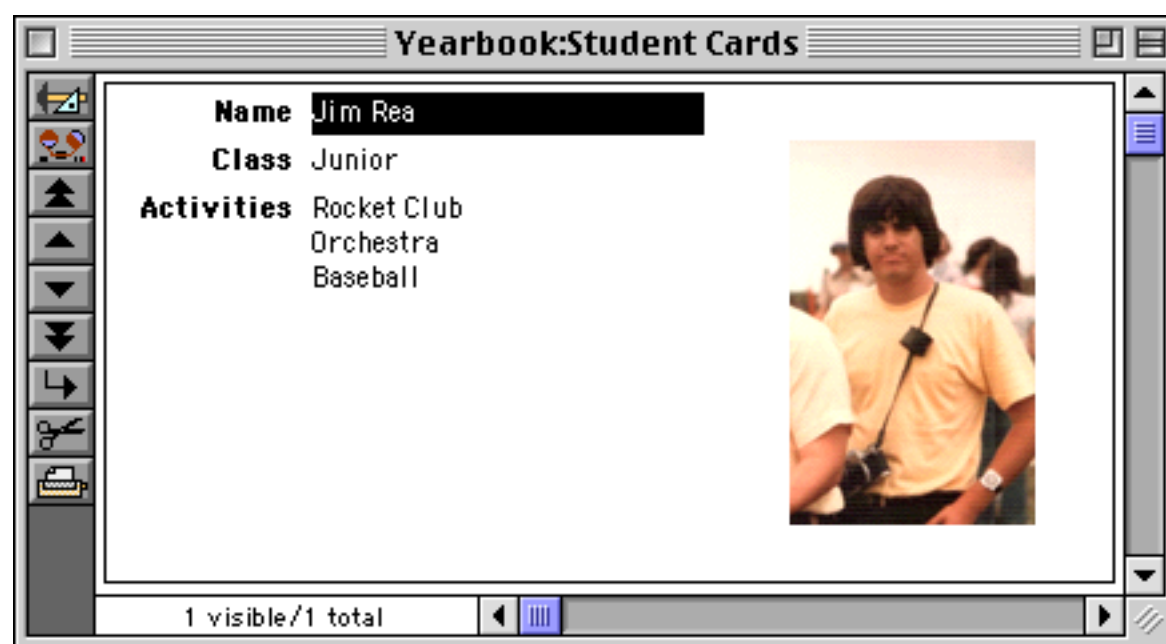
The next step is to go into your graphics application (Photoshop, etc.), locate the image, and copy it onto the clipboard.



Now go back to Panorama and use the **Paste** command to paste the image into the database.



When a normal data cell is selected, the text in that cell switches to a negative image, with white text in a black background. As you can see, the same thing happens with a picture data cell. When the data is selected, the picture appears in reverse, like a photographic negative. When another data cell is selected, the normal picture image will appear.

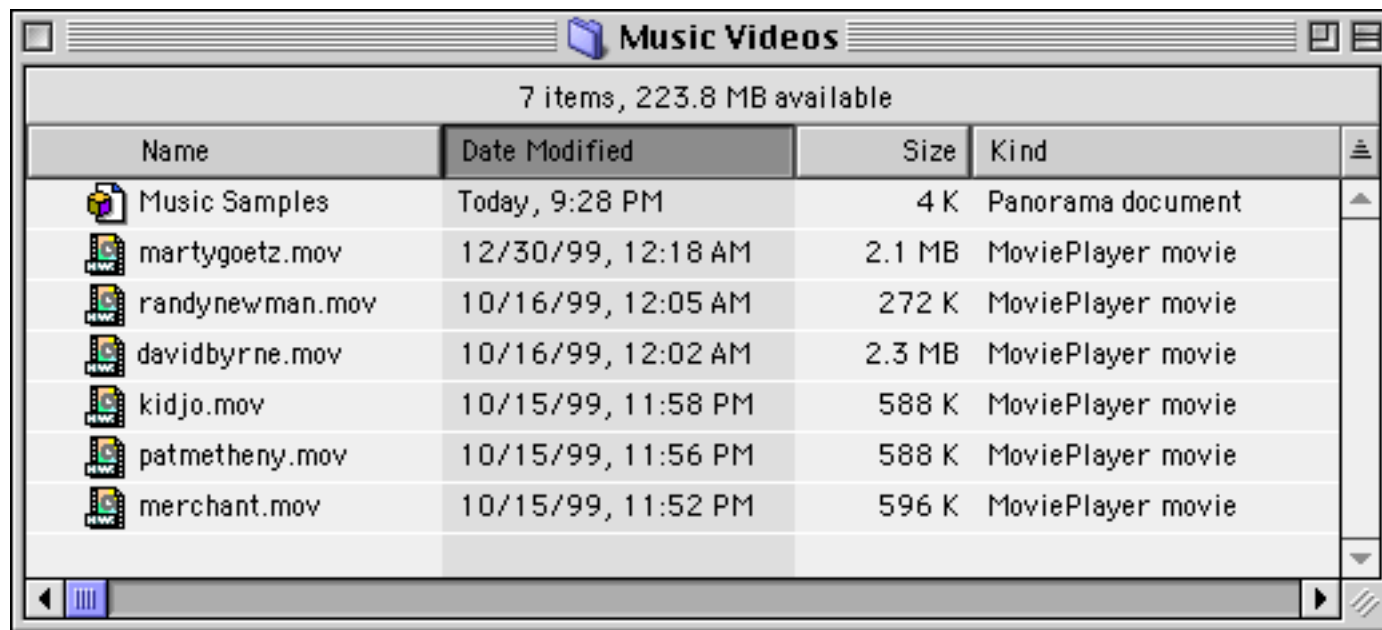


You cannot edit a picture by double clicking on the data cell, nor can you sort or select using a picture field or use a picture field as part of a formula. In the data sheet the picture field appears to be blank, and Panorama will not allow you to double click on the field.

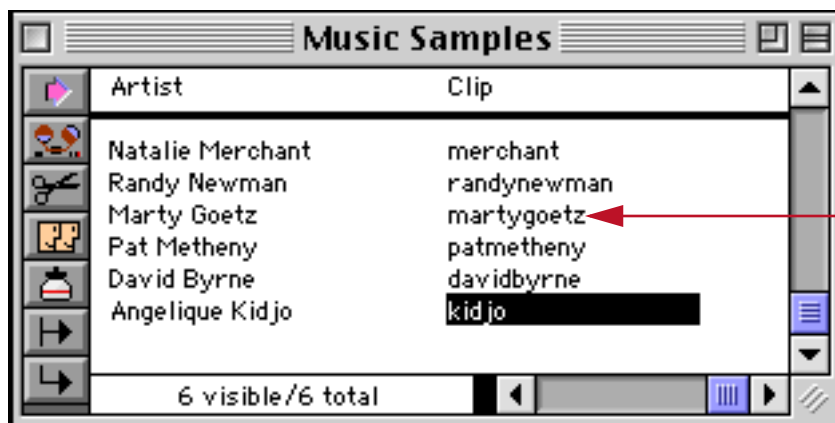
Displaying Movies in a Form

Panorama's Super Flash Art object is capable of displaying movies as well as still images. To do this you must have Apple's QuickTime software installed on your computer. If you don't have this software you can download it from www.apple.com for either Macintosh or Windows PC systems.

The first step in displaying movies is to create some movie files.

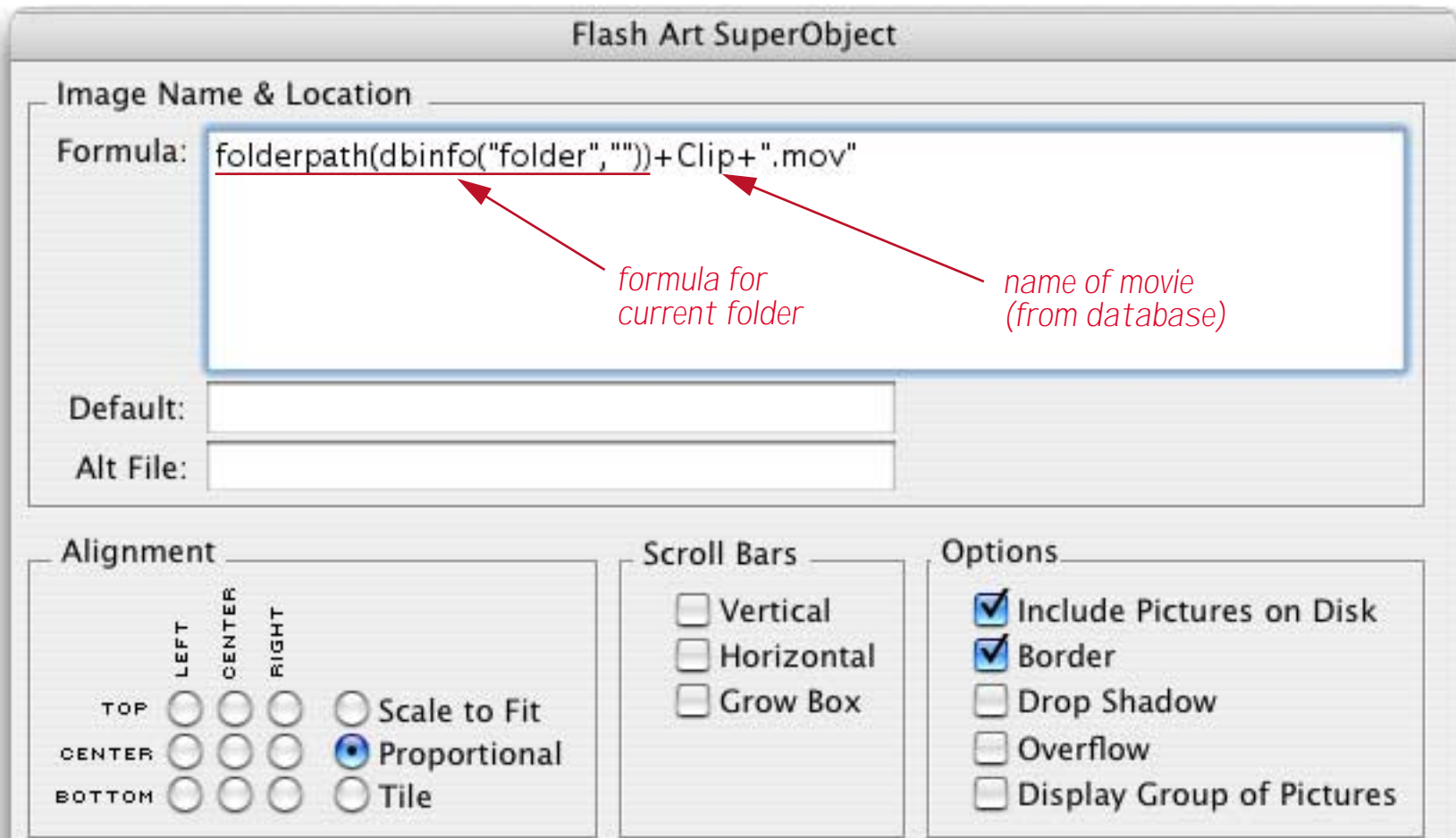


Next, you'll need to create a database. In this case we created a very simple database that has the artist's name along with the name of the movie (we'll add the `.mov` extension in a moment).

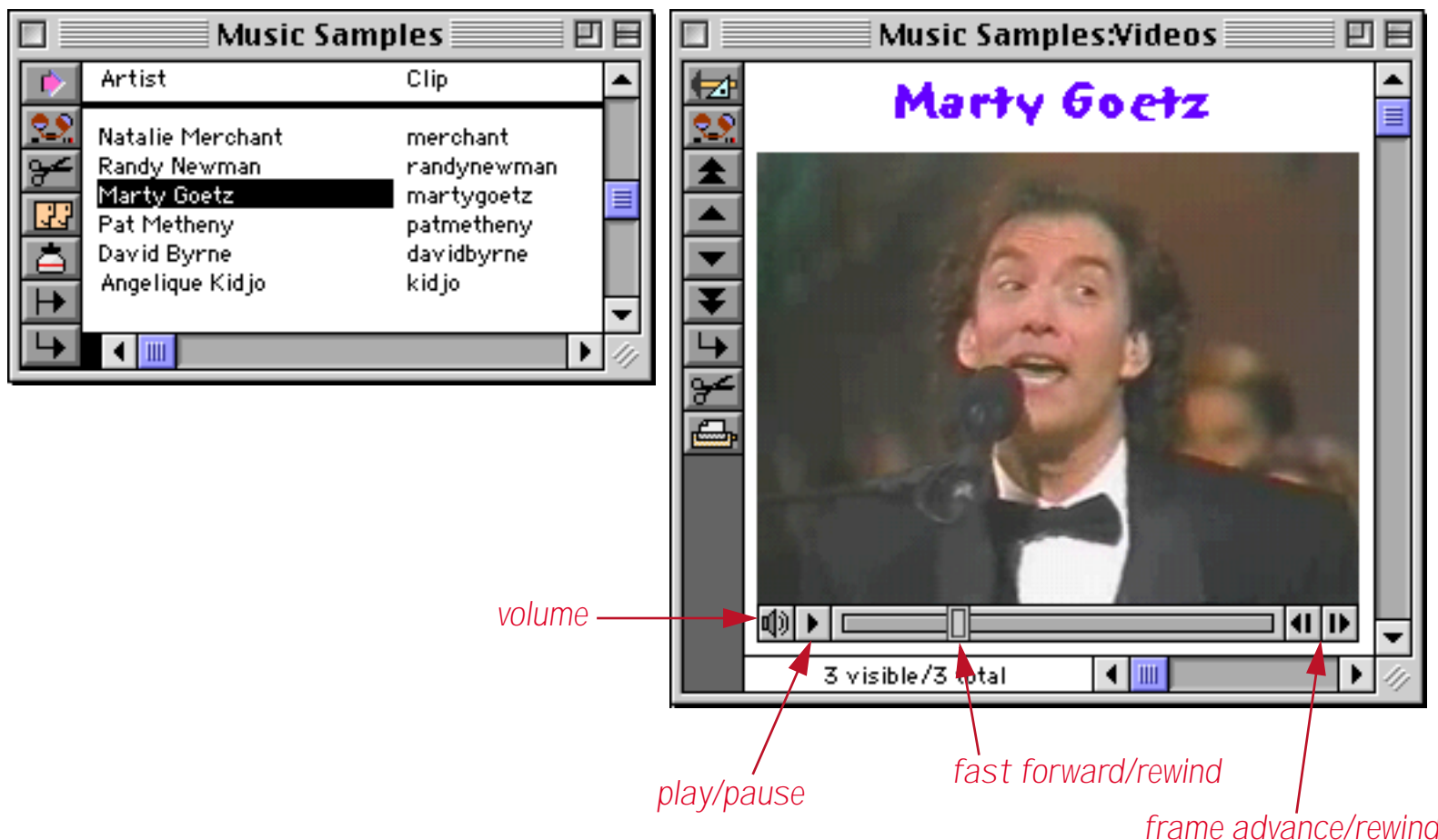


same as movie names above

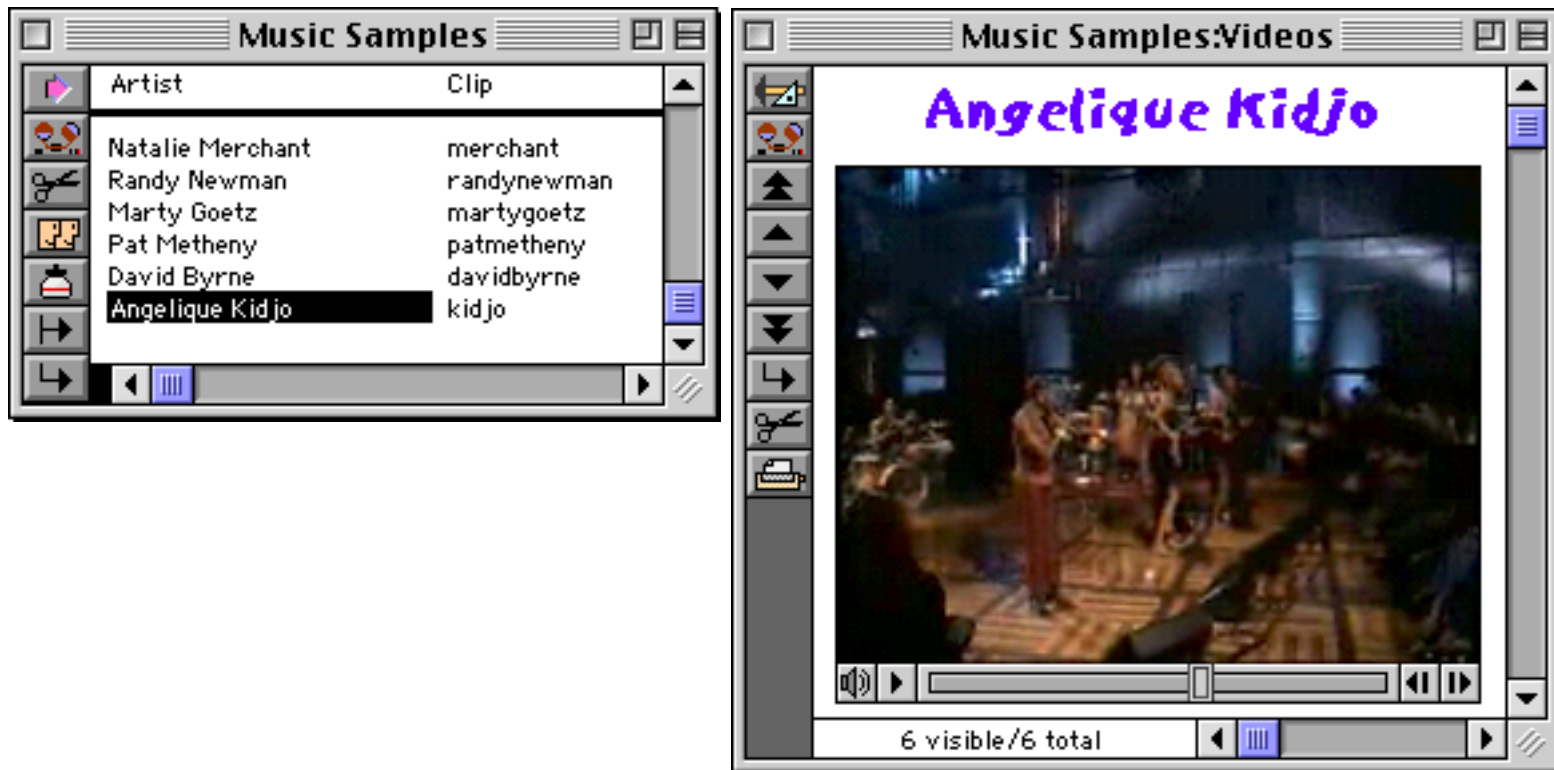
To display the movies we'll need to create a form, and then to create a Super Flash Art object within the form (see "[Creating Super Flash Art Objects](#)" on page 751). Unlike still images, movies always require you to specify the complete location of the file. The formula below shows how to do that (assuming that the movies are in the same folder as the database) and also adds the `.mov` extension. Make sure that the **Include Pictures on Disk** option is enabled, because a movie cannot be pasted into the Flash Art Scrapbook.



Switch to Data Access Mode to try out the movie. The normal QuickTime controls appear at the bottom of the Super Flash Art object.



To see a different movie simply move to the record for the movie you want to view.



In Graphics Mode editing a Super Flash Art object that is set up to display a movie can be a bit tricky. Even though you are in Graphics Mode, clicking on the movie tends to activate the movie controls instead of selecting the object. If you have difficulty, try dragging a marquee around the object instead of clicking on it (see “[Selecting Multiple Objects at Once](#)” on page 502). Instead of double clicking on the object to open the configuration dialog, try using the **Object Properties** command in the Edit menu.

Once a movie has been set up it can be controlled with a procedure as well as with the movie control strip. The procedure can start and stop the movie, move to a specific spot within the movie, change the playback rate and the volume. To learn how to program a movie see “[Super Flash Art Commands \(Including Movie Control\)](#)” on page 690.

For those of you that can't stand not knowing who Marty Goetz and Angelique Kidjo are, check them out at <http://www.martygoetz.com> (Marty Goetz) and at <http://wwwusers.imagnet.fr/~kidjo/home.html> (Angelique Kidjo).

Chapter 17: Buttons & Widgets



The Industrial Revolution introduced machinery with all kinds of knobs, levers, and doo-dads. In our electronic age these have been replaced by virtual push buttons, checkboxes, “radio” buttons, pop-up menus, scrolling lists, and other widgets. Panorama has a number of tools for incorporating these types of controls into your forms.

Although most of the buttons and widgets discussed in this chapter can be used without programming, most of them are often combined with Panorama procedures. Because of this, we will often reference procedures and programming techniques throughout this chapter. Before reading this chapter you may want to skip ahead and learn how to create and work with procedures (see “[Procedures](#)” on page 204 of *Formulas & Programming*) and variables (see “[Variables](#)” on page 53 of *Formulas & Programming*).

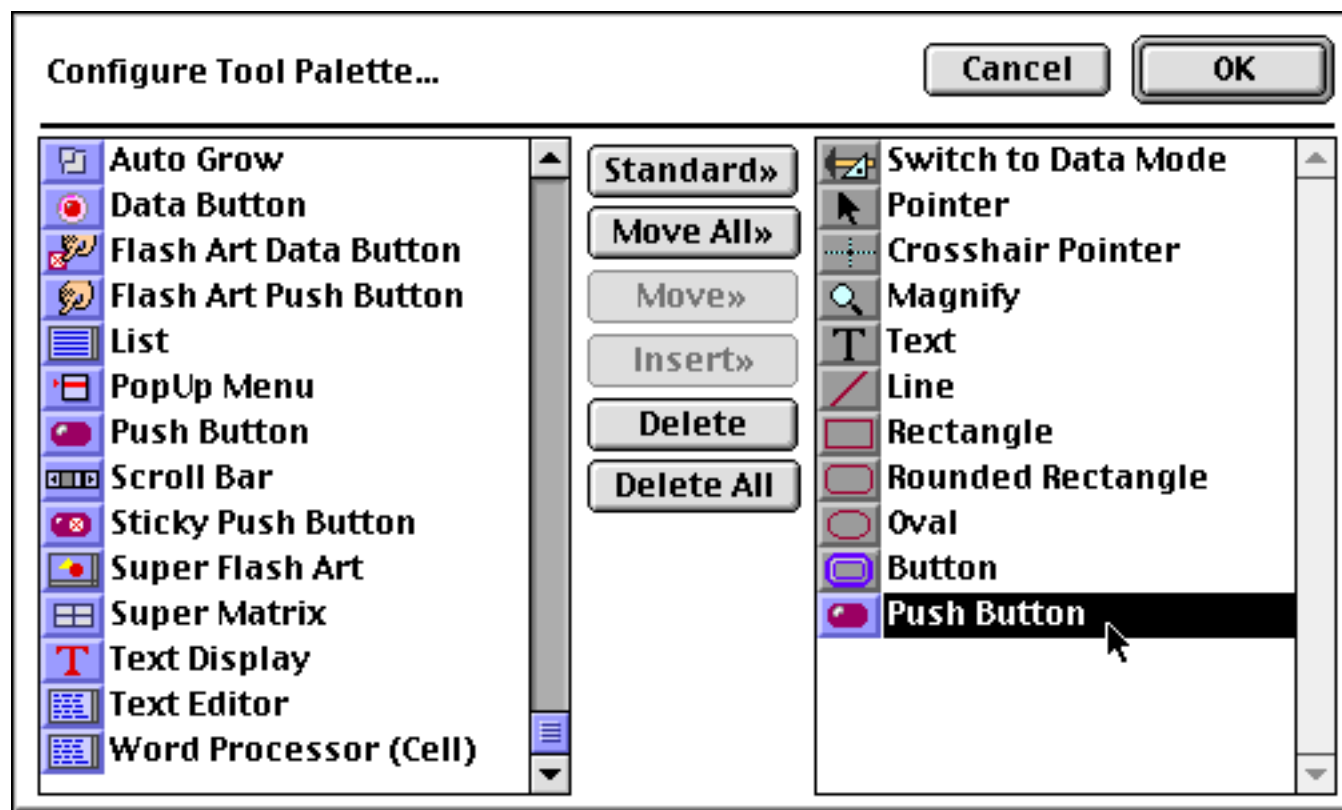
Push Buttons

Push buttons have one mission in life—to start something. In Panorama, clicking on a push button triggers a procedure (see “[50 Ways to Trigger a Procedure](#)” on page 355 of *Formulas & Programming*). You push the button and the program starts, simple as that. Panorama has three different types of button objects—Super Object Push Buttons (next section), “Classic” Button Objects (see “[“Classic” Push Buttons](#)” on page 830) and Flash Art Push Buttons (see “[Flash Art™ Push Button SuperObjects™](#)” on page 833).

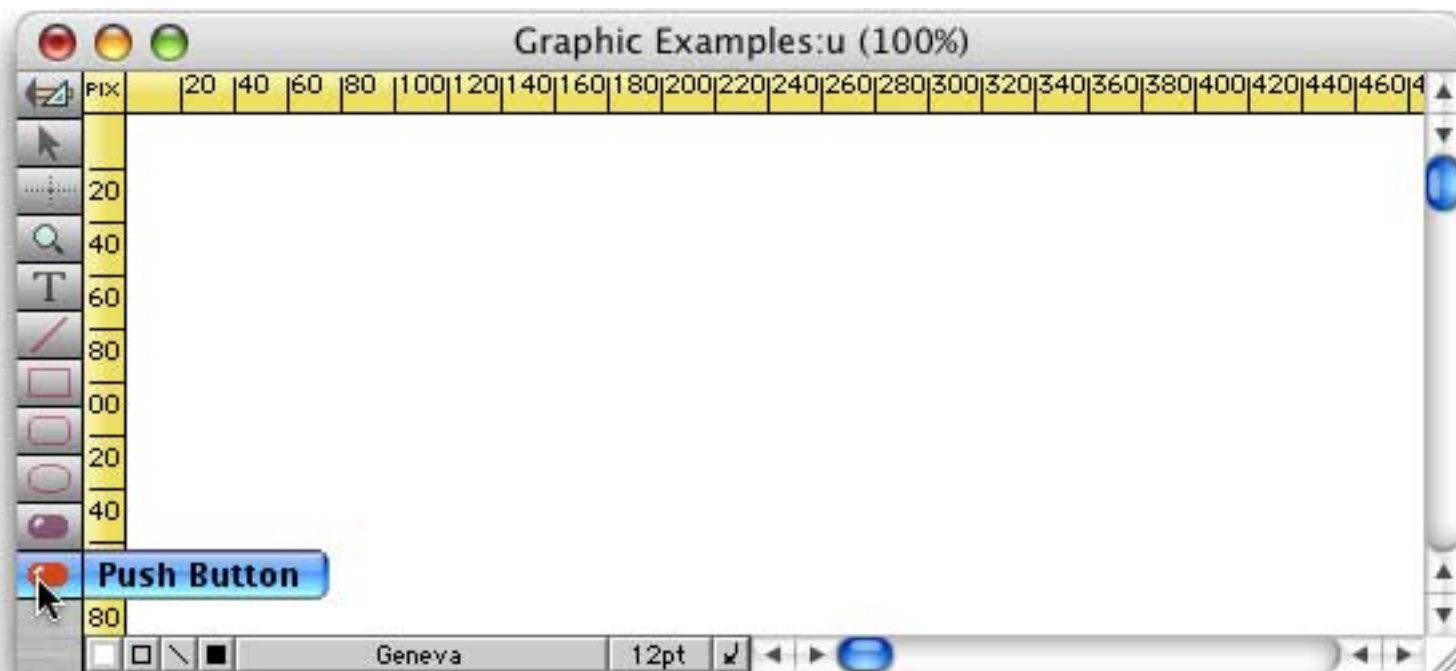
Super Object Push Button

The SuperObject Push Button makes it easy to create attractive buttons that trigger procedures. Unlike Panorama’s standard button tool, the SuperObject Push Button can create circular or oval buttons, and buttons with various 3-D effects.

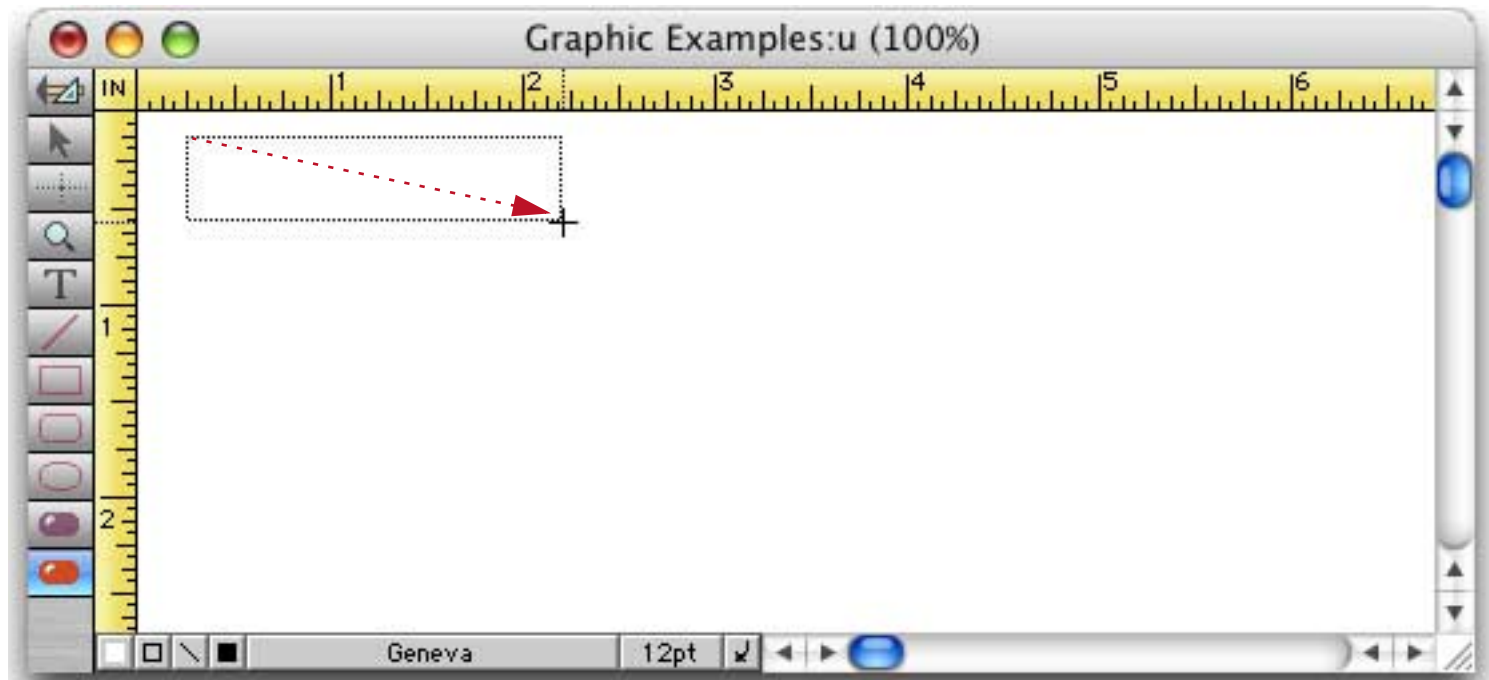
The SuperObject Push Button tool is not in the default tool palette, so you'll need to use the **Tool Palette** dialog to add this tool to the palette if it is not already there (see "[Customizing the Tool Palette](#)" on page 497).



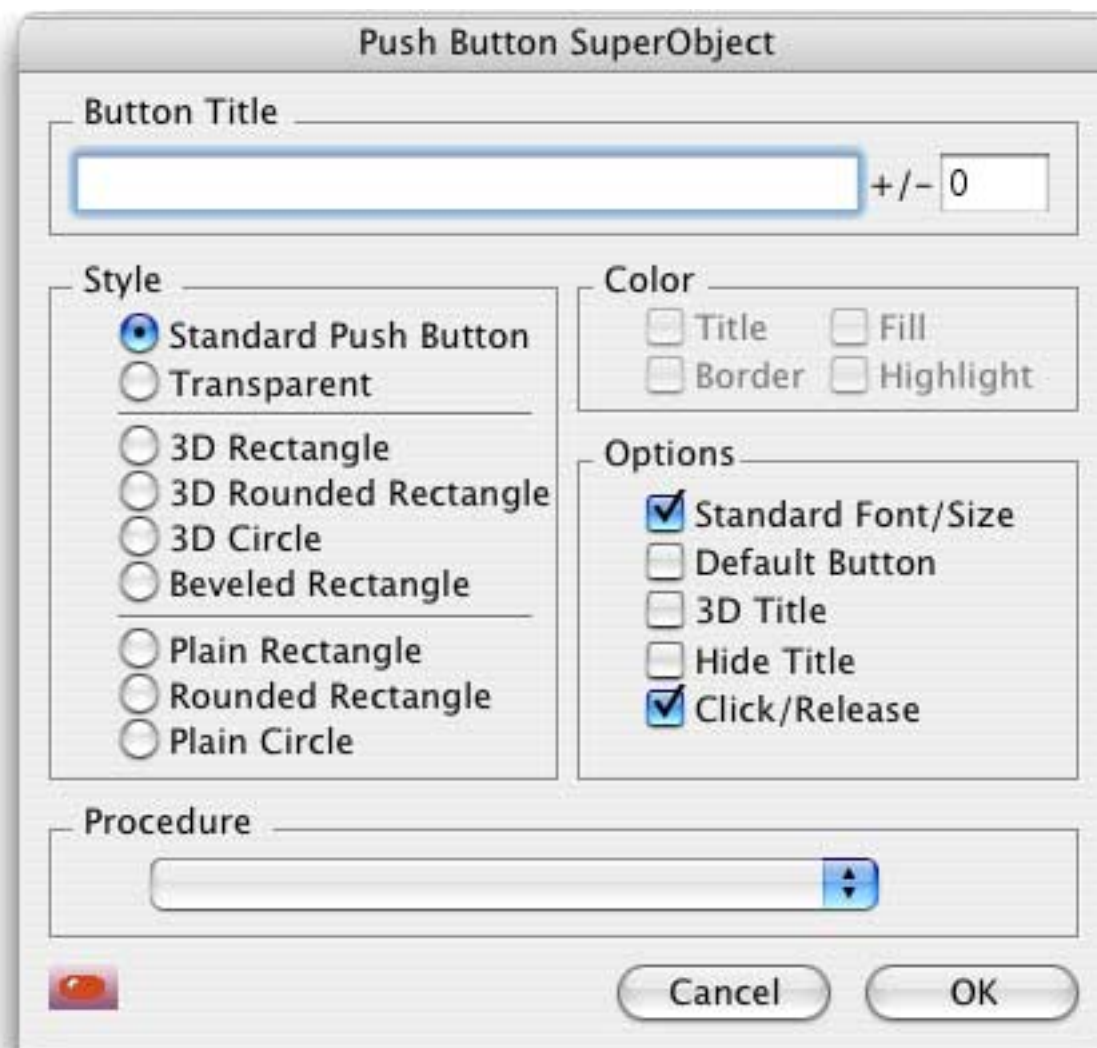
Now that the tool is added to the palette you can select it.



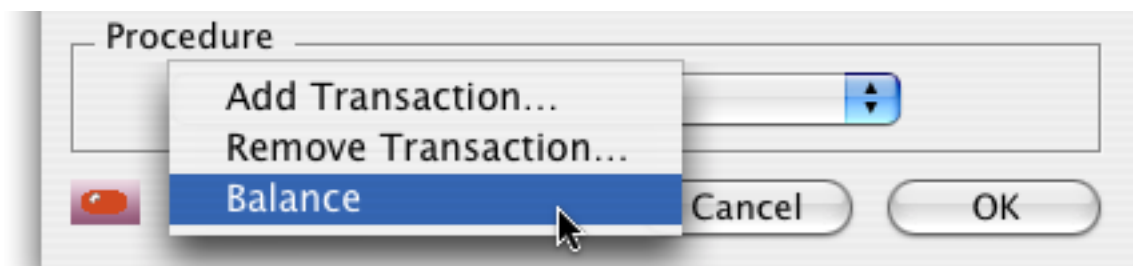
Once the tool is selected, drag the mouse across the form in the location where you want to create the button.



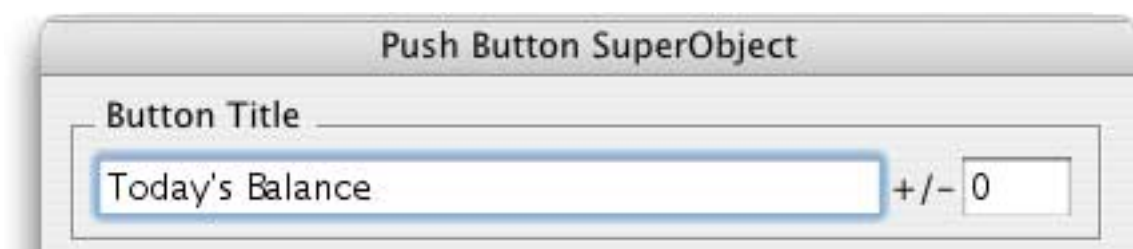
When you release the mouse, the SuperObject Push Button configuration dialog will appear.



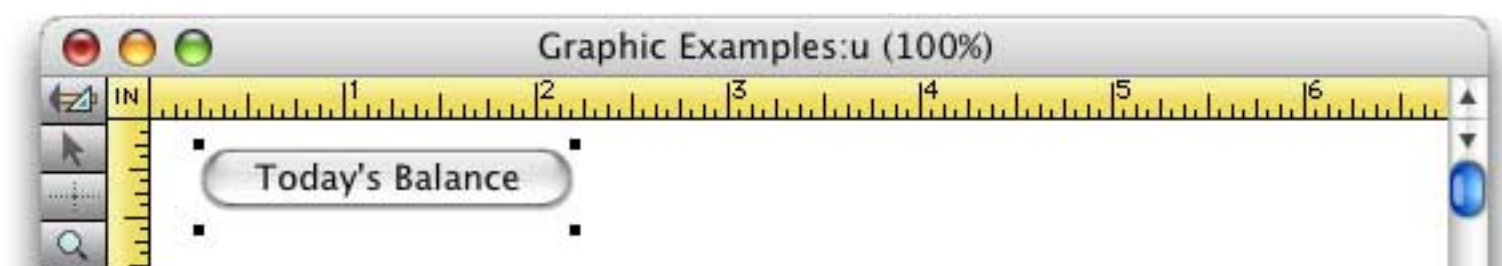
Use the pop-up menu to select the procedure that will be triggered by this button. The button can trigger any procedure in the current database. (If you haven't created the procedure yet you can still create the button, then go back later and choose the procedure.)



Usually you'll want to set up a title for the button, and a style. The title can be the same as the procedure name or it can be different.



When you press the **OK** button the new button will appear in your form.

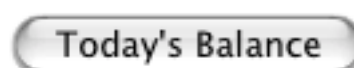


You can modify the appearance of the title with the **Font** and **Size** menus (see "[Font](#)" on page 529 and "[Text Size](#)" on page 531). To re-open the configuration dialog you can either double click on the button or select the button and open the dialog with the **Object Properties** command in the Edit menu.

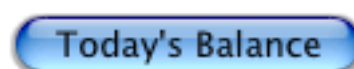
Push Button Styles

There are over a dozen controls for changing the push button appearance. The primary control is the button style.

Standard Push Button: This option displays a standard button for the current platform. The appearance of the button will vary depending on the operating system you are using: Windows, OS X, or OS 9. The example below is for OS X.



The appearance of a **Standard Push Button** can be modified using the **Default Button** option. When this option is used the button appearance changes to indicate that this is the default button (the button in a dialog that is activated automatically when the Enter key is pressed).

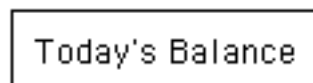


Remember, the **Default Button** option only changes the appearance of the button. You still have to program the button to make it the default (see "[Custom Dialogs](#)" on page 489 of *Formulas & Programming*).

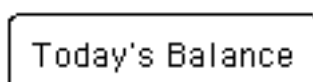
Transparent: This option displays a transparent button. A transparent button will be completely invisible except for the title (and you can make that invisible too with the **Hide Title** option).

Today's Balance

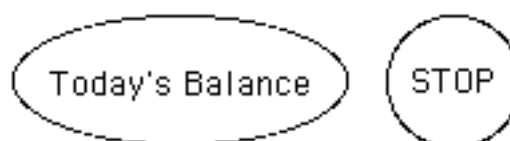
Rectangle: This button style has square corners.



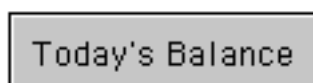
Rounded Rectangle: This is a standard two dimensional button. Panorama will display the name of the button inside the button. If you want this to look like a standard Macintosh button, you should use Chicago 12 point type.



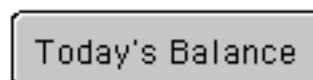
Circle/Oval: This style has an oval border. If the button's dimensions are square the button will be a circle.



3D Rectangle: This style looks like a 3 dimensional rectangle with beveled edges.



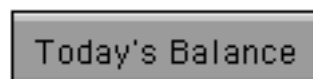
3D Rounded: This style looks like a 3 dimensional rounded rectangle with beveled edges on all four sides.



3D Circle/Oval: This style looks like a 3 dimensional oval with beveled edges.



Beveled Rectangle: This style looks like a 3 dimensional rectangle that is beveled on the top and bottom. This style looks a lot like the buttons on many VCR's and stereos.



Note: On black and white (b/w) monitors, Panorama automatically converts the 3D buttons to the corresponding 2D button.

Button Title

The button title is the title that appears on the button. This title will be centered in the middle of the button. The procedure that is triggered by the button can find out what button was pressed with the `info("trigger")` function. This function will return `Button`, followed by the title of the button. Using this function you can have several buttons that trigger a single procedure. The procedure can then use the `info("trigger")` function to find out which button was actually pressed. The procedure will usually use `if` or `case` statements to decide what button was pressed, like this.

```
local actionDate
case info("trigger") = "Button.Mon" actionDate=date("Monday")
case info("trigger") = "Button.Tue" actionDate=date("Tuesday")
case info("trigger") = "Button.Wed" actionDate=date("Wednesday")
case info("trigger") = "Button.Thu" actionDate=date("Thursday")
case info("trigger") = "Button.Fri" actionDate=date("Friday")
endcase
select Date=actionDate
```

Advanced Note: In this particular case, there is an easier way to write this procedure. Instead of using `case` statements for each button, this procedure simply uses a text funnel to strip out only the name of the day.

```
select Date=date(info("trigger")[8,-1])
```

You can often use a trick like this if you choose your button names carefully. See “[Taking Strings Apart \(Text Funnels\)](#)” on page 69 of *Formulas & Programming* for more details about text funnels.

Title Positioning

Panorama attempts to center the title both vertically and horizontally within the SuperObject push button. However, some fonts have non-standard vertical dimensions and need an adjustment to center properly. If necessary, you can adjust the title’s vertical position with the +/- option. For example, to move the title up by 2 pixels, enter 2 (or +2) into this option. To move the title down by one pixel enter -1.



Standard Font/Size

If this option is selected the button title will always be displayed in the operating system’s standard font and size. For example, on OS X systems the standard font is 14 point Lucinda Grande.

3D Title

If the **3D Title** option is turned on, Panorama will display the title with a white shadow, giving it an “etched” 3D look. Note: This option is ignored if you have use the Standard Push Button option. Also if you display the button on a black and white (b/w) monitor, Panorama ignores this option and displays the title normally.

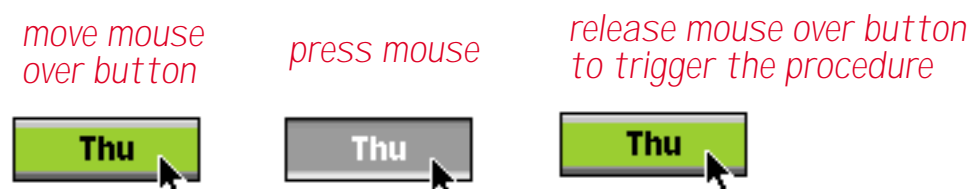


Hide Title

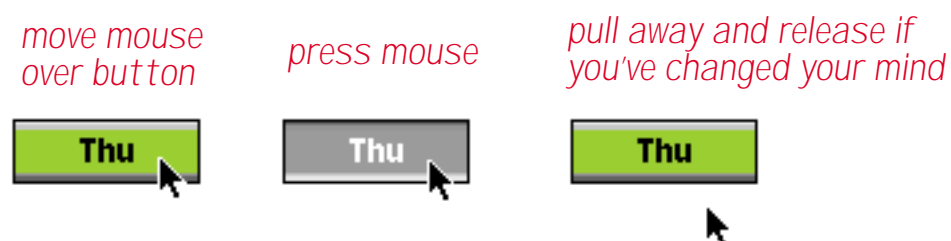
This option hides the title. In other words, the button will be blank, even though it has a title. Use this option if you want to place some graphics on top of the button, or to make a transparent button completely invisible. The title will be invisible so that it will not interfere with the graphics, but the procedure can still find out the title with the `info("trigger")` function.

Click/Release

Unlike most options, **Click/Release** is enabled by default—you have to turn it off if you don't want it. When this option is enabled, the button acts like a normal button—it highlights when you press on it, then activates (triggers a procedure) when you release the mouse.



If you decide you don't want to activate the button you can pull the mouse away before you release.



When the **Click/Release** option is disabled, there is no highlighting when you press the mouse. Instead, the procedure is triggered immediately as soon as you press the mouse. There's no chance to back out by pulling away from the button.

Color Options

Like other graphic objects, you can assign any color to a Push Button (see “[Color](#)” on page 526). Unlike most other types of objects, however, you can control what portions of the button are displayed in color. (However, if you are using the **Standard Push Button** style then these color options are not available.) The four options are:

Title: If this option is checked, the title will be displayed in color, otherwise the title will be displayed in black.



Border: If this option is checked, the border will be displayed in color, otherwise the border will be displayed in black. The option can be used with 2D or 3D buttons, like this.

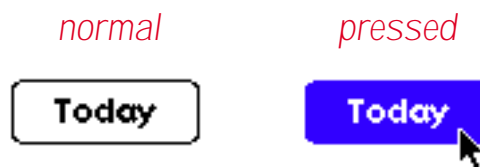


Fill: This option only applies to 3D buttons. If the **Fill** option is checked, the body of the button will be displayed in color instead of gray.

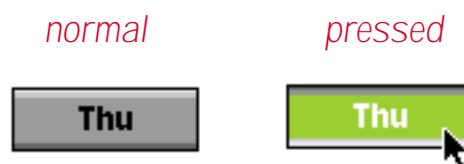


This option only looks good with a few very light colors (use your judgement).

Highlight: If this option is checked, the button will highlight in color when you press on it. For 2D buttons, Panorama simply displays the highlight color when the button is pressed (without this option the button will turn black when pressed).



For 3D buttons, Panorama will use the selected color instead of the dark gray it normally uses.

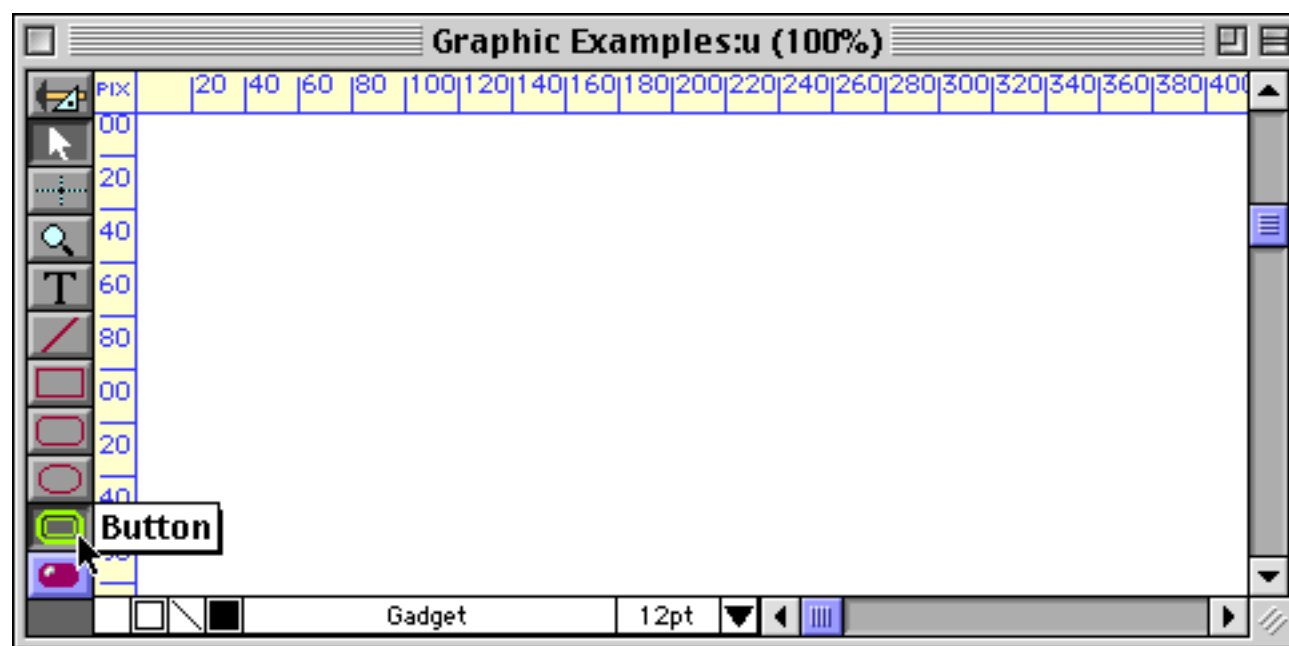


Note: Both 2D and 3D buttons will ignore this option if the **Click/Release** option is not checked.

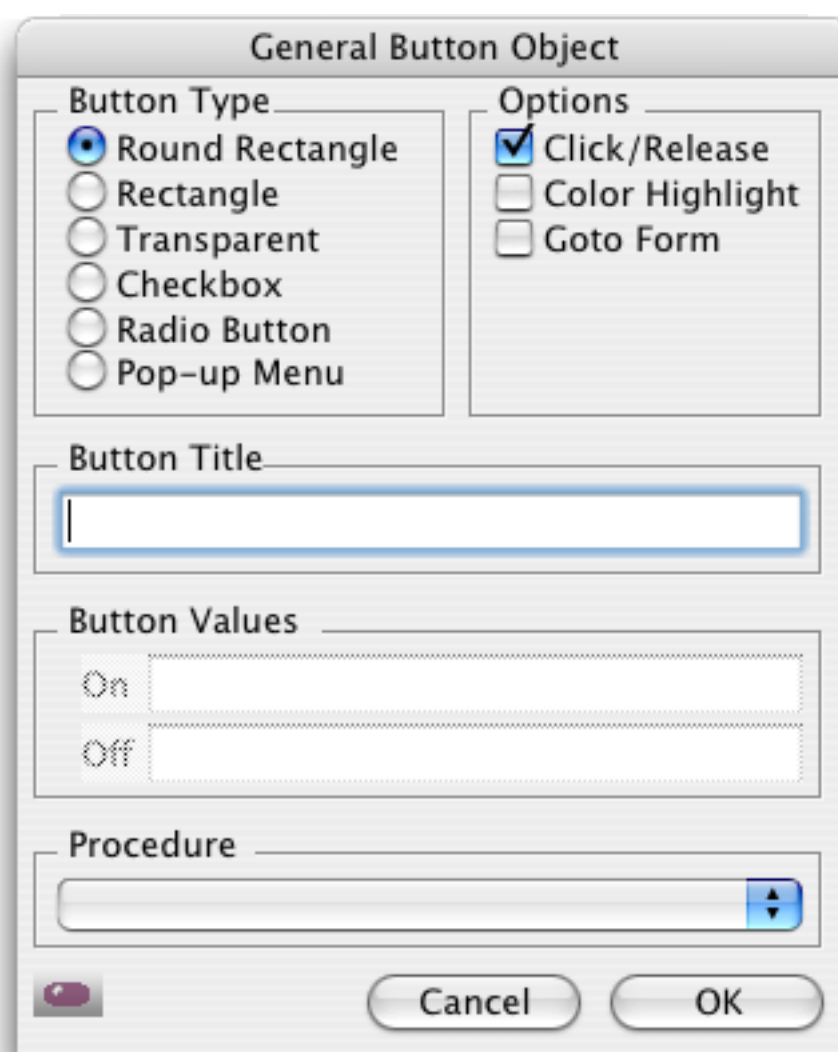
“Classic” Push Buttons

In addition to the **Super Push Button** object described in the previous section Panorama also has a “classic” Button object. When Super Push Button objects were added as part of Panorama 3.0, “classic” Push Button objects were retained for compatibility with older databases. For most applications we recommend that you use Super Push Button for new applications.

Using “classic” Button objects is very similar to working with Super Push Button objects. The **Button** tool looks like a button and is part of the standard Panorama tool palette.



To create a “classic” Button object select this tool and drag the mouse across the form (see “[Super Object Push Button](#)” on page 823). The configuration dialog for a “classic” Button object looks like this.



The “classic” button object can actually create three types of buttons: push buttons (round rect, rectangle, or transparent), data buttons (checkbox or radio button) and pop-up menus. In this section we’ll just concentrate on push buttons. See “[“Classic” Checkbox and Radio Buttons](#)” on page 856 and “[“Classic” Pop-Up Buttons](#)” on page 871 to learn about the other capabilities of the “classic” button object.

At the top of the dialog is a pop-up menu that allows you to select the procedure triggered by this button. The button can trigger any procedure in the current database. (If you haven’t created the procedure yet you can still create the button, then go back later and choose the procedure.)

The next line is the **button title**. This is the title that appears centered on the button. The triggered procedure can find out the button title with the `info("trigger")` function. See “[Button Title](#)” on page 828 to learn more about this function and button titles.

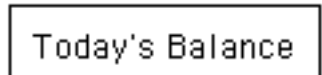
The **On** and **Off** options are only used for checkboxes and radio buttons. These options will remain dim as long as one of the push button options (round rect, rectangle, or transparent) are selected.

There are three classic push button styles: round rect, rectangle and transparent.

Rounded Rectangle: This is a standard two-dimensional button. Panorama will display the name of the button inside the button. If you want this to look like a standard Macintosh button, you should use Chicago 12 point type.

Today's Balance

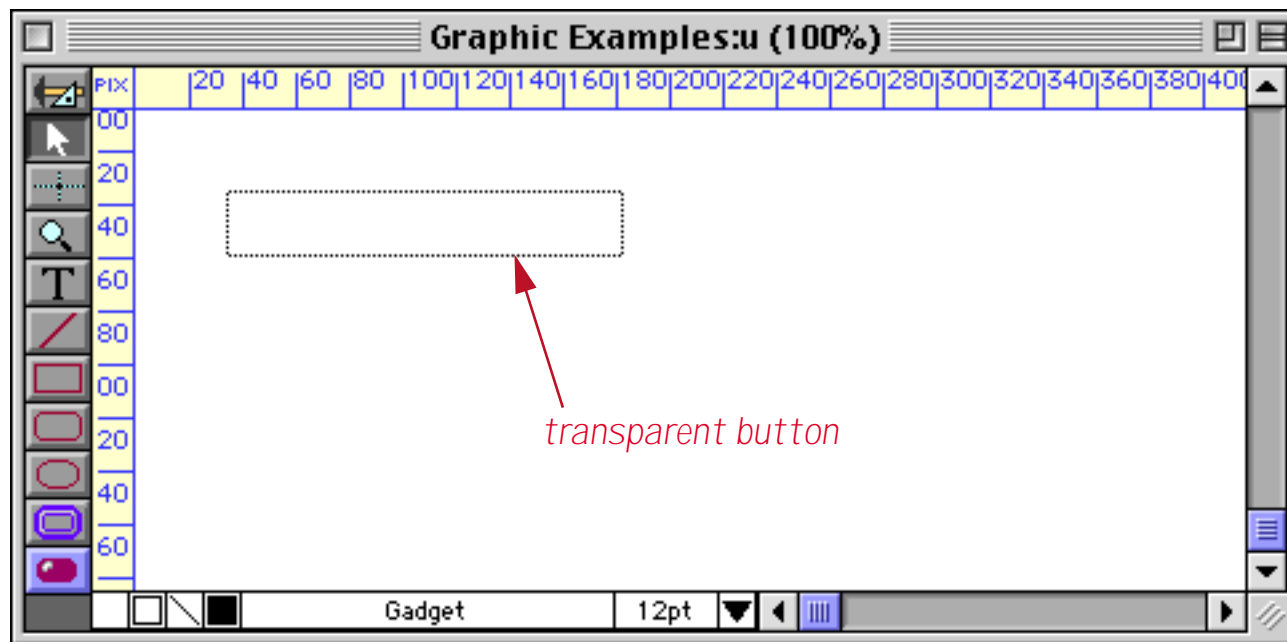
Rectangle: This button style has square corners.



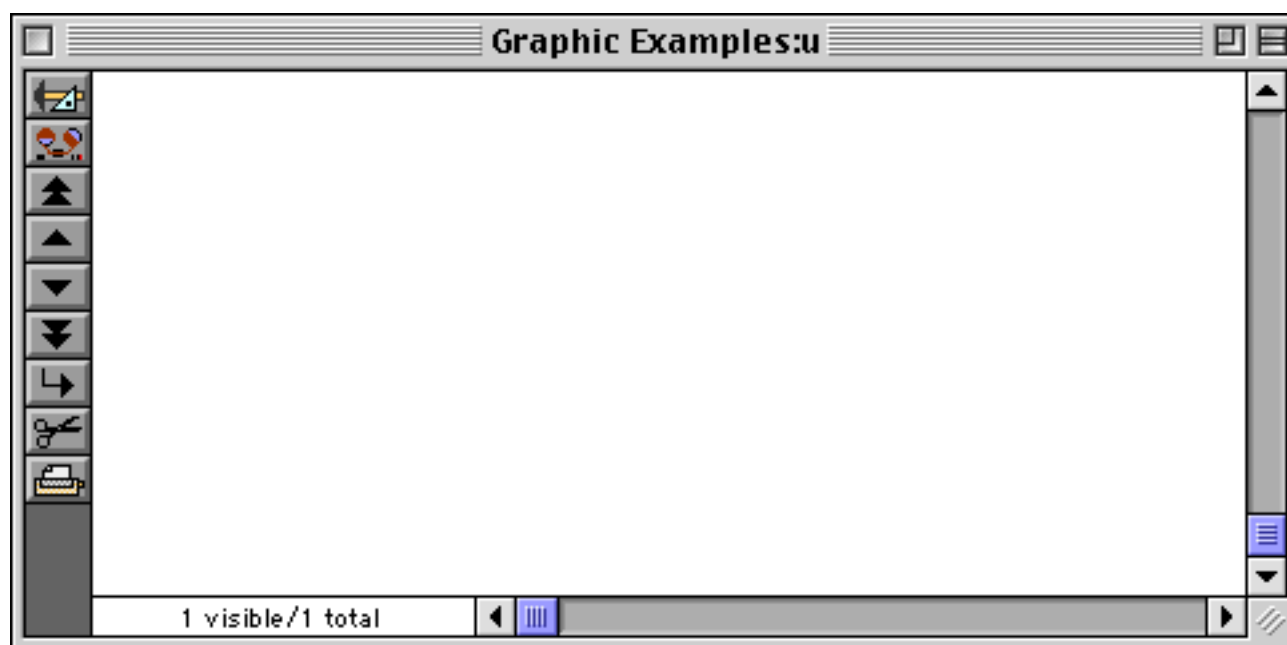
Transparent buttons are described in the next section.

Transparent Push Buttons

A transparent button is just that—transparent. It's invisible (including the title). However, in Graphics Mode Panorama does display a dotted line around the button to help you locate it for editing.

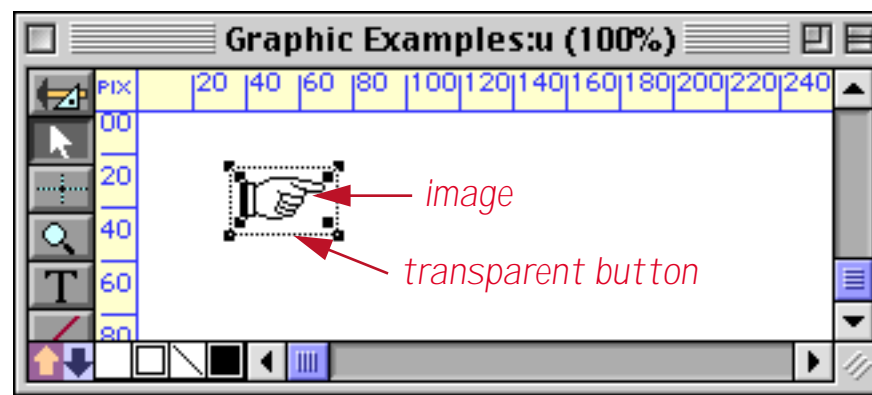


When you switch to Data Access Mode the button completely disappears.

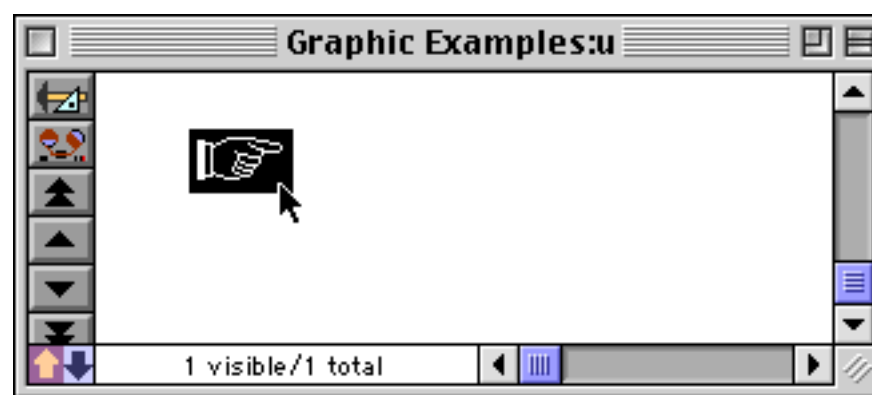


Even though the button is invisible, you can still click on it and trigger the procedure if you know where it is.

Sometimes you may really want a button to be completely invisible—for example a secret button that only you know about. However, it's more common to overlay a transparent button over a graphic image, turning the image into a button.



In Data Access Mode you can now click on the “hand button” to trigger a procedure.

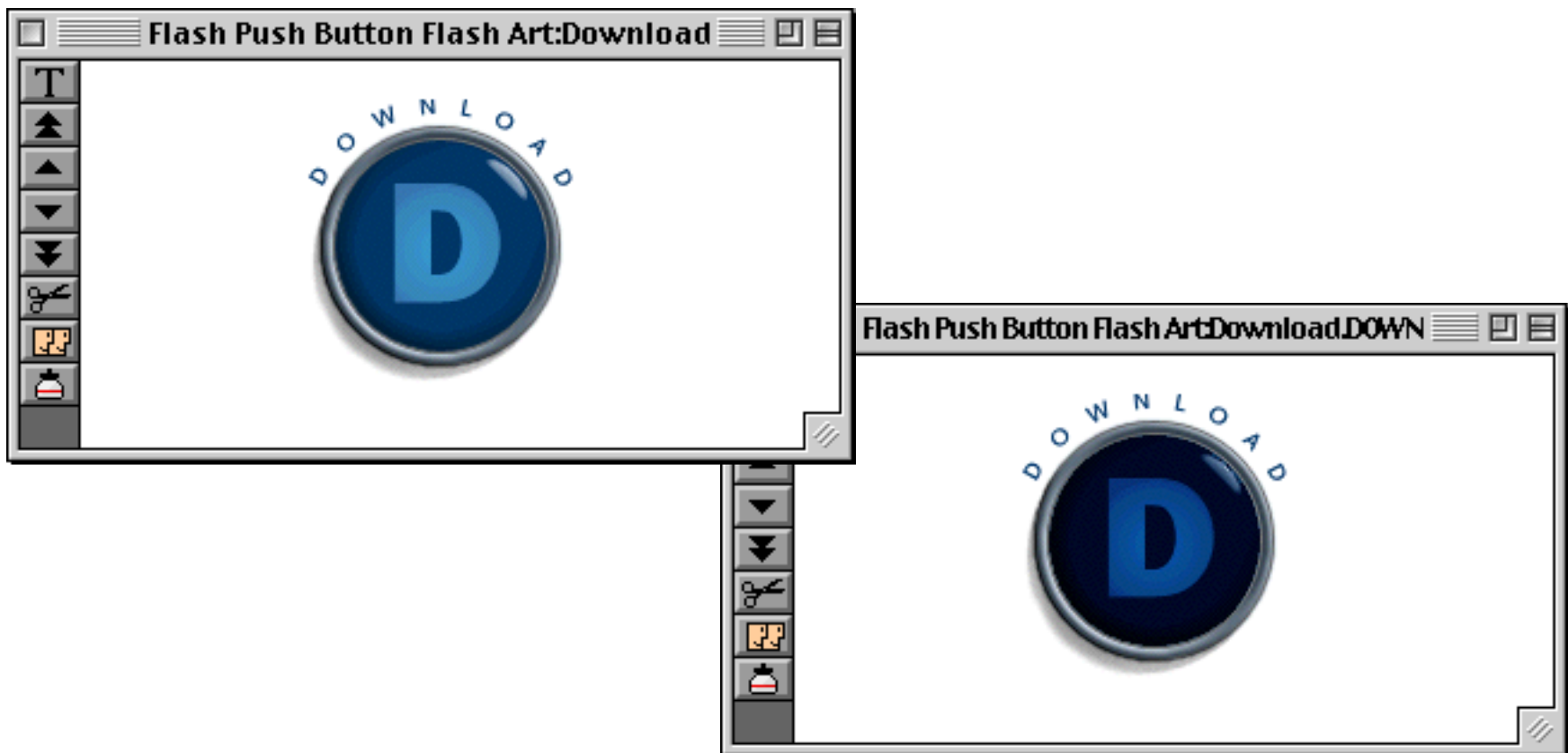


The illustration above shows what happens when you click on a transparent button with the **Click/Release** option turned on. If this option is turned off, the procedure will trigger immediately when the mouse is clicked, without highlighting (reverse image) the button. See “[Click/Release](#)” on page 829.

Flash Art™ Push Button SuperObjects™

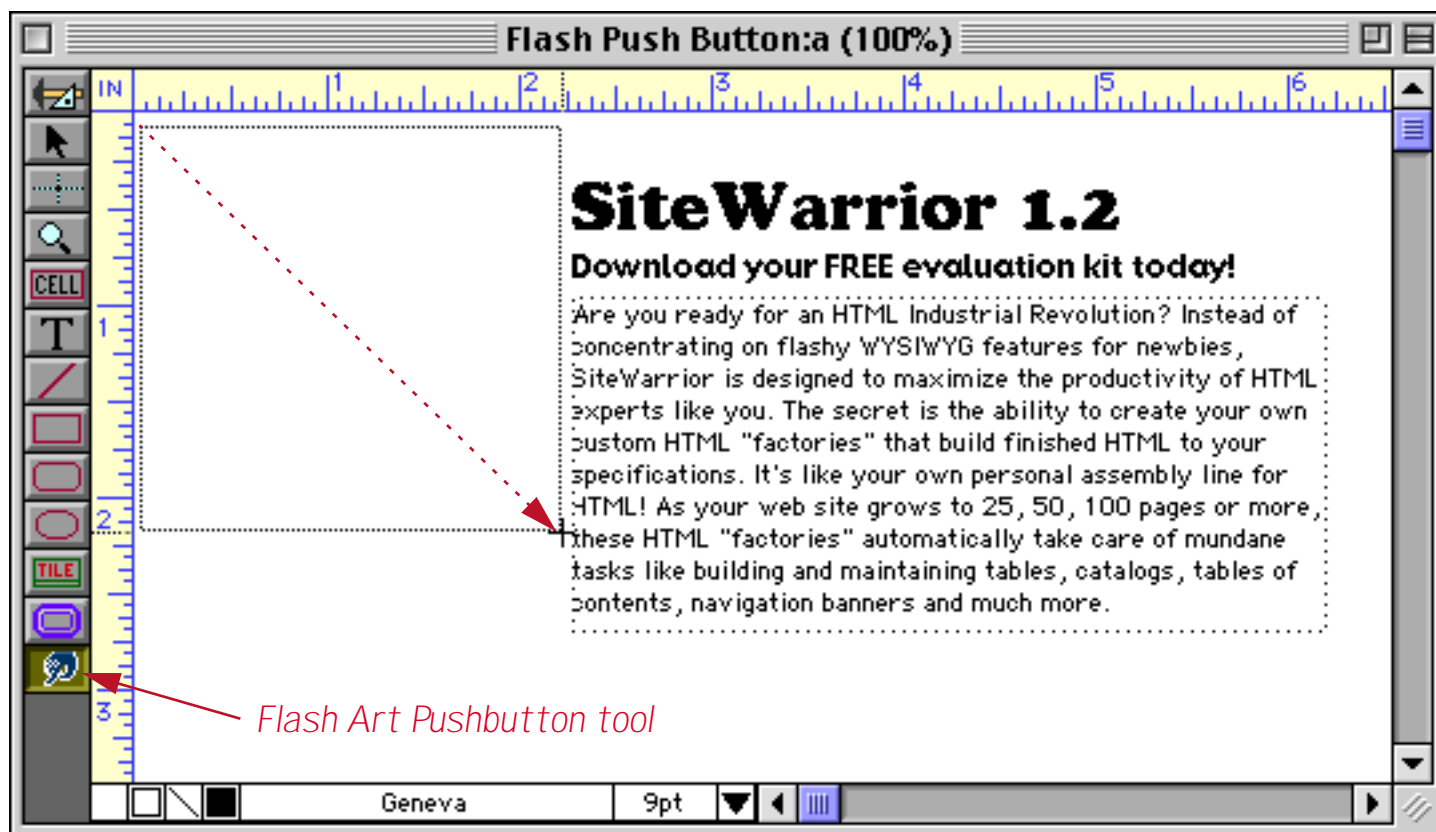
The Flash Art Push Button SuperObject™ lets you use images in the Flash Art gallery (see “[The Flash Art Scrapbook \(Gallery\)](#)” on page 764) to create push buttons that trigger procedures. You can use any application that can create PICT images to draw your button: Photoshop, Canvas, Freehand, etc. It takes more work to create a Flash Art™ Push Button, but you have the flexibility to create any kind of button you want!

The first step in creating a Flash Art Push Button is to create two Flash Art images: the first showing the button in its “normal” (unpressed) state and the second in its “activated” (pressed) state. When the button is clicked, Panorama will automatically switch between these two pictures as the button is pressed with the mouse. (The two pictures should have exactly the same dimensions or you will notice a shift as the mouse is pressed on the button.) The second picture must have the same name as the first picture, but with **.DOWN** added to the end. For example, if the “normal” picture is called **Download**, the “activated” picture must be called **Download.DOWN**.

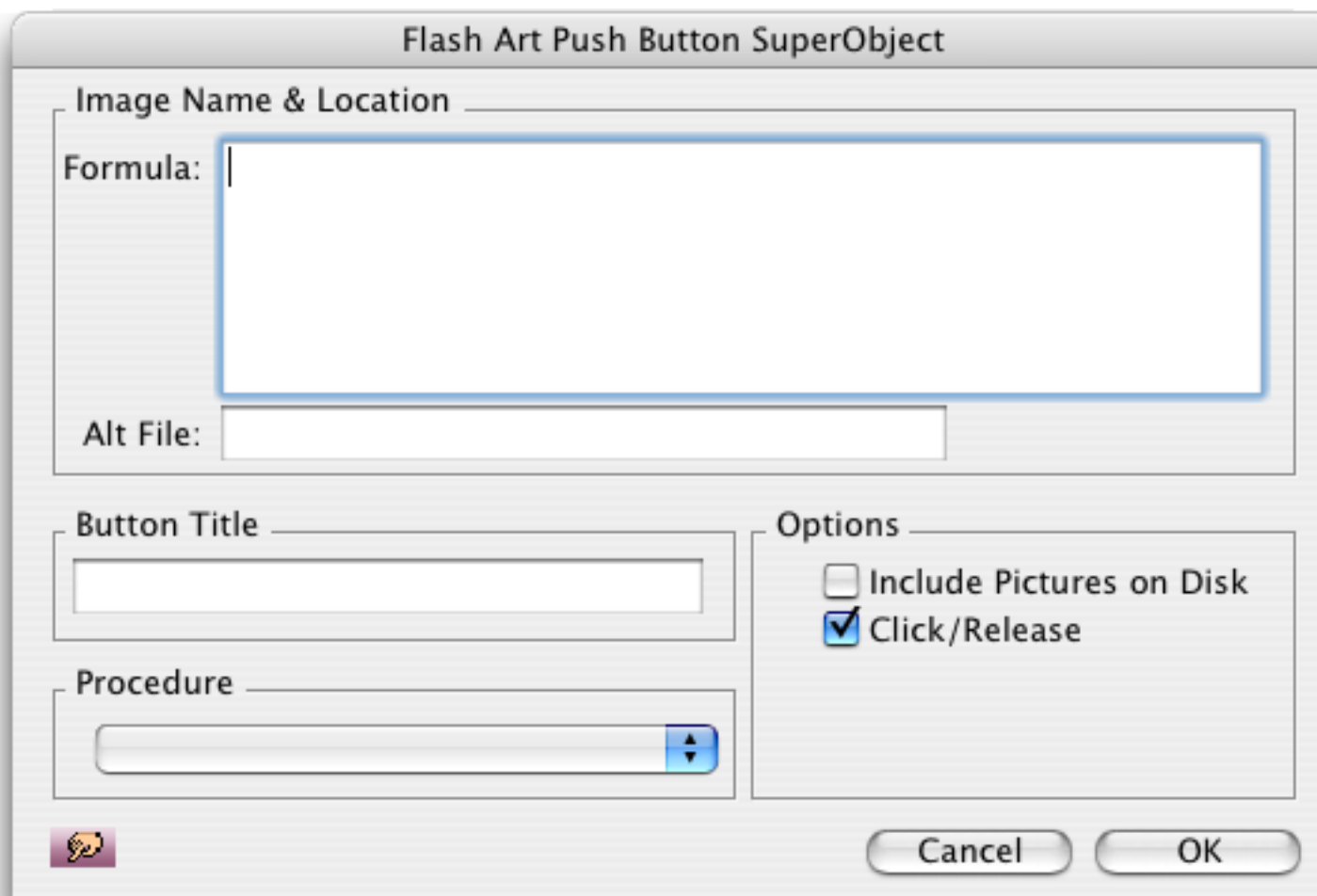


(Note: The Flash Art Push Button will display your pictures actual size, without any scaling or resizing. If the button you create is smaller than the picture, the picture will be cropped. If the button is larger than the picture, the picture will appear in the upper left hand corner of the button.)

Once the pictures have been created, you are ready to create the button itself. Select the **Flash Art Push Button** tool and drag across the form to create the button. (If the tool is not currently installed, use the **Tool Palette** dialog to install it — see “[Customizing the Tool Palette](#)” on page 497.)



When you release the mouse the configuration dialog will appear.



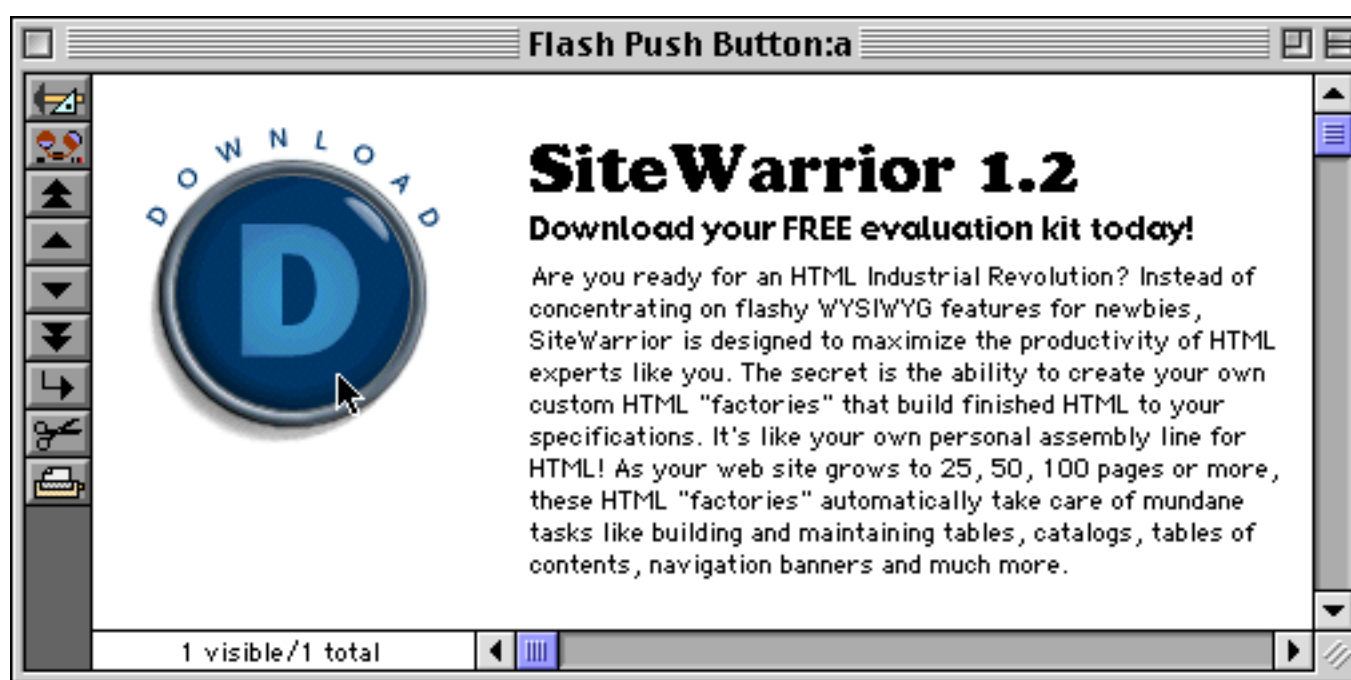
Select the procedure to be triggered and enter the title for the button (the title is not displayed but is returned by the `info("trigger")` function).

The **Formula** box is used to specify the pair of pictures displayed by this button. If you always want to use the same two pictures, simply enter the name of the “normal” picture surrounded by quotes, for example **"Download"**. The formula can also be set up so that the picture used for this button changes depending on circumstances—for example, you might want to use a different button for black and white vs. color monitors (using the **info("windowdepth")** function) or a different button in the morning vs. the afternoon.

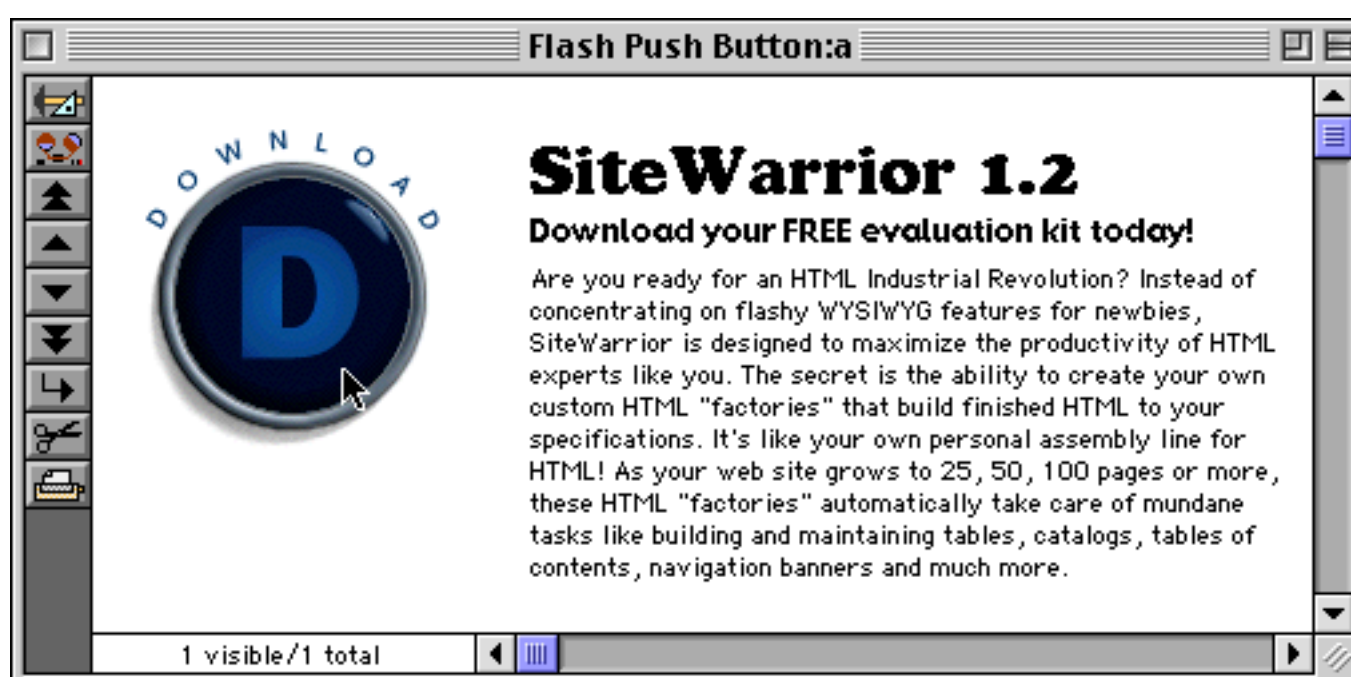
The **Alt File** option allows the button to display pictures stored in the Flash Art gallery of another database (the other database must be open). Enter the name of the database here. See **"Alt File"** on page 788 for more information on this option.

The **Include Pictures on Disk** option allows the button to display pictures that have been stored as PICT files on the disk. Normally these files should be in the same folder as the database itself, however, you may supply a file path as part of the Formula (see **"Displaying Images Directly From Disk Files"** on page 769).

The Flash Art Push Button tool allows you to make virtually any custom button you want. Here's what our finished button looks like in use.



When you click on the button, the second image appears. This gives you complete control over the appearance and highlighting of the button.



Your imagination is the only limit to the buttons you can create.

Data Buttons

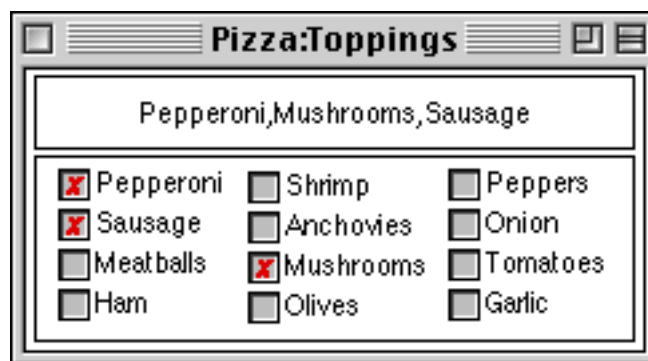
Data buttons are buttons that have a value associated with them. The value may be stored in a database field or in a variable (see “[Variables](#)” on page 53 and “[Variables](#)” on page 247 of *Formulas & Programming*). An on/off data button is usually called a **checkbox**.

Taxable

Data buttons may be grouped together as **radio buttons**. Only one button in the group may be selected at a time.

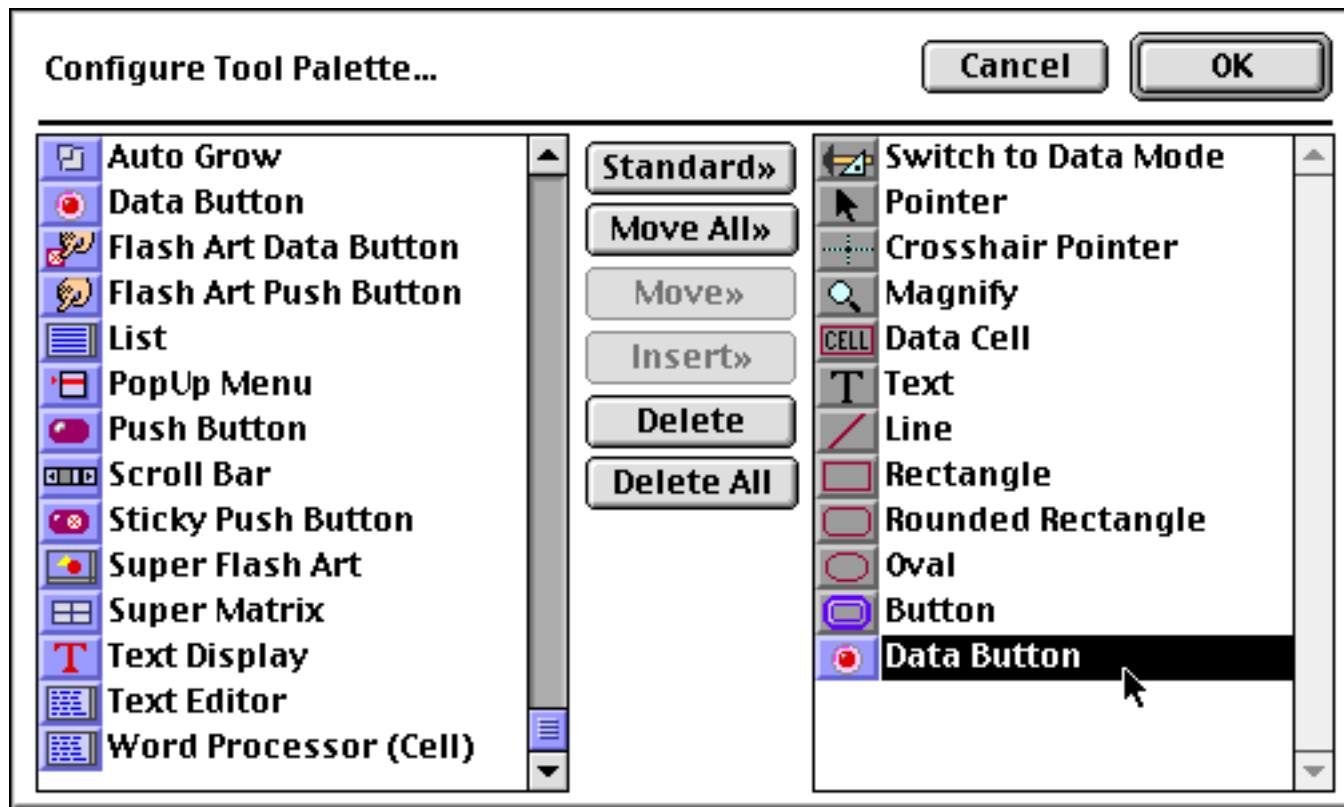
Priority Mail
 UPS Next Day Air
 Federal Express
 Airborne
 DHL

Panorama also allows you to build a group of buttons where more than one member of the group can be selected at a time. See “[Multiple Value Button Groups](#)” on page 845 to learn more about this option.

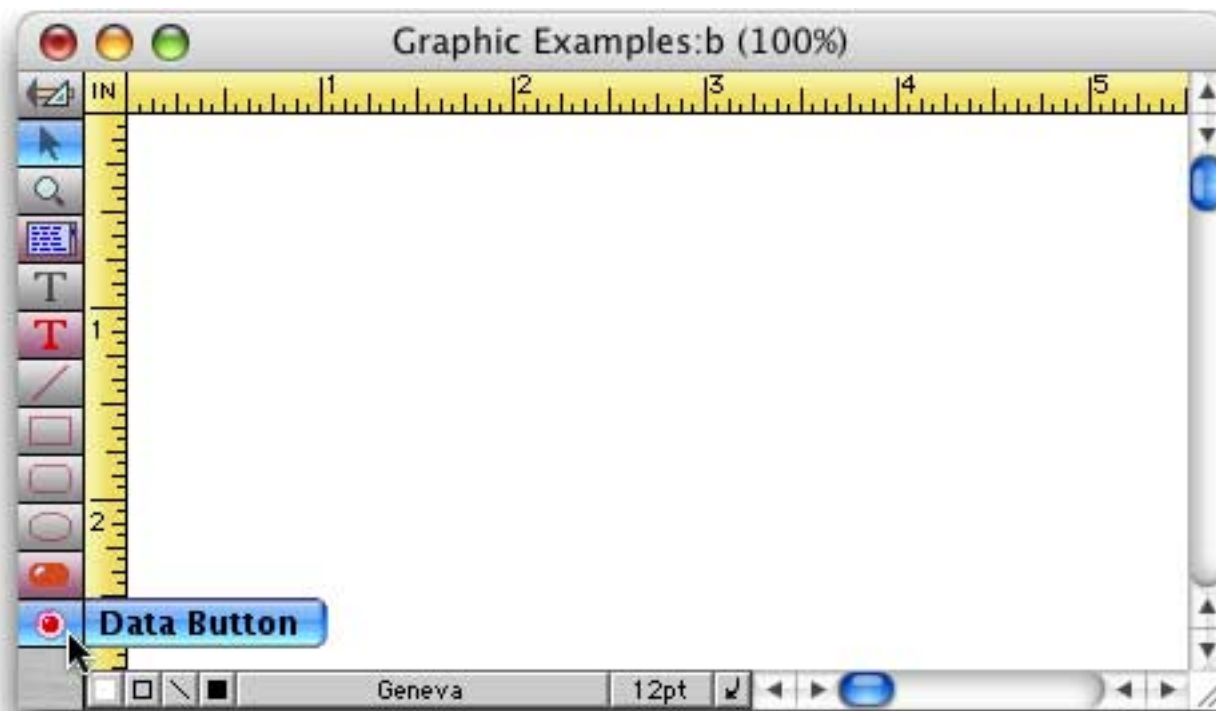


Data Button SuperObjects™

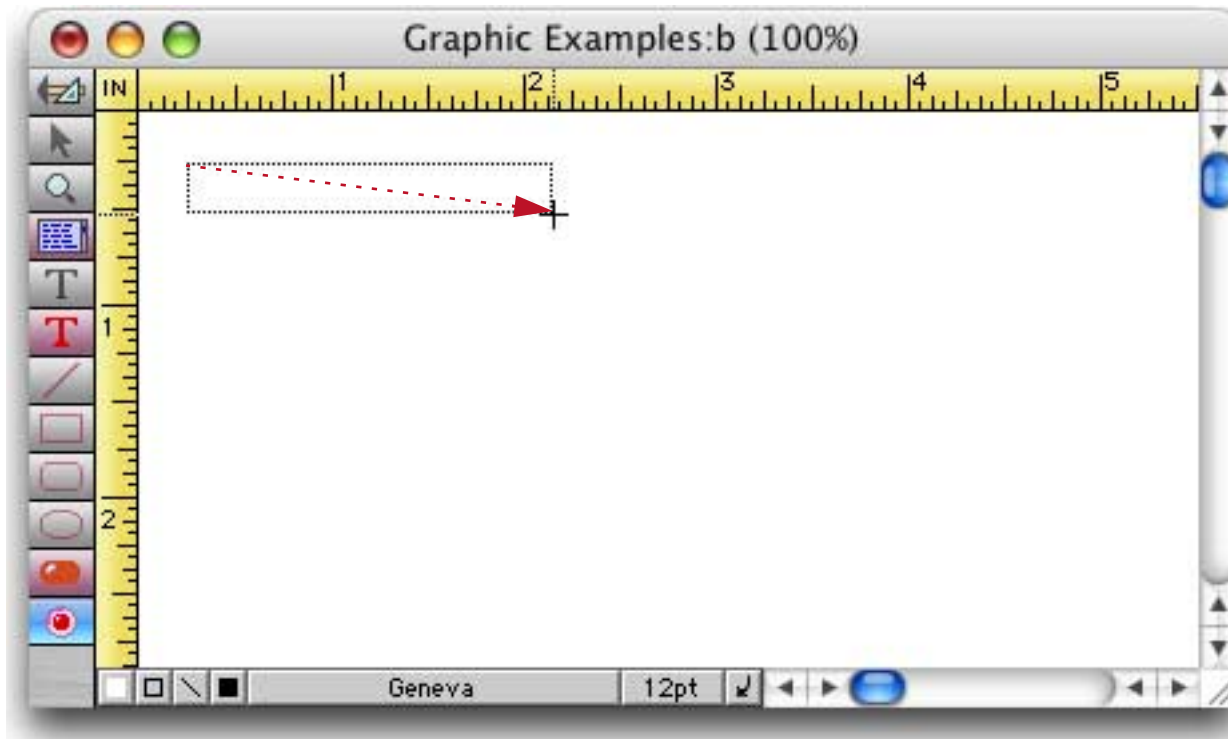
The Data Button SuperObject™ tool can be used to create checkboxes and radio buttons in a variety of styles. Unlike the “classic” button tool, this tool can work with global variables as well as fields. The SuperObject Data Button tool is not in the default tool palette, so you’ll need to move the use the Tool Palette dialog to add this tool to the palette if it is not already there (see “[Customizing the Tool Palette](#)” on page 497).



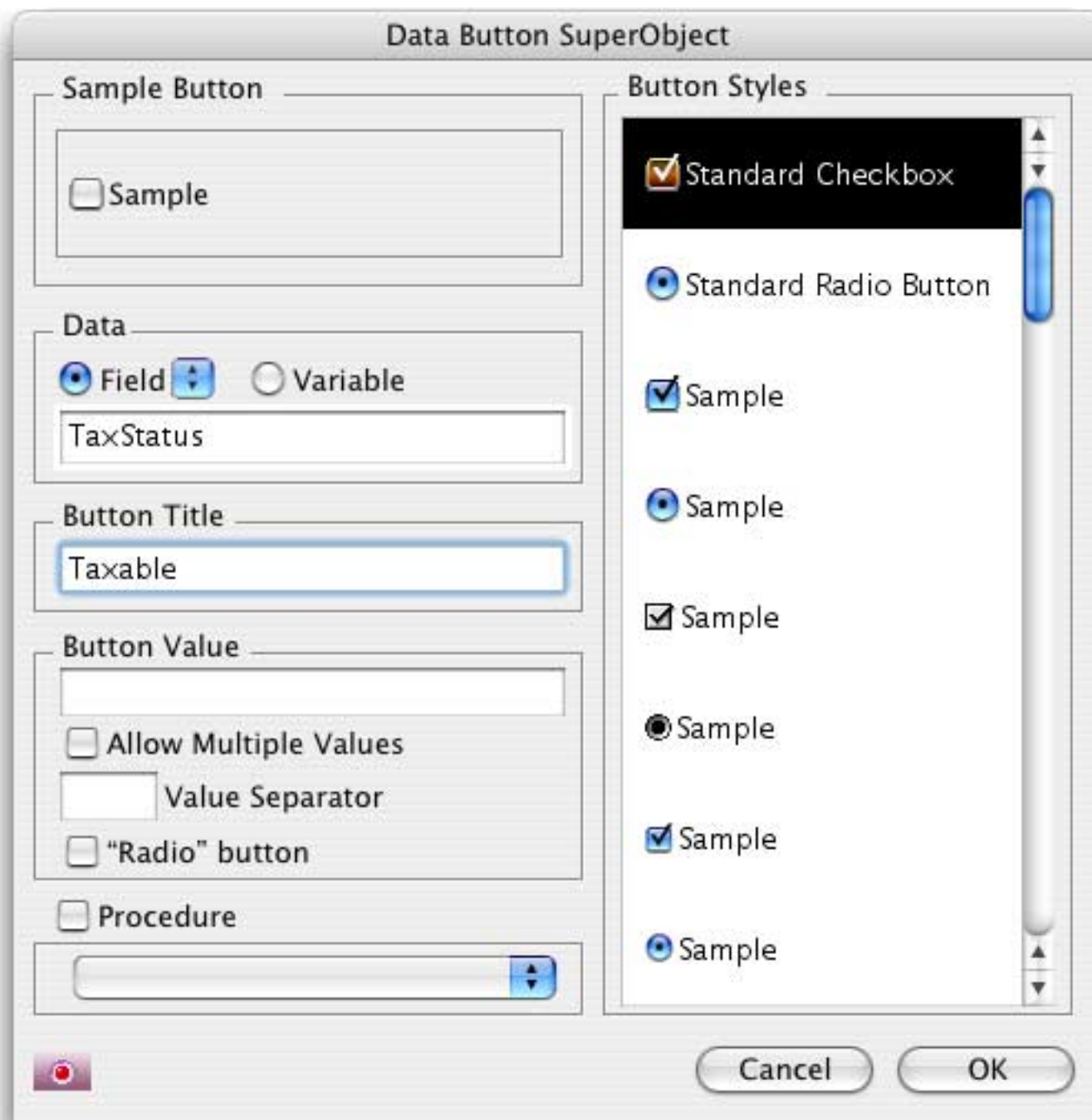
Now that the tool is added to the palette you can select it.



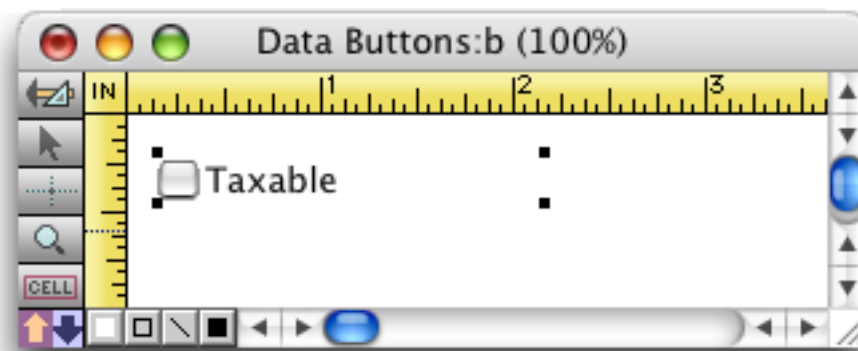
Once the tool is selected, drag the mouse across the form in the location where you want to create the button.



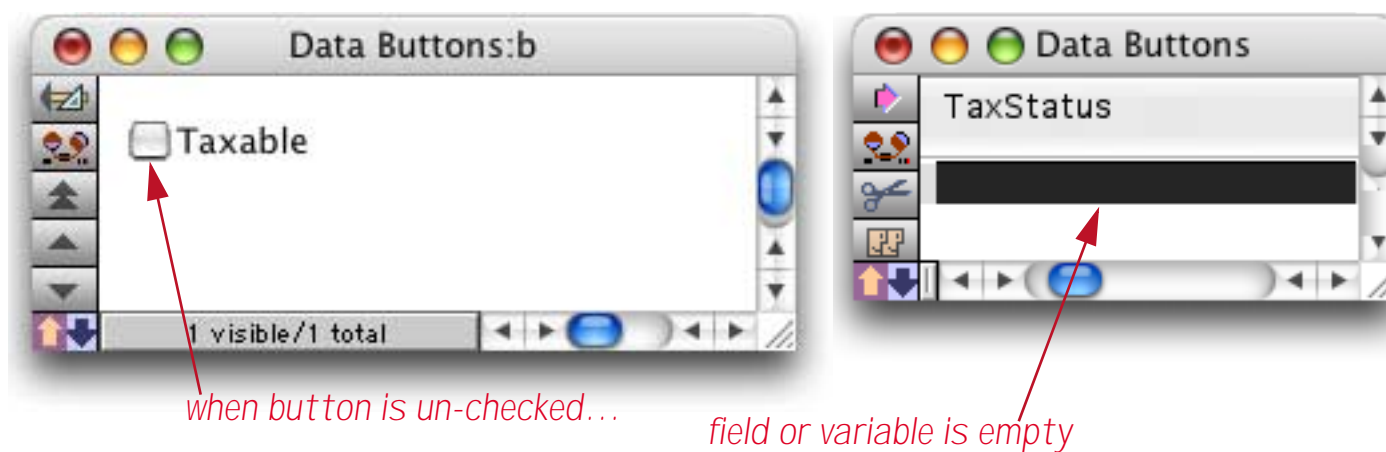
When you release the mouse, the SuperObject Data Button configuration dialog will appear.



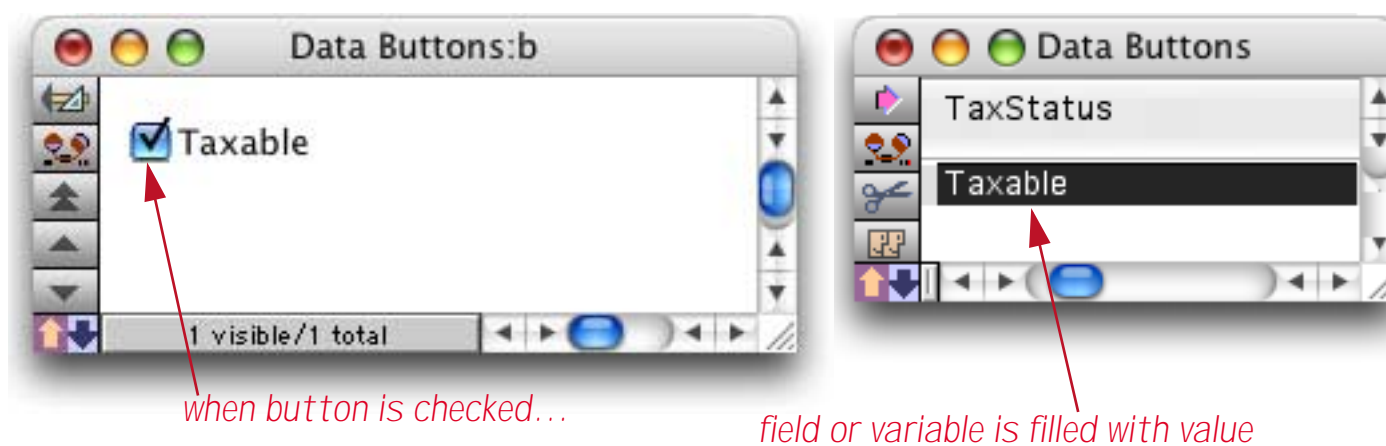
At a minimum you must select a field or variable to store the value, and enter a Title. When you press **OK** the new button will appear on the form.



To try out the button, switch to Data Access Mode. Since this button's value is stored in a field we can use the data sheet to watch the value as the button is checked and unchecked.



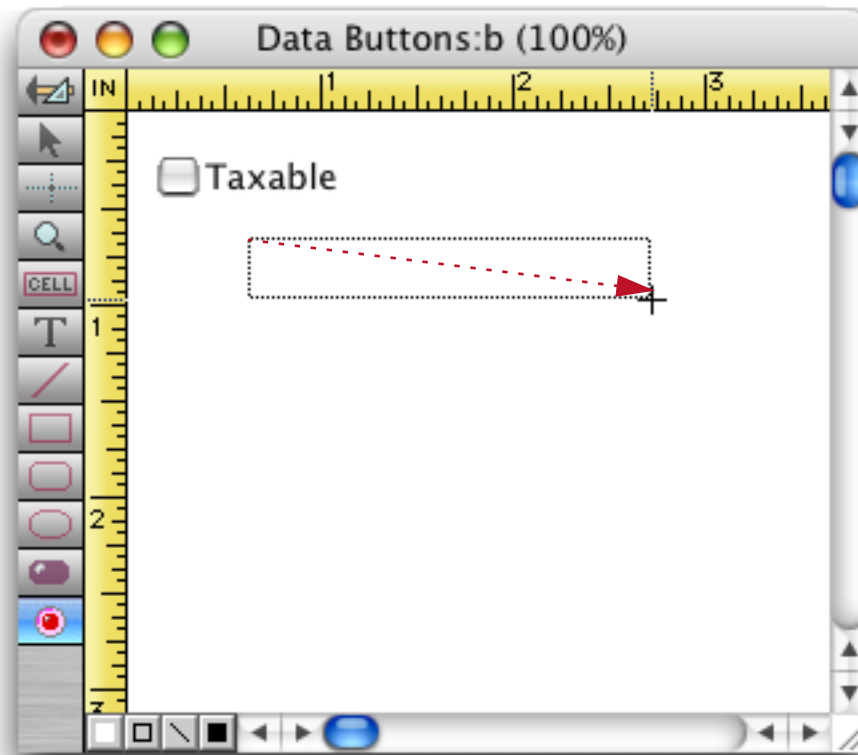
Clicking on the checkbox causes Panorama to fill the field or variable with the value.



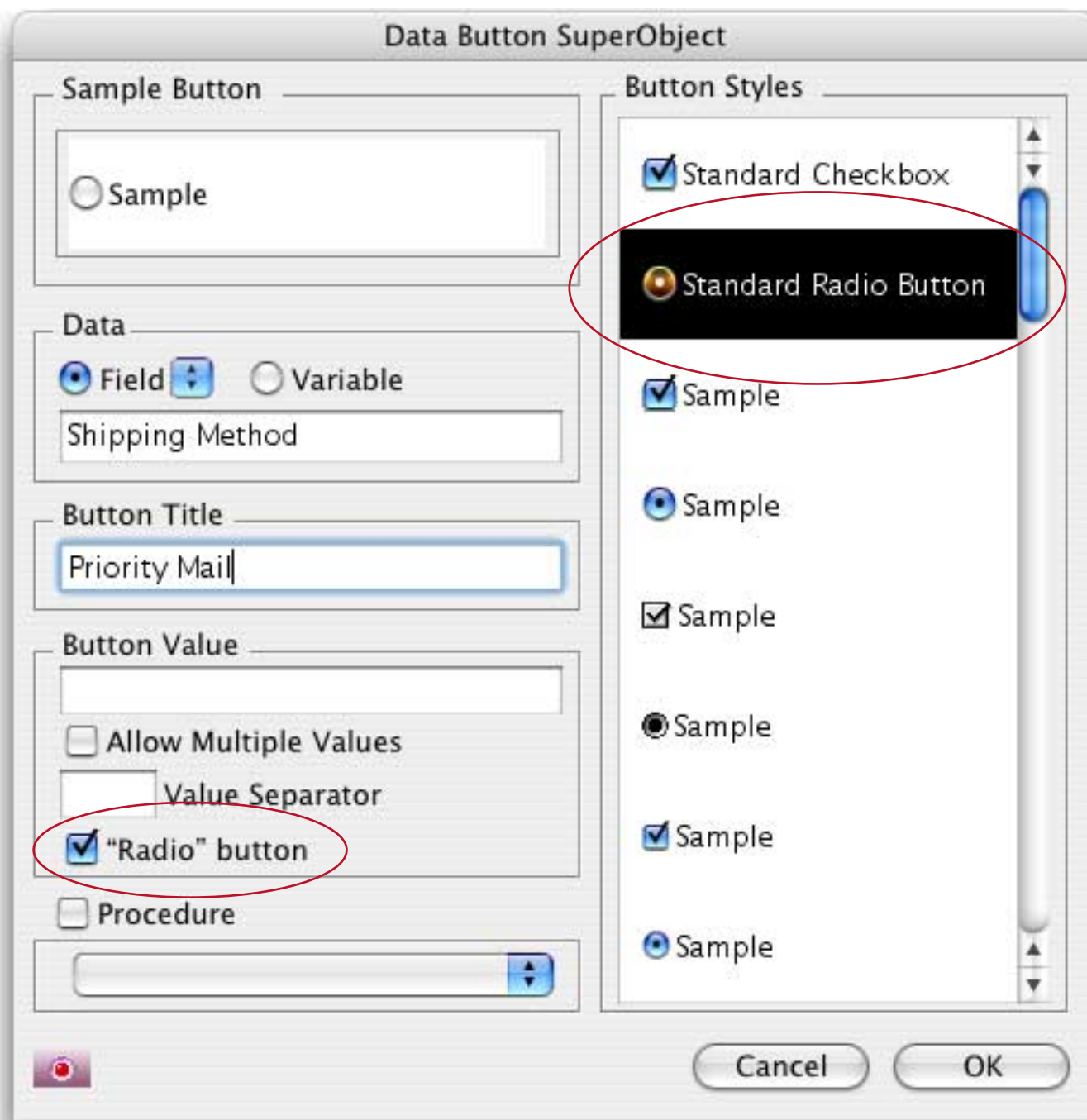
If you click again to un-check the button the field or variable will become empty again. (You may wonder if typing the value into the Data Sheet will cause the button to become checked. The answer is yes!)

Creating a Group of Radio Buttons

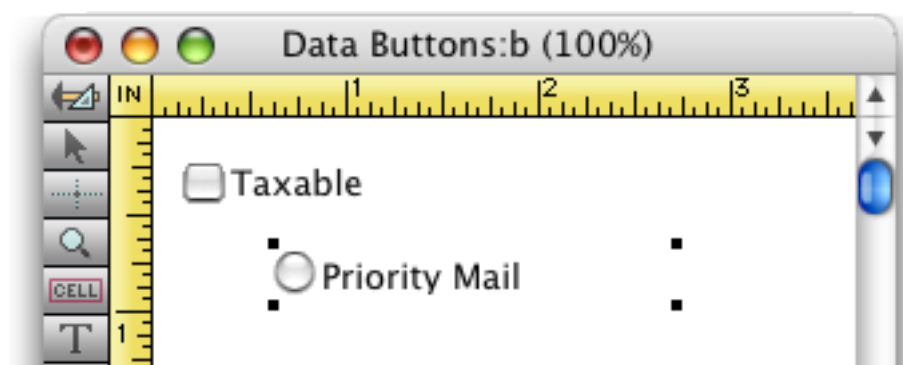
The easiest way to create radio buttons is to create a single button and then make copies. For example, suppose you want to make radio buttons for shipping options — [Priority Mail](#), [UPS Next Day Air](#), [Federal Express](#), [Airborne](#) and [DHL](#). Start by selecting the Data Button tool (see previous section) and dragging to create the first button.



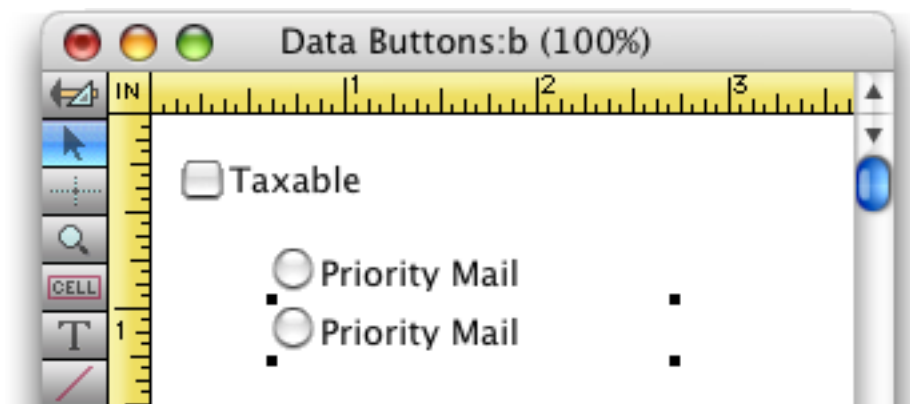
The field or variable and title are set up exactly the same as for a checkbox. You should also enable the **“Radio” button** option, and select a radio button style from the list of styles on the right hand side of the dialog. (Note: The visual style does not affect the operation of the button, so Panorama will happily let you create a radio button that looks like a checkbox, or vice versa.)



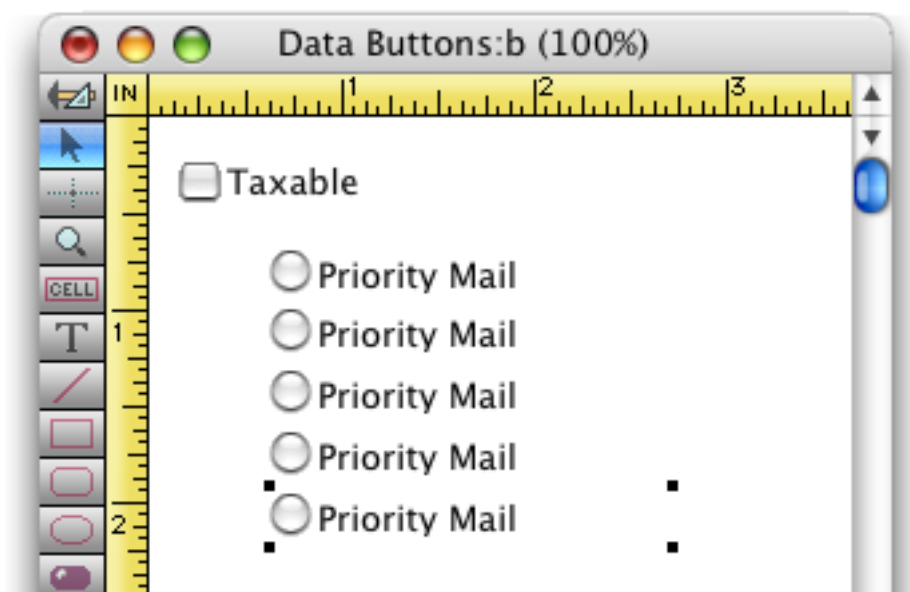
Press **OK** to create the first radio button.



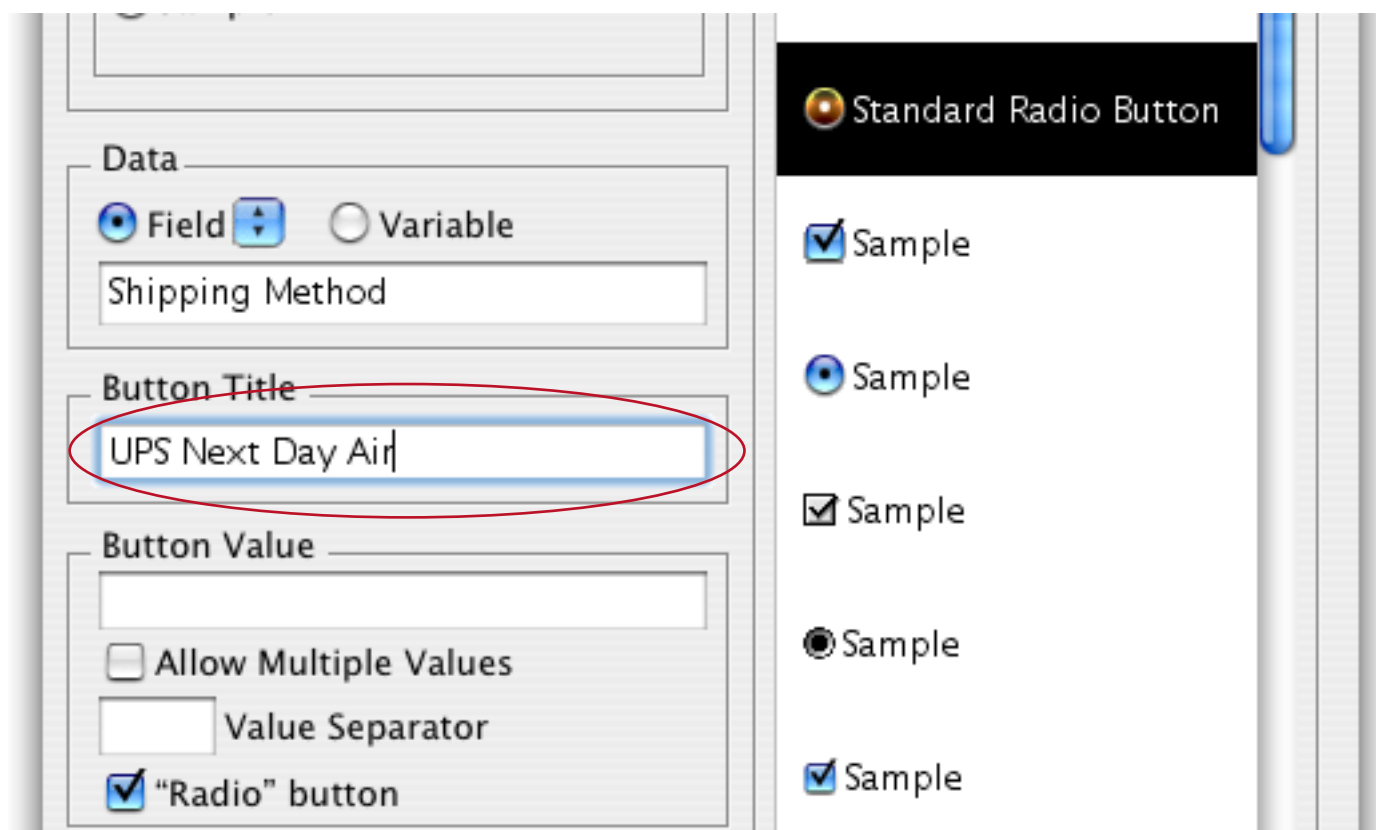
To duplicate this button, make sure that the **Pointer** tool is selected and hold down the **Shift** key and the **Option** (Mac)/**Alt** (PC) key while you drag the button. When you release the mouse Panorama creates a copy of the selected object (see “[Drag Duplicating](#)” on page 561).



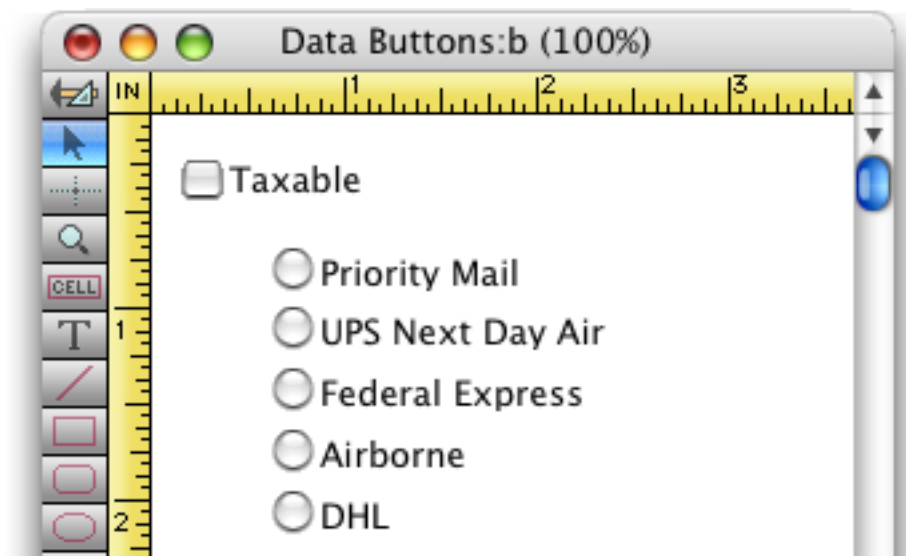
To make additional copies simply use the **Duplicate** command (see “[Step and Repeat](#)” on page 562).



Now you need to go back and change the title of each button (except the first). To change the title, simply double click on the button, then fill in the new title.

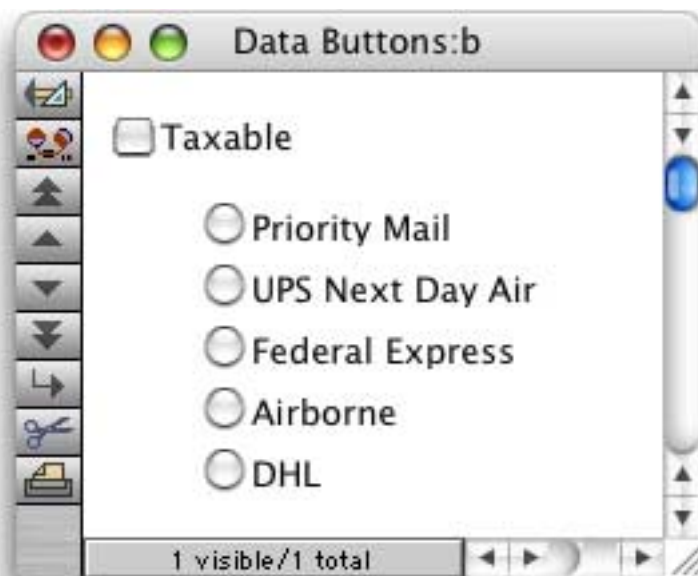


All the other options remain the same — only the title needs to be changed. Repeat this process for each button in the group.

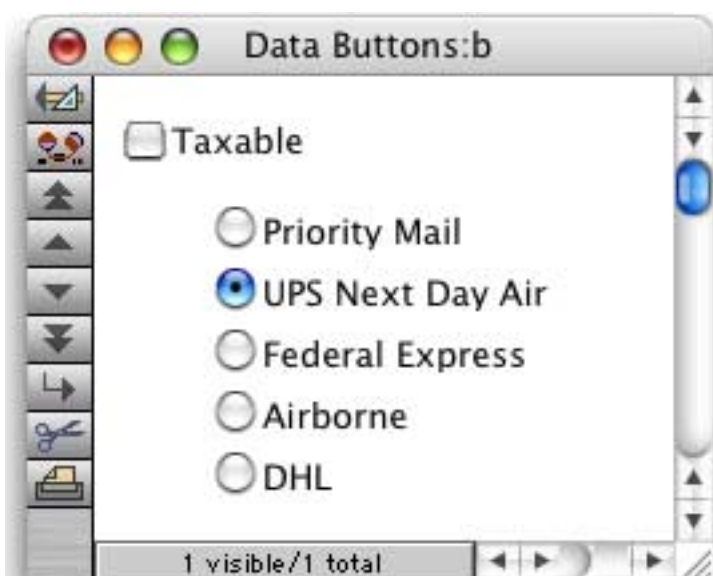


If necessary, you can adjust the spacing of the buttons with the **Spacing** command (see “[Setting Exact Dimensions of Multiple Objects](#)” on page 550 and “[Adjusting Spacing Between Multiple Objects](#)” on page 556). You can also adjust the width of the buttons using Cluster Resize (see “[Cluster Resize](#)” on page 541).

To try out the buttons, switch to Data Access Mode. Since the button’s value is stored in a field we can use the data sheet to watch the value as the different buttons in the group are checked. To start out, none of the buttons are checked and the field is empty.



When a button is checked, the corresponding value appears in the field.



Clicking on any button causes the corresponding value to appear in the field.



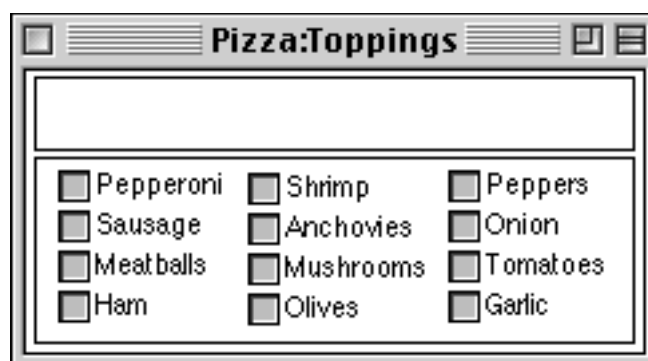
The synchronization between buttons and the field also works in reverse. If you type a value into the data sheet, the corresponding button will be activated. If none of the buttons match the value, all of the buttons will be turned off.



The buttons can also be completely turned off by clearing the contents of the field (making it empty).

Multiple Value Button Groups

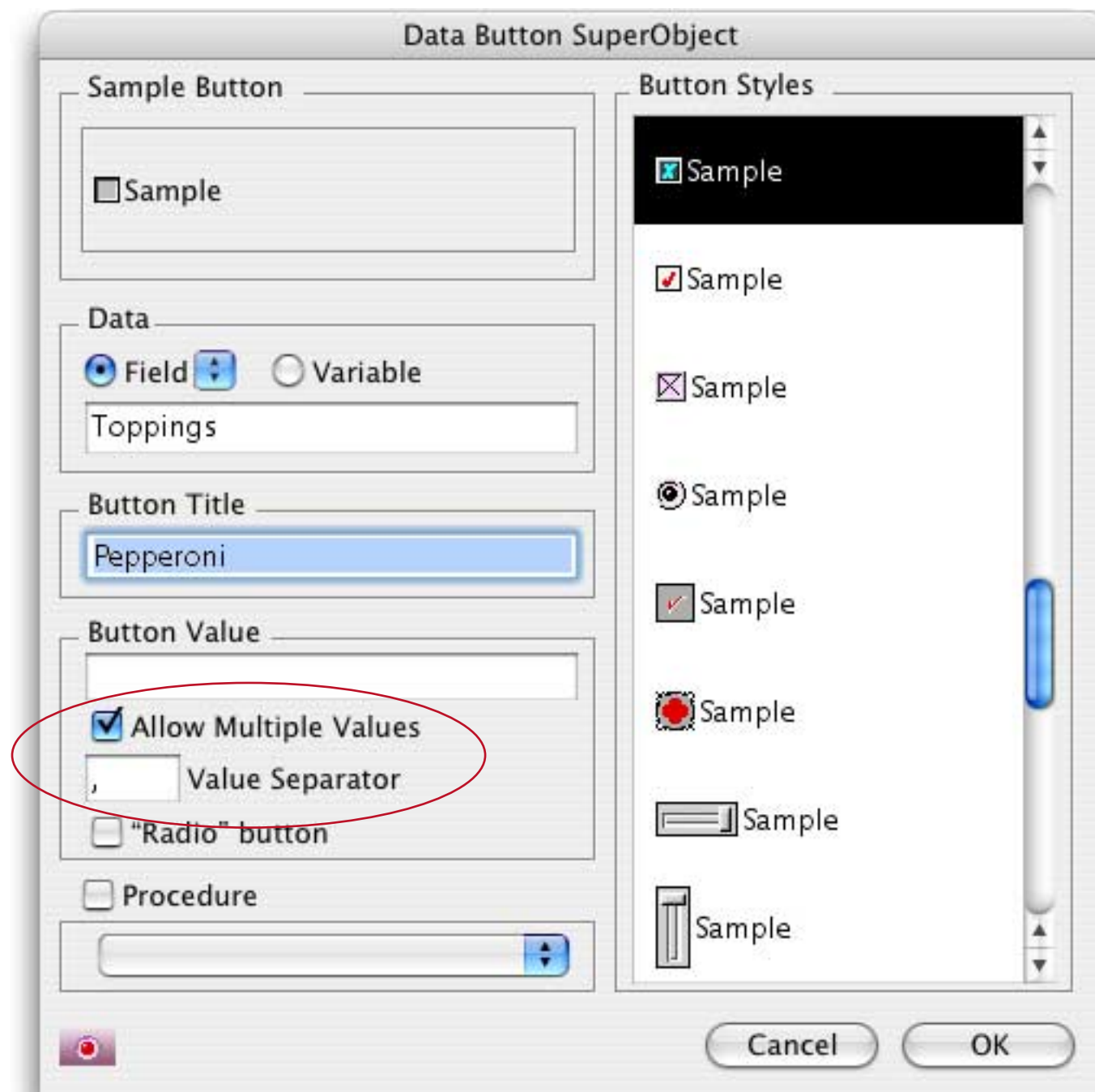
A group of radio buttons works fine as long as only one value at a time is valid. You can't ship a package by both [Priority Mail](#) and [Federal Express](#), only one or the other! Some applications, however, require that multiple options be selected. For example, consider a group of buttons for selecting pizza toppings.



In this application there may be zero, one, two, or even 12 values at one time! There are two ways to create a group of buttons like this.

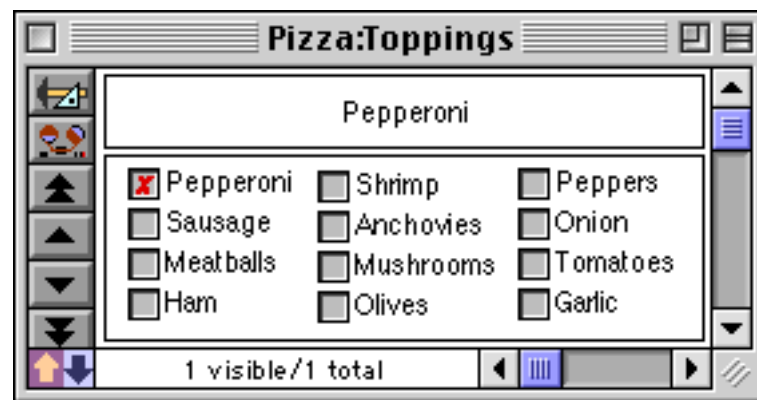
The first method is simply to create a field or variable for each option, and then create a standard checkbox for each field. See “[Data Button SuperObjects™](#)” on page 838 to learn how to create a checkbox.

The second method allows you to combine all of the values into a single field. Just as with a group of radio buttons, you’ll start by creating a single button and making copies (see previous section). However, instead of enabling the “**Radio**” button option you’ll enable the **Allow Multiple Values** option. You also need to specify what character(s) you want placed between each value. In this example, we’ve chosen a comma.



Set up the first button using the options shown above. Then make copies of the button and adjust the titles, just as described for radio buttons in the previous section.

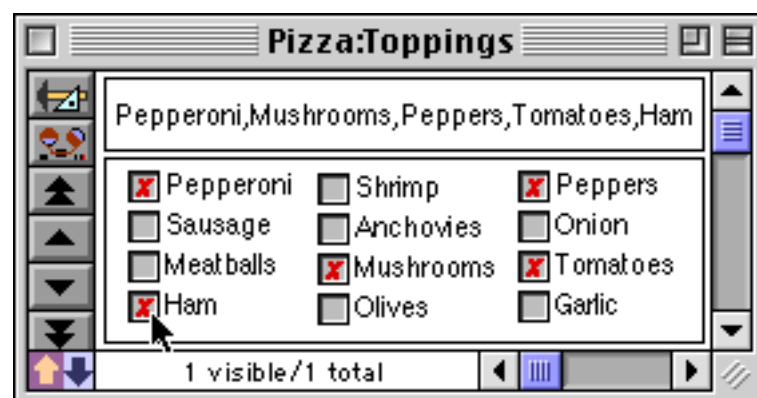
Switch to Data Access Mode to try out the group of buttons. When a single option is clicked the value appears in the field, just as for a standard checkbox. (A Text Display SuperObject has been added to the form to display the value of the **Toppings** field, see “[Text Display SuperObjects™](#)” on page 608 to learn how to create such an object.)



When a second button is clicked, that value is added to the field.



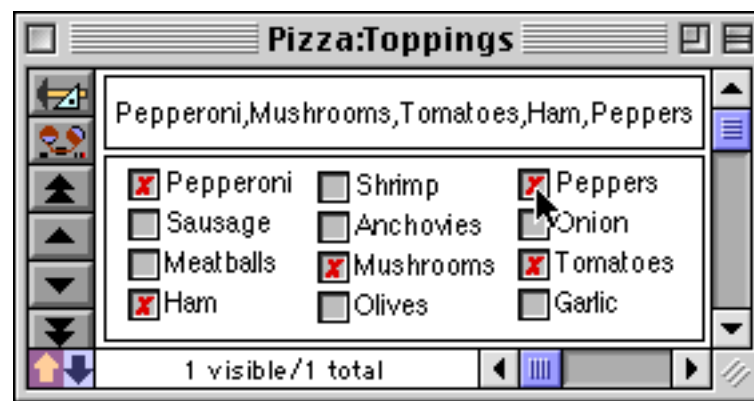
You can keep adding as many values as you like.



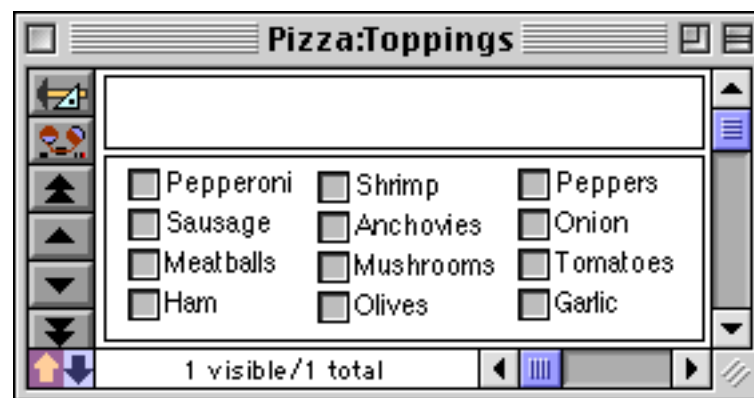
If you un-check a button, that value will be removed from the field (or variable). In this case we have removed **Peppers**.



If **Peppers** is re-enabled, it is added to the end of the value. You cannot control the order of the options within the field or variable.



If you un-check all of the buttons the field will become completely empty.



Like other types of buttons, the synchronization between the buttons and the field or variable works both ways. You can type in a value or combination of values into the field or variable and the appropriate buttons will automatically “light-up.”

Super Data Button Options

The left hand side of the Data Button dialog controls the operation of the button, the right hand side controls the appearance of the button.



Data

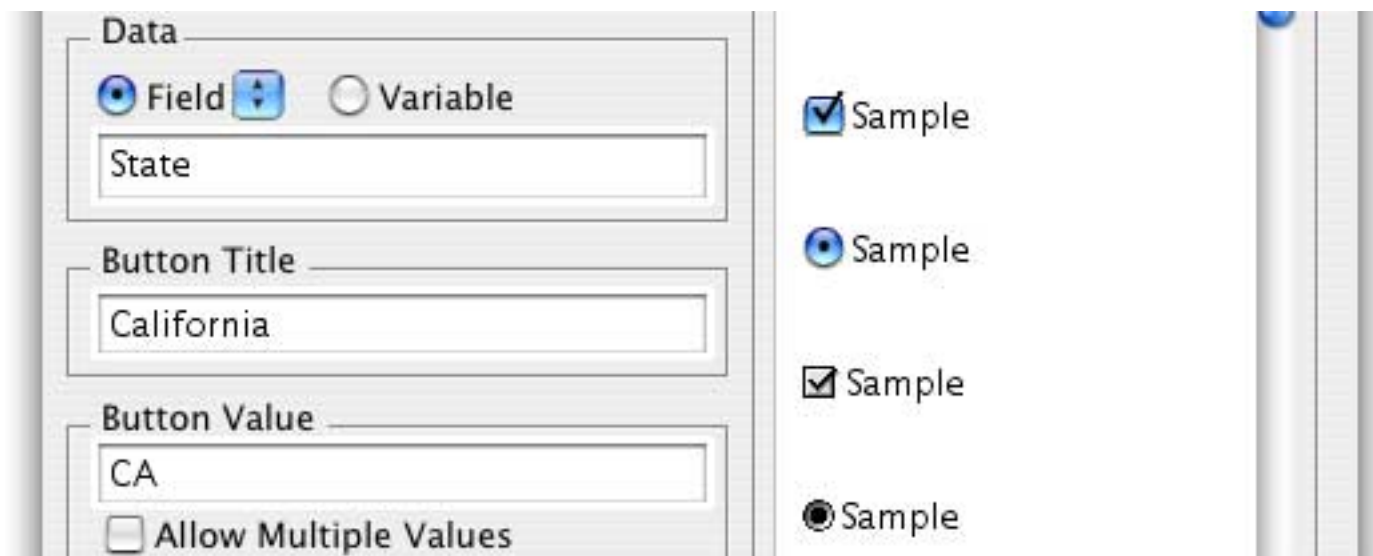
This section of the dialog specifies the field or variable associated with this button. Type the name of the field or variable into the box (or select the field name from the pop-up menu next to the **Field** radio button). If the button is associated with a variable that has not been created with a procedure, Panorama will automatically create a global variable with this name whenever the button appears. This global variable can be used in formulas and procedures just like any other global variable (see “[Variables](#)” on page 53 and “[Variables](#)” on page 247 of *Formulas & Programming*).

Title

This section of the dialog specifies the title of the button. This is the title that is actually displayed on the screen. If the value is empty (see next section) Panorama will use the title as the value.

Value

This section of the dialog specifies the data value corresponding to this button. Each button can have a single value, which you should type into the box next to the word **Value**. If you leave this box empty, Panorama will use the **Title** for the data value (see previous section). This example shows how you can use a value that is different from the title.



Using this technique you can make a group of radio buttons for western states.

- Arizona
- California
- Nevada
- Oregon
- Washington

The **State** field will not contain the fully spelled out state names, but only the 2 letter abbreviations (**AZ**, **CA**, **NV**, etc.).

Allow Multiple Values

It's possible to group together multiple buttons associated with the same field or variable. Normally clicking any button in the group erases the current value and replaces it with the new value (normal radio button behavior). However, if you have the **Allow Multiple Values** option turned on, clicking on the button will add the new value to the existing data in the field or variable, with the **Value Separator** in between.

As an example of the **Allow Multiple Values** option, consider pizza toppings. A pizza may have one, two, three or more toppings, or even none at all. Using the **Allow Multiple Values** option, you can create a series of checkboxes that will generate a list of toppings in a single field or variable. As the user clicks on each topping, it will be added to the end of the list. To remove a topping from the list, click on it again. See See "[Multiple Value Button Groups](#)" on page 845 for an example of this technique.

Value Separator

This is the text that will appear between each value in a multiple value list. Common separators include commas, spaces, slashes and hyphens. The separator may be up to 6 characters long, so you can use a multi character separator like comma-space. (However, if you want to process the value with Panorama's array functions you should use only a single character separator. See "[Text Arrays](#)" on page 93 of *Formulas & Programming* for more information on these functions.

"Radio" button

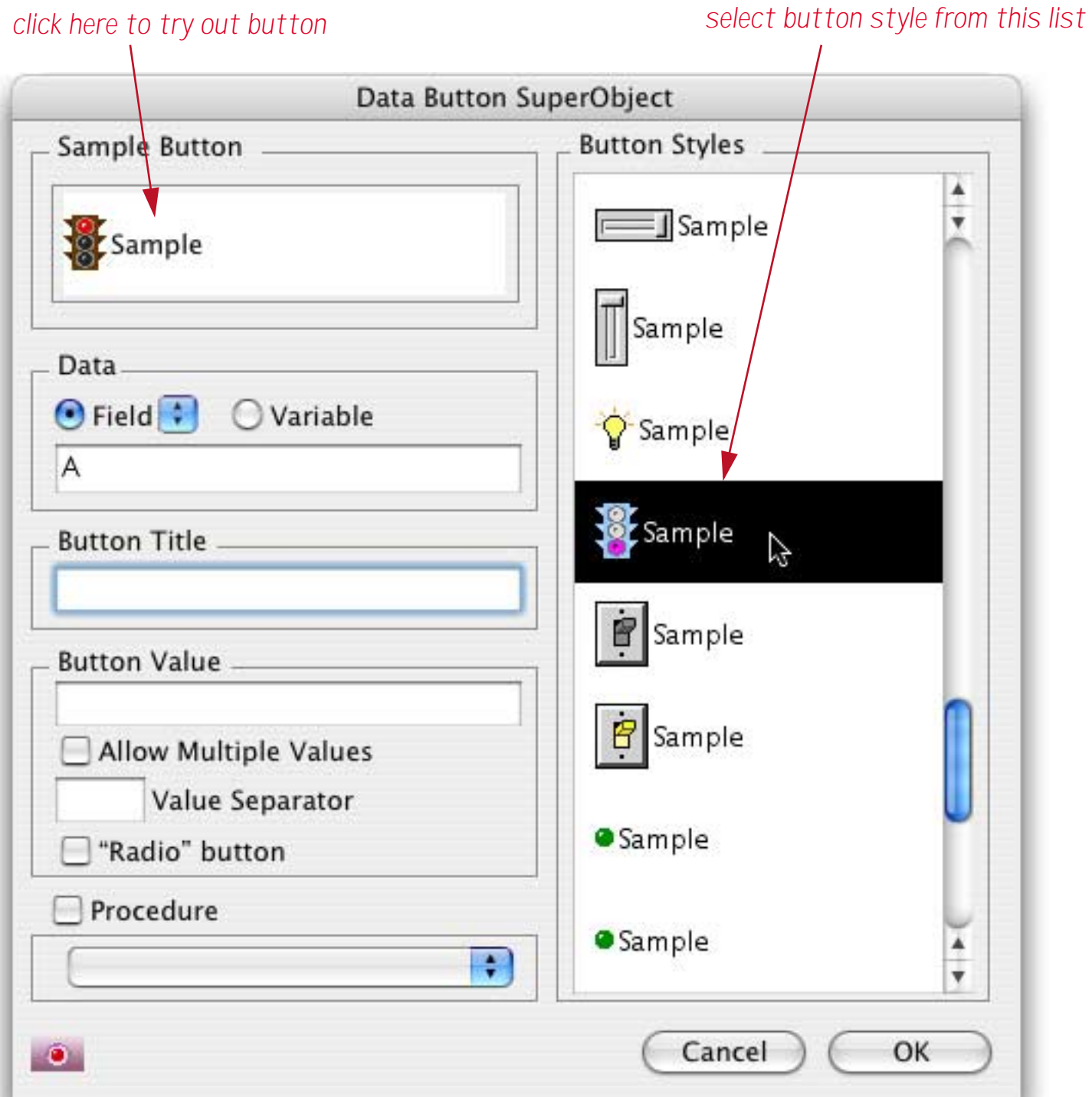
The data button normally toggles the value on and off each time you click on it. Turning on the **"Radio" button** option prevents the button from toggling off. In other words, you can turn the button on, but you can't turn it off again. Usually this option is only used for radio button combinations, where the value will be automatically turned off by clicking on another button in the group. This option prevents the user from turning off all the buttons in the group, so there is always at least one radio button checked.

Procedure

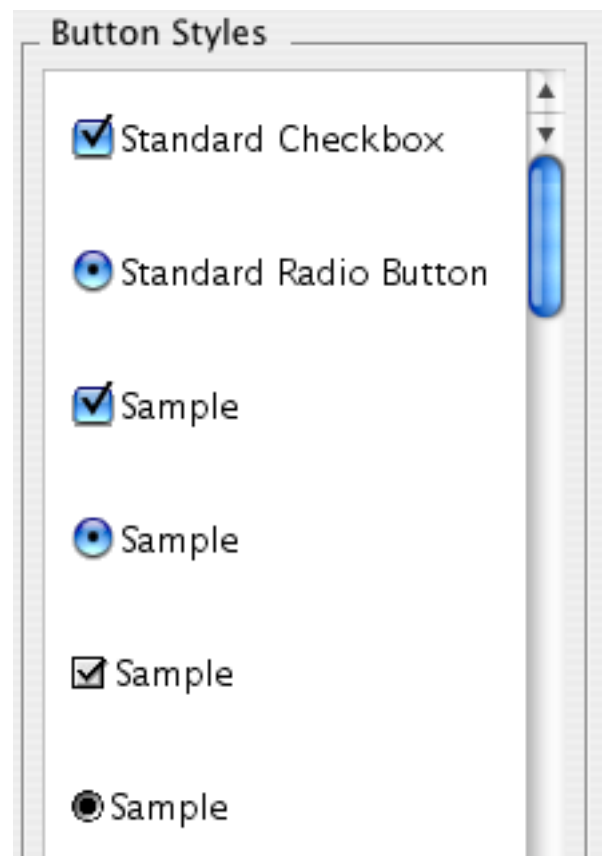
This section of the dialog specifies the procedure that will be triggered when this button is clicked (if any). The procedure can get information about what button was clicked by using the `info("trigger")` function. Even if you don't specify a procedure here, clicking on the button will trigger any automatic formulas and procedures associated with the field for the button (see ["Automatically Triggering a Procedure"](#) on page 314 of *Formulas & Programming*).

Sample

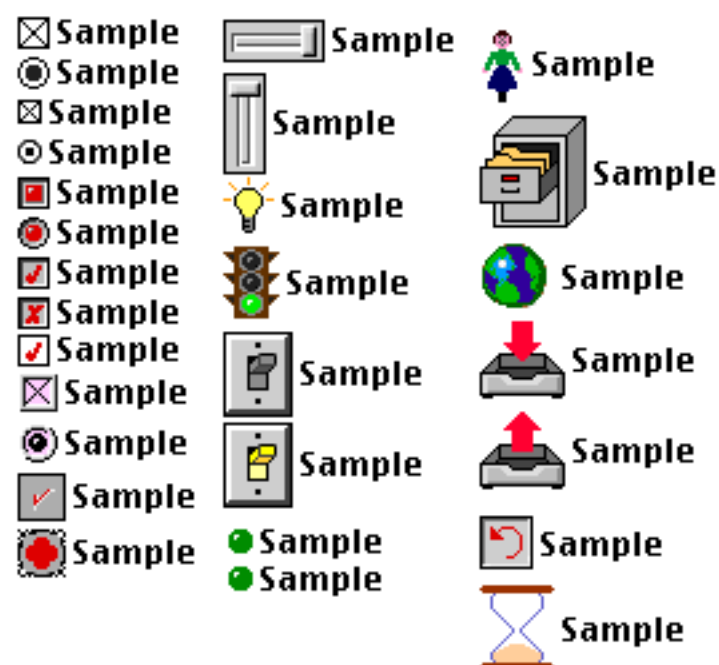
This section of the dialog shows a sample of the button. You can select the button style from the scrolling list on the right. Click on the sample button on the left to see what the button style will look like in both the on and off positions.



The first two styles, **Standard Checkbox** and **Standard Radio Button**, are special. Data buttons created with these styles will adjust automatically depending on what operating system is being used. In other words, the same button will change appearance depending on whether the database is being used on Mac OS X, Mac OS 9, or Windows.



With all of the other options what you see is what you get. Here are some of the other built-in choices available. (If you need to create your own custom button, use the Flash Art Data Button, see “[Flash Art Data Button SuperObjects™](#)” on page 852).



Note: Button operation is not affected by the button’s appearance. You can create a button that “looks” like a radio button but acts like a checkbox, or visa versa.

Flash Art Data Button SuperObjects™

Flash Art Data Buttons are identical in operation to regular SuperObject Data Buttons. However, instead of picking the button’s appearance from a list of predefined styles, you create the artwork for the button yourself using Flash Art™. Before you attempt to use a Flash Art Data Button, you should be familiar with Flash Art creation and usage (see “[Flash Art™](#)” on page 750).

The first step in creating a Flash Art Data Button is to create two Flash Art pictures: the first showing the button in its “off” state and the second in its “on” state. When the button is clicked, Panorama will automatically switch between these two pictures as the button is toggled on and off. (The two pictures should have exactly the same dimensions or you will notice a shift as the mouse is pressed on the button.) The second picture must have the same name as the first picture, but with **.DOWN** added to the end. For example, if the “off” picture is called **Box**, the “on” picture must be called **Box.DOWN**.

If you wish, you may optionally create two additional pictures. These pictures will be displayed temporarily when the mouse is actually pressed on the button, allowing the button to “highlight” as it is being clicked. Two pictures are needed: one to highlight the “off” state and one to highlight the “on” state. These pictures must have the same name as the original two pictures but with **•** added after the name (press **Option-8** to create the **•** symbol on the Macintosh, **Alt-0149** on the PC). In our example these pictures would be named **Box•** and **Box•.DOWN**. Here are four images that have been prepared for a Flash Art Data Button. They show a box in both open and shut positions. (The images are shown enlarged to 4X in Adobe Photoshop).



Once the pictures have been created, you are ready to create the button itself. Select the **Flash Art Data Button** tool and drag across the form to create the button. (If the tool is not currently installed, use the Tool Palette dialog to install it, see “[Customizing the Tool Palette](#)” on page 497.) Type in the name of the base picture for this button (enclosed by quotes) into the Formula box. In our example, you would type “Box” into the Formula box.

The rest of the options in the Flash Art Data Button dialog are the same as the options in the Flash Art Push Button and Data Button dialogs. See “[Super Data Button Options](#)” on page 849 for descriptions of these options.

The finished button looks like an open box.



When you click on the button it highlights.



Releasing the mouse causes the button to switch to a closed box.



Click again to highlight the closed box.



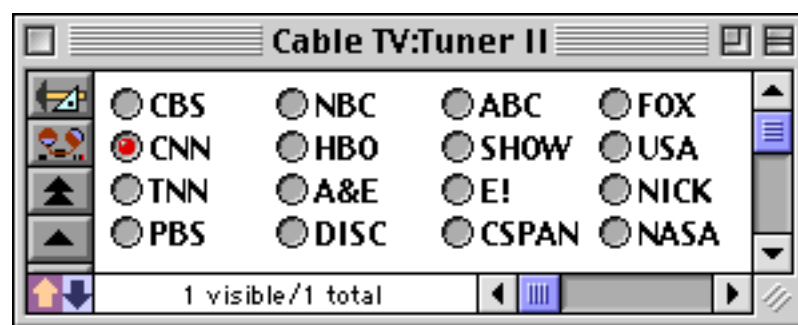
And release to switch back to an open box.



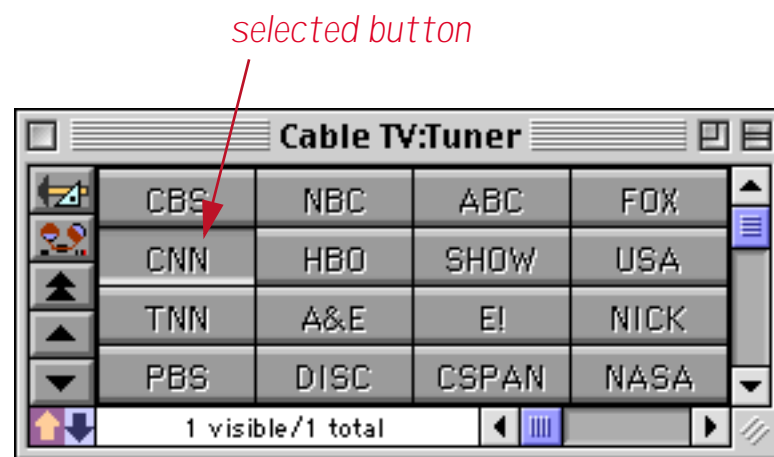
This is just one example. You can use this tool to make any size and shape of data button you like.

Sticky Push Button SuperObjects™

Sticky Push Buttons look like Push Buttons (see “[Super Object Push Button](#)” on page 823), but they operate like Data Buttons (see “[Data Button SuperObjects™](#)” on page 838). Instead of popping back up when you release the mouse, a Sticky Push Button stays pushed in like a checkbox or radio button. Like Data Buttons, Sticky Push Buttons are associated with a field or variable, and can be used separately or in groups (radio sticky push buttons, anyone?) To illustrate, here is a collection of options created as regular data buttons.



Here is the exact same example, but created with Sticky Push Buttons. Notice that CNN is also selected in this group of buttons.



These two examples operate exactly the same — the only difference is their appearance.

The Sticky Push Button configuration dialog is a combination of the options for Push Buttons and Data Buttons.

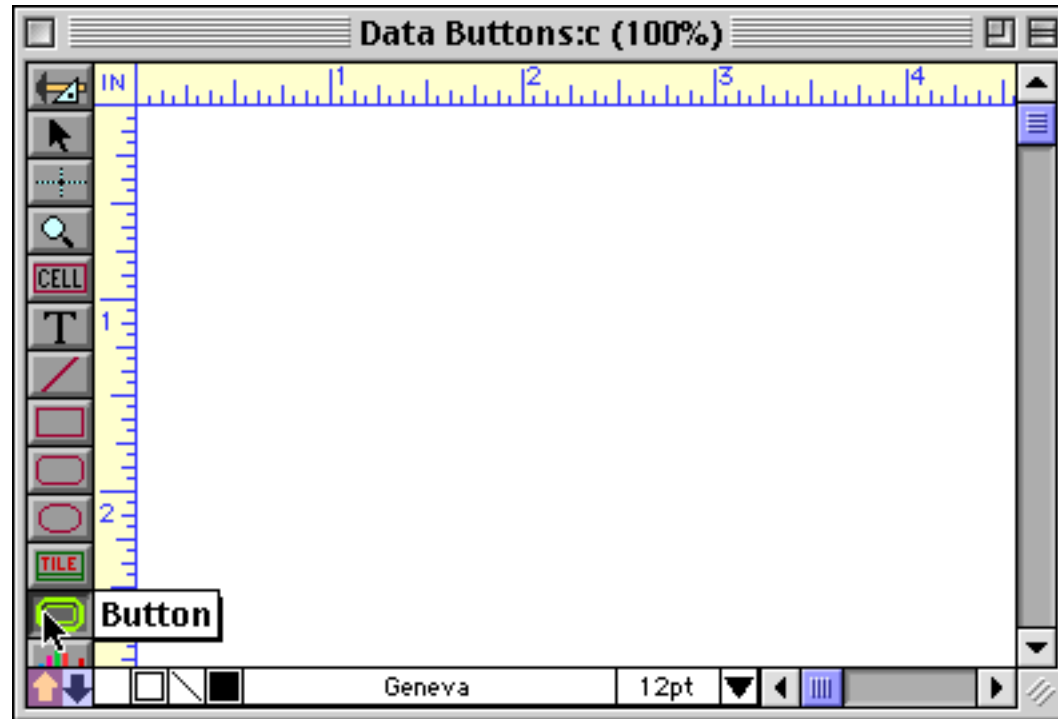
The image shows a configuration dialog titled "Sticky Push Button SuperObject". It is organized into two main columns: "Data" on the left and "Style" on the right. The "Data" column contains sections for "Data" (with radio buttons for "Field" and "Variable", and a text field containing "Channel"), "Title" (with a text field containing "CNN" and a counter "0"), "Value" (with a text field, checkboxes for "Allow Multiple Values", "Radio button", and "Procedure:", and a dropdown menu), and "Color" (with checkboxes for "Title", "Border", "Fill", and "Highlight"). The "Style" column includes a list of button styles (Rectangle, Rounded Rectangle, Circle, 3D Rectangle, 3D Rounded Rectangle, 3D Circle, and Beveled Rectangle, with "Beveled Rectangle" selected) and an "Options" section (with checkboxes for "3D Title", "Hide Title", and "Click/Release", with "3D Title" and "Click/Release" selected). At the bottom are "Cancel" and "OK" buttons.

See "[Super Object Push Button](#)" on page 823 and "[Data Button SuperObjects™](#)" on page 838 for the details of these options.

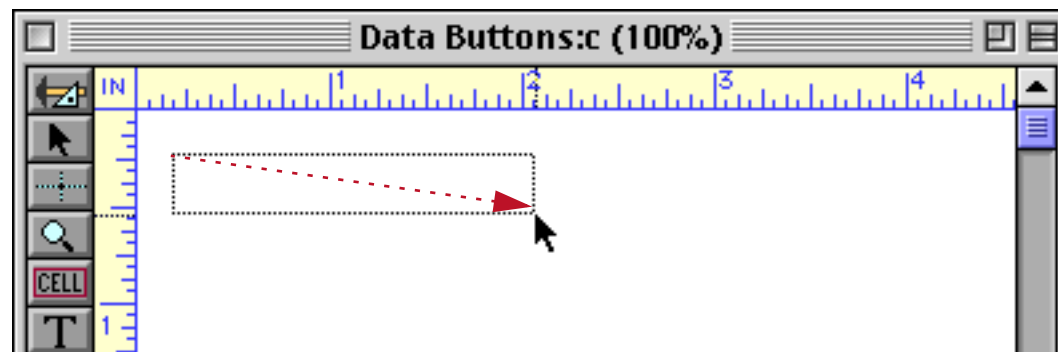
"Classic" Checkbox and Radio Buttons

In addition to the SuperObject data buttons described previously Panorama also has a "classic" Button object. When SuperObject buttons were added as part of Panorama 3.0, "classic" button objects were retained for compatibility with older databases. We recommend that you use SuperObject buttons for new applications. SuperObject buttons have many more style options, and can also work with variables as well as fields.

To create a checkbox or radio button, use the **Button** tool, which is part of the standard tool palette.



Drag the mouse across the form to specify the size and location of the button.



When you release the mouse, the Button Dialog appears. This dialog allows you to select the type of button you want to create.

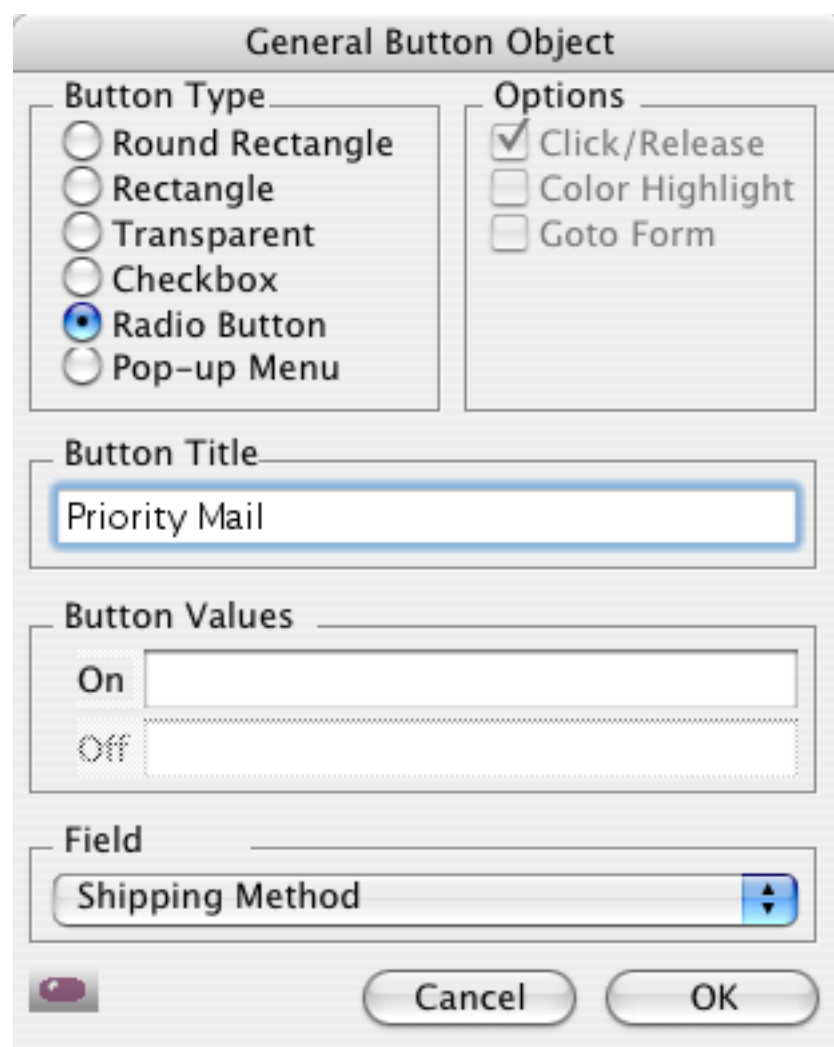
The image shows a dialog box titled "General Button Object". It contains the following elements:

- Button Type:** A group of radio buttons with the following options: Round Rectangle, Rectangle, Transparent, **Checkbox** (selected), Radio Button, and Pop-up Menu.
- Options:** A group of checkboxes with the following options: **Click/Release** (checked), Color Highlight, and Goto Form.
- Button Title:** A text input field containing the text "Taxable?".
- Button Values:** Two text input fields labeled "On" and "Off".
- Field:** A dropdown menu showing "TaxStatus".
- Buttons:** "Cancel" and "OK" buttons at the bottom.

Click on the type of button you want to create (**checkbox** or **radio button**) and select the field from the **Field** pop-up menu. Next type in the button title. This is the text that will be displayed as part of the button.

Use a checkbox button when a field has only two possible values (especially if one of these values is an empty cell). You can specify both on and off values. If you leave the on value blank Panorama will use the button title as the on value.

Use radio buttons when a field has three or more possible states. Each radio button has an on value. If you leave the on value blank, the button title will be used as the on value.



If you need to change a checkbox or radio button, click on it with the **Button** tool to make the Button configuration dialog re-appear. You can also double click on the button with the **Pointer** tool selected.

An easy way to create a group of radio buttons is to create the first button and then make copies of the button. See "[Creating a Group of Radio Buttons](#)" on page 841 for an example of this technique.

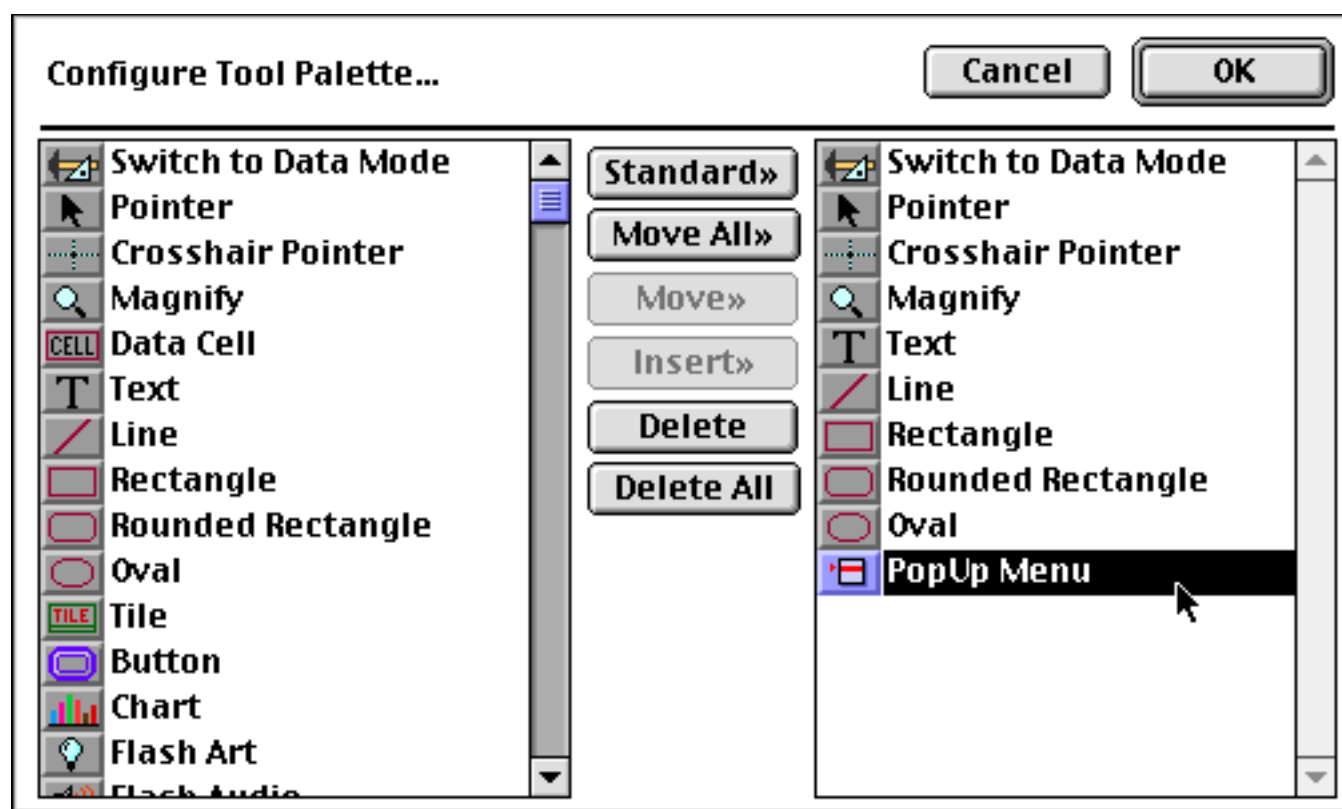
Pop-Up Menus

Radio buttons work well when there are only a few options. When you get past a dozen or so options, you'll probably want to use a pop-up menu or scrolling list (see "[List SuperObjects](#)" on page 879) instead. Panorama has three methods for creating pop-up menus: 1) Pop-Up Menu SuperObjects, 2) "Classic" buttons, and 3) Procedures (programming).

Pop-Up Menu SuperObjects™

The easiest and most flexible way to create a pop-up menu is with the Pop-Up Menu SuperObject™. A Pop-Up Menu SuperObject™ may be associated with any field or global variable. When the user makes a selection from the pop-up menu, the corresponding field or variable is automatically updated with the new value. Because the list of menu choices is calculated with a formula, the pop-up menu can change on the fly if necessary. You can also choose the menu font, color, and style (multi-column or scrolling).

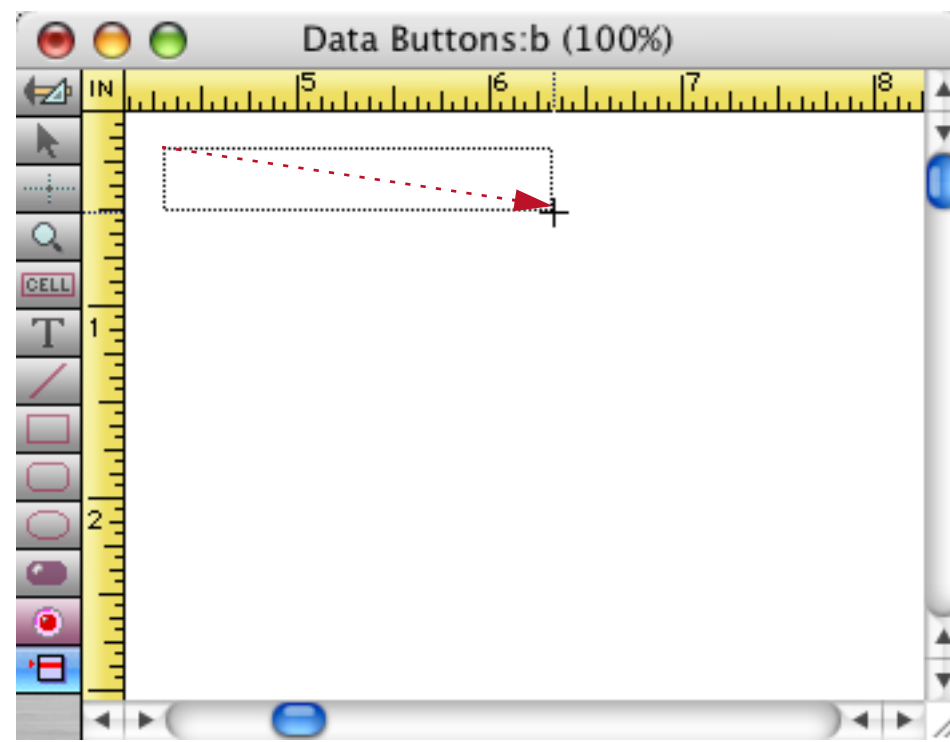
The Pop-Up Menu SuperObject tool is not in the default tool palette, so you'll need to move the use the Tool Palette dialog to add this tool to the palette if it is not already there (see "[Customizing the Tool Palette](#)" on page 497).



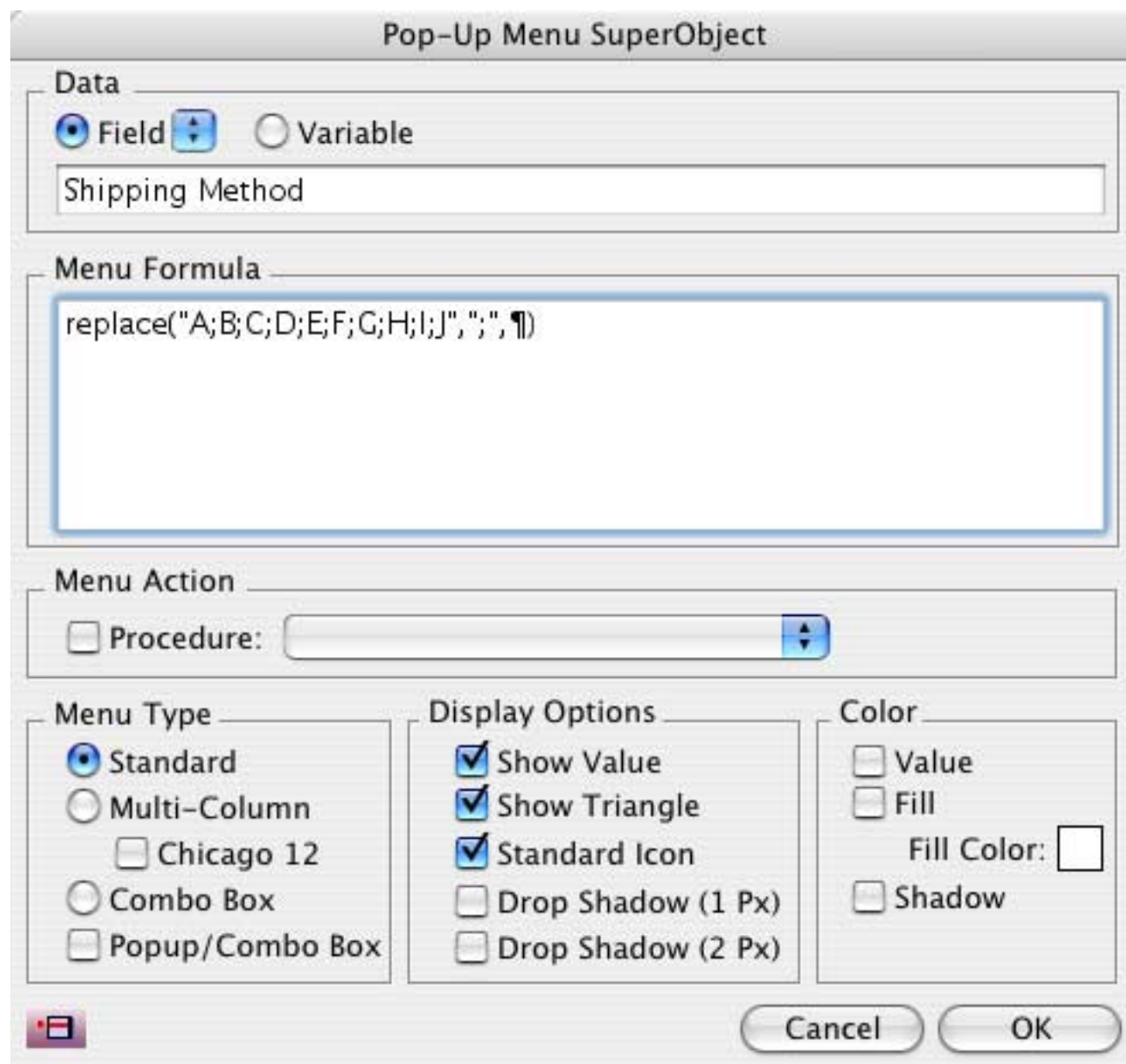
Now that the tool is added to the palette you can select it.



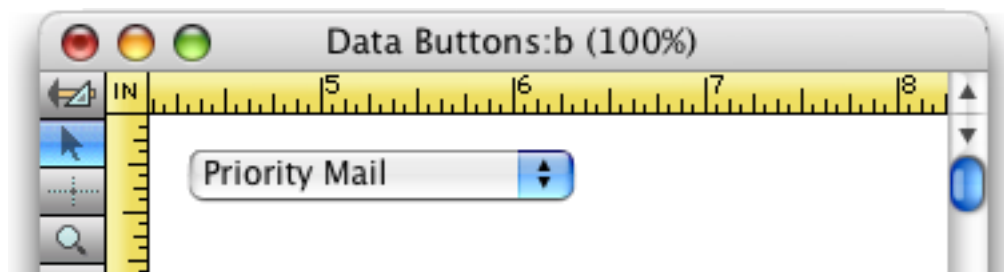
Once the tool is selected, drag the mouse across the form in the location where you want to create the pop-up menu object.



When you release the mouse, the Super Pop-Up Menu configuration dialog will appear.



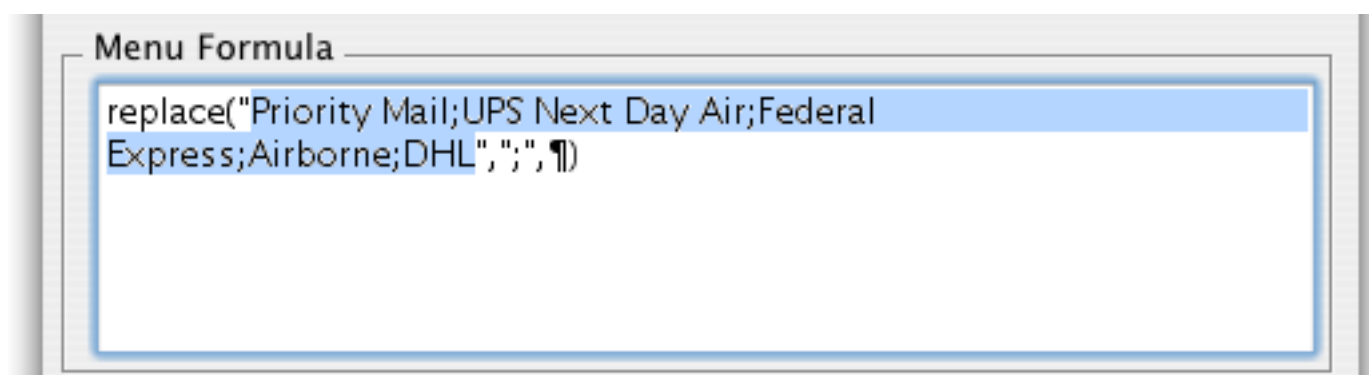
At a minimum you must select a field or variable for the pop-up menu. This field or variable will hold the result of the pop-up selection. Press **OK** to create the pop-up menu object.



Switch to Data Access Mode to try out the pop-up menu.



The default pop-up menu contains ten items, A thru J. To change the items in the menu, switch back to Graphics Mode, select the **Pointer** tool and double click on the pop-up object. In the formula, replace **A;B;C;D;E;F;G;H;I;J** with the actual items you want to appear in the menu, with each item separated by a semicolon.



Press **OK** and switch back to Data Access Mode to try out the revised pop-up menu.



The Pop-Up Menu Formula

The menu formula calculates the list of menu choices. Each menu choice is on a separate line, separated by a carriage return.

When the user presses on the pop-up menu button, Panorama takes the formula, calculates it, splits the result into individual menu items (one per line), then displays the pop-up menu and allows the user to make a selection. All this happens in the blink of an eye as the user clicks on the button.

So much for theory, now let's take a look at some real world menu formulas. Suppose you want to create a pop-up menu with three choices: **Gold**, **Silver** and **Bronze**. Keeping in mind that the ¶ symbol represents a carriage return, the most basic formula that can be used to create this menu would be:

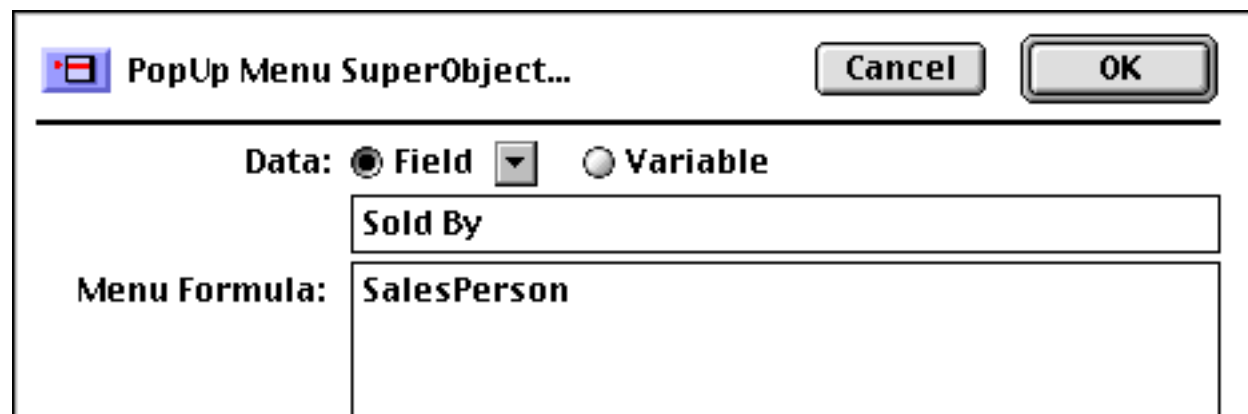
```
"Gold"+¶+"Silver"+¶+"Bronze"
```

To type the ¶ symbol, press **Option-7** on the Macintosh and **Alt-0182** on the PC. If your menu has a lot of items it can be kind of a pain to type in this symbol over and over again. We can use Panorama's **replace()** function to make this formula easier to type (see "**REPLACE()**" on page 5665 of the *Panorama Reference*). In the formula below, the **replace()** function will change the semicolons into carriage returns. This allows you to type the menu choices with just a semicolon in between them. This option is so useful that Panorama preloads this function into the menu formula.

```
replace("Gold;Silver;Bronze",";",¶)
```

The real power of the menu formula is unleashed when you use a variable or field in the formula. Since the variable or field may be changed at any time with a procedure (or even with standard data entry), the pop-up menu can change at any time. For example, suppose you want to create a pop-up menu of salespeople in your company. Simply create a **permanent variable** (see "**Long Life Variables**" on page 249 of *Formulas & Pro-*

graming) named **SalesPeople** and fill it with the name of each salesperson in your company on a separate line. You can create a preferences form that allows you to edit the list using a Text Editor SuperObject™ (see “[Text Editor SuperObject](#)” on page 639). When you create the pop-up menu, the menu formula will simply be **SalesPeople**.



Each time you click on the pop-up menu it will display the current list of salespeople.



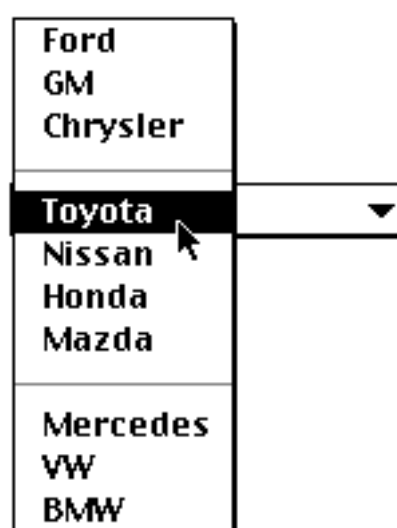
This list can be edited at any time simply by editing the permanent variable.

Dividing Lines in the Menu

To put a dividing line in a pop-up menu, simply create a line with the entry (-. The formula below produces a menu of car manufacturers in three sections: US, Japanese, and German.

```
replace("Ford;GM;Chrysler;(-;Toyota;Nissan;Honda;Mazda;(-;Mercedes;VW;BMW", ";", ",")
```

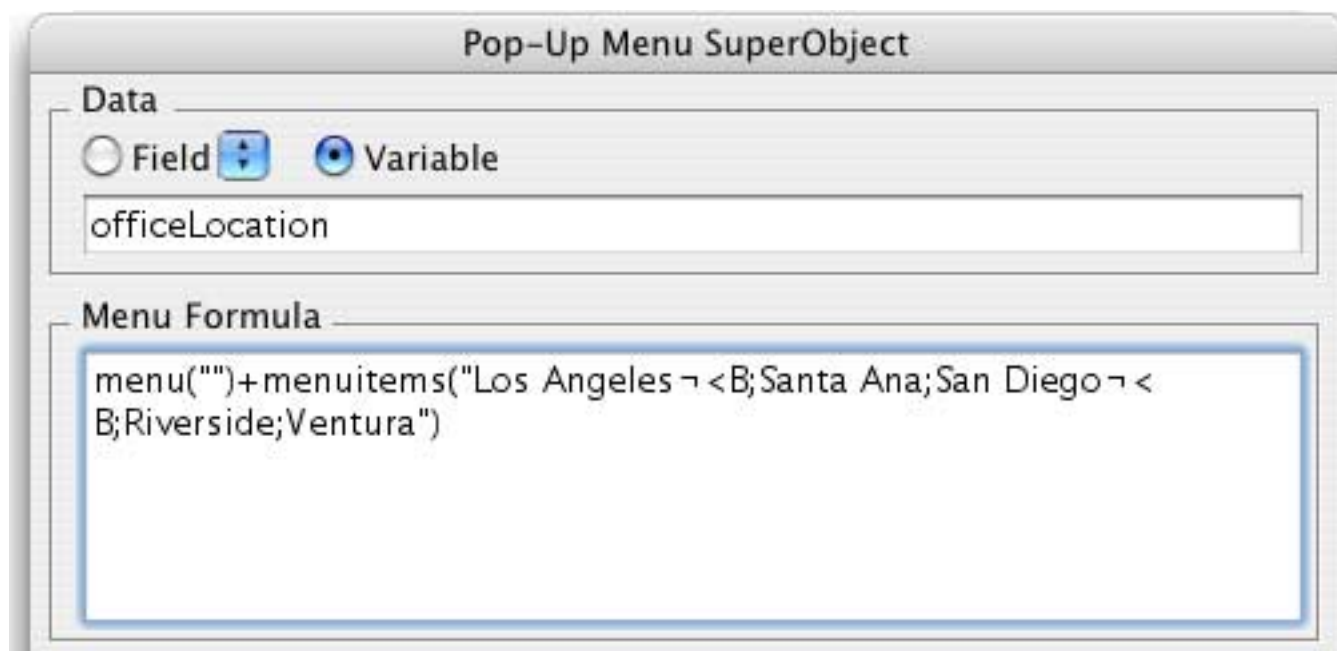
The dividing lines are not enabled in the menu, so the user cannot accidentally choose a dividing line.



“Live” Pop-Up Menu Formulas

If the first character of the text generated by the Pop-Up Menu formula is (, Panorama will build the pop-up menu using the same rules used for “Live Menus” in the menu bar (see “[Live Menus](#)” on page 362 of *Formulas & Programming*). This means that pop-up menus can include checked items, dimmed items, bold, italic, and even submenus!

If you are defining a normal pop-up menu with no submenus, the formula should start with the `menu()` function (see “[The FileMenuBar Statement](#)” on page 362 of *Formulas & Programming*). Since this is a pop-up menu you can leave the name blank if you want to. A pop-up menu with the formula shown below could be used to select Southern California field offices, with the main offices in bold.



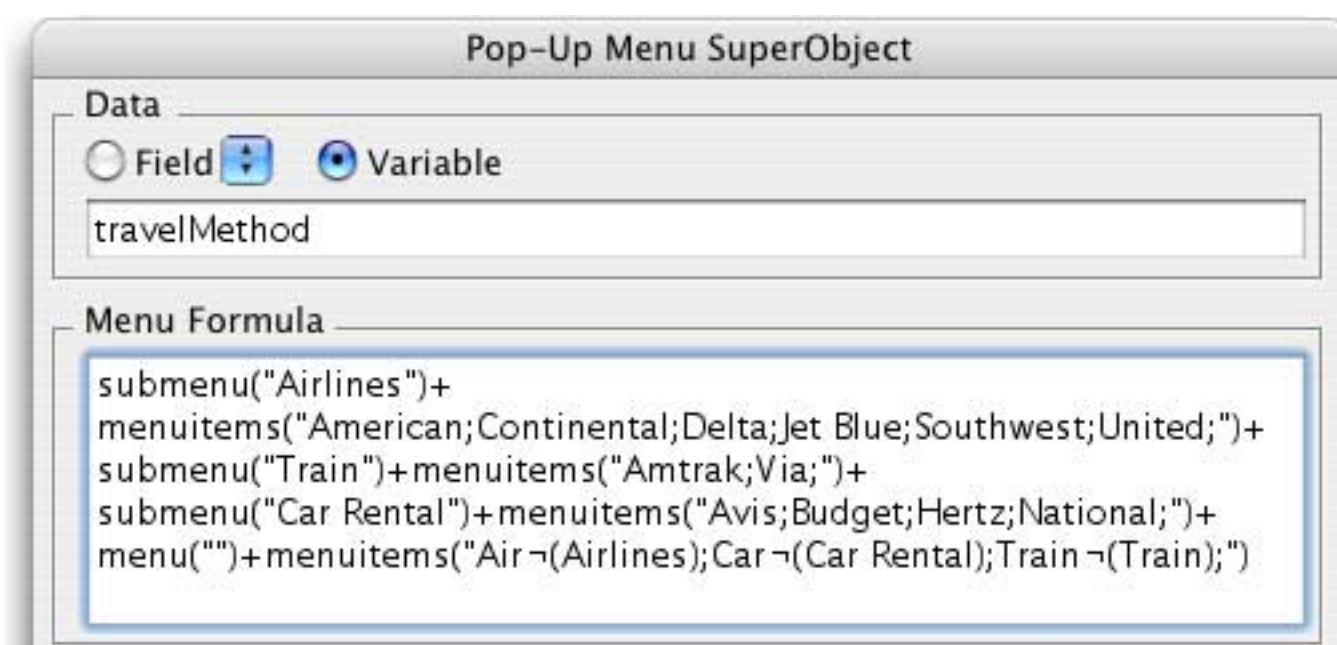
Here's what this pop-up menu will look like in use. The main offices, Los Angeles and San Diego, appear in bold.



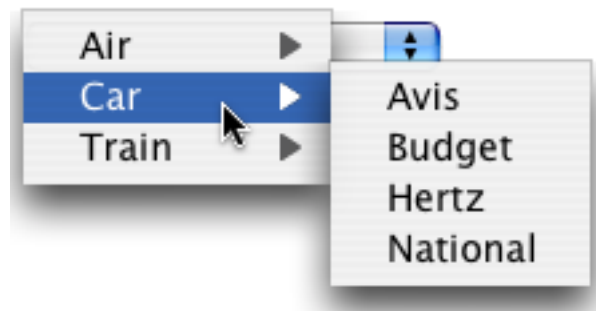
For more details on using the `menuitems()` function, see “[Live Menus](#)” on page 362 of *Formulas & Programming*.

Pop Up Submenus

To create pop-up submenus the submenu must be defined first. The last menu defined is the actual main pop-up menu. This main menu doesn't need a name, it can simply be blank, but the submenus must have names. Here is an example of a formula for creating a pop-up menu with three submenus:



When you click on this pop-up menu button the main menu will spawn three submenus, like this:



For more information on setting up live submenus see “[Submenus \(Hierarchical Menus\)](#)” on page 370 of *Formulas & Programming*.

When an item in a submenu is selected, the pop-up SuperObject will simply be filled in with the menu item. For example, if **Jet Blue** is selected, the value in the field or variable will be “**Jet Blue**”. There is no way to determine that this was selected from the **Airlines** menu.

Live menus can also be used with the PopUp statement (see “[Creating a Pop-Up Menu with a Procedure](#)” on page 874 of *Formulas & Programming*). When used with this statement the resulting trigger will include both the menu title and the menu name, for example “**Airlines.Jet Blue**”. The **PopUpByNumber** statement is similar, the trigger value will be: “**Airlines.4**”. See the **Programming Reference** wizard for detailed information on these statements.

Pop-Up Menu Options

The SuperObject™ Pop-Up menu dialog is divided into several sections.

Pop-Up Menu SuperObject

Data

Field Variable

A

Menu Formula

```
replace("A;B;C;D;E;F;G;H;I;J",";",",")
```

Menu Action

Procedure: [Dropdown]

Menu Type

Standard

Multi-Column

Chicago 12

Combo Box

Popup/Combo Box

Display Options

Show Value

Show Triangle

Standard Icon

Drop Shadow (1 Px)

Drop Shadow (2 Px)

Color

Value

Fill

Fill Color: [Color Picker]

Shadow

Cancel OK

Data

This section of the dialog specifies the field or variable associated with the pop-up menu. Type the name of the field or variable into the box (or select the field name from the pop-up menu next to the **Field** radio button). If the pop-up menu is associated with a variable that has not been created with a procedure, Panorama will automatically create a global variable with this name whenever the form containing this object appears. This global variable can be used in formulas and procedure just like any other global variable.

Menu Formula

This section specifies the choices listed in the actual pop-up menu. Instead of simply typing in the choices, you enter a formula that calculates the choices. (Since the formula can use a field or variable, this allows the menu to be changed easily on the fly.) The formula must calculate the list of choices, with each choice separated by a carriage return. (Remember, a carriage return can be represented by the ¶ symbol (Mac: **Option-7**/PC: **Alt-0182**) in a formula.) See “[The Pop-Up Menu Formula](#)” on page 863 for a detailed discussion of the menu formula.

Menu Type

The Pop-Up Menu SuperObject™ supports three menu styles: **Standard**, **Multi-Column** and **Combo Box**. **Standard** menus look and operate just like all of the other menus on your system. **Multi-Column** menus will automatically split the menu into an array of two or more columns. This allows dozens or even hundreds of options to appear on the screen at one time.

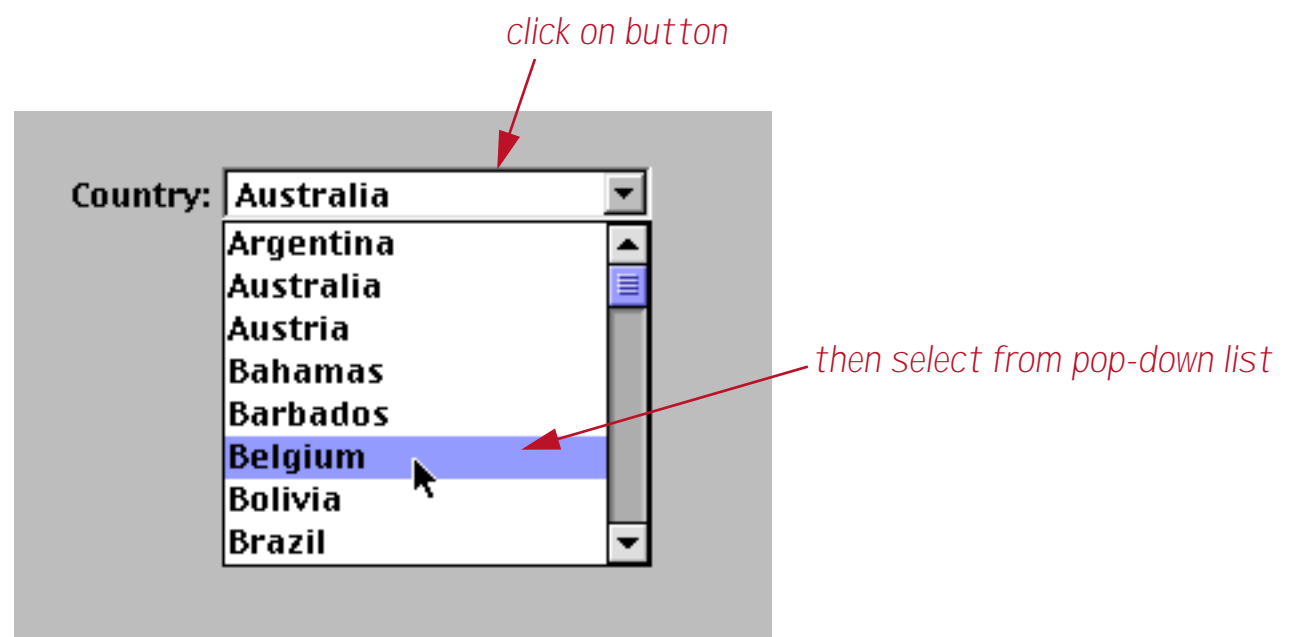


The **Chicago 12** option forces the actual pop-up menu to always appear in the standard system font, no matter what font and size are selected for the pop-up object. (On early Macintosh systems this font was Chicago 12, hence the name of the option.) If you leave this option off, the menu can be displayed in any font and size. Just select the Pop-Up Menu SuperObject™ and choose the font and size the normal way. (Note: If you select the **Scrolling** option, this option is ignored and the menu will always be displayed in Chicago 12 point type. Only **Multi-Column** menus can be displayed in non-standard sizes.)

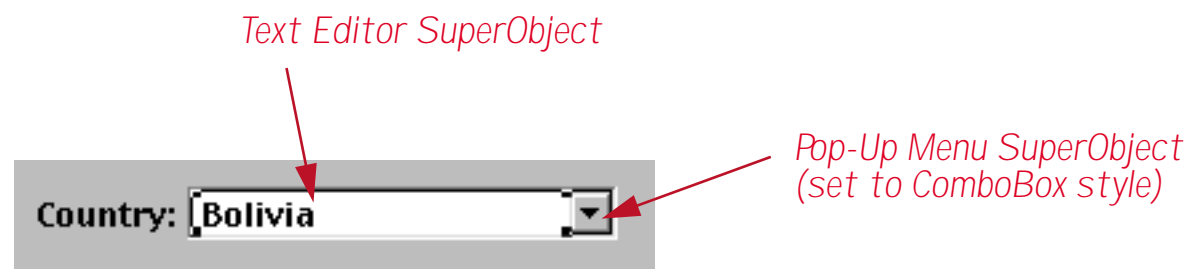
The **ComboBox** option makes the pop-up button look and operate like a Microsoft Windows style Combo Box. This type of button looks best on a gray or colored background.



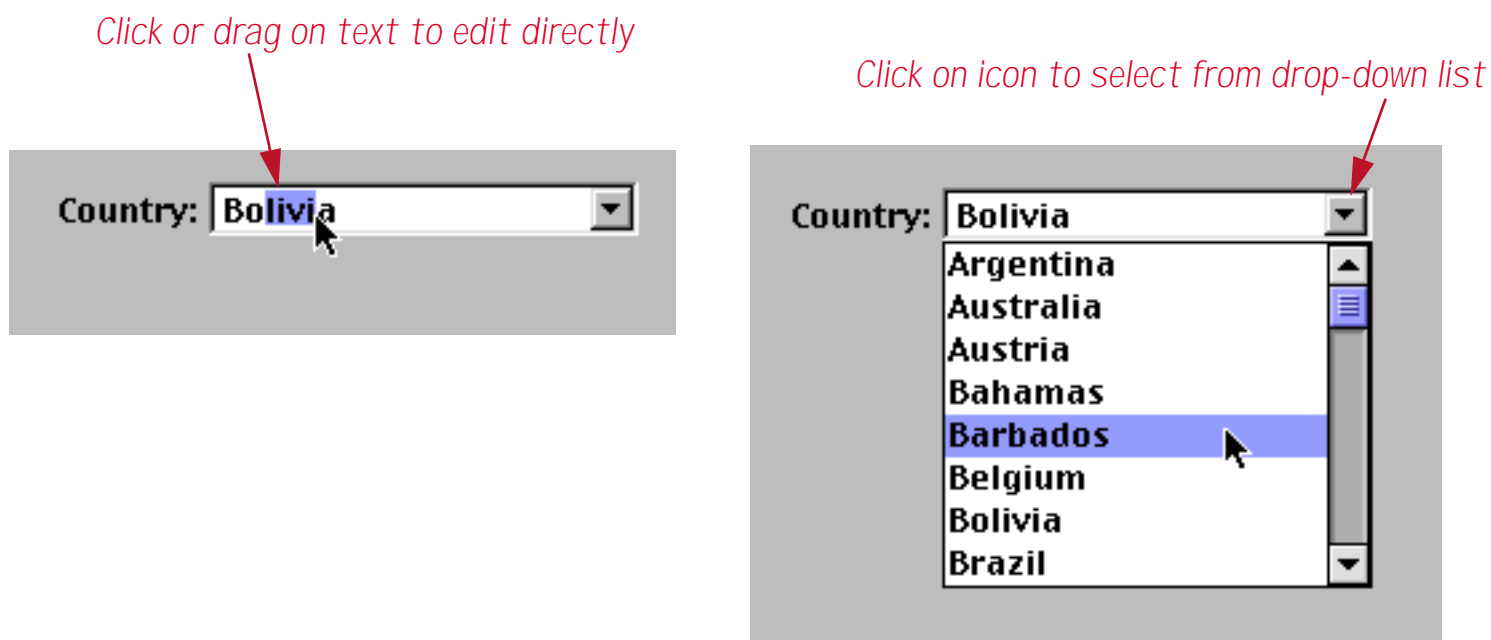
To use a Combo Box, simply click anywhere on the box to make a pop-down list appear, then make your choice from the list.



If you would like to be able to directly edit the value (the Country in this case) you can superimpose a Text Editor SuperObject (see “[Text Editor SuperObject](#)” on page 639) on top of the Combo Box.



Now you have a choice of editing methods. You can click or drag on the text to edit it directly, or click on the Combo Box icon to pop-down the list of choices.

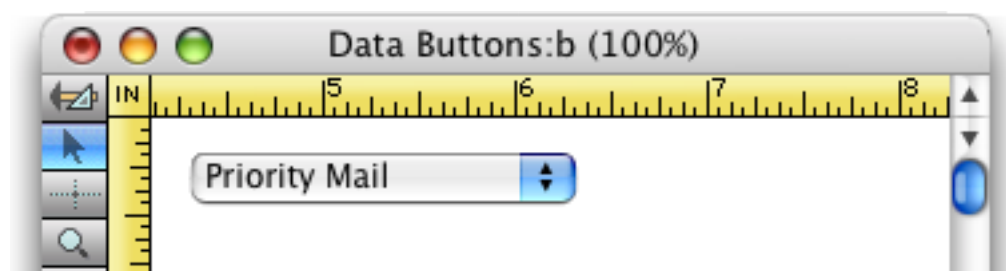


The final menu type is **Mac Pop-Up/Windows Combo Box**. The appearance and operation of this type depends on the type of computer being used. On a Macintosh computer this button will look and operate like a standard pop-up menu. On a Windows computer this button will look and operate like a Combo Box.

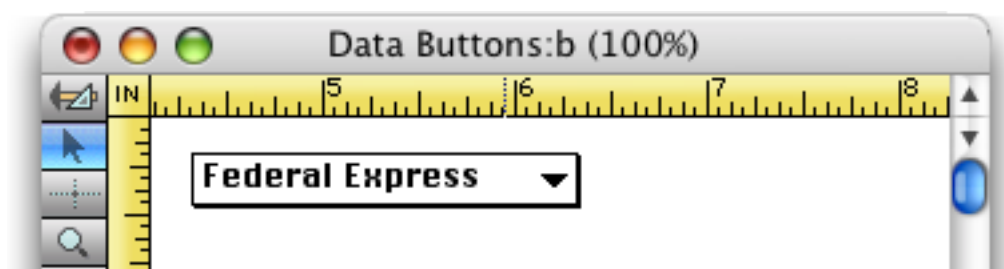
Display Options

This section controls how the pop-up menu object is displayed on the form. If the **Show Value** checkbox is turned on, the field or variable associated with the pop-up menu will be displayed in the object. If the **Show Triangle** option is on, a small downward pointing triangle will appear on the right side of the pop-up menu.

You can only pick one of the last three options (or none). The **Standard Icon** option is the default choice, and displays the standard pop-up menu graphics for the operating system being used. Here is the standard icon for Mac OS X.



If the **Drop Shadow** checkbox is on, Panorama will automatically draw a drop shadow around the edges of the pop-up menu object. You can select whether the drop shadow is 1 or 2 pixels deep.



If you turn off all three of these options the pop-up menu will be invisible. This can be handy if you want the pop-up menu to appear with a custom image.

Color

This section controls the color of various parts of the pop-up menu object on the form. If an option is checked, that part will appear in the color specified for the object, otherwise that part will appear in black. (To specify a color for an object, use the Graphics menu or the Graphic Control Strip (see “[Color](#)” on page 526). Note: The color options only apply to multi-column menus - they are ignored for **Standard** menus.)

Value: If this option is checked, the field or variable value will appear in color, otherwise it will appear in black. (This option is ignored if the Show Value option is not turned on.)

Fill: If this option is checked, the pop-up menu object will be filled with the object color. You should not check both this option and the Value option (this makes the value invisible).

Shadow: If this option is checked, the border and drop shadow will appear in color, otherwise it will appear in black. (This option is ignored if the Drop Shadow option is not turned on.)

Fill Color: This pop-up menu controls the background color of the pop-up menu itself. Usually, the background color is white, but you can switch it to any color you want. (Note: This option only works with Multi-Column menus. Scrolling menus always have a white background.)

Procedure

The pop-up menu can optionally trigger a procedure whenever the user makes a selection. This procedure can perform additional tasks that need to be done when a selection is made.

Since the pop-up menu updates a field or variable, the procedure can simply read the menu choice from that field or variable. In addition, the procedure can find out the name of the menu object using the `info("trigger")` function. The `info("trigger")` function will return the name of the pop-up menu object itself (if any). If you haven't assigned a name to this object, the default is `custom` (see “[Object Type/Object Name](#)” on page 533 to learn how to assign a name to an object). If you want to have several pop-up menus that trigger the same procedure, you should give each a unique name so that the procedure can tell which pop-up menu was used.

Pop-Up Menu Font, Size and Dimensions

If you are using the **Standard** menu style Panorama will use the standard menu font and size for the operating system in use (for example 13 point Lucinda Grande on Mac OS X).

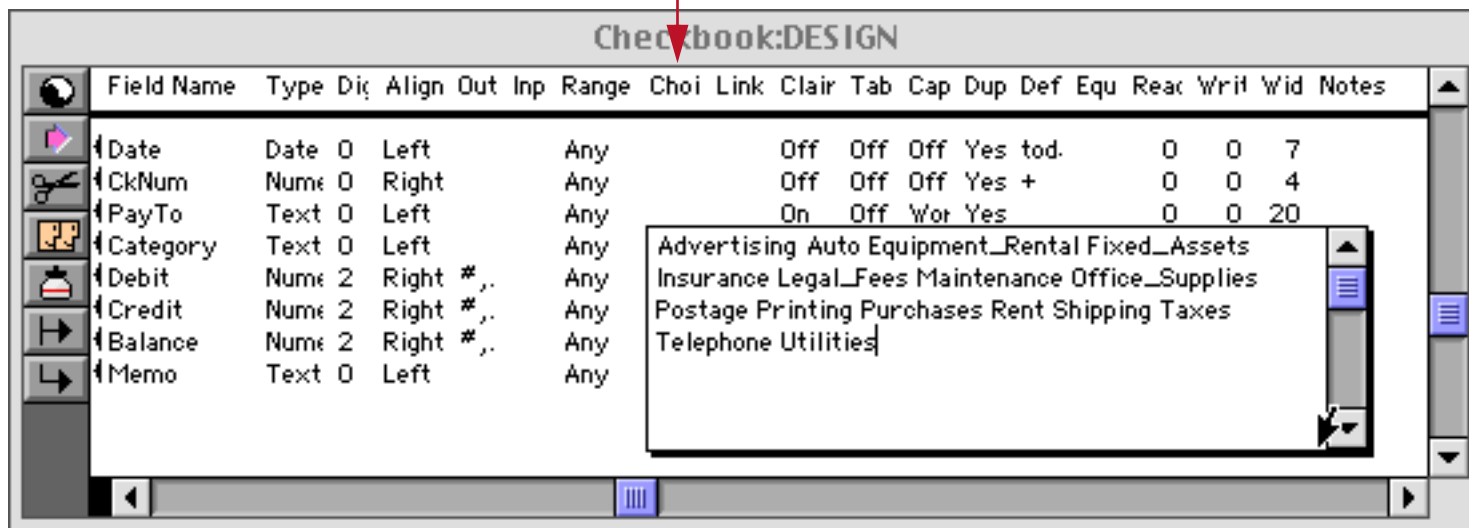
If you are using a **Multi-Column** menu you can use other fonts and point sizes. To get the most options in the least space, use Geneva 9 point (Alpine 9 point on a PC). For the best performance, you should stick to simple fonts and sizes that you actually have available in your system file (these sizes appear outlined in the Size menu.)

“Classic” Pop-Up Buttons

In addition to the SuperObject pop-up menu buttons described previously Panorama also has a “classic” Button object that can also create pop-up menus, although with very limited options. When SuperObject buttons were added as part of Panorama 3.0, “classic” button objects were retained for compatibility with older databases. We recommend that you use SuperObject buttons for new applications. SuperObject buttons have many more style options, and can also work with variables as well as fields.

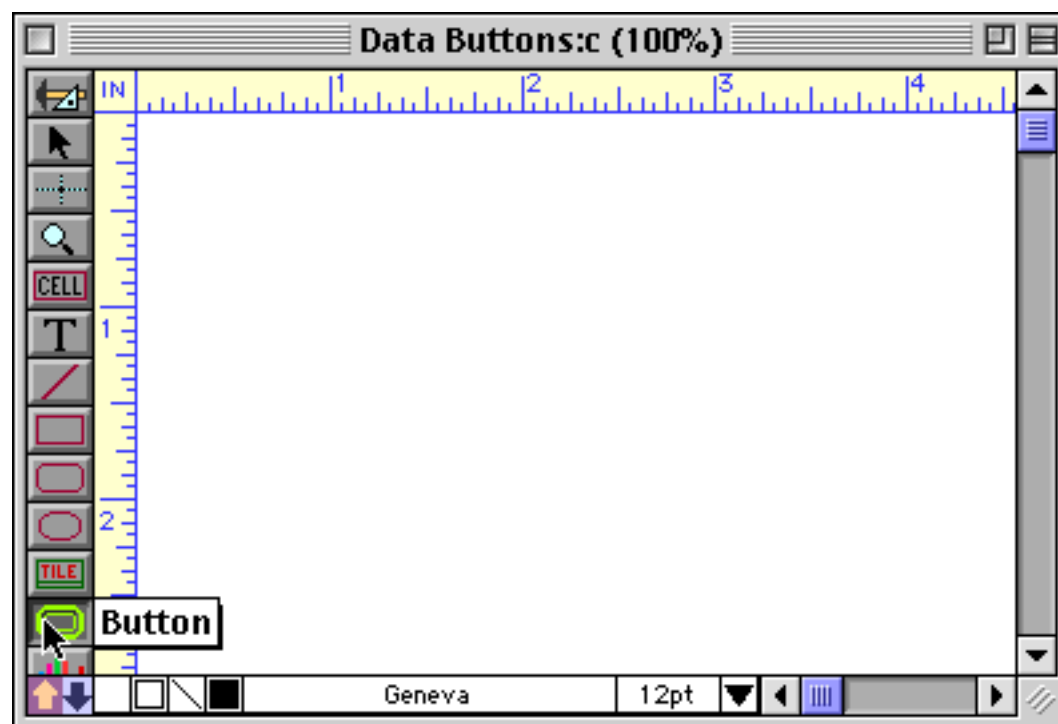
The “classic” pop-up menu button uses the [Choices](#) field of the design sheet as the template for the menu. The items in the menu will be the same as the choices in the list.

*type the list of choices into the **Choices** column*

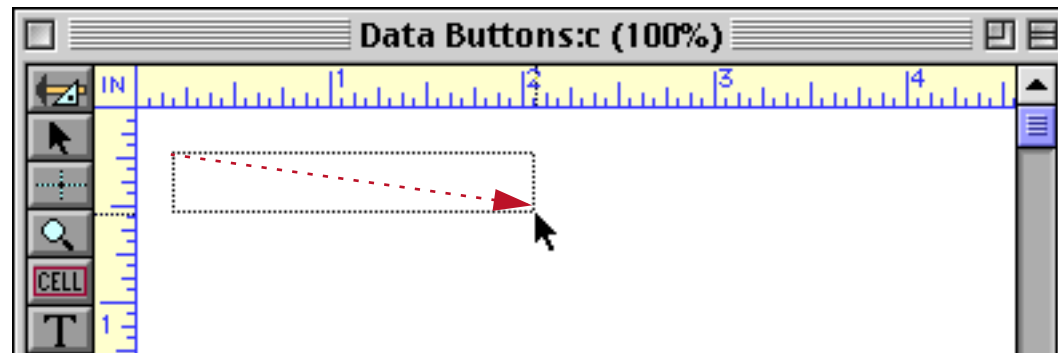


See “[Choices](#)” on page 259 to learn more about setting up a list of choices.

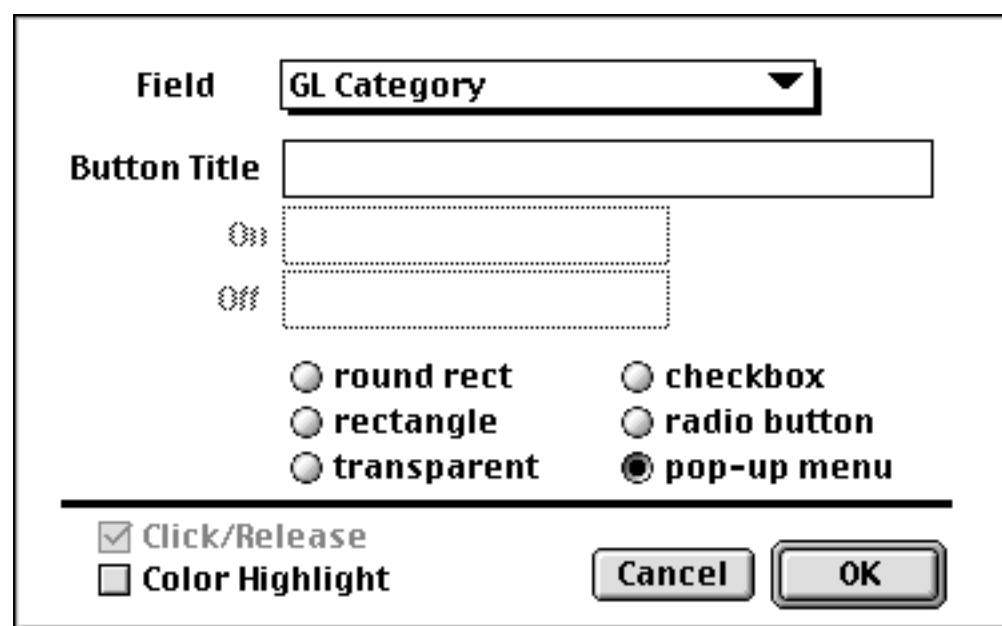
To create a classic pop-up menu button, use the **Button** tool, which is part of the standard tool palette.



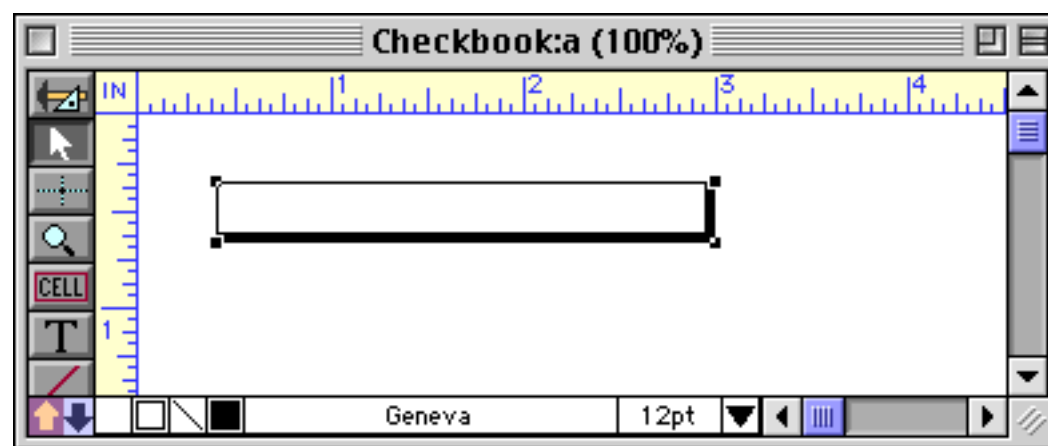
Drag the mouse across the form to specify the size and location of the button.



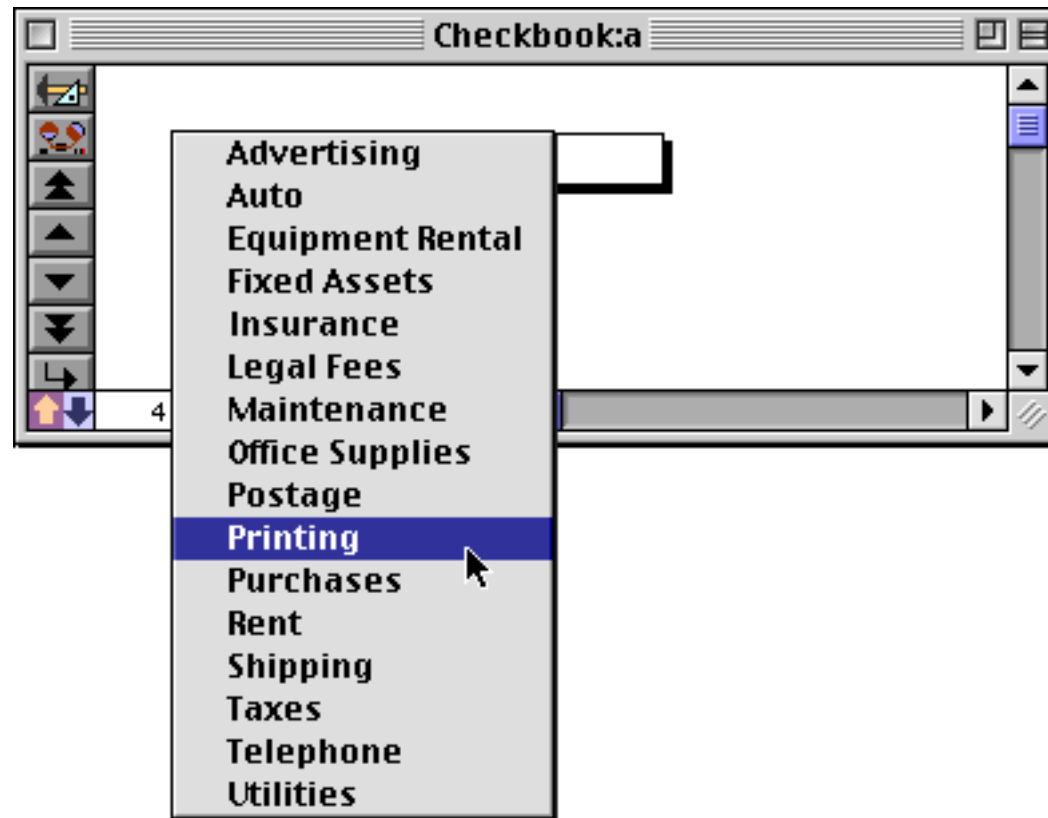
When you release the mouse, the Button Dialog appears. This dialog allows you to select the type of button you want to create.



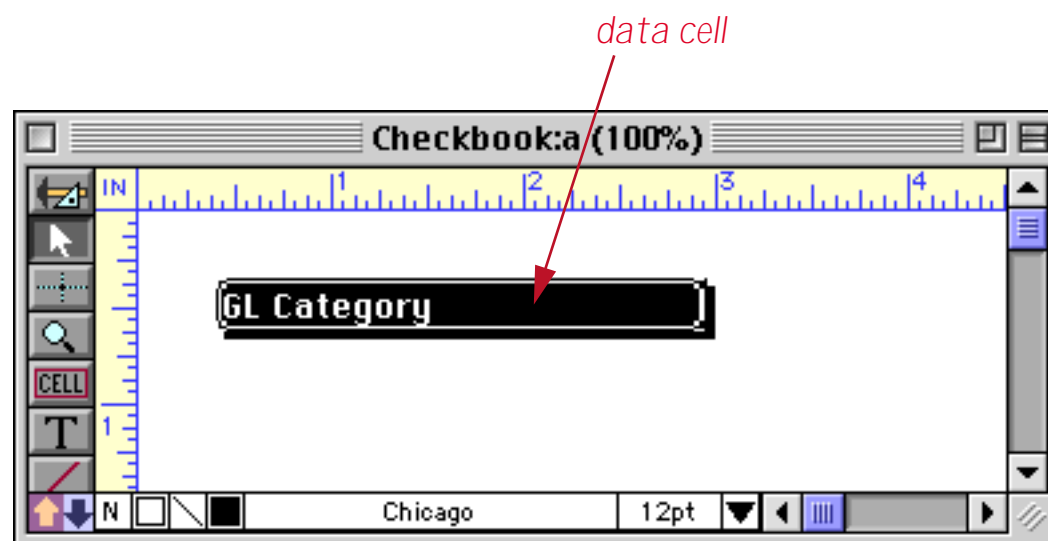
Click on the type of button you want to create (**pop-up menu**) and select the field from the **Field** pop-up menu. You can type in a button title, but it will be ignored. Press **OK** to create the button.



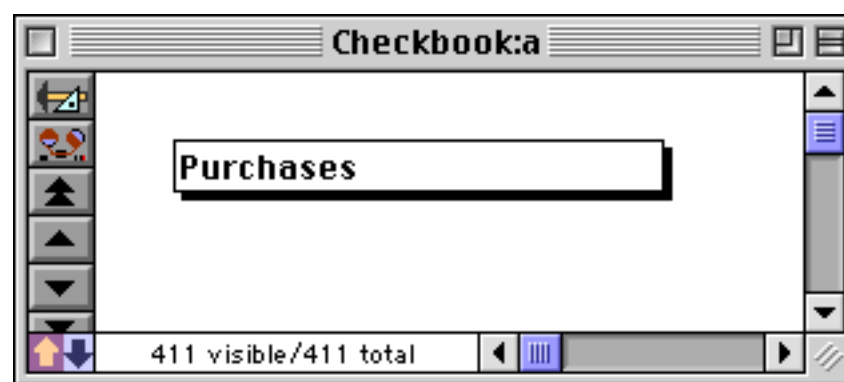
Switch to Data Access Mode to try out the pop-up menu.



Unlike SuperObject Pop-Up Menu buttons, the “classic” button does not display the contents of the field. If you want the field contents to appear you must add a Data Cell (see “[Working with Data Cell Objects](#)” on page 635), Auto-Wrap Text (see “[Displaying Data in Auto-Wrap Text](#)” on page 595), or Text Display SuperObject (see “[Text Display SuperObjects™](#)” on page 608) to the form. In this example we have added a Data Cell.



If the Data Cell remains on top of the button it will interfere with clicking on the button. Use the **Send to Back** command to move the Data Cell behind the button (see “[Changing the Stacking Order](#)” on page 569). Switching to Data Access Mode you can now see the field value displayed “inside” the pop-up menu.



If this all seems like a lot of extra tedious work, it is. To avoid all this extra work use the SuperObject Pop-Up Menu instead.

Creating a Pop-Up Menu with a Procedure

In very rare cases you may need even more flexibility than the Pop-Up Menu SuperObject™ provides. For even more control over your pop-up menu, you can create a pop-up menu with a standard button and with a procedure. In this procedure, you can control what happens both before and after the pop-up menu appears.

Here's how it works. First, the user clicks on a standard transparent button (see "[Transparent Push Buttons](#)" on page 832). This button must have the **Click/Release** option turned off, so that the procedure is triggered immediately when the mouse is clicked. Now the procedure determines the location of the mouse and makes the pop-up menu appear at that location. The procedure pauses while the user makes a selection from the menu. Once the selection is made, the procedure takes the choice and stores it or processes it. These are the same steps taken by the Pop-Up Menu SuperObject™, but in this case each step must be programmed by you as part of the procedure.

Where Will the Pop-Up Menu Appear?

The first step the procedure must take is to figure out where the pop-up menu will appear on the screen. You must determine two numbers: 1) The distance (in pixels) from the top of the current window and, 2) The distance from the left edge of the current window. (These two numbers are known as the local co-ordinates, because they are relative to the current (local) window. Global co-ordinates are relative to the entire screen.)

The usual choice is to make the pop-up menu appear in the same spot as the button that was pressed. You can find out the local co-ordinates of this button using the `GetLocalButton` statement. You must create four local variables to hold the four dimensions of the button (top, left, height, width).

```
local PopTop,PopLeft,ButtonHeight,ButtonWidth
GetLocalButton PopTop,PopLeft,ButtonHeight,ButtonWidth
```

For the purposes of a pop-up menu, you're only interested in the first two values, `PopTop` and `PopLeft`.

Another option is to make the pop-up menu appear right over the current mouse location. This is especially useful if you have created a large button where the current mouse location may be quite far from the upper left corner of the button. To find out the current mouse location in local co-ordinates, use the `GetLocalClick` statement.

```
local PopTop,PopLeft
GetLocalClick PopTop,PopLeft
```

(Note: The names of the local variables are not important. You can use any names you want as long as you are consistent within the procedure.)

The PopUp Statement

Once the procedure has calculated where the pop-up menu should appear, it should use the `PopUp` statement to actually make the menu appear and allow the user to make a choice from the menu. This statement has five parameters:

```
PopUp MenuFormula, V, H, CurrentValue, NewValue
```

The first parameter, `MenuFormula`, is a formula that specifies the menu items that should appear in the pop-up menu. This formula uses exactly the same rules that the Pop-Up Menu SuperObject menu formula uses, so you should refer to that section (see "[Menu Formula](#)" on page 867) for details on setting up the menu formula.

Experts only: The MenuFormula can also be used to specify that a custom menu you have created with ResEdit should be used for the pop-up menu. In this case the menu formula should result in a single number which corresponds to the resource number for the custom menu. Using this technique, you can create a pop-up menu with icons, or a pop-up menu that uses a non-standard menu proc (perhaps a non-text menu). (You can also use a Live Menu Formula, see below.)

The next two parameters, **V** and **H**, specify the location where the pop-up menu should appear. Use the values you calculated with the **GetLocalButton** or **GetLocalClick** command.

The final two parameters, **CurrentValue** and **NewValue**, tie the pop-up menu to a field or variable. **CurrentValue** specifies what item in the menu should be highlighted when the menu first appears. After the user makes a choice, the result will be placed in **NewValue**. **NewValue** must be a variable (see “[Variables](#)” on page 247 of *Formulas & Programming*). If you need this value in a field, the procedure must copy it from the variable into the field after the **PopUp** command. (However, if the user pulls the mouse off the menu and releases the mouse without making a choice, **NewValue** will be empty. In this case you probably want to leave the original field alone.)

The example below shows a simple procedure for a pop-up menu that allows a medal to be selected. This example assumes that the database contains a field named **Medal**.

```
local PopTop,PopLeft,ButtonHeight,ButtonWidth
local TempMedal
GetLocalButton PopTop,PopLeft,ButtonHeight,ButtonWidth
PopUp replace("Gold;Silver;Bronze", ";", ¶),PopTop,PopLeft,Medal,TempMedal
if TempMedal≠""
    Medal=TempMedal
endif
```

The only problem with this example is that it is a lot of work, and the same effect could be achieved in a few seconds with the Pop-Up Menu SuperObject™. Only use this technique when you need to accomplish something that absolutely cannot be done any other way (for example a non-text menu or a menu that pops up anywhere in a large area).

The PopUpButton Statement

This statement makes it simpler to produce a pop-up menu in response to clicking on a button. Unlike the **popup** statement, you don't have to specify the pop-up menu location. The menu will automatically pop-up over the button that was pressed. This statement should not be called unless the original procedure was triggered by a button. This button must have the **click/release** option turned off.

The **popupbutton** statement has three parameters:

```
PopUpButton MenuFormula, CurrentValue, NewValue
```

These three parameters are exactly the same as the corresponding parameters described above for the **popup** statement. Here is an example of how this statement can be used.

```
popupbutton "Red"+¶+"Green"+¶+"Blue", "Red", ColorChoice
```

The PopUpClick Statement

This statement makes it simpler to produce a pop-up menu in response to clicking somewhere on a form. Unlike the **popup** statement, you don't have to specify the pop-up menu location. The menu will automatically pop-up at the current mouse position. This statement is usually triggered by a transparent button that covers a large area. This button must have the **click/release** option turned off.

The **popupclick** statement has three parameters:

```
PopUpClick MenuFormula, CurrentValue, NewValue
```

These three parameters are exactly the same as the corresponding parameters described above for the `popup` statement. Here is an example of how this statement can be used.

```
popupclick "Red"+¶+"Green"+¶+"Blue", "Red", ColorChoice
```

The PopUpFieldChoices Statement

This statement can be used to automatically produce a pop-up menu containing a list of data values in a field. The statement must be triggered in response to clicking on a button. When the button is clicked, the menu will pop-up over the button. The menu will pop-up over the button that was pressed. The button must have the `click/release` option turned off.

The `popupfieldchoices` statement has three parameters:

```
PopUpClick Choice, Field, InitialChoice
```

The `Choice` parameter is the name of a field or variable. When the statement is complete this field or variable will contain the value that was chosen from the pop-up menu. If no choice was made this field or variable will contain "".

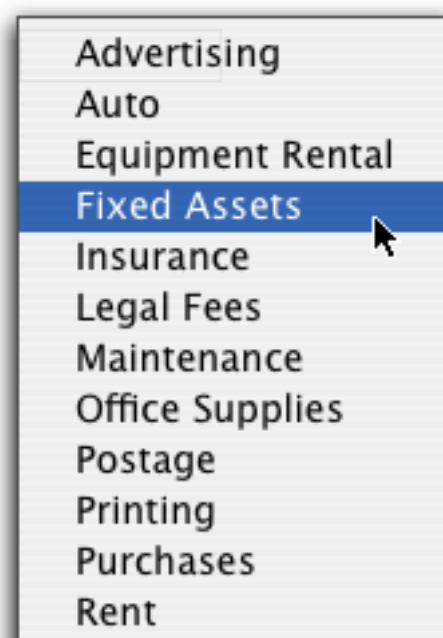
The `Field` parameter is the name of the field that contains the data to be included in the pop-up menu. Panorama will build a list of all of the current values in this field, and include those values in the menu.

The `InitialChoice` parameter is the initial value of the pop-up menu. If possible, the this value will be initially selected when the menu appears.

This procedure is in a checkbook database:

```
local newCategory
popupfieldchoices newCategory, Category, ""
```

When the button is clicked, a list of all the categories in the checkbook appears:



As new categories are added to the database they will automatically be added to the menu.

The PopUpDoubleFieldChoices Statement

This statement can be used to automatically produce a pop-up menu containing a list of data values in a field, along with submenus for data values in a second field. The statement must be triggered in response to clicking on a button. When the button is clicked, the menu will pop-up over the button. The menu will pop-up over the button that was pressed. The button must have the `click/release` option turned off.

The `popupfieldchoices` statement has four parameters:

```
PopUpClick Choice, Field, SubField, InitialChoice
```

The **Choice** parameter is the name of a field or variable. When the statement is complete this field or variable will contain the value that was chosen from the pop-up menu. If no choice was made this field or variable will contain "".

The **Field** parameter is the name of the field that contains the data to be included in the primary pop-up menu. Panorama will build a list of all of the current values in this field, and include those values in the menu.

The **SubField** parameter is the name of the field that contains the data to be included in the secondary pop-up menus. Panorama will build a list of all of the current values in this field, and include those values in the sub-menus.

The **InitialChoice** parameter is the initial value of the pop-up menu. If possible, the this value will be initially selected when the menu appears.

This procedure is in a checkbook database:

```
local newCategory
popupdoublefieldchoices newCategory,Category,PayTo,""
```

When the button is clicked, a list of all the categories in the checkbook appears, along with a submenu for each category listing the actual payees for each category:



If there are many items in the menus and submenus there may be a delay while the menus are being calculated.

The PopUpByNumber Statement

The **PopUpByNumber** statement is exactly the same as **PopUp** except for the last two parameters. The **PopUpByNumber** statement treats **CurrentValue** and **NewValue** as menu item numbers, instead of as text. For example, if the user selects the third menu item, **NewValue** will be 3. This command is useful for non-text menus, for example, a menu of color swatches.

The PopUpStyle Statement

The **PopUpStyle** statement allows you to control the font, size and color of pop-up menus created with the **PopUp** and **PopUpByNumber** statements. The **PopUpStyle** statement must be placed directly above the **PopUp** or **PopUpByNumber** statement in your procedure. This statement has four parameters:

```
PopUpStyle Font, Size, Color, BackgroundColor
```

The first parameter, **Font**, is the font you want to use for the menu, for example "Chicago" or "Geneva".

The second parameter, **Size**, is the size of the text you want to use for the menu, for example 9 or 12.

The final two parameters specify the foreground and background colors for the menu, which may be created with the **rgb()** or **hsb()** functions (see "[Colors](#)" on page 154 of *Formulas & Programming*). For a standard black on white menu you can simply use empty strings for the colors: "", "".

Here are a couple of examples of the **PopUpStyle** statement. Both set the menu to Geneva 9pt, but the second example creates a menu with red text on a dark gray background.

```
PopUpStyle "Geneva",9,"", ""
PopUp replace("Gold;Silver;Bronze", ";", ¶), PopTop, PopLeft, Medal, TempMedal

/* red text on dark gray background */
PopUpStyle "Geneva",9,rgb(65535,0,0),rgb(50000,50000,50000)
PopUp replace("Gold;Silver;Bronze", ";", ¶), PopTop, PopLeft, Medal, TempMedal
```

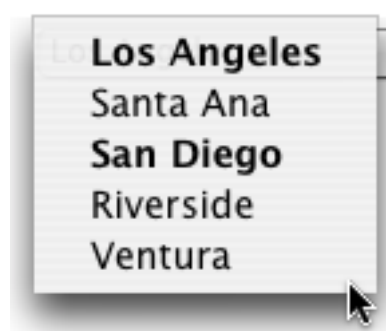
“Live” Pop-Up Menu Formulas

If the first character of the text generated by the menu formula is (, Panorama will build the pop-up menu using the same rules used for “Live Menus” in the menu bar (see "[Live Menu](#)" on page 362 of *Formulas & Programming*). This means that pop-up menus can include checked items, dimmed items, bold, italic, and even submenus!

If you are defining a normal pop-up menu with no submenus, the formula should start with the **menu()** function (see "[The FileMenuBar Statement](#)" on page 362 of *Formulas & Programming*). Since this is a pop-up menu you can leave the name blank if you want to. A pop-up menu with the formula shown below could be used to select Southern California field offices, with the main offices in bold.

```
local PopTop, PopLeft, ButtonHeight, ButtonWidth
local officeChoice
GetLocalButton PopTop, PopLeft, ButtonHeight, ButtonWidth
popup menu("")+menuitems("Los Angeles-<B;Santa Ana;San Diego-<B;Riverside;Ventura"),
    PopTop, PopLeft, "Los Angeles", officeChoice
```

Here's what this pop-up menu will look like. The main offices appear in bold (Los Angeles and San Diego).



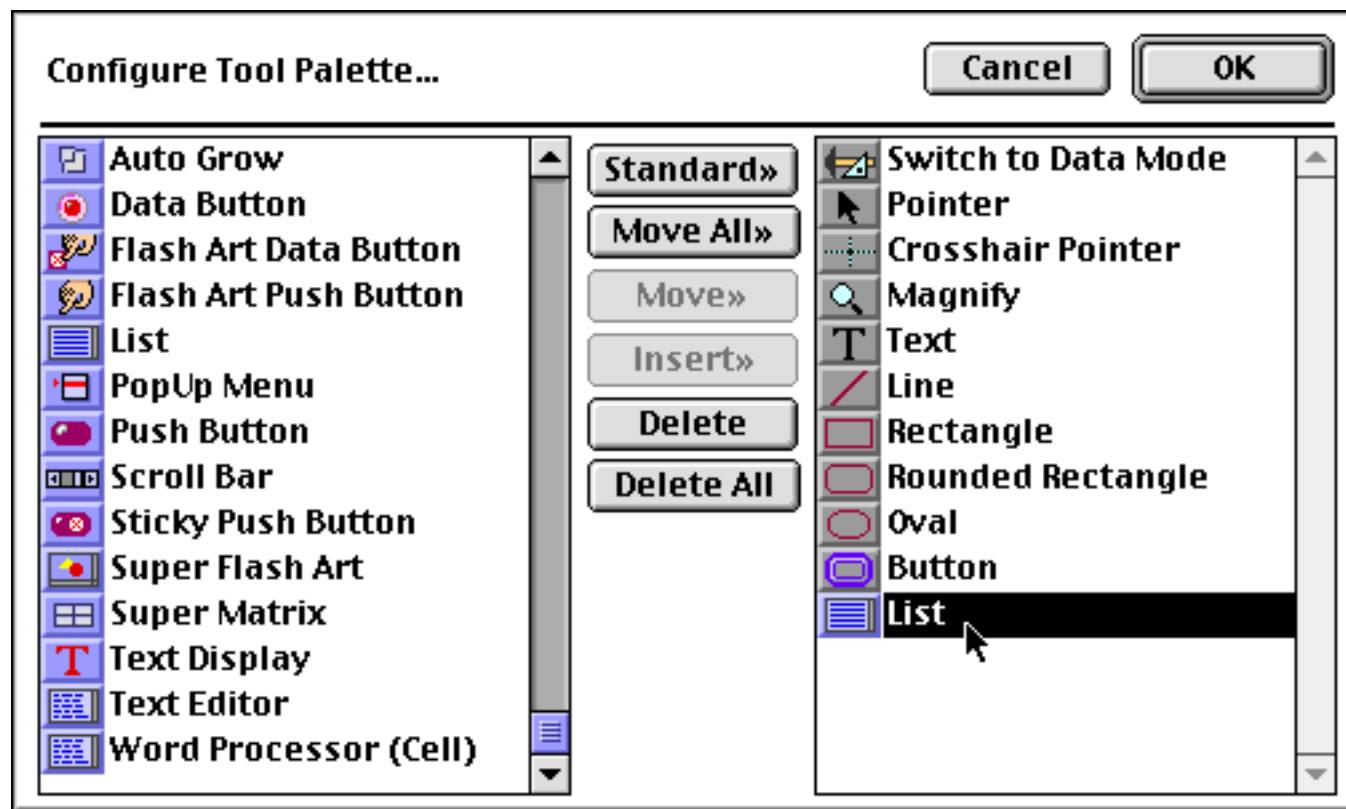
For more details on using the **menuitems()** function, see "[Live Menus](#)" on page 362 of *Formulas & Programming*.

List SuperObjects

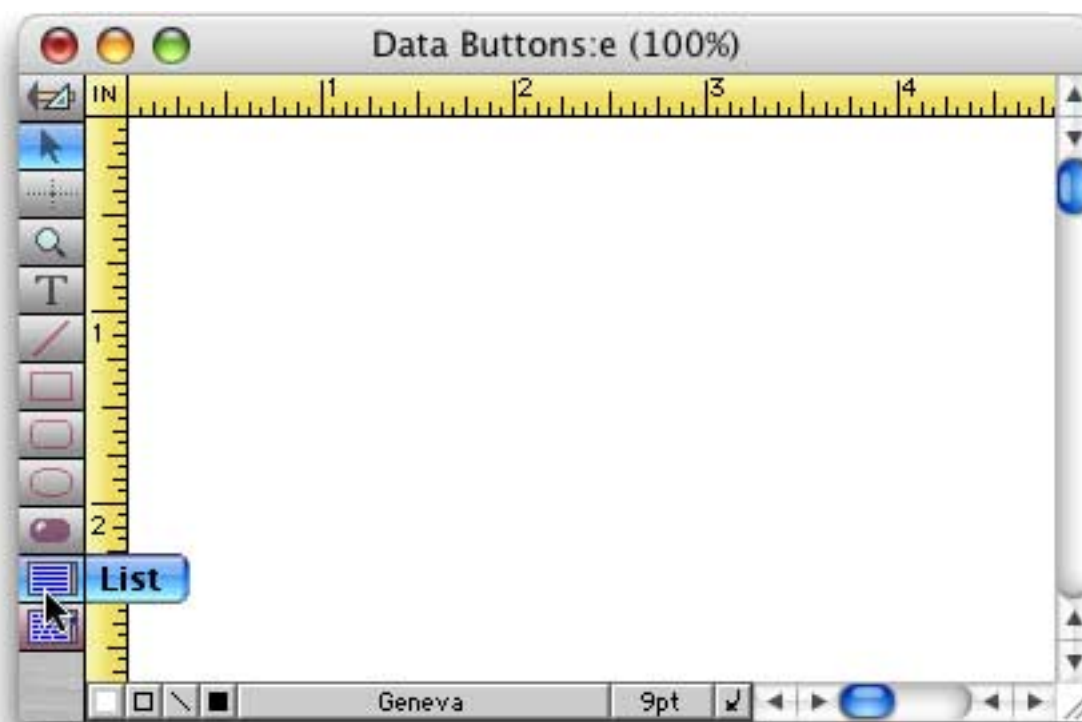
Using a List SuperObject™ it's easy to add a scrolling list to a Panorama form or dialog. This is the same type of scrolling list used in the standard Open and Save dialogs. The scrolling list allows a large amount of data to be displayed in a small area. Using the scroll bars, the user can quickly locate the items they are interested in. Each Panorama scrolling list can be filled with information from a field or variable or from an entire data-base.

Creating List SuperObjects™

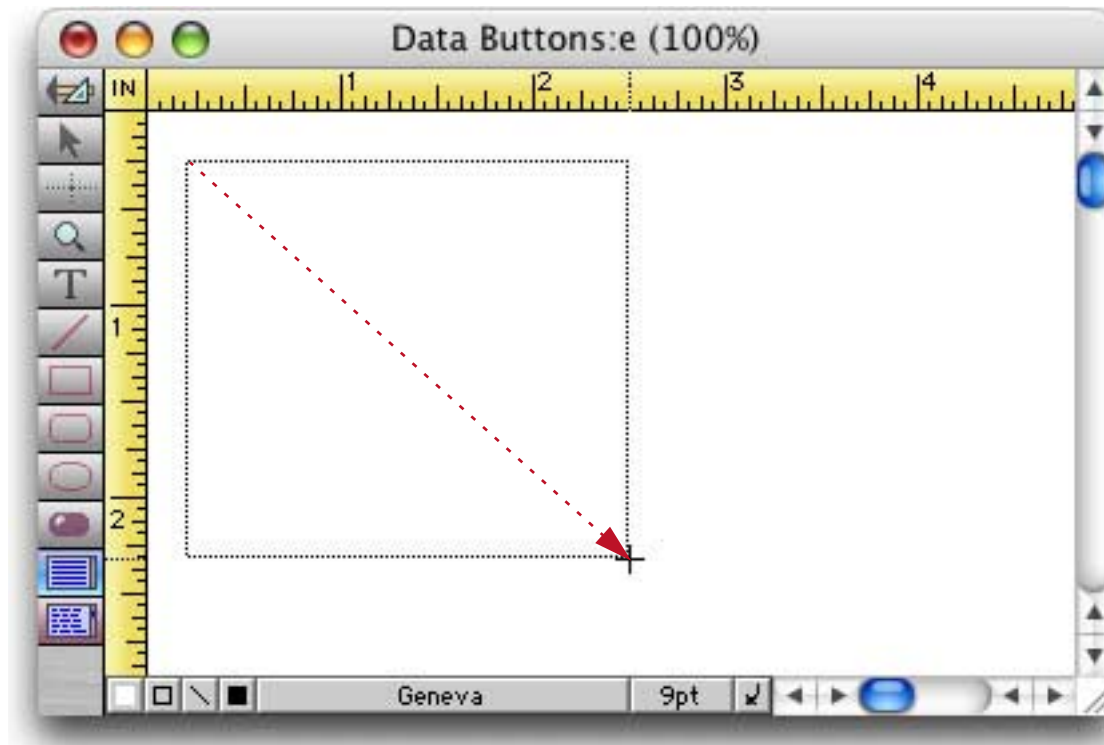
List objects are created just like any other SuperObject™. First make sure that the List tool is installed in the tool palette (see "[Customizing the Tool Palette](#)" on page 497 if it isn't.)



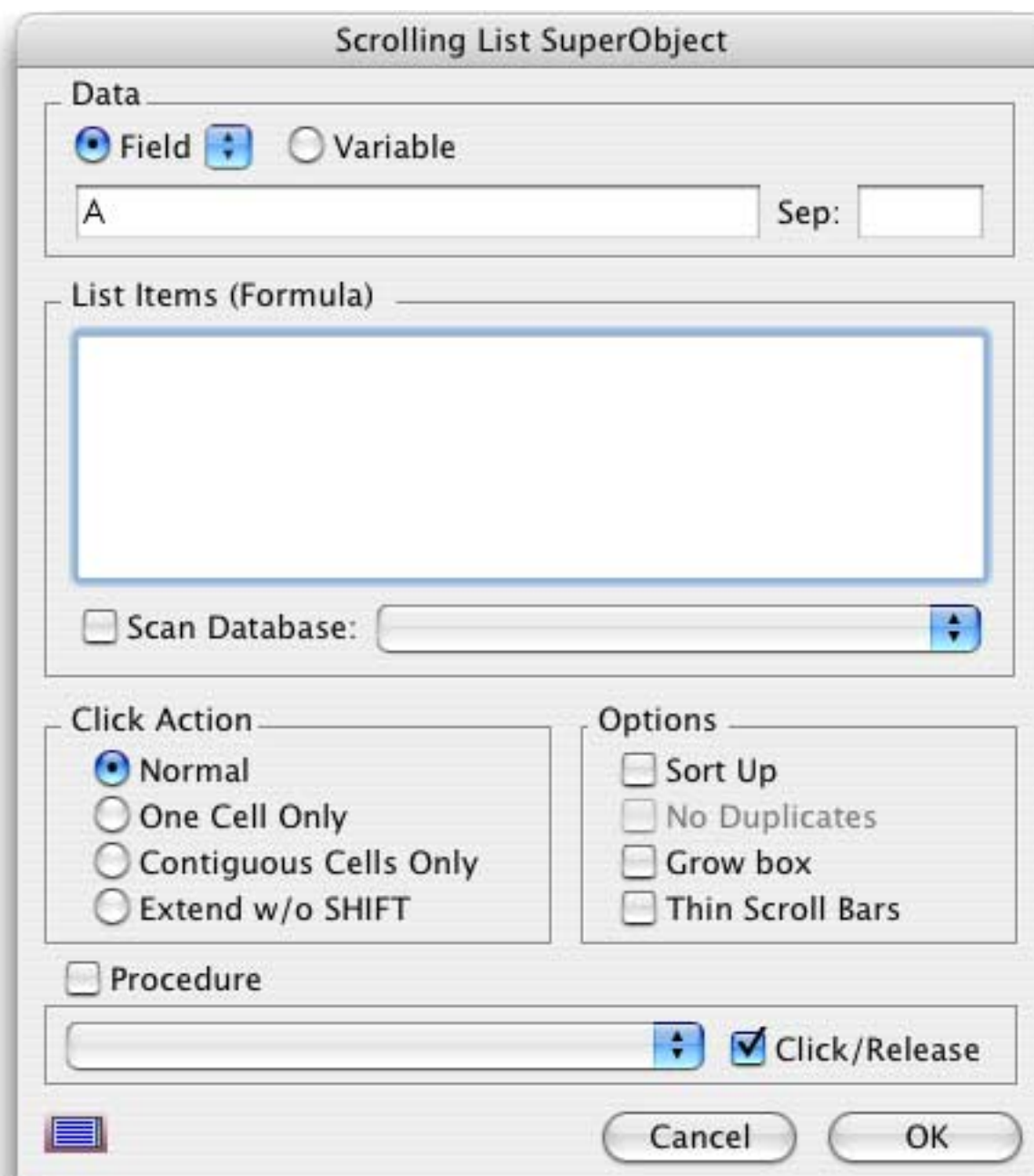
Select the List tool...



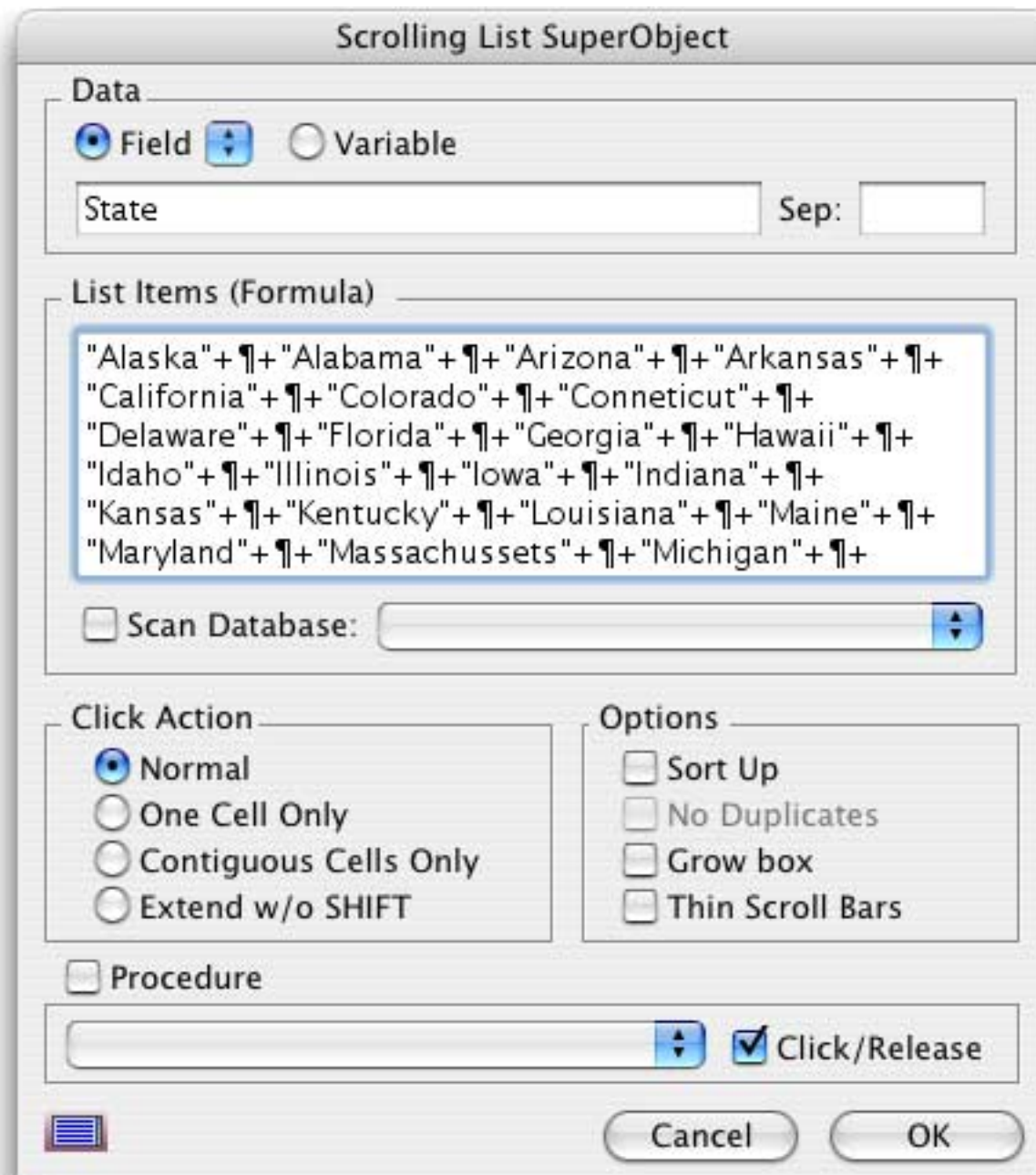
then drag the mouse across the form in the spot where you want the text to appear.



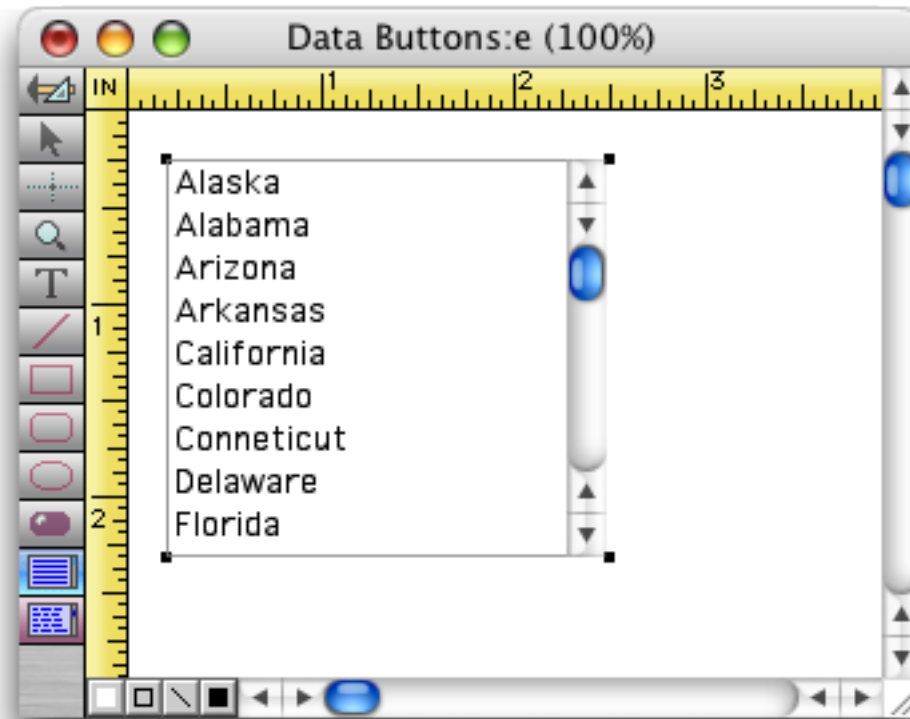
When you release the mouse, the List configuration dialog appears.



In some ways configuring a list is similar to configuring a pop-up menu. You need to specify a field or variable to hold the result, and you need to supply a formula to generate a list of items. Each item is separated by a carriage return. Here's a typical configuration to display a list of state names. (To type the ¶ symbol, press **Option-7** on the Macintosh and **Alt-0182** on the PC.)



Press OK to create the List object.

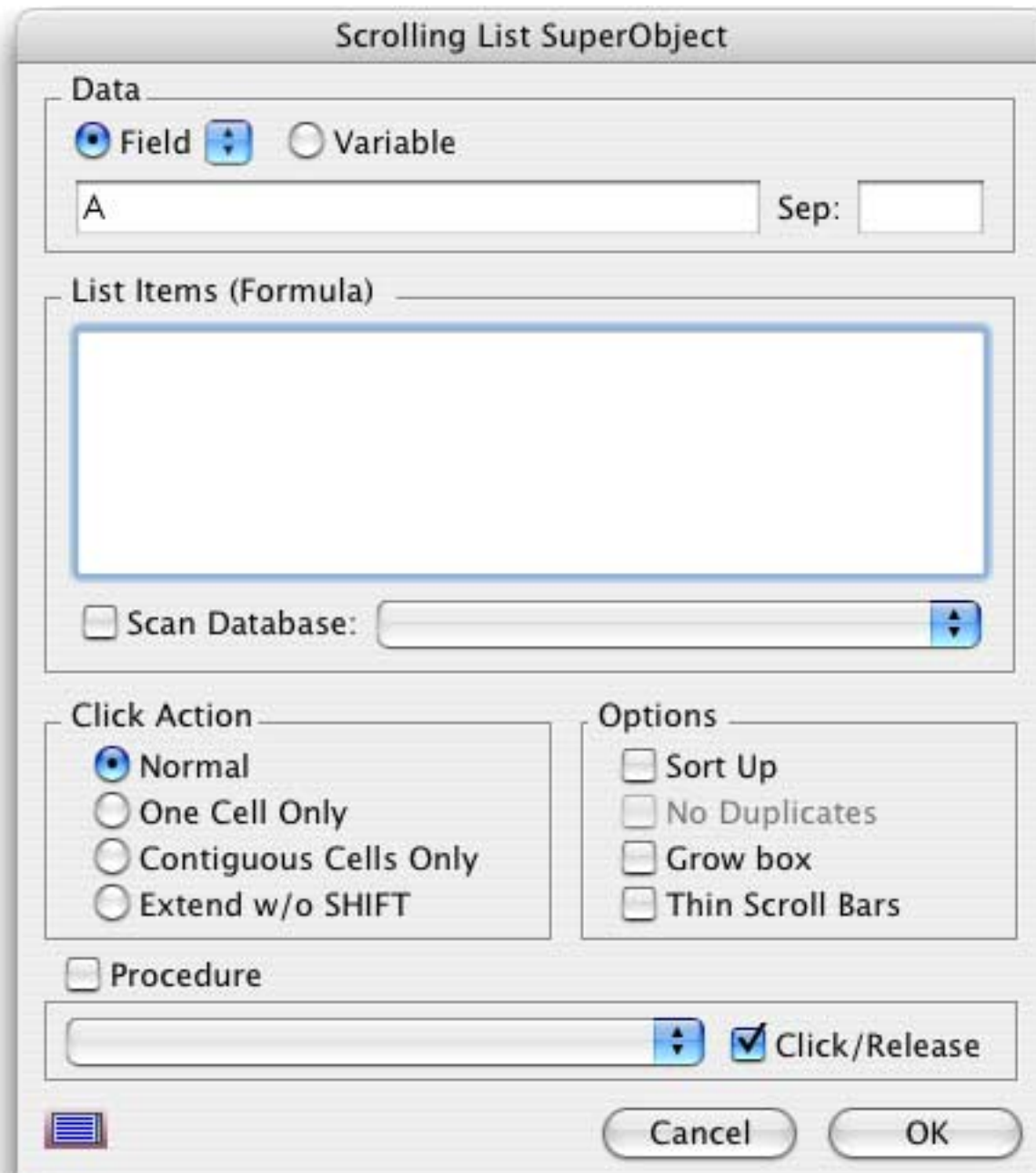


To actually use the list, switch to Data Access Mode. In this mode you can use the scroll bar to slide the contents of the list up and down, and click on list items to select them.



List Options

The SuperObject™ List dialog is divided into several sections. This dialog allows you to configure the way the text is calculated and formatted. The options in this dialog are described in the following sections.

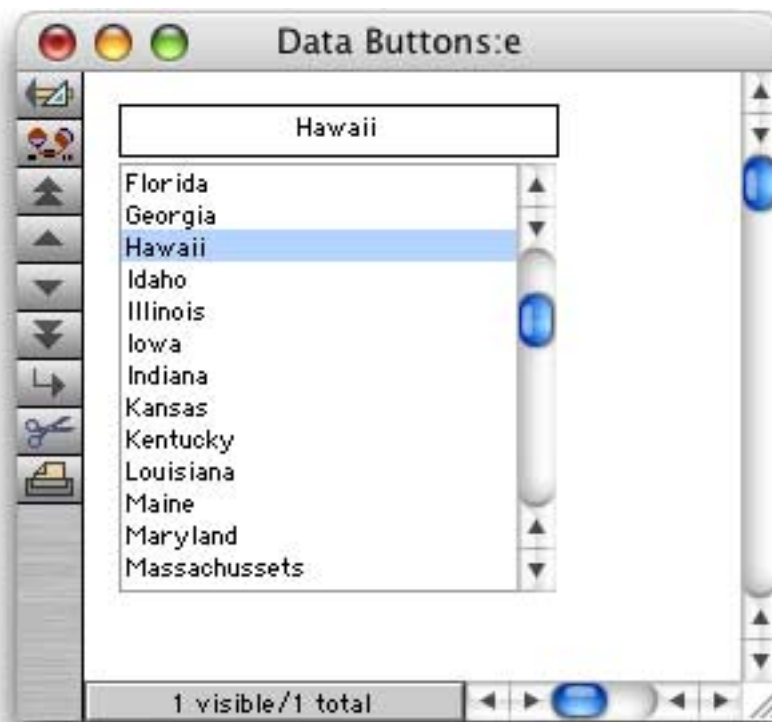


Once the options are set, press the **OK** button and the List object is ready to use. If you need to change the options later, double click on the List object to re-open the dialog.

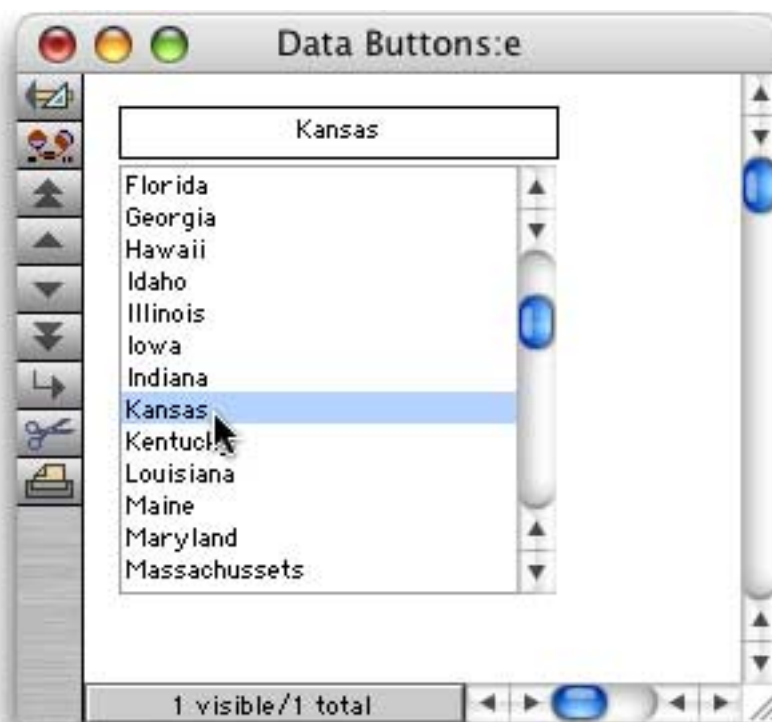
Data

This section of the dialog specifies the field or variable associated with this list, if any. This field or variable doesn't contain the list itself, but only the selected value(s) within the list. Type the name of the field or variable into the box (or select the field name from the pop-up menu next to the **Field** radio button). If the list is associated with a variable that has not been created with a procedure, Panorama will automatically create a global variable with this name whenever the list appears. This global variable can be used in formulas and procedures just like any other global variable.

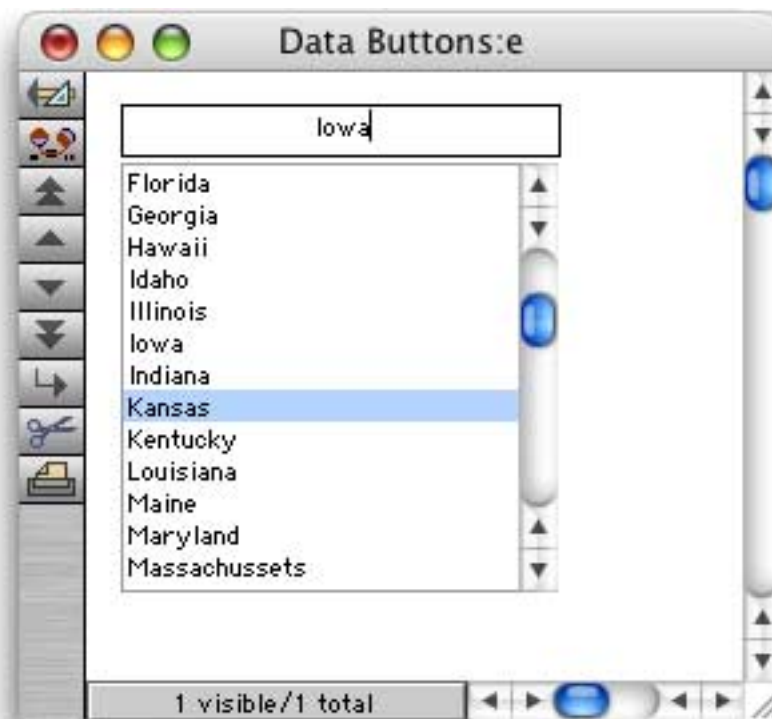
When first learning how to use the List SuperObject it's handy to include a Text Editor SuperObject on the form to allow you to see and modify the data value (see [“Text Editor SuperObject”](#) on page 639). In this example both the Text Editor and the List objects are displaying the same value — the field [State](#).



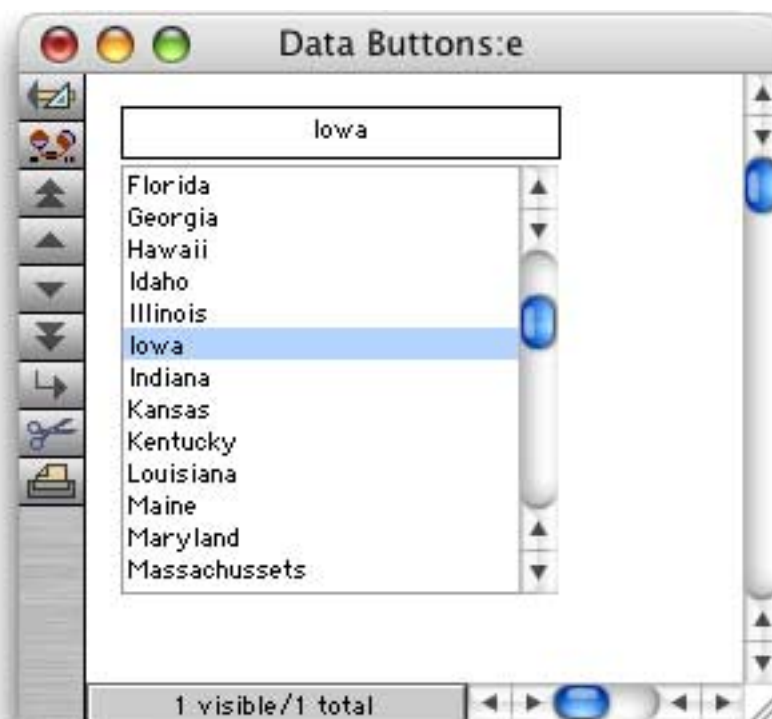
Clicking on an item fills the field with that value.



It's also possible to work this process in reverse. If you type a value into the Text Editor SuperObject the List will automatically select the corresponding item in the list, if any. For example, you could type **Iowa** into the field:



When you press **Enter** Iowa will be selected in the list.

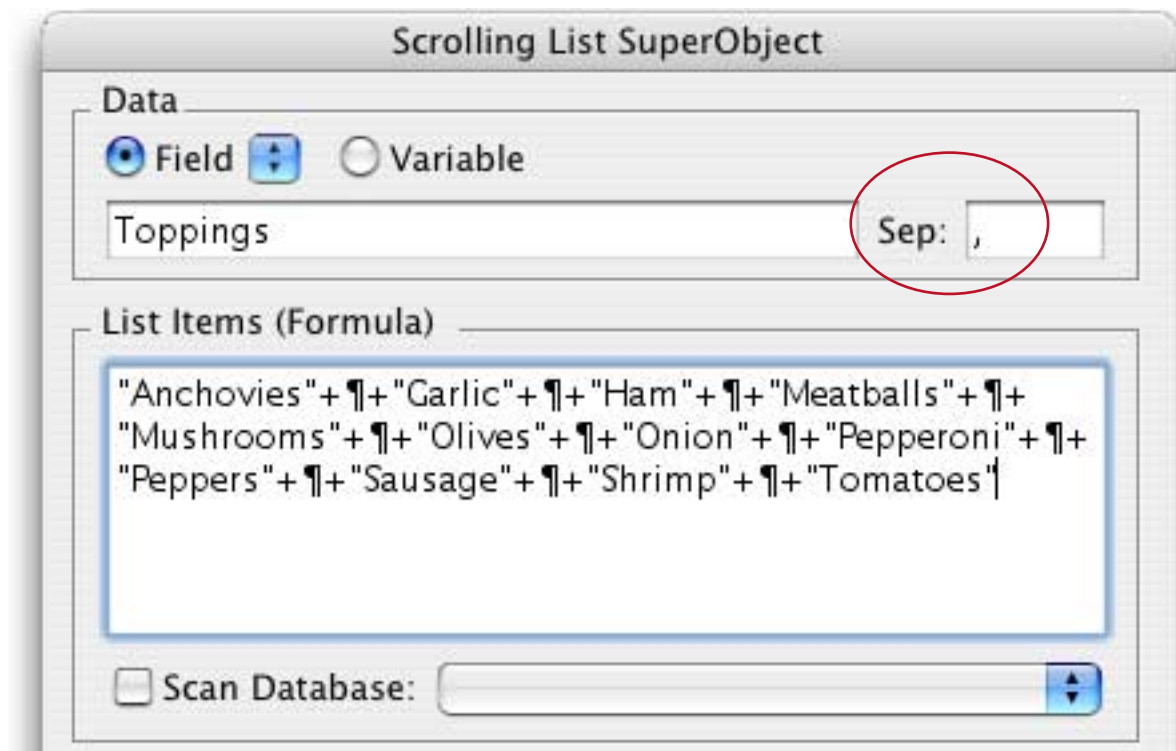


The item must be spelled exactly the same as it appears in the list, including capitalization. Only **Iowa** will work, not **iowa** or **IOWA**.

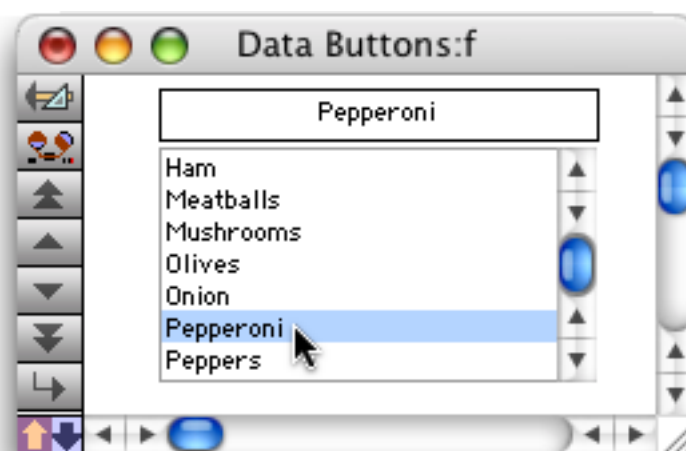
Sep

This is the separator text that will appear between each value if multiple items are selected in the list. Common separators include commas, spaces, slashes and hyphens. The separator may be up to 6 characters long. (Note: If the separator is left blank, Panorama will use a carriage return as the separator.)

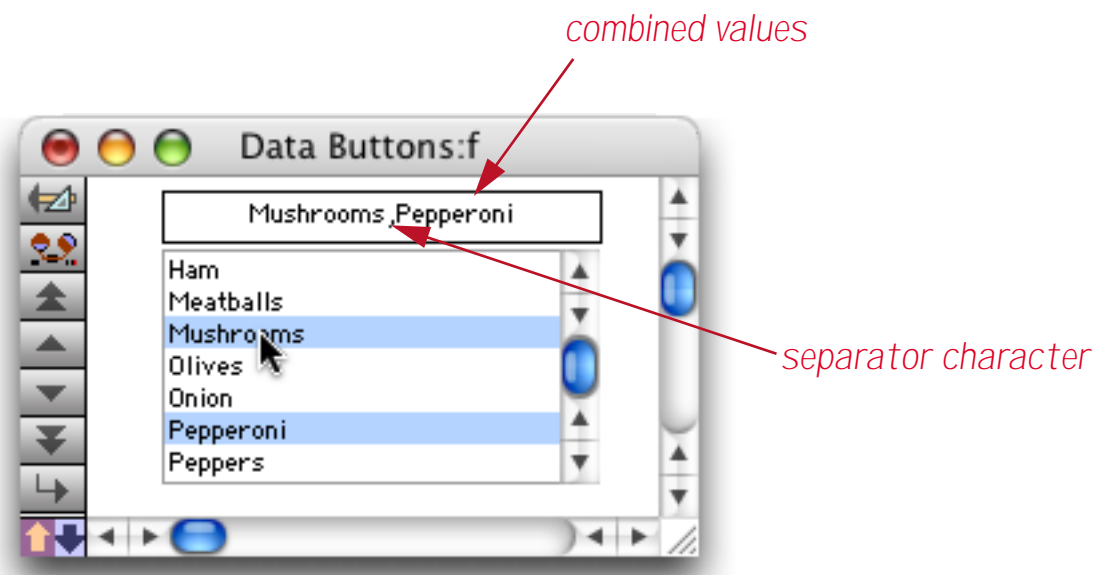
As an example of multiple items, consider pizza toppings. A pizza may have one, two, three or more toppings, or even none at all. You can create a list that shows all the different pizza toppings. In this example the separator character is a comma.



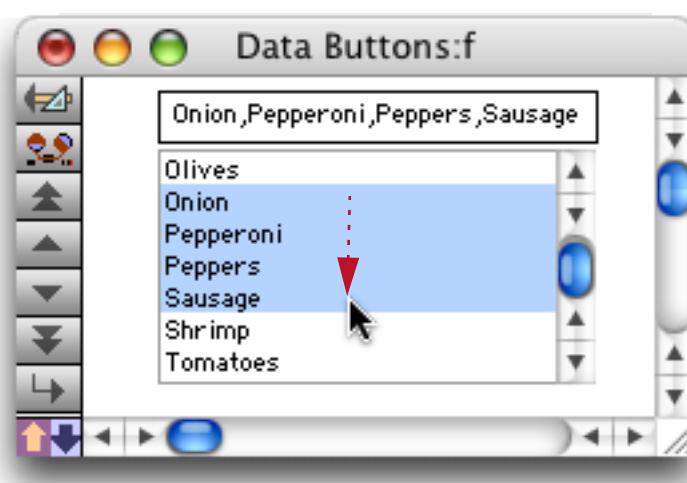
When you click on a single topping it appears in the field, just as in the previous example.



By holding down the **Command** key (Mac) or the **Control** key (PC) you can click on and select additional items, as shown below. The data field (or variable) will contain all of the selected items, with each item separated by a comma (or whatever separator character you have specified.) The values will always be in the same order as they appear in the list, no matter what order you click on them (unlike a group of radio buttons — see “[Multiple Value Button Groups](#)” on page 845).



You can continue to select additional items if you wish. You can also de-select an item by holding down the **Command** (Mac) / **Control** (PC) key and clicking on the selected item. Another option is to hold down the **Shift** key and drag across several items to select them all.



You can use any separator character you want. If you leave the **Sep** option empty, Panorama will use a carriage return as the separator. In other words, each item will be on its own separate line.

Database

There are two ways that Panorama can build the list of items: it can use a formula to build the list or it can scan a database to build the list. So far all of the examples have shown building the list with a formula. If you want the list built by scanning an entire database, select the name of the database from the pop-up menu in this section (the database must be open). To illustrate this feature we'll use this contact database.

Title	Company	Address	City	State	Zip	Country
Sales Manager	Acme Widgets	12 Harmony Lane	Huntington Beach	CA	92648	
Owner	Brian's Appliances	1844 Tiburon	Hollister	CA	95023	
		182 Dell Rd	Northbrook	IL	60062	
Sales Manager	Jim's Appliances	58272 Auburn Rd	Fort Wayne	IN	46825	
Vice President	D.S. Plumbing	683 Elm St	Batavia	IL	60510	
Sales Manager	Latham Video	4792 Latham	Mountain View	CA	94041	
President	P.T. Plumbing	1009 Secret Bay	Davis	CA	95616	
	S.W. Plumbing	1175 Wilson Rd	Fountain	CO	80817	
Vice President	Evanston Lumber	498 Noyes	Evanston	IL	60201	
		3050 North Main	Sand Springs	OK	74063	

107 visible/107 total

Create a List SuperObject the usual way (see “[Creating List SuperObjects™](#)” on page 879). Select the database to be scanned from the pop-up menu of open databases. In this case you'll select the name of the current database.

Scrolling List SuperObject

Data

Field Variable

gCompany Sep:

List Items (Formula)

Company

Scan Database: **Contacts**

Click Action

Normal
 One Cell Only
 Contiguous Cells Only
 Extend w/o SHIFT

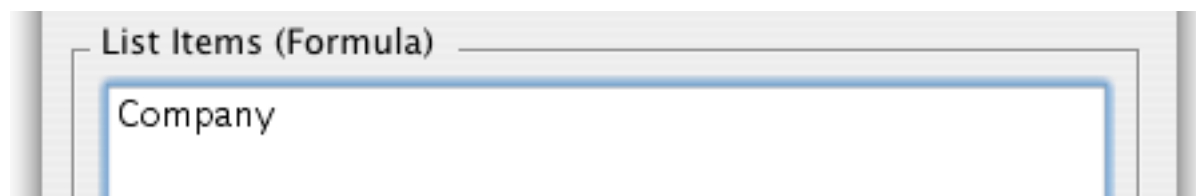
No Duplicates
 Grow box
 Thin Scroll Bars

Procedure

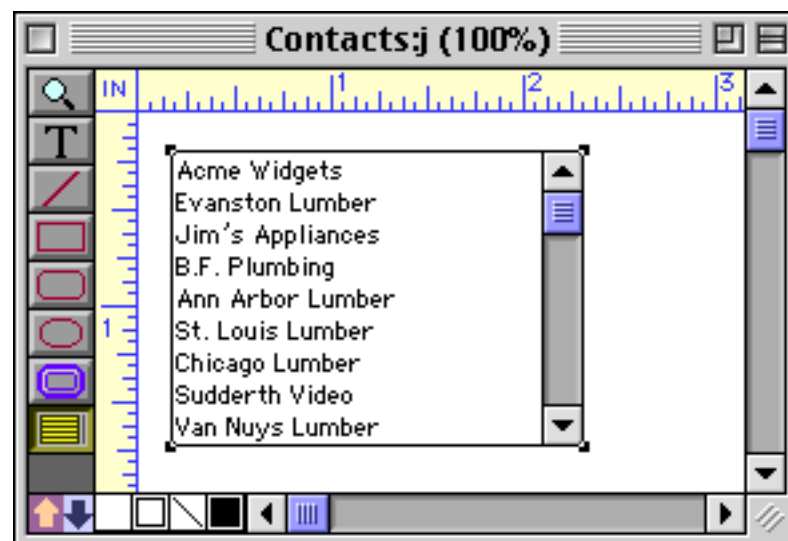
Click/Release

Cancel OK

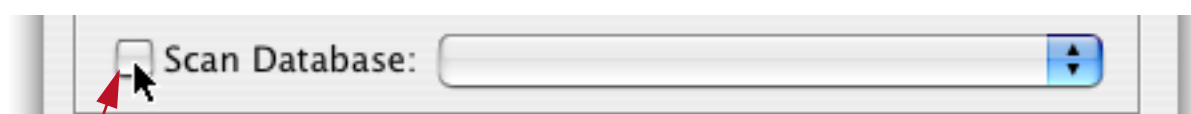
In the formula field you must enter a formula that will be used to process each field within the database. Usually this is simply a field name, which can either be typed in or selected from the **Field** menu. For this first example we'll build a list of company names.



When you press **OK** the list appears, already filled in with the items scanned from the database.

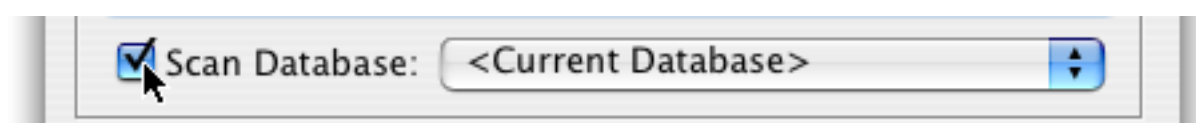


If the database name ever changes, this list will stop working. Here's how this problem can be fixed. Open the configuration dialog again (by double clicking on the object). Click on the **Database** checkbox to disable the database scanning procedure.



Click to turn off database scanning

Now click the checkbox again to turn database scanning back on. As you can see, this enables scanning of the current database, no matter what the name is.



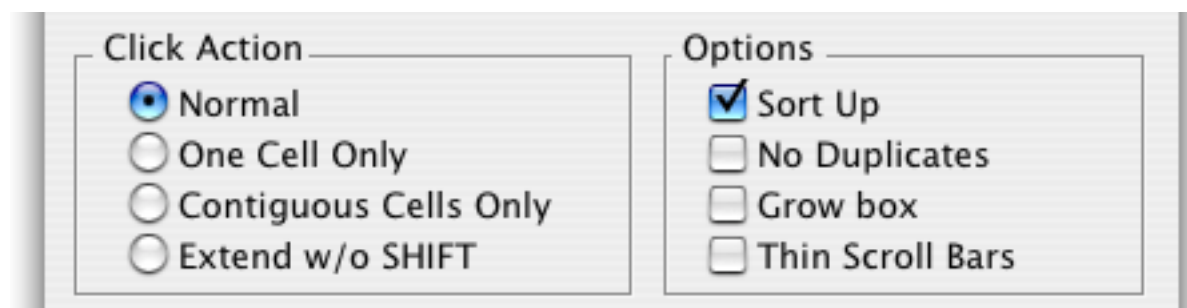
This trick only works with the current database. If the list is built from another database you'll have to make sure that the database name doesn't change (or if it does, you'll have to open the configuration dialog and adjust the name to make the list work again).

Sort Up

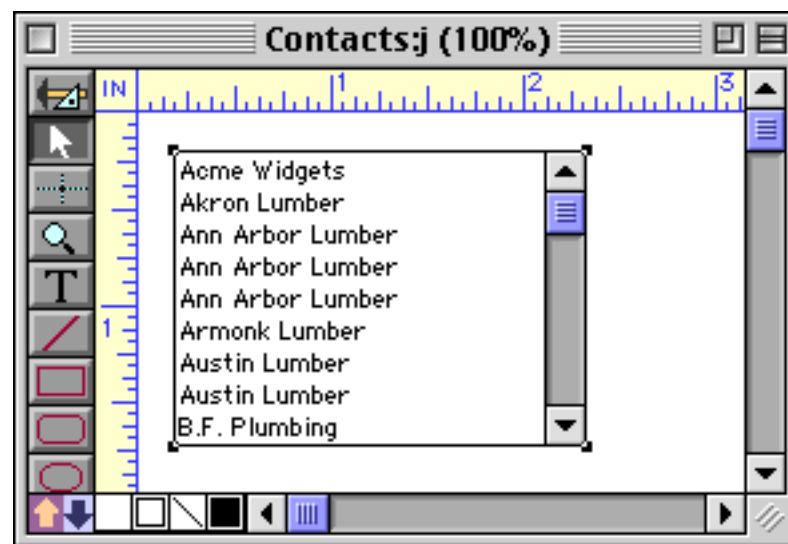
If this checkbox is turned on, the list of items will be sorted in ascending alphabetical order, otherwise the list will be displayed in the order the data was scanned. For example, the list of companies built in the previous example displays the company names in the order they appear in the database, which is definitely not alphabetical.



To display the list in order, enable the **Sort Up** option.



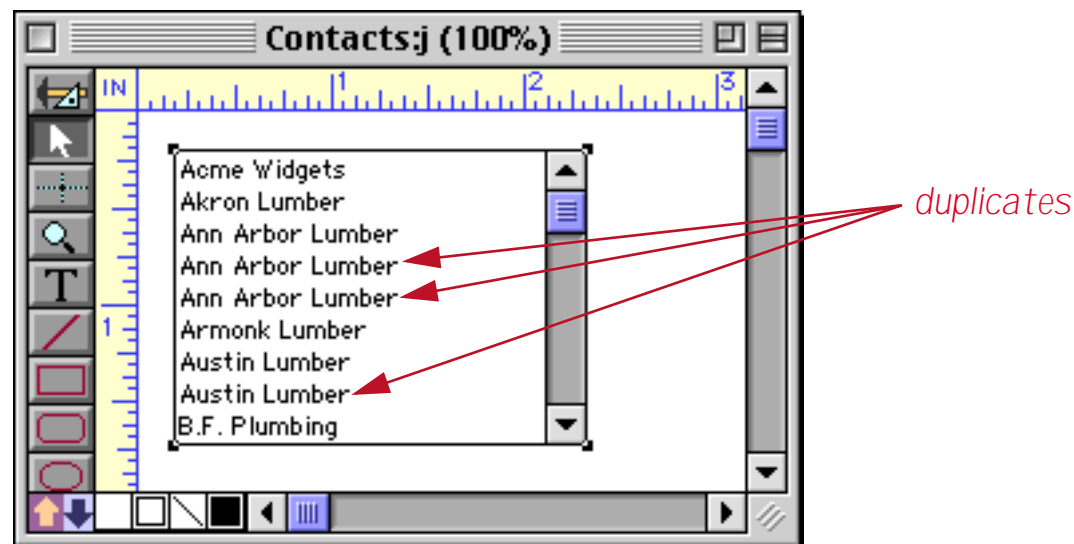
Here's the alphabetized list.



The **Sort Up** option works both with database scanning and when the list is generated by a single formula.

No Duplicates

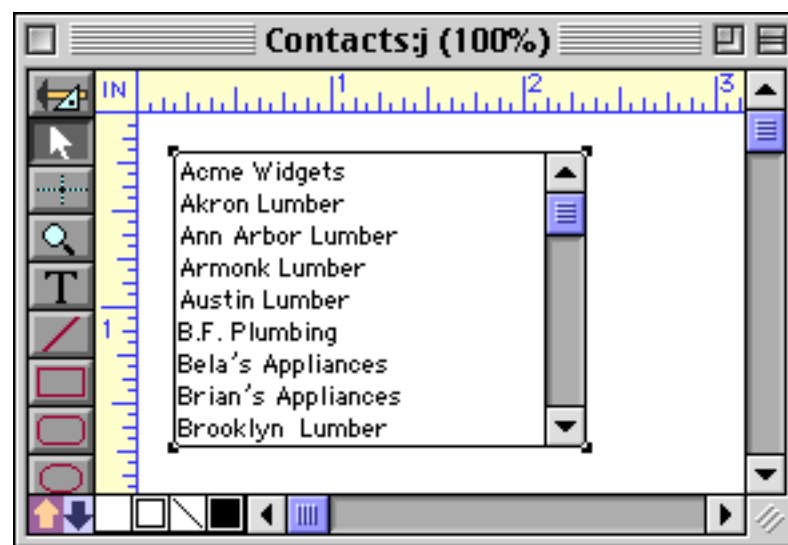
If this checkbox is turned on, duplicate data items will be eliminated from the list of items. (This option is not available if the **Sort Up** option is not also turned on.) For example, the list generated in the previous example contains many duplicate company entries.



To automatically remove the duplicate items enable the **No Duplicates** option.



Here is the revised list, without the duplicates.



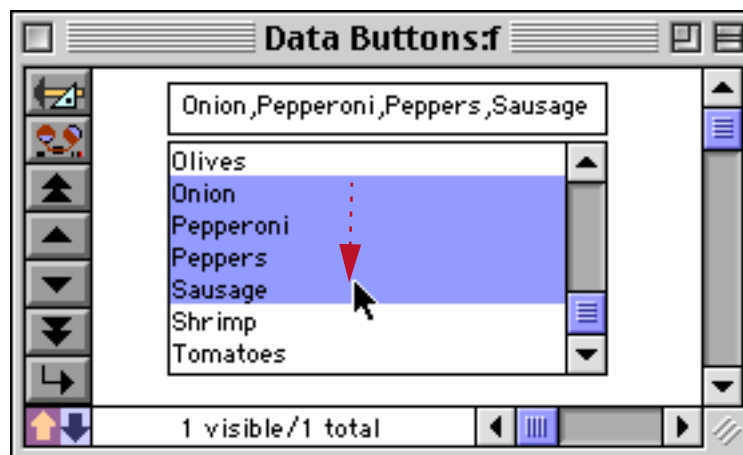
Formula

This section of the dialog contains the formula used to extract the data items from the database, field or variable. See "[Building the List](#)" on page 894 for details on how this formula is used.

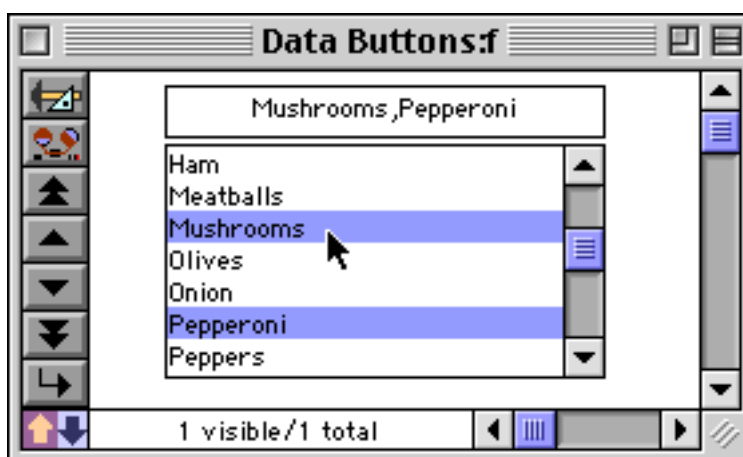
Click Action

This section of the dialog controls how multiple items in the list are selected.

Normal: This option normally allows only one item to be selected at a time. When the user clicks on an item, it is selected and all other items are un-selected. However, if you hold down the **Shift** key you can drag to select a contiguous range of items.



By holding down the **Command** key (Mac) or the **Control** key (PC) you can click on and select additional items, as shown below.



You can continue to select additional items if you wish. You can also de-select an item by holding down the **Command** (Mac) / **Control** (PC) key and clicking on the selected item.

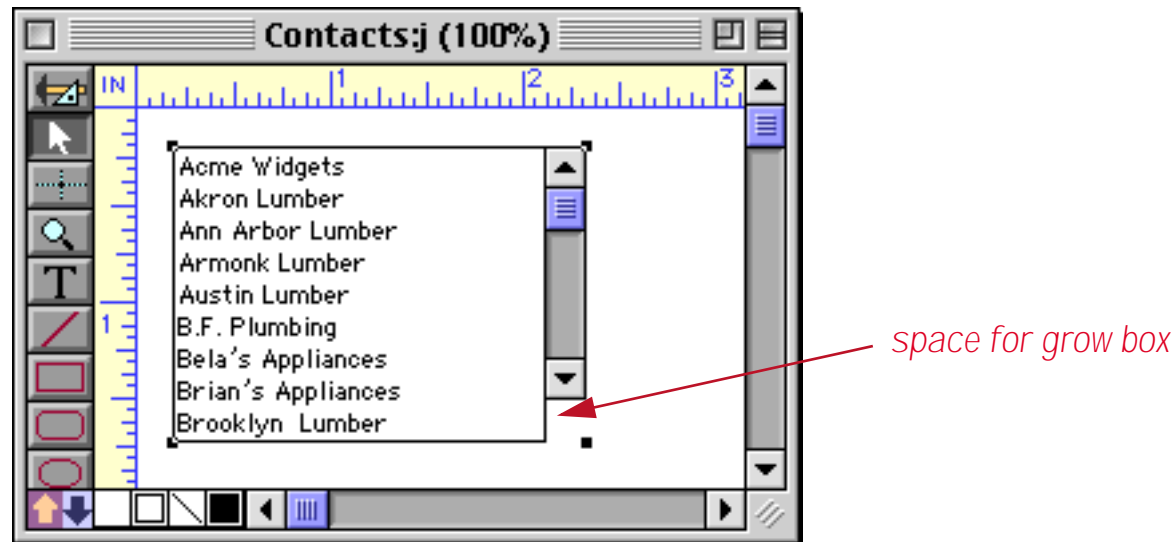
One Cell Only: This option only allows one item to be selected at a time, no matter what modifier keys are pressed.

Contiguous Cells Only: This option is similar to the Normal option, except that holding down the **Command** (Mac) / **Control** (PC) key does not allow you to select/un-select individual items. You can, however, select multiple items by holding down the **Shift** key and dragging across the items.

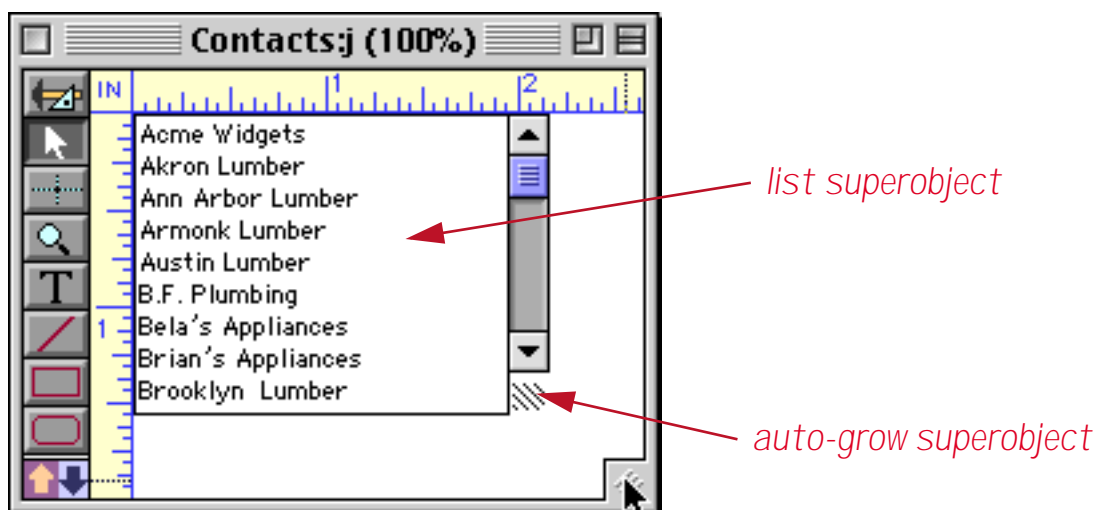
Extend w/o Shift: This option allows you to select a group of items simply by dragging over the items (you don't have to hold down the **Shift** key if this option is enabled).

Grow Box

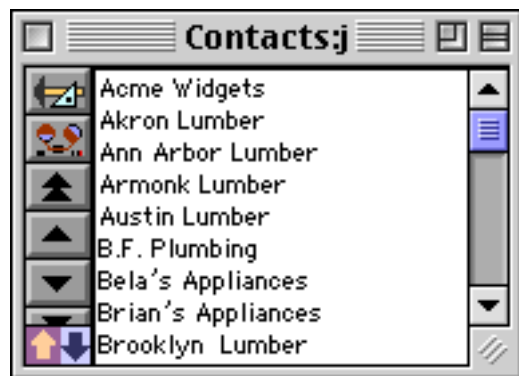
This option makes the scroll bar shorter to reserve space for a grow box in the lower right hand corner of the object.



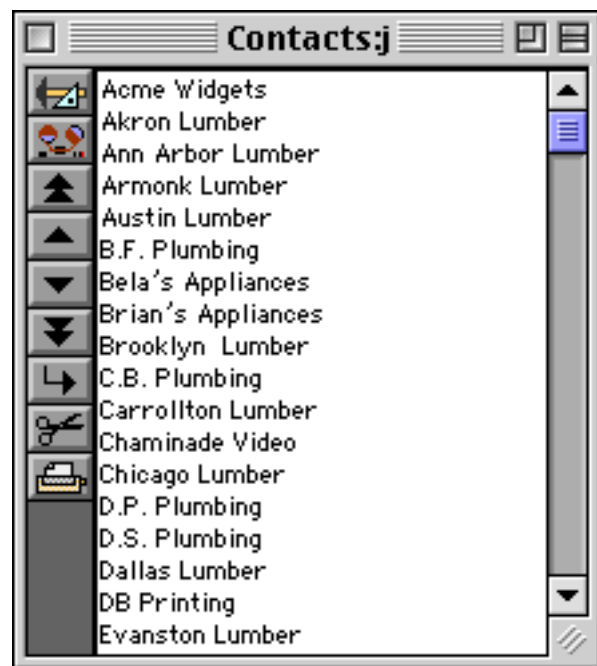
Usually you would only use this if the list was in the lower right hand corner of the window, or even filling the entire window. Then you could use this option with an **Auto-Grow SuperObject** to create an elastic form (see "[Elastic Forms](#)" on page 922). Here is an example of such a form in Graphics Mode...



and in Data Access Mode.



This form will automatically adjust to different window sizes.



See "[Elastic Forms](#)" on page 922 to learn more about elastic forms.

Thin Scroll Bars

If this option is checked the scroll bar will be narrower (11 pixels wide instead of 16 pixels).

Procedure

This pop-up menu allows you to specify a procedure that will be triggered every time the user clicks on an item in the list.

Click/Release

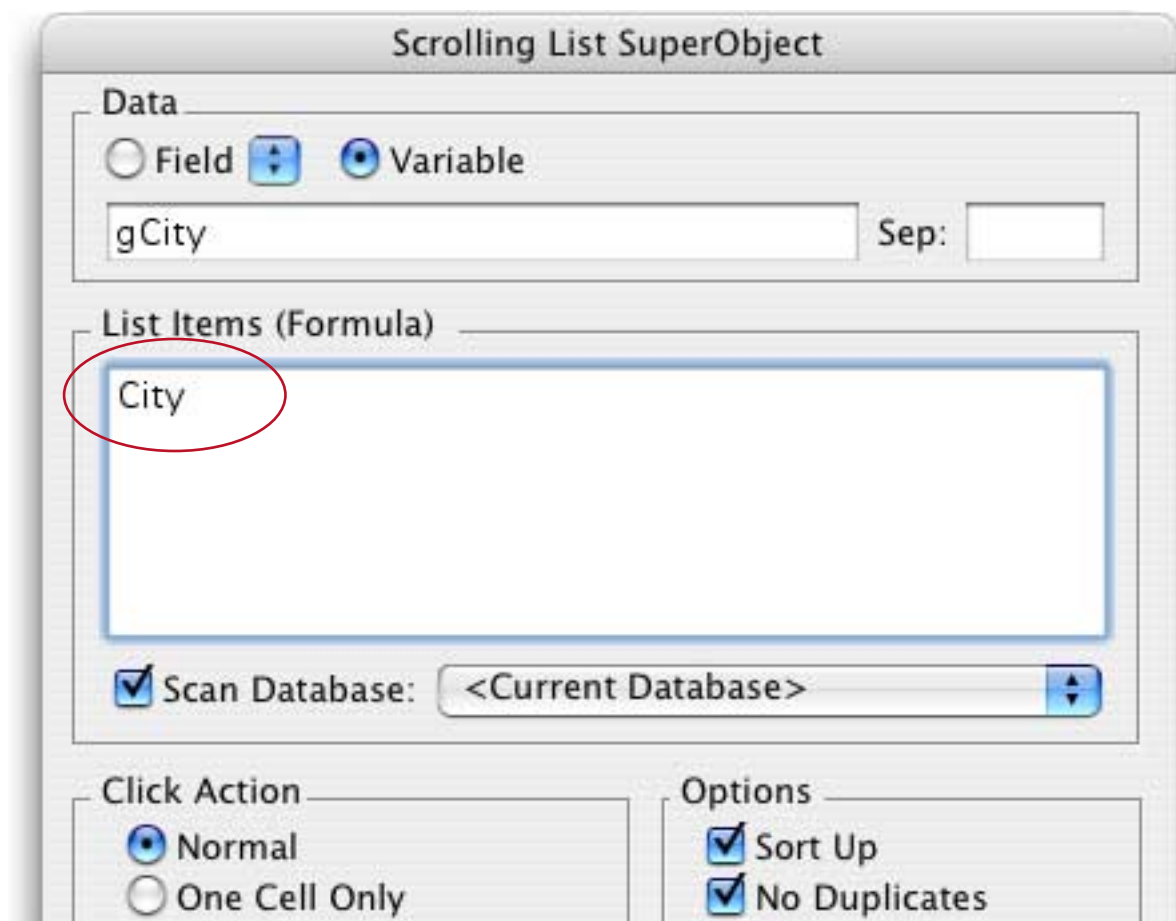
This option controls when the procedure (if any) is triggered. Normally, the **Click/Release** option is enabled and the procedure is triggered when you release the mouse. If the **Click/Release** option is disabled the procedure will be triggered immediately, as soon as you click on the list. This means that you cannot hold down the **Shift** key and drag to extend the selection (see "[Click Action](#)" on page 892). Turn off the **Click/Release** option if you want to trigger a procedure to drag list items (see "[Using Drag and Drop to Change the Order of Items in a List](#)" on page 712 of *Formulas & Programming*).

Building the List

There are two ways that Panorama can build the list of items: it can scan a single field or variable, or it can scan an entire database. Panorama normally builds the list once when the form containing the list is first opened. If you need to update the list or change it later, you'll need to send the list a command with a procedure (see "[List SuperObject™ Commands](#)" on page 708 of *Formulas & Programming*).

Scanning a single formula: If this method is selected, Panorama calculates the result of the formula, then scans the result to separate it into individual items for the list. Each line (separated by carriage return) in the result is treated as a separate item. This is the same method used by the Pop-Up Menu SuperObject to build a list; see "[The Pop-Up Menu Formula](#)" on page 863 for tips and tricks for setting up this formula.

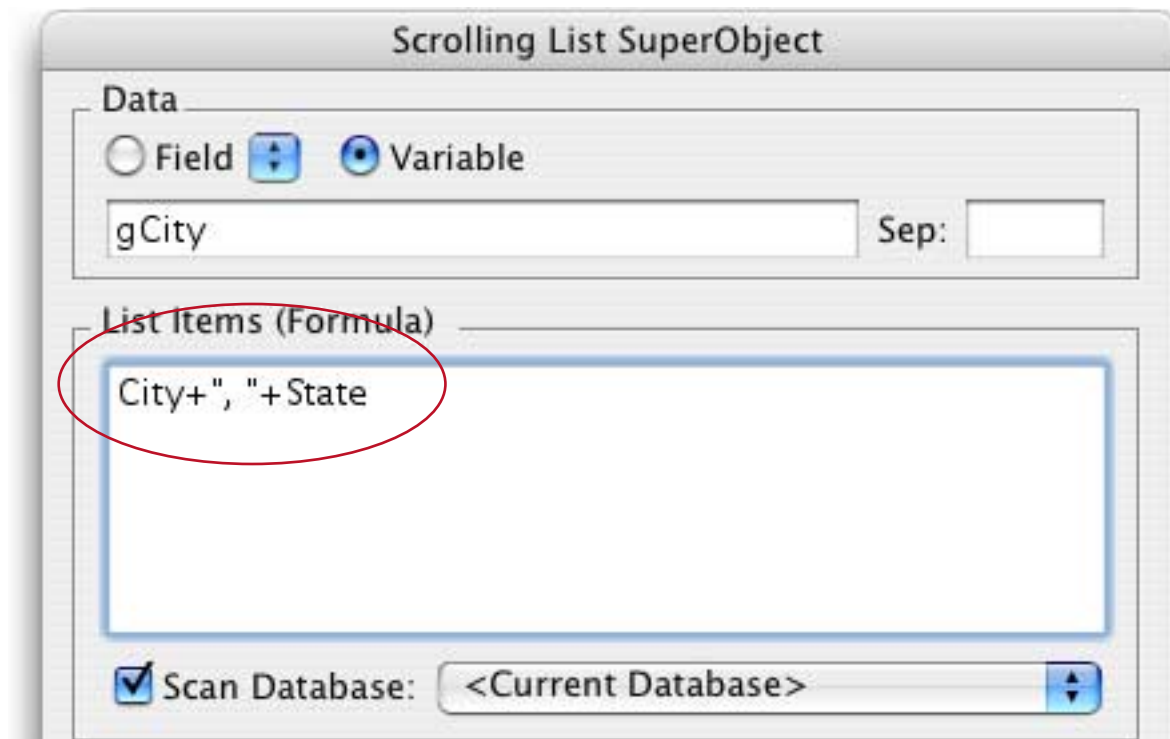
Scanning an entire database: If this method is selected, Panorama will scan the entire specified database, building up the list one record at a time as it scans. The formula determines what information is extracted from each record in the database and places it in the list. For example, suppose you want to build a list of cities extracted from an address database. For this application, the formula would be simply:



For this application you would probably want to turn on the **Sort Up** and **No Duplicates** options, so that each city will be listed only once.



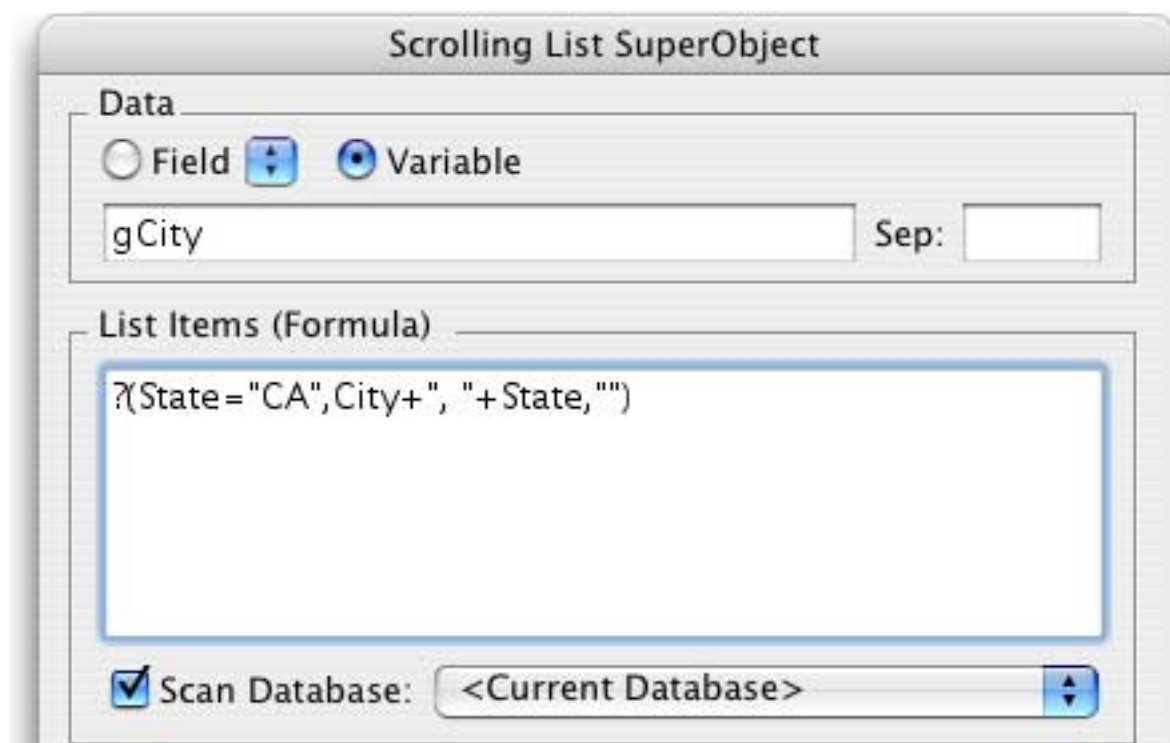
If you wanted both the city and state to appear in the list, a more complex formula could be used:



Here's the revised list.



If you want to build a list of only part of the database, use the `?()` function to select only the information you want (see "[The ? Function](#)" on page 130 of *Formulas & Programming*). If a record should not be included in the list, the result of the formula should be an empty string (`""`). The formula below will fill the list with cities in California.



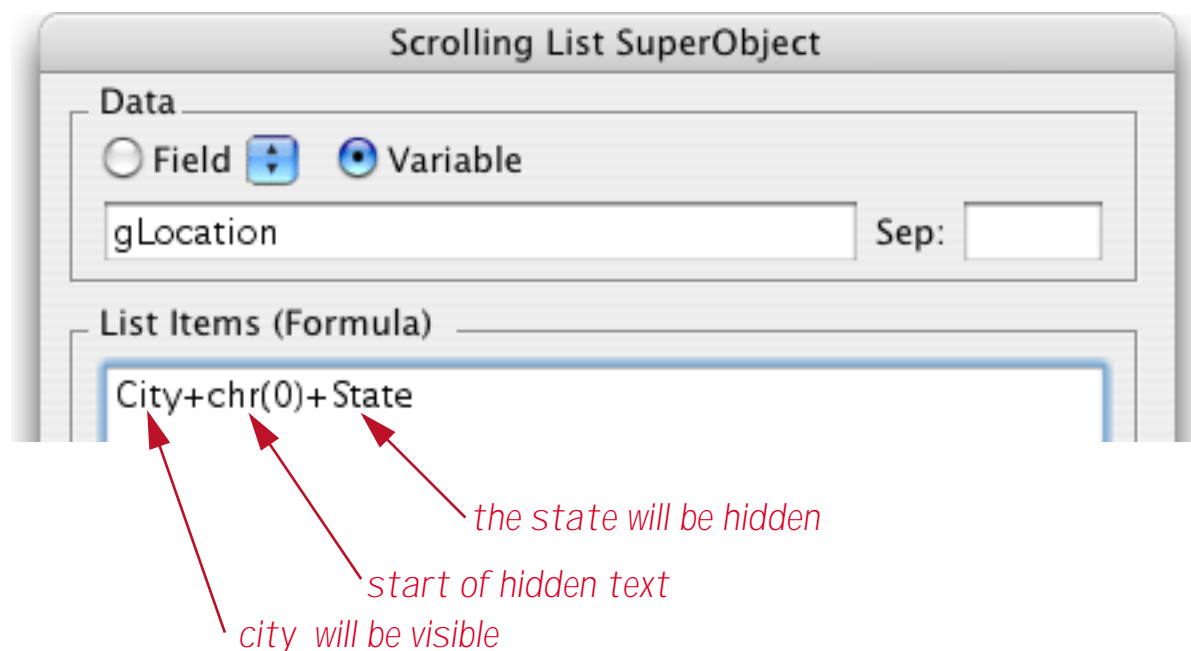
All other states will be left off the list.



“Hiding” Part of a List Item

The List SuperObject normally supplies all of the text in each line you supply to it. However it is possible to add hidden text to each line. This hidden text will be included in the value when a list item is clicked on, but will not be displayed. Any text after a null byte (`chr(0)`) will be hidden.

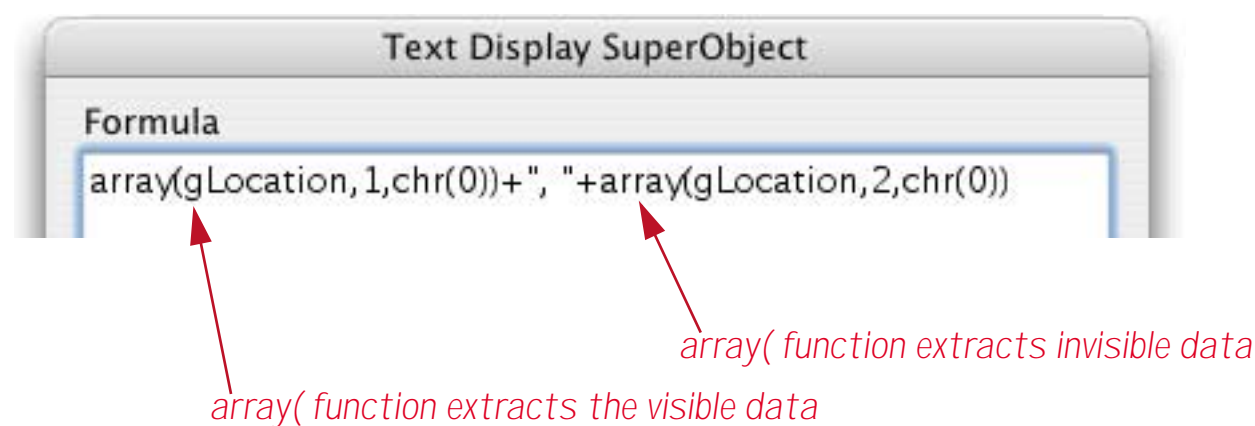
To illustrate this we'll create a list that displays only the city but actually contains both the city and state. Here's the configuration dialog for this list.



When the list is displayed only the city names are displayed.



Although the states are not displayed they are still part of the list. We can build a Text Display SuperObject to display the selected city and state. Here is the formula to be used to display the information.



Clicking on different items in the list displays both the city and the state.

Austin, TX	Buffalo Grove, IL	Fountain, CO	Jupiter, FL
Akron	Batavia	Dover	Jenison
Ann Arbor	Beverly Hills	Dublin	Jupiter
Armonk	Bronx	Evanston	Kansas City
Austin	Brooklyn	Flemington	Lenox
Batavia	Buffalo Grove	Fort Wayne	Lexington
Beverly Hills	Camarillo	Fountain	Lincoln
Bronx	Carrollton	Gray	Lindenhurst
Brooklyn	Chelsford	Grosse Pointe Shores	Los Angeles

An excellent use for the hidden text information is to keep secret identifying information in the list. For example a list of invoices might display only company names while keeping the invoice number hidden. When you click on an invoice the procedure can extract the hidden invoice number to display the corresponding invoice.

Maximum List Size

The List SuperObject is capable of handling lists up to a few thousand items. For large lists, you may need to increase your scratch memory allocation. However, keep in mind that the List SuperObject is not intended to replace Panorama's normal database operation. The performance of the list (speed) will degrade as the size of the list increases. Very large lists are also difficult for the user to handle. It's usually best to keep the list size to several hundred items or less. If necessary, you should split the list into multiple lists: for example by state, by price, or even by starting letter (A-Z).

Chapter 18: Form Goodies



This chapter covers some cool things you can do with forms that don't fit into any particular category. **View-as-List** forms allow you to display multiple records at a time, instead of just a single record at a time like a normal form. **Elastic Forms** allow you to create forms that automatically stretch to fit any window size (see "[Elastic Forms](#)" on page 922). **Super Matrix** objects allow you to quickly build repeating arrays like monthly calendars and photo arrays (see "[Super Matrix Objects](#)" on page 939). **Scroll Bar SuperObjects** can be used to create standalone scroll bars within a form (see "[Scroll Bars](#)" on page 979). **Balloon Help Objects** (Macintosh only) allow you to add detailed help to your forms (see "[Balloon Help](#)" on page 985).

View-As-List Forms

Panorama allows you to set up blank forms as individual pages or as a continuous sheet (**view-as-list**). When forms are set up as individual pages you see one record at a time. You can flip through the records just as you would shuffle through a stack of paper forms.

A **view-as-list** form displays data as a continuous sheet, as shown below. Instead of flipping from record to record, you scroll up and down through the data in a manner similar to the data sheet. However, unlike the data sheet, a view-as-list form allows you to arrange the data any way you like, and even include graphics in the display. On the other hand, view-as-list forms are slower than the data sheet (because of the overhead in displaying the graphics) and they are much more work to set up.

Date	Num/Pay To (Category)	Amount	Balance
01/17/99	1913 California Capitol (Insurance)	28.00	35,023.26
01/17/99	1914 U S Postmaster (Postage)	75.00	34,948.26
01/17/99	1915 Sacramento Bee (Advertising)	795.00	34,153.26
01/18/99	DEPOSIT	+3,846.32	37,999.58
01/22/99	1916 Walthers (Purchases)	12,463.00	25,536.58
01/22/99	1917 Blue Cross Of Calif (Insurance)	279.03	25,257.55
01/22/99	1918 Sherman Douglas Ins (Insurance)	418.60	24,838.95
01/22/99	1919 Cannon Astro (Office Supplies)	145.72	24,693.23
01/25/99	1920	1,885.40	22,807.83

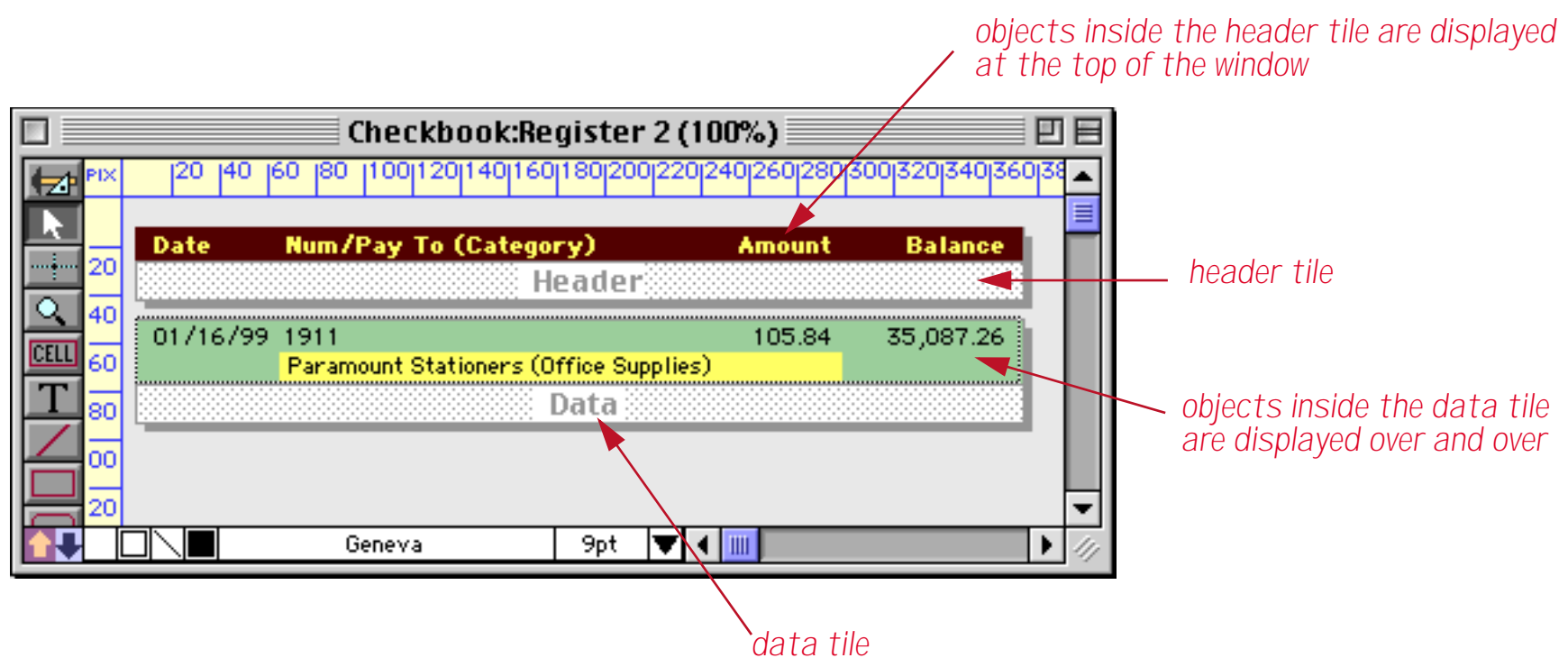
411 visible/411 total

How View-As-List Forms Work

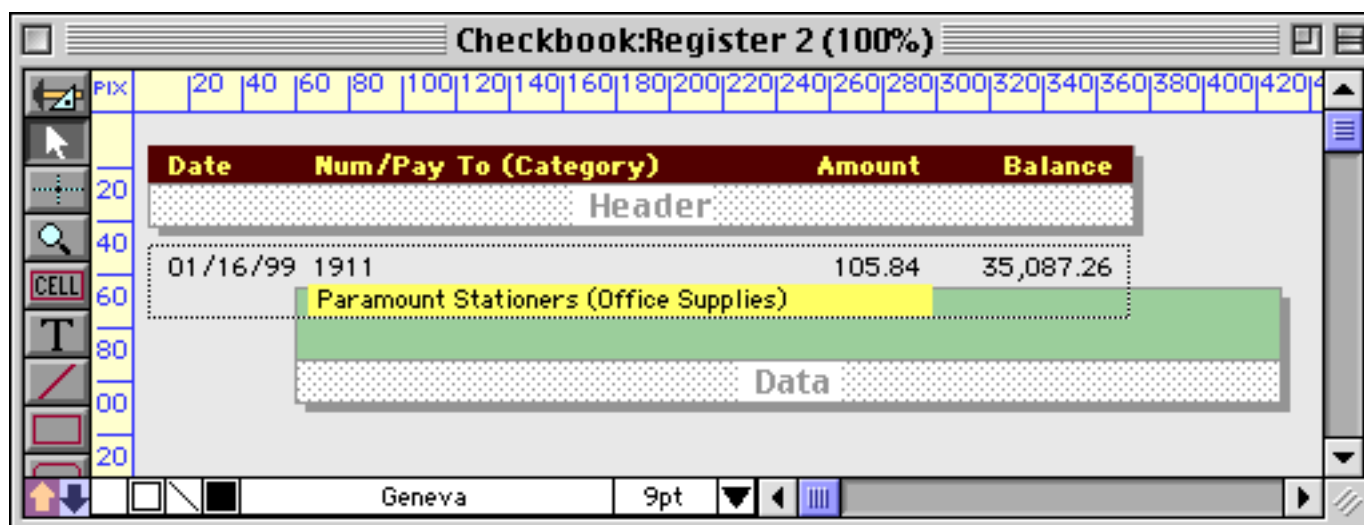
Panorama displays a View-As-List form by taking a collection of graphic objects and displaying them over and over again, once for each record. For the form in the previous section the collection of graphic objects looks like this.

01/16/99	1911	105.84	35,087.26
Paramount Stationers (Office Supplies)			

As you can see, this collection of objects is just a small portion of a form. How does Panorama know which collection of objects to include? You tell it by enclosing the objects in a special object called a **tile**. Panorama has over 40 different kinds of tiles, but for now we are interested in just two types—**data tiles** and **header tiles**.



Panorama doesn't care what the exact location of the tile is. It simply looks to see what is contained within the tile. For example, you could move the tile to a new position like this (see "[Working with Tiles](#)" on page 1062).



In Data Access Mode this new configuration will look like this.

Date	Num/Pay To (Category)	Amount	Balance
	Paramount Stationers (Office Supplies)		
	California Capitol (Insurance)		
	California Capitol (Insurance)		
	U S Postmaster (Postage)		
	Sacramento Bee (Advertising)		
	DEPOSIT		

411 visible/411 total

The height of the Data Tile controls the spacing of the records. For example, we can reduce the spacing by reducing the height of the tile (see “[Working with Tiles](#)” on page 1062).

Date	Num/Pay To (Category)	Amount	Balance
01/17/99	1913 California Capitol (Insurance)	28.00	35,023.26

PIX 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420

Header

Data

Geneva 9pt

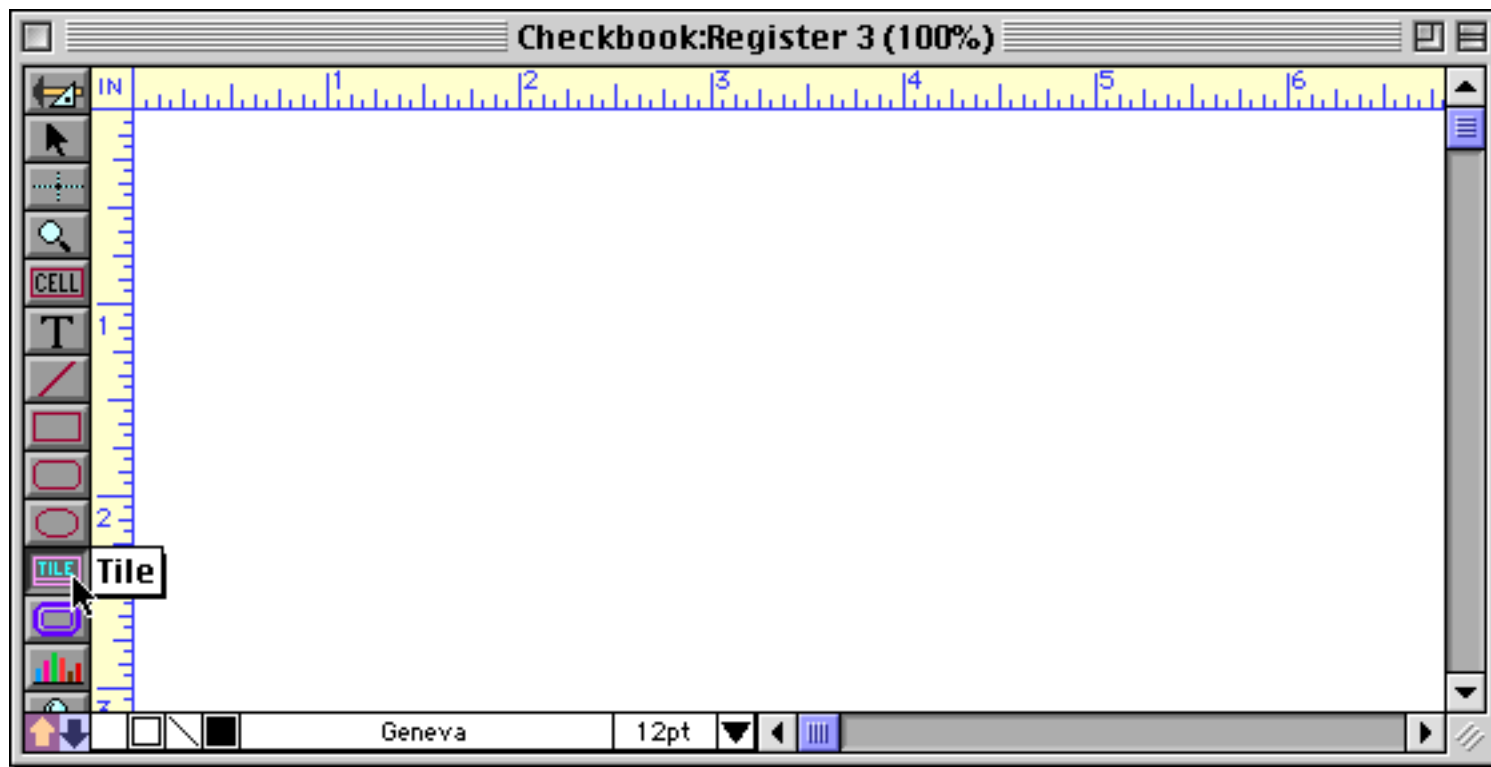
Here's what this configuration looks like.

Date	Num/Pay To (Category)	Amount	Balance
	Paramount Stationers (Office Supplies)		
	California Capitol (Insurance)		
	California Capitol (Insurance)		
	U S Postmaster (Postage)		
	Sacramento Bee (Advertising)		
	DEPOSIT		
	Walthers (Purchases)		
	Blue Cross Of Calif (Insurance)		
	Sherman Douglas Ins (Insurance)		
	Cannon Astro (Office Supplies)		
	Walthers (Purchases)		
	Nehs (Office Supplies)		

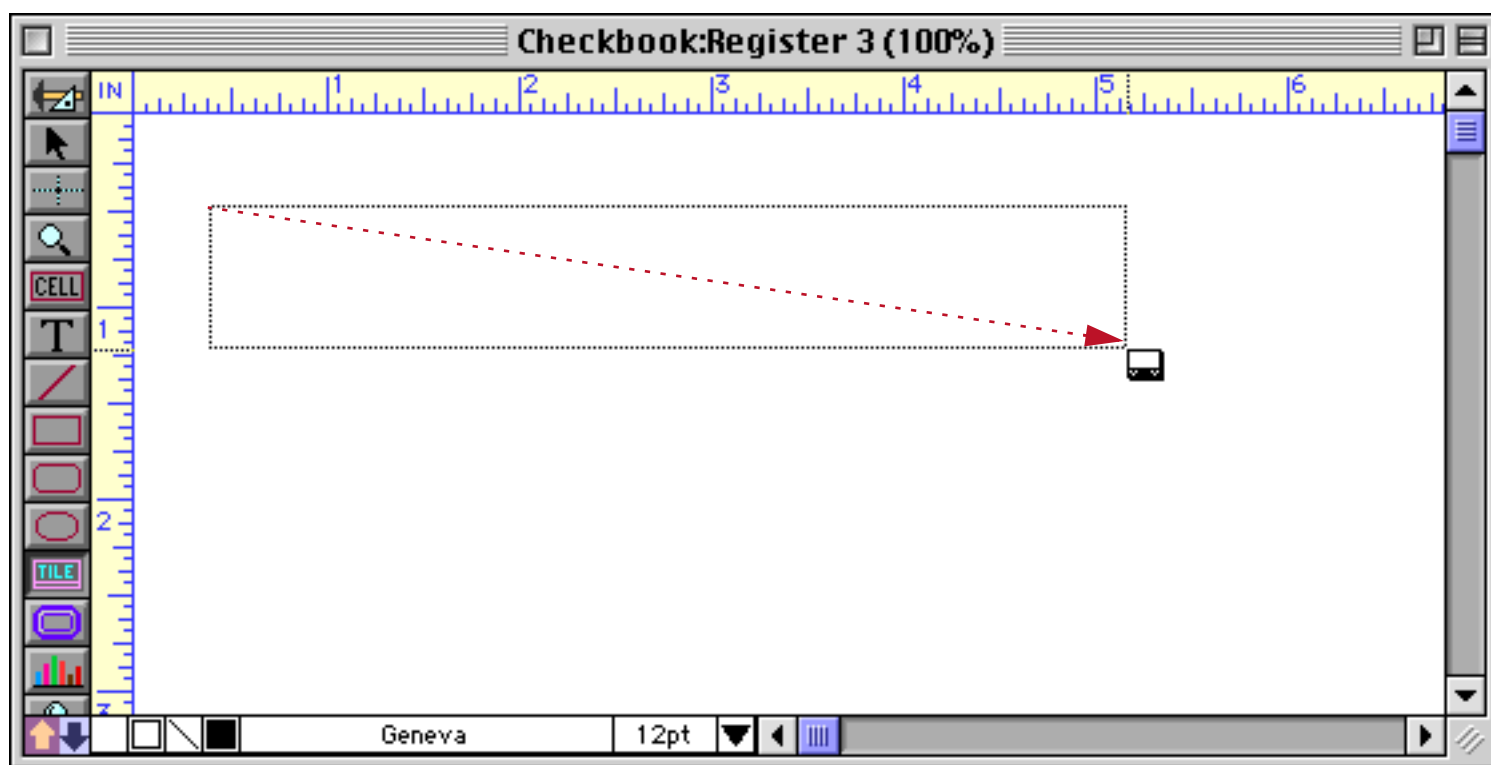
411 visible/411 total

Creating a View-As-List Form

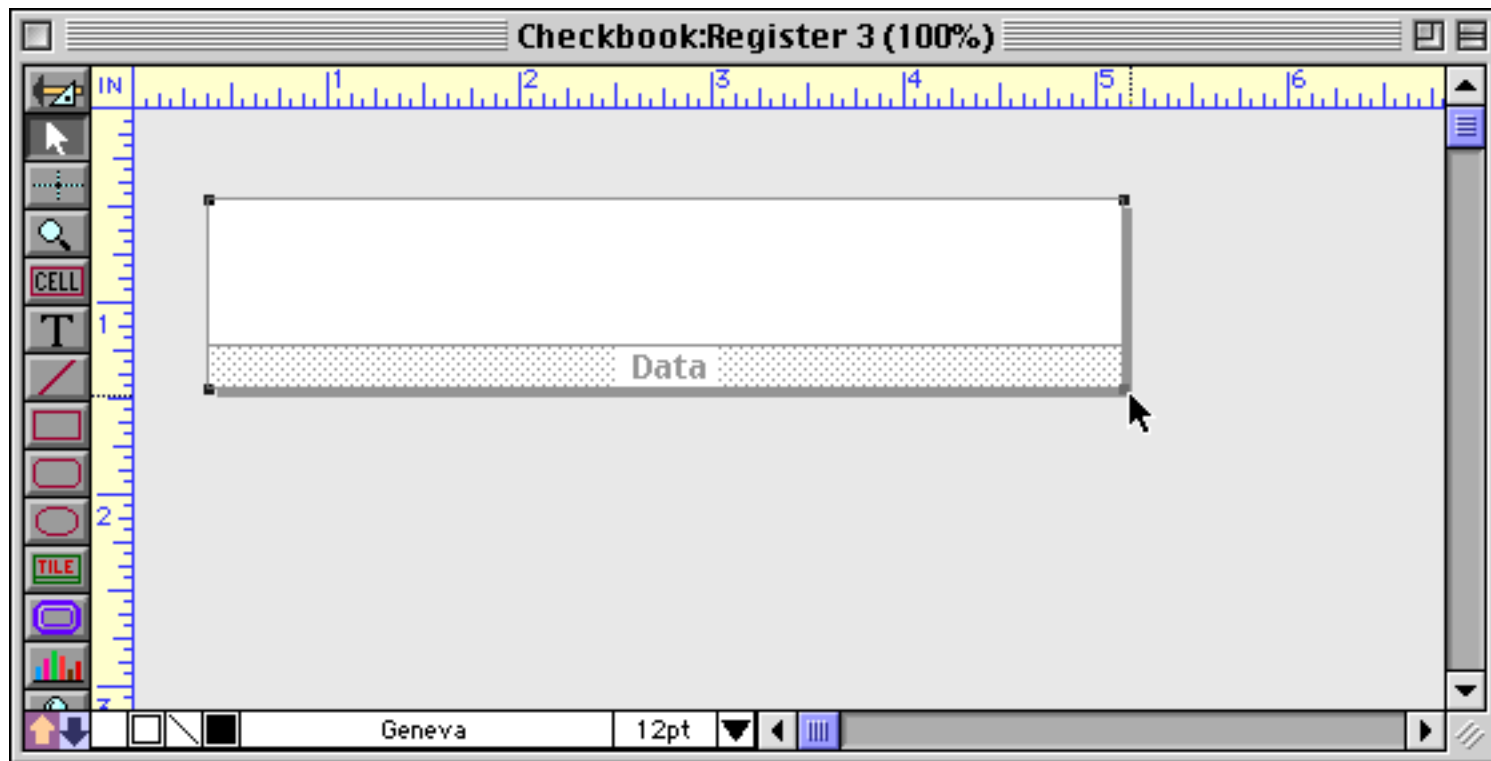
The first step in creating a view-as-list form is to create a Data Tile. To do this, select the Tile tool.



Now drag the mouse across the form to define the location and size of the tile.

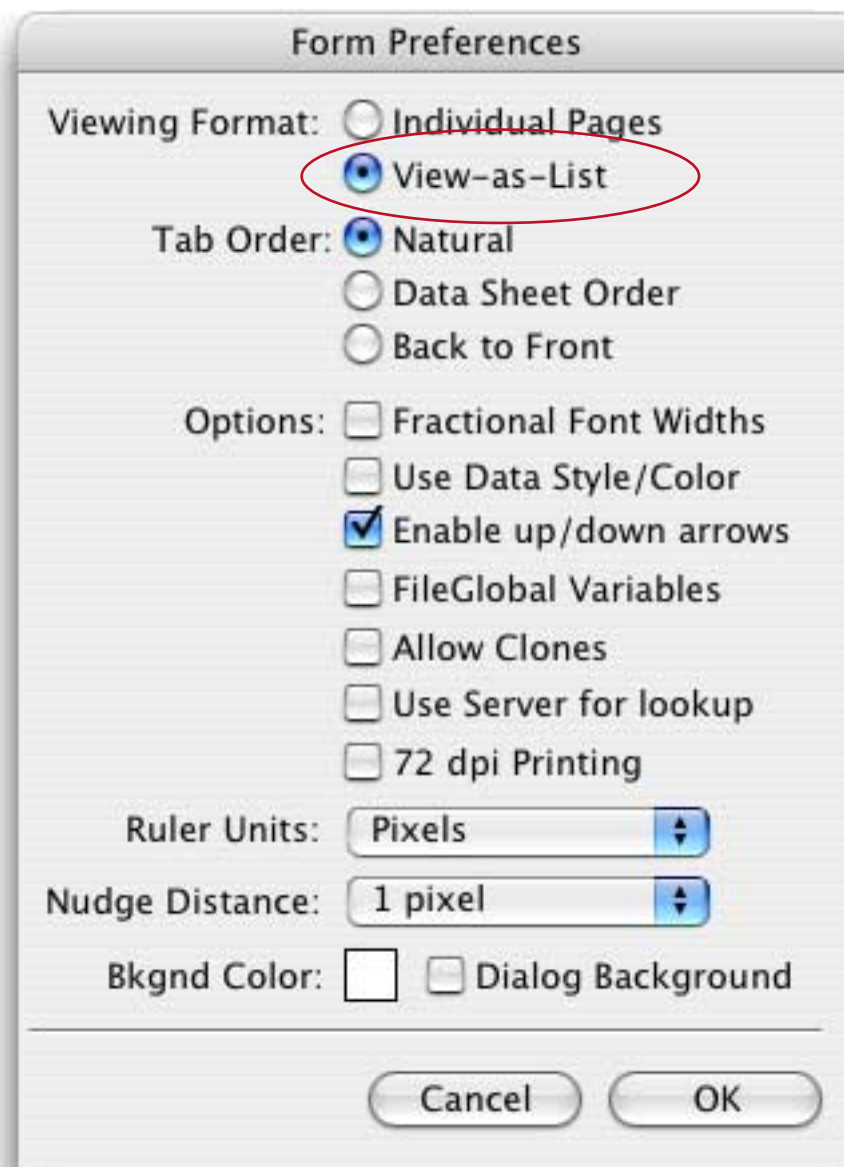


When you release the mouse Panorama will create the tile.

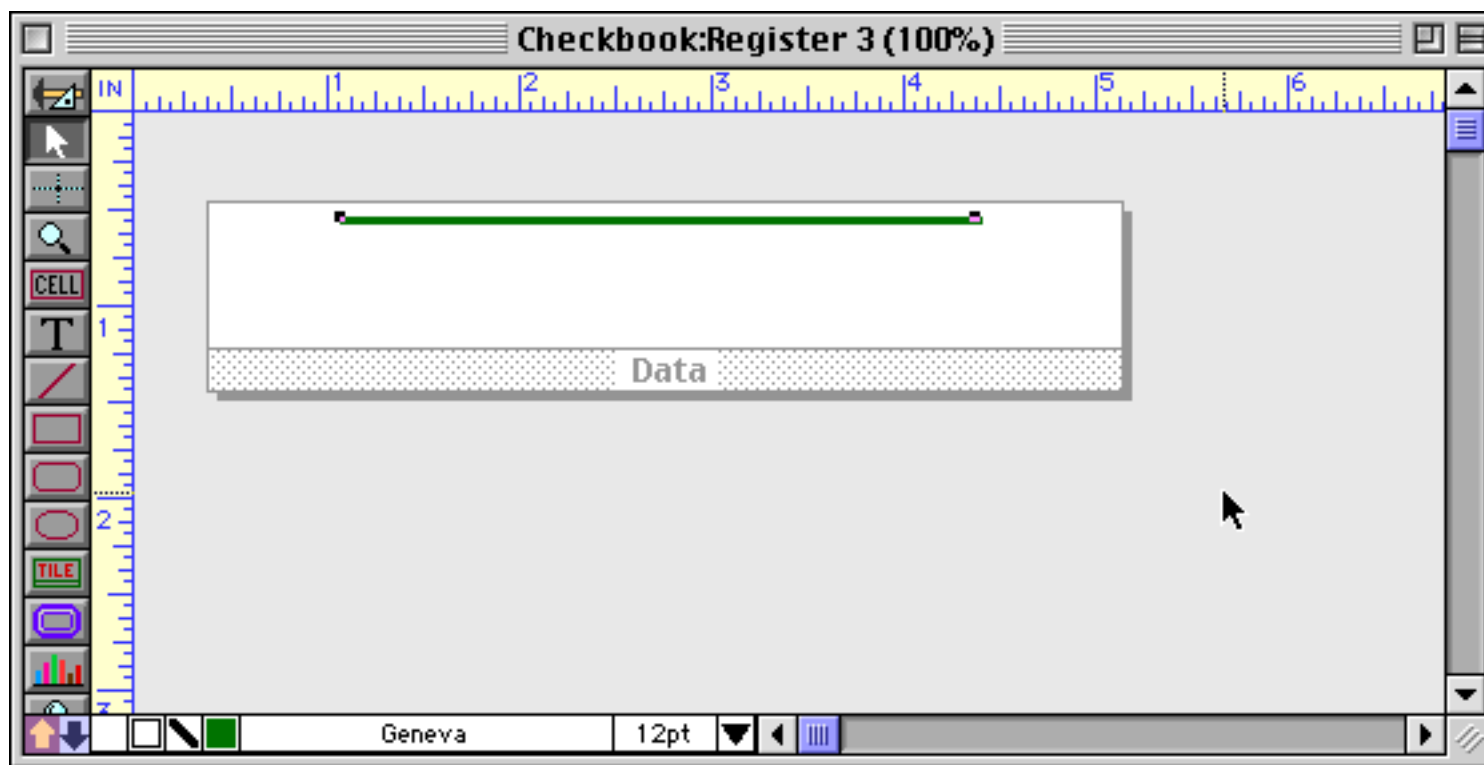


As you can see, the area outside of the form turns gray. This indicates that any object placed in this area will not be included as part of the form when in Data Access Mode.

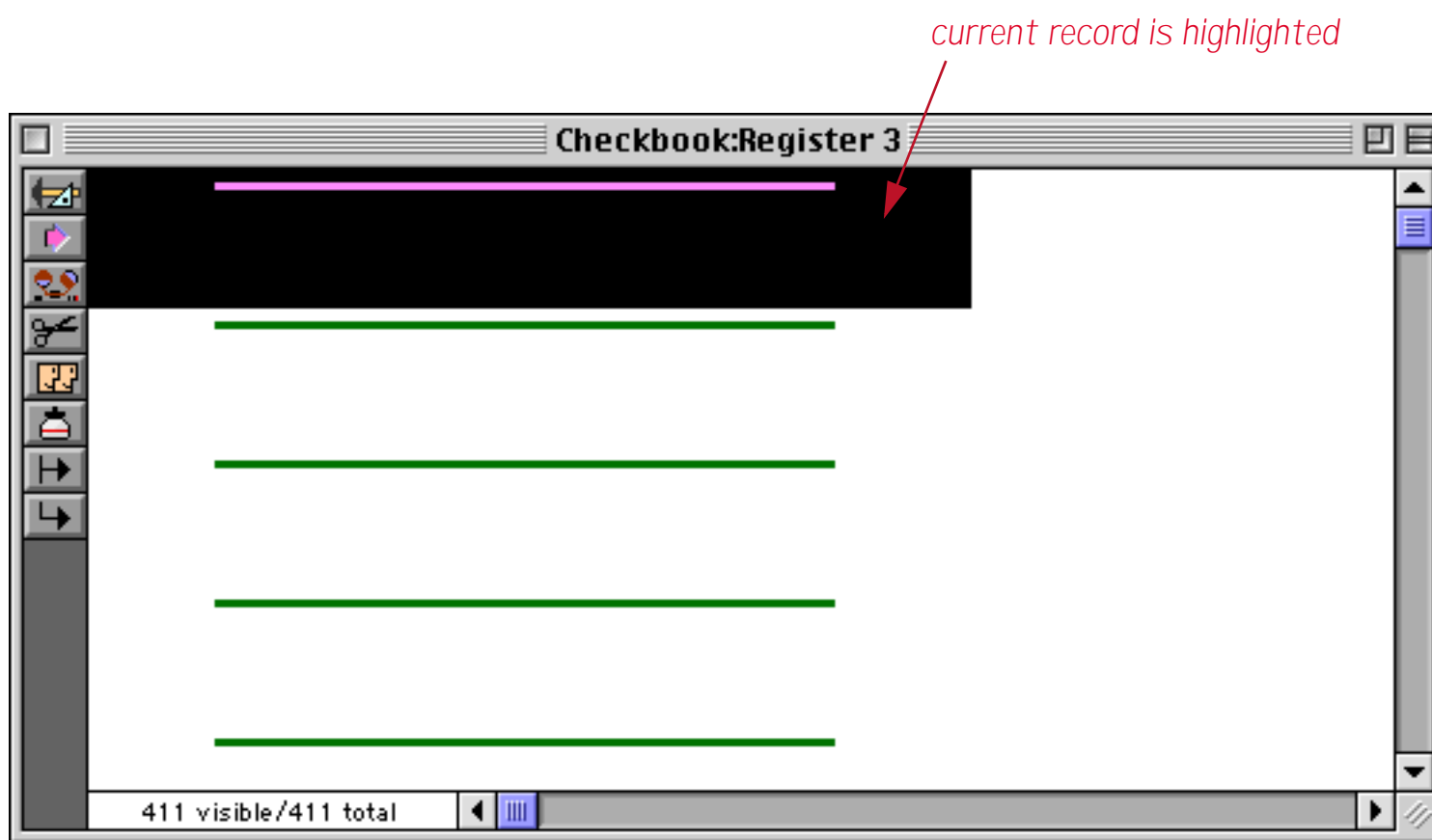
The next step is to enable the **View-As-List** option in the Form Preferences dialog. You'll find this dialog in the Setup menu.



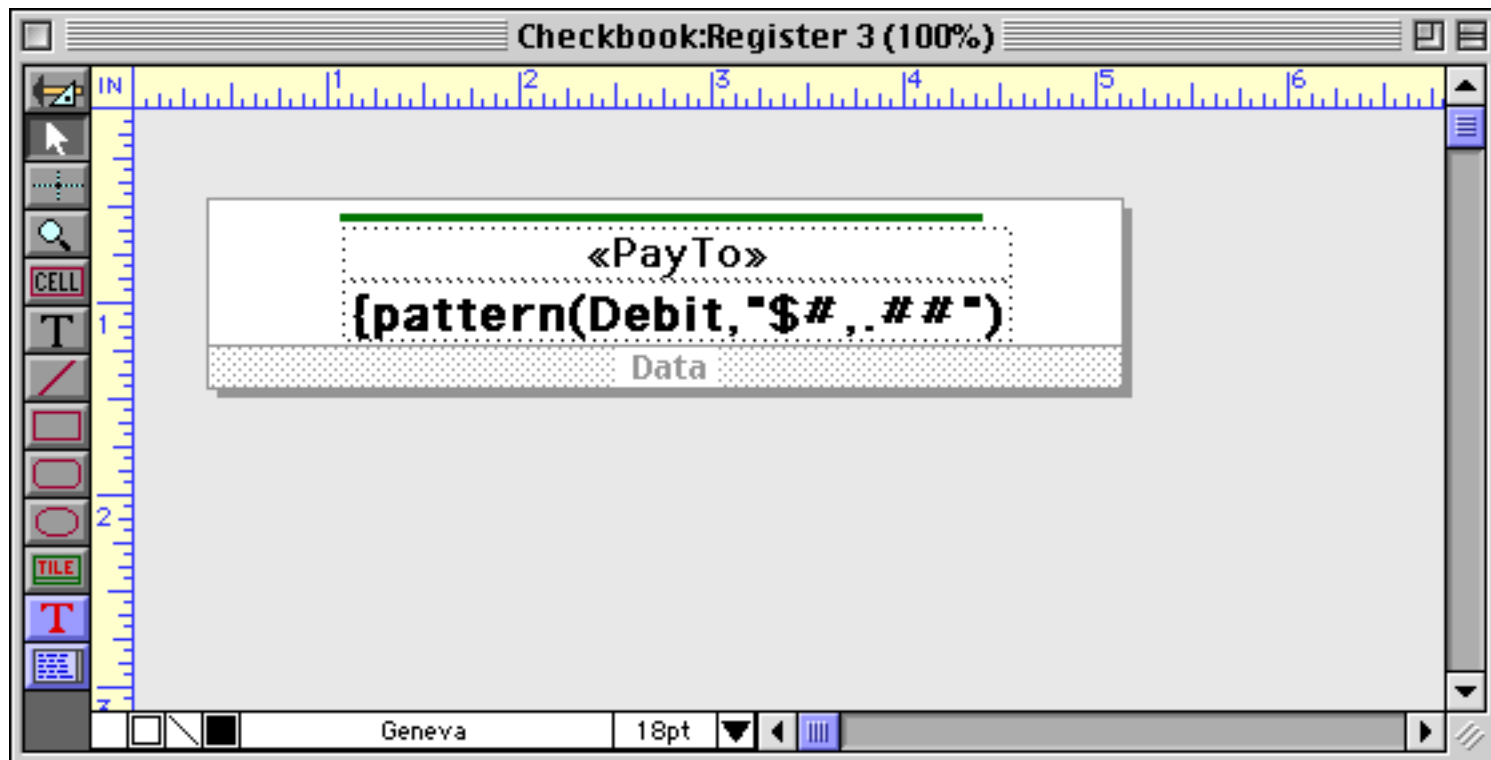
Press the OK button to confirm the new preferences. Now we're ready to start adding graphics to the form. We'll start by using the **Line** tool to add a horizontal line across the top of each record (see "[Creating a Graphic Object](#)" on page 494).



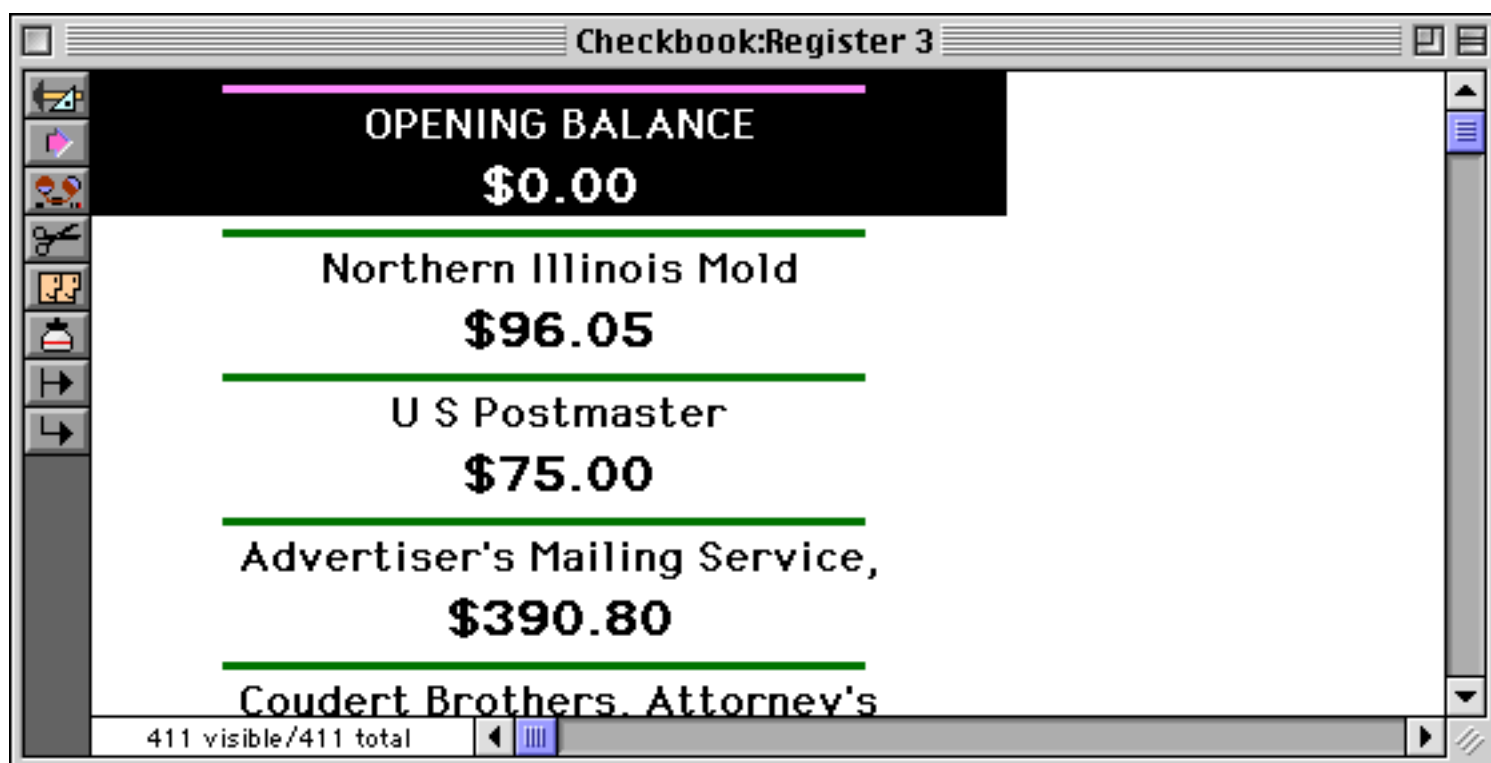
Switch to Data Access Mode to see what this configuration looks like. The line is repeated once for each record. (You'll also notice that the current record is highlighted in reverse - see "[Buttons on a View-As-List Form](#)" on page 921 for more information about this.)



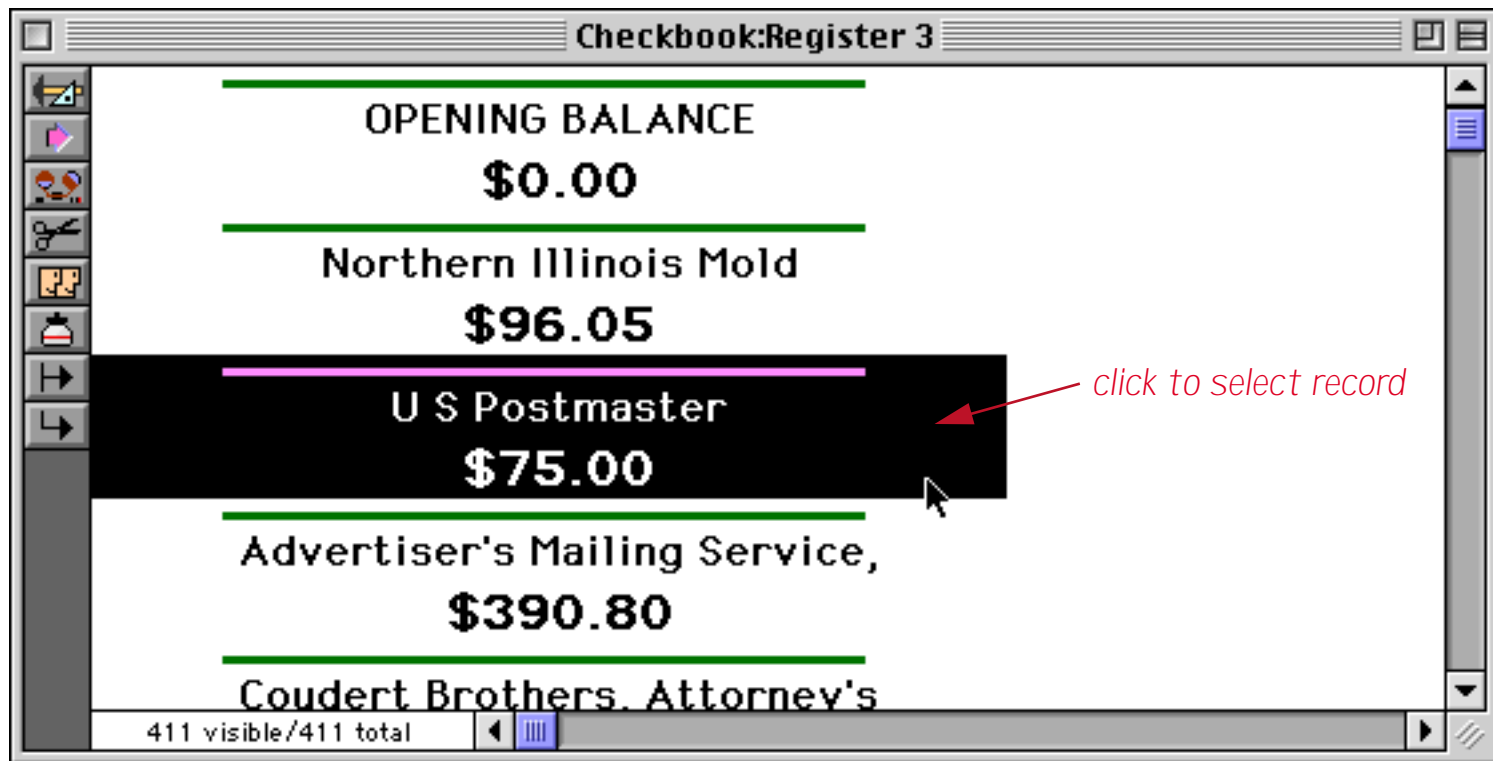
Got the idea? Now we can go back to Graphics Mode and add more objects. In this example we used auto-wrap text objects to display two fields from the database (see “[Displaying Data in Auto-Wrap Text](#)” on page 595). You can also use Data Cells (see “[Working with Data Cell Objects](#)” on page 635), Text Editor SuperObjects (see “[Text Editor SuperObject](#)” on page 639), Text Display SuperObjects (see “[Text Display SuperObjects™](#)” on page 608) or even Flash Art (see “[Flash Art™](#)” on page 750).



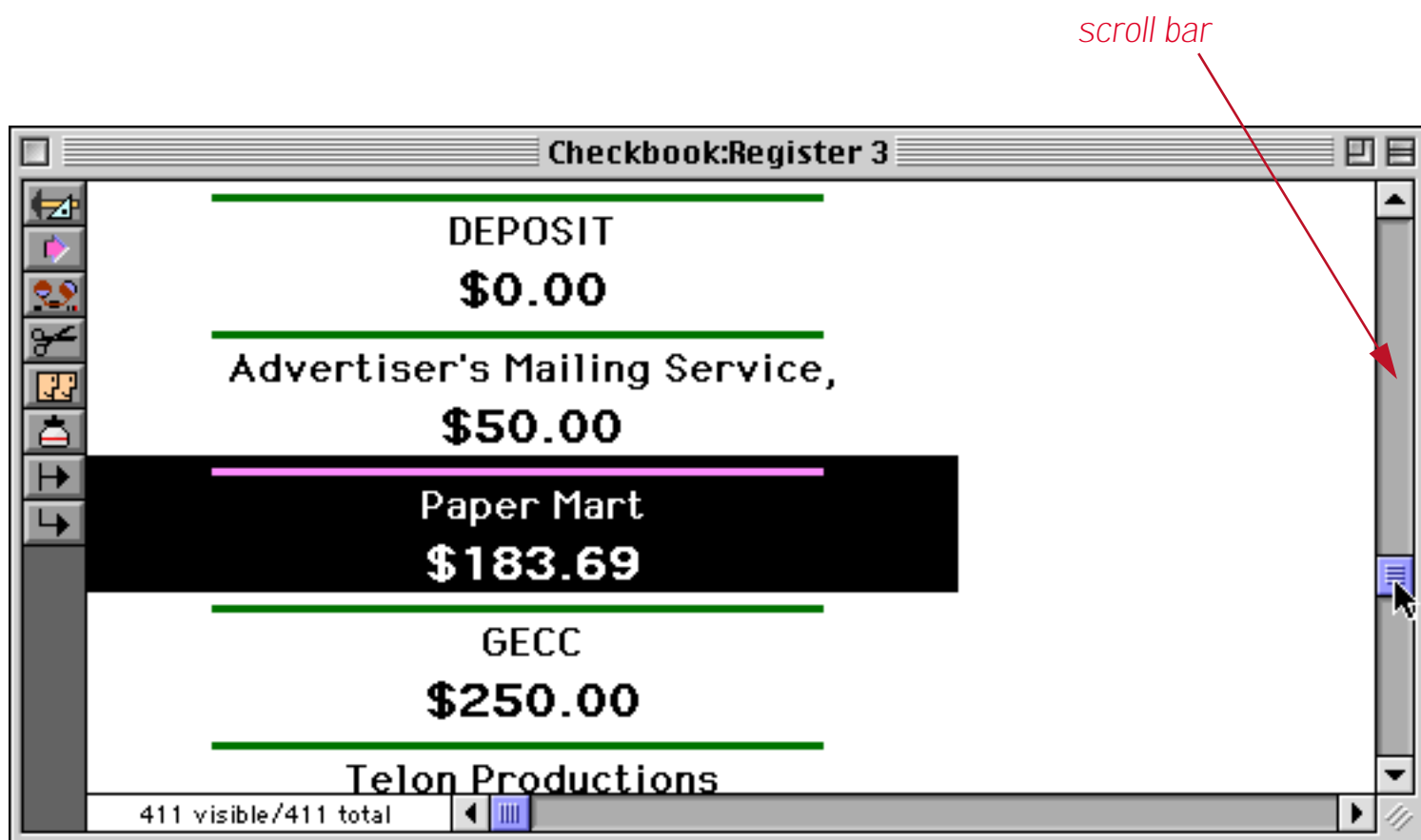
You can switch to Data Access Mode at any time to check out your work.



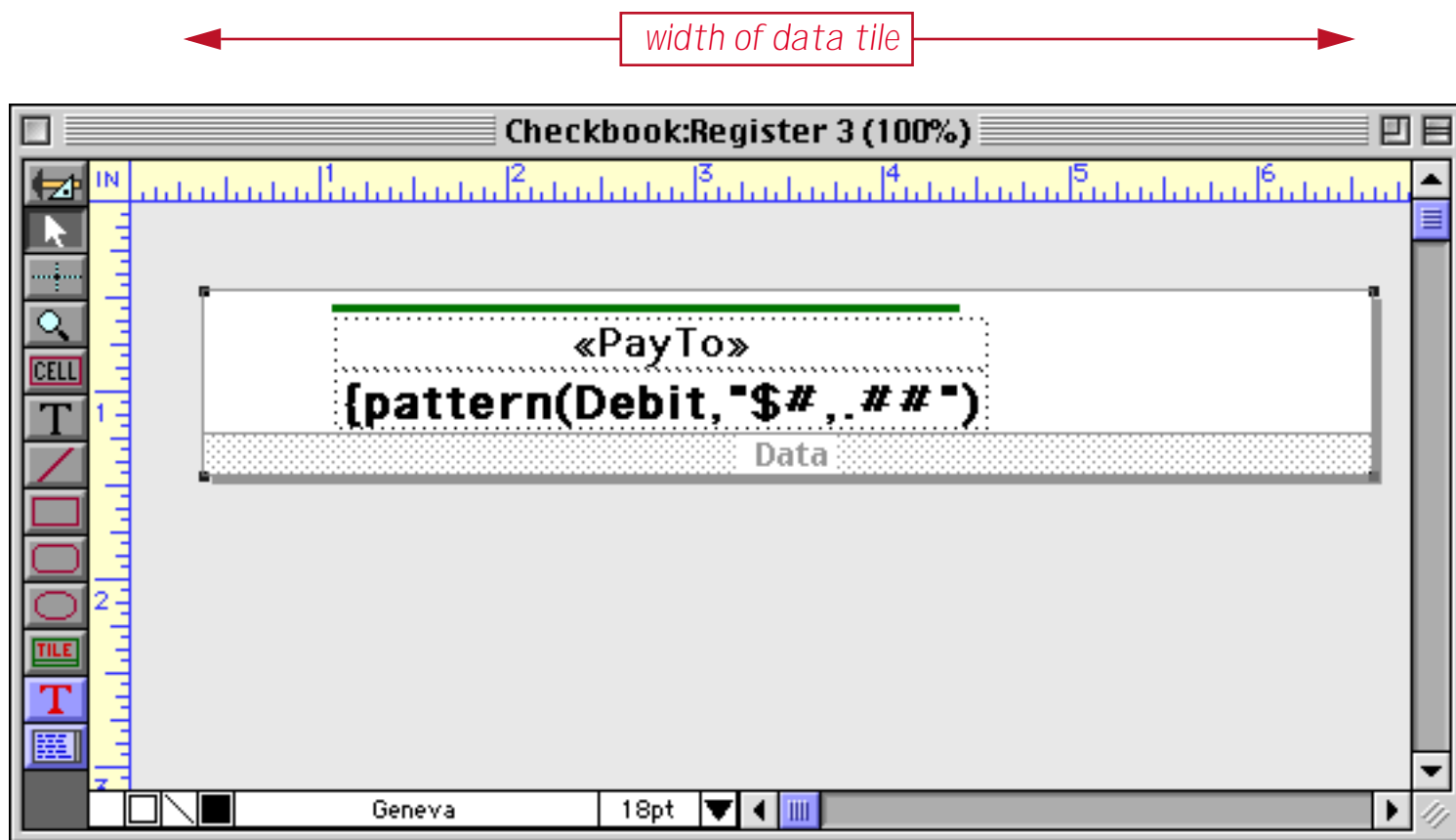
The view-as-list form kind of works like the data sheet. You can select a different record by clicking on it.



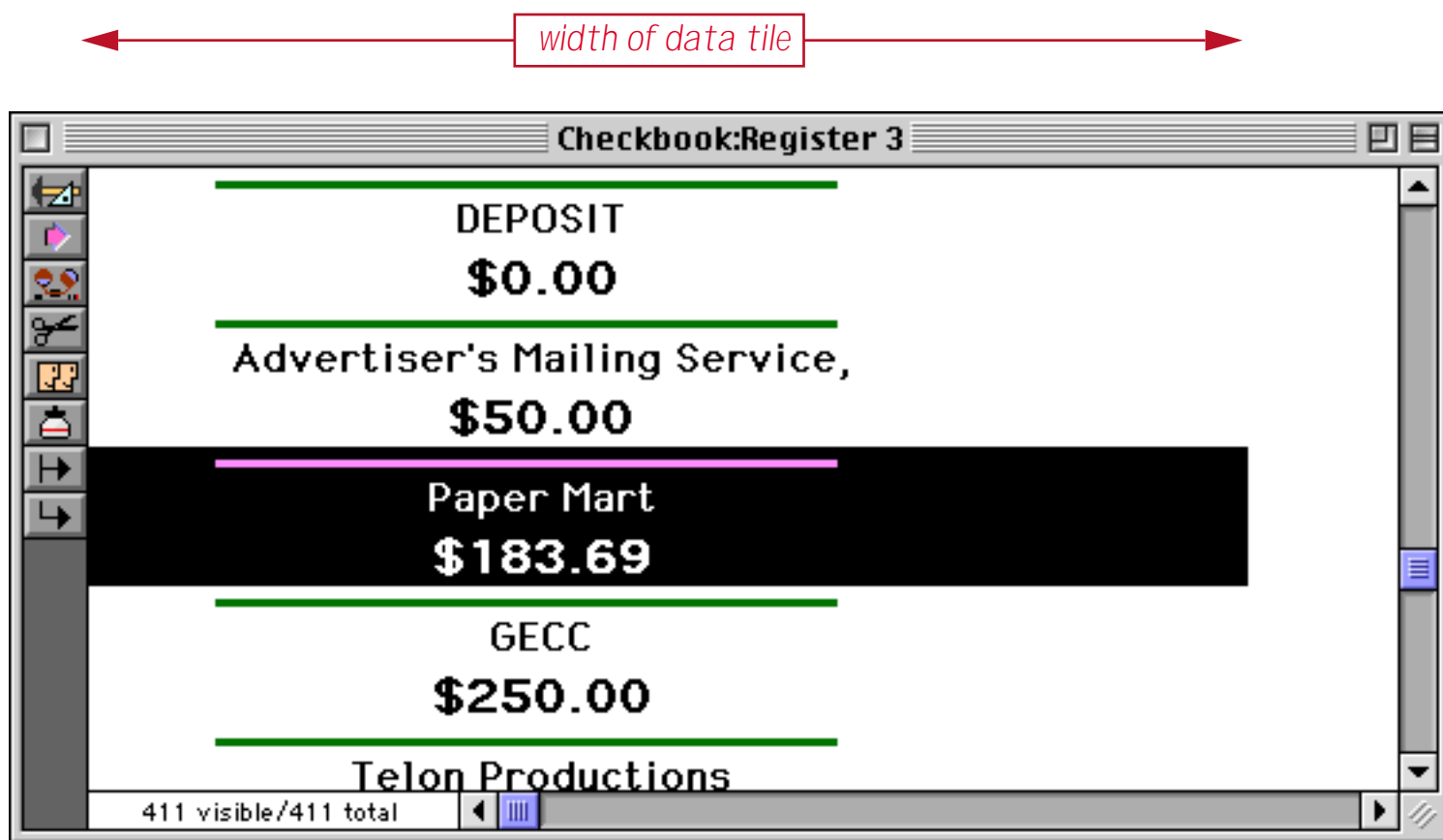
Or you can use the vertical scroll bar to navigate to any location within the database.



The width of the current record's highlighting corresponds to the width of the data cell. By changing the width of the data cell you can change the width of the highlight.



In Data Access Mode you can see the new, revised highlight width.



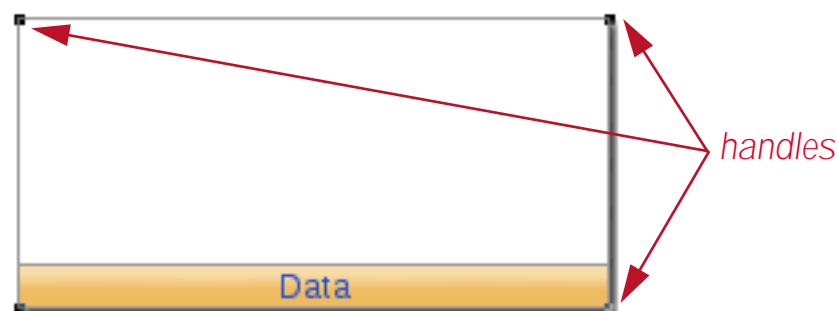
Since this form doesn't contain any Text Editor SuperObjects or Data Cells you cannot edit the data using this form. See "[Editable View-As-List Forms](#)" on page 913 to learn how to create an editable view-as-list form.

Working with Tiles

Like all other graphic objects, tiles can be moved and resized with the **Pointer** tool. However, tiles are slightly different than other objects. On the screen, a tile looks similar to an upside down window. Tiles are divided into two parts: the surface and the drag bar.



Unlike other graphic objects that can be manipulated by clicking anywhere in the object, a tile is only sensitive to clicks on its drag bar. To move a tile, press the mouse on the drag bar and drag the tile to the new position. To select a tile, click on the drag bar. When the tile is selected, four handles appear around the corners of the tile.



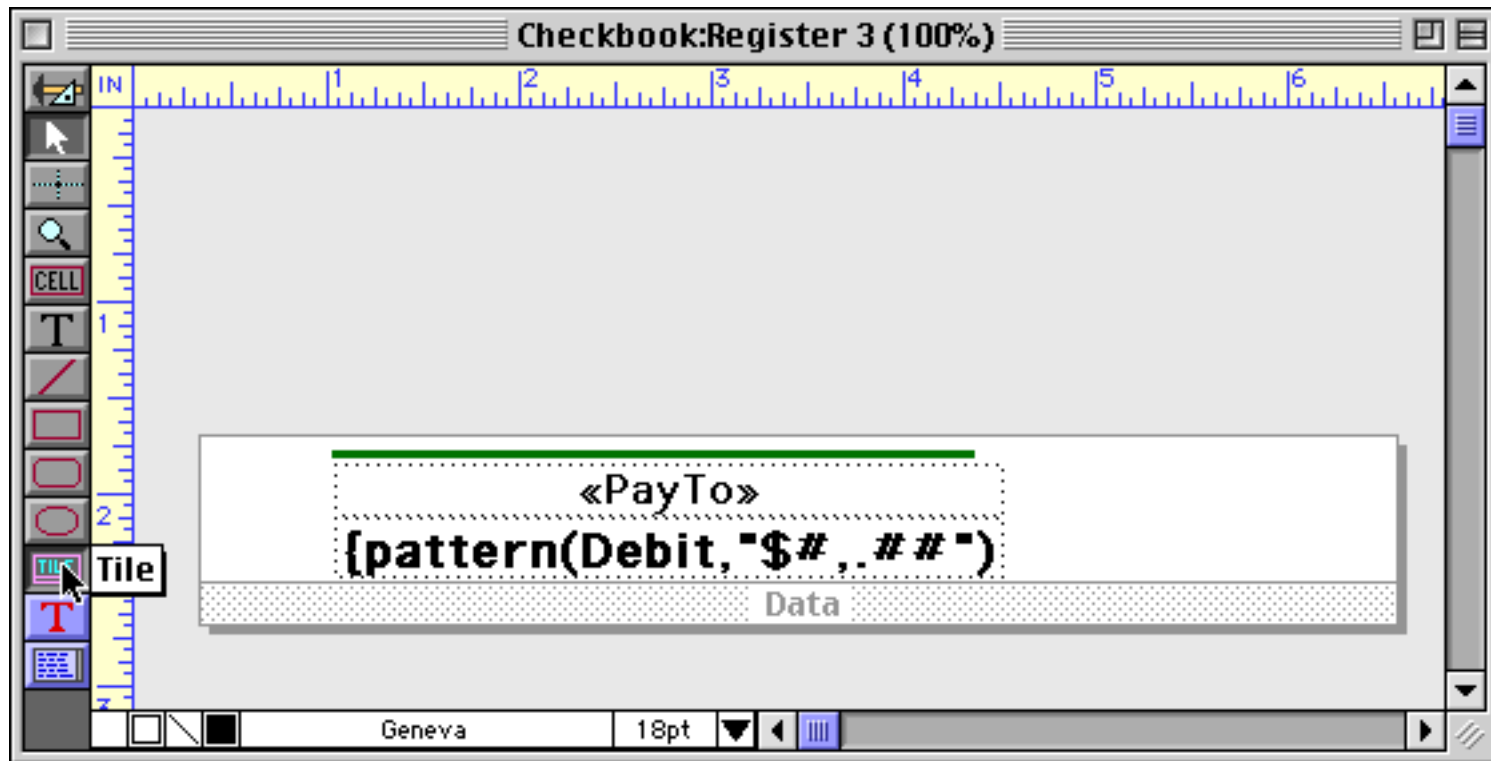
You can use these handles as grips to change the size of the tile (see "[Changing the Size of a Single Object](#)" on page 513). Tiles can also be moved or resized with the **Dimensions** command (see "[Viewing and Setting Exact Object Dimensions](#)" on page 512).

The surface of the tile is not sensitive to the mouse. In other words, clicking on the surface area does not select the tile, and you cannot move the tile by dragging on the surface.

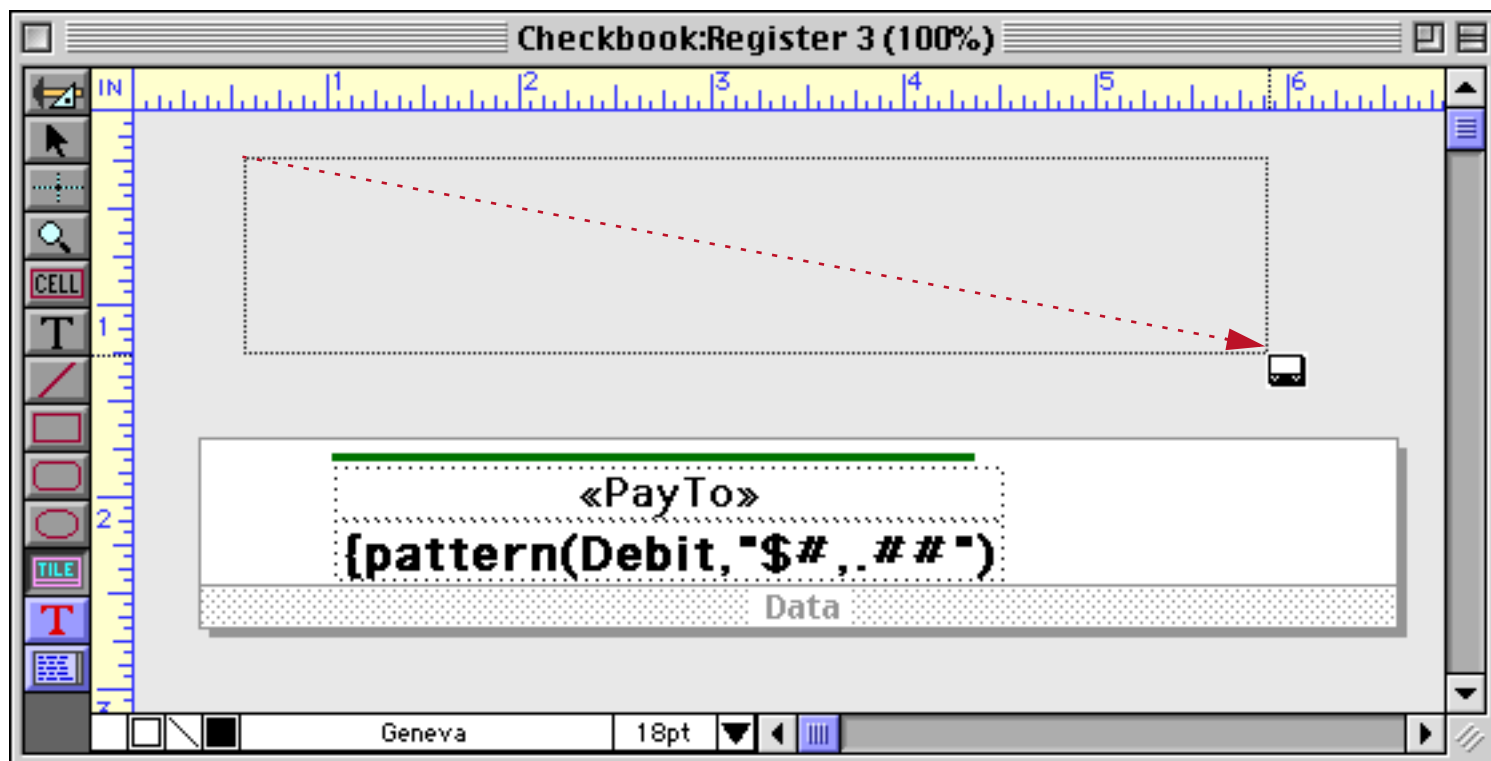
Adding a View-As-List Header

To add a header to your view-as-list form you'll need to add a second tile. Surprisingly enough this is called a **header tile**. There are two methods for creating this tile—you can create it from scratch or you can create it from a copy of the data tile.

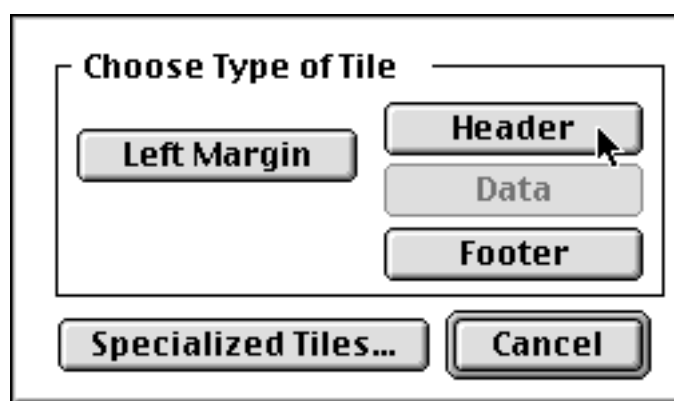
To create a header tile from scratch start by selecting the **Tile** tool.



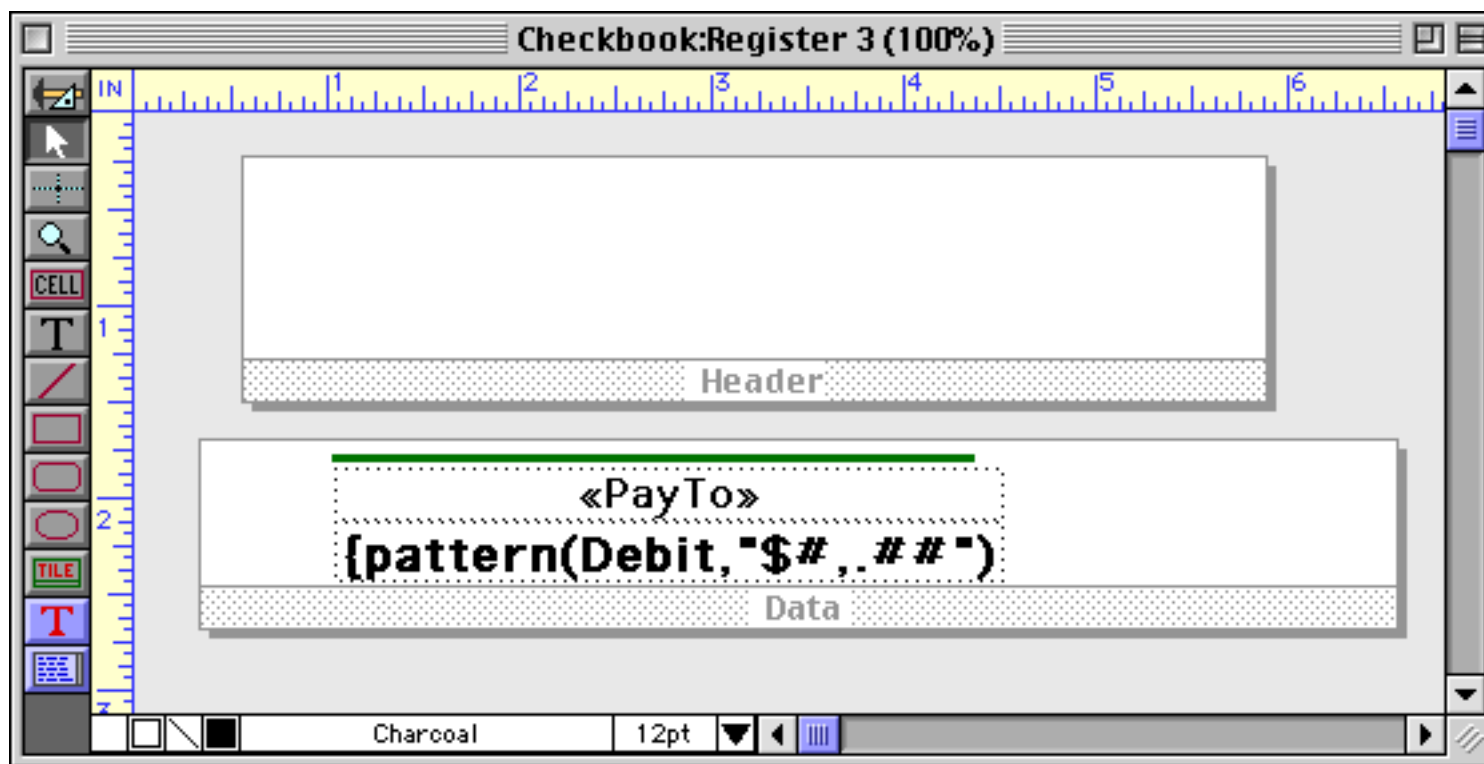
Now drag the mouse across the form where you want the tile to appear. The header tile does not have to line up with the data tile, although that can make it easier to visualize the final result.



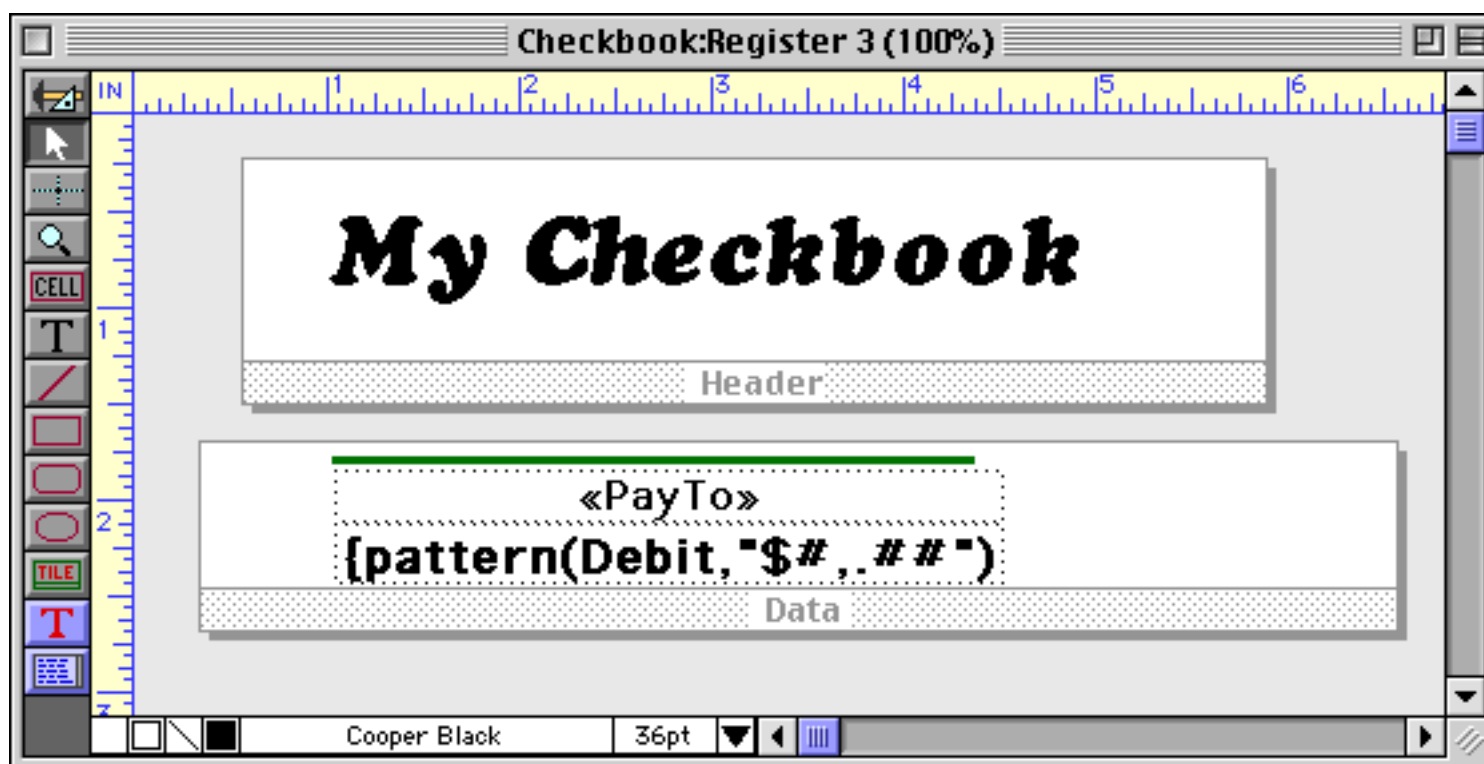
When you release the mouse a tile configuration dialog appears. This dialog allows you to select the type of tile you are creating.



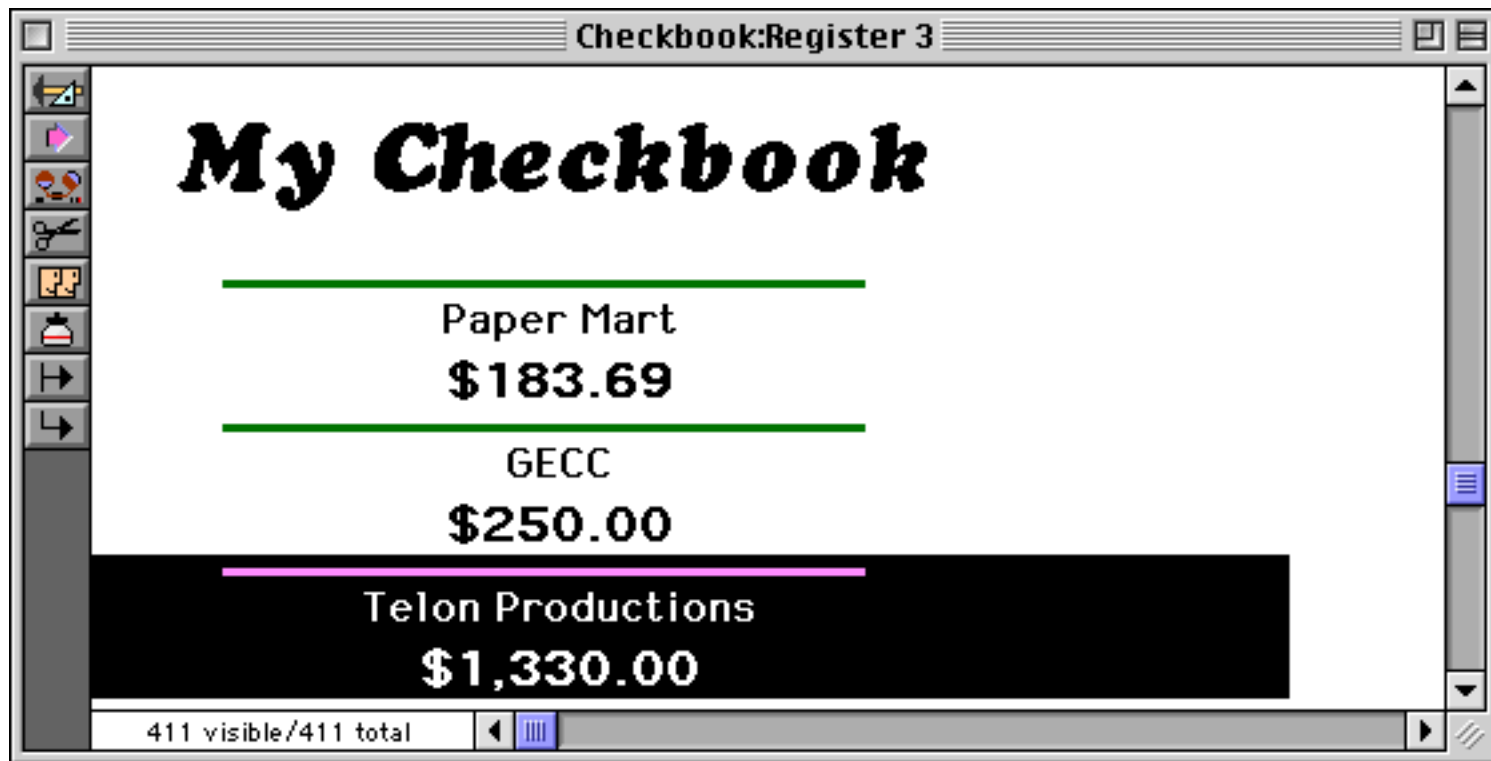
Press the **Header** button. When you press the button, Panorama creates the new tile.



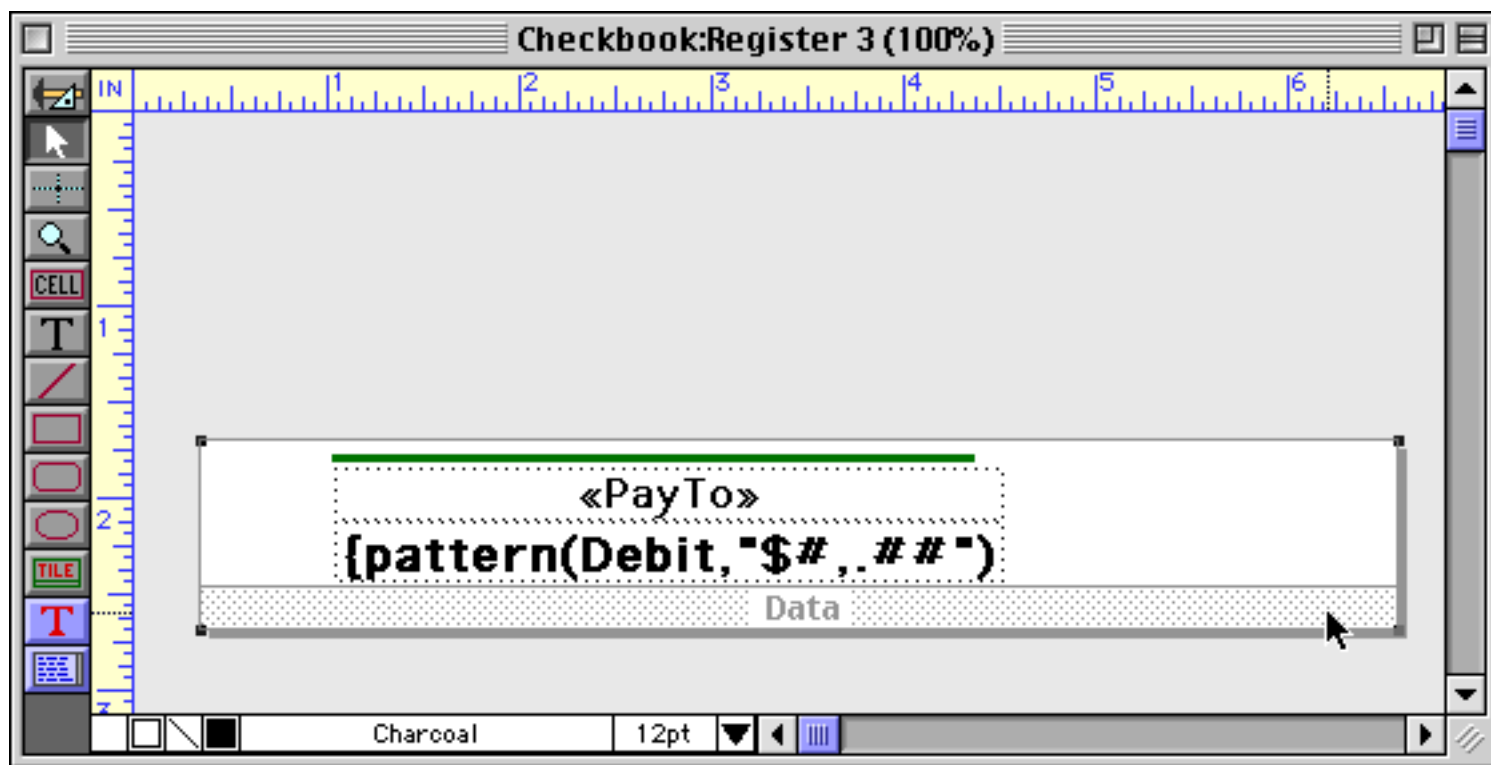
Now you should add any graphics and text that you want to appear on the header.



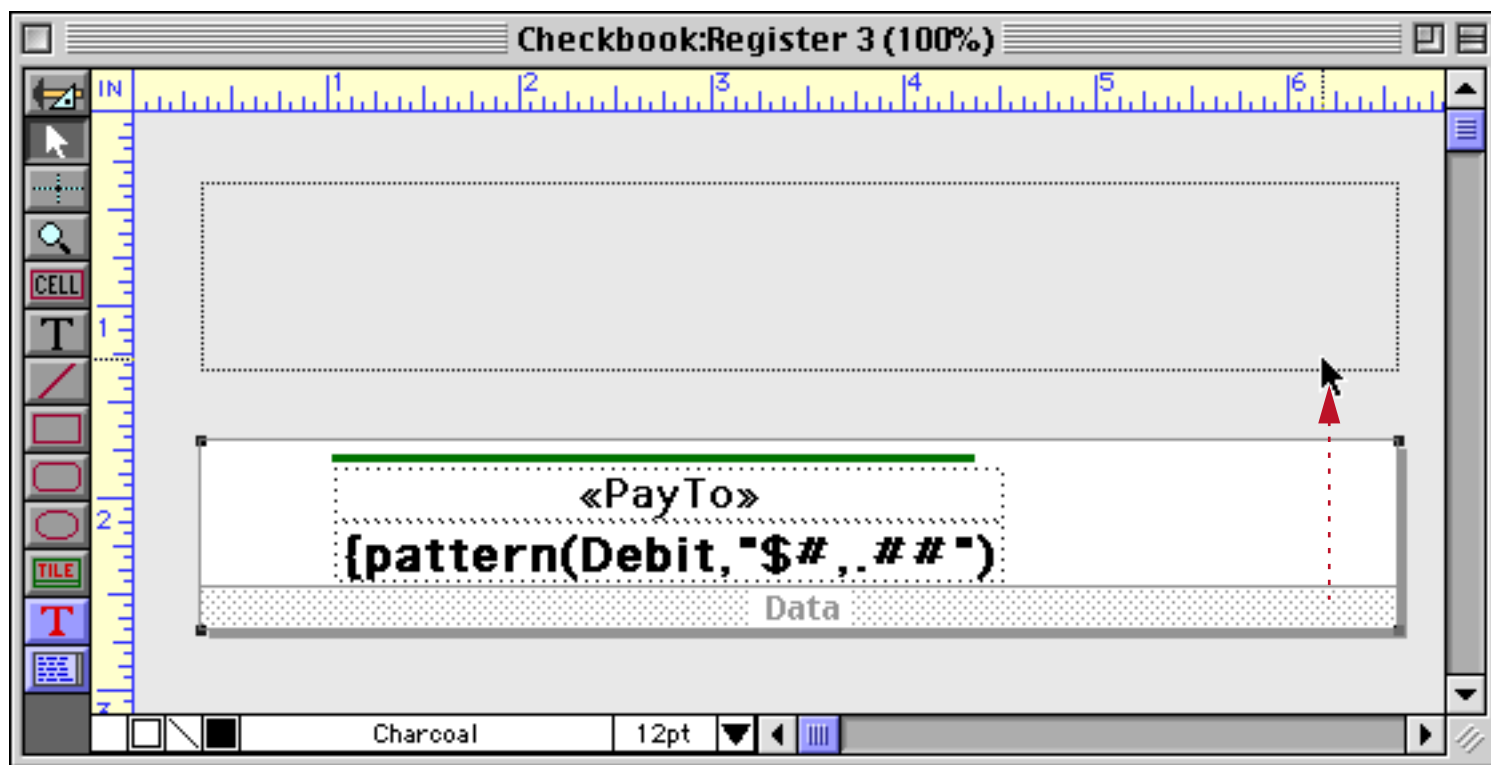
Switch to Data Access Mode to see the finished result.



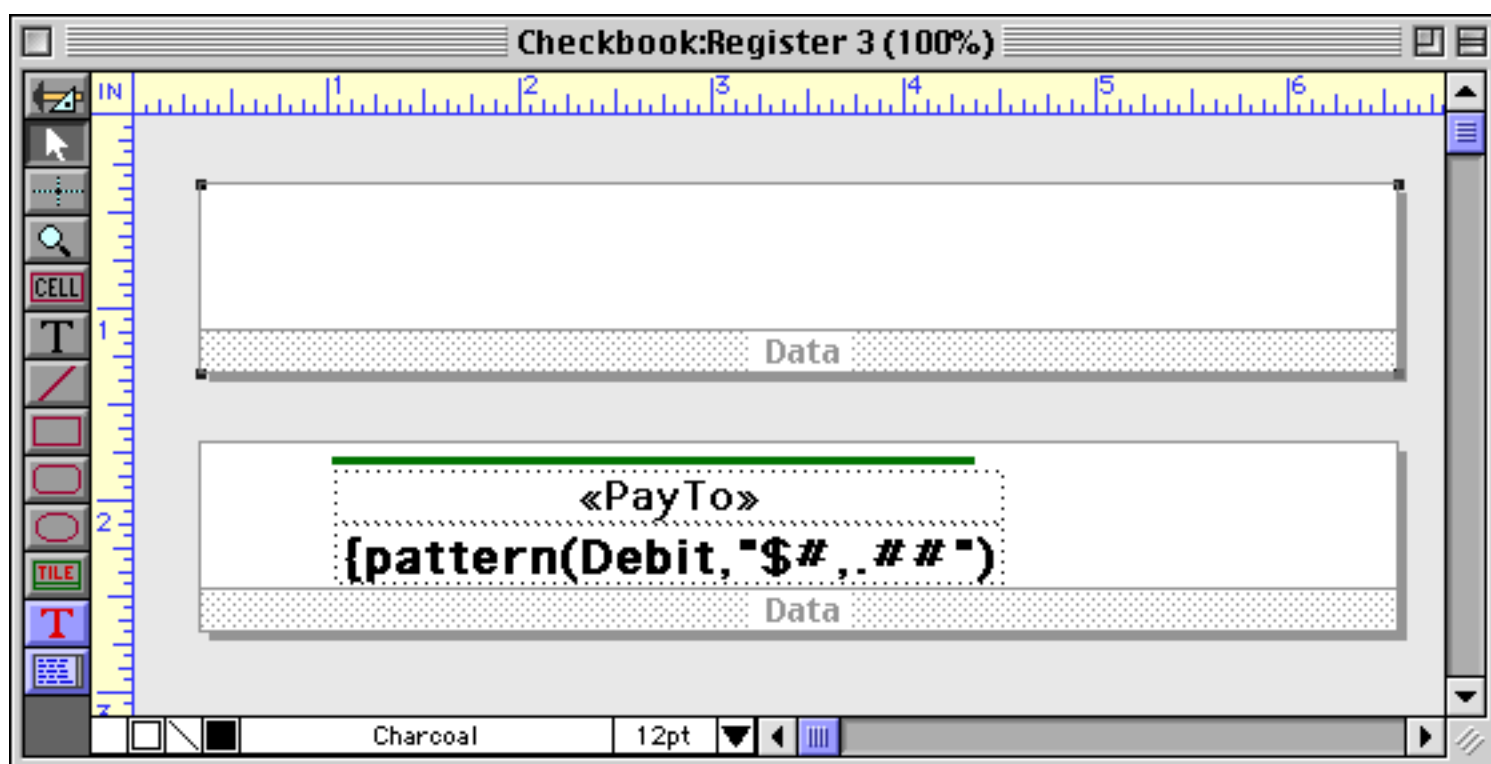
Now let's create a header tile by duplicating the data tile. Start with just the data tile.



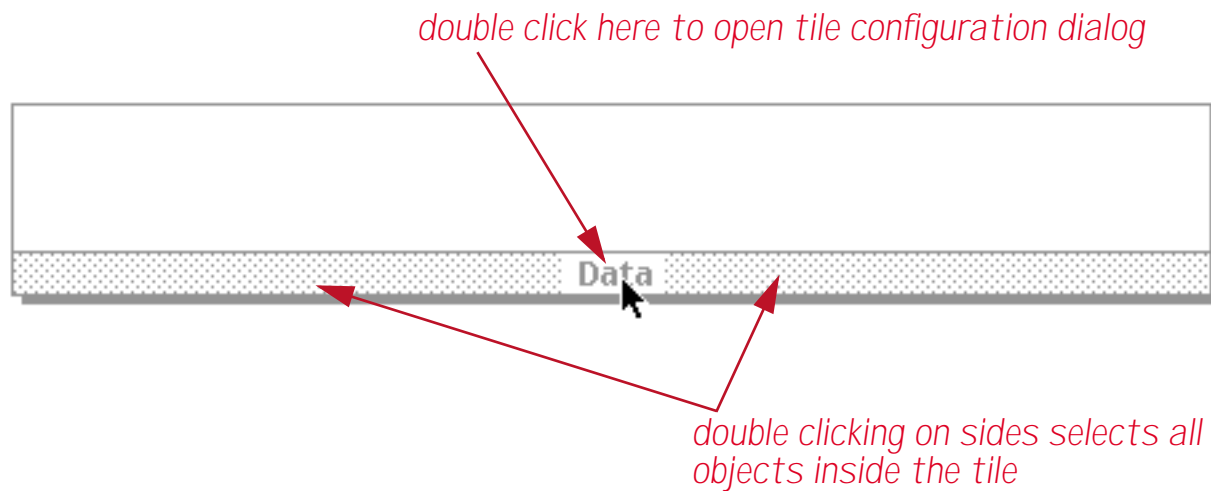
To duplicate the tile, hold down the **Option** key (Mac) or **Alt** key (Windows) and drag the tile (see “[Drag Duplicating](#)” on page 561). You may also want to hold down the **Shift** key at the same time to make sure that the two tiles stay in perfect alignment.



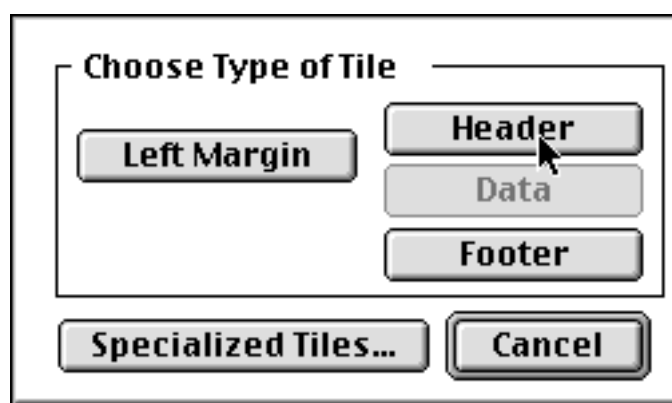
When you release the mouse your form will contain two data tiles.



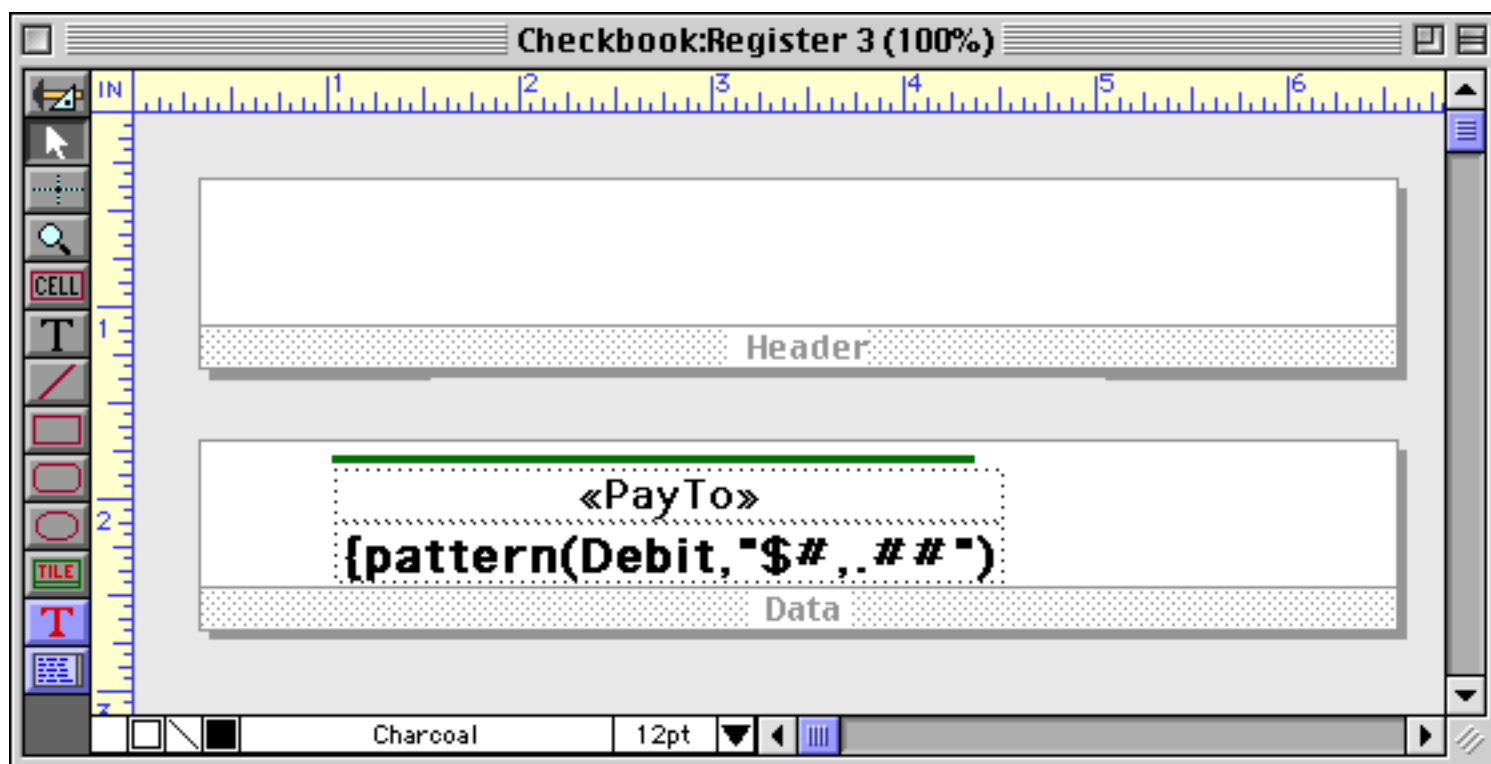
To transform the new data tile into a header tile, double click on the word **Data**.



This opens the tile's configuration dialog.



Press **Header** to convert the data tile into a header tile.

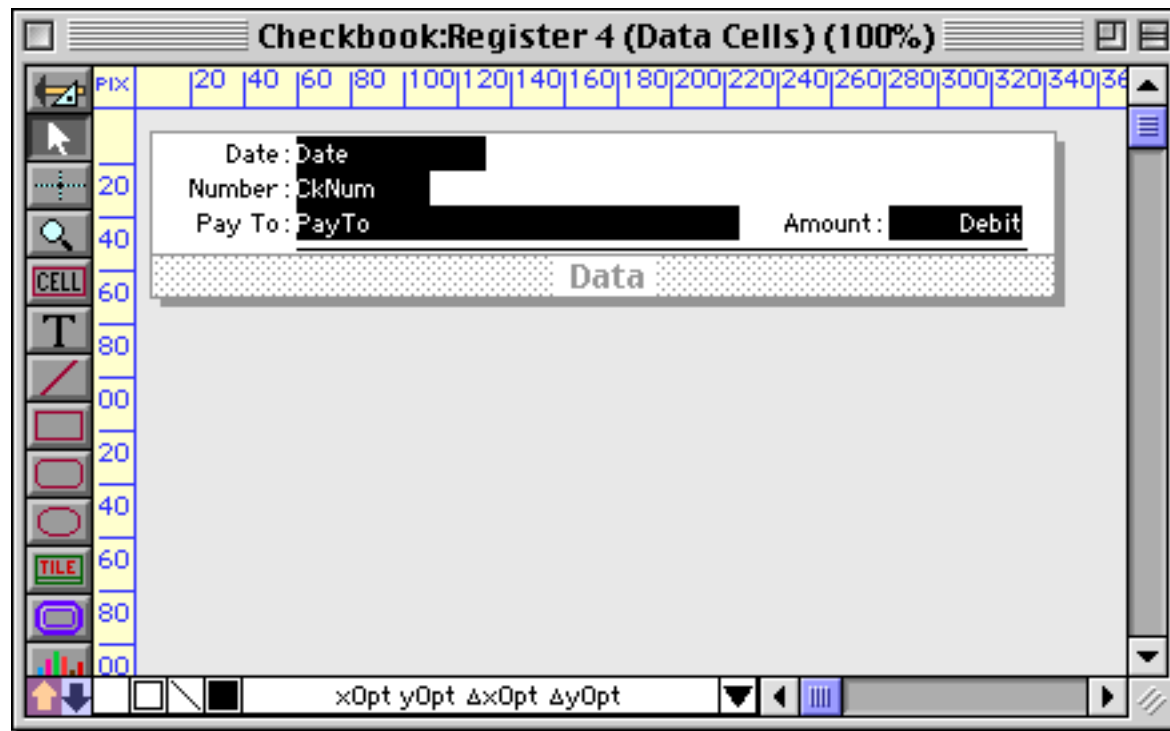


Voila! Now you can add any graphics and text you want to add to the header, and your form will be complete.

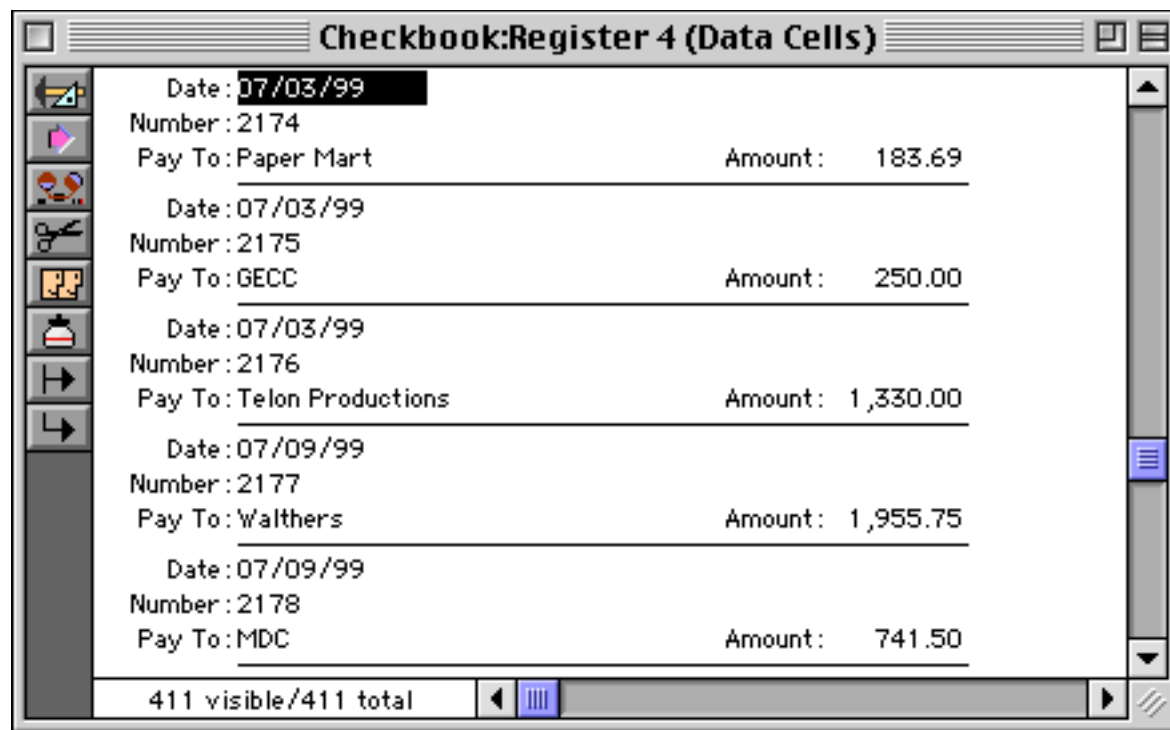
Editable View-As-List Forms

Adding data cells or Text Editor SuperObjects to the data tile makes it possible to edit the database using the view-as-list forms. The operation of each is a bit different.

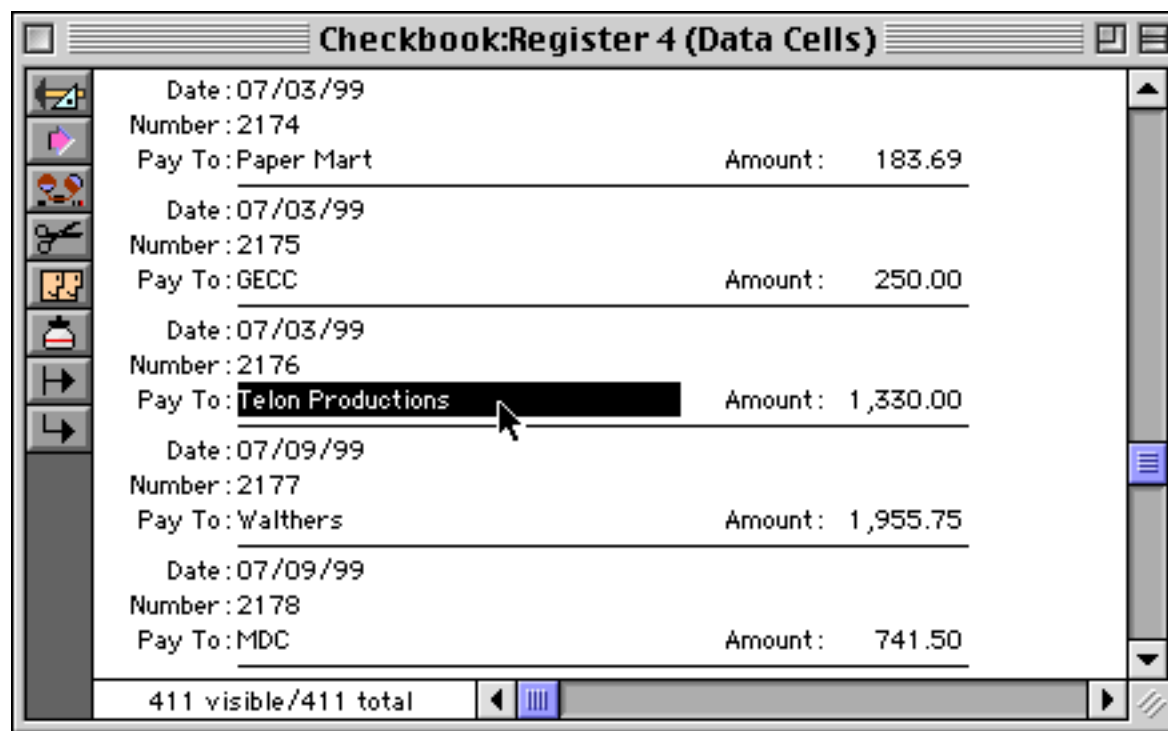
Here is a view-as-list form designed with Data Cells for editing. To learn how to add data cells to your form see “[Working with Data Cell Objects](#)” on page 635.



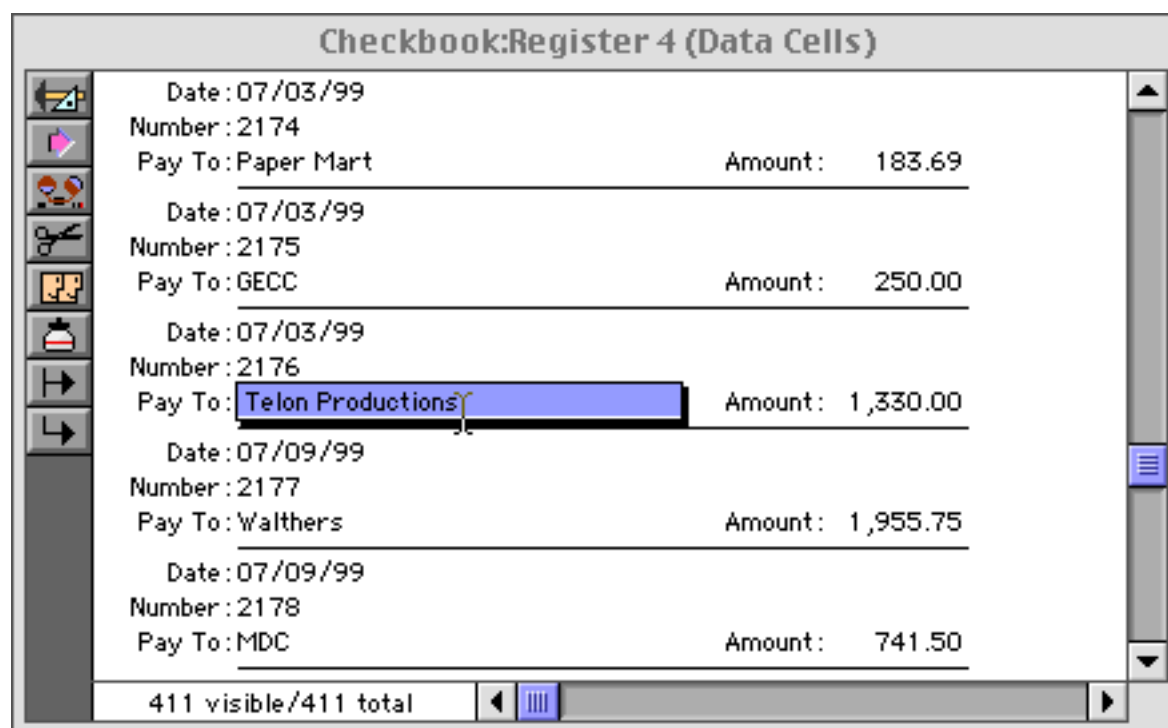
Switch to Data Access Mode to see the list view.



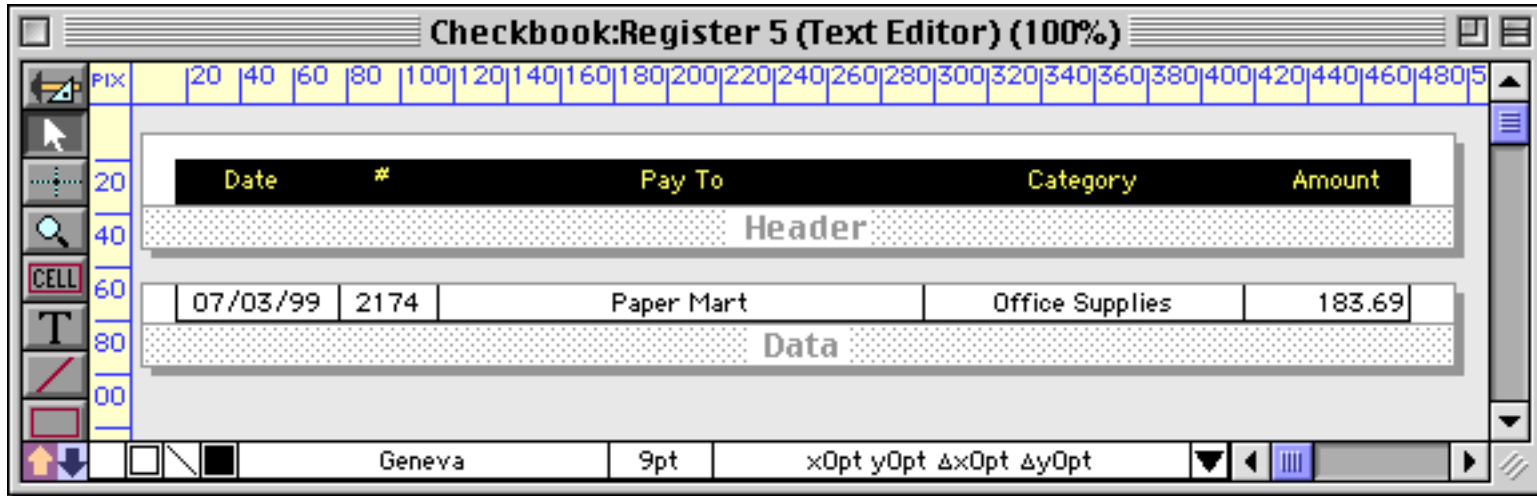
As you can see, when Data Cells are added to the form Panorama no longer highlights the entire record. Only the current cell itself is highlighted. You can click on any visible cell to highlight it.



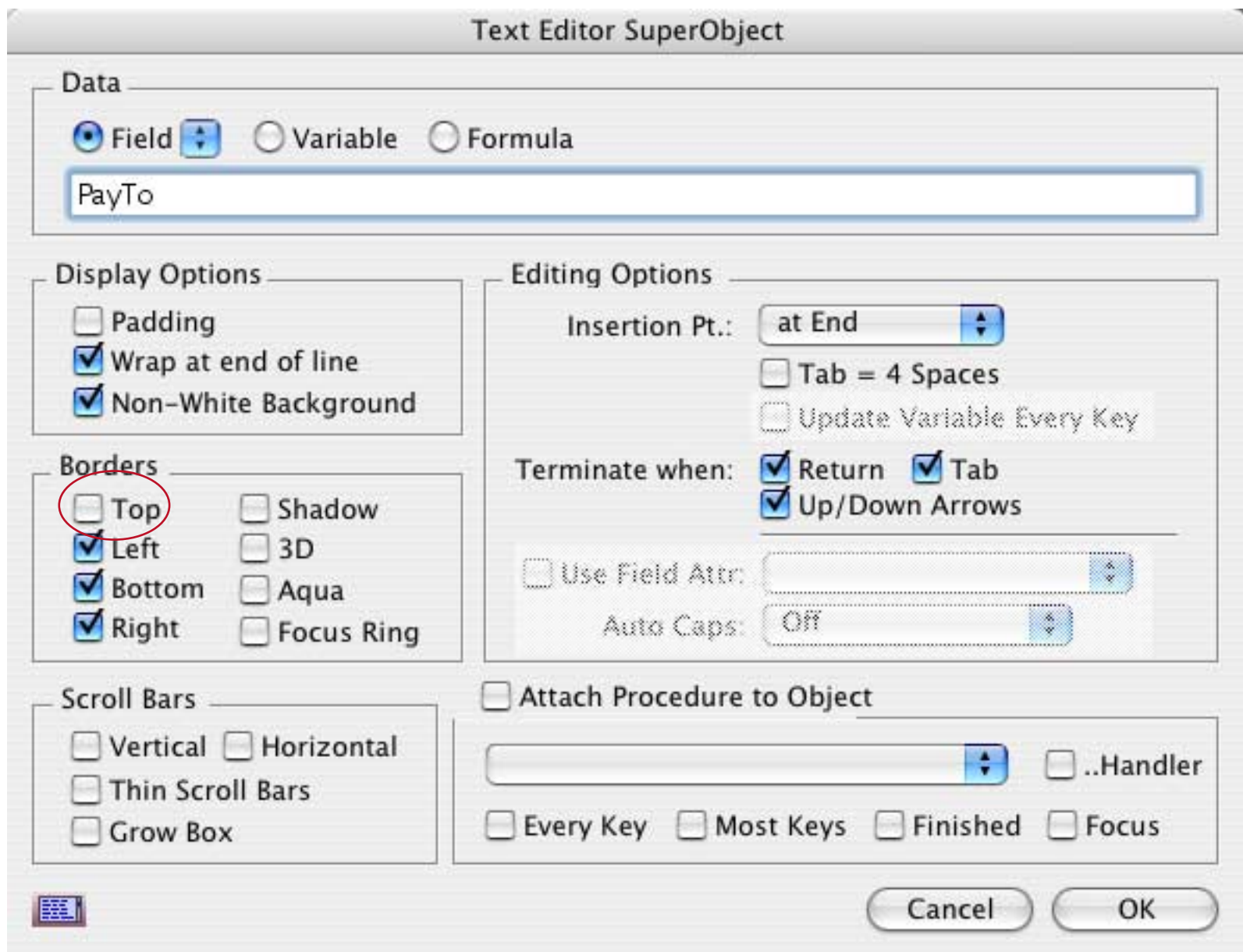
To edit a cell, double click on it. To learn more about editing within a cell see "[Editing Data Within a Cell](#)" on page 272.



Here is a form created using Text Editor SuperObjects (see “Text Editor SuperObject” on page 639).



In this case, each object was created with borders on the left, bottom and right but not on the top. Here is an “exploded view” of these objects, along with the configuration dialog for one of the objects.



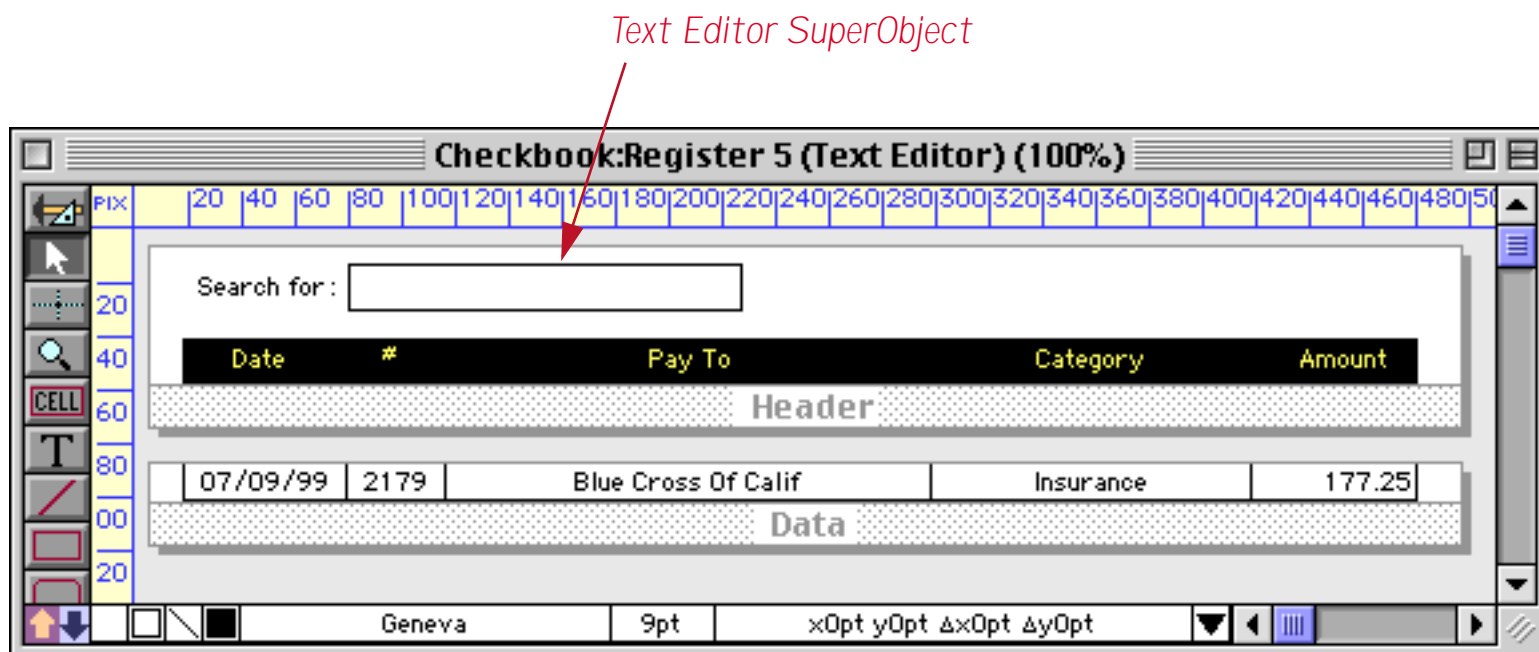
Switch to Data Access Mode to see the finished result.

Date	#	Pay To	Category	Amount
07/03/99	2174	Paper Mart	Office Supplies	183.69
07/03/99	2175	GECC	Fixed Assets	250.00
07/03/99	2176	Telon Productions	Purchases	1,330.00
07/09/99	2177	Walthers	Purchases	1,955.75
07/09/99	2178	MDC	Purchases	741.50
07/09/99	2179	Blue Cross Of Calif	Insurance	177.25
07/09/99	2180	Advertiser's Mailing Service, Inc.	Advertising	56.20
07/09/99	2181	Blue Dolphin Press	Printing	92.28
07/09/99	2182	Cable & Wireless	Telephone	82.38
07/11/99	2183	Advertiser's Mailing Service, Inc.	Advertising	25.70
07/15/99		DEPOSIT		
07/16/99	2184	Advertiser's Mailing Service, Inc.	Advertising	42.50
07/16/99	2185	Railroad Model Craftsman	Advertising	453.42
07/16/99	2186	U S Postmaster	Postage	75.00
07/16/99	2187	Pacific Bell	Telephone	26.94
07/16/99	2188	G T E	Telephone	210.67
07/16/99	2189	Unocal	Auto	38.11

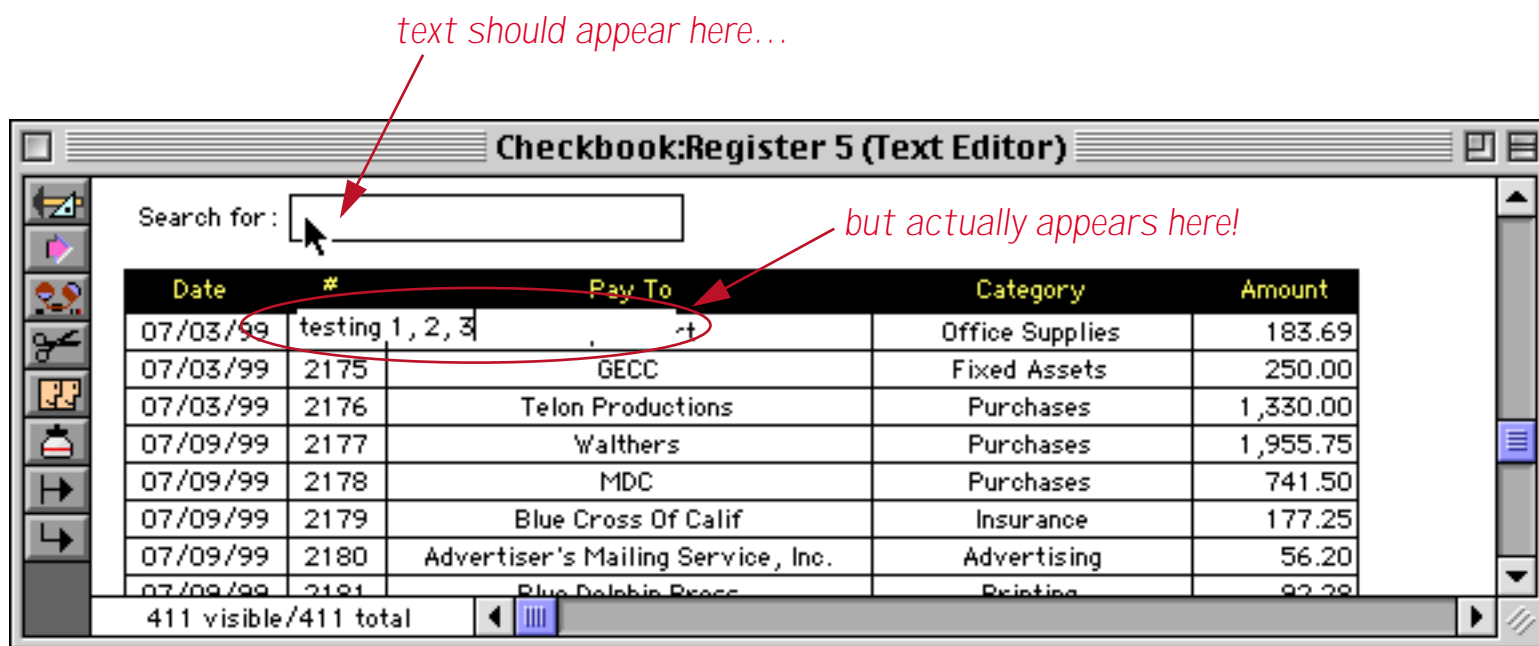
As you can see, one potential disadvantage of this technique is that nothing is highlighted, so it is very difficult to see which record is current. (If you need to be able to tell which record is highlighted, use Data Cells.) To edit a particular item just click on it.

Date	#	Pay To	Category	Amount
07/03/99	2174	Paper Mart	Office Supplies	183.69
07/03/99	2175	GECC	Fixed Assets	250.00
07/03/99	2176	Telon Productions	Purchases	1,330.00
07/09/99	2177	Walthers	Purchases	1,955.75
07/09/99	2178	MDC	Purchases	741.50
07/09/99	2179	Blue Cross Of Calif	Insurance	177.25
07/09/99	2180	Advertiser's Mailing Service, Inc.	Advertising	56.20
07/09/99	2181	Blue Dolphin Press	Printing	92.28
07/09/99	2182	Cable & Wireless	Telephone	82.38
07/11/99	2183	Advertiser's Mailing Service, Inc.	Advertising	25.70
07/15/99		DEPOSIT		
07/16/99	2184	Advertiser's Mailing Service, Inc.	Advertising	42.50
07/16/99	2185	Railroad Model Craftsman	Advertising	453.42
07/16/99	2186	U S Postmaster	Postage	75.00
07/16/99	2187	Pacific Bell	Telephone	26.94
07/16/99	2188	G T E	Telephone	210.67
07/16/99	2189	Unocal	Auto	38.11

You might be tempted to try placing a Text Editor SuperObject or Data Cell onto the header tile, like this.



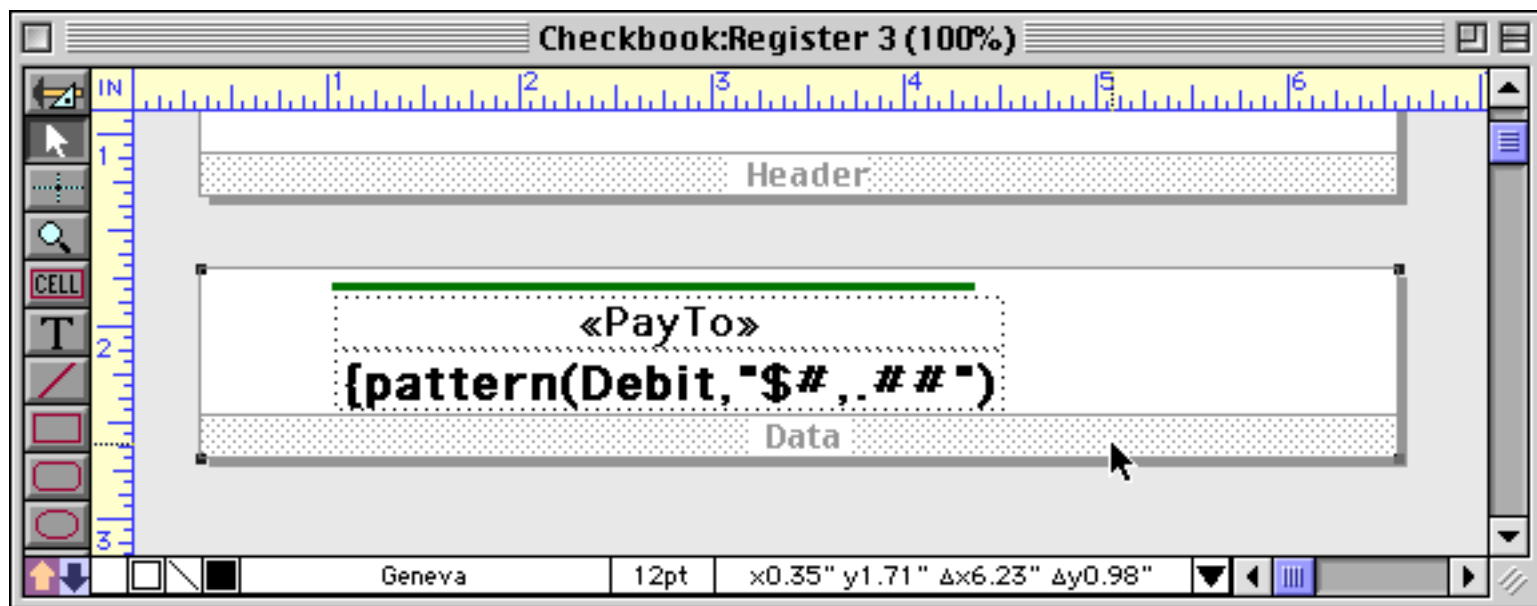
Unfortunately, this does not work correctly. When you attempt to edit the text, the edited text appears in the wrong position, something like this.



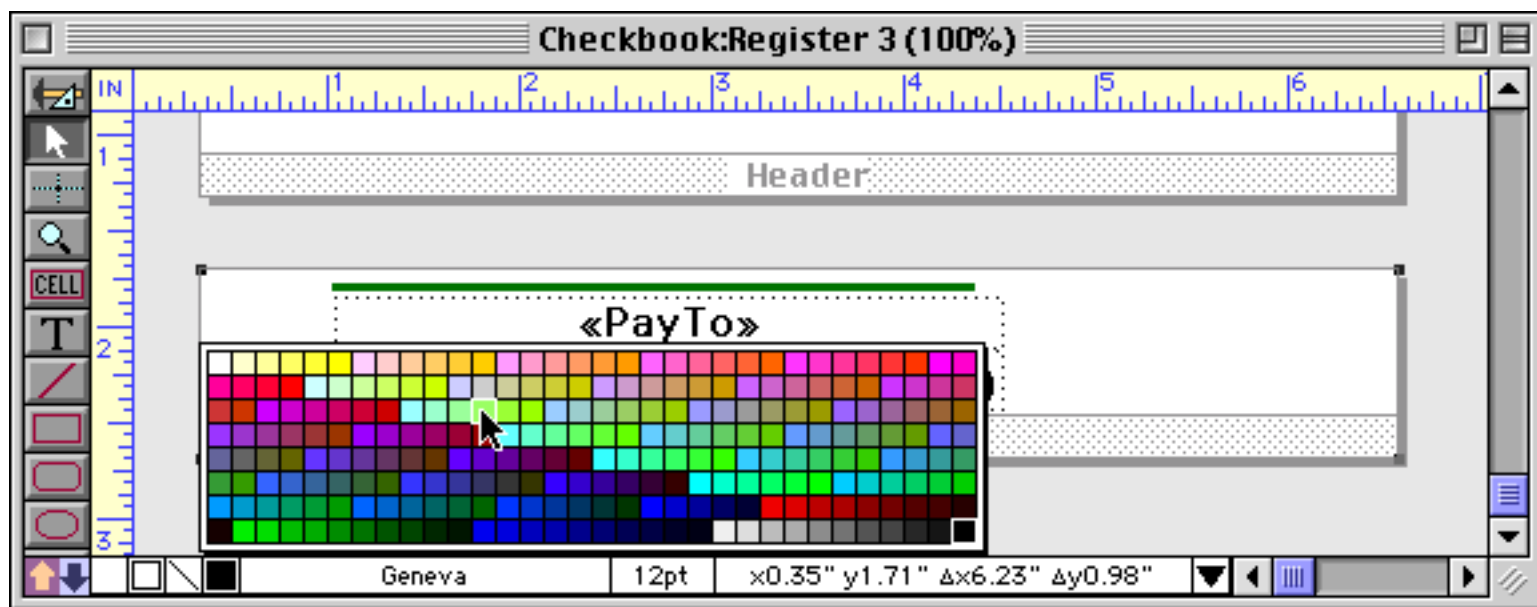
This problem may be corrected in a future version of Panorama, but for now you can only edit text within the data tile.

View-As-List Background Colors

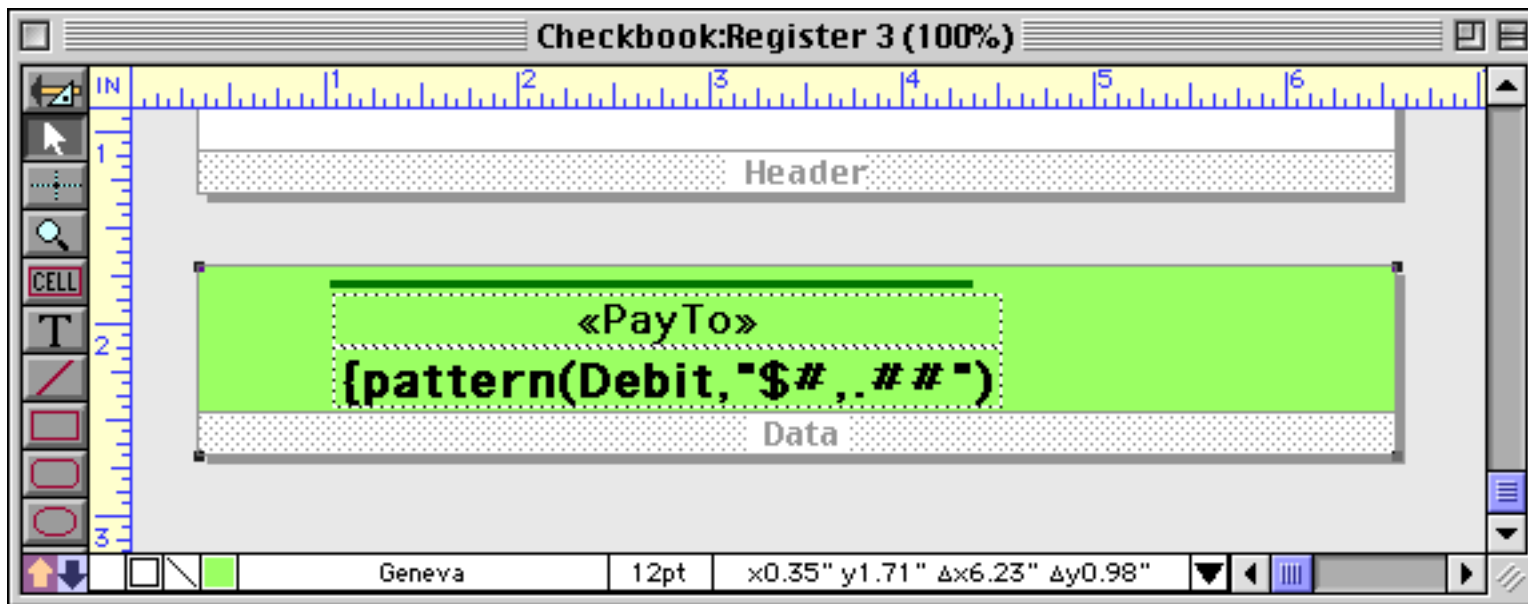
A tile's surface is normally white. However, it is possible to change the color of the tile surface to any color in Panorama's color palette. To change the color, start by clicking on the tile's drag bar to select it (see "[Working with Tiles](#)" on page 908).



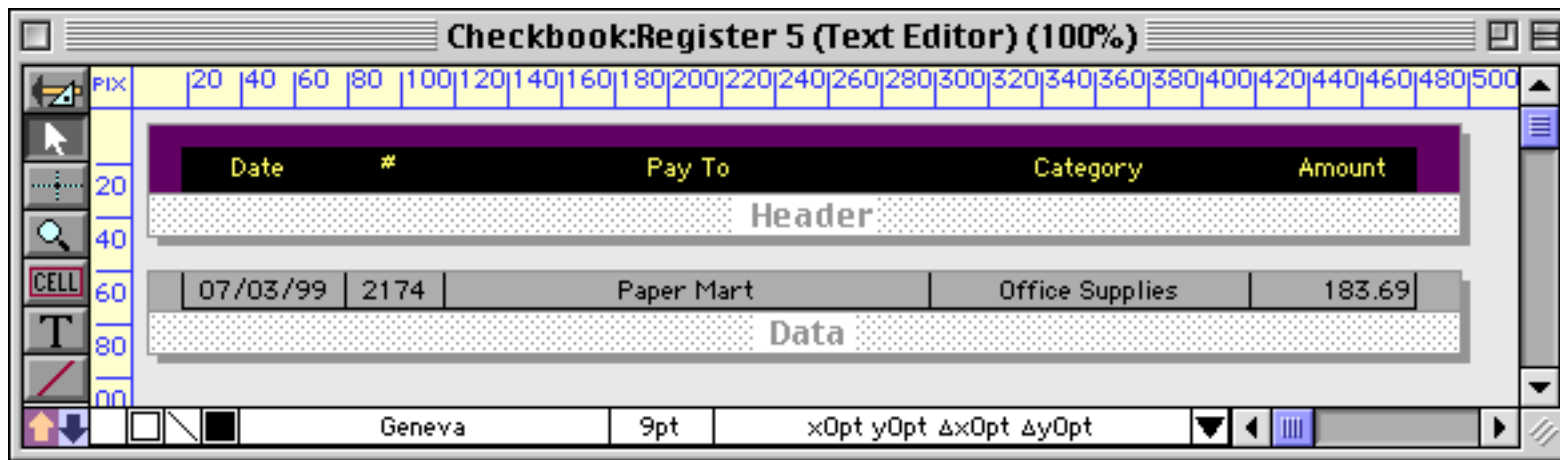
Once the tile is selected you can select a new color from the Graphic Control Strip (see "[Color](#)" on page 526). You can choose any color you want, but usually the lighter grays and pastels work best.



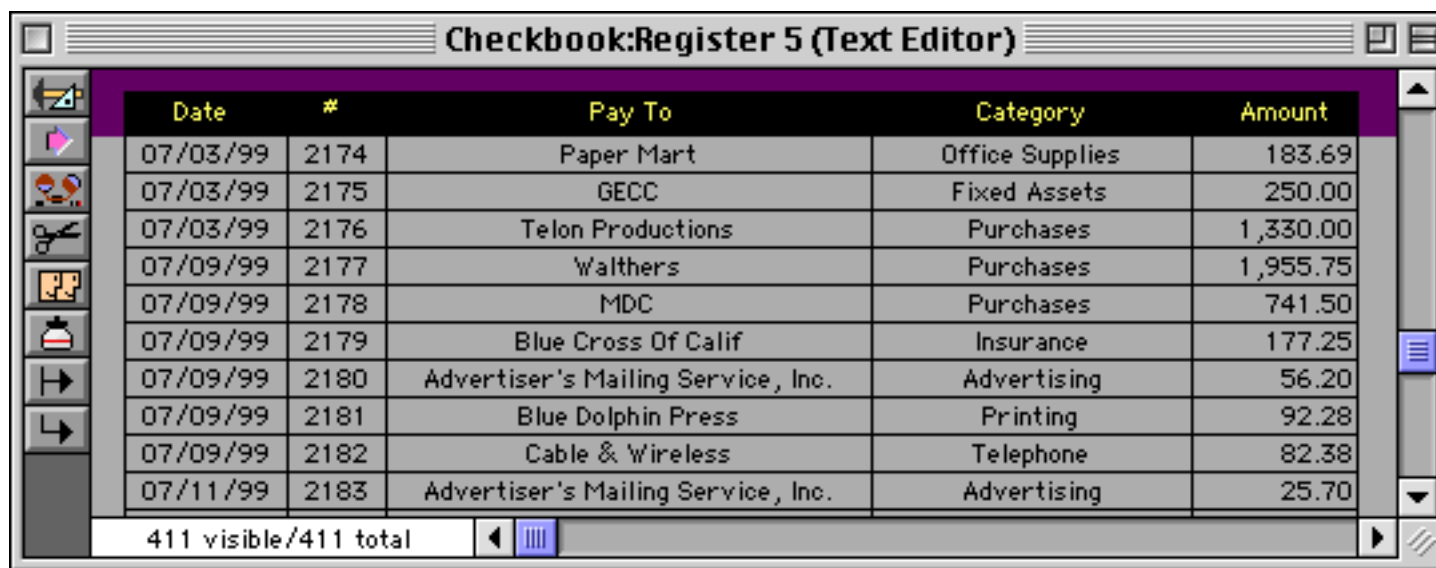
When you release the mouse the tile's surface changes to the new color. By the way, if you want to change the tile's surface back to white, select black (the color in the far bottom right).



Colored tiles work well with Text Editor SuperObjects. Here's an example.



Here's the same form in Data Access Mode.



When you click on an item to edit it, the entire area turns white (be sure you have selected the **Non-White Background** option, see “[Text Editor Options](#)” on page 643).

Date	#	Pay To	Category	Amount
07/03/99	2174	Paper Mart	Office Supplies	183.69
07/03/99	2175	GECC	Fixed Assets	250.00
07/03/99	2176	Telon Productions	Purchases	1,330.00
07/09/99	2177	Walthers	Purchases	1,955.75
07/09/99	2178	MDC	Purchases	741.50
07/09/99	2179	Blue Cross Of Calif	Insurance	177.25
07/09/99	2180	Advertiser's Mailing Service, Inc.	Advertising	56.20
07/09/99	2181	Blue Dolphin Press	Printing	92.28
07/09/99	2182	Cable & Wireless	Telephone	82.38
07/11/99	2183	Advertiser's Mailing Service, Inc.	Advertising	25.70

411 visible/411 total

Colored tiles can also work with Data Cells.

PIX | 20 | 40 | 60 | 80 | 100 | 120 | 140 | 160 | 180 | 200 | 220 | 240 | 260 | 280 | 300 | 320 | 340

Date: Date
 Number: CkNum
 Pay To: PayTo
 Amount: Debit

Data

Geneva 9pt

Here's what this form looks like in Data Access Mode.

Date: 07/09/99
 Number: 2179
 Pay To: Blue Cross Of Calif
 Amount: 177.25

Date: 07/09/99
 Number: 2180
 Pay To: Advertiser's Mailing Service, Inc.
 Amount: 56.20

Date: 07/09/99
 Number: 2181
 Pay To: Blue Dolphin Press
 Amount: 92.28

Date: 07/09/99
 Number: 2182
 Pay To: Cable & Wireless
 Amount: 82.38

411 visible/411 total

Buttons on a View-As-List Form

You can place any kind of button on either the data tile or header tile of a view-as-list form — push buttons, data buttons, pop-up menus etc. Data buttons that are placed on the data tile should be linked to fields. Data buttons that are placed on the header tile should be linked to variables (see “[Variables](#)” on page 53 and “[Variables](#)” on page 247).

Elastic Forms

Elastic Forms is a feature that allows a form to adjust intelligently when the window containing the form is resized or zoomed. When the form is designed, you decide how the individual elements will expand or shift as the form changes size. Here's an example of a typical form.

Checkbook:Check

2180 July 9, 1999 Advertising

PAY TO THE ORDER OF Advertiser's Mailing Service, \$ 56.20

Fifty six dollars and 20 cents

recent checks...

Ck #	Date	Amount	memo
2299	09/28/99	167.00	
2295	09/21/99	67.00	
2294	09/21/99	167.00	
2266	09/06/99	495.41	
2265	09/06/99	141.00	

411 visible/411 total

If the window containing an ordinary form is resized, the form remains the same, in this case leaving a large blank area.

Checkbook:Check

2180 July 9, 1999 Advertising

PAY TO THE ORDER OF Advertiser's Mailing Service, \$ 56.20

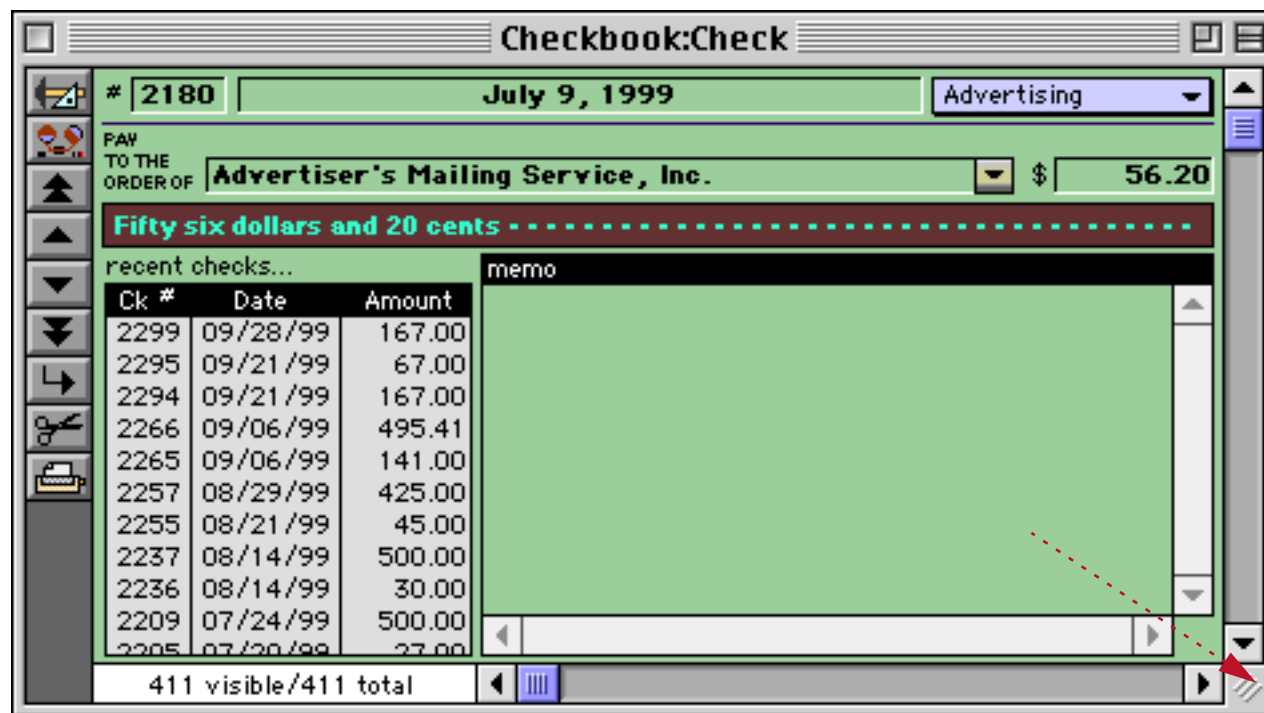
Fifty six dollars and 20 cents

recent checks...

Ck #	Date	Amount	memo
2299	09/28/99	167.00	
2295	09/21/99	67.00	
2294	09/21/99	167.00	
2266	09/06/99	495.41	
2265	09/06/99	141.00	

411 visible/411 total

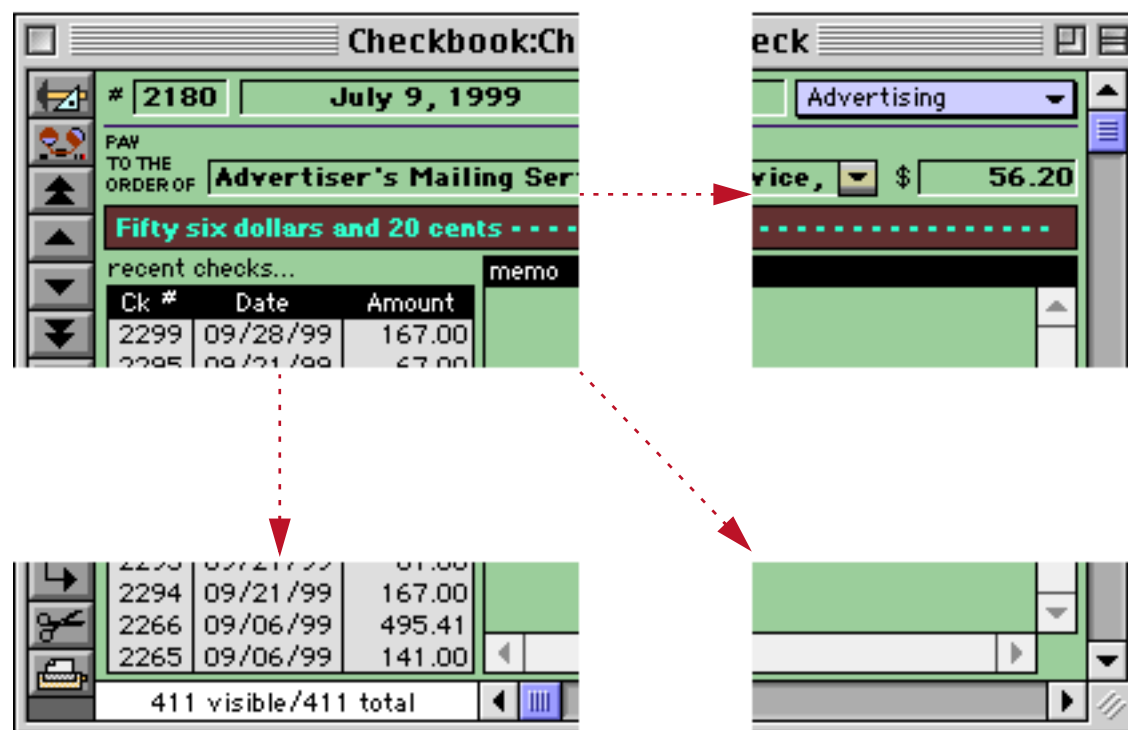
However, if the form is elastic the objects within the form will adjust themselves to the new size.



The best part is that once you learn how, you can turn almost any form into an elastic form in just a couple of minutes!

Theory of Elastic Forms

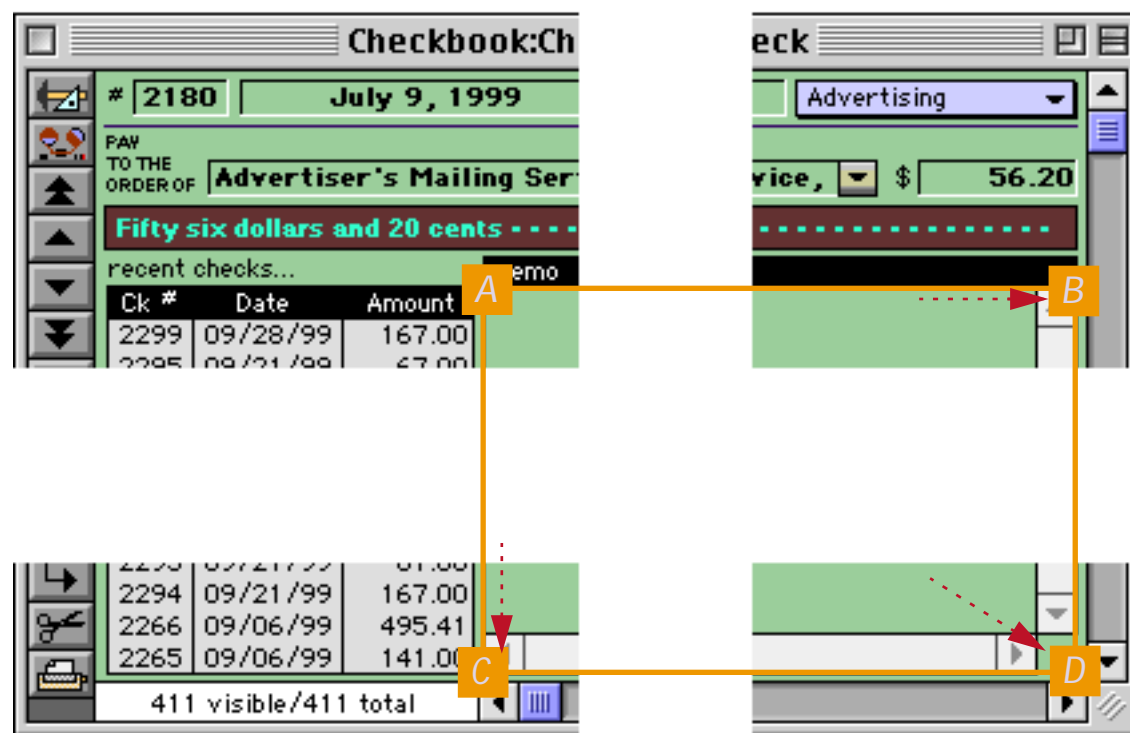
The basic theory of elastic forms is simple. The form is divided into four quadrants, like this.



The upper left hand quadrant always remains fixed, no matter how large or small the window gets. The upper right hand quadrant slides back and forth horizontally as the window size changes, while the lower left hand quadrant slides vertically. The lower right hand quadrant slides diagonally, always sticking to the bottom right hand corner of the window.

As Panorama adjusts the form, it doesn't adjust entire objects. Instead it adjusts individual points (i.e. object corners). If an object is split across multiple quadrants, that object will adjust in size as the form expands and shrinks. If an object is not split across multiple quadrants, it will remain the same size but may slide to a new position depending on which quadrant it is in.

As an example consider the Text Editor SuperObject shown below. The four corners of this object are split across the four quadrants. Point A, in the upper left quadrant, stays put. Point B, in the upper right quadrant, slides to the right. Point C slides down, while Point D slides diagonally. The end result is that the object expands to fill up the newly available space.



On the other hand the check number, amount and the category pop-up menu are all contained within a single quadrant, so these objects do not change in size. The Date and Pay To fields are split across two quadrants, so they expand in width but not in height.

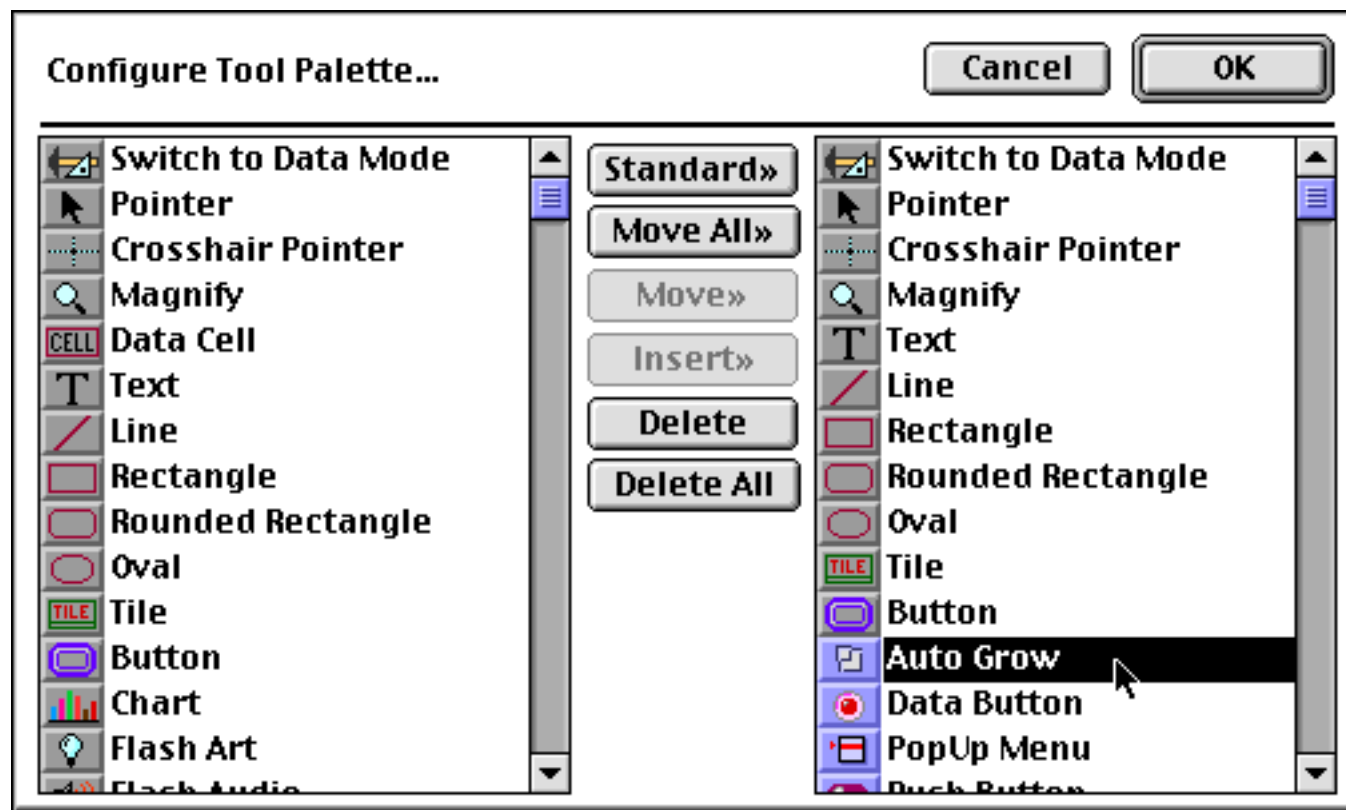
As you can see, the point where these four quadrants come together is very important (see “[Defining the Quadrants](#)” on page 925). You’ll need to pick this point carefully to create a form that expands and shrinks the way you want it to. Usually you’ll have one primary object that will expand and shrink as the window expands and shrinks. The quadrant meeting point should be inside this object. You may also have secondary objects above or below this object that need to expand and shrink in width only. The quadrant meeting point should line up with the middle of these objects. (If it is impossible to line up the quadrant meeting point with all of the secondary objects, you can create one or more slave Auto Grow objects. Slave Auto Grow objects allow you to create extensions that stick out of one or more quadrants (see “[Non-Rectangular Quadrants](#)” on page 934).)

Building an Elastic Form

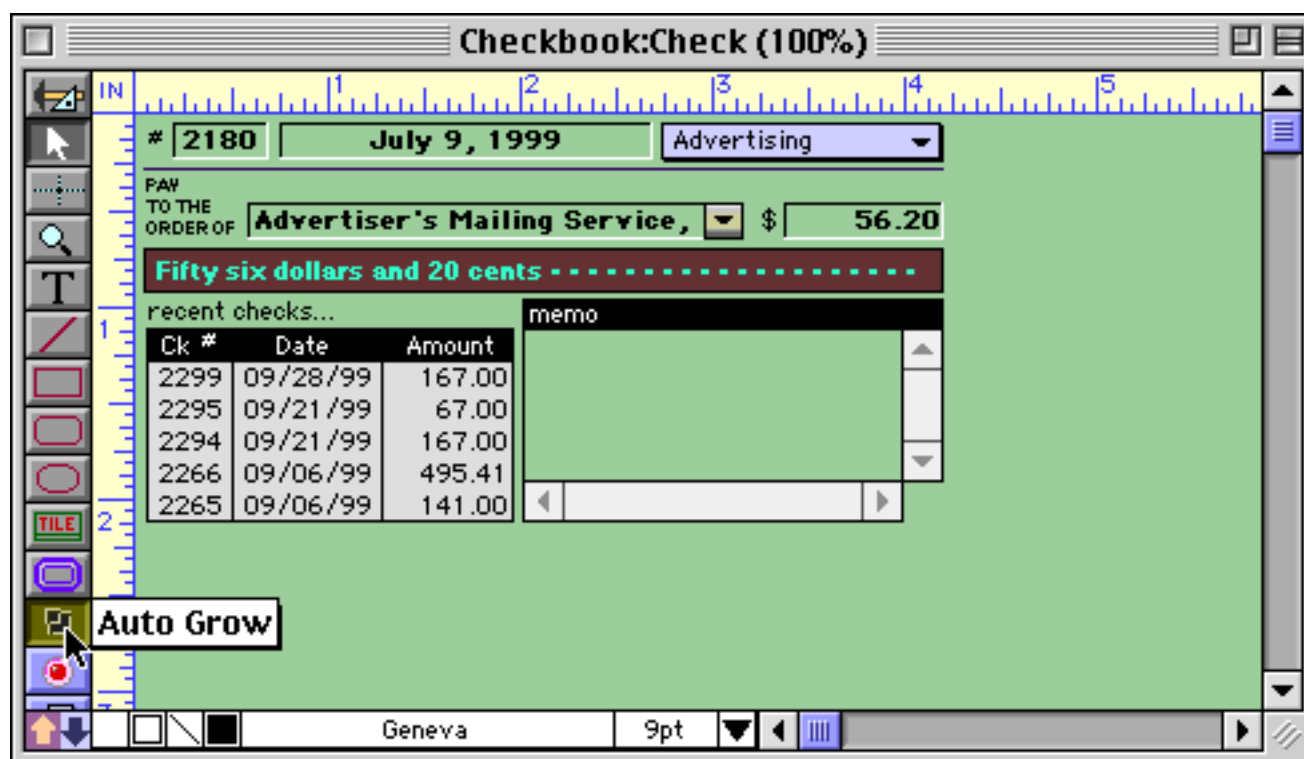
The first step in building an elastic form is to create a regular non-elastic form. Just use Panorama's regular shape and user interface elements. It's usually best to create the form in its smallest possible configuration. In other words, any form elements that may expand and shrink should be created in their "maximum shrink" size and shape. Once the form is created, be sure to save the database before going further.

Defining the Quadrants

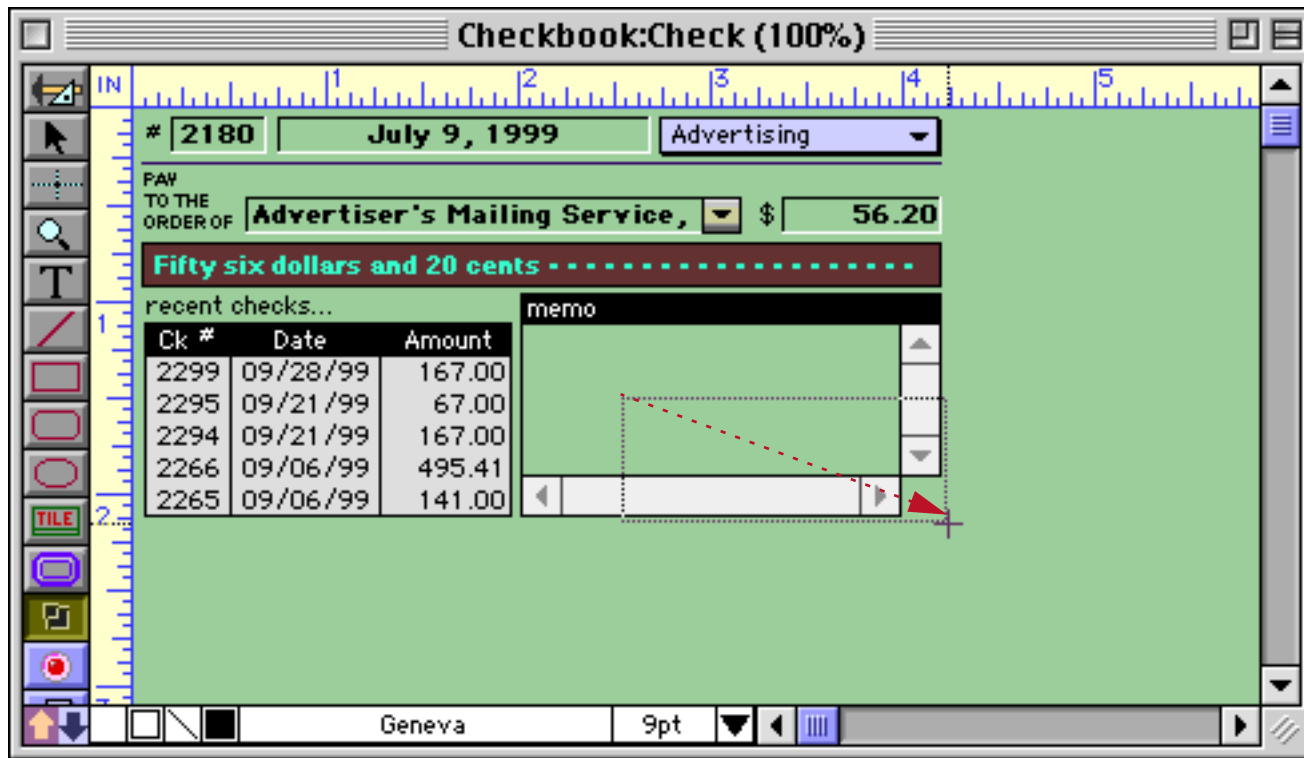
Once the form is created, the next step is to divide the form into four quadrants. This is done with the **Auto Grow SuperObject™**. The Auto-Grow tool is not in the default tool palette, so you'll need to use the **Tool Palette** dialog to add this tool to the palette if it is not already there (see "[Customizing the Tool Palette](#)" on page 497).



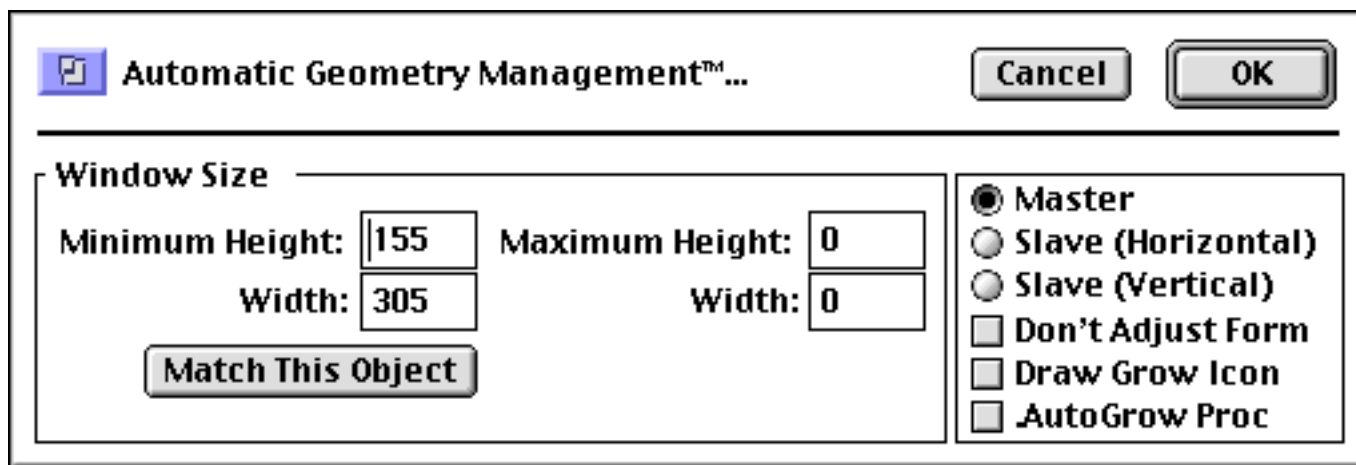
Now that the tool is added to the palette you can select it.



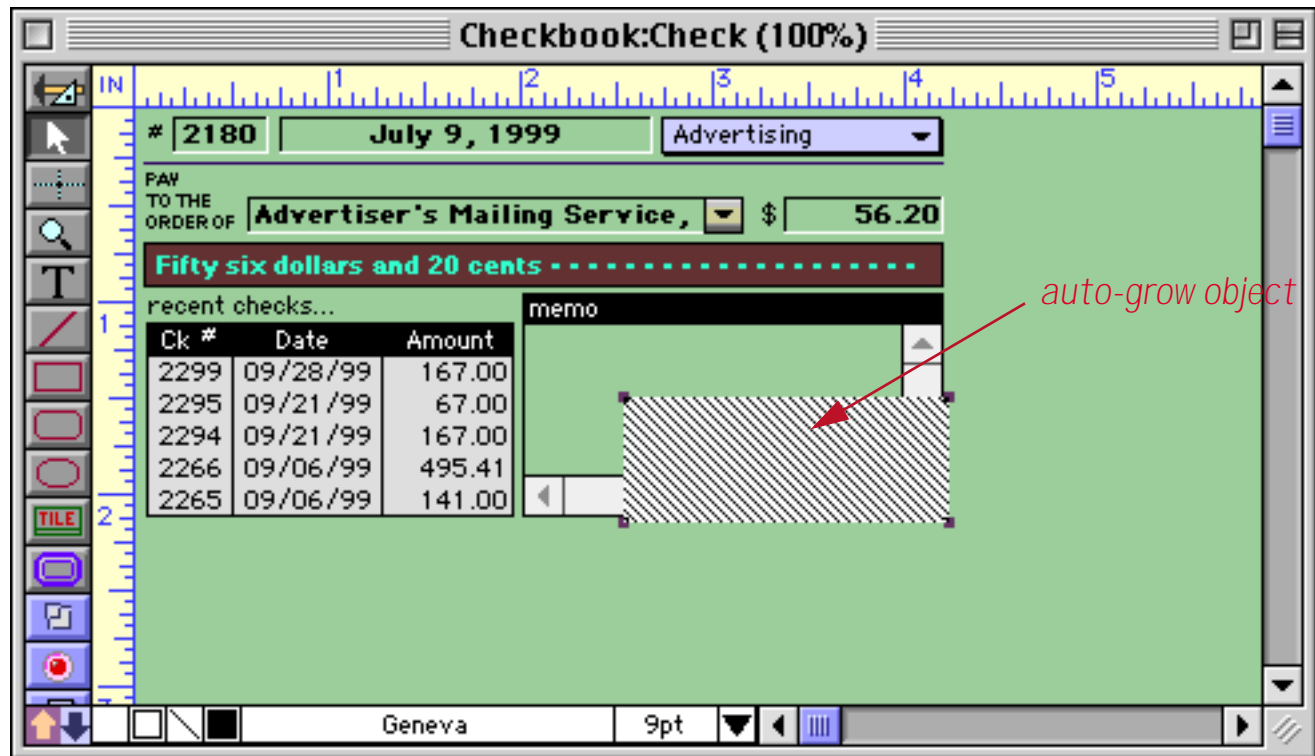
Once the tool is selected, drag the mouse across the form in the location where you want to create the auto-grow object. The Auto Grow SuperObject should cover the lower right hand quadrant of the form (the quadrant that will shift down and to the right diagonally when the window expands). The upper left corner of this Auto Grow SuperObject will determine the point where the four quadrants meet.



When you release the mouse, the Auto-Grow configuration dialog will appear.

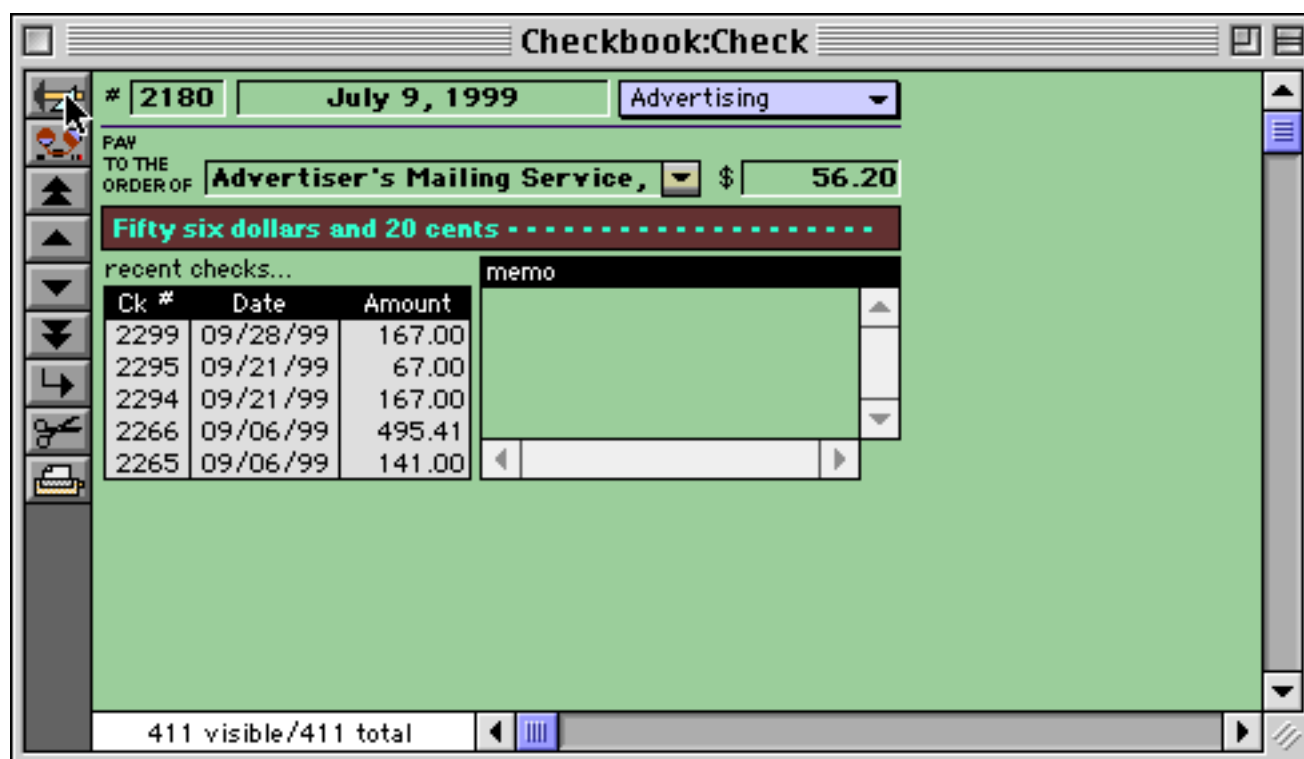


For a basic elastic form just press the **OK** button.

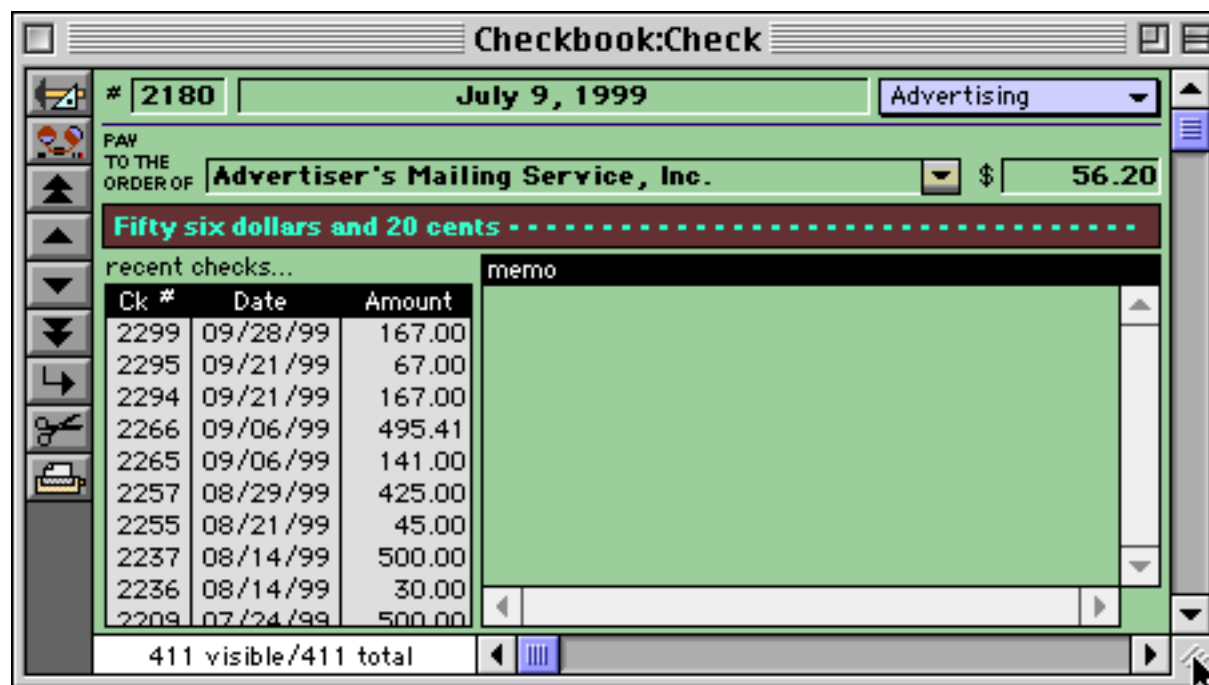


Using the mouse and the arrow keys, make sure the Auto Grow object is positioned exactly where you want the lower right quadrant of the form to be (see “[Nudging an Object \(or Objects\)](#)” on page 509 and “[Nudging the Size of an Object](#)” on page 513). Be sure to allow some space for a slight margin on the right and bottom side of the form.

Once the Auto Grow object is set up, switch the form to Data Access Mode. At first, all you’ll notice is that the Auto Grow object disappears.



Now change the size of the window. As soon as you change the size of the window, the form will adjust to the new window size.

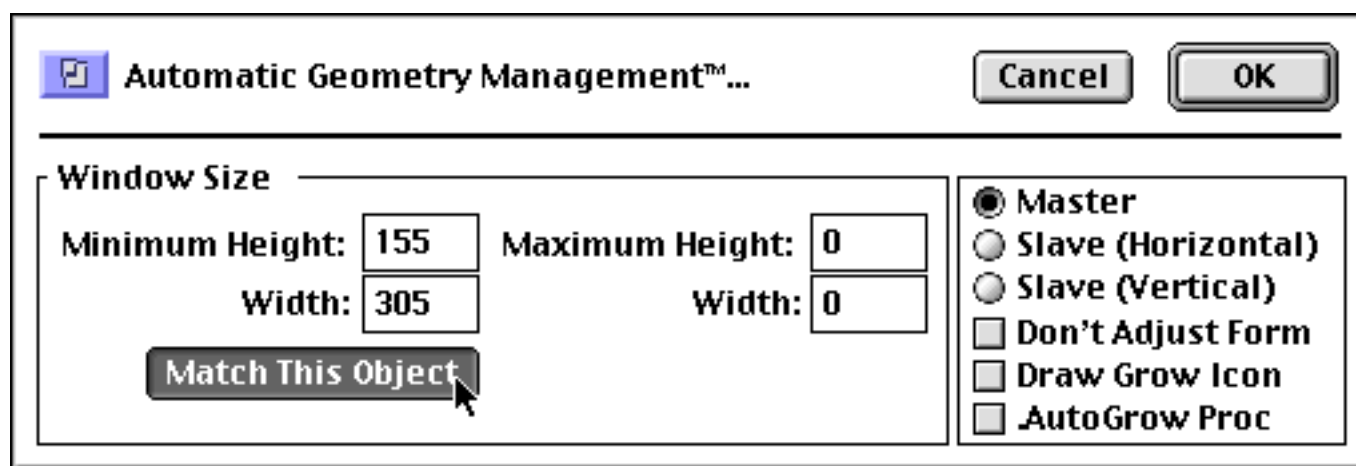


Try making the window larger or smaller, or zooming the window. The form will automatically adjust to the new size.

If the form doesn't quite adjust the way you wanted, set it back to the minimum size and then go into Graphics Mode and adjust the auto-grow object. In extreme cases you may need to **Revert To Saved** to get the original form configuration back (you *did* save the database before you tried your elastic form, right?).

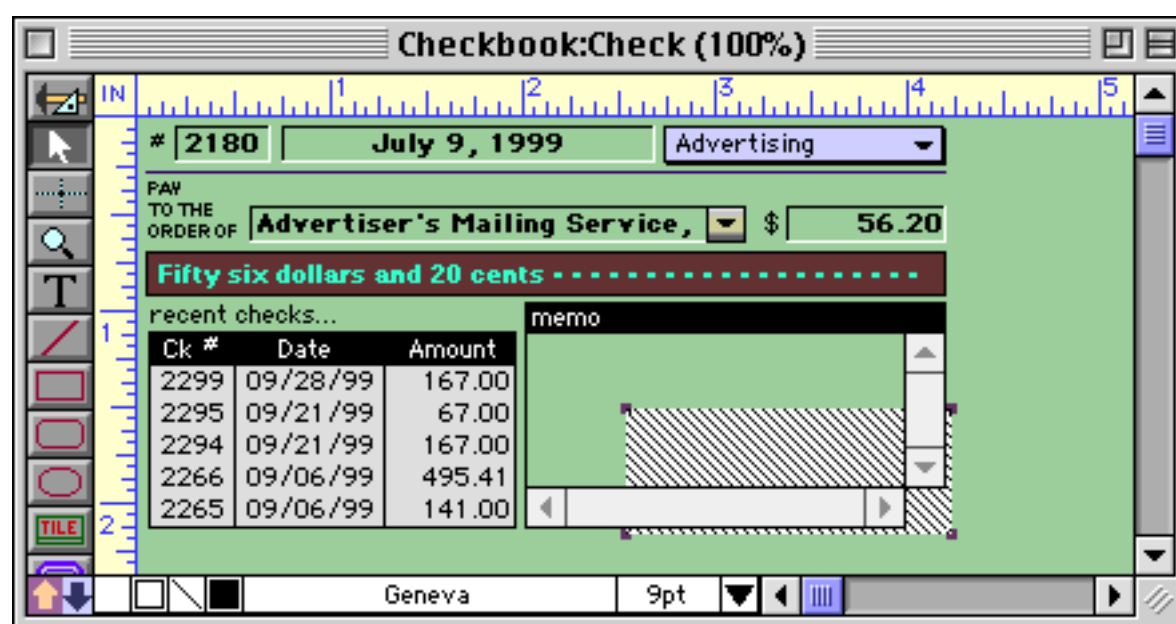
Once the Auto Grow object is exactly positioned over the lower right quadrant of the form you can set the minimum window size. The following discussion assumes that the form is currently in its minimum window size configuration, with all expandable objects set to their smallest size. In other words, the bottom right hand corner of the Auto Grow object defines the smallest possible window size.

To set this minimum size, double click on the Auto Grow object, then click on the **Match This Object** button.



The dialog will show the dimensions of the minimum window size. Click on the **OK** button to permanently set this size.

After the minimum window size is set, use the **Send to Back** command (Arrange menu) to move the Auto Grow object underneath all of the other objects in the form (see “[Changing the Stacking Order](#)” on page 569).

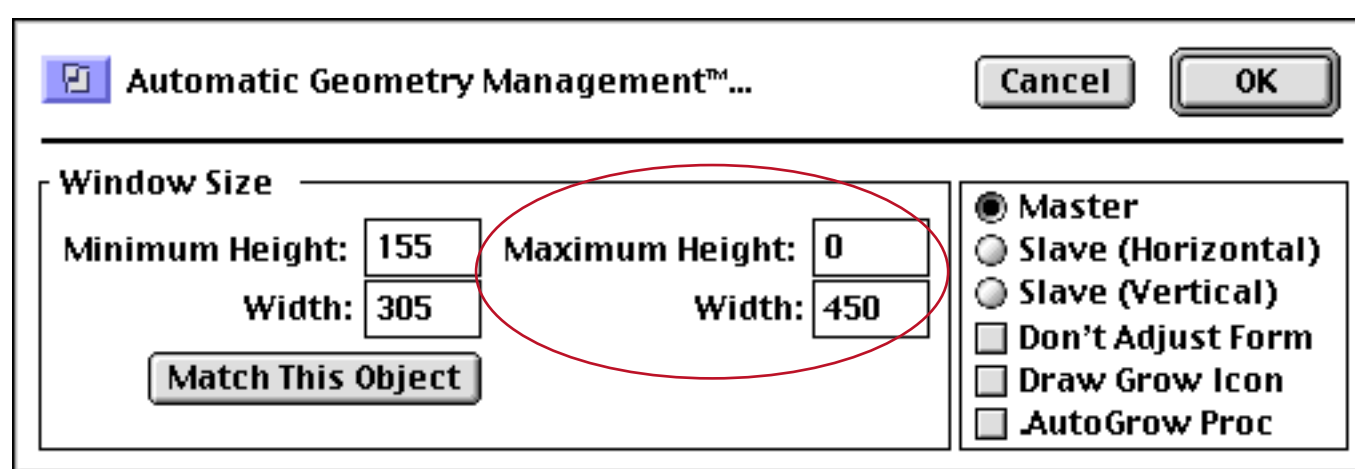


This prevents the Auto Grow object from interfering with the operation of other objects (for example buttons). Whether it is on top or on the bottom, the Auto Grow object will become invisible when the form is switched from Graphics Mode to Data Access Mode.

The Auto Grow dialog also allows you to manually set the minimum window size by typing in the dimensions. This is necessary if the form elements are not currently at the minimum window size. We recommend that you avoid this if at all possible. Only edit the form when it is in its minimum size configuration.

Maximum Window Size

Panorama windows can normally be expanded to the full height and width of the computer screen (or even across multiple monitors if your computer has them). In some cases, however, you may wish to restrict the maximum height or width of the window. Double click on the auto-grow object to set the maximum dimensions.



In this case the **Maximum Height** is set to 0. When the maximum is set to zero, Panorama treats it as if there is no maximum. In other words, the vertical expansion of this window is unlimited, but the horizontal expansion is limited to 450 pixels. You can set a limit on the vertical expansion (height), horizontal expansion (width) or both.

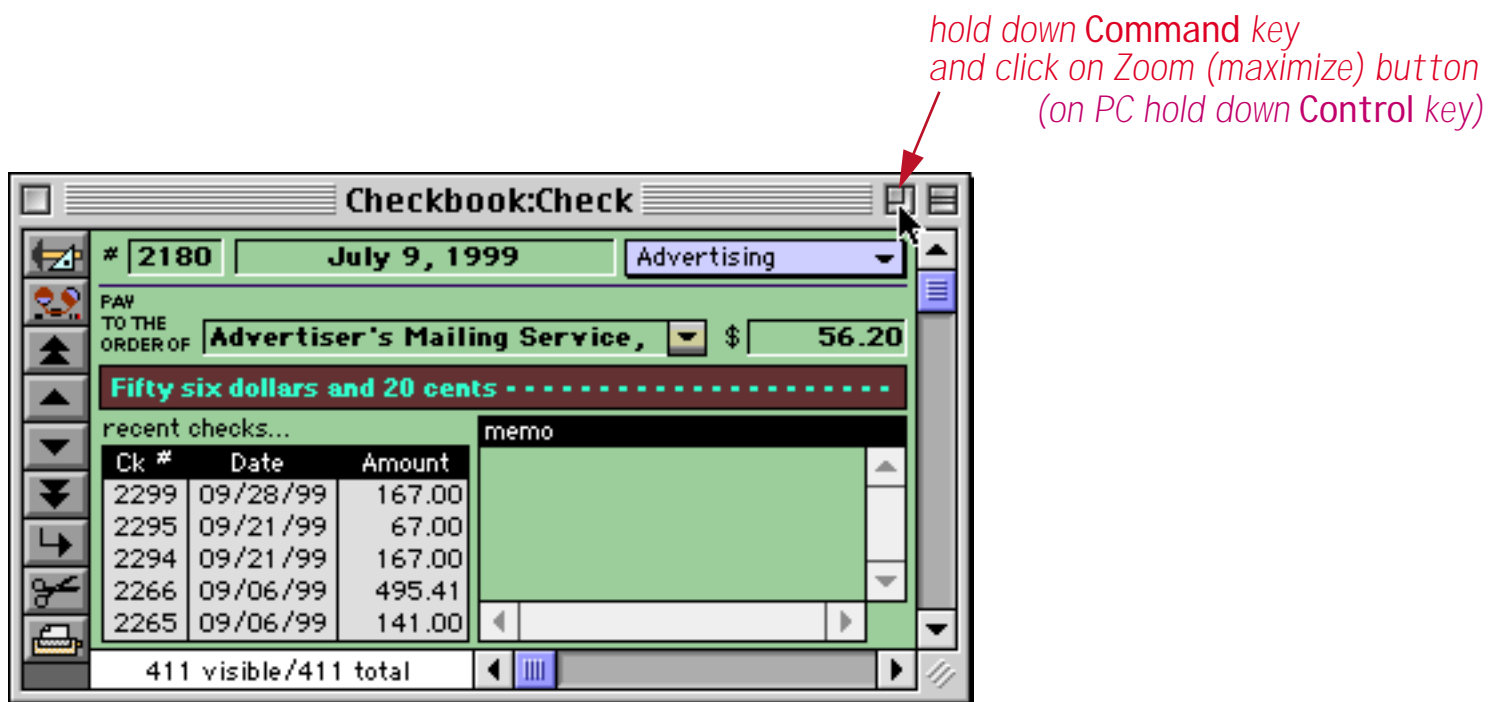
You can set a maximum window size even if the form is not elastic. To do this, create an auto-grow object anywhere on the form. In the configuration dialog, set the maximum dimension and also enable the **Don't Adjust Form** option. When this option is enabled Panorama does not adjust the objects in the form when the window is resized.

If you want the window to be a fixed size (not expandable) set the minimum and maximum dimensions to the same value.

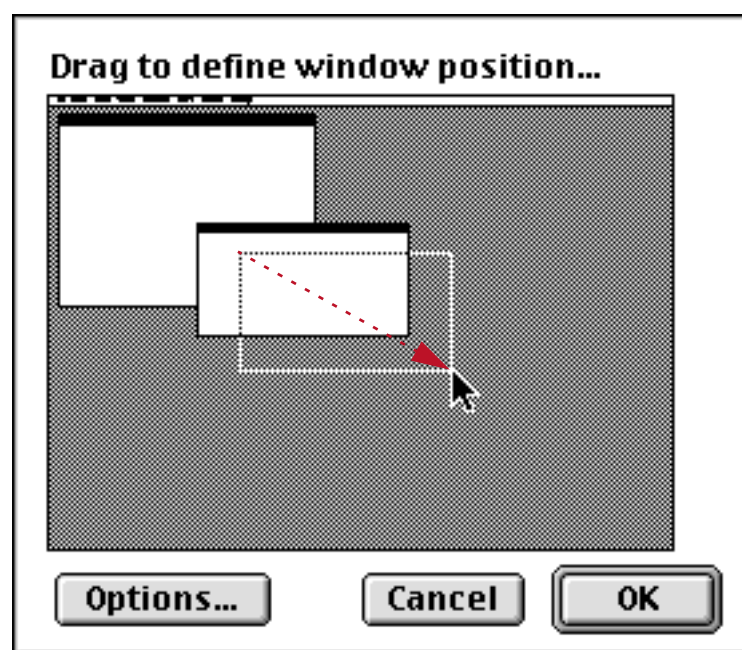
Removing the Window's Scroll Bars

Form windows normally have scroll bars on the right and bottom edges of the window. When using an elastic form these scroll bars really aren't necessary because the form objects are always adjusted to fit inside the visible area. Panorama allows you to remove the unnecessary scroll bars either manually or with a procedure.

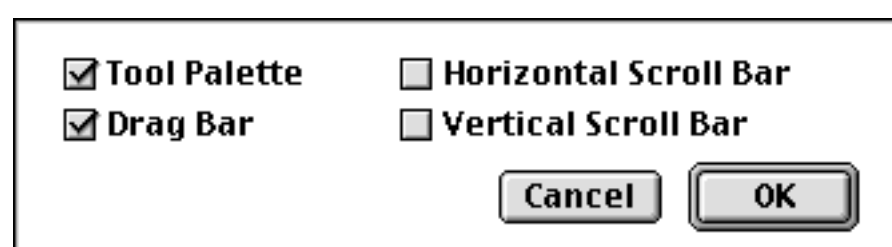
To manually remove the scroll bars, hold down the **Command** key (Macintosh) or **Control** key (PC) while you click on the Zoom box (in the upper right hand corner of the window).



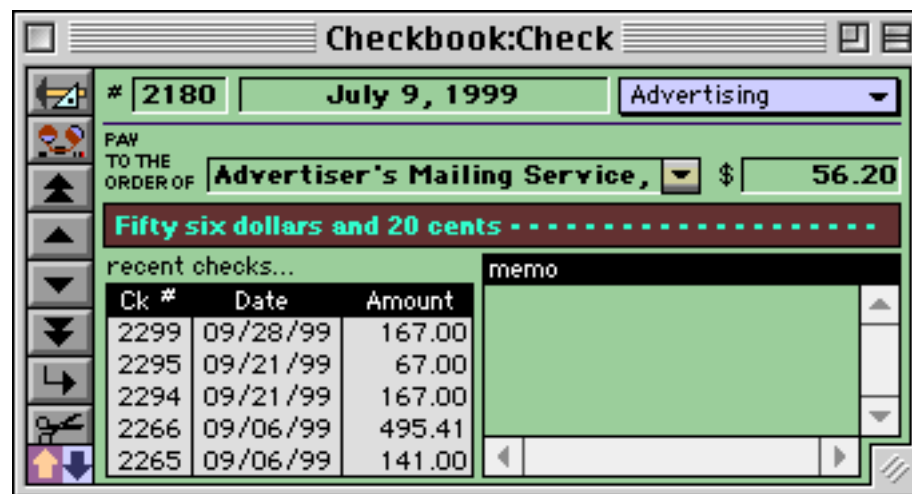
A dialog with a miniature diagram of the monitor appears. Drag the mouse across this diagram to define a new window position.



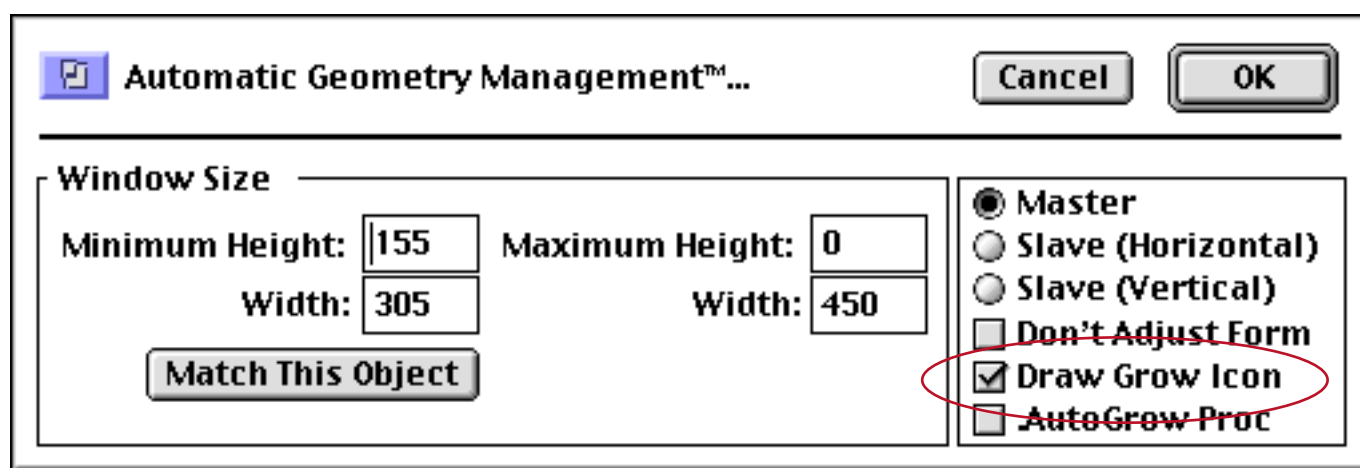
Now press the **Options** button. This opens a second dialog. Using this dialog you can enable and disable four different window options. Normally all four of these options are enabled. In the example below the scroll bars have been disabled.



Press **OK** twice to close both dialogs. The window will be re-displayed without the scroll bars.



Depending on the operating system you are using, the grow box in the lower right hand corner may not appear. To make sure that it appears, open the auto-grow configuration dialog and check the **Draw Grow Icon** option.



If you save the database with this window open, Panorama will remember to leave the scroll bars off when you re-open the database. However, if you close just this window you will have to repeat this process to turn off the scroll bars when you re-open the window.

The Window Tweak Wizard

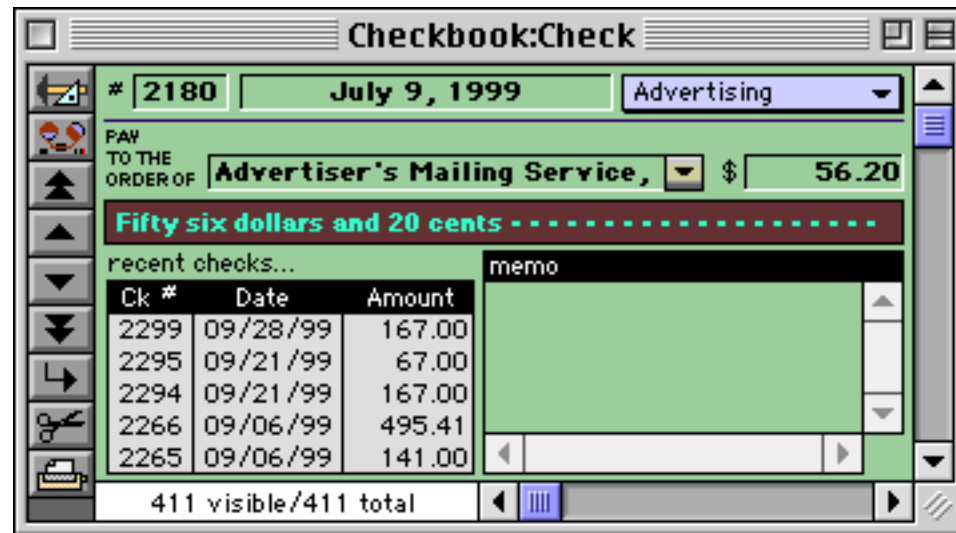
The process described in the previous section gets rather tedious if you wind up repeatedly adding and removing the scroll bars. A simpler method is to use the **Window Tweak** wizard, which you'll find in the **Form Tools** submenu of the **Wizard** menu. When you select this wizard it will automatically toggle the scroll bars and tool palette from the current window (if they are currently visible they will be removed, if they are currently disabled they will be made visible).

When you open the **Window Tweak** wizard a small window appears in the lower right hand corner. The buttons on this window allow you to perform additional "tweaks" without using the menu.

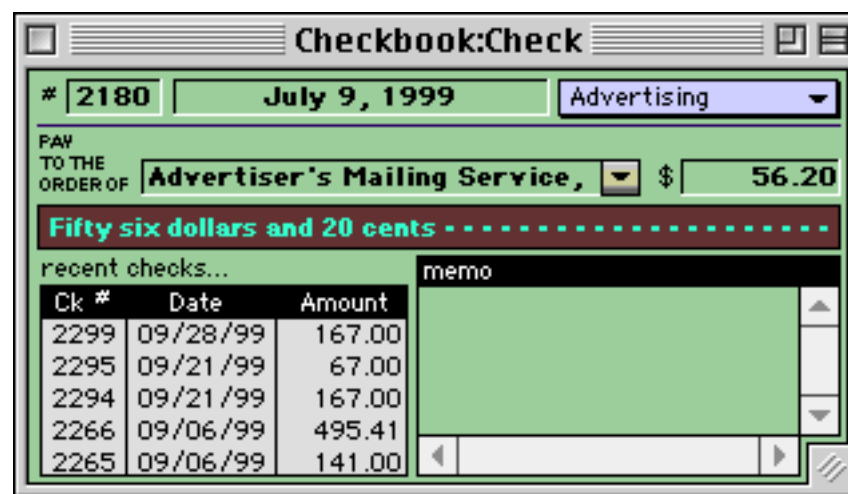


Press the **Tweak** button to toggle the palette and scroll bars of the window just below the **Window Tweak** window. Using the checkboxes you can modify the "tweak" action to exclude the tool palette or either scroll bar.

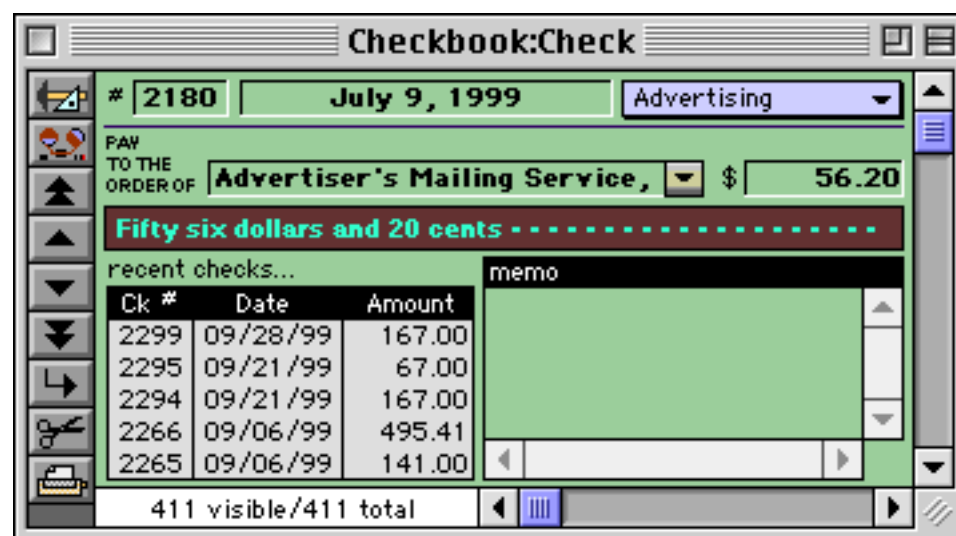
To illustrate the “tweak” action we’ll use this Checkbook database. Here is the original window.



Once the form is set up and ready to go, run the Window Tweak wizard. Voila! The scroll bars and tool palette magically disappear, and the window size shrinks slightly to compensate.



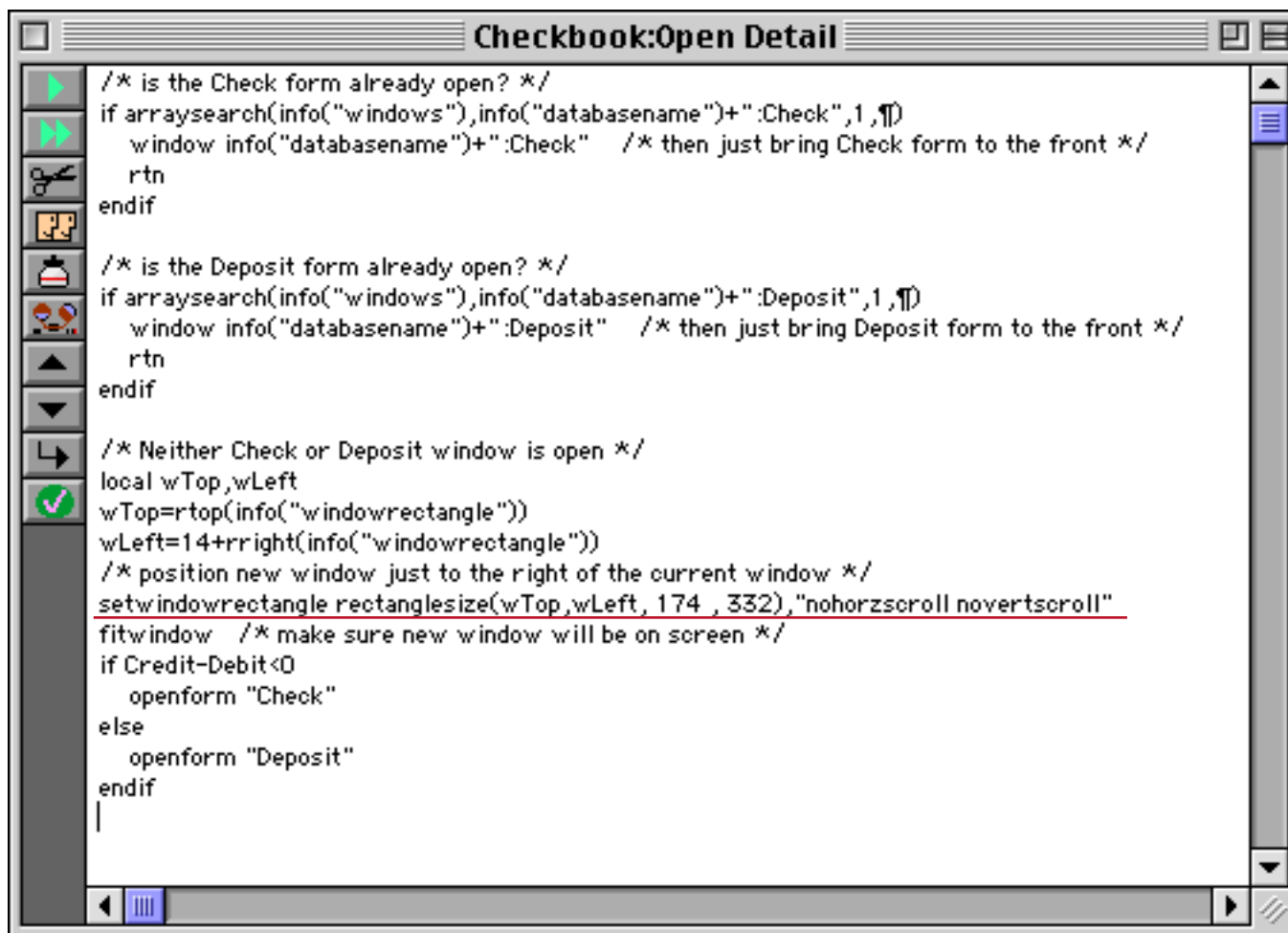
When you need to get the palette and scroll bars back again, run the Window Tweak wizard again (or click on the **Tweak** button). Poof! The missing items re-appear (and the window expands slightly).



Each time you run the Window Tweak wizard the scroll bars and palette will toggle on or off.

Opening Windows with a Procedure

It's possible to write a procedure that opens a form window with the scroll bars already disabled. Here's such a procedure from the [Checkbook](#) database that comes with Panorama.



```

/* is the Check form already open? */
if arraysearch(info("windows"),info("databasename")+":Check",1,1)
  window info("databasename")+":Check" /* then just bring Check form to the front */
  rtn
endif

/* is the Deposit form already open? */
if arraysearch(info("windows"),info("databasename")+":Deposit",1,1)
  window info("databasename")+":Deposit" /* then just bring Deposit form to the front */
  rtn
endif

/* Neither Check or Deposit window is open */
local wTop,wLeft
wTop=rtop(info("windowrectangle"))
wLeft=14+rright(info("windowrectangle"))
/* position new window just to the right of the current window */
setwindowrectangle rectangle,rectangle(wTop,wLeft,174,332),"nohorzscroll novertscroll"
fitwindow /* make sure new window will be on screen */
if Credit-Debit<0
  openform "Check"
else
  openform "Deposit"
endif

```

This procedure automatically opens either the [Check](#) or [Deposit](#) form, depending on the type of transaction contained in the current record. The key statement in this procedure is `setwindowrectangle`. This statement tells Panorama the dimensions of the new window, and also tells it not to include horizontal or vertical scroll bars in the new window. For more information on this statement see "[Specifying the New Window Location](#)" on page 446.

Modifying an Elastic Form

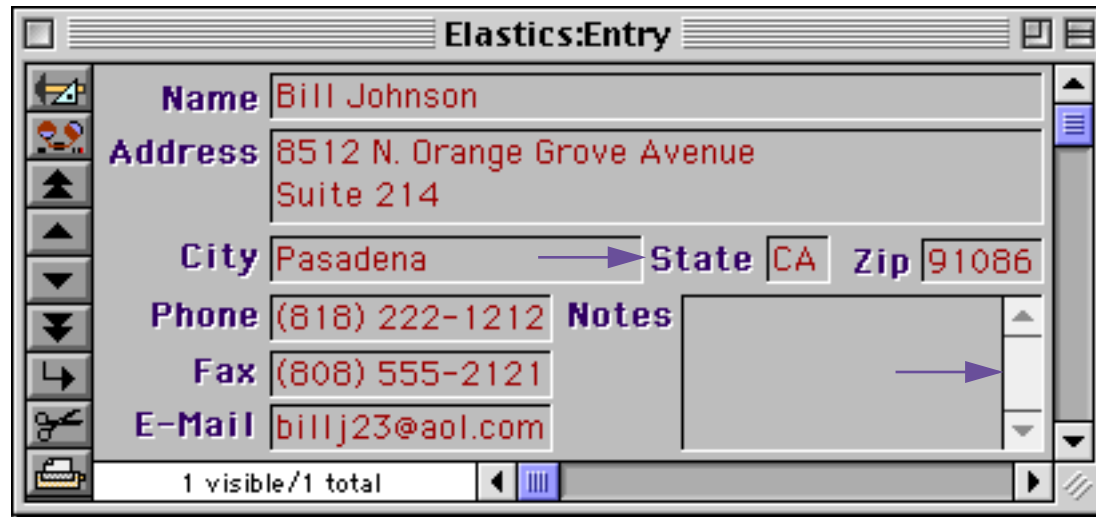
If you need to change an elastic form, we recommend that you start by resizing the window to its minimum size. Once the window is at the minimum size, you can switch to Graphics Mode and then expand the window (if necessary). In Graphics Mode the window can be expanded without automatically adjusting the form.)

If you change the position or size of the Auto Grow object, you must re-set the minimum window size. Simply double click on the object, then click on the **Match This Object** button, just as you did before. The dialog will show the new minimum window size. Click on the **OK** button to permanently set this size.

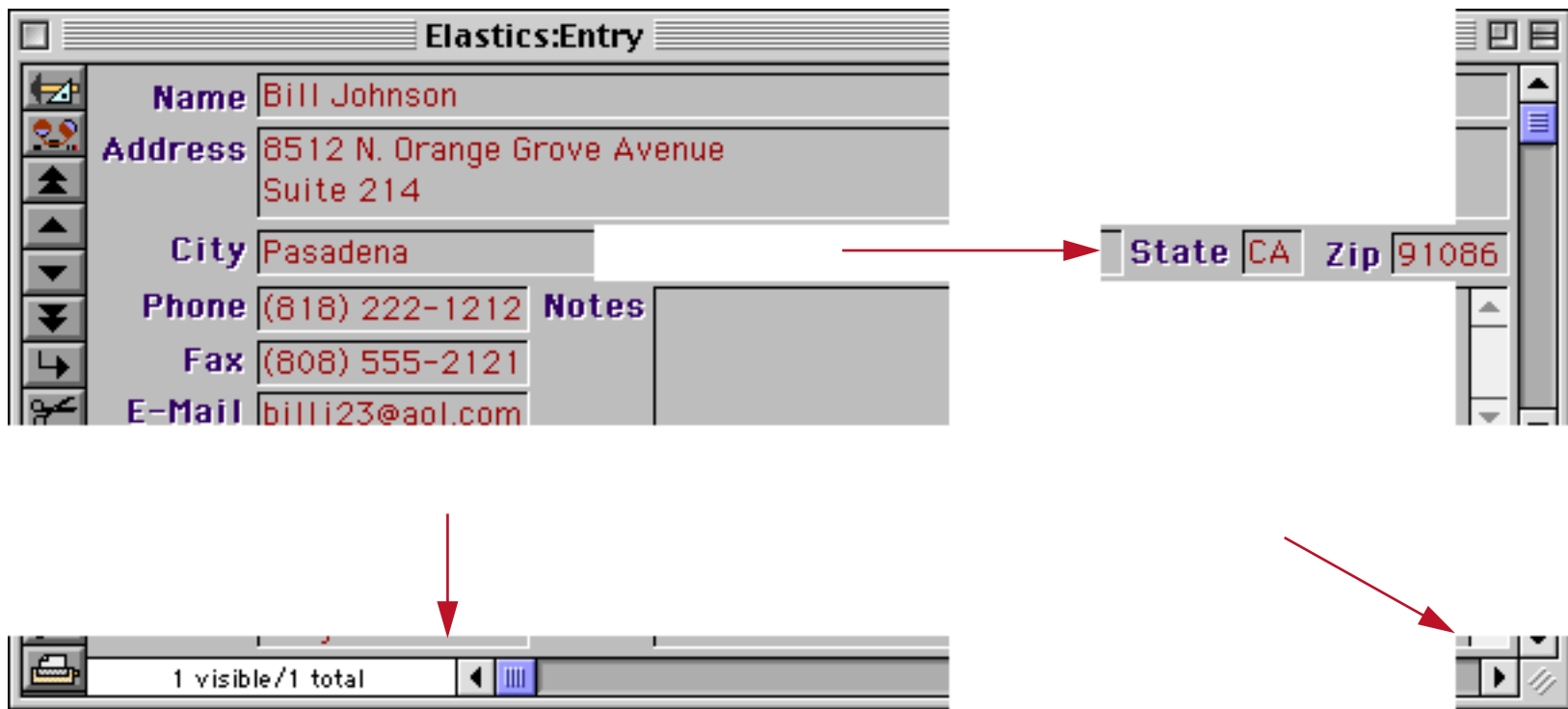
Non-Rectangular Quadrants

Sometimes it is not possible to position the intersection point of the four quadrants so that all the objects in your form expand and shrink the way you want them too. In that case you can add “extensions” to the upper right and/or lower left quadrants that stick out into the fixed quadrant. The area covered by these extensions will adjust when the window is resized. These extensions are created by “slave” Auto Grow objects. These objects are called slaves because they always follow exactly what the “master” Auto Grow object does. An extension to the upper right hand quadrant is called a horizontal extension because it sticks out horizontally into the fixed quadrant. This is the most common type of extension. It allows different lines of a form to expand differently. A vertical extension sticks out from the lower left quadrant into the fixed quadrant.

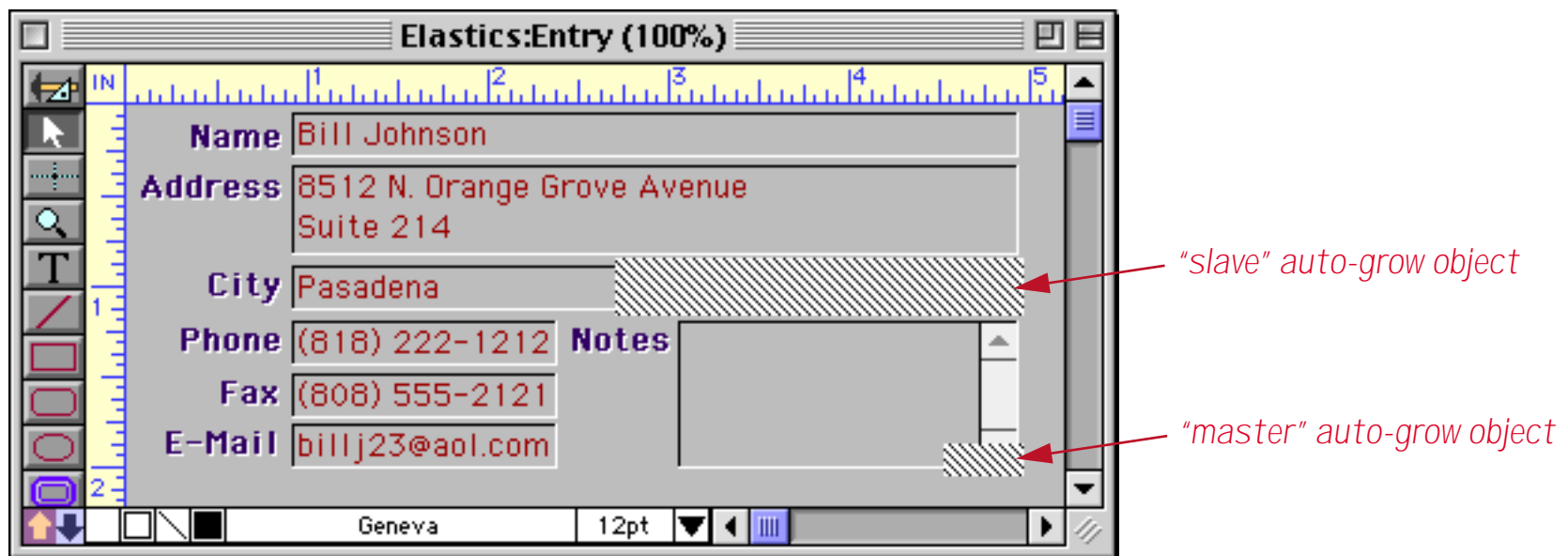
Here is an example of a form that requires an extension. When this form expands we would like both the **Notes** and the **City** fields to expand.



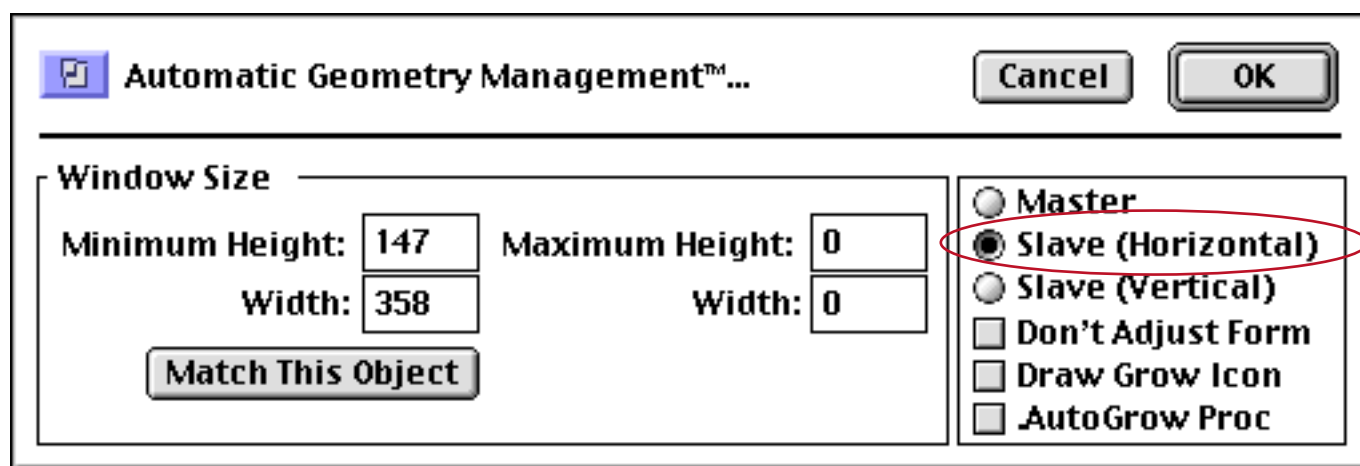
There's no way to divide the form into quadrants and have both of these objects expand. Instead, an extension is needed, like this.



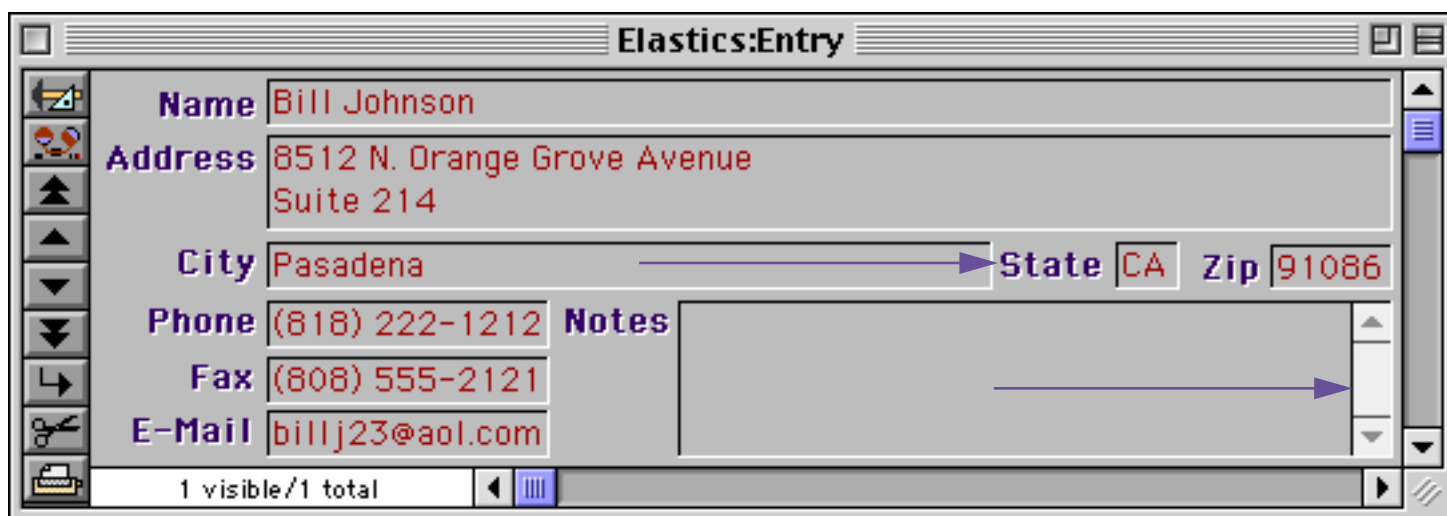
To create an elastic form with an extension like this, start by creating a normal auto-grow object in the lower right hand corner. This is the **master**. Then add a second auto-grow object over the area of the extension. This second auto-grow object is a **slave**. Make sure that the slave object extends past the edge of the fixed quadrant into one or more of the movable quadrants.



Here is the configuration dialog for the slave auto-grow object shown above. A slave may be horizontal or vertical. In this case the extension area will slide left and right so the extension is horizontal.

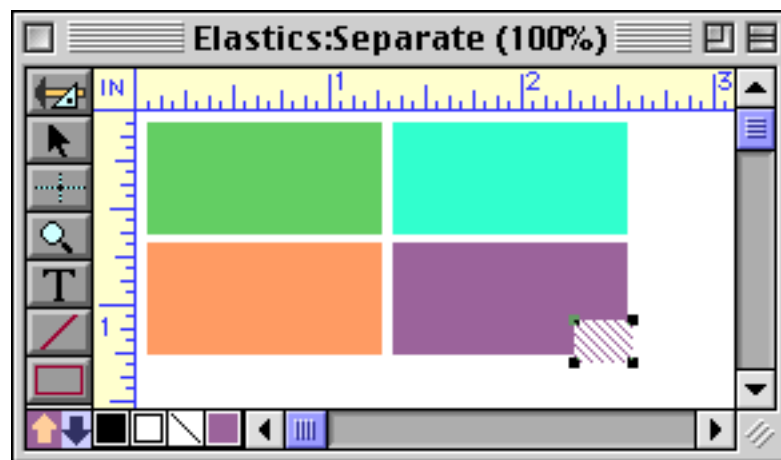


You can add as many slaves as necessary to your form. Once they have been added the form will adjust automatically with the extensions, like this.

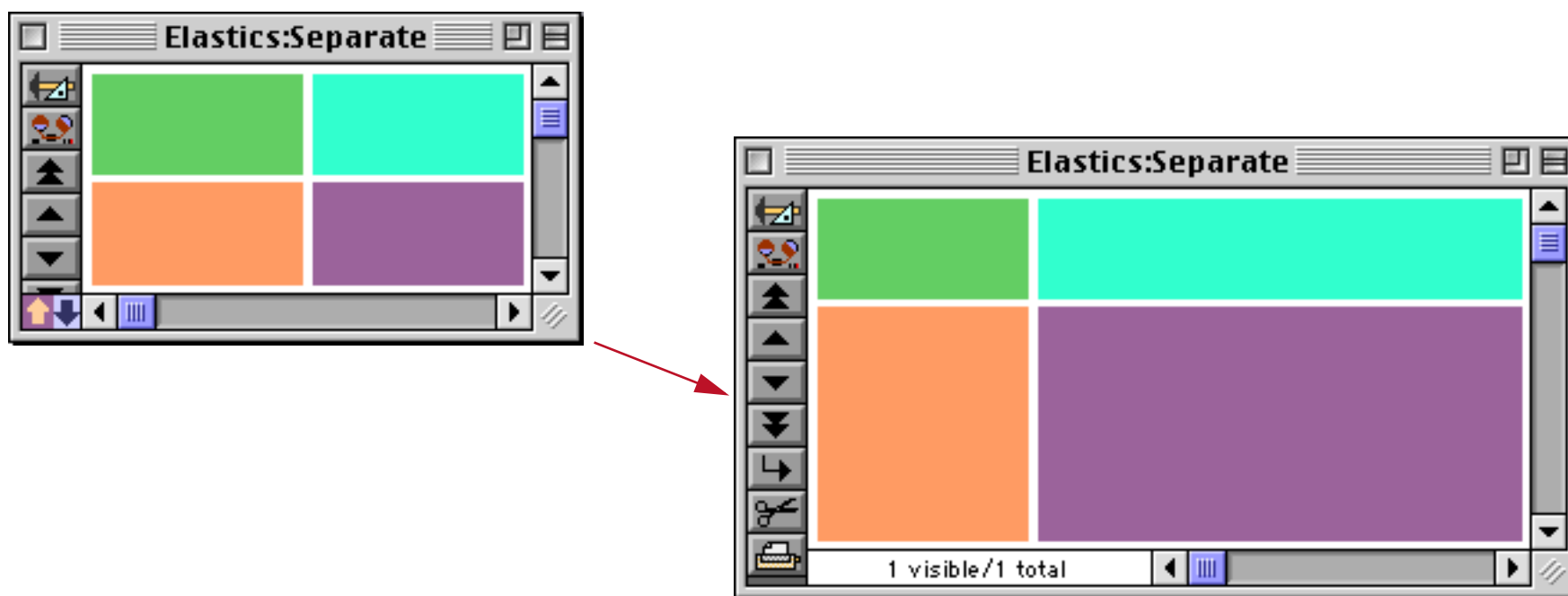


Expanding Multiple Objects Proportionally

Panorama normally adjusts each object separately, either by expanding them or sliding each object. For example, consider the form shown below.

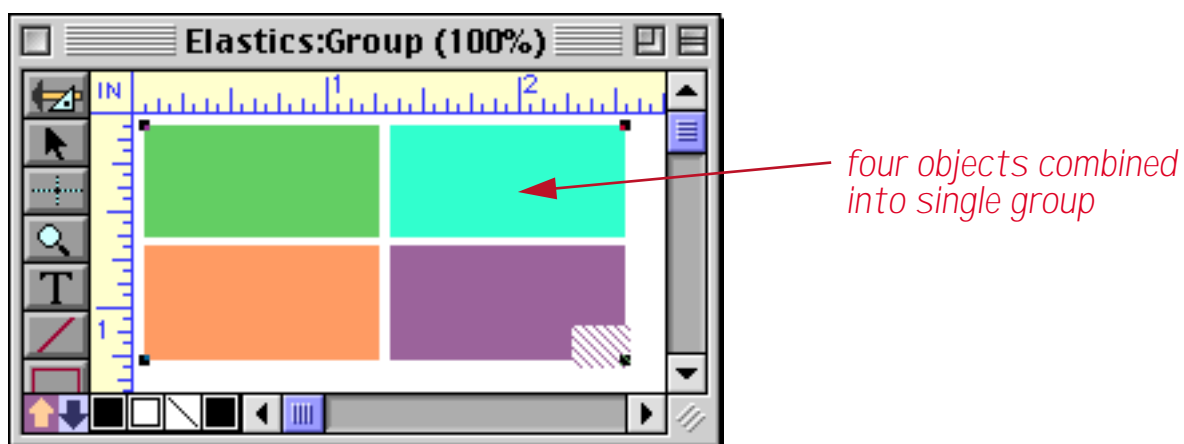


This form expands like this.

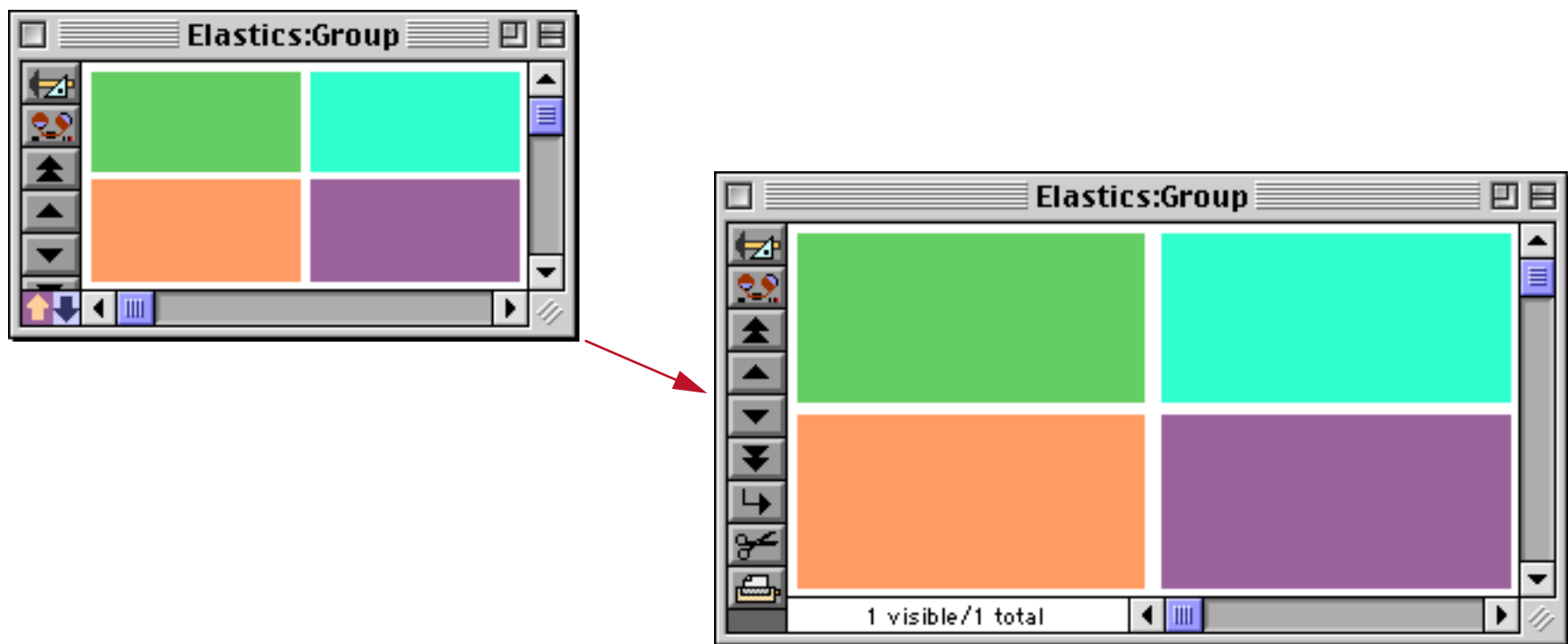


Sometimes, however, you may want several objects to expand or shrink proportionally as a group. For example, if the window grows by an inch, you want four objects to grow equally by 1/4 inch.

One way to do this is by grouping the objects (see "[Grouping Objects Together](#)" on page 536).



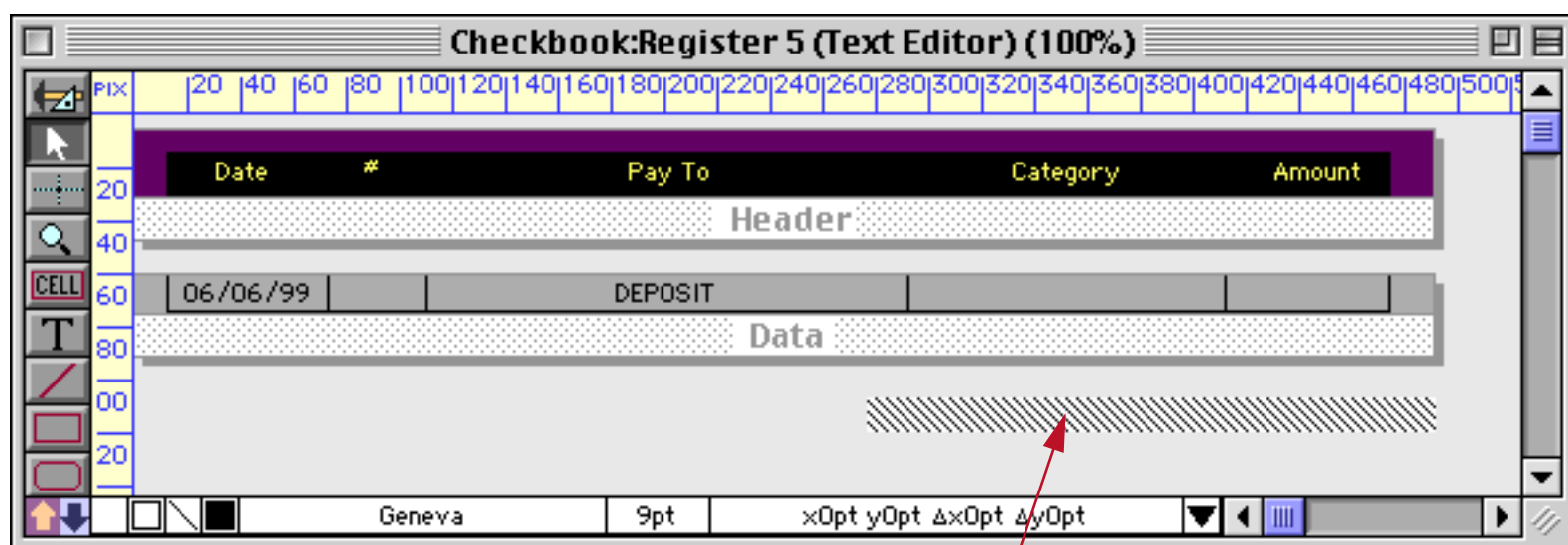
The form adjusting mechanism treats the group as a single object. Within the group, each object will expand or shrink proportionally as the entire group expands or shrinks. Notice that the gaps between the objects also expand proportionally.



Another method is to use a Matrix SuperObject (see “[Super Matrix Objects](#)” on page 939). Again, as the entire matrix expands or shrinks, the individual cells in the matrix expand or shrink proportionally. This method is ideal for calendars (see “[Building a Calendar](#)” on page 971). If you use the Text Display SuperObject to display text, the text can automatically increase or decrease in size as the form expands and shrinks (see “[Text Display Options](#)” on page 611).

Elastic View-As-List Forms

Starting with Panorama 4.0 it is possible to create an elastic view-as-list form. In this case the vertical position of the auto-grow object is unimportant. The horizontal position of the object should correspond to the right edge of the visible area. It’s easier to set this up if the data tile is aligned with the left edge of the form. In the example below the width of the Deposit field will increase when the form is expanded.



auto-grow object

Here's what this form looks like in a minimum width configuration.

Date	#	Pay To	Category	Amount
06/05/99	2153	Bob Citron	Taxes	155.76
06/05/99	2154	S C E	Utilities	157.31
06/05/99	2155	State Of California	Legal Fees	5.00
06/05/99	2156	Metagram	Telephone	19.95
06/05/99	2157	Sun Computers	Maintenance	101.25
06/06/99		DEPOSIT		
06/14/99	2158	C M S	Fixed Assets	1,168.75
06/14/99	2159	Commonwealth Of Massachusetts	Legal Fees	10.00
06/14/99	2160	PacTel Cellular	Telephone	102.83

411 visible/411 total

When the window is expanded, the form adjusts automatically.

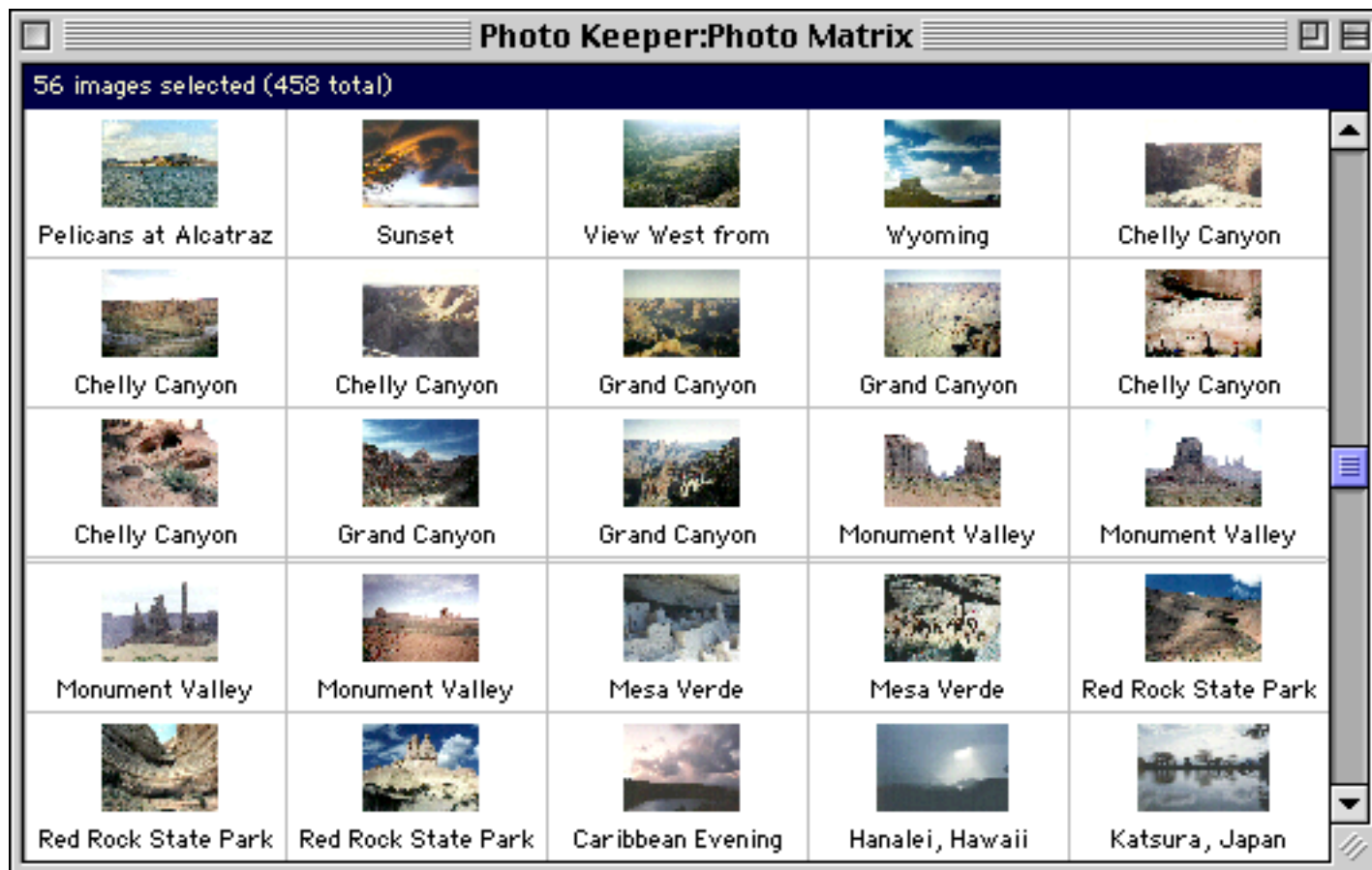
Date	#	Pay To	Category	Amount
06/05/99	2153	Bob Citron	Taxes	155.76
06/05/99	2154	S C E	Utilities	157.31
06/05/99	2155	State Of California	Legal Fees	5.00
06/05/99	2156	Metagram	Telephone	19.95
06/05/99	2157	Sun Computers	Maintenance	101.25
06/06/99		DEPOSIT		
06/14/99	2158	C M S	Fixed Assets	1,168.75
06/14/99	2159	Commonwealth Of Massachusetts	Legal Fees	10.00
06/14/99	2160	PacTel Cellular	Telephone	102.83

411 visible/411 total

You can also use the auto-grow object to set the minimum and maximum dimensions of the view-as-list form, just as with a regular form.

Super Matrix Objects

Some applications require a rectangular array (or matrix) of data, pictures, and/or pushbuttons (for example a monthly calendar or a thumbnail artwork preview).

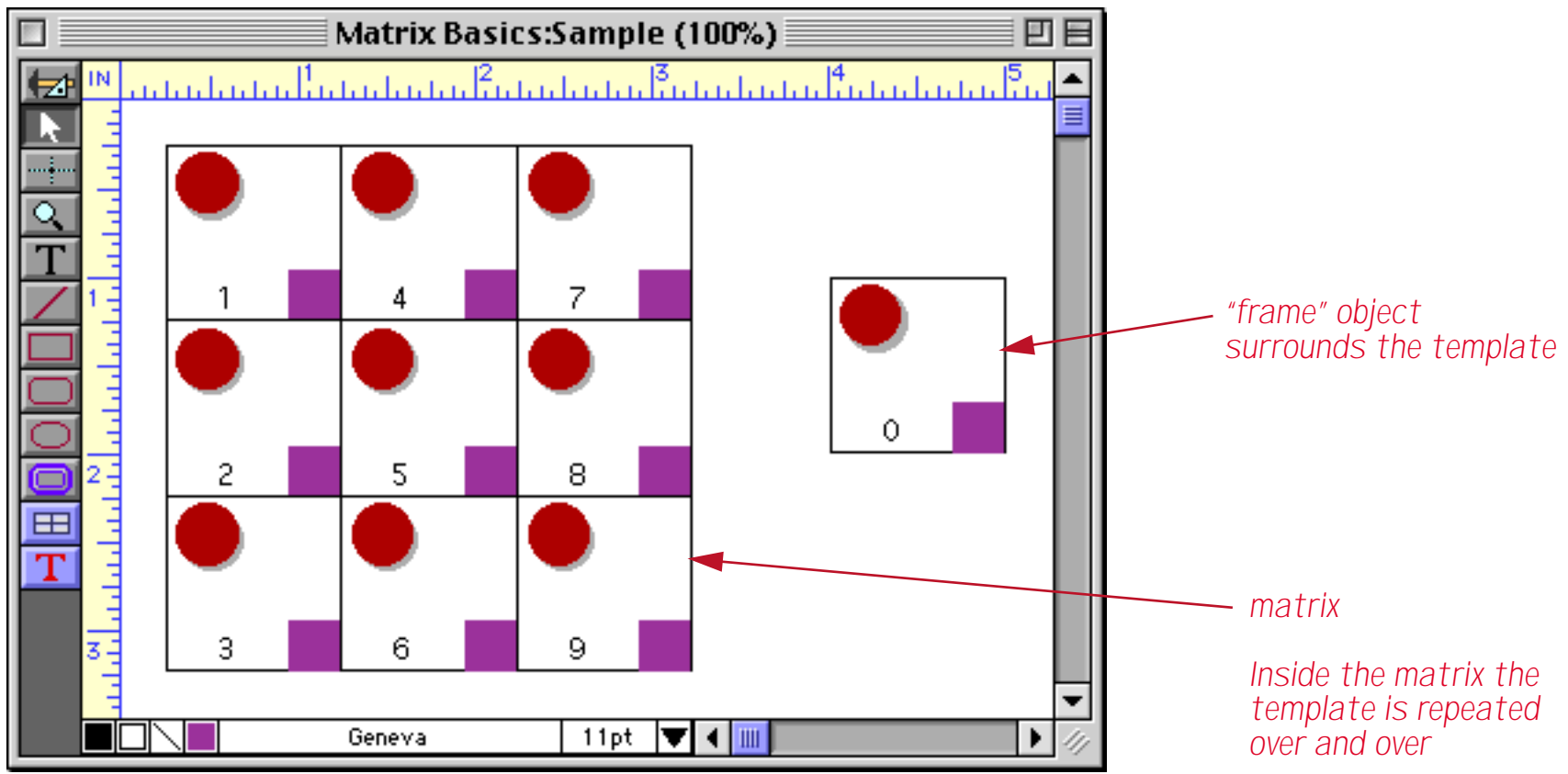


Such a matrix consists of a series of cells assembled into rows and columns. Of course, you can build up such a matrix from individual objects, but the Super Matrix SuperObject™ allows the entire matrix to be built by repeating a single template. The template may contain artwork and text that will be repeated over and over again for each cell in the matrix. The template can use formulas to display the appropriate information in each column and row. This system has several advantages: 1) The array can be built quickly, 2) If changes are necessary later, they only have to be made once in the template and are automatically repeated throughout the entire matrix, 3) It is very easy to change the number of columns or rows in the matrix, 4) The matrix and template can be constructed to adjust automatically as the window changes size and shape.

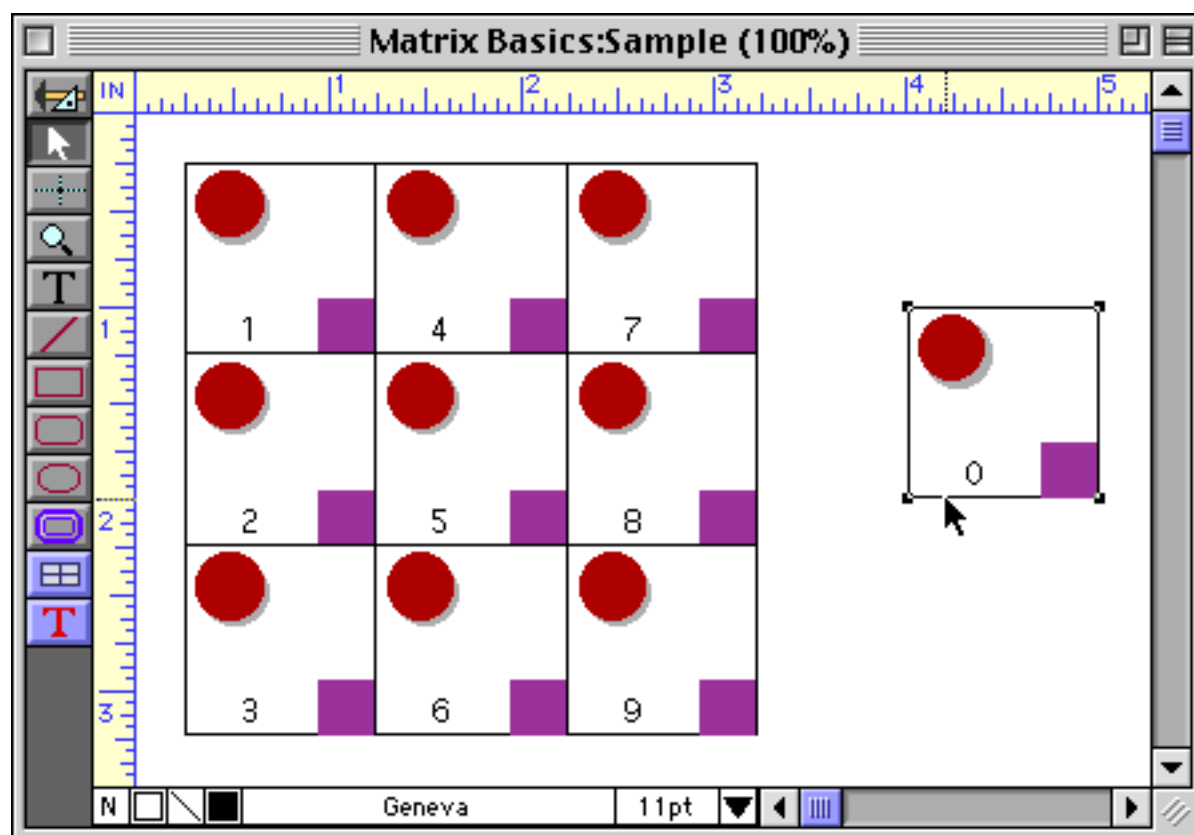
(Note for Panorama 3 and 4 users: The Matrix Data, Scroll Bar, and Overflow options in the Super Matrix configuration dialog only work for new super matrix objects that are created with Panorama V or later. If you have an old Super Matrix object that was created with an older version of Panorama you'll need to delete it and create a new object to use these features.)

The Matrix Template (and Frame Object)

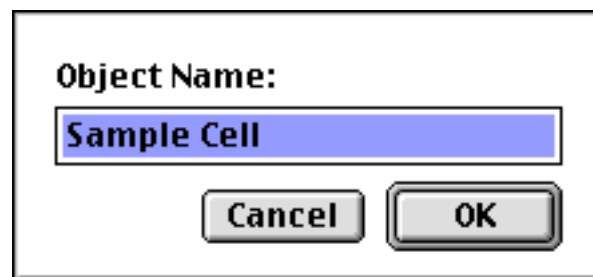
Unlike most other objects, the Super Matrix is not completely self contained. For non-trivial applications, it requires a template that tells Panorama what to draw within each matrix cell. This template consists of Panorama objects enclosed within an object you designate as the frame object. We call the object a frame object because it surrounds the objects inside, just like a picture frame. Any object that is inside the frame object will automatically appear inside the cells of the matrix. The frame is usually placed off to the side or below, somewhere where it will not normally be visible.



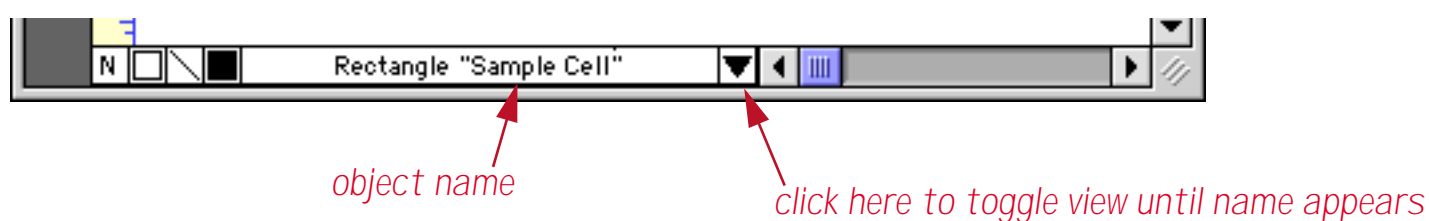
To designate an object as a frame object, you must give it a unique name. To give an object a name, first select the object (frame objects are usually rectangles, but any kind of object will work).



Next, use the **Object Name** command in the Edit menu or click on the object name in the Graphic Control Strip (along the bottom of the window). See “[Object Type/Object Name](#)” on page 533 for more details about setting and viewing an object’s name. The name you pick is unimportant, but keep it handy, because you’ll need it when you create the matrix itself.



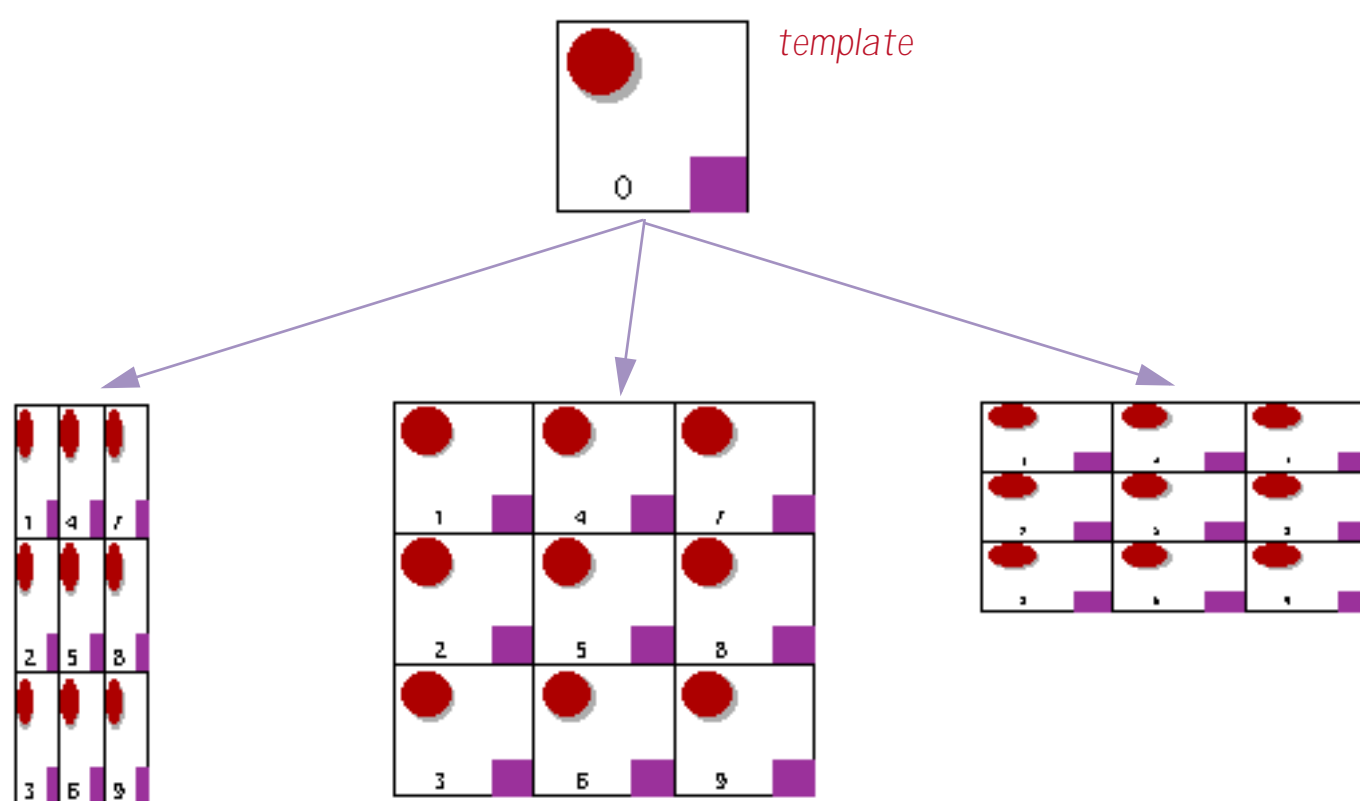
If you later forget the name of the object you can use the Graphic Control Strip to remind you.



The frame object may be located anywhere on the form, and may be any size you want. Usually it is most convenient to make it about the same size as the cells in the matrix will be. You can move the frame object around at any time, but remember that only objects inside the frame object will appear inside the cells of the matrix.

In some ways, the matrix frame object is similar to a report tile object. Both are used to designate a template built up with other objects. However, there are some important differences. First of all, the tile is a special kind of object, while any object may be designated as a matrix frame.

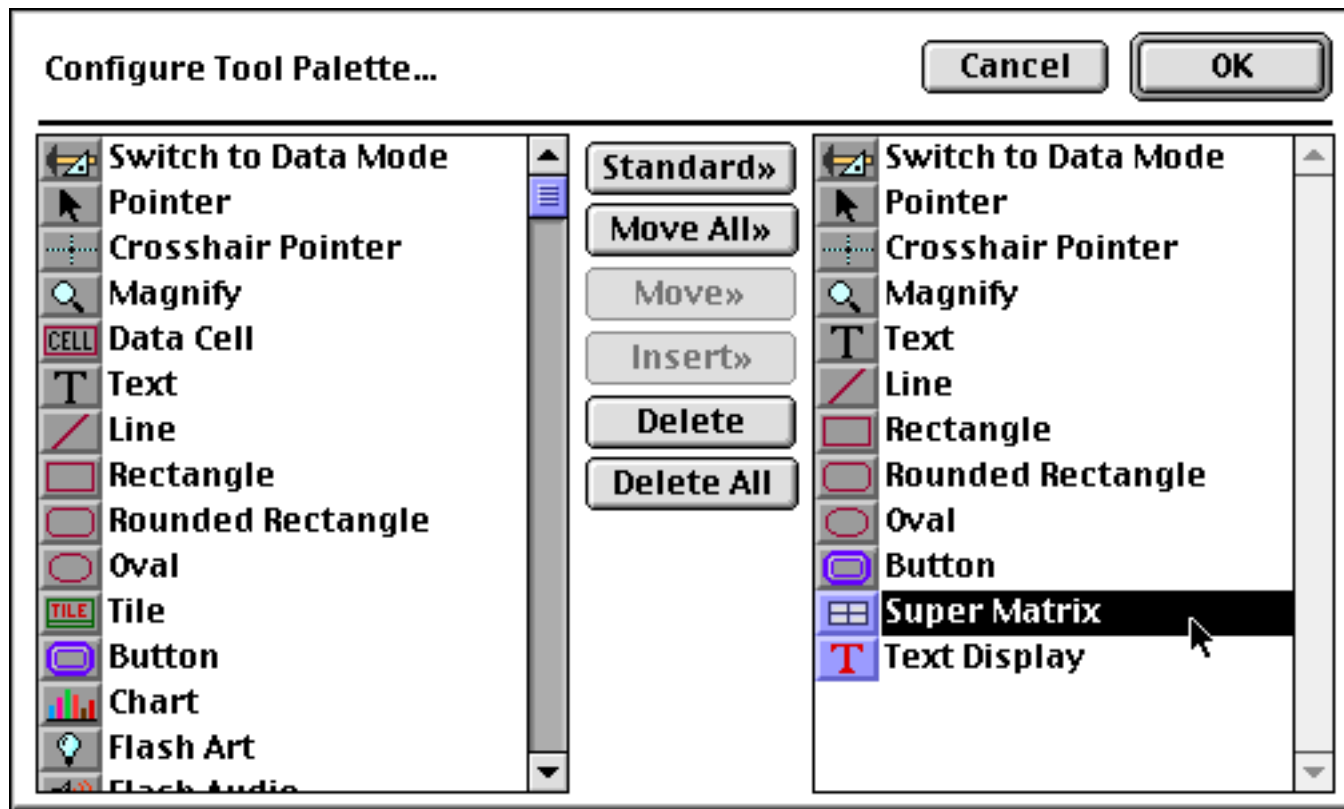
A more important difference is that the tile object always prints at a fixed size and proportion, no matter what the size of your paper is. The matrix frame, however, will be squeezed and adjusted as necessary to fit into the actual matrix cells. If the matrix cells are tall and skinny then the matrix frame and template will be squeezed to fit—even if in graphics mode the matrix frame appears to be short and wide.



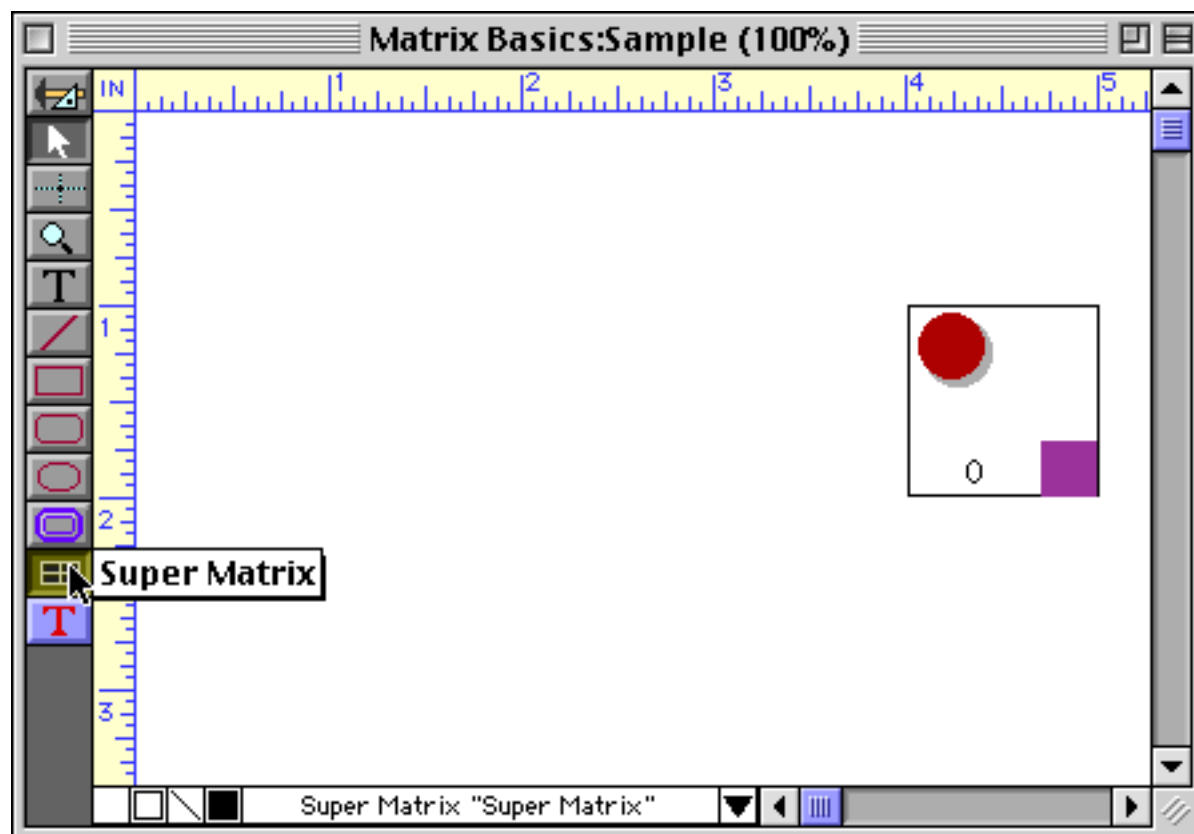
If you know the exact size your matrix cells will be, make the matrix frame the same size and you won't have to worry. But if the size of the matrix cells may change, you'll have to design your matrix template to adjust as the matrix changes size and shape. Techniques for making adjustable templates are discussed later in this section.

Creating Super Matrix Objects

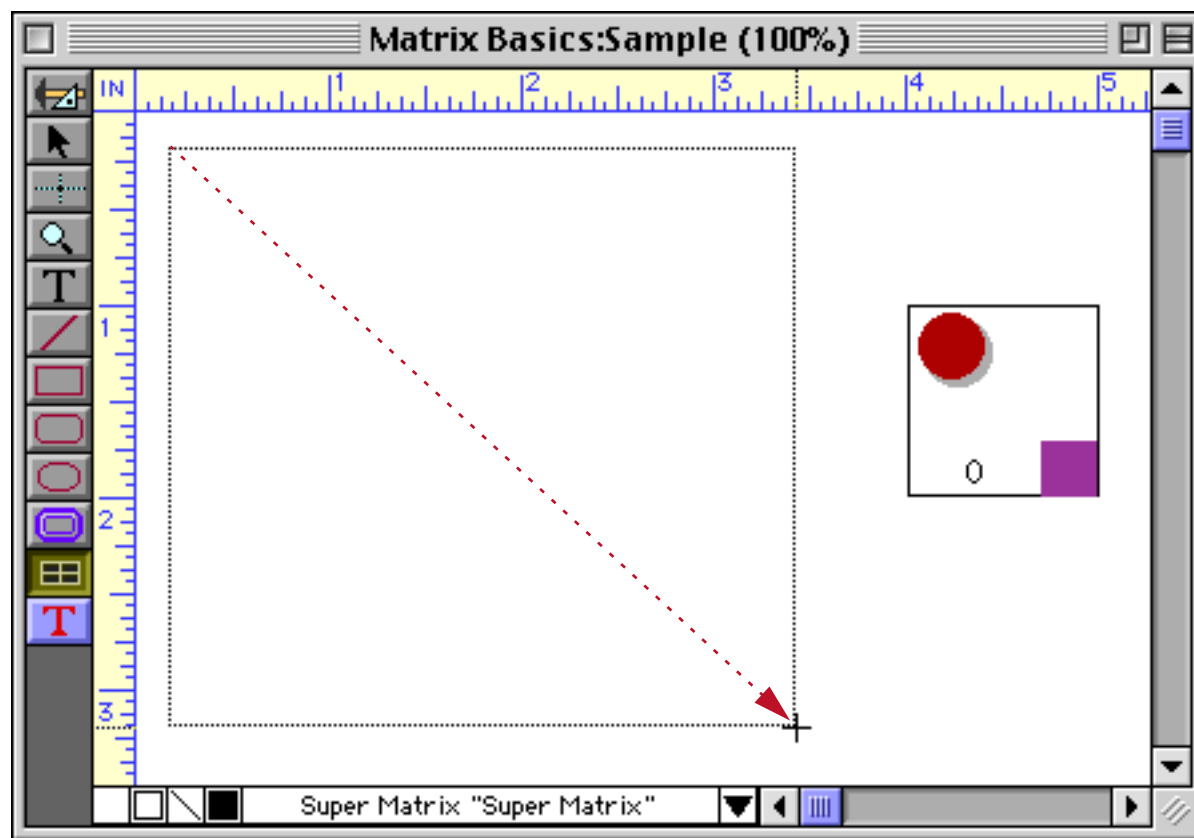
Super Matrix objects are created just like any other SuperObject™. The Super Matrix tool is not in the default tool palette, so you'll need to use the **Tool Palette** dialog to add this tool to the palette if it is not already there (see "[Customizing the Tool Palette](#)" on page 497).



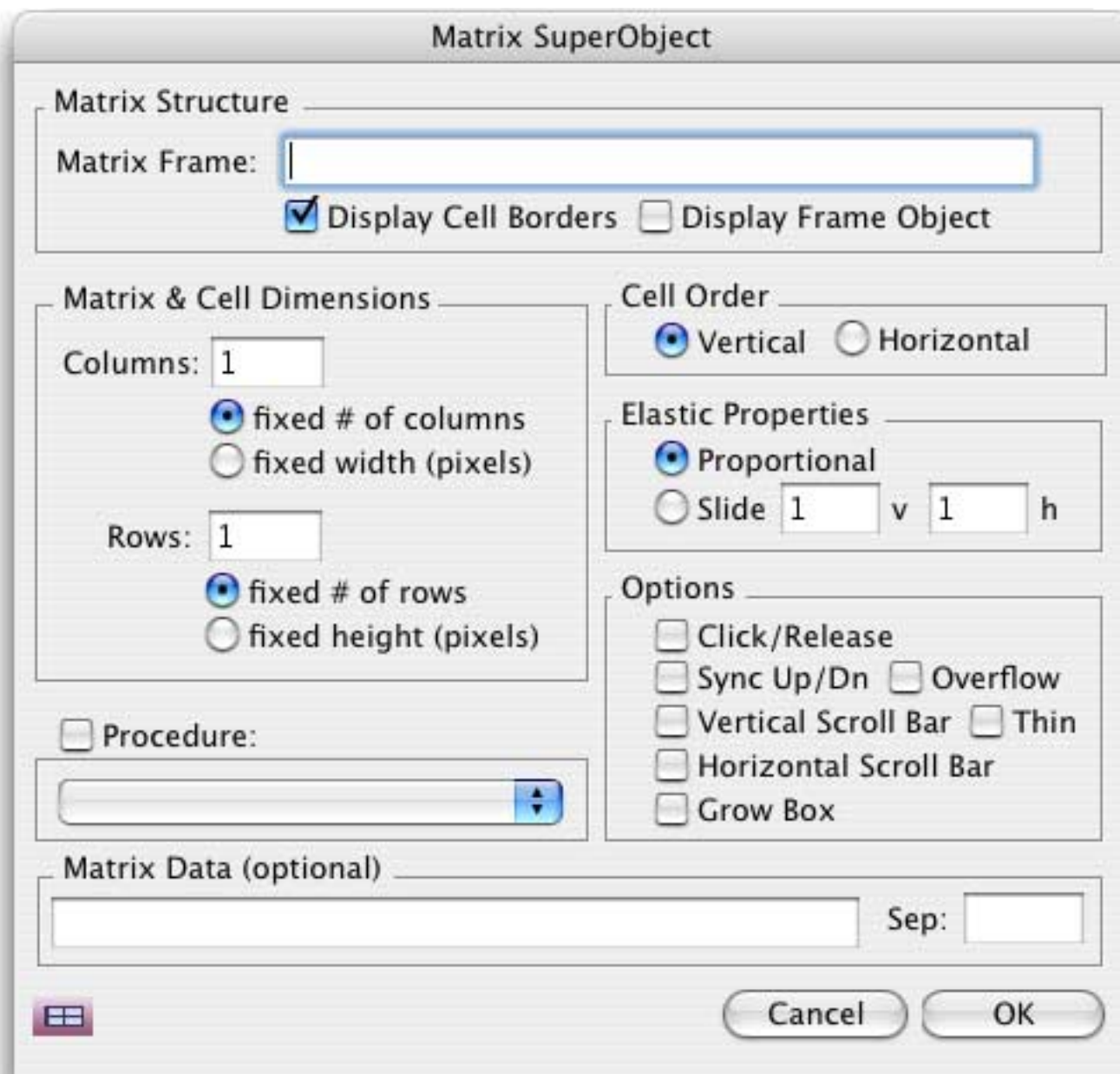
Now that the tool is added to the palette you can select it.



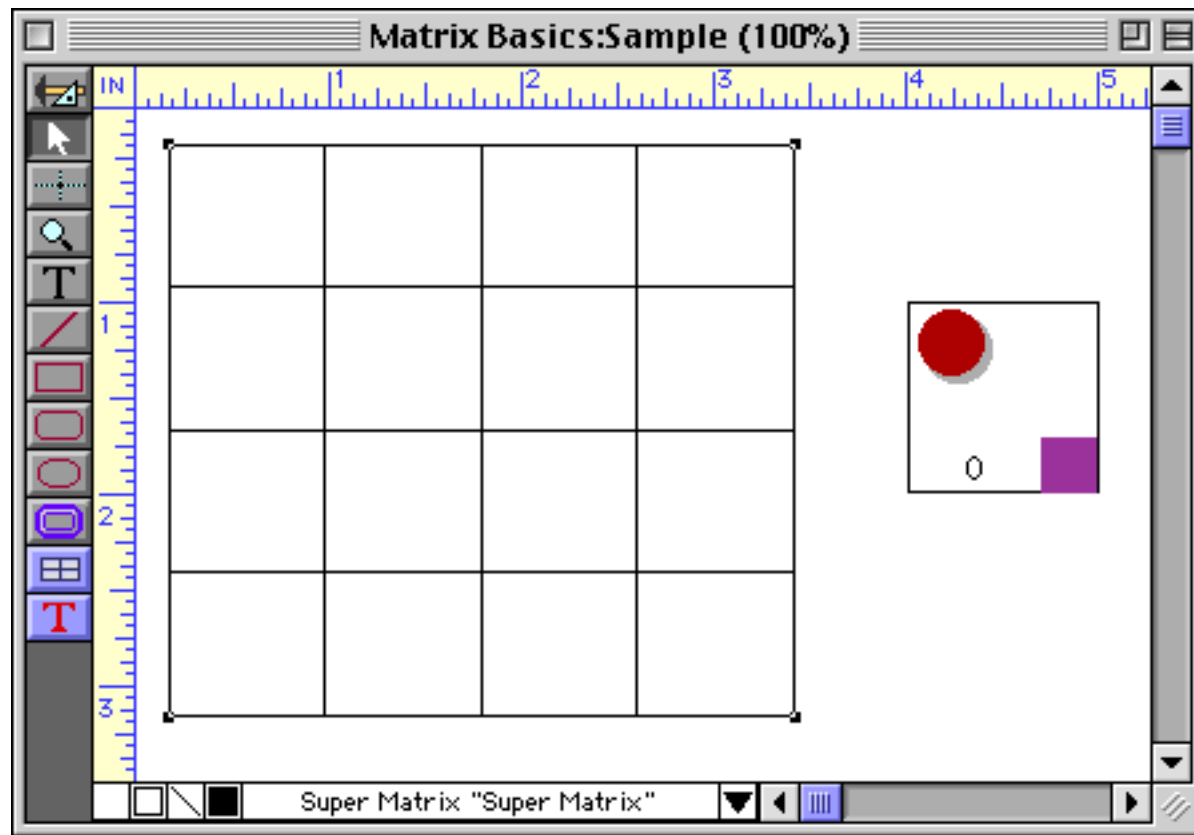
Once the tool is selected, drag the mouse across the form in the location where you want to create the matrix to appear.



When you release the mouse, the Super Matrix configuration dialog will appear.



For a blank matrix just fill in the number of columns and rows and press the **OK** button.

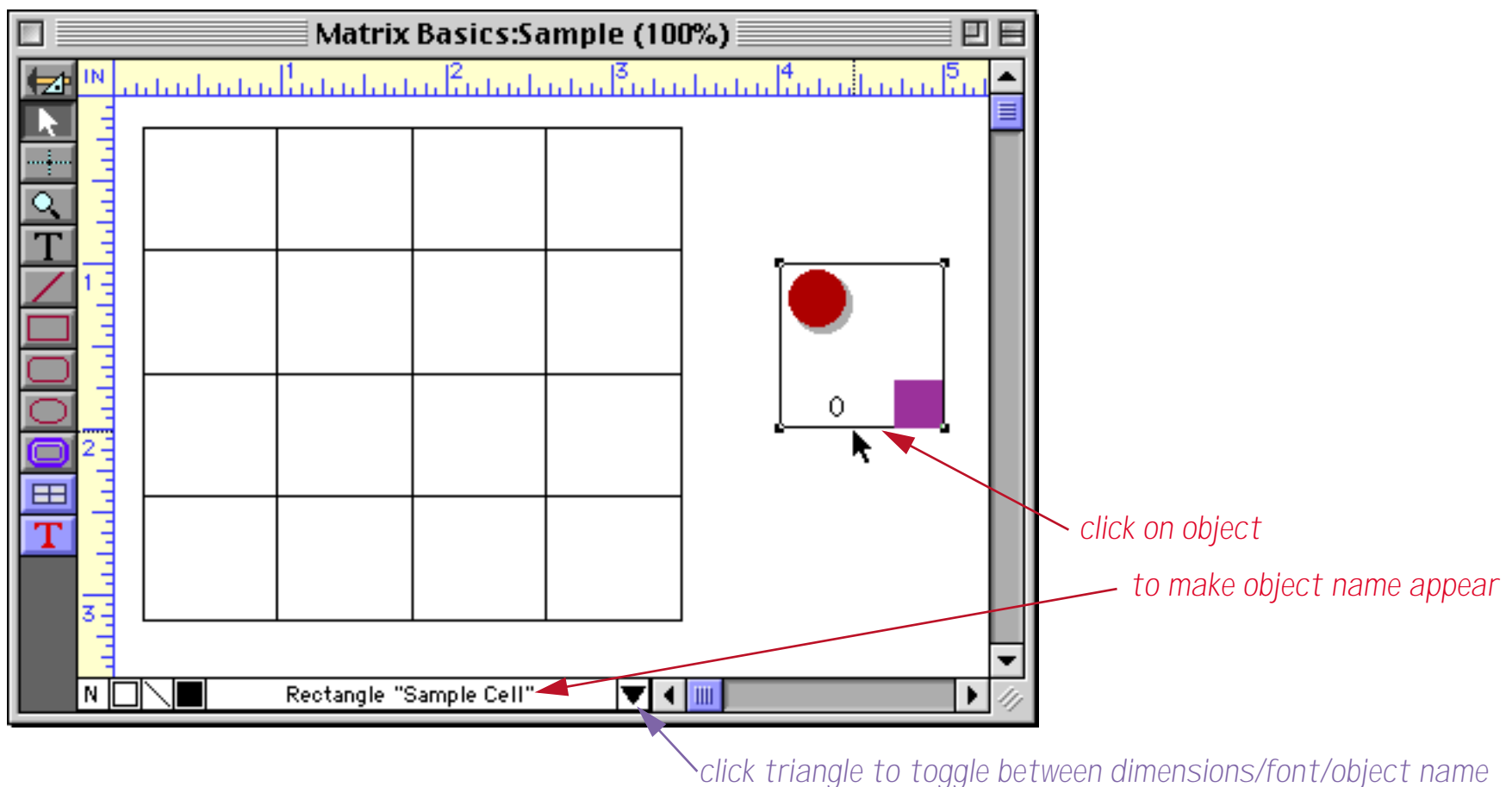


If you need to change the matrix options later, double click on the matrix object with the **Pointer** tool to re-open the configuration dialog.

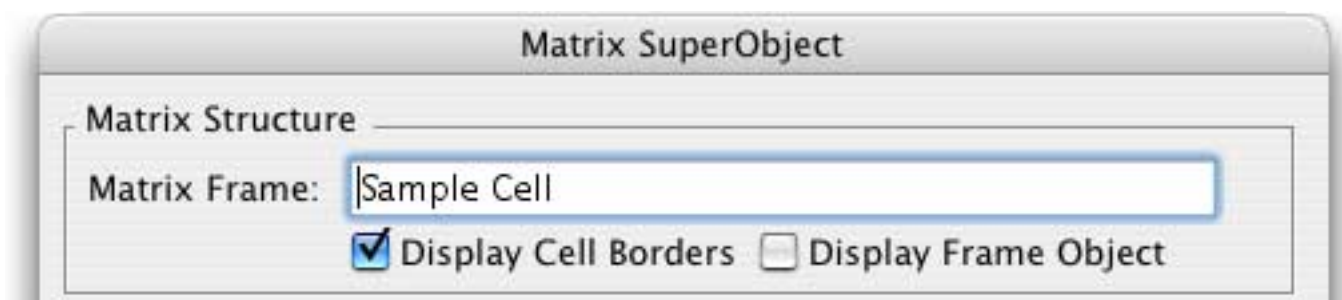
Linking with the Matrix Frame

The first option in the Super Matrix dialog is called Matrix Frame. This is the name you gave to the frame object described earlier (see "[The Matrix Template \(and Frame Object\)](#)" on page 940). If you haven't created this object yet, don't worry. Just type in the name you intend to use here, then later go back and create and name the frame object and template.

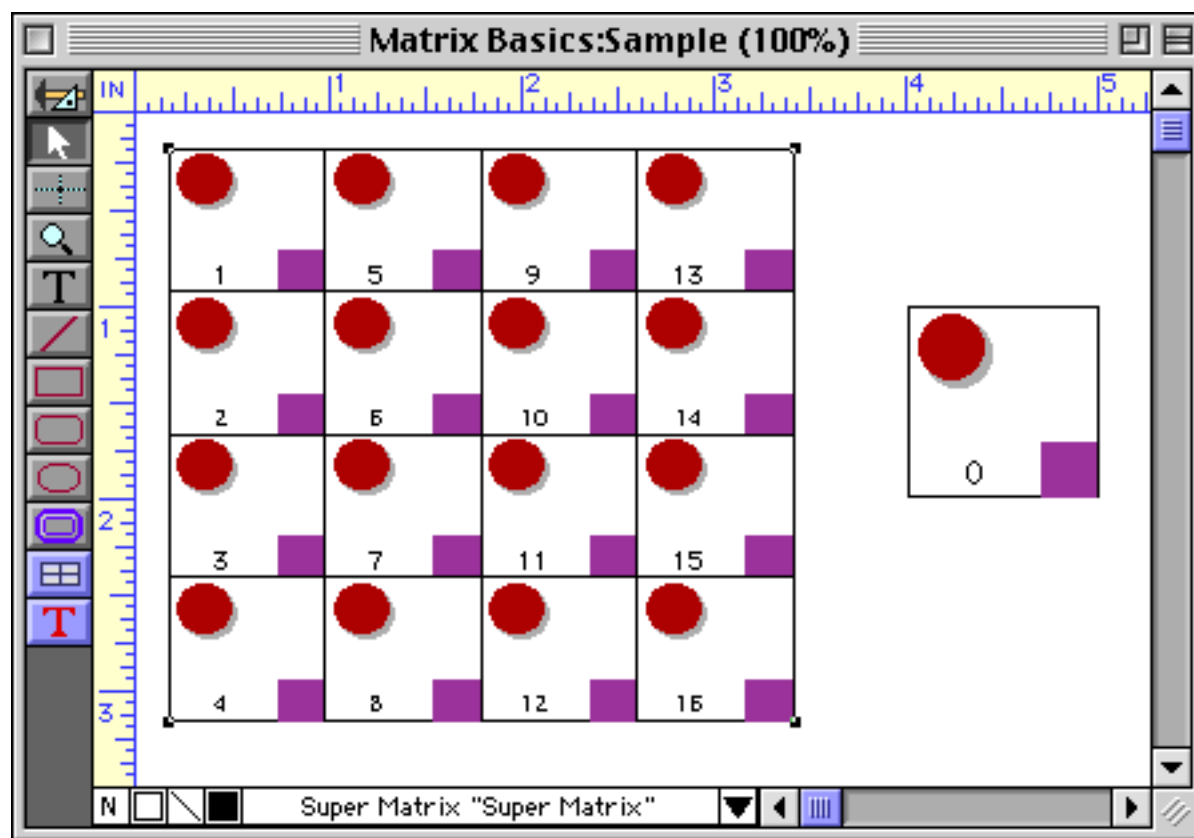
As you may recall, in our example we named the frame object **Sample Cell**. You can double check the name by clicking on the frame object (see "[Object Type/Object Name](#)" on page 533).



Now that we've double checked on the name of the frame object, double click on the Super Matrix object to open the configuration dialog. Type in the name of the frame object, [Sample Cell](#).



When you press the OK button the frame is linked to the matrix. The objects in the template will be repeated inside each matrix cell.



It's possible to have more than one Super Matrix object in a single form. In this case, usually each one will have its own matrix frame with a unique name. The unique name is important so that Panorama can tell which frame belongs to which matrix.

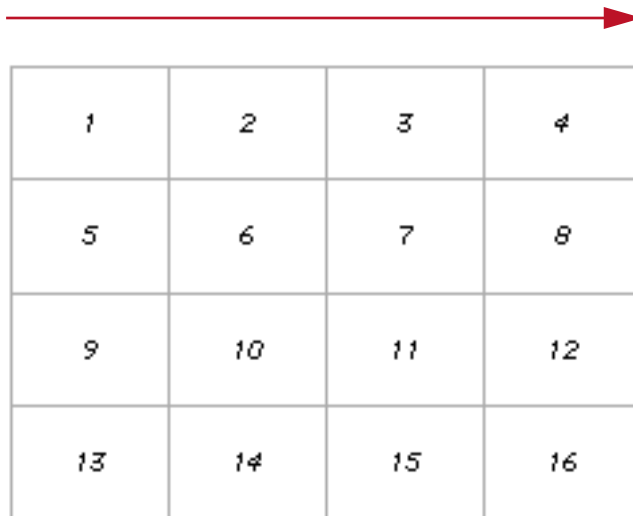
Matrix Cell Borders & Background

If you turn on the **Cell Borders** option in the Super Matrix dialog, Panorama will display a border around each cell in the object. You can control the color, line width, and pen pattern of the border using the Graphic Control Strip or the Graphics menu. (If you would like a dotted border, use a diagonal stripe pen pattern.) Panorama will adjust the borders of adjacent cells so that they overlap (instead of creating a double width border). The amount of overlap is adjusted according to the width of the line. (Note: This overlap feature does not work with hairlines.)

The **Frame Object** option controls whether or not the frame object itself is displayed as part of each matrix cell. Usually you'll leave this option off. However, you might want to use this option to display a background for each cell, perhaps using a Flash Art object as the frame object. You could also display a border around each cell using the frame object, but in this case Panorama will not make adjacent cells overlap.

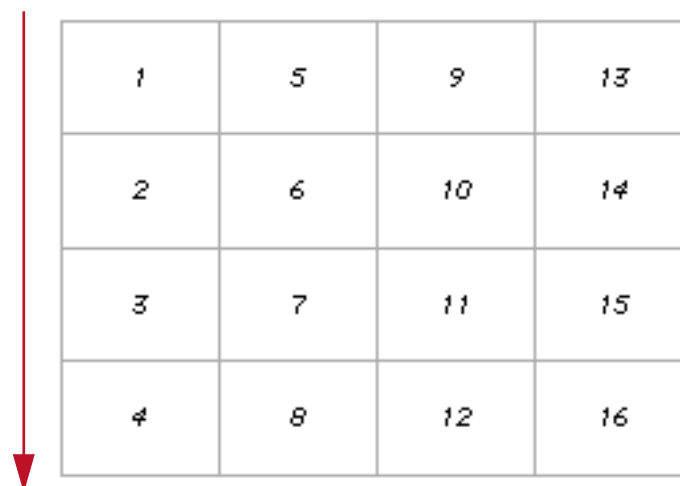
Matrix Order

Each matrix cell is numbered, starting from 1. The matrix can be drawn one of two ways: vertically or horizontally. In both cases the upper left hand cell is number 1. If the matrix order is **horizontal**, then the cell numbers will be consecutively numbered from left to right in each row.



1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

If the matrix order is **vertical**, then the cell numbers will be consecutively numbered from top to bottom in each column.



1	5	9	13
2	6	10	14
3	7	11	15
4	8	12	16

Matrix Rows and Columns

The Super Matrix dialog allows you to control how many rows and columns your matrix has. You can choose either variable sized (fixed #) or fixed size rows and columns.

For example, suppose you wanted to build a monthly calendar. In that case you would always want 7 columns and 6 rows, so you should choose the **fixed # of columns** and **fixed # of rows** options.

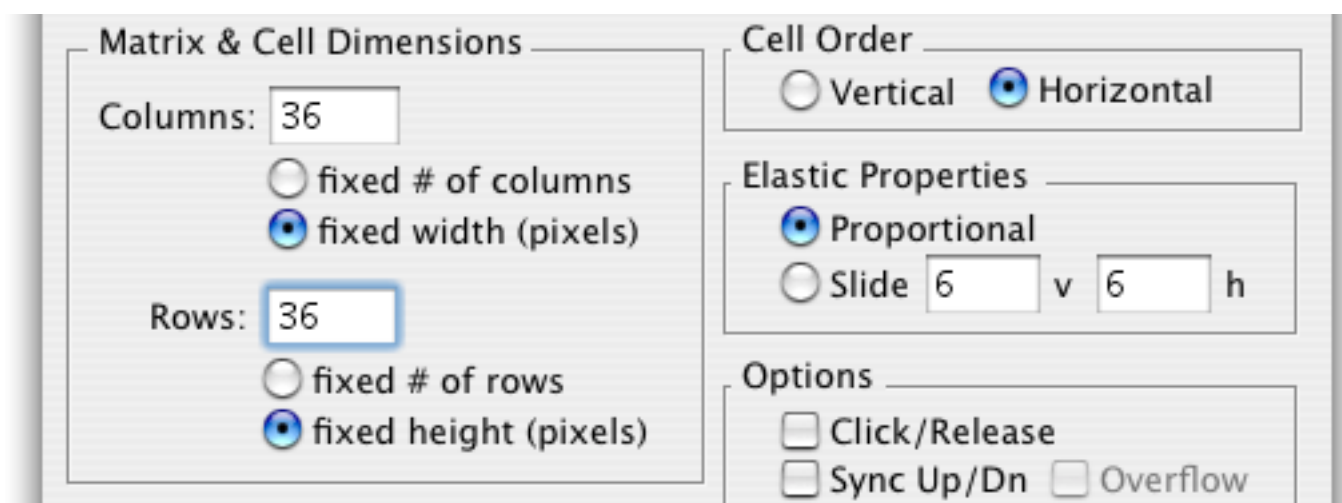
The screenshot shows the 'Matrix & Cell Dimensions' dialog box. Under 'Columns', the value '7' is entered in a text box, and the radio button for 'fixed # of columns' is selected. Under 'Rows', the value '6' is entered, and the radio button for 'fixed # of rows' is selected. In the 'Elastic Properties' section, the 'Proportional' radio button is selected, and the 'Slide' section has '6' entered for both 'v' and 'h'. The 'Cell Order' section has 'Horizontal' selected. The 'Options' section has 'Click/Release', 'Sync Up/Dn', and 'Overflow' all unchecked.

This matrix will always have 7 columns and 6 rows, but the size of the rows and columns will change if the matrix changes size.

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	32	33	34	35
36	37	38	39	40	41	42

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	32	33	34	35
36	37	38	39	40	41	42

In another application you may want to display icons in a matrix with cells that are always 36 pixels wide and 36 pixels high (1/2 inch). To get this effect you must choose the **fixed width** and **fixed height** options.



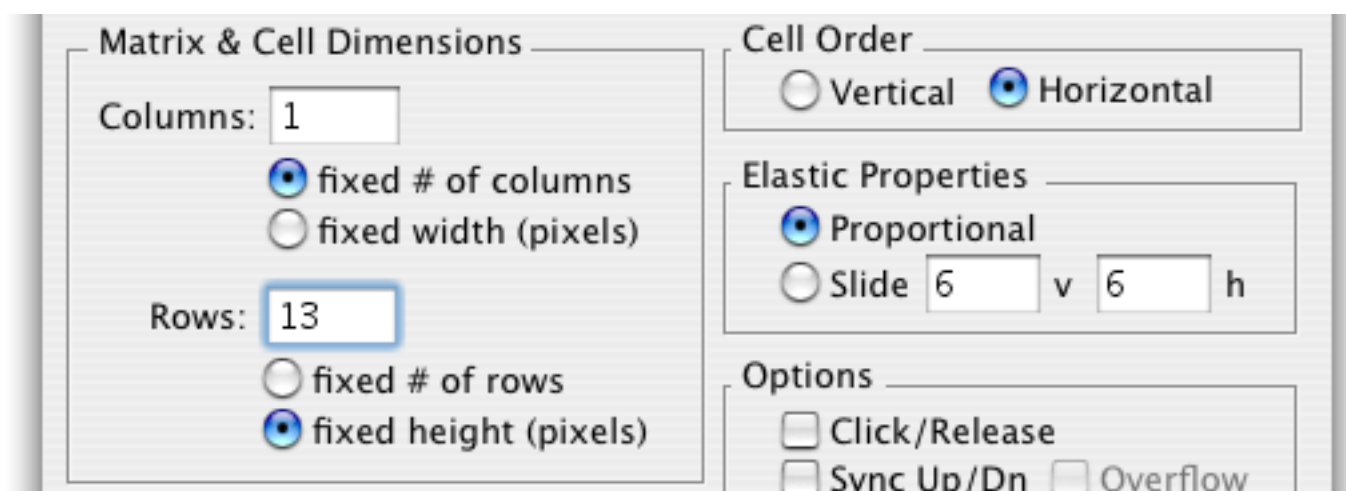
The rows and columns will always be 36 pixels (1/2 inch) high and wide. If the overall matrix changes size, the number of rows and columns will increase or decrease as necessary.

1	2	3	4
5	6	7	8
9	10	11	12

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40

If the size of the matrix is not an exact multiple of the size of the individual cells there will be extra space left-over on the right and/or bottom of the matrix. Panorama will leave this space blank. The only solution to this problem is to make sure that the matrix height and width are an exact multiple of the height and width of each individual cell.

It's possible to mix the **fixed width/height** and **fixed # of rows/columns** options in a single matrix. For example, this matrix always has one column, but has a variable number of rows that are always 13 pixels high.



As the height of the matrix increases, more and more rows appear. Each row is always 13 characters high.

Burritos	
Super Deluxe \$4.99	
Jr. Super Deluxe \$3.99	
Super \$3.99	
Deluxe \$4.99	
Beef \$4.99	
Beef & Bean \$4.99	

Burritos	
Super Deluxe \$4.99	
Jr. Super Deluxe \$3.99	
Super \$3.99	
Deluxe \$4.99	
Beef \$4.99	
Beef & Bean \$4.99	
Green Chile \$4.99	
Carnitas \$5.50	
Carne Azada \$5.50	
Bean & Cheese \$2.99	
Chorizo \$3.99	

Burritos	
Super Deluxe \$4.99	
Jr. Super Deluxe \$3.99	
Super \$3.99	
Deluxe \$4.99	
Beef \$4.99	
Beef & Bean \$4.99	
Green Chile \$4.99	
Carnitas \$5.50	
Carne Azada \$5.50	
Bean & Cheese \$2.99	
Chorizo \$3.99	
Chicken \$4.99	
Machaca \$3.99	
Relleno \$4.99	
Bean & Eqq \$2.99	
A La Mexicana \$3.99	

Designing a Matrix Template

Matrix templates were introduced earlier in this chapter. The next few sections explain how to create the actual “guts” of a matrix template.

In creating matrix templates, it may help to understand how Panorama draws a matrix. First, it calculates the exact size and location of each cell in the matrix. Then, starting from the upper left, it draws each cell. To draw each cell, it first locates the matrix frame, and the objects inside the matrix frame. It temporarily moves and adjusts these objects so that they fit inside the matrix cell. It then draws the cell. The process repeats for each cell. Your job is to create graphic objects that: 1) display the appropriate information in each cell, and, 2) will look satisfactory when adjusted to fit inside any reasonable size and shape matrix cell (as a bonus, you get to decide what constitutes a reasonable size and shape matrix cell!).

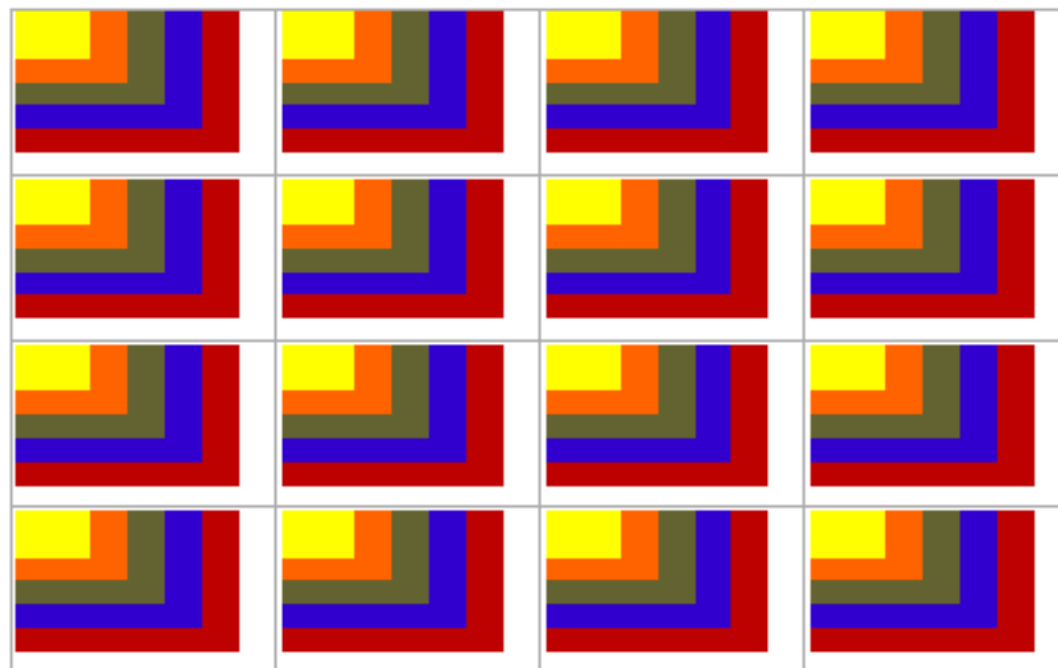
Adjustable Size Templates

The cells in a Super Matrix object can change size and shape several ways: 1) You can change the number of rows or columns, 2) You can change the size of the entire matrix in graphics mode, or 3) If you've created an elastic form, the size of the entire matrix can automatically change when the size of the window changes. Whenever any of these things happen, the graphics inside each matrix cell need to adjust automatically.

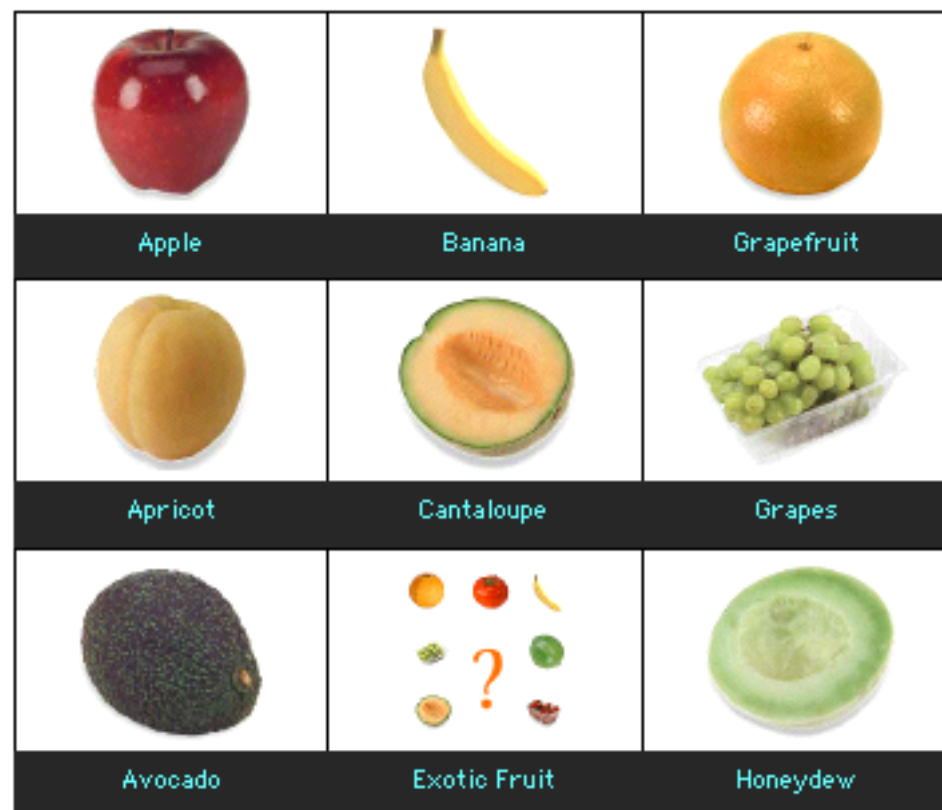
The Super Matrix object has two methods it can use for adjusting the graphics you create so that they automatically fit into each matrix cell. We'll use this matrix template to illustrate both of these methods.



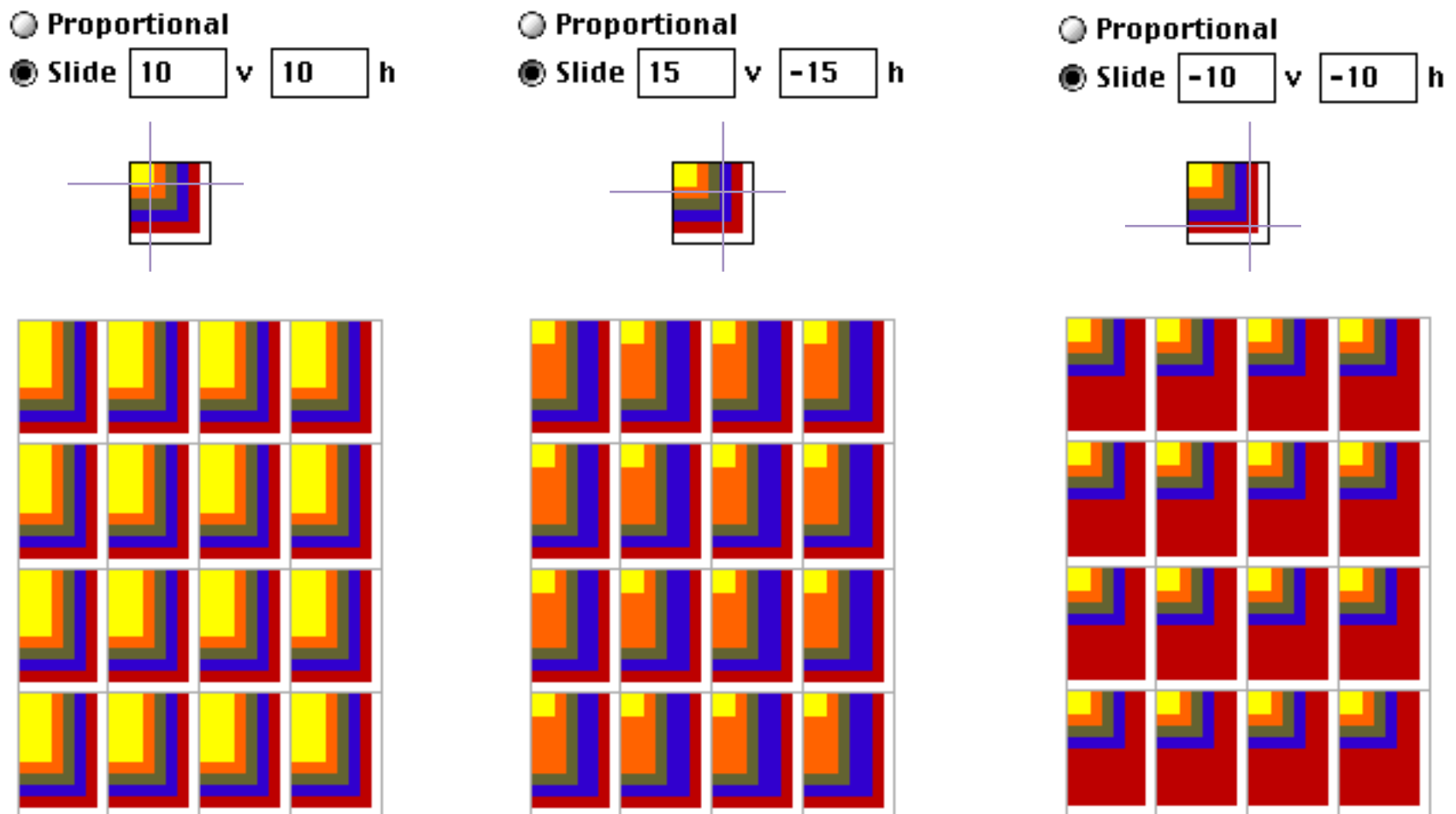
The standard method is **Proportional**. In this method, each graphic object will occupy the same relative position in the matrix cell that it occupies inside the matrix frame object. So if, for example, a flash art object is located in the bottom right third of the matrix frame it will also appear in the bottom right third of each cell. It's almost as if you drew the matrix template on a rubber sheet, and Panorama stretches the rubber sheet as necessary to fit each cell.



A potential disadvantage of this method is that as the cell expands, everything in the cell expands with it. For example, if each cell contained a photograph with a 9 point caption on the bottom, the caption would also expand if the cell expanded. This may or may not be what you want to happen.



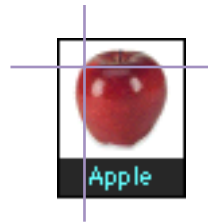
The second method for adjusting the matrix template is called **Sliding**. As the matrix cell gets bigger, points in the upper left hand corner stay put, while points toward the right and the bottom slide over and down. Essentially, the template “explodes” as the cell gets bigger. This method is somewhat similar to Panorama’s cluster resize feature, and is also similar to an elastic form. To control the point at which the template “explodes,” enter the size (in pixels) of the upper left hand corner that you want to stay together in the boxes marked **v** and **h**. **V** is the height of this box (stands for vertical) and **h** is the width (for horizontal). In some cases, it may be more convenient to enter negative values. In this case the dimension will be measured from the bottom right hand corner instead of the upper top.
















If you use the sliding method, be careful that your matrix cells don't get too small. If they do, your template may “implode.” The result isn't as horrible as it sounds, but it may look very strange and become unreadable.

Using the sliding method you can create a variable size photograph with a fixed height caption, like this. No matter how small or large the matrix is, the caption area will always remain the same height.

Resizing: Proportional
 Slide v h



		
Apple	Banana	Grapefruit
		
Apricot	Cantaloupe	Grapes
		
Avocado	Exotic Fruit	Honeydew

		
Apple	Banana	Grapefruit
		
Apricot	Cantaloupe	Grapes
		
Avocado	Exotic Fruit	Honeydew

Tips for Adjustable Size Templates

The Text Display SuperObject™ is very handy for displaying text in a matrix cell (see See “[Text Display SuperObjects™](#)” on page 608). It has flexible alignment options that allow the text to be aligned both horizontally and vertically within the cell.

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

Even more handy is the **Scale Text Size** option, which allows the text to grow and shrink as the matrix grows and shrinks (see See [“Text Display Options”](#) on page 611). You may need to play with the lines option to get the effect you want (as this value is increased, the text size decreases).

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>
<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>
<i>13</i>	<i>14</i>	<i>15</i>	<i>16</i>

Both standard Flash Art™ and SuperObject™ Flash Art are also handy for displaying pictures in a matrix cell (see See [“Creating Super Flash Art Objects”](#) on page 751). Use the **Center** or **Scale** options to automatically display the picture attractively within each cell. For displaying photographs, the **Proportional** option (Super Flash Art only) is ideal. The photograph will always be displayed in the largest possible size without distortion.

Matrix Co-Ordinates and Data

Whether you are displaying text or pictures (or both), chances are you want to display something in each cell in the matrix. To do this you'll use one or more formulas. These formulas can either be displayed directly (using an Auto Wrap Text object or Text Display SuperObject™) or may be incorporated into a Flash Art™ object to display a picture. Within each formula, you can choose from several different functions to identify the cell being drawn and the appropriate data to draw in that cell.

Matrix Co-Ordinates (What cell is this?)

The `info("matrixcell")` function returns the cell number within the matrix, starting with 1 in the upper left hand corner. If the matrix order is horizontal, then the cell numbers will be consecutively numbered from left to right in each row. If the matrix order is vertical, then the cell numbers will be consecutively numbered from top to bottom in each column. This illustration shows a matrix with an auto-wrap text object being used to display the cell number along the bottom.

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

The `info("matrixcolumn")` function returns the column number, starting with 1 for the left hand column and increasing by one for each column to the right.

1	2	3	4
1	2	3	4
1	2	3	4
1	2	3	4

The `info("matrixrow")` function returns the row number, starting with 1 for the top row and increasing by one for each row in the matrix.

1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4

Usually the result of these functions is not used alone, but is fed into another function. For calendars, you would feed the cell number into `calendardate()` and `calendarday()` functions. To display items in an array or list, you would feed the cell number into the `arrayelement()` or `extract()` functions. These functions can help convert the raw cell number into the actual data that should be displayed in the cell.

Co-Ordinates and Scroll Bars

If the matrix has scroll bars, the coordinates will adjust as the scroll bars are used. If the matrix has both vertical and horizontal scroll bars then the `info("matrixcell")` function will not return a reliable number. Instead you should use the `info("matrixrow")` and `info("matrixcolumn")` functions to identify the cell.

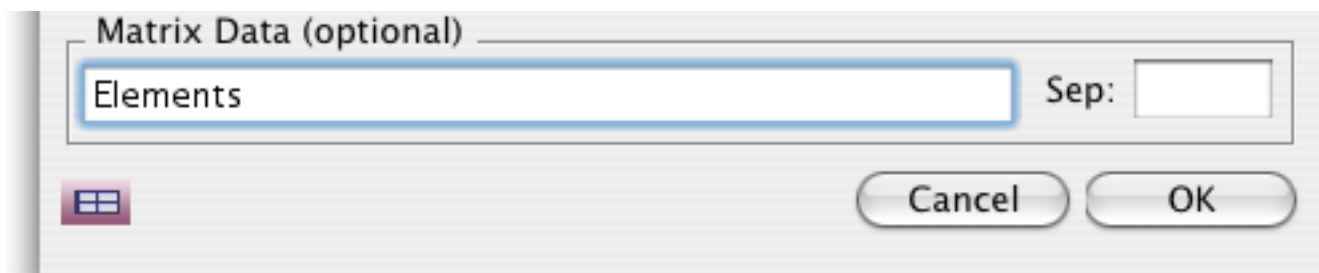
Using a Matrix to Display an Array

Starting with Panorama V there are two techniques available for displaying an array with a matrix. The first technique is to use just the `info("matrixcell")` function (this technique will also work in earlier versions of Panorama). For example, suppose that you want to display a carriage return separated array named `Elements` in a matrix. To do this simply use a Text Display SuperObject with this formula:

```
array(Elements,info("matrixcell"),¶)
```

This will work, but it has some drawbacks. In this case the array is stored in a field or variable, but if it is a more complex formula (perhaps a `lookupall()` function, for example) that formula must be calculated over and over again. The matrix object has no way of detecting if the array data changes, so the matrix can't automatically redisplay the data if it changes. The matrix also can't automatically the scroll bar(s), if any, to account for changes in the data.

The second technique remedies all of these drawbacks. Instead of calculating the array elements in a formula, they are calculated by the matrix object itself. To do so you must enter the formula for the array in the matrix configuration dialog, as well as the separator. (Note: This technique only works for new super matrix objects that are created with Panorama V or later. If you have an old Super Matrix object that was created with an older version of Panorama you'll need to delete it and create a new object to use this feature.)



If the separator is left blank (as in the example above) Panorama will assume the array is carriage return separated. Otherwise you can type any single character into this box.

Once the matrix data and separator are set you can use three functions to access the data within a matrix cell. The the `info("matrixcelldata")` function returns the array element corresponding to the current cell. In our example, to display the array elements with a Text Display Superobject the formula would be simply:

```
info("matrixcelldata")
```

A formula can find out the entire array value with the `info("matrixdata")` function and the current separator value with the `info("matrixseparator")` function.

Using the Matrix as a Button

The Super Matrix object doesn't just display a matrix, it also allows you to click on matrix cells and trigger a procedure. You can select the procedure to be triggered using the **Procedure** pop-up menu in the Super Matrix dialog. If you decide later that you don't want a procedure to be triggered, simply un-check the **Procedure** check box.

If the **Click/Release** option is checked, Panorama will highlight the matrix cell the user clicked on by inverting it (black becomes white, white becomes black). The procedure will be triggered if the mouse is released over the same matrix cell it was originally clicked on. If the **Click/Release** option is not checked, Panorama will trigger the procedure immediately without highlighting the matrix cell.

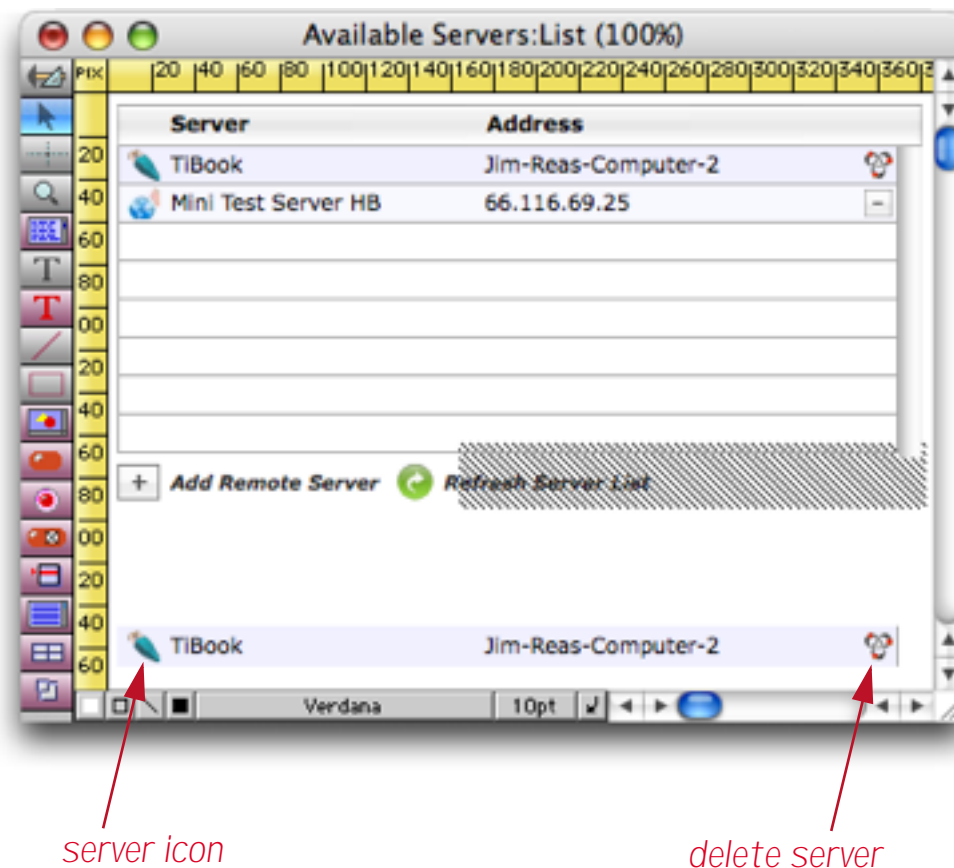
What Cell Was Clicked?

The procedure can determine what cell in the matrix was clicked by using the `info("matrixcell")`, `info("matrixcolumn")` and `info("matrixrow")` functions described earlier in this section. It can also use the `info("matrixcelldata")` function if the **Matrix Data** and **Separator** have been set up. In addition, the `info("trigger")` function will return the name of the matrix object itself (if any — see "[Object Type/Object Name](#)" on page 533). If you haven't assigned a name to this object, the default is custom.

Buttons Within Matrix Cells

If you place buttons (3D buttons, checkboxes, radio buttons, etc.) within a matrix template, these buttons will be displayed in each cell of the matrix. However, these buttons will not be active and will not do anything when you click on them.

With a bit of extra work, however, you can make buttons within a matrix cell. To illustrate this we'll look at the insides of the Available Servers wizard. This wizard uses a matrix with two "buttons" inside each matrix cell — the server icon and the delete server button.



These "buttons" aren't really buttons, but simply objects with names (see "[Object Type/Object Name](#)" on page 533). You can use any type of object, as long as it has a name assigned. In this case both "buttons" are actually Super Flash Art objects, one named **Server Icon** and one named **DeleteServer**. Rather than setting up a procedure to trigger when these objects are pressed, set up a procedure that is triggered when the Matrix object is clicked. This procedure will look something like this:



The key statement in this procedure is `matrixbuttonhelper`.

```
matrixbuttonhelper buttonlist,clickbutton,buttonrect
```

Given a list of objects within the matrix frame this statement will tell you which one was clicked on (if any). Only objects that are listed will be considered, so if you add a new “button” don’t forget to add it to this list.

The third optional parameter to this statement, `buttonrect`, should be a variable that will hold the actual coordinates of the object that was clicked on. (If no objects in the list were clicked on the variable will be set to “”.)

Updating the Matrix Display

So far this discussion has assumed that the contents of the matrix never change. But appointments are rescheduled, new photos are added to portfolios, and all these changes must be displayed as they happen. To cause the entire matrix to update whenever the current record moves up or down check the **Sync Up/Dn** option.

If you have set up the **Matrix Data** formula (see “[Using a Matrix to Display an Array](#)” on page 954) the matrix will update whenever any field or variable in that formula changes. This also usually means that the **Sync Up/Dn** option is not necessary.

If you want to update only a portion of the matrix you must use a procedure. To review, a procedure can send a message to any SuperObject that has a unique object name using the `SuperObject` statement (see “[Program Control of SuperObjects™](#)” on page 666 of *Formulas & Programming*). The format for the statement that tells a Super Matrix to redraw some or all of the cells is:

```
SuperObject "matrix name","redraw","area",start,end
```

The first parameter, “matrix name”, is the name assigned to the matrix object. (Note: To give an object a name, first select the object, then use the **Object Name** command in the Edit menu or click on the object name in the Graphic Control Strip. See “[Object Type/Object Name](#)” on page 533 for more details on object names.)

The second parameter, “redraw”, tells the Super Matrix object that you want to redraw part or all of the matrix.

The third parameter, “area”, defines the area that will be redrawn. Legal options for this parameter are: “all”, “column”, “row”, and “cell”.

The fourth and fifth parameters define the start and end of the area to be redrawn. For example, if the third parameter was “column” and the last two parameters were 3 and 5, then columns 3 thru 5 would be redrawn. (Note: The start and end values are ignored if the “all” area is chosen.)

The following one-line examples illustrate different ways a matrix might be updated.

```
; This command redisplay the entire month
SuperObject "Month","redraw","all",0,0
```

```
; This command redisplay only weekdays
SuperObject "Month","redraw","column",2,6
```

```
; This command redisplay photo 7 only. Use a similar command
; if you update a single item in a matrix.
SuperObject "Thumbnails","redraw","cell",7,7
```

```
; This command redisplay all photos after photo 12. Use a similar
; command if you insert or delete an item in the middle of a matrix.
SuperObject "Thumbnails","redraw","cell",12,9999
```

A Trick for Updating the Matrix Display Automatically

(Note: The following trick is unnecessary if you have set up the Matrix Data formula (see “[Using a Matrix to Display an Array](#)” on page 954), but may still be used in older databases that do not use this option.) If you simply want the entire matrix to redraw whenever a specific field changes, you can do so without writing a procedure. Simply overlay the matrix with an auto-wrap text object (see “[Displaying Data in Auto-Wrap Text](#)” on page 595) or text display SuperObject™ (see “[Text Display SuperObjects™](#)” on page 608) with a formula that includes the field or fields you want to update. (If you use an auto-wrap text object, don’t forget that formulas must be enclosed in { } characters.) Use text funnels to make the result of the formula invisible (see “[Taking Strings Apart \(Text Funnels\)](#)” on page 69). For example, if you want to update the matrix when the **Photos** field is updated, overlay the matrix with an object that contains the formula:

```
Photos[2,1]
```

The result of this text funnel will always be an empty string, so nothing is displayed. Nevertheless, Panorama will always try to redisplay this text whenever **Photos** is changed, and your matrix will go along for the ride and get updated also.

Super Matrix Case Studies

The following case studies show several examples of how super matrix objects can be used in your databases. In addition to these examples you’ll find a number of databases that are included with Panorama that use matrix objects: the Favorite Databases wizard, Text Import and Text Export wizard, White Pages, Fedex Tracker, Icons & Backgrounds, Disk Permissions and more. You can examine these databases for additional ideas on how to use matrixes.

Displaying Music Tracks

Our first simple example displays album track names. These track names are stored in the **Tracks** field, with a / character separating each element of the array.

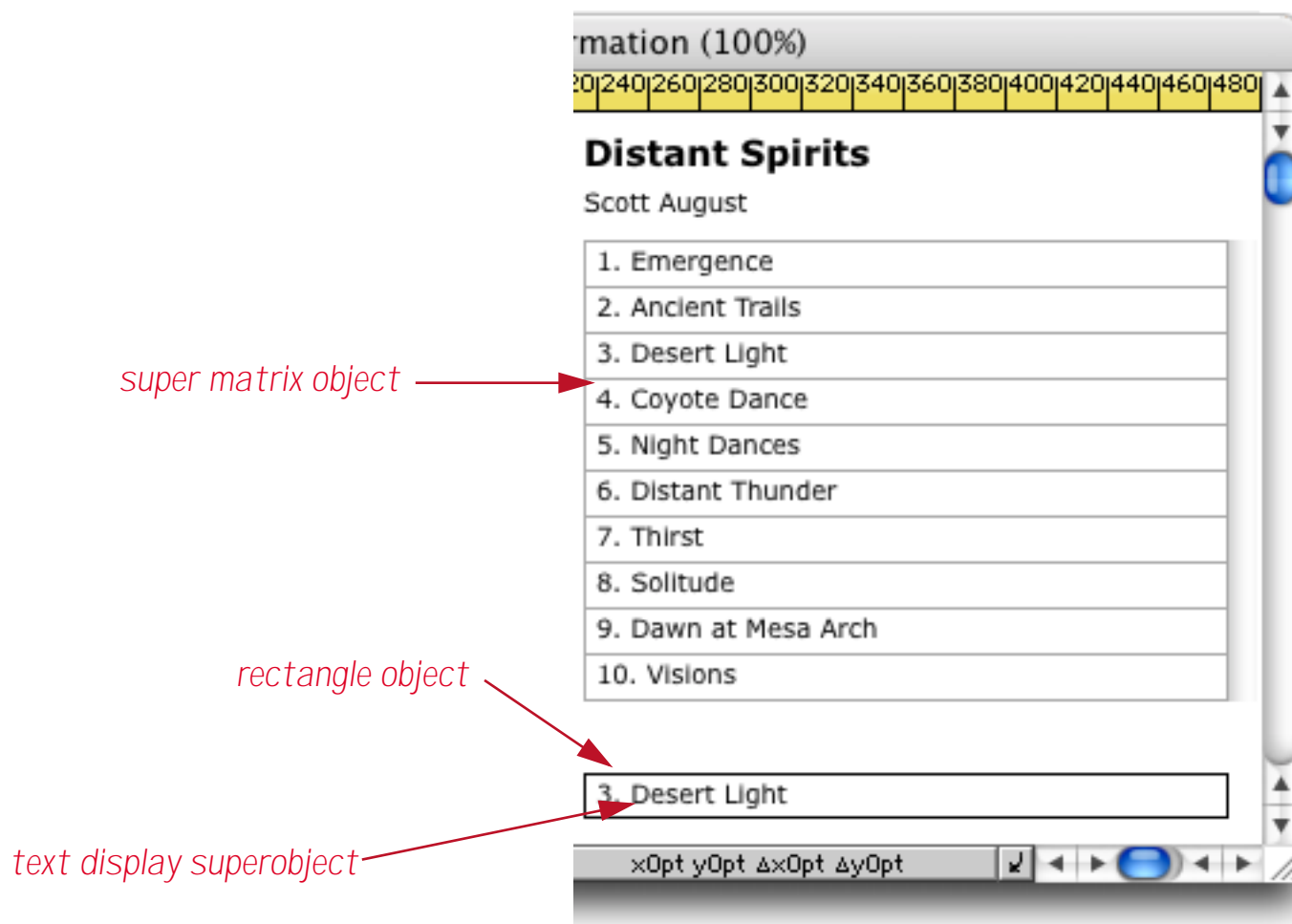


Artist	Album	Tracks
Happy The Man	Crafty Hands	Service With A Smile/Morning Sun/Ibby It Is/Steaming Pipes/Wind Up Doll Day Wind/Open
Moody Blues	Days of Future Passed	The Day Begins/Dawn Is A Feeling/Another Morning/Peak Hour/Forever Afternoon/The Sun
Scott August	Distant Spirits	Emergence/Ancient Trails/Desert Light/Coyote Dance/Night Dances/Distant Thunder/
Scott August	Sacred Dreams	Thirst/Solitude/Dawn at Mesa Arch/Visions

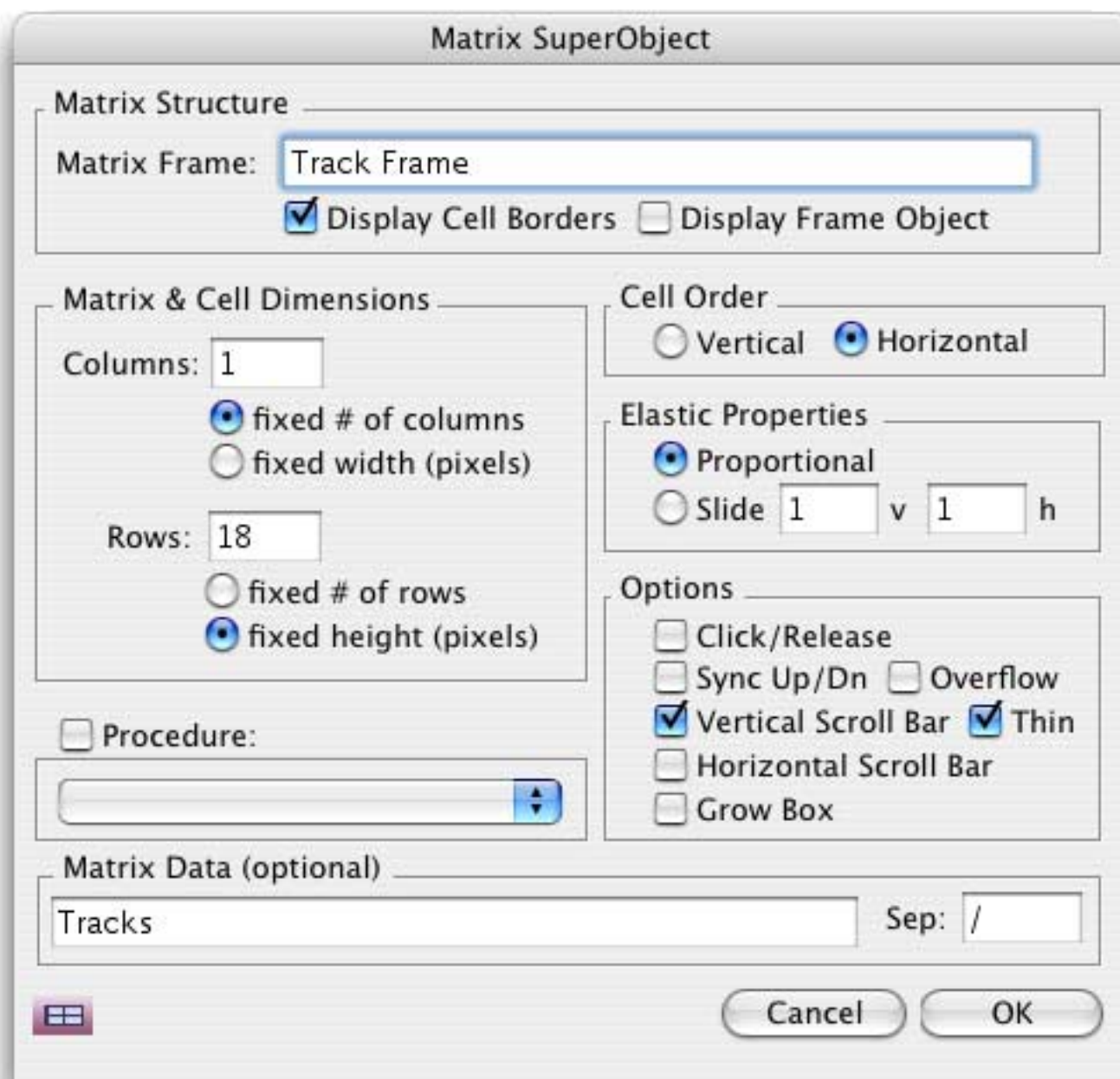
Instead of displaying the data in the data sheet, we'd really like to display it in a form like this. This form displays the exact same data as the data sheet above, but formatted with the use of a Super Matrix object.



Switching to Graphics Mode reveals that the album tracks are displayed with three objects: the primary *super matrix* object, a *rectangle* object (used as the frame object) and a *Text Display SuperObject*.



Let's look at the settings for each of these three objects. First is the *Super Matrix object* (this is usually the object we create first).



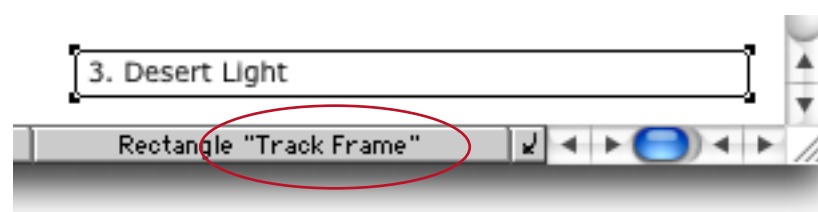
The **Matrix Frame** option is set to **Track Frame**. You can set this option to any name you like, but it must match the name of the frame object (more on this in a minute).

The **Matrix & Cell Dimensions** are set to display a single column with each cell being 18 pixels high. This height is set according to the height of the font you choose to use in the Text Display SuperObject. In the **Options** section we've turned on a thin vertical scroll bar.

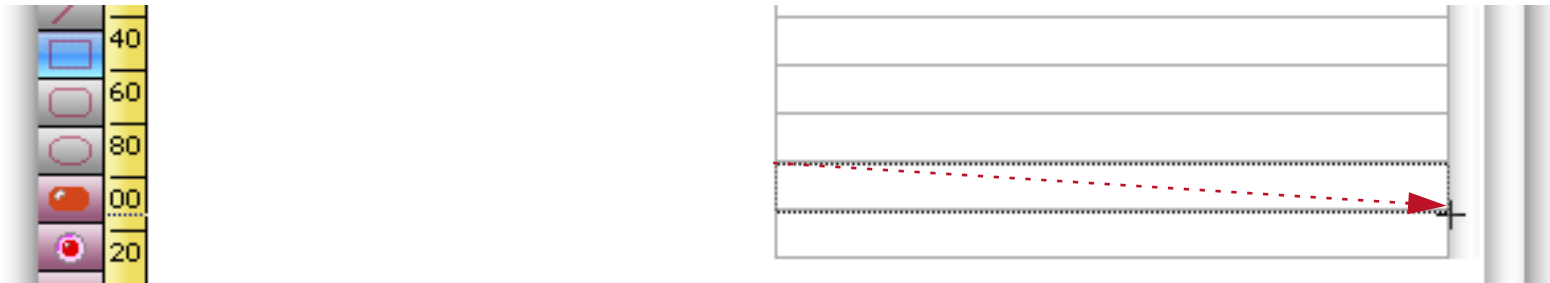
At the bottom of the dialog the Matrix Data has been configured so that this matrix will display data from the **Tracks** field. The data for each field is separated by the **/** character (see the original data sheet above).

After the matrix object was created we made one further change - the color of the object was changed to light gray. If you don't do that the divider lines between each cell will be black, which we thought was too dark.

The second object is the *frame rectangle*. This is simply an ordinary rectangle with its name set to **Track Frame** (see "[Object Type/Object Name](#)" on page 533).

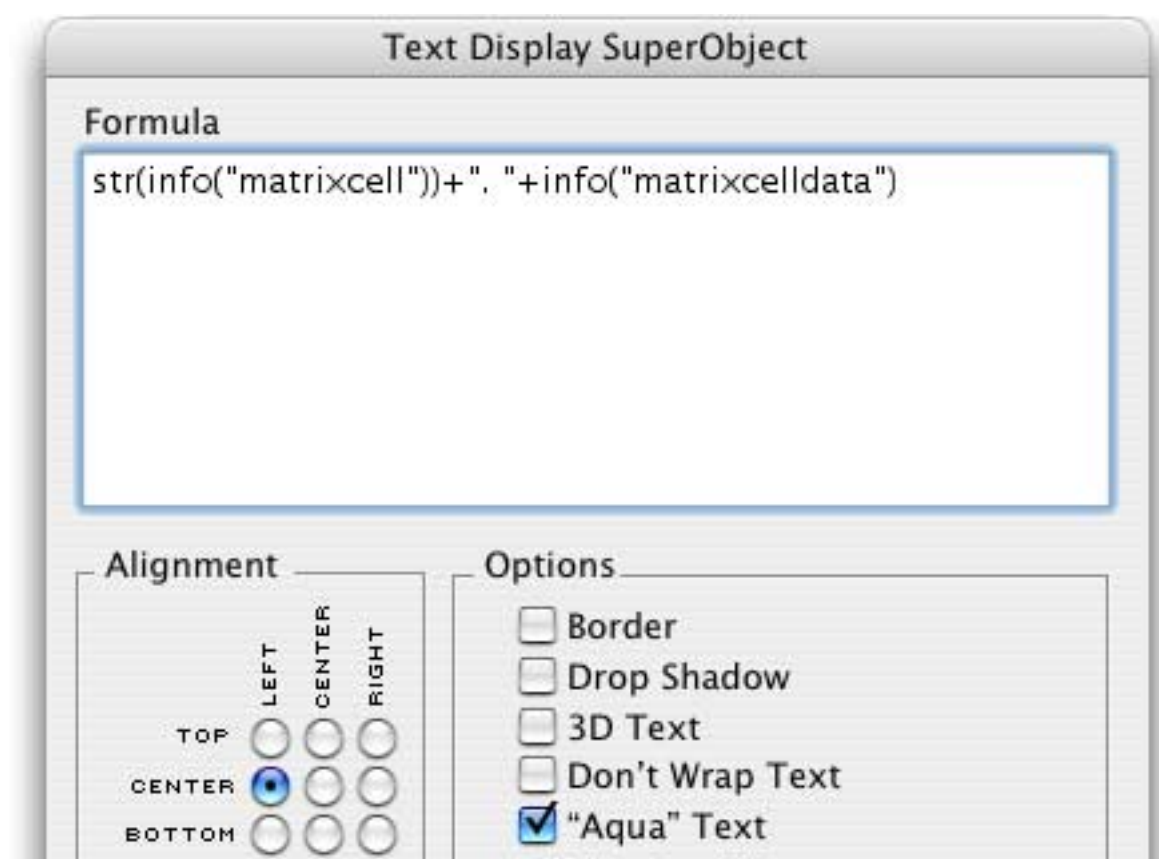


It's not necessary for the frame rectangle to be the same size as the cells in the super matrix object, but it is convenient. We've found that an easy way to do that is to initially create the rectangle on top of the matrix object.



Using the matrix as a guide it's easy to create the rectangle the exact size needed. Once it is created you can move the rectangle to another location, then set the object name.

The final object is the *Text Display SuperObject*.



The formula controls what is displayed in each cell of the matrix. The first part of the formula

```
str(info("matrixcell"))+'. '
```

displays the track number: 1., 2., 3., etc. The second part of the formula

```
info("matrixcelldata")
```

displays the actual track names that have been extracted from the [Tracks](#) statement.

The end result is that the form displays a numbered list of the track names.



The form will update automatically when you edit the list of track names or move to a different record. If there are more than 10 tracks on an album a thin scroll bar will automatically appear, allowing you to scroll to see the additional tracks.



(A personal note from the ProVUE staff - the two albums above are really excellent. If you'd like to know more about this artist see <http://www.cedarmesa.com> or amazon.com.)

Displaying Olympic Results

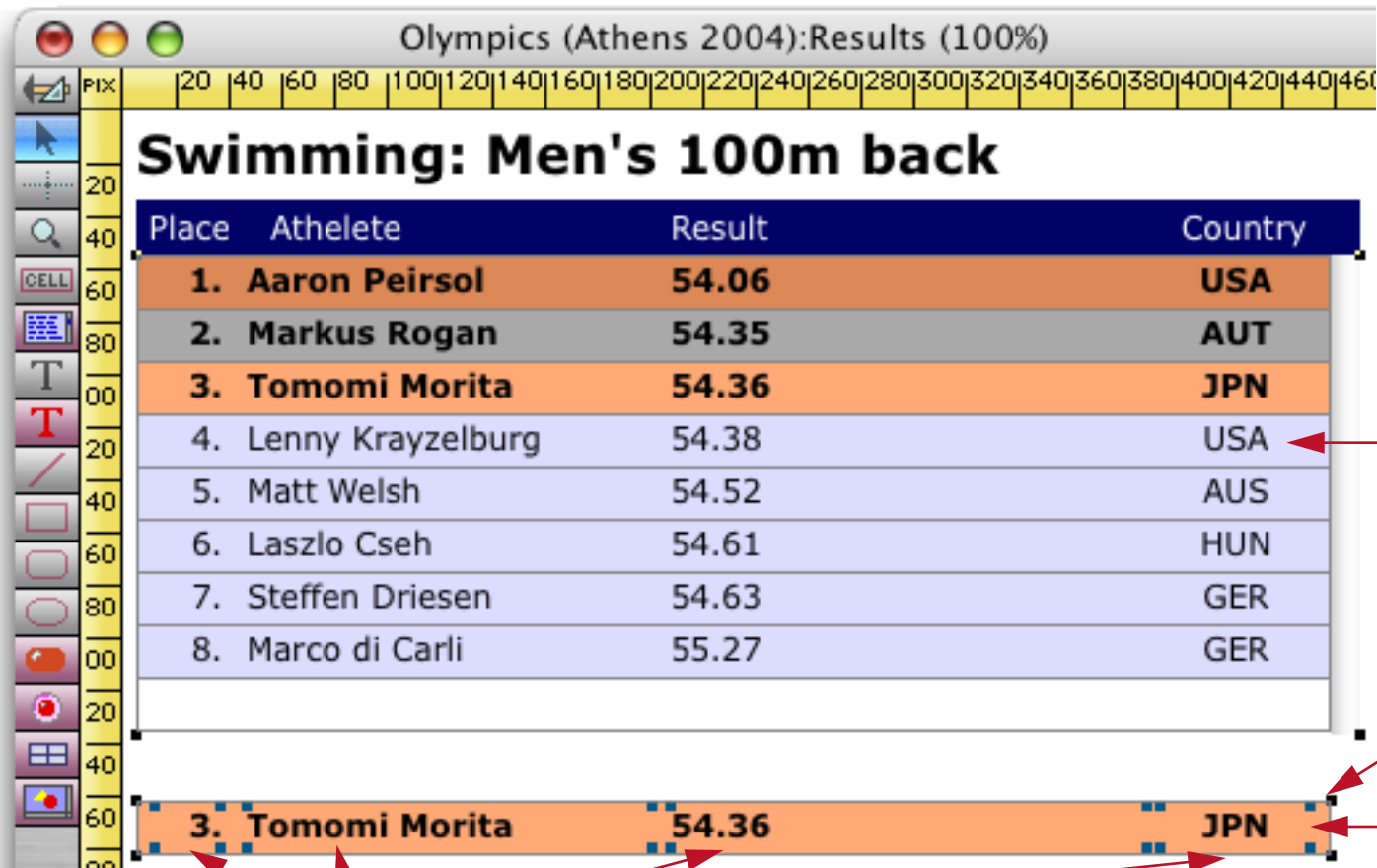
The next example displays Olympic competition results. These track names are stored in the `Results` field, with a `carriage return` character separating each element of the array.

Discipline	Event	Type	Results	Date
Swimming	Women's 200m free	Individual	1. Camelia Potec (Rom) 1:58.03	08/17/04
Swimming	Women's 200m medley	Individual	1. Yana Klochkova (Ukr) 2:11.14	08/17/04
Fencing	Men's individual foil	Individual	1. Brice Guyart (Fra)	08/16/04
Swimming	Men's 100m back	Individual	1. Aaron Peirsol (USA) 54.06	8/17/04
Swimming	Women's 100m back	Individual	2. Markus Rogan (Aut) 54.35	8/17/04
Swimming	Women's 100m breast	Individual	3. Tomomi Morita (Jpn) 54.36	8/17/04
Weightlifting	Women's 53-58kg - 58 kg	Individual	4. Lenny Krayzelburg (USA) 54.38	8/17/04
Weightlifting	Men's 56-62kg	Individual	5. Matt Welsh (Aus) 54.52	8/17/04
			6. Laszlo Cseh (Hun) 54.61	
			7. Steffen Driesen (Ger) 54.63	
			8. Marco di Carli (Ger) 55.27	

This example is a bit more complicated because each element contains four subelements - the place, athlete name, country, and time (or distance, weight etc.). We'll use a matrix to display each of these subelements in a separate column.

Place	Athelete	Result	Country
1.	Aaron Peirsol	54.06	USA
2.	Markus Rogan	54.35	AUT
3.	Tomomi Morita	54.36	JPN
4.	Lenny Krayzelburg	54.38	USA
5.	Matt Welsh	54.52	AUS
6.	Laszlo Cseh	54.61	HUN
7.	Steffen Driesen	54.63	GER
8.	Marco di Carli	55.27	GER

Switching to Graphics Mode reveals a design similar to the Album tracks example, including the primary *super matrix* object, and a *rectangle* object (used as the frame object). However, instead of just one *Text Display SuperObject* there are now four (one for each subelement), and there is also a *Super Flash Art* object that draws the colored background.



text display superobjects

matrix

frame rectangle

super flash art

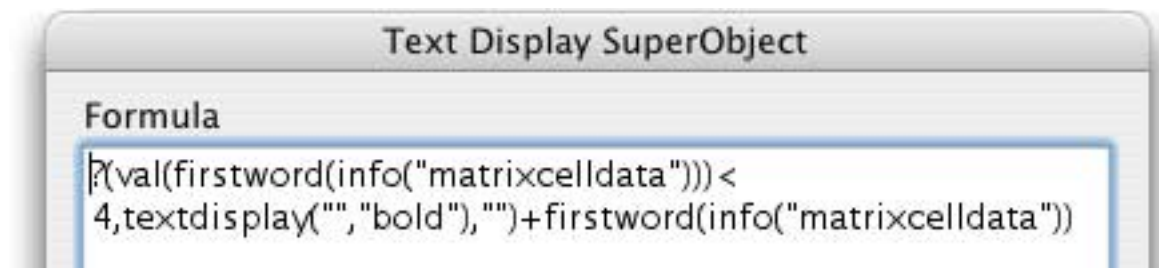
Here is the Matrix SuperObject configuration for this example. It's almost identical to the previous example, except for using an empty separator (which means that a carriage return is the separator - in other words, each cell will display data from an individual line in the [Results](#) field).

Before looking at the Text Display SuperObjects, let's review the format of each line in the [Results](#) field (this data was extracted from a news web site in this format). The illustration below shows the four subelements of each line, along with the formulas needed to extract each element from the line.

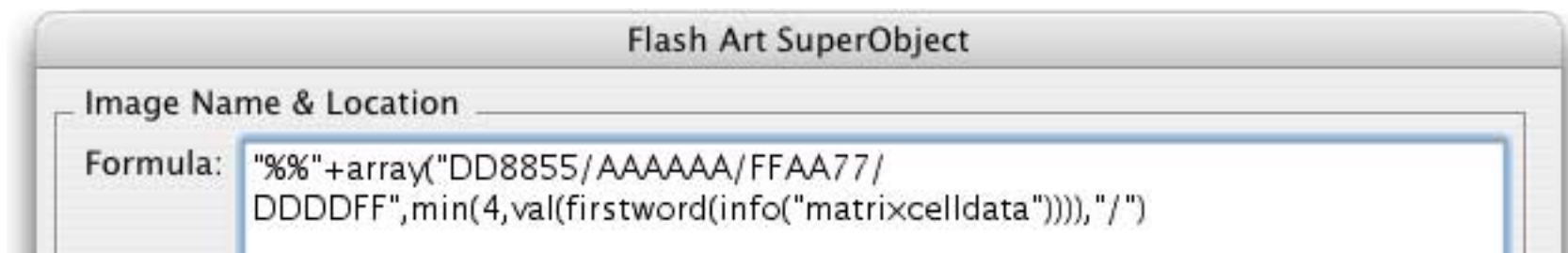
1. Aaron Peirsol (USA) 54.06

place `firstword(info("matrixcelldata"))`
athlete `tagdata(info("matrixcelldata"), ". ", "(" , 1)`
country `strip(array(info("matrixcelldata"), 2, ","))`
time `upper(tagdata(info("matrixcelldata"), "(" , 1))`

Here is the configuration dialog for the leftmost Text Display SuperObject. Notice that in addition to the formula for extracting the subelement, the formula also has a prefix that uses the `textdisplay()` function (see “[Controlling Text Display Color and Style on the Fly](#)” on page 619) to display the first three results (the medal winners) in bold.



The form also has a Super Flash Art object that displays the background color for each element (see “[Using Flash Art to Display a Color](#)” on page 761). The formula uses the `array()` function to pick a different color for the first (gold - `DD8855`), second (silver - `AAAAAA`), third (bronze - `FFAA77`) and subsequent lines (light blue - `DDDDFF`).



In data mode the results are automatically formatted into four columns.

Place	Athlete	Result	Country
1.	Natalie Coughlin	1:00.37	USA
2.	Kirsty Coventry	1:00.50	ZIM
3.	Laure Manaudou	1:00.88	FRA
4.	Reiko Nakamura	1:01.05	JPN
5.	Nina Zhivanevskaya	1:01.12	SPA
6.	Antje Buschschulte	1:01.39	GER
7.	Louise Oernstedt	1:01.51	DEN
8.	Haley Cope	1:01.76	USA

If the results don't fit within a matrix the scroll bar is automatically activated.

Olympics (Athens 2004):Results

Weightlifting: Women's 53-58kg - 58 kg

Place	Athlete	Result	Country
1.	Yanqing Chen	237.5kg Olympic Record	CHN
2.	Song Hui Ri	232.5kg	PRK
3.	Wandee Kameaim	230.0kg	THA
4.	Aylin Dasdelen	225.0kg	TUR
5.	Aleksandra Klejnowska	220.0kg	POL
6.	Hyon Suk Pak	217.5kg	PRK
7.	Alexandra Escobar	215.0kg	ECU
8.	Patmawati Patmawati	212.5kg	INA
9.	Michaela Breeze	212.5kg	GBR

Television Station Guide

In the previous examples the matrix array data was contained in a single field. In this example we'll show how a more complex formula can be used to assemble the array "on-the-fly." Our example will display the television stations available in a particular city. Here's the data sheet:

TV Stations

City	Channel	Station	Network	Transmitter	State
Barstow	15	K15BZ	CBS	DAGGETT	CA
Barstow	19	K19BS	NBC	DAGGETT	CA
Barstow	23	K23BP	FOX	DAGGETT, ETC.	CA
Barstow	29	KBAK	CBS	BAKERSFIELD	CA
Barstow	61	K61AE	CBS	DAGGETT	CA
Barstow	64	KHIZ	A1	BARSTOW	CA
Barstow	67	K67AZ	TBN	DAGGETT, ETC.	CA
Los Angeles	2	KCBS	CBS	LOS ANGELES	CA
Los Angeles	3	KEYT	ABC	SANTA BARBARA	CA
Los Angeles	4	KNBC	NBC	LOS ANGELES	CA
Los Angeles	5	KTLA	WB	LOS ANGELES	CA
Los Angeles	7	KABC	ABC	LOS ANGELES	CA
Los Angeles	8	KFMB	CBS	SAN DIEGO	CA

138 visible/138 total

Our goal is to display the data using a matrix like this:

The screenshot shows a window titled "TV Stations:Guide" with a "City:" dropdown menu set to "Los Angeles". Below the menu is a table with four columns: "Chan", "Station", "Network", and "Transmitter". The table contains 14 rows of data, alternating between light blue and light green background colors. A vertical scrollbar is on the right side of the table.

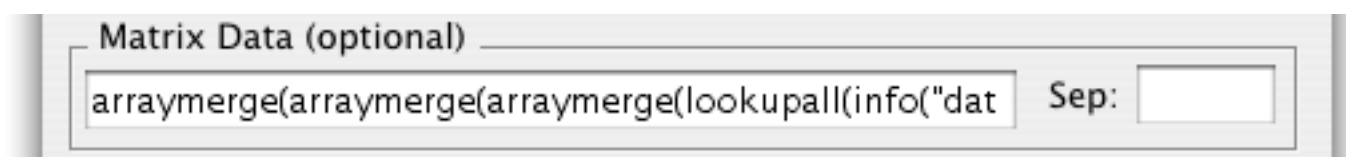
Chan	Station	Network	Transmitter
2	KCBS	CBS	Los Angeles
3	KEYT	ABC	Santa Barbara
4	KNBC	NBC	Los Angeles
5	KTLA	WB	Los Angeles
7	KABC	ABC	Los Angeles
8	KFMB	CBS	San Diego
9	KCAL	IND	Los Angeles
10	KGTV	ABC	San Diego
11	KTTV	FOX	Los Angeles
13	KCOP	UPN	Los Angeles
15	KPBS	PBS	San Diego
18	KSCI	IND	Long Beach

In graphics mode this form looks very similar to the previous example:

The screenshot shows the same application in graphics mode, titled "TV Stations:Guide (100%)". It features a pixel ruler at the top and a toolbar on the left. The table is larger and includes an additional row (Chan 24, Station KVCR, Network PBS, Transmitter San Bernardino). Red arrows point to various graphical elements: "matrix" points to the table rows, "frame rectangle" points to the table's border, "super flash art" points to the table's background, and "text display superobjects" points to the text within the table cells.

Chan	Station	Network	Transmitter
2	KCBS	CBS	Los Angeles
3	KEYT	ABC	Santa Barbara
4	KNBC	NBC	Los Angeles
5	KTLA	WB	Los Angeles
7	KABC	ABC	Los Angeles
8	KFMB	CBS	San Diego
9	KCAL	IND	Los Angeles
10	KGTV	ABC	San Diego
11	KTTV	FOX	Los Angeles
13	KCOP	UPN	Los Angeles
15	KPBS	PBS	San Diego
18	KSCI	IND	Long Beach
22	KWHY	IND	Los Angeles
24	KVCR	PBS	San Bernardino

The big difference in this case study is the **Matrix Data**. Instead of simply a field or variable this contains a long formula.



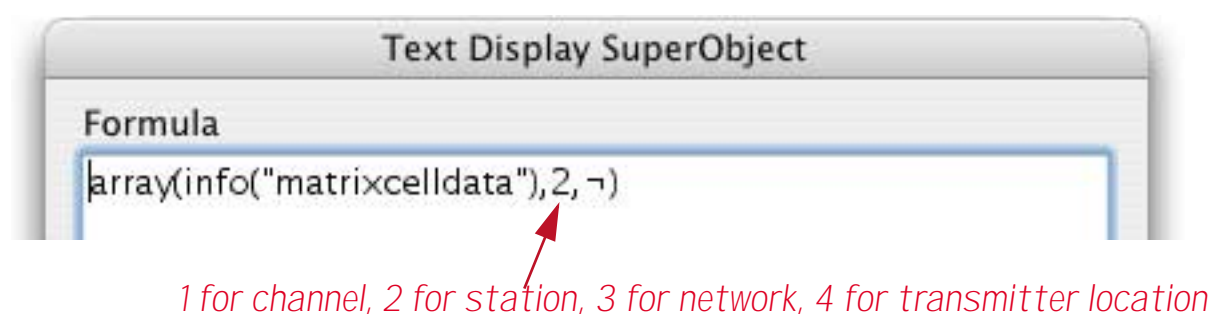
The formula is so long that most of it is invisible. Here is the complete formula:

```
arraymerge(
arraymerge(
arraymerge(
lookupall(info("databasename"), "City", tvLocation, "Channel", ¶),
lookupall(info("databasename"), "City", tvLocation, "Station", ¶), ¶, ¶),
lookupall(info("databasename"), "City", tvLocation, "Network", ¶), ¶, ¶),
lookupall(info("databasename"), "City", tvLocation, "Transmitter", ¶), ¶, ¶, ¶)
```

The variable **tvLocation** is set by the pop-up menu at the top of the form, and will contain the name of a city (Los Angeles, San Diego, etc.). Each of the **lookupall()** functions returns a carriage return separated array with data from one field (Channel, Station, Network and Transmitter). These four arrays are combined into a single array with the **arraymerge()** functions. (For detailed information on these functions see the **Programming Reference** wizard.) The final combined array will look like this (though of course you can never see it directly):

69	K69FB	TBN	SACRAMENTO
3	KEYT	ABC	SANTA BARBARA
6	KSBY	NBC	SAN LUIS OBISPO
8	KAGP-LP	SPA	ARROYO GRANDE
12	KCOY	CBS	SANTA MARIA
15	K15BD	PBS	SAN LUIS OBISPO
20	KCCE-LP	IND	SAN LUIS OBISPO
22	K22EE	TBN	MORRO BAY

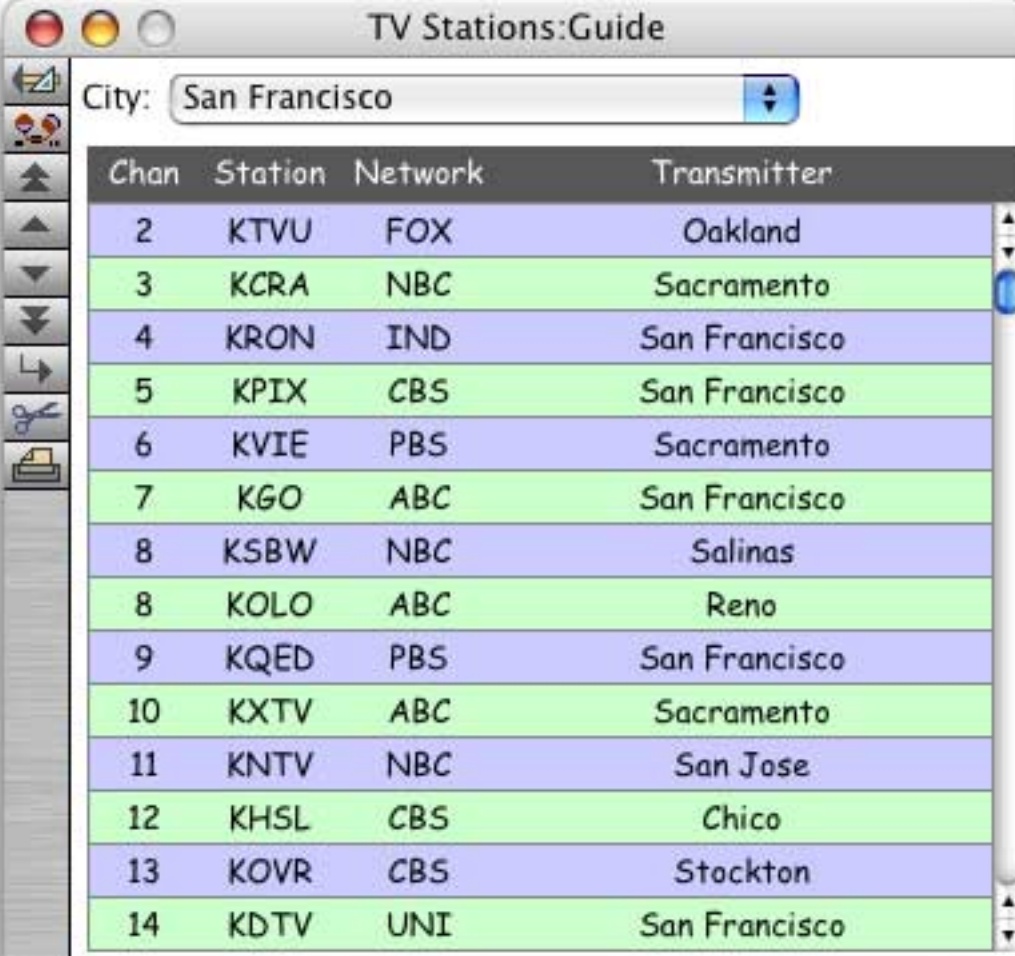
The four text display objects simply extract a sub-element from the matrix generated by the formula above.



The remaining object is the Super Flash Art object, which displays the alternating blue/green background. Here is the formula that displays the colors. The result of the **mod** operator will be either 0 or 1 depending on whether or not **info("matrixcell")** is even or odd.



The final result is shown below. Whenever you select a different city with the pop-up menu the matrix re-calculates the data formula and redisplay the matrix.



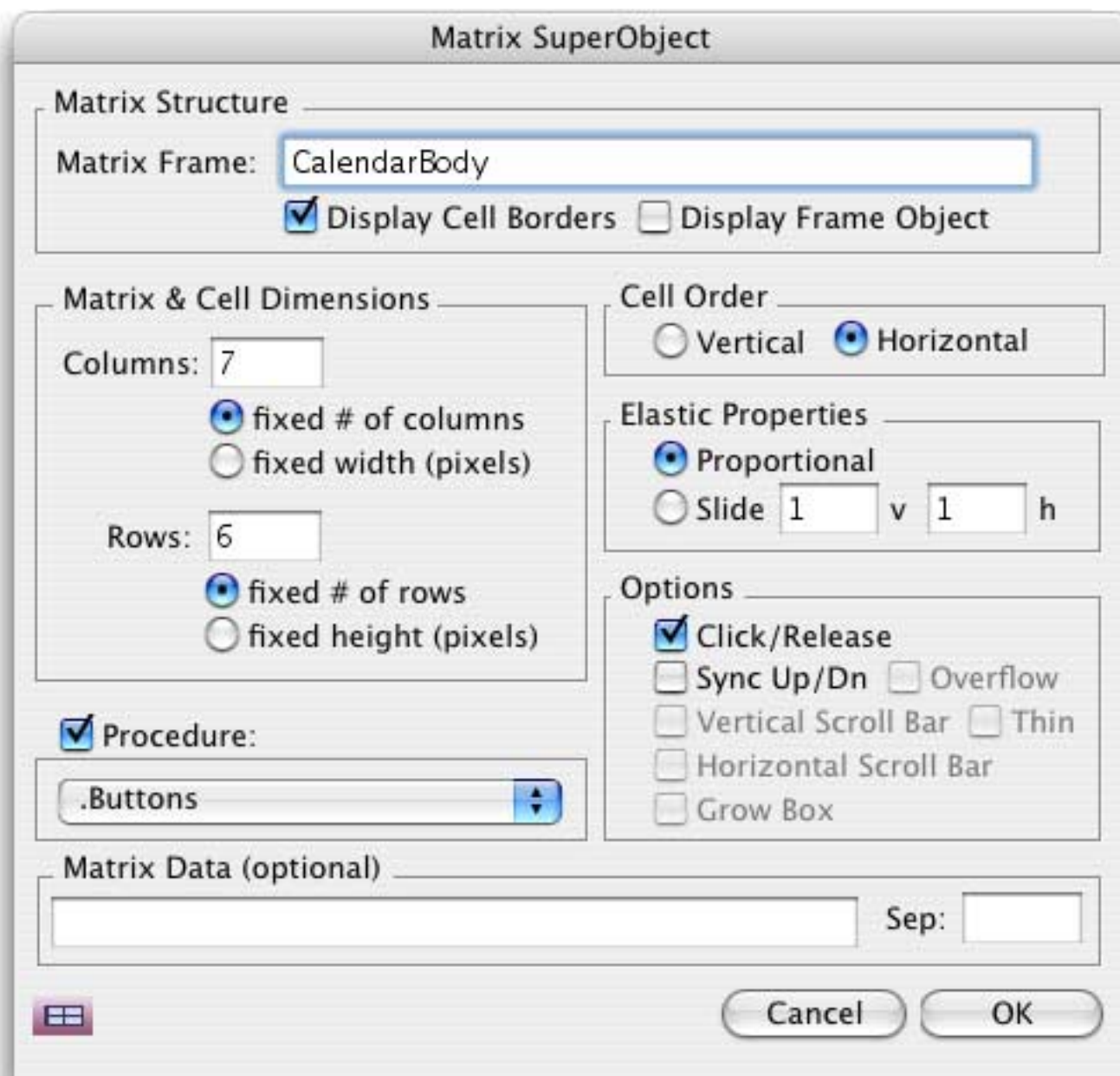
The screenshot shows a window titled "TV Stations:Guide" with a "City:" dropdown menu set to "San Francisco". Below the menu is a table with the following data:

Chan	Station	Network	Transmitter
2	KTVU	FOX	Oakland
3	KCRA	NBC	Sacramento
4	KRON	IND	San Francisco
5	KPIX	CBS	San Francisco
6	KVIE	PBS	Sacramento
7	KGO	ABC	San Francisco
8	KSBW	NBC	Salinas
8	KOLO	ABC	Reno
9	KQED	PBS	San Francisco
10	KXTV	ABC	Sacramento
11	KNTV	NBC	San Jose
12	KHSL	CBS	Chico
13	KOVR	CBS	Stockton
14	KDTV	UNI	San Francisco

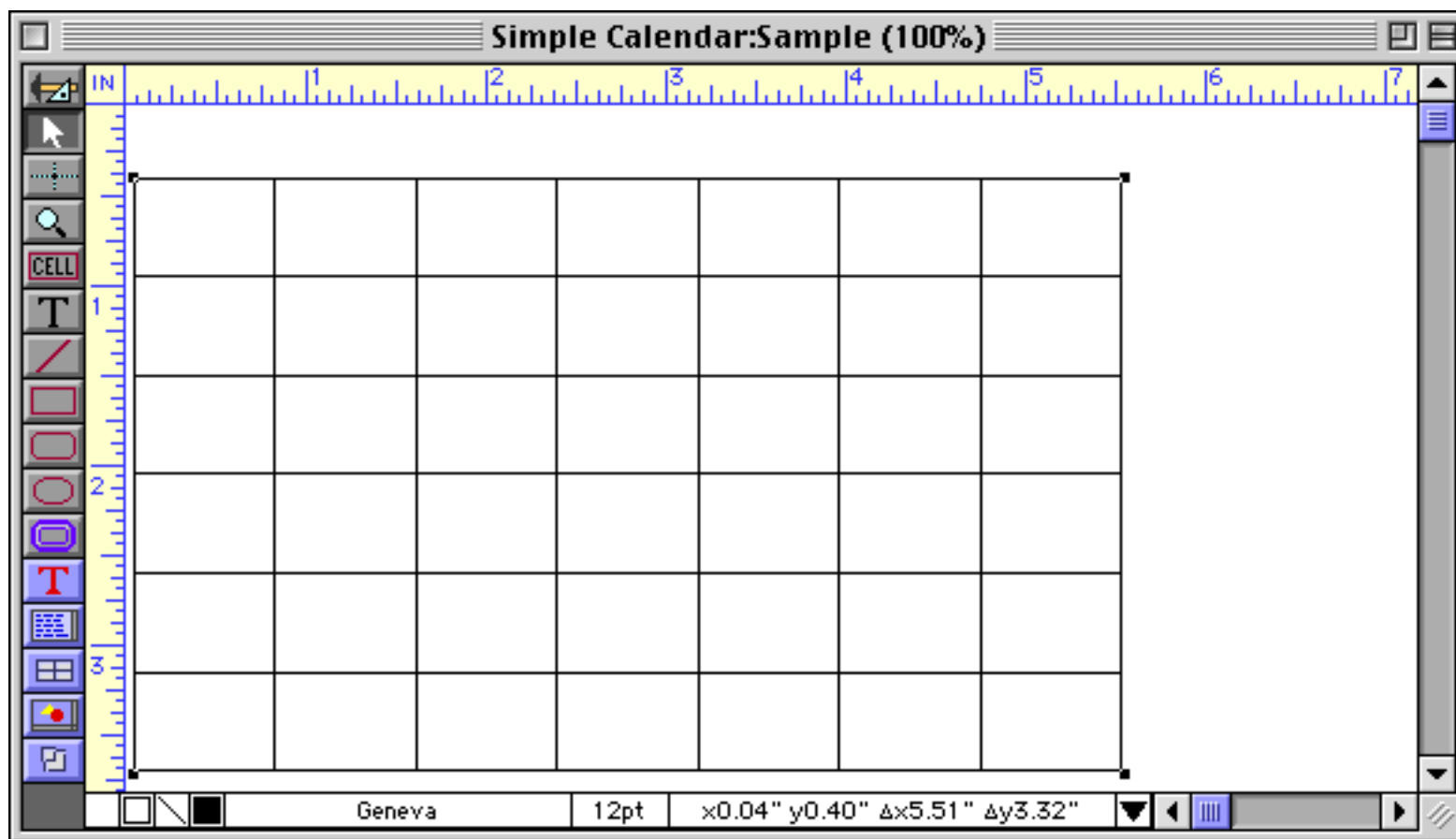
In this example the `lookupall()` functions extracted data from the current database, but they could just as easily extract data from another database. For example, a vendor database could display a list of purchase orders for this vendor that is extracted from a purchase order database, or a contact database could display a list of phone calls from a phone log database. This makes the Super Matrix object an ideal way to display one-to-many relationships between different databases.

Building a Calendar

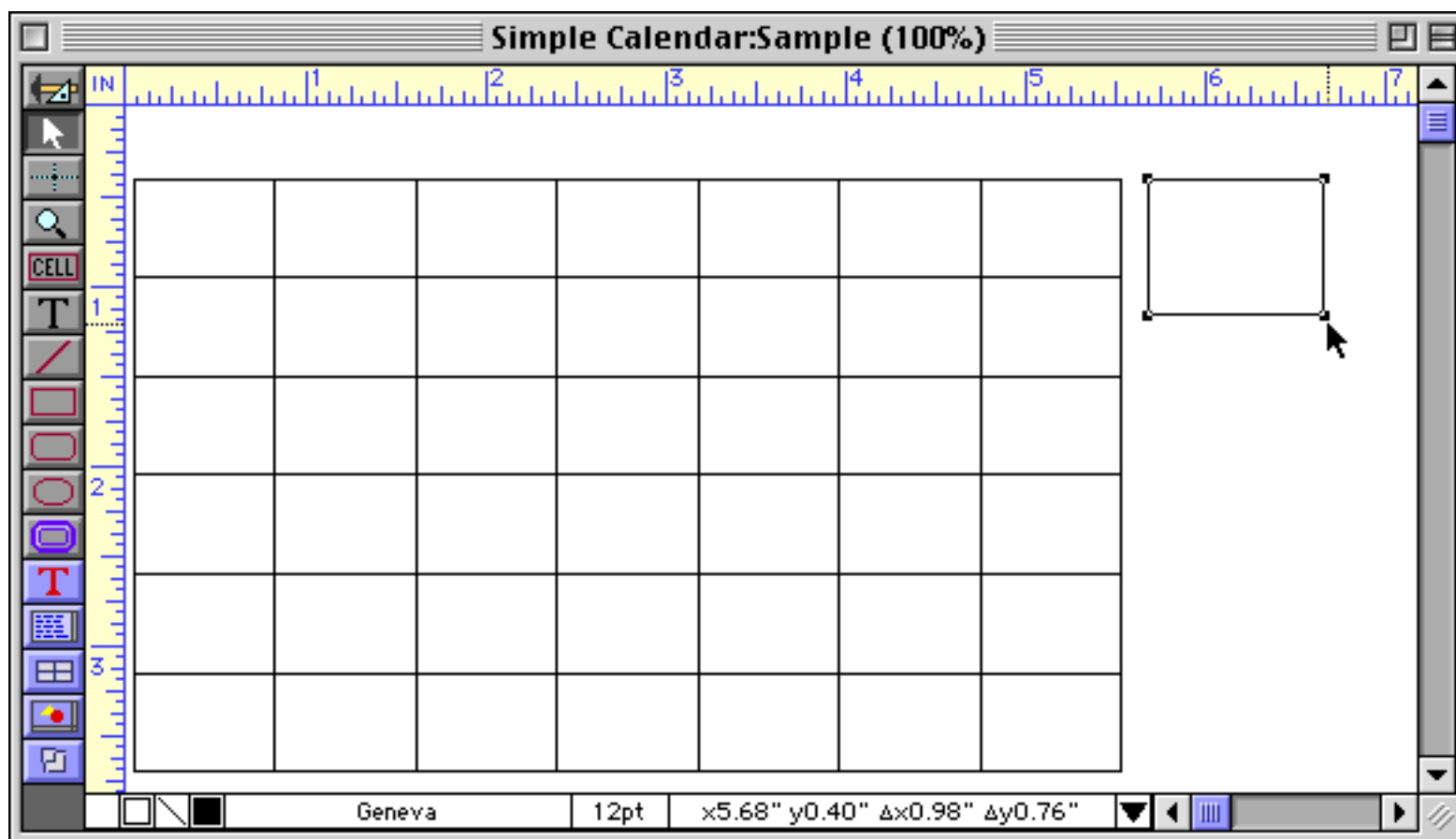
Our final case study uses a SuperMatrix object to build a monthly calendar. Unlike the other case studies in this example the **Matrix Data** is not used. A simple calendar can be constructed in a few minutes. Start by creating a Super Matrix object.



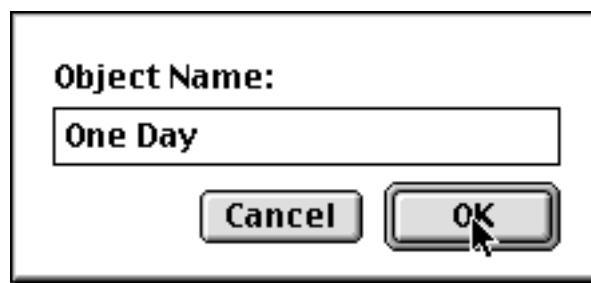
The object should be seven columns wide (one for each day of the week) by six rows high. Make sure that the matrix order is horizontal and assign a name for the Matrix Frame of **One Day**. We've also set the resizing method to Slide (see "[Adjustable Size Templates](#)" on page 949).



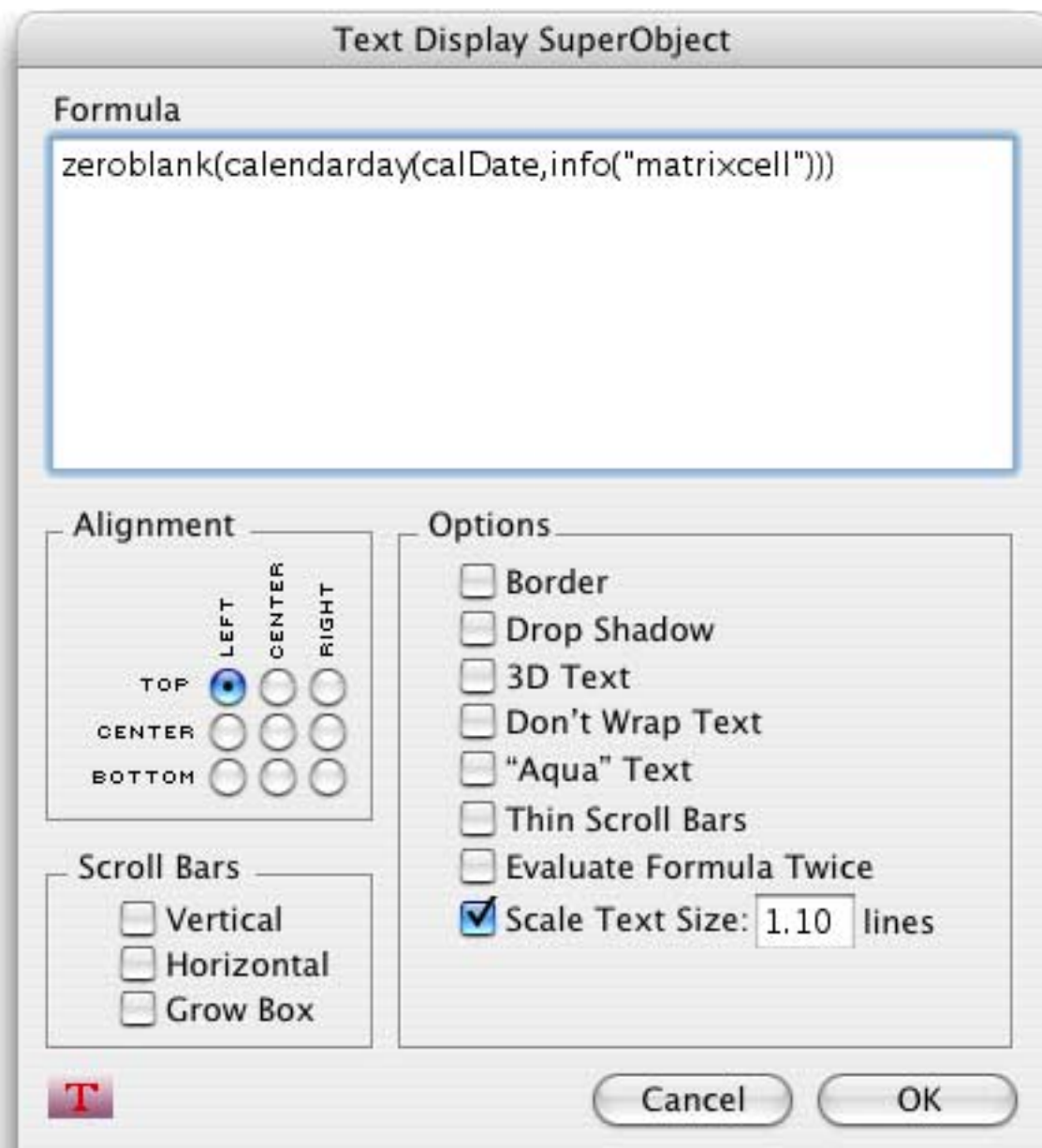
Next create a rectangle to serve as the matrix frame. Notice that the rectangle frame does not have to be the same size as the cells in the matrix, though it can't hurt either.



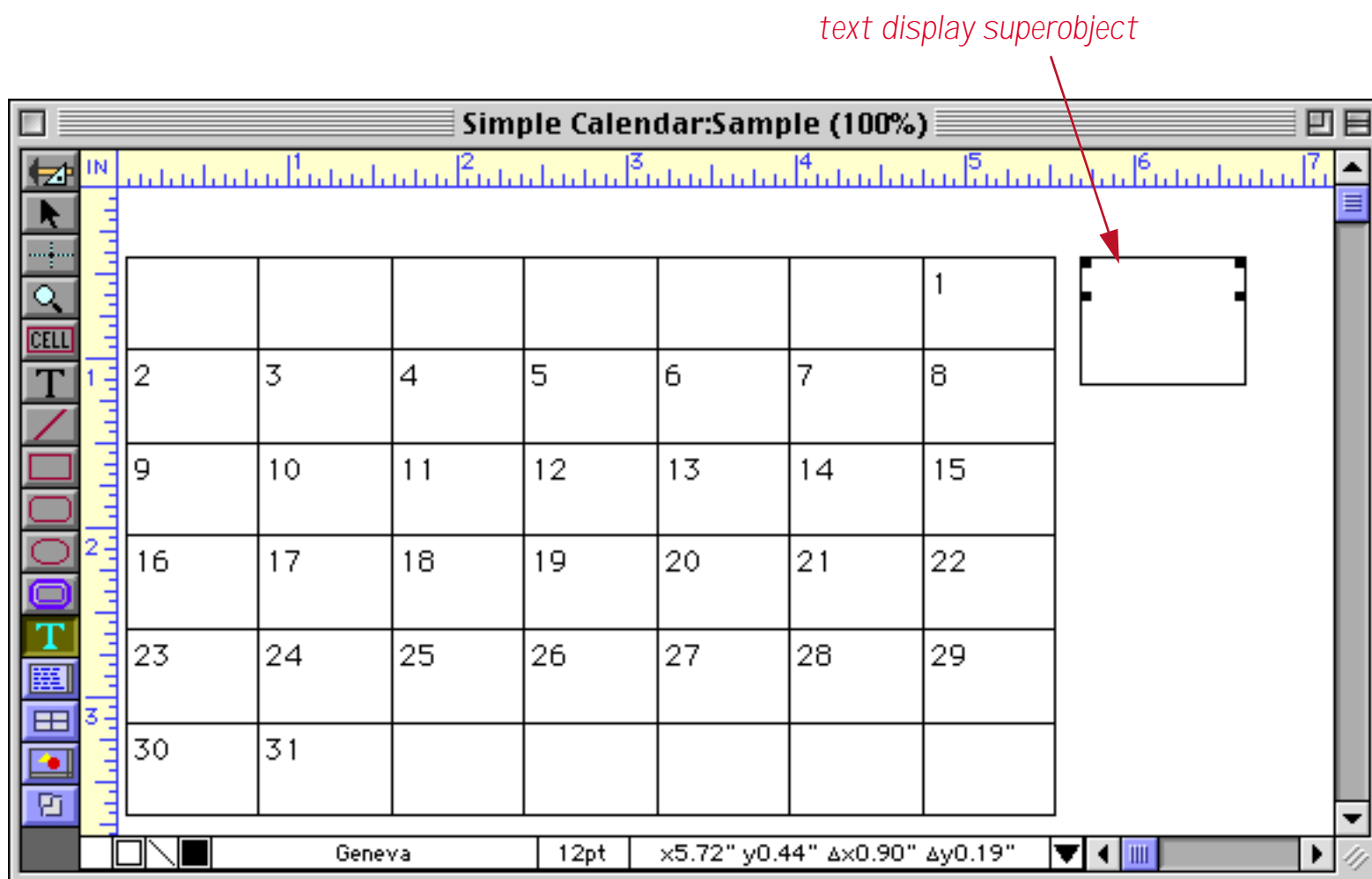
Use the **Object Name** command to assign the name **One Day** to this object (see “[Object Type/Object Name](#)” on page 533).



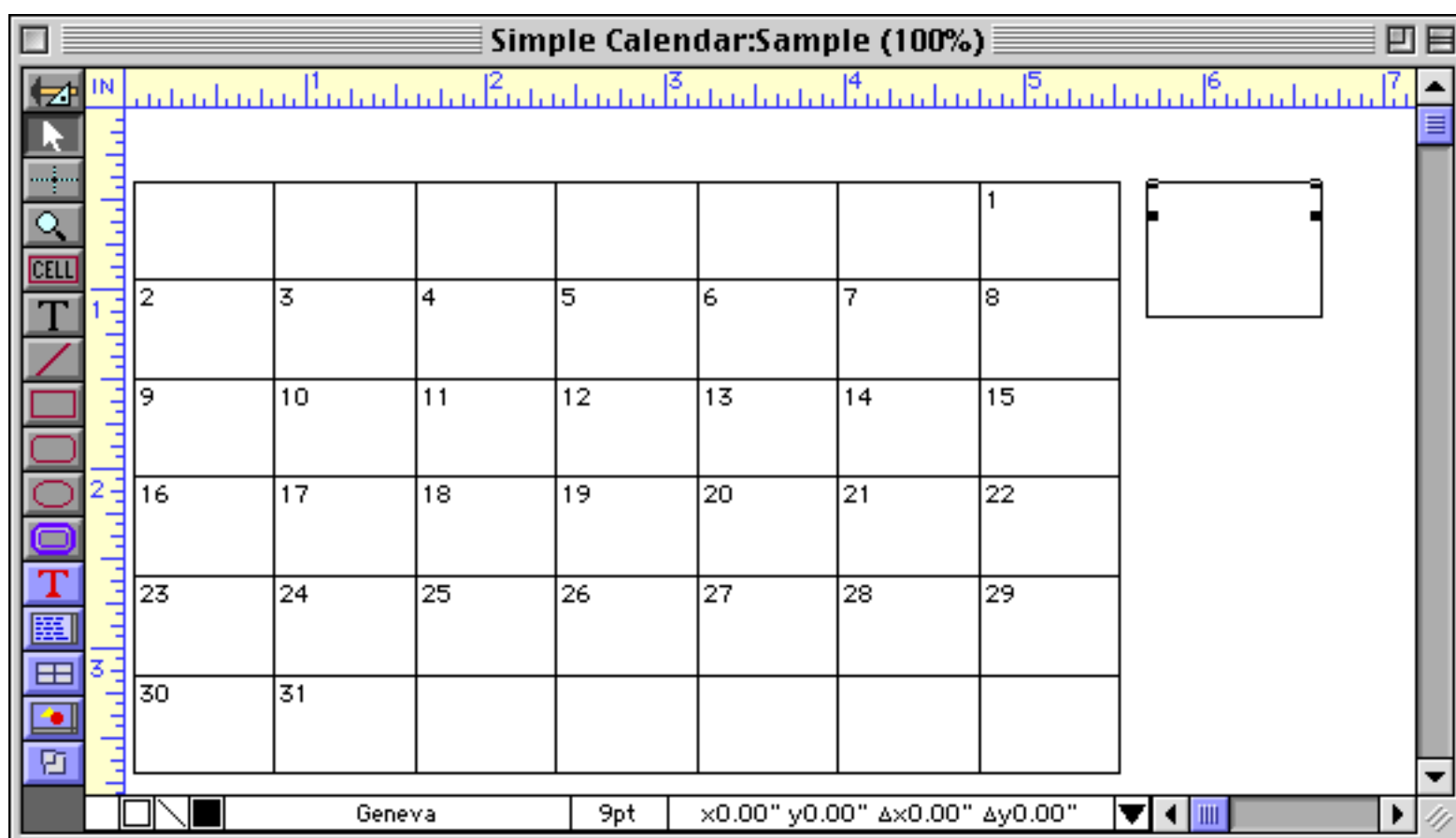
The next step is to add a Text Display SuperObject to display the day of the month (1, 2, 3, ... 30, 31). See “[Creating and Modifying Text Display SuperObjects](#)” on page 608 to learn how to create such an object. Use the formula shown in the illustration below.



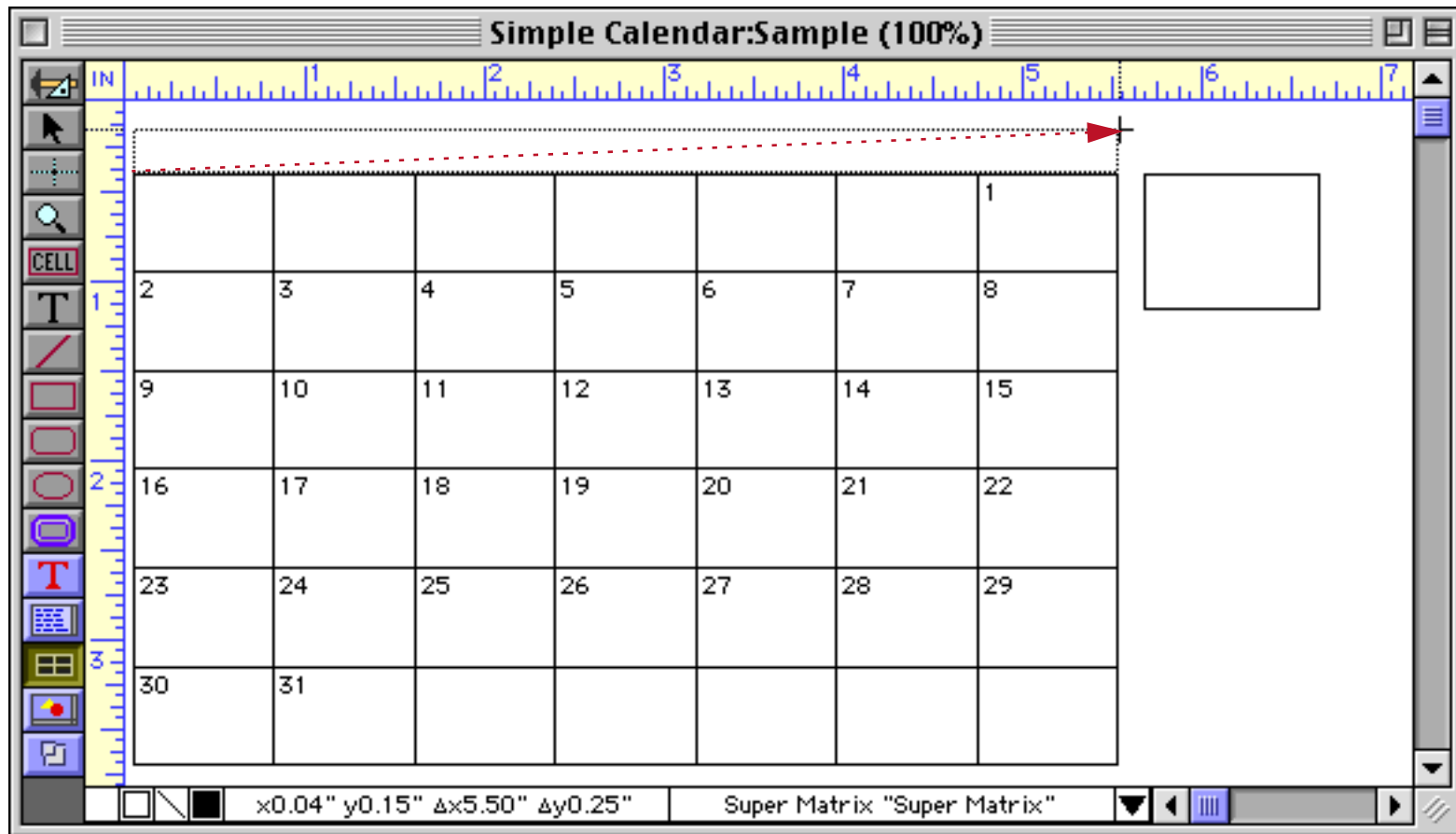
When you press **OK** the beginnings of a calendar will appear.



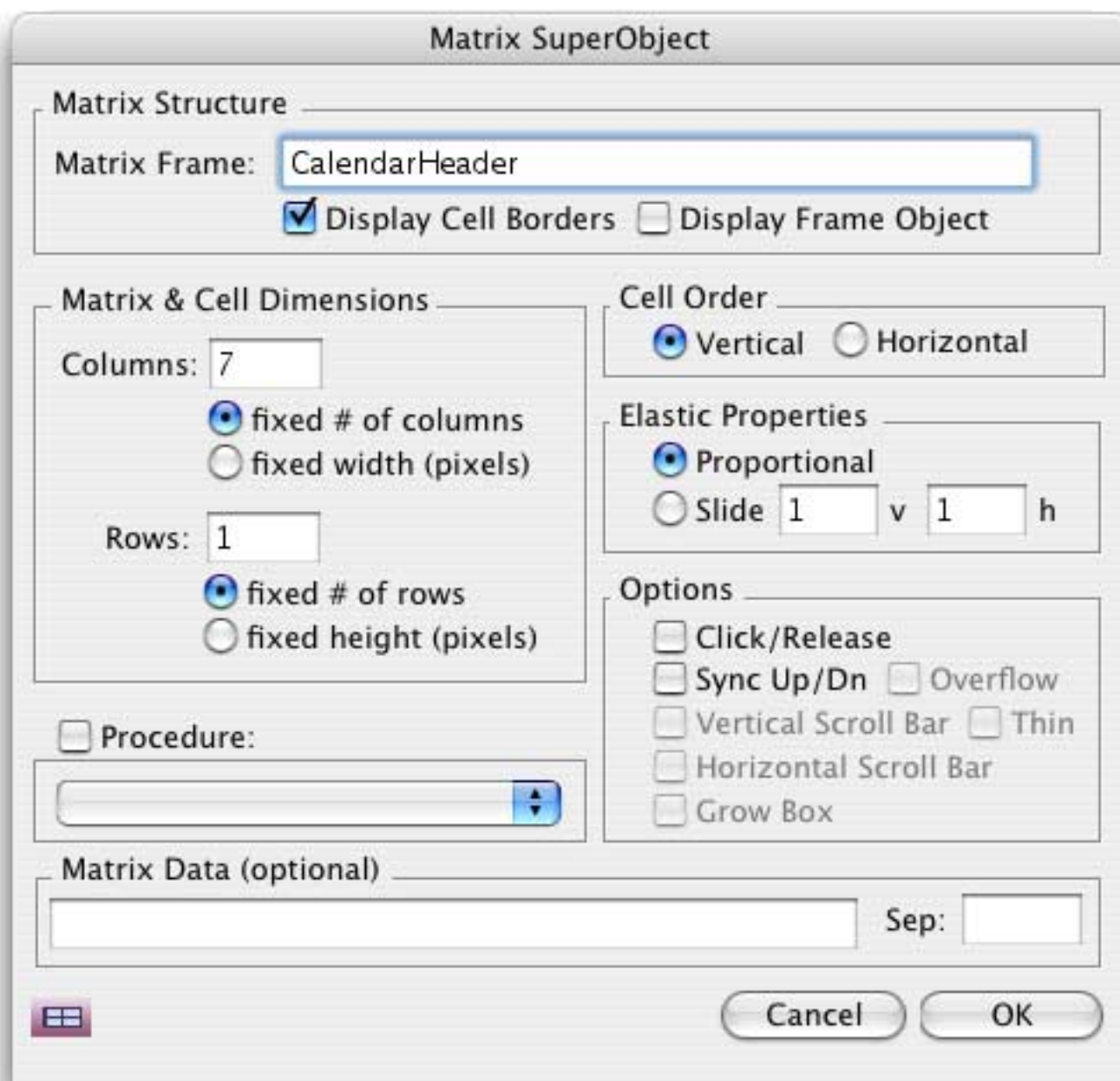
The 12 pt text looks a bit big. Change the text to 9 pt. You'll notice that nothing happens when you make this change. To actually see the change you'll need to force the window to redisplay. The easiest way to do that is to scroll down a page, then scroll back. On Macintosh systems you can also click on the window minimize icon twice. Either way, once the screen updates you'll see the new look.



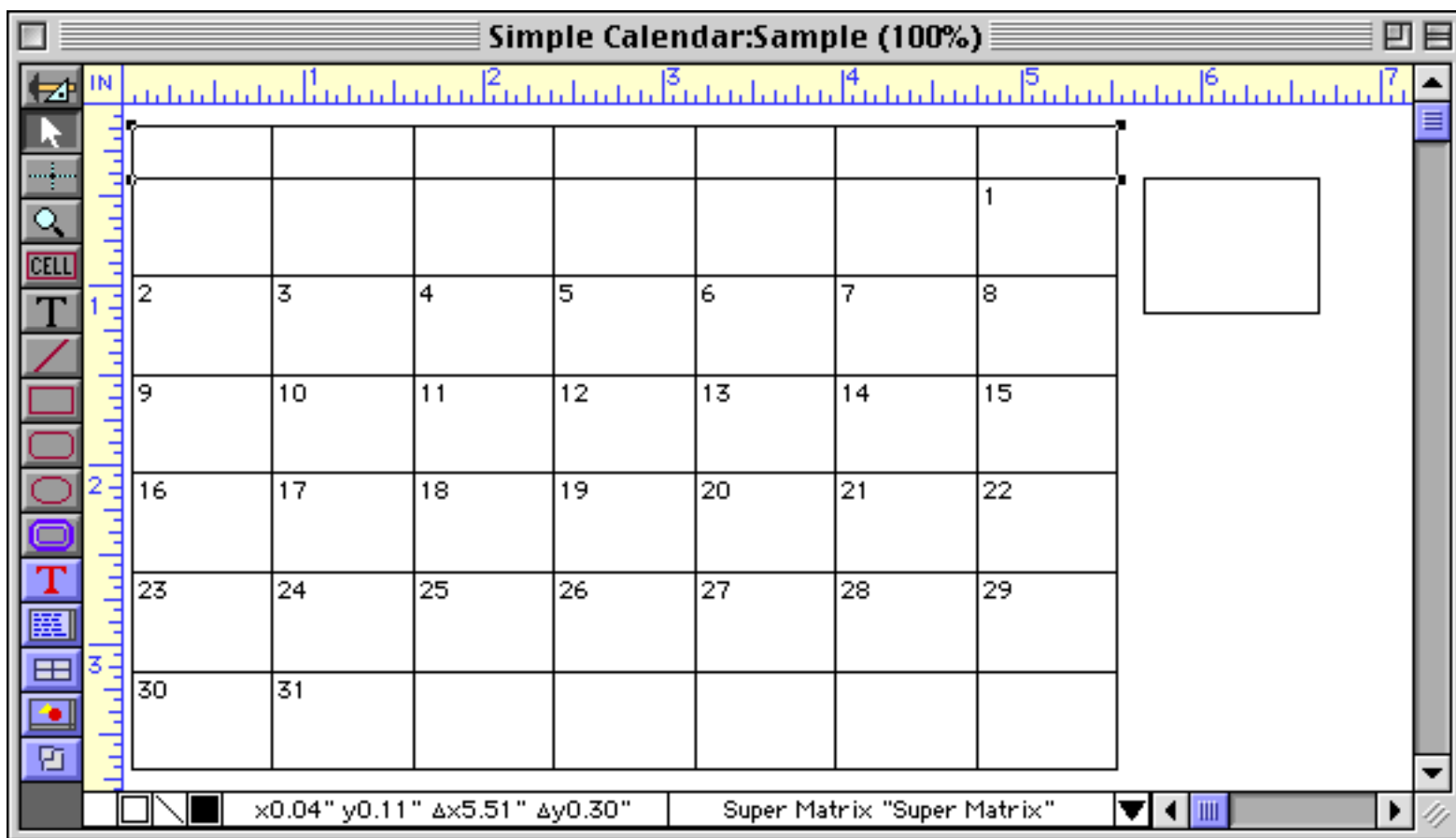
Next our calendar needs a header for the days of the week. You could create the header with separate text objects, but we'll create it with another matrix. Select the **Matrix** tool and drag to create the new matrix.



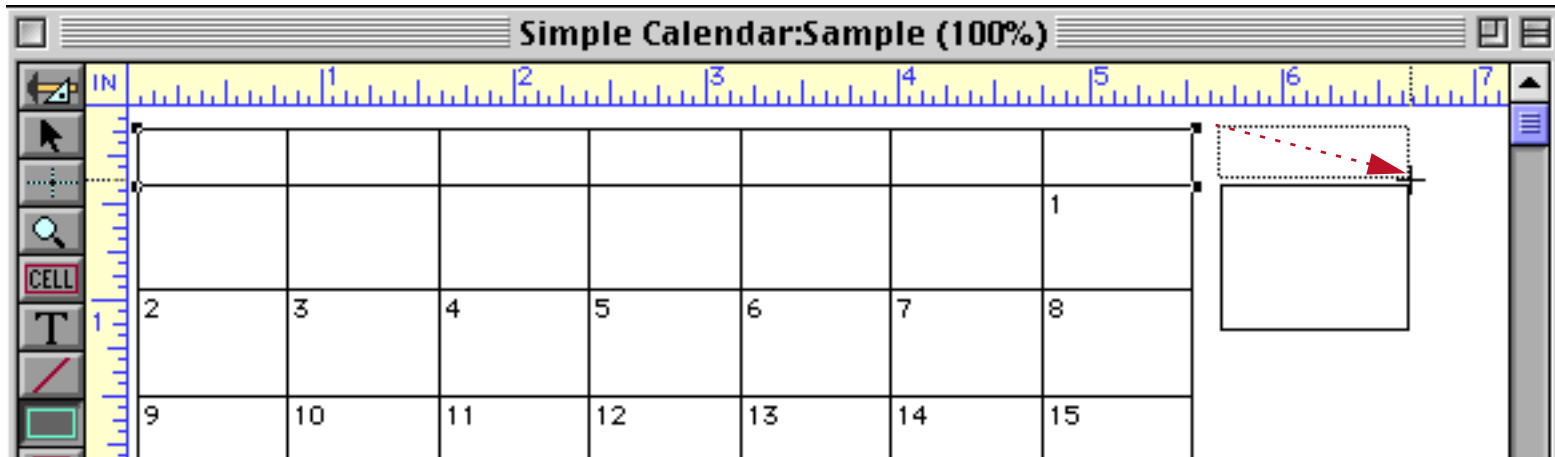
This new matrix will have only one row with seven columns (one for each day of the week). Type in [Day Of Week](#) for the matrix frame, which we will create in a moment.



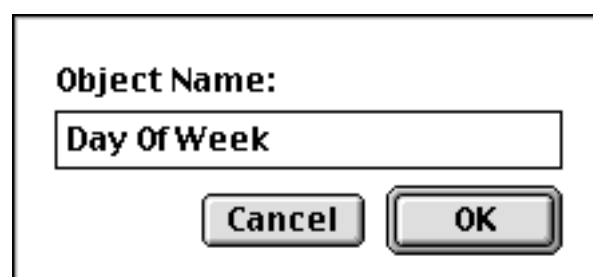
Once the new matrix is created you may need to nudge it a bit to get it perfectly lined up with the main body of the calendar (see “[Nudging an Object \(or Objects\)](#)” on page 509 and “[Nudging the Size of an Object](#)” on page 513).



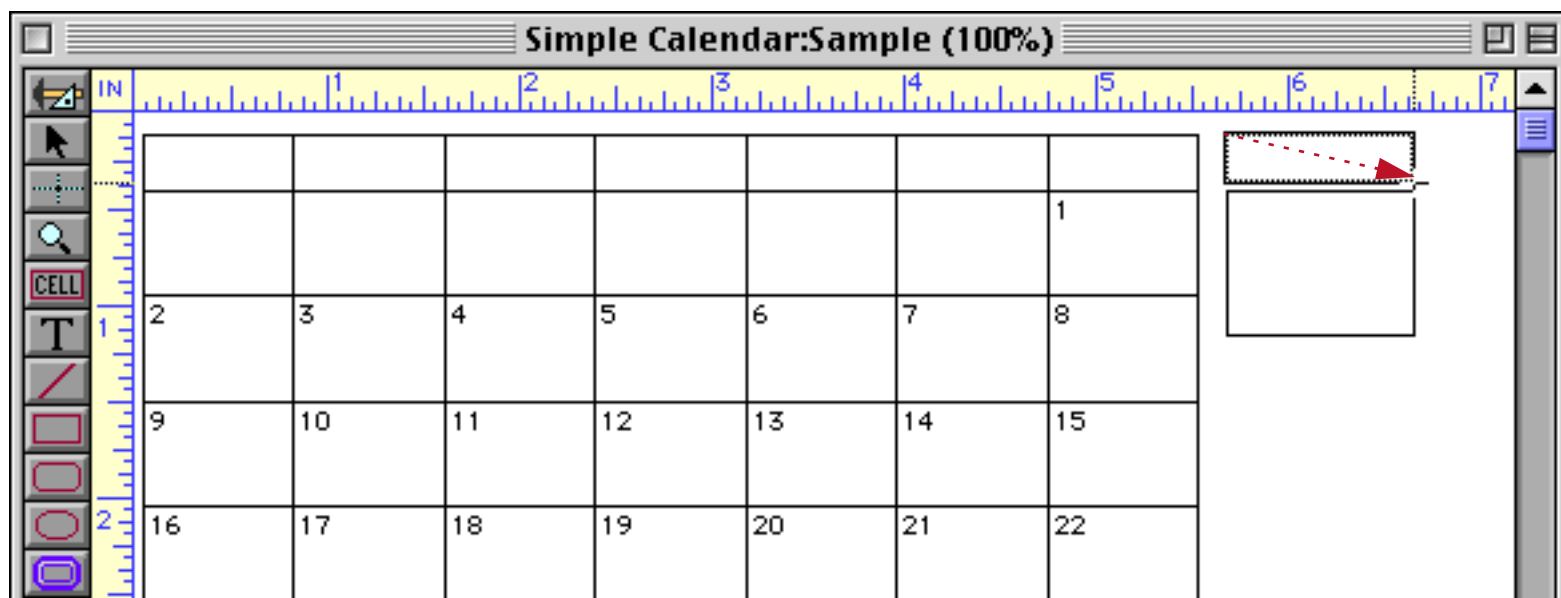
The next step is to create the second matrix frame. Start by creating a rectangle.



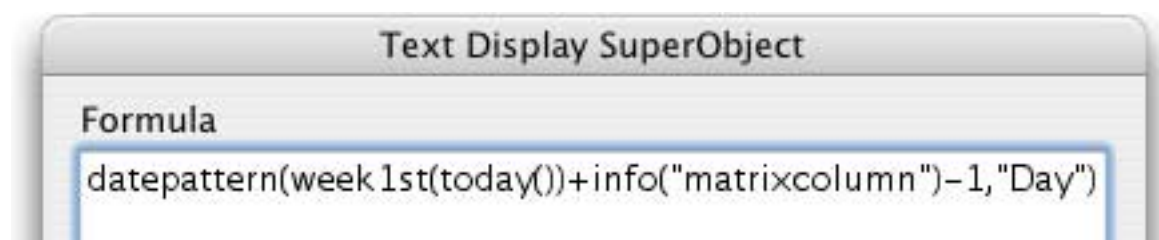
Set the name of the rectangle to **Day Of Week** (see “[Object Type/Object Name](#)” on page 533).



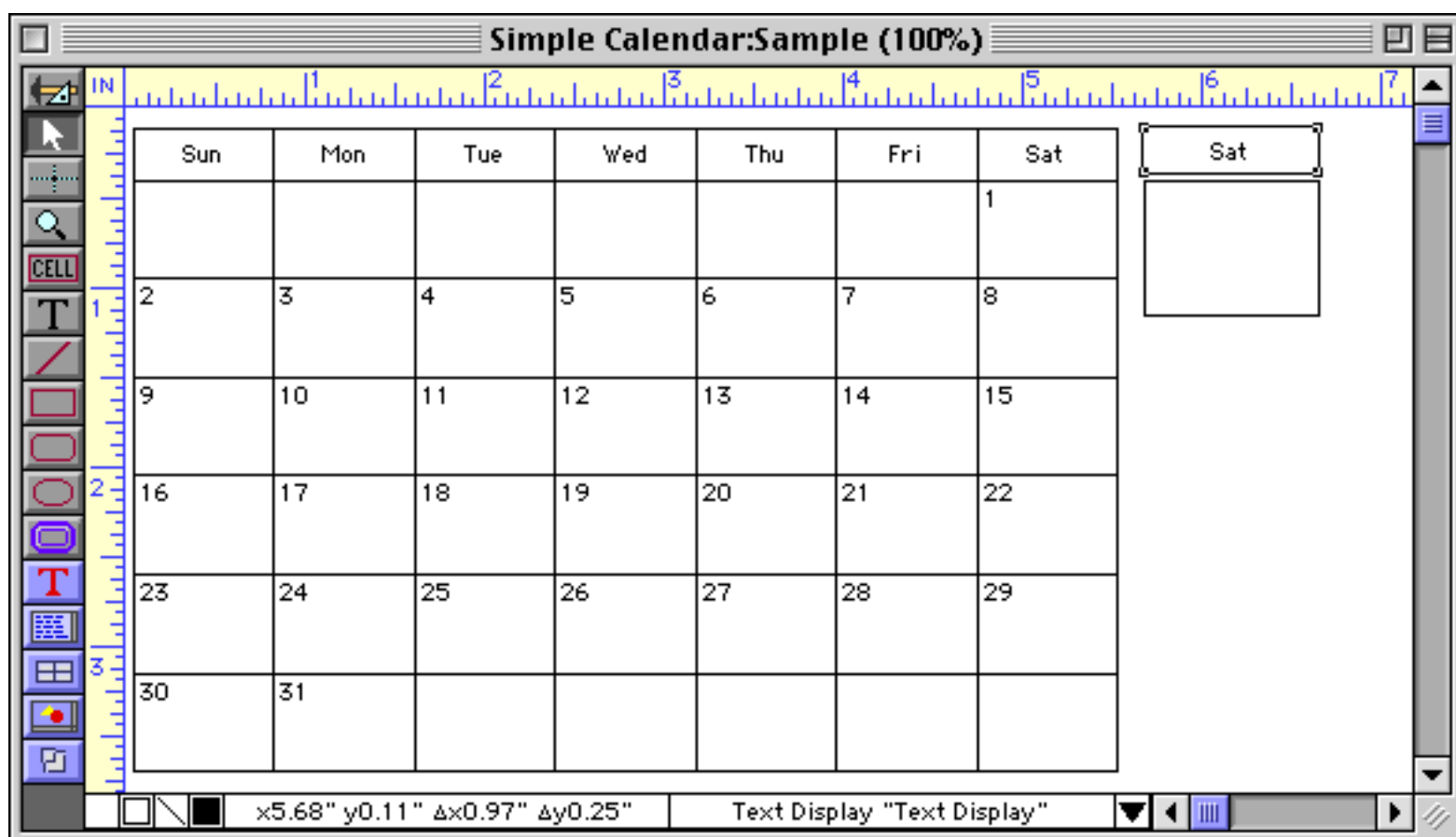
The next step is to add a Text Display SuperObject to display the day of the week (Sun, Mon, Tue, ...). See [“Creating and Modifying Text Display SuperObjects”](#) on page 608 to learn how to create such an object. The Text Display SuperObject should be created to almost fill the frame rectangle.



Use the formula shown in the illustration below to display the day of the week. You'll also want to set the alignment to centered, as shown below.



Depending on where your window is on the screen, you may need to scroll the form down a page and then back to see the finished result.



Believe it or not, this entire calendar has been created with only six graphic objects — two matrixes, two rectangles, and two text objects.

Scroll Bars

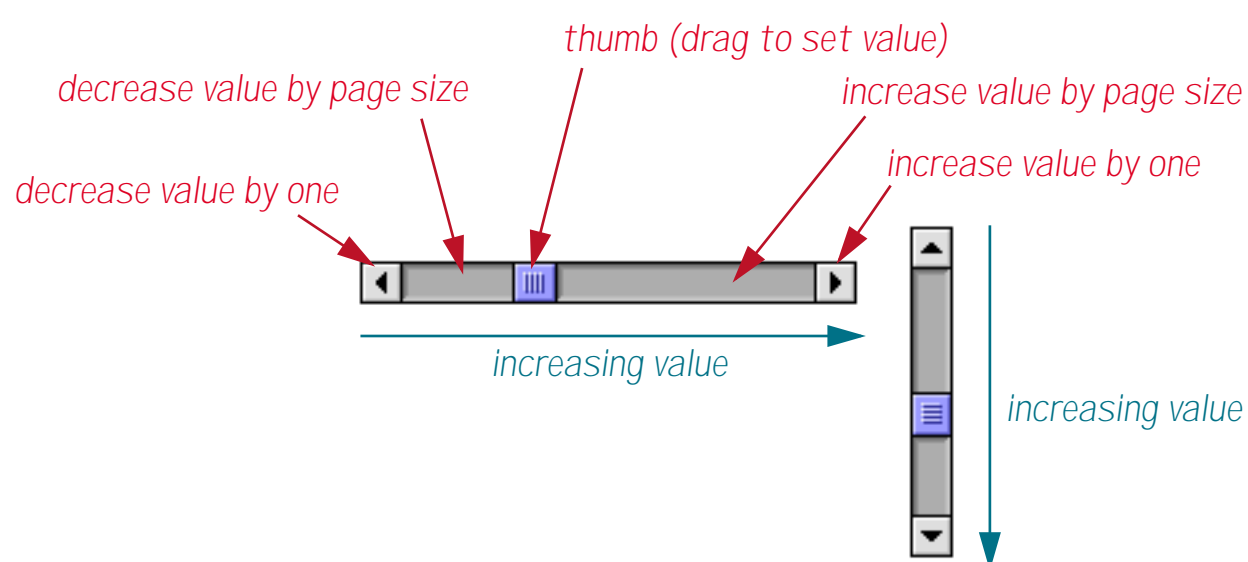
Scroll bars are another common user interface element, and in fact may be included as part of several other user interface elements (text editor, flash art, lists). The **Scroll Bar SuperObject™** allows you to create a scroll bar by itself as an independent user interface element.

Scroll bars can be used two ways. One is to act as a graphical method of displaying and modifying a numeric value. For example, you could set up a scroll bar that allowed you to display and control the Temperature field in a database. Instead of typing in the temperature, you would simply dial it in.

The second way to use a scroll bar is to scroll something. A Scroll Bar object can be combined with other objects (a matrix, for example) to produce a scrolling section within a form.

Scroll Bar “Theory”

A scroll bar has two arrows at the end, and a sliding “thumb” that can be positioned anywhere between the two ends. The position of the thumb moves corresponds to the current “value” of the scroll bar. As the value increases, the thumb moves down or to the right (depending on the direction of the scroll bar). Conversely, moving the thumb (by dragging it) changes the current value associated with the scroll bar. This value is kept in a field or variable.



The scroll bar value is not unlimited, but ranges between preset minimum and maximum values. The minimum value corresponds to a thumb position all the way to the top (or left), while the maximum value corresponds to a thumb position all the way to the bottom (or right). Values in between the minimum and maximum represent intermediate thumb positions. Only integer values are allowed; fractional values (like 2.49) are not allowed. The minimum and maximum values may be preset to any value between 1 and 65535. For example, if the minimum is set to **1000** and the maximum set to **2000** then the scroll bar will have 1001 possible positions. A thumb position halfway in the middle corresponds to **1500**.

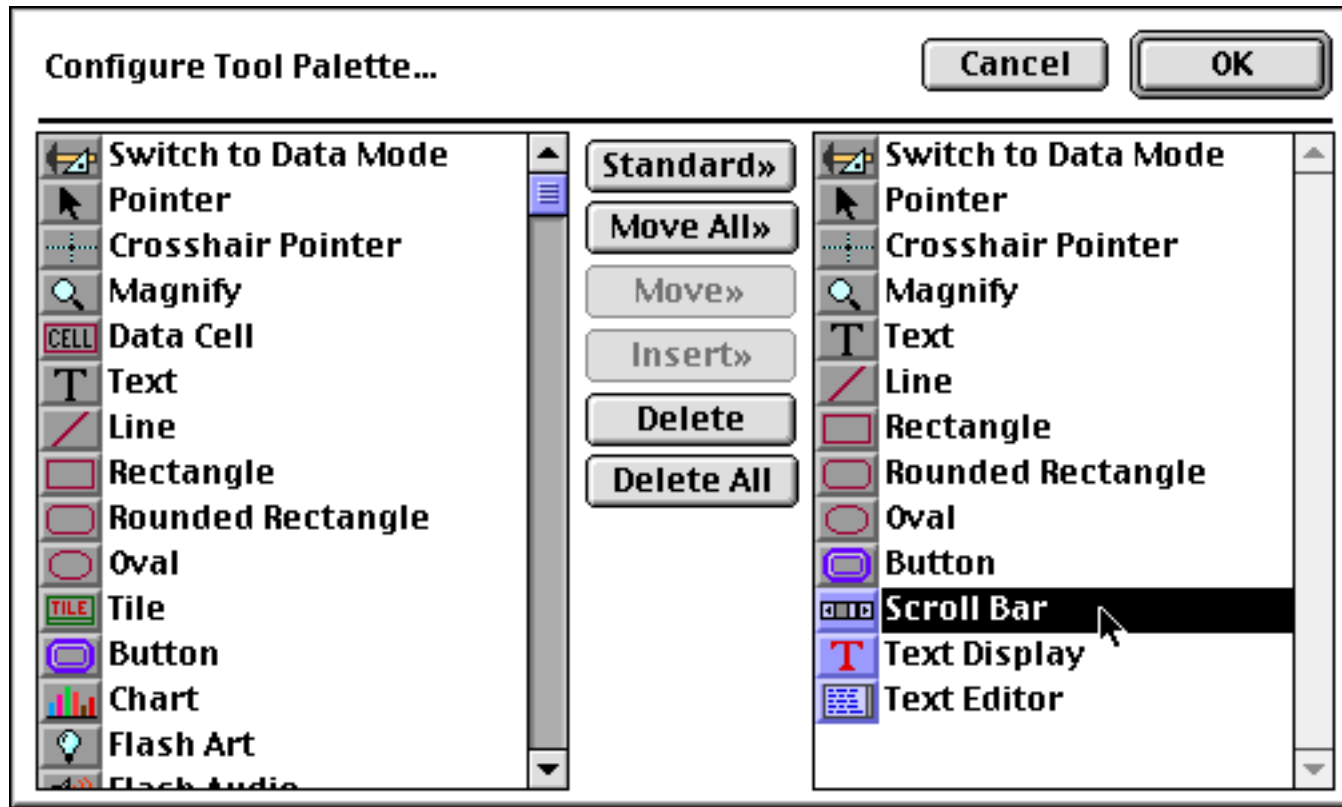


Each time the user presses on one of the scroll bar arrows the value will increase or decrease by one. If the minimum and maximum are set close together (for example 1 and 10) you’ll be able to see a definite jump each time the arrow is clicked. If the minimum and maximum are far apart (for example 1 and 1000) you may have to click several times to see even a tiny change in the thumb position.

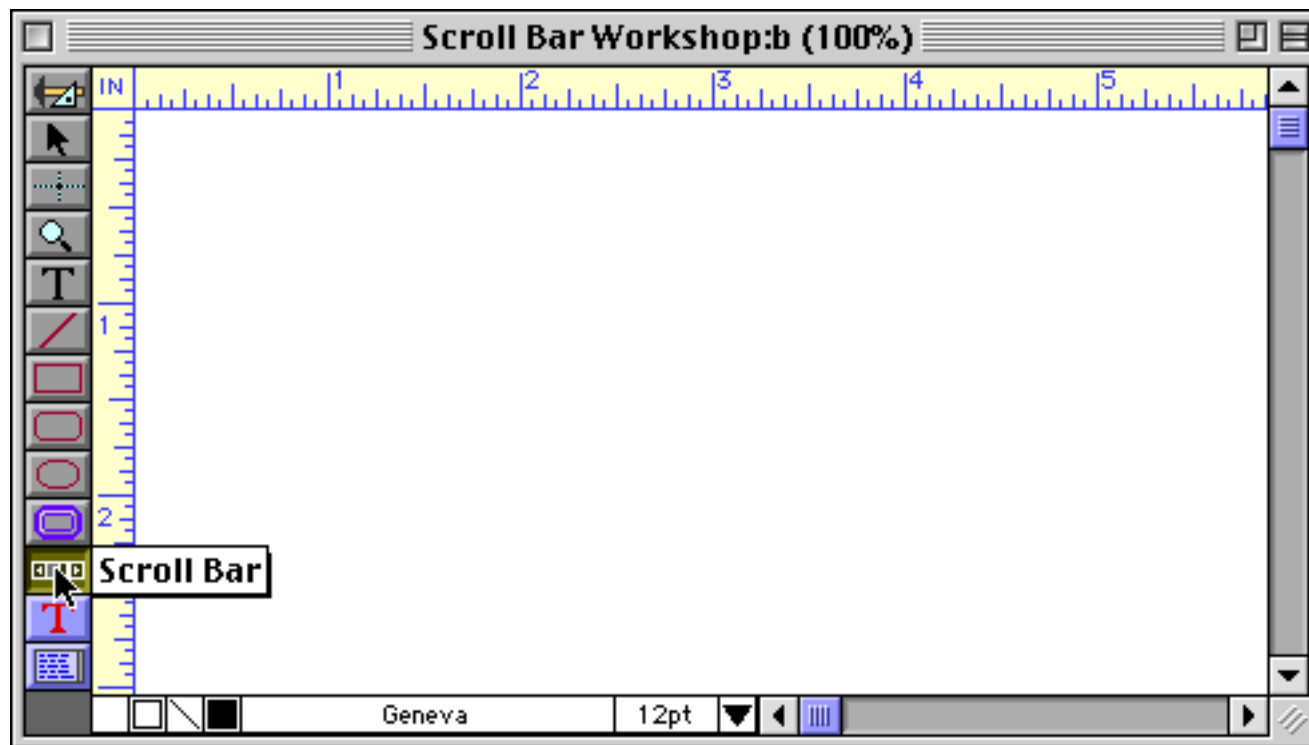
If the user presses on the gray area above or below the thumb the scroll bar value changes by a larger, predetermined amount. This usually corresponds to scrolling a page at a time, instead of a line at a time. The exact value change is set in the scroll bar's configuration dialog.

Creating Scroll Bar SuperObjects™

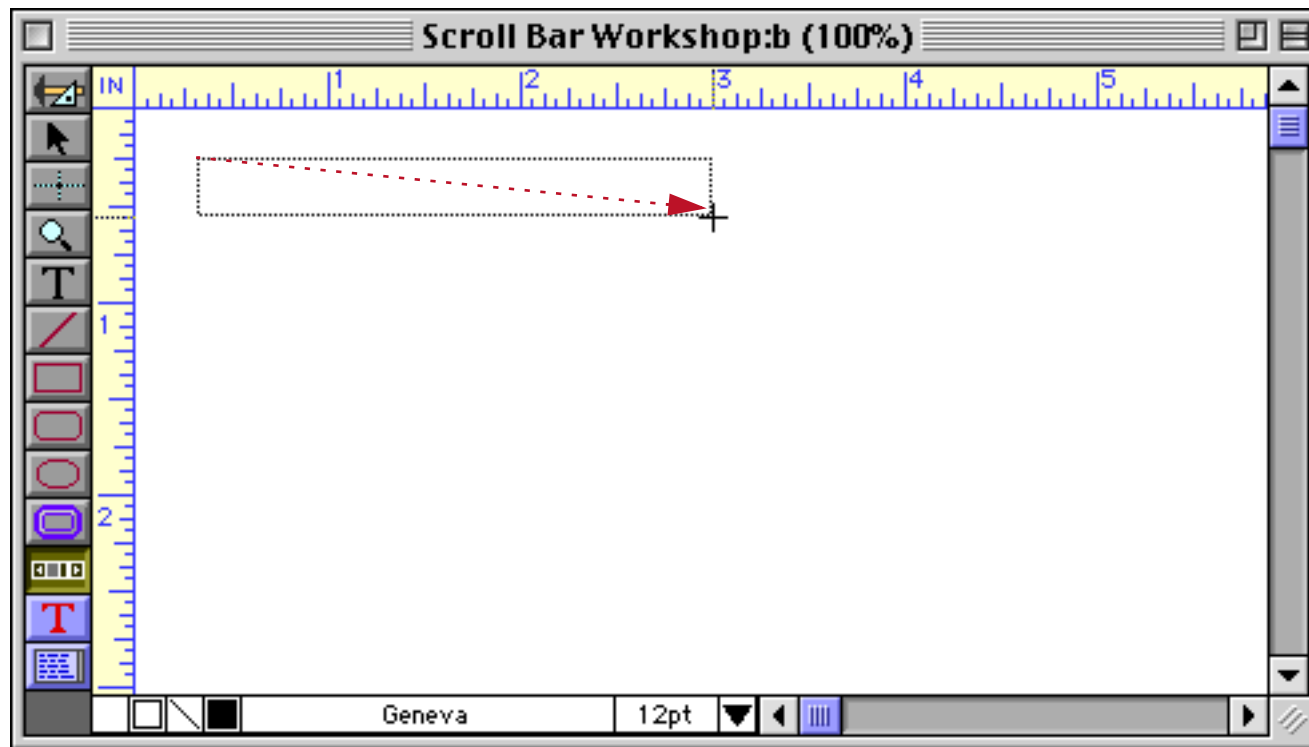
Scroll Bar objects are created just like any other SuperObject™. First make sure that the **Scroll Bar** tool is installed in the tool palette (see "[Customizing the Tool Palette](#)" on page 497).



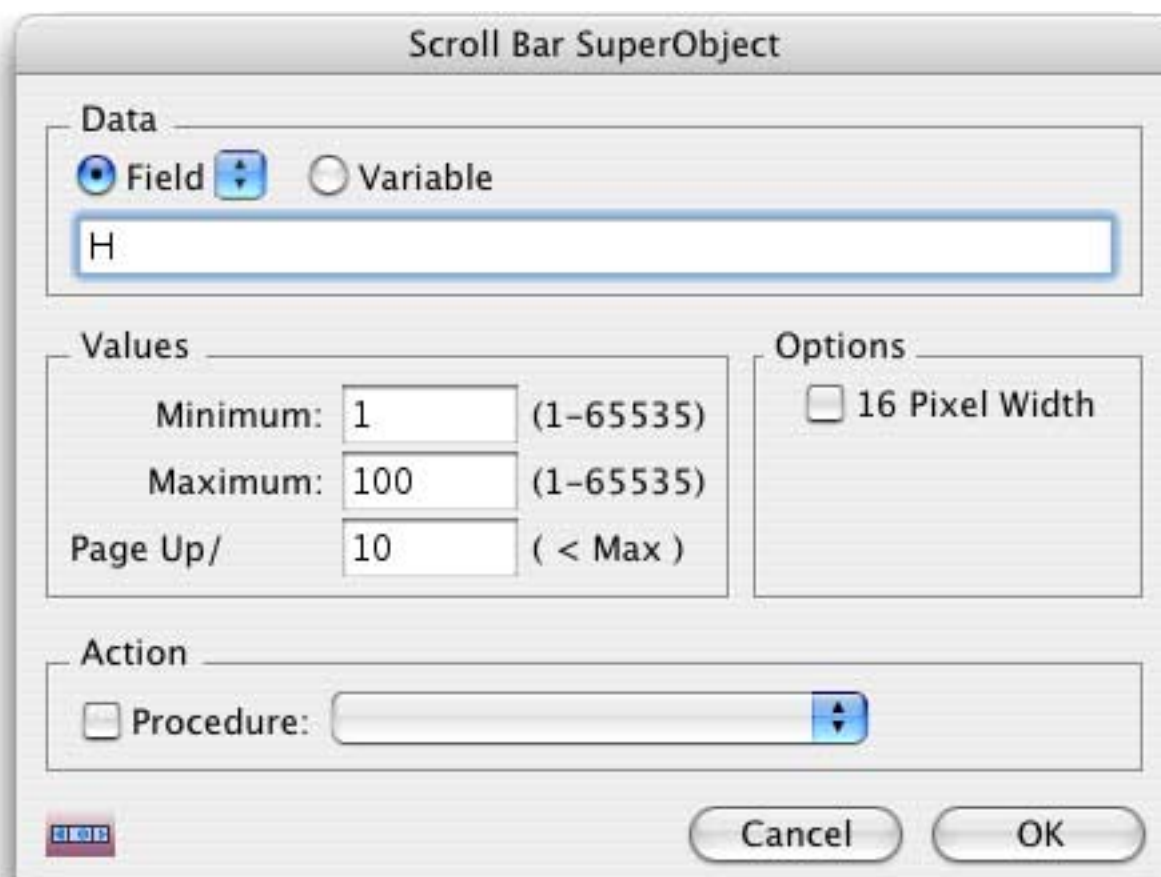
Now that the tool is added to the palette you can select it.



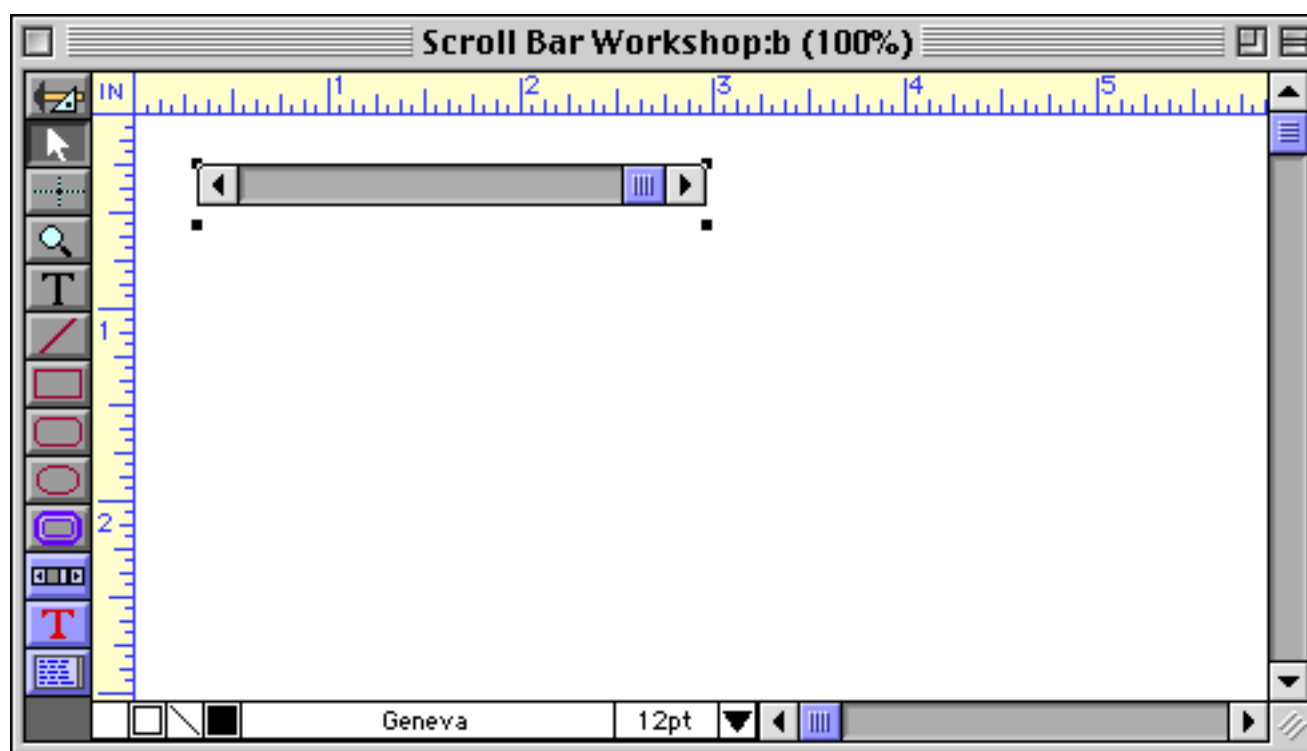
Next drag the mouse across the form in the spot where you want the scroll bar to appear. If you want a vertical scroll bar, drag a tall skinny box; if you want a horizontal scroll bar drag a squat wide box.



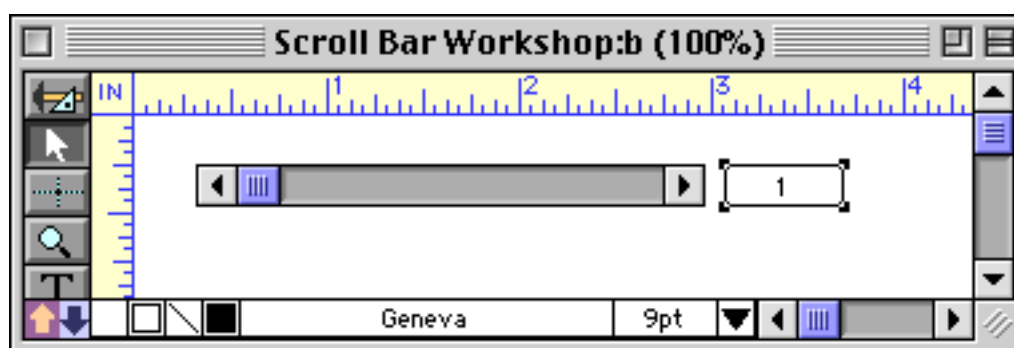
When you release the mouse, the Scroll Bar configuration dialog appears.



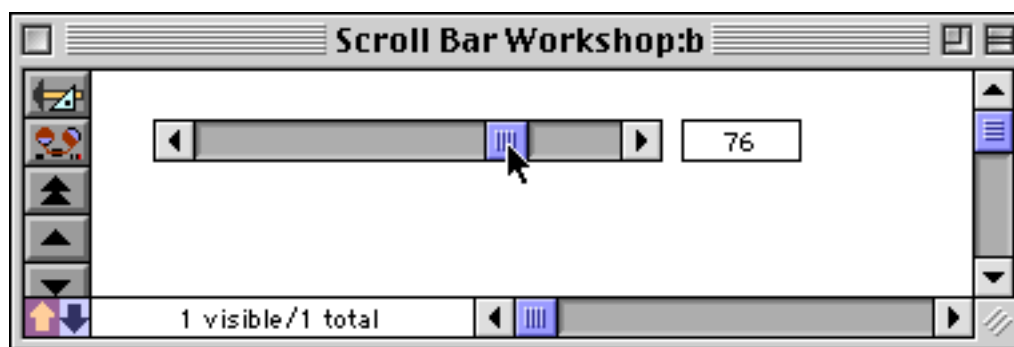
Select a field (must be a numeric field) or type in a global variable name (see “[Variables](#)” on page 53 and “[Variables](#)” on page 247 of *Formulas & Programming*) and then press **OK**. The new scroll bar appears.



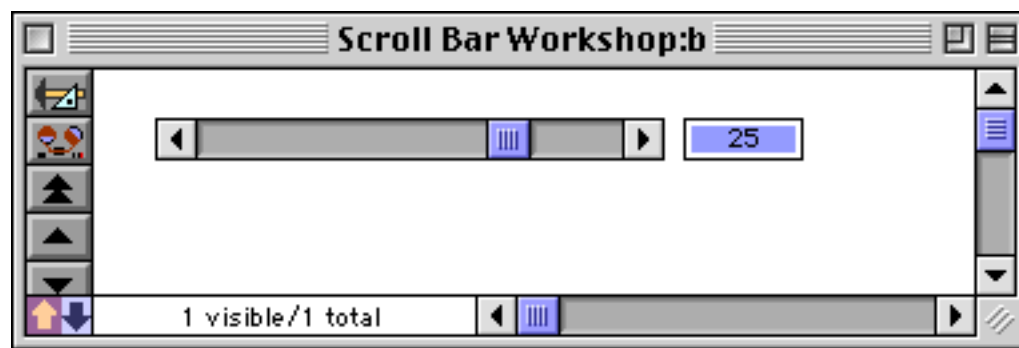
In this case we linked the scroll bar to a numeric field: **H**. We can add a Text Editor SuperObject to display the value of that field (see “[Creating and Modifying Text Editor SuperObjects](#)” on page 639).



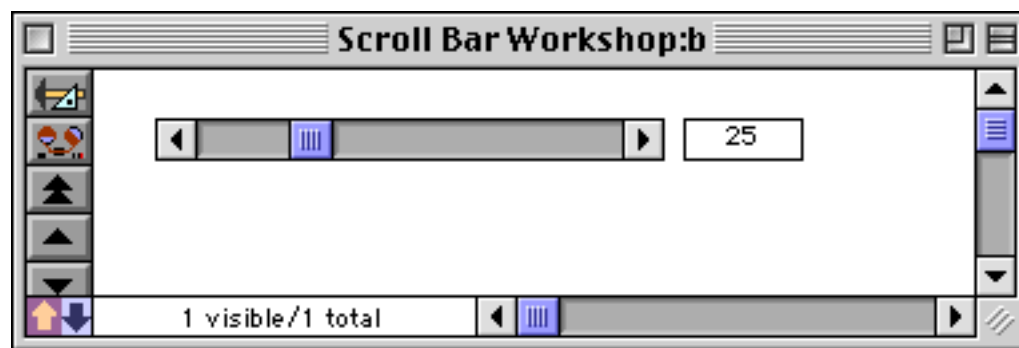
Now switch to Data Access Mode to try out the scroll bar. You can drag the thumb to any spot to set the value of the **H** field.



You can also move the position of the scroll bar thumb by typing in a value from 1 to 100. For example, you could type **25** into the Text Editor SuperObject.

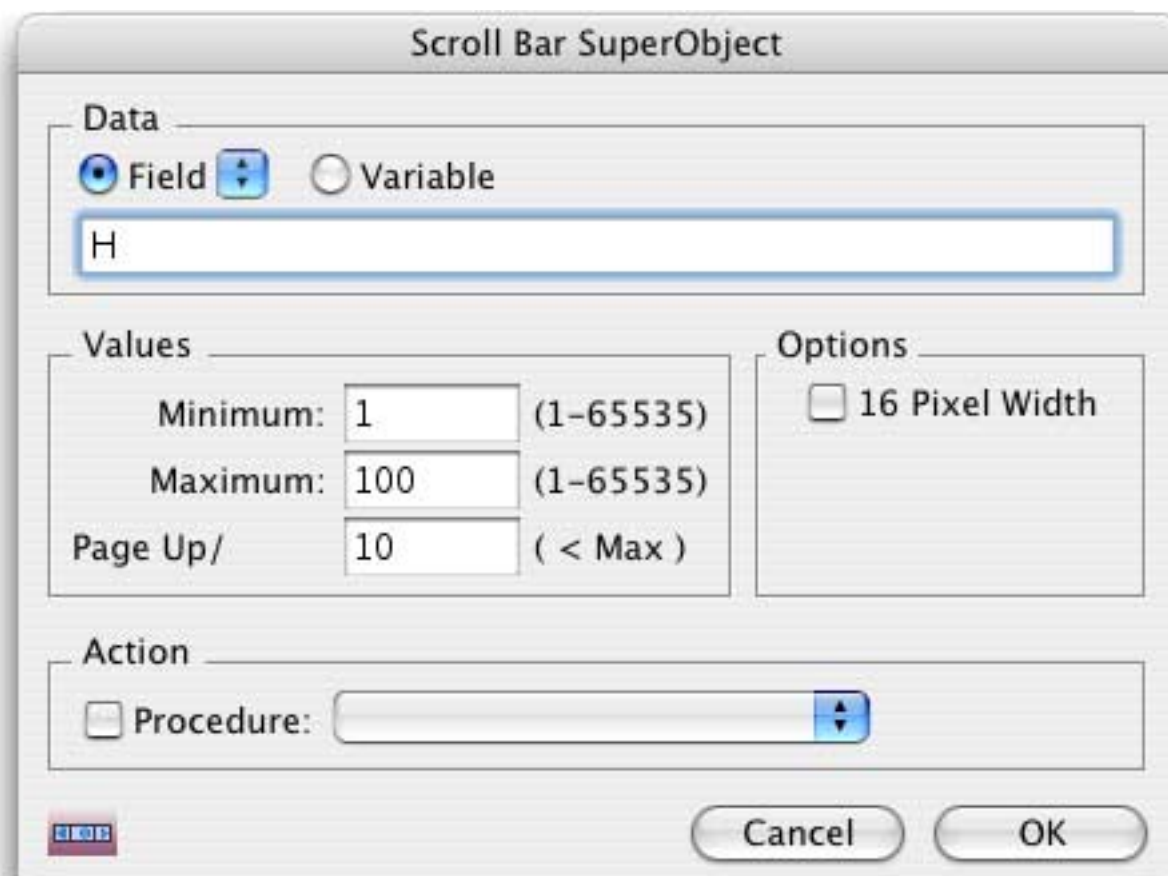


When you press the **Enter** key the scroll bar thumb will hop to the 25% position.



Scroll Bar Options

The SuperObject™ Scroll Bar dialog is divided into several sections. To re-open this dialog for a scroll bar you have already created, select the **Pointer** tool and then double click on the scroll bar object.



Data

This section of the dialog specifies the field or variable associated with this scroll bar. Type the name of the field or variable into the box (or select the field name from the pop-up menu next to the Field checkbox). If you choose a field, the field must be numeric with zero digits (see “[Numeric Data](#)” on page 249). If the scroll bar is associated with a variable that has not been created with a procedure, Panorama will automatically create a global variable with this name whenever the scroll bar appears. This global variable can be used in formulas and procedures just like any other global variable.

Min

This is the minimum value for the scroll bar, which corresponds to the scroll bar thumb position at the far left or top. The minimum value must be between 1 and 65535, and must be less than the maximum value.

Max

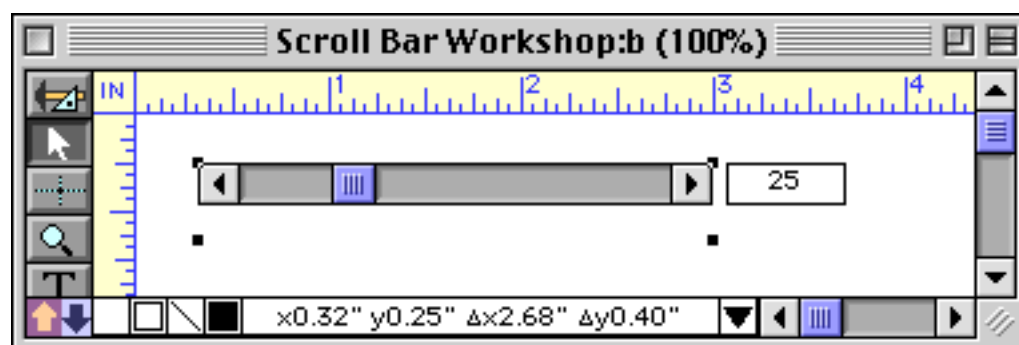
This is the maximum value for the scroll bar, which corresponds to the scroll bar thumb position at the far right or bottom. The maximum value must be between 2 and 65535, and must be greater than the minimum value. Setting the maximum value close to the minimum will produce a “grainy” scroll bar with big jumps as you press the arrows. Setting the maximum value far from the minimum will produce a “precise” scroll bar with tiny or even imperceptible movement as you press the arrows.

Page Up/Down

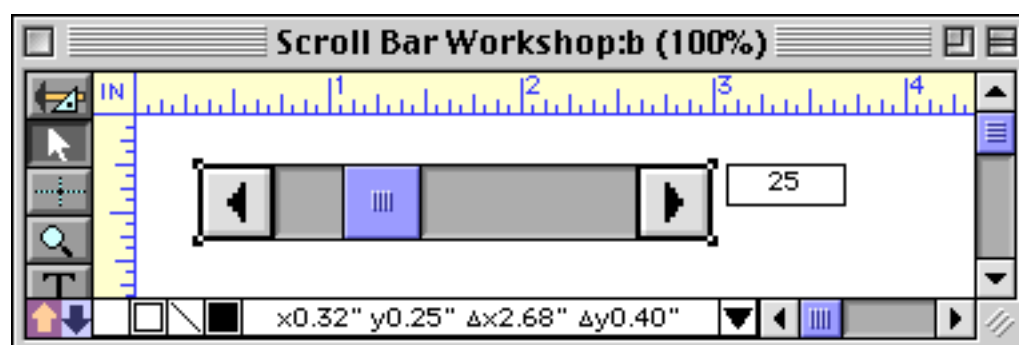
This is the amount the scroll bar value will change when the user presses on the gray area above and below the thumb. This value must be less than the difference between the minimum and maximum values, and is often about 1/10th of that difference.

16 Pixel

If this checkbox is turned on, Panorama will limit the scroll bar width to 16 pixels, even if the object is larger. This is the normal size for most scroll bars. The illustration below shows a scroll bar with the **16 Pixel** option enabled. Even though the scroll bar object is 29 pixels high, the scroll bar is only 16 pixels high.



Here is the same scroll bar with the **16 Pixel** option turned off.

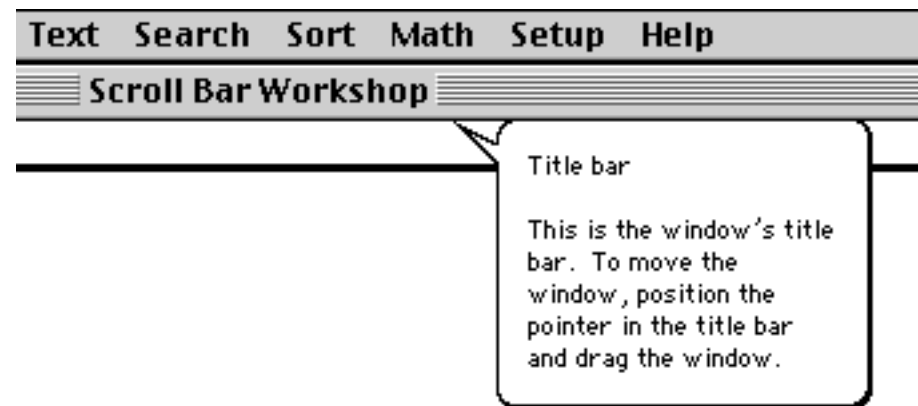


Procedure

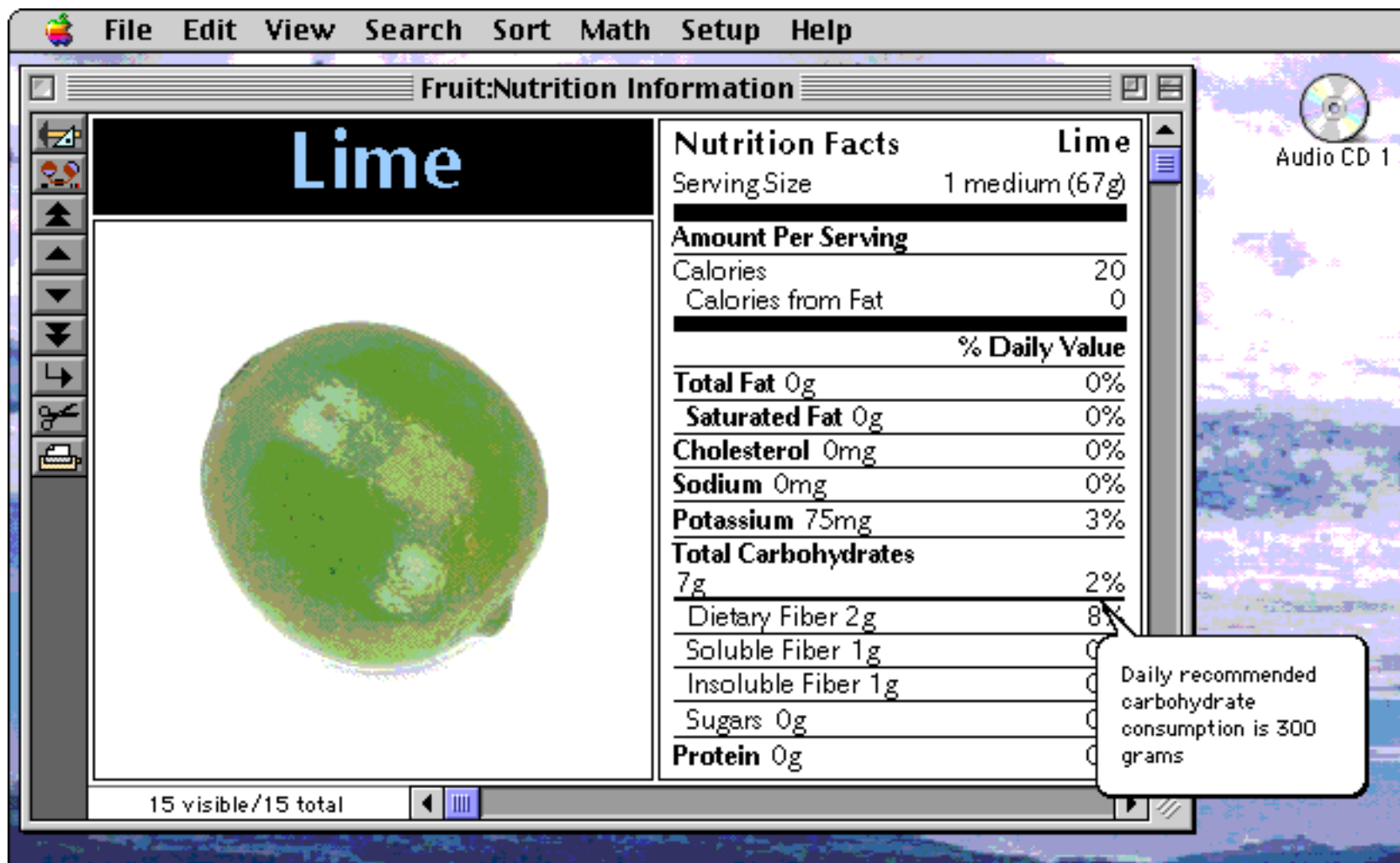
This section of the dialog allows you to specify a procedure that will be triggered every time the user clicks on the scroll bar.

Balloon Help

The Macintosh has a feature called **balloon help** that can help in learning how to use a program. When the **Show Balloons** option is turned on (Help menu), little pop-up balloons with help messages appear as you move the mouse across the screen.



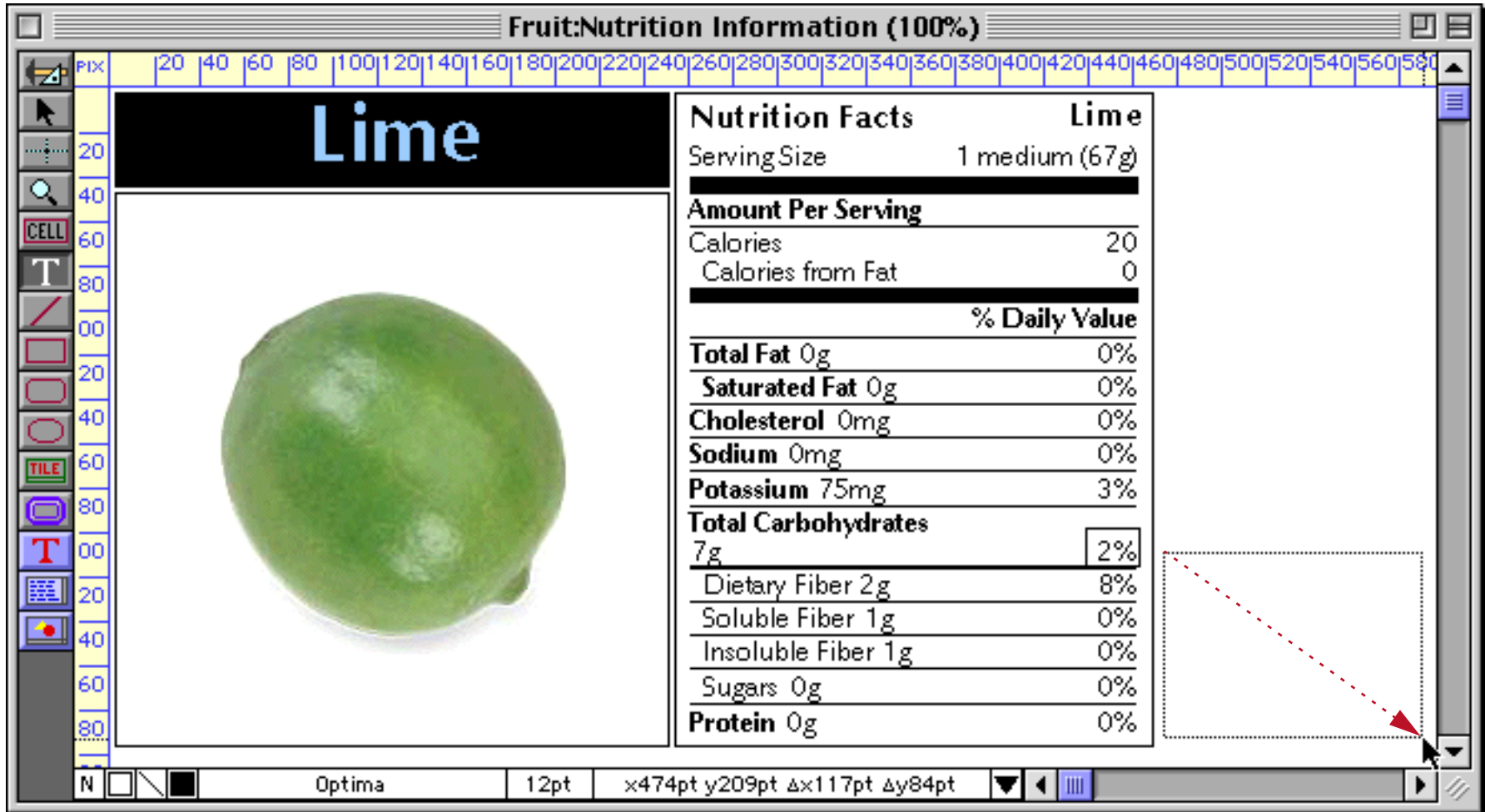
Panorama allows balloon help to be added to any form. You can make any message you want pop-up over different areas of a form.



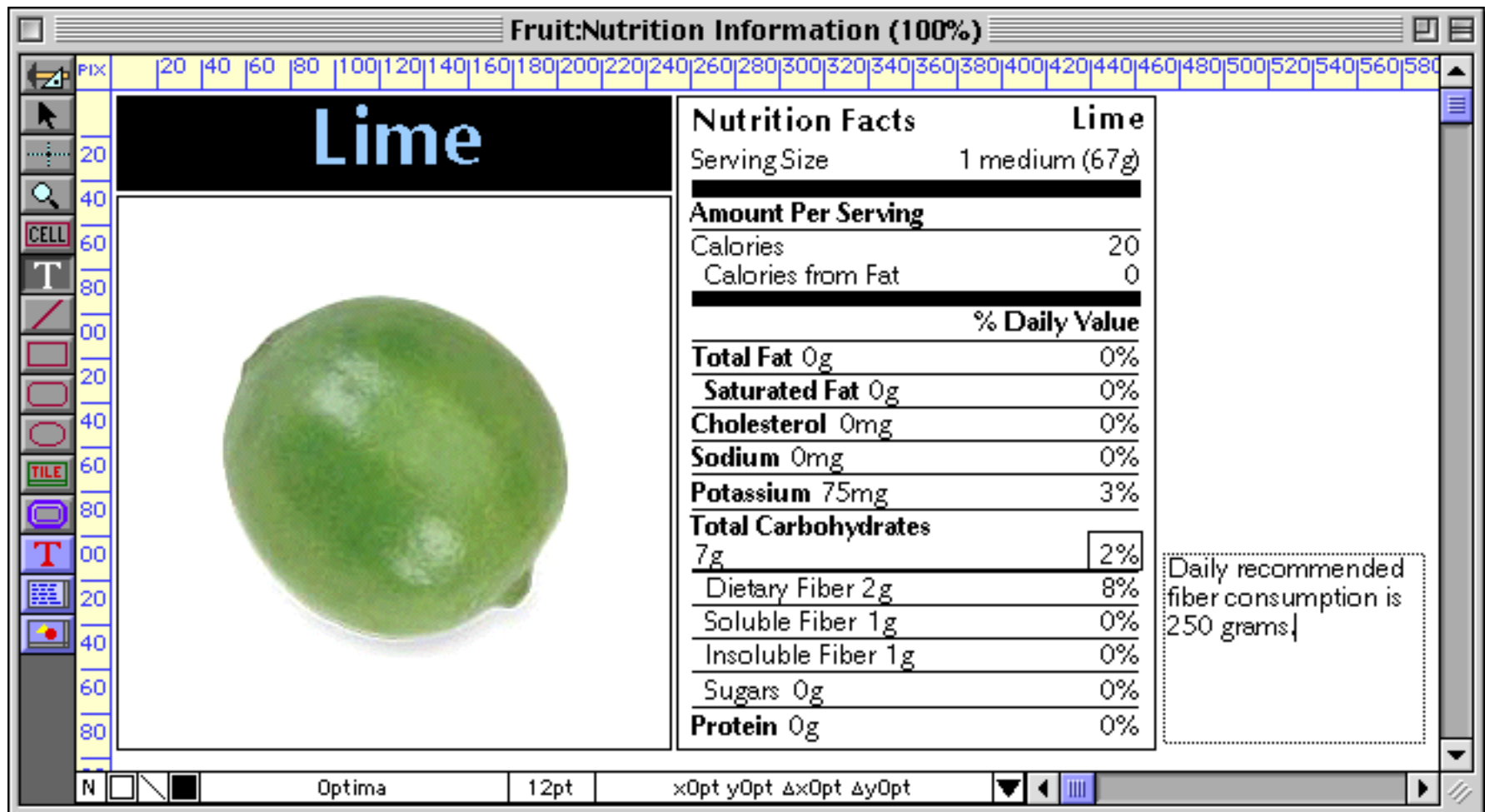
Creating Balloon Help Objects

Balloon help is added to a form by creating balloon help objects. You must create a separate balloon help object for each area where you want a different balloon help message to appear. For example, if you want to create balloon help for a button, you must create a balloon help object in the same location as the button (either on top of or behind the button).

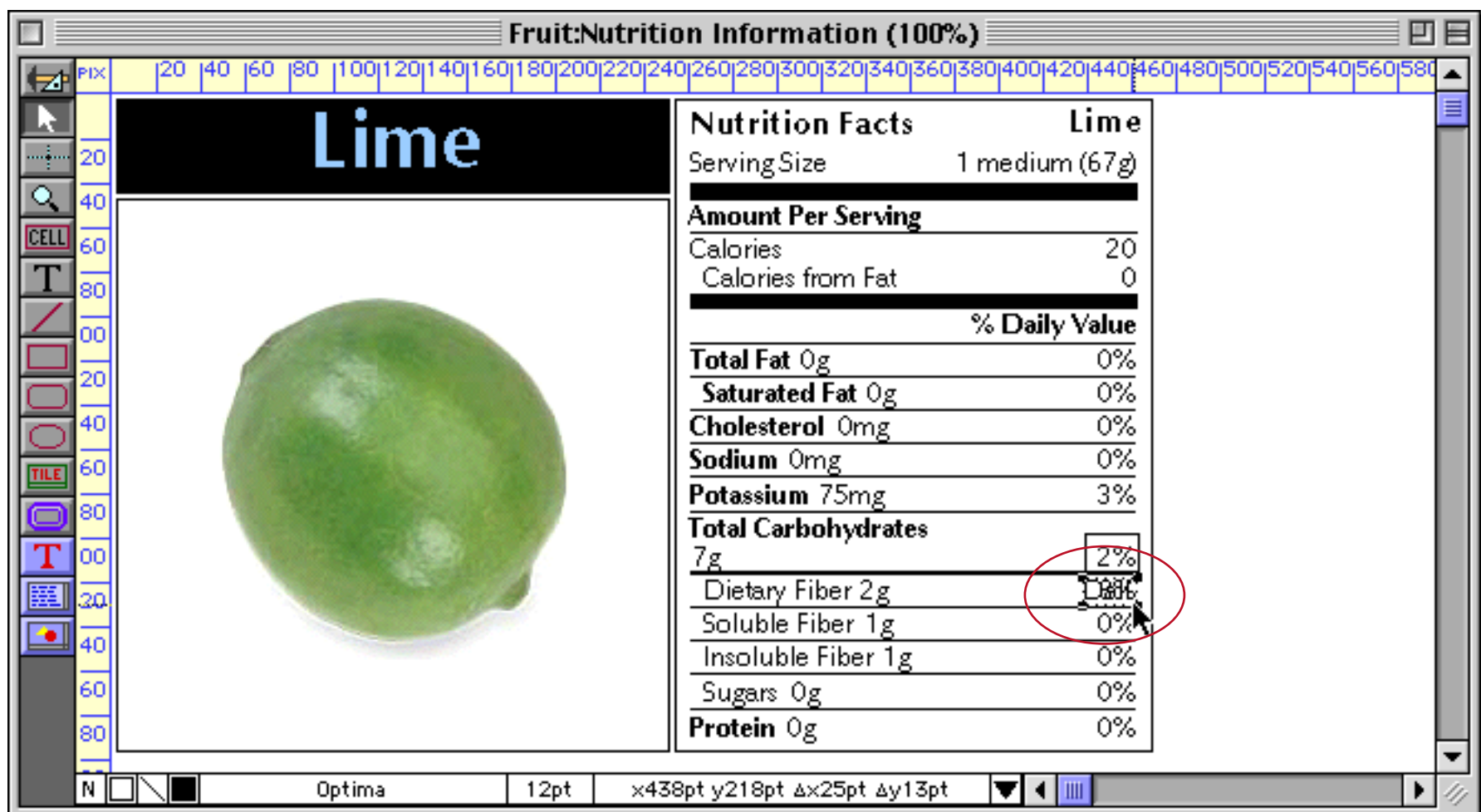
Balloon help objects are created in a different way than any other kind of object. First, you create a text object with the Text tool.



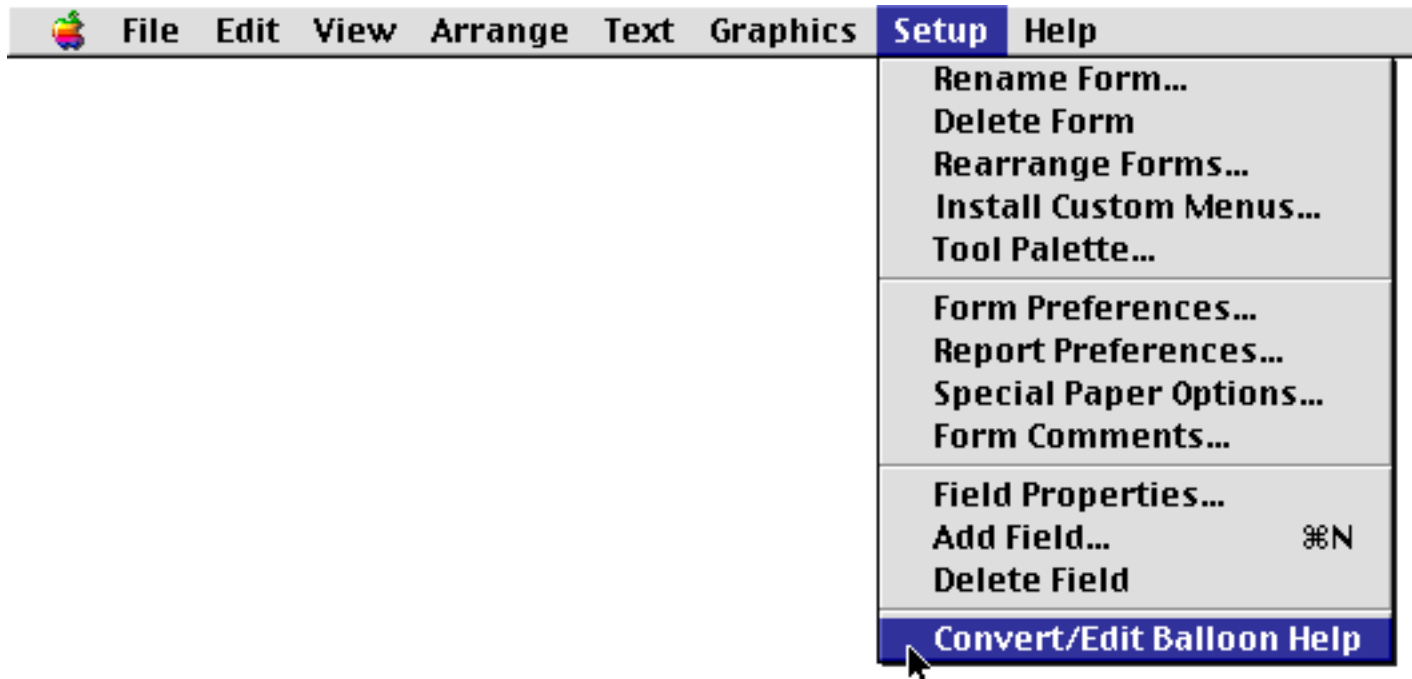
Type in the text that you want to appear in the balloon (you can edit this later).



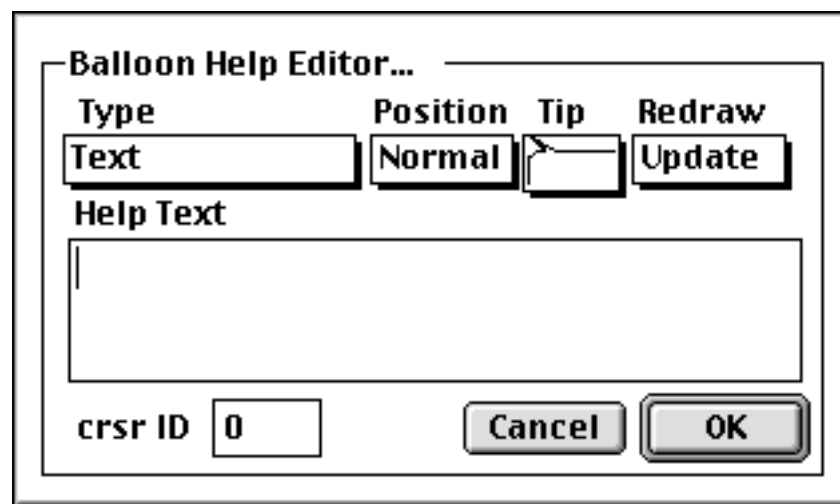
Once the text is created, select the text object with the **Pointer** tool. If necessary, move and resize the object to position it over the appropriate area of the form.



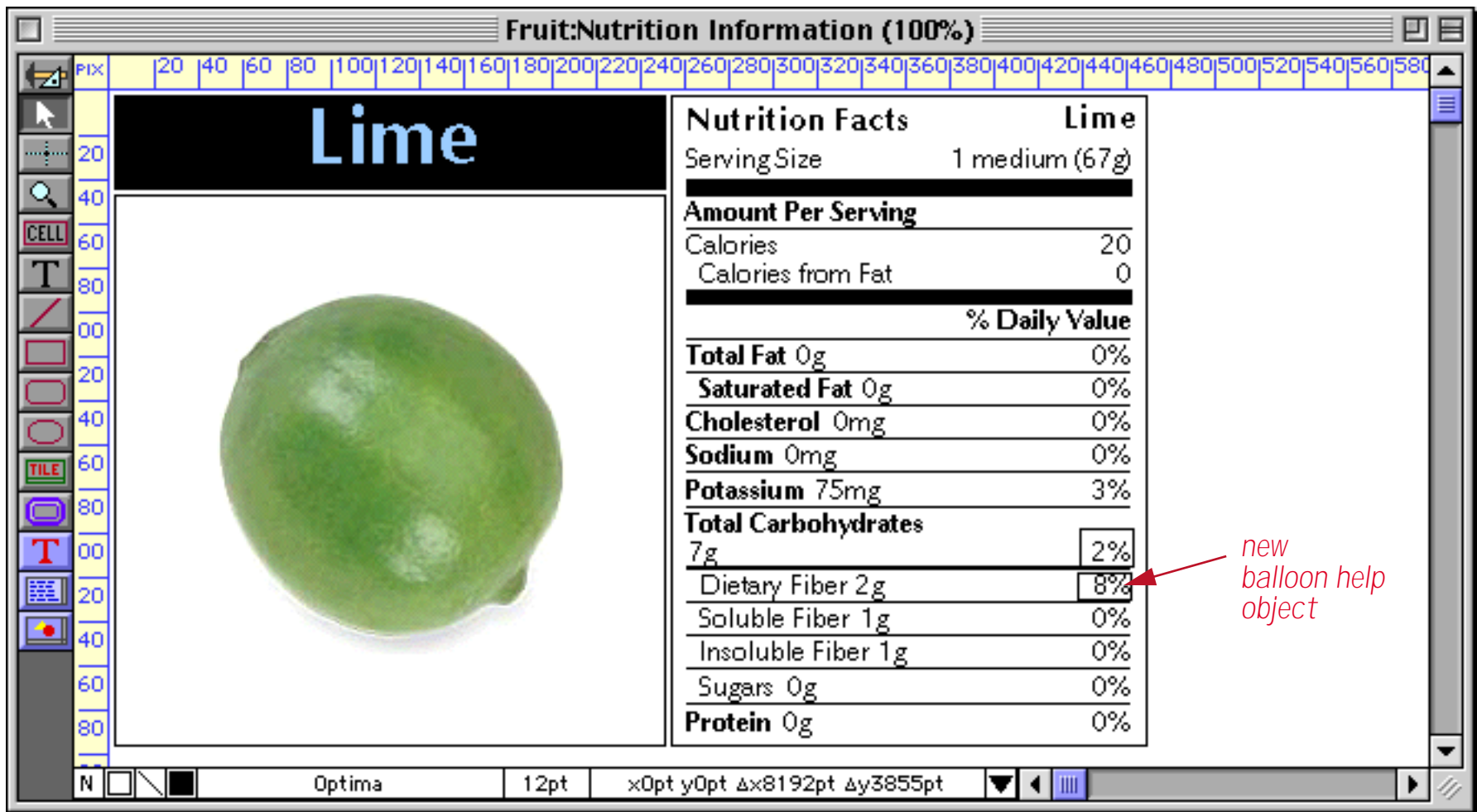
With the auto-wrap text object selected, choose **Convert/Edit Balloon Help** from the Setup menu.



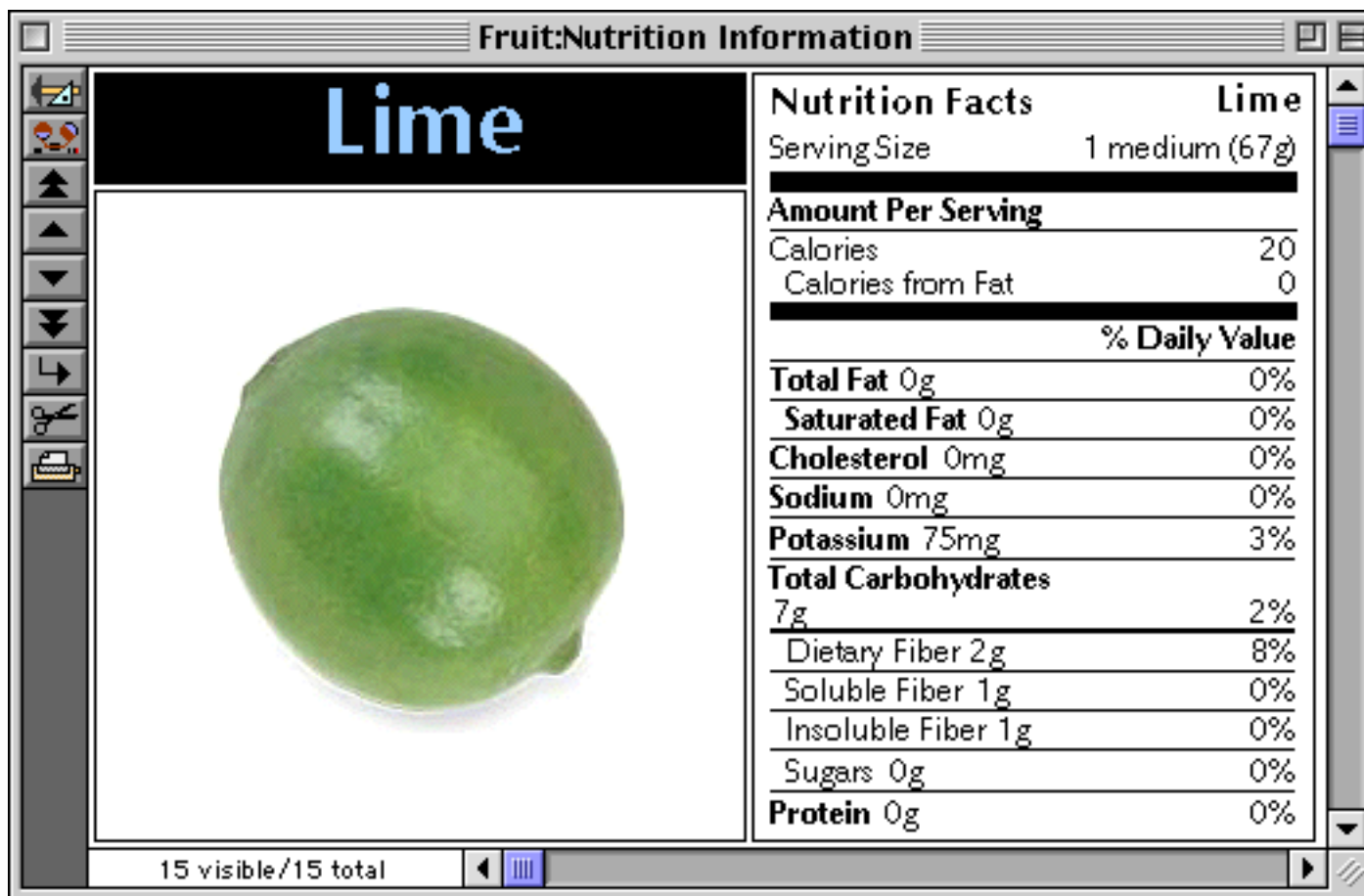
Panorama will convert the text object into a balloon help object, and at the same time it opens a dialog that allows you to specify balloon help options.



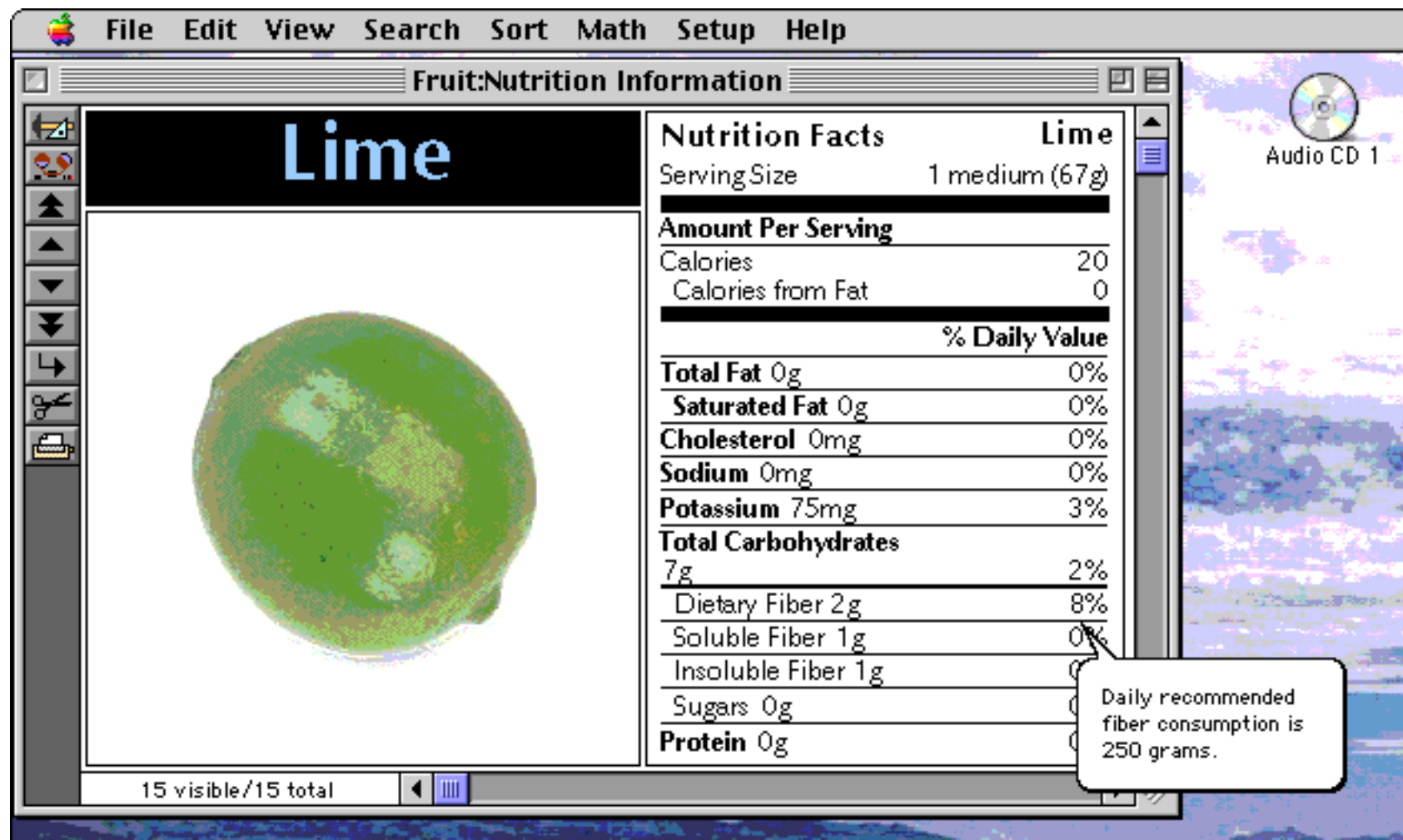
Don't worry about the fact that the **Help Text** are empty. Just leave it blank and press **OK**. The text object has been converted into a balloon help object, which appears with a black line around it.



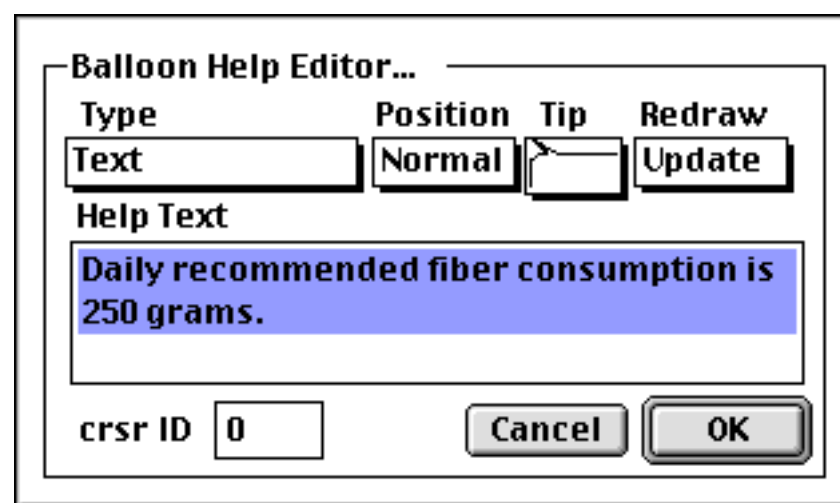
When you go to Data Access Mode the black line disappears, and the balloon help object becomes completely invisible.



Turn on the **Show Balloons** option (Help menu) to try out your new help balloon.

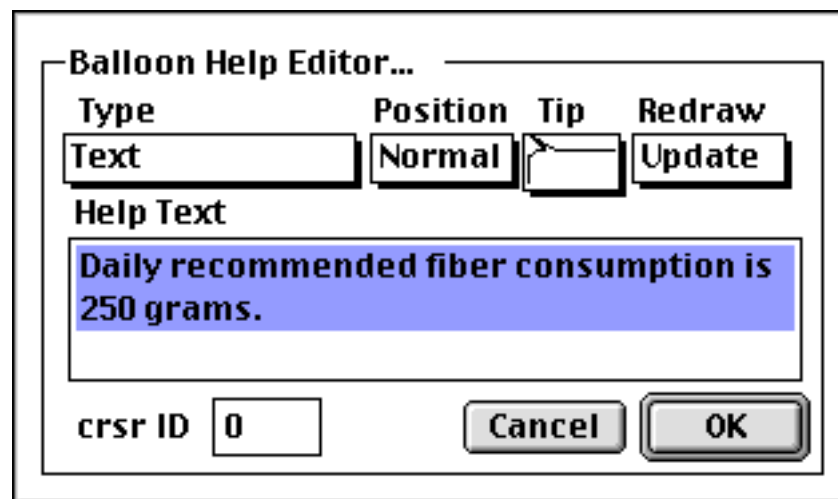


If you want to change the options later, go back to Graphics Mode. Select the object and choose **Convert/Edit Balloon Help** again to re-open the configuration dialog. This time the help text will appear, and you can edit it.



Balloon Help Options

The Balloon Help configuration dialog has four pop-up menus that allow you to specify various balloon help options. To open this dialog for a balloon help object that has already been created select the object and then choose **Convert/Edit Balloon Help** from the Setup menu. (Note: Unlike virtually every other type of Panorama object, you cannot open the configuration dialog by double clicking on the object with the **Pointer** tool selected. You must use the **Convert/Edit Balloon Help** command.)



The **Type** pop-up menu allows you to control whether a text or picture appears inside the balloon. If you select **Text** (the default option), the balloon will display the text in the **Help Text** section of the dialog. If you choose any of the resource options, the dialog will change to allow you to enter a resource ID number. The **Picture Resource** option will display a picture with the specified resource ID number. The **String Resource** option will display text from a STR resource. The **String# Resource** option will display text from a STR# resource. The **TEXT styl** Resource option will display styled text (which may include bold, italic, etc.) from a **styl** resource. These resources must be created with ResEdit or your favorite resource editor.

The **Position** pop-up menu controls where the tip of the balloon will appear. The **Normal** option makes the tip appear at the current mouse location. The **Center** option makes the tip appear in the center of the balloon help object.

The **Tip** pop-up menu controls the default position of the balloon. If possible, the computer will place the tip at the corner of the balloon that you specify. However, if the mouse is near the edge of the screen this may be impossible.

The **Redraw** pop-up menu controls how the screen is redisplayed when the balloon disappears. The **Update** option will always work, but is usually slower. The **BitCopy** option works by saving the pixels under the balloon and then replacing the exact same pixels when the balloon disappears. This option is much faster, but won't work if the pixels underneath might change while the balloon is visible (for example if the balloon is over a clock). The **Both** option uses both methods simultaneously. I'm not sure why you would want to do this, but Apple made this option available to us so we made it available to you.

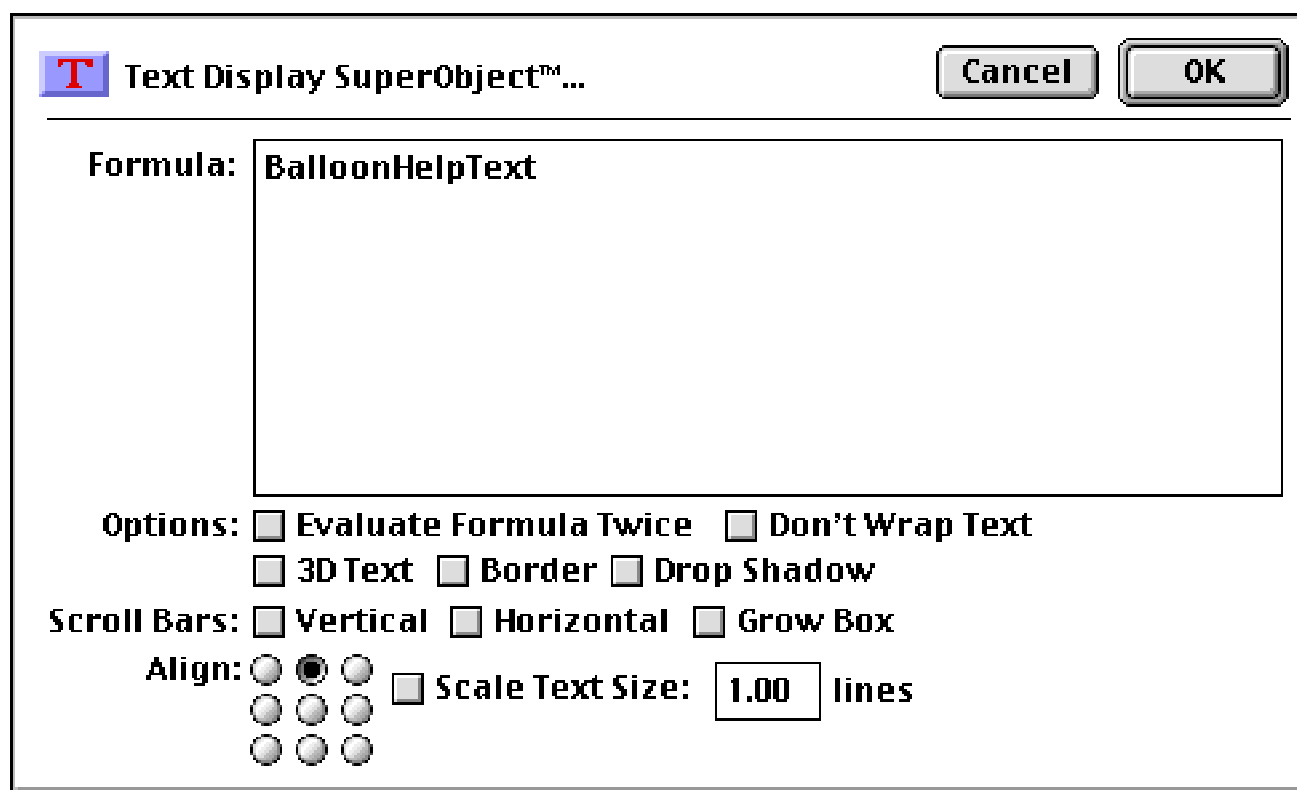
Changing the Cursor Shape Over Different Areas

Many applications change the shape of the cursor as the mouse moves over different areas of a window. For example, it might change to a finger when over a button, to a crosshair when over a table, and to a pointer everywhere else. You can make the cursor change as the mouse moves over your Panorama forms by using Balloon Help objects. The Balloon Help dialog allows you to enter the resource ID of a cursor in the Cursor ID option. The cursor must be stored in a resource file that has been opened with the **openresource** statement.

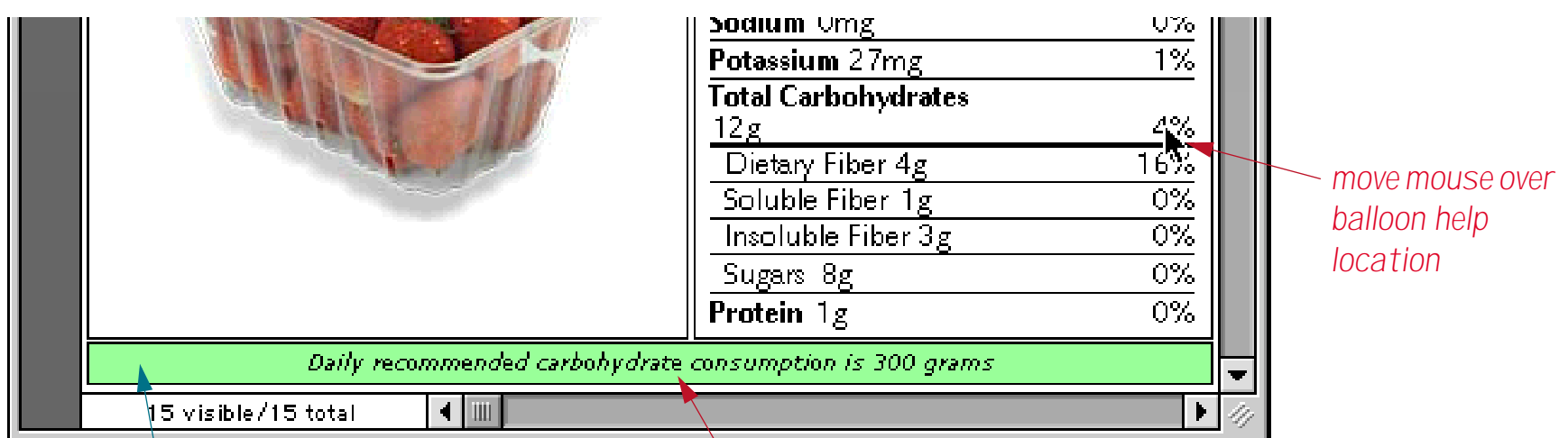
Displaying Balloon Help Text Directly on the Form

Balloon Help text can be displayed on the form itself using a special variable. When used this way the text is visible even if the **Show Balloons** option is not turned on. This option also allows the balloon help text to be displayed on PC systems (kind of like tool tips). Note: This option was added in the Panorama 4.0.2 release, and will not work with earlier versions.

To display balloon help text directly on a form first set up balloon help objects on various locations on the form (as described earlier in this chapter, see “[Creating Balloon Help Objects](#)” on page 986). Once the balloon help objects are set up you’ll need to set up a Text Display Objector Auto-Wrap Text Object that displays the variable **BalloonHelpText** (see “[Using Formulas to Display Text](#)” on page 621). You don’t need to create this variable yourself, Panorama will do it for you. Here is an example of how to set up a Text Display SuperObject to display the balloon help text.



There’s nothing more to it. To see the help text simply move the mouse over a location where you have set up balloon help.



Note: The green background in this example was created with a separate rectangle object

The help text will automatically update as you move the mouse over different locations in the form. The help text will appear whether or not the **Show Balloons** option is turned on, and will also appear when viewing the form on a Windows PC system.

Chapter 19: Charts



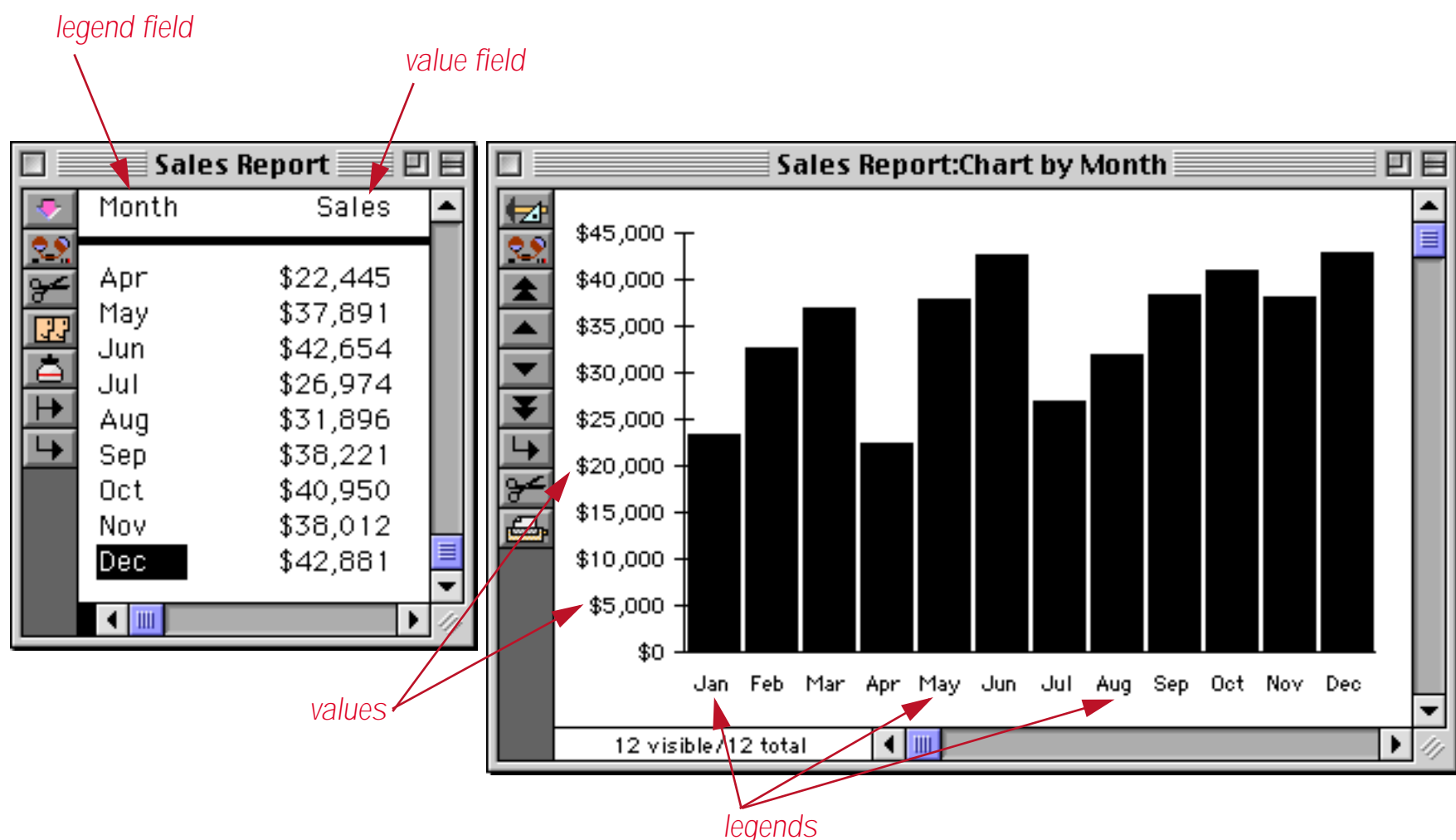
Many databases are filled with numbers. In this chapter you'll learn how to bring those numbers to life by turning them into charts and graphs. Panorama can draw five different kinds of charts—Bar, Line, Area, Pie, and Scatter.

Drawing a chart involves two steps—setting up the chart itself and preparing the database. You only have to set up the chart once, but you usually have to prepare the database each time you want to draw the chart. Fortunately, preparing the data is easy, and the entire process can be automated with a procedure to make it a real “no brainer.”

Chart Data

The job of a chart is to display numeric information graphically. Before Panorama can draw a chart it needs to know what numbers you want to draw, and what those numbers represent.

The illustration below shows a simple data sheet along with a form containing a bar chart. Each bar corresponds to a record in the database. The database has 12 visible records, so this chart has 12 bars.



Of course, most databases have hundreds or thousands or records—far too many records to chart directly like this. Before you can draw a chart of a database with hundreds or thousands of records, you must create a summary of the database. The chart will display the summary instead of the entire database. See “[Preparing the Database for Drawing a Chart](#)” on page 1006 later in this chapter.

Each bar has a legend that tells what the bar represents. The chart grabs the legend from a field in the database—the legend field. In the illustration above the legends come from the **Month** field. The legend is usually drawn across the X (horizontal) axis of the chart.

The height of each bar shows its value. The chart grabs the value from a field in the database—the value field. Any numeric field can be used as a value field. In the illustration above the values come from the **Sales** field. The values are usually drawn along the Y (vertical) axis of the chart.

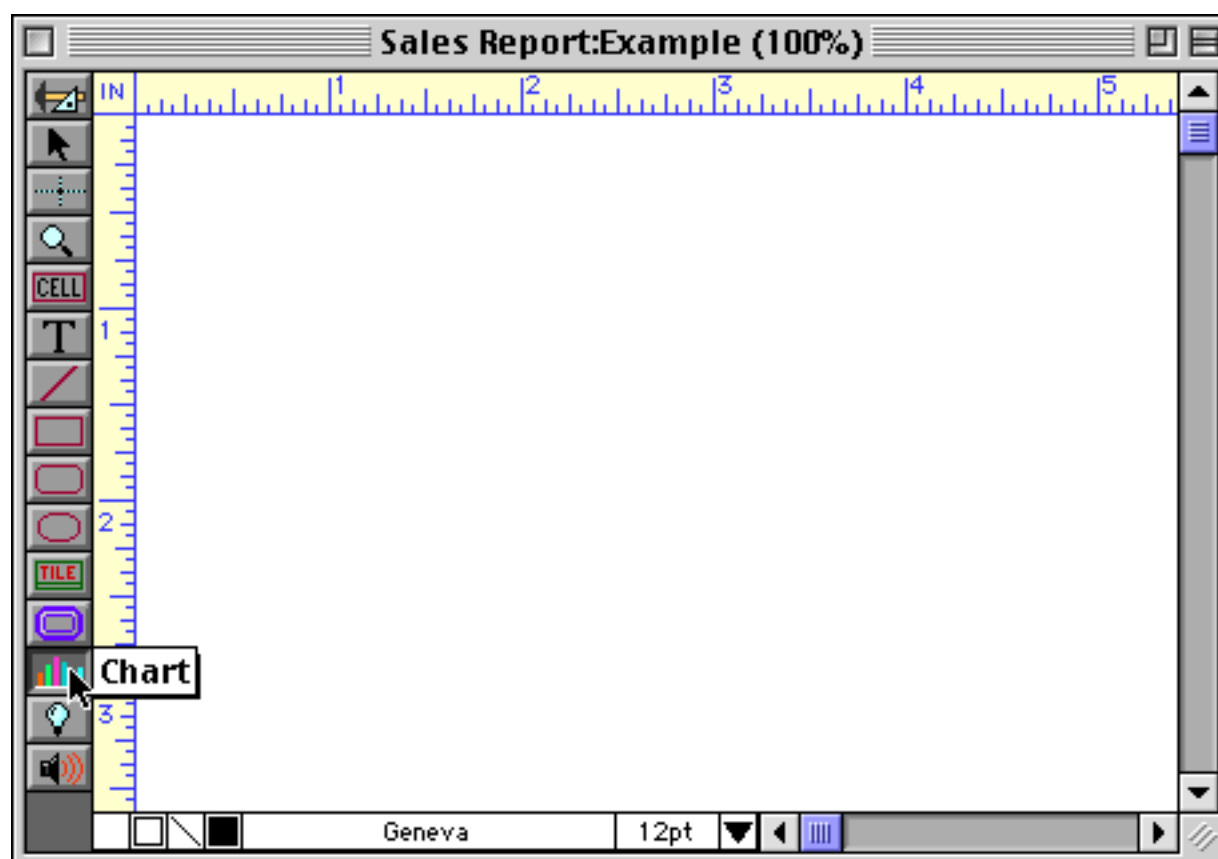
The chart doesn’t just use any random field for the legend and value—you must specify these fields using pop-up menus. You’ll learn how to do that later in this chapter.

Tip: Remember that each legend and value comes from a separate record. When you set up your database, make sure that the data to be charted is in separate records—not spread across a single record.

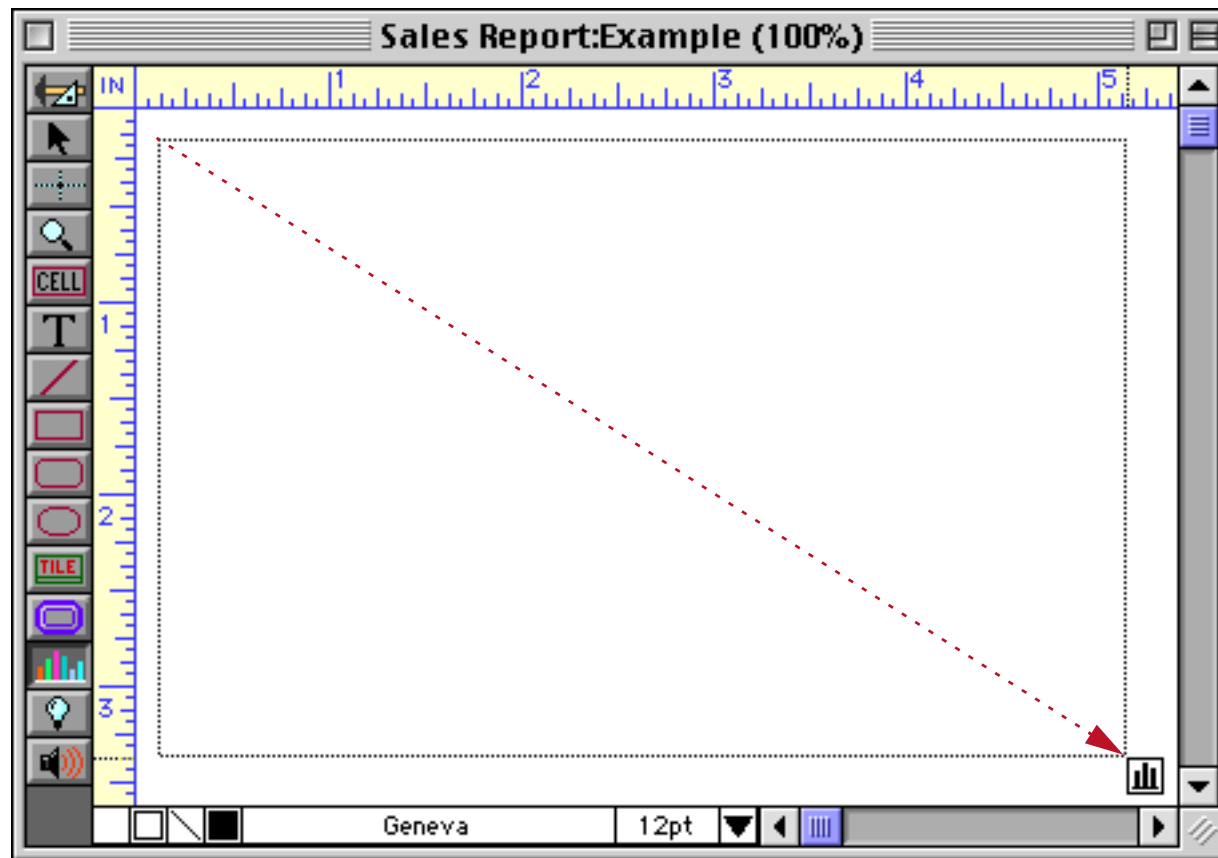
Creating a New Chart

Charts are graphic objects that are set up and manipulated with the same graphic editing tools you use to create forms and reports (see “[Graphic Design](#)” on page 491). Be sure the form is in graphic design mode before you try to create a chart.

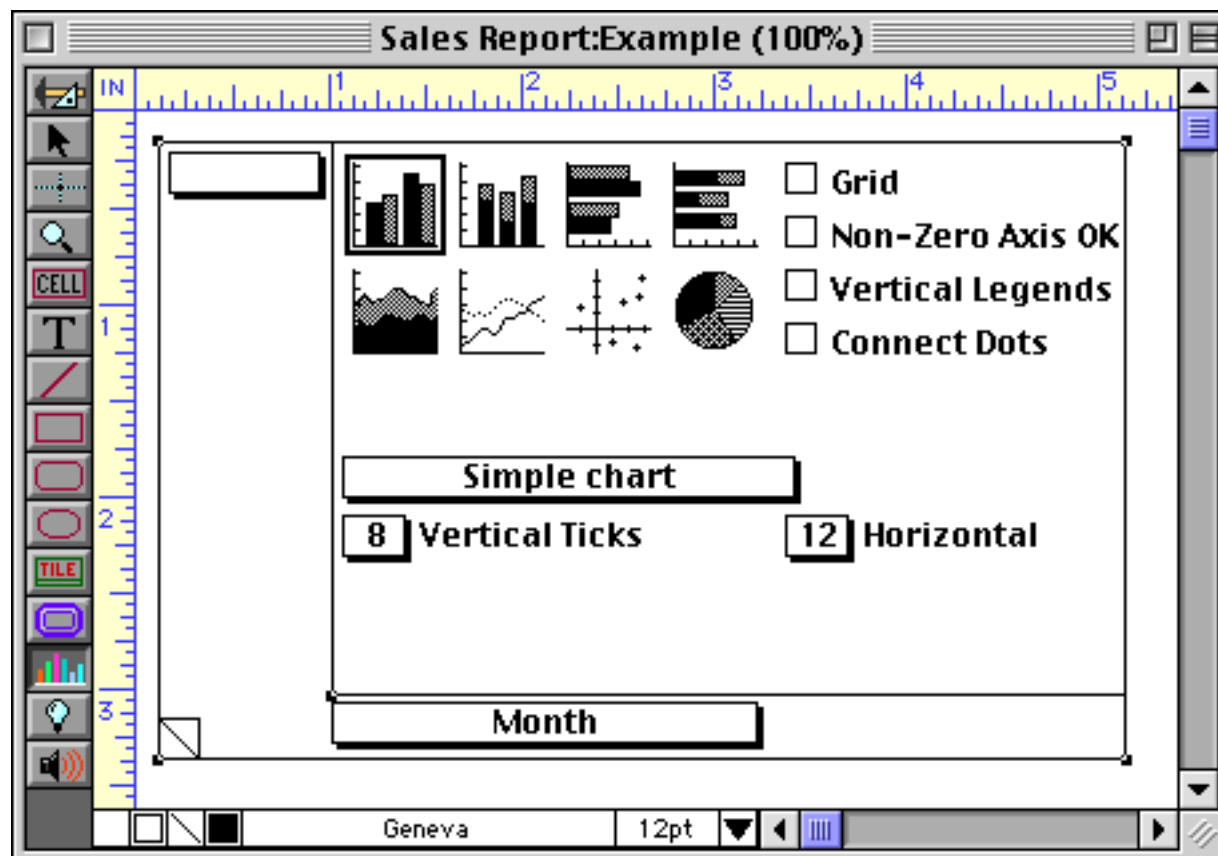
To create a chart, start by selecting the **Chart** tool.



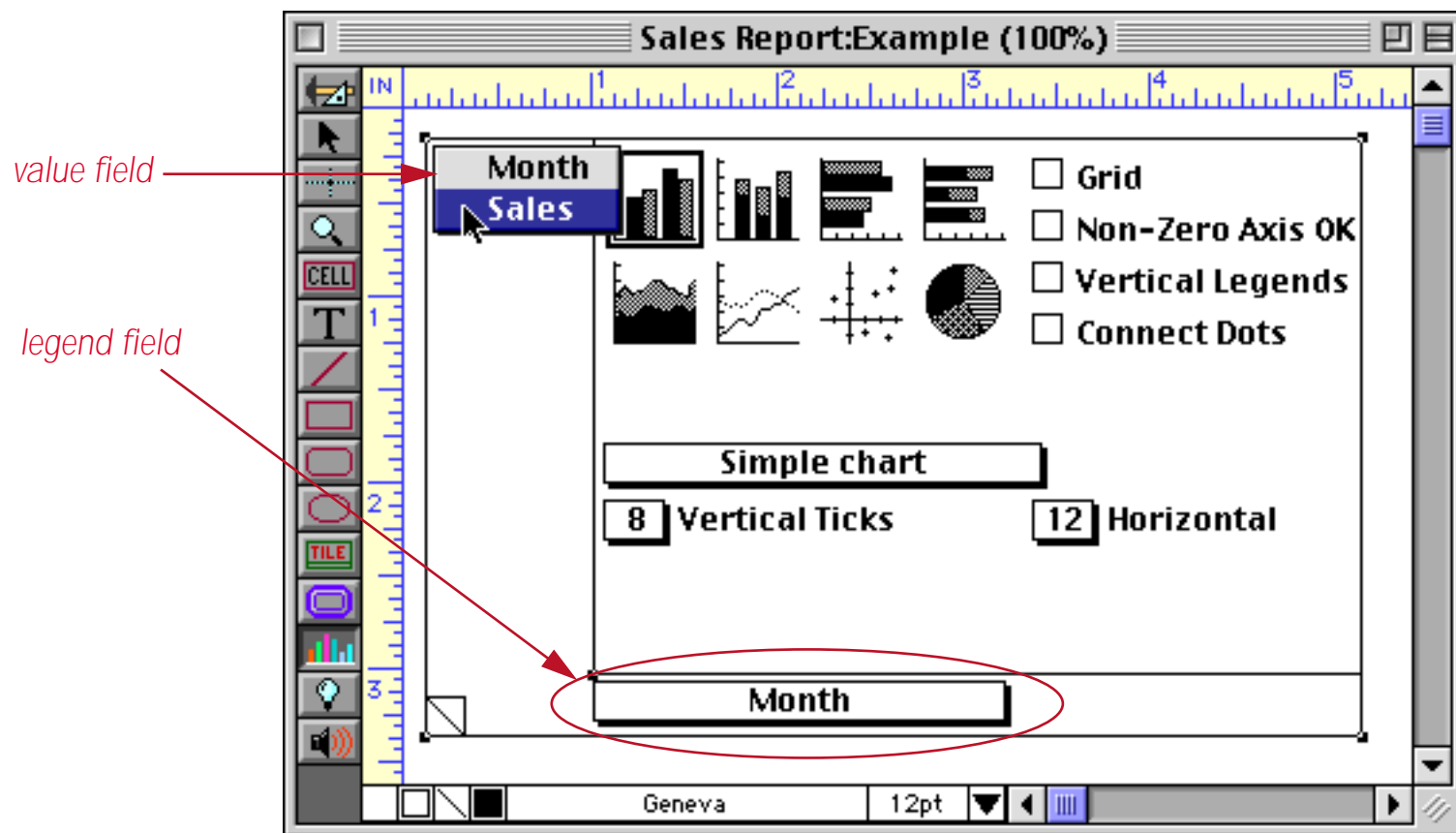
Next, drag the mouse across the form to define the corners of the chart.



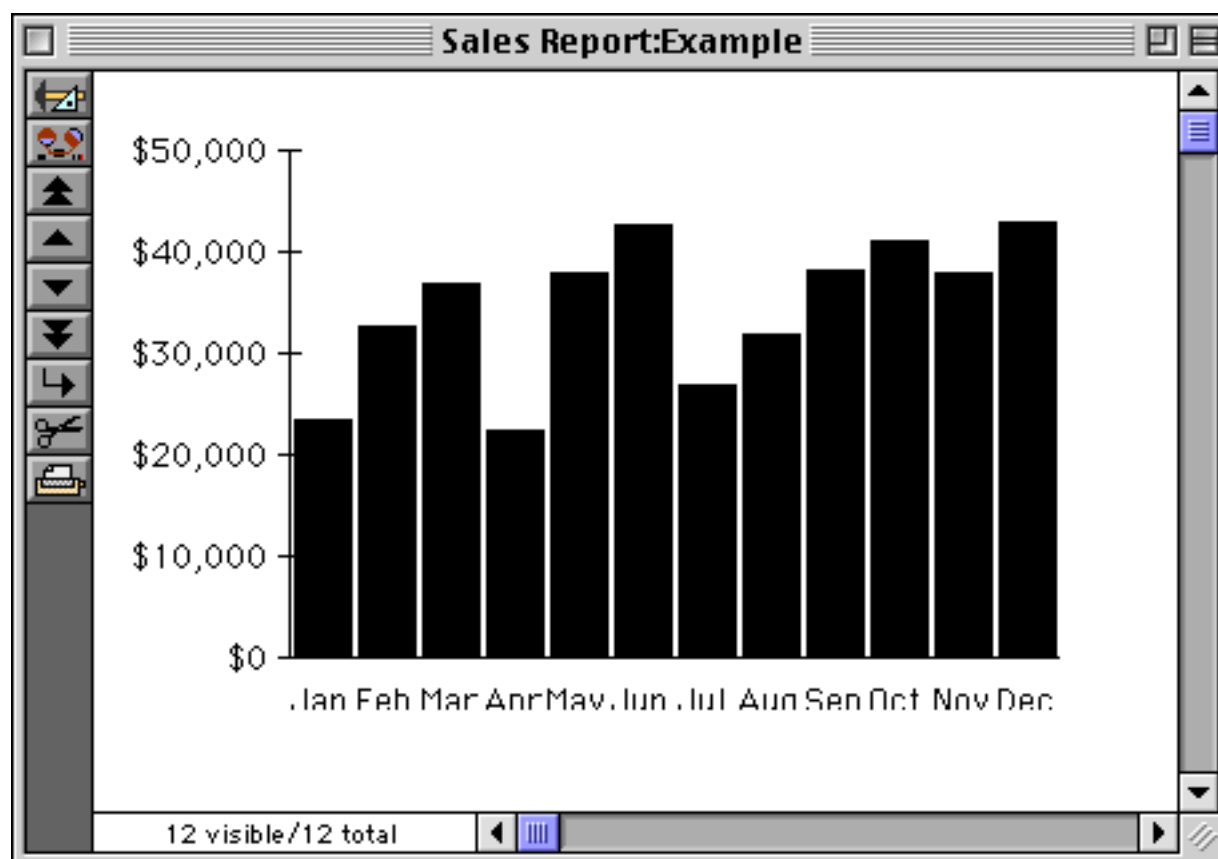
The new chart doesn't look much like a chart. In fact, it looks more like a dialog!



The buttons and pop-up menus in the dialog allow you to configure the chart. At a minimum, you must select a legend field and at least one value field. In this case the legend field is already set to **Month**. Use the pop-up menu to set the value field to **Sales**.

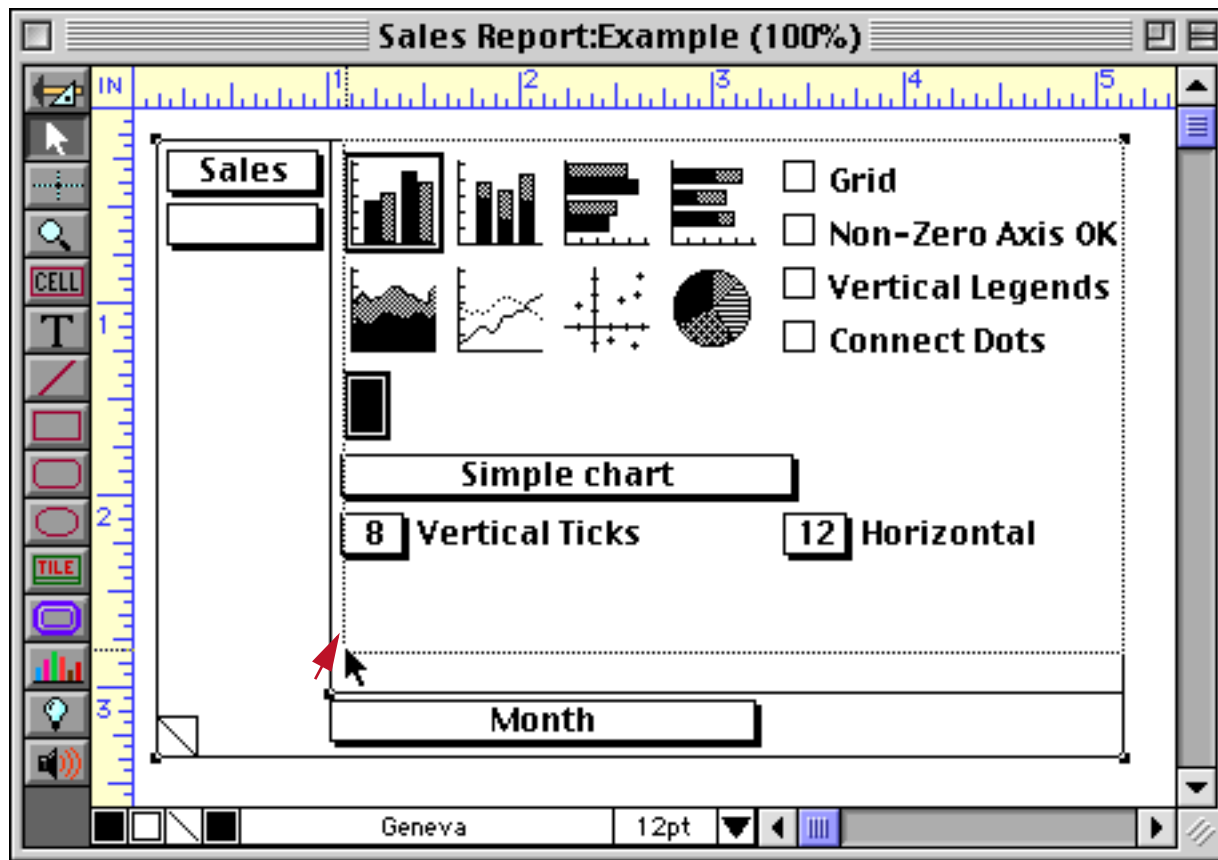


When you switch to Data Access Mode, the chart options disappear and Panorama draws the actual chart based on the information in the legend and value fields.

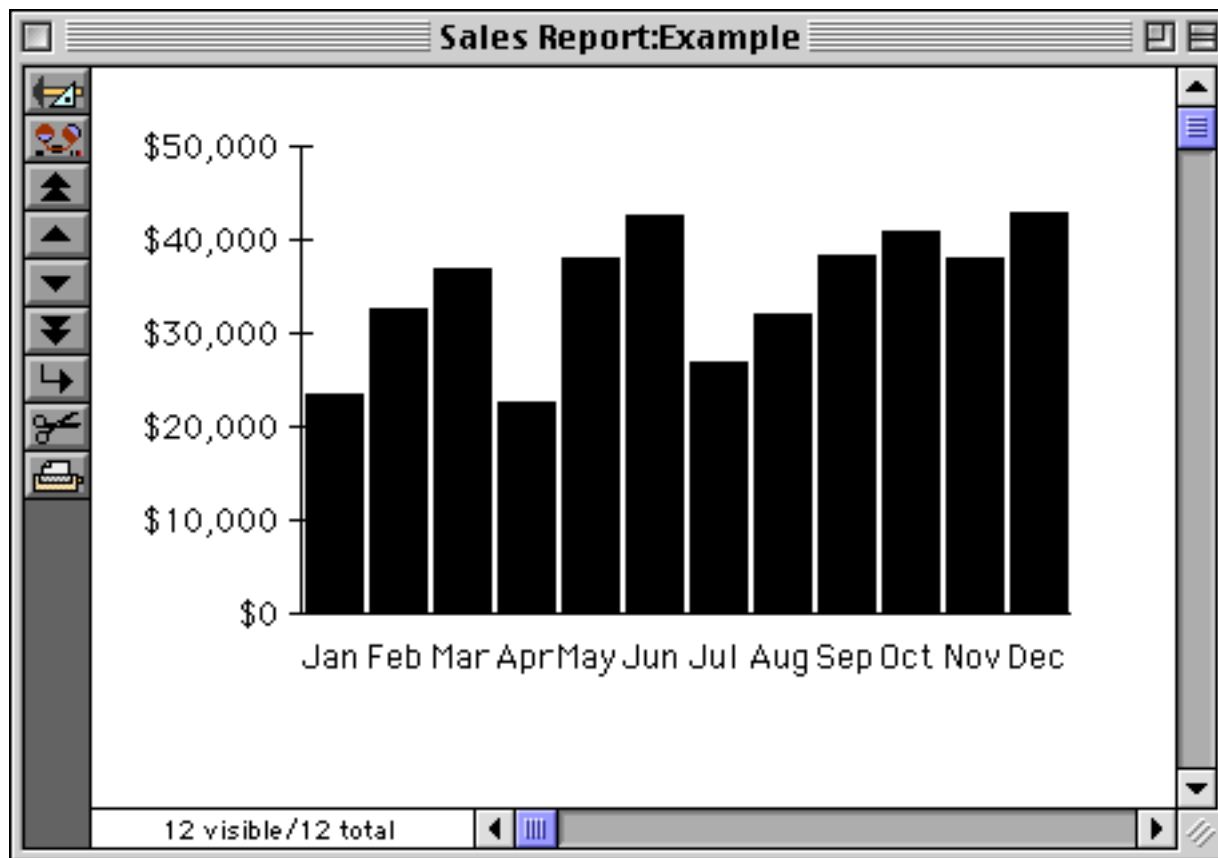


You can move the chart by dragging it, or change the size by dragging one of the handles on the corners (just like any other graphic object). When you drag the chart, be sure you press on one of the empty areas within the chart, not on a button.

In addition to the four handles on the corners, charts have an extra handle at the intersection of the X and Y axes. You can drag this handle to change the position of the X and Y axis within the chart. In this illustration the extra handle is being dragged upward to leave more room for the legends.

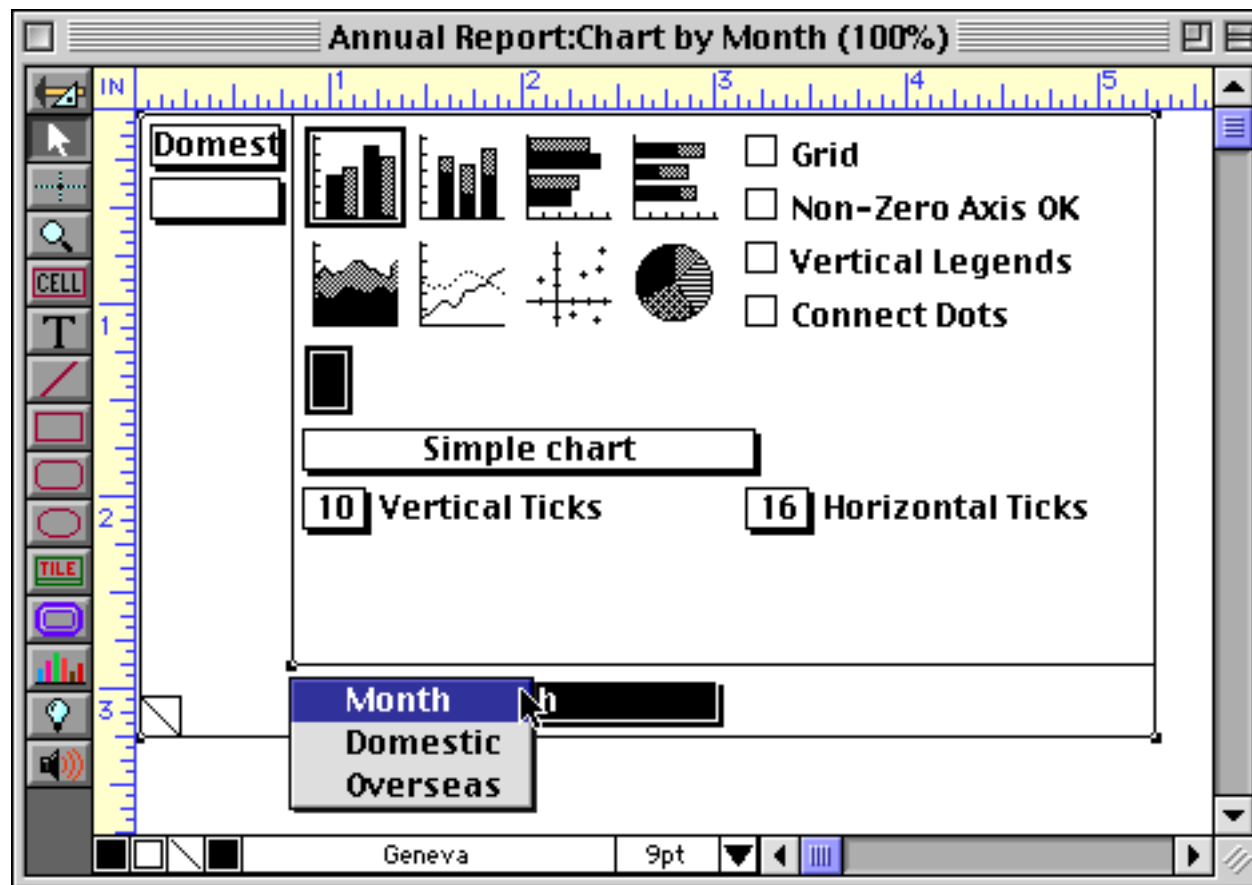


Switching back to Data Access Mode shows that there is now enough room to display the legends without cropping.



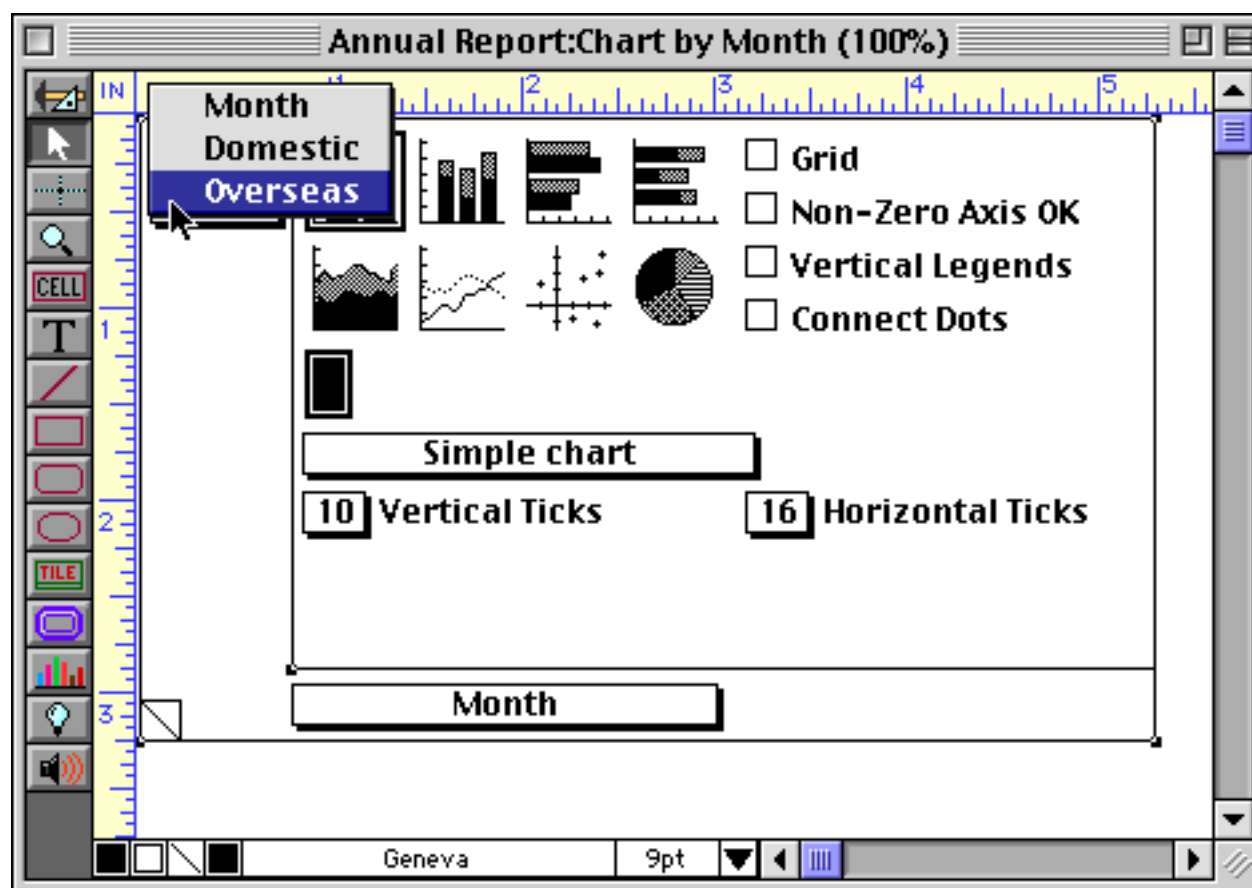
Setting Up Legend and Value Fields

To set the legend field, use the pop-up menu at the bottom of the chart object.



If the chart is being designed to display summary records, the legend field is usually the field that was used to group the database (see “[STEP 1 - GROUP](#)” on page 394). Each chart has one (and only one) legend field.

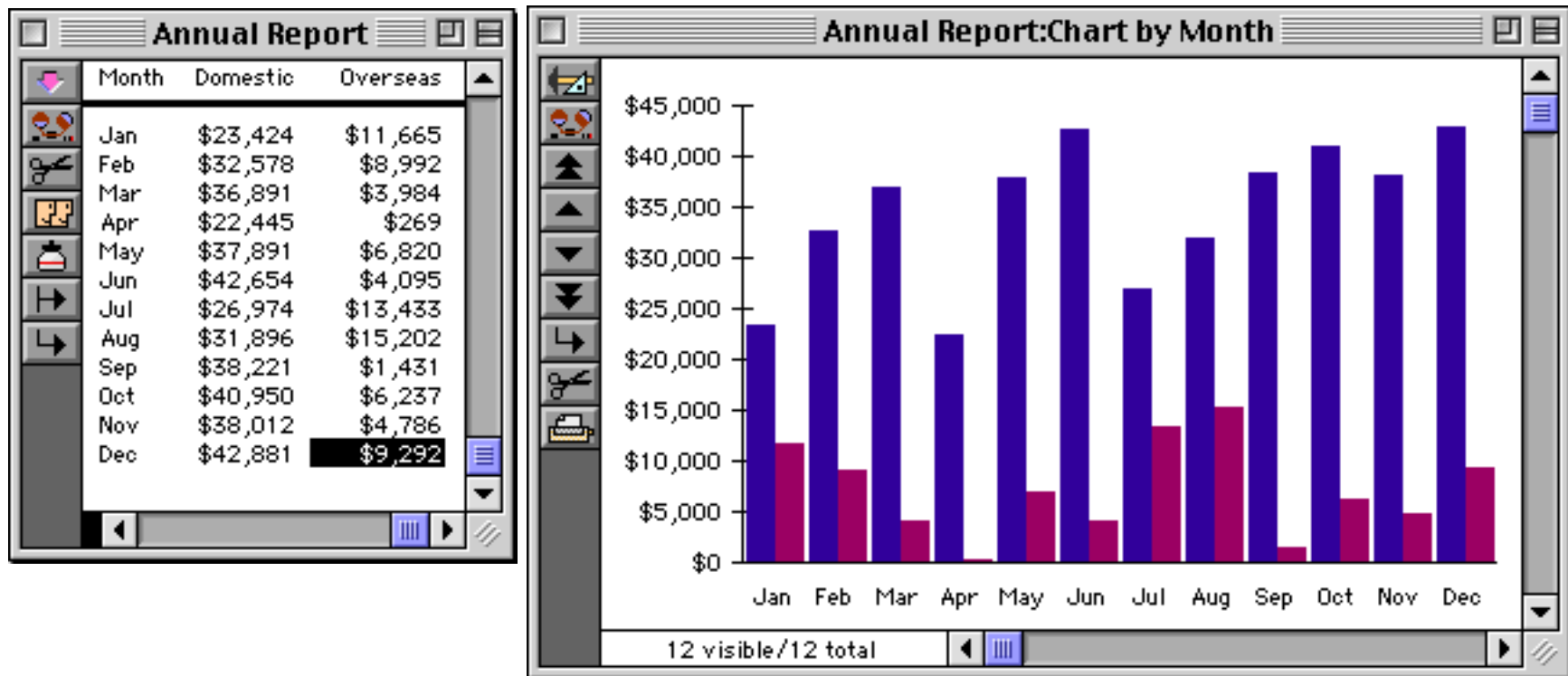
To set the value field, use the pop-up menu in the upper left corner of the chart object.



Keep in mind that the value field must contain numeric data (see “[Numeric Data](#)” on page 249).

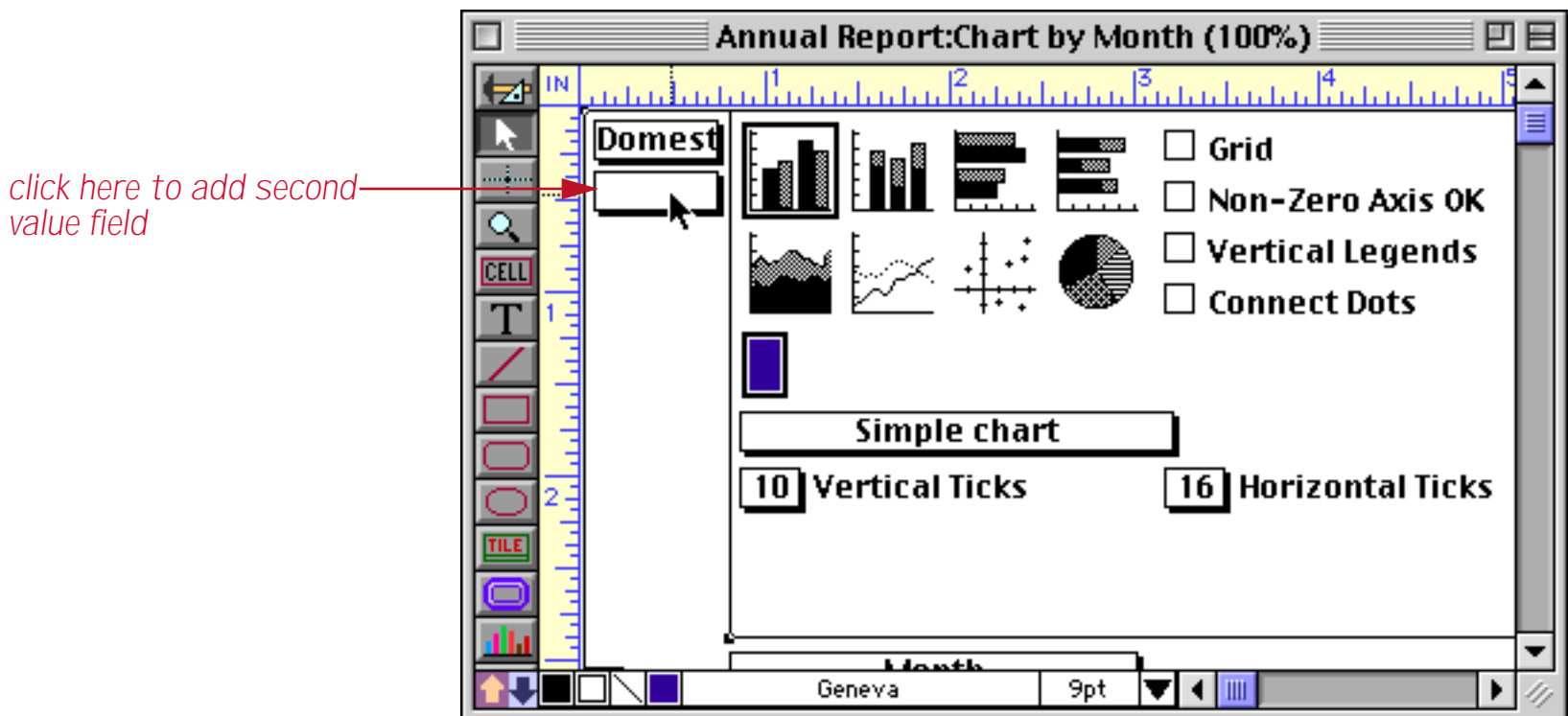
Setting Up Additional Value Fields

The simple bar chart shown on the previous pages displays one value per record. More complex charts can display several values per record by adding additional bars or lines.



A chart can display up to 10 values per record. To differentiate between the values, each value field can be given its own color and pattern.

After you specify the first value field, a second pop-up menu appears below the first value field. To add another value field, use this pop-up menu.



You can add up to 10 value fields to a chart.

To remove a value field, choose **Remove Field** from the value field pop-up menu. However, you cannot remove the first value field.

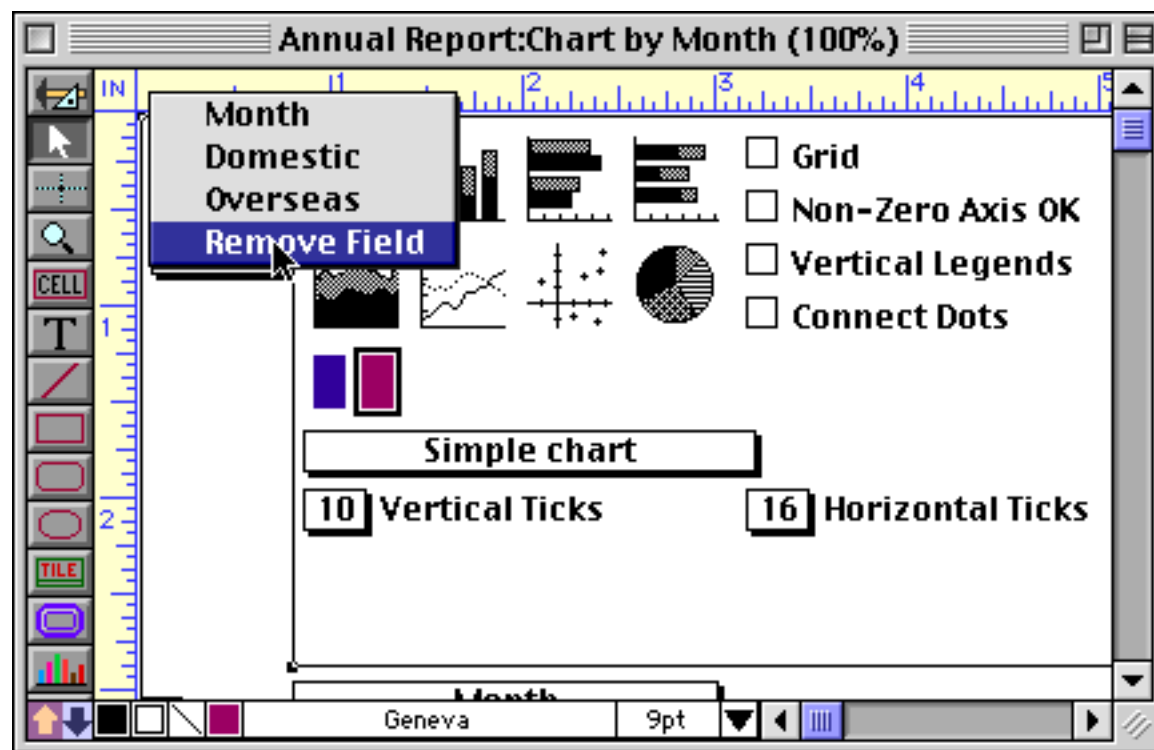
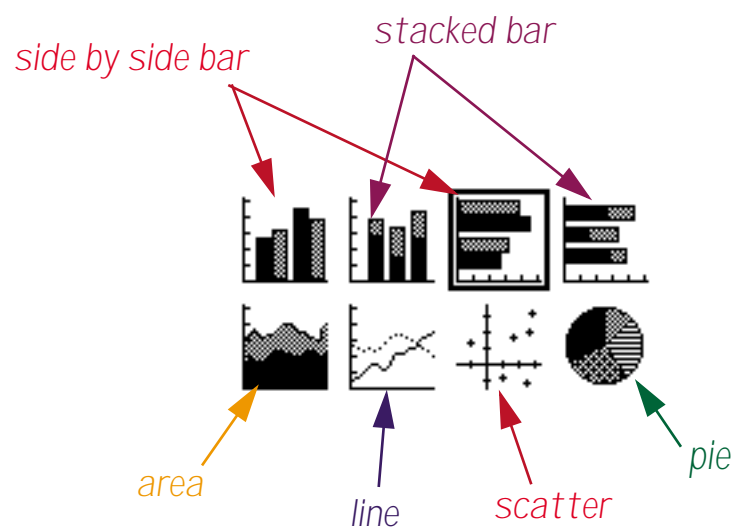


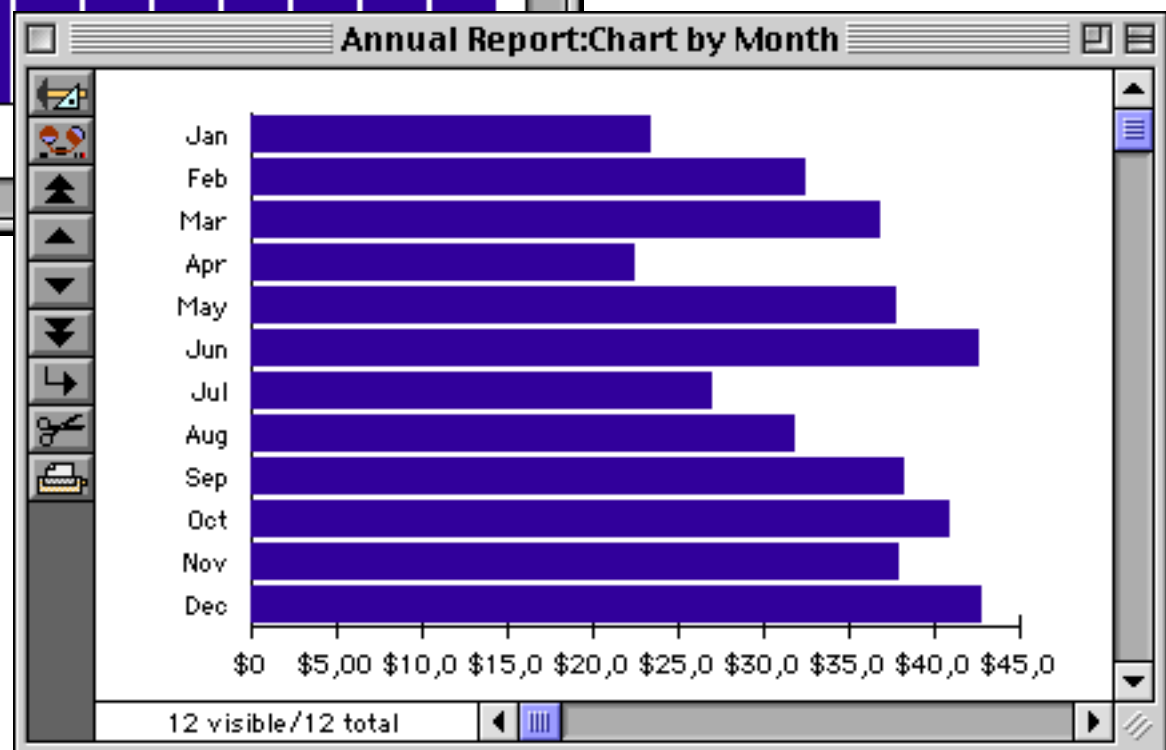
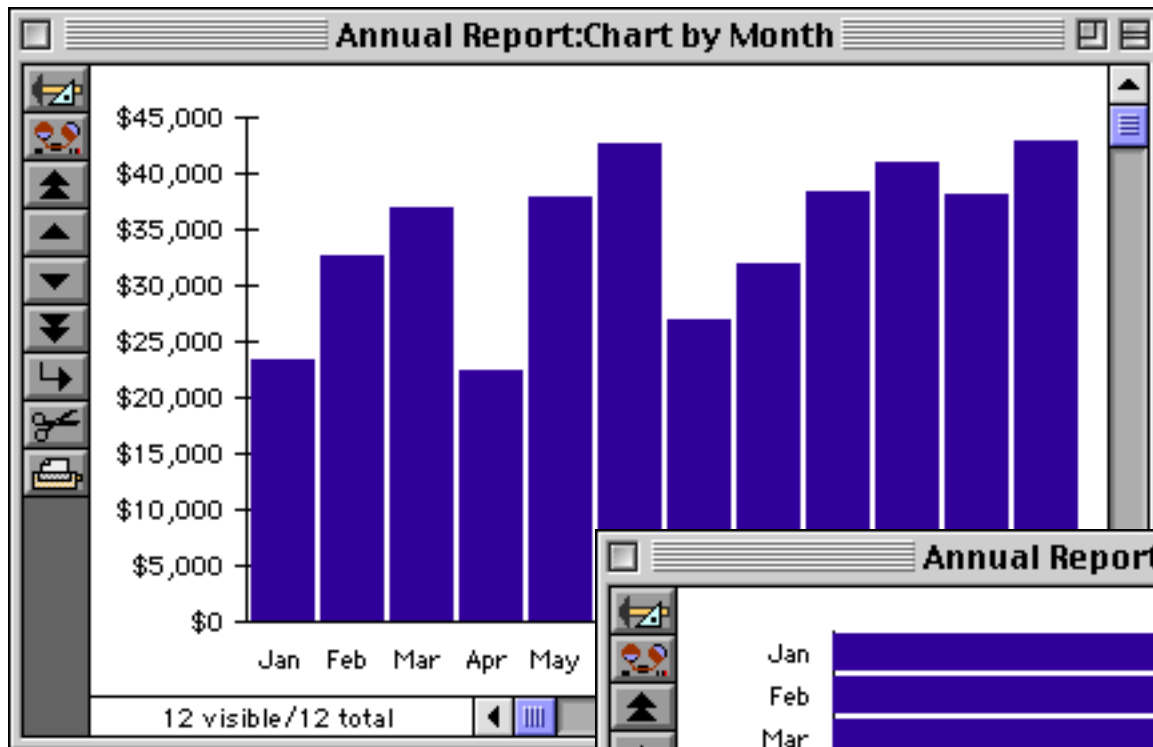
Chart Types

The chart dialog has eight icons representing the kinds of charts Panorama can draw, including bar charts, line charts, area charts, pie charts, and scatter diagrams. The following section contains a brief description of each type of chart. Select the chart type by clicking on the appropriate icon. A box will appear around your selection.



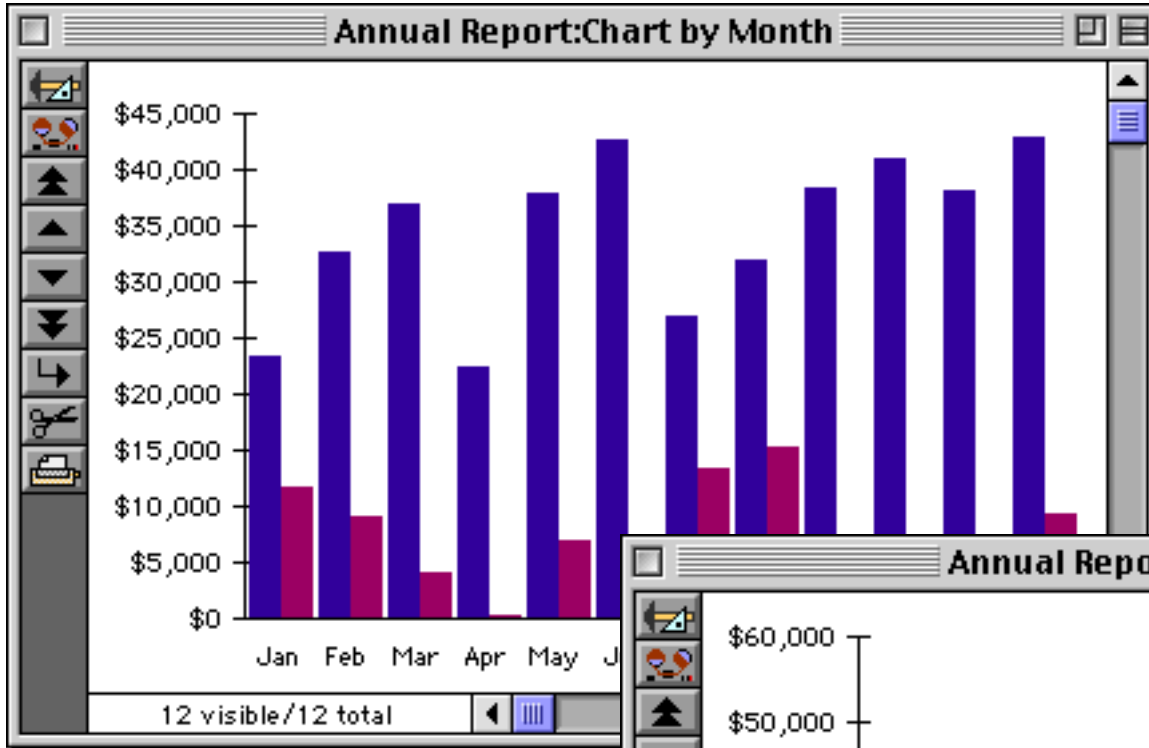
Bar Charts

Bar charts are probably the most common type of chart. Panorama can draw bar charts with either vertical or horizontal bars. Horizontal bars are especially useful when you have lots of data or long legends.

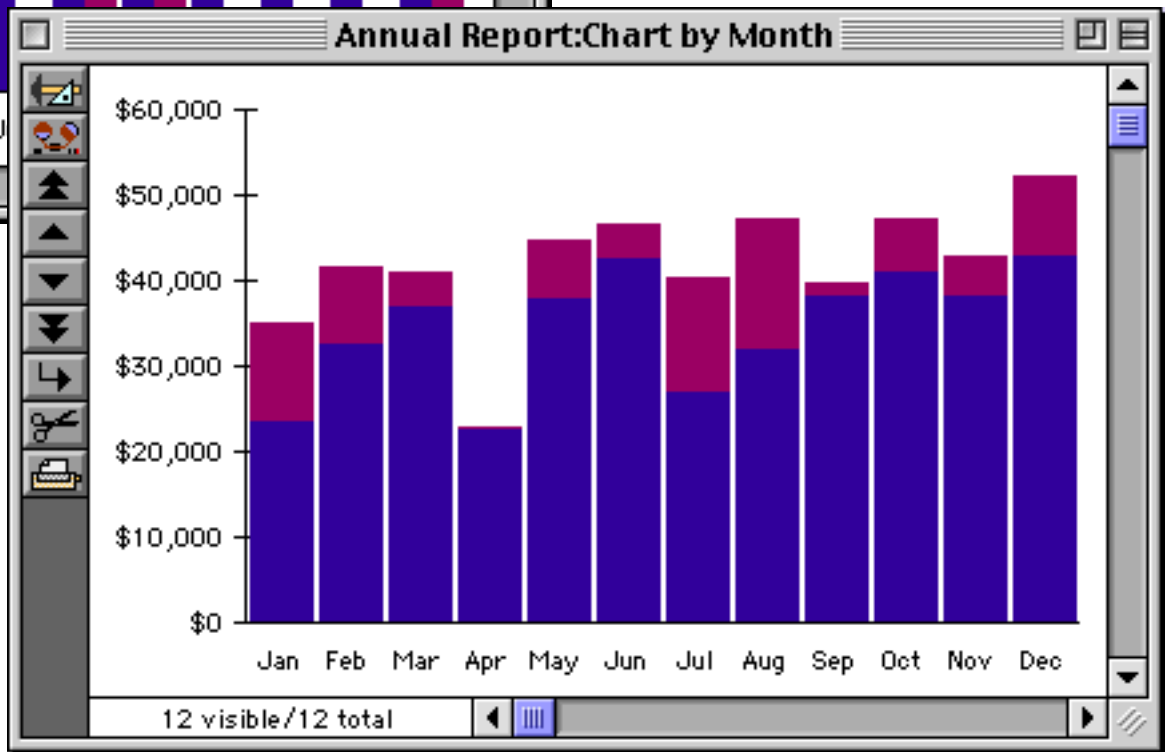


If the chart has multiple value fields, the bars can appear either side-by-side or stacked. If the values are side-by-side, they are displayed from left to right. If the values are stacked, they are displayed from bottom to top.

side by side

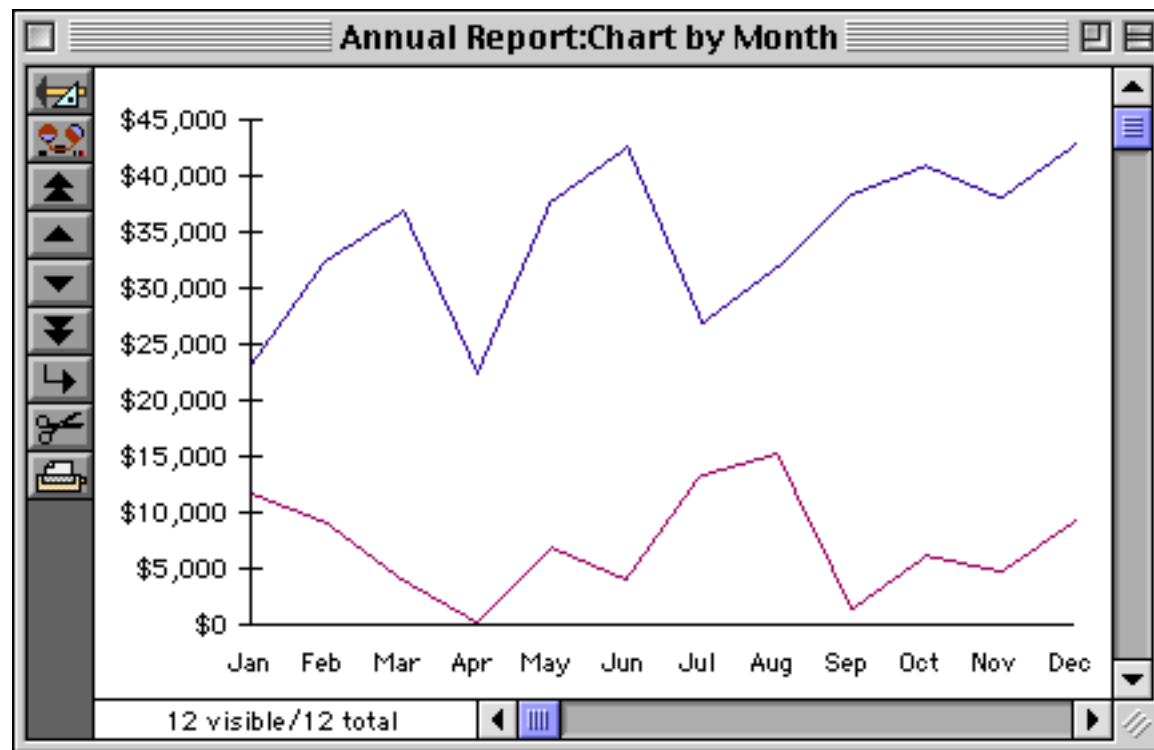


stacked



Line Charts

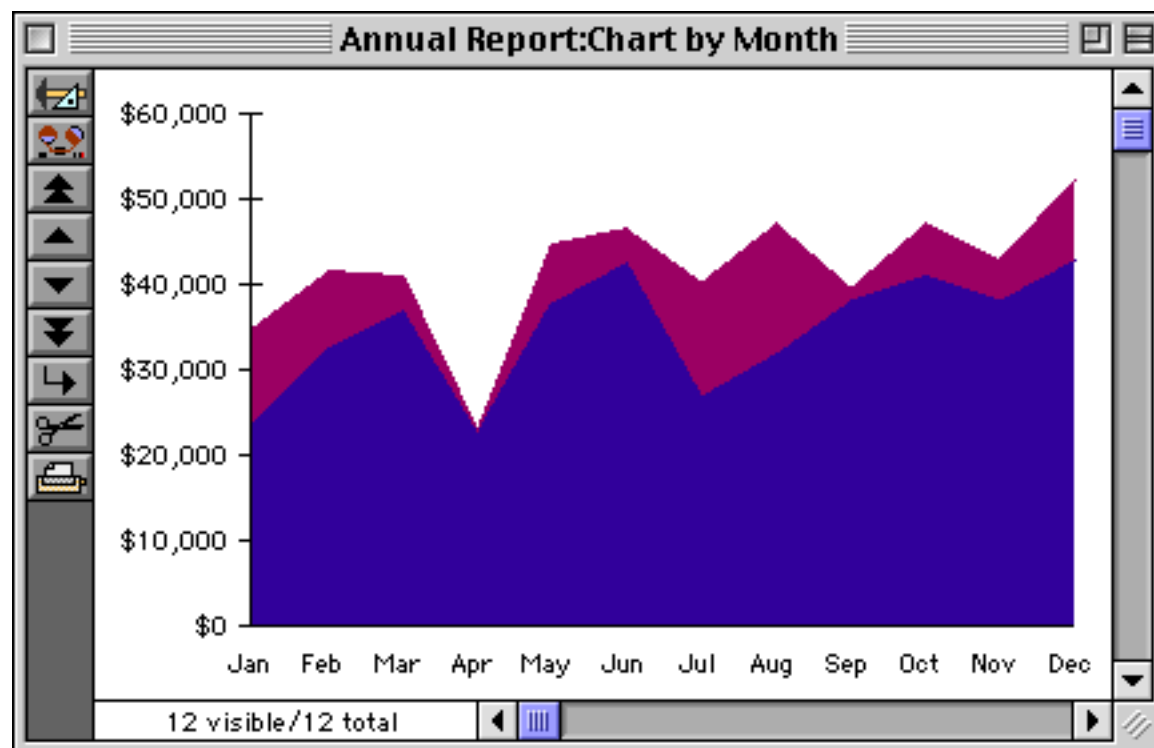
Line charts are also popular, especially when large amounts of data need to be displayed.



See "[Dressing Up Chart Appearance](#)" on page 1014 to learn how to control the pattern, width, and color of each line.

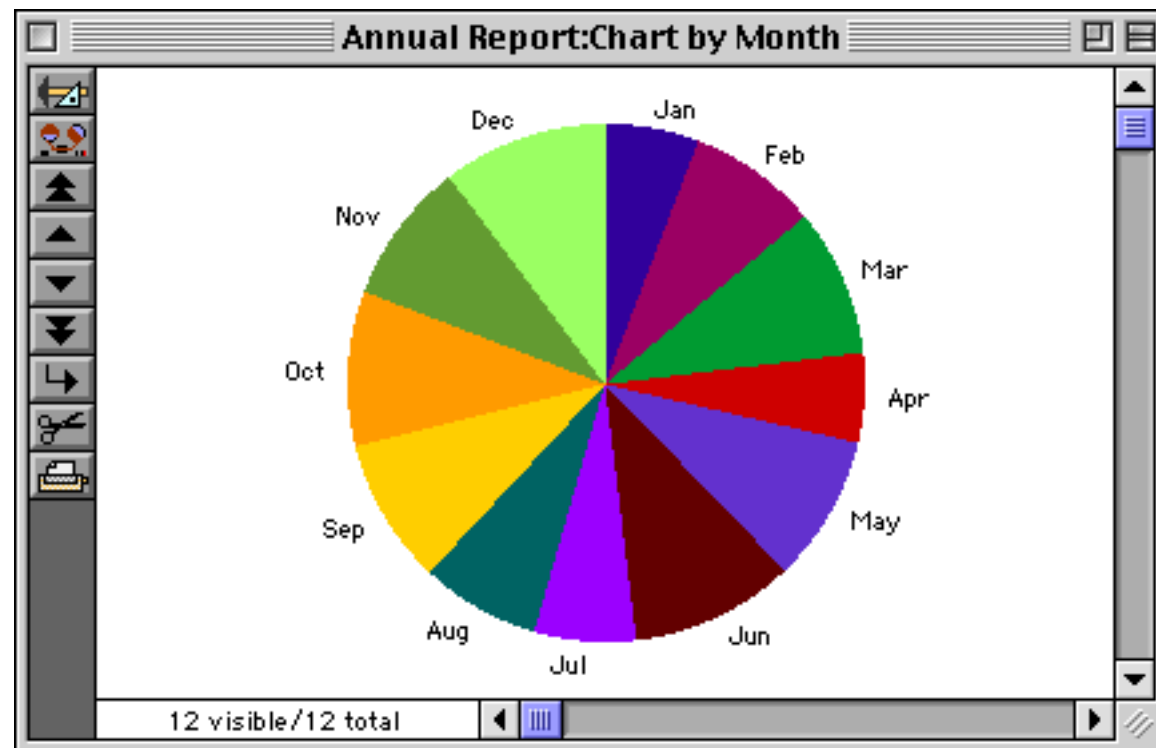
Area Charts

Area charts are very similar to line charts. The areas for each value are stacked on top of one another.

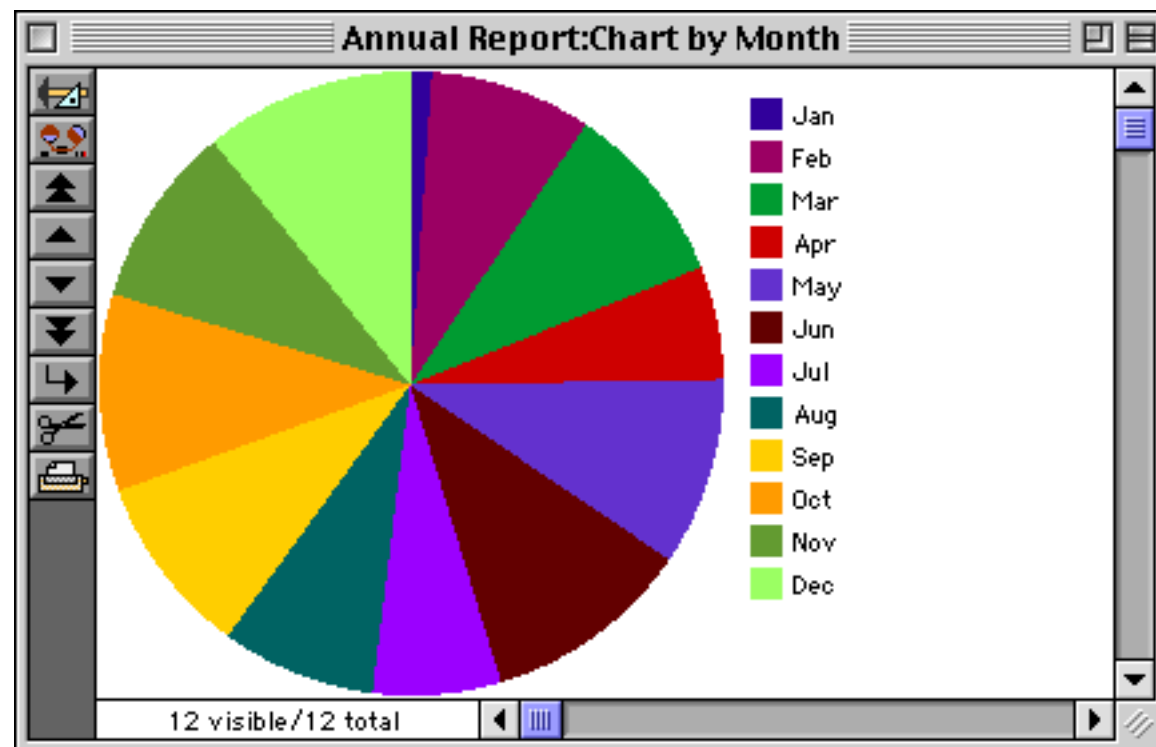


Pie Charts

Pie charts display the data as slices of a pie. The size of each slice is proportional to size of each value in relation to the whole. If possible, Panorama will draw the legends around the pie.



If some of the slices are too thin, Panorama will draw a separate legend, either to the right or below the pie. The exact location of the legend depends on the shape of the chart object.

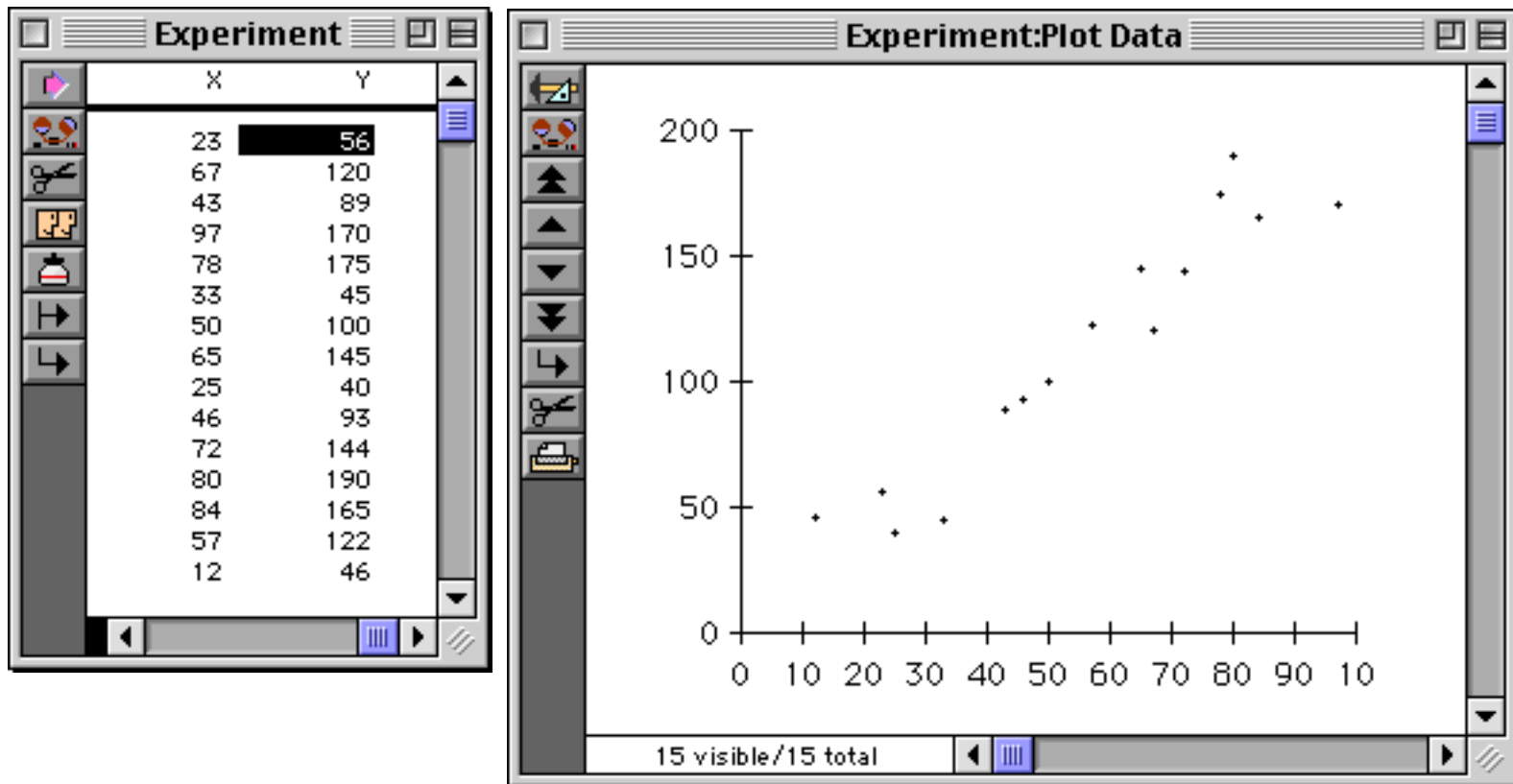


Pie charts should only be used for showing the relationships between a few values. Most graphic designers suggest that pie charts with more than seven slices should be avoided. Although Panorama can draw a pie chart with dozens of slices, a bar or line chart will probably convey the message more clearly.

A pie chart can only display a single value field. Any additional value fields will be removed from the chart when the pie chart icon is selected.

Scatter Diagrams

Scatter diagrams plot two numeric fields against each other. Each record contains a pair of numbers (Legend,Value) that Panorama uses as Cartesian (x,y) co-ordinates.

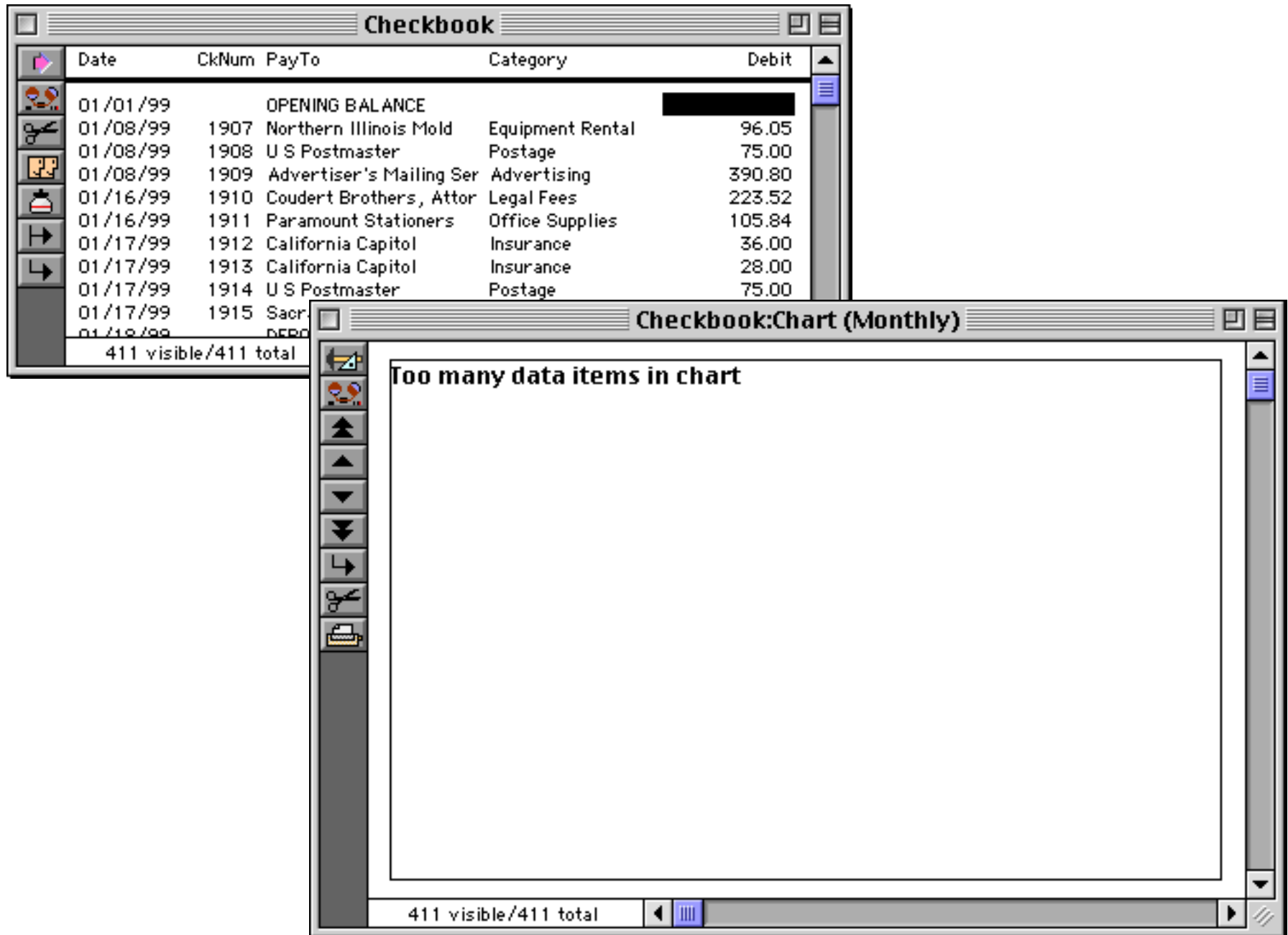


Each pair of values is normally plotted as a separate dot, but you can also connect the dots or change the dots into symbols or pictures (see "[Scatter Diagram Flash Art](#)" on page 1038 and "[Connect Dots](#)" on page 1042).

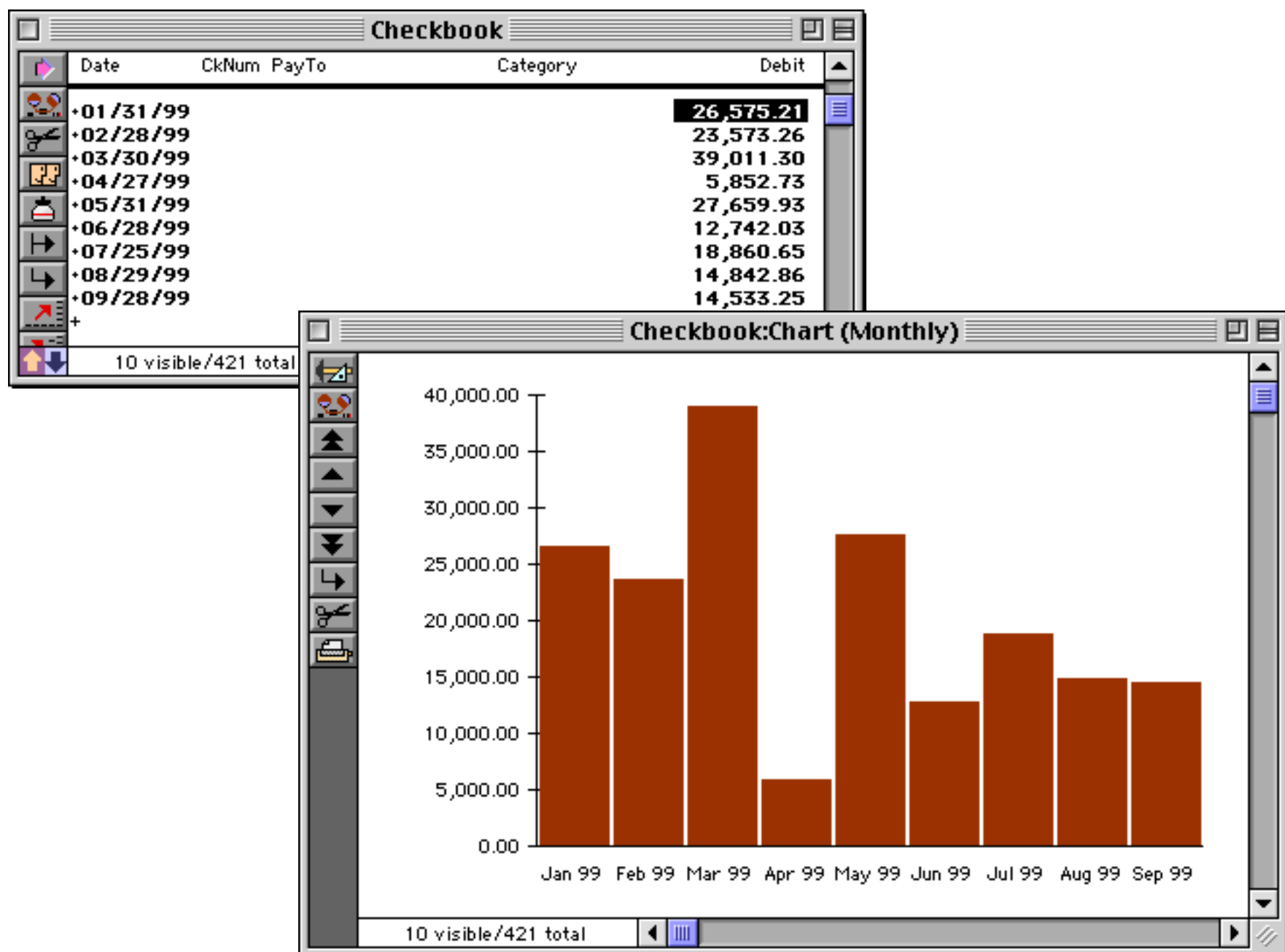
Unlike other charts, a scatter diagram requires that both the legend and the value fields contain numeric data.

Preparing the Database for Drawing a Chart

Most databases contain far too much raw data to chart directly, record for record. For example, this checkbook database has several hundred records. Panorama can't draw a chart with 411 bars, and even if it could, you wouldn't be able to make much sense out of it.

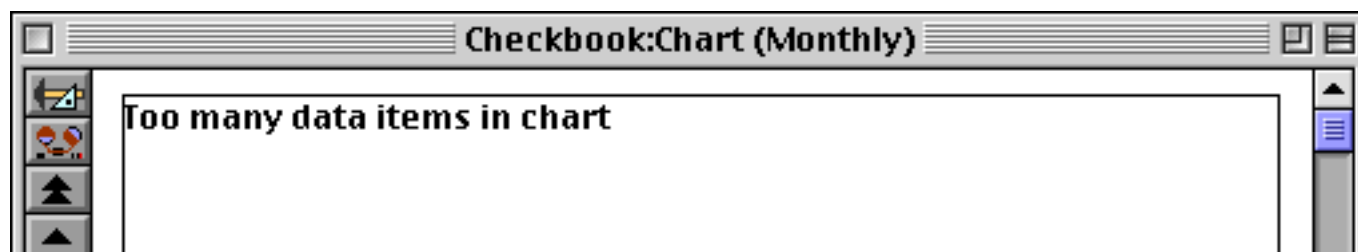


Before the chart can be drawn from this database the data must be reduced to a few summary records. To recap those techniques, first group (usually **Group Up**, see “[STEP 1 - GROUP](#)” on page 394), then calculate (**Total**, **Average**, etc., see “[STEP 2 - CALCULATE](#)” on page 398), then use **Outline Level** to collapse the database so only the summary records are visible (see “[STEP 3 - OUTLINE](#)” on page 406). The result is that hundreds or even thousands of data records are converted into a few summary records that can be charted easily like this. In this example the 411 data records have been summarized into nine monthly summary records. (The tenth summary record, the grand total, is not included in the chart).



A chart will only display data from a single summary level. Before it starts drawing a chart, Panorama checks the summary level of the first visible record in the database. It only charts information that is at the same summary level as that first record. This means that you do not have to remove the grand total from the bottom of the database—the chart will ignore it automatically. It also means that you must collapse the data in addition to grouping it. If you do not collapse the data with the **Outline Level** command (see “[STEP 3 - OUTLINE](#)” on page 406), the chart will try to display the raw data.

If you forget to group and collapse the database before opening the chart, Panorama will probably not be able to display any chart at all. Instead of drawing the chart, the chart will display the message **Too many data items in chart**.



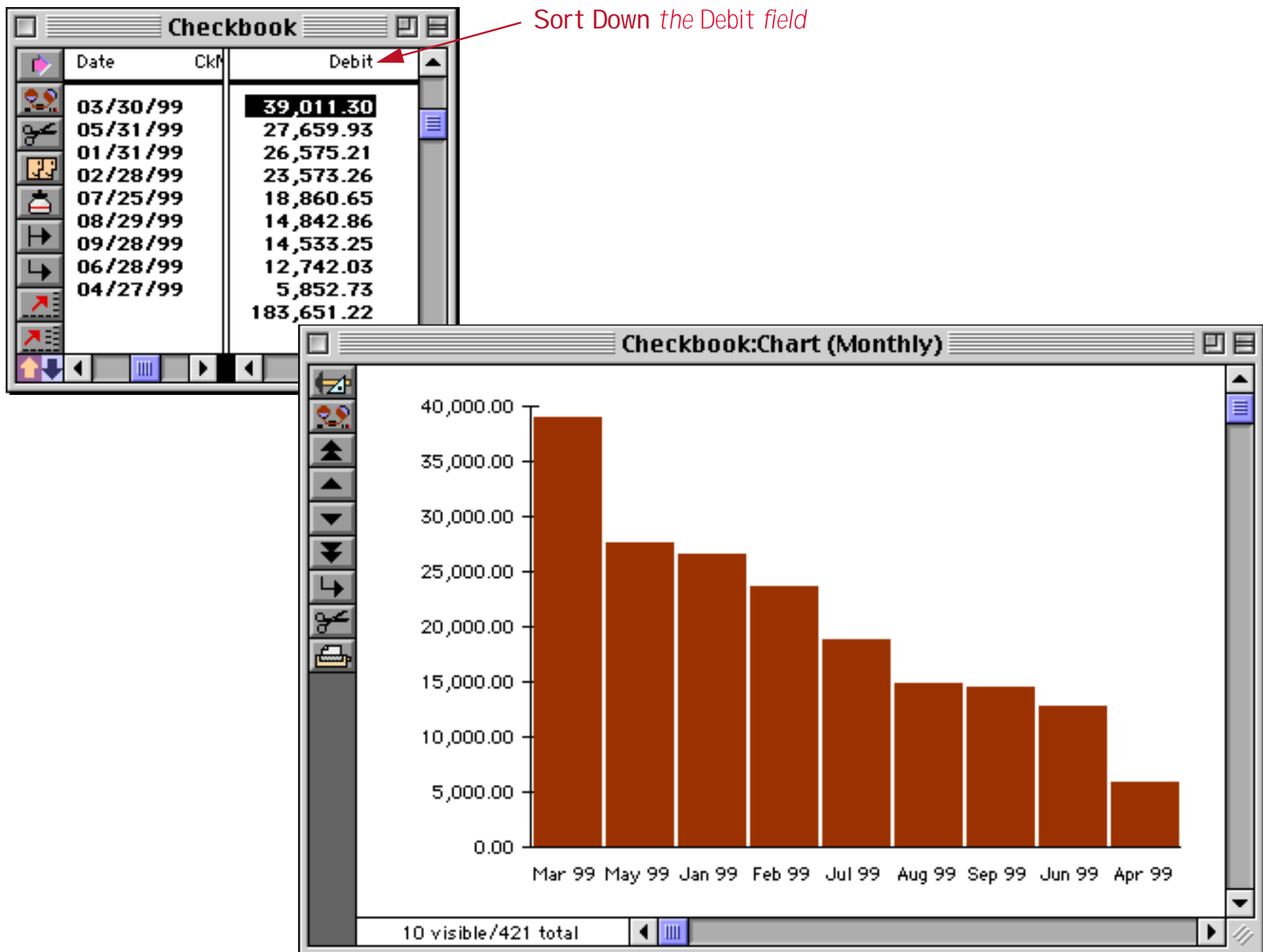
Don't panic—just go back and prepare the database. As soon as the database is collapsed, the chart will appear.

Tip: You can also reduce the scope of a chart with the **Find/Select** command (see "[The Find/Select Dialog](#)" on page 336). For example, you may only want to chart data in the current year, or transactions on the west coast. You should perform selections like these before you group the database.

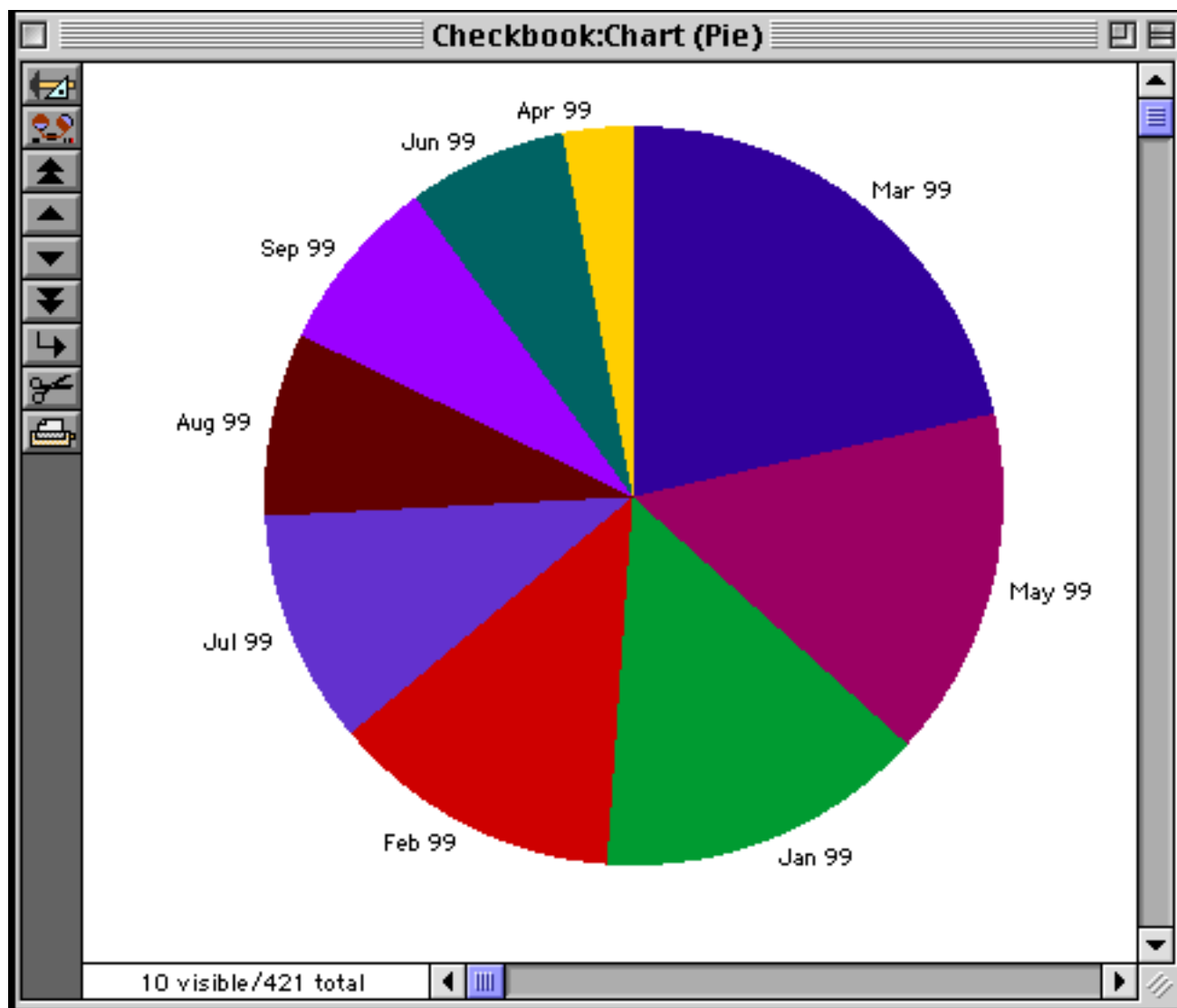
You may want to create a procedure that automatically groups, calculates, collapses, and then opens the form window containing the chart. For information about creating procedures see "[Procedures](#)" on page 204 of *Formulas & Programming*.

Ranking (Sorting) the Chart Values

Sometimes you may want a chart to display the values in order from smallest to largest, or largest to smallest. To display a chart this way, sort the database by value after it has been collapsed (see "[Ranking Summaries](#)" on page 383). Click on the value field you want to sort by and choose **Sort Up** to display values from smallest to largest, or **Sort Down** to display values from largest to smallest. Here is a chart that shows the result of **Sort Down** on the value column. The months are no longer in chronological order, but in order of spending per month from highest to lowest.



Pie charts are often displayed with the largest pie first (at 12 o'clock), then each smaller pie in order. Use **Sort Down** to sort the collapsed database in this order.



Charts with “Other”

Often you’ll want to display a chart with all the small values lumped together under the legend **Other**. The best way to do this is with a procedure. Here is an example procedure that creates totals for the top three checkbook categories, with all other categories lumped together into an **Other** category.

```

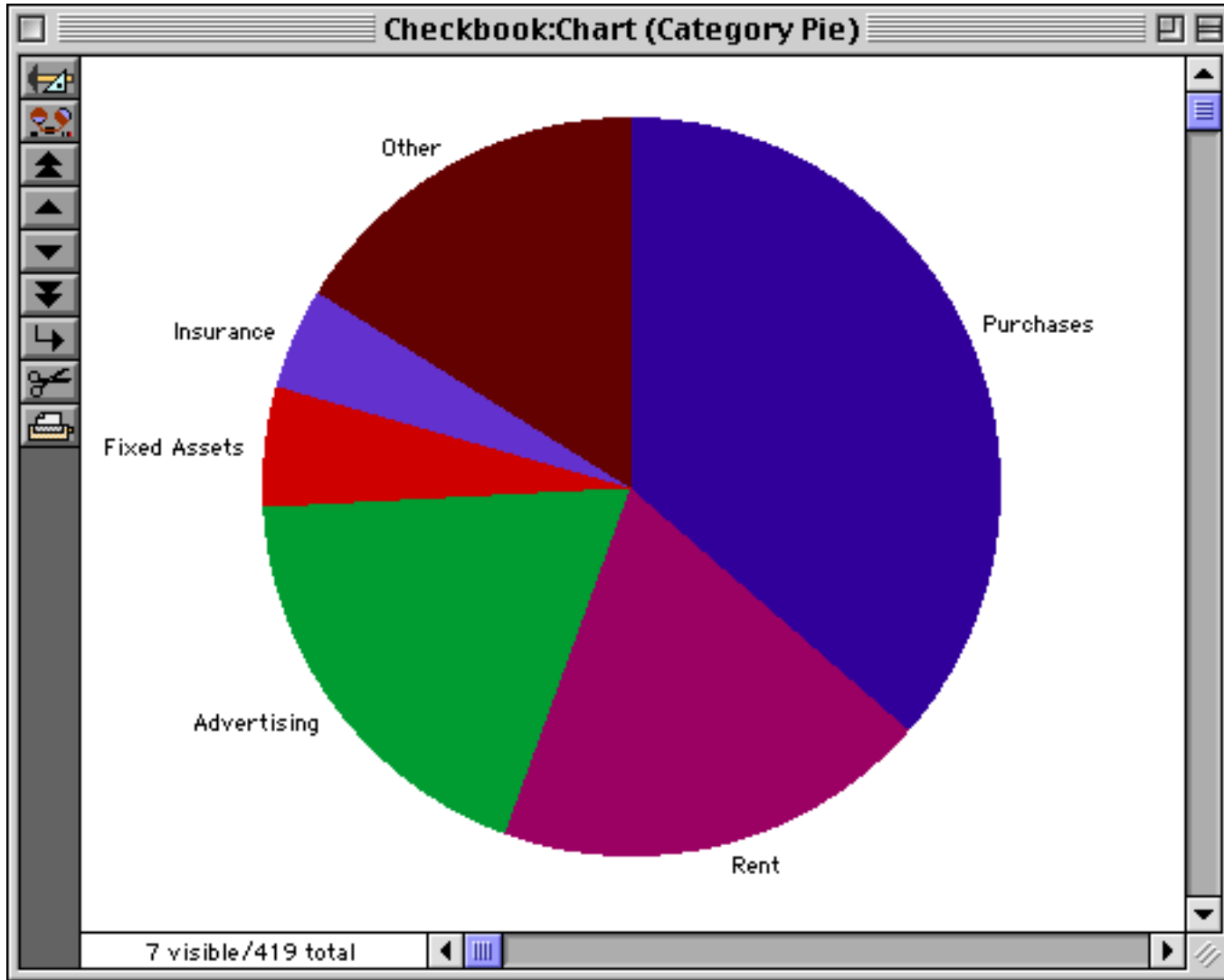
local LegendField,ValueField,TopCategories
LegendField="Category"
ValueField="Debit"
TopCategories=5
removesummaries 7
field (LegendField)
groupup
field (ValueField)
total
outlinelevel 1
sortdown
field (LegendField)
loop
  downrecord
until TopCategories
loop
  downrecord
  stoploopif info("summary")>1
  uprecord
  deleterecord
while forever
  uprecord
  set (LegendField),"Other"
  field Debit
  total

```

Running this procedure will produce summaries that look like this —

Category	Debit
+Purchases	66,217.17
+Rent	35,026.34
+Advertising	34,516.82
+Fixed Assets	9,774.47
+Insurance	8,234.53
+Other	29,881.89
+	183,651.22

which can be easily charted like this!

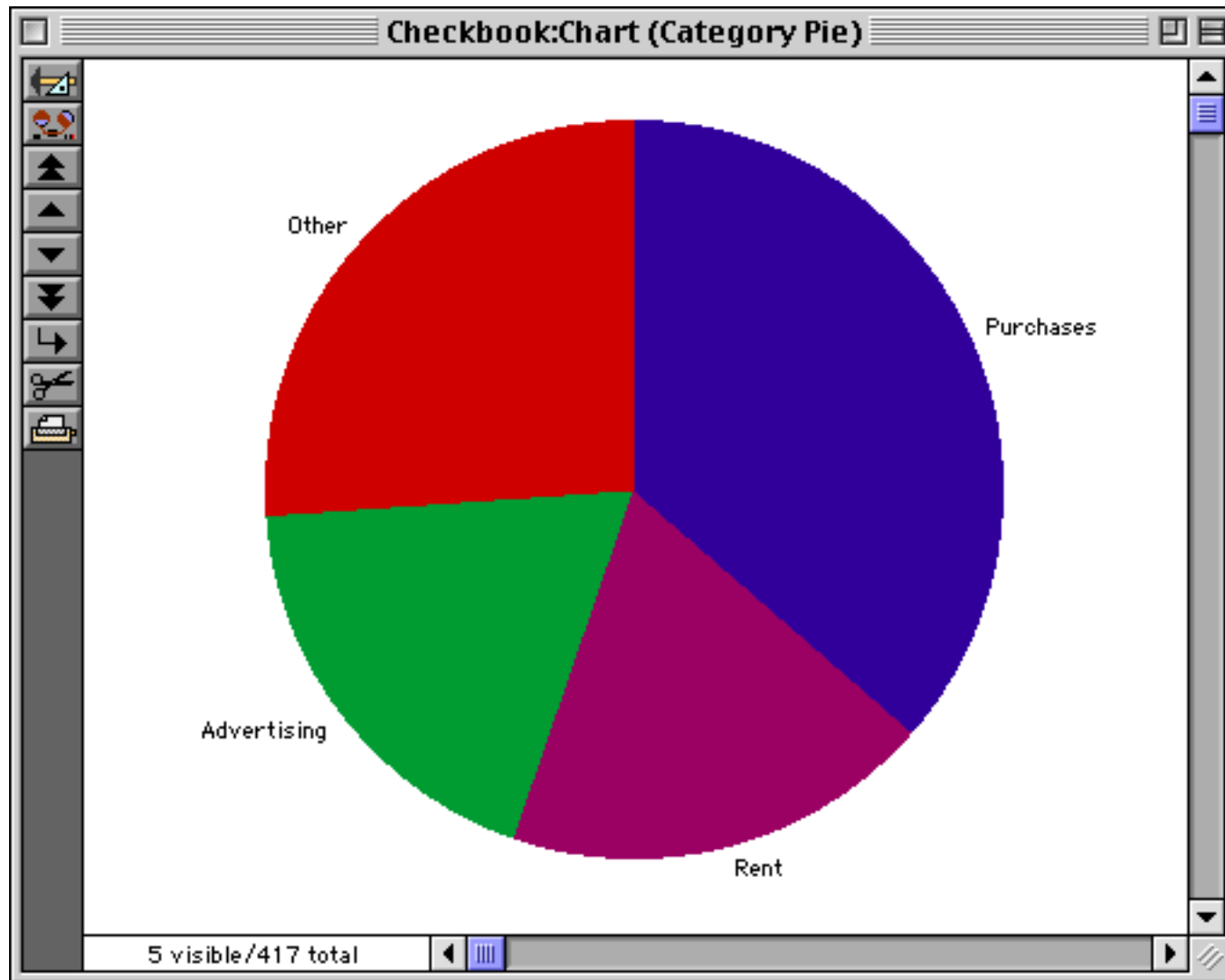


This procedure is designed to be easily adaptable to any database or situation. For example, to lump everything into only 3 categories plus other you only need to change one number.

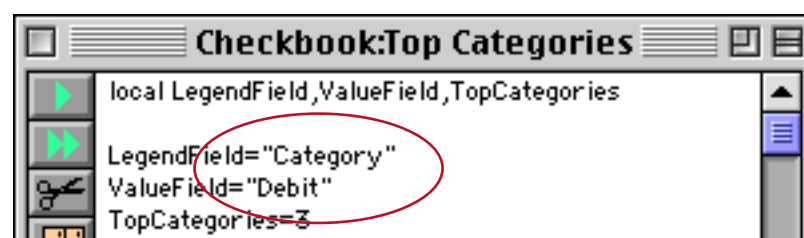
A screenshot of a window titled "Checkbook:Top Categories" showing configuration parameters for a chart. The parameters are listed in a text area with a toolbar on the left. The parameters are: "local LegendField,ValueField,TopCategories", "LegendField='Category'", "ValueField='Debit'", and "TopCategories=3".

```
local LegendField,ValueField,TopCategories
LegendField="Category"
ValueField="Debit"
TopCategories=3
```

Here's the revised chart.



To adapt this procedure to a different database just change the field names.



By the way, it's kind of fun to run this procedure with the chart visible. Check it out!

Restoring the Original Data

When you are done with your chart, use the **Remove Summaries** dialog (Sort Menu) to remove the summary records (see "[Printing Reports with Summary Information](#)" on page 410). Simply press the **Remove All Summaries** button and all the summary records will vanish.



(Remember, if the chart is still visible, the message **Too many data items in chart** will re-appear when the summaries are deleted.)

Maximum Number of Chart Points

Most bar or pie charts only display a few values. But a complex line chart or scatter diagram may display hundreds of data values. You must tell Panorama in advance that you plan to display such a complex chart.

The complexity pop-up menu (below the chart type icons) allows you to specify one of three complexity levels—simple, medium, or very complex. A simple chart takes the least amount of memory and can display up to 50 data values—more than adequate for most applications. The table below lists the attributes of each complexity level.

Type of Chart	# of Values	# of Bytes
Simple	50	2100
Medium	200	3400
Medium	500	5000
Complex	2,000	20,000
Very Complex	5,000	41,000

If memory is tight, you'll want to use the simple chart option whenever possible. On the other hand, in today's world of machines with 32 mb, 64 mb, 128 mb or more memory there's not much reason to avoid using the more complex chart types.

Dressing Up Chart Appearance

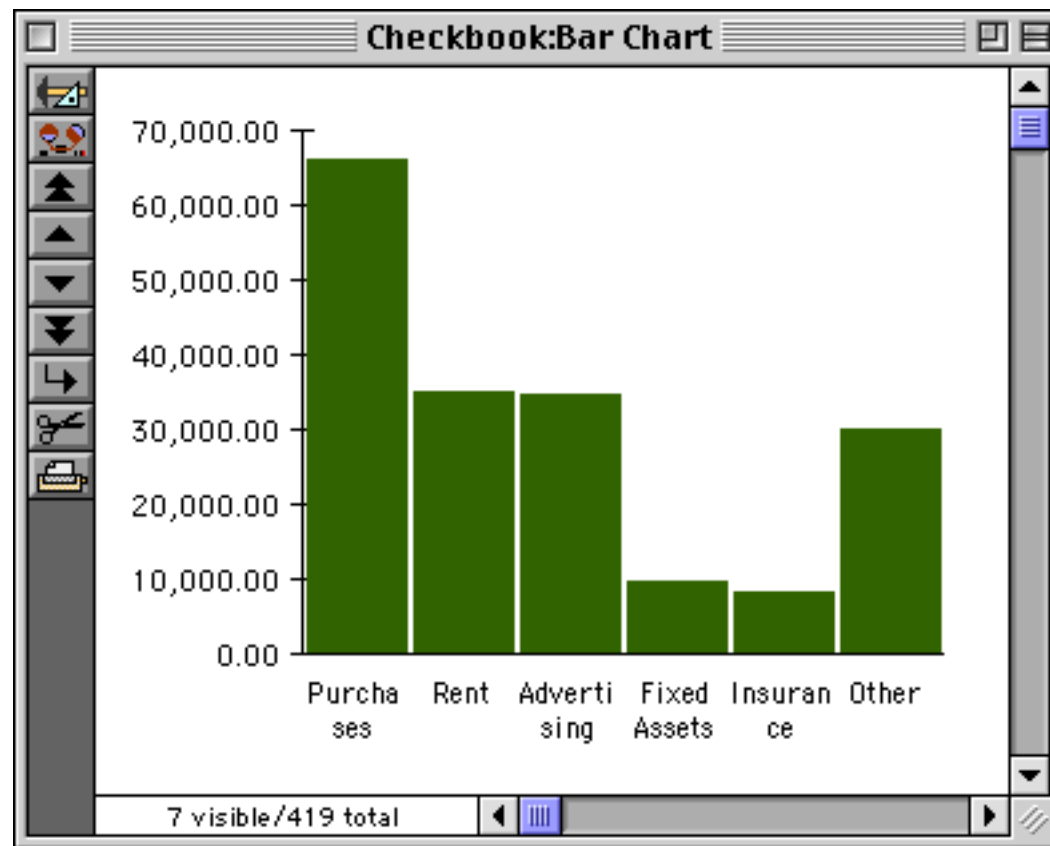
Panorama tries to display an attractive chart automatically. However you are not stuck with the chart Panorama provides. You can change the fonts, patterns, colors and many other chart attributes to suit your tastes.

Chart Font, Size, and Style

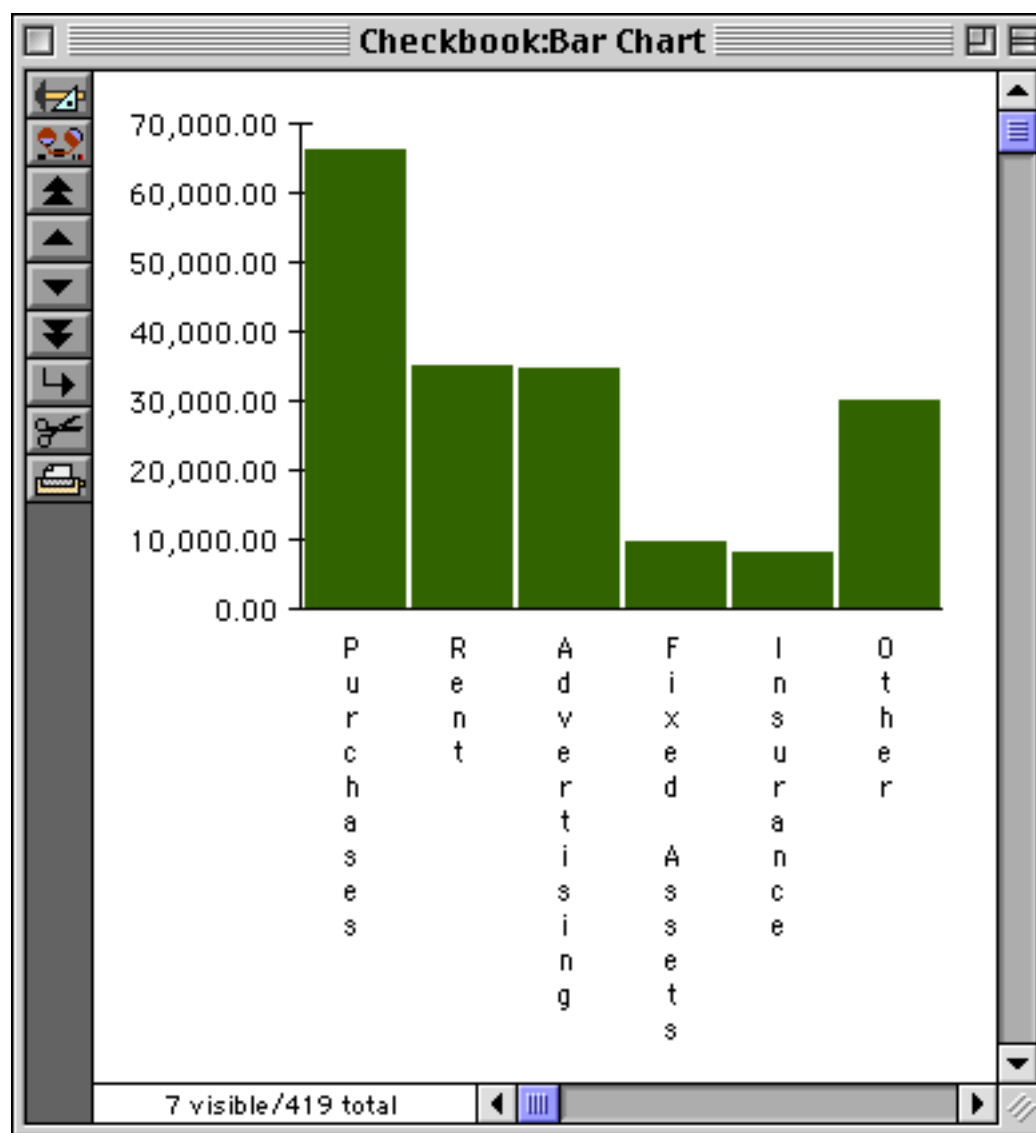
You can change the font, size, and style of the text in a chart just as you would for any text object. Simply select the chart and choose from the **Font** (see "[Font](#)" on page 529), **Size** (see "[Text Size](#)" on page 531), and **Style** (see "[Text Style](#)" on page 532) menus.

Vertical Legends

Legends are normally displayed horizontally under bar, line and area charts. However, as in this example, sometimes the legends are just too wide to fit under the bars!



The **Vertical Legends** check box allows the chart to display legends vertically instead of horizontally.



Adjust the fifth handle of the chart to allow enough room for the vertical legends.

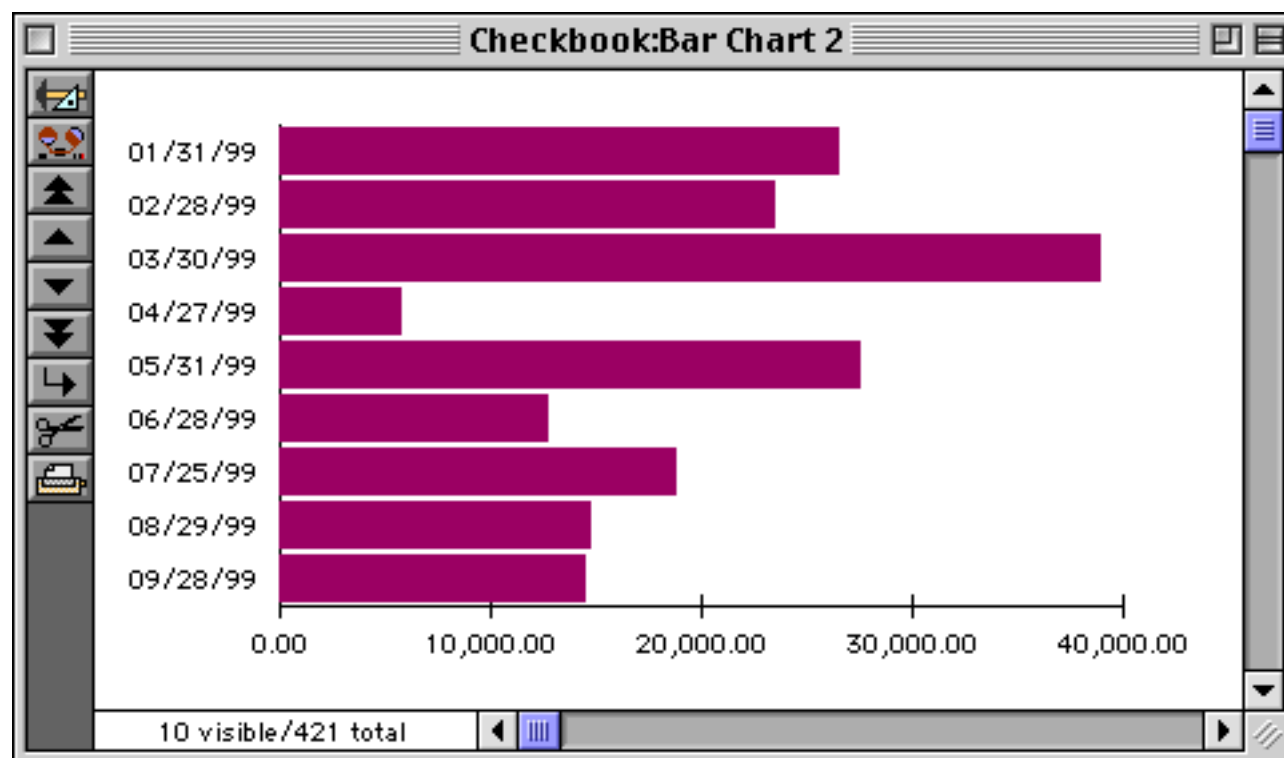
Note: If a chart uses horizontal legends, there may not be enough room on the chart for a long legend. When this happens, the legend is not displayed. Four solutions are possible: 1) use vertical legends, 2) use shorter legends, 3) use a smaller font size, or 4) increase the size of the chart.

Output Patterns

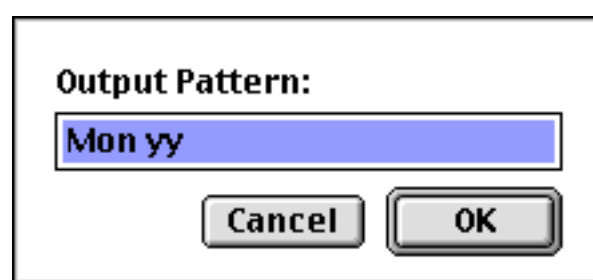
Panorama displays the numbers along the axis of the chart using the output pattern (see “[Numeric Output Patterns](#)” on page 250) set up for the first value field. For example if the first value field’s output pattern is `$#.##`, the chart will display a dollar sign in front of each tick mark value.

If the legend field contains numbers or dates, you can use the **Output Pattern** command (Text Menu) to format the legend. For example, if the chart is designed to display data grouped by month, the output pattern could be set to `mm-YY` or `Mon yy`.

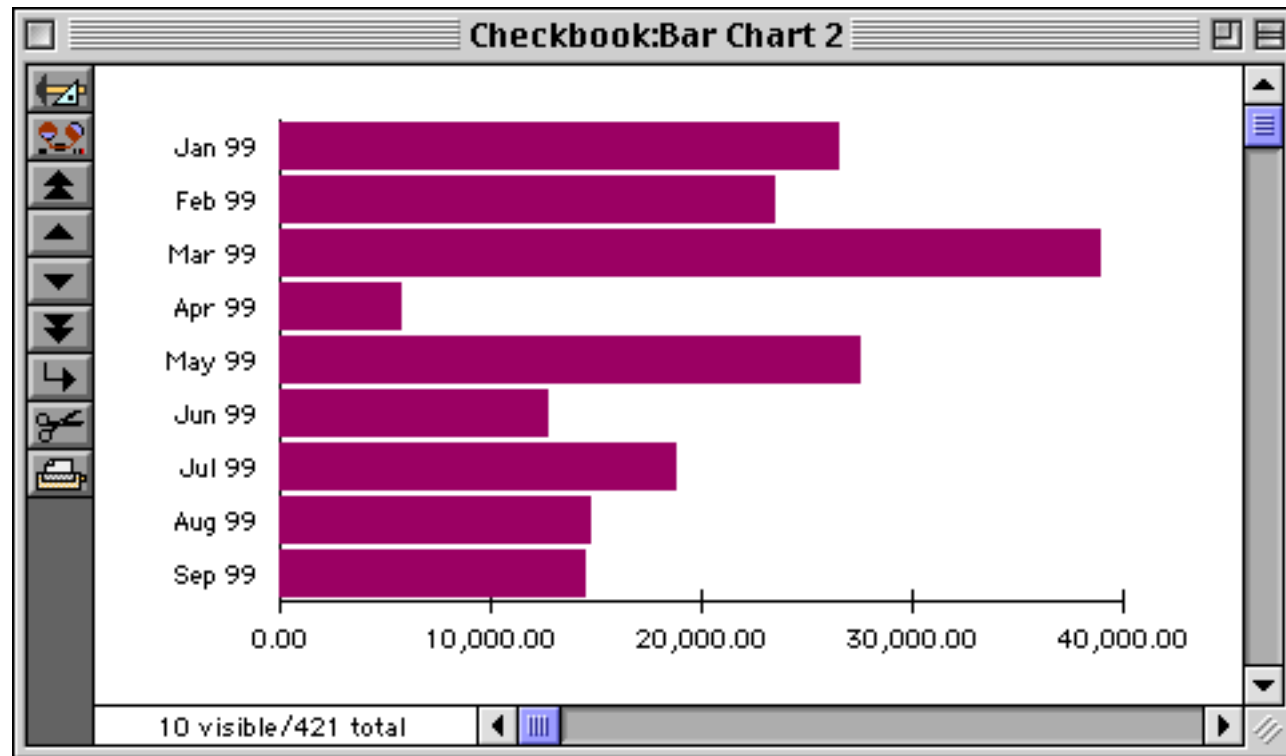
Here’s an example of a chart without any output pattern set. The database has been grouped by month, so the chart legend shows the date of the last transaction in each month.



We can make a much better chart by selecting the chart object with the **Pointer** tool, choosing the **Output Pattern** command, and setting the pattern to `Mon yy`.



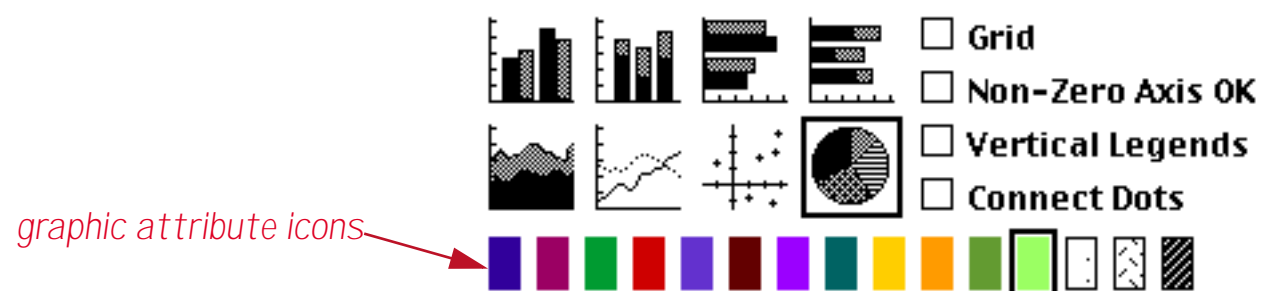
Here's the revised chart.



Graphic Attribute Icons

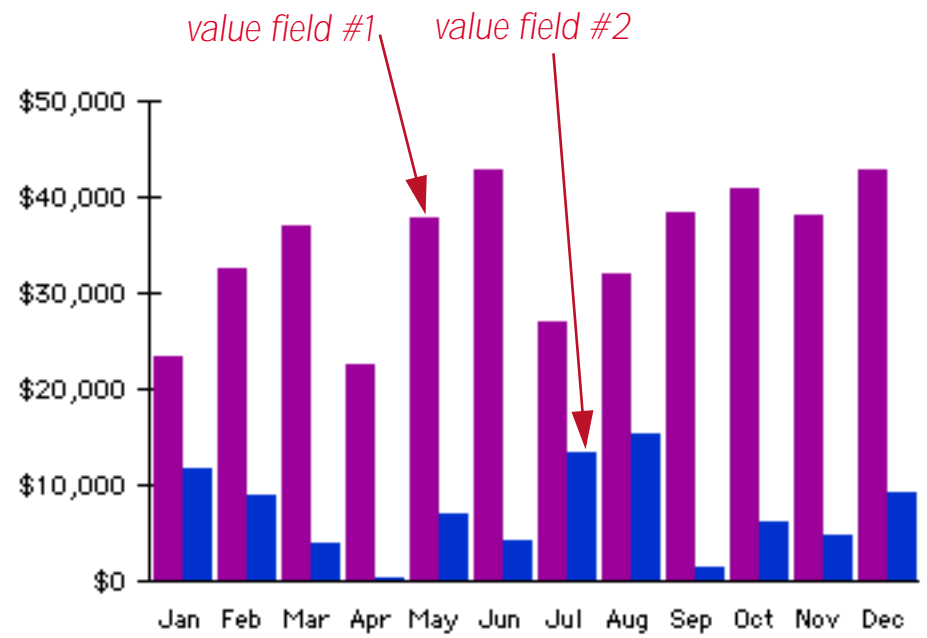
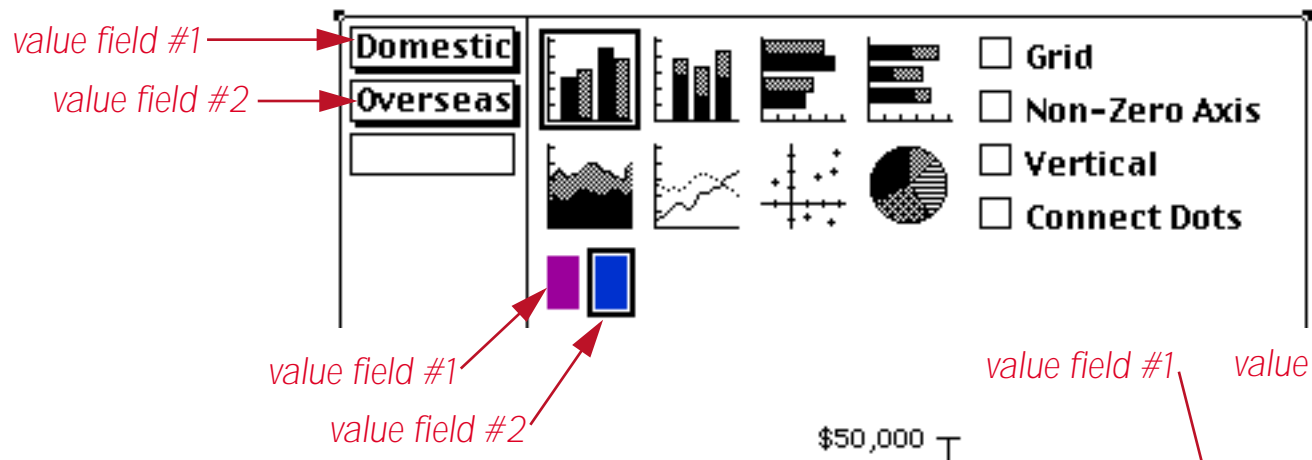
Panorama normally lets you select the graphic attributes of an object (pattern, border, color, etc.) by selecting the object and then choosing the attributes from the Graphic Control Strip or Graphic sub-menus. A chart, however, can have several different components that need to have separate graphic attributes. For example, you must be able to set the attributes for each slice of a pie chart independently.

To allow you to assign different attributes to different components, the chart object contains a row of graphic attribute icons just below the chart type buttons.

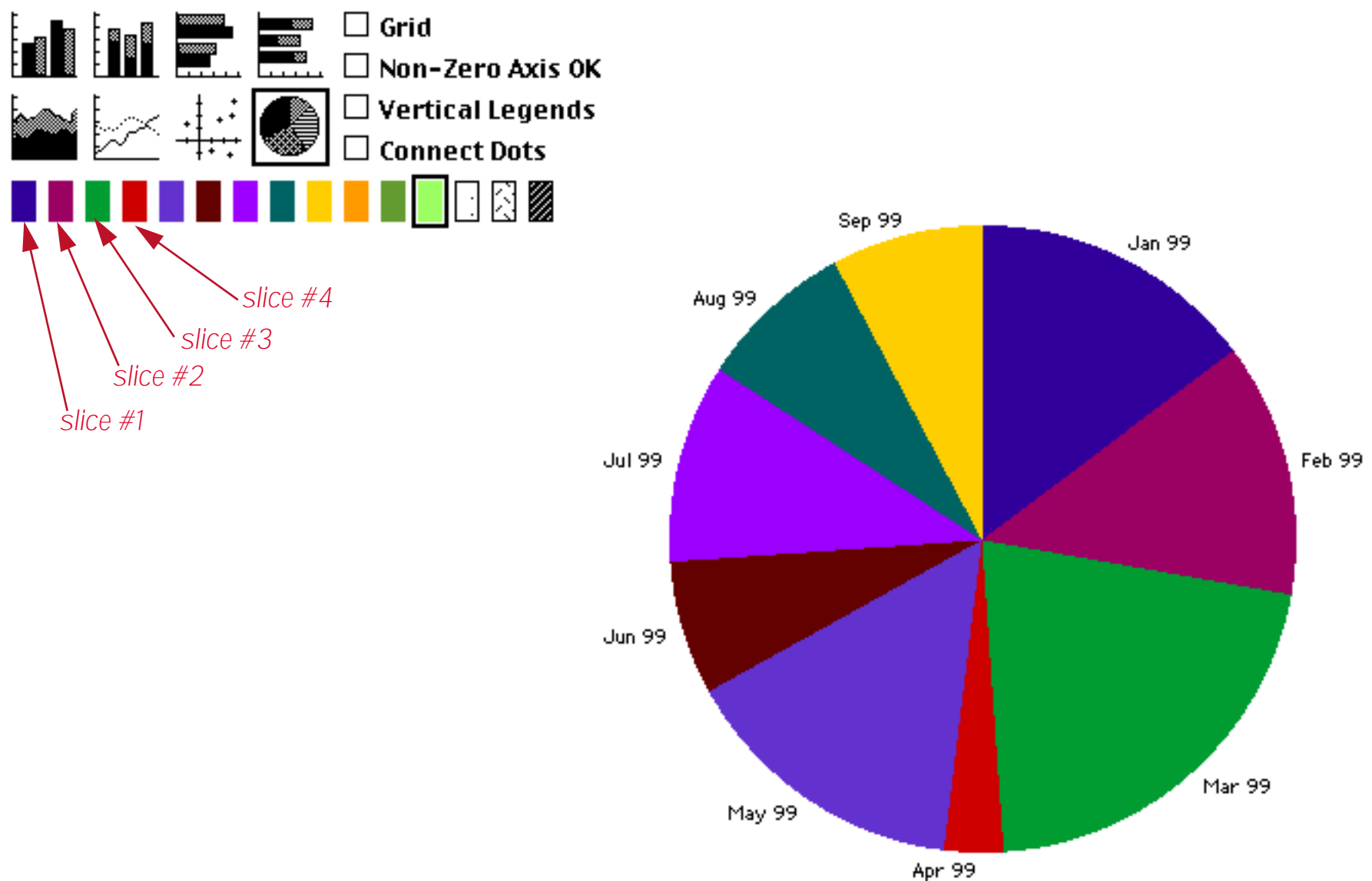


The number of graphic attribute icons available depends on the type of chart and the number of value fields.

For most types of charts the number of graphic attribute icons is the same as the number of value fields. The leftmost icon is used to set the attributes for the first value field, the next icon represents the second value field, etc.

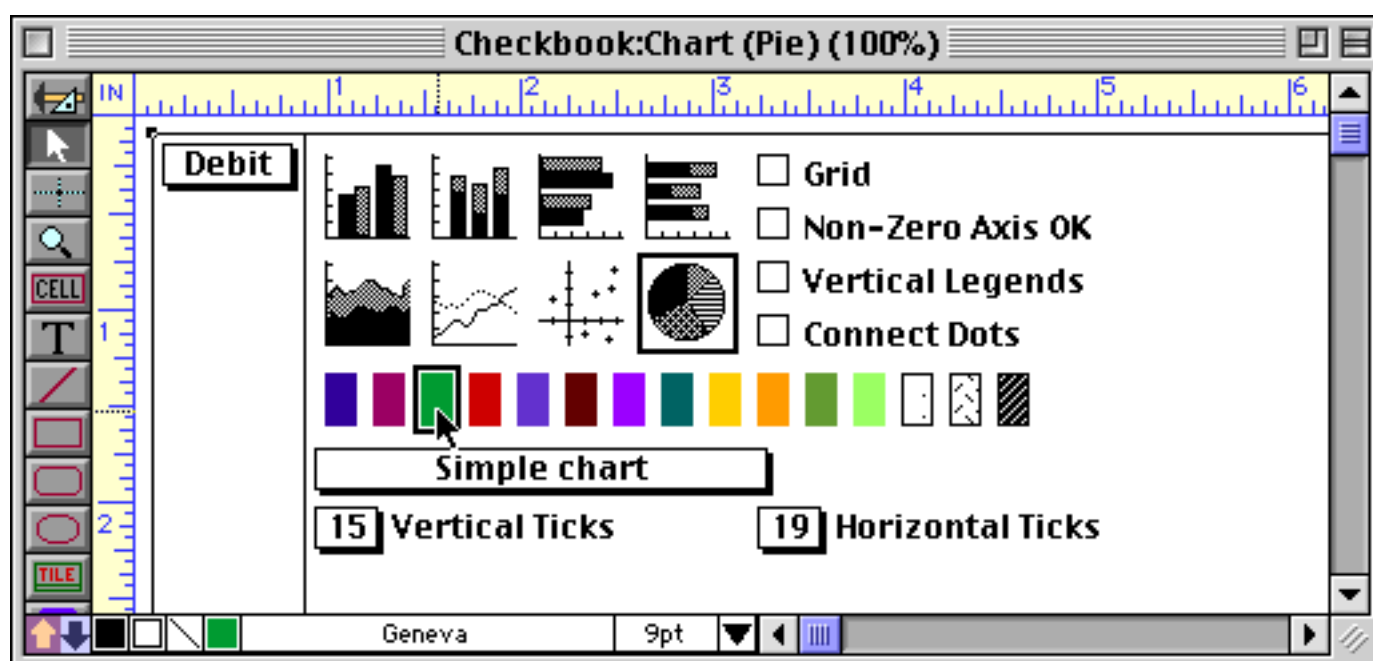


A pie chart always has 15 graphic attribute icons (although some may be invisible if the chart object is too small). The leftmost icon is used to set the attributes of the first pie slice (12 o'clock), the second icon represents the next slice, etc. If the pie has more than 15 slices, the 16th slice will wrap back to the beginning and use the first graphic attribute icon. The 17th slice will use the second icon, etc.

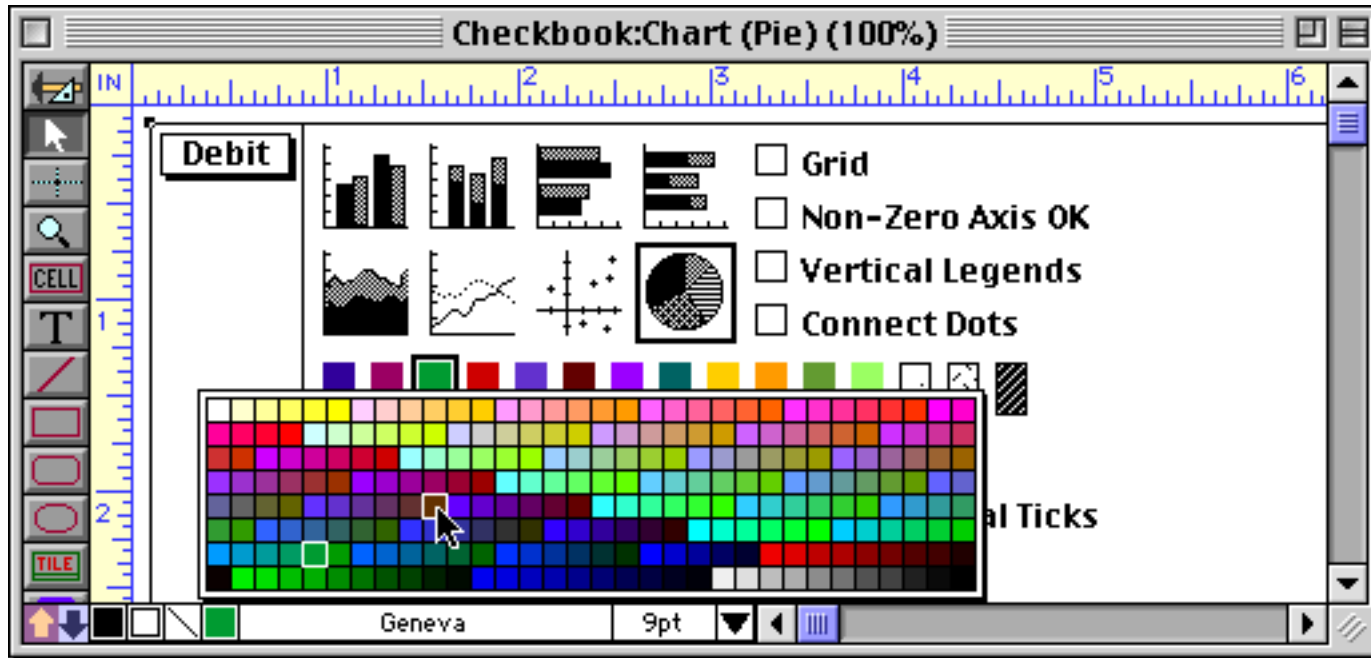


To change the graphic attributes of one of these icons, simply click on the icon to select it and then choose the attributes from the Graphic Control Strip or the Graphic sub-menus (Fill Pattern, Line Pattern, Line Width, Color). The icon will change to show the effect of the new attributes. Panorama draws a box around the selected icon to show that it is active.

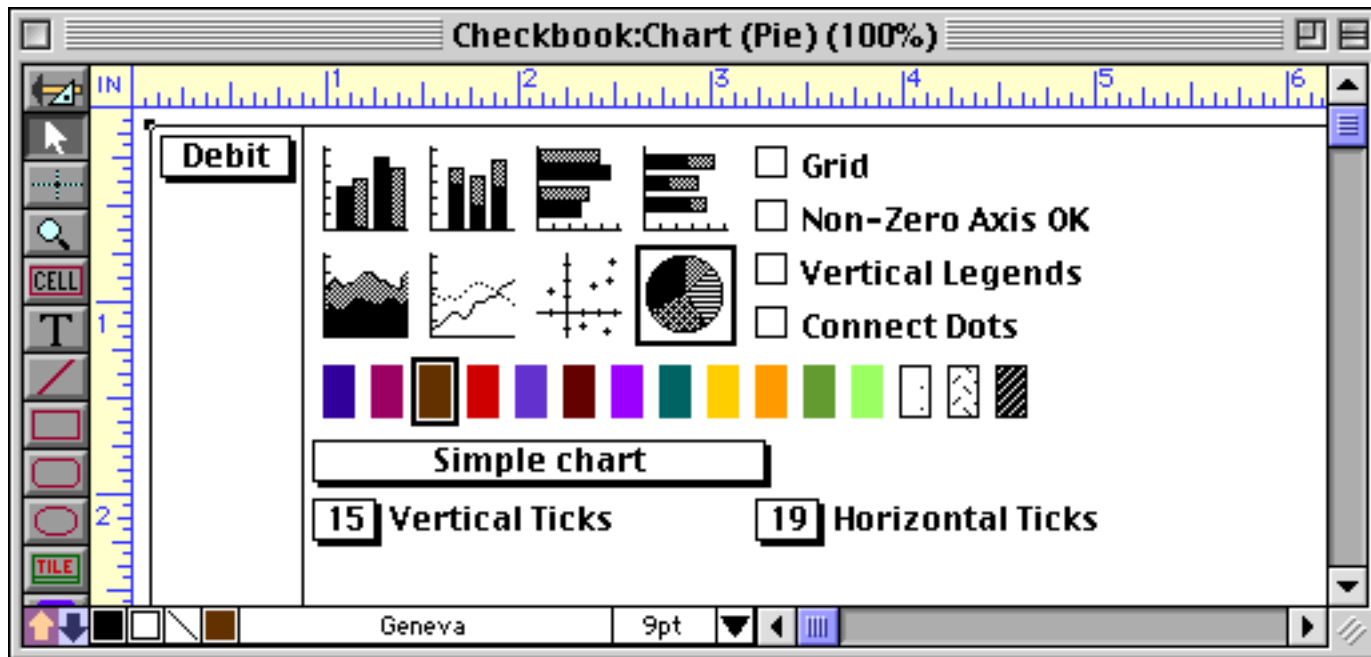
For example, to change the color of the third slice of a pie chart, click on the third graphic attribute icon.



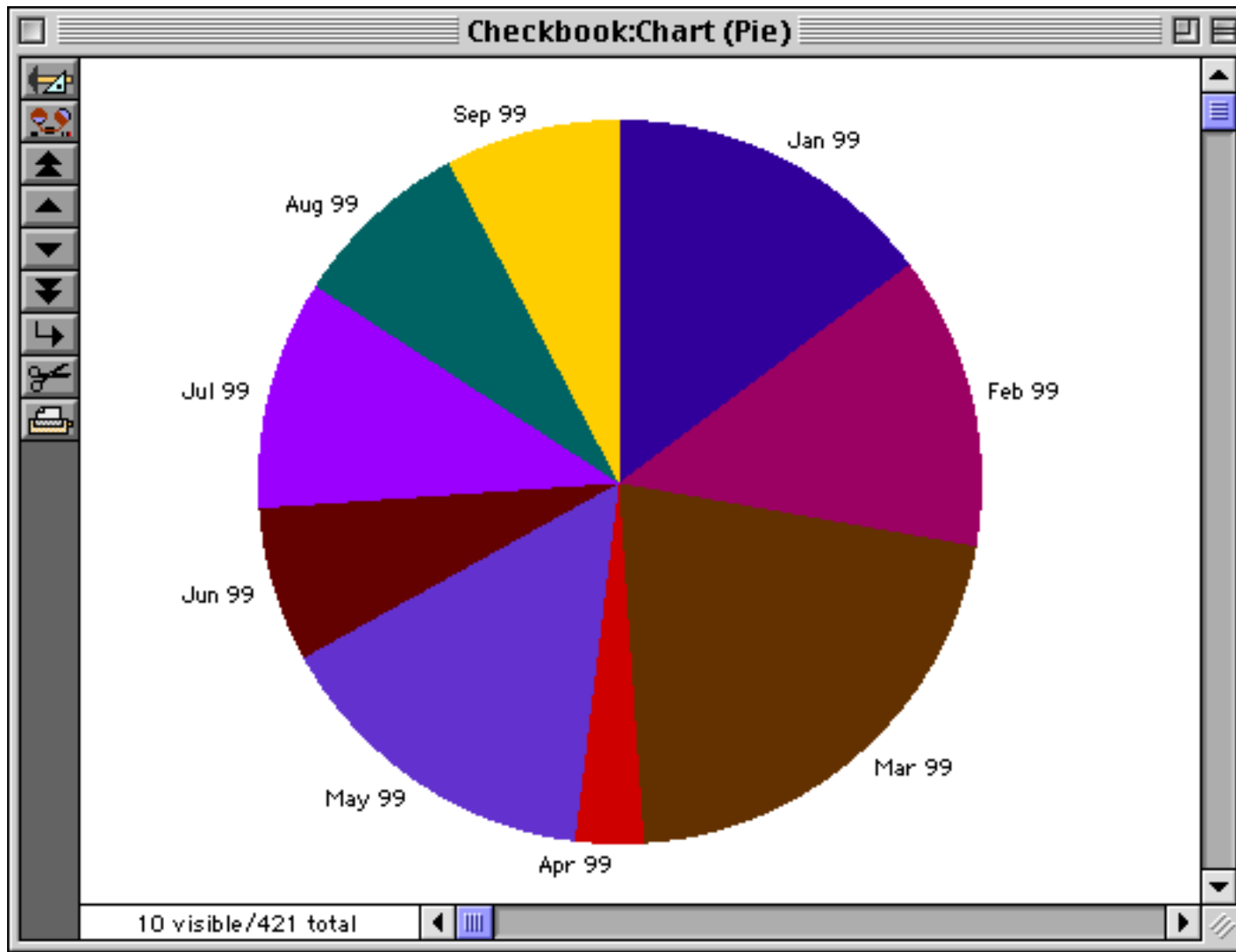
Once the icon is selected, pick the color from the Color box in the Graphic Control Strip.



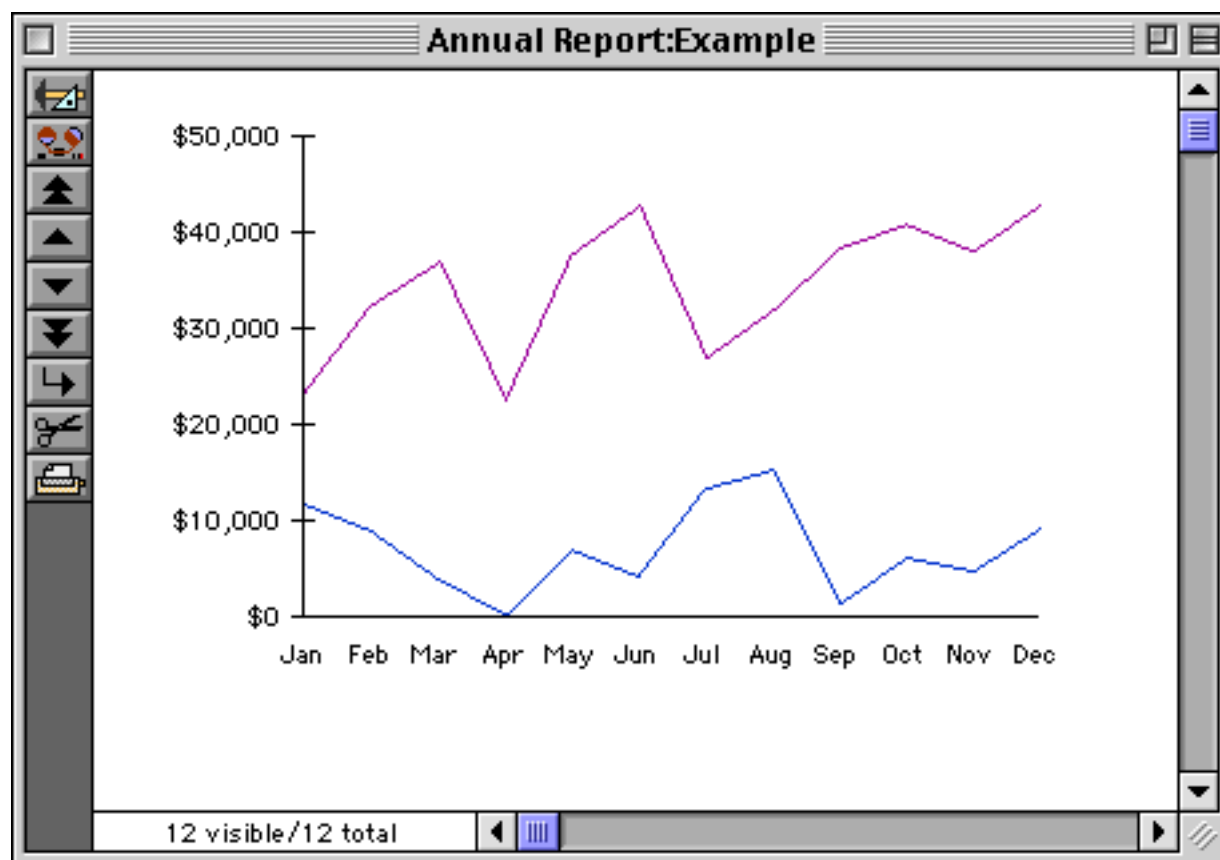
When you release the mouse the icon updates to show the new color.



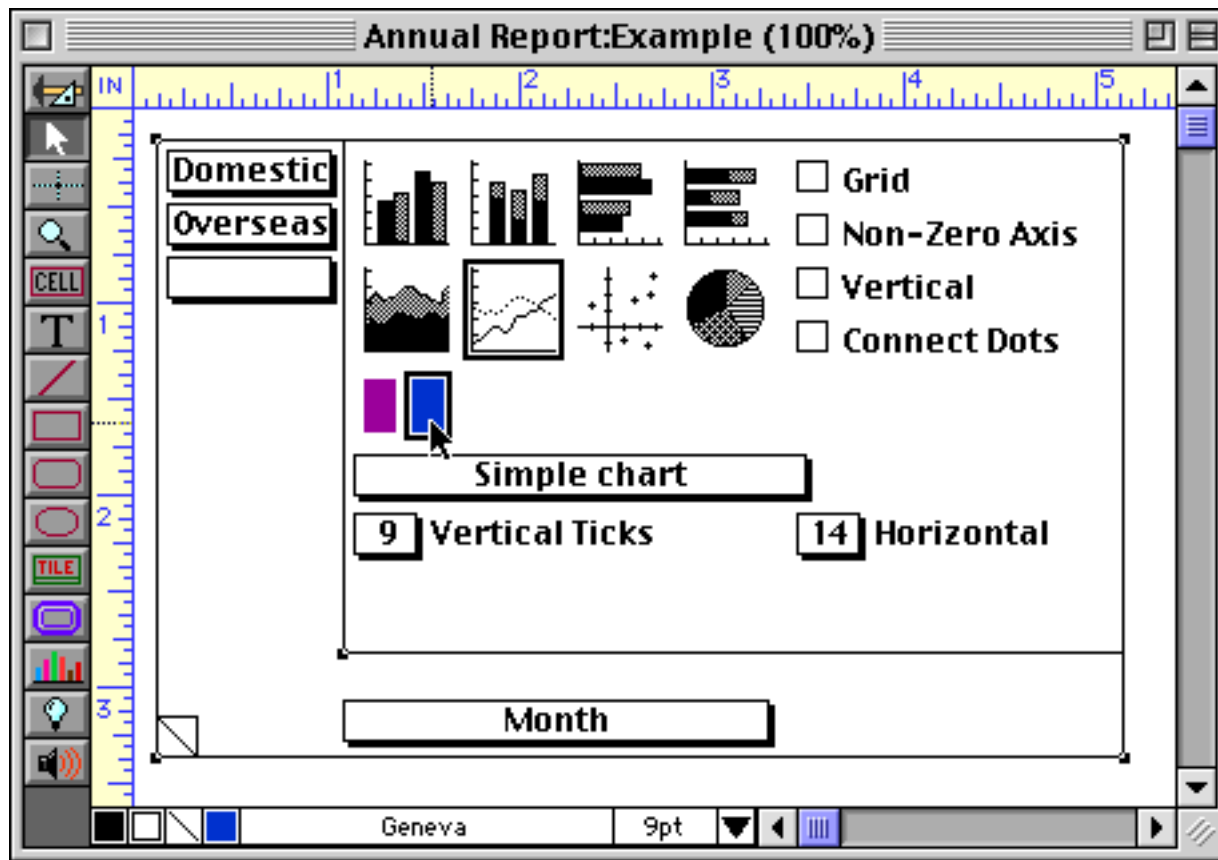
Here's the updated chart with a brown third slice.



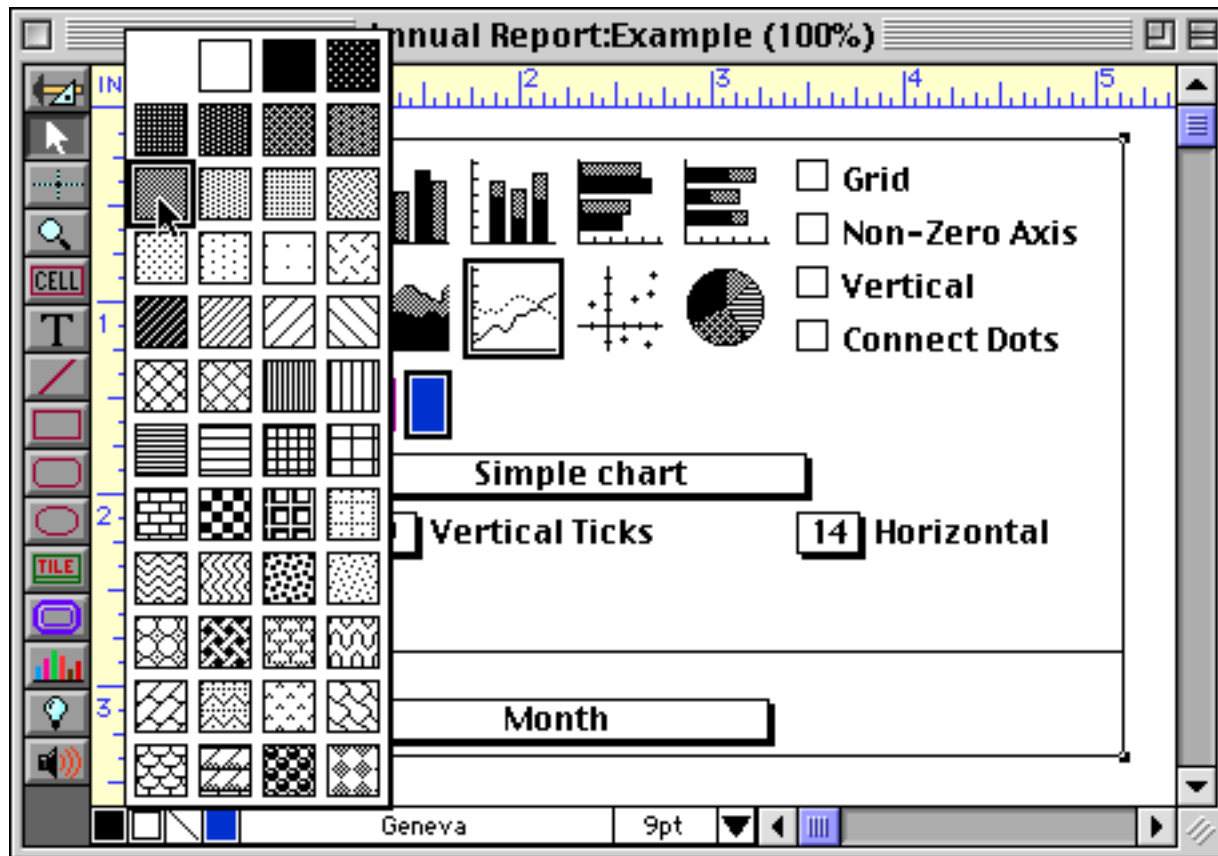
Here is a line chart with two lines — domestic (purple) and overseas (blue) sales.



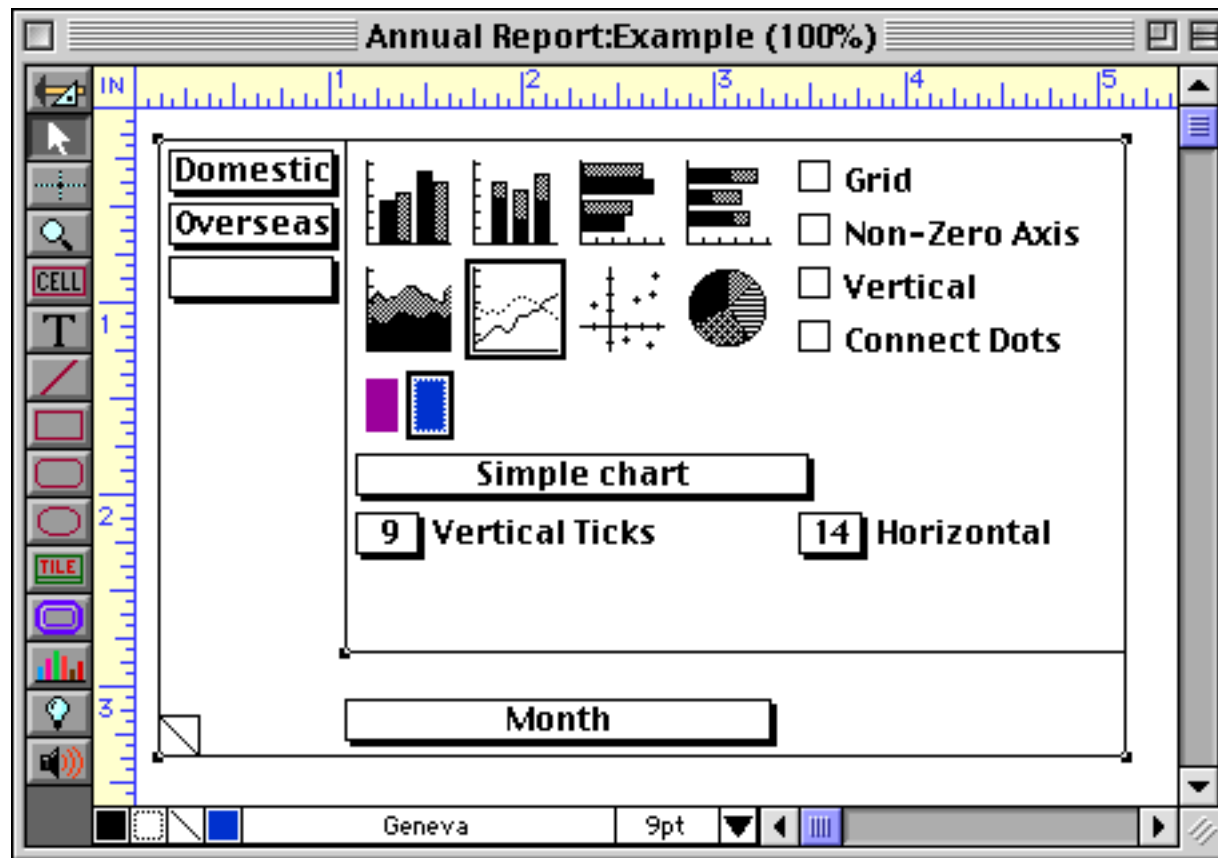
Suppose you wanted the overseas line to be dotted instead of solid. Switch to Graphic Design mode and click on the second graphic attribute icon.



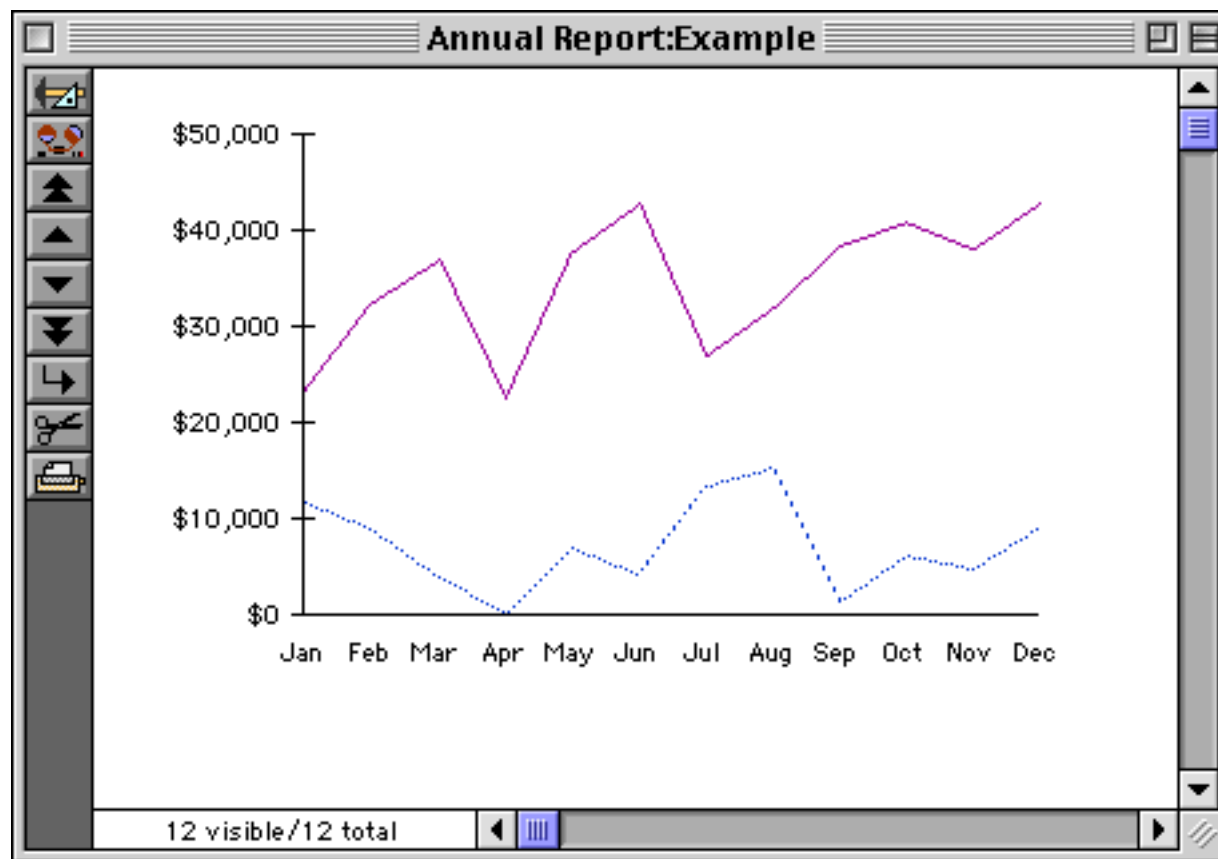
Now choose a gray pattern from the line pattern menu.



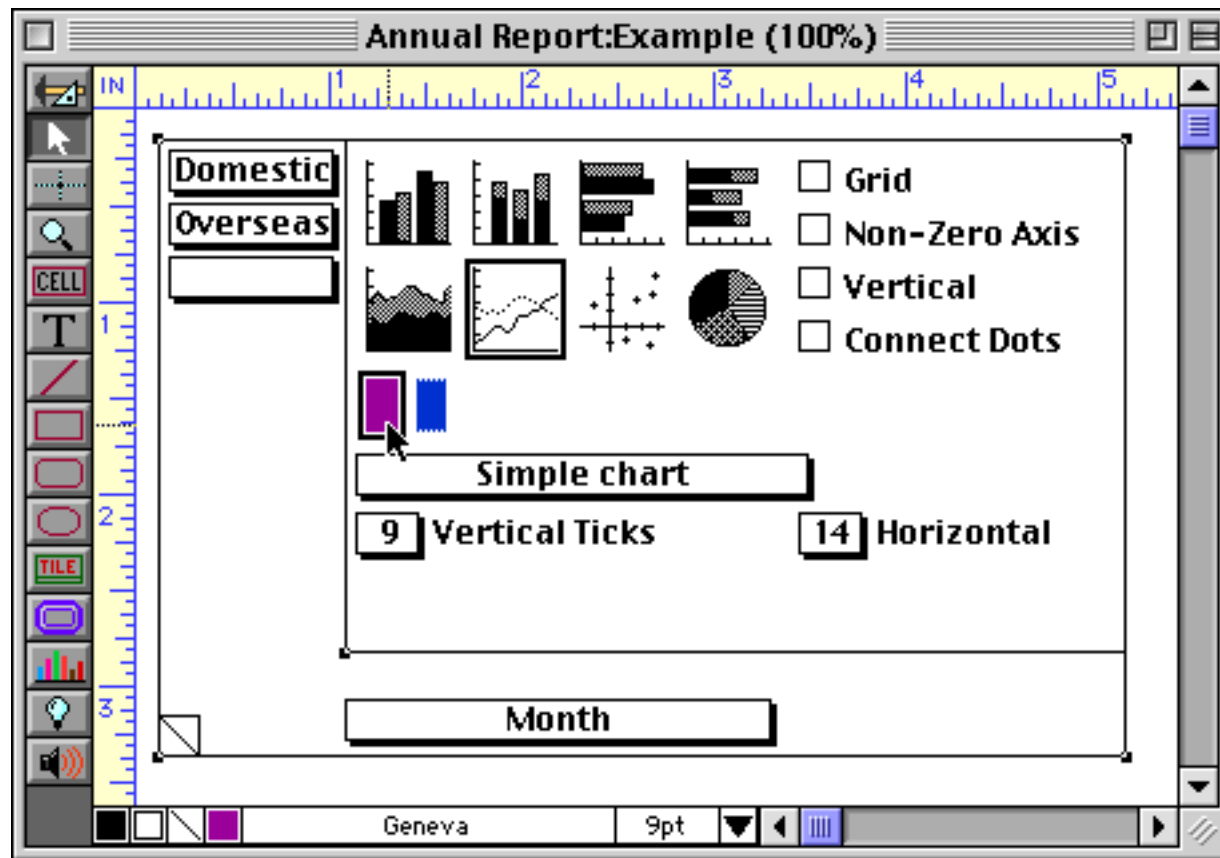
When you release the mouse you will see a dotted border around the graphic attribute icon.



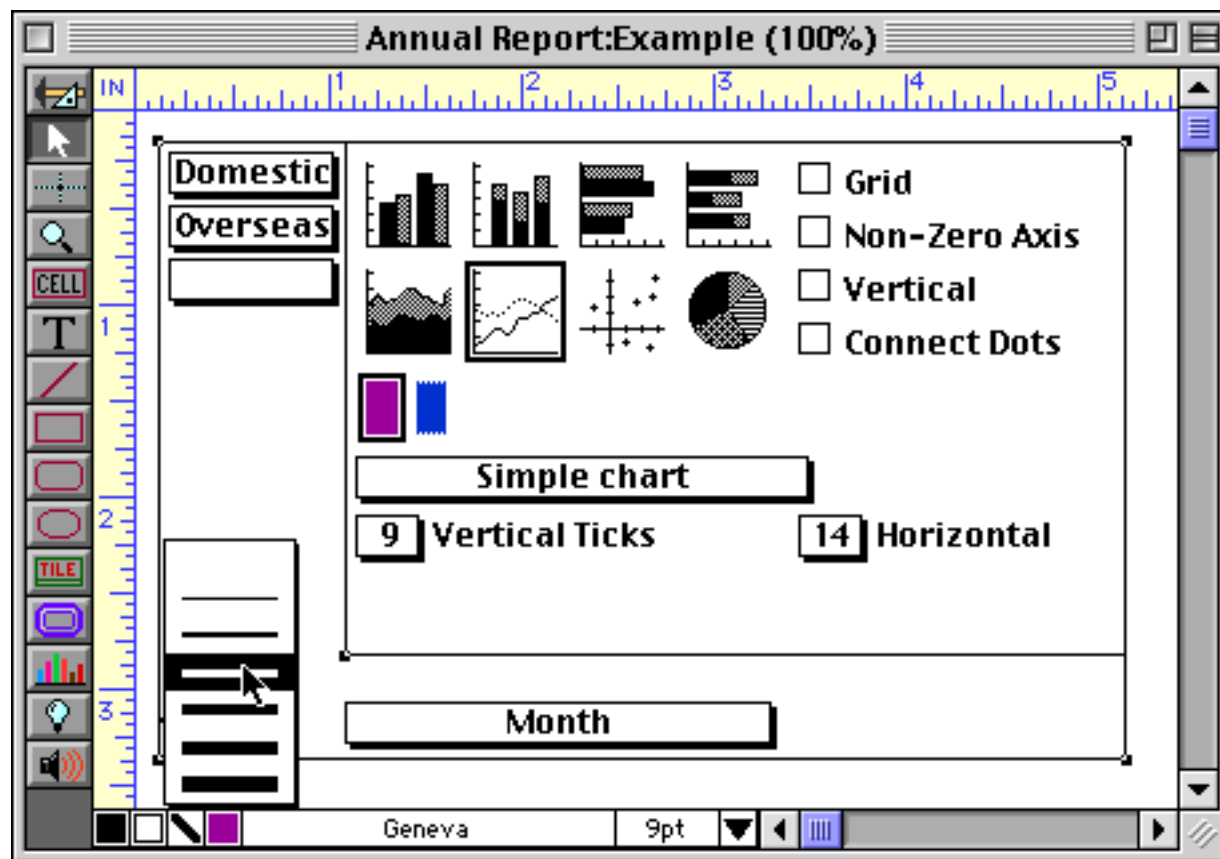
Switch to Data Access Mode to see the revised chart.



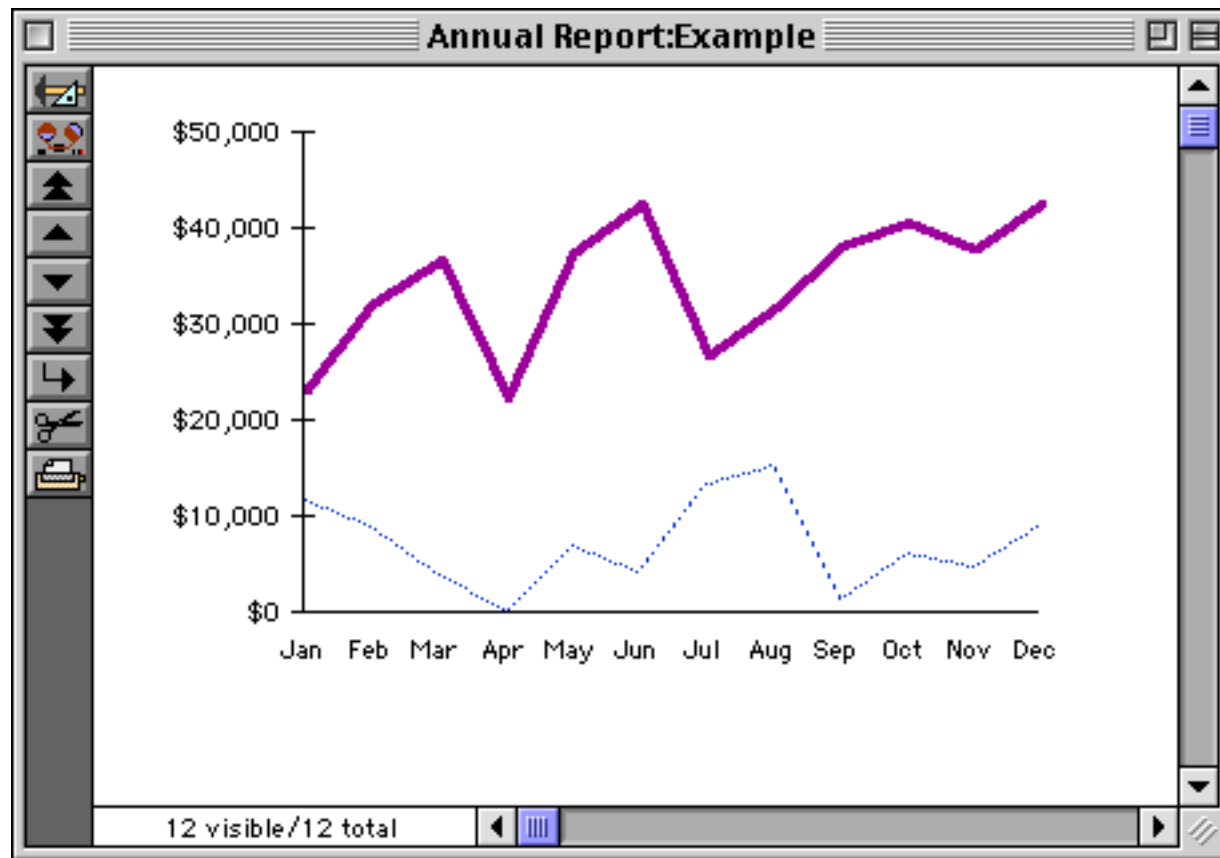
Let's make one further revision. Go back to Graphic Design Mode and select the first graphic attribute icon.



Now choose a double width line from the Line Width menu.

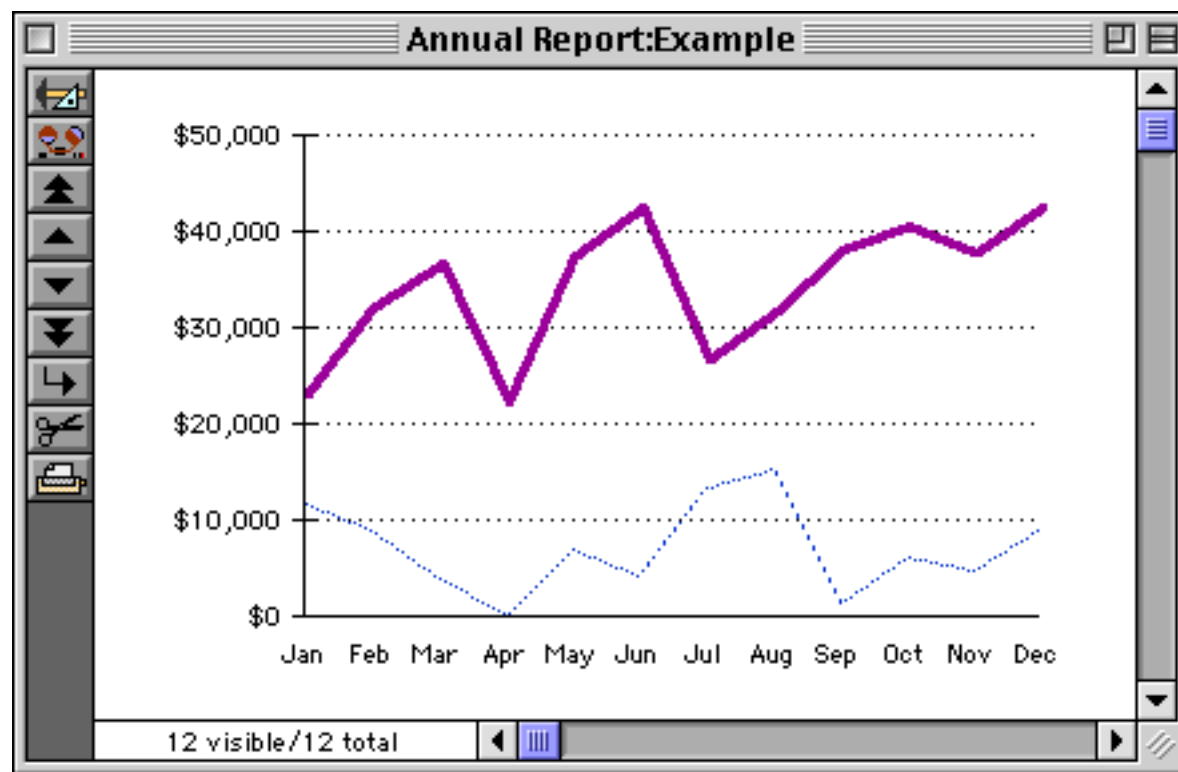


Here's the result of this modification.



Grid

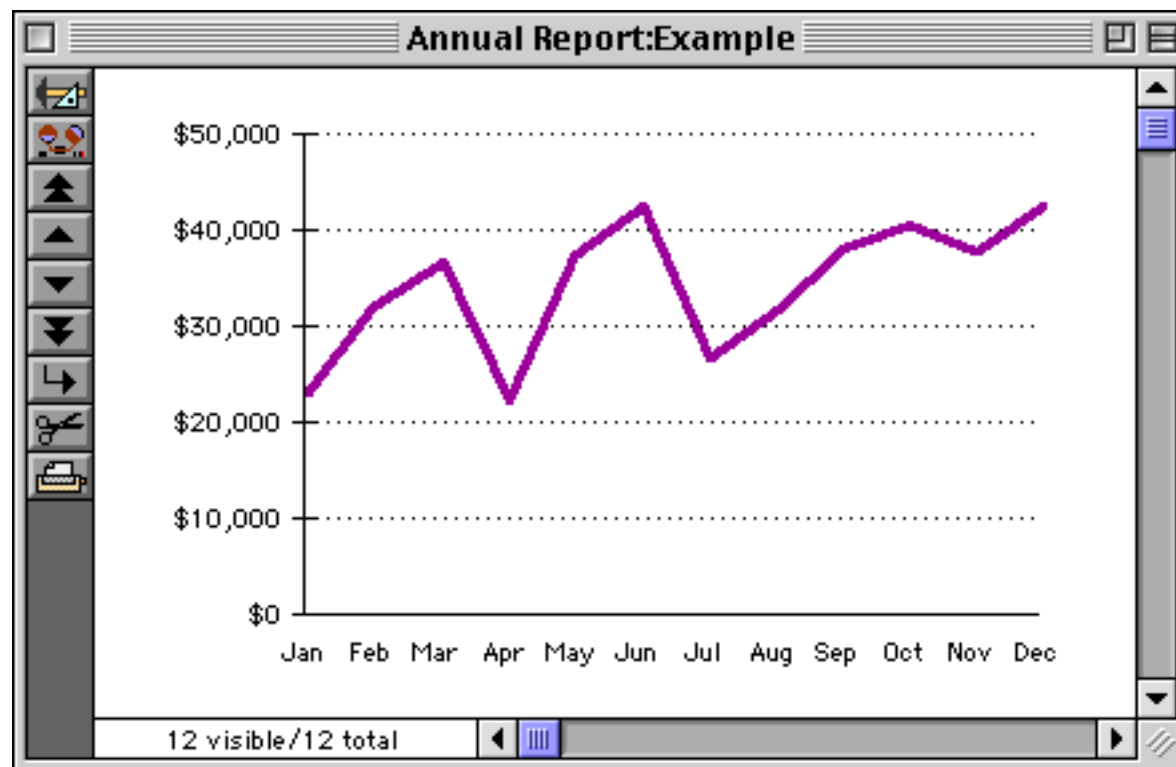
The **Grid** checkbox tells the chart to display grid lines from each tick mark.



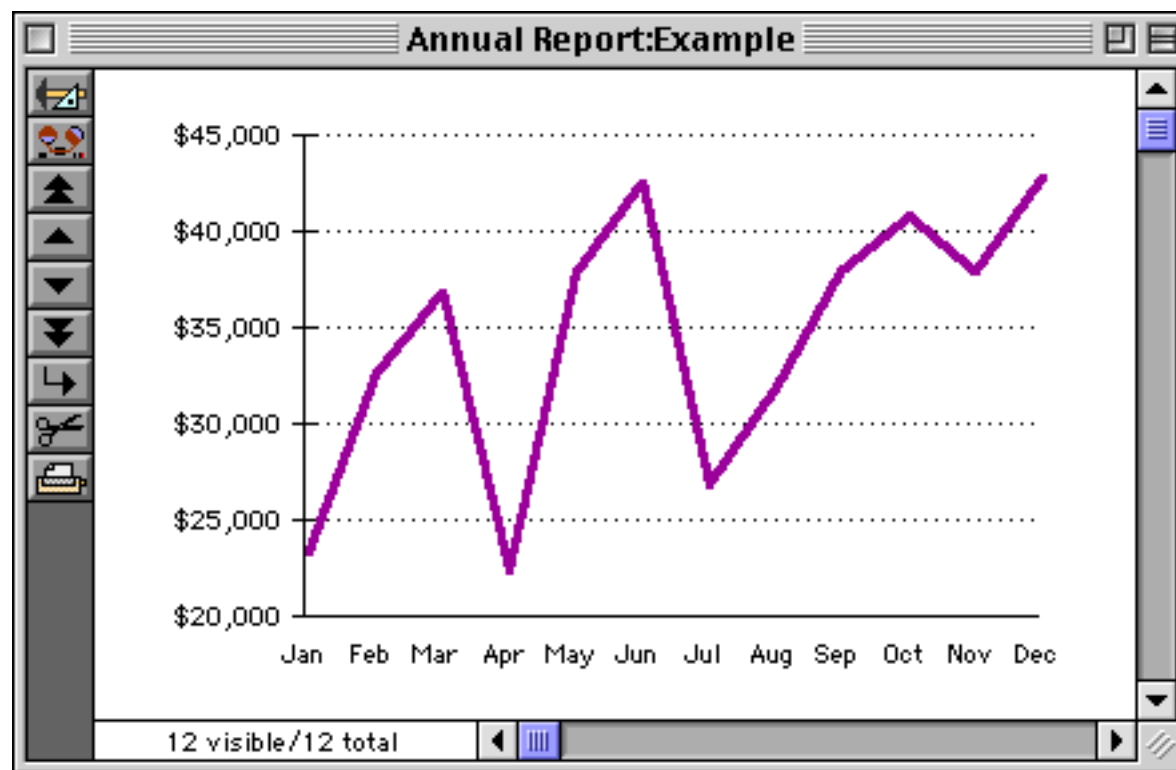
You can also turn grids on or off by double clicking any of the chart type icons. The **Grid** checkbox is ignored when displaying pie charts.

Non-Zero Axis OK

Panorama normally displays all charts from zero. If you check the **Non-Zero Axis OK** option, Panorama is allowed to display charts that don't go all the way to zero. Here's a normal chart that includes zero even though the lowest value is over \$20,000.



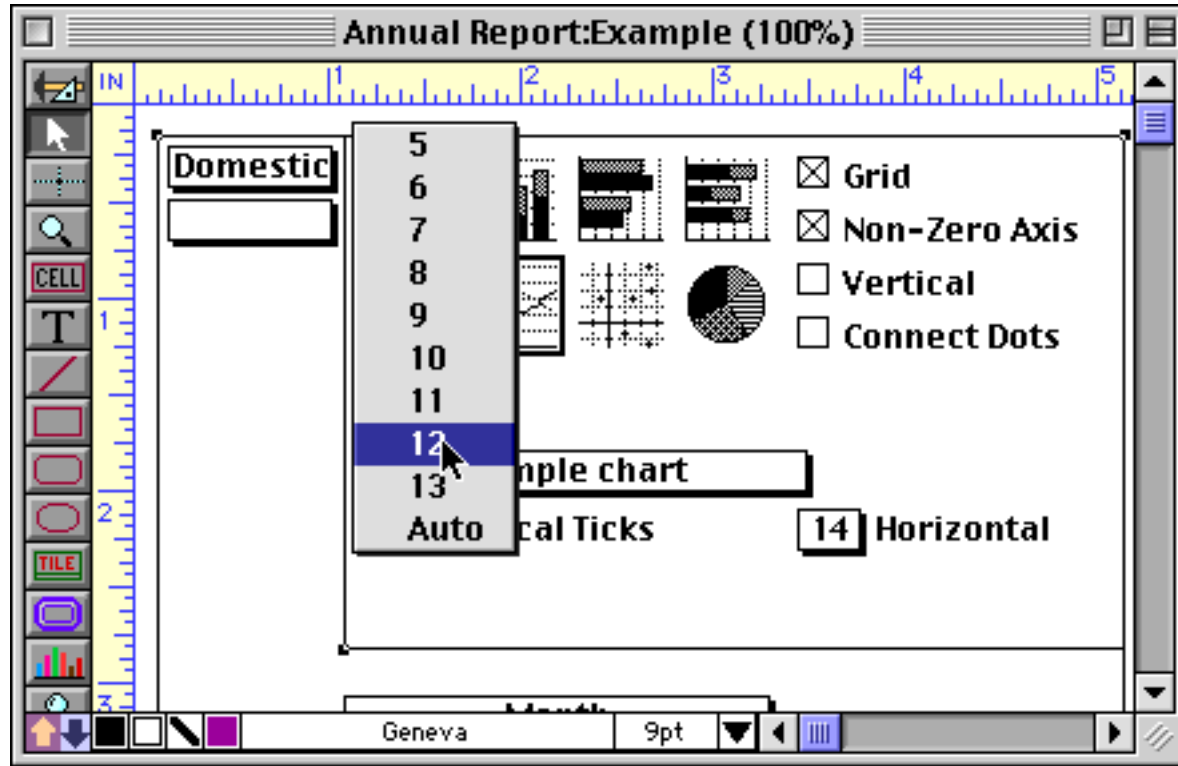
Here's the same chart with the **Non-Zero Axis OK** option enabled.



As you can see, a chart with a non-zero axis can greatly exaggerate the differences between values. Because charts that are not based on zero can be very misleading, they should be avoided if possible.

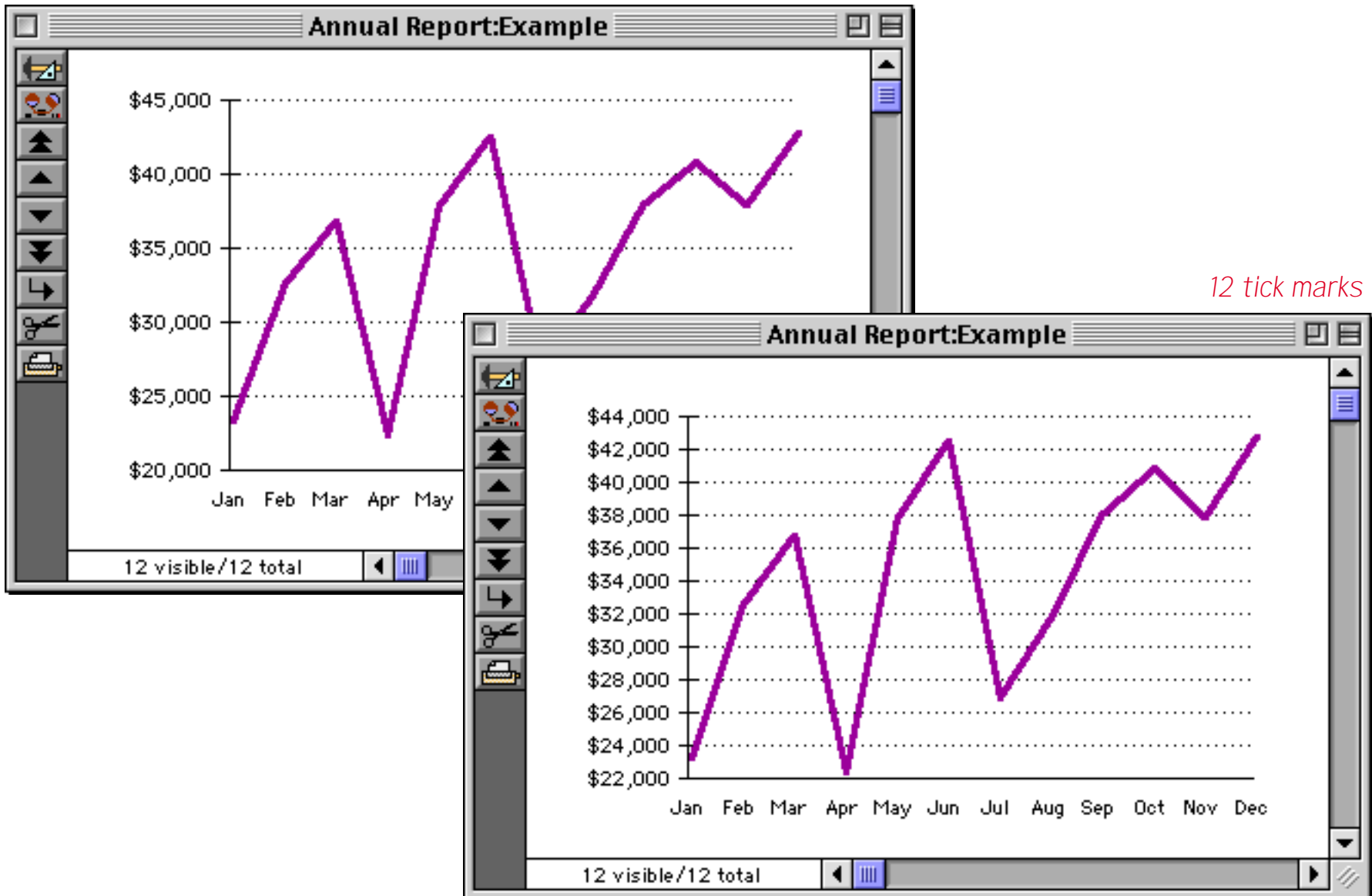
Tick Mark Spacing

Panorama normally sets the number of tick marks automatically depending on the data values and the chart size. You can override the automatic tick mark spacing using the two pop-up menus near the bottom of the chart object.



Here's what this chart looks like with automatic tick marks and set to 12 tick marks.

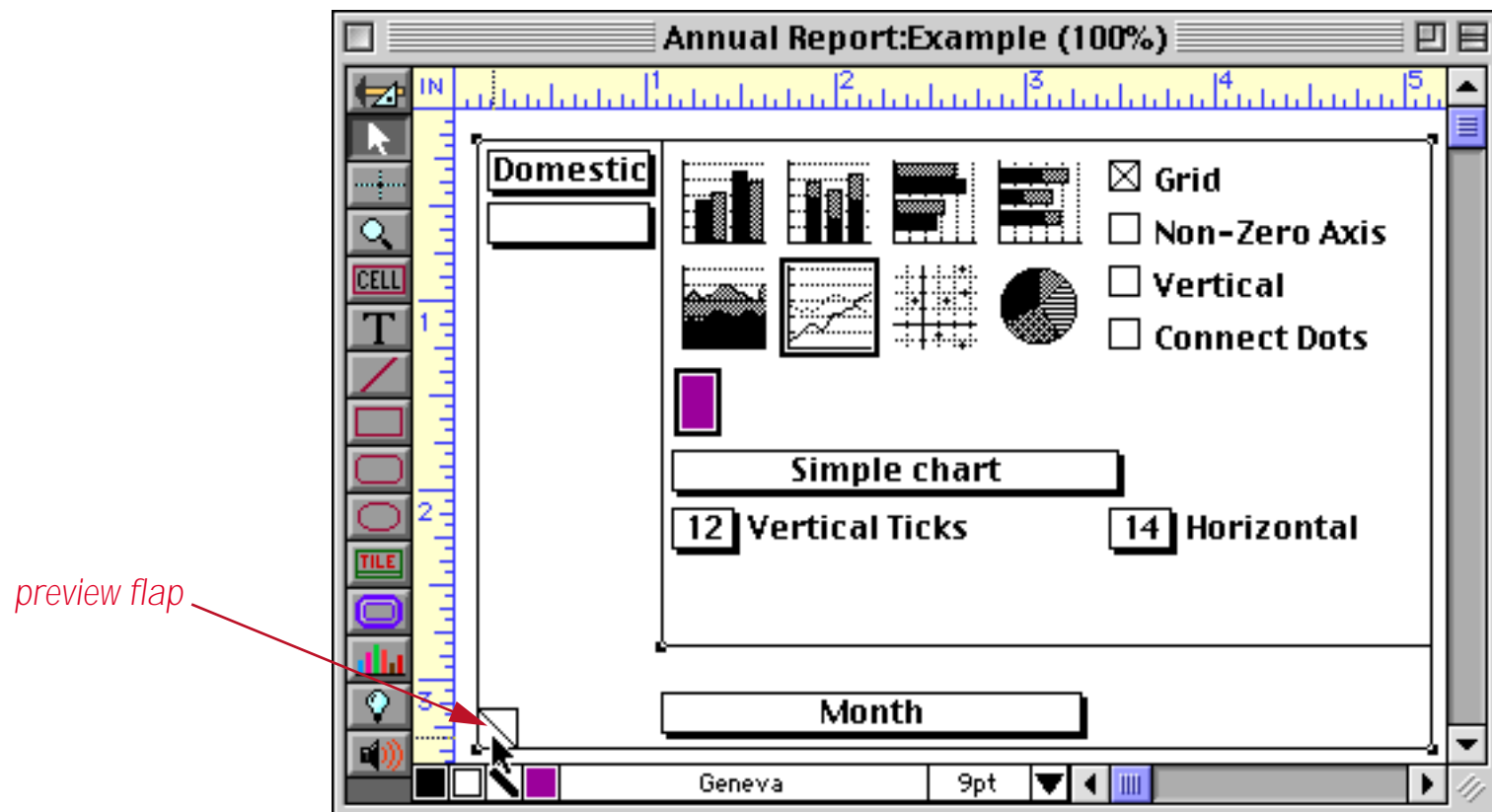
automatic tick marks



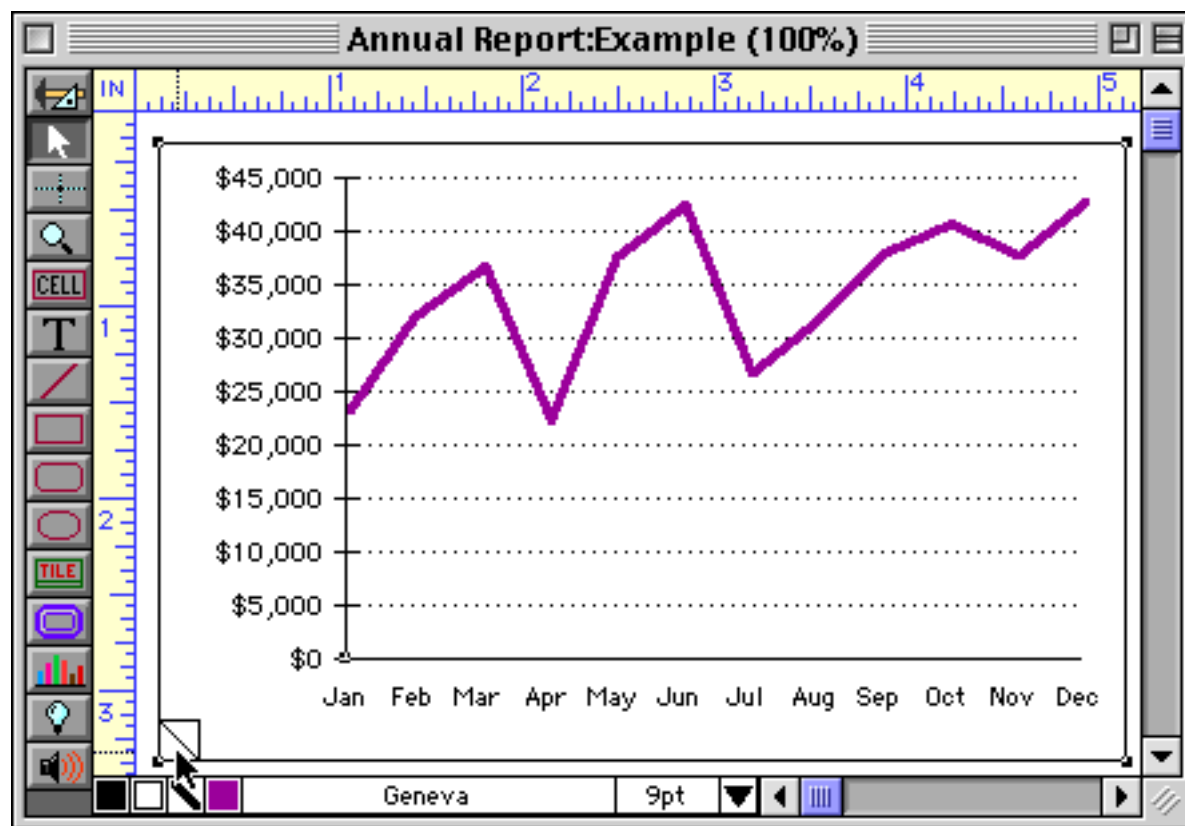
12 tick marks

Chart Preview

You can see the effect of a change in chart setup by switching from Graphic Mode to Data Access Mode. You can also preview the chart by clicking on the preview flap in the lower left hand corner of the chart object. The preview flap is the small triangle that looks like a turned up page corner.

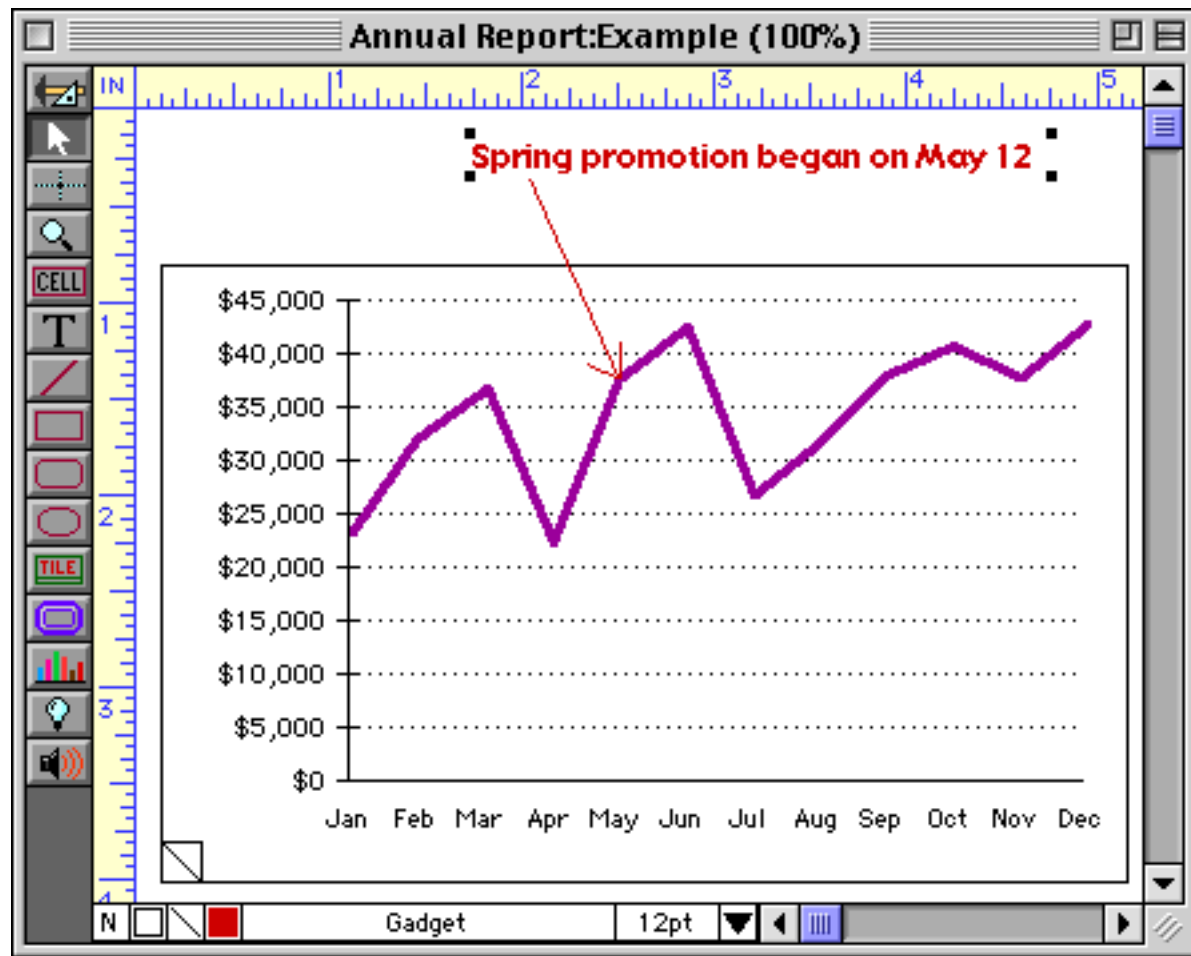


Click the preview flap to flip to a preview of the chart.



Click the preview flap again to flip back to the chart dialog. You can flip back and forth as many times as you like.

Chart preview is especially handy when you want to draw graphics on the chart itself. For example, you may want to draw a line to a data point to highlight the point. Chart preview lets you see the chart while you draw objects on top of it. Of course if the data changes, these objects may no longer be in the correct position!



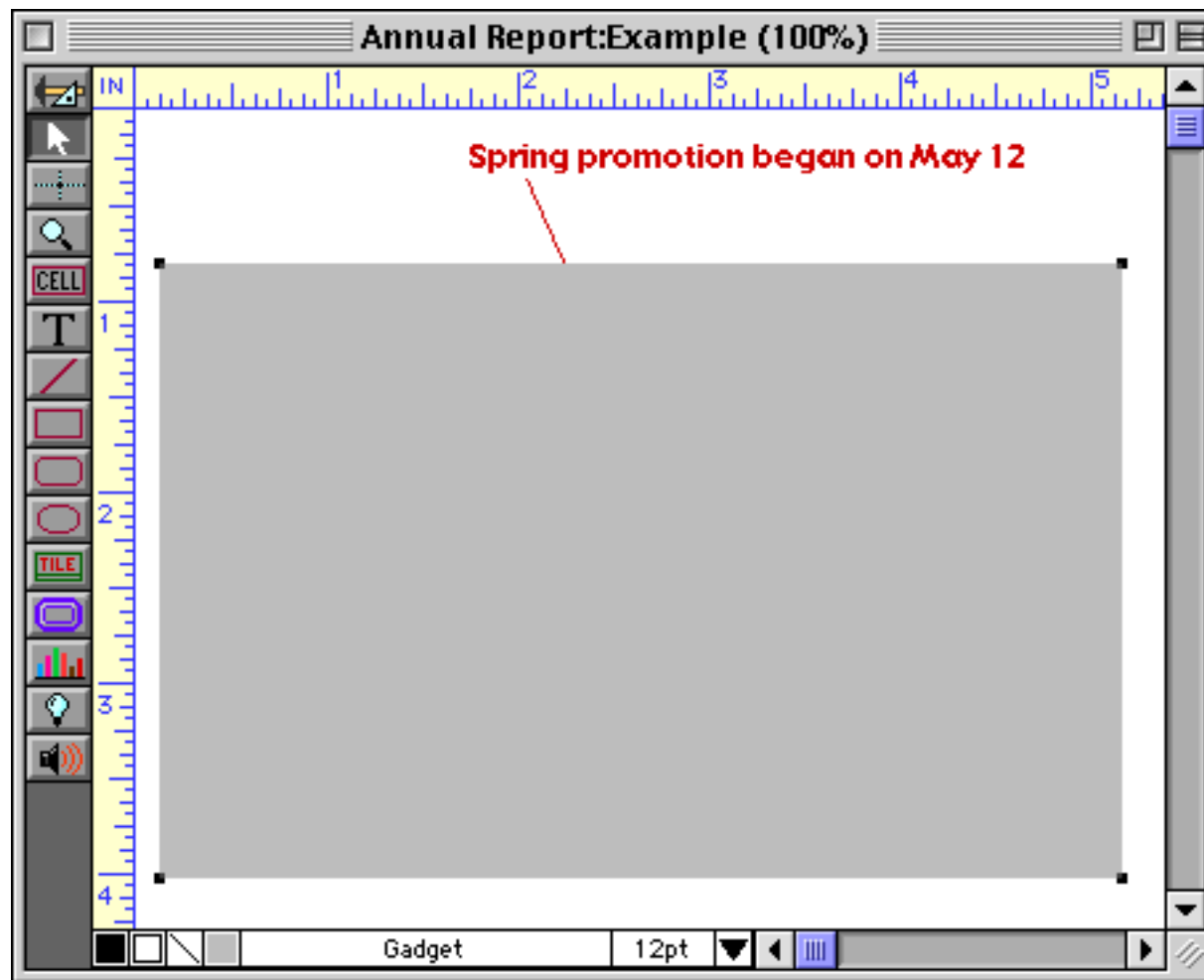
Copying a Chart to Another Application

Chart preview is also useful for copying a chart to a separate graphics or page layout program. To copy a chart to the clipboard, first preview the chart, then select the chart object and use the **Copy** command. You can then paste the chart into another program (as a picture).

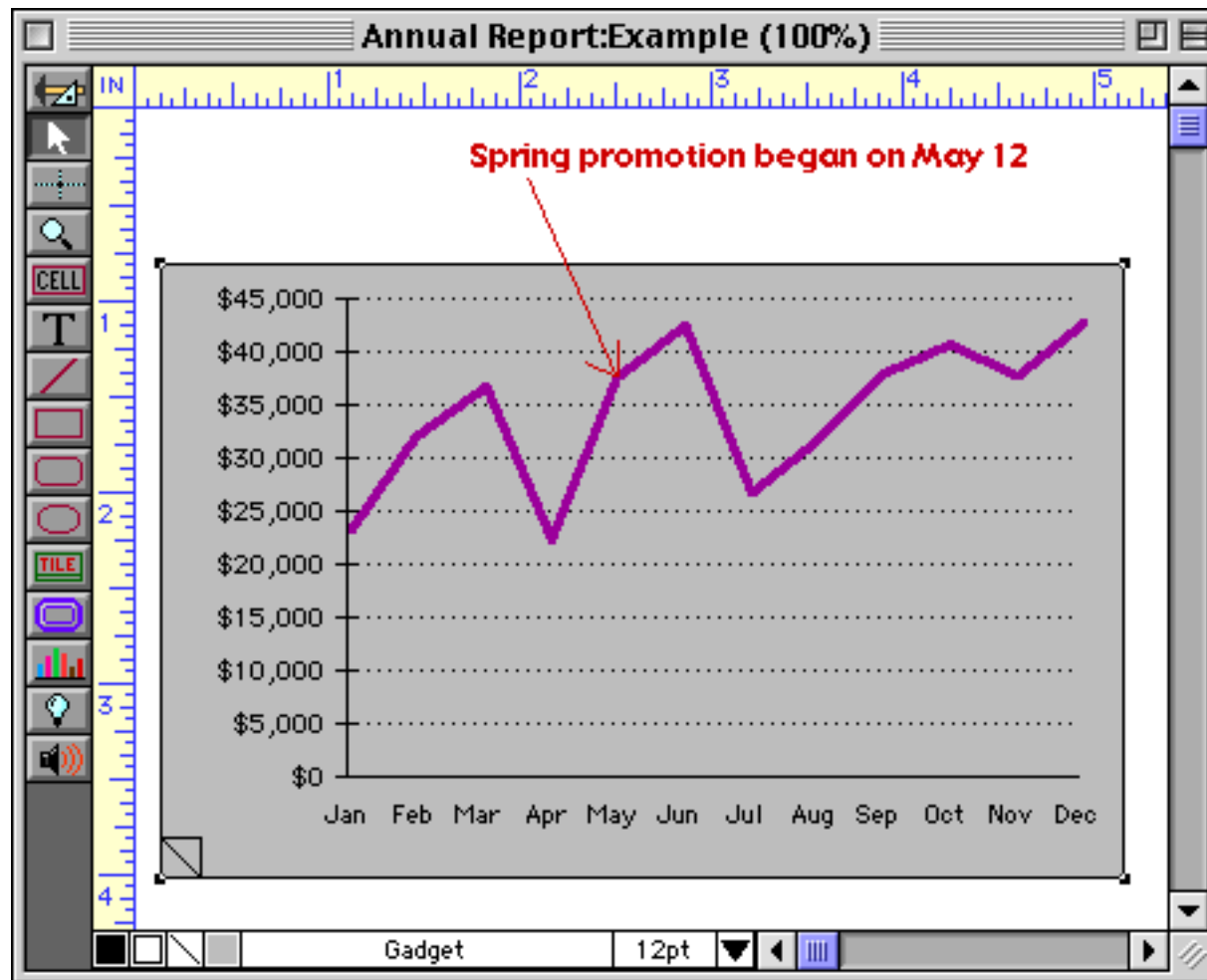
Graphic Embellishments (Titles, Legends, Drop Shadows, etc.)

Since a chart object is part of a form, you can use Panorama's graphic tools to spruce up the form any way you wish. You can add a title to a form with the Text tool. Since charts are transparent, you can add a back-drop by putting a gray or colored rectangle behind the chart. You can even create a complete legend for the chart showing which pattern or color corresponds to which data value.

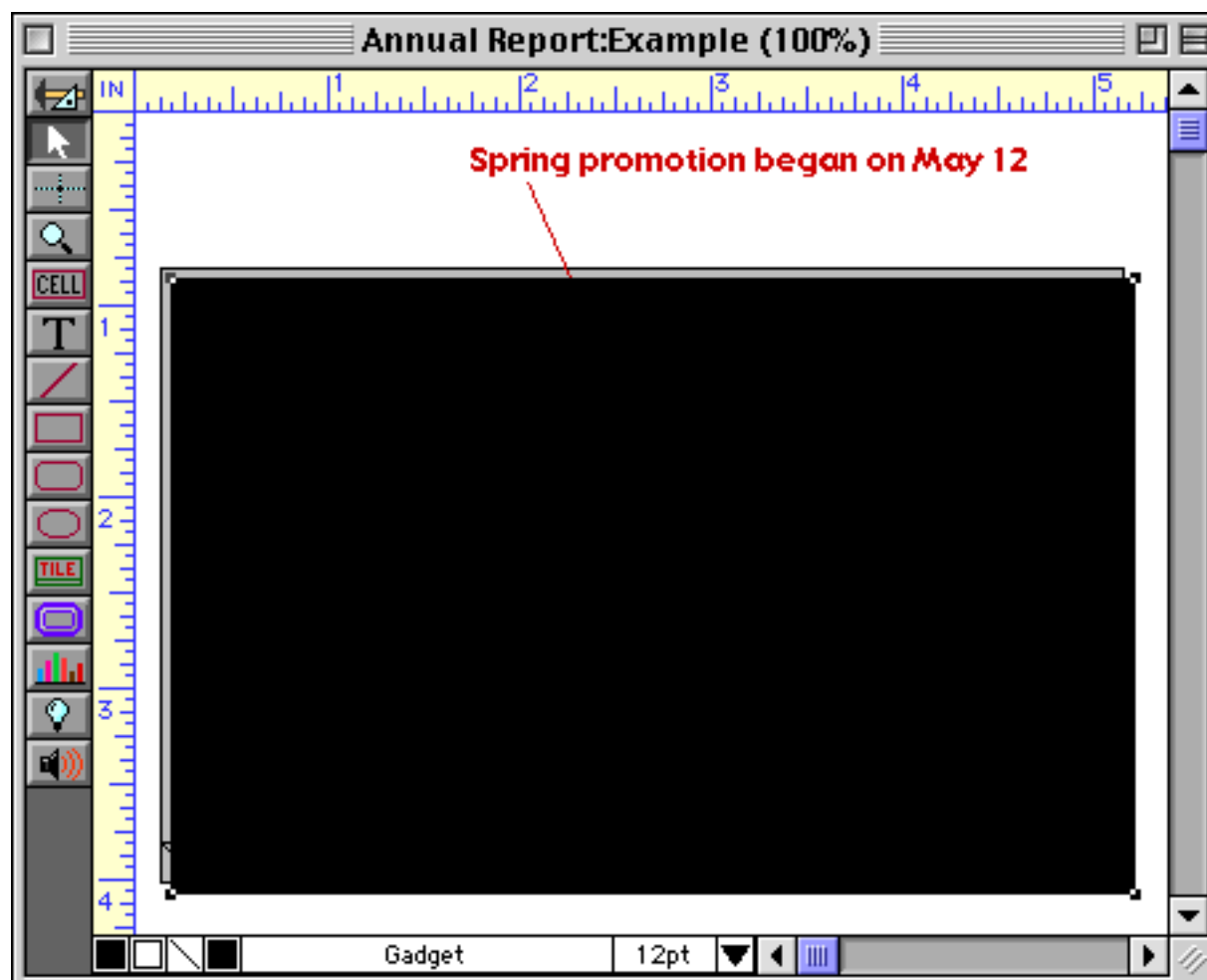
Adding a drop shadow to a chart requires two rectangles. First create a white or light colored rectangle over the chart (see "[Creating a Graphic Object](#)" on page 494).



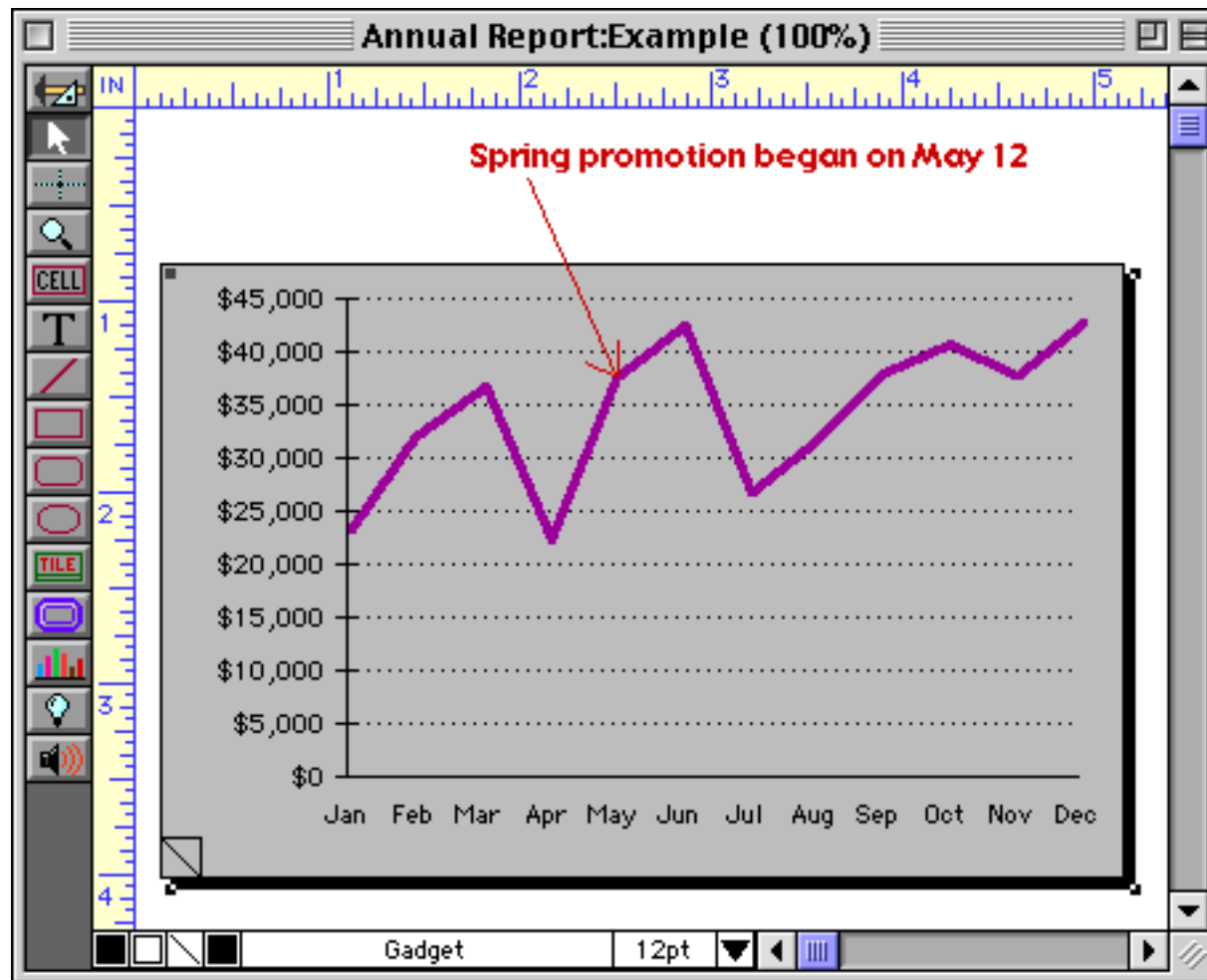
Use **Send to Back** to move the rectangle behind the chart (see “[Changing the Stacking Order](#)” on page 569).



Next, duplicate this rectangle (see “[Duplicate](#)” on page 561) and change it to a dark color (see “[Color](#)” on page 526).



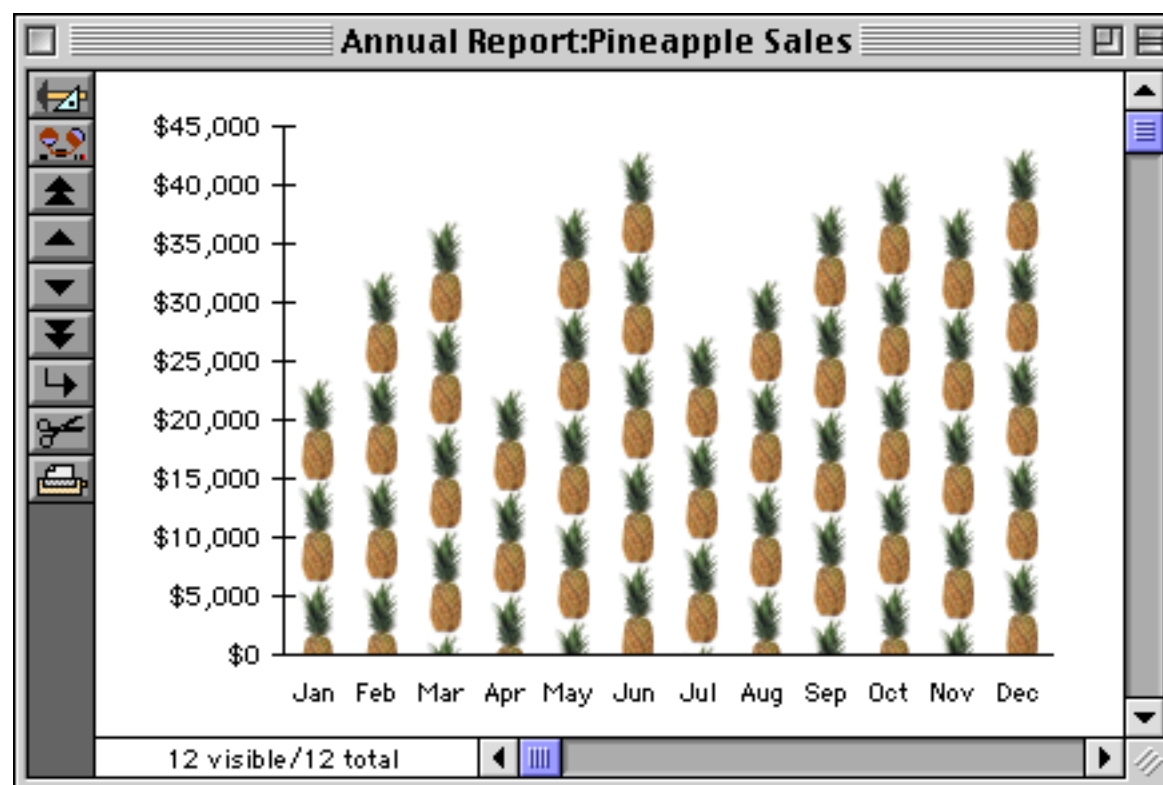
Use **Send to Back** to move this new rectangle behind everything else. Voila! A drop shadow!



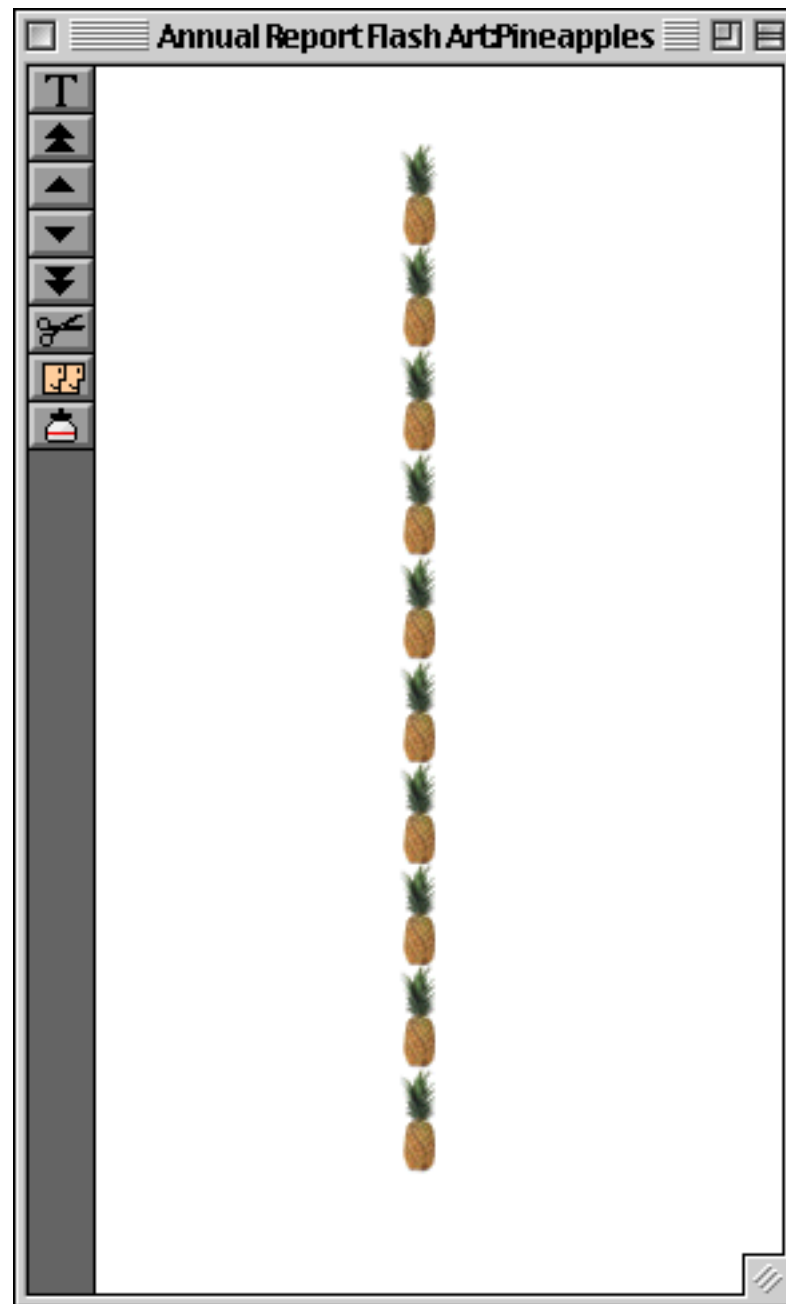
If necessary, move the shadow into position behind the chart, using the arrow keys if necessary for fine adjustments (see "[Nudging an Object \(or Objects\)](#)" on page 509). (The white or light colored rectangle is needed because the chart is transparent. This rectangle blocks the shadow rectangle below it.)

Chart Flash Art

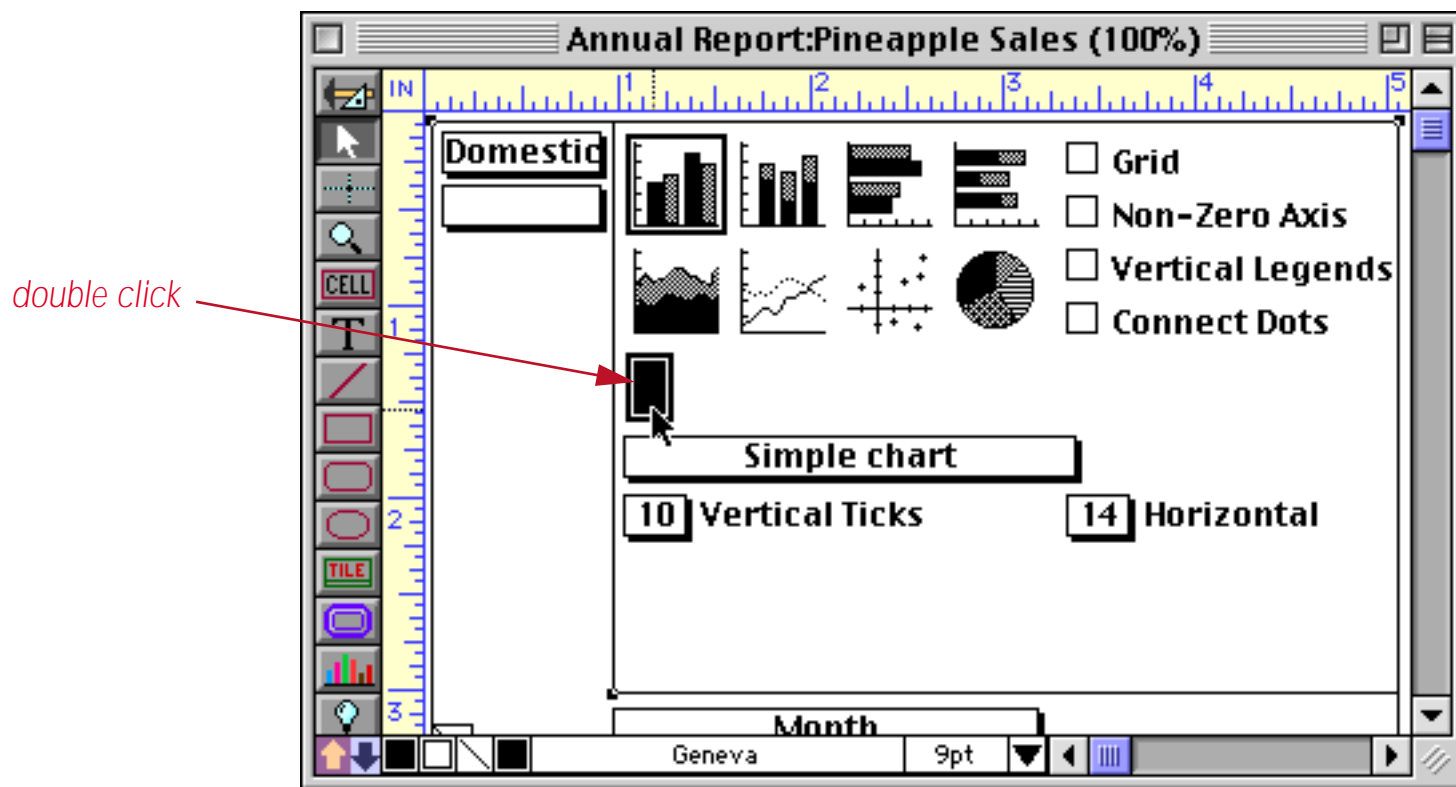
Charts are usually displayed using solid patterns and colors. With a little extra effort, you can create a truly unusual charts by using Flash Art to draw the values in a bar, area, or scatter chart.



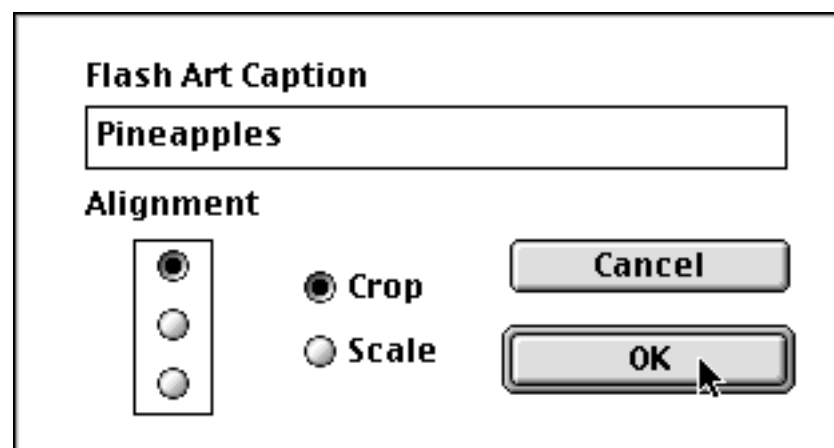
Before you can use Flash Art in a chart, you must build up a scrapbook of one or more Flash Art pictures. Each Flash Art picture is identified by a name. For instructions on building a Flash Art Scrapbook, see “[The Flash Art Scrapbook \(Gallery\)](#)” on page 764. The image used for the chart above was created in Adobe Photoshop and consists of a series of pineapples stacked on top of each other.



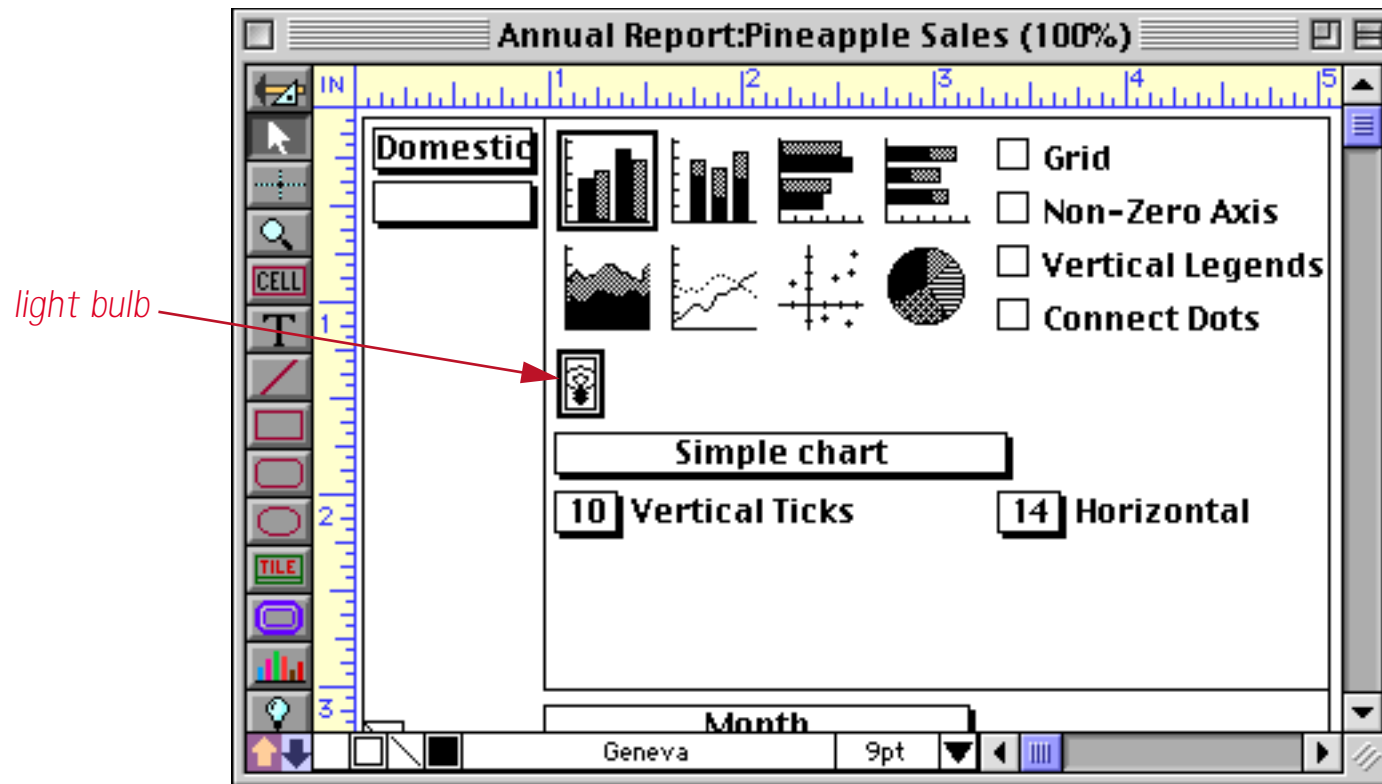
To use Flash Art instead of a standard pattern or color, double click on one of the graphic attribute icons (see “[Graphic Attribute Icons](#)” on page 1017).



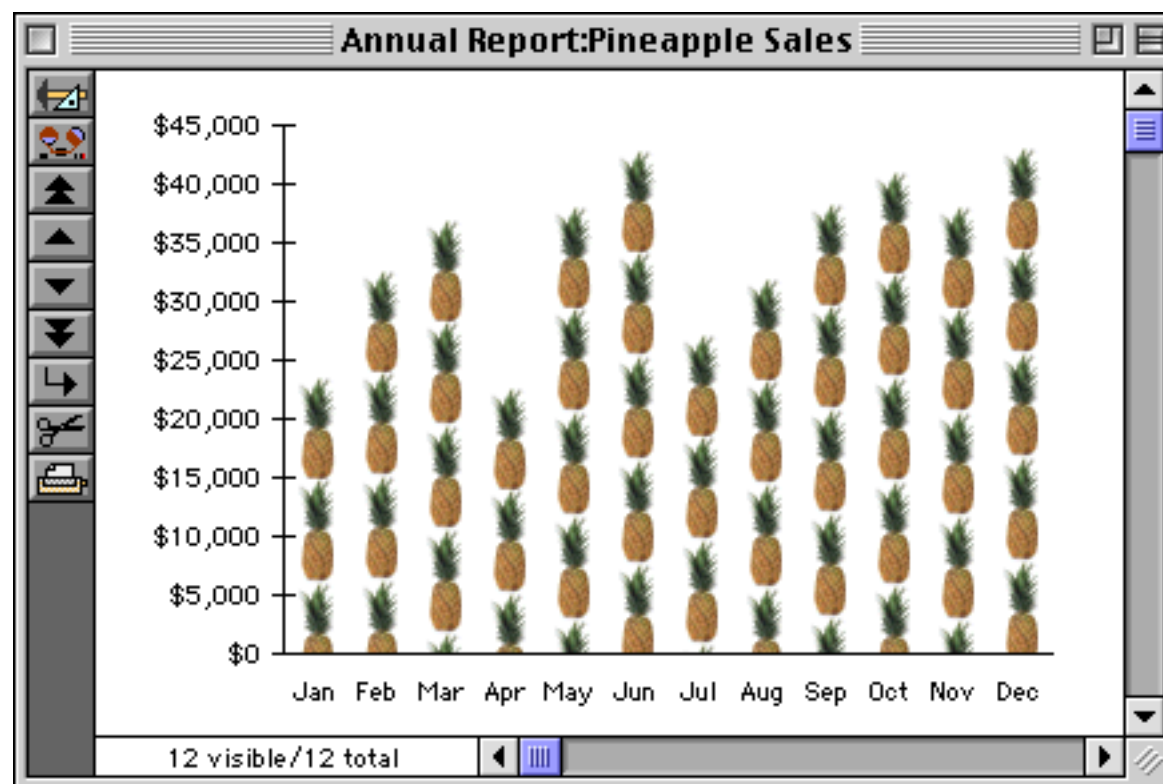
Double clicking on a graphic attribute icon opens a dialog for setting up the Flash Art options. Type in the name of the Flash Art picture you want to use (up to 28 characters).



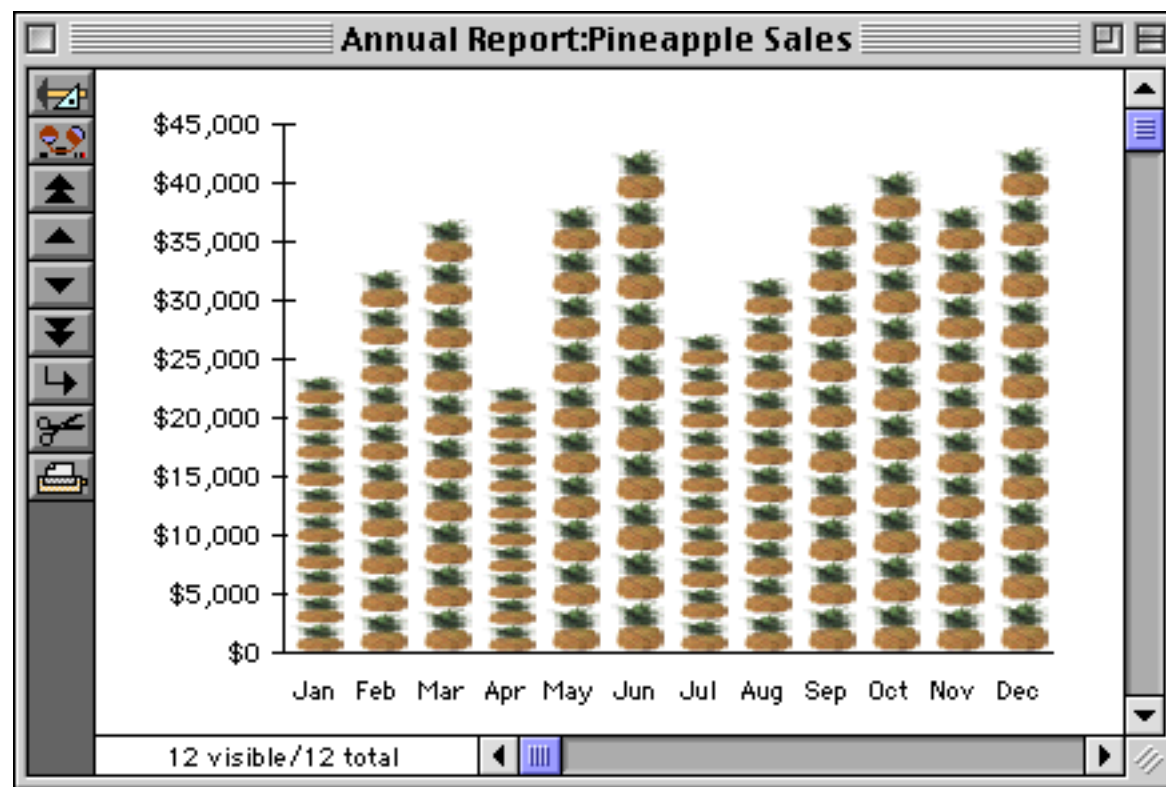
When you click **OK**, the icon will display a tiny flash art light bulb.



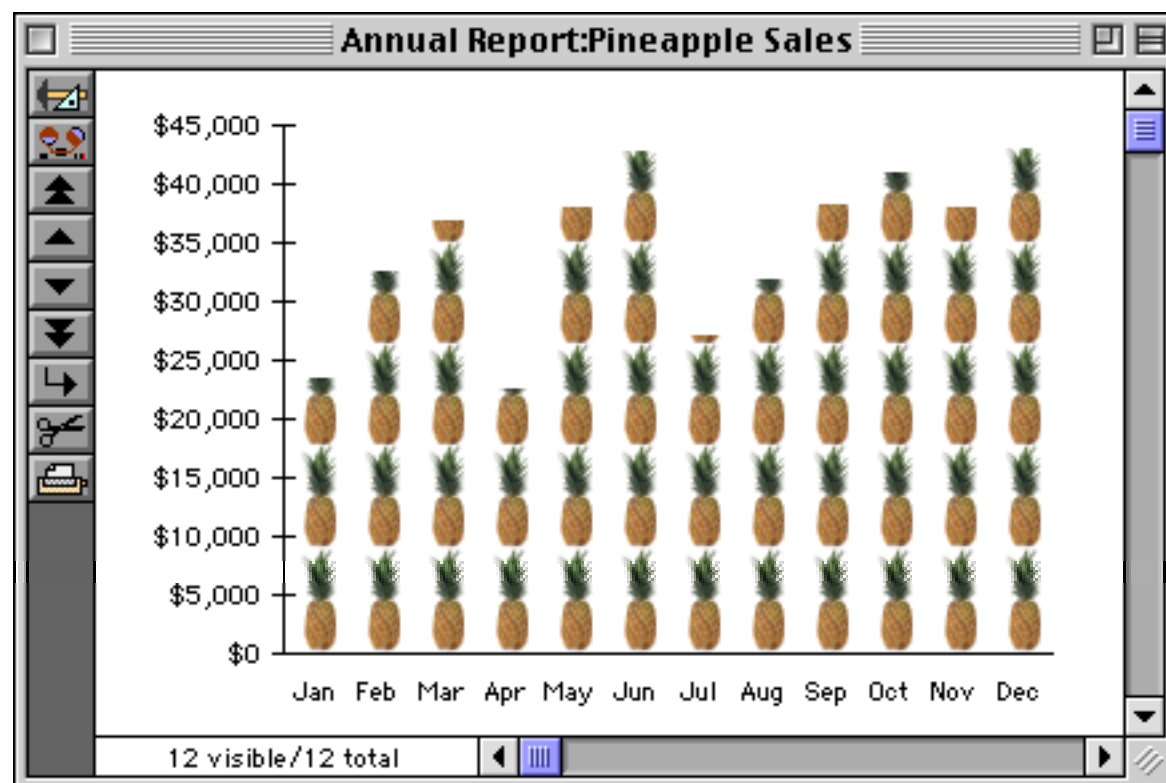
Switch to Data Access Mode (or preview) to see the Flash Art picture in the chart.



The Flash Art dialog allows you to specify whether you want to scale or crop the picture to fit in each bar of a bar chart. Here's an example of the same chart using the **Scale** option.



If the picture is cropped, you can specify whether it should be cropped from the center or from either end. Here's an example that is cropped from the bottom instead of the top. Notice how the tops of the pineapples are cut off.

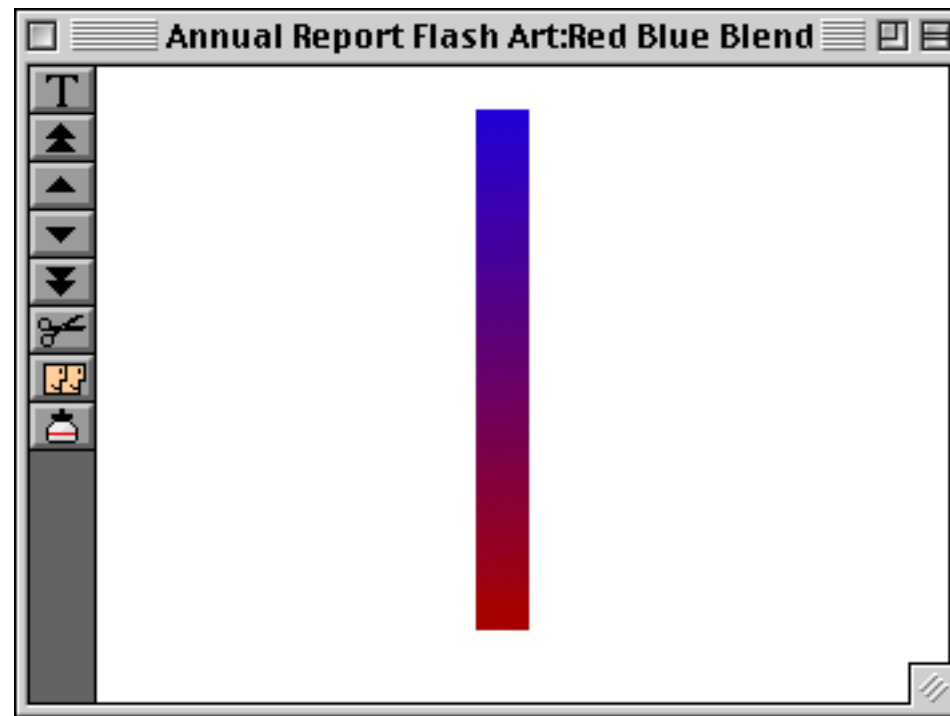


Flash Art cannot be used in line or pie charts.

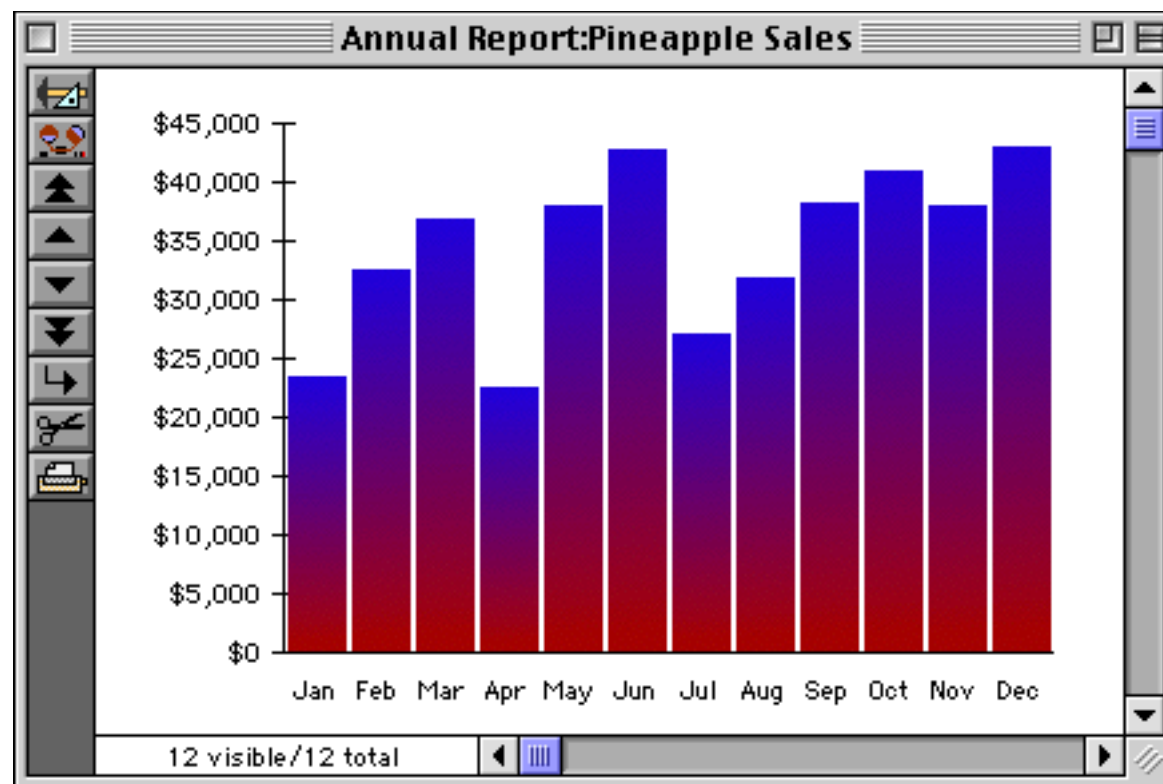
Using Flash Art for Color or Blends

Beyond the obvious application of pict-o-grams, Flash Art can also be used to display charts using graphic effects that cannot normally be created with Panorama. For example, Panorama is normally limited to 256 colors, but using Flash Art you can use any color available on your system. Simply create a swatch of the color in a color paint or draw program, then copy the swatch into the Flash Art Scrapbook. Once the color swatch is in the scrapbook, it can be used in a chart.

You can also use a program like PhotoShop to create a blend, then paste the blend into the Flash Art Scrapbook.



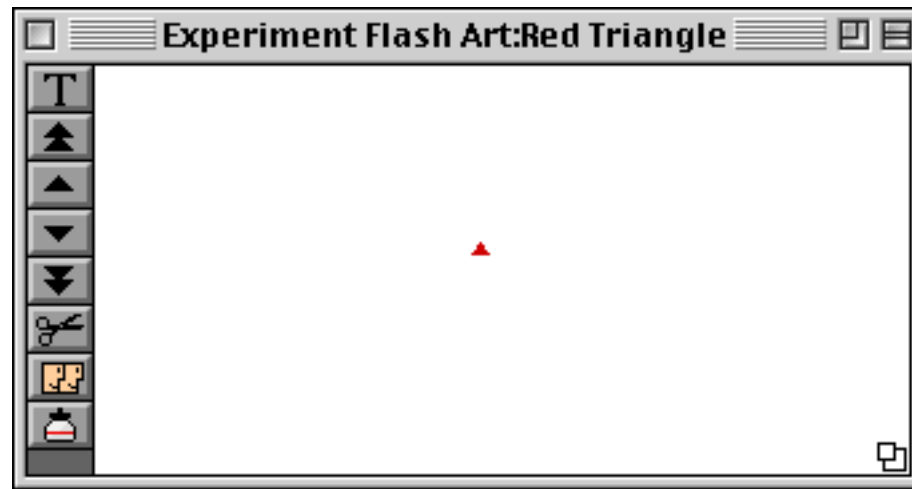
Once the blend is in the scrapbook, it can be used in a chart. This chart was created using the **Scale** option, but you can also get nice effects using the **Crop** option.



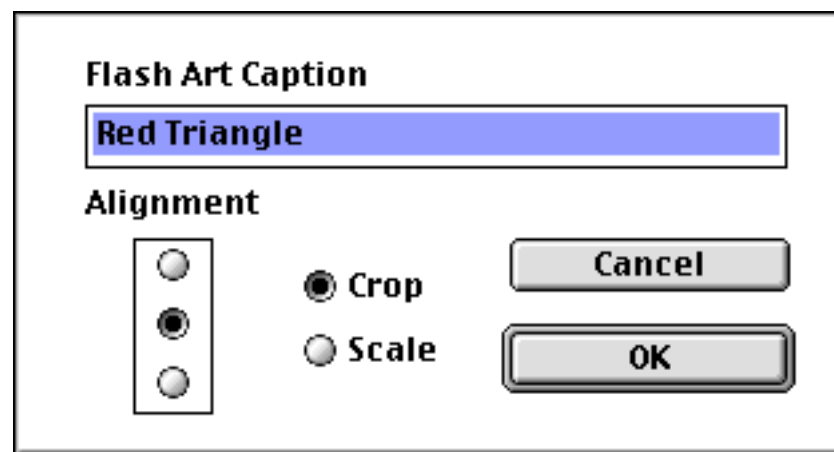
Scatter Diagram Flash Art

Scatter diagrams don't have to be just a collection of dots. You can spruce up scatter diagrams with Flash Art, and by playing connect the dots. (See "[Scatter Diagrams](#)" on page 1005 for basic information about scatter diagrams.)

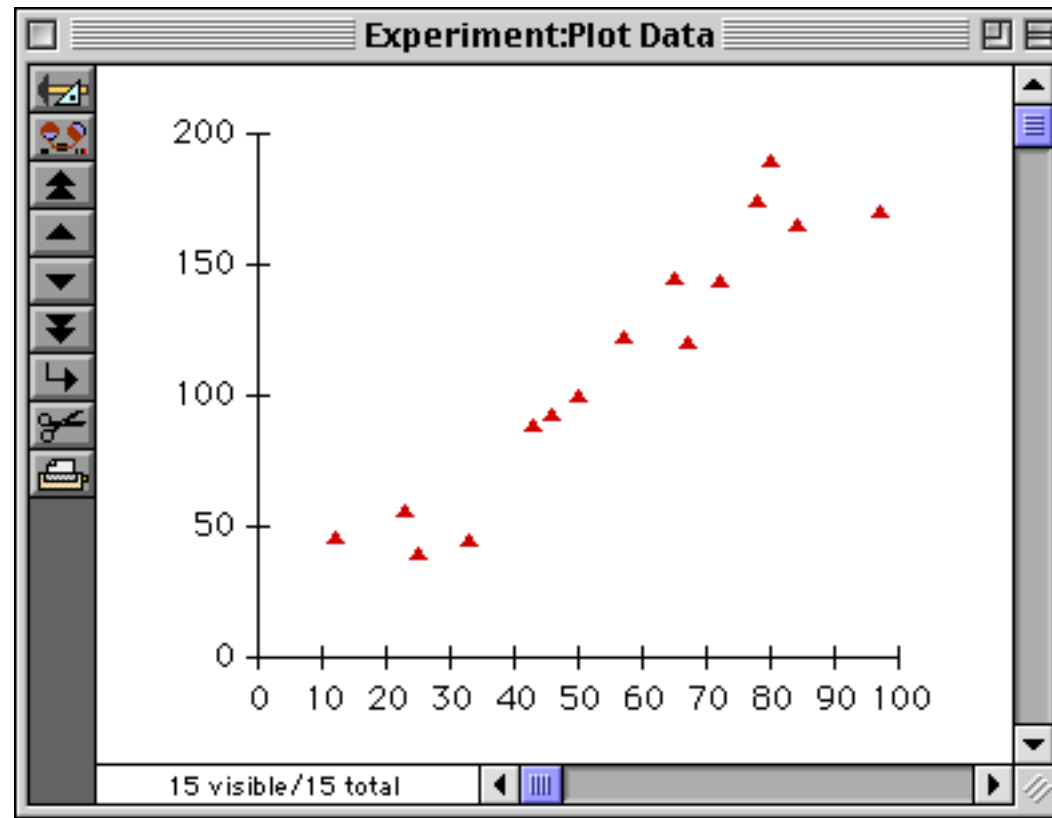
To use a Flash Art picture instead of a simple dot, start by creating an image you want to use, then paste that image into the Flash Art Scrapbook (see "[Adding a New Image to the Scrapbook](#)" on page 765).



Next double click the graphic attributes icon and set up the Flash Art option (see "[Chart Flash Art](#)" on page 1032).



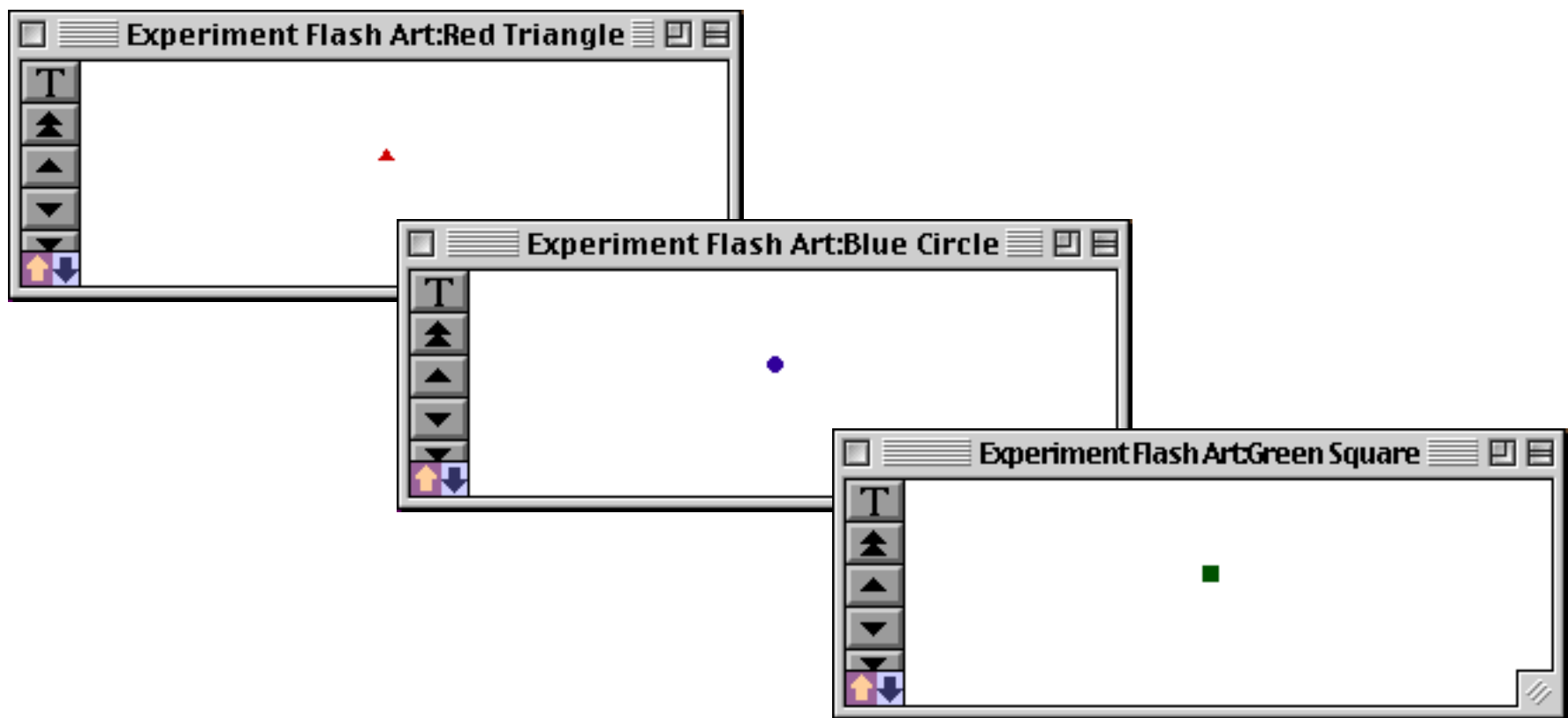
Now Panorama will draw the scatter diagram using red triangles.



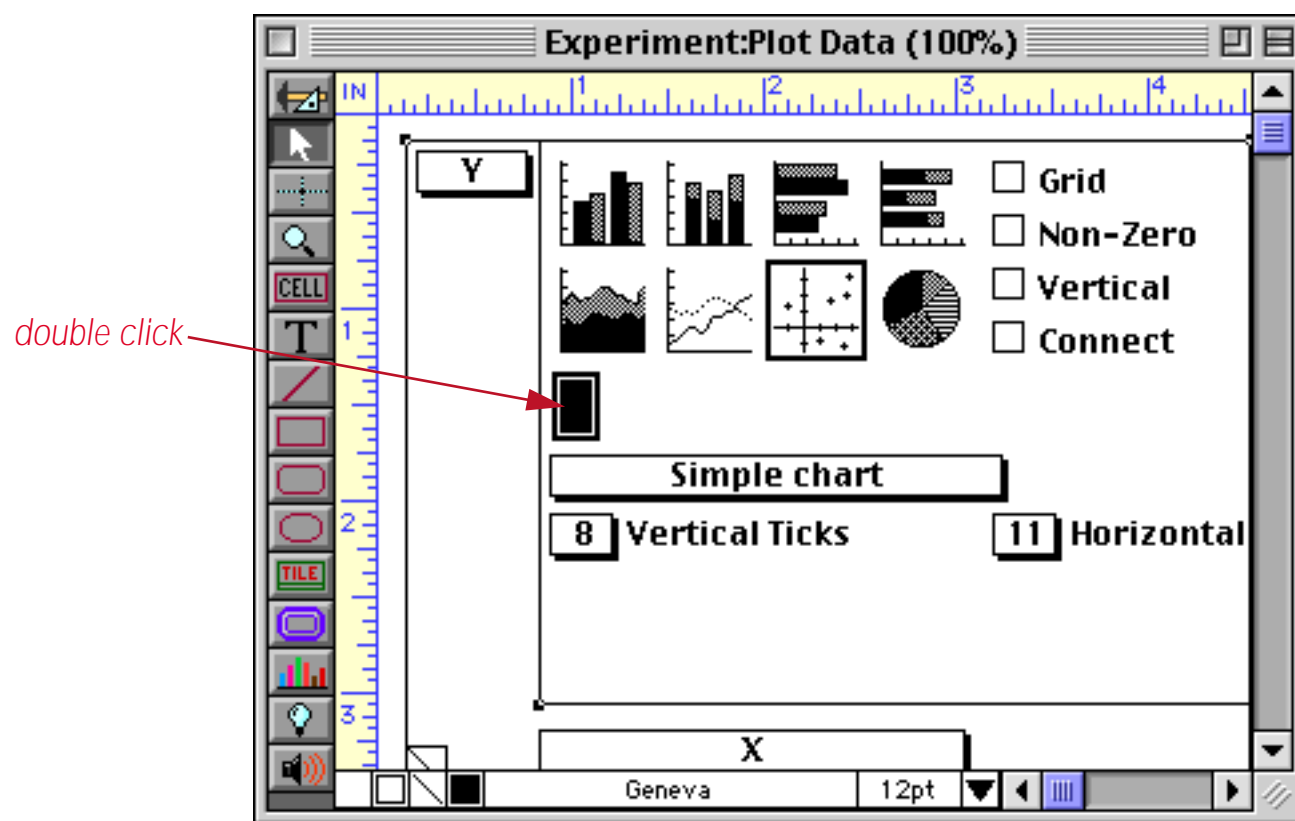
It's possible to create a scatter diagram in which different points are represented with different images. To create a chart like this, start by adding an extra field to the database that contains the name of the image associated with each point. In this example a field named **Data Type** has been added (see "[Adding New Fields](#)" on page 198).

X	Y	Data Type
23	56	Red Triangle
67	120	Blue Circle
43	89	Green Square
97	170	Blue Circle
78	175	Blue Circle
33	45	Green Square
50	100	Red Triangle
65	145	Red Triangle
25	40	Green Square
46	93	Blue Circle
72	144	Red Triangle
80	190	Blue Circle
84	165	Green Square
57	122	Green Square
12	46	Red Triangle

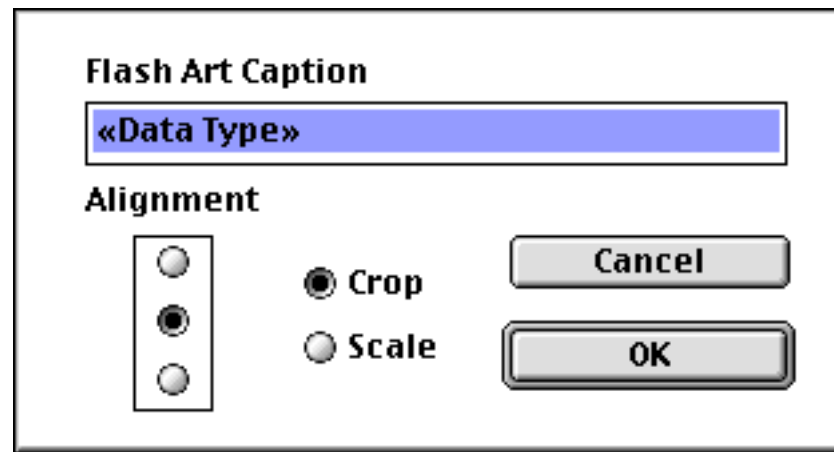
The next step is to add the images to the Flash Art Scrapbook (see “[Adding a New Image to the Scrapbook](#)” on page 765).



Next double click on the graphic attribute icon for the chart (see “[Chart Flash Art](#)” on page 1032).

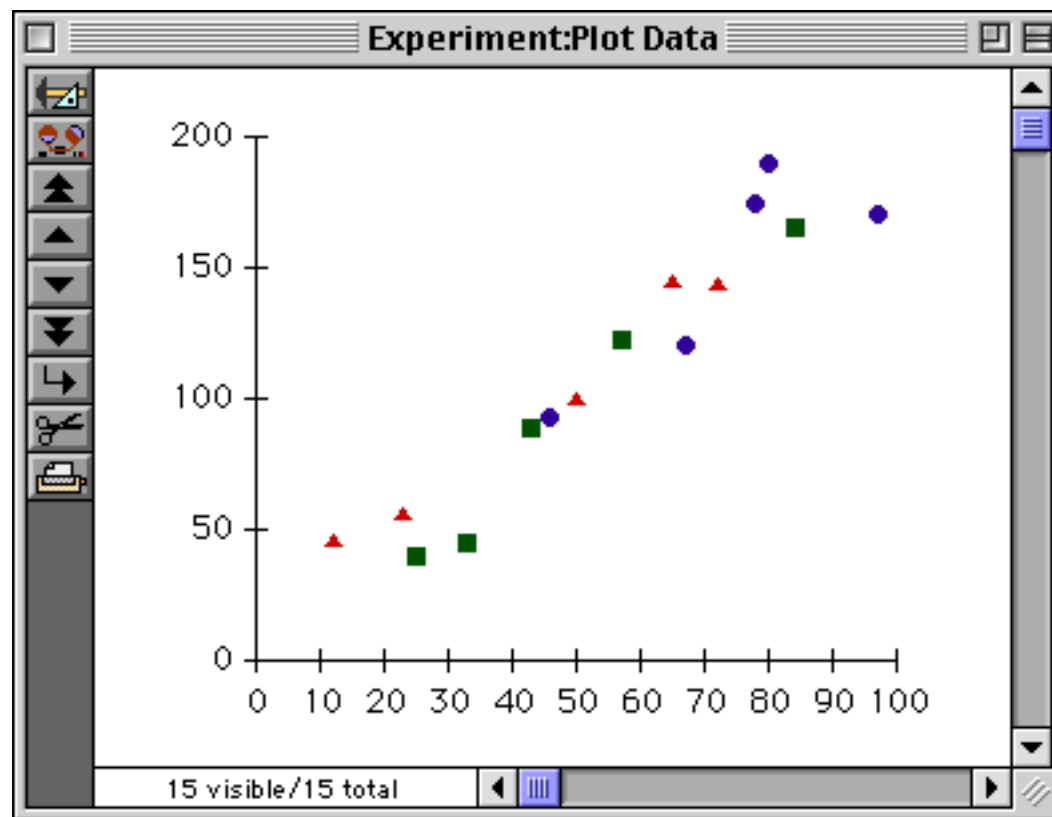


Enter the name of that field surrounded by the « » chevron characters. On the Macintosh these characters are produced by typing **Option-** and **Shift-Option-**. On PC systems these characters are produced by typing **Alt-0171** and **Alt-0187**.



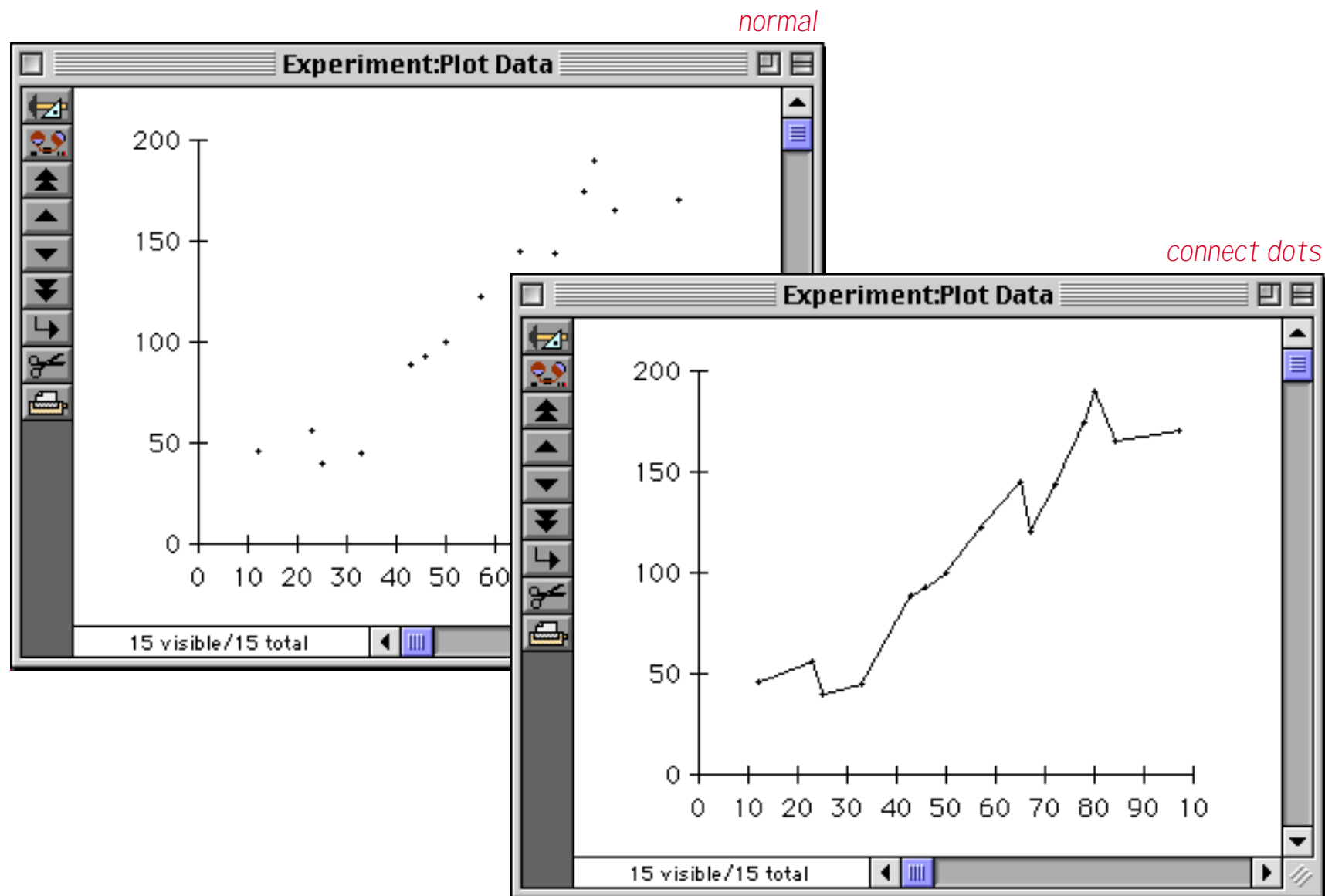
(Note: Although the example may make it appear as if you could enter an entire formula, only a field name is allowed.)

When the chart is displayed it shows the appropriate symbol for each point.

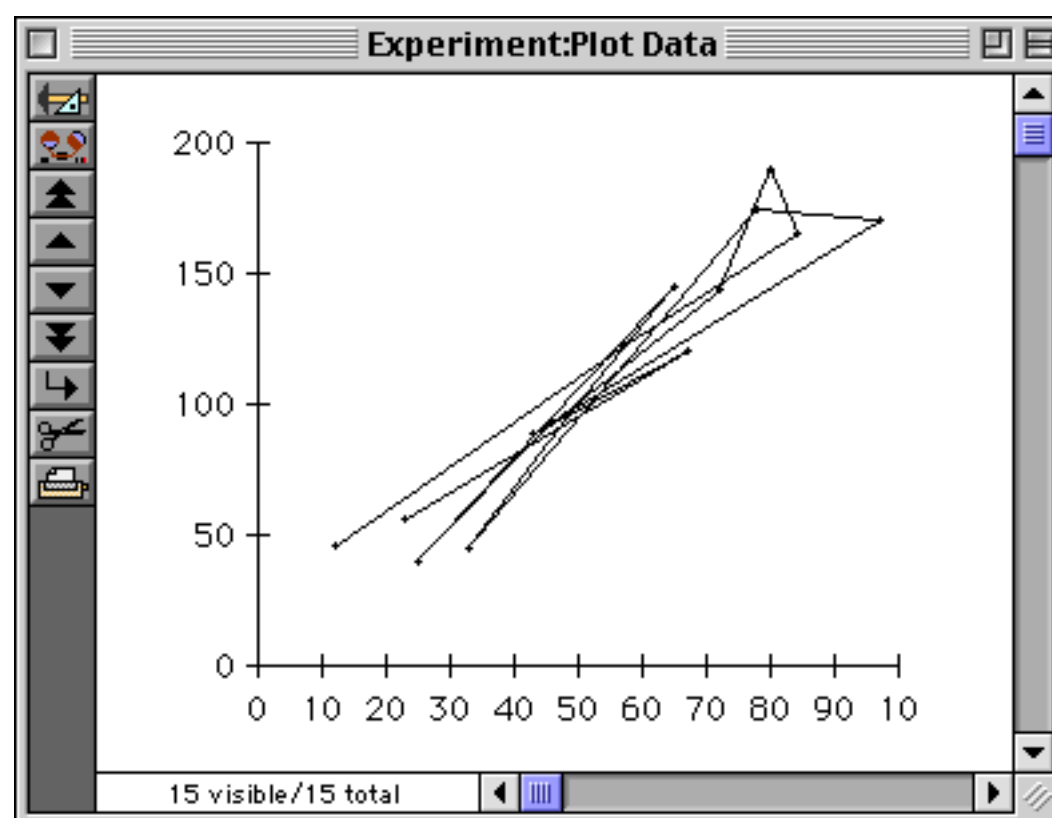


Connect Dots

To draw a line between the dots in a scatter diagram, check the **Connect Dots** option. The **Connect Dots** option only affects scatter diagrams. All other chart types ignore this option.

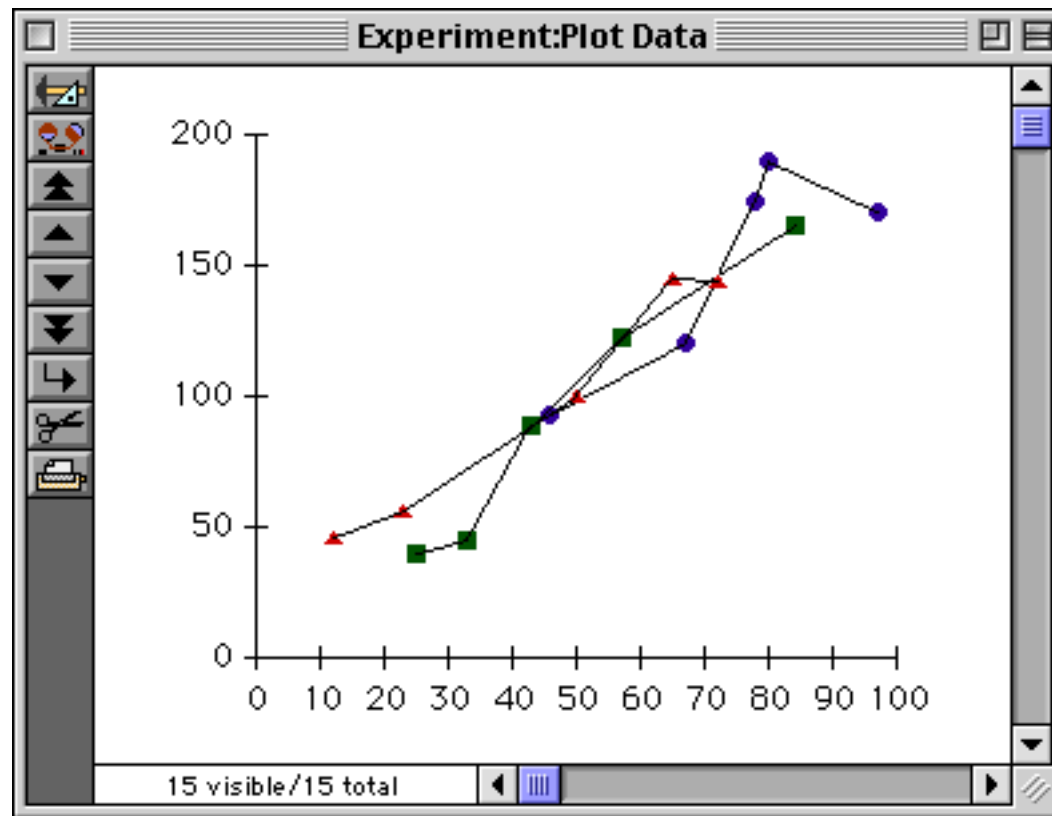


When a chart is connecting the dots, the order of each point is very important. If the points are out of order, the result can be a mess.



The points can be re-arranged into order by **Sorting** the X value, and then using **Sort Within** on the Y value (see “[Sorting By More Than One Field](#)” on page 324). (This assumes, of course, that you don’t want the lines to be scrambled up.)

If the chart uses different Flash Art symbols for different dots (see “[Scatter Diagram Flash Art](#)” on page 1038), Panorama will only draw a line between points that are the same shape.

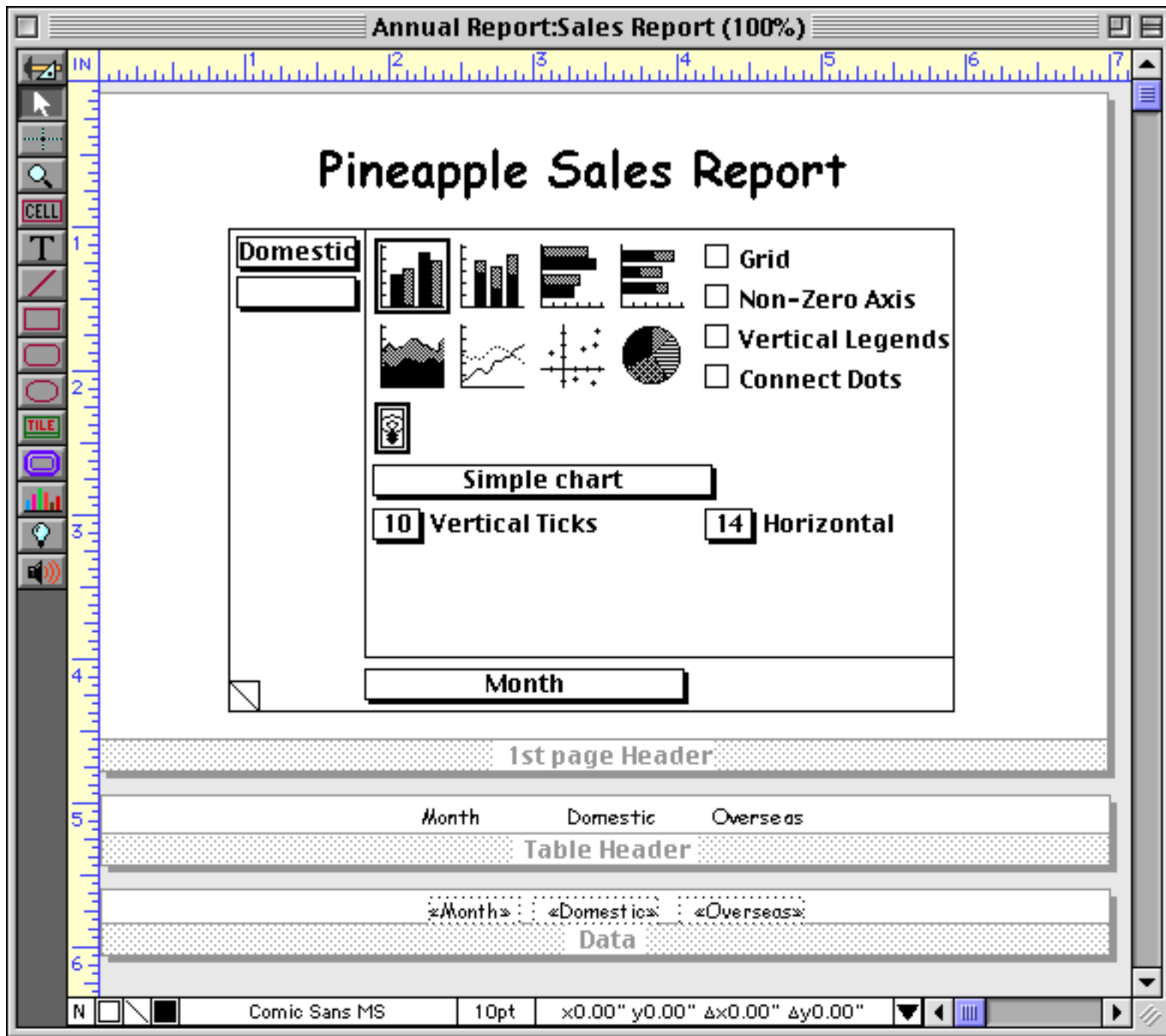


To make sure that all points of each symbol are connected together, sort the database by the type of symbol. You may also want to **Sort Within** by the X and Y values.

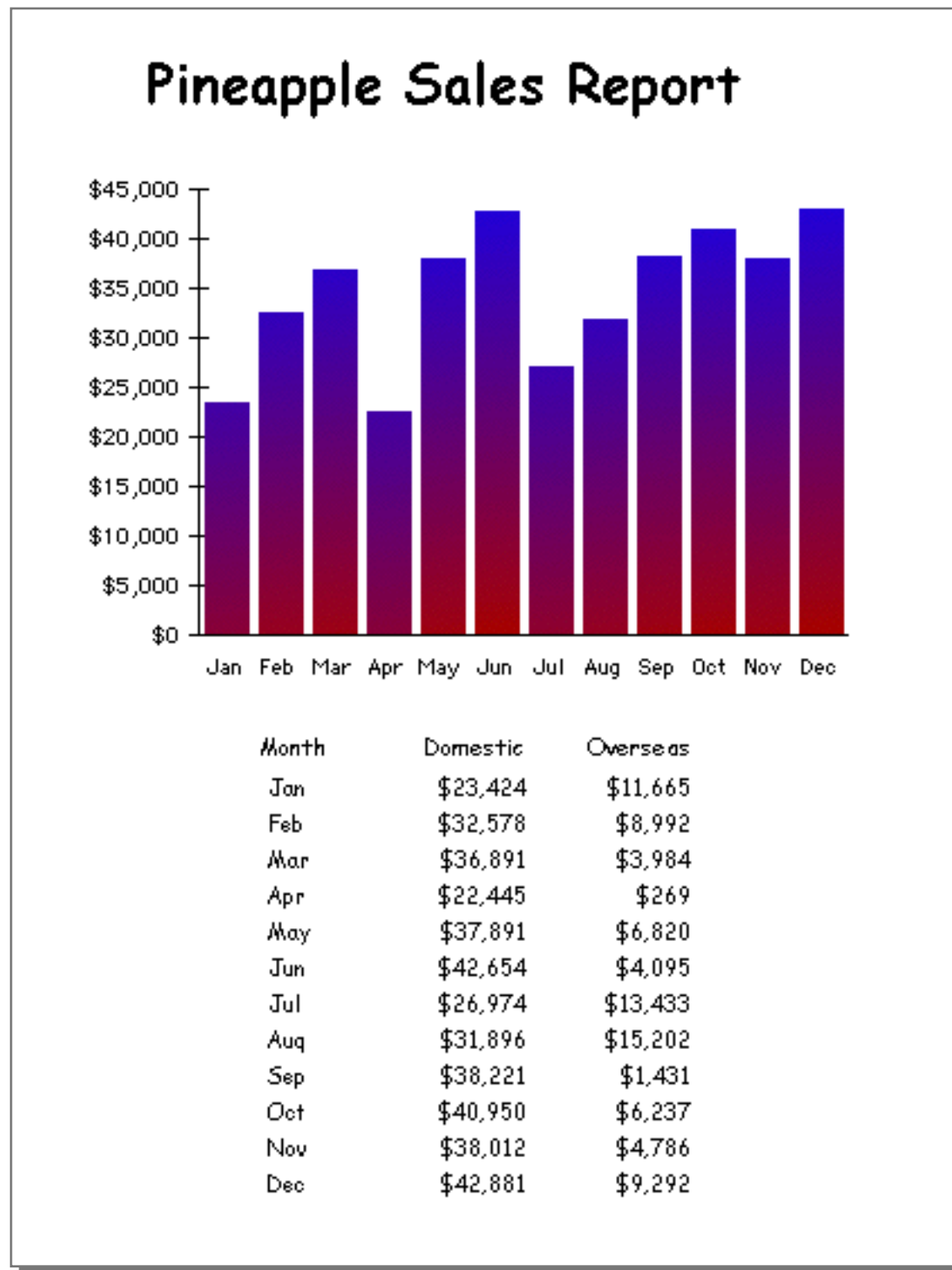
Printing a Chart

A chart can be printed just like any other graphic element. A simple way to print a chart is to place it on a data tile and use the **Print One Record** tool to print it (see “[Print One Record](#)” on page 1058). (If you use the **Print** command you will get many identical copies of the chart—one for each visible record.)

Another method is to place the chart on the **First Page Header** tile (see [“First Page Header Tile”](#) on page 1105).



This allows you to combine the chart with a listing of the data on the same page. Here's what the final printed page looks like.



Chapter 20: Printing Basics



Since we haven't quite arrived at the age of the totally paperless office, printing is still an important function of any computer program—including Panorama. This chapter covers the basics of printing. In the next chapter you'll learn how to design and use custom reports.

Printing Different Views

You can print any of Panorama's six kinds of views—data sheet, design sheet, flash art gallery, form, crosstab, or procedure. To print a view, you must make it visible in the top window. Use the View Menu if the view you want to print is not currently visible and on top (see "[Switching Between Views](#)" on page 168).

Once the view is visible in the top window, use the **Print** command in the File Menu to print the contents of the view.

Printing the Data Sheet

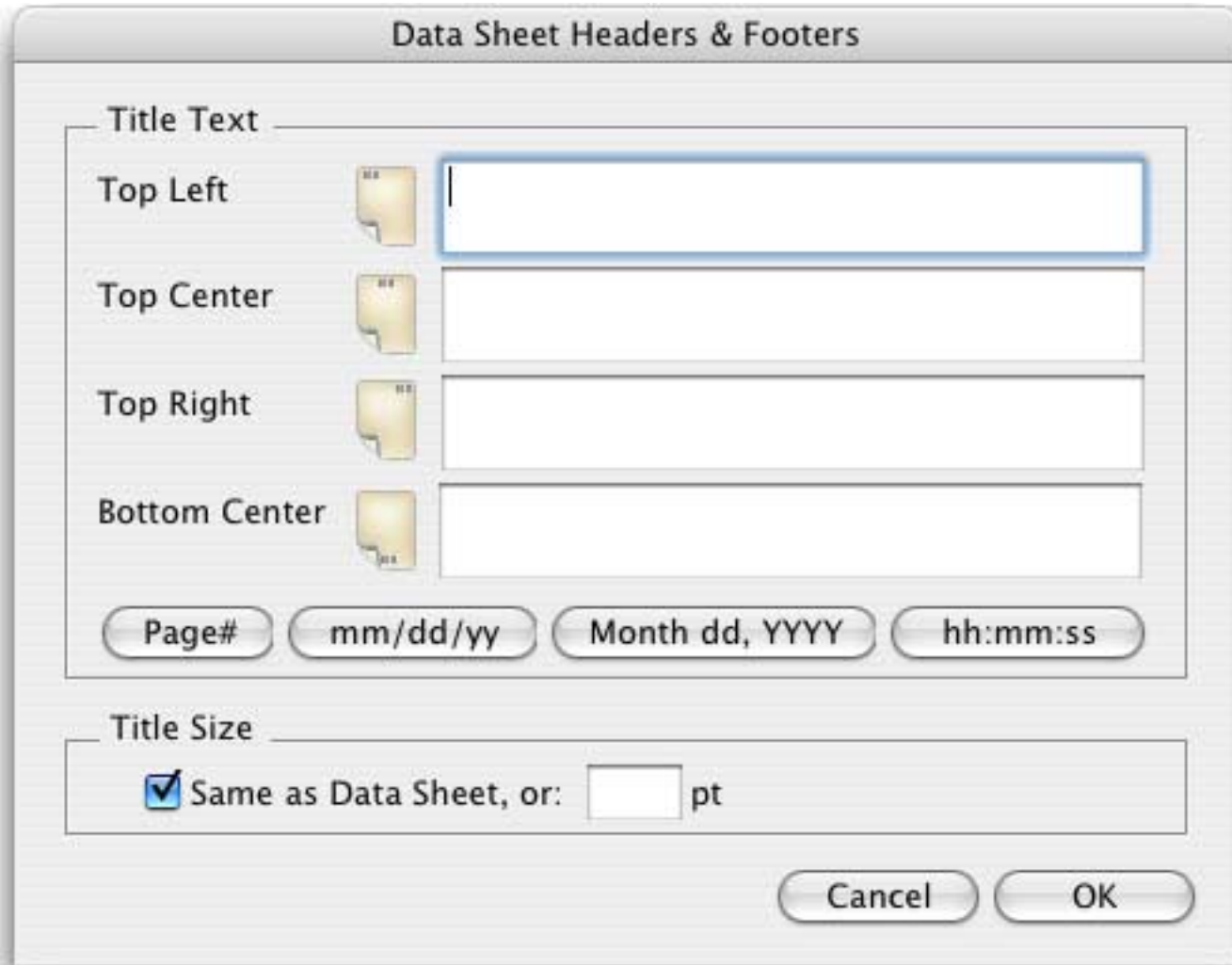
Panorama prints the data sheet exactly as it appears on the screen. If the data sheet is too wide to fit on the page, Panorama will print extra pages until all the columns are printed.

You can get more data sheet columns on a page several ways. One method is to use the **Page Setup** dialog to switch to a wide paper orientation (sideways or landscape), or to reduce the printout to a smaller size (Macintosh only). You can also use a smaller font.

You can also print the design sheet or a crosstab sheet. These views will also print extra pages if they contain more columns than will fit on a single page.

Printing Data Sheet Headers & Footers

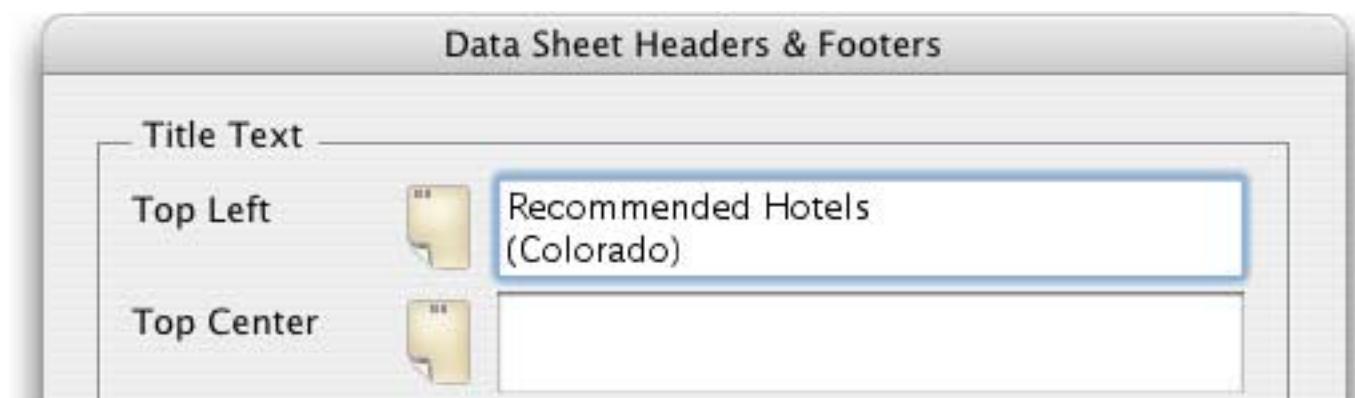
The Headers/Footers dialog (File Menu) sets up headers and footers for the data sheet, design sheet, or any crosstab. (You can set up separate headers and footers for each of these windows.)



The Headers/Footers dialog allows you to position headers and footers in four locations on the printed page: top left, top center, top right, and bottom center.

Top Left Header		Top Center Header			Top Right Header	
Hotel	City	Rate	Units	Phone	Stars	
6 & 40 Motel	Idaho Springs	19.00	30	567-2691	2	
ABC Motel	Gunnison	26.00	18	641-9909	2	
Airport Village Motor H	Denver	34.00	131	388-4821	3	
Alamosa Inn Best Weste	Alamosa	35.00	143	589-5123	3	
Best Western Spiner	Steamboat Springs	34.00	32	879-1430	3	
Best Western Spa Motor	Denver	35.00	70	292-0220	3	
Best Western Stagecoac	La Junta	30.00	60	384-5476	3	
		Bottom Center Header				

If you want to create a header or footer that is more than one line high, just press the **Return** key and type in the additional lines, like this.



When printed this header will look like this.

Recommended Hotels (Colorado)						Page 1
Hotel	City	Rate	Units	Phone	Stars	
6 & 40 Motel	Idaho Springs	19.00	30	567-2691	2	
ABC Motel	Gunnison	26.00	18	641-9909	2	
Airport Village Motor H	Denver	34.00	131	388-4821	3	
Alamosa Inn Best Weste	Alamosa	35.00	143	589-5123	3	
Alamosa Lamplighter M	Alamosa	30.00	73	589-6636	3	

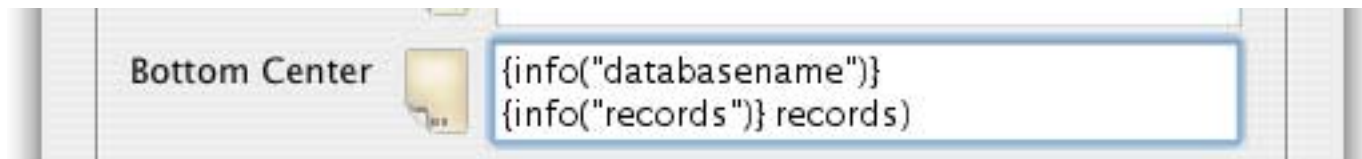
You can insert special codes into the header/footer text to print the page number, date, and time. Here's an example of how to insert the page number (the printed result is shown above). On the Macintosh the « » chevron characters are produced by typing **Option-\
On PC systems these characters are produced by typing **Alt-0171** and **Alt-0187**.**



The table below lists some of the special codes that can be inserted into a header or footer:

Description	Code	Example
Page Number	«page #»	1
Date	«date:mm/dd/yy»	3/7/02
Date	«date:Month ddnth, yyyy»	April 8th, 2003
Time	{timepattern(now),"hh:mm:ss am/pm"}	2:23:12 PM
Database Name	{info("databasename")}	Hotels

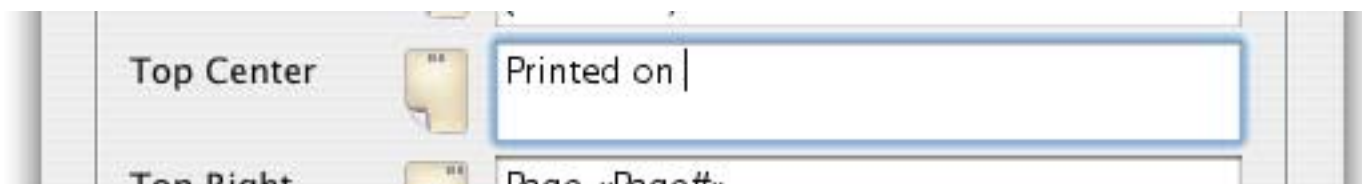
As the last two entries in this table show, you can actually insert any formula into a header or footer by surrounding the formula with { and }. Here's an example that uses two formulas to display the database name and number of records in the footer.



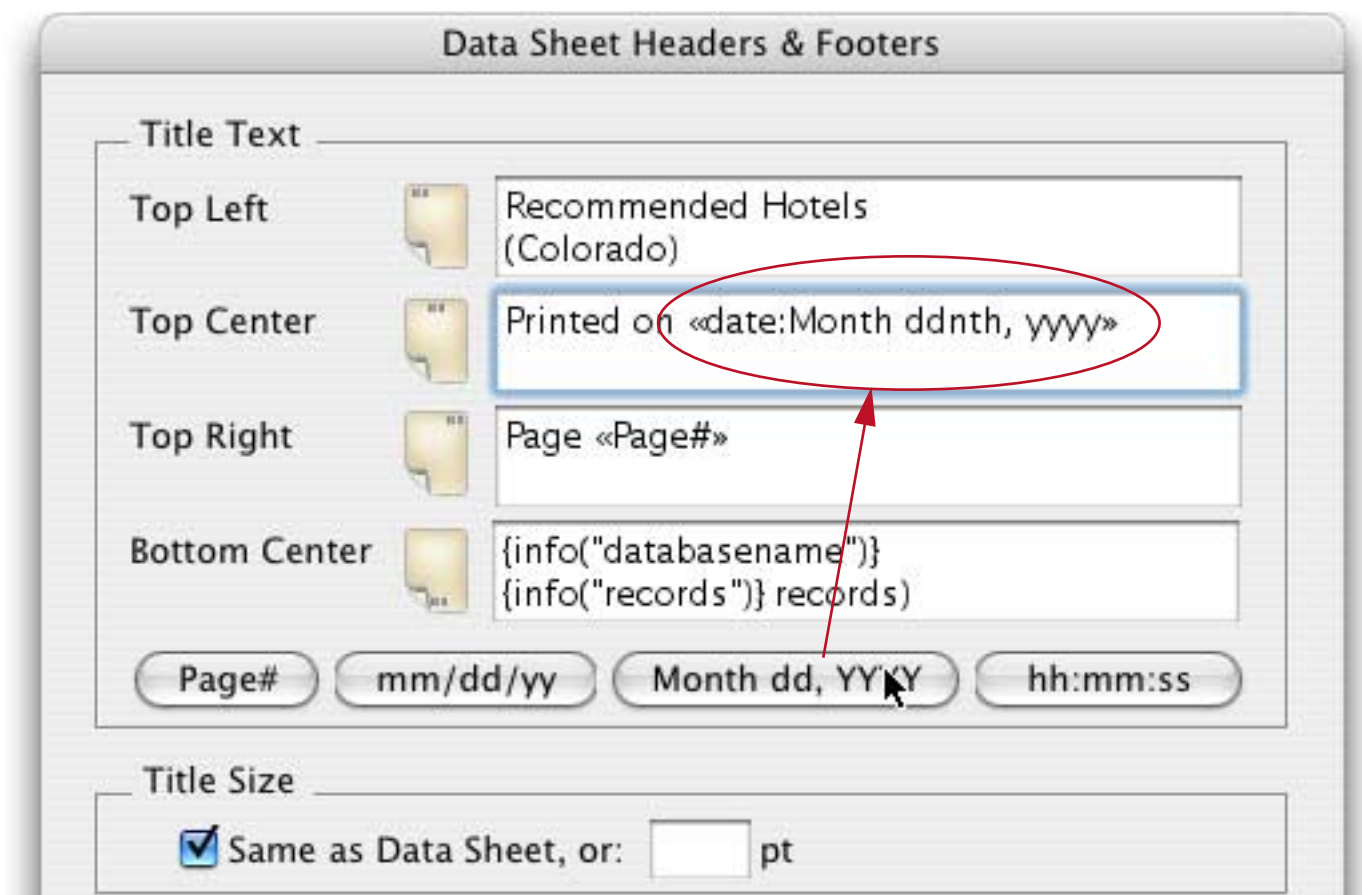
Here's what the finished footer looks like. See "[Formulas](#)" on page 19 of *Formulas & Programing* to learn more about formulas.

Best Western Sands	Cortez	30.00	81	565-3761	4
Best Western Shangri L	Breckenridge	38.00	41	453-2225	3
Best Western Silver Ki	Leadville	33.00	62	486-2610	3
Best Western Spiner	Steamboat Springs	34.00	32	879-1430	3
Best Western Spa Motor	Denver	35.00	70	292-0220	3
Colorado Hotels (439 records)					

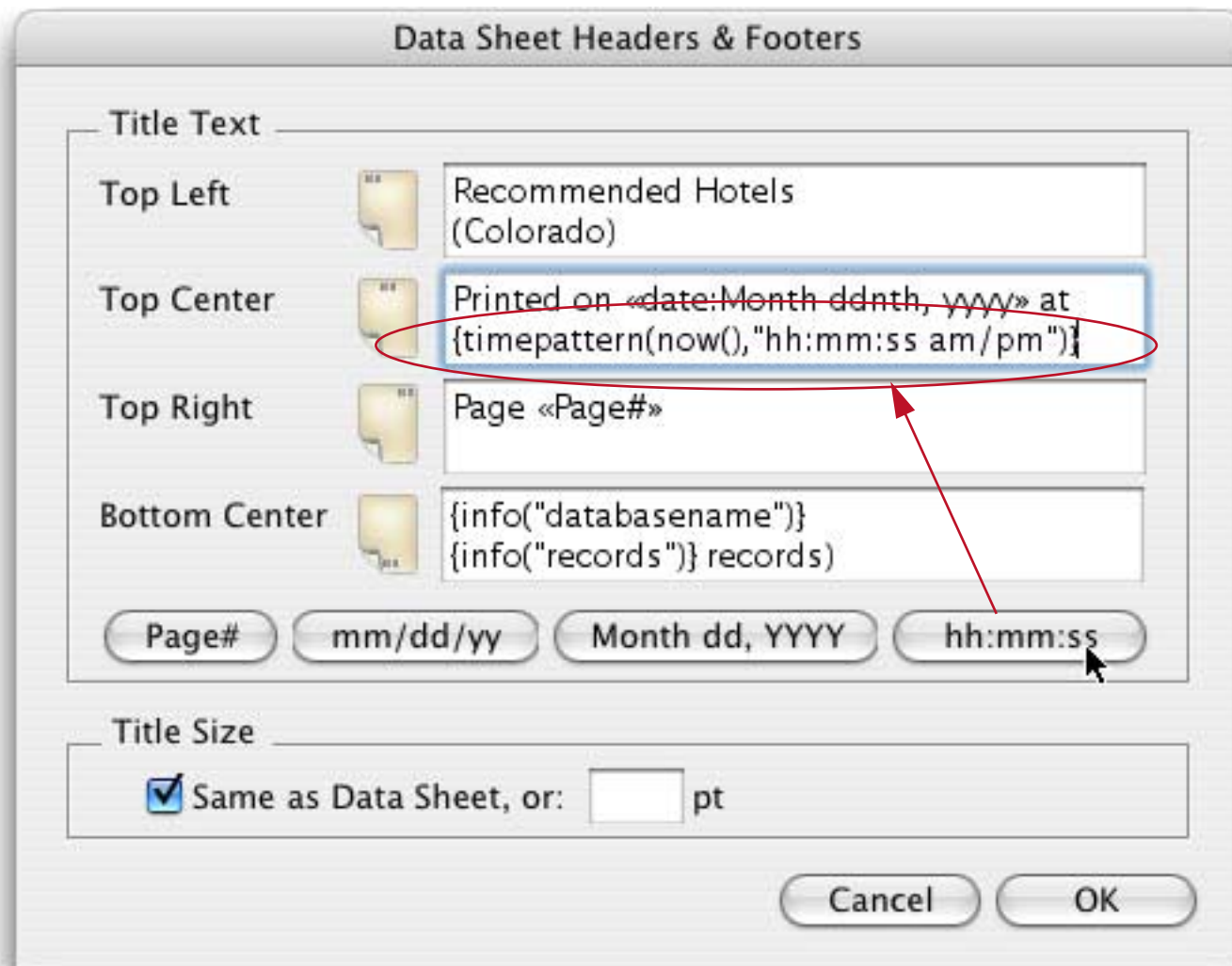
The four buttons just below the header/footer area will insert the most common codes into a header or footer for you. For example, suppose you wanted the top center header to show the time and date the database was printed, like this: [Printed on May 23rd, 2000 at 4:21 PM](#). Start by opening the Headers/Footers dialog. Type [Printed on](#) into the **Top Center** header.



Now press the **Month dd, YYYY** button. Panorama will insert the code for you.



Next type in `at` and press the **hh:mm:ss** button.



Now press **OK**, and print or preview the data sheet. The top of the printed page will look like this:

Recommended Hotels (Colorado)		Printed on July 6th, 2000 at 8:04:39 PM				Page 1
Hotel	City	Rate	Units	Phone	Stars	
6 & 40 Motel	Idaho Springs	19.00	30	567-2691	2	
ABC Motel	Gunnison	26.00	18	641-9909	2	
Airport Village Motor H	Denver	34.00	131	388-4821	3	
Alamosa Inn Best Weste	Alamosa	35.00	143	589-5123	3	
Alamosa Lamplighter M	Alamosa	30.00	73	589-6636	3	
Alpenglo Motor Lodge	Winter Park	44.00	12	726-5294	2	
Alpine Motel	Duray	28.00	12	325-4546	2	
Alpine North Motel	Durango	34.00	21	247-4042	3	

Printing a Form

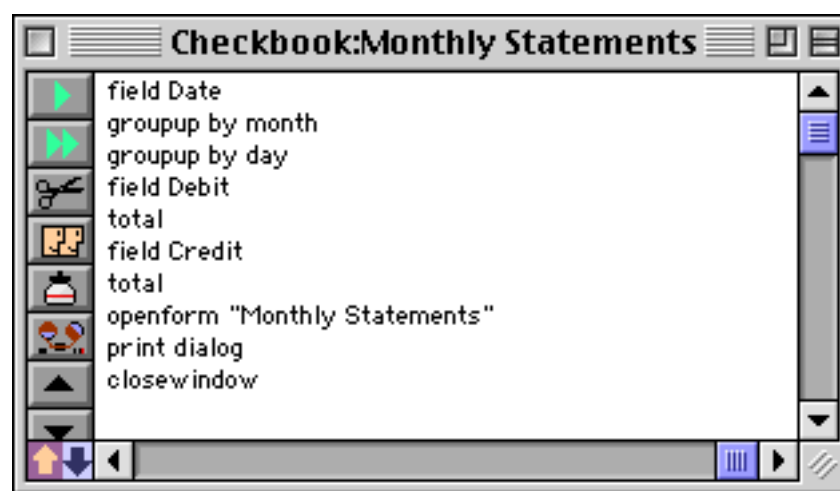
When you ask Panorama to print a data sheet, it prints an exact line-for-line replica—with one line for every visible record in the database. But when a form view is printed it would not be practical to print the entire form for every record. Instead, Panorama lets you specify what part of the form should be printed where on the report. To do this you use special graphic objects called **report tiles**. Each report tile defines a section of the form that is to be included in a printed report. By combining several tiles you can create a complex report with headers, footers, subtitles, summaries, etc. Report tiles and their applications are covered in detail in the following chapter, see “[Custom Reports](#)” on page 1061.

If you ask Panorama to print a form that has no report tiles, it will simply print the upper left hand corner of the form (8" by 10"), one record per page. In other words if your database contains 187 visible records, Panorama will print 187 pages. For most reports you will want to use report tiles so that more than one record is printed per page.

Preparing Data For Printing

Before you print the database, you may want to prepare it for printing. If you want the data printed in a certain order (for example alphabetical by name), you must sort the database before you print it (see "[Sorting](#)" on page 323). If you want to print only a portion of the database (for example, only zip codes in California), you must use the **Find/Select** command to make the rest of the database invisible (see "[Searching and Selecting](#)" on page 331). If you want to print subtotals or other summary information, you must group and total the database before printing (see "[Summaries and Outlines](#)" on page 365).

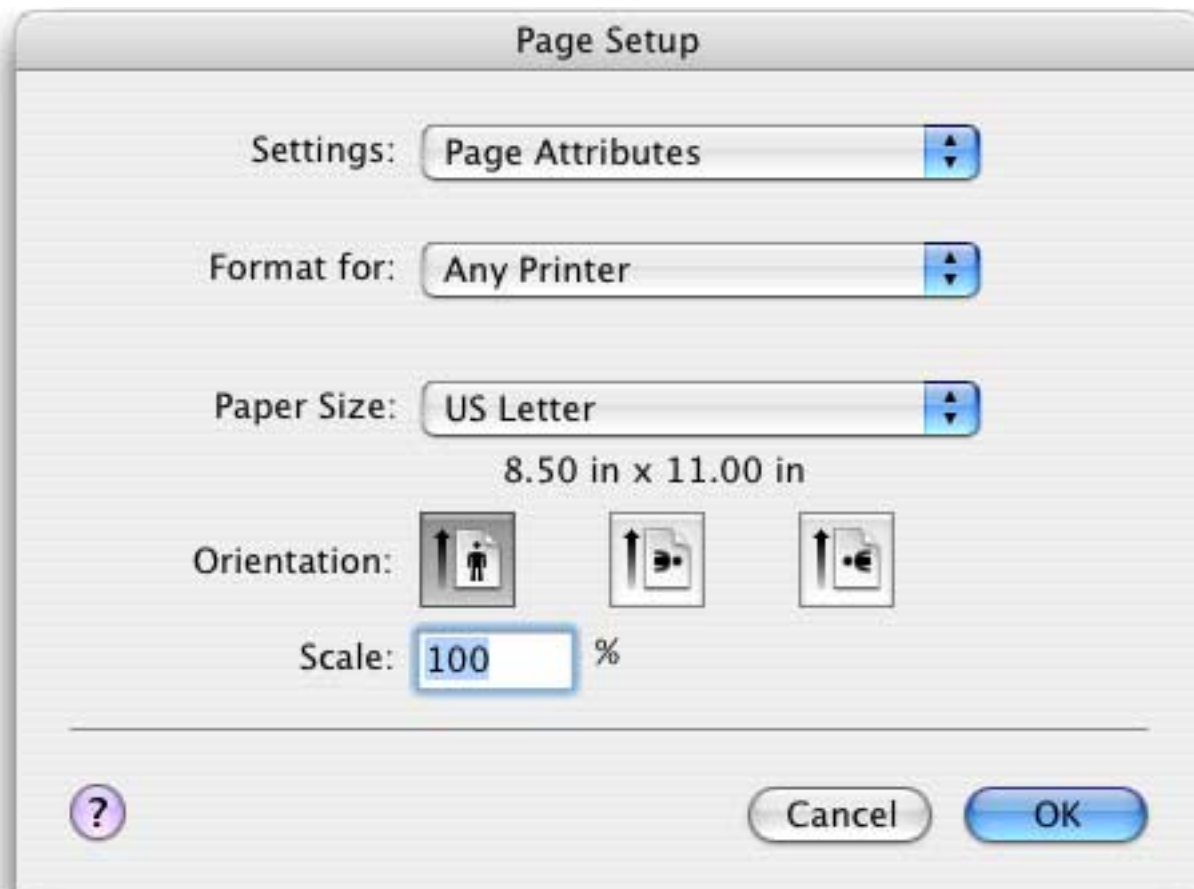
If you are going to print a report often, you may want to create a procedure to automatically prepare the data before printing. For example, here is a procedure that groups the database by month and by day, calculates the totals, then opens the form [Monthly Statements](#) and prints the database.



For more information on procedures see "[Procedures](#)" on page 203 of *Formulas & Programing*.

The Page Setup Dialog

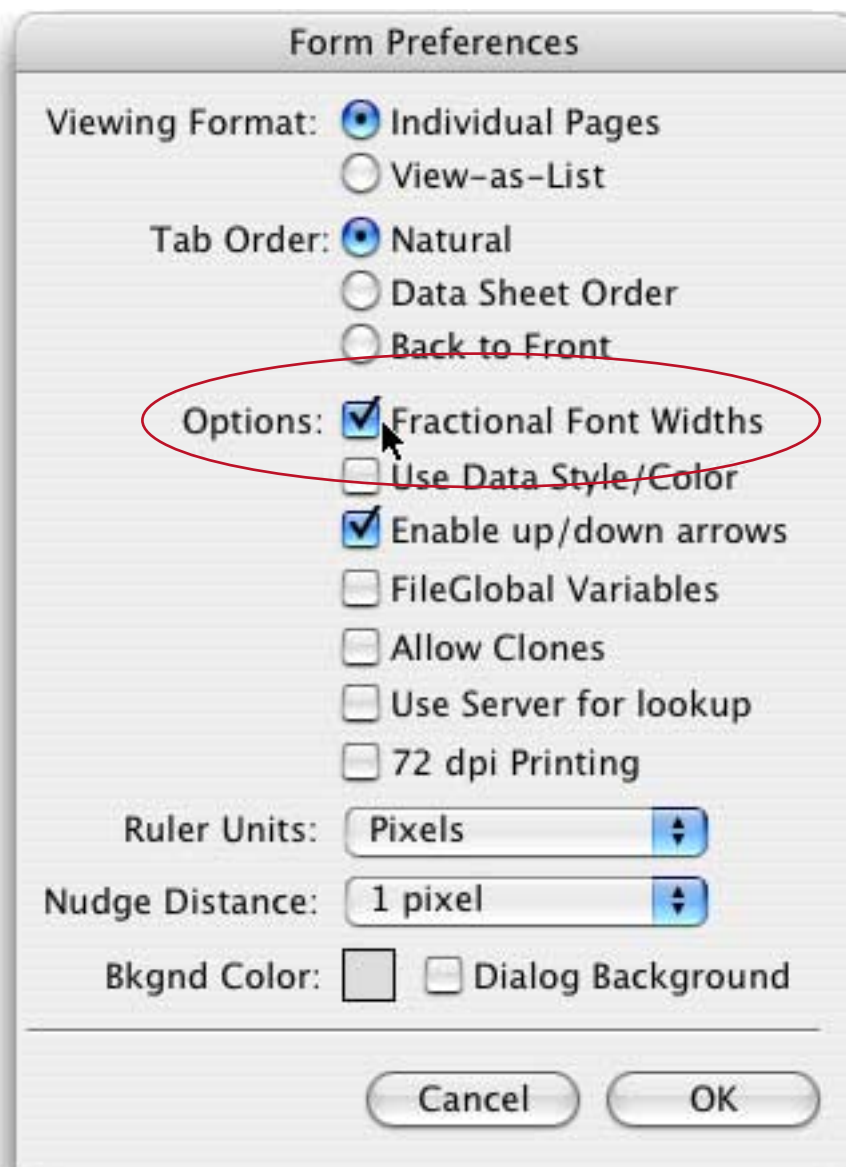
The **Page Setup** command in the File Menu displays a dialog that allows you to specify several printing options. The exact options available depend on the operating system and what kind of printer you are using, but in general you can control the page size, orientation (tall or wide), and print reduction factor. Here is a typical **Page Setup** dialog.



Each form view has its own separate page setup. The page setup is remembered as part of the form. For example, a single database can have an invoice that is printed using the tall orientation, and a report that is printed using the wide orientation (sideways). You don't have to remember to switch the page setup when you switch forms—Panorama will do it for you. Incidentally, be sure to save the file after you change the page setup. If you save the file, Panorama will remember the page setup the next time the file is opened. (However, not all print options are saved as part of the database. The exact options that are saved vary from printer to printer.)

Fractional Fonts

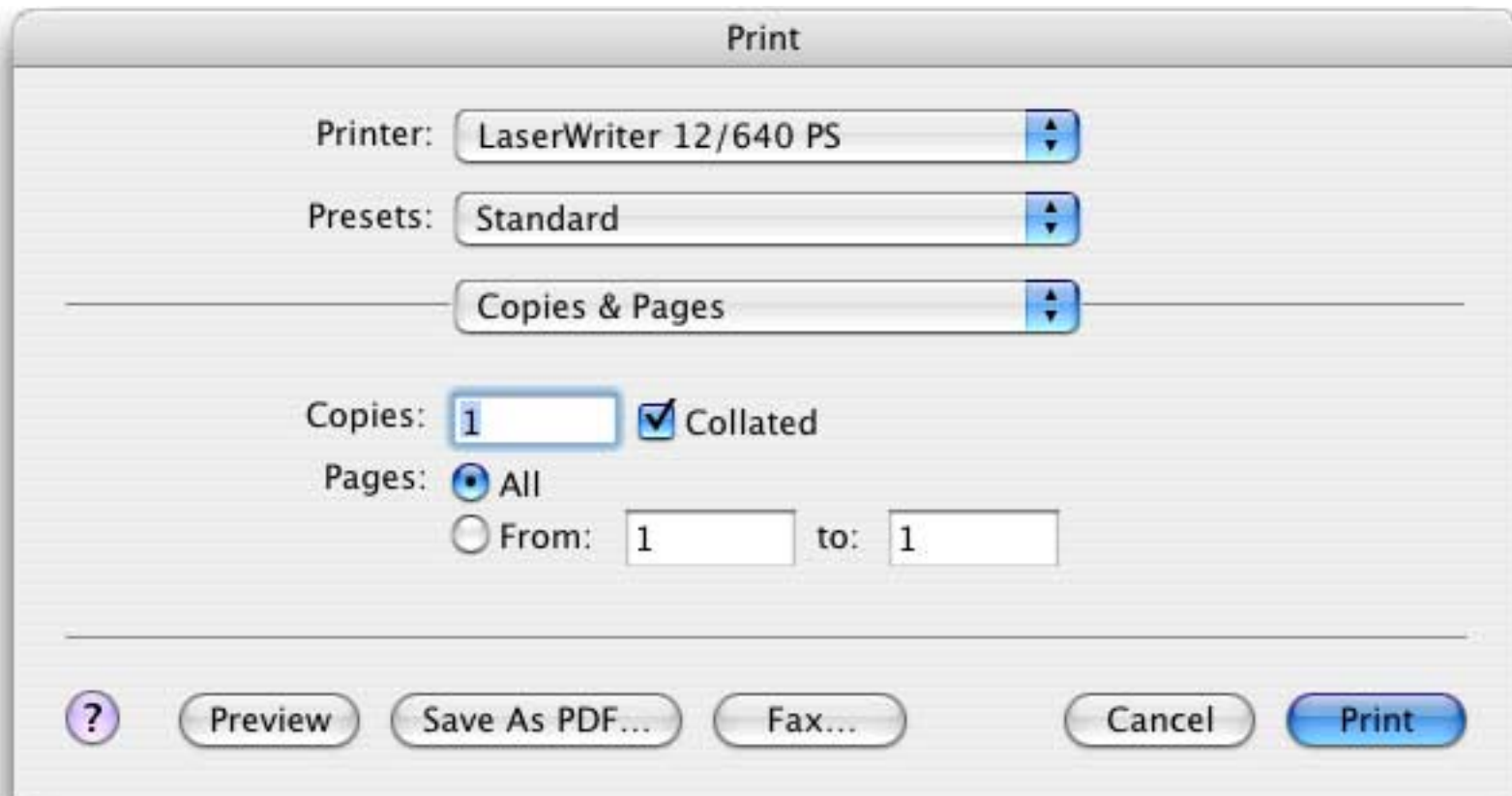
The **Fractional Fonts** option is in the Form Preferences dialog (Setup Menu).



If this option is checked, Panorama will print using the most accurate character spacing. This option should only be checked when you are printing using a Postscript or TrueType font (which these days, is almost always true).

The Print Dialog

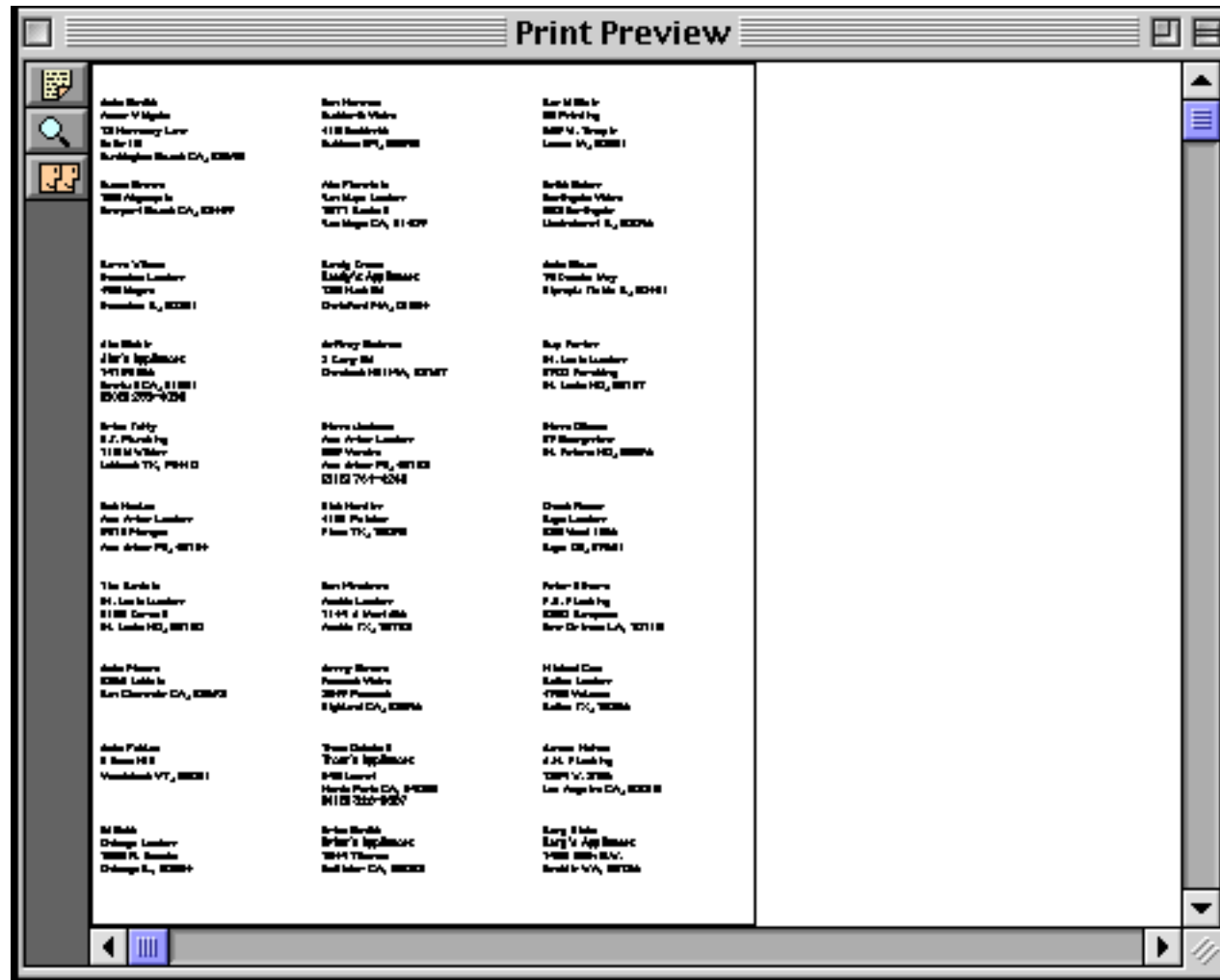
The **Print** command also displays a dialog box allowing you to choose printing options. You can choose which pages to print, how many copies to print, and whether you want to manually feed the paper. The exact options will depend on the operating system and printer you are using. Here is a typical **Print** option dialog.



For the exact details on the operation of this dialog see the documentation that came with your printer.

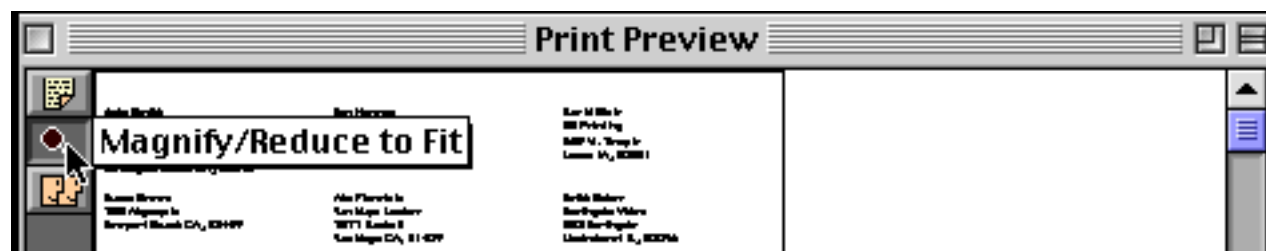
Print Preview

The **Print Preview** command (File Menu) allows you to see what a report will look like without using any paper. This command opens a new window called **Print Preview**.

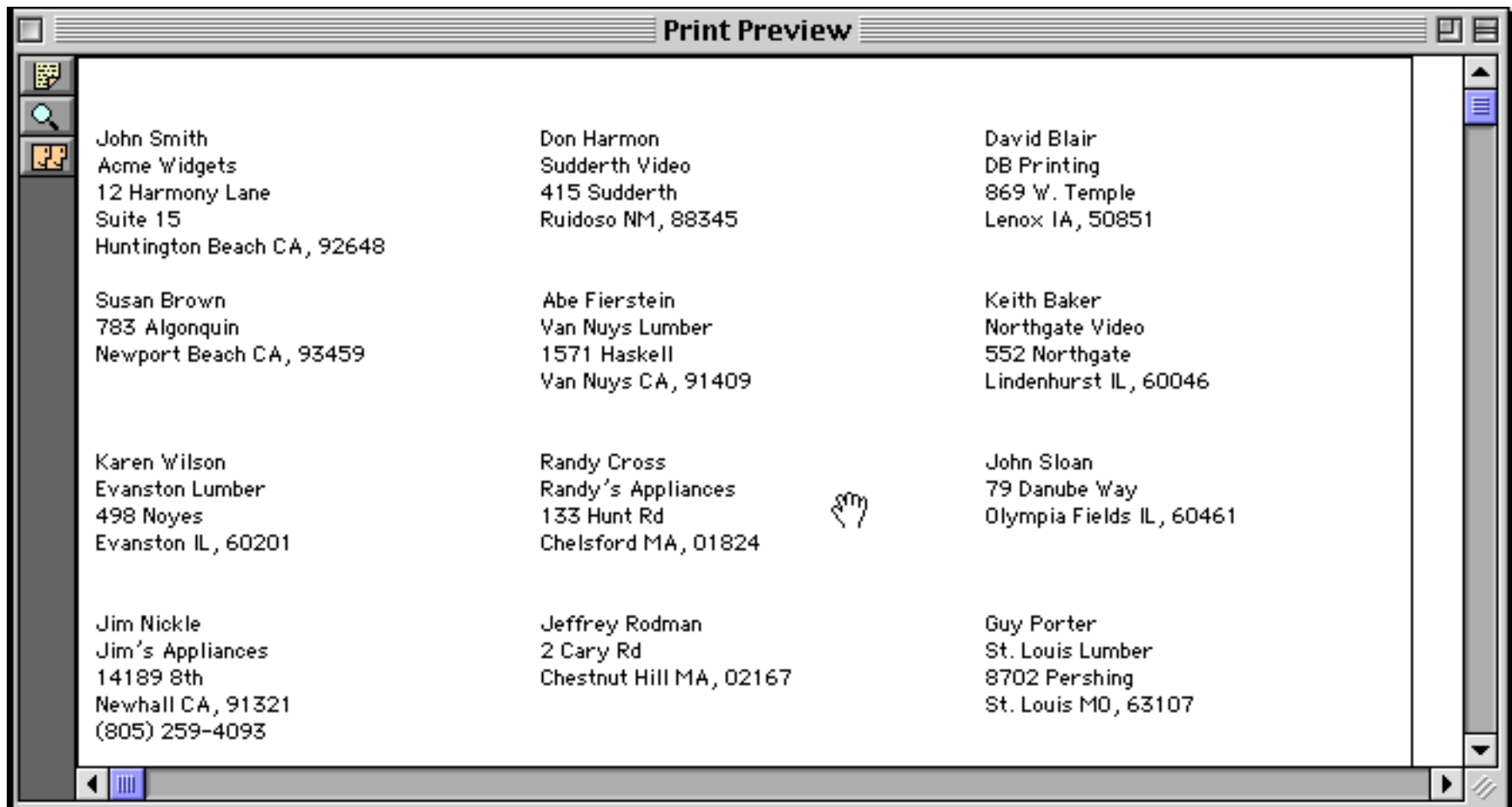


The preview window normally fills the entire screen, but you can change the size and location of the preview window after it is opened using the grow box and drag bar. Only one preview window can be open at a time, and all other Panorama windows are disabled when the preview window is open. You can still see the other windows, but you cannot bring them to the front or click on them.

The image of the printed page is reduced so that the entire page fits in the window. To expand the image to full size, click on the magnifying glass tool.

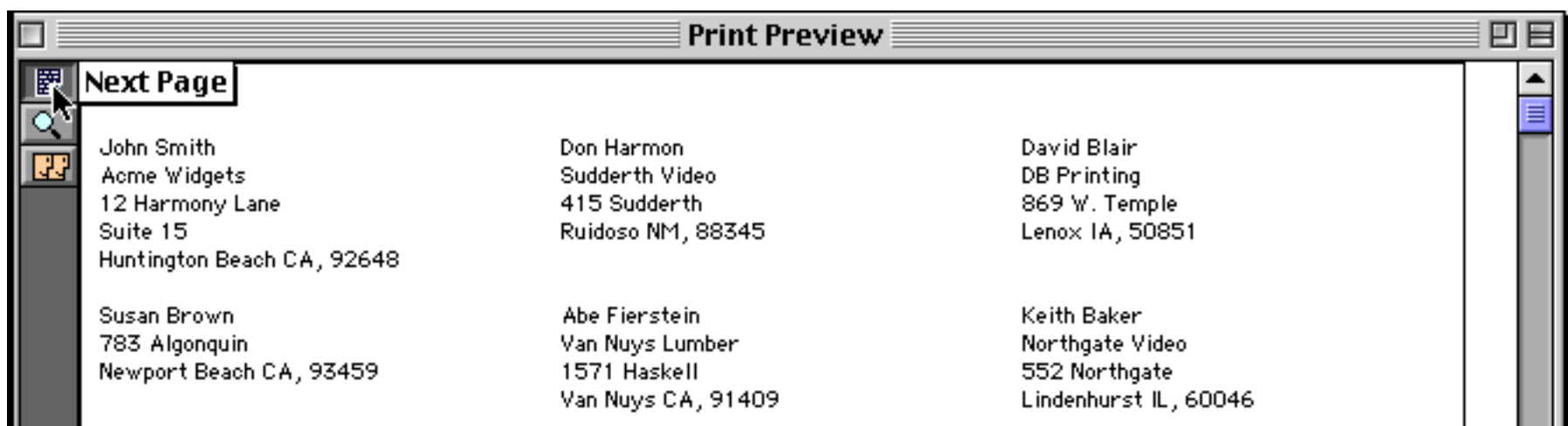


Each time you click on this tool, the window toggles between reduce to fit and 100% magnification, like this.

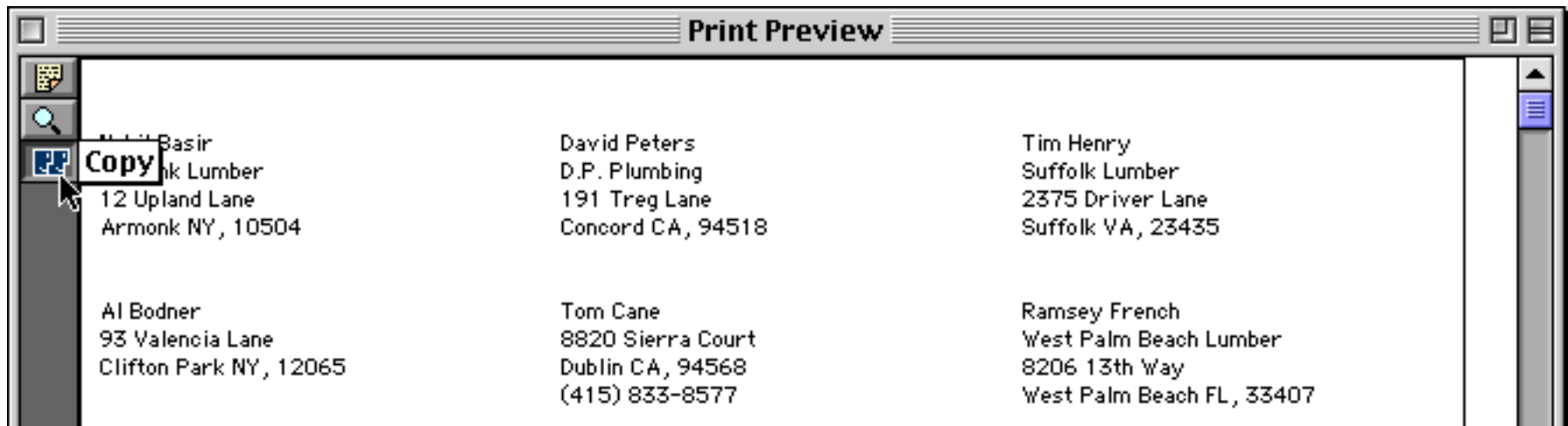


When the preview is magnified to 100%, you can use the scroll bars to shift to different locations within the page. You can also use the mouse to push the preview to a different spot. Simply press the mouse (which looks like a hand, see illustration above) on the preview window, then drag the image to a new location.

To preview the next page, click on the **Next Page** tool.



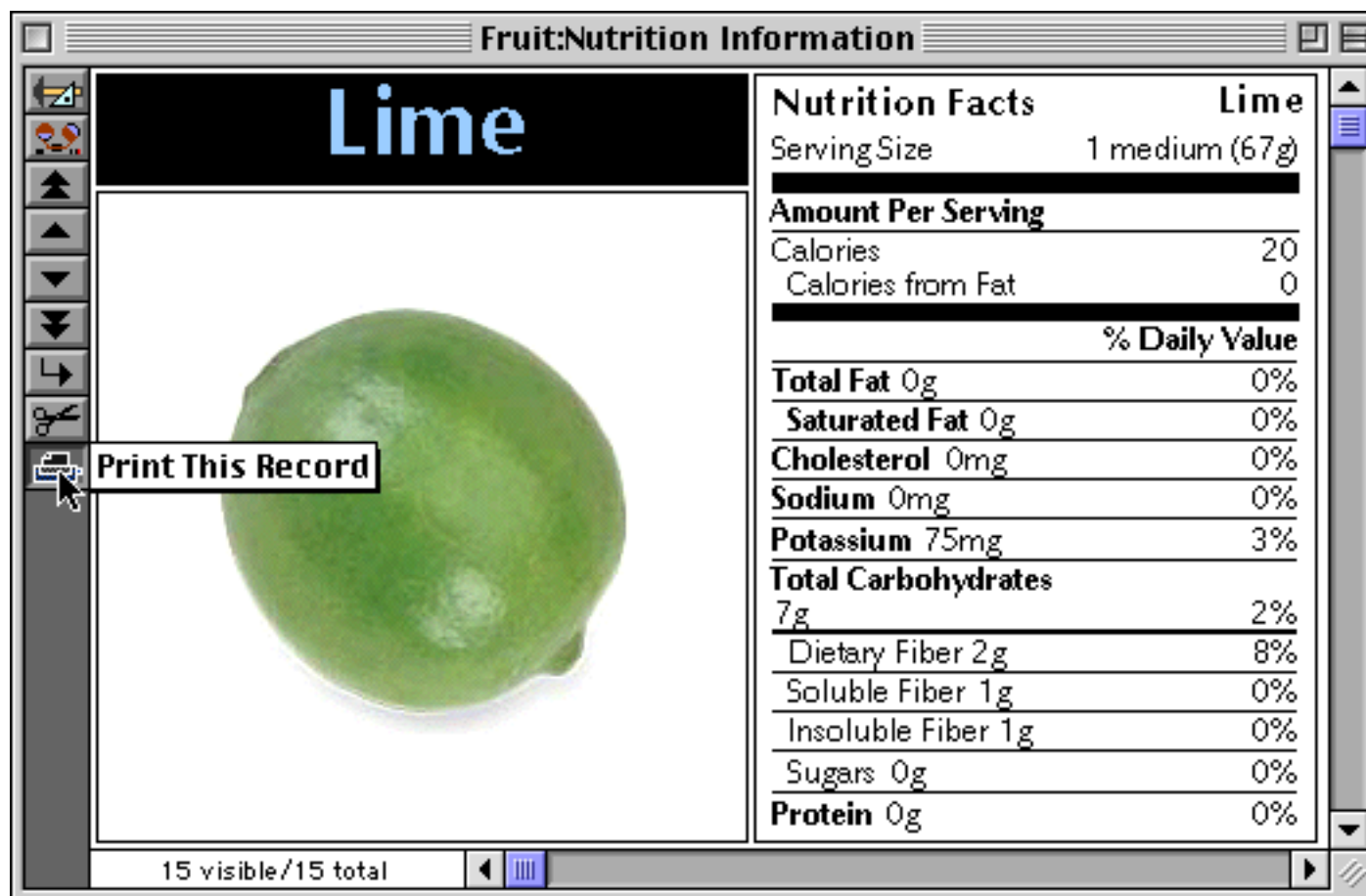
To copy an image of the page to the clipboard, use the **Copy Page** tool.



Once the image is on the clipboard, you can copy it into a graphic or page layout program.

Print One Record

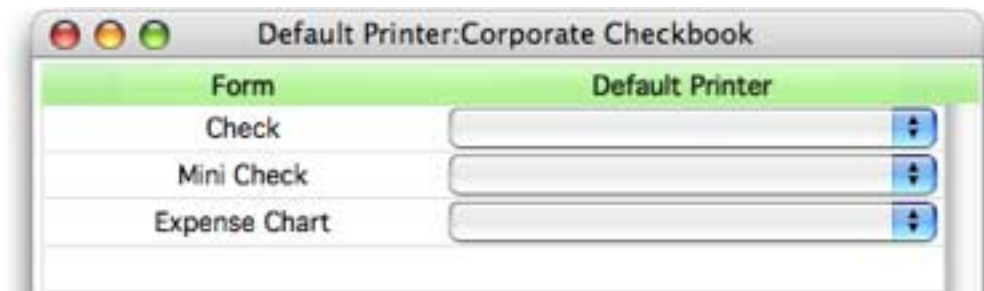
The **Print** command normally prints every visible record in a database. If you want to print just one record, use the **Print One Record** tool at the bottom of the tool palette.



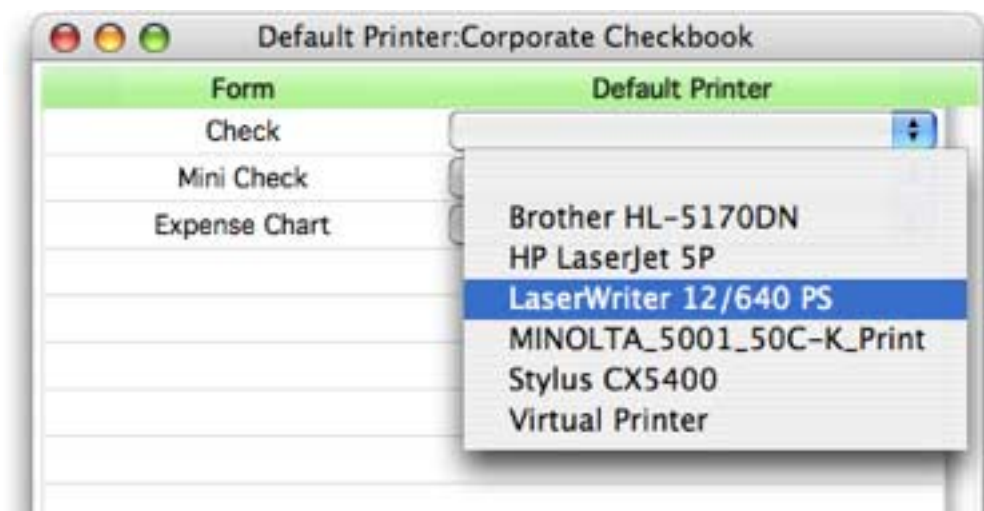
This tool only appears in the tool palette of form windows. It is not available for any other view (data sheet, design sheet, etc.).

Setting up Default Printers

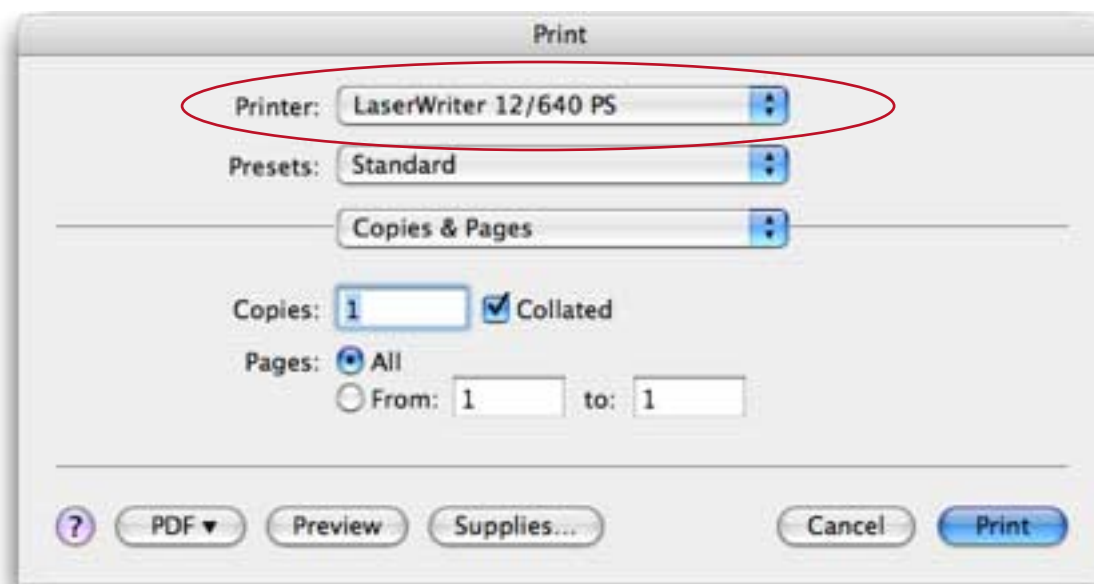
Panorama normally prints on whatever printer is currently selected in the operating system. If you are using Mac OS X you can also specify a default printer to be used with any form (this feature only works in the form view). When a default printer is set up Panorama will automatically switch to that printer when printing a form. For example you may want to print checks, envelopes or labels using a special printer. To configure this use the **Default Printer** wizard (in the **Preferences** submenu of the **Wizard** menu). Start by opening the database you want to set up, then open the wizard. The wizard will list all of the forms in the database.



Suppose you want to set up the Mini Check form so that it always defaults to printing on a specific printer, no matter what printer is currently selected. Simply click on the appropriate pop-up menu and choose the printer.



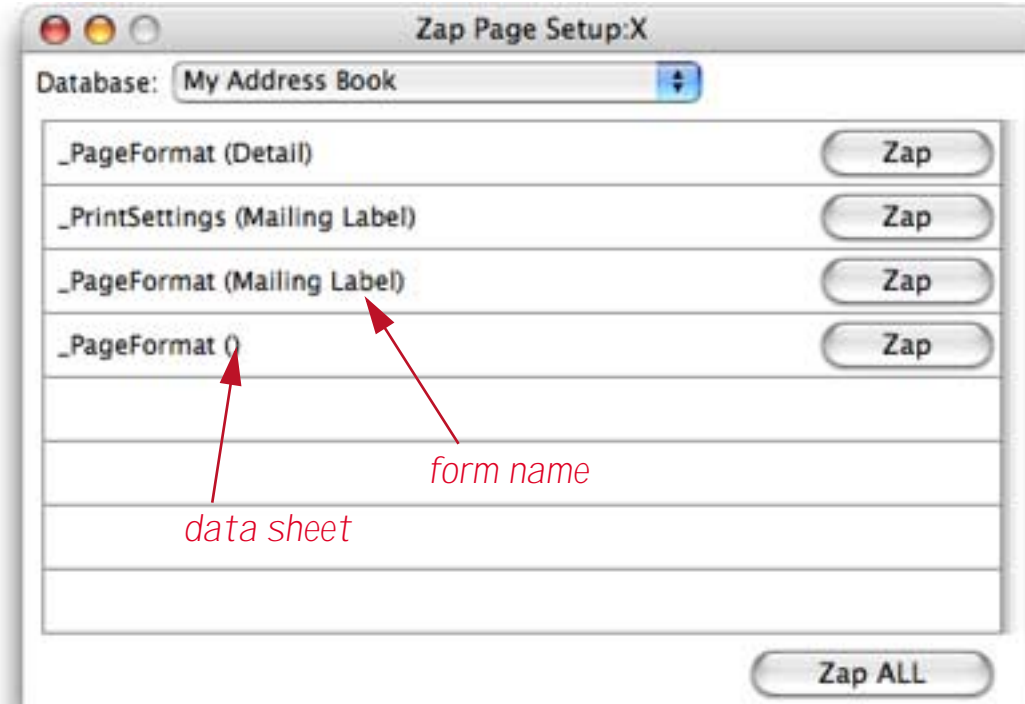
Whenever you print this form the printer will automatically be set to the printer you have specified. (Of course you can always use the pop-up menu in the Print dialog to change the printer at the last minute.)



To turn off the default printer selection simply choose the empty option from the pop-up menu.

Zap Page Setup Wizard

Panorama stores page setup and print configuration information for the data sheet and for each form in each database. Normally you don't have to worry about this, but occasionally this information will become corrupted (we believe this is caused by problems with printer drivers) and Panorama will fail to print. The corrupted information cannot be recovered but you can zap it and start over. To do this open the **Zap Page Setup** wizard.



The wizard lists each entity (data sheet or form) that has page setup information. You can zap the settings for individual forms separately, or simply zap all of the page setup information for the entire database. Once you zap you'll need to use the **Page Setup** dialog to re-configure the settings for each item.

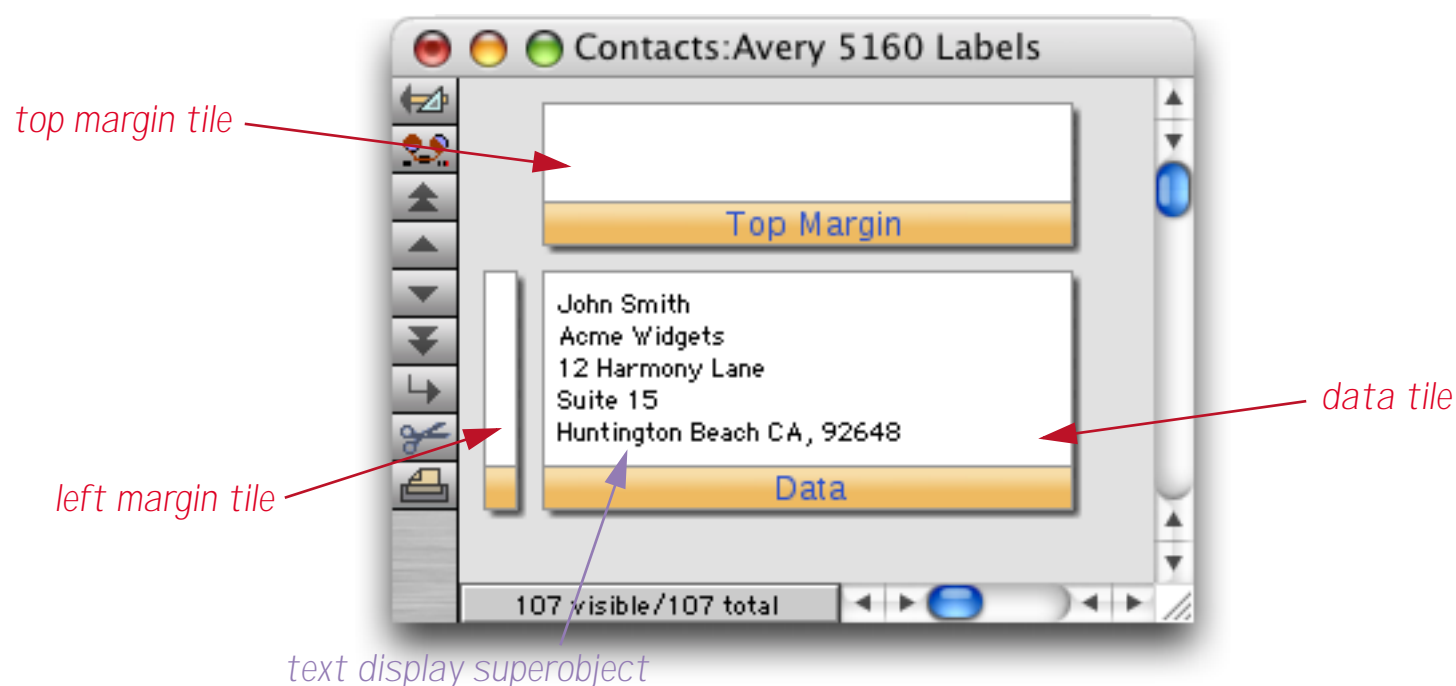
Chapter 21: Custom Reports



Panorama has a very flexible system for printing custom reports. Panorama assembles each report page by taking pre-defined components from your form and sliding them into position on the page. Because the report components fit together like floor tiles, these components are called **report tiles**. Each tile in the form corresponds to a section of real estate on the printed page.

A form for generating a report may contain only a single report tile, or it may contain dozens of tiles. Panorama checks for the presence of each type of tile as it is building the report, and if found, uses the tile to build one section of the report. The size and shape of the tiles determines the overall layout of the report.

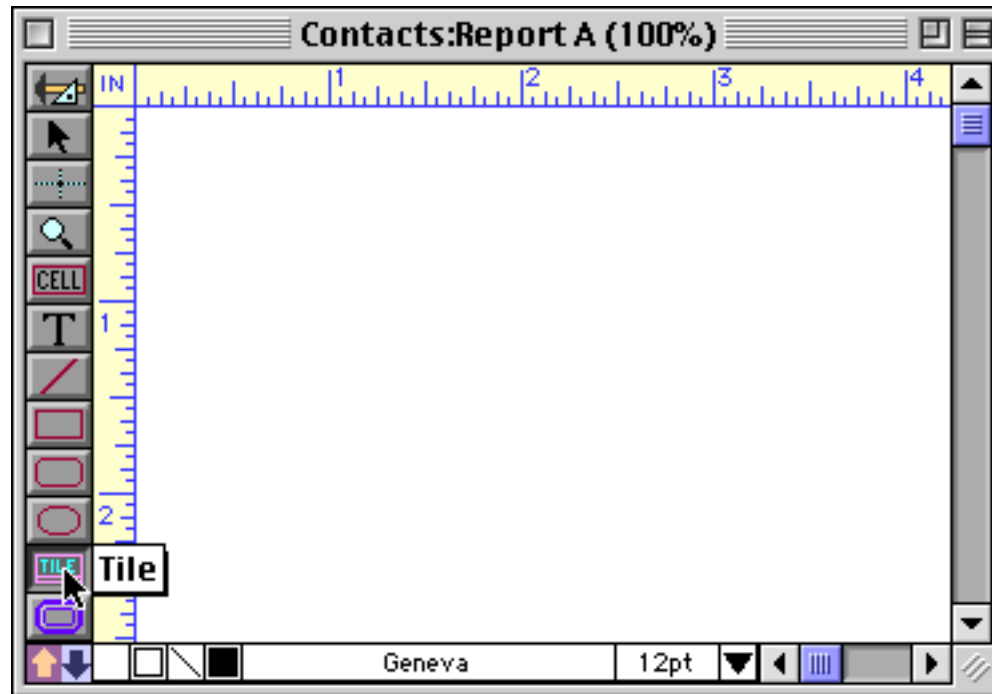
Report tiles are graphic objects that are part of a form. Here is an example of a typical form that contains three report tiles—top margin tile, left margin tile, and data tile. (This form also contains a Text Display SuperObject that has been placed on top of the data tile—more on that later.)



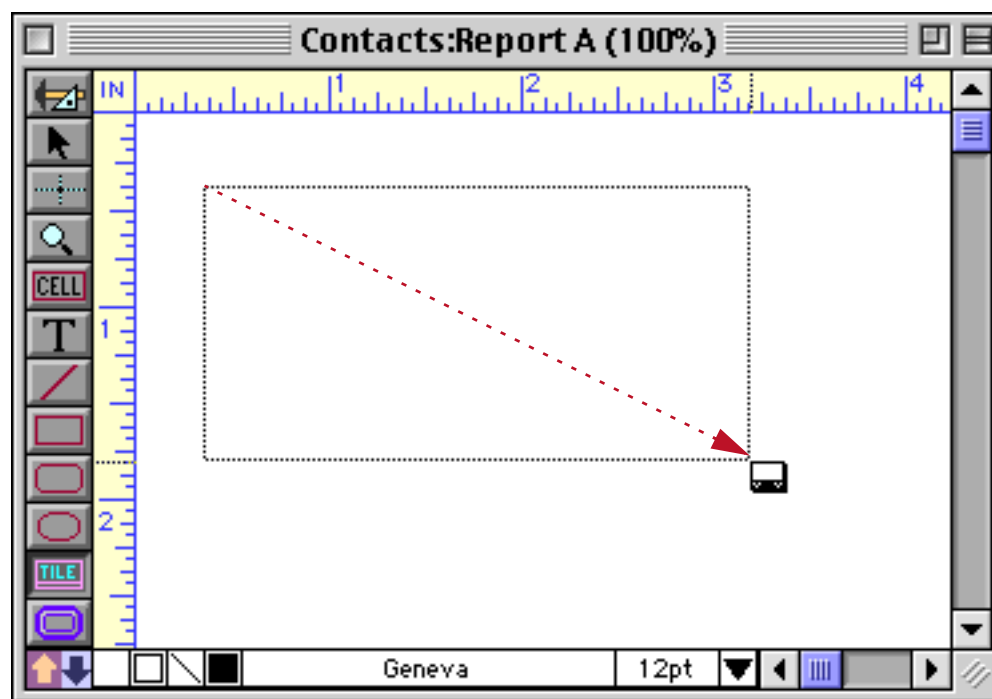
You can manipulate report tiles just as you would any other graphic object—drag, nudge, copy, etc. (see “[Graphic Design](#)” on page 491). Each form can be used to generate a unique report. Since a database can contain an unlimited number of different forms you can also have an unlimited number of custom reports. To print a particular custom report simply open the appropriate form (see “[Switching Between Views](#)” on page 168) and print. (You may also want to prepare the data before you print by sorting, selecting, and/or summarizing the data. See “[Sorting](#)” on page 323, “[Searching and Selecting](#)” on page 331, and “[Summaries and Outlines](#)” on page 365).

Working with Tiles

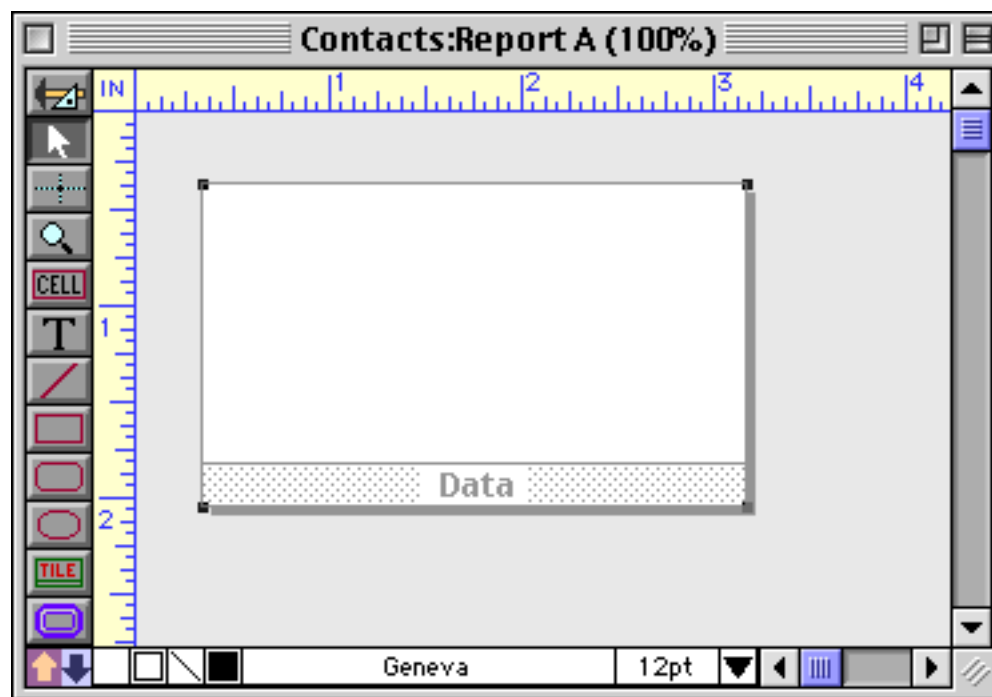
To create a new tile, start by selecting the Tile tool.



Next, drag the mouse across the form in the spot where you want to place the new tile. Any empty spot will do. The position of a tile on the form does not affect how it is printed—only the size and shape.

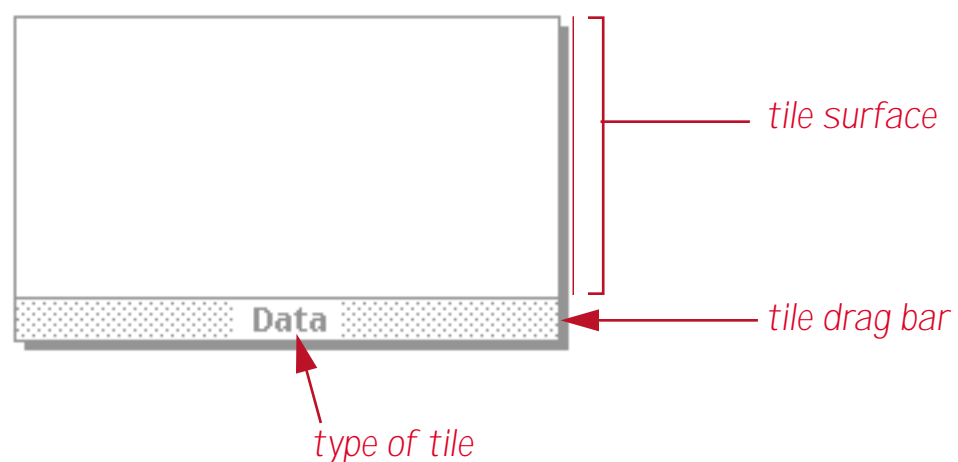


When you release the mouse, Panorama creates the new tile. If this is the first tile on the form, Panorama automatically creates a **data tile** (see “[Data Tiles](#)” on page 1076). Later, Panorama will give you a choice.

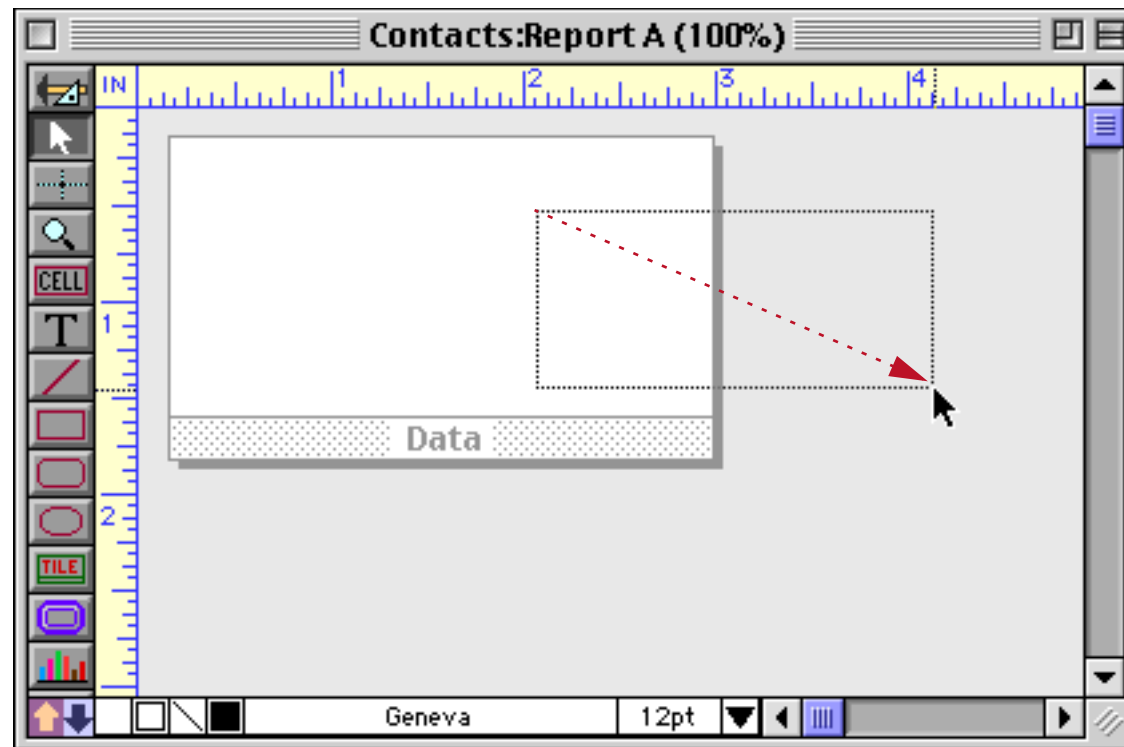


When you add the first tile to the form (the data tile), the background (outside the tile) will turn gray, as shown above. Only graphics or text that are on top of a tile will be printed — any graphics or text in the gray area will not be printed.

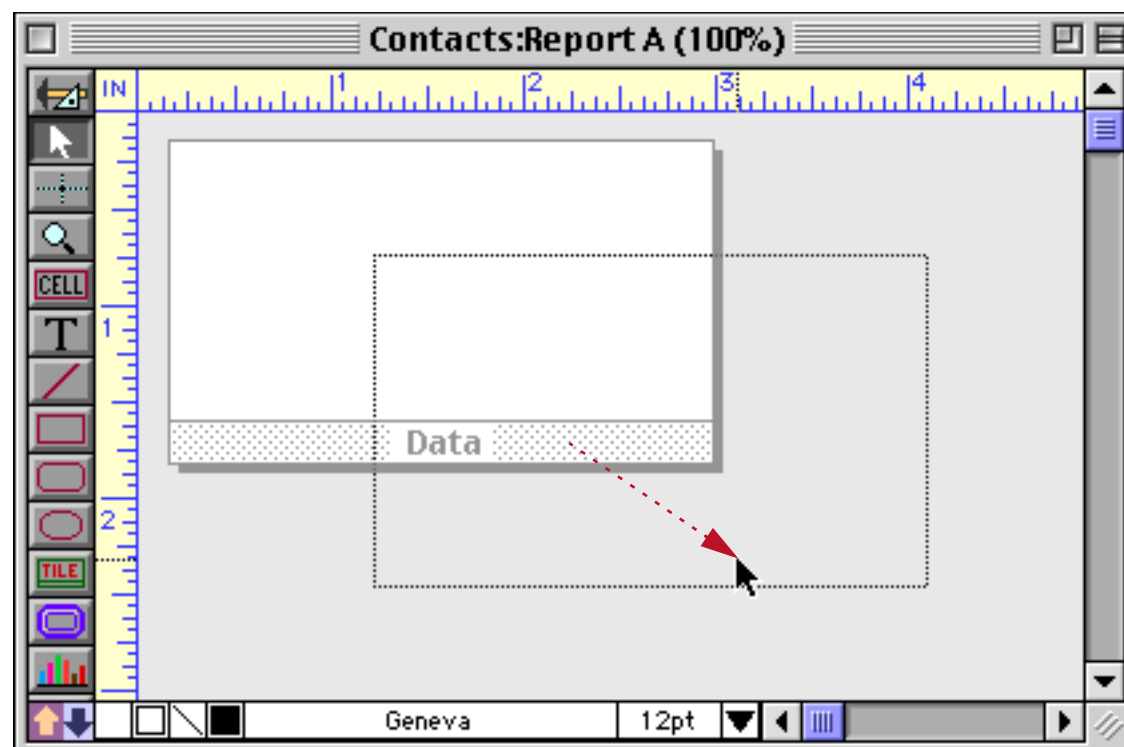
On the screen, a tile looks sort of like an upside down window. Tiles are divided into two parts: the surface and the drag bar. The surface is the actual printed area of the tile.



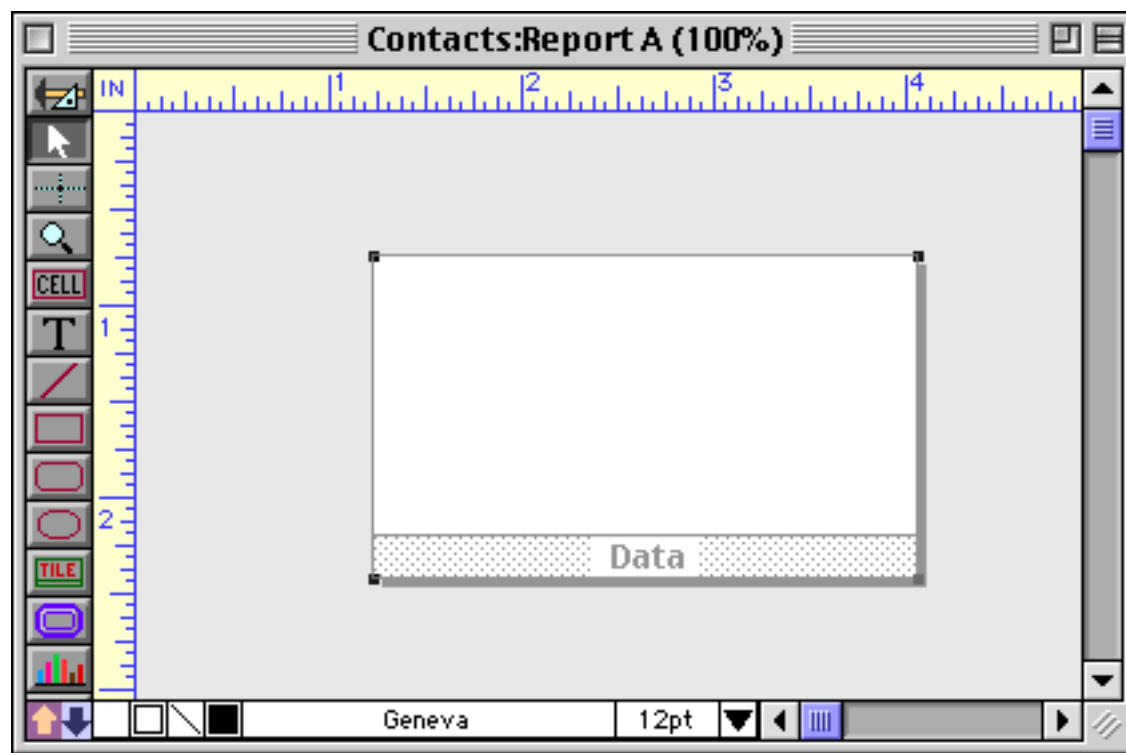
Unlike other graphic objects that can be manipulated by clicking anywhere in the object, a tile is only sensitive to clicks on its drag bar. If you click and/or drag on the surface of a tile, the object is not selected and does not move. Instead, a selection marquee appears, just as if you had dragged on an empty spot in the form (see “[Selecting Multiple Objects at Once](#)” on page 502).



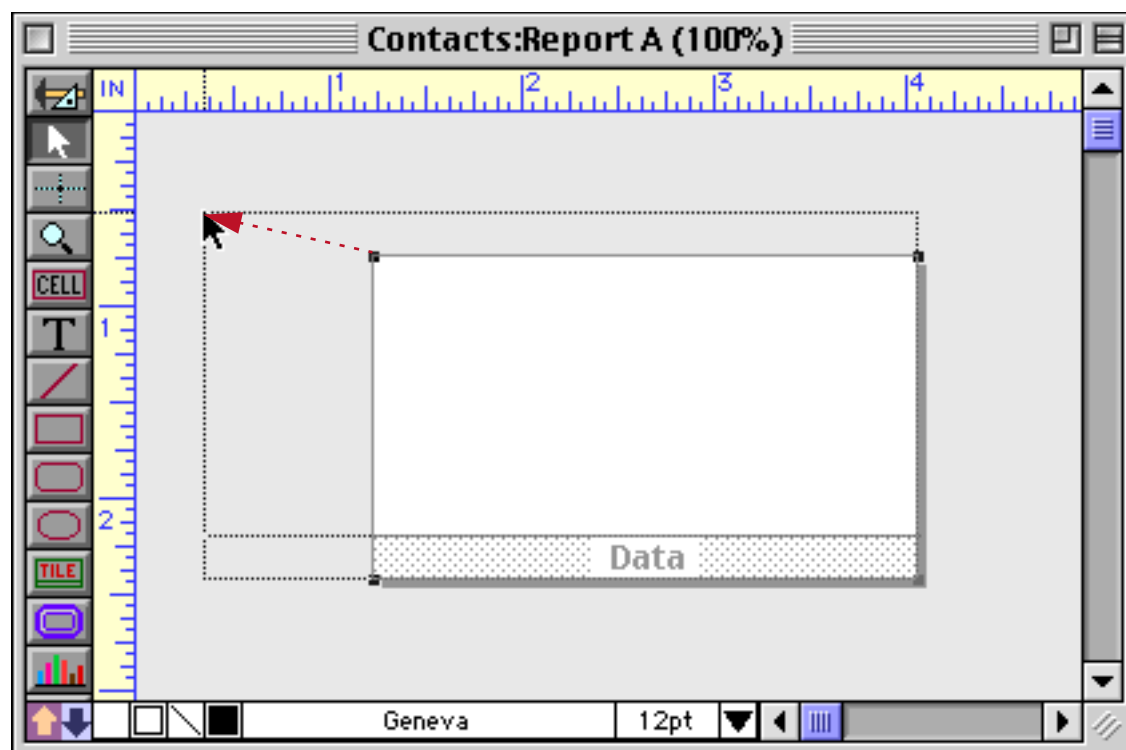
To move a tile, press the mouse on the drag bar and drag the tile to the new position.



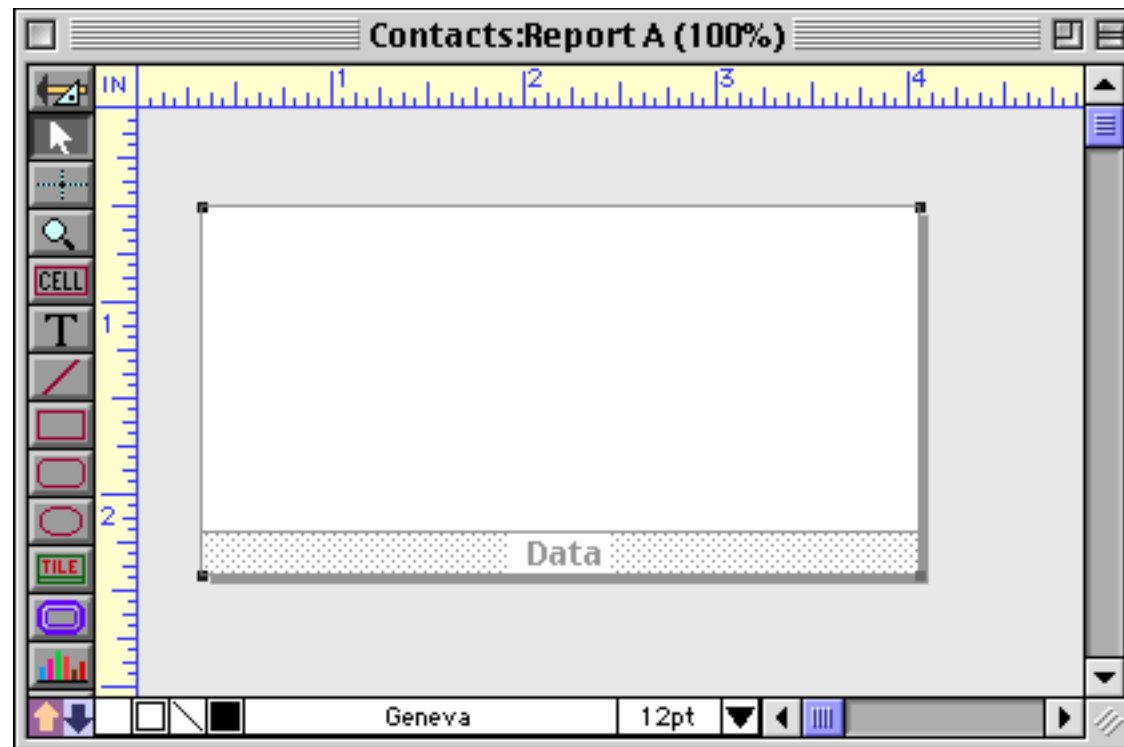
When you release the mouse, the tile moves to the new position, just as with dragging any other kind of object.



To select a tile, click on the drag bar. When the tile is selected, four handles appear around the corners of the tile, as shown above. You can use these grips to change the size of the tile, again, just like any other kind of object.

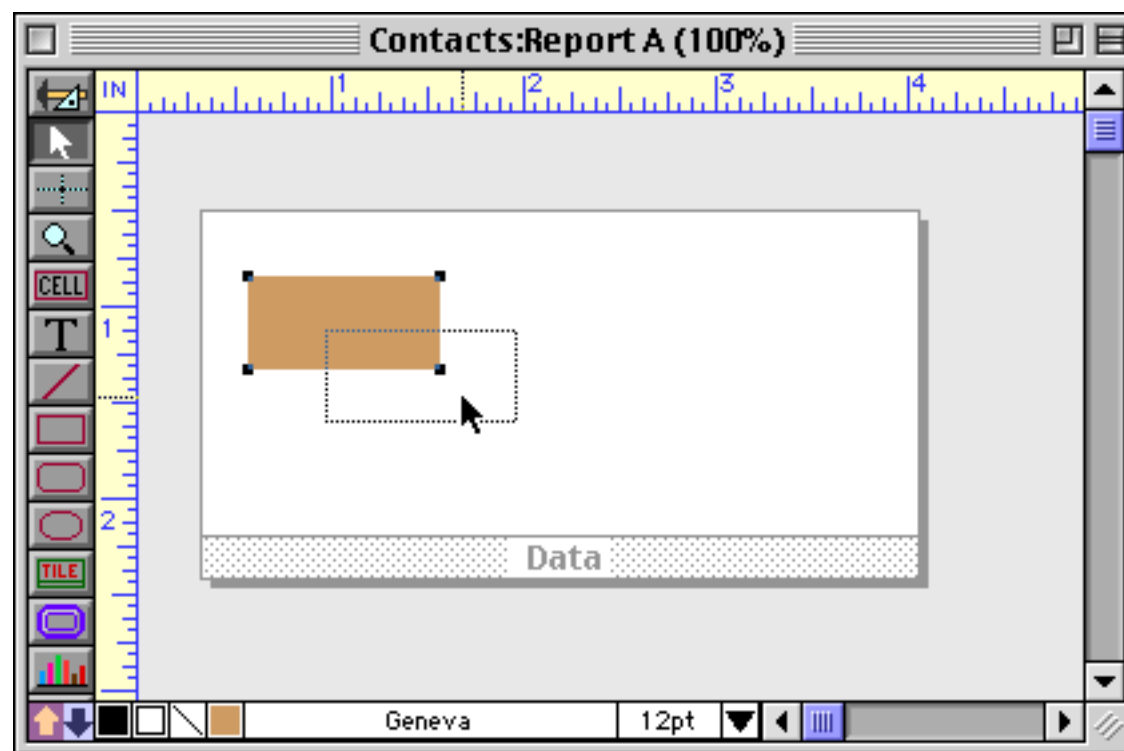


Release the mouse to see the new size.



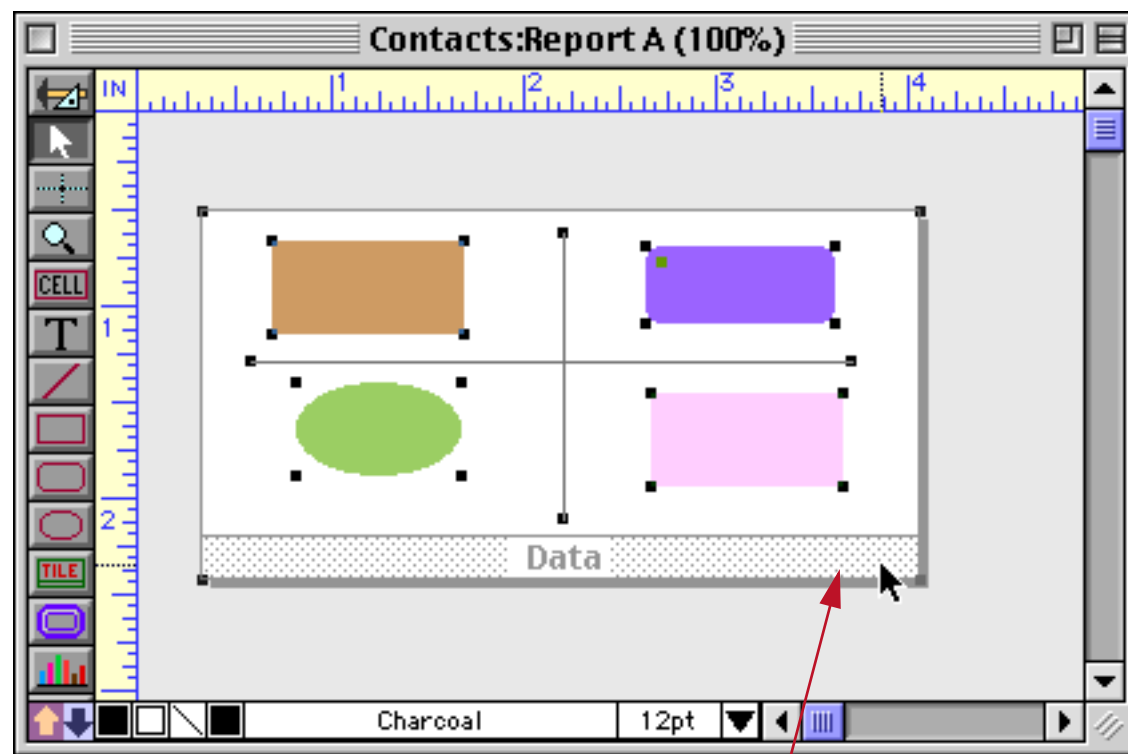
Tiles can also be moved or resized with the **Dimensions** command (see “[Viewing and Setting Exact Object Dimensions](#)” on page 512) and by nudging with the arrow keys (see “[Nudging an Object \(or Objects\)](#)” on page 509 and “[Nudging the Size of an Object](#)” on page 513). Note: When using the **Dimensions** command the dimensions are for the surface of the tile only, not including the drag bar along the bottom of the tile.

As mentioned above, the surface of the tile is not sensitive to the mouse. In other words, clicking on the surface area does not select the tile, and you cannot move the tile by dragging on the surface. However, you can place objects on top of the tile and move or select them.



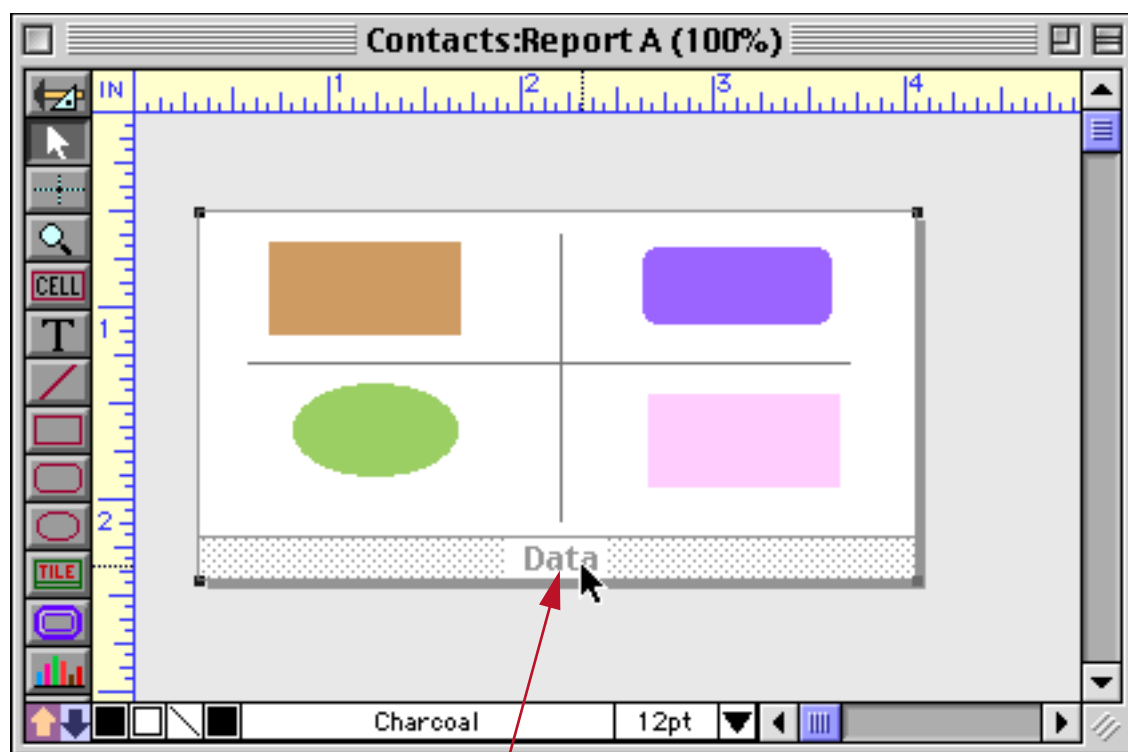
In fact, as you will see later, most tiles must have other objects placed on top of them to build a complete report.

If a report tile has one or more objects placed on top of it, double clicking on the tile's drag bar will select both the tile and all of the objects on top of the tile. This is convenient if you want to move or copy the tile and the objects to a new position or to a different form.



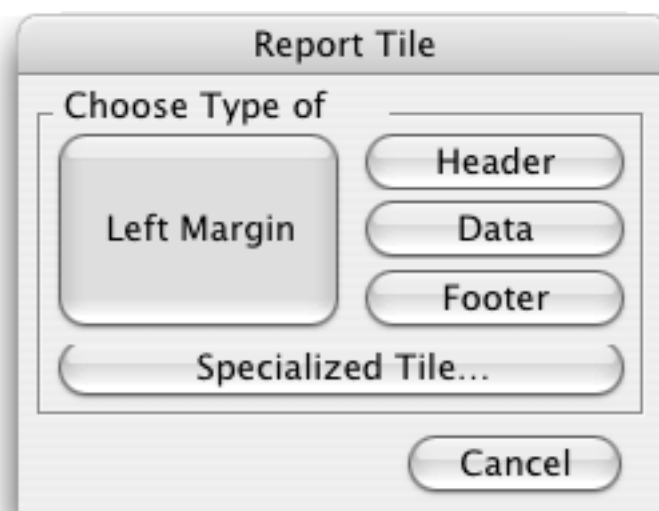
double click drag bar to select tile and all objects on the tile

However, double clicking on the type of tile does not select the objects.

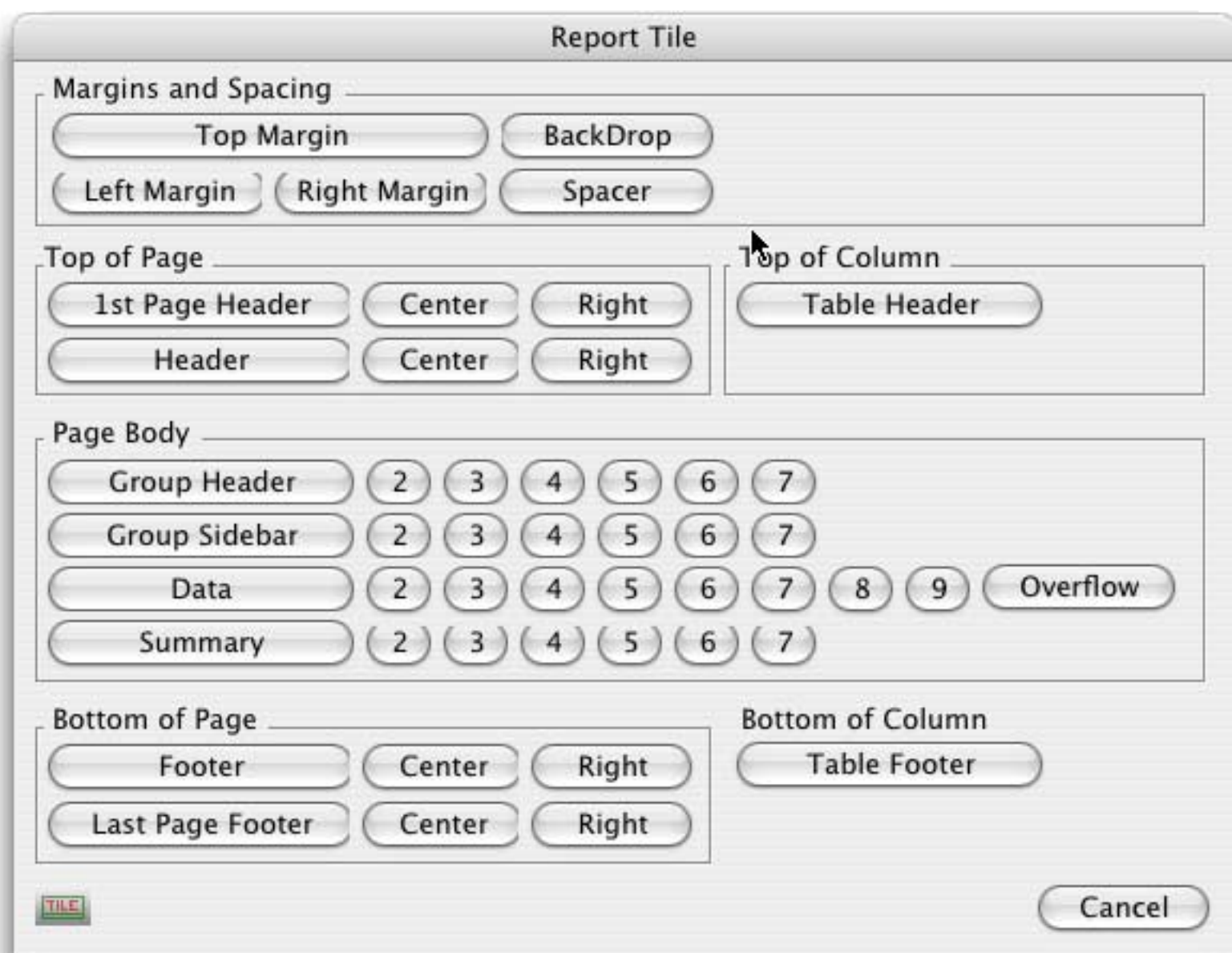


double click here to open the tile configuration dialog

Instead it opens the tile configuration dialog, allowing you to change the type of a tile. Depending on the number and type of tiles that are already on your form you may get the simple dialog shown here:



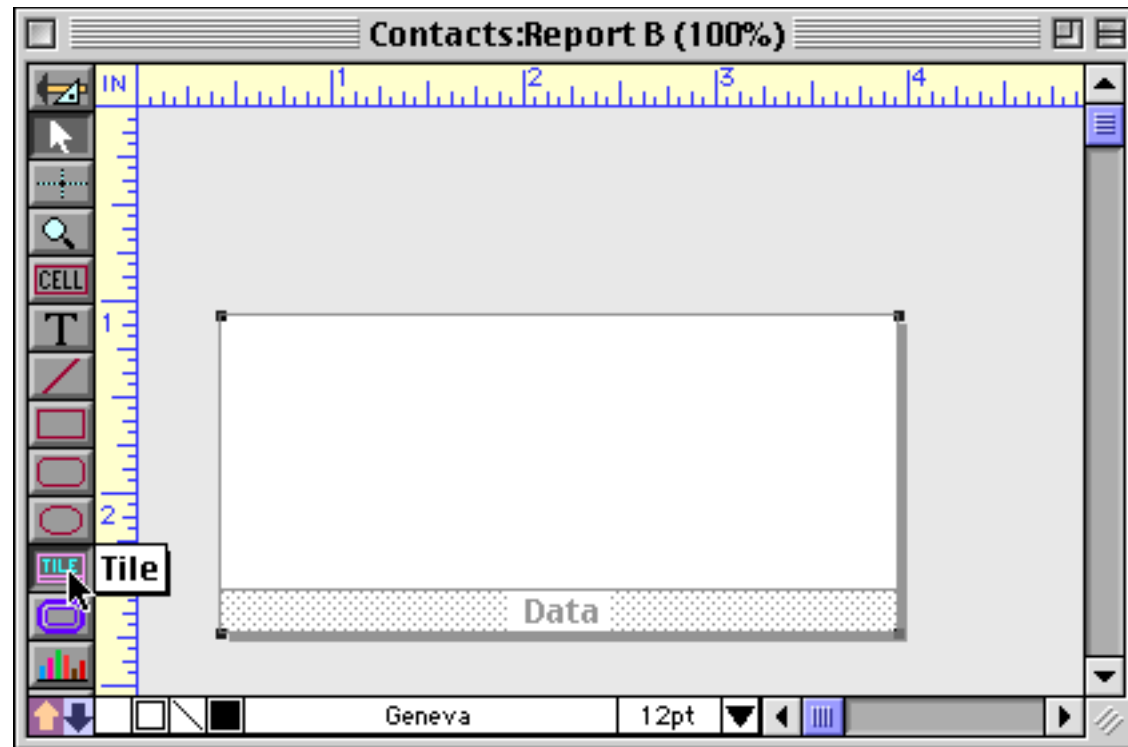
or the more complex dialog shown here (the *Specialized Tile* dialog).



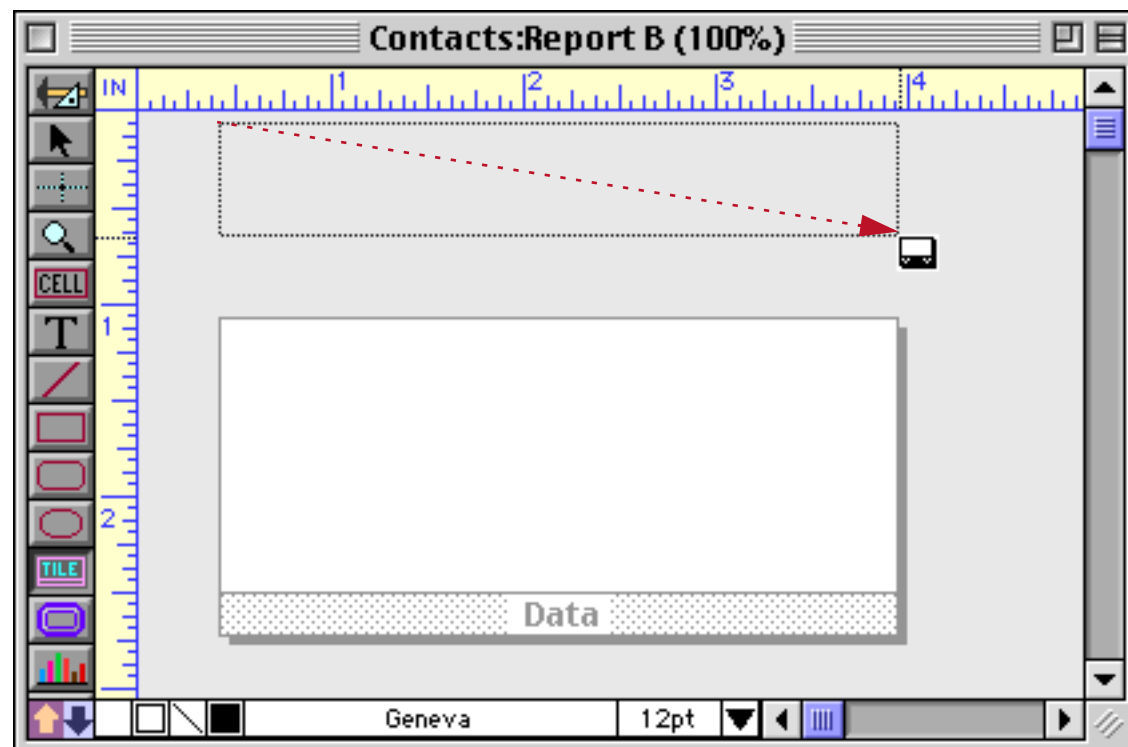
To change the tile's type simply pick the appropriate button, or press **Cancel** to keep the same type.

Creating Additional Tiles

A minimum report contains at least a data tile. Many reports will contain additional tiles. To create an additional tile, start by selecting the **Tile** tool.



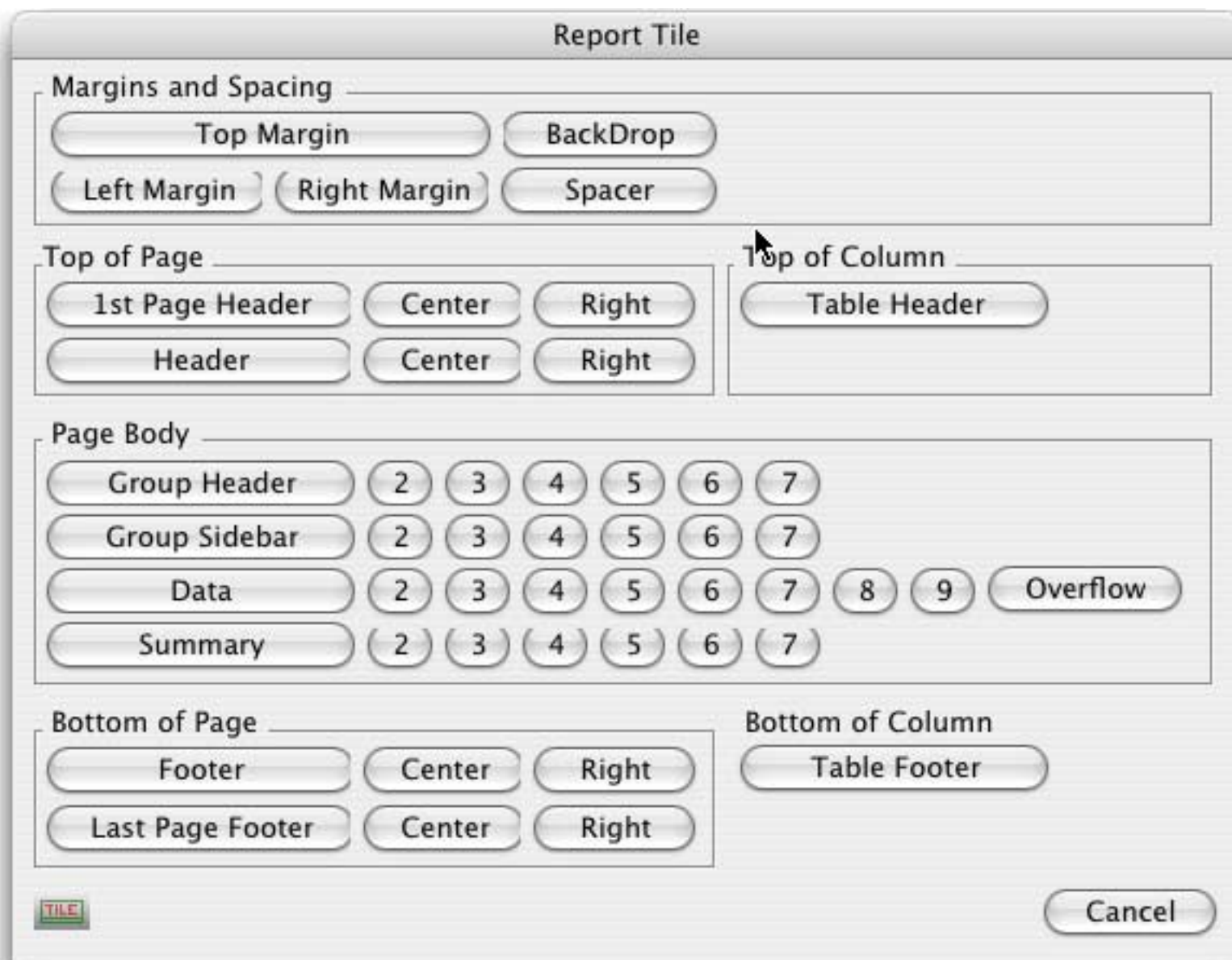
Next, drag the mouse across an empty (gray) spot on the form. Remember, the exact position of the tile is not important, only the size and shape.



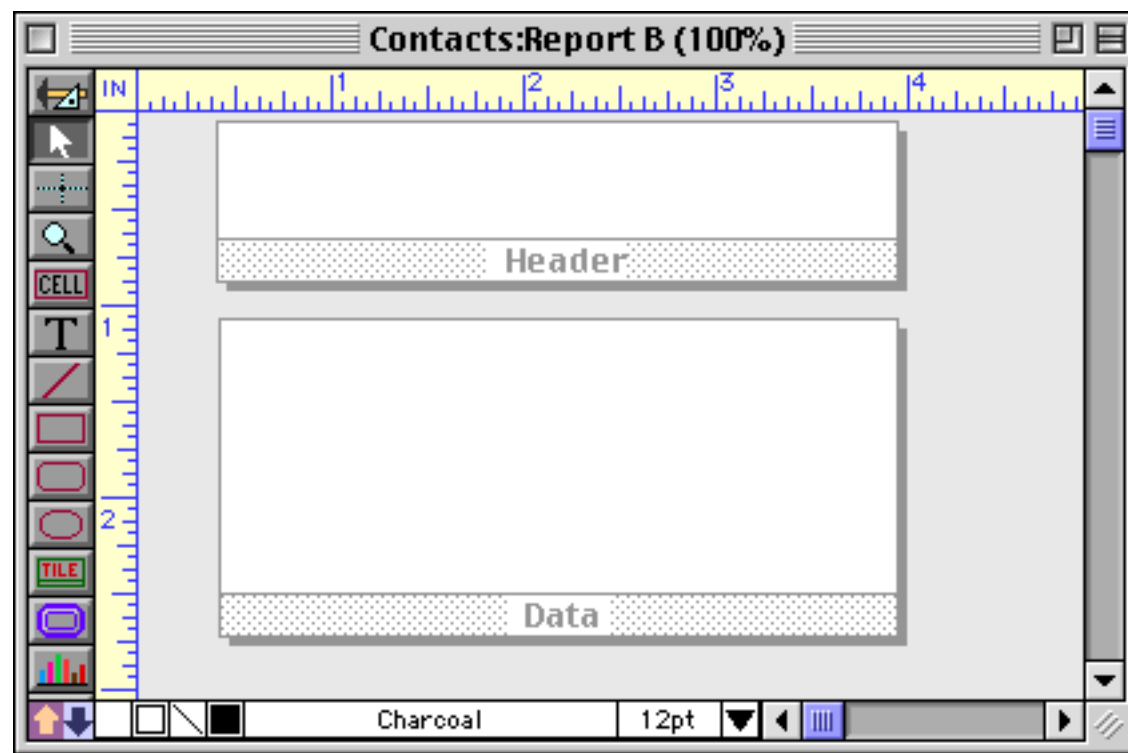
When you release the mouse the tile configuration dialog appears. Since this form currently has only one tile, the simple version of the configuration dialog will appear.



To create a **Header** tile, **Footer** tile, or **Left Margin** tile simply press the appropriate button. To create any other type of tile press the Specialized Tiles button, which makes the “long” version of the tile configuration dialog appear.

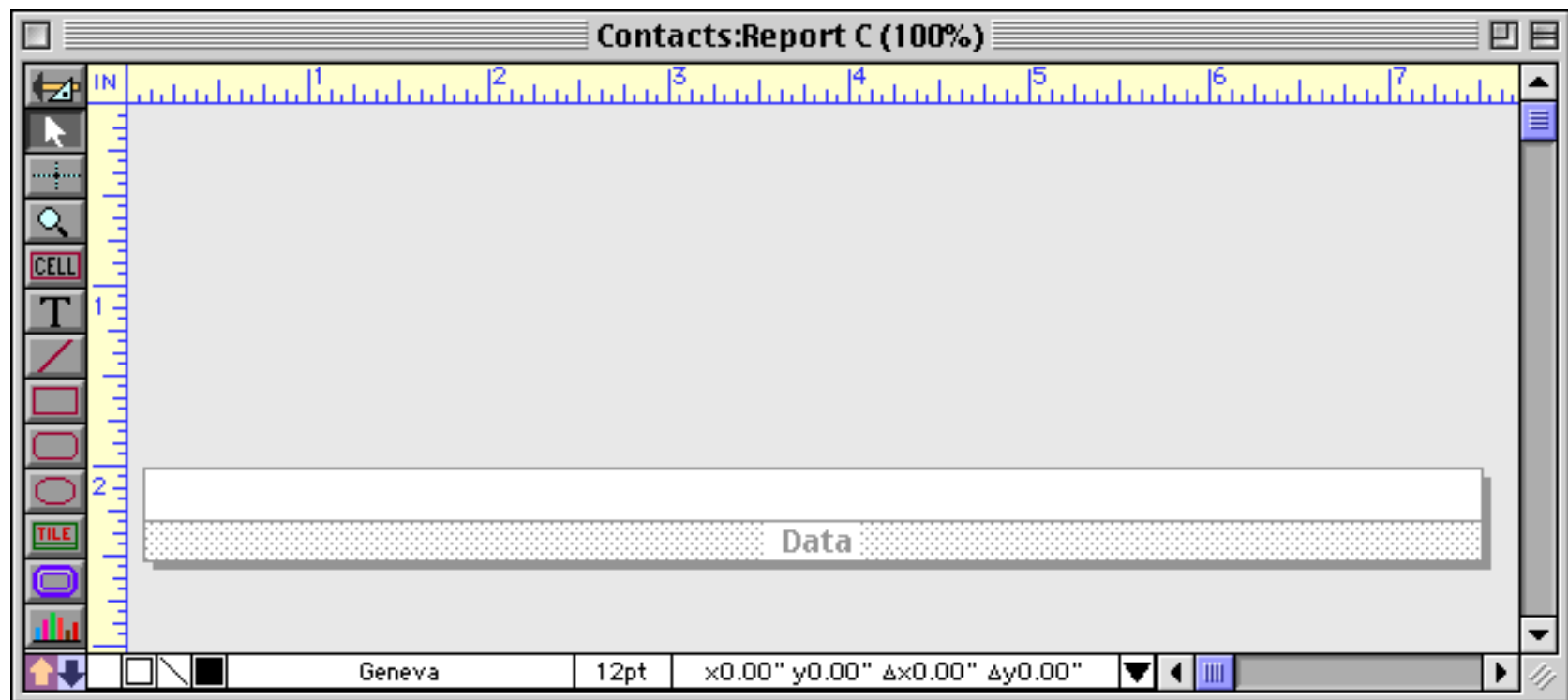


The multitude of choices in this dialog will be discussed later. For now we'll simply press the Header button to create a header tile.

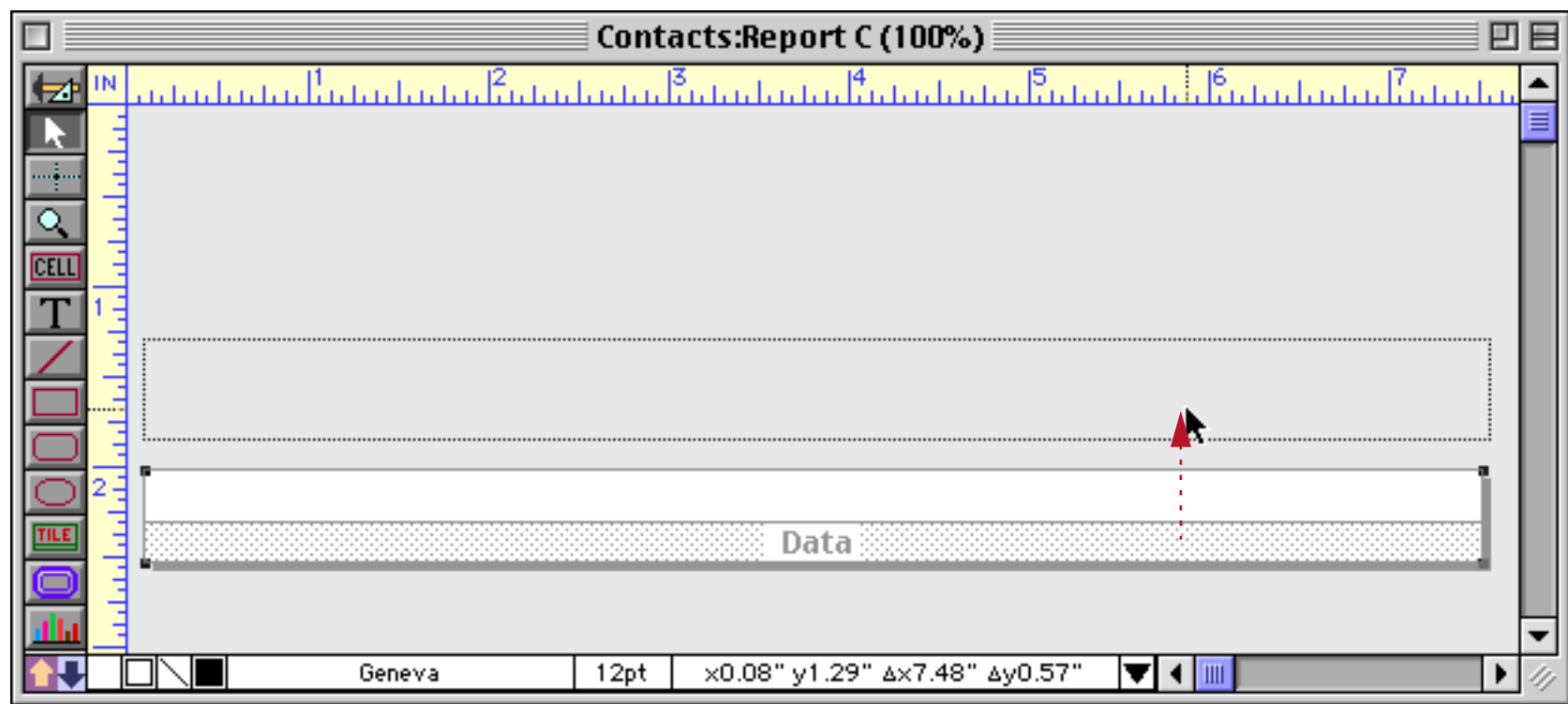


Creating A New Tile By Duplicating

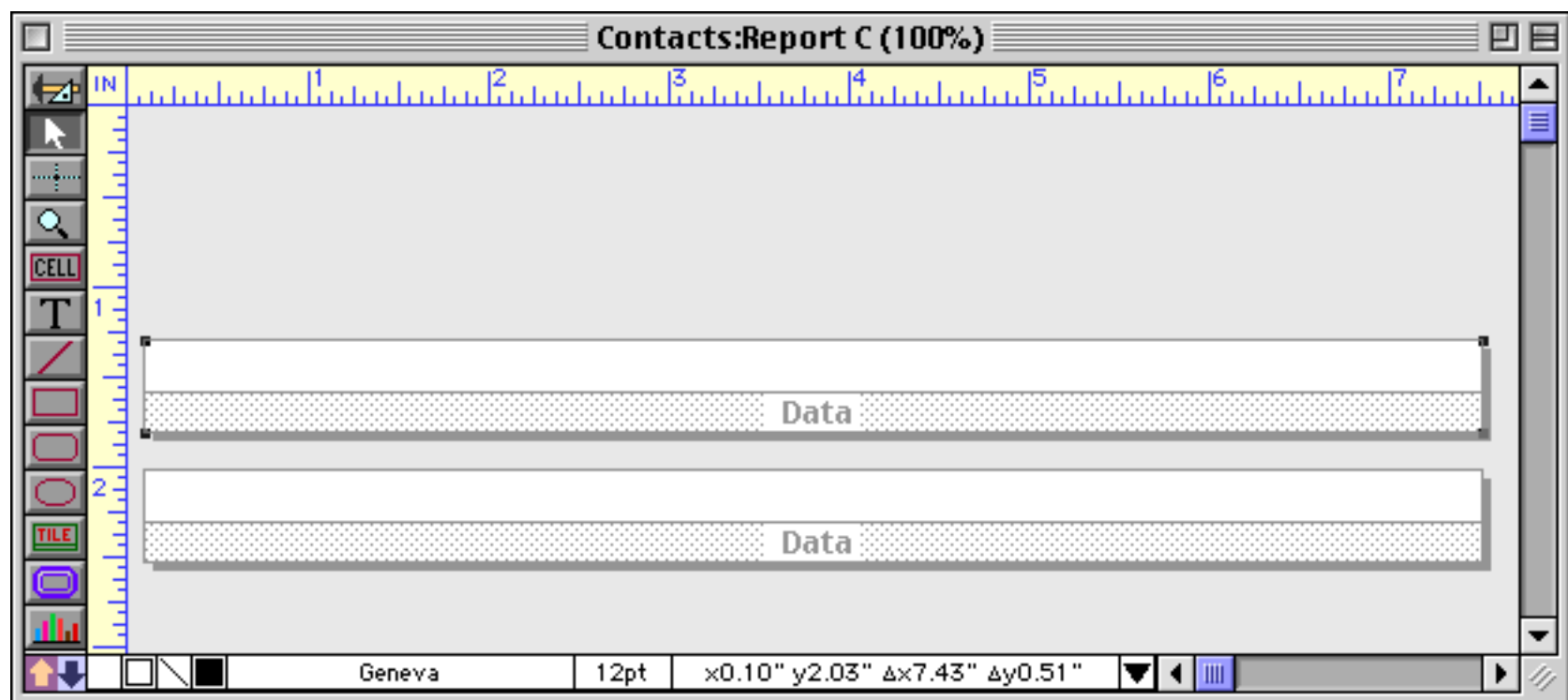
Another way to create a new tile is by duplicating an existing tile. For example, suppose you started with a data tile like this and wished to create a matching header tile.



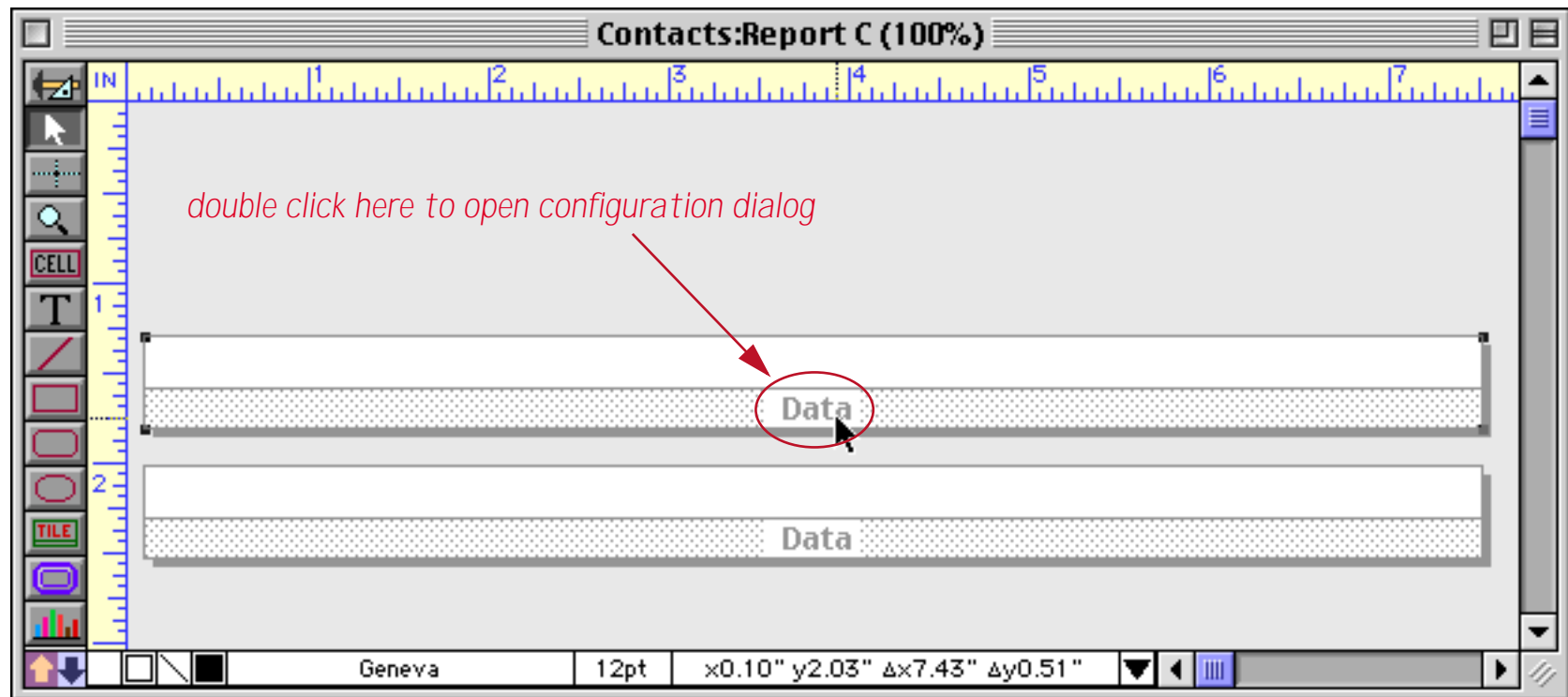
To duplicate this tile, hold down the **Option** key (Macintosh) or **Alt** key (PC), then click on the tile's drag bar and drag it (see "[Drag Duplicating](#)" on page 561). You may also want to hold down the **Shift** key to keep the new tile perfectly aligned with the original.



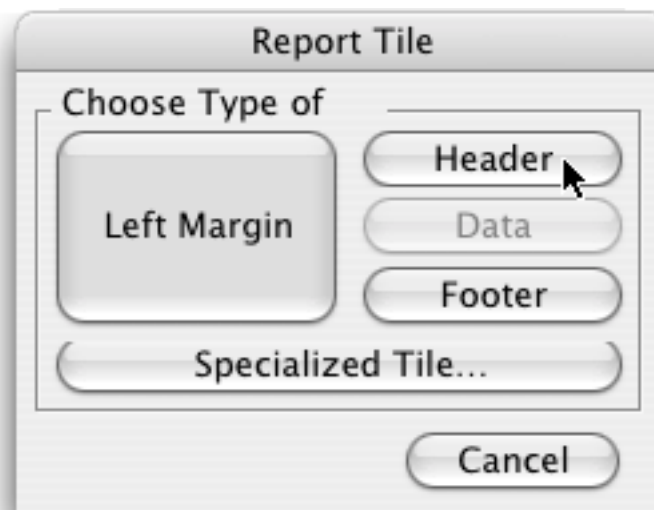
When you release the mouse a second data tile will appear.



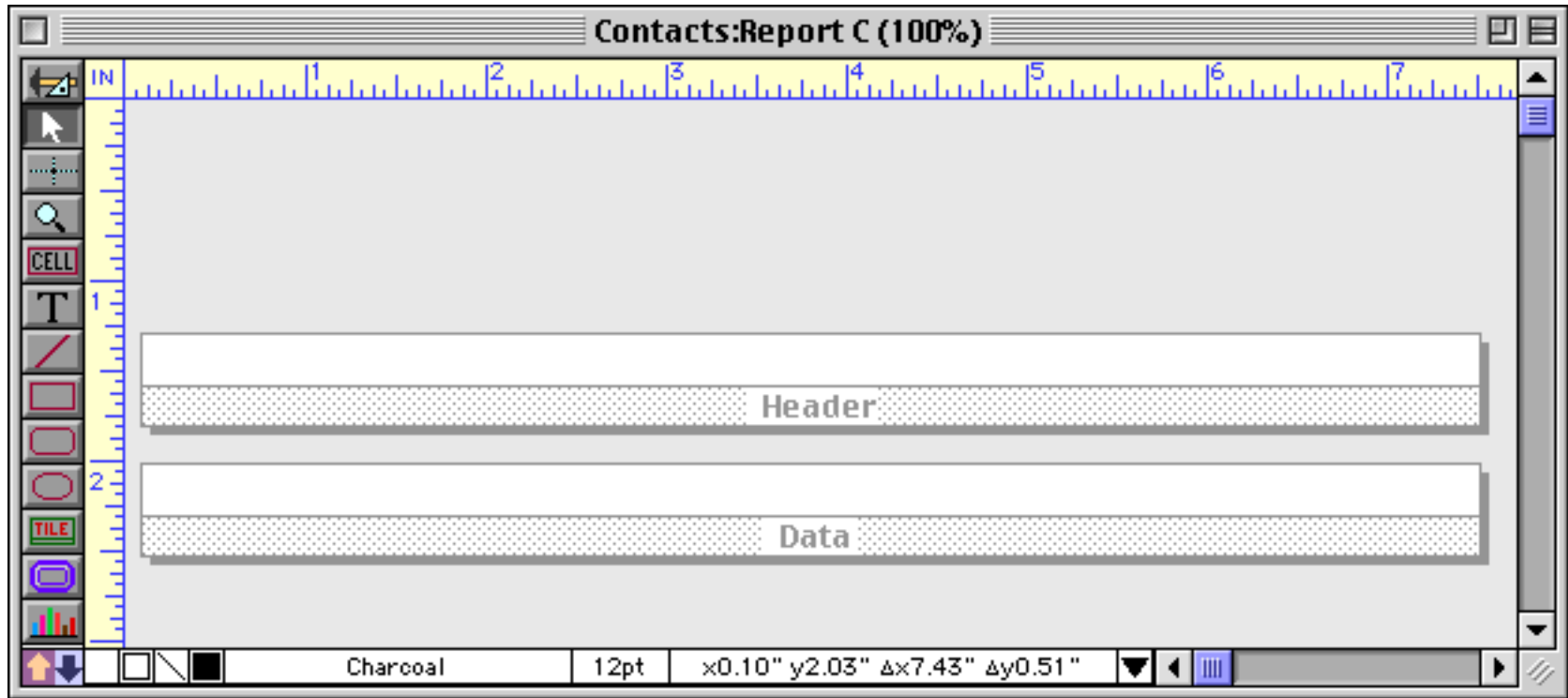
To change the type of the new tile, double click on the type of tile.



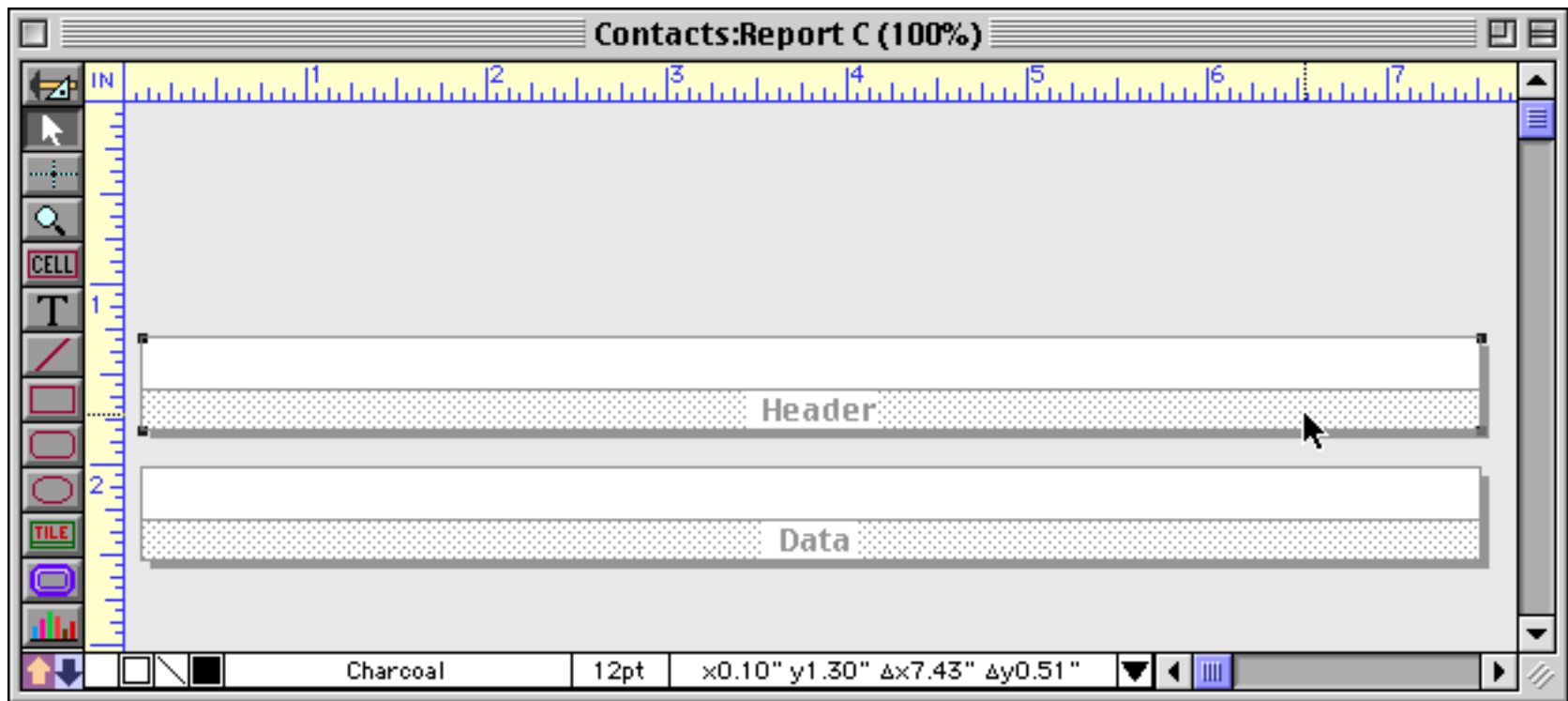
This opens the tile configuration dialog.



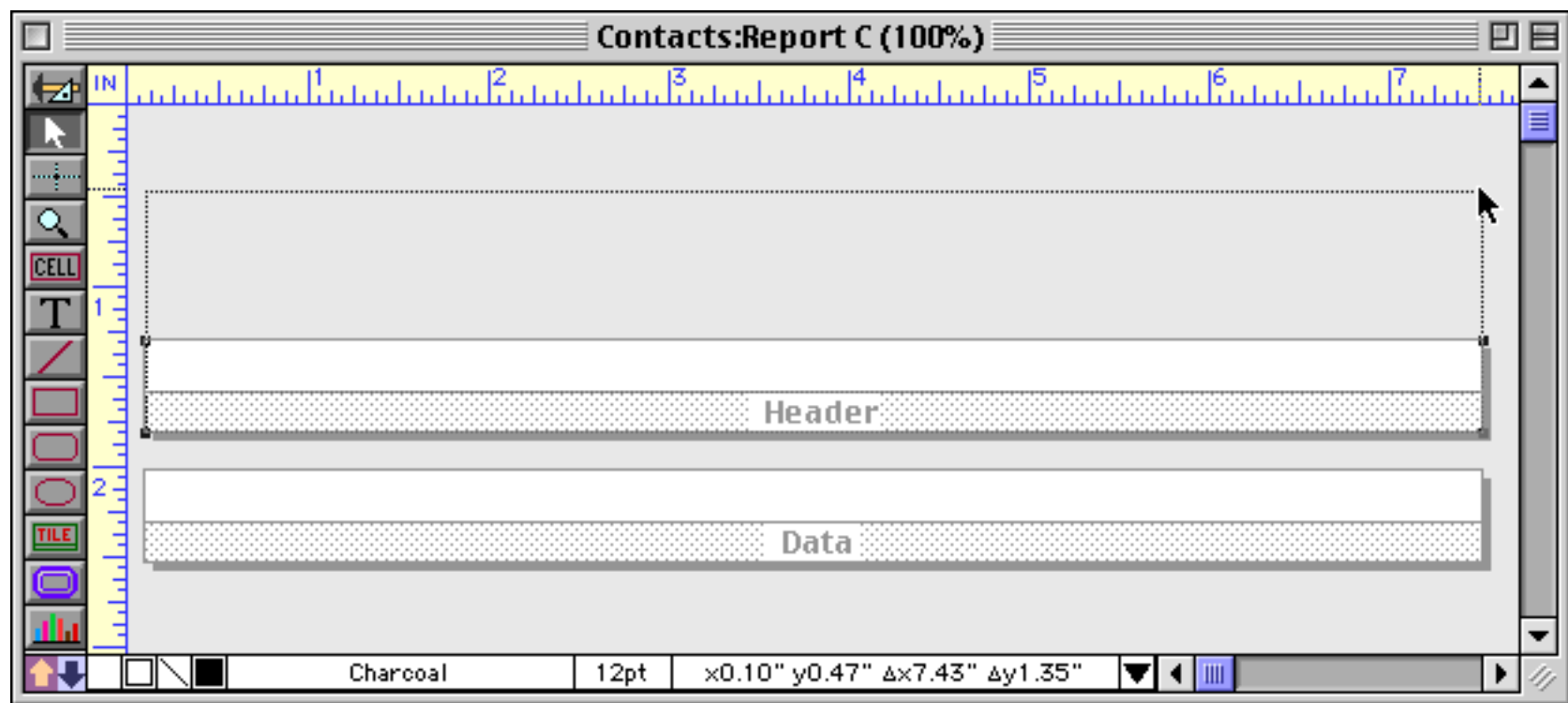
Press **Header** to switch the type of the new tile.



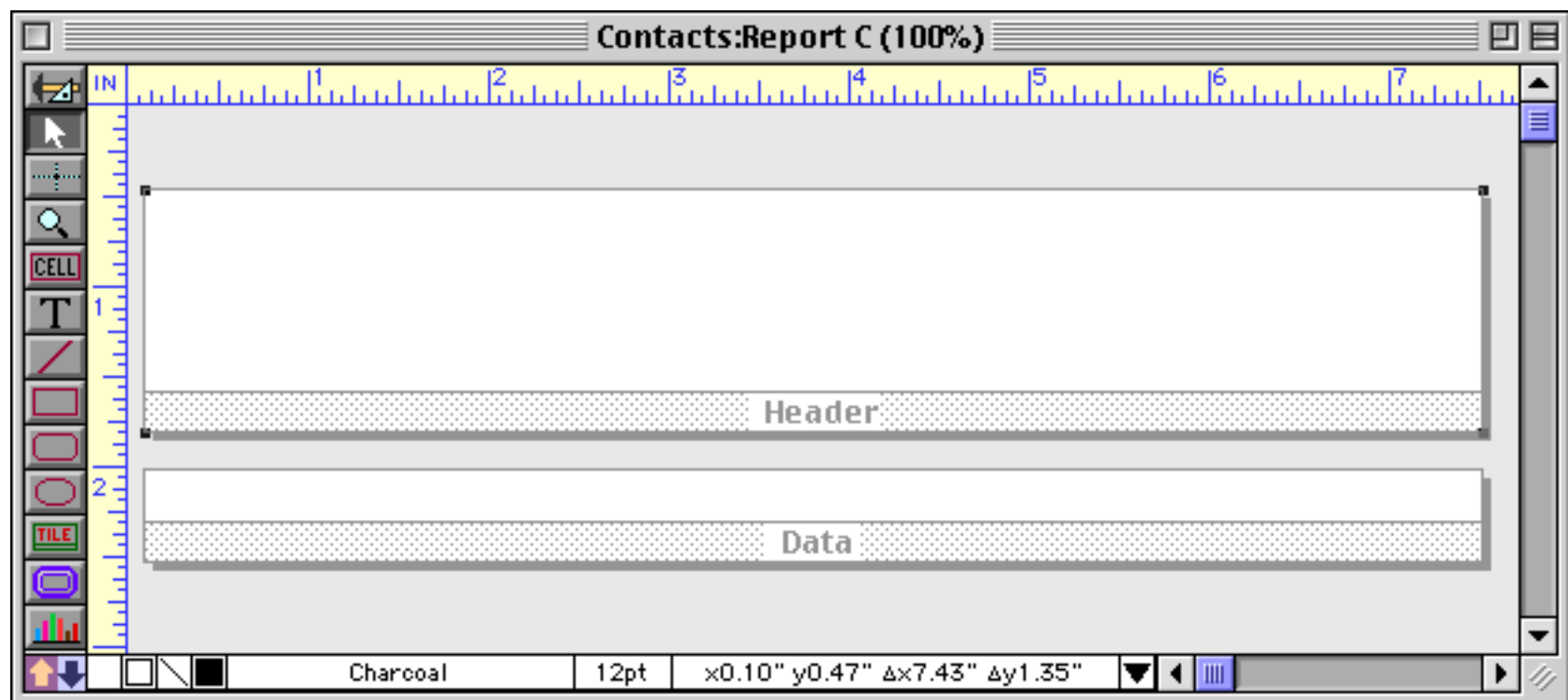
You may want to increase the height of the header tile. Here's one way to do that. Start by clicking on the drag bar to select the tile.



Now drag one of the handles to set the new size. Hold down the **Shift** key if you want to keep the width constant.



When you release the mouse button the tile snaps to the new height.



Of course the tile can also be moved or resized with the **Dimensions** command (see "[Viewing and Setting Exact Object Dimensions](#)" on page 512) and by nudging with the arrow keys (see "[Nudging an Object \(or Objects\)](#)" on page 509 and "[Nudging the Size of an Object](#)" on page 513).

Tiles In Action

Panorama has many different types of tiles. Each type of tile has its own rules that tell Panorama where the tile should be printed on the page. For example, a header tile is always printed at the top of the page. You can make the header bigger or smaller, add fancy graphics, even move it to a different spot in the form window—but no matter what you do, the header will always print at the top of the page.

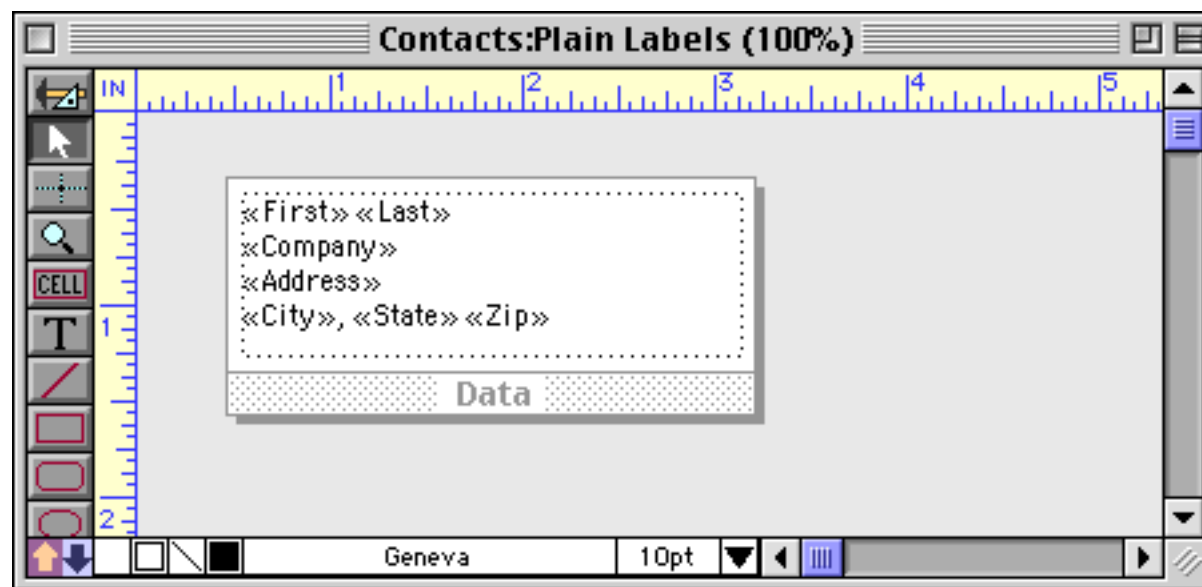
Panorama's basic rules for printing tiles are simple. First it prints the header (if any) at the top of the page, then the footer at the bottom of the page. The space left in the middle is available for data. Panorama starts in the upper left hand corner and prints a column of data—one data tile at a time. Once Panorama reaches the bottom, it checks to see if it should print another column. If another column is needed, Panorama goes back to the top and prints it.

More complex reports can have variations on this basic theme. Panorama has many different specialized types of tiles for automatically creating almost any report format. But the basic idea is the same—each tile slides into place on the page according to its rules.

A form should contain no more than one tile of each type. If a form contains two header tiles, for example, Panorama will not know which one to print at the top of the page. If you attempt to print using a form that has duplicate tiles, Panorama will display an alert.

Data Tiles

The data tile is the cornerstone of every custom report. Because the data tile is used to print each data record, the size and shape of the data tile has a major impact on the overall look of the report. For instance, if you want to print labels, the data tile should be the same size and shape as a single label plus the gaps between the labels, like this.



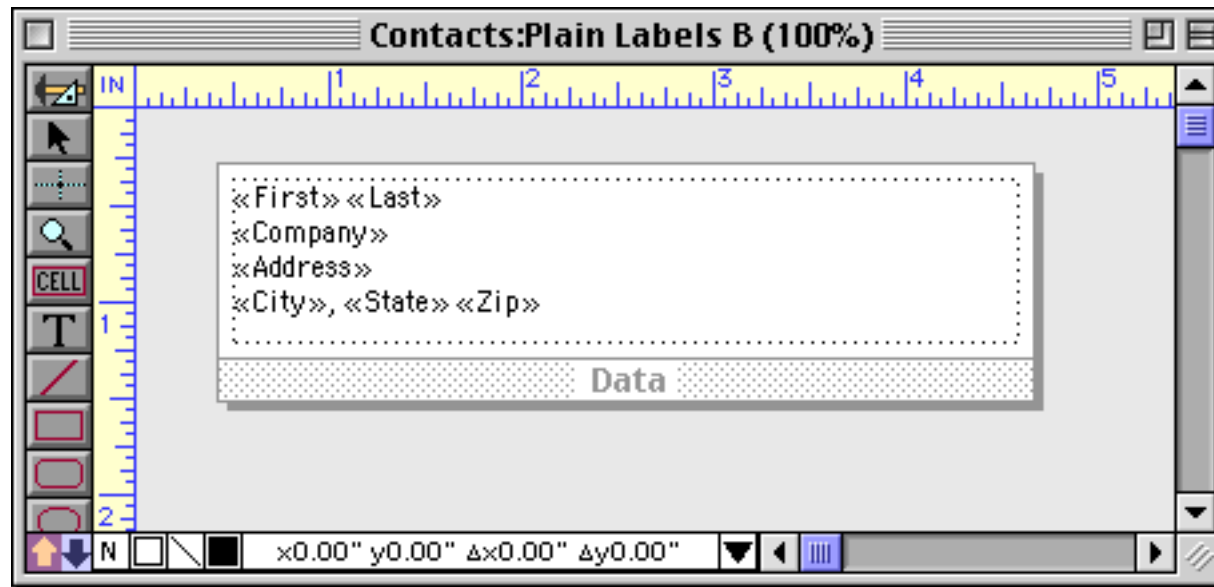
When you print this form it will look like this.

John Smith Acme Widgets 12 Harmony Lane Suite 15	Don Harmon Sudderth Video 415 Sudderth Ruidoso, NM 88345	David Blair DB Printing 869 W. Temple Lenox, IA 50851
Susan Brown 783 Algonquin Newport Beach, CA 93459	Abe Fierstein Van Nuys Lumber 1571 Haskell Van Nuys, CA 91409	Keith Baker Northgate Video 552 Northgate Lindenhurst, IL 60046
Karen Wilson Evanston Lumber 498 Noyes Evanston, IL 60201	Randy Cross Randy's Appliances 133 Hunt Rd Chelsford, MA 01824	John Sloan 79 Danube Way Olympia Fields, IL 60461
Jim Nickle Jim's Appliances 14189 8th Newhall, CA 91321	Jeffrey Rodman 2 Cary Rd Chestnut Hill, MA 02167	Guy Porter St. Louis Lumber 8702 Pershing St. Louis, MO 63107

This illustration shows how Panorama stacked the tiles together to create the report shown above. In this illustration, the tiles, which are actually invisible, are shown in light blue. As you can see, Panorama slides the tile surfaces together as closely as possible. (The tile drag bars are not counted as part of the tile when the report is printed.)

John Smith Acme Widgets 12 Harmony Lane Suite 15	Don Harmon Sudderth Video 415 Sudderth Ruidoso, NM 88345	David Blair DB Printing 869 W. Temple Lenox, IA 50851
Data	Data	Data
Susan Brown 783 Algonquin Newport Beach, CA 93459	Abe Fierstein Van Nuys Lumber 1571 Haskell Van Nuys, CA 91409	Keith Baker Northgate Video 552 Northgate Lindenhurst, IL 60046
Data	Data	Data
Karen Wilson Evanston Lumber 498 Noyes Evanston, IL 60201	Randy Cross Randy's Appliances 133 Hunt Rd Chelsford, MA 01824	John Sloan 79 Danube Way Olympia Fields, IL 60461
Data	Data	Data
Jim Nickle Jim's Appliances 14189 8th Newhall, CA 91321	Jeffrey Rodman 2 Cary Rd Chestnut Hill, MA 02167	Guy Porter St. Louis Lumber 8702 Pershing St. Louis, MO 63107
Data	Data	Data

Simply changing the size or shape of the data tile can completely change the printed report.



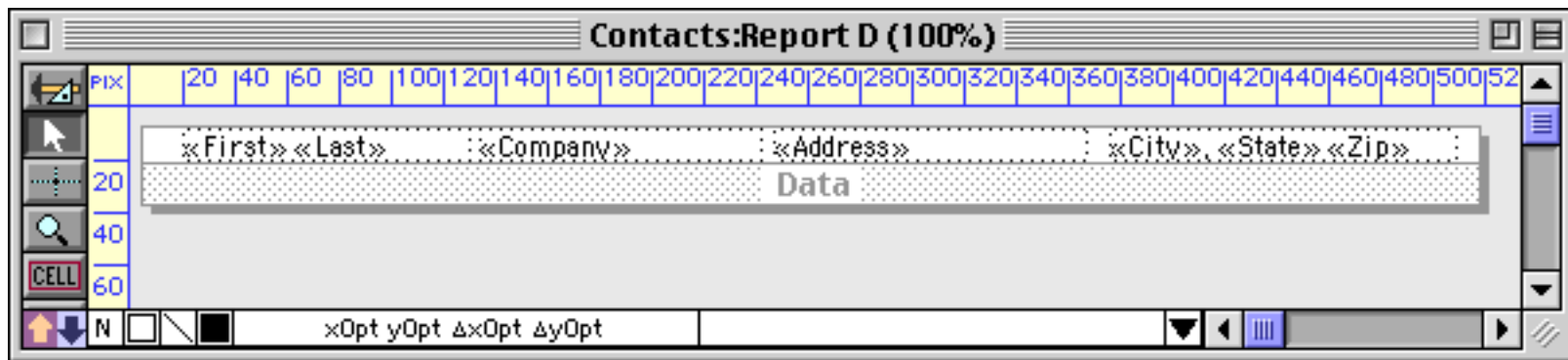
The only change is that the data tile (and the text object on it) has been made wider. Now Panorama can only stack two data tiles side by side.

John Smith Acme Widgets 12 Harmony Lane Suite 15	Don Harmon Sudderth Video 415 Sudderth Ruidoso, NM 88345
Susan Brown 783 Algonquin Newport Beach, CA 93459	Abe Fierstein Van Nuys Lumber 1571 Haskell Van Nuys, CA 91409
Karen Wilson Evanston Lumber 498 Noyes Evanston, IL 60201	Randy Cross Randy's Appliances 133 Hunt Rd Chelsford, MA 01824
Jim Nickle Jim's Appliances 14189 8th Newhall, CA 91321	Jeffrey Rodman 2 Cary Rd Chestnut Hill, MA 02167

Once again here is an illustration that shows how Panorama fits the invisible tiles together to make the finished report.

John Smith Acme Widgets 12 Harmony Lane Suite 15	Don Harmon Sudderth Video 415 Sudderth Ruidoso, NM 88345
Data	Data
Susan Brown 783 Algonquin Newport Beach, CA 93459	Abe Fierstein Van Nuys Lumber 1571 Haskell Van Nuys, CA 91409
Data	Data
Karen Wilson Evanston Lumber 498 Noyes Evanston, IL 60201	Randy Cross Randy's Appliances 133 Hunt Rd Chelsford, MA 01824
Data	Data
Jim Nickle Jim's Appliances 14189 8th Newhall, CA 91321	Jeffrey Rodman 2 Cary Rd Chestnut Hill, MA 02167
Data	Data

To make a columnar report with one line per record, make the data tile as wide as the page and one line high, like this.



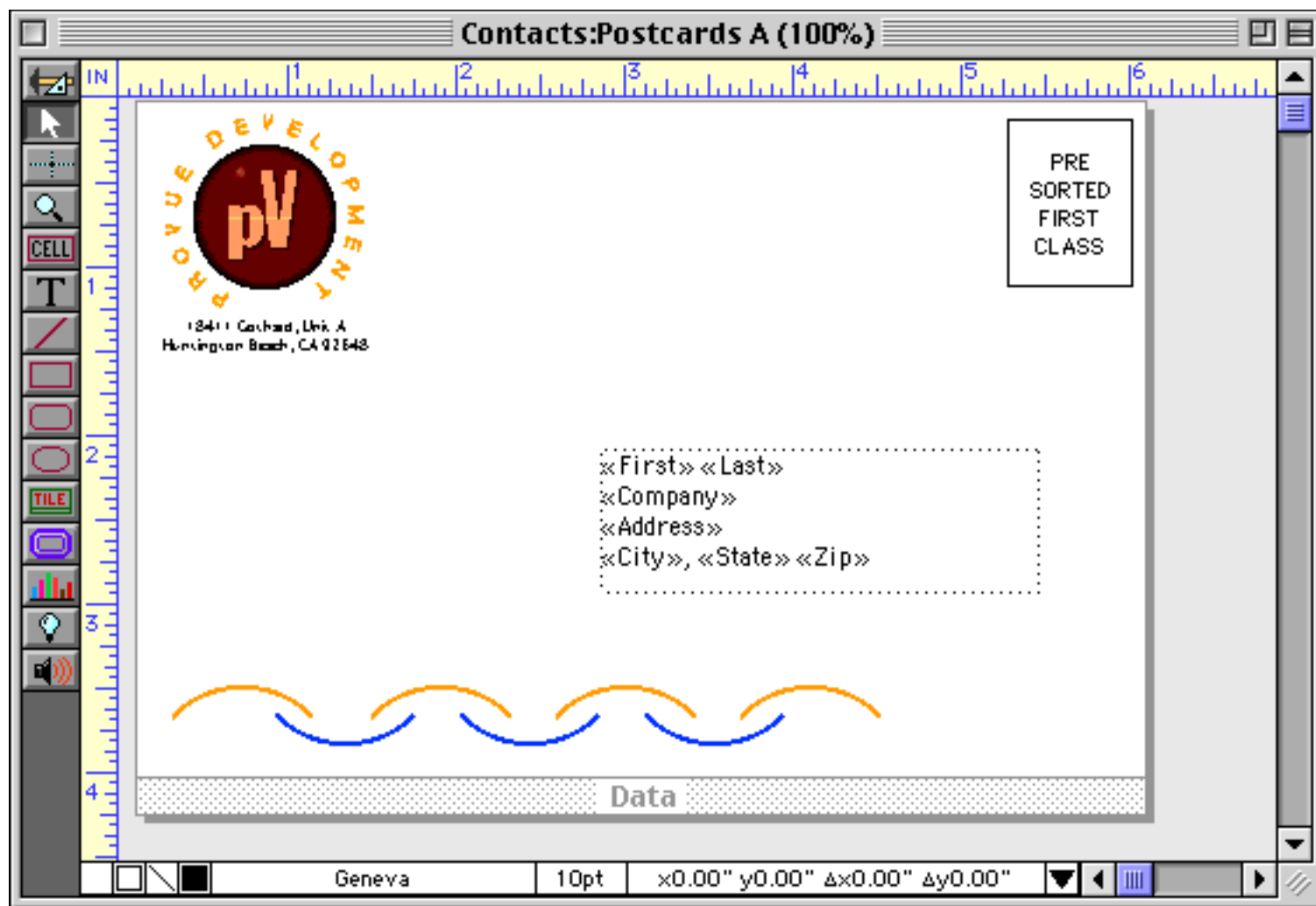
Here's the finished report printed from this tile.

John Smith	Acme Widgets	12 Harmony Lane	Huntington Beach, CA
Susan Brown		783 Algonquin	Newport Beach, CA 93459
Karen Wilson	Evanston Lumber	498 Noyes	Evanston, IL 60201
Jim Nickle	Jim's Appliances	14189 8th	Newhall, CA 91321
Brian Felty	B.F. Plumbing	118 N Wilder	Lubbock, TX 79410
Bob Hanlan	Ann Arbor Lumber	6916 Morgan	Ann Arbor, MI 48104
Tim Daniels	St. Louis Lumber	3133 Cornell	St. Louis, MO 63130
John Moses		8265 Leticia	San Clemente, CA 92672
John Fabian		3 Rose Hill	Woodstock, VT 05091
Ed Ruth	Chicago Lumber	1580 N. Oconto	Chicago, IL 60634
Don Harmon	Sudderth Video	415 Sudderth	Ruidoso, NM 88345

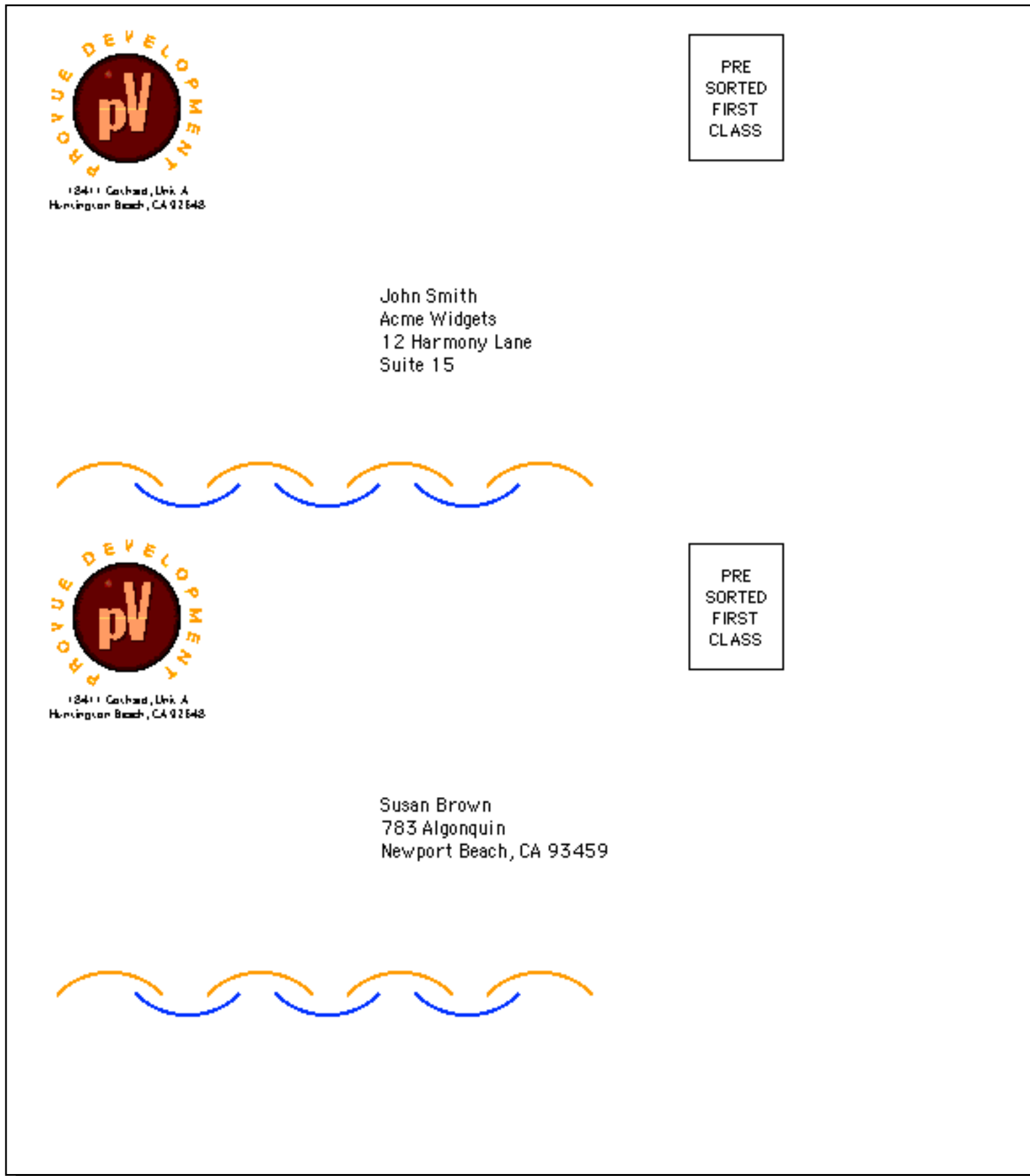
This data tile is too wide to stack side-by-side, so Panorama simply stacks them vertically.

John Smith	Acme Widgets	12 Harmony Lane	Huntington Beach, CA
Susan Brown		783 Algonquin	Newport Beach, CA 93459
Karen Wilson	Evanston Lumber	498 Noyes	Evanston, IL 60201
Jim Nickle	Jim's Appliances	14189 8th	Newhall, CA 91321
Brian Felty	B.F. Plumbing	118 N Wilder	Lubbock, TX 79410
Bob Hanlan	Ann Arbor Lumber	6916 Morgan	Ann Arbor, MI 48104
Tim Daniels	St. Louis Lumber	3133 Cornell	St. Louis, MO 63130
John Moses		8265 Leticia	San Clemente, CA 92672
John Fabian		3 Rose Hill	Woodstock, VT 05091
Ed Ruth	Chicago Lumber	1580 N. Oconto	Chicago, IL 60634
Don Harmon	Sudderth Video	415 Sudderth	Ruidoso, NM 88345
Data			

At the other extreme you can make the data tile very large so that only one or two records will be printed per page. This form is designed to print two postcards per page.



Here's what the postcards look like when printed on an 8.5 x 11 inch page.



Just as with the other reports, Panorama prints this one by stacking the data tiles as close together as possible.

PROVE DEVELOPMENT
pV
12411 Carhad, Unit A
Huntington Beach, CA 92648

PRE SORTED
FIRST
CLASS

John Smith
Acme Widgets
12 Harmony Lane
Suite 15

Data

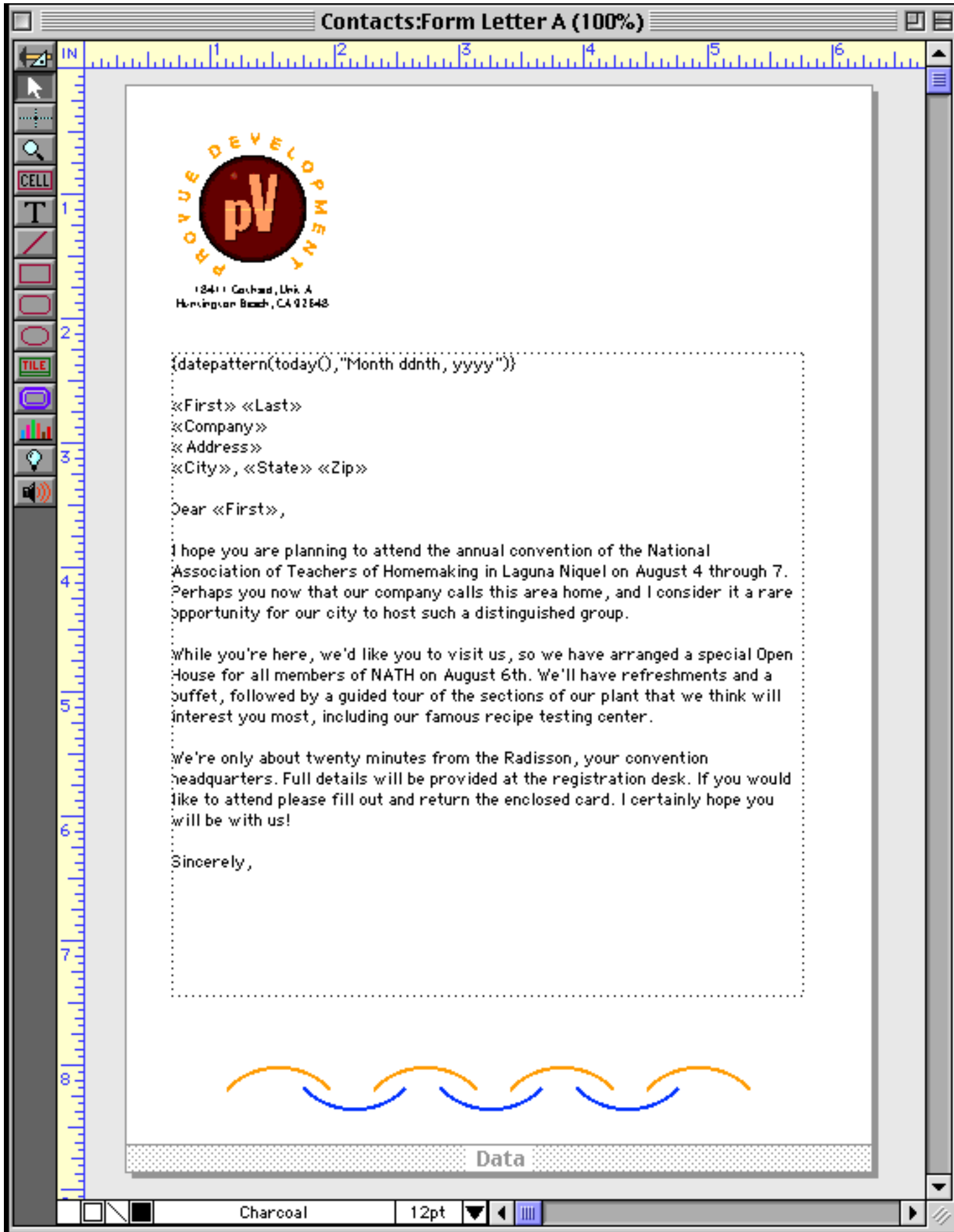
PROVE DEVELOPMENT
pV
12411 Carhad, Unit A
Huntington Beach, CA 92648

PRE SORTED
FIRST
CLASS

Susan Brown
783 Algonquin
Newport Beach, CA 93459

Data

If the data tile is large enough Panorama will only print one record per page. Common applications include invoices, statements, tax returns, and form letters like the one shown here.



Here's the printed result of this form. Panorama will print one complete page for each selected record in the database, each with a customized letter. (Or, if you wish, you can use the **Print One Record** tool to print a single letter. See "[Print One Record](#)" on page 1058)



By the way, it's also possible to print multi-page letters. See "[Printing Data that Overflows a Page](#)" on page 1116.

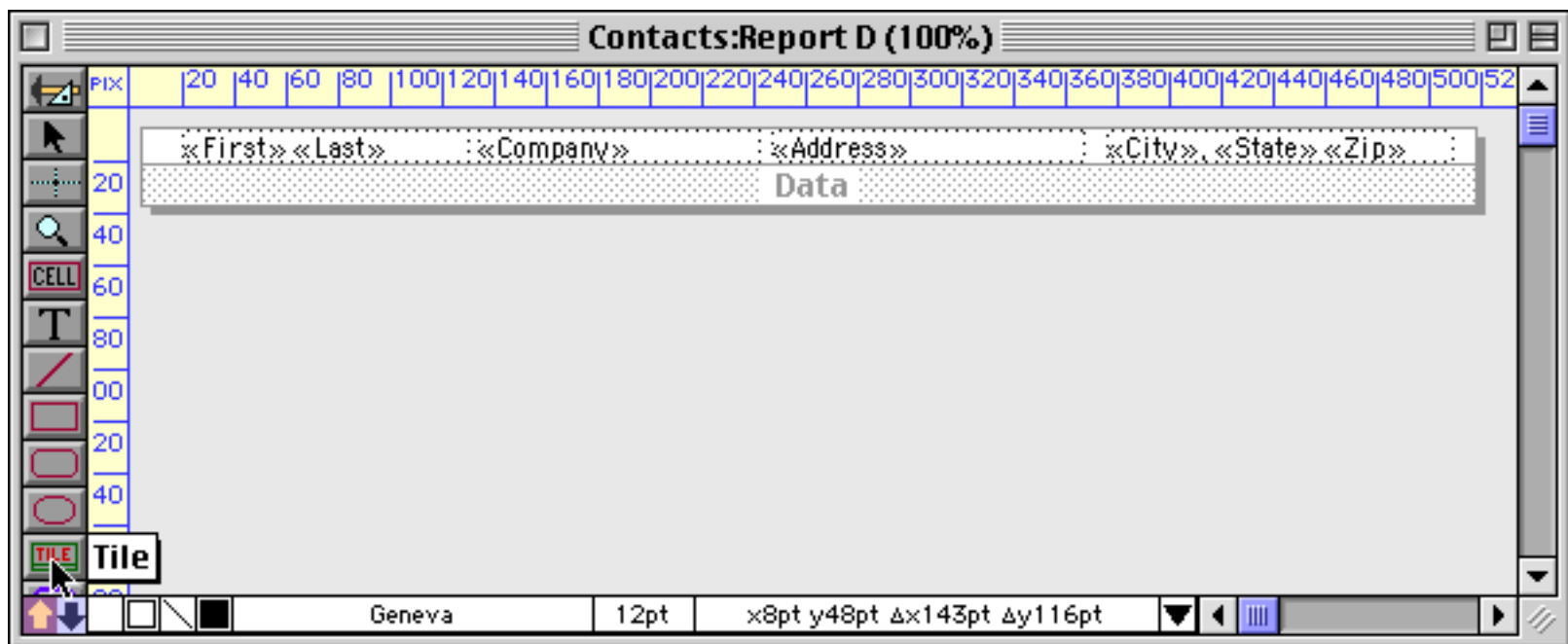
Margins

If a form doesn't contain any margin tiles (like the examples in the previous section) Panorama will automatically start printing as far up and to the left as possible on the current printer. In this case the exact margins will depend on the printer and on the Page Setup options you have chosen.

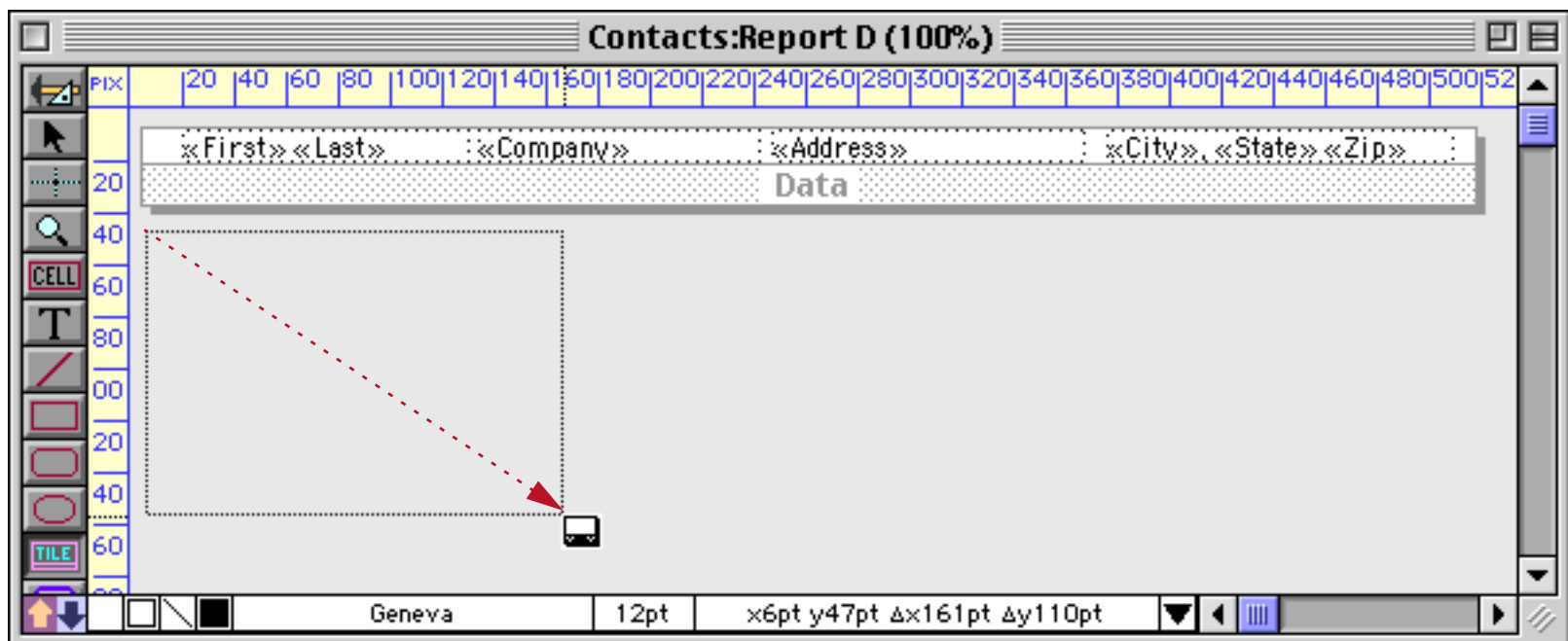
Top Margin Tile

The top margin tile allows you to modify the distance from the top of the page to the top of the first tile printed. Unlike most other tiles where both dimensions are important, Panorama only cares about the height of the top margin tile. If the report contains a top margin tile, the height of that tile becomes the top margin of the report.

To create a top margin, start by selecting the **Tile** tool.



Drag the mouse over an empty spot on the form. You don't need to worry about the width, but the height of this object will become the height of the top margin. Of course you can adjust the dimensions later.



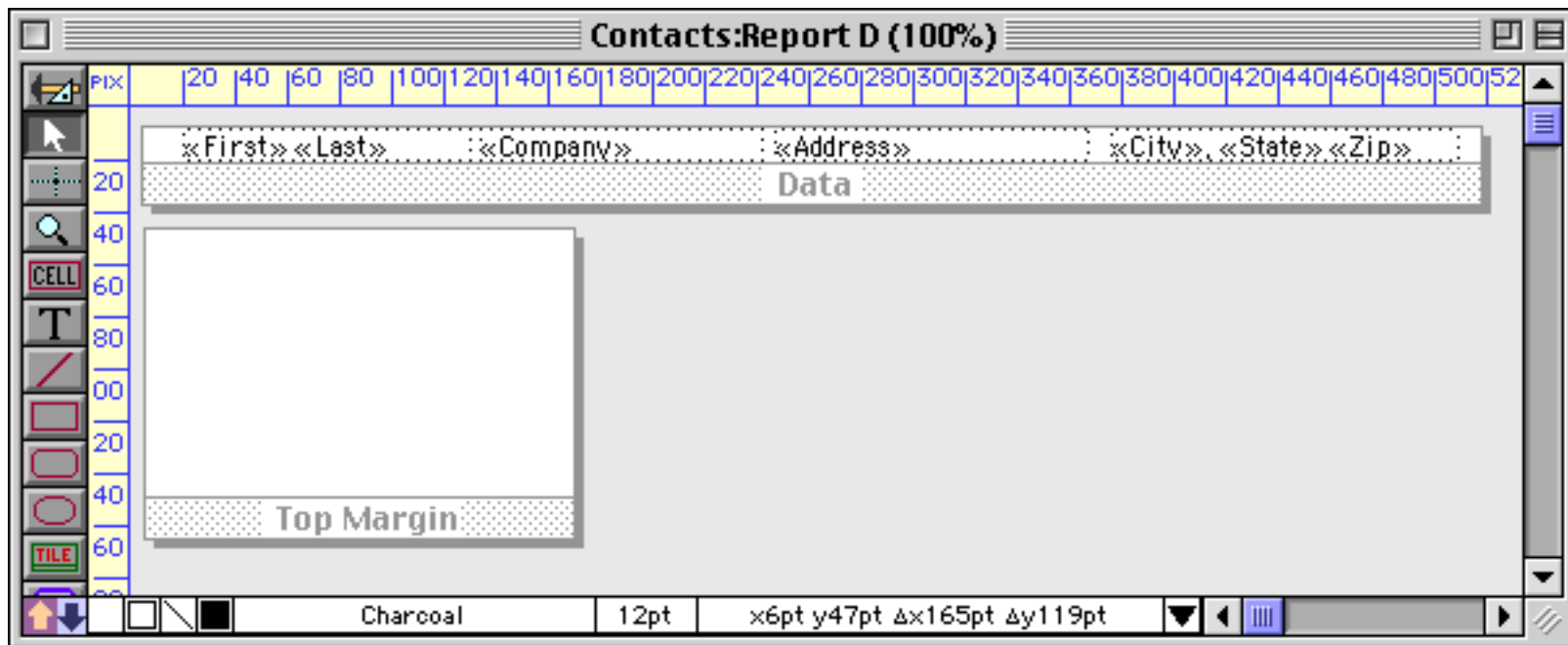
When you release the mouse the tile configuration dialog appears. If the small configuration dialog appears (as shown below) then click on the **Specialized Tiles** button.



The **Top Margin** button is near the top of the dialog.



Press this button to create the new tile.



When it's printed, this report will look like this.

John Smith	Acme Widgets	12 Harmony Lane	Huntington Beach, CA
Susan Brown		783 Algonquin	Newport Beach, CA 93459
Karen Wilson	Evanston Lumber	498 Noyes	Evanston, IL 60201
Jim Nickle	Jim's Appliances	14189 8th	Newhall, CA 91321
Brian Felty	B.F. Plumbing	118 N Wilder	Lubbock, TX 79410
Bob Hanlan	Ann Arbor Lumber	6916 Morgan	Ann Arbor, MI 48104
Tim Daniels	St. Louis Lumber	3133 Cornell	St. Louis, MO 63130
John Moses		8265 Leticia	San Clemente, CA 92672
John Fabian		3 Rose Hill	Woodstock, VT 05091
Ed Ruth	Chicago Lumber	1580 N. Oconto	Chicago, IL 60634
Don Harmon	Sudderth Video	415 Sudderth	Ruidoso, NM 88345

This illustration shows how Panorama assembles the report using the top margin and data tiles. The top margin is always the top tile on the page, with any other tiles stacked below it.

John Smith	Acme Widgets	12 Harmony Lane	Huntington Beach, CA
Susan Brown		783 Algonquin	Newport Beach, CA 93459
Karen Wilson	Evanston Lumber	498 Noyes	Evanston, IL 60201
Jim Nickle	Jim's Appliances	14189 8th	Newhall, CA 91321
Brian Felty	B.F. Plumbing	118 N Wilder	Lubbock, TX 79410
Bob Hanlan	Ann Arbor Lumber	6916 Morgan	Ann Arbor, MI 48104
Tim Daniels	St. Louis Lumber	3133 Cornell	St. Louis, MO 63130
John Moses		8265 Leticia	San Clemente, CA 92672
John Fabian		3 Rose Hill	Woodstock, VT 05091
Ed Ruth	Chicago Lumber	1580 N. Oconto	Chicago, IL 60634
Don Harmon	Sudderth Video	415 Sudderth	Ruidoso, NM 88345

Unlike other tiles, Panorama will not print text or graphics that are placed on the surface of the top margin tile. The top margin tile has only one purpose—to set the top margin.

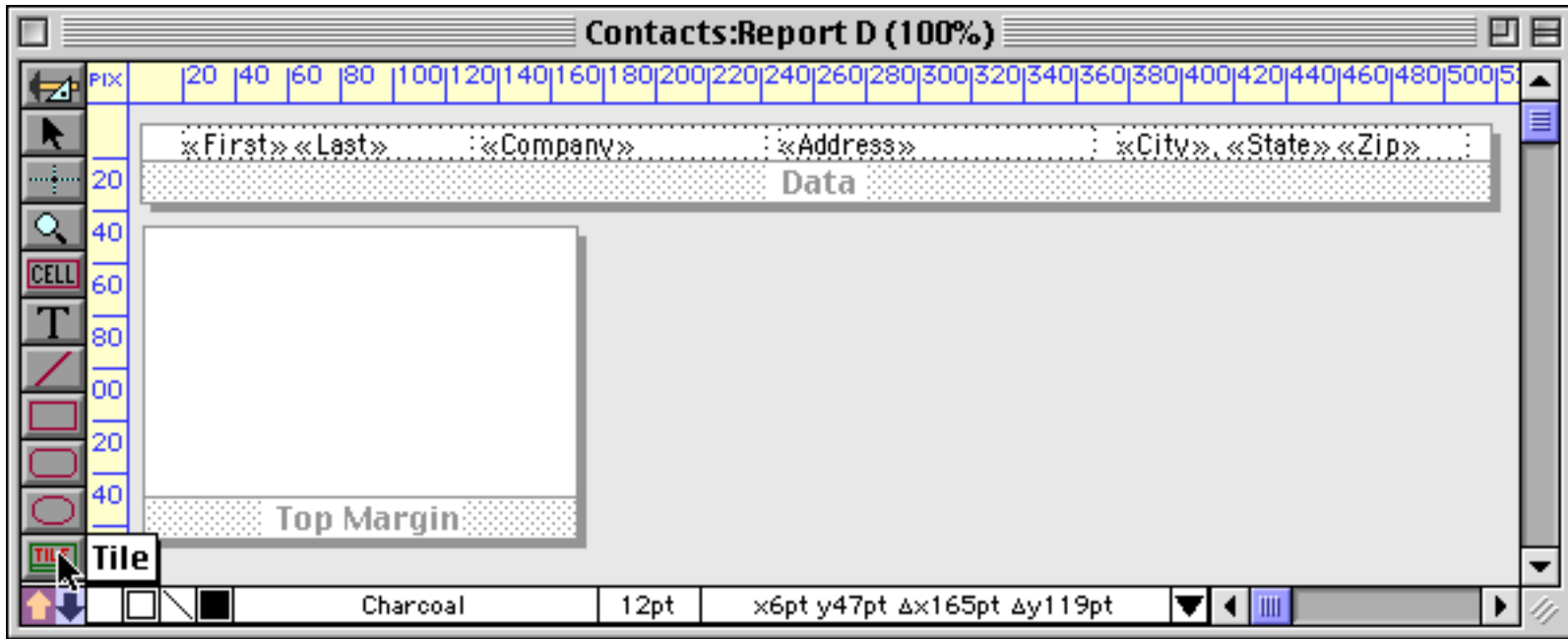
If the height of the top margin tile is less than the minimum printer margin the text may be cut off.

Left Margin Tile

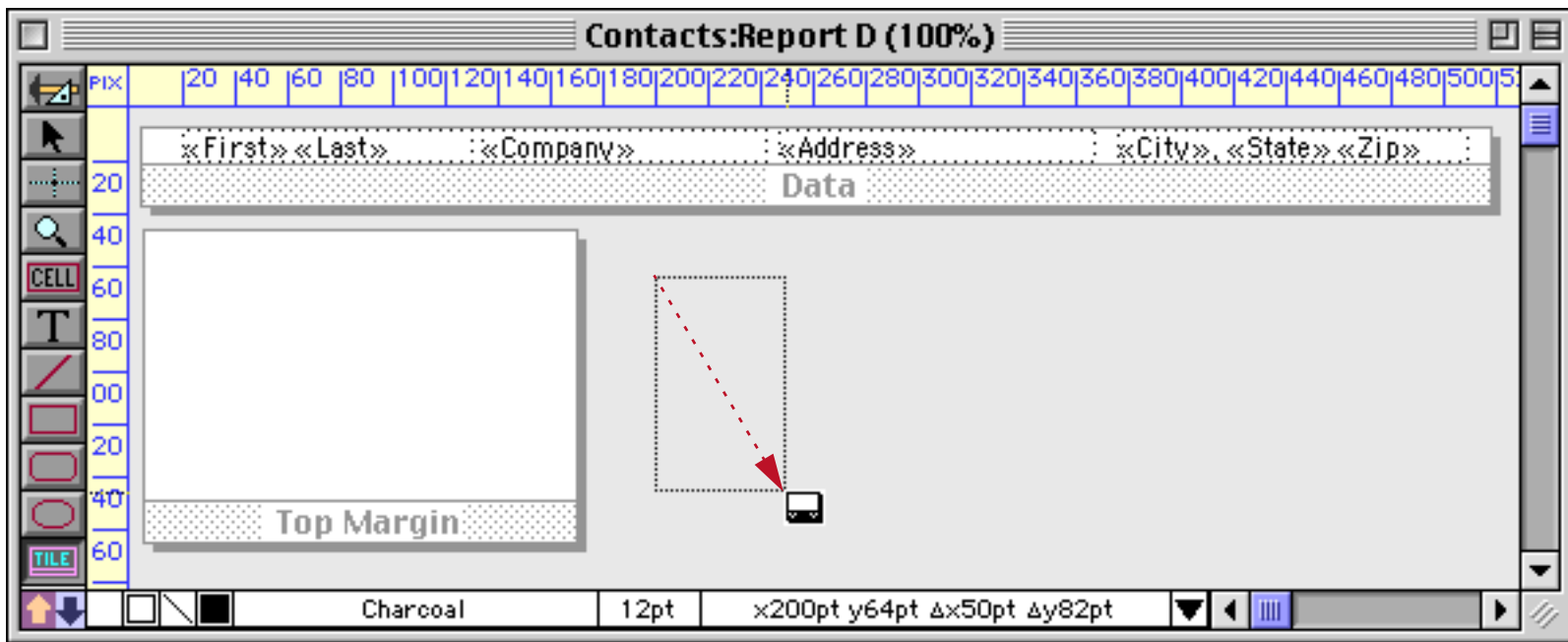
Panorama normally prints the header, footer, and data tiles with the smallest possible left margin, usually about 1/4 inch. (The actual minimum left margin depends on the type of printer you are using, and on the current **Page Setup**.)

You can use the left margin tile to change the left margin. Unlike other tiles where both dimensions are important, Panorama only cares about the width of the left margin tile. If the report contains a left margin tile, the width of that tile becomes the left margin of the report.

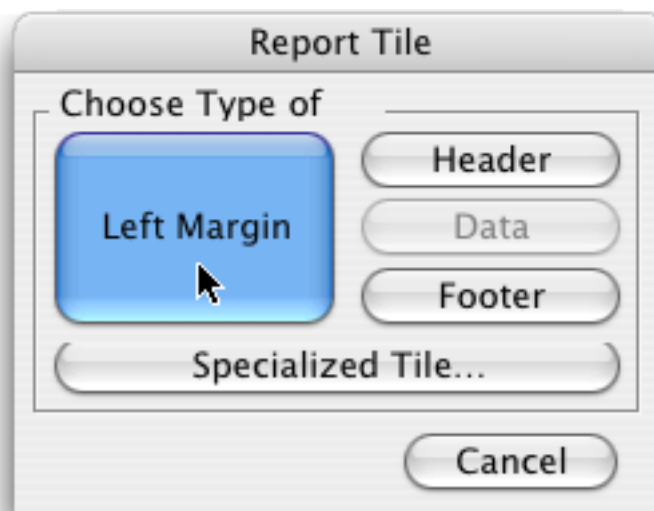
To create a left margin, start by selecting the Tile tool.



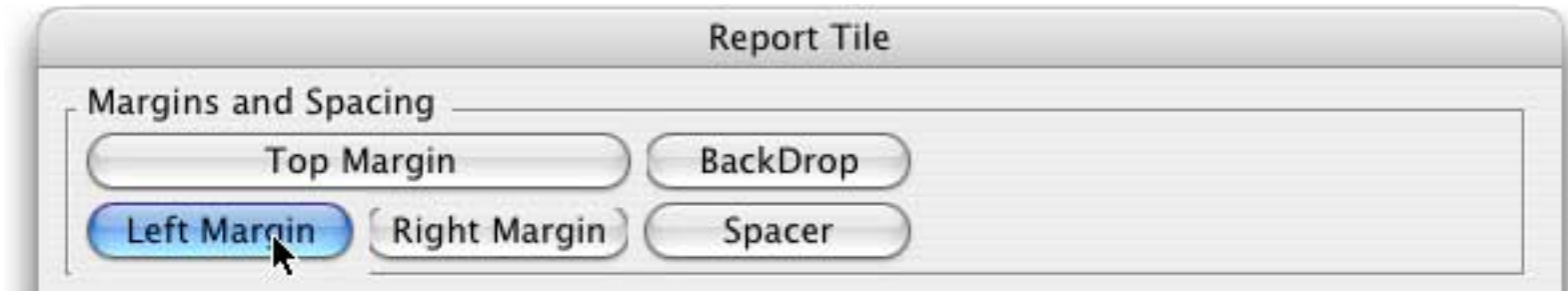
Drag the mouse over an empty spot on the form. You don't need to worry about the height, but the width of this object will become the width of the left margin. Of course you can adjust the dimensions later.



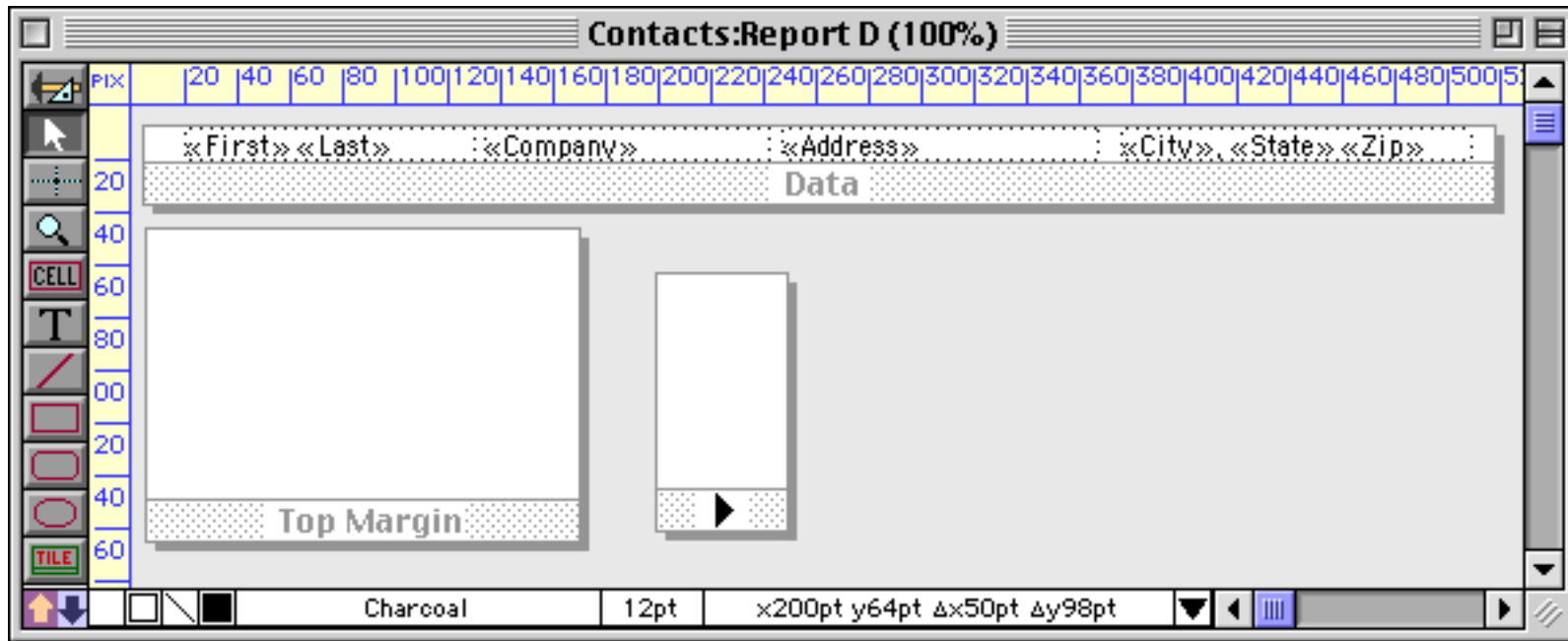
When you release the mouse the tile configuration dialog appears. If the small configuration dialog appears (as shown below) then click on the **Left Margin** button.



If the large configuration dialog appears press the **Left Margin** button, which is near the top of the dialog.



Since the Left Margin tile is often quite narrow, Panorama simply displays a triangle in the tile's drag bar.



When it's printed, this report will look like this.

John Smith	Acme Widgets	12 Harmony Lane	Huntington Beach, CA
Susan Brown		783 Algonquin	Newport Beach, CA 93459
Karen Wilson	Evanston Lumber	498 Noyes	Evanston, IL 60201
Jim Nickle	Jim's Appliances	14189 8th	Newhall, CA 91321
Brian Felty	B.F. Plumbing	118 N Wilder	Lubbock, TX 79410
Bob Hanlan	Ann Arbor Lumber	6916 Morgan	Ann Arbor, MI 48104
Tim Daniels	St. Louis Lumber	3133 Cornell	St. Louis, MO 63130
John Moses		8265 Leticia	San Clemente, CA 92672
John Fabian		3 Rose Hill	Woodstock, VT 05091
Ed Ruth	Chicago Lumber	1580 N. Oconto	Chicago, IL 60634
Don Harmon	Sudderth Video	415 Sudderth	Ruidoso, NM 88345

This illustration shows how Panorama assembles the report using the top margin and data tiles. The top margin is always the top tile on the page, with any other tiles stacked below it.

Top Margin			
John Smith	Acme Widgets	12 Harmony Lane	Huntington Beach, CA
Susan Brown		783 Algonquin	Newport Beach, CA 93459
Karen Wilson	Evanston Lumber	498 Noyes	Evanston, IL 60201
Jim Nickle	Jim's Appliances	14189 8th	Newhall, CA 91321
Brian Felty	B.F. Plumbing	118 N Wilder	Lubbock, TX 79410
Bob Hanlan	Ann Arbor Lumber	6916 Morgan	Ann Arbor, MI 48104
Tim Daniels	St. Louis Lumber	3133 Cornell	St. Louis, MO 63130
John Moses		8265 Leticia	San Clemente, CA 92672
John Fabian		3 Rose Hill	Woodstock, VT 05091
Ed Ruth	Chicago Lumber	1580 N. Oconto	Chicago, IL 60634
Don Harmon	Sudderth Video	415 Sudderth	Ruidoso, NM 88345
Data			

Unlike other tiles, Panorama will not print text or graphics that are placed on the surface of the left margin tile. The left margin tile has only one purpose—to set the left margin.

Right Margin Tile

The right margin tile is rarely used. Panorama normally tries to use the entire printed area of the page, right up to the minimum right margin. The usual right margin is about 1/4 inch, but like the left margin, it can vary depending on the type of printer you are using and the current Page Setup.

You can use the right margin tile to set a larger right margin. Like the left margin, Panorama only cares about the width of the right margin tile. If the report contains a right margin tile, the width of that tile becomes the right margin of the report. However, there is one exception—if your right margin tile is less than the minimum width, the report will ignore the tile and use the minimum right margin.

Increasing the right margin has two effects. First, when you are using automatic multiple columns (see “[Controlling the Number of Columns](#)” on page 1139), increasing the right margin can reduce the number of columns printed. Panorama will stop printing columns when the right margin is reached. However, it is usually simpler not to use a right margin and instead set the number of columns explicitly using the **Report Preferences** dialog (see “[Controlling the Number of Columns](#)” on page 1139).

The right margin also affects the position of the center and right header/footer tiles (see “[Designing Headers and Footers For Changing Page Sizes](#)” on page 1109). The centered tiles will be centered between the left and right margins, while right flush tiles will be flush against the right margin.

The right margin does not have any effect on normal header/footer tiles, or on the first column of data tiles. For example, suppose that the header tile is wider than the space between the left and right margins. The header will overlap and print in the right margin area.

Unlike other tiles, Panorama will not print text or graphics that are placed on the surface of the right margin tile. The right margin tile has only one purpose—to set the right margin.

Bottom Margin

Panorama does not have a special tile for setting the bottom margin. Instead, you should include space for the bottom margin in the footer tile (see “[Footer Tile](#)” on page 1099).

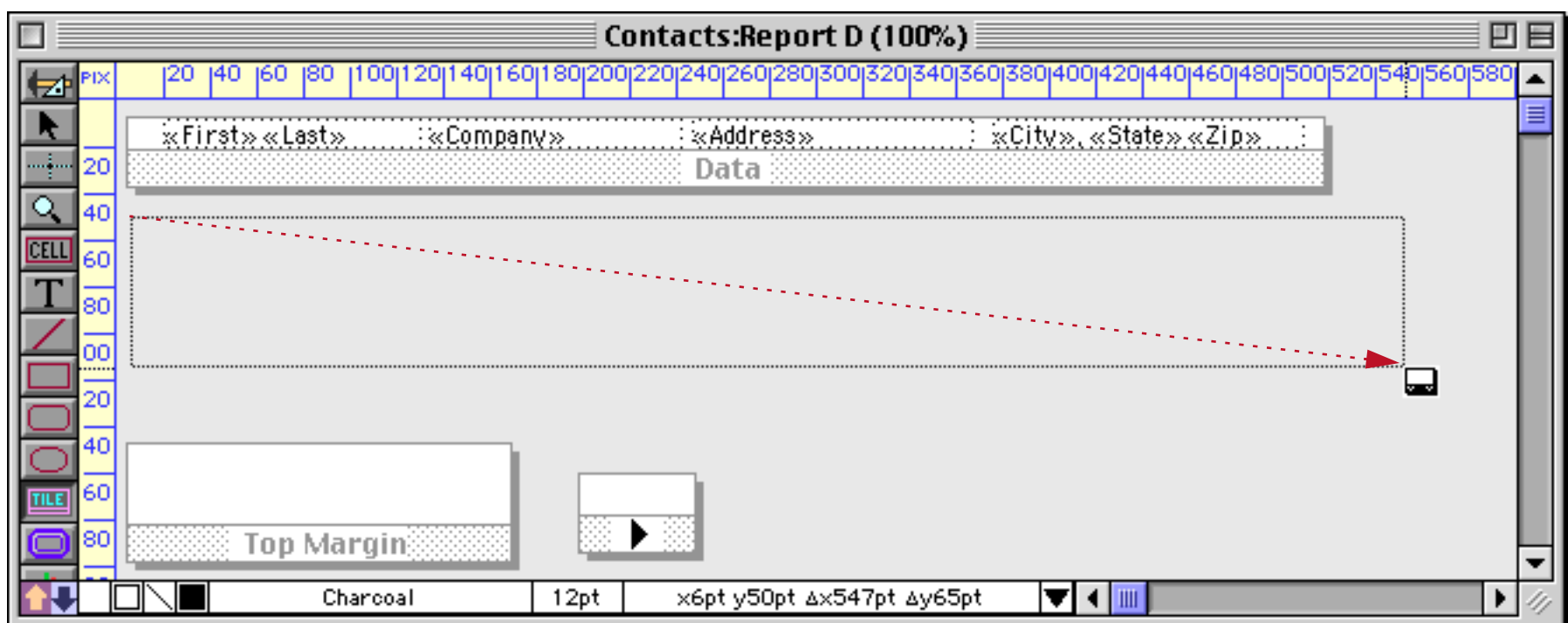
Headers and Footers

Many reports have headers at the top of each page and footers at the bottom. As you might guess, headers and footers are set up with report tiles!

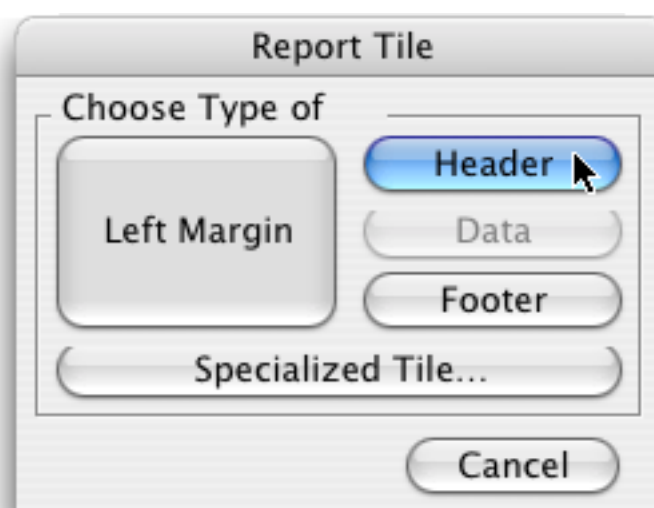
Header Tile

The header tile is printed at the top left of each page. The header can be used to print the report title, page number (see “[Page Numbers](#)” on page 1100), date (see “[Printing the Current Date and Time](#)” on page 1103) or anything else you want.

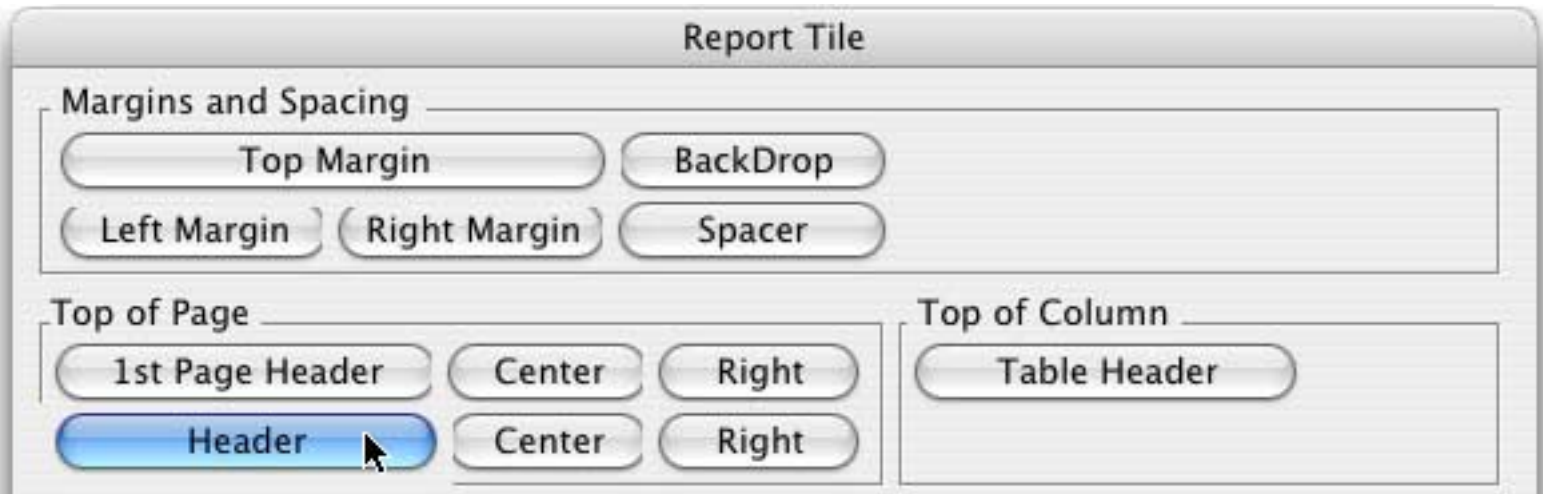
To create a header, start by selecting the **Tile** tool, just as with any other tile. Drag the mouse over an empty spot on the form, leaving the proper amount of space for the header you want to create. Usually the header is approximately the entire width of the page. (Of course you can adjust the dimensions later.) The header tile can be in any empty spot on the form. In this example we are creating the header tile below the data tile, even though the header will eventually print above the data.



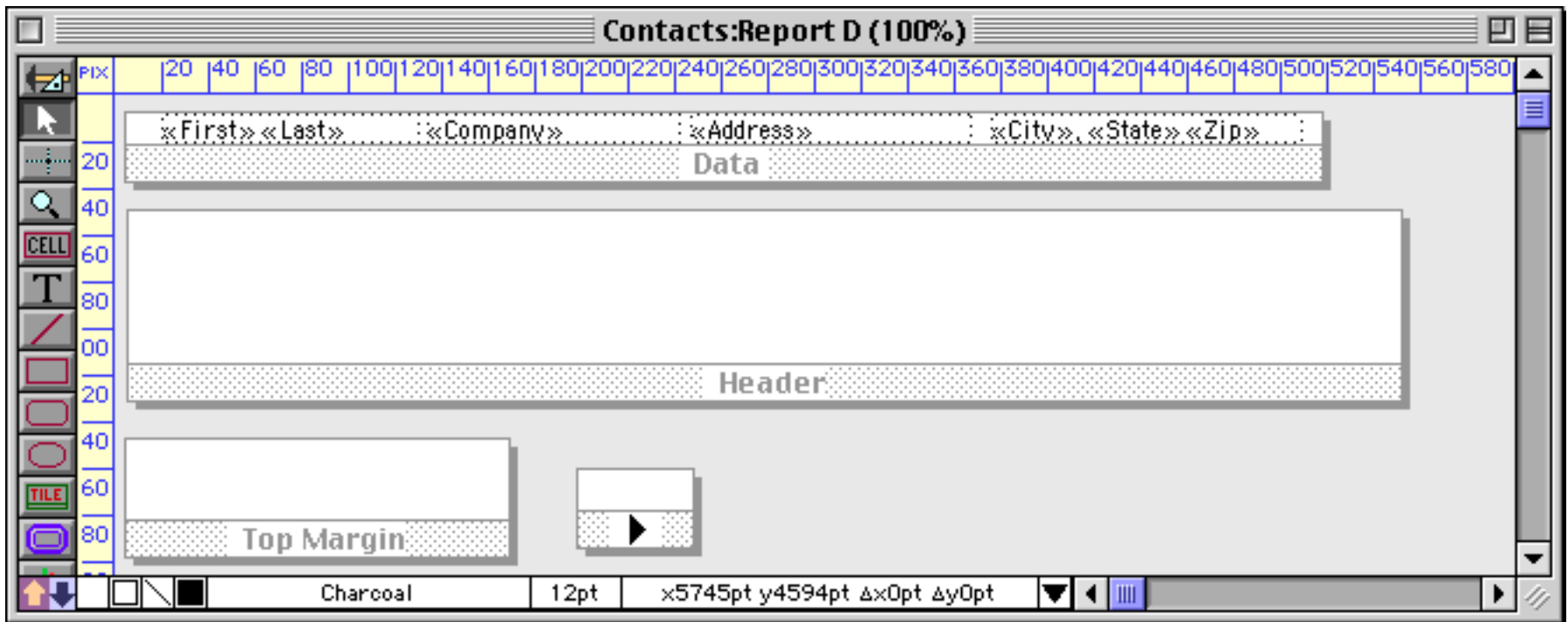
When you release the mouse the tile configuration dialog appears. If the small configuration dialog appears (as shown below) then click on the **Header** button.



If the large configuration dialog appears press the **Header** button, in the *Top of Page* section.



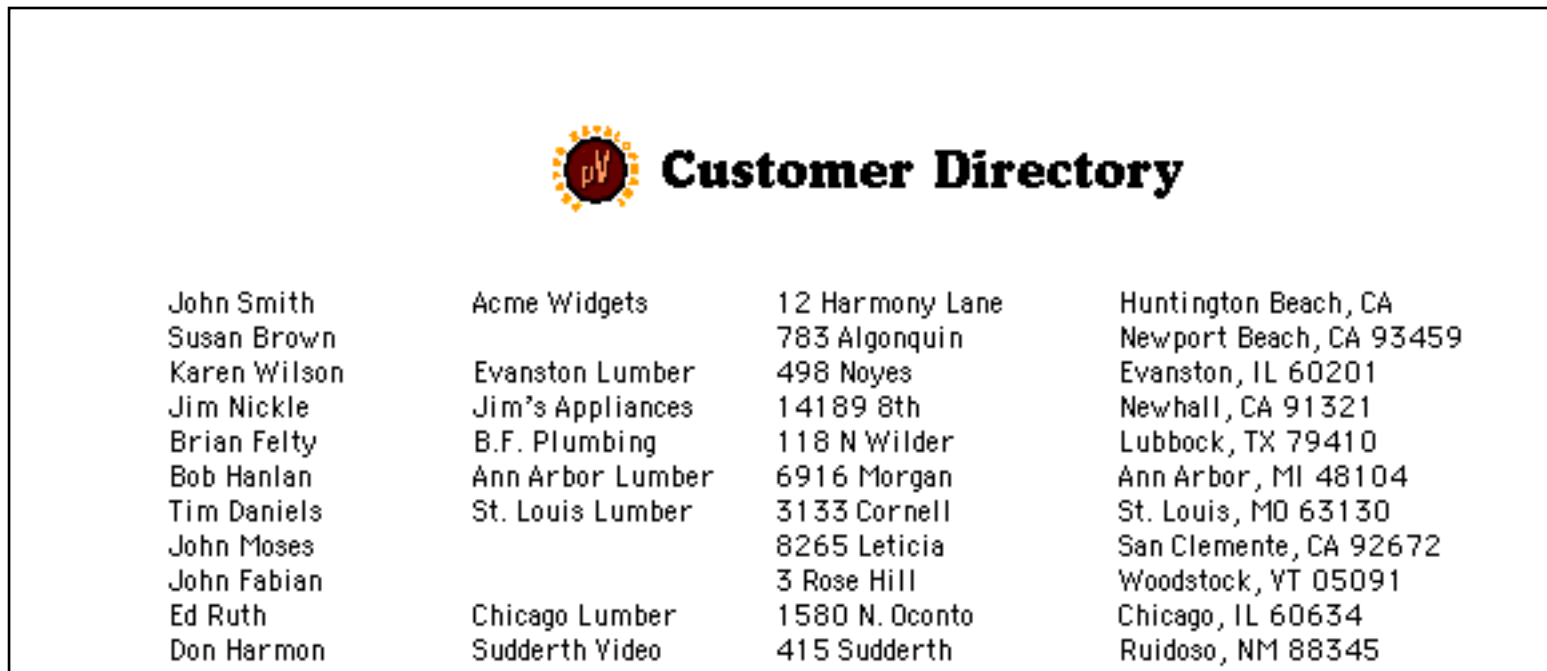
Here's the new tile.




A blank header tile isn't much use, so we'll add some text and graphics to the header.



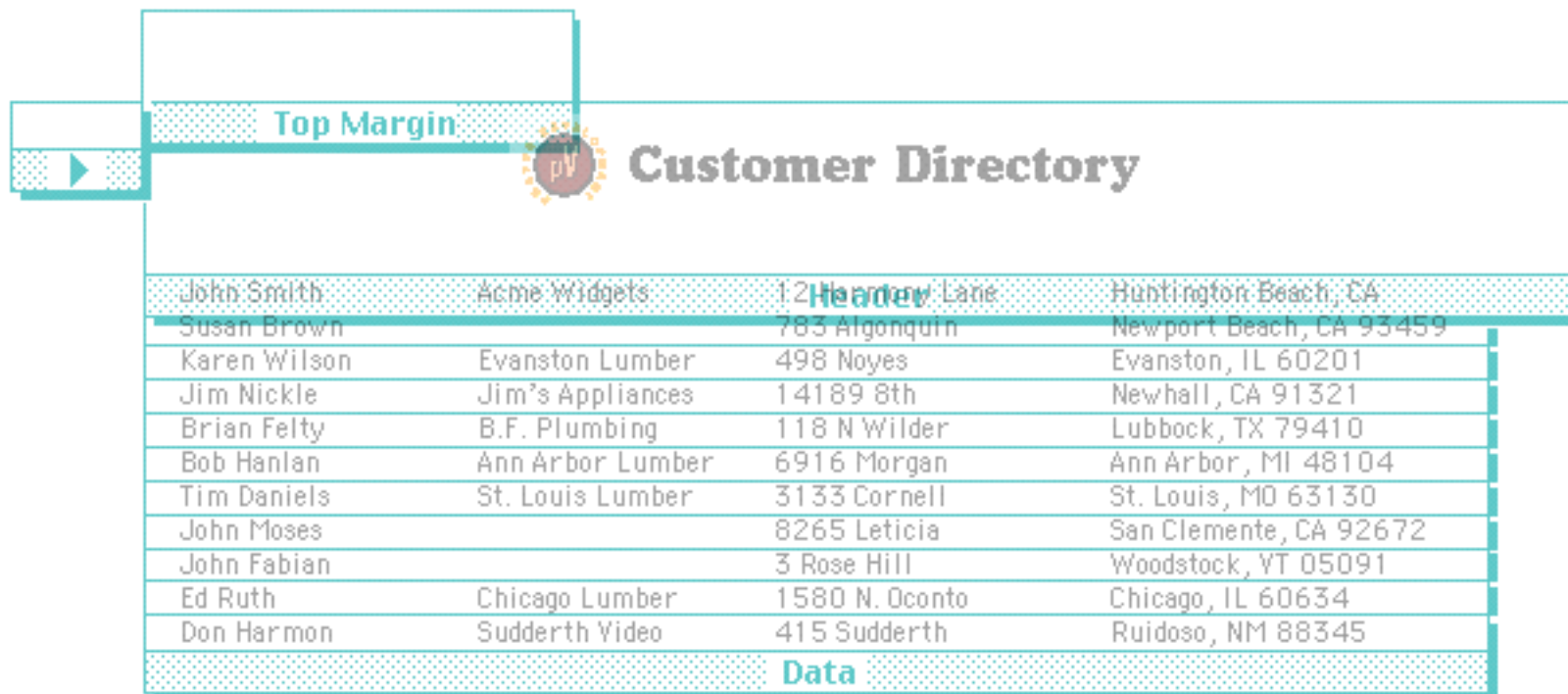
When it's printed, this report will look like this.



 **Customer Directory**

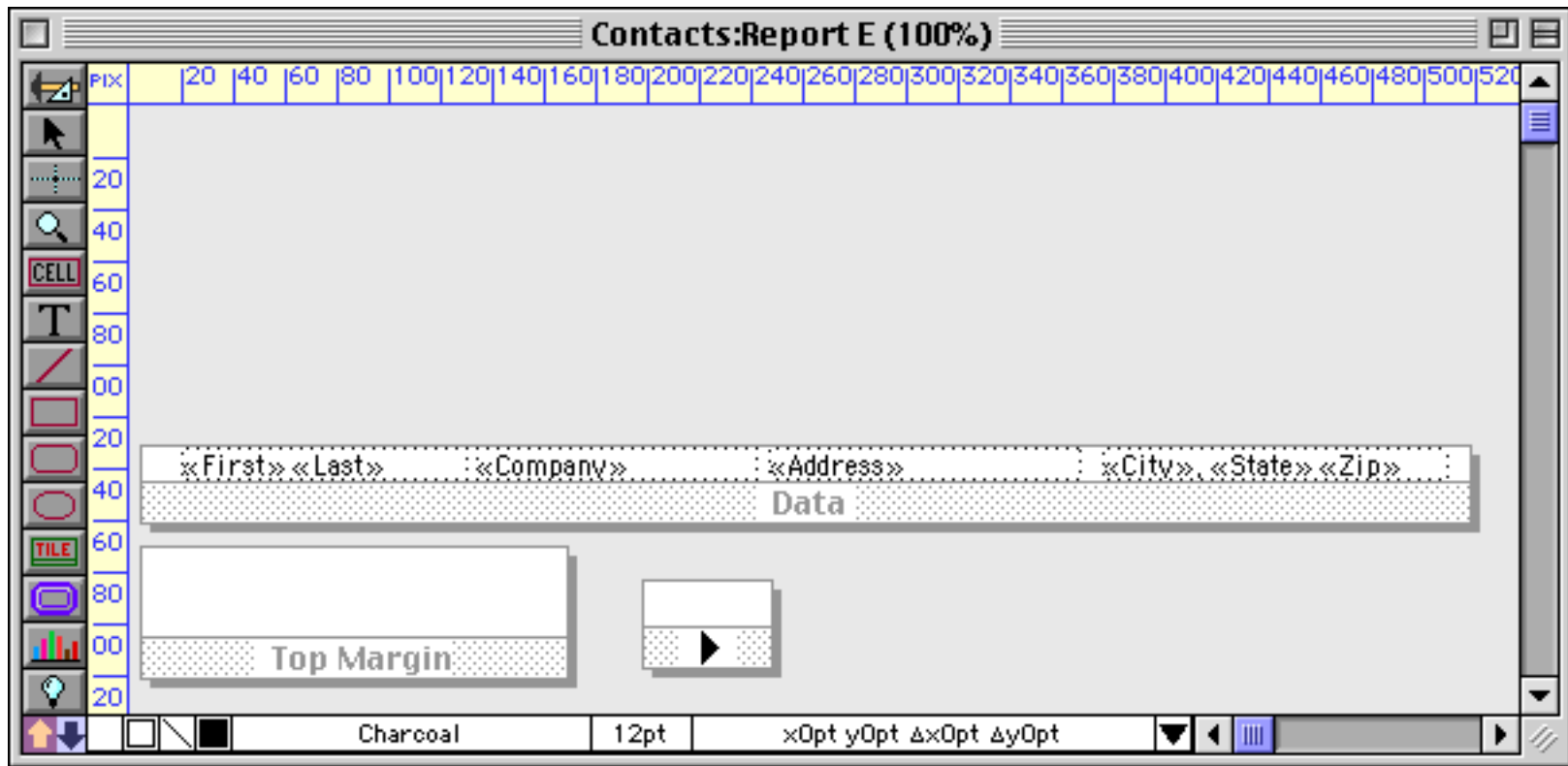
John Smith	Acme Widgets	12 Harmony Lane	Huntington Beach, CA
Susan Brown		783 Algonquin	Newport Beach, CA 93459
Karen Wilson	Evanston Lumber	498 Noyes	Evanston, IL 60201
Jim Nickle	Jim's Appliances	14189 8th	Newhall, CA 91321
Brian Felty	B.F. Plumbing	118 N Wilder	Lubbock, TX 79410
Bob Hanlan	Ann Arbor Lumber	6916 Morgan	Ann Arbor, MI 48104
Tim Daniels	St. Louis Lumber	3133 Cornell	St. Louis, MO 63130
John Moses		8265 Leticia	San Clemente, CA 92672
John Fabian		3 Rose Hill	Woodstock, VT 05091
Ed Ruth	Chicago Lumber	1580 N. Oconto	Chicago, IL 60634
Don Harmon	Sudderth Video	415 Sudderth	Ruidoso, NM 88345

This illustration shows how Panorama assembles the report using the margin, header and data tiles.

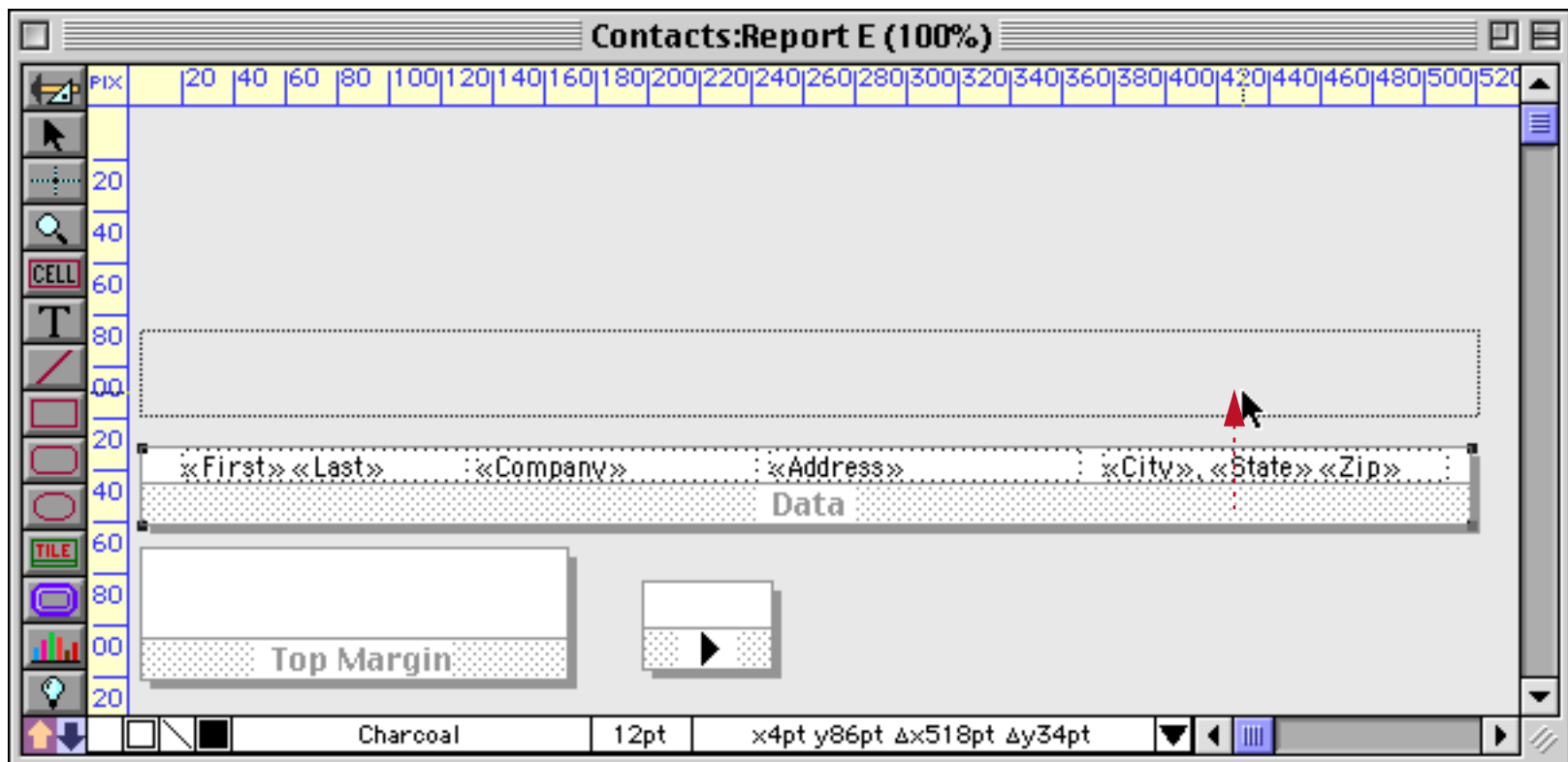


Creating a Header Tile by Duplicating the Data Tile

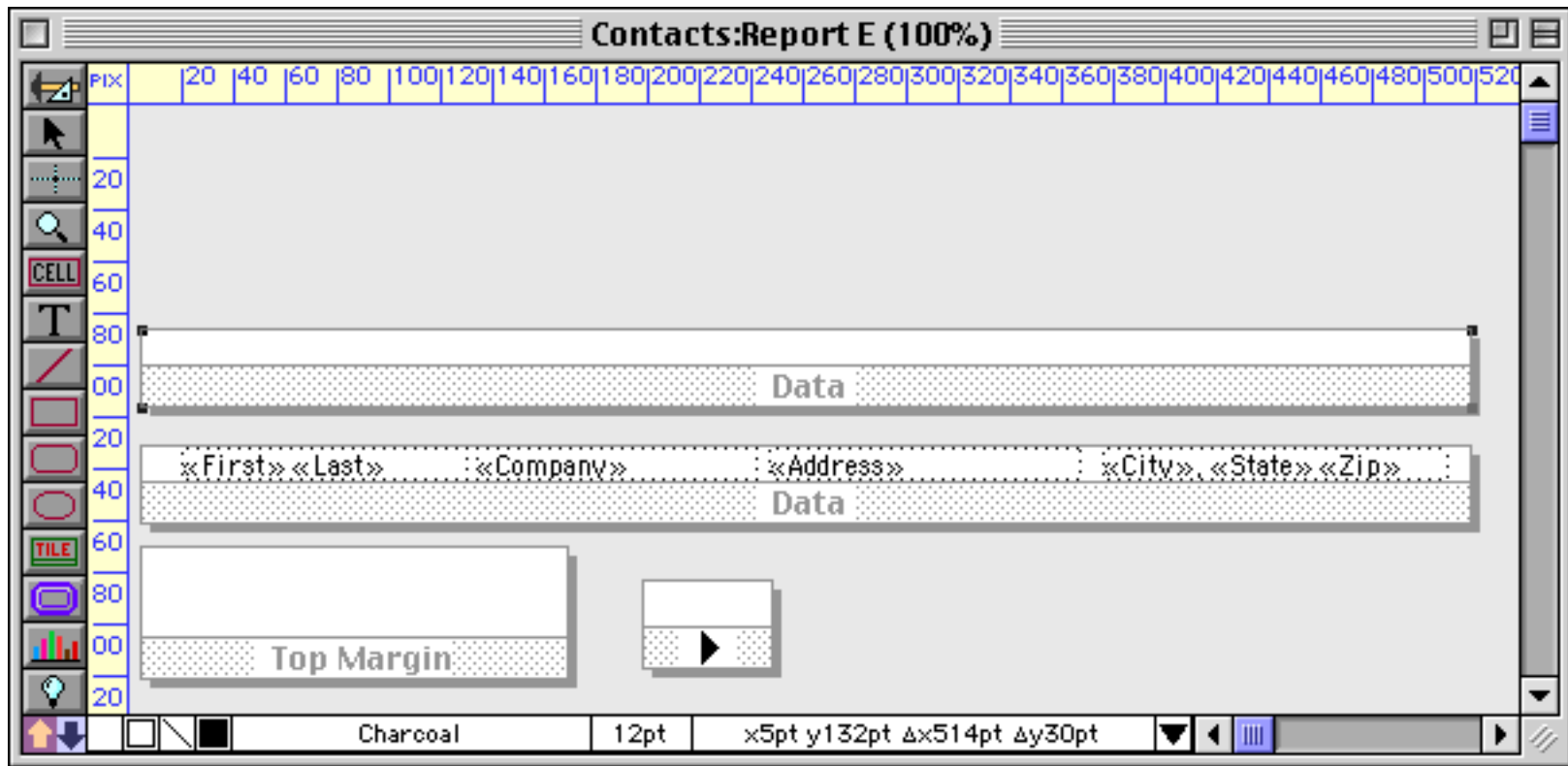
An alternate way to create the header tile is to duplicate the data tile (see “[Drag Duplicating](#)” on page 561). This makes it easy to line up items between the two tiles. Start with just a data tile.



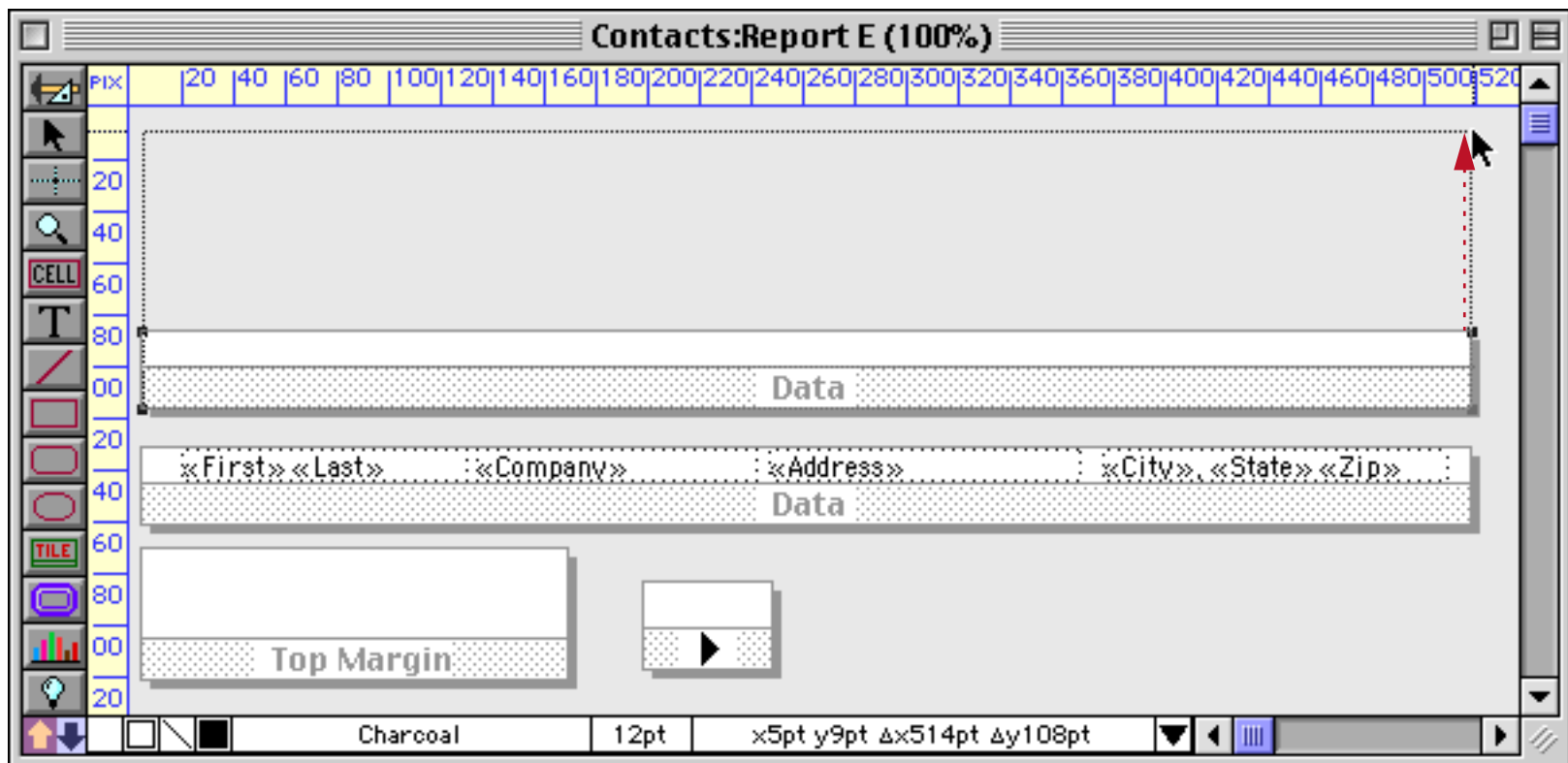
To duplicate the tile, hold down the **Option** key (Mac) or **Alt** key (Windows) and drag the tile (see “[Drag Duplicating](#)” on page 561). You probably also want to hold down the **Shift** key at the same time to make sure that the two tiles stay in perfect alignment.



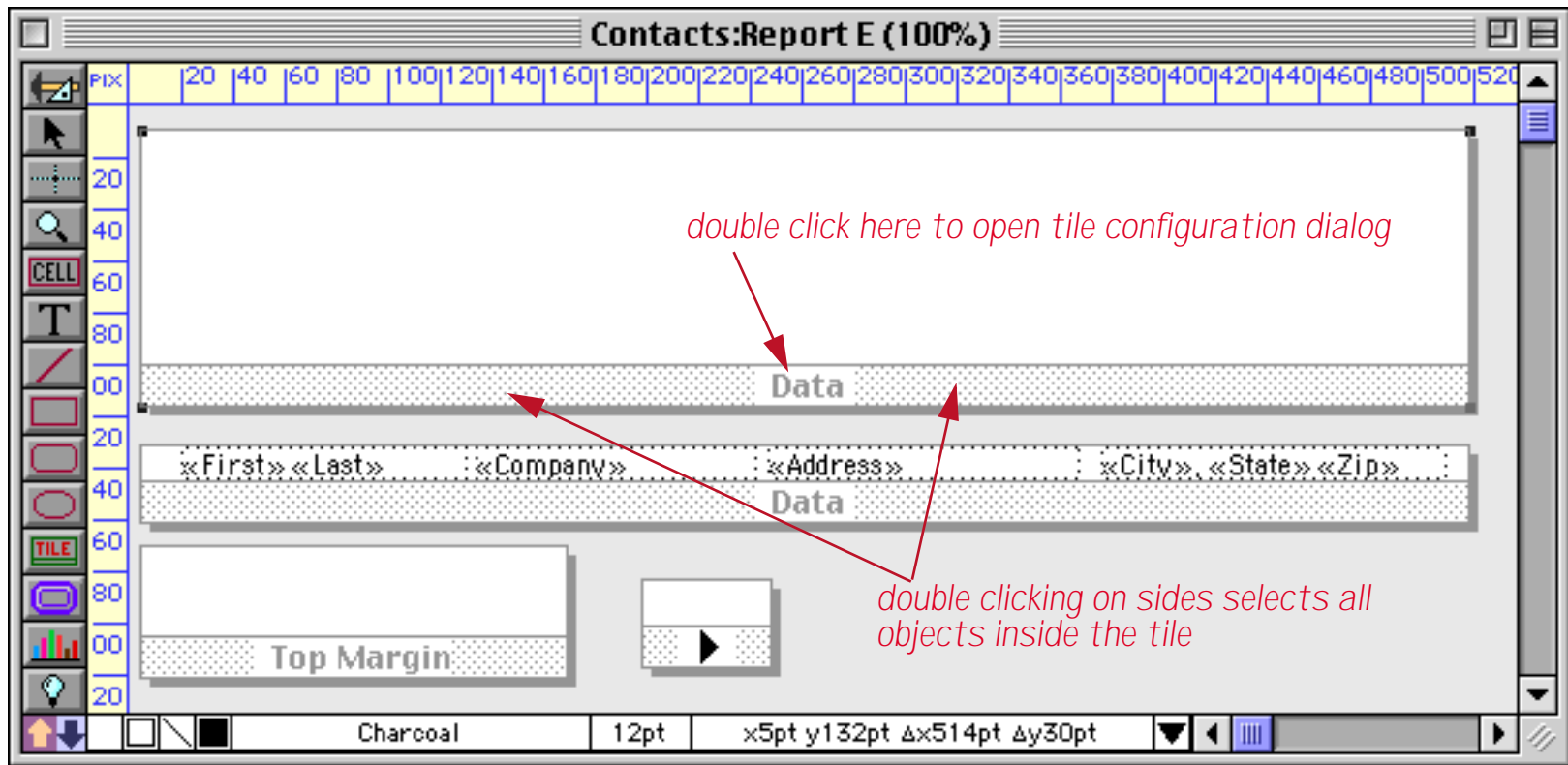
When you release the mouse your form will contain two data tiles.



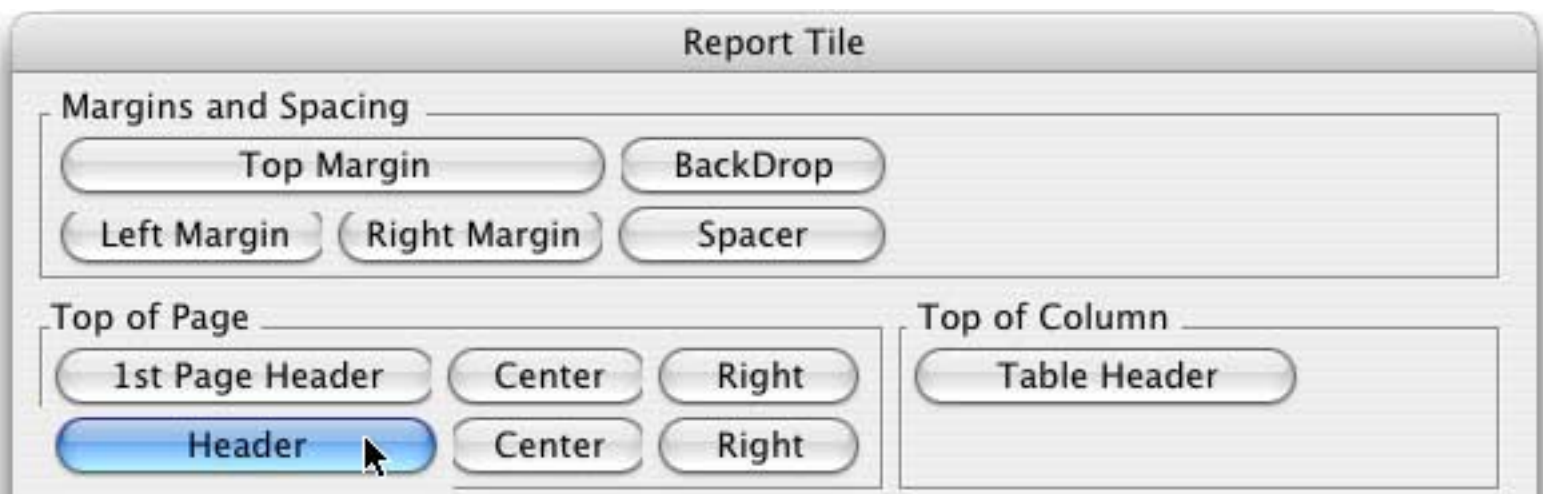
Grab one of the handles to adjust the height of the new tile.



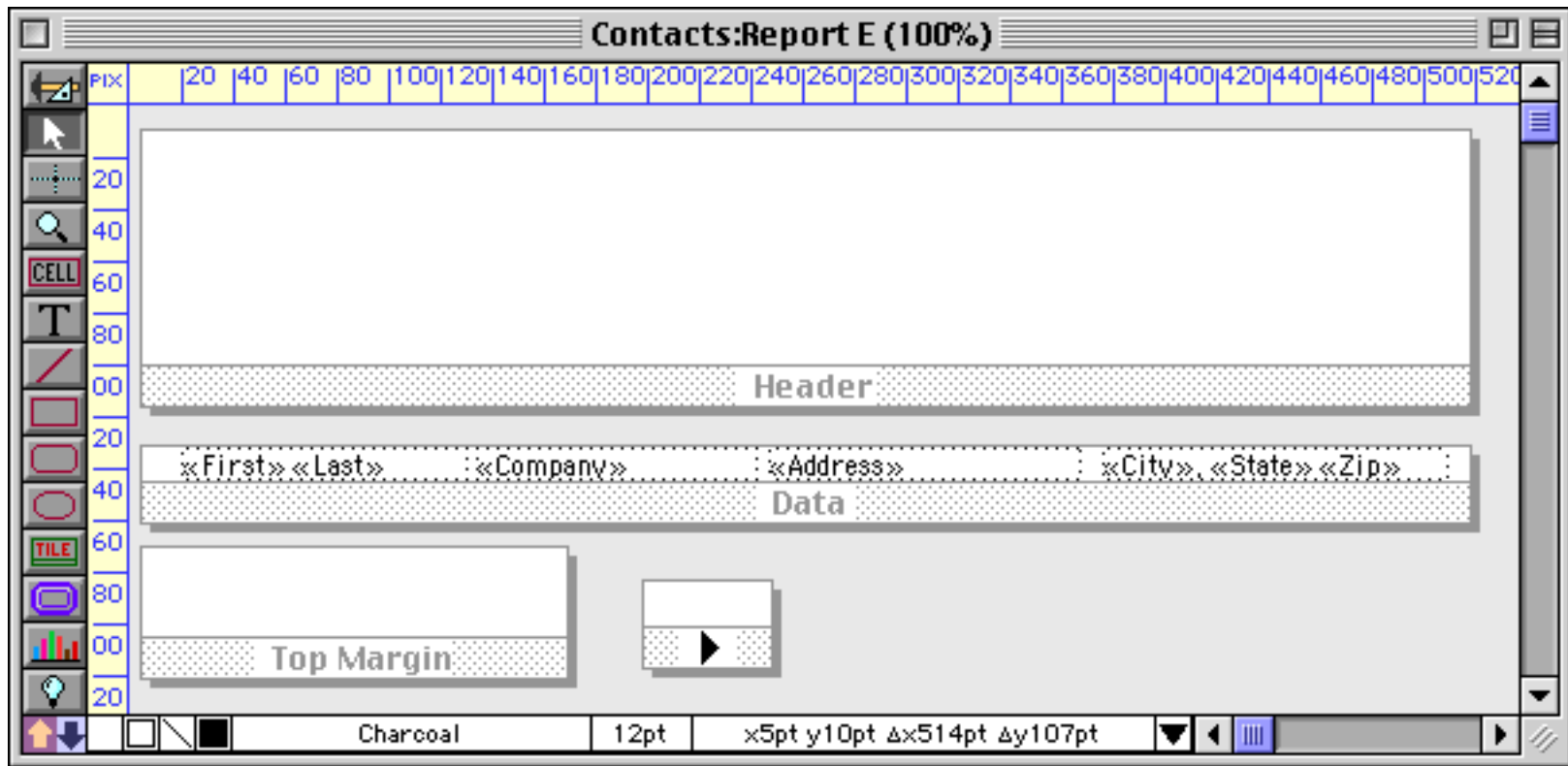
To convert the new tile from a data tile into a header tile, double click on the word **Data**.



This opens the tile configuration dialog.



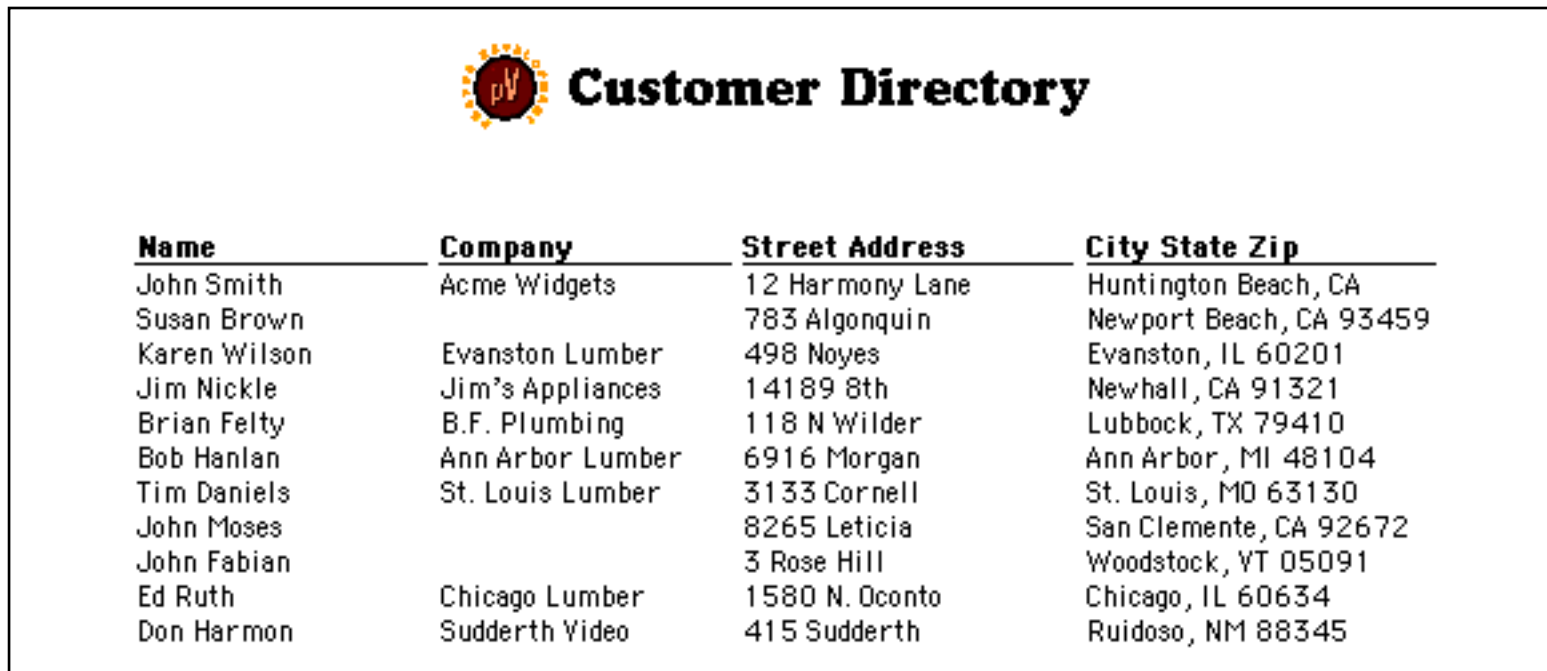
Press the **Header** button to convert the tile.




Now we can add graphics and text to the header. Anything placed on the header will line up vertically with objects in the same position on the data tile.



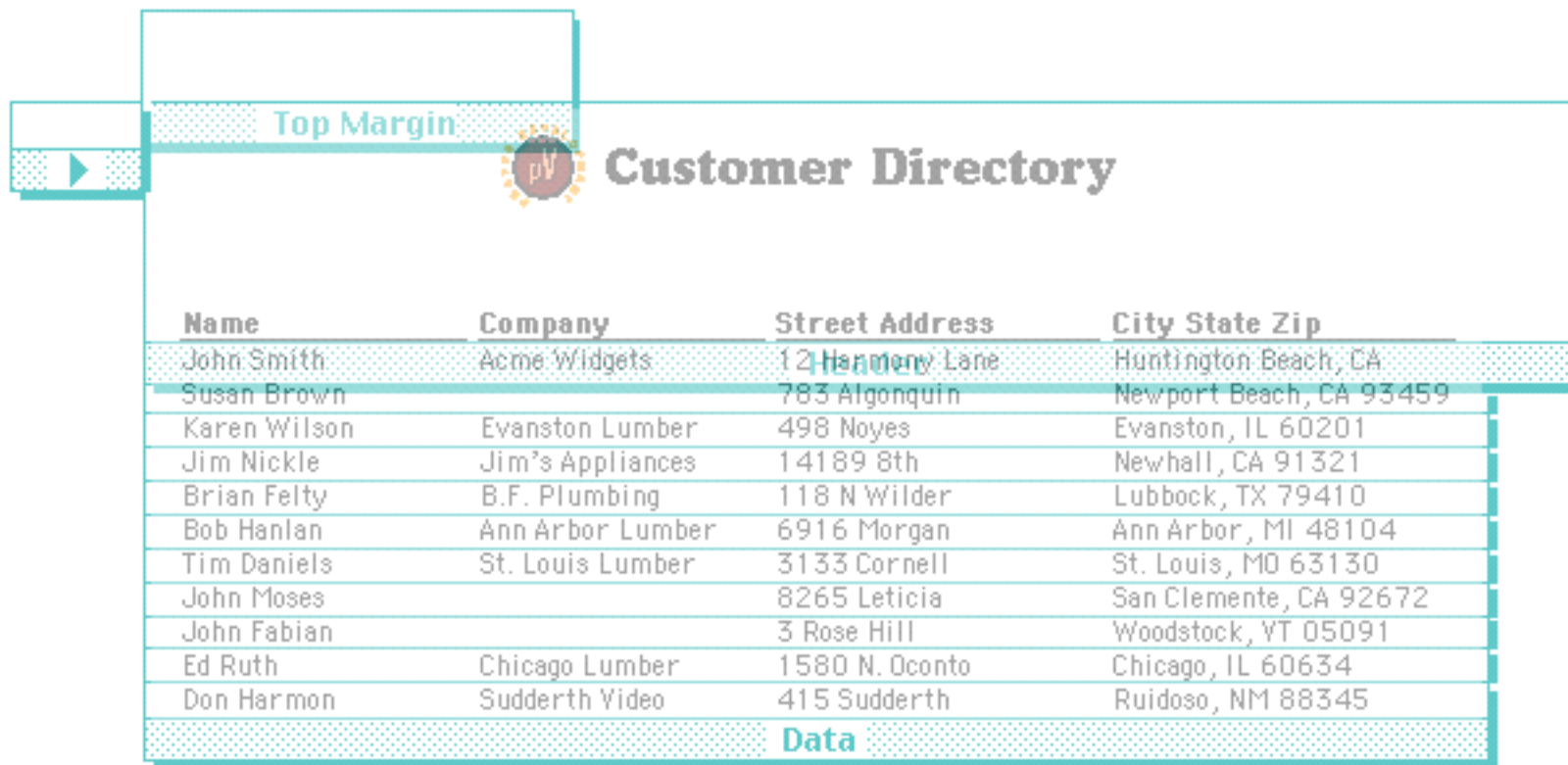
Here's the printed report.



 **Customer Directory**

Name	Company	Street Address	City State Zip
John Smith	Acme Widgets	12 Harmony Lane	Huntington Beach, CA
Susan Brown		783 Algonquin	Newport Beach, CA 93459
Karen Wilson	Evanston Lumber	498 Noyes	Evanston, IL 60201
Jim Nickle	Jim's Appliances	14189 8th	Newhall, CA 91321
Brian Felty	B.F. Plumbing	118 N Wilder	Lubbock, TX 79410
Bob Hanlan	Ann Arbor Lumber	6916 Morgan	Ann Arbor, MI 48104
Tim Daniels	St. Louis Lumber	3133 Cornell	St. Louis, MO 63130
John Moses		8265 Leticia	San Clemente, CA 92672
John Fabian		3 Rose Hill	Woodstock, VT 05091
Ed Ruth	Chicago Lumber	1580 N. Oconto	Chicago, IL 60634
Don Harmon	Sudderth Video	415 Sudderth	Ruidoso, NM 88345

Once again Panorama builds these reports by sliding the tile's into place.



You can also build a header using the **Table Header** tile. See [“Table Header and Table Footer Tiles”](#) on page 1135.

Footer Tile

The footer tile is printed at the bottom left of each page. The footer can be used to print the report title, page number (see “[Page Numbers](#)” on page 1100), date (see “[Printing the Current Date and Time](#)” on page 1103) or anything else you want.

You can create a footer with the **Tile** tool (see “[Header Tile](#)” on page 1091) or by duplicating another tile (see “[Creating a Header Tile by Duplicating the Data Tile](#)” on page 1094). In this example the footer was created by drag duplicating the data tile (see “[Drag Duplicating](#)” on page 561).



Here’s what the bottom of this page looks like.

Alan Spencer		182 Dell Rd	Northbrook, IL 60062
Raymond Wood		5420 W Crosby	Slaton, TX 79364
Lee Tucker	Latham Video	4792 Latham	Mountain View, CA 94041
Logan Nourse	Palo Alto Lumber	1828 Amaranta	Palo Alto, CA 94306
David Peters	D.P. Plumbing	191 Treg Lane	Concord, CA 94518
Tom Cane		8820 Sierra Court	Dublin, CA 94568
Pat Turner	P.T. Plumbing	1009 Secret Bay	Davis, CA 95616
Scott Lay	Portland Lumber	1278 N.E. 136th	Portland, OR 97230
John Draper	Exeter Video	446 Exeter Rd	Hampton, NH 03842

- 1 -

Notice that there is a gap between the bottom of the last line of data and the footer tile. This is because the Panorama always aligns the footer with the bottom of the page. The footer is printed as close to the bottom of the page as possible.

Alan Spencer		182 Dell Rd	Northbrook, IL 60062
Raymond Wood		5420 W Crosby	Slaton, TX 79364
Lee Tucker	Latham Video	4792 Latham	Mountain View, CA 94041
Logan Nourse	Palo Alto Lumber	1828 Amaranta	Palo Alto, CA 94306
David Peters	D.P. Plumbing	191 Treg Lane	Concord, CA 94518
Tom Cane		8820 Sierra Court	Dublin, CA 94568
Pat Turner	P.T. Plumbing	1009 Secret Bay	Davis, CA 95616
Scott Lay	Portland Lumber	1278 N.E. 136th	Portland, OR 97230
John Draper	Exeter Video	446 Exeter Rd	Hampton, NH 03842

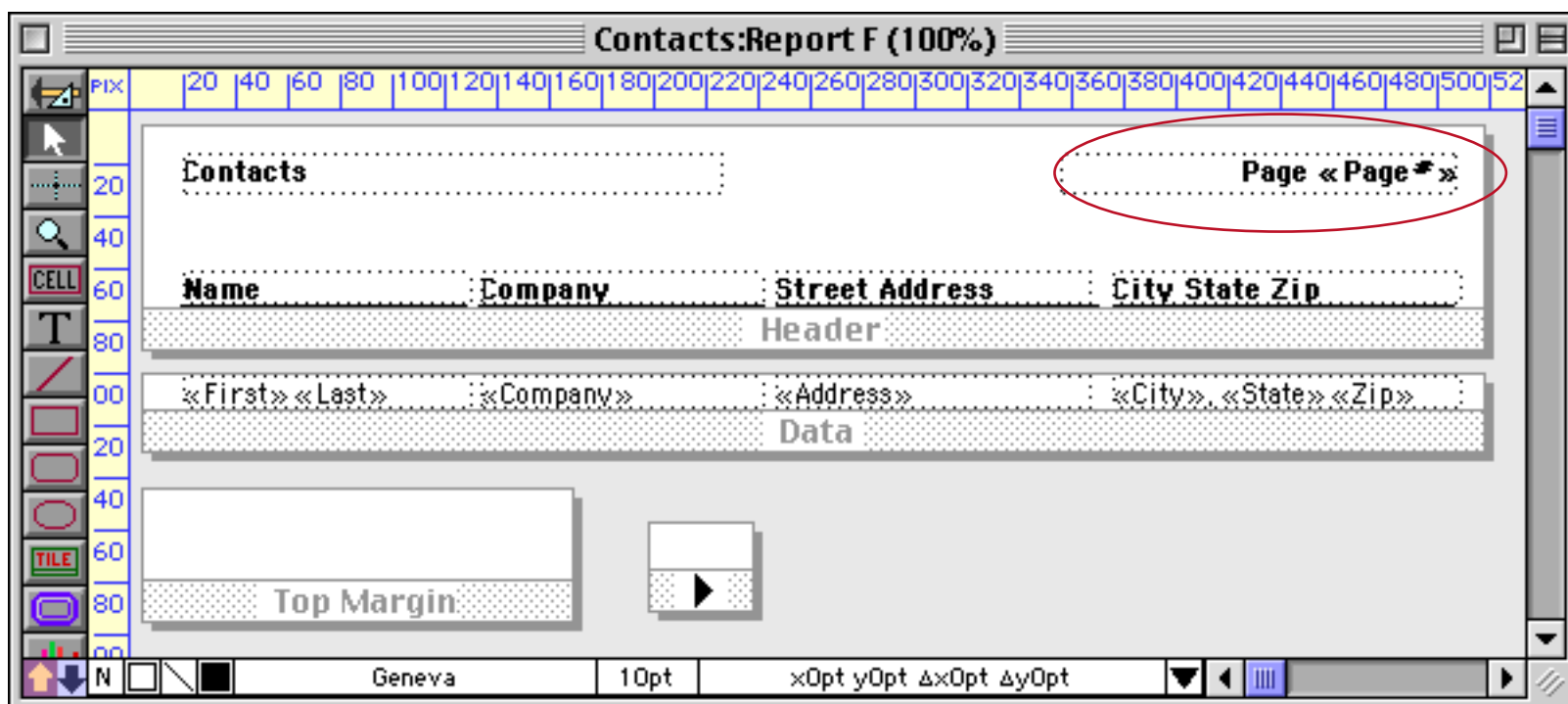
- 1 -

Footer

If you want to create a footer that is right below the data tiles with no gap, use the **Table Footer** tile (see [“Table Header and Table Footer Tiles”](#) on page 1135).

Page Numbers

Panorama can automatically calculate and print a page number on each page of your report. One technique for printing the page number is to use an auto-wrap text object (see [“Displaying Data in Auto-Wrap Text”](#) on page 595). The page number is merged into the text by typing `<<page#>` into the object. (On a Macintosh the `<<` chevron is **Option-** and the `>>` chevron is **Shift-Option-**. On Windows systems the `<<` chevron is **Alt-0171** and the `>>` chevron is **Alt-0187**.) The illustration below shows how to print page numbers on the upper right hand corner of a report. Notice that the text object has been set to right justify (Style Menu) so that the page number will be flush with the right edge of the report.

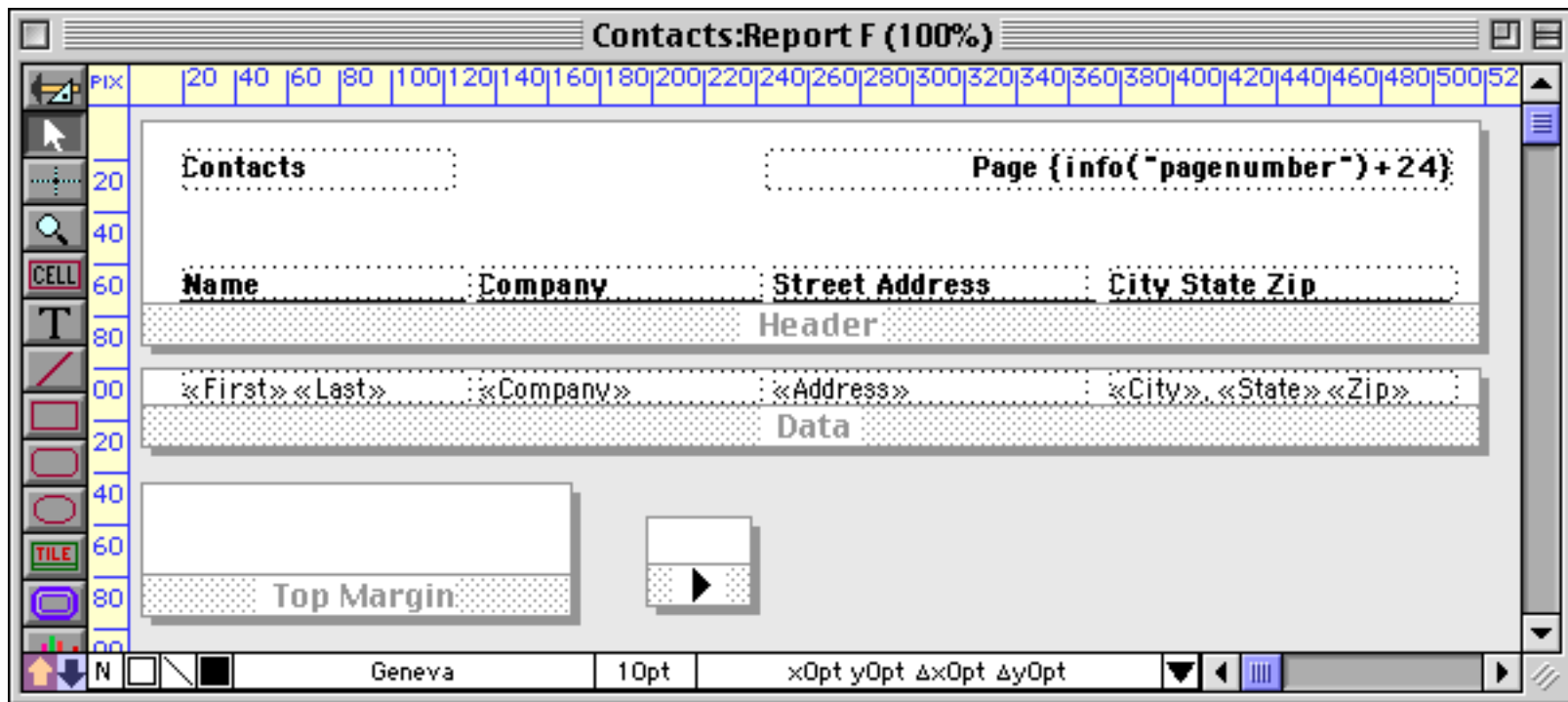


Here is what the first three pages of this report look like.

The image shows three overlapping report pages. The top page is labeled 'Page 3', the middle 'Page 2', and the bottom 'Page 1'. Each page has a title 'Contacts' in the top left and a page number in the top right. The data is presented in a table with the following columns: Name, Company, Street Address, and City State Zip.

Name	Company	Street Address	City State Zip
John Smith	Acme Widgets	12 Harmony Lane	Huntington Beach, CA
Susan Brown		783 Algonquin	Newport Beach, CA 93459
Karen Wilson	Evanston Lumber	498 Noyes	Evanston, IL 60201
Jim Nickle	Jim's Appliances	14189 8th	Newhall, CA 91321
Brian Felty	B.F. Plumbing	118 N Wilder	Lubbock, TX 79410

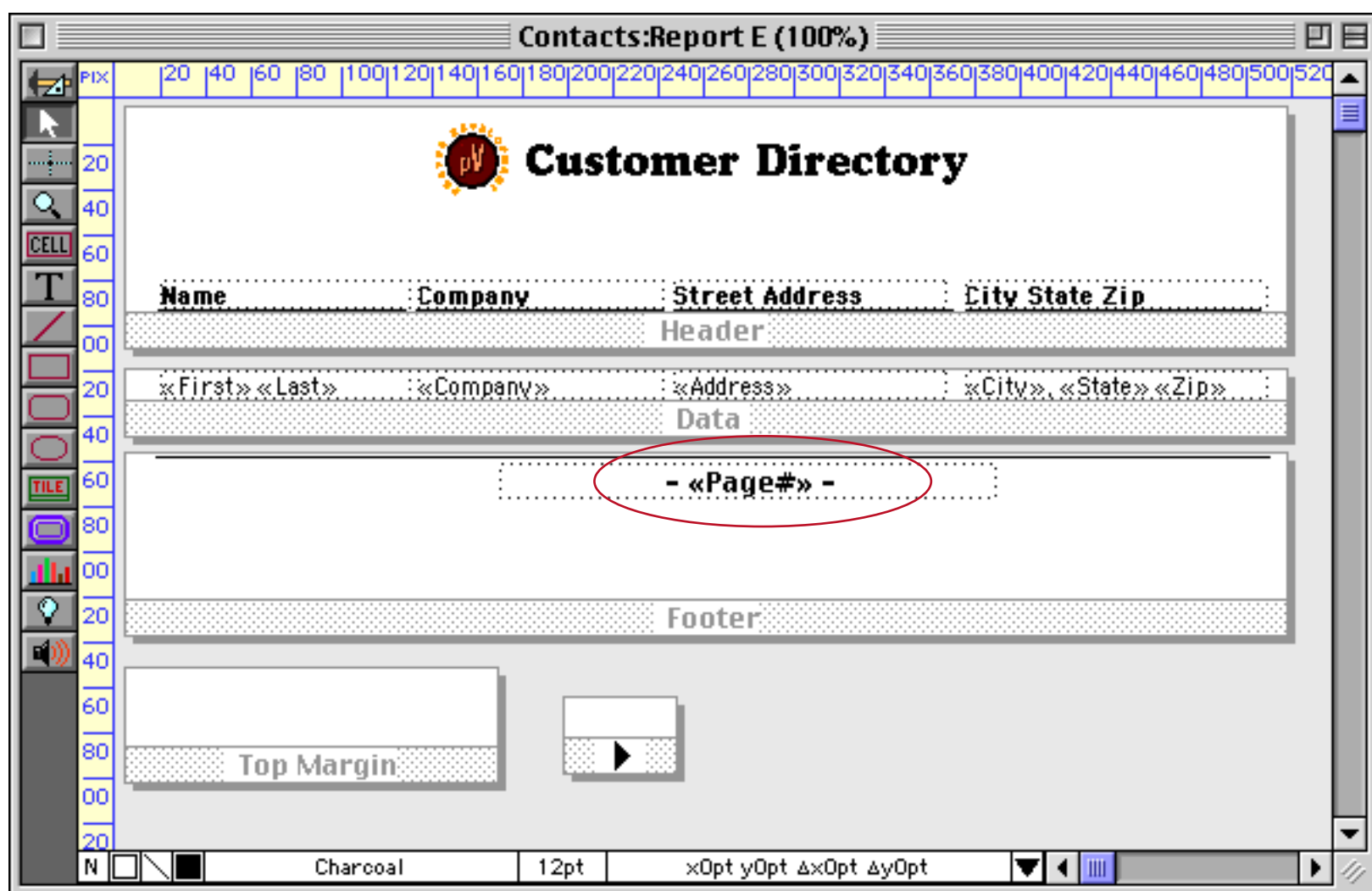
If you want the page number to start with a page number other than one you must use the `info("pagenumber")` function. You can either merge this function into an auto-wrap text object (see “[Displaying Formulas in Auto-Wrap Text](#)” on page 602) or use a Text Display SuperObject (see “[Text Display SuperObjects™](#)” on page 608). The example below shows how to create a report with page numbers starting at 25.



Here's the printed report, with page numbering beginning at 25.

Contacts				Page 27
Contacts				Page 26
Contacts				Page 25
Name	Company	Street Address	City State Zip	
John Smith	Acme Widgets	12 Harmony Lane	Huntington Beach, CA	
Susan Brown		783 Algonquin	Newport Beach, CA 93459	
Karen Wilson	Evanston Lumber	498 Noyes	Evanston, IL 60201	
Jim Nickle	Jim's Appliances	14189 8th	Newhall, CA 91321	
Brian Felty	B.F. Plumbing	118 N Wilder	Lubbock, TX 79410	

To center the page number at the bottom of each page, place an auto-wrap text or Text Display SuperObject in the center of the footer tile. To make sure that the page number is centered, the text object should be centered within the footer tile. You also need to check the center justify option in the Style Menu.



You may want to display each page number in relation to the total number of pages in the report—for instance [Page 2 of 5](#). Panorama cannot automatically calculate the total number of pages in a report, but you can find out this number manually with the [Preview](#) command (see "[Print Preview](#)" on page 1056). Use the [Next Page](#) tool in the preview window to count the number of pages, then edit the title to display the correct number.

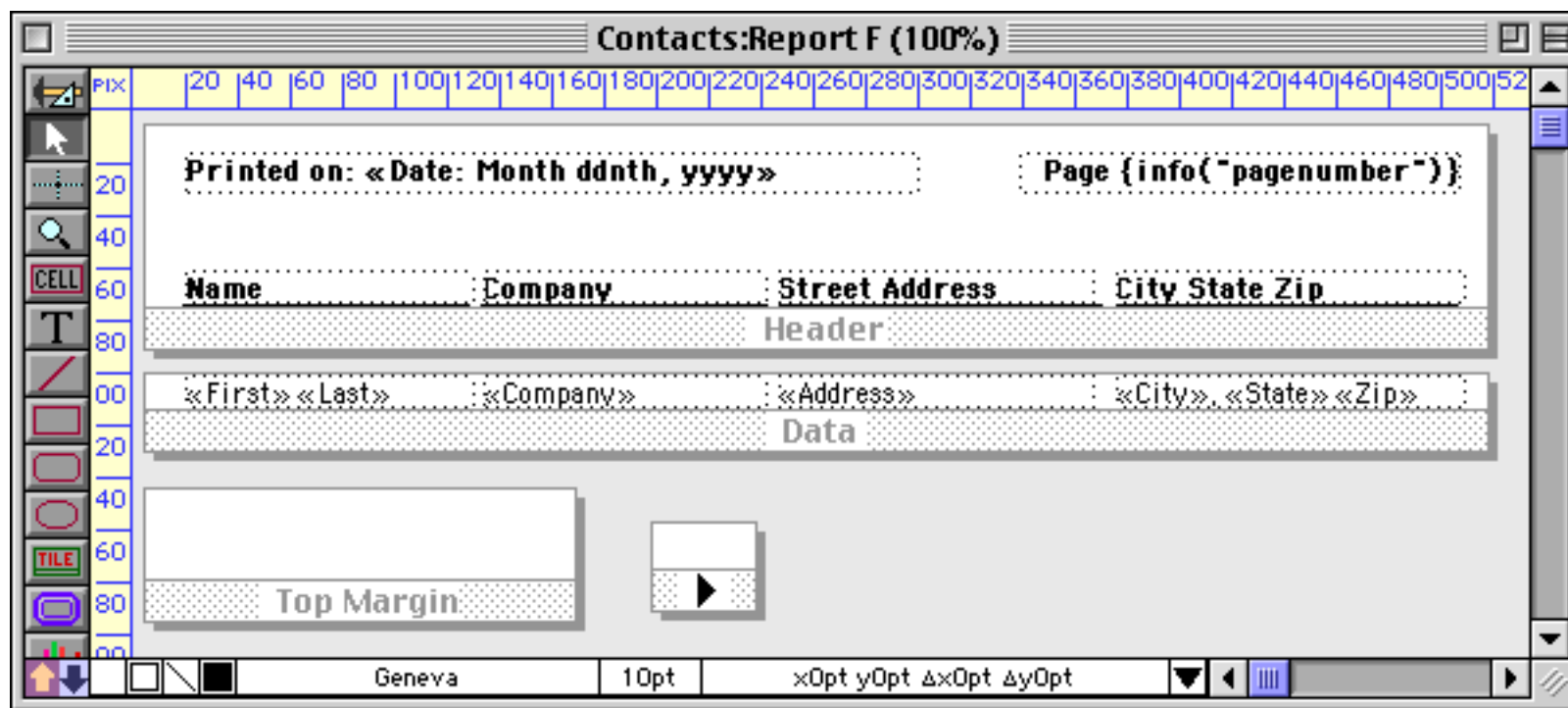
The examples shown have all assumed that odd and even pages are identical. It is also possible to make odd and even pages mirror images, so that the page number always prints on the outside (on the right for odd pages and on the left for even pages). See “[Even and Odd Page Layout](#)” on page 1164 to learn how to set this up.

Printing the Current Date and Time

Panorama can automatically print the current date and time on each page of your report. One technique for printing the date is to use an auto-wrap text object (see “[Displaying Data in Auto-Wrap Text](#)” on page 595). The page number is merged into the text by typing «date:pattern» into the object. (On a Macintosh the « chevron is **Option-**\ and the » chevron is **Shift-Option-**\. On Windows systems the « chevron is **Alt-0171** and the » chevron is **Alt-0187**.) Don’t actually type in the word pattern, instead choose one of the patterns from the table below.

Pattern	Example
mm/dd/yy	3/9/04
MM/DD/YY	03/09/04
mm-dd-yyyy	3-9-2004
dd-MON-yy	9-MAR-04
dd-Month-yy	9-March-04
Month dd, yyyy	March 9, 2004
Month ddnth, yyyy	March 9th, 2004
DayOfWeek, Month dd	Thursday, March 9

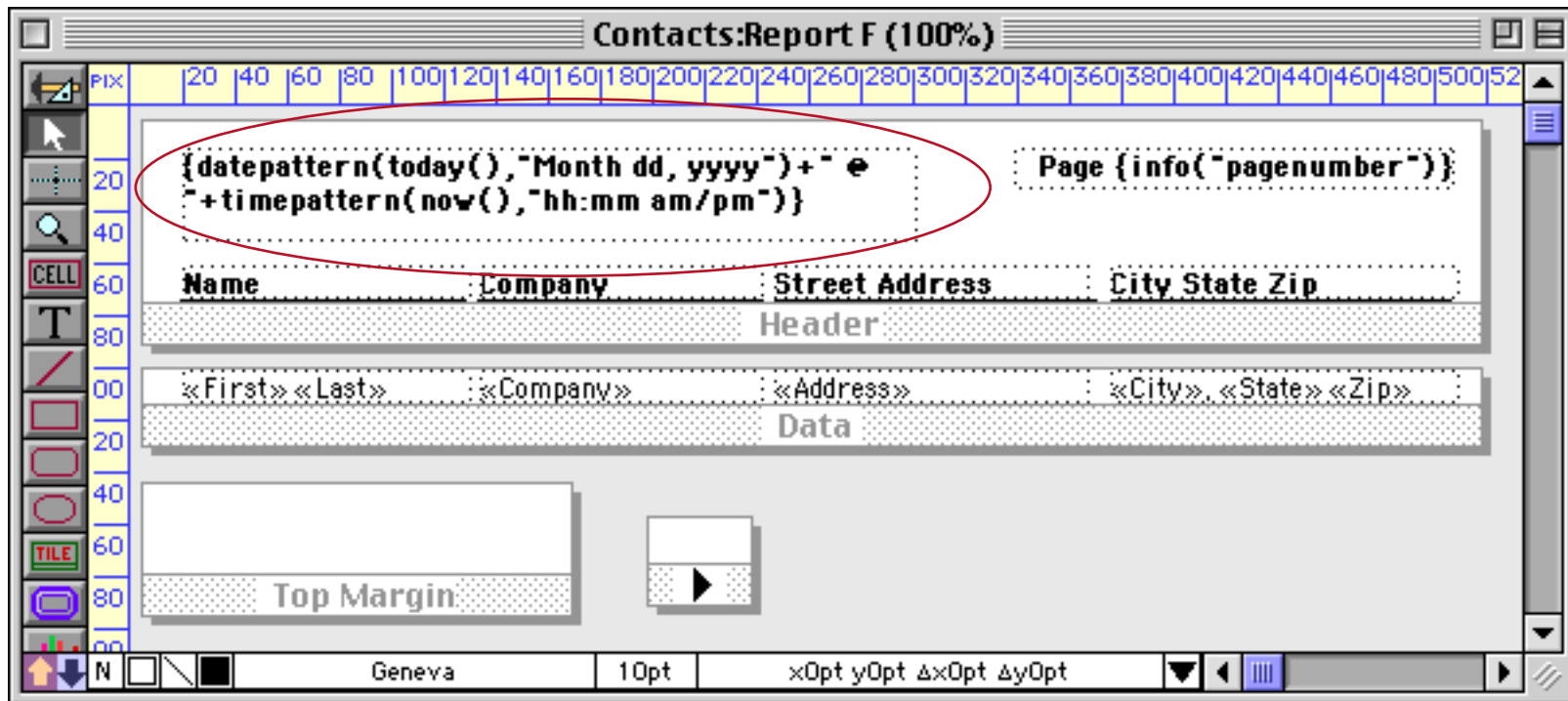
The illustration below shows how to print the current date in the upper left hand corner of a report.



Here's the top of the first page of this report.

Printed on: July 10th, 2000			Page 1
Name	Company	Street Address	City State Zip
John Smith	Acme Widgets	12 Harmony Lane	Huntington Beach, CA
Susan Brown		783 Algonquin	Newport Beach, CA 93459
Karen Wilson	Evanston Lumber	498 Noyes	Evanston, IL 60201
Jim Nickle	Jim's Appliances	14189 8th	Newhall, CA 91321
Brian Felty	B.F. Plumbing	118 N Wilder	Lubbock, TX 79410
Bob Hanlan	Ann Arbor Lumber	6916 Morgan	Ann Arbor, MI 48104
Tim Daniels	St. Louis Lumber	3133 Cornell	St. Louis, MO 63130
John Moses		8265 Leticia	San Clemente, CA 92672
John Fabian		3 Rose Hill	Woodstock, VT 05091

To include the current time in a printed report you must use the `now()` and `timepattern()` functions. You can either merge these function into an auto-wrap text object (see [“Displaying Formulas in Auto-Wrap Text”](#) on page 602) or use a Text Display SuperObject (see [“Text Display SuperObjects™”](#) on page 608). The example below prints both the date and time using a formula.



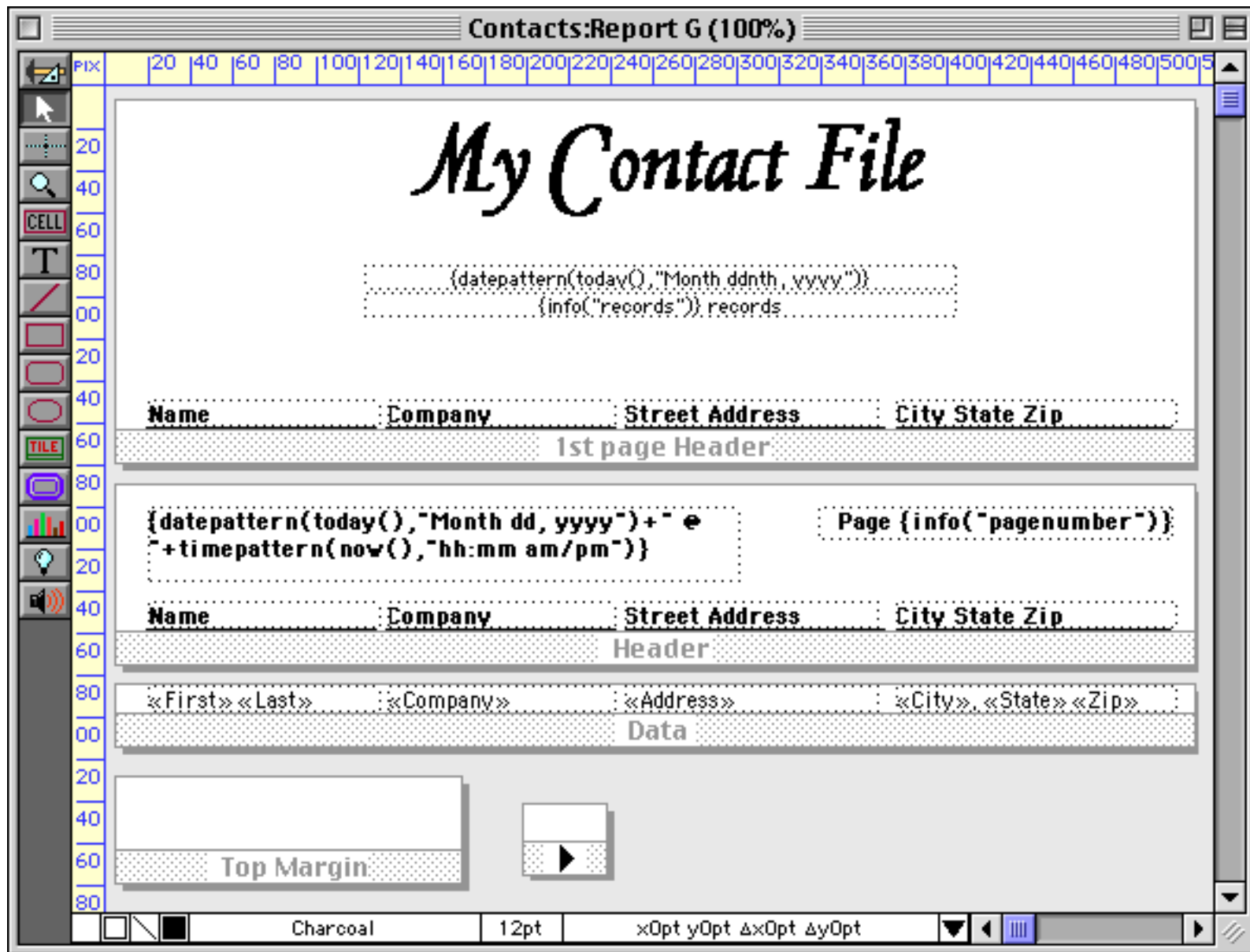
Here is the printed report.

July 10, 2000 @ 2:31 PM		Page 1	
Name	Company	Street Address	City State Zip
John Smith	Acme Widgets	12 Harmony Lane	Huntington Beach, CA
Susan Brown		783 Algonquin	Newport Beach, CA 93459
Karen Wilson	Evanston Lumber	498 Noyes	Evanston, IL 60201
Jim Nickle	Jim's Appliances	14189 8th	Newhall, CA 91321
Brian Felty	B.F. Plumbing	118 N Wilder	Lubbock, TX 79410
Bob Hanlan	Ann Arbor Lumber	6916 Morgan	Ann Arbor, MI 48104
Tim Daniels	St. Louis Lumber	3133 Cornell	St. Louis, MO 63130
John Moses		8265 Leticia	San Clemente, CA 92672
John Fabian		3 Rose Hill	Woodstock, VT 05091

You can actually merge in any formula you want into the header and/or footer.

First Page Header Tile

Panorama normally prints the header tile (or tiles) at the top of each page (see above). However, if the report includes a first page header tile, that tile will be printed at the top of the first page. All subsequent pages will print using the normal header tile (or tiles). Here is an example of a form that contains both a first page header and a regular header that will print on the second, third, and any additional pages.



Here are the first two pages of the printed report generated by this form. The first page includes the **First Page Header**, while the second (and subsequent pages) use the regular Header tile.

July 10, 2000 @ 2:53 PM			Page 2
Name	Company	Street Address	City State Zip
Glen Knock	South Portland	909 Wescott Rd	South Portland, ME 04106
Carl Berg	C.B. Plumbing	161 Norton St	New Haven, CT 06511
Wes Lemarr		57 Hobart Ave	Rutherford, NJ 07070
Charles Dalbert	New York Lumber	171 Broadway	New York, NY 10003
Brad Hess	Brooklyn Lumber	128 70th St	Brooklyn, NY 11209
Tim Henry	Suffolk Lumber	2375 Driver Lane	Suffolk, VA 23435

My Contact File

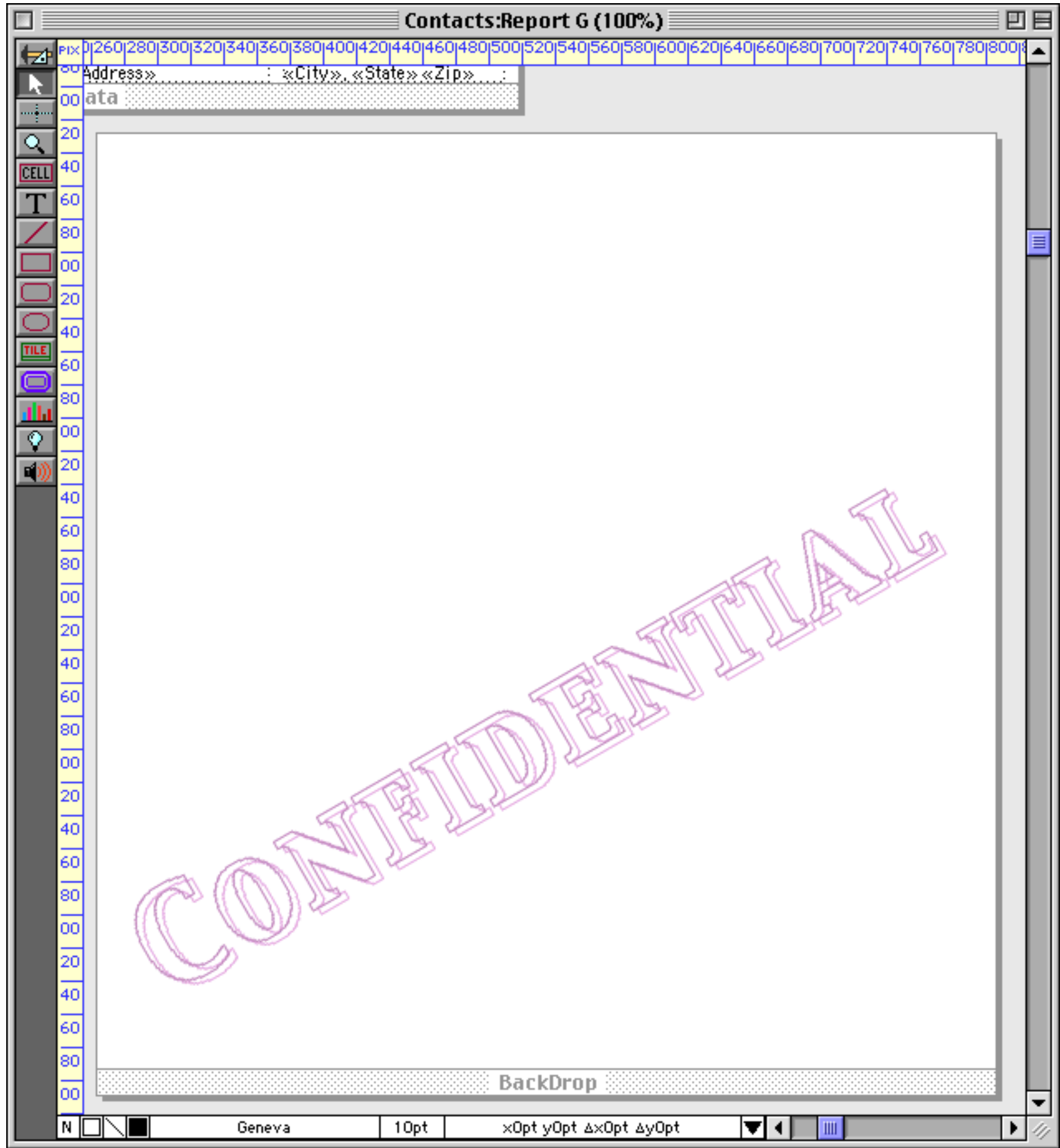
July 10th, 2000
104 records

Name	Company	Street Address	City State Zip
John Smith	Acme Widgets	12 Harmony Lane	Huntington Beach, CA
Susan Brown		783 Algonquin	Newport Beach, CA 93459
Karen Wilson	Evanston Lumber	498 Noyes	Evanston, IL 60201
Jim Nickle	Jim's Appliances	14189 8th	Newhall, CA 91321
Brian Felty	B.F. Plumbing	118 N Wilder	Lubbock, TX 79410
Bob Hanlan	Ann Arbor Lumber	6916 Morgan	Ann Arbor, MI 48104
Tim Daniels	St. Louis Lumber	3133 Cornell	St. Louis, MO 63130
John Moses		8265 Leticia	San Clemente, CA 92672
John Fabian		3 Rose Hill	Woodstock, VT 05091
Ed Ruth	Chicago Lumber	1580 N. Oconto	Chicago, IL 60634
Don Harmon	Sudderth Video	415 Sudderth	Ruidoso, NM 88345
Abe Fierstein	Van Nuys Lumber	1571 Haskell	Van Nuys, CA 91409
Randy Cross	Randy's Appliances	133 Hunt Rd	Chelsford, MA 01824
Jeffrey Rodman		2 Cary Rd	Chestnut Hill, MA 02167
Steve Jackson	Ann Arbor Lumber	389 Worden	Ann Arbor, MI 48103
Dick Hardlee		4151 Polstar	Plano, TX 75075
Don Meadows	Austin Lumber	1144 A West 6th	Austin, TX 78703
Jerry Bowen	Peacock Video	2847 Peacock	Highland, CA 92346
Thom Getchell	Thom's Appliances	543 Laurel	Menlo Park, CA 94025
Brian Smith	Brian's Appliances	1844 Tiburon	Hollister, CA 95023
David Blair	DB Printing	869 W. Temple	Lenox, IA 50851
Keith Baker	Northgate Video	552 Northgate	Lindenhurst, IL 60046

The **First Page Header** tile can also be used to create a title page for the report. To do this simply enlarge the **First Page Header** tile until it is large enough to cover an entire page. In that case Panorama will print only that tile on the first page. The regular report will begin on the second page.

BackDrop Tile

The backdrop tile can be used to print an overall graphic design on each page of the report. The backdrop tile actually overlays all of the other tiles on the page. For example, the backdrop tile could be used to print the word “Confidential” across each page of the report or to print a border around the page. Here’s an example of a backdrop tile.



The contents of the **Backdrop** tile will print on top of every page in the report.

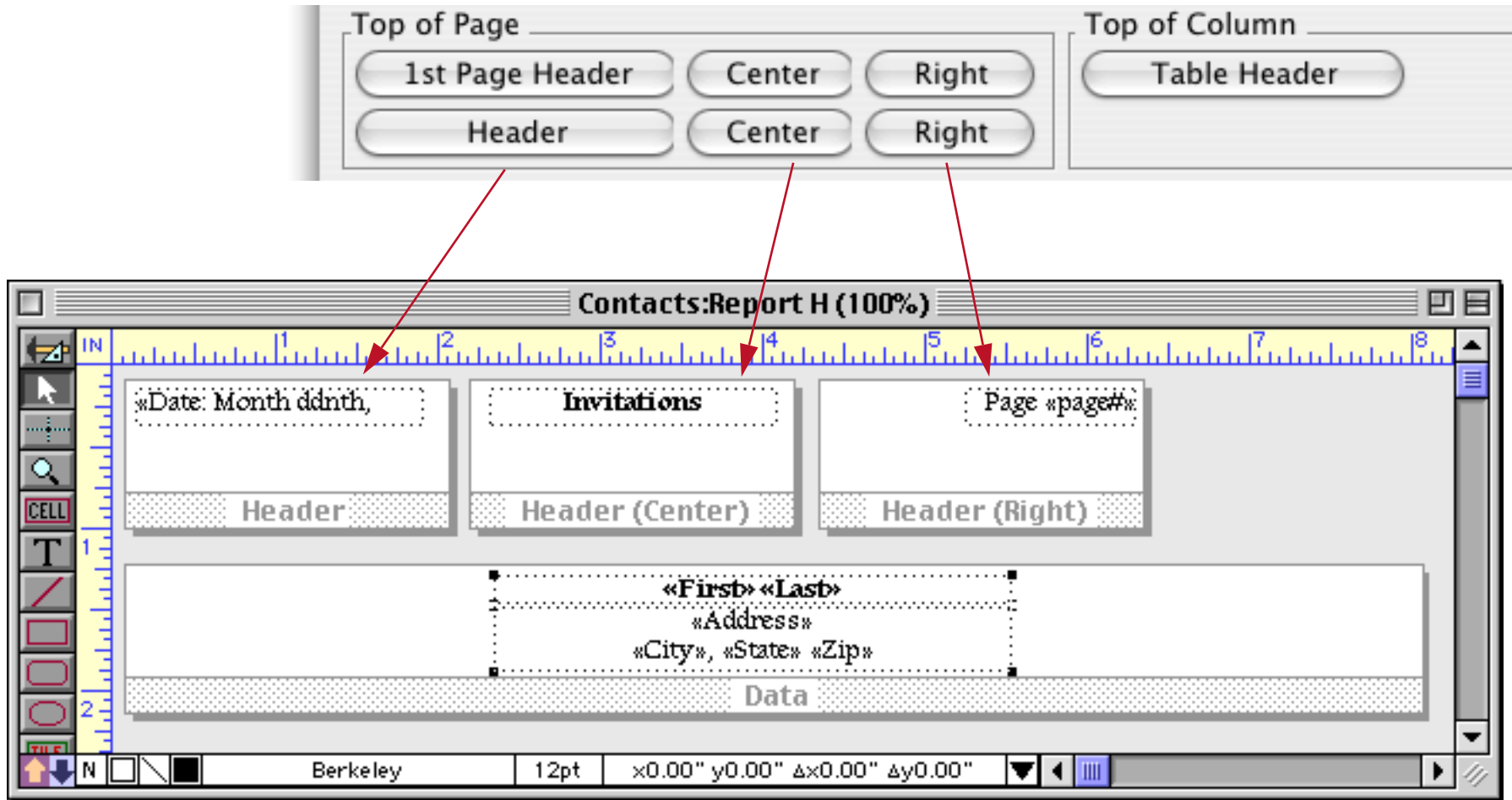
July 10, 2000 @ 3:47 PM

Page 2

Name	Company	Street Address	City State Zip
Glen Knock	South Portland	909 Wescott Rd	South Portland, ME 04106
Carl Berg	C.B. Plumbing	161 Norton St	New Haven, CT 06511
Wes Lemarr		57 Hobart Ave	Rutherford, NJ 07070
Charles Dalbert	New York Lumber	171 Broadway	New York, NY 10003
Brad Hess	Brooklyn Lumber	128 70th St	Brooklyn, NY 11209
Tim Henry	Suffolk Lumber	2375 Driver Lane	Suffolk, VA 23435
Ramsey French	West Palm Beach	8206 13th Way	West Palm Beach, FL
Steve Miller	SM Printing	3894 11th Court	Jupiter, FL 33458
Joseph Doll	Joseph's Appliances	2650 Helen Rd	Shaker Heights, OH 44122
John Maguire	Akron Lumber	39 Beck Ave	Akron, OH 44302
Jerry Boone		6125 Park Drive	Traverse City, MI 49684
John Bath	J.B. Plumbing	8864 Ave	Mendota Heights, MN
Sam Pack		6051 Pheasant	Inverness, IL 60067
David Cohn		307 Ronnie Drive	Buffalo Grove, IL 60089
Tim Moran		220 East Parkway	Wheaton, IL 60137
Ed Swanson	D.S. Plumbing	683 Elm St	Batavia, IL 60510
Steve Dallas	Chaminade Video	1 Chaminade	Creve Coeur, MO 63141
Charles Pierce	Midland Lumber	1662 Durant	Midland, TX 79705
Steve West	S.W. Plumbing	1175 Wilson Rd	Fountain, CO 80817
Mary Bilbury	M.B. Plumbing	2754 Parkway	Beverly Hills, CA 90210
Charles Michaels		5238 Quince	Upland, CA 91786
Herb Dang	Herb's Appliances	206 Phelps St	San Francisco, CA 94124
Sari Rattner	S.R. Plumbing	495 N.E. 63Rd	Seattle, WA 98115
Leslie Bianchi		23 Oak St	Lexington, MA 02173
Peter Yarensky	Peter's Appliances	41 Elm St	Dover, NH 03820
Cheryll Howell	Gray Lumber	4 Fran Circle	Gray, ME 04039
Tom Love		53 Clubhouse Drive	Woodbury, CT 06798
Patrick Dowd		26 Catalpa Rd	Convent Station, NJ 07961
Jeffrey Funk	Jeffrey's Appliances	7 Elwood Ave	Flemington, NJ 08822
Craig Hesth	H.H. Plumbing	54 Parkway Drive	North Chili, NY 14514
Jules Silk	J.S. Plumbing	9338 Waltham Rd	Cheltenham, PA 19012
Bela Hackman	Bela's Appliances	3132 Glengarry	Memphis, TN 38128
Jerry Levan		883 Boone Trail	Richmond, KY 40475
Frank Stelle	Jim's Appliances	58272 Auburn Rd	Fort Wayne, IN 46825
Thomas Cupal	Ann Arbor Lumber	8 Medford Court	Ann Arbor, MI 48104
Anne Crane	Grosse Pointe Shores	11 Moorland Drive	Grosse Pointe Shores, MI
Joseph Bizzarri	JB Printing	7045 Mandel	Westchester, IL 60153
Janel Rundlett	J.R. Plumbing	8601 Fairfax	Kansas City, KS 66115
Henry Hultquist	Lincoln Lumber	1197 S. 17th	Lincoln, NE 68502
Jerry Wilson		3050 North Main	Sand Springs, OK 74063

Designing Headers and Footers For Changing Page Sizes

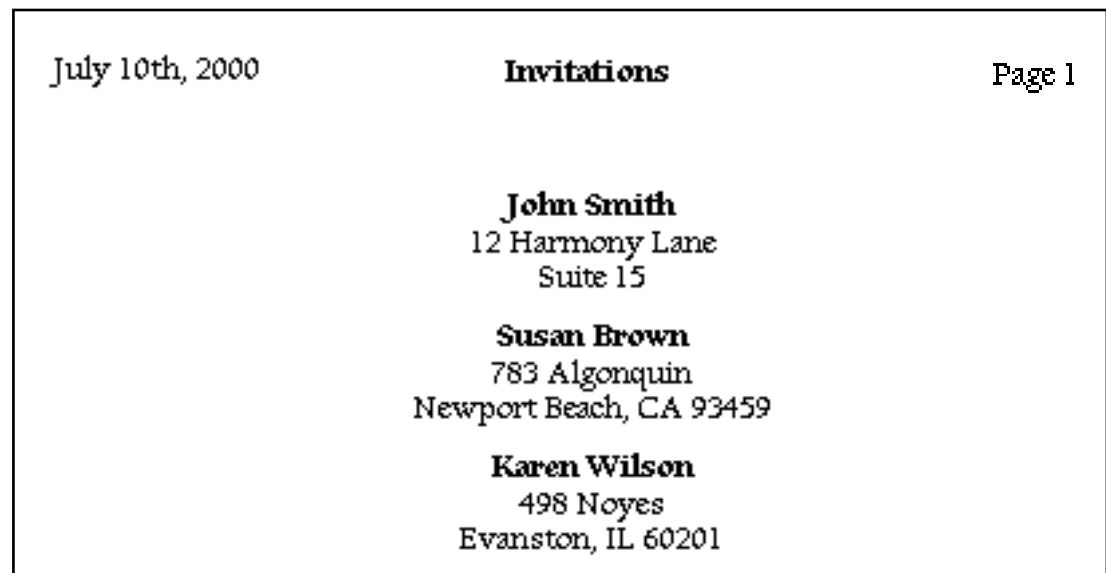
Most reports are designed for a specific page size. It is possible, however, to design headers and footers that automatically adjust for different page sizes. The key is to divide the header and footer into three components: left flush, centered, and right flush. Here is a report with three headers.



On a standard 8 1/2 by 11 page this report will look like this.



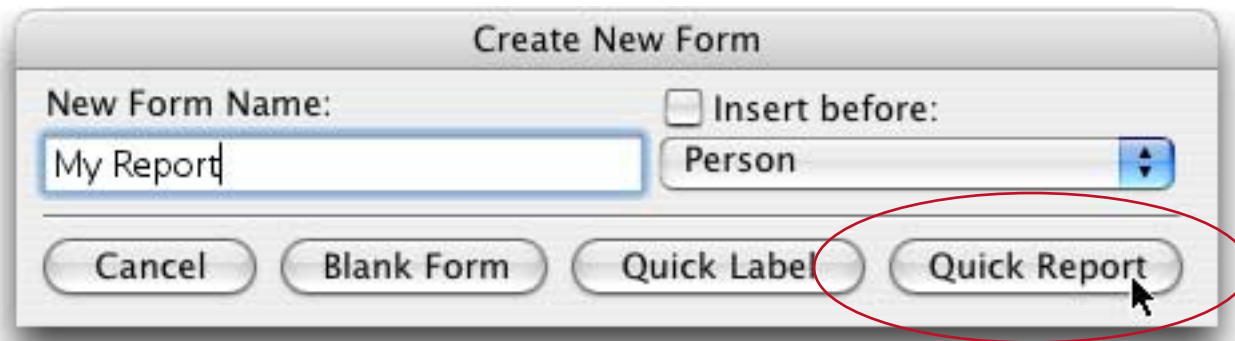
If you print this report on a different size page (or switch from portrait to landscape orientation or use a different page reduction factor) the titles will adjust automatically.



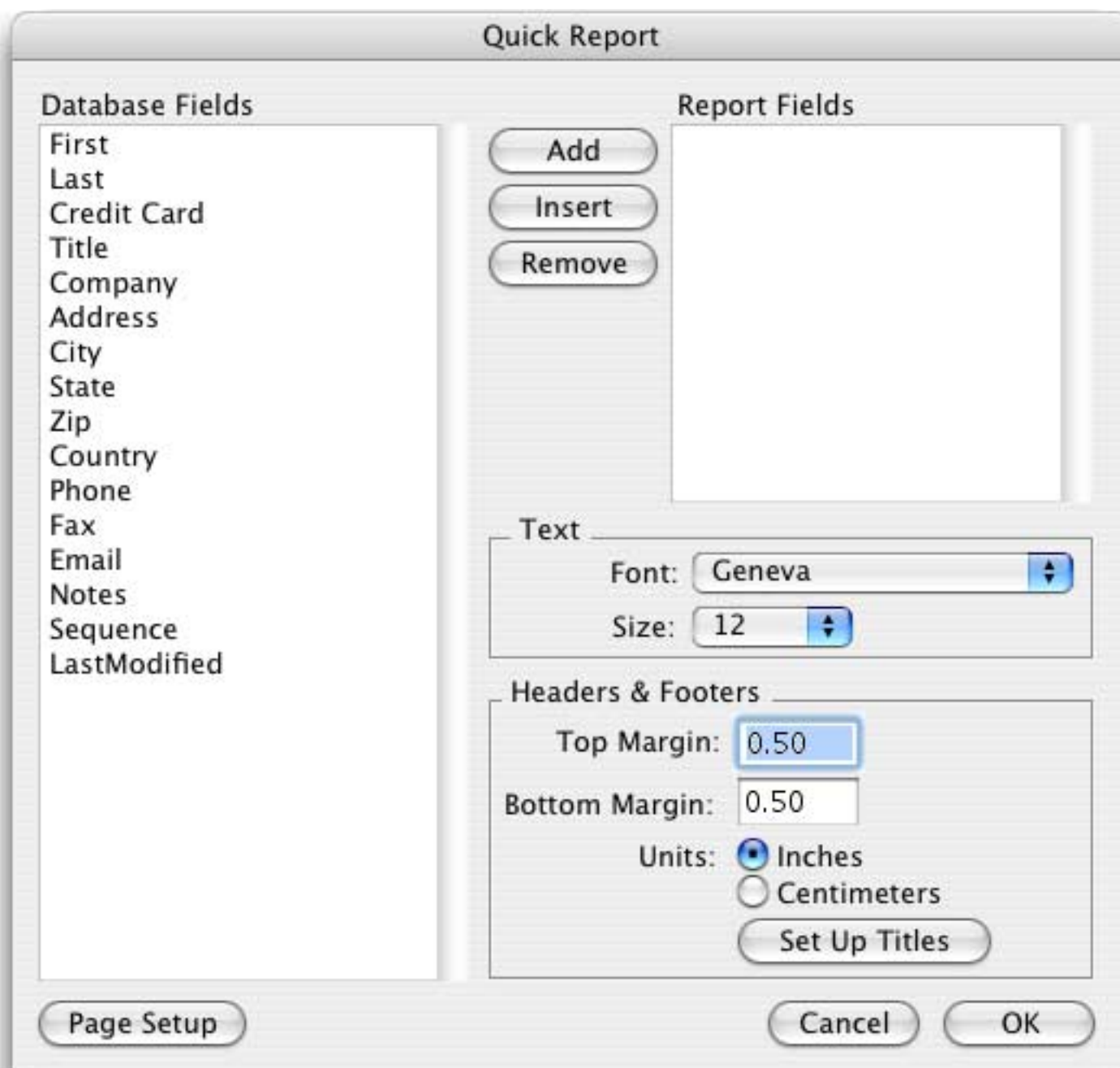
You don't need to use this technique unless you think that the page size may change. If the page size is fixed, just use the regular header and footer tiles.

The QuickReport Dialog

When you create a new form, Panorama gives you the option of creating a blank form or automatically creating a label or report.



The **QuickReport** button opens a dialog that can do most or all of the work of setting up a report for you. The QuickReport dialog allows you to automatically create a tabular report.



On the left is a list of all the fields in the database. On the right is a list of the fields that will be included in the report. In the dialog the report fields are listed from top to bottom, in the actual report they will be printed from left to right. To set up the report, copy the fields you want to include in the report from the list of fields on the left to the report list on the right.

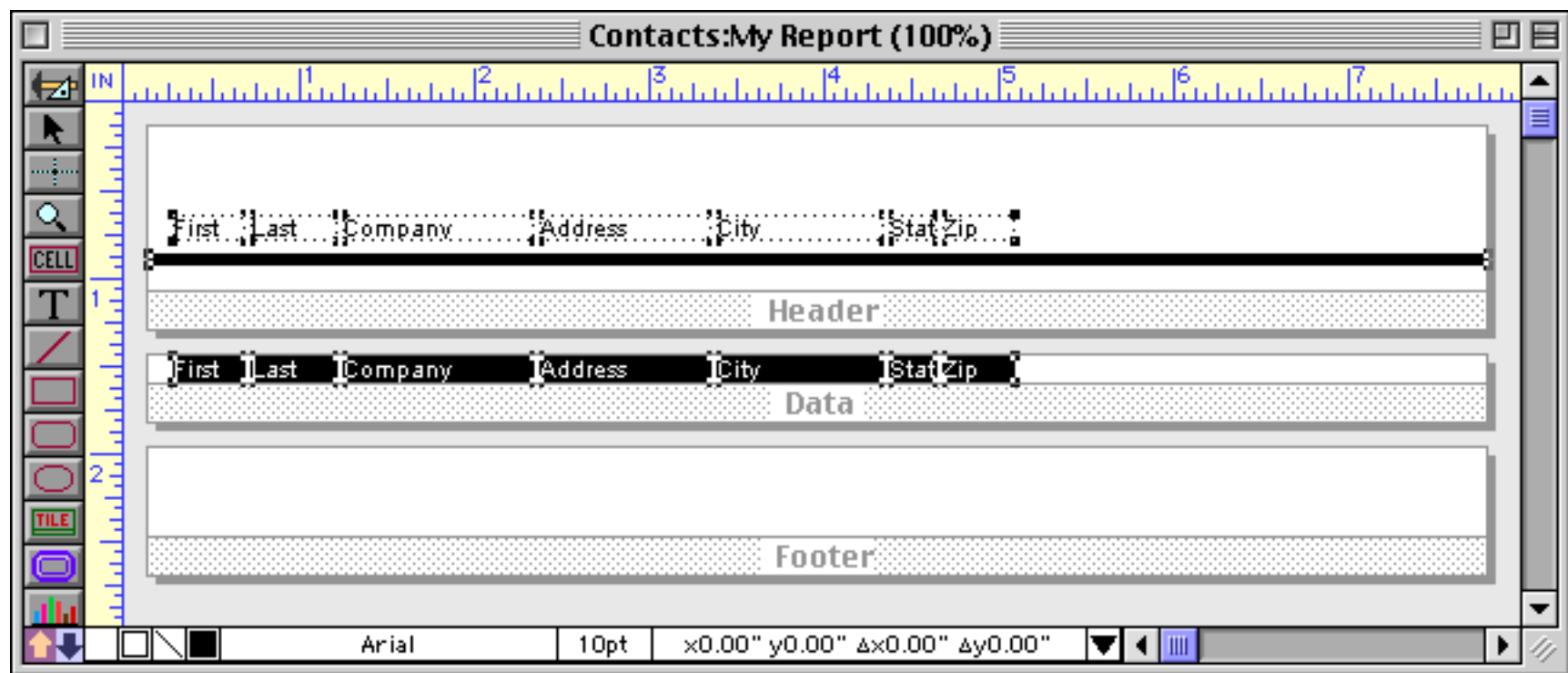
The easiest way to copy a field from the left to the right is to double click on the field name. Double clicking on a field name adds the field to the end of the list on the right. If a field name on the right is already selected, then double clicking on a field name on the left replaces that field. The **Add** button works the same as double clicking.

To insert a field into the middle of the list on the right, first select a field on the right, then select a field on the left. Press the **Insert** button to insert the new field into the list on the right.

To delete a field from the list on the right, select the field and press the **Remove** button. You can also delete a field from the list on the right by double clicking on it.

If you want to use a non-standard page size, you should use the **Page Setup** button to set it up. Be sure to set up the page size before you press the **OK** button. This lets QuickReport know how wide the page will be.

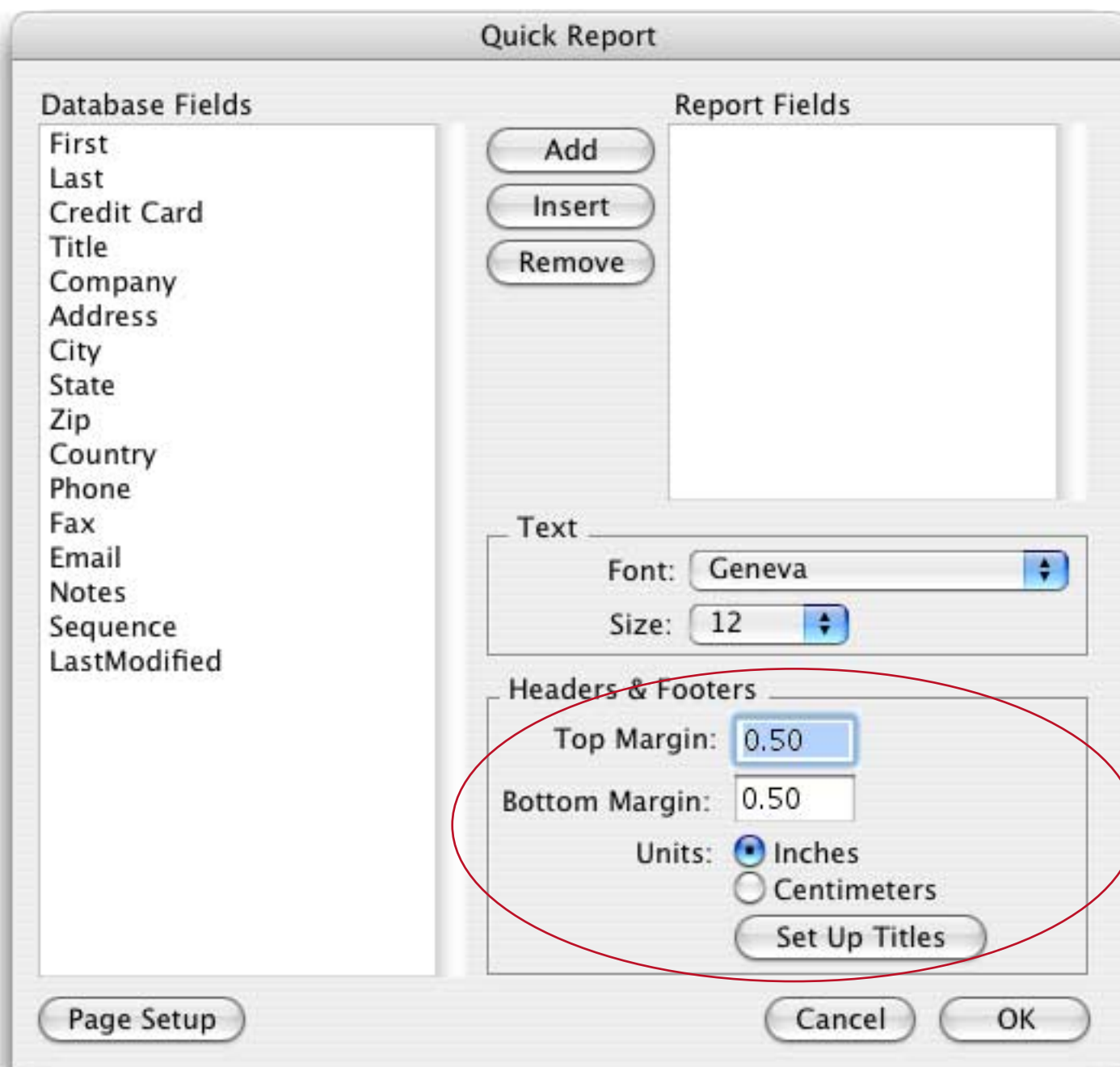
Press the **OK** button to generate the actual report. Panorama will generate all the tiles and cells needed for the report.



You can use this report as is, or you can use it as a starting point and modify it to suit your needs.

First	Last	Company	Address	City	Stat	Zip
John	Smith	Acme Widgets	12 Harmony	Huntington	CA	9264
Susan	Brown		783 Algonquin	Newport	CA	9345
Karen	Wilson	Evanston	498 Noyes	Evanston	IL	6020
Jim	Nickle	Jim's	14189 8th	Newhall	CA	9132
Brian	Felty	B.F. Plumbing	118 N Wilder	Lubbock	TX	7941
Bob	Hanlan	Ann Arbor	6916 Morgan	Ann Arbor	MI	4810
Tim	Daniels	St. Louis	3133 Cornell	St. Louis	MO	6313
John	Moses		8265 Leticia	San Clemente	CA	9267
John	Fabian		3 Rose Hill	Woodstock	VT	0509
Ed	Ruth	Chicago	1580 N.	Chicago	IL	6063
Don	Harmo	Sudderth Video	415 Sudderth	Ruidoso	NM	8834

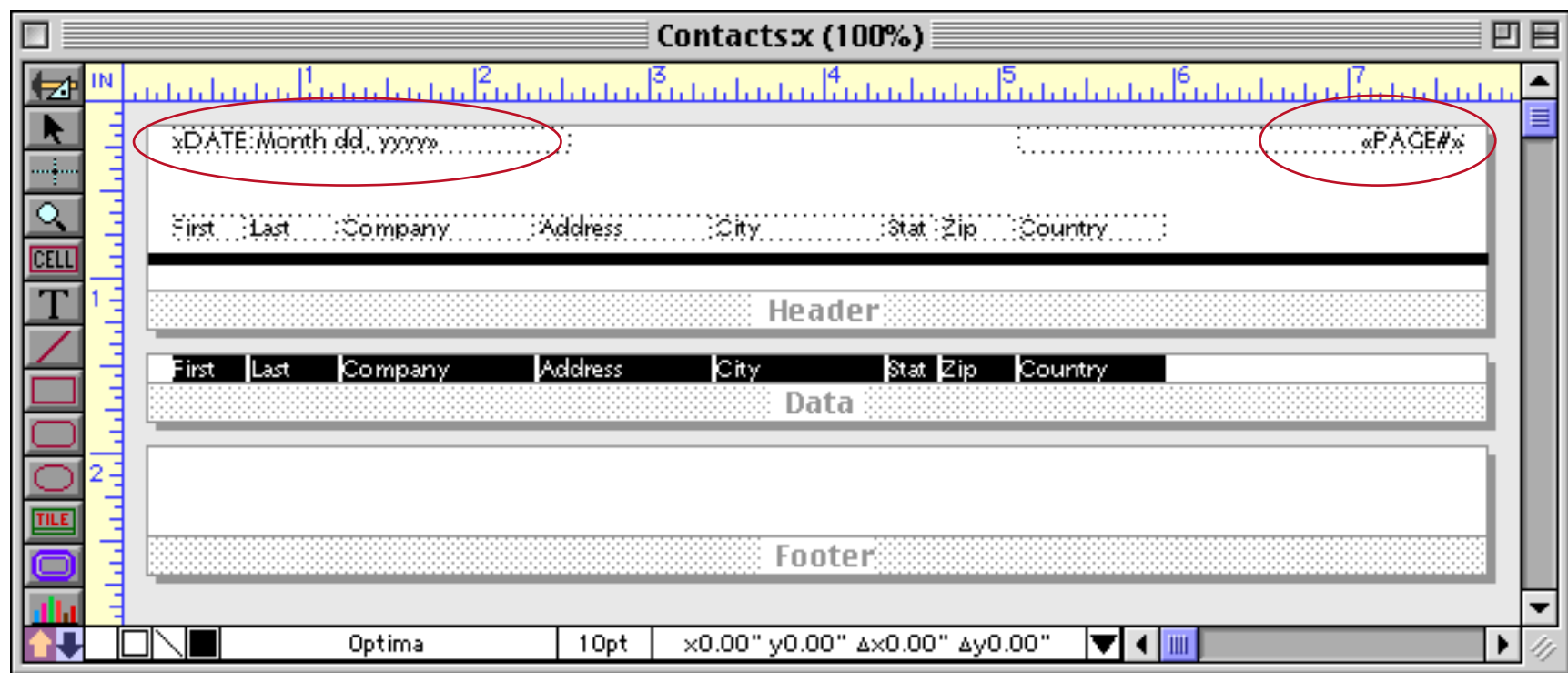
The QuickReport dialog also creates header and footer tiles. You can specify the height of the header and footer by specifying the top and bottom margins (in either inches or centimeters).



The QuickReport dialog can place page numbers and/or the date and time on the header and footer tiles. To set up the page numbers and date/time, press the **Set Up Titles** button. This button opens a small dialog with 16 checkboxes.



These checkboxes allows you to place any combination of page number, date, and time in up to four positions on the page: top left, top center, top right, and bottom center. Here is the form generated with the options shown above.

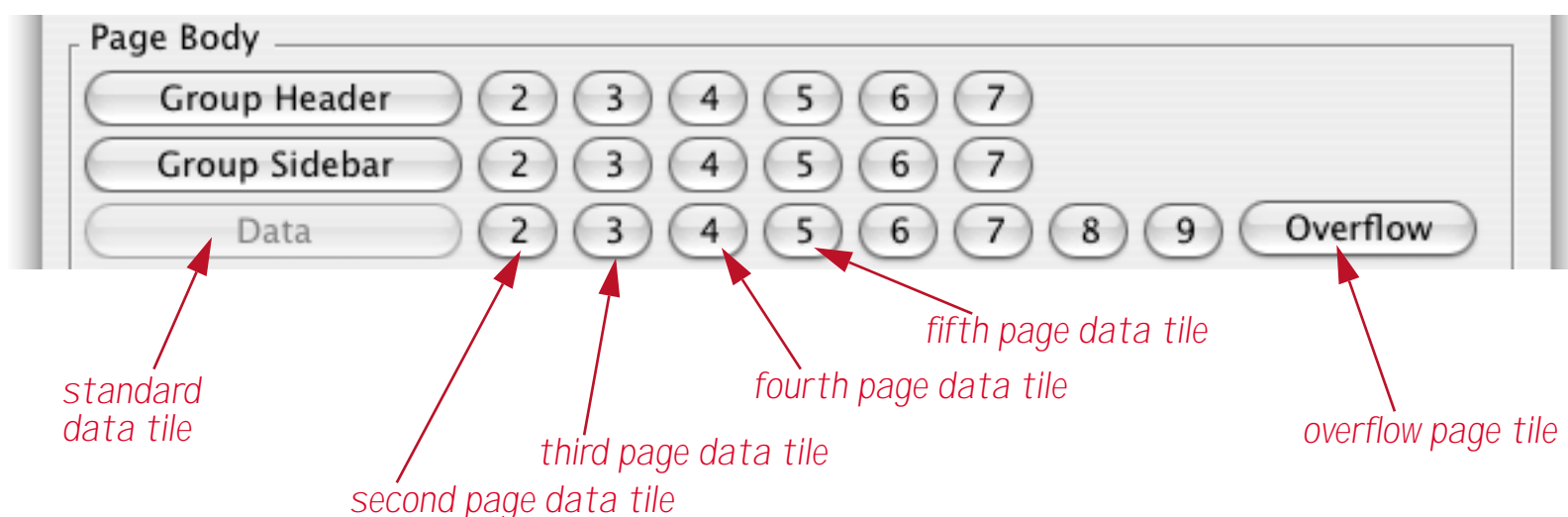


To learn more about printing the page number and date see [“Page Numbers”](#) on page 1100 and [“Printing the Current Date and Time”](#) on page 1103.

Printing Multiple Page Records

If the data tile is made large enough to fill the entire page then Panorama will print only one record per page. In some cases, a single page is not enough. For example, you may need to print an invoice, statement or tax return with several pages per record. Panorama can print up to 10 pages for each record.

To print a multiple page form you will need to create multiple data tiles. These additional data tiles are created with the **Specialized Tile** configuration dialog.



The tile's for additional pages can be identified by the page number in the drag bar of the tile.



When you create a data tile for an additional page it should be large enough to fill the entire sheet of paper, just like the first data tile. When a form contains data tiles for multiple records Panorama will ignore any header or footer tiles. Only the margins and data tiles will be printed. This illustration shows a form for simultaneously printing an invoice and packing slip. (Sorry — had to reduce this image to make both pages fit!)

When you print this form, both pages will print automatically for each record printed. If you use the **Print One Record** tool (see “[Print One Record](#)” on page 1058) Panorama will automatically print the current invoice and packing slip. If you use the regular **Print** command Panorama will print an invoice and packing slip for each selected record.

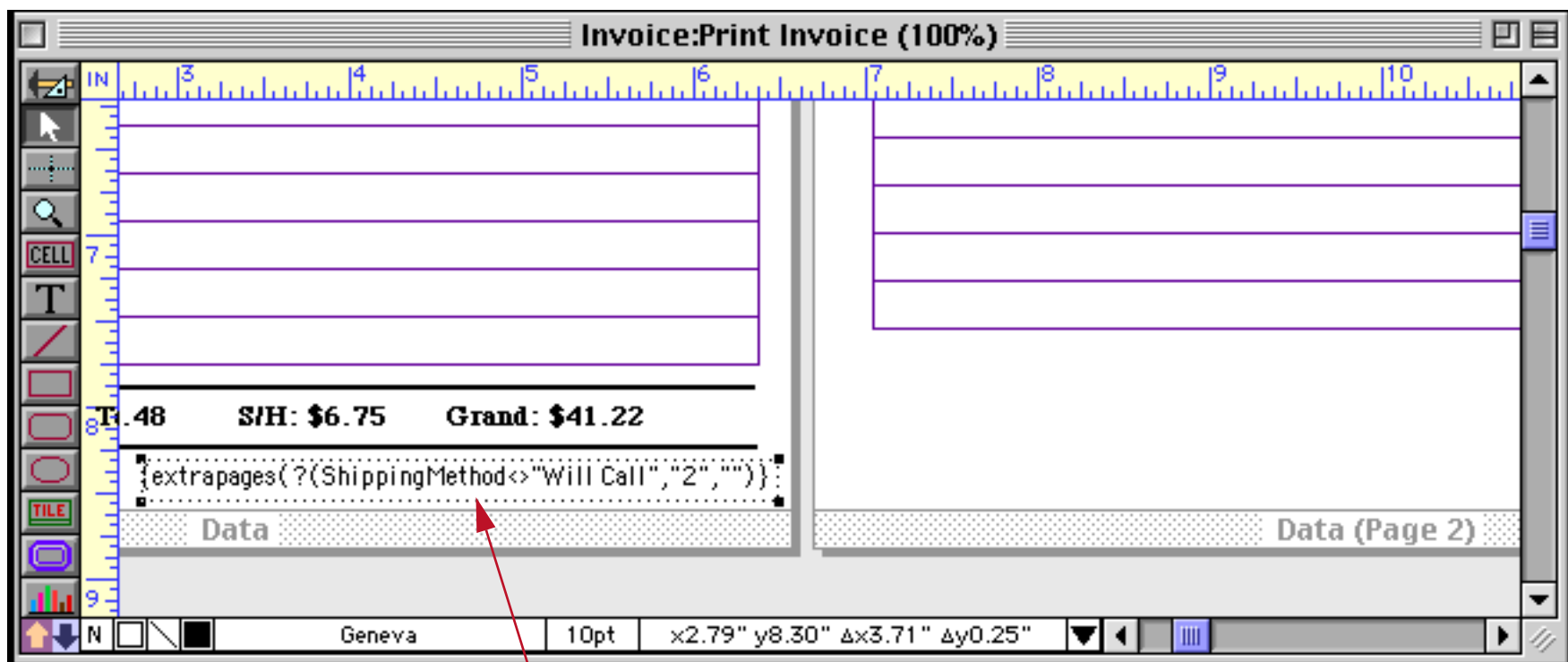
Selectively Printing Multiple Pages per Record

Panorama allows up to 9 pages to be printed per record using data tiles 1 through 9. However, you do not have to print all tiles for each record, you can print them selectively using a formula on the form. For example, you can easily ask Panorama to print pages 1, 2, and 5 for one record and 1 and 4 for another record (page one, the primary data tile, always prints). You could use this feature to selectively print an envelope, to print only selected portions of a tax return, to print one or two page invoices, etc.

To control which extra data tiles get printed, you must use the `extrapages(<pagelist>)` function (see “[EXTRAPAGES](#)” on page 5213 of the *Panorama Reference*). This function must be put in a formula in an auto wrap text object somewhere on the main data tile. For example if you want to print pages 1, 2, and 5 you would need to use the formula

```
{extrapages("25")}
```

Usually you would use a field or variable to selectively control which pages print instead of a fixed string. To illustrate this let's modify the invoice example from the previous section. This form would always print both an invoice and a packing slip. By adding an **extrapages()** function we can modify the form so that a packing slip is not printed if the shipping method is **Will Call**.



extrapages() *formula may be placed anywhere on primary Data tile*

The **extrapages()** function may be placed anywhere on the primary Data tile. The function has no result, so it won't cause anything to be printed. In this case if the shipping method is **Priority Mail**, **FedEx**, **UPS**, or anything except **Will Call** the **?(** function will produce "2" and the second page (the packing list) will print. If the shipping method is **Will Call** the **?(** function will produce "" and the packing list will not print.

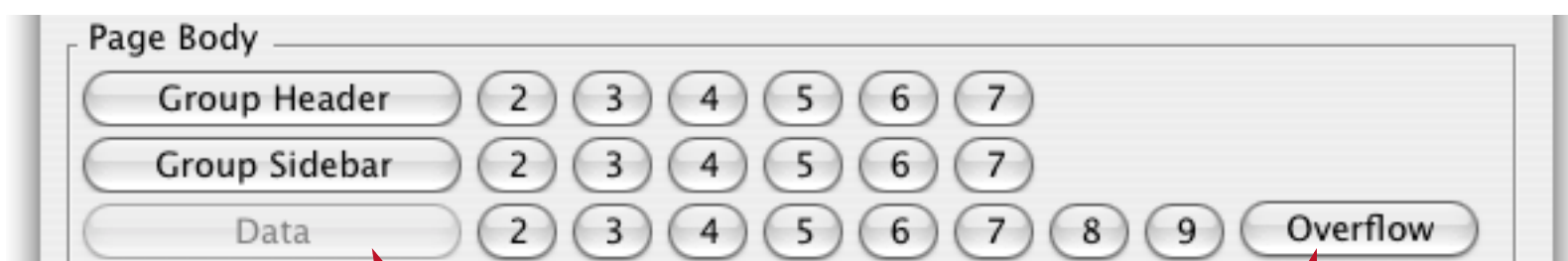
Printing Data that Overflows a Page

With some restrictions, Panorama allows a report to print data records that won't fit on a single page. For example, this feature could be used to print a multiple page letter. If the letter doesn't fit on the first page it spills over onto multiple pages using the data overflow tile.

To print data in a single record that doesn't fit on a single page, the data must meet the following criteria:

- 1) The data must be contained in a single graphic object.
- 2) The graphic object must be an auto-wrap text object, Word Processor SuperObject, or Super Flash Art object.

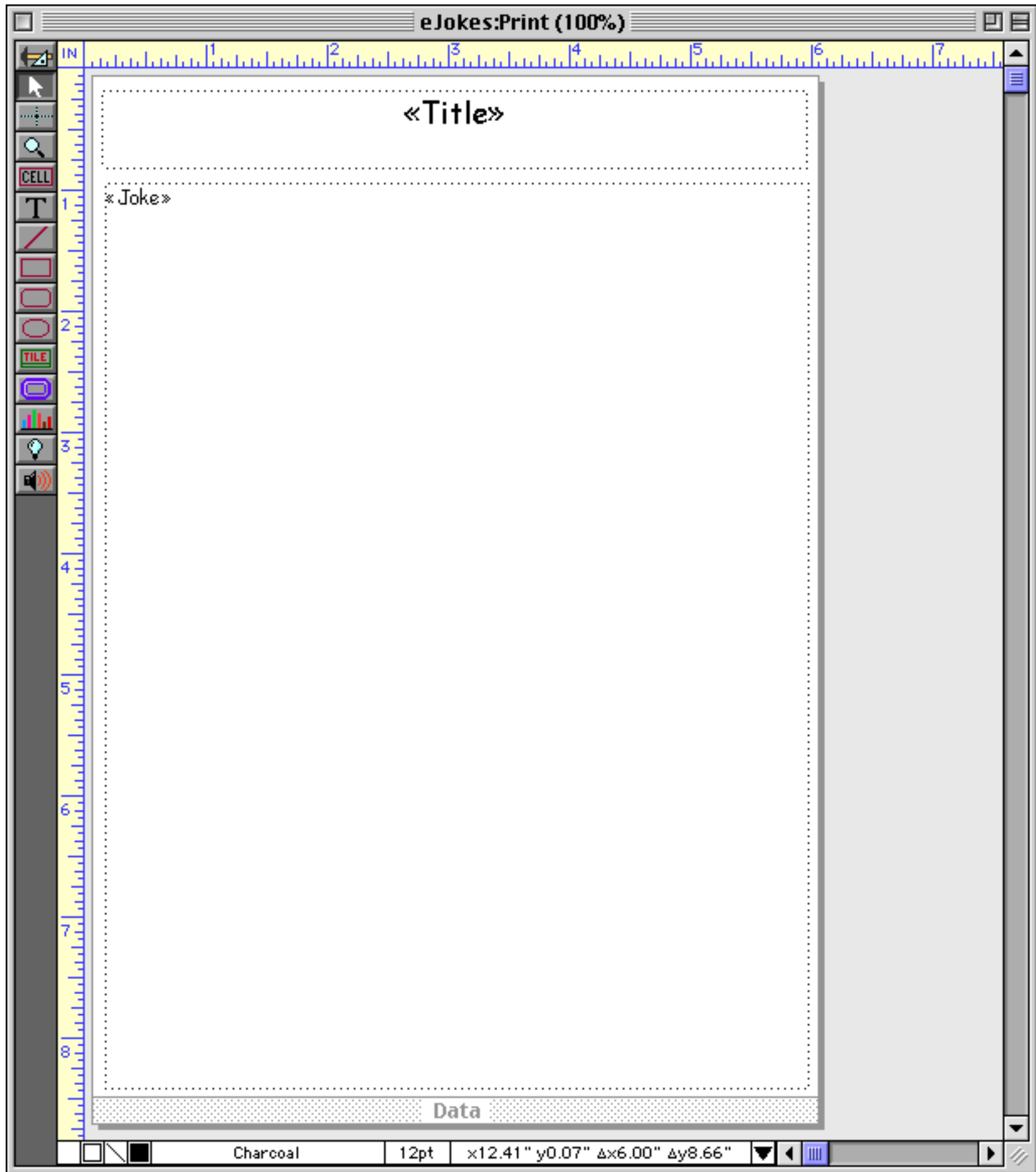
To print data that overflows a page you'll need two tiles: a data tile and an overflow tile. The overflow tile is labeled (...) in the Specialized tile configuration dialog.



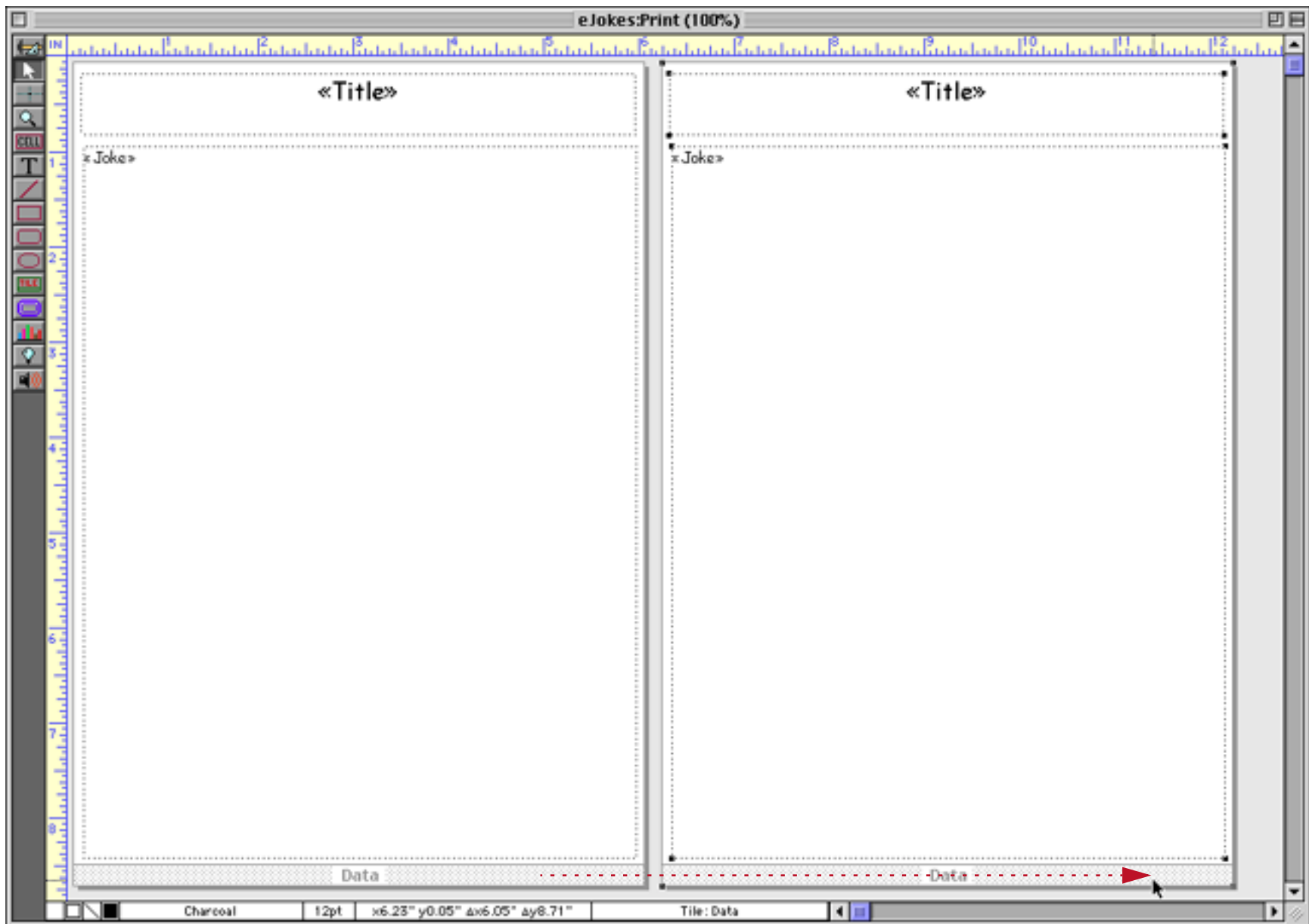
standard data tile

overflow page tile

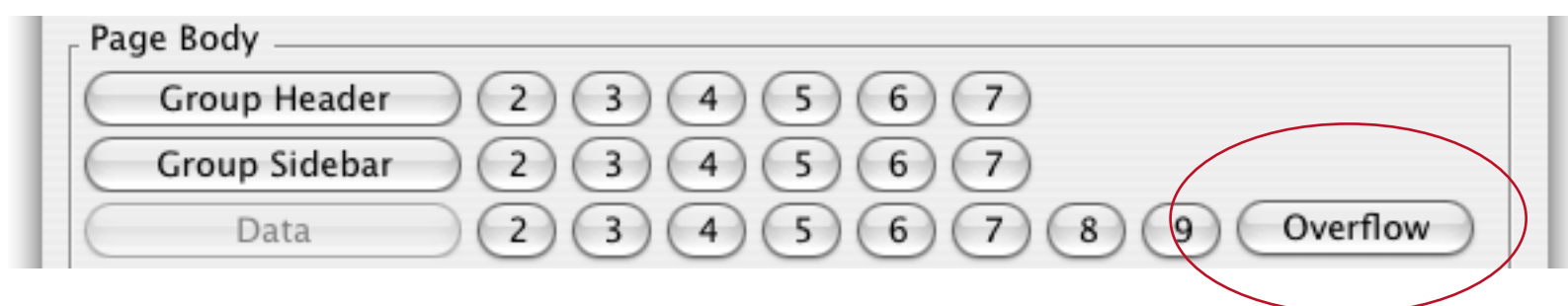
Usually the best way to create a form with an overflow tile is to start with a single page form like this.



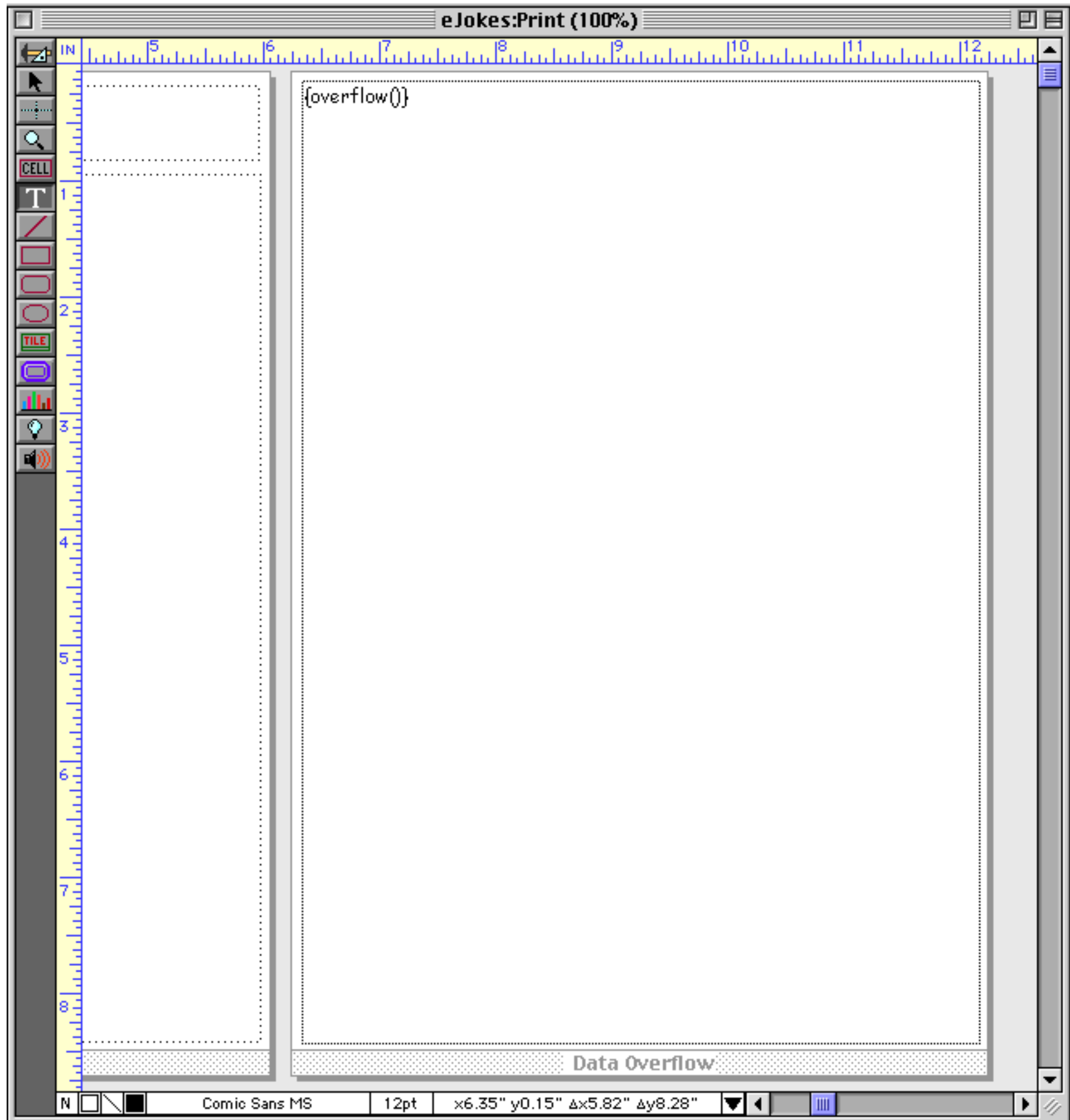
Double click the tile drag bar to select the tile and all the objects on it (see “[Working with Tiles](#)” on page 1062). Then duplicate these objects by holding down the **Option** key (Macintosh) or **Alt** key (PC), and clicking on the tile’s drag bar and dragging it (see “[Drag Duplicating](#)” on page 561). You may also want to hold down the **Shift** key to keep the new tile perfectly aligned with the original. The result is two data tiles, like this.



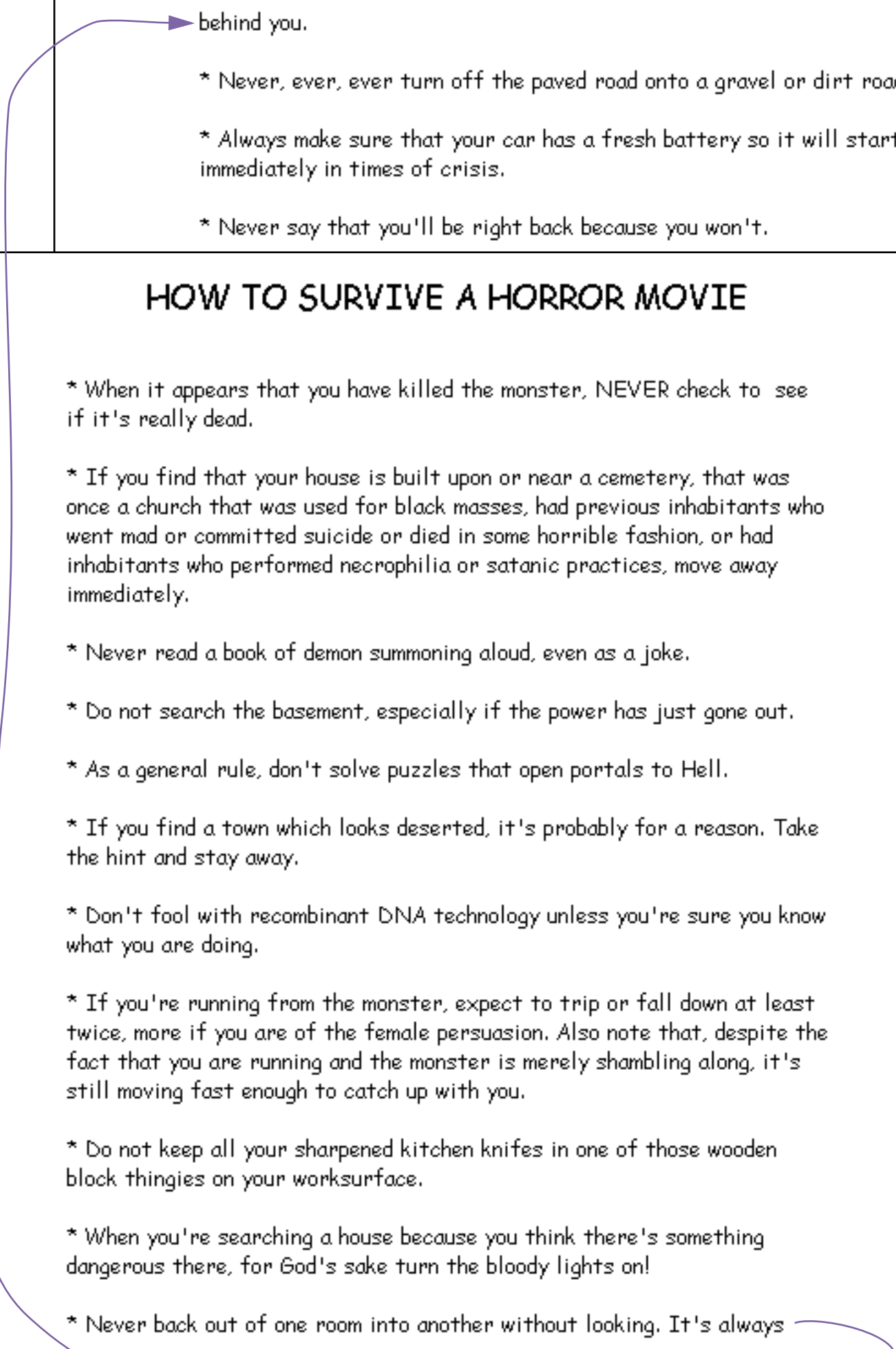
Double click on the title of the second data tile to change it to an overflow tile.



Now adjust the graphics on the overflow tile to the format you want for the second, third, and succeeding pages. If you are using auto-wrap text to display the text you'll need to type in the `overflow()` function as shown in the illustration below.



That's all there is too it! When you print a record that contains more than one page of data, Panorama will automatically print as many additional pages as is necessary to display all of the data. The blue arrow shows how the text overflows from one page to the next.



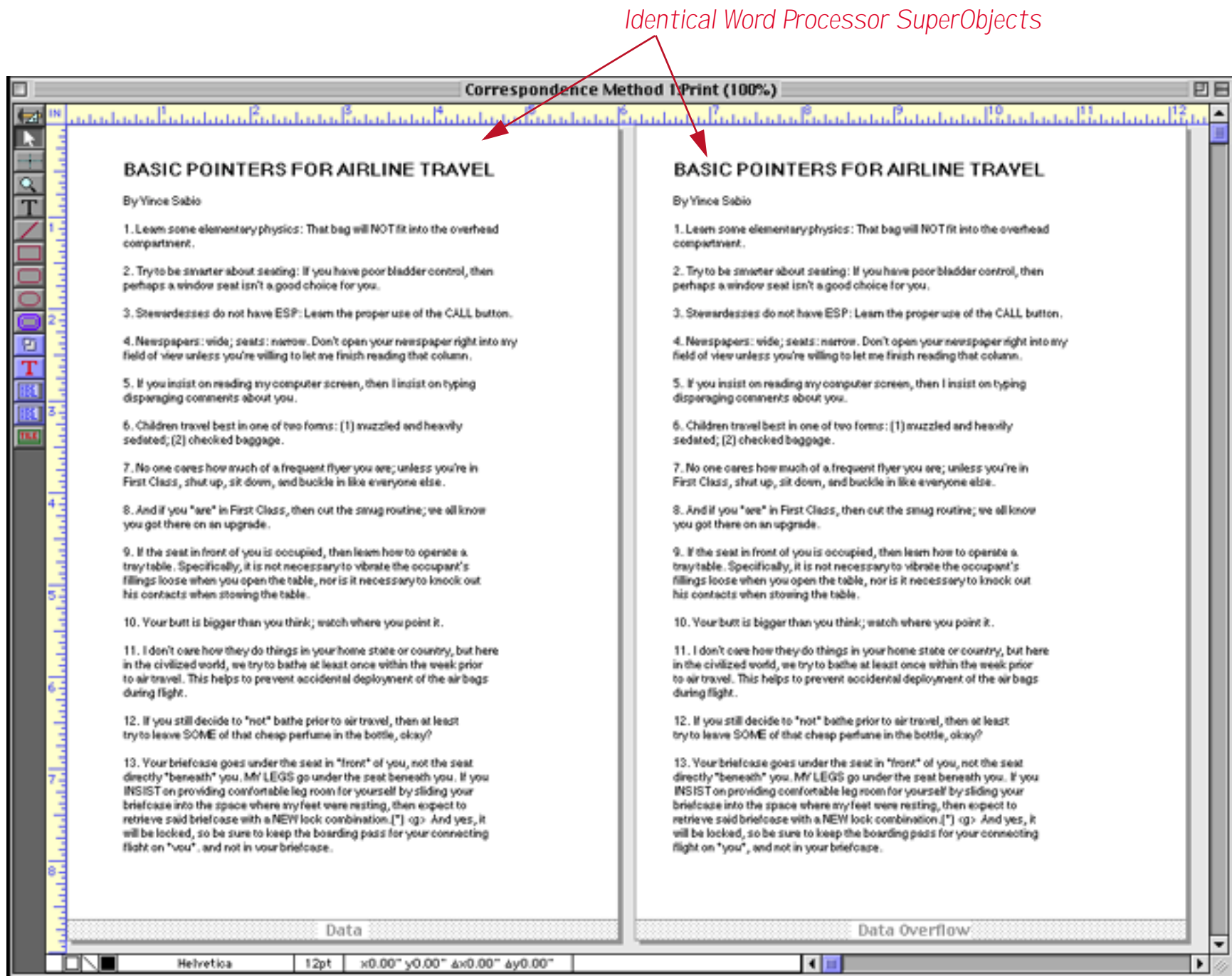
behind you.

- * Never, ever, ever turn off the paved road onto a gravel or dirt road.
- * Always make sure that your car has a fresh battery so it will start immediately in times of crisis.
- * Never say that you'll be right back because you won't.

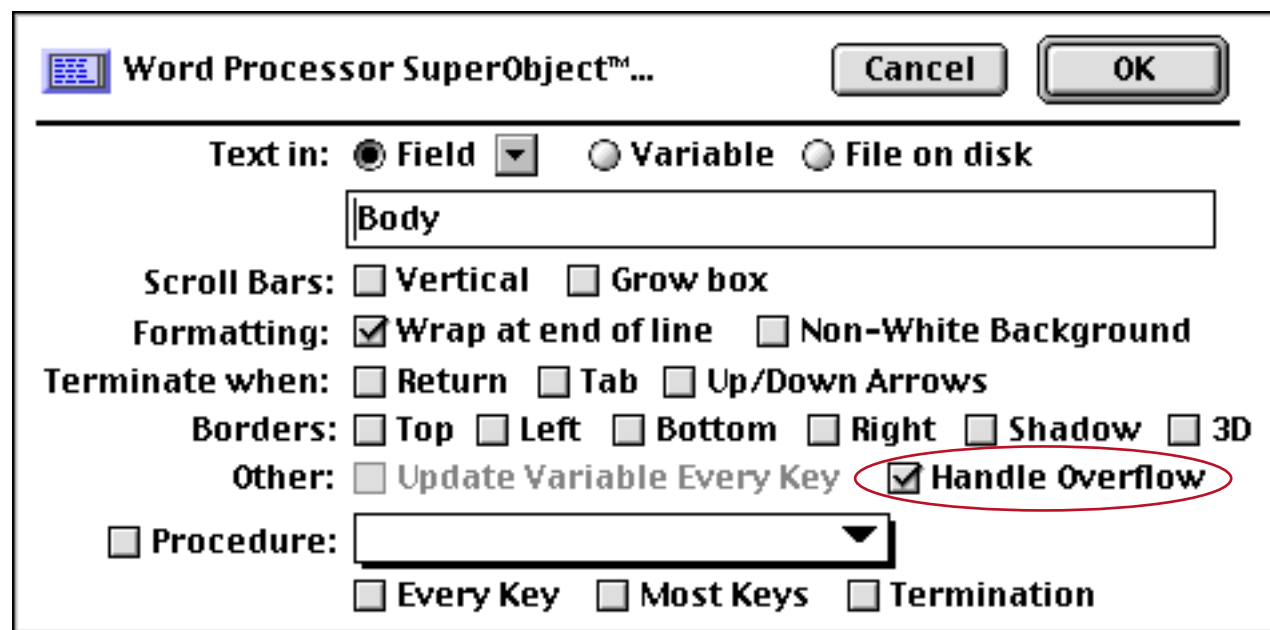
HOW TO SURVIVE A HORROR MOVIE

- * When it appears that you have killed the monster, NEVER check to see if it's really dead.
- * If you find that your house is built upon or near a cemetery, that was once a church that was used for black masses, had previous inhabitants who went mad or committed suicide or died in some horrible fashion, or had inhabitants who performed necrophilia or satanic practices, move away immediately.
- * Never read a book of demon summoning aloud, even as a joke.
- * Do not search the basement, especially if the power has just gone out.
- * As a general rule, don't solve puzzles that open portals to Hell.
- * If you find a town which looks deserted, it's probably for a reason. Take the hint and stay away.
- * Don't fool with recombinant DNA technology unless you're sure you know what you are doing.
- * If you're running from the monster, expect to trip or fall down at least twice, more if you are of the female persuasion. Also note that, despite the fact that you are running and the monster is merely shambling along, it's still moving fast enough to catch up with you.
- * Do not keep all your sharpened kitchen knives in one of those wooden block thingies on your worksurface.
- * When you're searching a house because you think there's something dangerous there, for God's sake turn the bloody lights on!
- * Never back out of one room into another without looking. It's always

Printing overflow pages with the Word Processor SuperObject (see “[Printing Word Processor Documents](#)” on page 719) is almost the same as with the auto-wrap text object. Instead of two auto-wrap text objects, you have two Word Processor SuperObjects.



Both of these Word Processor objects should be configured exactly the same, and both must have the **Handle Overflow** option turned on.



Just as with the auto-wrap text objects, the text wraps from one page to the next.

12. If you still decide to **not** bathe prior to air travel, then at least try to leave SOME of that cheap perfume in the bottle, okay?

13. Your briefcase goes under the seat in **front** of you, not the seat directly **beneath** you. MY LEGS go under the seat beneath you. If you INSIST on providing comfortable leg room for yourself by sliding your briefcase into the space where my feet were resting, then expect to retrieve said briefcase with a NEW lock combination.(*) <g> And yes, it will be locked, so be sure to keep the boarding pass for your connecting flight on hand, and lock in your briefcase.

BASIC POINTERS FOR AIRLINE TRAVEL

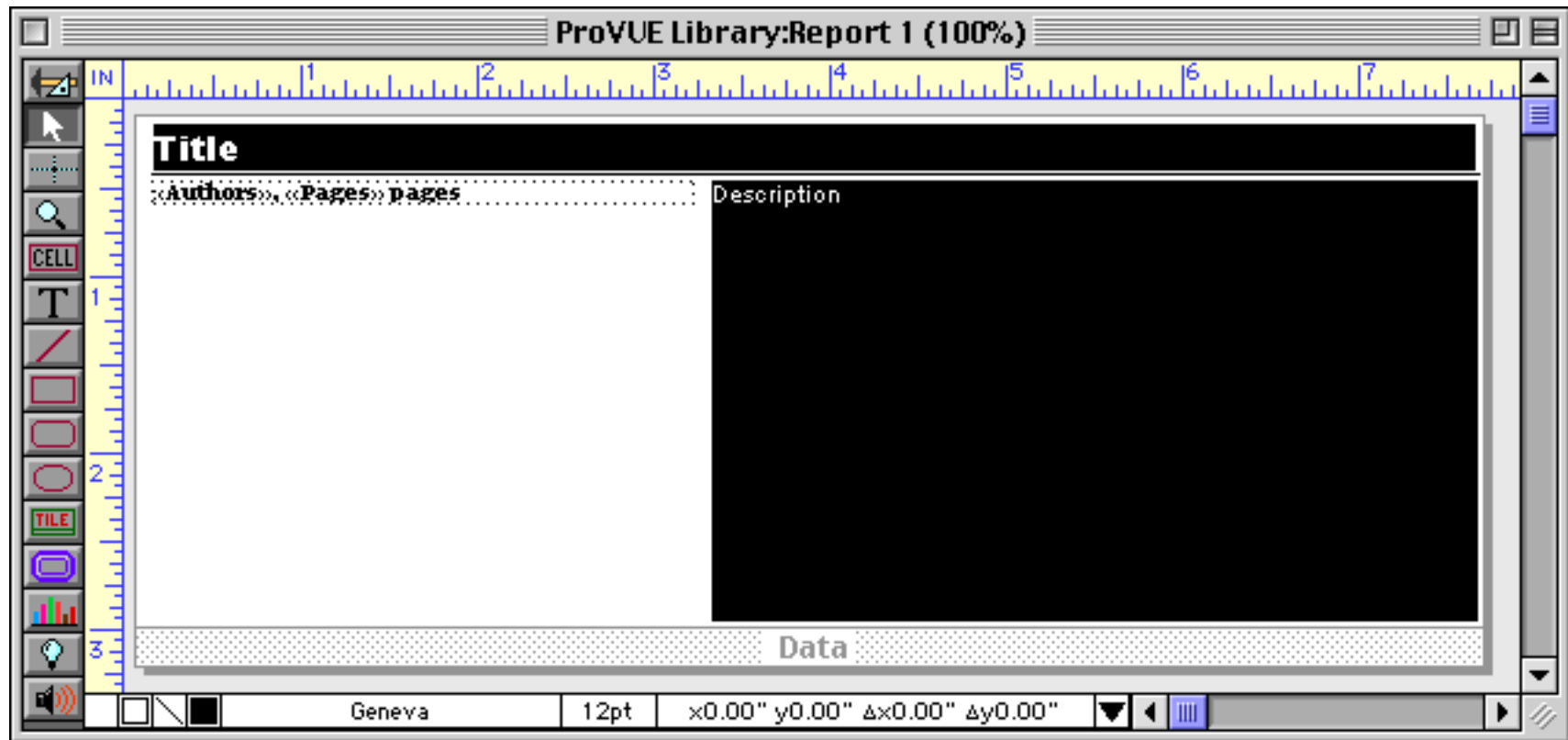
By Vince Sabio

- 1.** Learn some elementary physics: That bag will NOT fit into the overhead compartment.
- 2.** Try to be smarter about seating: If you have poor bladder control, then perhaps a window seat isn't a good choice for you.
- 3.** Stewardesses do not have ESP: Learn the proper use of the CALL button.
- 4.** Newspapers: wide; seats: narrow. Don't open your newspaper right into my field of view unless you're willing to let me finish reading that column.
- 5.** If you insist on reading my computer screen, then I insist on typing disparaging comments about you.
- 6.** Children travel best in one of two forms: (1) muzzled and heavily sedated; (2) checked baggage.
- 7.** No one cares how much of a frequent flyer you are; unless you're in First Class, shut up, sit down, and buckle in like everyone else.
- 8.** And if you **are** in First Class, then cut the smug routine; we all know you got there on an upgrade.
- 9.** If the seat in front of you is occupied, then learn how to operate a tray table. Specifically, it is not necessary to vibrate the occupant's fillings loose when you open the table, nor is it necessary to knock out his contacts when stowing the table.
- 10.** Your butt is bigger than you think; watch where you point it.
- 11.** I don't care how they do things in your home state or country, but here in the civilized world, we try to bathe at least once within the week prior to air travel. This helps to prevent accidental deployment of the air bags during flight.

In the same way you can also wrap a tall image from page to page with the Super Flash Art object (see "[Flash Art™](#)" on page 750). This only works for images taller than a page - it does not work for images that are wider than a page.

Variable Height Records

In most reports each record is evenly spaced down the page. In some databases, however, the amount of data in each record may vary dramatically. For example, a database of catalog items may contain a description field whose contents vary dramatically. Some descriptions may be only a few words long, while others are several hundred words long. When a database like this is printed with a fixed height per record there will be large gaps between some of the records. For example, consider this form designed for printing a catalog of books.

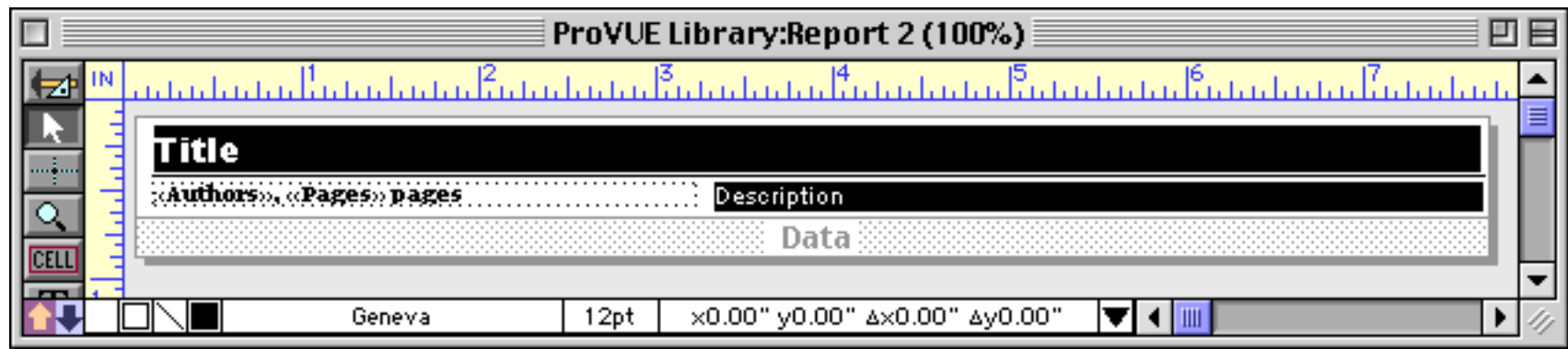


Since this form is designed to print the longest possible description, it will leave gaps when printing shorter book descriptions.

Windows Annoyances	David A. Karp, 280 pages	Windows is full of all kinds of oddities and frustrating behavior. This book is full of complaints, but it is also full of positive suggestions for getting around the roadblocks. Some of the suggestions are simple, but little known, while others are much more technical. Covers Windows 95 and NT 4.0, though of course much of the material also applies to Windows 98. Don't read this as your first Windows book, but after you've been using Windows for a while you'll get a lot out of this relatively slim book.
<i>gap</i> →		
Designing for the Web : Getting Started in a New Medium	Jennifer Niederst, Edie Freedman, 180 pages	This book provides an excellent introduction to HTML. It is especially targeted towards graphic artists. Unlike many other HTML books that are heavy enough to use as lethal weapons, Ms. Niederst has filtered out the essentials that you really need to know first, while leaving out the overwhelming mass of detail that is usually included in most other web tutorials. (When using this book with SiteWarrior, keep in mind that SiteWarrior automatically adds the document header and footer for you, so you don't need to worry about including the <html>, <head>, <title> and <body> tags.) Although this book is an excellent introduction to HTML, it does not cover more advanced topics. The biggest omission is tables, which are mentioned, but not explained. Nevertheless, this is one of the best books on the market for someone who is just getting started with HTML for the first time.
<i>gap</i> →		
Getting Connected : The Internet at 56K and Up	Kevin Dowd, Mike Loukides, 410 pages	If you want to move beyond dial-up and move into the arcane world of ISDN, Fractional T-1, Frame Relay, T-1, routers, and other arcane technology, this book is the guide you'll need. I won't claim that I understood all this technology after reading this book, but at least I had some idea of what was going on. And when installing our Frame Relay connection, I was able to find the clue that got our router talking to the ISP's Cisco router in this book, after the ISP was stuck for three days. Fortunately, it's worked perfectly every since!

To print this type of database without leaving these large gaps between the records the report must be printed with variable height records. Contrary to what you might think at first, creating a report with variable height records does not involve using a special report tile. Instead, you design the report for the minimum possible size (in this case a one line description) and tell Panorama which objects may need to expand to accommodate extra data. As the report prints, Panorama will automatically expand these objects, and also adjust any other objects that may need to make room.

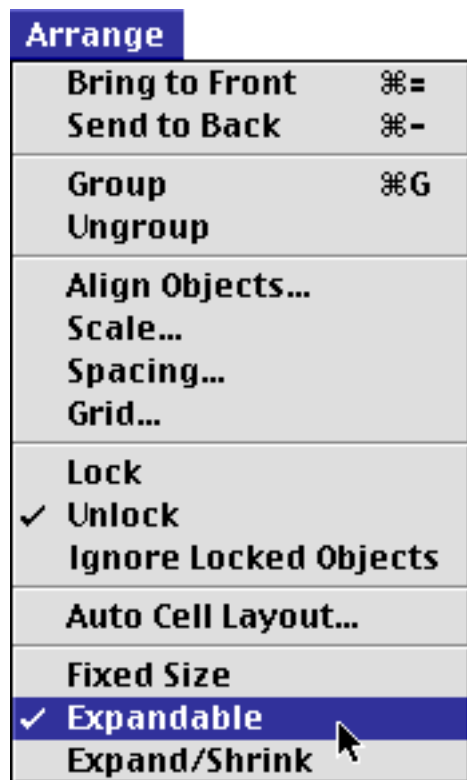
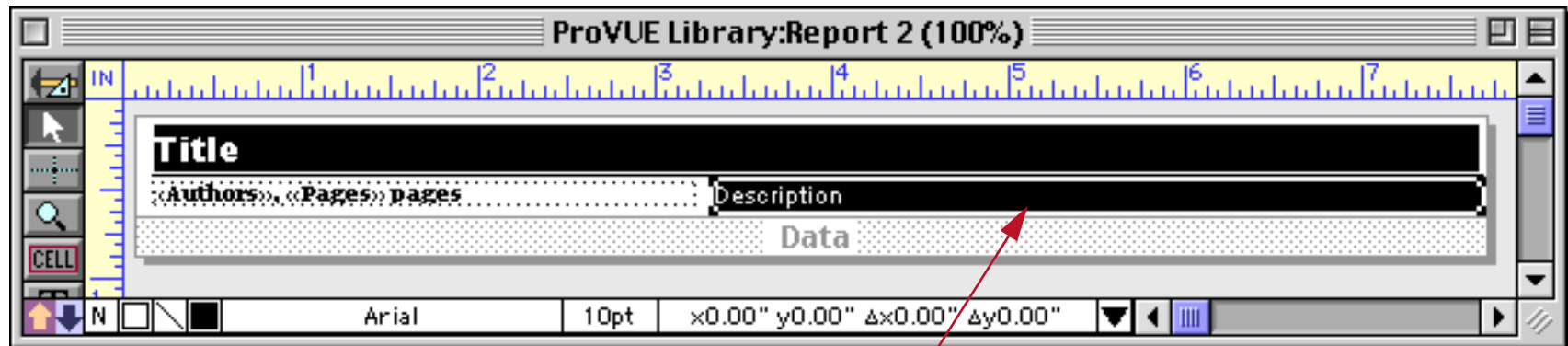
Here is a revised version of our book catalog form that is designed to print the minimum possible amount — a one line description.



Of course when this report is printed it isn't what we want at all - only the first line of each description is printed. (On the other hand, we have gotten rid of the gaps between the records!)

Windows Annoyances	
David A. Karp, 280 pages	Windows is full of all kinds of oddities and frustrating behavior.
Designing for the Web : Getting Started in a New Medium	
Jennifer Niederst, Edie Freedman, 180 pages	This book provides an excellent introduction to HTML. It is
Getting Connected : The Internet at 56K and Up	
Kevin Dowd, Mike Loukides, 410 pages	If you want to move beyond dial-up and move into the arcane
Frontier: The Definitive Guide	
Matt Neuburg, 560 pages	This book covers everything Frontier 4.2 from A to Z. It's not for the
HTML : The Definitive Guide (Nutshell Handbook)	
Chuck Musciano, Bill Kennedy, 552 pages	This book contains a complete, informative reference to all
GIF Animation Studio: Animating Your Web Site	
Richard Koman, 180 pages	There's only one kind of animation that will work on virtually any

To fix this problem we need to select the **Description** object and make it **Expandable**.



The **Description** object is the only object that needs to be made expandable. You don't need to make anything else expandable, including the **Data** tile. (On the other hand, it doesn't hurt anything to make the **Data** tile expandable. Since the **Data** tile doesn't contain any data itself it cannot expand on its own. When a data cell (or other variable height object) expands, the tile it is placed on expands automatically. Although you can make any type of object variable height, it only makes sense for objects that can contain variable height data—data cells, auto-wrap text, and flash art.)

Now that the Description object is expandable we get a very nice printed report that even Goldilock's could love — each record is not too long, not too short, but just right.

Windows Annoyances

David A. Karp, 280 pages

Windows is full of all kinds of oddities and frustrating behavior. This book is full of complaints, but it is also full of positive suggestions for getting around the roadblocks. Some of the suggestions are simple, but little known, while others are much more technical. Covers Windows 95 and NT 4.0, though of course much of the material also applies to Windows 98. Don't read this as your first Windows book, but after you've been using Windows for a while you'll get a lot out of this relatively slim book.

Designing for the Web : Getting Started in a New Medium

Jennifer Niederst, Edie Freedman, 180 pages

This book provides an excellent introduction to HTML. It is especially targeted towards graphic artists. Unlike many other HTML books that are heavy enough to use as lethal weapons, Ms. Niederst has filtered out the essentials that you really need to know first, while leaving out the overwhelming mass of detail that is usually included in most other web tutorials. (When using this book with SiteWarrior, keep in mind that SiteWarrior automatically adds the document header and footer for you, so you don't need to worry about including the <html>, <head>, <title> and <body> tags.)

Although this book is an excellent introduction to HTML, it does not cover more advanced topics. The biggest omission is tables, which are mentioned, but not explained. Nevertheless, this is one of the best books on the market for someone who is just getting started with HTML for the first time.

Getting Connected : The Internet at 56K and Up

Kevin Dowd, Mike Loukides, 410 pages

If you want to move beyond dial-up and move into the arcane world of ISDN, Fractional T-1, Frame Relay, T-1, routers, and other arcane technology, this book is the guide you'll need. I won't claim that I understood all this technology after reading this book, but at least I had some idea of what was going on. And when installing our Frame Relay connection, I was able to find the clue that got our router talking to the ISP's Cisco router in this book, after the ISP was stuck for three days. Fortunately, it's worked perfectly every since!

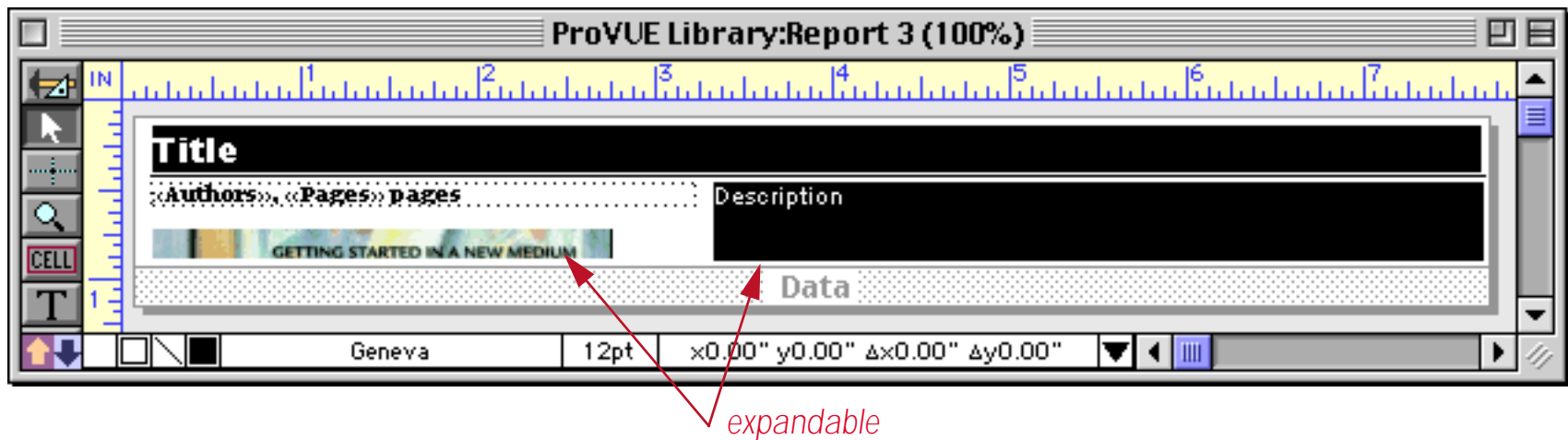
Frontier: The Definitive Guide

Matt Neuburg, 560 pages

This book covers everything Frontier 4.2 from A to Z. It's not for the faint of heart, but if you want to master Frontier, this book is complete and clear. The approach is much like a college class, starting with fundamentals and gradually building up to more advanced topics - leaving nothing out. In other words, this isn't a "Learning Frontier for Dummies" or "Build Web Sites With Frontier in 20 Minutes."

The Frontier web stuff is in a couple of chapters at the back. I was suprised at how little Frontier has in the way of web support. Though you could do many things with it, you really have to do a lot of programming to make web sites happen, especially compared to SiteWarrior. When I got a chance to meet Matt Neuburg at a trade show and show him SiteWarrior, he said "That's how Frontier should work!"

It's possible to place two or more expandable objects side-by-side in a form. This report contains two expandable objects: a Flash Art SuperObject and a Data Cell.



When you place expandable objects side-by-side, it's important to make sure that the bottom edges of the expandable objects are perfectly aligned. You can make sure they are aligned properly with the **Align Objects** command (see "[Aligning Objects](#)" on page 553). When the objects are perfectly aligned Panorama will adjust the form for the largest object. In this example either the Flash Art or the text may be larger — the form will be adjusted for whichever is larger.

Windows Annoyances
 David A. Karp, 280 pages



image is larger

Windows is full of all kinds of oddities and frustrating behavior. This book is full of complaints, but it is also full of positive suggestions for getting around the roadblocks. Some of the suggestions are simple, but little known, while others are much more technical. Covers Windows 95 and NT 4.0, though of course much of the material also applies to Windows 98. Don't read this as your first Windows book, but after you've been using Windows for a while you'll get a lot out of this relatively slim book.

Designing for the Web : Getting Started in a New Medium
 Jennifer Niederst, Edie Freedman, 180 pages



text is larger

This book provides an excellent introduction to HTML. It is especially targeted towards graphic artists. Unlike many other HTML books that are heavy enough to use as lethal weapons, Ms. Niederst has filtered out the essentials that you really need to know first, while leaving out the overwhelming mass of detail that is usually included in most other web tutorials. (When using this book with SiteWarrior, keep in mind that SiteWarrior automatically adds the document header and footer for you, so you don't need to worry about including the <html>, <head>, <title> and <body> tags.)

Although this book is an excellent introduction to HTML, it does not cover more advanced topics. The biggest omission is tables, which are mentioned, but not explained. Nevertheless, this is one of the best books on the market for someone who is just getting started with HTML for the first time.

Getting Connected : The Internet at 56K and Up
 Kevin Dowd, Mike Loukides, 410 pages

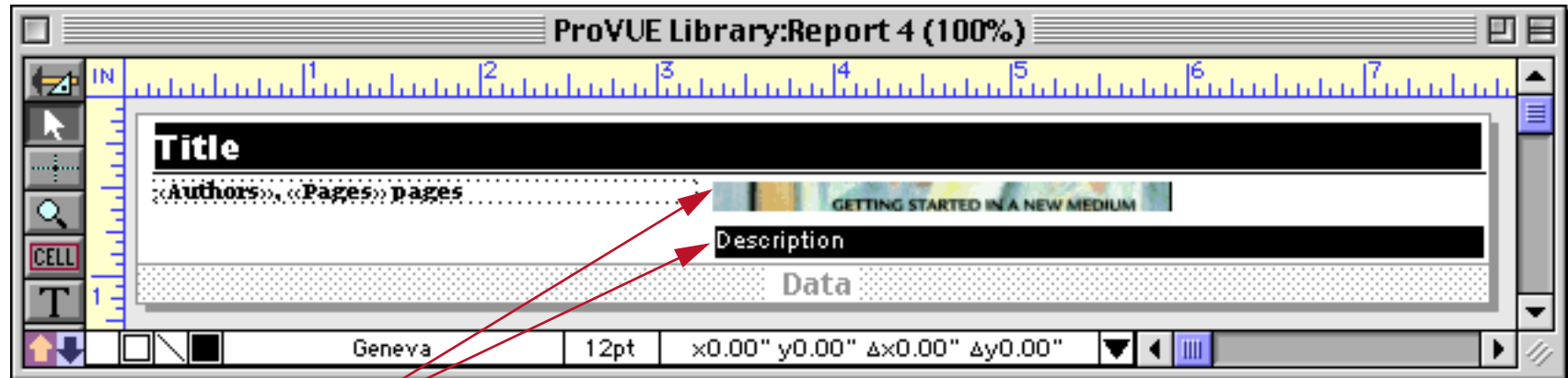


If you want to move beyond dial-up and move into the arcane world of ISDN, Fractional T-1, Frame Relay, T-1, routers, and other arcane technology, this book is the guide you'll need. I won't claim that I understood all this technology after reading this book, but at least I had some idea of what was going on. And when installing our Frame Relay connection, I was able to find the clue that got our router talking to the ISP's Cisco router in this book, after the ISP was stuck for three days. Fortunately, it's worked perfectly every since!

Any graphic element below an expandable object will shift downward as the expandable object expands. Any graphic element surrounding a variable height object will expand as that object expands. For instance, if a variable height cell has a box around it, the box will expand automatically as the cell expands. You don't need to check the **Expandable** option for the box.

Stacking Variable Height Objects

In the previous section expandable objects were arranged side by side. You can also stack variable height items vertically.



expandable

As each cell expands, it shifts the material below it, including any other expandable objects.

<p>JavaScript: The Definitive Guide David Flanagan, Dan Shafer, 776 pages</p>	 <p>As usual for an O'Reilly publication, this book provides a comprehensive reference for the topic. It's probably not the best learning tool for JavaScript, but you'll want it nearby once you get into JavaScript coding.</p>
<p>Javascript Bible Danny Goodman, 607 pages</p>	 <p>JavaScript is one of the most powerful features in today's browsers, yet most HTML coders don't know how to use it. Although JavaScript is a full programming language, Danny Goodman does an excellent job of explaining JavaScript in a way that will be understandable to most technically minded HTML authors.</p> <p>The book is full of detailed explanations and real examples you can try for yourself. One of the best features of the book is the coverage of different browsers and how JavaScript works on each. If you want to use JavaScript on your web site, I highly recommend this book.</p>

You can arrange expandable objects horizontally or vertically, but not both horizontally and vertically in the same report. The result of such a combination is usually unpredictable.

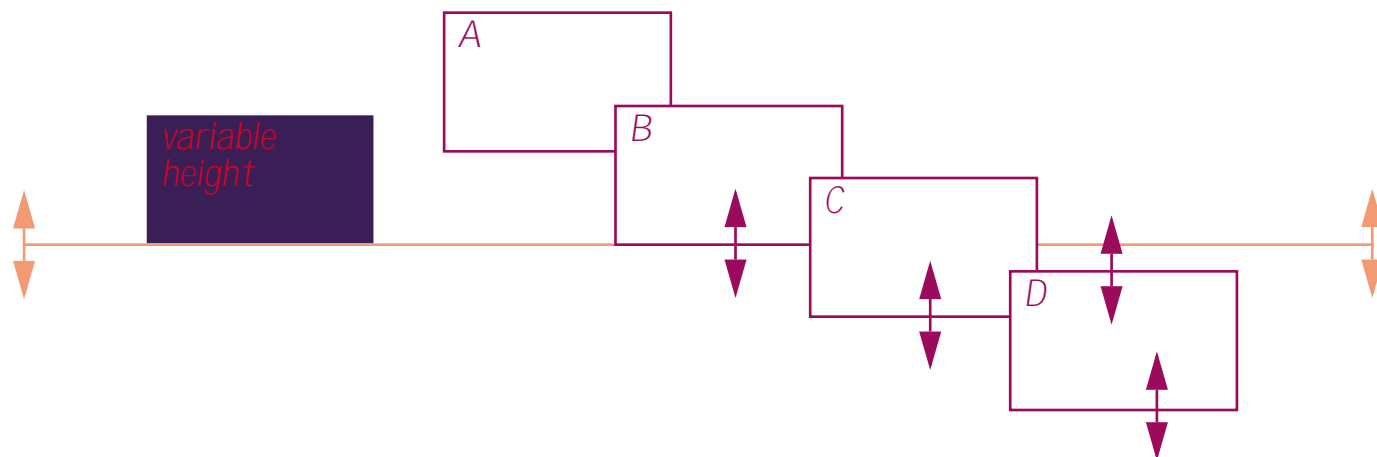
The Expand/Shrink Option

Expandable cells can grow to accommodate large amounts of data, but they can never get smaller. The **Expand/Shrink** option allows variable height objects to both grow and shrink as the data changes. If there is no data at all the object will shrink to nothing and disappear! In fact, this ability to make an object disappear completely is the main advantage of this option. If you don't need the object to disappear completely we recommend using the **Expandable** option.

Expand/Shrink objects can be stacked vertically in a column, but they should never be placed side by side. When expand/shrink objects are placed side by side they fight each other and the result is unpredictable. In fact, you must be careful when placing an **Expand/Shrink** object next to anything else. You may find that an object placed next to an **Expand/Shrink** object also disappears, which is probably not what you had intended.

Mixing Variable Height Objects With Other Graphics

When variable height objects are mixed with other objects, the variable height objects can force the other objects to move or change size. The illustration below shows this effect. On the left is a variable height data cell. The illustration shows how four other graphic objects are affected by the variable height object.



When a variable height object expands or shrinks, everything in the area below the object (shown in gray) is affected. How the other objects are affected depends on their location relative to the gray area.

Object A is completely above the gray area. It isn't affected by the variable height data cell.

Object B touches the gray area, so it expands and shrinks in step with the variable height object.

Object C straddles the gray area, so it also expands and shrinks. If it shrinks too much it will disappear completely! (Of course that could be exactly what you want.)

Object D is completely in the gray area, so it slides up and down as the variable height object expands and contracts. It does not change size, however.

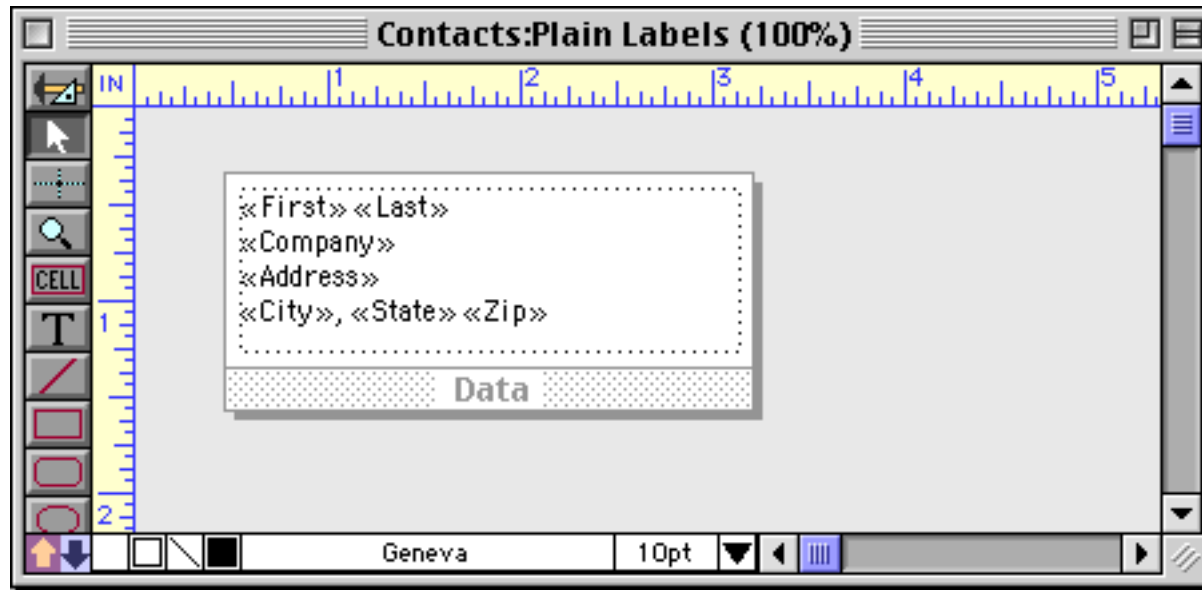
If there is more than one variable height object, the effect is cumulative. Panorama starts with the first variable height object (closest to the back) and works its way toward the front. For each variable height object the new height is calculated and all the other objects are adjusted.

These rules apply to other variable height objects as well as fixed height objects. If a second variable height object is partly or completely below another variable height object, it will be adjusted when the original variable height object expands or shrinks. You can use these rules to predict how unusual combinations of variable height objects will interact.

Printing Multiple Column Reports

If the data tile is less than half the width of the page Panorama can print a two column report. If the data tile is less than 1/3 of the page width Panorama can print a three column report. Multiple column reports can be used to print mailing labels, or to print multiple column catalogs, lists, and directories.

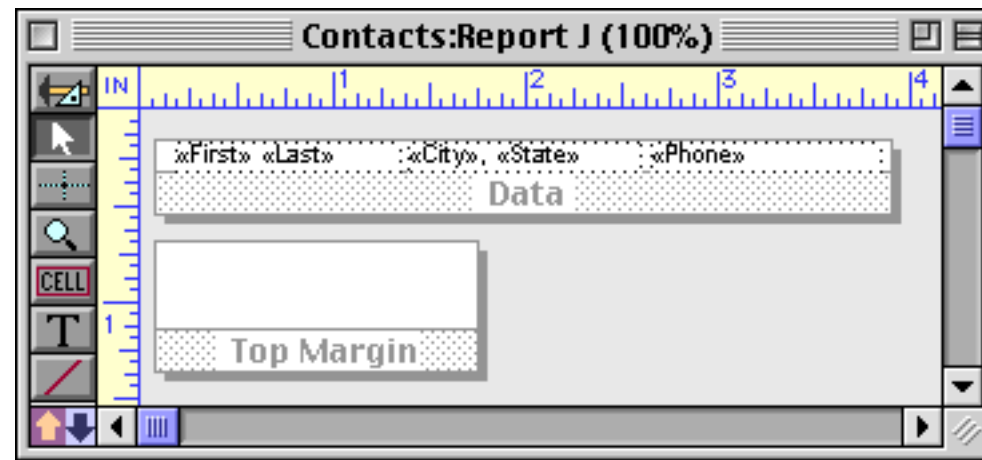
For example, the data tile on this form is just about 1/3 page.



When you print this form it will look like this.

John Smith Acme Widgets 12 Harmony Lane Suite 15	Don Harmon Sudderth Video 415 Sudderth Ruidoso, NM 88345	David Blair DB Printing 869 W. Temple Lenox, IA 50851
Susan Brown 783 Algonquin Newport Beach, CA 93459	Abe Fierstein Van Nuys Lumber 1571 Haskell Van Nuys, CA 91409	Keith Baker Northgate Video 552 Northgate Lindenhurst, IL 60046
Karen Wilson Evanston Lumber 498 Noyes Evanston, IL 60201	Randy Cross Randy's Appliances 133 Hunt Rd Chelsford, MA 01824	John Sloan 79 Danube Way Olympia Fields, IL 60461
Jim Nickle Jim's Appliances 14189 8th Newhall, CA 91321	Jeffrey Rodman 2 Cary Rd Chestnut Hill, MA 02167	Guy Porter St. Louis Lumber 8702 Pershing St. Louis, MO 63107

Here's another report where the Data tile is just less than half of the page width.



Panorama will print a two-up report, like this.

Keith Baker	Lindenhurst, IL		Jeannette Mulder	Irving, TX	
Nabil Basir	Armonk, NY		David Murray	Westport, CT	
John Bath	Mendota Heights, IL	(612) 451-1121	Jim Nickle	Newhall, CA	(805) 259-4093
Jack Beardsley	Toledo, OH		Logan Nourse	Palo Alto, CA	
Carl Berg	New Haven, CT	(203) 624-3367	Sam Pack	Inverness, IL	
Leslie Bianchi	Lexington, MA		Michael Paine	Pullman, WA	
Mary Bilbury	Beverly Hills, CA		David Peters	Concord, CA	
Joseph Bizzami	Westchester, IL		Charles Pierce	Midland, TX	
David Blair	Lenox, IA		Guy Porter	St. Louis, MO	
Al Bodner	Clifton Park, NY		Jim Pyle	Roseville, CA	
Jerry Boone	Traverse City, MI		Sari Rattner	Seattle, WA	
Jerry Bowen	Highland, CA		Bud Roble	Riverside, CA	
Yvonne Broach	Houston, TX		Jeffrey Rodman	Chestnut Hill, MA	
Susan Brown	Newport Beach, CA		Chuck Rouse	Hays, KS	
Tom Cane	Dublin, CA	(415) 833-8577	Janel Rundlett	Kansas City, KS	
David Cohn	Buffalo Grove, IL		Ed Ruth	Chicago, IL	
Michael Cox	Dallas, TX		Peter Schug	Bronx, NY	
Anne Crane	Grosse Pointe		Jules Silk	Cheltenham, PA	
Randy Cross	Chelsford, MA		Peter Silvers	New Orleans, LA	
Thomas Cupal	Ann Arbor, MI		John Sloan	Olympia Fields, IL	
Charles Dalbert	New York, NY		John Smith	Huntington Beach, CA	(999) 555-1234
Steve Dallas	Creve Coeur, MO	(314) 993-4251	Brian Smith	Hollister, CA	

Across or Down?

When printing a multiple column report Panorama normally prints the entire first column, then goes back to the top of the second column, prints the entire column, goes to the top of the third column and prints it and on and on for all of the columns in the report.

Keith Baker	Lindenhurst, IL		Jeannette Mulder	Irving, TX	
Nabil Basir	Armonk, NY		David Murray	Westport, CT	
John Bath	Mendota Heights, IL	(612) 451-1121	Jim Nickle	Newhall, CA	(805) 259-4093
Jack Beardsley	Toledo, OH		Logan Nourse	Palo Alto, CA	
Carl Berg	New Haven, CT	(203) 624-3367	Sam Pack	Inverness, IL	
Leslie Bianchi	Lexington, MA		Michael Paine	Pullman, WA	
Mary Bilbury	Beverly Hills, CA		David Peters	Concord, CA	
Joseph Bizzari	Westchester, IL		Charles Pierce	Midland, TX	
David Blair	Lenox, IA		Guy Porter	St. Louis, MO	
Al Bodner	Clifton Park, NY		Jim Pyle	Roseville, CA	
Jerry Boone	Traverse City, MI		Sari Rattner	Seattle, WA	
Jerry Bowen	Highland, CA		Bud Roble	Riverside, CA	
Yvonne Broach	Houston, TX		Jeffrey Rodman	Chestnut Hill, MA	
Susan Brown	Newport Beach, CA		Chuck Rouse	Hays, KS	
Tom Cane	Dublin, CA	(415) 833-8577	Janel Rundlett	Kansas City, KS	
David Cohn	Buffalo Grove, IL		Ed Ruth	Chicago, IL	
Michael Cox	Dallas, TX		Peter Schug	Bronx, NY	
Anne Crane	Grosse Pointe		Jules Silk	Cheltenham, PA	
Randy Cross	Chelsford, MA		Peter Silvers	New Orleans, LA	
Thomas Cupal	Ann Arbor, MI		John Sloan	Olympia Fields, IL	
Charles Dalbert	New York, NY		John Smith	Huntington Beach, CA	(999) 555-1234
Steve Dallas	Creve Coeur, MO	(314) 993-4251	Brian Smith	Hollister, CA	

If you want Panorama to print the data row by row instead of column by column, open the **Report Preferences** dialog (in the Setup menu) and switch to **Across** instead of **Down**.

Report Preferences

Multiple Column Labels/Reports

of Columns 1 2 3 4 Auto

Direction Down Across

Here is the exact same report but with the **Across** option enabled.

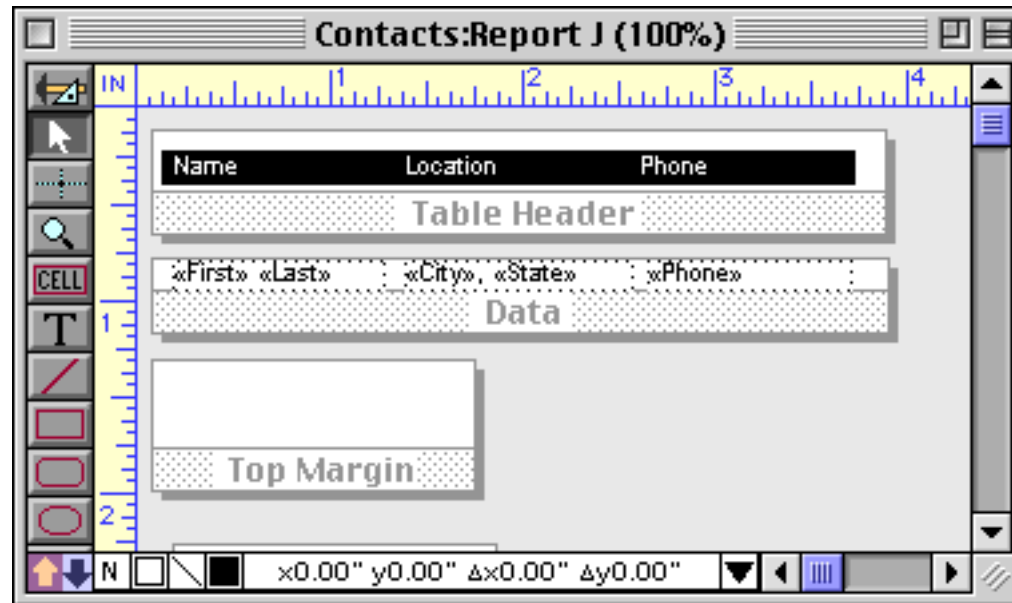
Keith Baker	Lindenhurst, IL		Nabil Basir	Armonk, NY	
John Bath	Mendota Heights, IL	(612) 451-1121	Jack Beardsley	Toledo, OH	
Carl Berg	New Haven, CT	(203) 624-3367	Leslie Bianchi	Lexington, MA	
Mary Bilbury	Beverly Hills, CA		Joseph Bizzari	Westchester, IL	
David Blair	Lenox, IA		Al Bodner	Clifton Park, NY	
Jerry Boone	Traverse City, MI		Jerry Bowen	Highland, CA	
Yvonne Broach	Houston, TX		Susan Brown	Newport Beach, CA	
Tom Cane	Dublin, CA	(415) 833-8577	David Cohn	Buffalo Grove, IL	
Michael Cox	Dallas, TX		Anne Crane	Grosse Pointe	
Randy Cross	Chelsford, MA		Thomas Cupal	Ann Arbor, MI	
Charles Dalbert	New York, NY		Steve Dallas	Creve Coeur, MO	(314) 993-4251

The **Across** option is often the way you'll want to print mailing labels, and is automatically enabled when you create labels with the **QuickLabel** dialog (see "[The QuickLabel Dialog](#)" on page 1169).

Table Header and Table Footer Tiles

The Table Header and Table Footer tiles allow you to print a header and/or footer at the top and bottom of each column in a multiple column report. Unlike the regular header and footer tiles (see “[Header Tile](#)” on page 1091 and “[Footer Tile](#)” on page 1099) which are only printed once per page, the Table Header and Table Footer tiles are printed once for each column. You can combine the Table Header/Footer tiles with regular Header/Footer tiles if you wish, using the regular Header/Footer tiles for page numbers and overall page titles while using the Table Header/Footer tiles to create headers for each column.

Here is an example of a form with a table header.



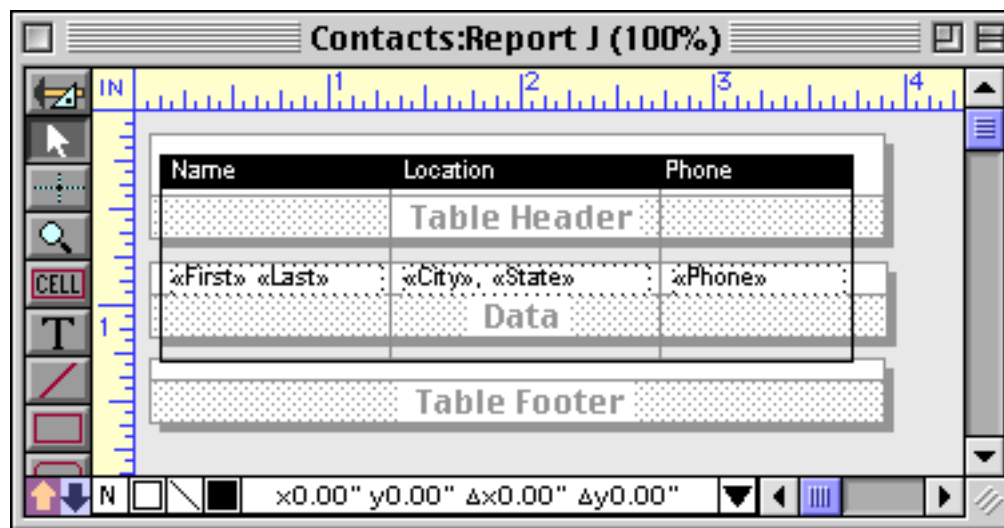
When the form is printed, the table header appears at the top of each column.

Name	Location	Phone	Name	Location	Phone
Keith Baker	Lindenhurst, IL		Mike Kuenning	Malvern, PA	
Nabil Basir	Armonk, NY		Scott Lay	Portland, OR	
John Bath	Mendota Heights, IL	(612) 451-1121	Wes Lemarr	Rutherford, NJ	
Jack Beardsley	Toledo, OH		Jerry Levan	Richmond, KY	
Carl Berg	New Haven, CT	(203) 624-3367	Tom Long	Austin, TX	(512) 474-1587
Leslie Bianchi	Lexington, MA		Tom Love	Woodbury, CT	
Mary Bilbury	Beverly Hills, CA		Nadine Lucas	San Francisco, CA	
Joseph Bizzari	Westchester, IL		John Maguire	Akron, OH	
David Blair	Lenox, IA		James Mahan	Los Angeles, CA	
Al Bodner	Clifton Park, NY		John Marshall	Jenison, MI	
Jerry Boone	Traverse City, MI		Don Meadows	Austin, TX	
Jerry Bowen	Highland, CA		Charles Michaels	Upland, CA	
Yvonne Broach	Houston, TX		Steve Miller	Jupiter, FL	
Susan Brown	Newport Beach, CA		Tim Moran	Wheaton, IL	
Tom Cane	Dublin, CA	(415) 833-8577	John Moses	San Clemente, CA	
David Cohn	Buffalo Grove, IL		Jeannette Mulder	Irving, TX	
Michael Cox	Dallas, TX		David Murray	Westport, CT	
Anne Crane	Grosse Pointe		Jim Nicke	Newhall, CA	(805) 259-4093
Randy Cross	Chelsford, MA		Logan Nourse	Palo Alto, CA	
Thomas Cupal	Ann Arbor, MI		Sam Pack	Inverness, IL	

This illustration shows how Panorama assembles the Table Header and Data tiles into two columns.

Name	Location	Phone	Name	Location	Phone
Keith Baker	Urbana, IL		Mike Kuenning	Mayfield, PA	
Nabil Basir	Armonk, NY		Scott Lay	Portland, OR	
John Bath	Mendota Heights, IL	(612) 451-1121	Wes Lemarr	Rutherford, NJ	
Jack Beardsley	Toledo, OH		Jerry Levan	Richmond, KY	
Carl Berg	New Haven, CT	(203) 624-3367	Tom Long	Austin, TX	(512) 474-1587
Leslie Bianchi	Lexington, MA		Tom Love	Woodbury, CT	
Mary Bilbury	Beverly Hills, CA		Nadine Lucas	San Francisco, CA	
Joseph Bizzari	Westchester, IL		John Maguire	Akron, OH	
David Blair	Lenox, IA		James Mahan	Los Angeles, CA	
Al Bodner	Clifton Park, NY		John Marshall	Jenison, MI	
Jerry Boone	Traverse City, MI		Don Meadows	Austin, TX	
Jerry Bowen	Highland, CA		Charles Michaels	Upland, CA	
Yvonne Broach	Houston, TX		Steve Miller	Jupiter, FL	
Susan Brown	Newport Beach, CA		Tim Moran	Wheaton, IL	
Tom Cane	Dublin, CA	(415) 833-8577	John Moses	San Clemente, CA	
David Cohn	Buffalo Grove, IL		Jeannette Mulder	Irving, TX	
Michael Cox	Dallas, TX		David Murray	Westport, CT	

Here's a modified version of the same report that includes both Table Header and Table Footer tiles.



This form uses the Table Footer tile to print a bottom border below each column.

Name	Location	Phone	Name	Location	Phone
Keith Baker	Lindenhurst, IL		Mike Kuenning	Malvern, PA	
Nabil Basir	Armonk, NY		Scott Lay	Portland, OR	
John Bath	Mendota Heights, MN	(612) 451-1121	Wes Lemarr	Rutherford, NJ	
Jack Beardsley	Toledo, OH		Jerry Levan	Richmond, KY	
Carl Berg	New Haven, CT	(203) 624-3367	Tom Long	Austin, TX	(512) 474-1587
Leslie Bianchi	Lexington, MA		Tom Love	Woodbury, CT	
Mary Bilbury	Beverly Hills, CA		Nadine Lucas	San Francisco, CA	
Joseph Bizzari	Westchester, IL		John Maguire	Akron, OH	
David Blair	Lenox, IA		James Mahan	Los Angeles, CA	
Al Bodner	Clifton Park, NY		John Marshall	Jenison, MI	
Jerry Boone	Traverse City, MI		Don Meadows	Austin, TX	
Jerry Bowen	Highland, CA		Charles Michaels	Upland, CA	
Yvonne Broach	Houston, TX		Steve Miller	Jupiter, FL	
Susan Brown	Newport Beach, CA		Tim Moran	Wheaton, IL	
Tom Cane	Dublin, CA	(415) 833-8577	John Moses	San Clemente, CA	
David Cohn	Buffalo Grove, IL		Jeannette Mulder	Irving, TX	
Michael Cox	Dallas, TX		David Murray	Westport, CT	
Anne Crane	Grosse Pointe		Jim Nickle	Neuhall, CA	(805) 259-4093
Randy Cross	Chelsford, MA		Logan Nourse	Palo Alto, CA	
Thomas Cupal	Ann Arbor, MI		Sam Pack	Inverness, IL	
Charles Dalbert	New York, NY		Michael Paine	Pullman, WA	
Steve Dallas	Creve Coeur, MO	(314) 993-4251	David Peters	Concord, CA	
Herb Dang	San Francisco, CA		Charles Pierce	Midland, TX	
Tim Daniels	St. Louis, MO		Guy Porter	St. Louis, MO	
Stephen Dempsey	Demarest, NJ		Jim Pyle	Roseville, CA	
Mark Dockum	Camarillo, CA		Sari Rattner	Seattle, WA	
Joseph Doll	Shaker Heights, OH	(216) 751-1432	Bud Roble	Riverside, CA	
Patrick Doud	Convent Station, NJ		Jeffrey Rodman	Chestnut Hill, MA	
Mary Doyle	Redwood City, CA		Chuck Rouse	Hays, KS	
John Draper	Hampton, NH		Janel Rundlett	Kansas City, KS	
Joel Dye	Carrollton, TX		Ed Ruth	Chicago, IL	
John Fabian	Woodstock, VT		Peter Schug	Bronx, NY	
Brian Felty	Lubbock, TX		Jules Silk	Cheltenham, PA	
Abe Fierstein	Van Nuys, CA		Peter Silvers	New Orleans, LA	
Ramsey French	West Palm Beach, FL		John Sloan	Olympia Fields, IL	
Jeffrey Funk	Flemington, NJ		John Smith	Huntington Beach, CA	(999) 555-1234
Thom Getchell	Menlo Park, CA	(415) 326-3887	Brian Smith	Hollister, CA	
Steve Gibson	St. Peters, MO		Alan Spencer	Northbrook, IL	
Harry Gilmer	Jackson, TN		Frank Stelle	Fort Wayne, IN	(219) 489-3428
Gary Gintz	Seattle, WA		Ed Swanson	Batavia, IL	
David Grudem	Windsor Locks, CT		Lee Tucker	Mountain View, CA	
Bela Hackman	Memphis, TN		Pat Turner	Davis, CA	
Bob Hanlan	Ann Arbor, MI		Steve West	Fountain, CO	
Dick Hardlee	Plano, TX		Karen Wilson	Evanston, IL	
Don Harmon	Ruidoso, NM		Jerry Wilson	Sand Springs, OK	(918) 245-4363
Craig Heath	North Chili, NY		Gregory Wing	Newton Centre, MA	
Tim Henry	Suffolk, VA		William Wong	South San Francisco, CA	
Brad Hess	Brooklyn, NY		Raymond Wood	Slaton, TX	
Cheryll Howell	Gray, ME		Victor Yalom	San Francisco, CA	
Henry Hultquist	Lincoln, NE		Peter Yarensky	Dover, NH	
Steve Jackson	Ann Arbor, MI	(313) 761-4243			
Glen Knock	South Portland, ME				
Kovacs	Demarest, NJ				

Notice that unlike the regular Footer tile (see “[Footer Tile](#)” on page 1099) there is no gap between the last data tile and the column footer tile. (In this example the second column is shorter than the first because there weren’t enough data records to fill the entire page. The height of each column will always be the same except for the last column on the last page.)

Harry Gilmer	Jackson, TN		Frank Stelle	Fort Wayne, IN	(219) 489-3428
Gary Gintz	Seattle, WA		Ed Swanson	Batavia, IL	
David Grudem	Windsor Locks, CT		Lee Tucker	Mountain View, CA	
Bela Hackman	Memphis, TN		Pat Turner	Davis, CA	
Bob Hanlan	Ann Arbor, MI		Steve West	Fountain, CO	
Dick Hardlee	Plano, TX		Karen Wilson	Evanston, IL	
Don Harmon	Ruidoso, NM		Jerry Wilson	Sand Springs, OK	(918) 245-4363
Craig Heath	North Chili, NY		Gregory Wing	Newton Centre, MA	
Tim Henry	Suffolk, VA		William Wong	South San Francisco,	
Brad Hess	Brooklyn, NY		Raymond Wood	Slaton, TX	
Cheryll Howell	Gray, ME		Victor Yalom	San Francisco, CA	
Henry Hultquist	Lincoln, NE		Peter Yarensky	Dover, NH	
Steve Jackson	Ann Arbor, MI	(313) 761-4243			
Glen Knock	South Portland, ME				
Kovacs	Demarest, NJ				
Table Footer			Table Footer		

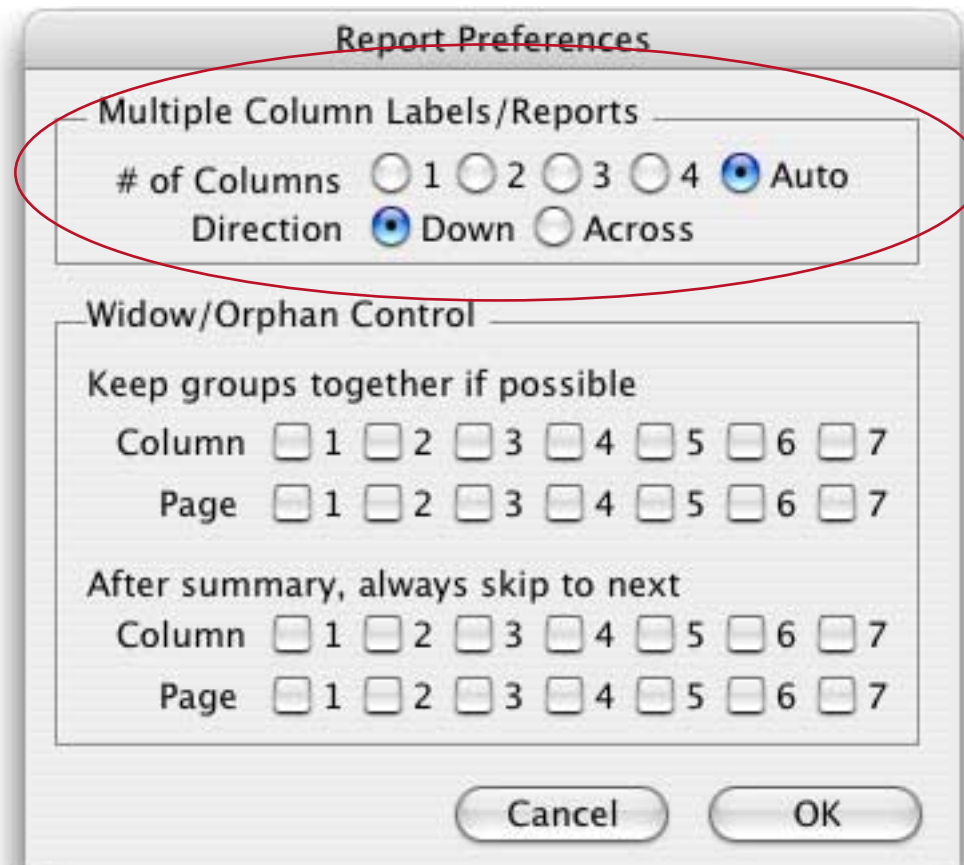
However, if the form does contain a regular Footer tile there may be a gap between the bottom of the Table Footer tile and the top of the Footer tile. Here’s an example showing a report with both a Table Footer and a regular Footer tile. The regular Footer tile is being used to print the page number (see “[Page Numbers](#)” on page 1100).

Don Harmon	Ruidoso, NM		Jerry Wilson	Sand Springs, OK	(918) 245-4363
Craig Heath	North Chili, NY		Gregory Wing	Newton Centre, MA	
Tim Henry	Suffolk, VA		William Wong	South San Francisco,	
Brad Hess	Brooklyn, NY		Raymond Wood	Slaton, TX	
Cheryll Howell	Gray, ME		Victor Yalom	San Francisco, CA	
Henry Hultquist	Lincoln, NE		Peter Yarensky	Dover, NH	
Steve Jackson	Ann Arbor, MI	(313) 761-4243			
Glen Knock	South Portland, ME				
Kovacs	Demarest, NJ				
Table Footer			Table Footer		
- 1 -					
Footer					

Usually table header and footer tiles are combined with the normal header and footer tiles for printing the report title, date, and page numbers.

Controlling the Number of Columns

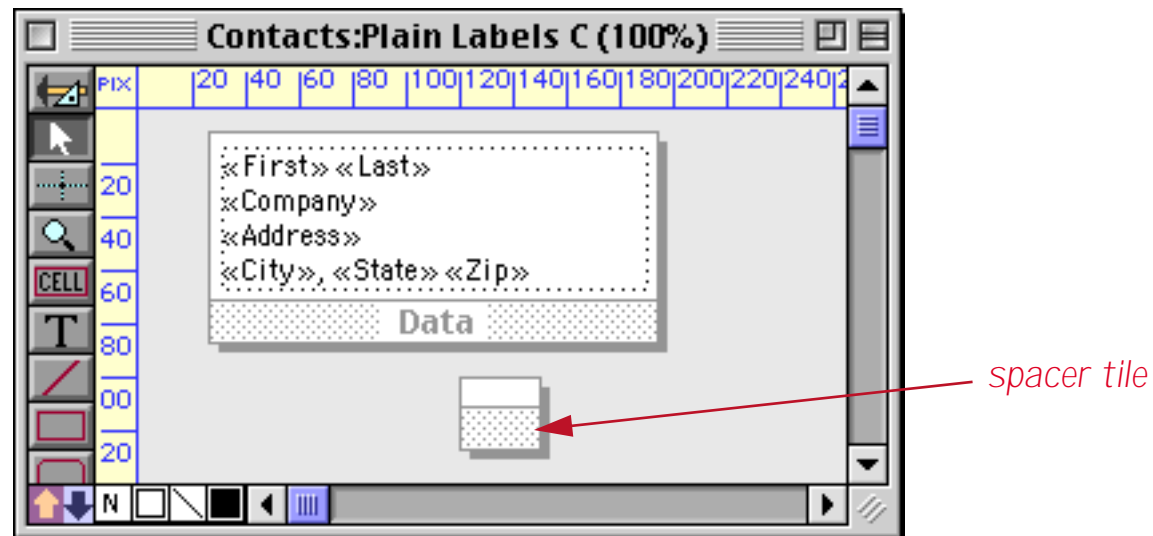
Panorama normally packs in as many columns as it can based on the width of the data tile. However, you can override the number of columns with the **Report Preferences** dialog in the Setup menu.



Picking **1**, **2**, **3**, or **4** forces the number of columns. Panorama will use the number of columns you specify even if the columns won't fit on the page. This is usually useful when the number of columns you want to fit almost fits on the page, but not quite. There's no point in printing four columns when only three will fit — the extra column will simply be invisible. Pick **Auto** to let Panorama choose the number of columns based on the width of the data tile.

Spacer Tile

The spacer tile is rarely used. Panorama normally packs the data tiles as close to each other as possible. The spacer tile allows you to spread the data tiles apart. When printing a multiple column report, Panorama will spread the columns apart by the width of the spacer tile. Vertically, each data tile will be spread apart by the height of the spacer. Horizontally, each data tile will be spread apart by the width of the spacer. Here's an example of a form with a spacer tile.



When the form is printed, Panorama inserts the Spacer tile in between the Data tiles. Notice, however, that there are no spacer tiles to the right of the last column. This slightly reduces the overall width of the report, possibly allowing you to squeeze in that extra column.

Keith Baker Northgate Video 552 Northgate Lindenhurst, IL 60046	Jerry Boone 6125 Park Drive Traverse City, MI 49684	Charles Dalbert New York Lumber 171 Broadway New York, NY 10003
Data	Data	Data
Nabil Basir Armonk Lumber 12 Upland Lane Armonk, NY 10504	Jerry Bowen Peacock Video 2847 Peacock Highland, CA 92346	Steve Dallas Chaminade Video 1 Chaminade Creve Coeur, MO 63141
Data	Data	Data
John Bath J.B. Plumbing 8864 Ave Mendota Heights, MN 55118	Yvonne Broach 9330 Poitiers Houston, TX 77071	Herb Dang Herb's Appliances 206 Phelps St San Francisco, CA 94124
Data	Data	Data

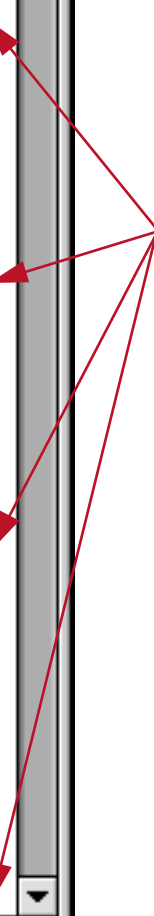
For most reports, this same spreading effect can be obtained by increasing the size of the data tile. If you are using automatic multiple columns however, increasing the size of the data tile doesn't always work, because it may force the last column into the right margin. If that happens, Panorama won't print the final column. The spacer tile allows you to spread the columns apart while still printing the maximum number of columns. Remember, the only time you may need the spacer tile is when you are printing reports with automatic multiple columns. You can also force the number of columns with the **Report Preferences** dialog (see previous section).

Printing Summary Information

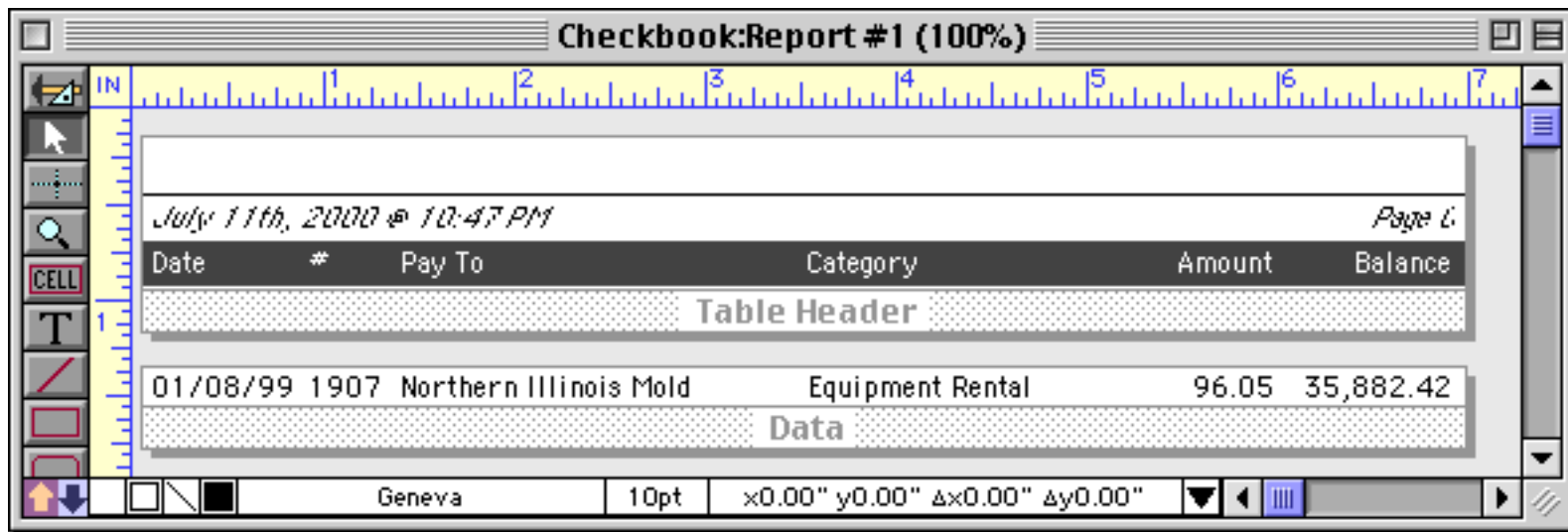
In the chapter “[Summaries and Outlines](#)” on page 365 you learned how to take a database and group it into categories and then summarize those categories. The summary information (totals, averages, etc.) appears in temporary new summary records that temporarily become part of the database, like this.

Date	CkNum	PayTo	Category	Debit
07/16/99	2185	Railroad Model Craftsma	Advertising	453.42
07/18/99	2199	New Direction	Advertising	112.48
07/19/99	2203	Model Railroader	Advertising	110.00
07/20/99	2205	Advertiser's Mailing Ser	Advertising	27.00
07/24/99	2206	Sir Speedy	Advertising	142.40
07/24/99	2209	Advertiser's Mailing Ser	Advertising	500.00
07/24/99	2211	Railroad Model Craftsma	Advertising	453.42
08/13/99	2227	Page One	Advertising	92.05
08/14/99	2237	Advertiser's Mailing Ser	Advertising	500.00
08/29/99	2257	Advertiser's Mailing Ser	Advertising	425.00
09/06/99	2266	Advertiser's Mailing Ser	Advertising	495.41
09/18/99	2271	Railroad Model Craftsma	Advertising	453.42
09/19/99	2283	Caboose Gazette	Advertising	1,990.10
09/26/99	2297	AC Label Company	Advertising	205.97
09/28/99	2298	Graphic Depot	Advertising	344.00
09/28/99	2299	Advertiser's Mailing Ser	Advertising	167.00
Advertising				34,516.82
02/01/99	1938	Unocal	Auto	182.59
02/09/99	1968	Unocal	Auto	57.62
03/16/99	2007	Unocal	Auto	33.32
05/24/99	2111	Unocal	Auto	119.05
07/16/99	2189	Unocal	Auto	38.11
07/24/99	2213	Unocal	Auto	34.44
08/20/99	2240	Unocal	Auto	89.91
Auto				555.04
01/08/99	1907	Northern Illinois Mold	Equipment Rental	96.05
02/09/99	1950	Pitney Bowes	Equipment Rental	73.14
04/23/99	2063	Pitney Bowes	Equipment Rental	79.69
05/24/99	2137	Pitney Bowes	Equipment Rental	25.75
05/24/99	2141	Pitney Bowes	Equipment Rental	79.69
08/21/99	2251	Pitney Bowes	Equipment Rental	198.00
08/21/99	2253	Pitney Bowes	Equipment Rental	79.69
Equipment Rent:				632.01
02/09/99	1952	GECC	Fixed Assets	428.39
05/02/99	2072	GECC	Fixed Assets	704.00
05/24/99	2112	GECC	Fixed Assets	74.00
06/14/99	2158	C M S	Fixed Assets	1,168.75
07/03/99	2175	GECC	Fixed Assets	250.00
07/18/99	2200	SSG LaserWorks	Fixed Assets	793.00
08/21/99	2243	GECC	Fixed Assets	725.00
09/18/99	2275	T.W. Bender Group	Fixed Assets	2,814.33
09/19/99	2280	GECC	Fixed Assets	352.00
09/26/99	2296	TesLabe	Fixed Assets	2,465.00
Fixed Assets				9,774.47

summary records



In an ordinary report these summary records are printed just like any other record – in other words, they are printed with the data tile. Here’s an example of a typical form with a data tile.



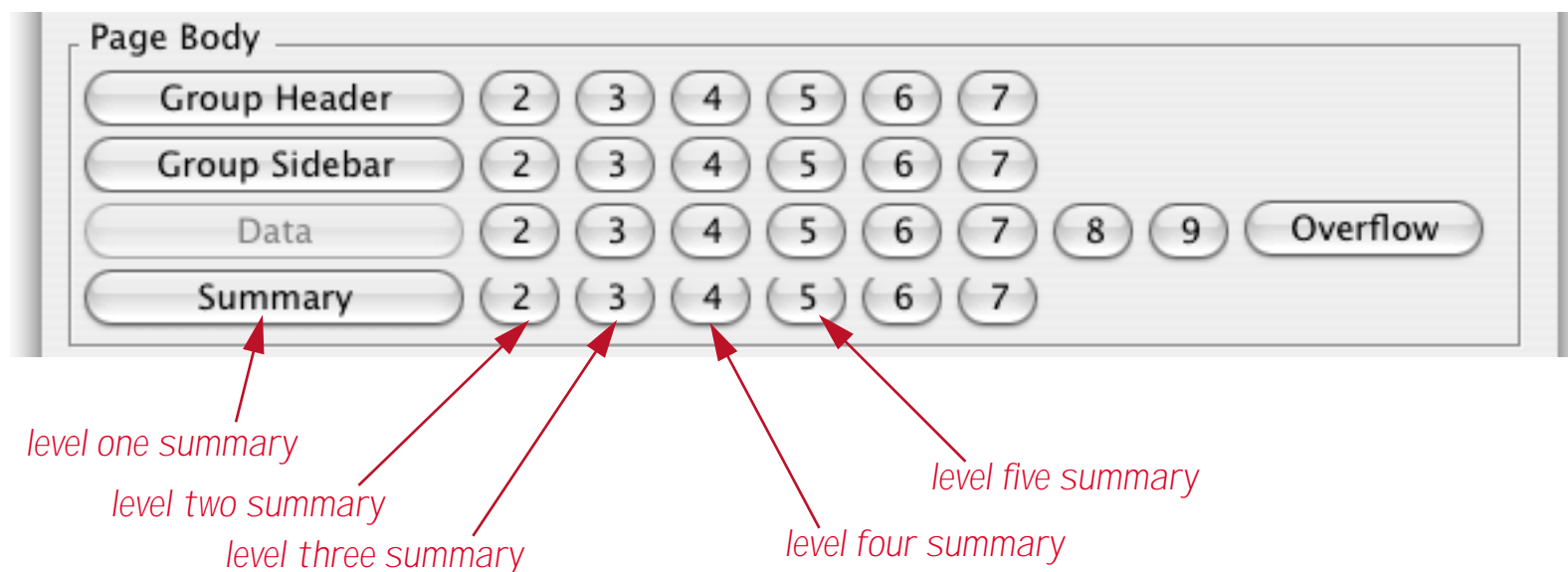
Here’s a page from the printout, with the summary records circled in red. As you can see, the summary records are formatted exactly the same way as the regular data records.

<i>July 11th, 2000 @ 10:47 PM</i>						<i>Page 4</i>
Date	#	Pay To	Category	Amount	Balance	
09/19/99	2285	Sherman Douglas Ins	Insurance	161.00	61,567.10	
			Insurance	8,234.53	0.00	
01/16/99	1910	Coudert Brothers, Attorney's	Legal Fees	223.52	35,193.10	
02/09/99	1948	California Secretary Of State	Legal Fees	5.00	21,817.37	
02/09/99	1949	City Of Caboose	Legal Fees	90.00	21,727.37	
05/24/99	2121	Coudert Brothers/Attorney's	Legal Fees	799.55	49,799.79	
06/05/99	2155	State Of California	Legal Fees	5.00	51,530.16	
06/14/99	2159	Commonwealth Of	Legal Fees	10.00	58,056.21	
07/16/99	2194	XL Corporation	Legal Fees	155.00	49,684.63	
			Legal Fees	1,288.07	0.00	
02/09/99	1964	Copierland	Maintenance	310.00	17,113.53	
03/01/99	1986	Boyer & Ambrose Carpet	Maintenance	87.50	14,196.18	
03/12/99	2002	Boyer & Ambrose Carpet	Maintenance	156.35	8,988.30	
03/29/99	2037	Priority One Computers	Maintenance	496.40	21,349.77	
03/29/99	2046	Executive Surveillance	Maintenance	132.00	19,370.06	
04/24/99	2067	Boyer & Ambrose Carpet	Maintenance	132.00	31,336.38	
05/08/99	2090	ServiceWorld	Maintenance	265.63	40,460.26	
05/24/99	2114	ET S	Maintenance	49.00	51,641.24	
05/24/99	2116	Sun Computers	Maintenance	282.00	51,091.39	
05/24/99	2139	Pitney Bowes	Maintenance	140.00	43,941.69	
05/29/99	2149	Sun Computers	Maintenance	276.00	52,038.36	
06/05/99	2157	Sun Computers	Maintenance	101.25	51,408.96	
06/21/99	2167	Dial One	Maintenance	267.13	56,654.66	
07/16/99	2190	Executive Surveillance	Maintenance	168.00	50,229.71	
07/24/99	2214	J & M Fire Extinguisher	Maintenance	38.19	41,952.07	
08/08/99	2220	Newport Buidling &	Maintenance	120.00	49,321.22	
08/21/99	2252	Vint Pest Control	Maintenance	120.00	54,797.48	
09/18/99	2270	Computek Computer	Maintenance	100.00	69,777.93	
09/18/99	2274	Boyer & Ambrose Carpet	Maintenance	432.54	68,392.35	
			Maintenance	3,673.99	0.00	
01/16/99	1911	Paramount Stationers	Office Supplies	185.84	35,087.26	
01/22/99	1919	Cannon Astro	Office Supplies	145.72	24,693.23	
01/25/99	1921	Nebs	Office Supplies	77.27	22,730.56	
01/25/99	1922	Ramona Drinking Water	Office Supplies	98.10	22,632.46	
02/01/99	1935	Copierland	Office Supplies	137.04	27,721.02	

If you want the summary records to print differently from regular data records you'll need to add additional **summary report tiles** to your database (described in the next section). The use of these specialized tiles is strictly optional. If the report does not contain any summary tiles, Panorama will print summary records as if they were ordinary data records. For many reports this is just fine. If, however, you choose to use the specialized summary tiles, you can independently control how each summary level will be printed.

Summary Tiles

A summary tile works just like a data tile, except that the summary tile is used only when Panorama prints a summary record. Since a database may have up to 7 levels of summary records, a report may contain up to 7 summary tiles. For example, you could use summary tiles to print the data in 12 point Helvetica, subtotals (level 1) in 14 point and the grand total (level 2) in 18 point. Summary tiles are created with the **Specialized Tile** configuration dialog.



When Panorama is about to print a summary record, it checks to see if the report has a summary tile for that level. If it does, that summary tile will be placed in the report instead of the data tile. If there is no corresponding summary tile, Panorama will look for summary tiles corresponding to a lower summary level. If it finds such a tile, Panorama will use it to print the summary record. If Panorama doesn't find a lower level summary tile, it gives up and uses the data tile to print the summary record.

The easiest way to create summary tiles is dragging to make a copy of the data tile (see “[Drag Duplicating](#)” on page 561). Once the new tile is created, you can double click on the tile’s name to open the configuration dialog and convert it from a data tile into the appropriate level summary tile. Here is an example of a report with two summary tiles - one for subtotals and one for the grand total.

Date	#	Pay To	Category	Amount	Balance
Table Header					
			Auto	555.04	0.00
Data					
			Auto	555.04	0.00
Summary (1)					
			GRAND TOTAL	555.04	0.00
Summary (2)					

Here is one page from the report that is printed by this form (assuming that the database has already been grouped by the **Category** field (see "**STEP 1 - GROUP**" on page 394) and totaled by the **Amount** field (see "**STEP 2 - CALCULATE**" on page 398).

<i>July 11th, 2000 @ 10:55 PM</i>					<i>Page 4</i>
Date	#	Pay To	Category	Amount	Balance
08/21/99	2245	Maryland Casualty	Insurance	147.78	55,454.15
08/29/99	2260	Blue Cross Of Calif	Insurance	177.85	49,716.67
09/13/99	2269	Employers Health	Insurance	284.44	69,877.93
09/18/99	2272	Blue Cross Of Calif	Insurance	177.85	69,146.66
09/19/99	2285	Sherman Douglas Ins	Insurance	161.00	61,567.10
Insurance				8,234.53	0.00
01/16/99	1910	Coudert Brothers, Attorney's	Legal Fees	223.52	35,193.10
02/09/99	1948	California Secretary Of State	Legal Fees	5.00	21,817.37
02/09/99	1949	City Of Caboose	Legal Fees	90.00	21,727.37
05/24/99	2121	Coudert Brothers/Attorney's	Legal Fees	799.55	49,799.79
06/05/99	2155	State Of California	Legal Fees	5.00	51,530.16
06/14/99	2159	Commonwealth Of	Legal Fees	10.00	58,056.21
07/16/99	2194	XL Corporation	Legal Fees	155.00	49,684.63
Legal Fees				1,288.07	0.00
02/09/99	1964	Copierland	Maintenance	310.00	17,113.53
03/01/99	1986	Boyer & Ambrose Carpet	Maintenance	87.50	14,196.18
03/12/99	2002	Boyer & Ambrose Carpet	Maintenance	156.35	8,988.30
03/29/99	2037	Priority One Computers	Maintenance	496.40	21,349.77
03/29/99	2046	Executive Surveillance	Maintenance	132.00	19,370.06
04/24/99	2067	Boyer & Ambrose Carpet	Maintenance	132.00	31,336.38
05/08/99	2090	ServiceWorld	Maintenance	265.63	40,460.26
05/24/99	2114	E T S	Maintenance	49.00	51,641.24
05/24/99	2116	Sun Computers	Maintenance	282.00	51,091.39
05/24/99	2139	Pitney Bowes	Maintenance	140.00	43,941.69
05/29/99	2149	Sun Computers	Maintenance	276.00	52,038.36
06/05/99	2157	Sun Computers	Maintenance	101.25	51,408.96
06/21/99	2167	Dial One	Maintenance	267.13	56,654.66
07/16/99	2190	Executive Surveillance	Maintenance	168.00	50,229.71
07/24/99	2214	J & M Fire Extinguisher	Maintenance	38.19	41,952.07
08/08/99	2220	Newport Buidling &	Maintenance	120.00	49,321.22
08/21/99	2252	Yint Pest Control	Maintenance	120.00	54,797.48
09/18/99	2270	Computek Computer	Maintenance	100.00	69,777.93
09/18/99	2274	Boyer & Ambrose Carpet	Maintenance	432.54	68,392.35
Maintenance				3,673.99	0.00
01/16/99	1911	Paramount Stationers	Office Supplies	105.84	35,087.26
01/22/99	1919	Cannon Astro	Office Supplies	145.72	24,693.23
01/25/99	1921	Nebs	Office Supplies	77.27	22,730.56
01/25/99	1922	Ramona Drinking Water	Office Supplies	98.10	22,632.46

The last page of this report contains both level 1 (subtotal) and level 2 (in this case, grand total) summaries.

<i>July 11th, 2000 @ 11:08 PM</i>					<i>Page 16</i>
Date	#	Pay To	Category	Amount	Balance
02/09/99	1953	City Of Caboose	Utilities	9.64	21,151.17
02/09/99	1972	So. Calif. Gas Co.	Utilities	136.33	14,937.24
02/09/99	1973	S C E	Utilities	172.03	14,765.21
03/29/99	2041	City Of Caboose	Utilities	77.71	20,801.96
03/29/99	2042	So. Calif. Gas Co.	Utilities	217.32	20,584.64
03/29/99	2043	S C E	Utilities	89.46	20,495.18
05/07/99	2083	S C E	Utilities	96.26	41,775.05
05/07/99	2085	So. Calif. Gas Co.	Utilities	86.74	41,420.56
05/24/99	2117	So. Calif. Gas Co.	Utilities	134.99	50,956.40
05/24/99	2118	S C E	Utilities	97.00	50,859.40
05/24/99	2119	City Of Caboose	Utilities	114.77	50,744.63
06/05/99	2154	S C E	Utilities	157.31	51,535.16
06/14/99	2161	S C E	Utilities	56.27	57,897.11
07/24/99	2212	City Of Caboose	Utilities	98.52	42,024.70
08/13/99	2235	S C E	Utilities	86.53	45,764.17
09/19/99	2290	City Of Caboose	Utilities	103.15	60,793.57
09/19/99	2291	S C E	Utilities	81.13	60,712.44
09/19/99	2292	So. Calif. Gas Co.	Utilities	154.95	60,557.49
			Utilities	2,054.89	0.00
GRAND TOTAL				183,651	0.00

This illustration shows how the report tiles at the end of this report are put together. Data records are printed with the Data tile, level 1 (subtotal) summary records are printed with the Summary (1) tile, and level 2 (grand total) summary records are printed with the Summary (2) tile.

05/24/99	2118	S C E	Utilities	97.00	50,859.40
05/24/99	2119	City Of Caboose	Utilities	114.77	50,744.63
06/05/99	2154	S C E	Utilities	157.31	51,535.16
06/14/99	2161	S C E	Utilities	56.27	57,897.11
07/24/99	2212	City Of Caboose	Utilities	98.52	42,024.70
08/13/99	2235	S C E	Utilities	86.53	45,764.17
09/19/99	2290	City Of Caboose	Utilities	103.15	60,793.57
09/19/99	2291	S C E	Utilities	81.13	60,712.44
09/19/99	2292	So. Calif. Gas Co.	Utilities	154.95	60,557.49
			Utilities	2,054.89	0.00
GRAND TOTAL				183,651	0.00
Summary (2)					

Printing Summaries Without Data

Sometimes you may want to print only summary records without printing any data records. The preferred technique for doing this is to use the **Outline Level** dialog to collapse the database before printing (see “[STEP 3 - OUTLINE](#)” on page 406). Another method is to create a zero-height data tile, as shown in this example.

The screenshot shows a report viewer window titled "Checkbook:Report #3 (100%)". The report content is as follows:

Category	Amount
Table Header	
Data	
Auto	555.04
Summary (1)	
GRAND TOTAL 555.04	
Summary (2)	

A red arrow points to the "Data" row, which is labeled "zero height data tile".

The easiest way to make sure that the height of the Data tile is exactly zero is to use the **Dimensions** dialog (see “[Viewing and Setting Exact Object Dimensions](#)” on page 512). When this form is printed all of the data records are invisible because of the zero height Data tile and all you see are the summaries.

<h2>Spending Recap</h2>	
Category	Amount
Advertising	34,516.82
Auto	555.04
Equipment Rental	632.01
Fixed Assets	9,774.47
Insurance	8,234.53
Legal Fees	1,288.07
Maintenance	3,673.99
Office Supplies	7,261.09
Postage	1,456.35
Printing	188.96
Purchases	66,217.17
Rent	35,026.34
Shipping	1,928.20
Taxes	5,152.79
Telephone	5,690.50
Utilities	2,054.89
GRAND TOTAL	
	183,651

Remember that all reports must have a data tile, even if (as in this case) it is not actually visible in the printed report.

Printing Data Grouped by Month, Quarter or Year

When a database has been grouped by month, quarter or year, the dates should usually be formatted differently at each summary level. At the raw data level the entire date should be printed, while on the summary tiles only the month, quarter, or year should be printed.

To format a Data Cell object to display only the month, quarter, or year, select the date cell object and choose the **Output Pattern** command in the Text Menu (see “[Data Cell Custom Output Patterns](#)” on page 638). This command sets the output pattern for just the individual selected object. The pattern for a month summary could be **Month yyyy**, **Mon-yy** or **mm-yy**. For a quarter summary use **qqyy** or **Qtr “Qtr” yy**. For a year use **yy** or **yyyy**. For more information about date output patterns see “[Date Output Patterns](#)” on page 255.

To print only the month, quarter or year with an auto-wrap or Text Display object use the **datepattern()** function (see “[Converting Between Dates and Text](#)” on page 107 of *Formulas & Programming*) with one of the patterns mentioned in the previous paragraph.

Here's an example that uses Text Display SuperObjects to display the date.

T Text Display SuperObject™...

Formula: `datepattern(Date,"Month")`

Checkbook:Report #4 (100%)

Expense Report

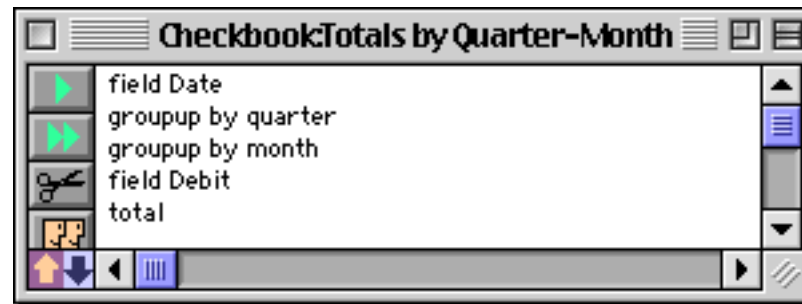
Table Header	
Data	
January	96.05
Summary (1)	
First Quarter	96.05
Summary (2)	
TOTAL YTD	96.05
Summary (3)	

Charcoal 12pt x0.00" y0.00" Δx0.00" Δy0.00"

T Text Display SuperObject™...

Formula: `datepattern(Date,"Quarter")+ " Quarter"`

To prepare this report for printing you must **Group Up** by Quarter on the **Date** field (see “[Grouping by Week, Month, Quarter, or Year](#)” on page 395) then **Group Up** by Month, then **Total** the **Debit** field (see “[Total](#)” on page 398). Here is a procedure that will prep the database for you (see “[Procedures](#)” on page 203 of *Formulas & Programing*).



Here is the printed report.

<h2>Expense Report</h2>	
January	26,575.21
February	23,573.26
March	39,011.30
First Quarter	89,159.77
<hr/>	
April	5,852.73
May	27,659.93
June	12,742.03
Second Quarter	46,254.69
<hr/>	
July	18,860.65
August	14,842.86
September	14,533.25
Third Quarter	48,236.76
<hr/>	
TOTAL YTD	183,651.22

Group Headers

Panorama normally prints a header at the top of each report page. The **Group Header** tiles allow an individual header to be printed at the top of each group in the report. (Of course, the database must already be arranged into groups.) The **Group Header** tile can be used to print a title at the top of each group and also to provide extra spacing between groups. Here's an example of a report with a group header. This example assumes that the database has been grouped by the **PayTo** field.

Checkbook:Report #5a (100%)

July 12th, 2000 @ 6:17 PM Page 0

PayTo field →

Header

3 M

Group Header (1)

Date field → 05/24/99 *Ck # field* → 2143 12.05 *Debit field* →

Data

Summary (1)

GRAND TOTAL 12.05

Summary (2)

Geneva 10pt x0.00" y0.00" Δx0.00" Δy0.00"

When it's printed, this report looks like this.

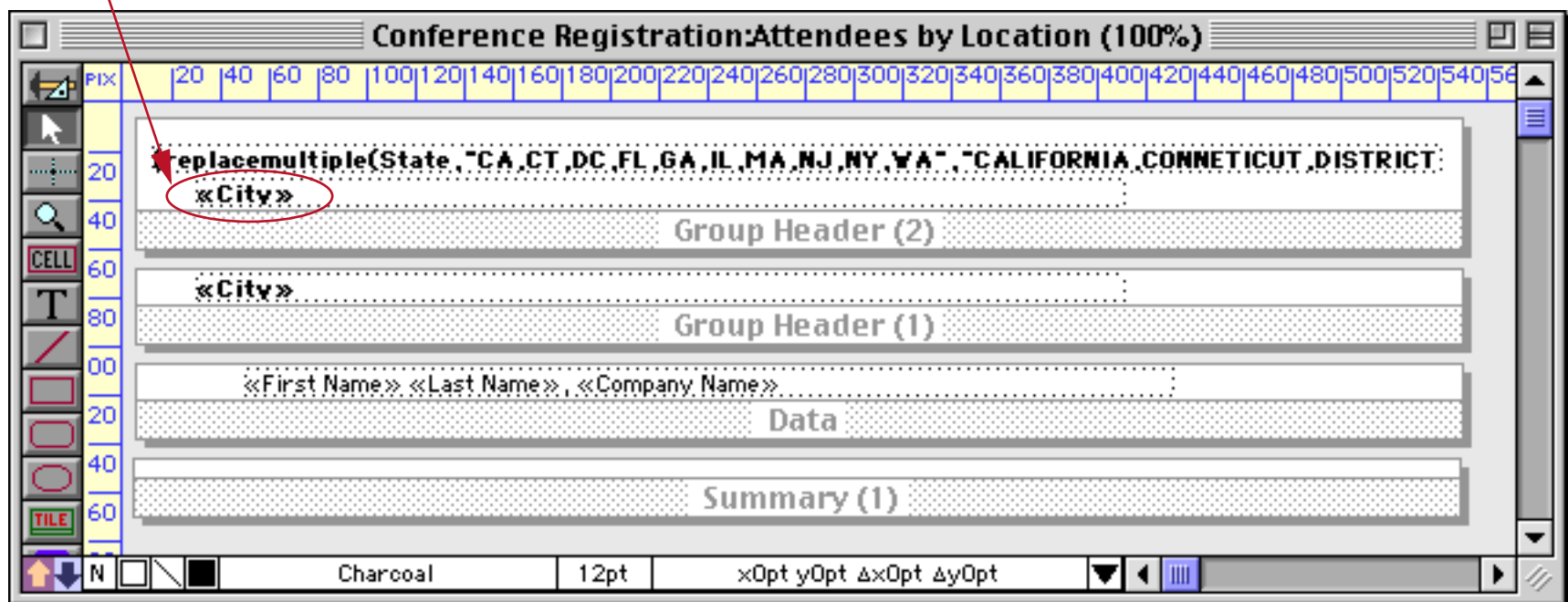
July 12th, 2000 @ 6:17 PM		Page 1
3 M		
05/24/99 2143		12.05
		12.05
A A A		
03/29/99 2035		45.00
05/24/99 2148		128.65
		173.65
A T & T		
03/29/99 2039		19.51
05/24/99 2129		19.51
05/24/99 2130		3.01
07/16/99 2196		7.67
08/13/99 2231		34.62
08/21/99 2241		34.62
08/21/99 2249		19.51
		138.45

This illustration shows how Panorama assembles the tiles to create the final report. At the beginning of each group it prints the group header, then the data tiles. At the end of the group it prints the summary tile.

July 12th, 2000 @ 6:17 PM		Page 1
3 M		
05/24/99	2143	12.05
		12.05
A A A		
03/29/99	2035	45.00
05/24/99	2148	128.65
		173.65
A T & T		
03/29/99	2039	19.51
05/24/99	2129	19.51
05/24/99	2130	3.01
07/16/99	2196	7.67
08/13/99	2231	34.62
08/21/99	2241	34.62
08/21/99	2249	19.51
		138.45
Summary (1)		

Sometimes two groups start at the same spot. For example, in a database grouped by **State** and **City**, the start of the California group may also be the start of the Alameda group. In this case the higher level wins, and Panorama will print the group header for California. Because of this, the higher level summary headers should include any graphics or data needed for each lower level, as shown in this illustration.

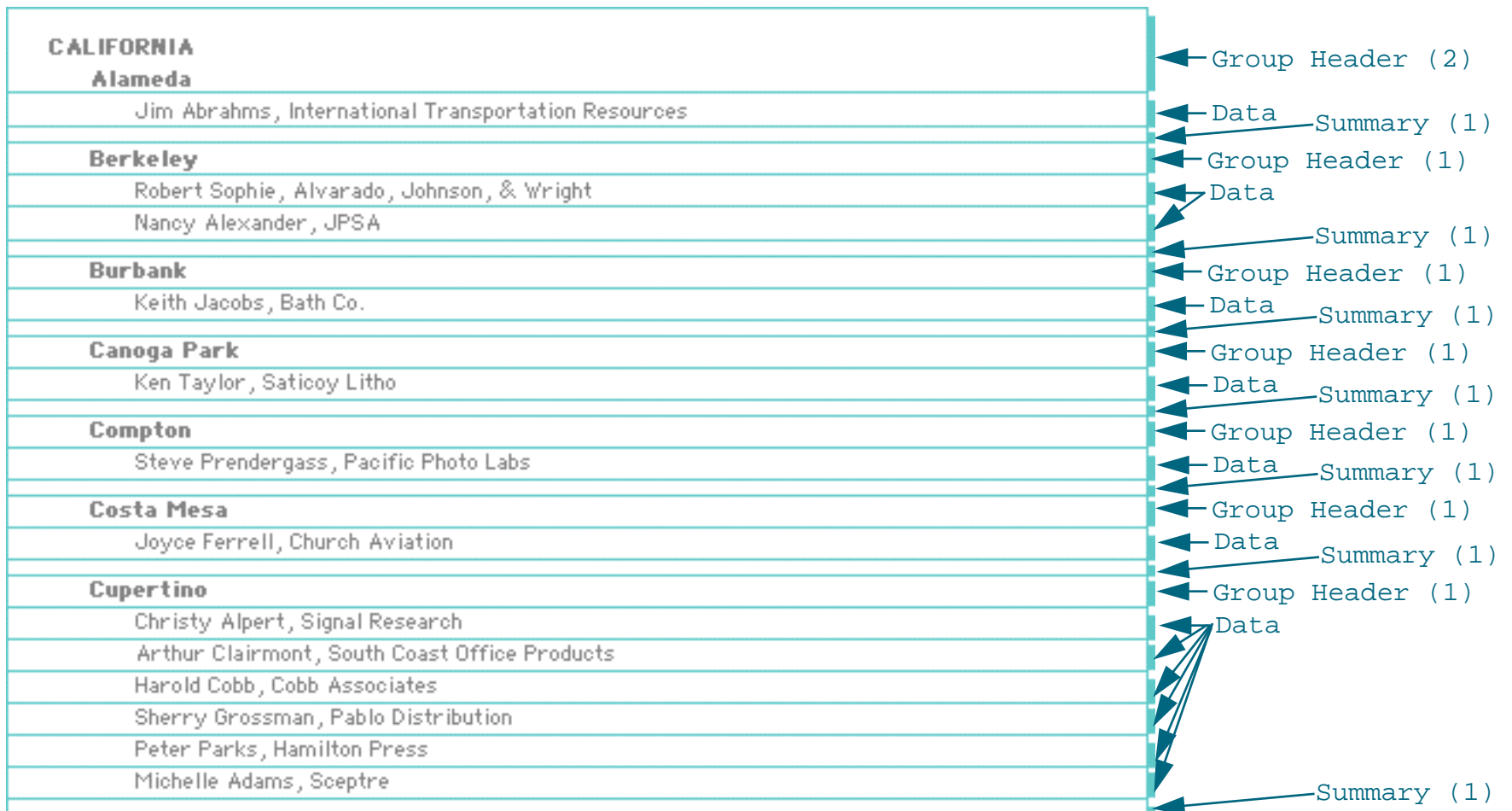
City field is printed on both Group Header (1) and Group Header (2)



Here's the finished report,

CALIFORNIA
Alameda
Jim Abrahms, International Transportation Resources
Berkeley
Robert Sophie, Alvarado, Johnson, & Wright
Nancy Alexander, JPSA
Burbank
Keith Jacobs, Bath Co.
Canoga Park
Ken Taylor, Saticoy Litho
Compton
Steve Prendergass, Pacific Photo Labs
Costa Mesa
Joyce Ferrell, Church Aviation
Cupertino
Christy Alpert, Signal Research
Arthur Clairmont, South Coast Office Products
Harold Cobb, Cobb Associates
Sherry Grossman, Pablo Distribution
Peter Parks, Hamilton Press
Michelle Adams, Sceptre
Emeryville
Cynthia Knight, TBS Contracting, Inc.

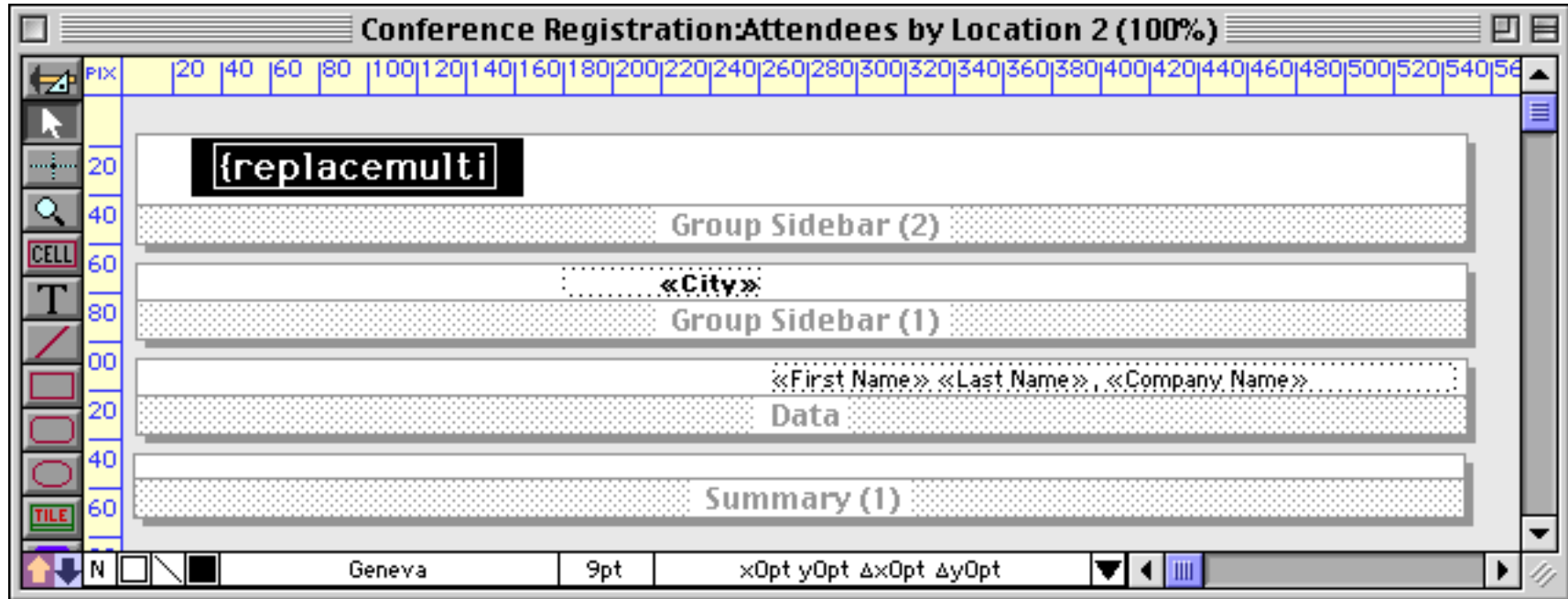
Here's how Panorama assembles the tiles to create this report.



Group Sidebars

The **Group Sidebar** tile allows you to print a “header” beside each group (either to the left or to the right) instead of above the group. The group sidebar tile is unusual because when it is printed, it will actually overlap the data tiles that follow. It is up to you to design the graphics on the group sidebar and data tiles so that they don’t interfere with each other. In other words, all the text and graphics on the group sidebar tile should be to the left with the text and graphics on the data tile to the right, or vice versa.

Here is a report with two Group Sidebar tiles. The report is designed to be printed after the database has been grouped by **State** and then by **City**.



Here is the printed report. Notice that at the beginning of each state and city the sidebar prints next to the data. The sidebar is actually overlaying the data (and in the case of the state, the other sidebar) but because of the way the graphics are laid out the sidebars don't interfere with each other or with the data.

CALIFORNIA

Cupertino Christy Alpert, Signal Research
Arthur Clairmont, South Coast Office Products
Harold Cobb, Cobb Associates
Sherry Grossman, Pablo Distribution
Peter Parks, Hamilton Press
Michelle Adams, Sceptre

Long Beach Kathy Schwartz, Wendover Insurance Group

Los Angeles Charles Arrow, Arrow, Inc.
Dave Elko, First Row Group

Palo Alto Cindy Blunden, Hot Lines, Inc.
Robert Dorn, Valley Services
Roxie Jacobsen, Alpha Pic
Donna Brady, Challenger Air Cargo

San Diego Jan Morgan, McCormick-Ridder
Frank Pearce, Taylor & Associates
Ray Cavalier, Stagg Instant Press

San Francisco Kris Frazee, Mariani Publishing
Mike Reynolds, Birch Catering
John Chelsie, British Consulate
George Kraus, Sand Hill Technology

San Mateo Roy Jones, Wheeler & Assoc
Donald Mentzinger, Sequoia Advertising
Marty Abrams, Minutemen Press
Karly Gersh, Hamilton Printing

San Rafael Isabel Alston, Leader Systems
Lew Farrell, Coast Label & Supply
Barry Church, Montbuild
Mark Kochs, Alexander Escrow

Santa Ana Tim Hill, Alameda Escrow
Charlene Stein, Borregas-Wilson Inc.
Jared Alexander, Kinetic Computing

FLORIDA

Naples Mark Lauing, Sherman-Davis

Tallahassee Robin Knight, Fico Appliance Service

Tampa Ralph Webster, Nordhoff Aviation

GEORGIA

Marietta Kay Desia, Industrial Development Board

ILLINOIS

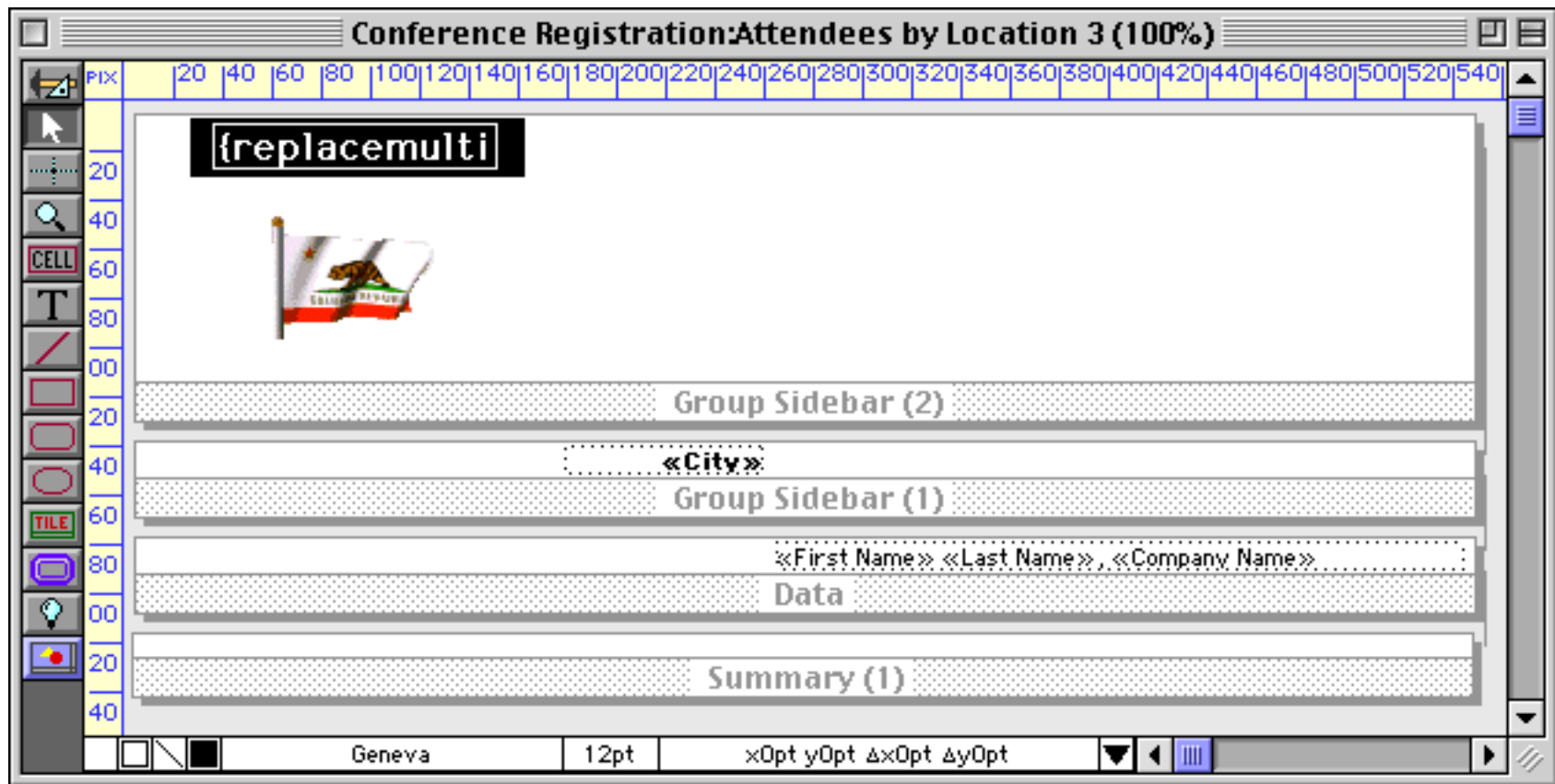
Chicago Anthony Campbell, Drake Inc.
Russ Malone, Northridge Bakeries

Here's how Panorama assembles the tiles to create this report. Because of the overlapping tiles this can be a bit confusing, so the Data tiles have been omitted from this illustration. The Group Sidebar(2) tiles are shown in green, and the Group Sidebar(1) tiles are shown in blue.



Tip: Although the group sidebar will overlap the data tiles when the report is printed, they must not overlap on the form window.

You can add images to a group sidebar using Flash Art. This report is exactly the same as the previous example except for the addition of the Super Flash Art image displaying the state flag (see See “Flash Art™” on page 750).



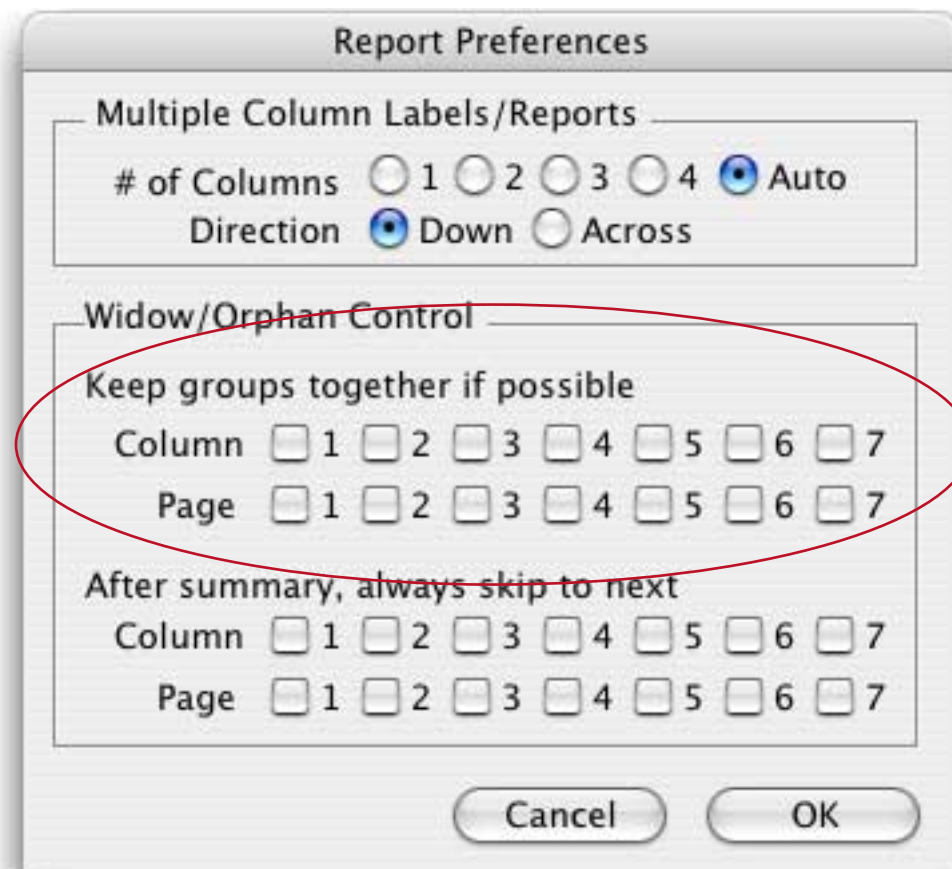
Here is the printed report.

<p>CALIFORNIA</p>	<p>Cupertino Christy Alpert, Signal Research Arthur Clairmont, South Coast Office Products Harold Cobb, Cobb Associates Sherry Grossman, Pablo Distribution Peter Parks, Hamilton Press Michelle Adams, Sceptre</p> <p>Long Beach Kathy Schwartz, Wendover Insurance Group</p> <p>Los Angeles Charles Arrow, Arrow, Inc. Dave Elko, First Row Group</p> <p>Palo Alto Cindy Blunden, Hot Lines, Inc. Robert Dorn, Valley Services Roxie Jacobsen, Alpha Pic Donna Brady, Challenger Air Cargo</p> <p>San Diego Jan Morgan, McCormick-Ridder Frank Pearce, Taylor & Associates Ray Cavalier, Stagg Instant Press</p> <p>San Francisco Kris Frazee, Mariani Publishing Mike Reynolds, Birch Catering John Chelsie, British Consulate George Kraus, Sand Hill Technology</p> <p>San Mateo Roy Jones, Wheeler & Assoc Donald Mentzinger, Sequoia Advertising Marty Abrams, Minutemen Press Karly Gersh, Hamilton Printing</p> <p>San Rafael Isabel Alston, Leader Systems Lew Farrell, Coast Label & Supply Barry Church, Montbuild Mark Kochs, Alexander Escrow</p> <p>Santa Ana Tim Hill, Alameda Escrow Charlene Stein, Borregas-Wilson Inc. Jared Alexander, Kinetic Computing</p>
<p>FLORIDA</p>	<p>Naples Mark Lauing, Sherman-Davis</p> <p>Tallahassee Robin Knight, Fico Appliance Service</p> <p>Tampa Ralph Webster, Nordhoff Aviation</p>
<p>GEORGIA</p>	<p>Marietta Kay Desia, Industrial Development Board</p>

Notice that for the state of Florida the sidebar is actually taller than the data records. In that case Panorama will leave a gap between the last data record in a group and the first data record of the next group.

Keeping a Group Together on a Column or Page

If you wish, Panorama can automatically make sure that groups are not divided across column or page boundaries. This can make a report easier to read and much more attractive. (Of course it can only do this for groups that are small enough to fit on a single column or page.) This feature is called widow/orphan control and is available in the **Report Preferences** dialog in the Setup menu.



Select the largest group level you want to keep together on a column or page (or both).

For example, consider the report shown below. The group of records for **Advertiser's Mailing Service** is split across two columns.

July 12th, 2000 @ 11:48 PM		Page 1	
3 M		04/24/99 2066	468.50
05/24/99 2143	12.05	05/07/99 2087	59.48
	12.05	05/09/99 2096	216.00
AAA		05/09/99 2097	239.63
03/29/99 2035	45.00	05/23/99 2107	187.00
05/24/99 2148	128.65	05/23/99 2108	102.00
	173.65	05/24/99 2144	676.80
AT & T		05/24/99 2145	50.00
03/29/99 2039	19.51	05/24/99 2146	254.24
05/24/99 2129	19.51	06/14/99 2162	278.00
05/24/99 2130	3.01	06/21/99 2168	525.00
07/16/99 2196	7.67	06/27/99 2171	25.00
08/13/99 2231	34.62	07/03/99 2173	50.00
08/21/99 2241	34.62	07/09/99 2180	56.20
08/21/99 2249	19.51	07/11/99 2183	25.70
	138.45	07/16/99 2184	42.50
AC Label Company		07/20/99 2205	27.00
09/26/99 2297	205.97	07/24/99 2209	500.00
	205.97	08/14/99 2237	500.00
ACSC		08/29/99 2257	425.00
02/09/99 1975	46.00	09/06/99 2266	495.41
08/13/99 2226	250.55	09/28/99 2299	167.00
	296.55	04/16/99 2053	156.35
Advertiser's Mailing Service, Inc.		08/14/99 2236	30.00
01/08/99 1909	390.80	08/21/99 2255	45.00
01/29/99 1925	860.22	09/06/99 2265	141.00
02/09/99 1955	200.89	09/21/99 2294	167.00
02/09/99 1956	292.50	09/21/99 2295	67.00
03/06/99 1991	300.00		9,590.71
03/09/99 1996	154.47	Airborne Express	
03/20/99 2009	900.00	02/09/99 1962	35.40
03/20/99 2011	315.02		35.40
03/28/99 2026	200.00	AIRS	
		03/26/99 2018	138.07
			138.07
		Alhambra Typewriter	
		08/08/99 2223	10.66

To prevent this from happening, open the Report Preferences dialog and check the box as shown below.

Widow/Orphan Control

Keep groups together if possible

Column 1 2 3 4 5 6 7

Page 1 2 3 4 5 6 7

Panorama will automatically push the group to the next column so that it is no longer split in the middle.

July 12th, 2000 @ 11:56 PM		Page 1																																																																																																																											
<table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">3 M</td> </tr> <tr> <td style="border-top: 1px solid black;">05/24/99 2143</td> <td style="text-align: right;">12.05</td> </tr> <tr> <td></td> <td style="text-align: right;">12.05</td> </tr> <tr> <td colspan="2">AAA</td> </tr> <tr> <td style="border-top: 1px solid black;">03/29/99 2035</td> <td style="text-align: right;">45.00</td> </tr> <tr> <td style="border-bottom: 1px solid black;">05/24/99 2148</td> <td style="text-align: right;">128.65</td> </tr> <tr> <td></td> <td style="text-align: right;">173.65</td> </tr> <tr> <td colspan="2">AT & T</td> </tr> <tr> <td style="border-top: 1px solid black;">03/29/99 2039</td> <td style="text-align: right;">19.51</td> </tr> <tr> <td>05/24/99 2129</td> <td style="text-align: right;">19.51</td> </tr> <tr> <td>05/24/99 2130</td> <td style="text-align: right;">3.01</td> </tr> <tr> <td>07/16/99 2196</td> <td style="text-align: right;">7.67</td> </tr> <tr> <td>08/13/99 2231</td> <td style="text-align: right;">34.62</td> </tr> <tr> <td>08/21/99 2241</td> <td style="text-align: right;">34.62</td> </tr> <tr> <td style="border-bottom: 1px solid black;">08/21/99 2249</td> <td style="text-align: right;">19.51</td> </tr> <tr> <td></td> <td style="text-align: right;">138.45</td> </tr> <tr> <td colspan="2">AC Label Company</td> </tr> <tr> <td style="border-top: 1px solid black;">09/26/99 2297</td> <td style="text-align: right;">205.97</td> </tr> <tr> <td></td> <td style="text-align: right;">205.97</td> </tr> <tr> <td colspan="2">ACSC</td> </tr> <tr> <td style="border-top: 1px solid black;">02/09/99 1975</td> <td style="text-align: right;">46.00</td> </tr> <tr> <td style="border-bottom: 1px solid black;">08/13/99 2226</td> <td style="text-align: right;">250.55</td> </tr> <tr> <td></td> <td style="text-align: right;">296.55</td> </tr> </table>	3 M		05/24/99 2143	12.05		12.05	AAA		03/29/99 2035	45.00	05/24/99 2148	128.65		173.65	AT & T		03/29/99 2039	19.51	05/24/99 2129	19.51	05/24/99 2130	3.01	07/16/99 2196	7.67	08/13/99 2231	34.62	08/21/99 2241	34.62	08/21/99 2249	19.51		138.45	AC Label Company		09/26/99 2297	205.97		205.97	ACSC		02/09/99 1975	46.00	08/13/99 2226	250.55		296.55	<table style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">Advertiser's Mailing Service, Inc.</td> </tr> <tr> <td style="border-top: 1px solid black;">01/08/99 1909</td> <td style="text-align: right;">390.80</td> </tr> <tr> <td>01/29/99 1925</td> <td style="text-align: right;">860.22</td> </tr> <tr> <td>02/09/99 1955</td> <td style="text-align: right;">200.89</td> </tr> <tr> <td>02/09/99 1956</td> <td style="text-align: right;">292.50</td> </tr> <tr> <td>03/06/99 1991</td> <td style="text-align: right;">300.00</td> </tr> <tr> <td>03/09/99 1996</td> <td style="text-align: right;">154.47</td> </tr> <tr> <td>03/20/99 2009</td> <td style="text-align: right;">900.00</td> </tr> <tr> <td>03/20/99 2011</td> <td style="text-align: right;">315.02</td> </tr> <tr> <td>03/28/99 2026</td> <td style="text-align: right;">200.00</td> </tr> <tr> <td>04/24/99 2066</td> <td style="text-align: right;">468.50</td> </tr> <tr> <td>05/07/99 2087</td> <td style="text-align: right;">59.48</td> </tr> <tr> <td>05/09/99 2096</td> <td style="text-align: right;">216.00</td> </tr> <tr> <td>05/09/99 2097</td> <td style="text-align: right;">239.63</td> </tr> <tr> <td>05/23/99 2107</td> <td style="text-align: right;">187.00</td> </tr> <tr> <td>05/23/99 2108</td> <td style="text-align: right;">102.00</td> </tr> <tr> <td>05/24/99 2144</td> <td style="text-align: right;">676.80</td> </tr> <tr> <td>05/24/99 2145</td> <td style="text-align: right;">50.00</td> </tr> <tr> <td>05/24/99 2146</td> <td style="text-align: right;">254.24</td> </tr> <tr> <td>06/14/99 2162</td> <td style="text-align: right;">278.00</td> </tr> <tr> <td>06/21/99 2168</td> <td style="text-align: right;">525.00</td> </tr> <tr> <td>06/27/99 2171</td> <td style="text-align: right;">25.00</td> </tr> <tr> <td>07/03/99 2173</td> <td style="text-align: right;">50.00</td> </tr> <tr> <td>07/09/99 2180</td> <td style="text-align: right;">56.20</td> </tr> <tr> <td>07/11/99 2183</td> <td style="text-align: right;">25.70</td> </tr> <tr> <td>07/16/99 2184</td> <td style="text-align: right;">42.50</td> </tr> <tr> <td>07/20/99 2205</td> <td style="text-align: right;">27.00</td> </tr> <tr> <td>07/24/99 2209</td> <td style="text-align: right;">500.00</td> </tr> <tr> <td>08/14/99 2237</td> <td style="text-align: right;">500.00</td> </tr> <tr> <td>08/29/99 2257</td> <td style="text-align: right;">425.00</td> </tr> <tr> <td>09/06/99 2266</td> <td style="text-align: right;">495.41</td> </tr> <tr> <td>09/28/99 2299</td> <td style="text-align: right;">167.00</td> </tr> <tr> <td>04/16/99 2053</td> <td style="text-align: right;">156.35</td> </tr> <tr> <td>08/14/99 2236</td> <td style="text-align: right;">30.00</td> </tr> <tr> <td>08/21/99 2255</td> <td style="text-align: right;">45.00</td> </tr> <tr> <td>09/06/99 2265</td> <td style="text-align: right;">141.00</td> </tr> <tr> <td>09/21/99 2294</td> <td style="text-align: right;">167.00</td> </tr> <tr> <td style="border-bottom: 1px solid black;">09/21/99 2295</td> <td style="text-align: right;">67.00</td> </tr> <tr> <td></td> <td style="text-align: right;">9,590.71</td> </tr> </table>	Advertiser's Mailing Service, Inc.		01/08/99 1909	390.80	01/29/99 1925	860.22	02/09/99 1955	200.89	02/09/99 1956	292.50	03/06/99 1991	300.00	03/09/99 1996	154.47	03/20/99 2009	900.00	03/20/99 2011	315.02	03/28/99 2026	200.00	04/24/99 2066	468.50	05/07/99 2087	59.48	05/09/99 2096	216.00	05/09/99 2097	239.63	05/23/99 2107	187.00	05/23/99 2108	102.00	05/24/99 2144	676.80	05/24/99 2145	50.00	05/24/99 2146	254.24	06/14/99 2162	278.00	06/21/99 2168	525.00	06/27/99 2171	25.00	07/03/99 2173	50.00	07/09/99 2180	56.20	07/11/99 2183	25.70	07/16/99 2184	42.50	07/20/99 2205	27.00	07/24/99 2209	500.00	08/14/99 2237	500.00	08/29/99 2257	425.00	09/06/99 2266	495.41	09/28/99 2299	167.00	04/16/99 2053	156.35	08/14/99 2236	30.00	08/21/99 2255	45.00	09/06/99 2265	141.00	09/21/99 2294	167.00	09/21/99 2295	67.00		9,590.71
3 M																																																																																																																													
05/24/99 2143	12.05																																																																																																																												
	12.05																																																																																																																												
AAA																																																																																																																													
03/29/99 2035	45.00																																																																																																																												
05/24/99 2148	128.65																																																																																																																												
	173.65																																																																																																																												
AT & T																																																																																																																													
03/29/99 2039	19.51																																																																																																																												
05/24/99 2129	19.51																																																																																																																												
05/24/99 2130	3.01																																																																																																																												
07/16/99 2196	7.67																																																																																																																												
08/13/99 2231	34.62																																																																																																																												
08/21/99 2241	34.62																																																																																																																												
08/21/99 2249	19.51																																																																																																																												
	138.45																																																																																																																												
AC Label Company																																																																																																																													
09/26/99 2297	205.97																																																																																																																												
	205.97																																																																																																																												
ACSC																																																																																																																													
02/09/99 1975	46.00																																																																																																																												
08/13/99 2226	250.55																																																																																																																												
	296.55																																																																																																																												
Advertiser's Mailing Service, Inc.																																																																																																																													
01/08/99 1909	390.80																																																																																																																												
01/29/99 1925	860.22																																																																																																																												
02/09/99 1955	200.89																																																																																																																												
02/09/99 1956	292.50																																																																																																																												
03/06/99 1991	300.00																																																																																																																												
03/09/99 1996	154.47																																																																																																																												
03/20/99 2009	900.00																																																																																																																												
03/20/99 2011	315.02																																																																																																																												
03/28/99 2026	200.00																																																																																																																												
04/24/99 2066	468.50																																																																																																																												
05/07/99 2087	59.48																																																																																																																												
05/09/99 2096	216.00																																																																																																																												
05/09/99 2097	239.63																																																																																																																												
05/23/99 2107	187.00																																																																																																																												
05/23/99 2108	102.00																																																																																																																												
05/24/99 2144	676.80																																																																																																																												
05/24/99 2145	50.00																																																																																																																												
05/24/99 2146	254.24																																																																																																																												
06/14/99 2162	278.00																																																																																																																												
06/21/99 2168	525.00																																																																																																																												
06/27/99 2171	25.00																																																																																																																												
07/03/99 2173	50.00																																																																																																																												
07/09/99 2180	56.20																																																																																																																												
07/11/99 2183	25.70																																																																																																																												
07/16/99 2184	42.50																																																																																																																												
07/20/99 2205	27.00																																																																																																																												
07/24/99 2209	500.00																																																																																																																												
08/14/99 2237	500.00																																																																																																																												
08/29/99 2257	425.00																																																																																																																												
09/06/99 2266	495.41																																																																																																																												
09/28/99 2299	167.00																																																																																																																												
04/16/99 2053	156.35																																																																																																																												
08/14/99 2236	30.00																																																																																																																												
08/21/99 2255	45.00																																																																																																																												
09/06/99 2265	141.00																																																																																																																												
09/21/99 2294	167.00																																																																																																																												
09/21/99 2295	67.00																																																																																																																												
	9,590.71																																																																																																																												

If the checkbox in the **Page** row had been checked Panorama would only have made sure that a group wasn't split across a page - it wouldn't worry about group's split across a column like this.

Starting a Group on a New Column or Page

If you wish, Panorama can automatically skip to a new column or a new page at the beginning of each new group. To do this, choose **Report Preferences** from the Setup Menu, then choose the summary levels that triggers skipping to a new column or page.

After summary, always skip to next	
Column	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7
Page	<input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7

Here's what the first few pages of this report looks like. Only one group is printed per page.

July 15th, 2000 @ 12:08 PM	Page 1
3 M	
05/24/99 2143	12.05
	12.05

July 15th, 2000 @ 12:08 PM	Page 2
A A A	
03/29/99 2035	45.00
05/24/99 2148	128.65
	173.65

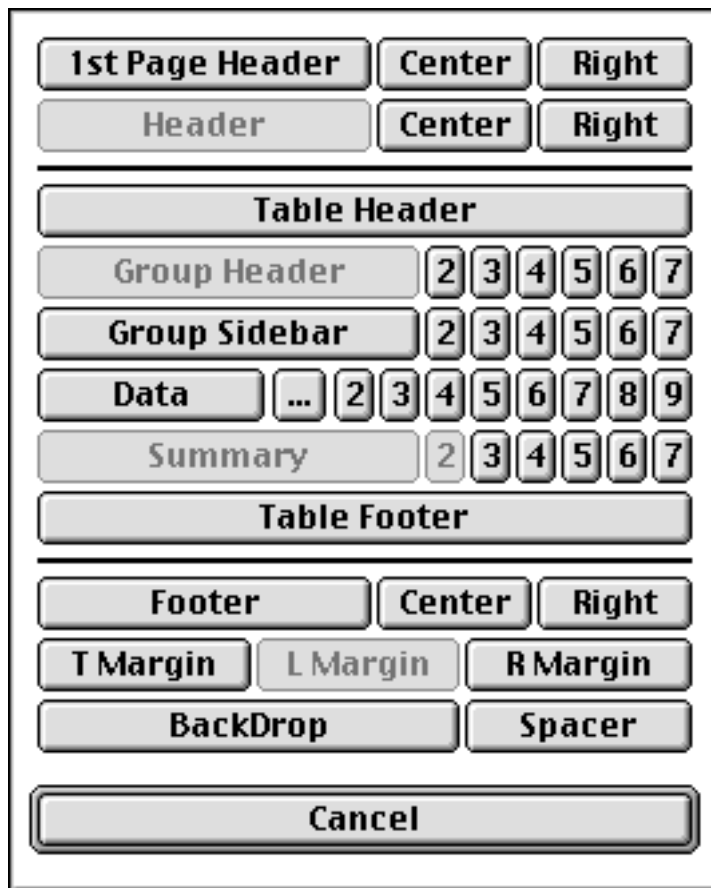
July 15th, 2000 @ 12:08 PM	Page 3
A T & T	
03/29/99 2039	19.51
05/24/99 2129	19.51
05/24/99 2130	3.01
07/16/99 2196	7.67
08/13/99 2231	34.62
08/21/99 2241	34.62
08/21/99 2249	19.51
	138.45

July 15th, 2000 @ 12:08 PM	Page 4
AC Label Company	
09/26/99 2297	205.97
	205.97

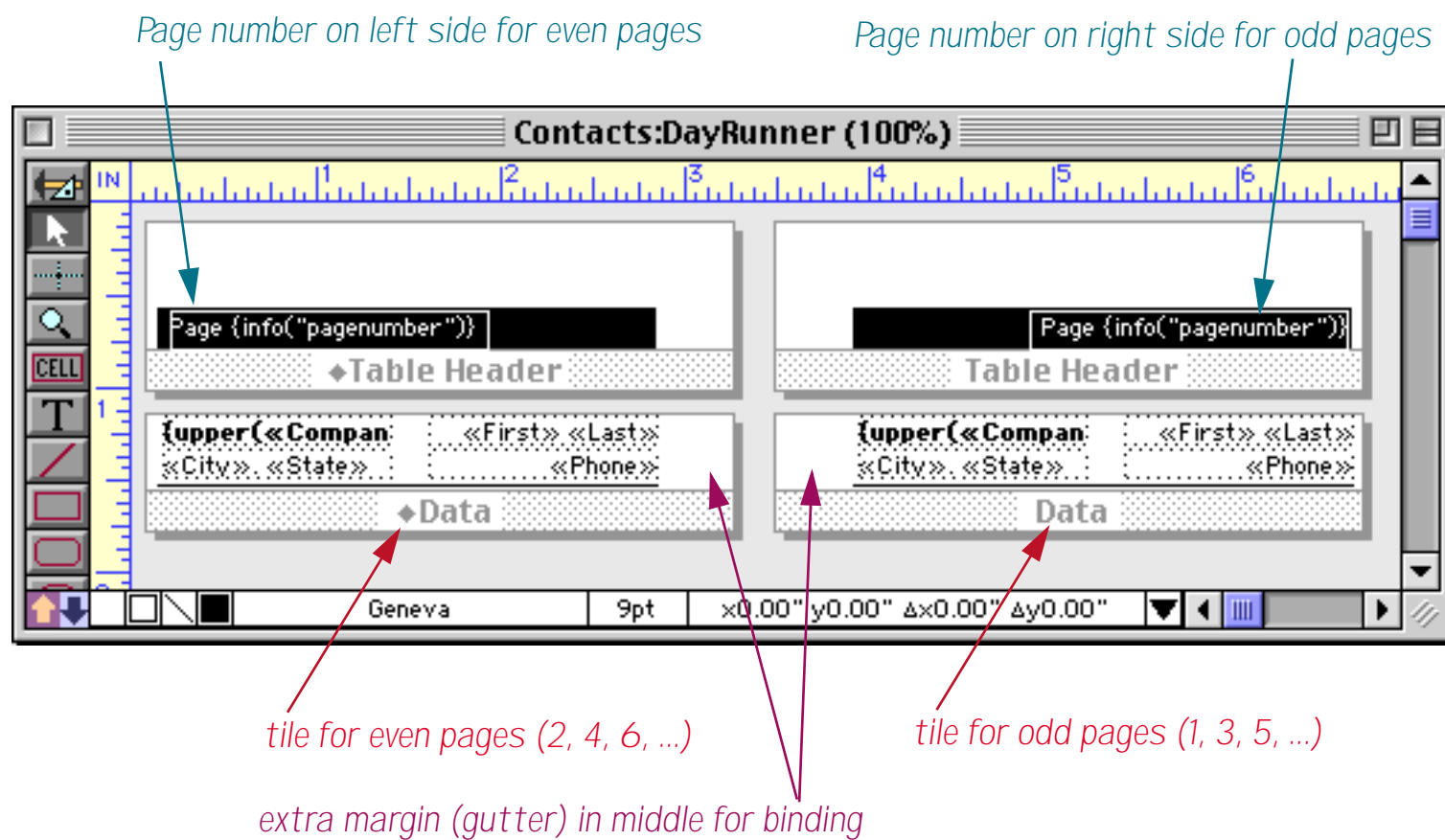
Even and Odd Page Layout

Panorama allows you to format the even and odd pages of a report differently. For example you could change the margins from even to odd pages to create a wide gutter in the middle, or flip the titles so the page number is always on the outside.

To set up these amazing feats, Panorama allows you to set up two sets of tiles: even page tiles and odd page tiles. When you create a tile with the **Specialized Tile** dialog, you can use the **Side** menu to select whether the tile is for even or odd pages. (The **Side** menu only appears when this dialog is open.)



You can recognize an even tile on a form by the \diamond symbol in front of the tile name.

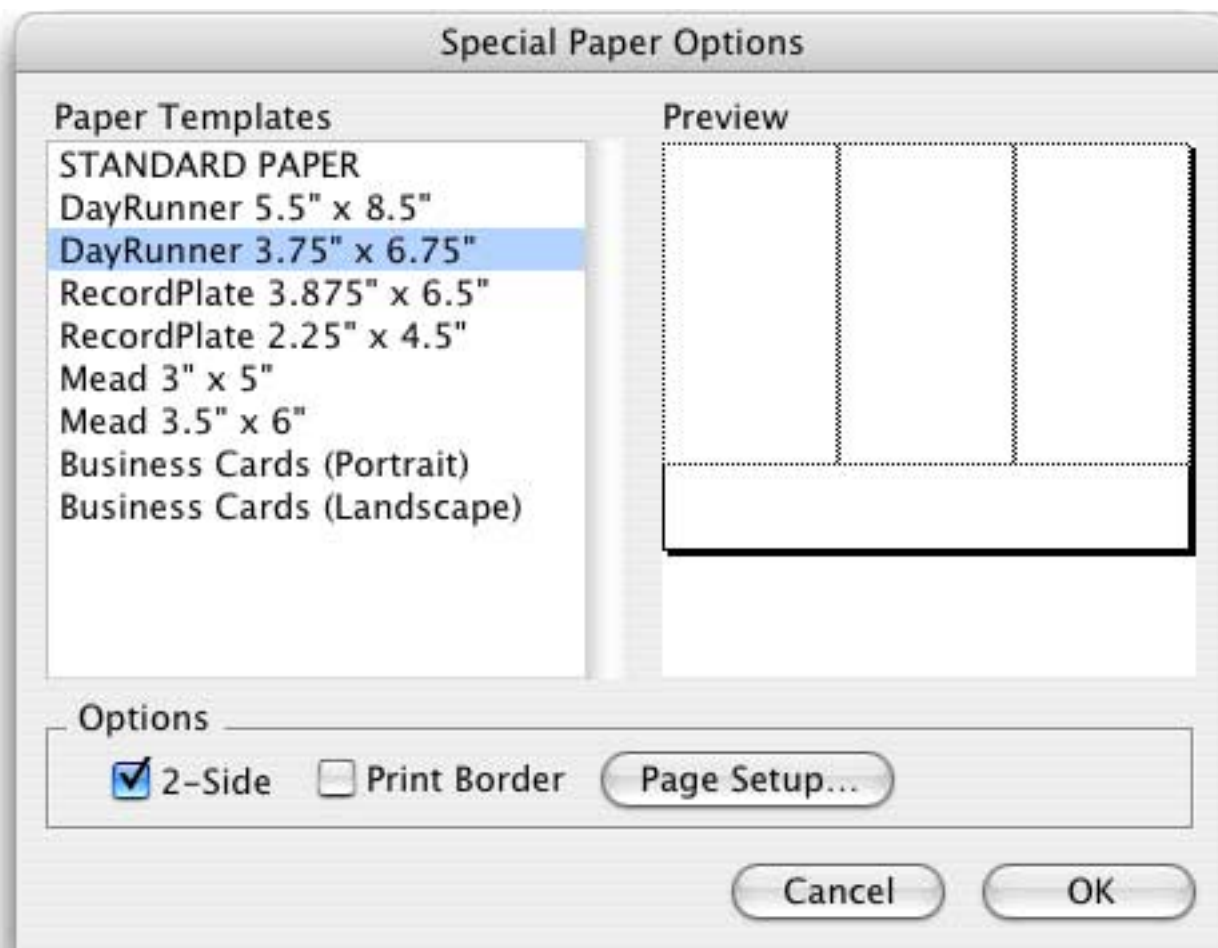


It's not necessary to create a complete duplicate set of both even and odd tiles. You only need to create even tiles for tiles that are actually different from the odd tiles. For example, suppose you want the left margin to be different on even and odd sides, but everything else is the same. In that case you would create an odd data tile, header tiles, etc. along with both an odd and even left margin tile.

Special Paper Options

The **Special Paper Options** dialog (Setup Menu) allows Panorama to print reports with multiple page images on a single physical sheet of paper. After the report is printed you can cut up the individual pages...usually so that they can be inserted in an organizer notebook. It also allows a report to be printed double sided (you must print one side, then turn the paper over and feed it back into the printer to print the second side). Note: You must turn off background printing to use the double sided option.

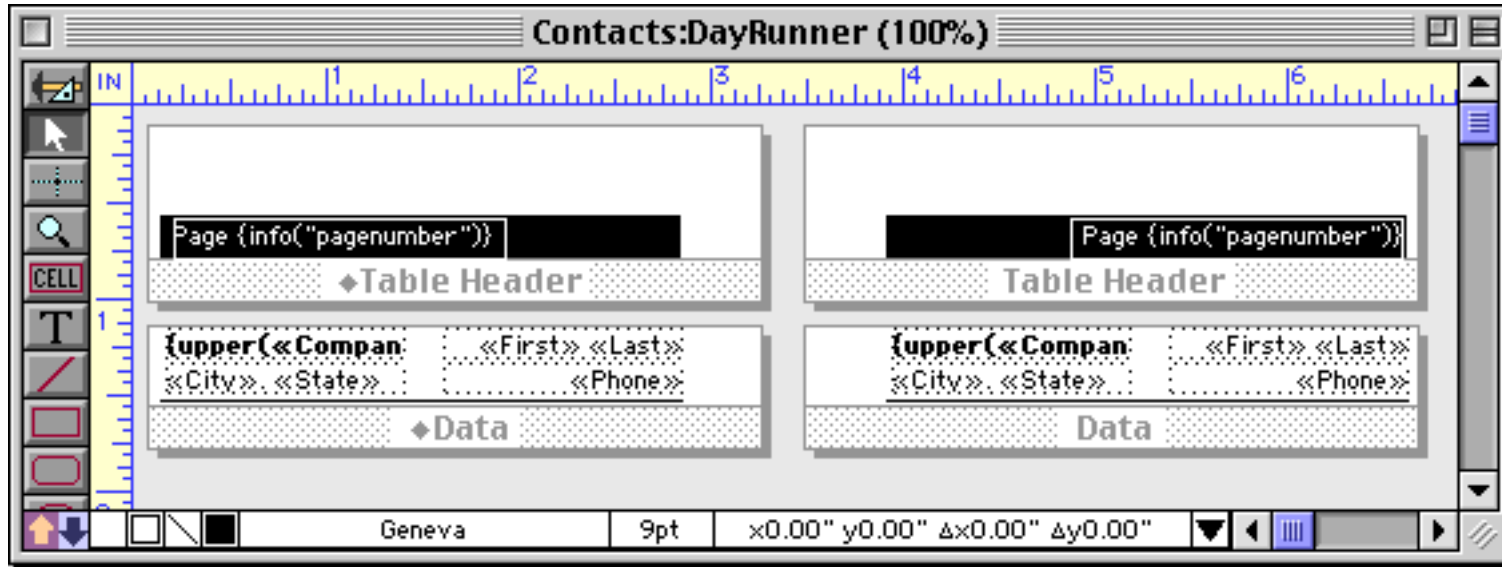
The left side of the **Special Paper Options** dialog displays a list of paper formats.



The default format, **Standard Paper**, prints normally on the entire page. The other options split the physical paper into two or more separate subpages. The area on the right shows a preview of how the paper will be split into separate pages. If necessary, you should use the **Page Setup** dialog to adjust the paper orientation (portrait vs. landscape) to make sure that all of the subpages fit on the paper.

If you select a format with two or more subpages, Panorama will print a separate report page on each subpage. For example, if you use the **DayRunner 5.5\" x 8.5\"** format (two subpages per sheet), Panorama will print report pages 1 and 2 on the first sheet, report pages 3 and 4 on the second sheet, etc. You must design your report so that each report page fits on a subpage.

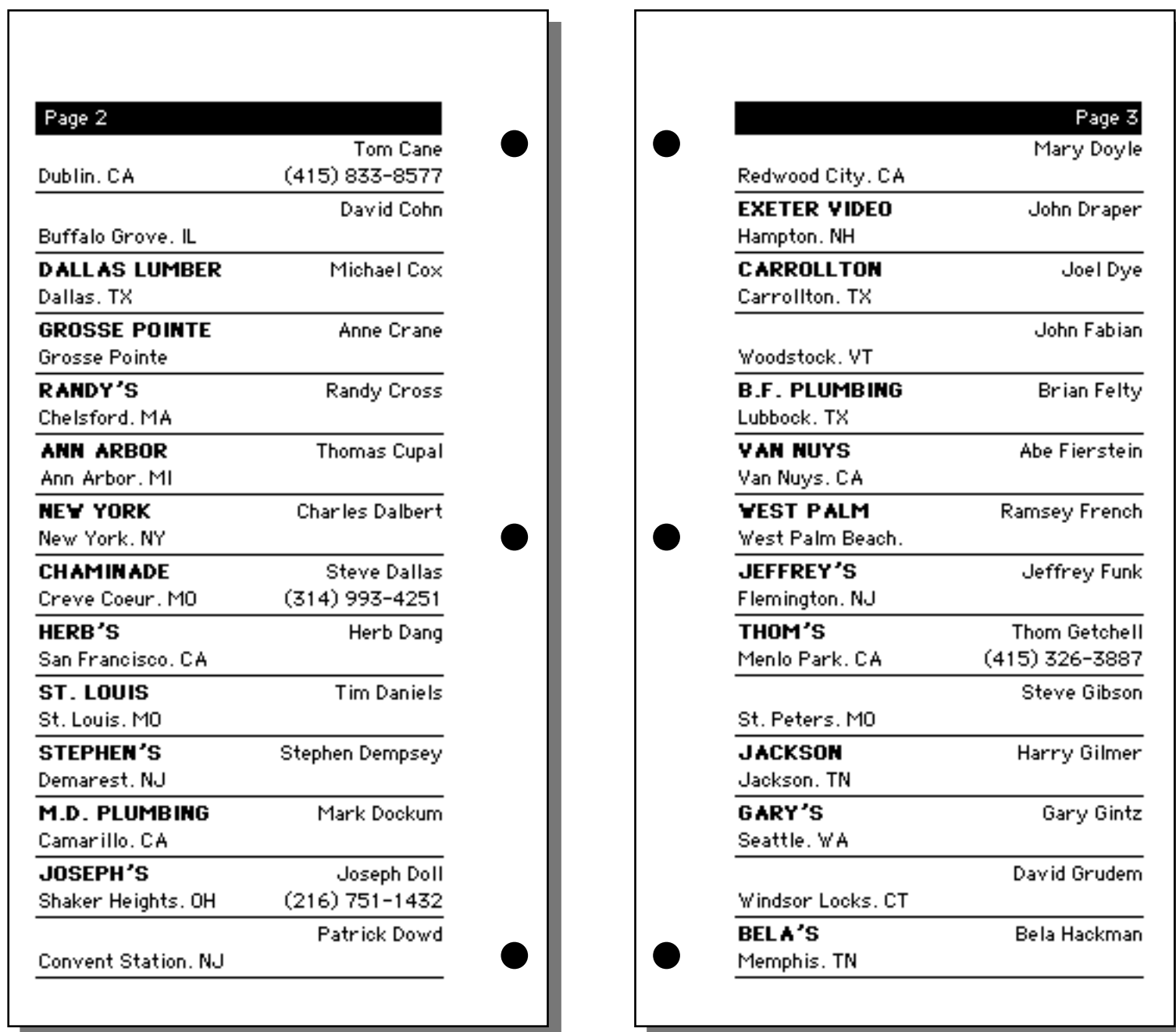
The report below is designed to print using the DayRunner 3.75" x 6.75" option.



This option will cause 3 DayRunner pages to print on one, real page, like this.

Page 1	Page 2	Page 3
NORT-GATE Keith Bater Lindenhurst, IL	Tom Cane Dublin, CA (415) 833-8577	Mary Doyle Redwood City, CA
ARMONK Habib Basir Armont, NY	David Cohn Buffalo Grove, IL	John Draper EXETER VIDEO Hampton, NH
J.B. PLUMBING John Bath Mendota Heights, (612) 451-1121	Michael Cox DALLAS LUMBER Dallas, TX	Joel Dye CARROLLTON Carrollton, TX
TOLEDO LUMBER Jack Beardsley Toledo, OH	Anne Crane GROSSE POINTE Grosse Pointe	John Fabian Woodstock, VT
C.B. PLUMBING Carl Berg New Haven, CT (203) 624-3367	Randy Cross RANDY'S Chelmsford, MA	Brian Felty B.F. PLUMBING Lubbock, TX
Leslie Bianchi Lexington, MA	Thomas Cupal ANN ARBOR Ann Arbor, MI	Abe Fienstein VAN NUYS Van Nuys, CA
M.B. PLUMBING Mary Bilbury Beverly Hills, CA	Charles Dabert NEW YORK New York, NY	Ramsay French WEST PALM West Palm Beach
J.B. PRINTING Joseph Bizzarri Westchester, IL	Steve Dallas CHAMPAIGN Creve Coeur, MO (314) 993-4251	Jeffrey Funt JEFFREY'S Flemington, NJ
DE PRINTING David Blair Lenexa, IA	Herb Dang HERB'S San Francisco, CA	Thom Getchell THOM'S Menlo Park, CA (415) 326-3887
Al Badner Clifton Park, NY	Tim Daniels ST. LOUIS St. Louis, MO	Steve Gibson St. Peters, MO
Jerry Boone Traverse City, MI	Stephen Dempsey STEPHEN'S Demarest, NJ	Harry Gilmer JACKSON Jackson, TN
PEACOCK VIDEO Jerry Bowen Highland, CA	Mart Doctum M.D. PLUMBING Camarillo, CA	Gary Gintz GARY'S Seattle, WA
Yvonne Branch Houston, TX	Joseph Dall JOSEPH'S Shaker Heights, OH (216) 751-1432	David Grudem Windsor Locks, CT
Susan Brown Newport Beach, CA	Patrick Dawd Convent Station, NJ	Bela Hactman BELA'S Memphis, TN

After the report is printed you can cut apart the individual pages, punch holes, and install them in a DayRunner style binder. (You can also purchase paper that is pre-perfed to be split apart this way.)



The bottom of the **Special Paper Options** dialog has two additional options: **2-sided** and **Borders**. If you select the **2-sided** option, Panorama will use a special procedure for printing the report on both sides of the paper. First, it will print all the odd pages (1, 3, 5, 7, etc.). Then it stops printing and displays a dialog requesting that you flip the paper over and re-insert the paper into the printer. When you press the **OK** button, Panorama will print the even pages (2, 4, 6, 8, etc.). If the report is printed using multiple subpages, Panorama will adjust the positions as it prints the even pages to make sure that page 2 is on the back of page 1, page 4 on the back of page 3, etc. (Warning: The **2-sided** option does not work properly if background spooling is on. You must turn off background spooling before printing a 2-sided report.)

The **Borders** option makes Panorama print a border around each subpage. If you are not printing on pre-perfed paper, you can use this border to help you cut apart the individual subpages. The border can also be useful to see where the subpages are when you use **Print Preview**.

Chapter 22: Labels



Two of the most common jobs for a database program are printing mailing labels and form letters. Mailing labels can be tricky because the printing must line up with the pre-cut labels. This chapter describes tips and techniques that can help take the “trial and error” out of printing labels and form letters.

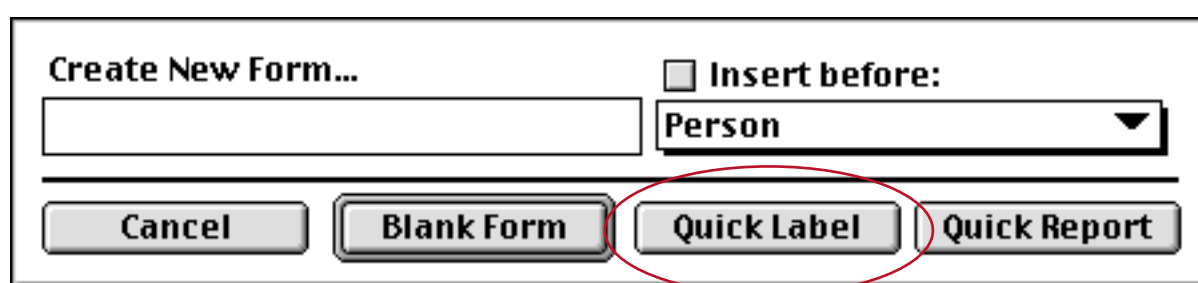
Label Fundamentals

Labels are printed using report tiles in a form (see “[Custom Reports](#)” on page 1061 for an introduction to report tiles). Many labels only require a single tile: the data tile (see “[Data Tiles](#)” on page 1076). This tile should be the same size as the size of the label plus the gap between labels. In some cases you may also need margin tiles, see “[Top Margin Tile](#)” on page 1085 and “[Left Margin Tile](#)” on page 1087.

To actually print the names and addresses you will usually use an auto-wrap text object (“[Displaying Data in Auto-Wrap Text](#)” on page 595) or a Text Display SuperObject (see “[Text Display SuperObjects™](#)” on page 608). Either of these types of objects allow data, text, and punctuation to be mixed in the label.

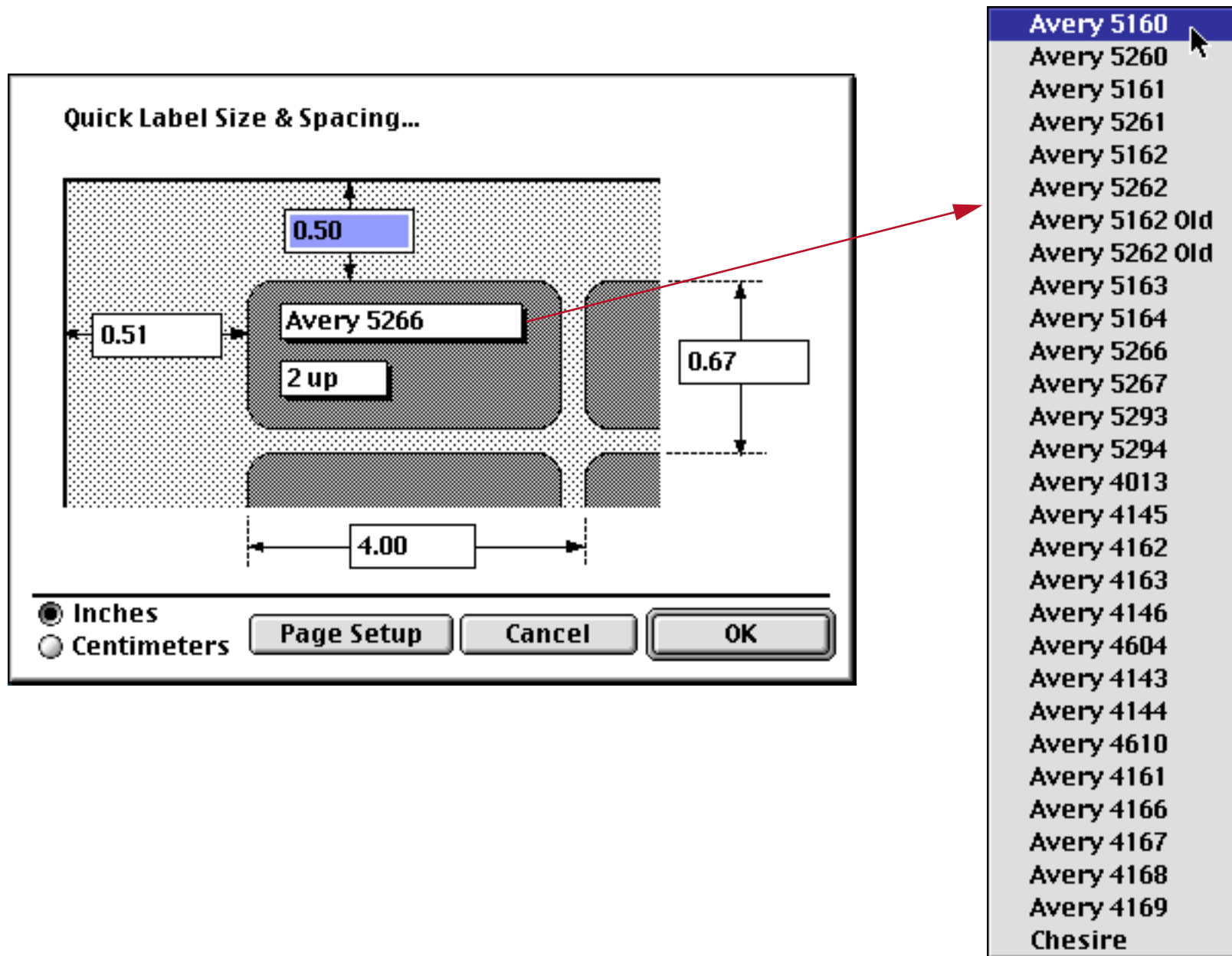
The QuickLabel Dialog

When you create a new form, Panorama gives you the option of creating a blank form or automatically creating a label or report.

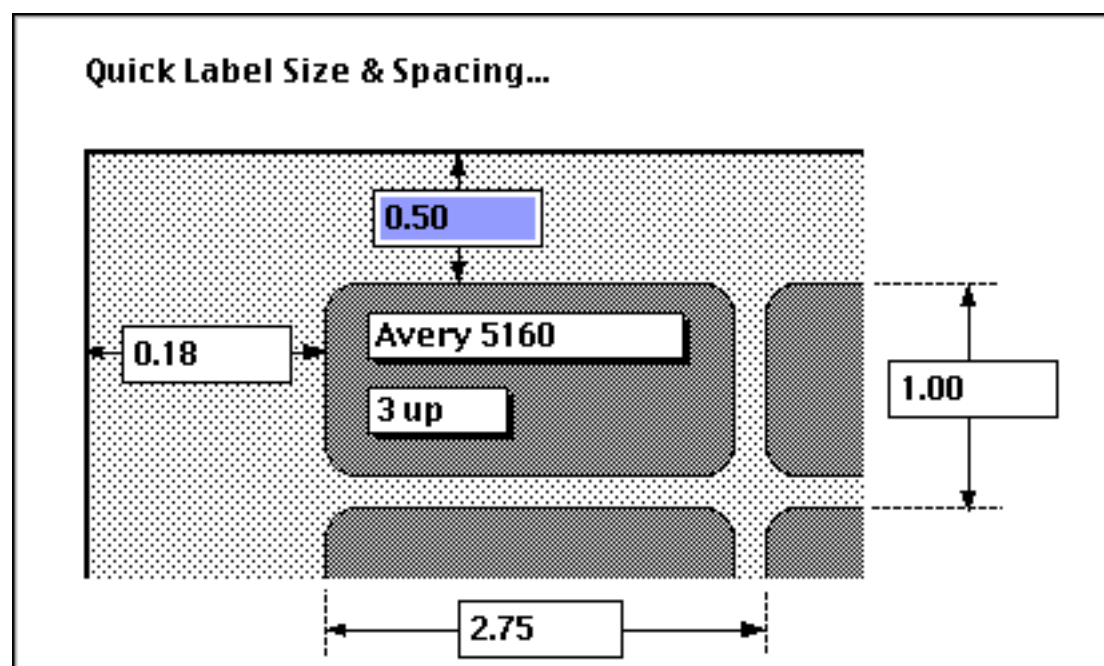


The **QuickLabel** button opens a dialog that can do most or all of the work of setting up a label for you. To use the QuickLabel dialog, select **New Form** from the View Menu (see “[Switching Between Views](#)” on page 168), give the new form a name, and then click on the **QuickLabel** button.

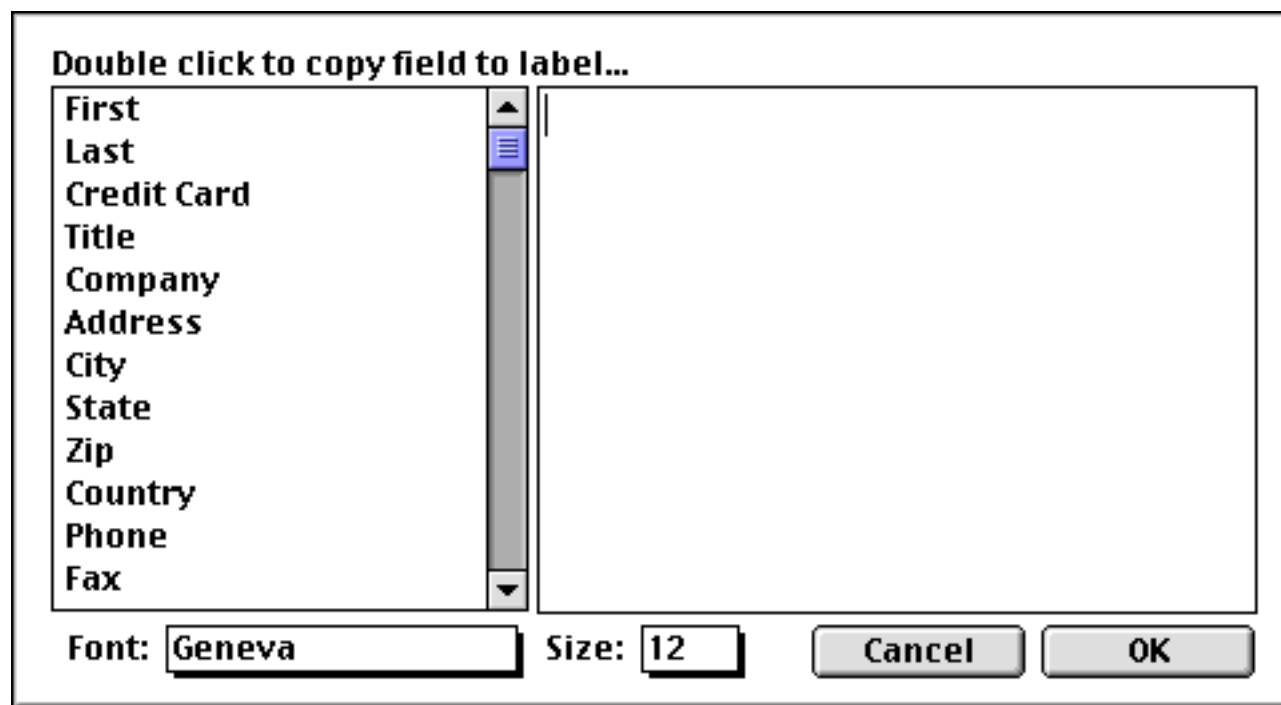
The QuickLabel dialog is really a two part dialog. The first part allows you to define the dimensions of the label. The dialog shows a picture of a label with dimensions around it. You can enter the dimensions manually, or you can pick a pre-defined label size using the pop-up menus inside the label. The top pop-up menu allows you to choose from popular label sizes. The bottom pop-up menu allows you to choose whether the label should be printed 1, 2, 3, or 4 up.



The most popular style of label is Avery 5160, which prints 30 labels on a sheet (10 rows by 3 columns).



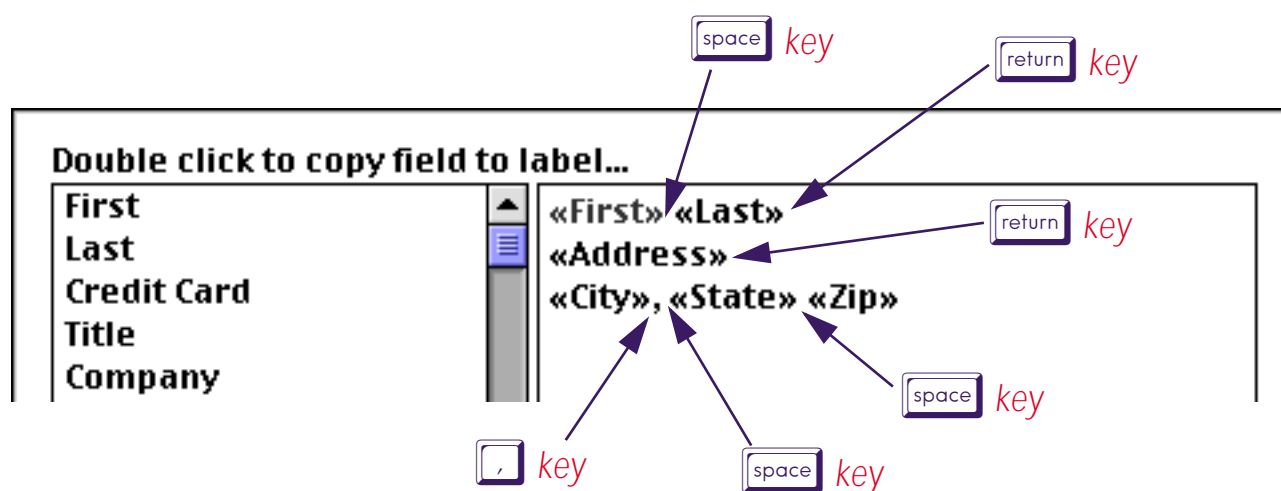
The second part of the dialog allows you to specify the data that will be printed on each label (usually name and address). The left side of the dialog lists all the database fields, while the right hand side contains an image of the actual label.



To copy a field into the label, double click on the field name. Double clicking types the field name into the area on the right, surrounded by « » characters.

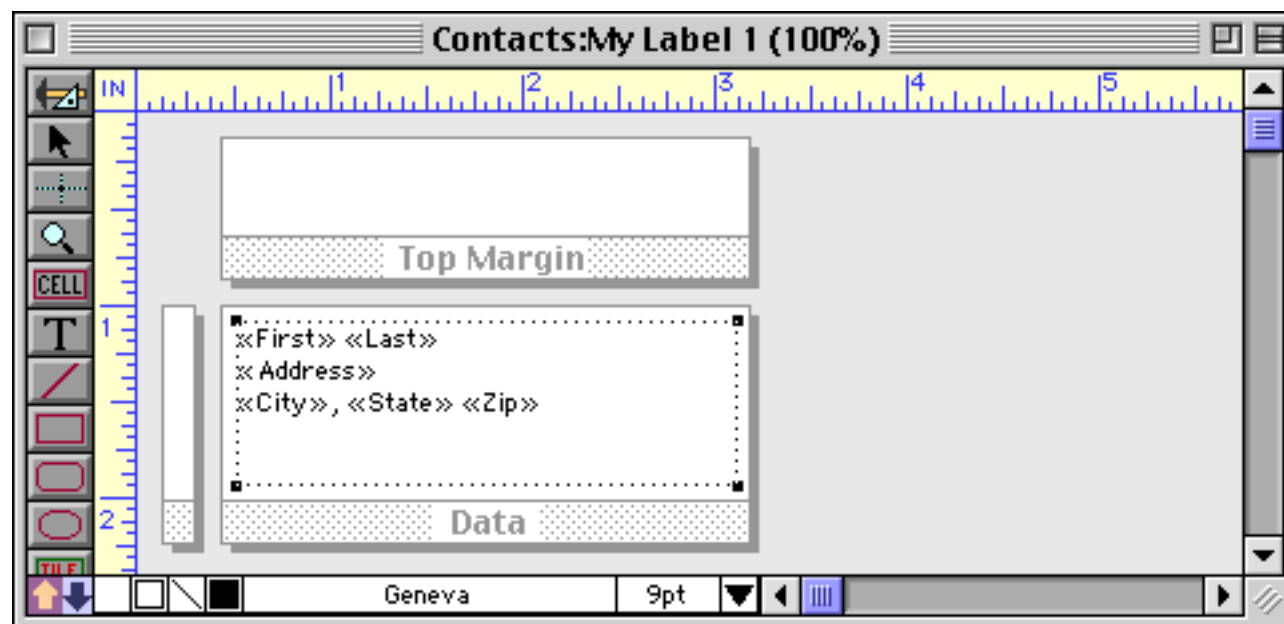


To add a space or punctuation, simply press the appropriate key. To start a new line, press the **Return** key.



You can also edit the text in the label like any other text—click to create an insertion point, drag to select one or more characters, or type to enter new text.

When the content of the label is finished, press the **OK** button. The dialog will automatically create one or more tiles and an auto-wrap text object.



The label is now finished and can be printed or modified further. Here's what the printed labels look like.

Keith Baker 552 Northgate Lindenhurst, IL 60046	Jerry Boone 6125 Park Drive Traverse City, MI 49684	Charles Dalbert 171 Broadway New York, NY 10003
Nabil Basir 12 Upland Lane Armonk, NY 10504	Jerry Bowen 2847 Peacock Highland, CA 92346	Steve Dallas 1 Chaminade Creve Coeur, MO 63141
John Bath 8864 Ave Mendota Heights, MN 55118	Yvonne Broach 9330 Poitiers Houston, TX 77071	Herb Dang 206 Phelps St San Francisco, CA 94124
Jack Beardsley 4964 Pelham Toledo, OH 43606	Susan Brown 783 Algonquin Newport Beach, CA 93459	Tim Daniels 3133 Cornell St. Louis, MO 63130

Printing Labels on Sheets

Labels come in two styles — sheets and rolls. Most of today's laser and inkjet printers work well with sheets, so we'll discuss those first. To learn about printing roll labels see "[Printing Roll Labels](#)" on page 1173.

Some sheets contain labels that go right up to the edge of the sheet. Depending on your printer you may not be able to print all the way to the edge. You may be able to use the **Page Setup** command to make it possible to print closer to the edge of the sheet. Consult the documentation that came with your printer to find out if this is possible.

The height of the data tile should equal the distance from the top of one label to the top of the next label, while the width of the label should equal the distance from the left edge of one label to the left edge of the next label.

Printing 3 by 10 1" Labels (Avery 5160)

The most common type of label sheet contains 30 1" high labels in 3 columns of 10 labels (Avery 5160). The Avery 5160 labels are spaced 1" vertically and 2.75" horizontally. There is a 1/2 inch top margin above the labels, and a 0.18 inch left margin.

You can use the QuickLabel dialog to set up the tiles for this type of label (see "[The QuickLabel Dialog](#)" on page 1169). If the edges of the labels are cut off when you print, use the Page Setup dialog to adjust your printer settings to allow Panorama to print as close to the edge of the sheet as possible. Consult the documentation that came with your printer to find out how to set the printer margins (if possible).

Aligning Labels on the Sheet

If the names and addresses are not properly aligned on the labels, you can create Left Margin and Top Margin tiles. (The QuickLabel dialog automatically creates these tiles for you.) To shift the text up or down, change the height of the **Top Margin** tile (see "[Top Margin Tile](#)" on page 1085). To shift the text left or right change the width of the **Left Margin** tile (see "[Left Margin Tile](#)" on page 1087). You can make precision adjustments to the size of a tile with the **Dimensions** dialog (see "[Viewing and Setting Exact Object Dimensions](#)" on page 512).

Note: If you do not specify a left or top margin, Panorama will use the default printer margins.

Printer Inaccuracy and Vertical Creep

If you try to print very small labels (less than 1/2 inch high), or if you try to print to the very edge of each label (for example a border around the label), you may run into problems due to printer inaccuracy. Due to mechanical tolerances, most printers are only accurate to about 1/8 inch over a full 11 inch page. Even if the labels line up properly at the top of the sheet, they may gradually creep out of place towards the bottom of the page. Unfortunately this problem is difficult to correct.

You may be able to reduce or eliminate the creep by adjusting for the inaccuracy in your printer. To try to compensate for this problem you can adjust the height of the data tile in 1/8th pixel increments. To do this, use the **Form Preferences** dialog to reduce the nudge increment to 1/8th pixel, then use the up/down arrows to nudge the size of the tile. Remember this adjustment may be different for different printers, or may even change for the same printer at different times.

A simpler solution is to not print anything less than 1/8th inch from the edge of a label. This leaves enough tolerance for the inaccuracy of the printer.

Printing Roll Labels

Roll labels can be much more difficult to set up than sheet fed labels, and on some printers you may not be able to get roll labels to print correctly at all.

Before you read this section we have a confession to make. Printers that can print roll labels are very rare these days, and here at ProVUE we have not used such a printer for at least a decade. We also rarely get tech support calls on this topic. The material below was written primarily for the Apple ImageWriter printer, a printer that has not been available for many years, so this material is pretty out of date. However, we decided to include it since we do not have any more recent experience with roll feed labels.

Printing on 1-up 1" Roll Labels

The most common type of roll label contains labels spaced 1 inch from label to label (usually the label itself is 15/16 inch, with a 1/16 inch gap between the labels). To print 1 inch labels, use the **QuickLabel** dialog to set up the report tiles. The data tile should be exactly 1 inch high, and as wide as the label. Choose 1-up from the pop-up menu. If your printer has an option for turning off gaps between pages use the **Page Setup** dialog to make sure that gaps are disabled. If your printer always prints a gap between labels you won't be able to print roll labels on that printer.

Printing Non 1" 1-up Labels

There are two basic methods for printing roll labels. The first method is to set up a custom page size and treat each label as a separate page. The second method is to use a normal page size and print several labels per page. For example, you could print eleven 1 inch high labels on a normal 8 1/2 by 11 page. Each of these methods has advantages and disadvantages.

Using Custom Page Size to Print Labels

To print 1-up labels using a custom page size, start by creating a data tile the same width as the label. Make the height of the tile equal to the distance from the top of one label to the top of the next. For instance if the labels are 1 15/16 inch high with a 1/16 inch gap between labels, make the tile 2 inches high.

Once the data tile is set up choose the **Page Setup** command from the File Menu. Click the **Custom Labels** button. **Custom Labels** tells Panorama to automatically set the paper size to the same dimensions as the data tile. Warning: If you ever change the size of the data tile, you must go back to the Page Setup command and re-set the paper size to **Custom Labels**. Otherwise Panorama will continue to use the old custom label size.

Remember that for most labels you will also have to set the No Gaps Between Pages option to eliminate the top and bottom margins.

You should only use a custom page size if you need to print on an odd size label. Custom page sizes are only available for the Apple ImageWriter printer—they are not available for non-Apple printers.

Using Standard Page Sizes to Print Labels

The most common label size is 1 inch high (1 inch from the top of one label to the top of the next). Since 11 of these labels are an exact fit on a standard 11 inch high paper size, you can avoid the use of custom page size to print these labels. This can help reduce problems with labels peeling off inside the printer that can occur when custom page sizes are used with the No Gaps Between Pages option.

Using a standard page size to print labels is easy—just set up the data tile and print. Remember that the height of the data tile should equal the distance from the top of one label to the top of the next. For 1-up labels the tile should be the same width as the label.

You can print using a standard page size even if the labels don't fit evenly on the page. For instance, you can get almost nine 1 1/4 inch high labels onto a standard page, but not quite. However, if you set the No Gaps Between Pages option Panorama will compensate, automatically printing labels that are split over the page break. The only problem will be that before printing begins, the Macintosh will automatically skip over the first 11 inch page. This wastes labels and throws the labels out of alignment. One solution to this problem is to start with a single blank sheet of paper in the printer. Let the printer skip over this page, then feed in the roll of labels and continue printing. Of course another solution is to use a custom page size. This only wastes one label but runs an increased risk of label jamming.

2, 3, and 4-Up Roll Labels

Panorama can print multiple column labels, but we don't recommend doing this with adhesive backed labels in an ImageWriter printer. As each label is printed the printer platen will rock back and forth. We've found that with multiple column adhesive labels this almost always results in labels peeling off inside the printer. At a minimum you should watch the printer carefully during printing to prevent a minor problem from turning into a catastrophe. You can also reduce the problem quite a bit by using **Best** or **Faster** print quality instead of **Draft**.

You can print multiple column labels simply by using the **Report Preferences** dialog to select the number of columns (from 1 to 4). If you are using the Custom Labels page size you should set up the number of columns before you use Page Setup to set the page size to Custom Labels.

4-Up Cheshire Labels

To print 4-up Cheshire labels, use the QuickLabel dialog and select 4-up Cheshire from the pop-up menu. Once the form is set up, use the **Report Preferences** dialog to set the **Across** option, so the labels will print across the page instead of down. Don't forget to use the Page Setup dialog to set the No Gaps Between Pages option. When you print the labels, we recommend using **Best** or **Faster** print quality instead of **Draft**.

Selecting Font and Print Quality

When you are printing labels using an ImageWriter, the choice of font and print quality can have a major impact on print speed. For maximum speed, use **Draft** quality with Monaco 10 point text. It looks funny on the screen, but prints several times faster than any other font because it matches the ImageWriter's built in font.

Of course if the label contains any graphics, it must be printed using **Best** or **Faster** quality. Using **Best** or **Faster** quality can also reduce the amount of forward/back platen motion when printing multiple column labels.

