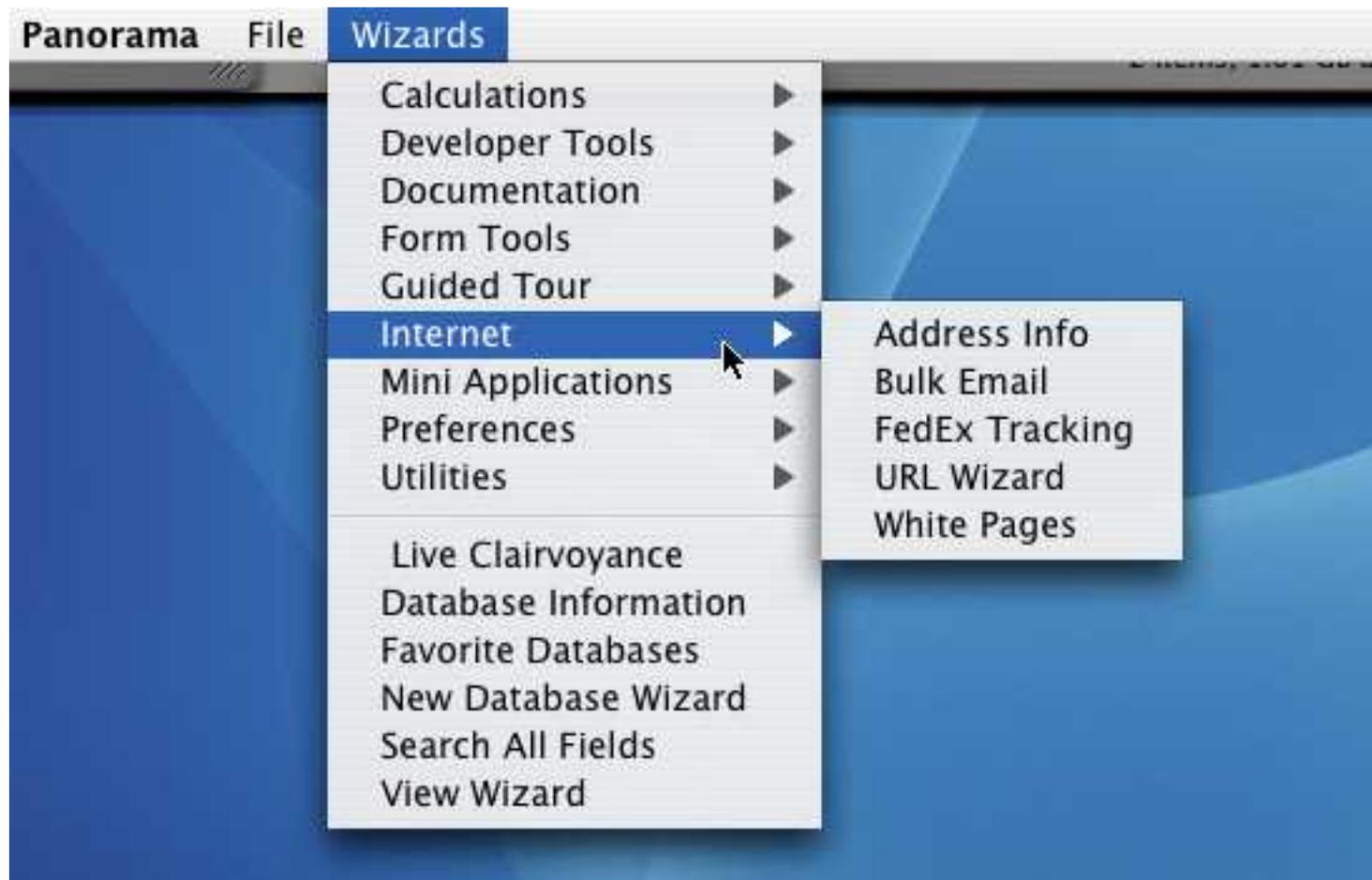


Guide to Wizards & Demo Files



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.



Wizard & Demo File Quick Reference

The wizards and demo files provided with Panorama fall into several categories.

Submenu	Wizard	Page	Description
Main Menu	Live Clairvoyance	Page 4	Performs “live” searches on any database
	Database Information	Page 5	View and modify database metadata information
	Favorite Databases	Page 5	Helps to keep track of your frequently used databases
	New Database Wizard	Page 6	Helps to design and create new databases
	Search All Fields	Page 6	Search entire database (not one field at a time)
	View Wizard	Page 8	Open form and procedure windows
Calculations	Formula Wizard	Page 9	Workbench for experimenting with formulas
	Mini Calculator	Page 9	Basic math calculator
	RPN Programmers Calculator	Page 10	Calculator for decimal, hex, octal and binary
	Run Automatic Calculations	Page 11	Recalculate based on design sheet formulas
Developer Tools	ASCII Chart	Page 12	Table of ASCII characters
	Channel Workshop	Page 12	Assists with building new channel modules
	Cross Reference	Page 13	Organize multi-database projects
	Custom Functions (ProVUE)	Page 14	View custom functions included with Panorama
	Custom Functions (User)	Page 14	Create your own custom functions
	Custom Statements	Page 15	Create your own custom statements
	Debug Log	Page 15	Trace internal operation of a program
	Dialog Workshop	Page 16	Helps to build custom dialogs
	Dropalyzer	Page 17	Tool for analyzing drag and drop operations
	Elastic Picture Workshop	Page 18	Modify pictures so they won't distort when stretched.
	Resource Menu Editor	Page 19	Edit custom menu resource files
	Variables	Page 19	Display and edit the contents of variables
Documentation	Panorama Handbook	Page 72	Opens Panorma Handbook PDF Document
	Panorama Movies	Page 21	Watch Panorama Training Movies
	Programmers Reference	Page 24	Searchable reference to all statements and functions
Form Tools	Font Usage	Page 25	Display list of fonts used in forms.
	Form Explorer	Page 25	Display/edit information about form objects
	Icons & Backgrounds	Page 26	Display images contained in Panorama itself
	Window Size	Page 26	Display size of window
	Window Tweak	Page 26	Disable window tool palettes and scroll bars
Internet	Address Info	Page 27	Check address and zip code information
	Bulk Email	Page 30	Send mass e-mails
	FedEx Tracking	Page 32	Track FedEx shipment information
	URL Wizard	Page 33	Open web/email URL's stored in current record
	White Pages	Page 35	Look up phone numbers

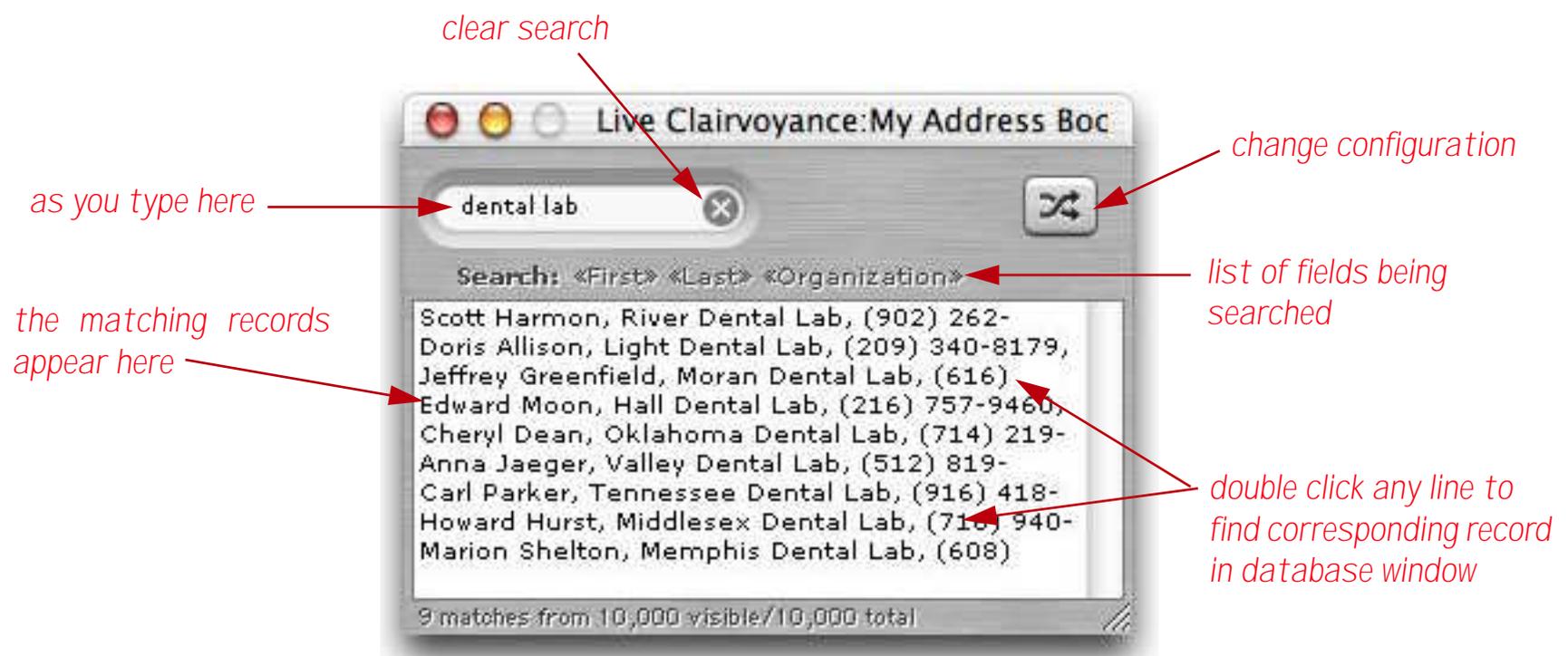
Submenu	Wizard	Page	Description
Mini Applications	Mini Calendar	Page 46	Basic calendar/event database
	Mini Contacts	Page 42	Basic name & address database
	Mini Correspondence	Page 48	Basic correspondence/mail merge database
	Mini Statistics	Page 49	Calculate mean, standard deviation, plot distribution.
	Stopwatch	Page 49	Simple timer
	Task Timer	Page 50	Keep track of time spent on different tasks
Preferences	Channels	Page 54	Configure channels for phone dialing, email, etc.
	Generic Fields	Page 58	Configure generic fields for contact information
	Hotkey Manager	Page 58	Configure universal and database specific hot keys
	Speech Wizard	Page 62	Configure speech templates
Utilities	Arrange Windows	Page 70	Tile and stack windows
	Disk Permissions	Page 71	Display disk permissions (OS X)
	Open Database	Page 71	Open database with special options
	Platform Converter	Page 72	Convert between versions and platforms
	Summaries & Outline	Page 73	Categorize and subtotal database information
	Text Export	Page 73	Export data into text files
	Text Import	Page 74	Import data from text files
	VCard Wizard	Page 75	Import/Export VCard information

Primary Wizards

The most basic and commonly used wizards have been placed in the primary Wizard menu instead of in a submenu.

Live Clairvoyance™

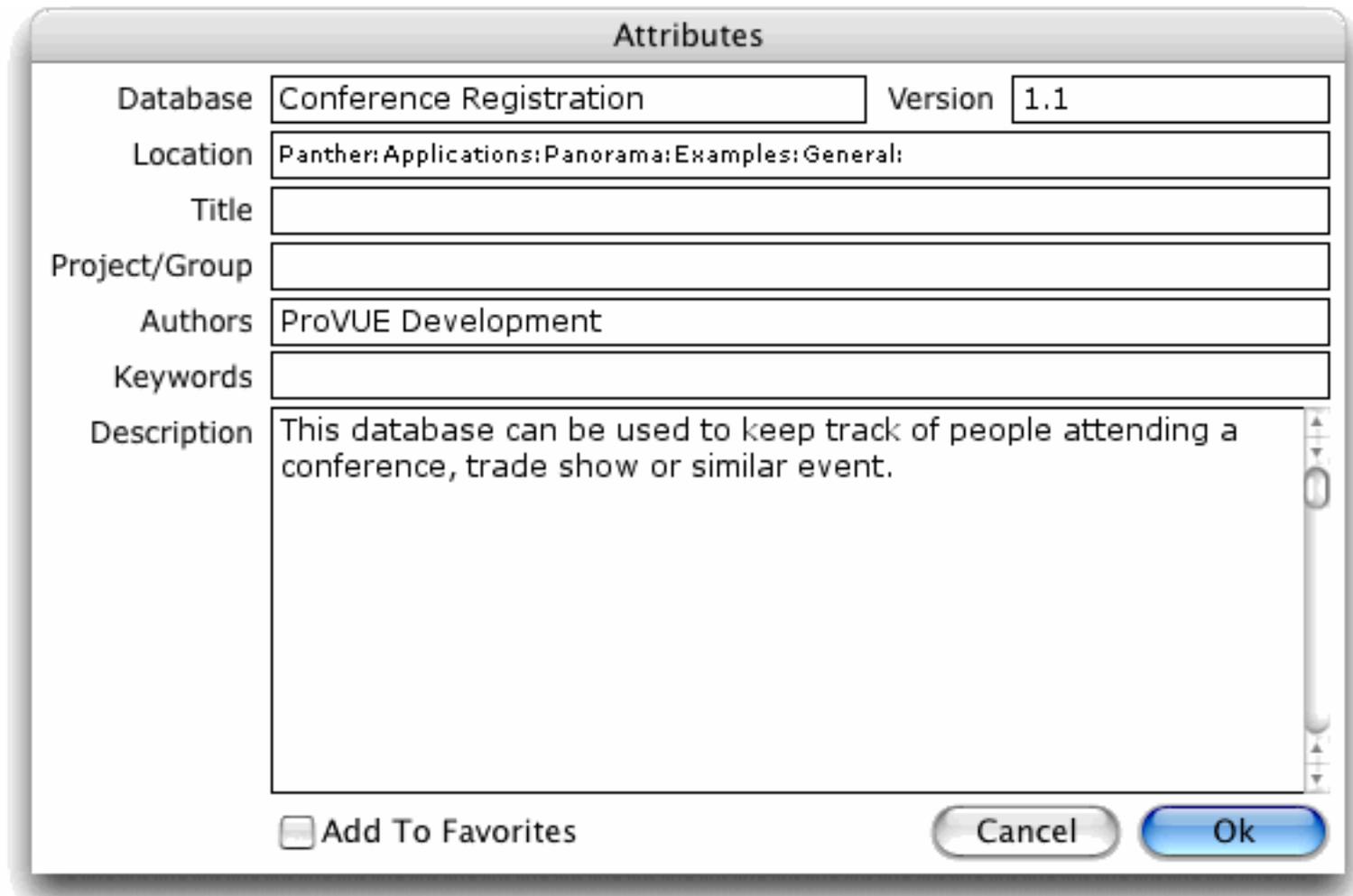
The **Live Clairvoyance™** wizard allows you to perform “live” searches on any Panorama database. The search results are updated dynamically as you type, allowing you to “hone in” on just the information you are looking for. The search may include multiple fields or even all fields in the database being searched. (If you've used the search box in iTunes you'll find the operation of this wizard familiar.) Using the Live Clairvoyance wizard doesn't require you to do any programming or make any modifications to your existing databases. Here's what this wizard looks like in action.



To learn more about this wizard see [“The Live Clairvoyance™ Wizard”](#) on page 507.

Database Information

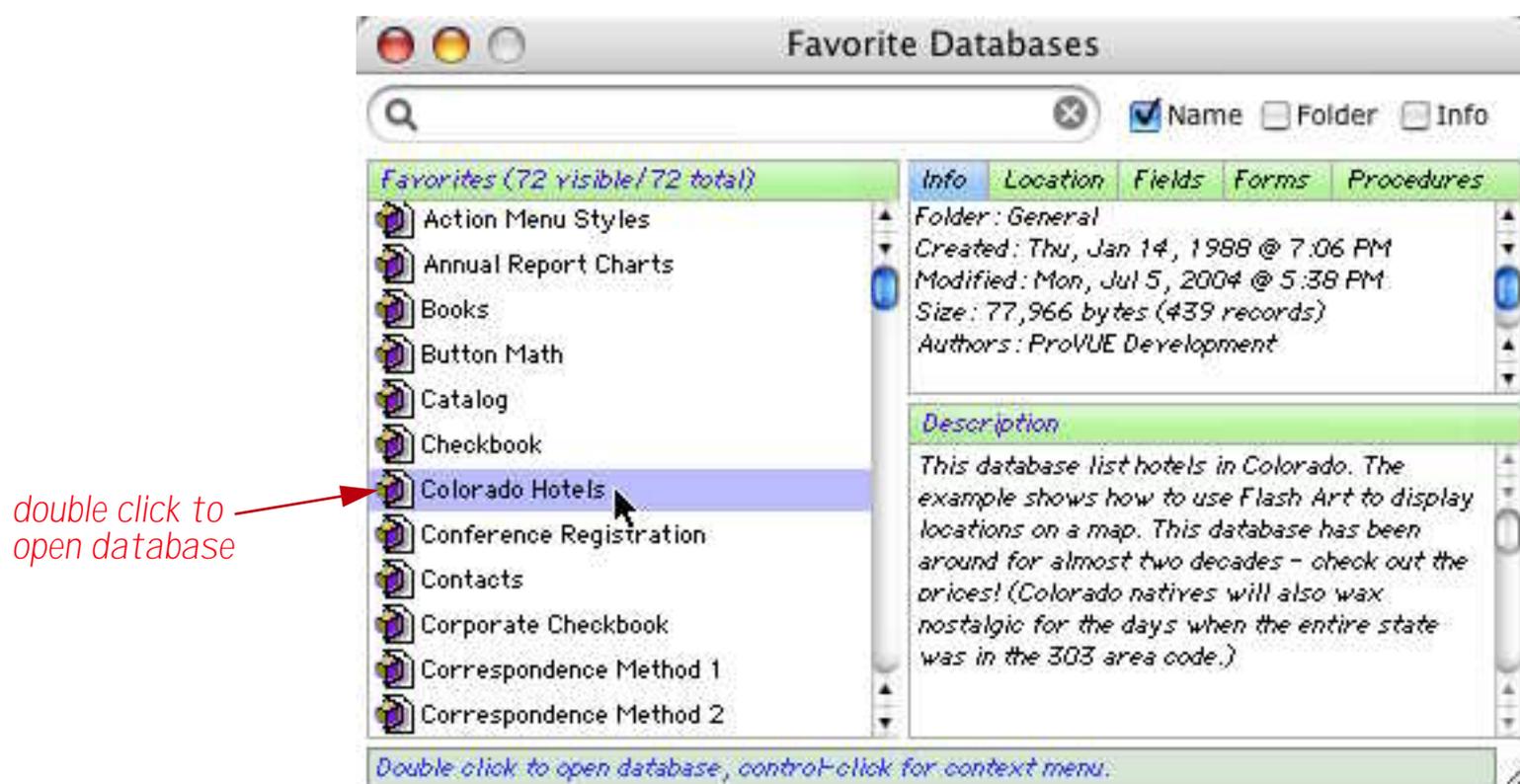
The **Database Information** wizard allows you to view and modify descriptive information about any database: the title, author name, description, keywords, etc.



To learn more about this wizard see [“Viewing and Modifying Database Metadata”](#) on page 263.

Favorite Databases

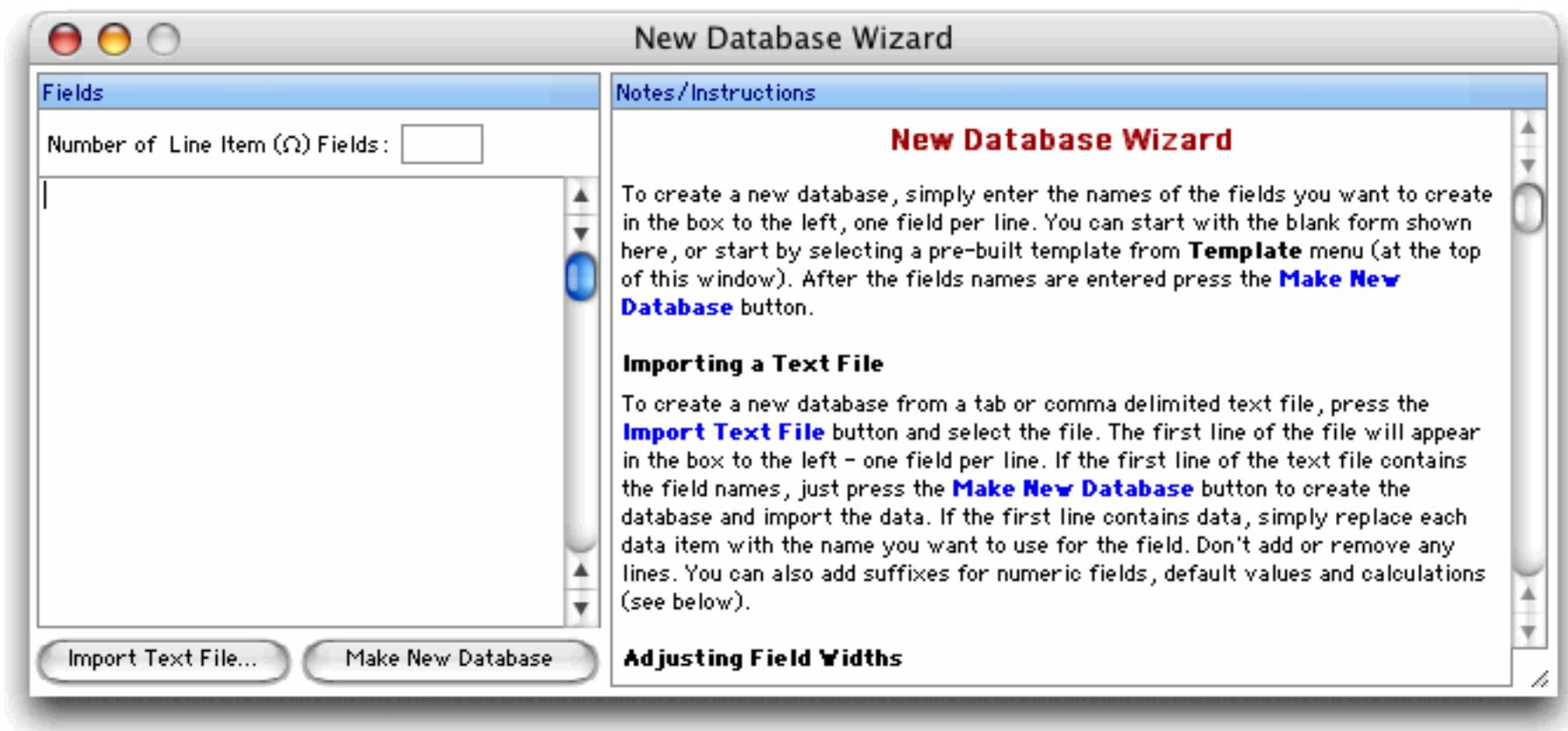
The **Favorite Databases** wizard keeps your favorite databases organized and at your fingertips. You can quickly display, search for, and open databases you have designated as favorites.



To learn more about this wizard see [“The Favorite Databases Wizard”](#) on page 237.

New Database Wizard

The **New Database Wizard** makes it easy to design and set up the fields for a new database. You simply enter the names of the fields you want to create and press the **Make New Database** button. The wizard does the rest.



To learn more about creating databases with this wizard see [“Using the New Database Wizard”](#) on page 250.

Search All Fields Wizard

The **Search All Fields** wizard makes it easy to search all of the fields in a database at once instead of one field at a time. Simply enter the word or phrase you want to locate and press either the **Find** or **Select** button.



The wizard will locate the word or phrase no matter what field it is located in. If you use the **Find** button you can jump through the database with the **Next** button to locate every occurrence of the word or phrase (in this case **Green**).

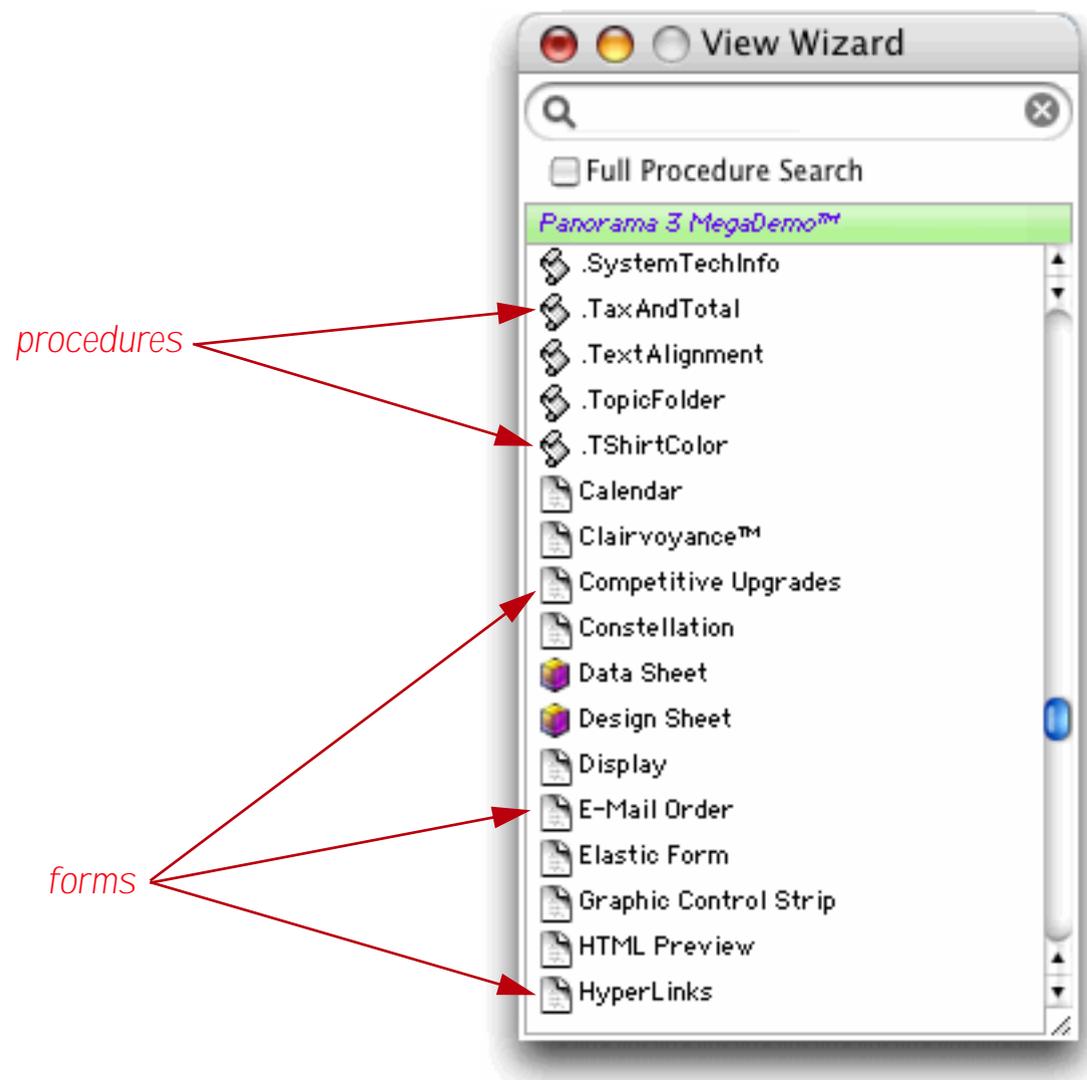
The following table represents the data shown in the screenshots, with the search results highlighted in the original image.

First	Last	Address	City	Stat	Zip	Phone
Darlene	Simpson	37054 South Greene Ap	Industry	CA	91746	(818) 247-5475
Melissa	Wheeler	47677 W Burnside Dr	La Mesa	CA	91942	(619) 464-9001
Raymond	Hendrickson	30953 S.W Poplar Blvd	Los Angeles	CA	90035	(213) 724-2175
Bernard	Gustafson	15417 E. Catalina Pkwy	Moffett Field	CA	94035	(415) 773-6256
Jason	Stevens	4779 N Fairview St.	Napa	CA	94558	(707) 278-1530
Judith	Simpson	544 S. Custer Lane	Orange	CA	92666	(714) 406-5575
Louise	Stauffer	40520 S.E. Cleveland P.	Piedmont	CA	94620	(510) 525-8600
Brian	Potter	15236 N. Porter Apt	Rialto	CA	92377	(909) 248-8477
Nancy	Greenberg	8526 West Dayton Rd.	San Anselmo	CA	94960	(415) 675-4256
Alan	Harrison	93 Morton Ter	San Diego	CA	92123	(619) 783-1965
Sandra	Cain	3975 S.W 1st Parkway	San Diego	CA	92154	(619) 297-5327
Edward	Hasson	429 W Harvey Cir	San Gabriel	CA	91776	(818) 990-1793
201 visible/201 total						
Raymond	Sanchez	59 W. Palmetto Cir.	Greenville	ME	04441	(207) 241-7088
Catherine	Wolff	2555 West University F	West Paris	ME	04289	(207) 718-0644
Joanne	Valdez	37935 S.E. Arbor Rt	Ann Arbor	MI	48105	(313) 592-4050
Sharon	Smith	915 E Willow Loop	Dearborn	MI	48126	(313) 420-8778
Tammy	Grant	468 S. Dorchester Ln	Ithaca	MI	48847	(517) 287-8374
Mary	Cooper	573 N. Somerset Loop	Greensboro	NC	27407	(919) 525-4522
Sally	Erickson	306 W Greene Dr.	Research Triang	NC	27709	(919) 680-8960
Stacey	Perkins	20143 Bishop Place	Elsie	NE	69134	(402) 526-8658
Charles	Wall	7306 W. Bethany St.	Papillion	NE	68128	(402) 374-5680
Kelly	Gage	677 S. Charlotte Lane	Bloomfield	NJ	07003	(201) 947-6456
Mary	Cooper	573 N. Somerset Loop	Greensboro	NC	27407	(919) 525-4522
Sally	Erickson	306 W Greene Dr.	Research Triang	NC	27709	(919) 680-8960
Stacey	Perkins	20143 Bishop Place	Elsie	NE	69134	(402) 526-8658
Charles	Wall	7306 W. Bethany St.	Papillion	NE	68128	(402) 374-5680
Kelly	Gage	677 S. Charlotte Lane	Bloomfield	NJ	07003	(201) 947-6456
Rachel	Greenberg	659 N.W. Sacramento L	Houston	TX	77265	(713) 873-2786
Esther	Hampton	6380 W. Lamar Ave.	Liberty	TX	77575	(409) 372-0787
Robert	Thoman	685 N Red Pl	Los Fresnos	TX	78566	(512) 898-3290
Dennis	Bailey	37121 W Elliot Dr	San Marcos	TX	78667	(512) 644-5347
Rhonda	Jones	161 East Marion Cir.	Provo	UT	84604	(801) 382-7759

For more information on this wizard see “[The Search All Fields Wizard](#)” on page 512.

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 wizard can help you locate and open any view within any open database. The wizard displays a list of the views in any database, including  forms,  procedures,  crosstabs, the  data sheet and the  design sheet. The list is searchable, and you can even search all of the procedure source code to search for a field, variable, or other program element. You can easily open any view by double clicking on it.



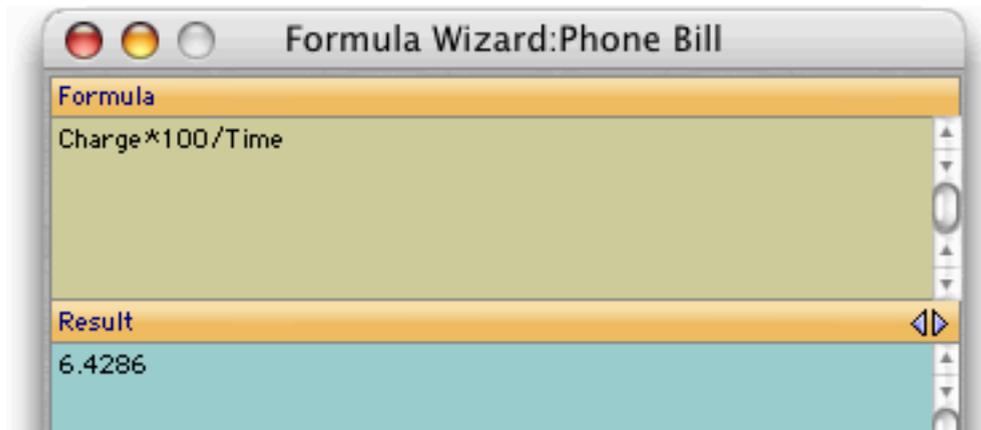
To learn more about this wizard see [“The View Wizard”](#) on page 355.

Calculation Wizards

The wizards in this submenu perform various types of calculations.

Formula Wizard

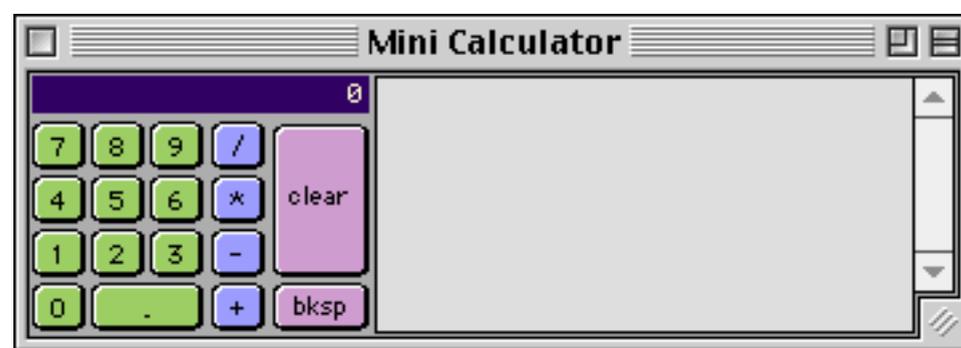
The **Formula Wizard** can be used as a workbench for working with formulas. You can experiment with formulas here before you actually use them in your database. The formula wizard can handle formulas that use numeric, text and date calculations (the illustration below shows a text calculation).



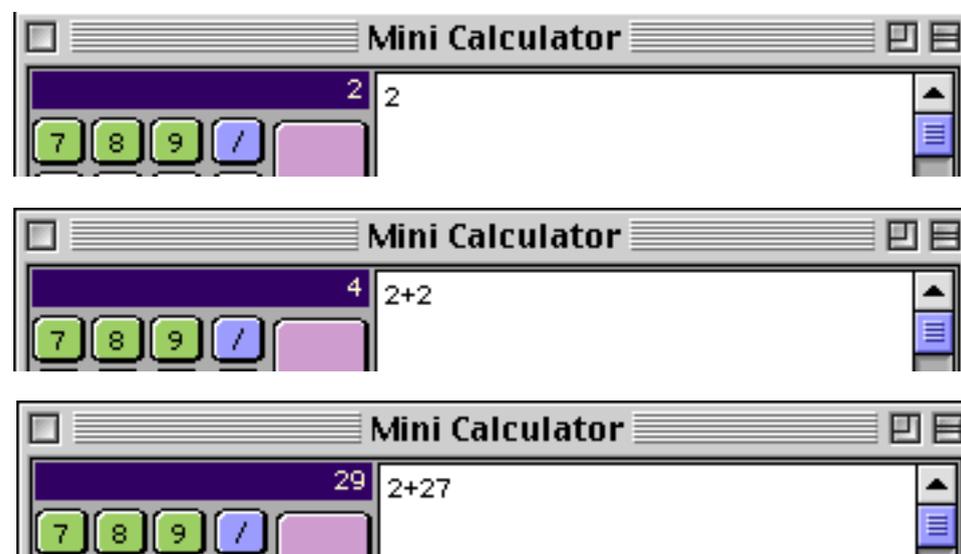
To get the complete scoop on this very useful wizard see “[Using the Formula Wizard](#)” on page 1303.

Mini Calculator Wizard

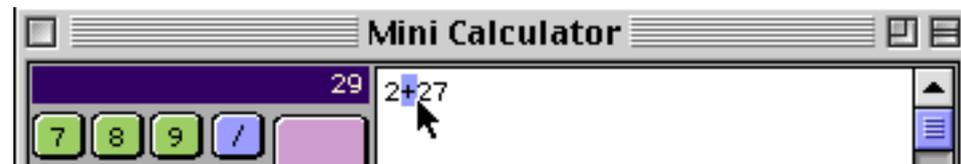
The **Mini Calculator** wizard performs basic math calculations. You can enter calculations with either the buttons on the form or with keyboard (or both).



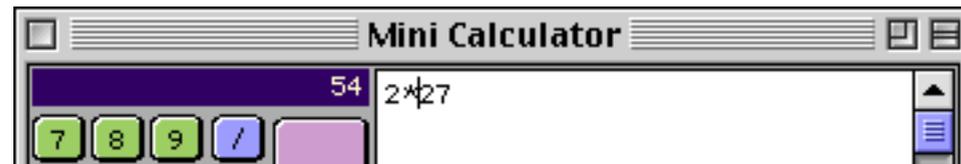
As you press each button or key the calculator immediately shows the new result.



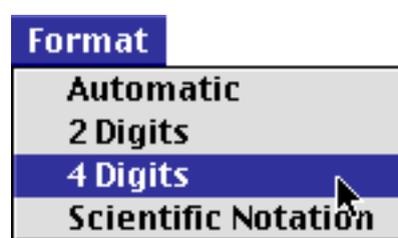
You can click on the formula to edit it.



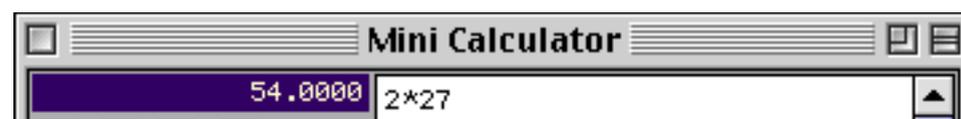
The wizard recalculates the newly edited formula immediately. In this case the new answer is 54.



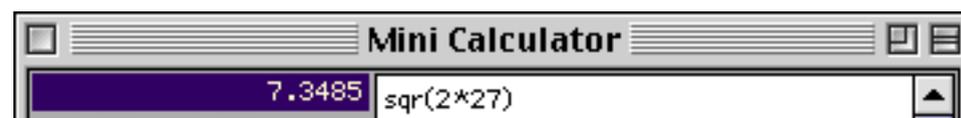
You can use the **Format** menu to choose the format used to display the calculation result.



The **4 Digits** format displays four digits after the decimal point.



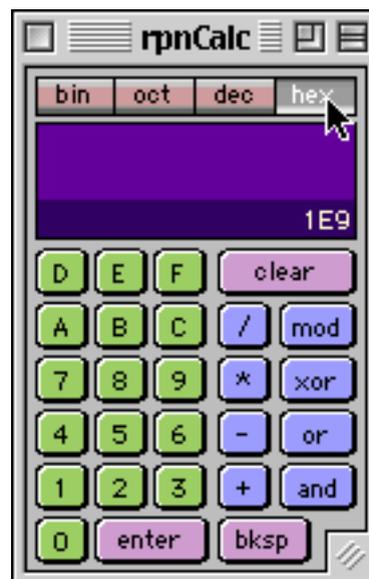
You can type in any numeric function supported by Panorama. This example calculates the square root of 54.



To learn more about the numeric functions supported by Panorama see "[Arithmetic Formulas](#)" on page 1333.

RPN Programmers Calculator

The **RPN Programmer's Calculator** can be used to perform numeric calculations and to convert numbers between decimal, hexadecimal, octal and binary.



See "[The RPN Programmer's Calculator](#)" on page 1427 to learn more about this wizard.

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 “[Filling a Field with a Formula](#)” on page 581). 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 468). You can recalculate all fields with formulas, or just the current field.



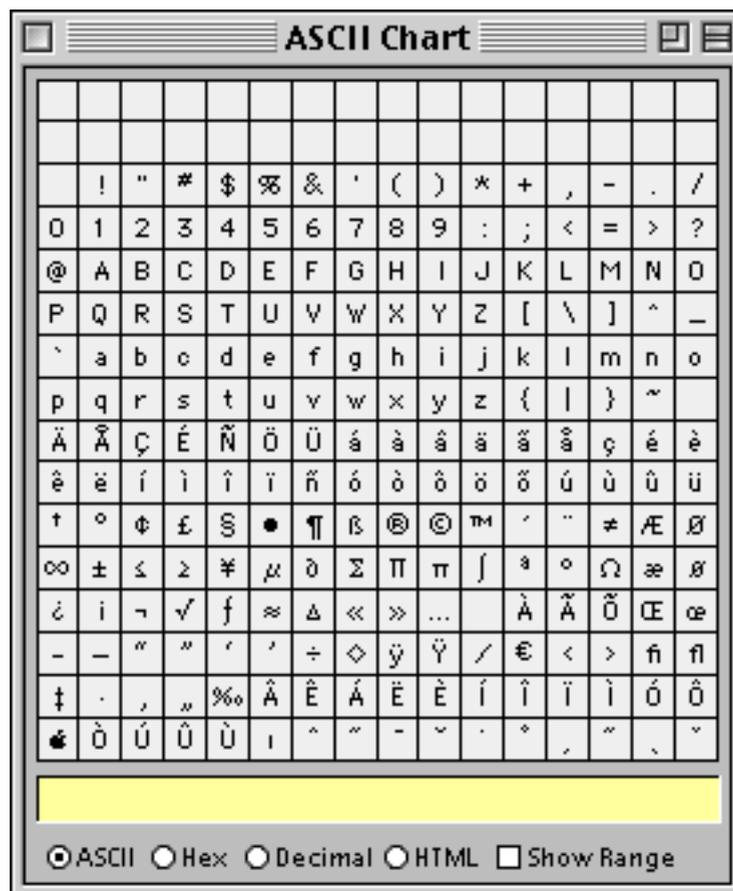
To learn more about this wizard see “[The Run Automatic Calculations Wizard](#)” on page 480.

Developer Tool Wizards

The wizards in this submenu are designed to help design, build and debug complex applications with Panorama.

ASCII Chart

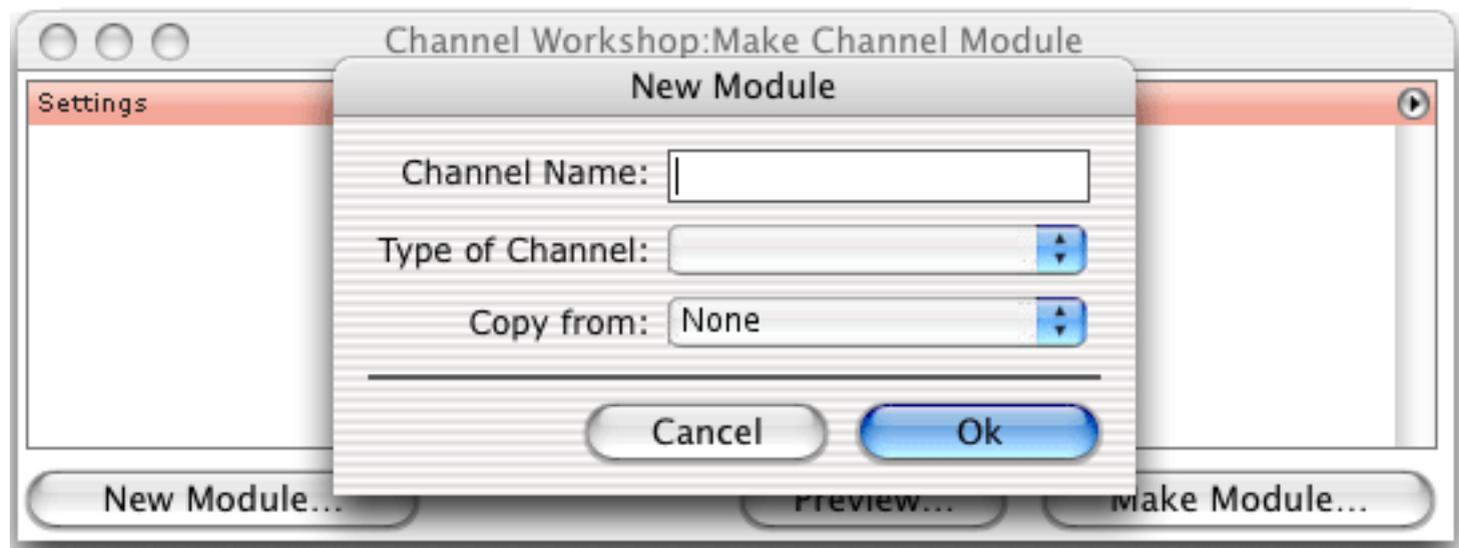
The **ASCII Chart** wizard allows you to displays a matrix showing all 256 ASCII characters. When you click on a character it types that character into the box at the bottom.



To learn more about this wizard see [“The ASCII Chart Wizard”](#) on page 1360.

Channel Workshop

Panorama comes with a number of channel modules for sending e-mail, dialing the phone, and interfacing with other web sites and third party software. If you have programming experience you can write your own channel modules. To help make this easier we have created a **Channel Workshop** wizard that will create the core of your new module for you.

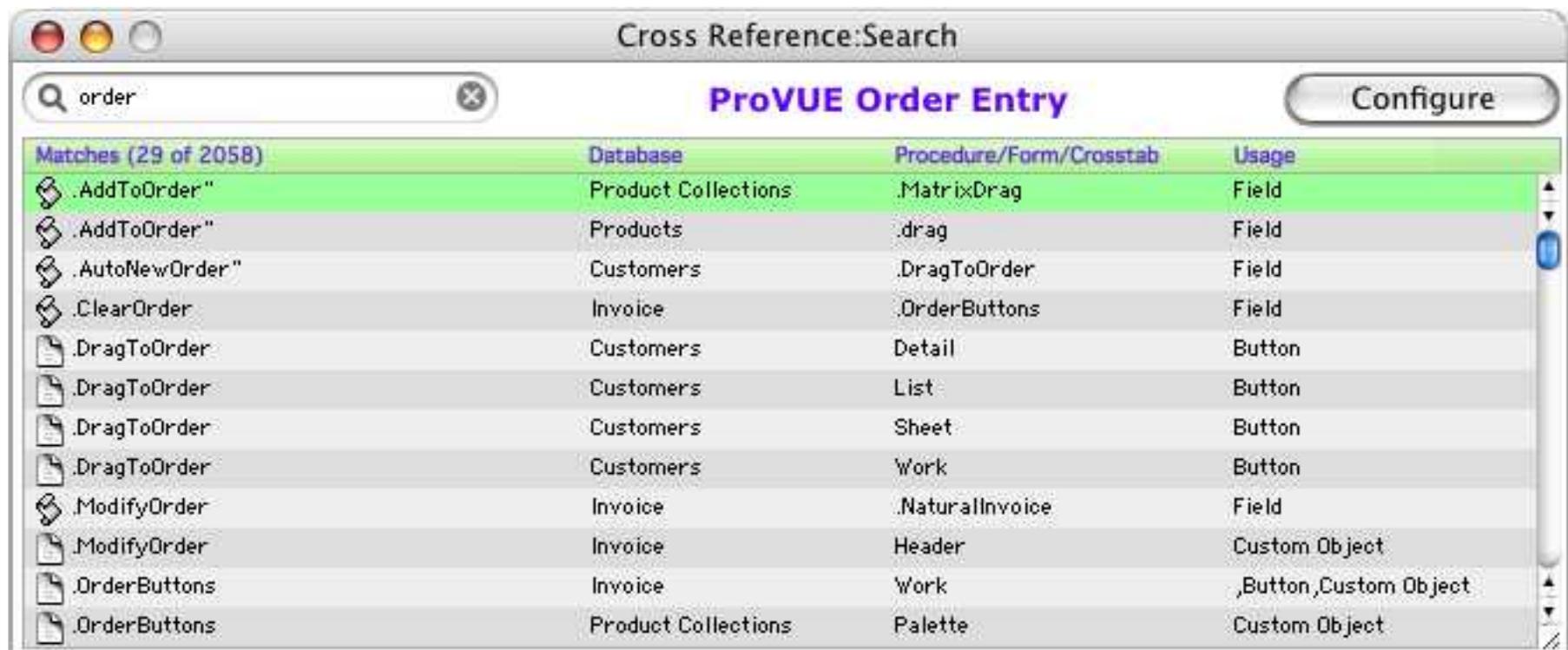


To learn more about this wizard see [“Writing Your Own Channel Modules”](#) on page 1977.

Cross Reference

A complex real world system (accounting, reservations, order entry, etc.) created with Panorama may involve a dozen files with hundreds of fields, variables, procedures, forms, etc. Keeping track of all this information in your head can be a monumental task.

Panorama's **Cross Reference** database feature can help make this task manageable. A cross reference database keeps track of all the items in one or more databases: every field, every variable, every procedure, every form—every everything. Not only does the cross reference database keep track of where these items are defined, but also everywhere they are used. For example, suppose your database has a field named **Title**. A cross reference database can tell you that this field is used in the **Entry**, **List**, and **Label** forms, and is also used in the procedures **.NewRecord** and **Search**. Or you could use a cross reference database to find out that the **.LastYear** procedure is triggered by buttons in the **Entry** and **Annual Report** forms. As your database applications become more complicated you'll find that a cross reference database is an invaluable tool to help you sift through a mountain of databases and programming.

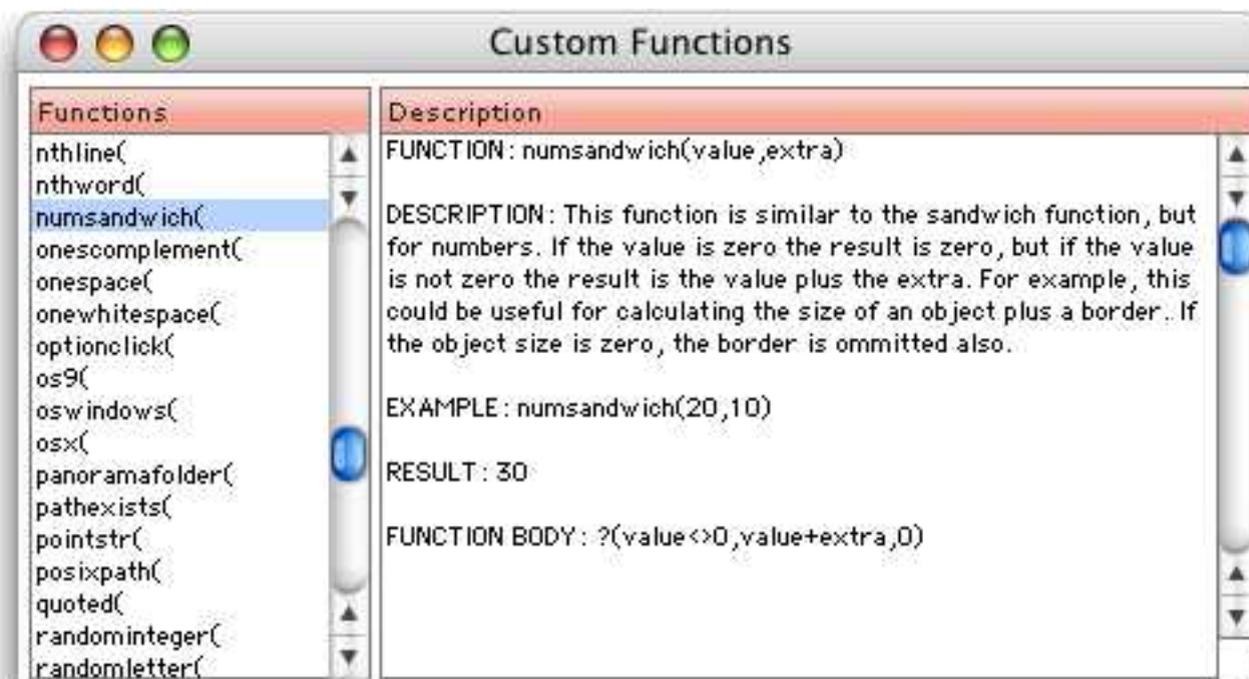


Matches (29 of 2058)	Database	Procedure/Form/Crosstab	Usage
.AddToOrder"	Product Collections	.MatrixDrag	Field
.AddToOrder"	Products	.drag	Field
.AutoNewOrder"	Customers	.DragToOrder	Field
.ClearOrder	Invoice	.OrderButtons	Field
.DragToOrder	Customers	Detail	Button
.DragToOrder	Customers	List	Button
.DragToOrder	Customers	Sheet	Button
.DragToOrder	Customers	Work	Button
.ModifyOrder	Invoice	.NaturalInvoice	Field
.ModifyOrder	Invoice	Header	Custom Object
.OrderButtons	Invoice	Work	,Button,Custom Object
.OrderButtons	Product Collections	Palette	Custom Object

To learn more about this wizard see "[Cross Referencing](#)" on page 1580.

Custom Functions (ProVUE)

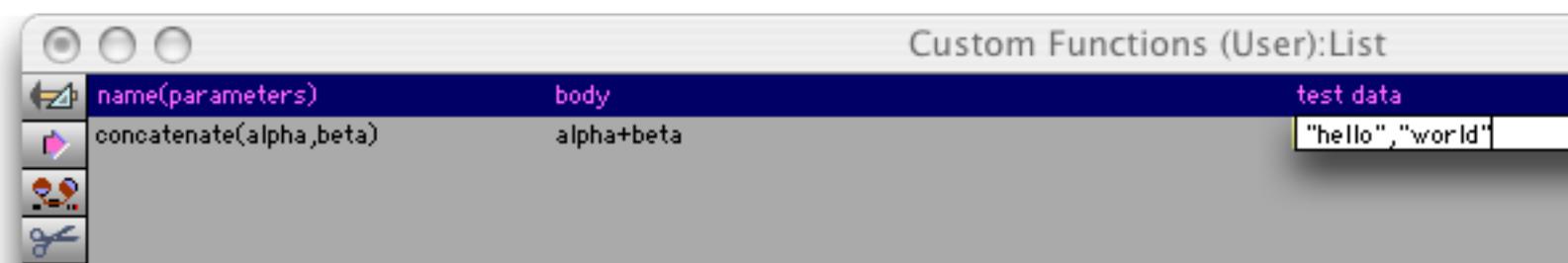
Panorama includes a number of custom functions that have already been defined for you. To see a list of these functions open the **Custom Functions (ProVUE)** wizard.



You can also find these functions in the Programming Reference Wizard. For more information on Custom Functions see “[Custom Functions](#)” on page 1461.

Custom Functions (User)

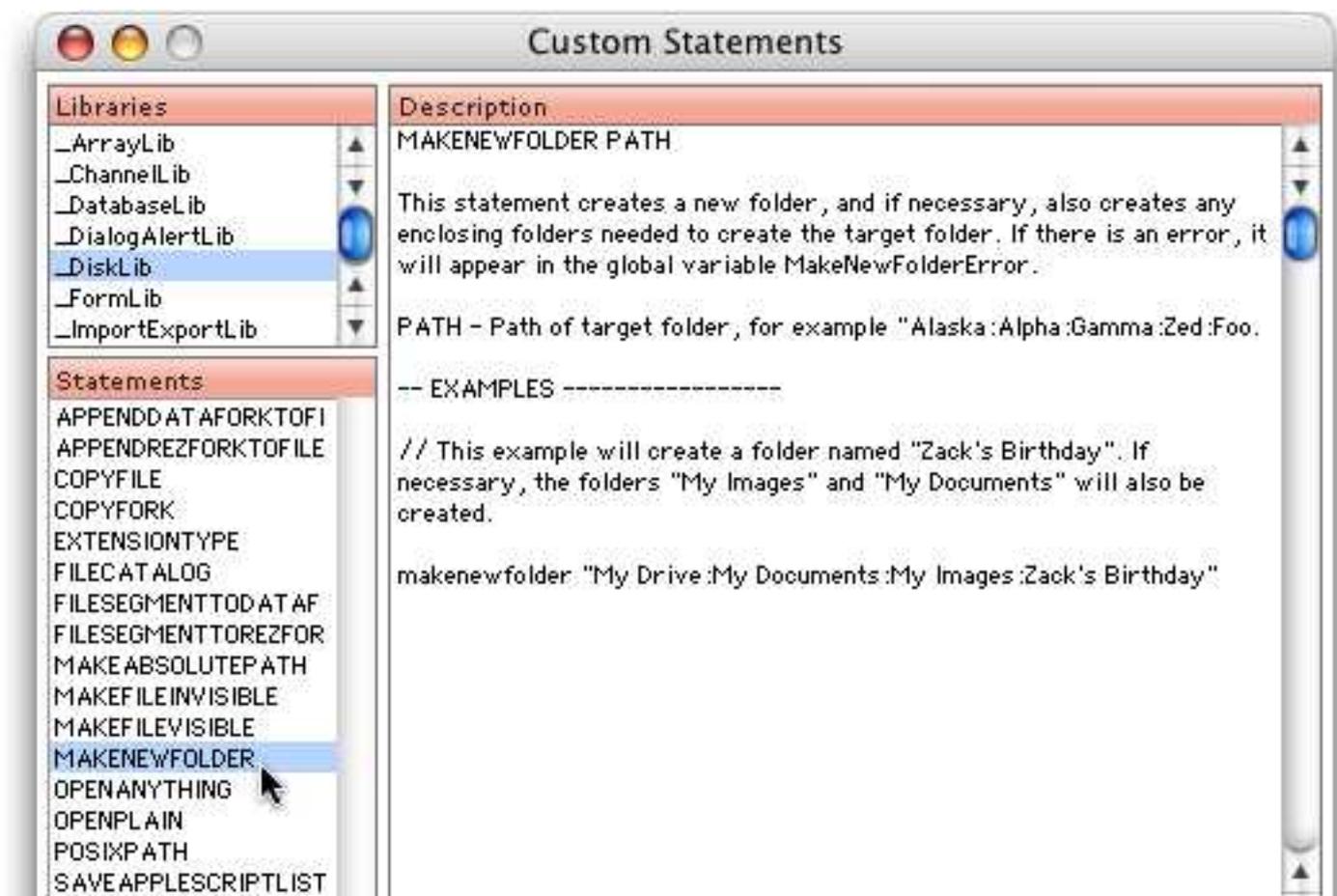
Panorama doesn't limit you to the built-in functions that are supplied with a Panorama. In fact using the **Custom Functions (User)** wizard you can actually create your own functions that can be used in any formula.



For more information on Custom Function see “[Custom Functions](#)” on page 1461.

Custom Statements

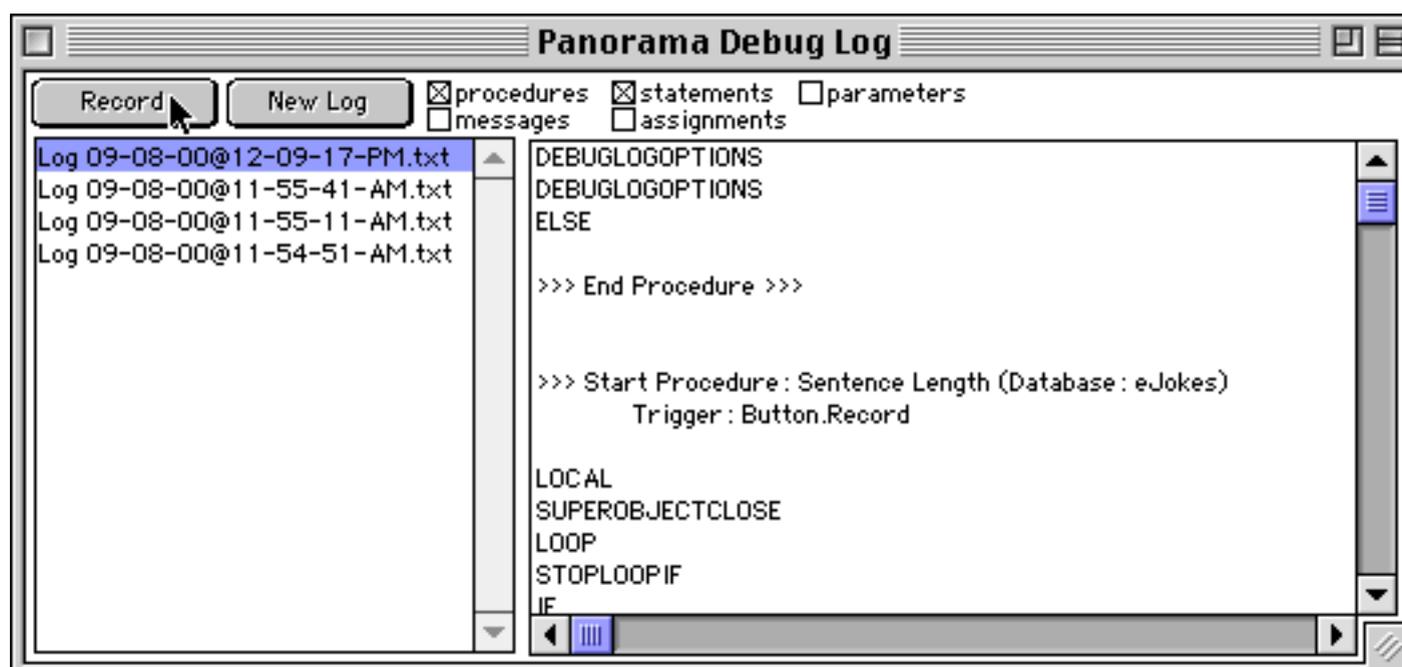
This wizard allows you to extend Panorama's programming language by writing your own custom statements. You can also examine (and even modify) the hundreds of custom statements that come with Panorama.



For more information on Custom Statements see [“Custom Statements”](#) on page 1536.

Debug Log

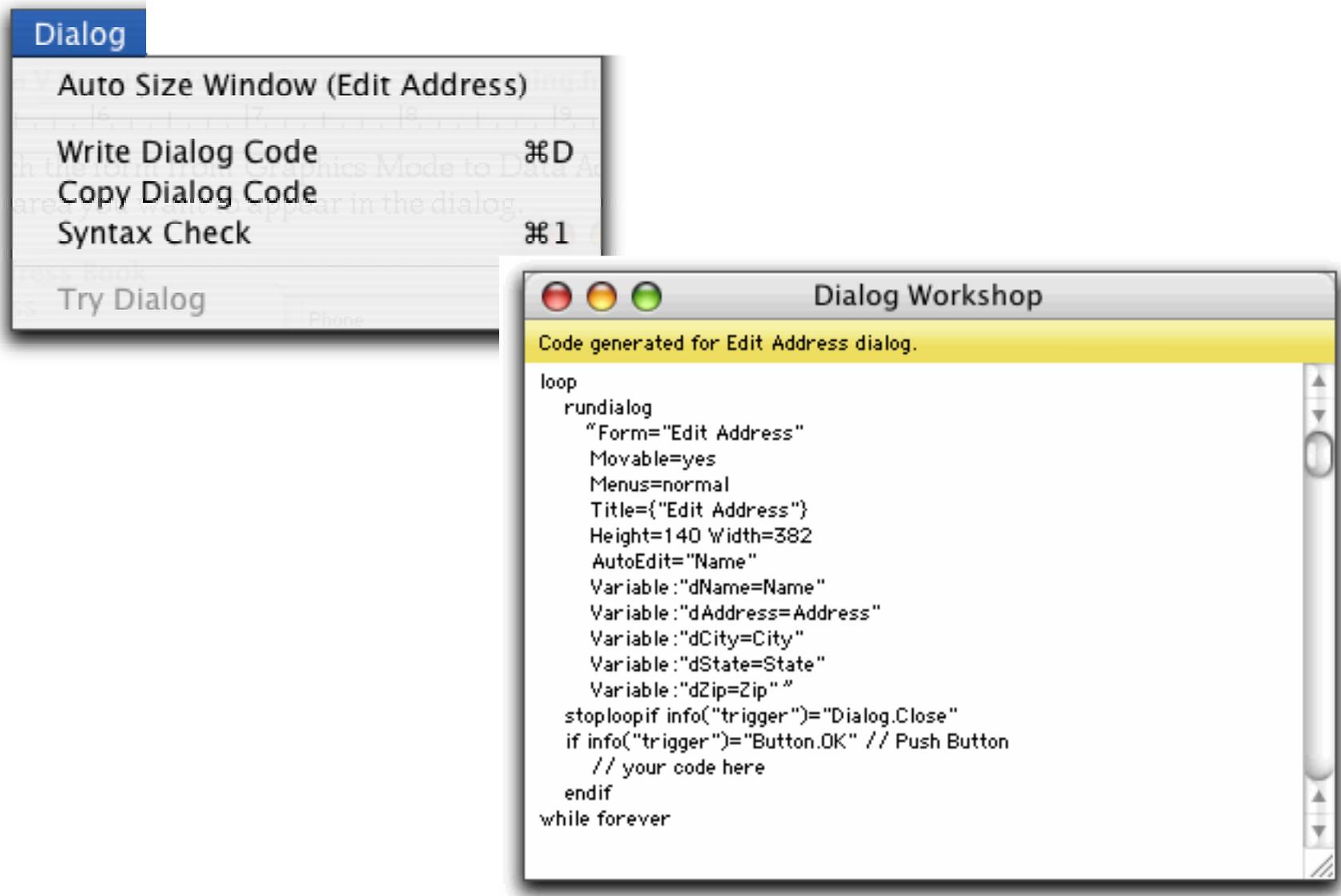
The procedure debug log was originally developed as an “in house” tool to help debug Panorama itself. It has proved so useful that we have decided to document and make it available for general use. When the debug log is in use Panorama records procedure activity in a text file. Later you can review the text file to trace the actions of your procedure.



To learn more about tracking procedures with this wizard see [“Procedure Debug Log”](#) on page 1572.

Dialog Workshop

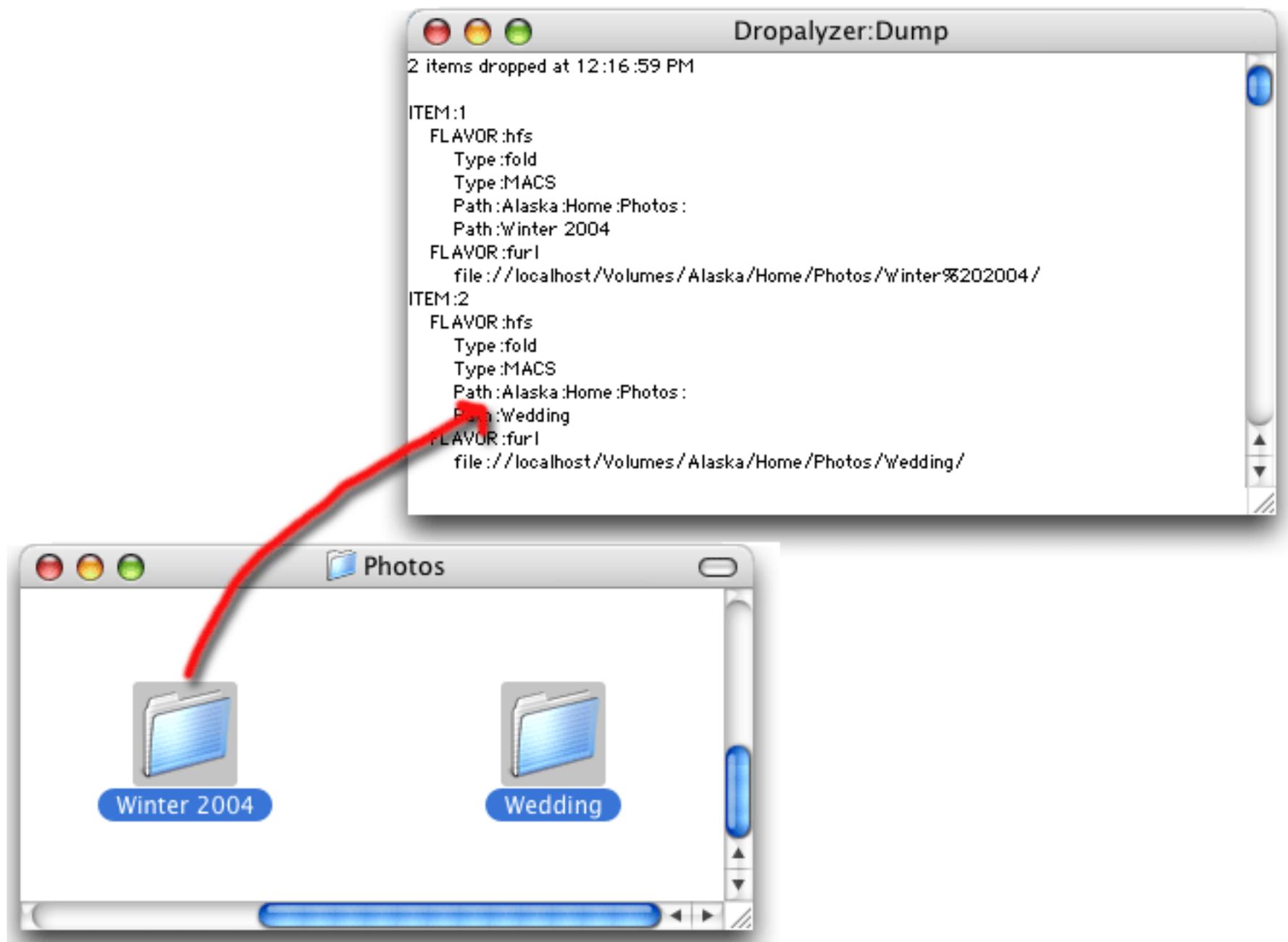
When an off the shelf dialog won't cut do, you can build your own using dialogs using standard Panorama forms and the **Dialog Workshop** wizard. This wizard analyzes your form and writes the basic code for that form for you. It also let's you try out your dialog before you actually commit the code to your database.



To learn more about this wizard see "[Custom Dialogs](#)" on page 1744.

Dropalyzer

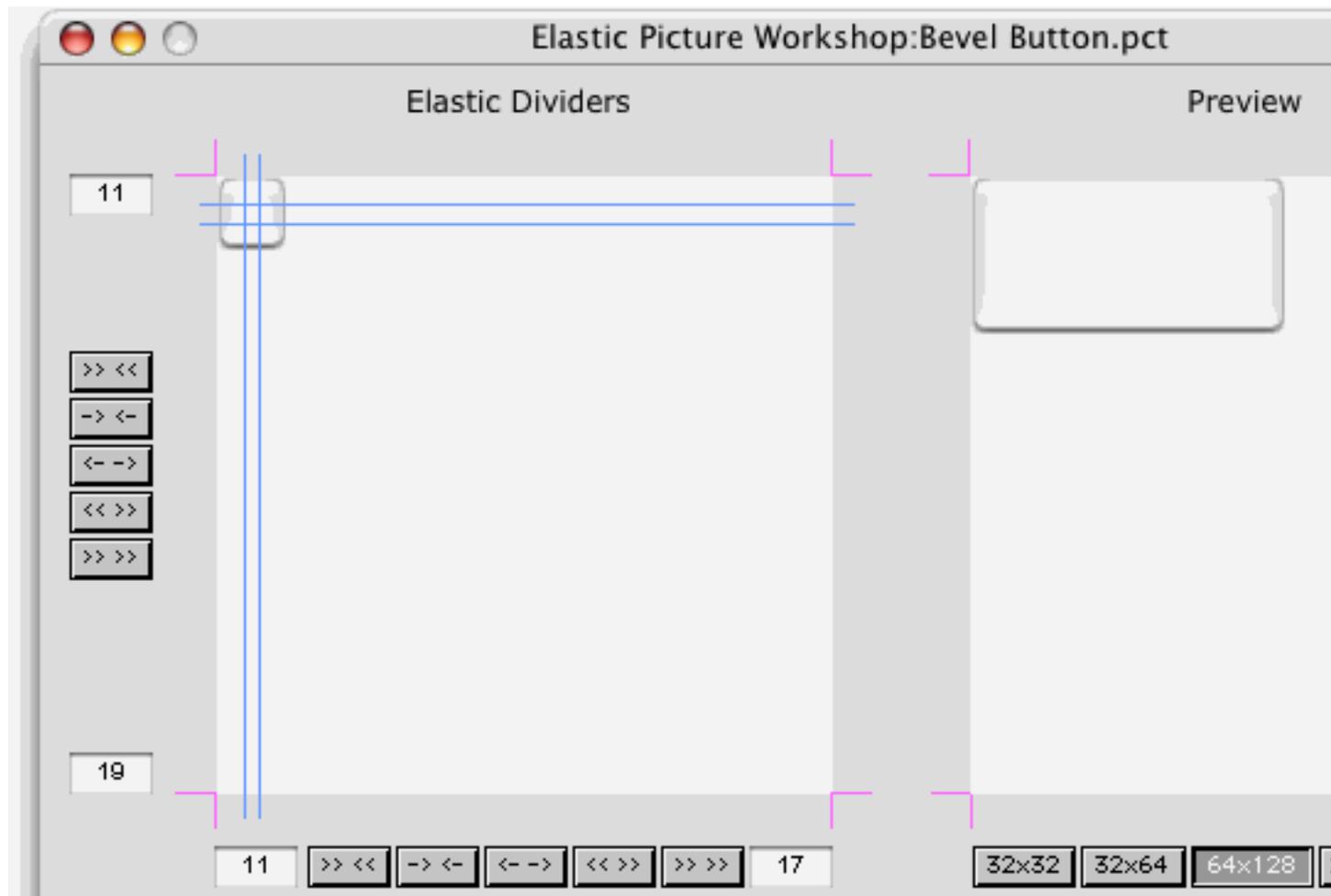
The Dropalyzer wizard is a handy tool for analyzing, writing and testing drag and drop procedures. When you first open this wizard it is completely blank, but you can drag anything you want onto this wizard and it will display some information about what was dropped. The illustration below shows the display if you drop two folders from the Finder onto the Dropalyzer wizard.



To learn more about this wizard see "[The Dropalyzer Wizard](#)" on page 1899.

Elastic Picture Workshop

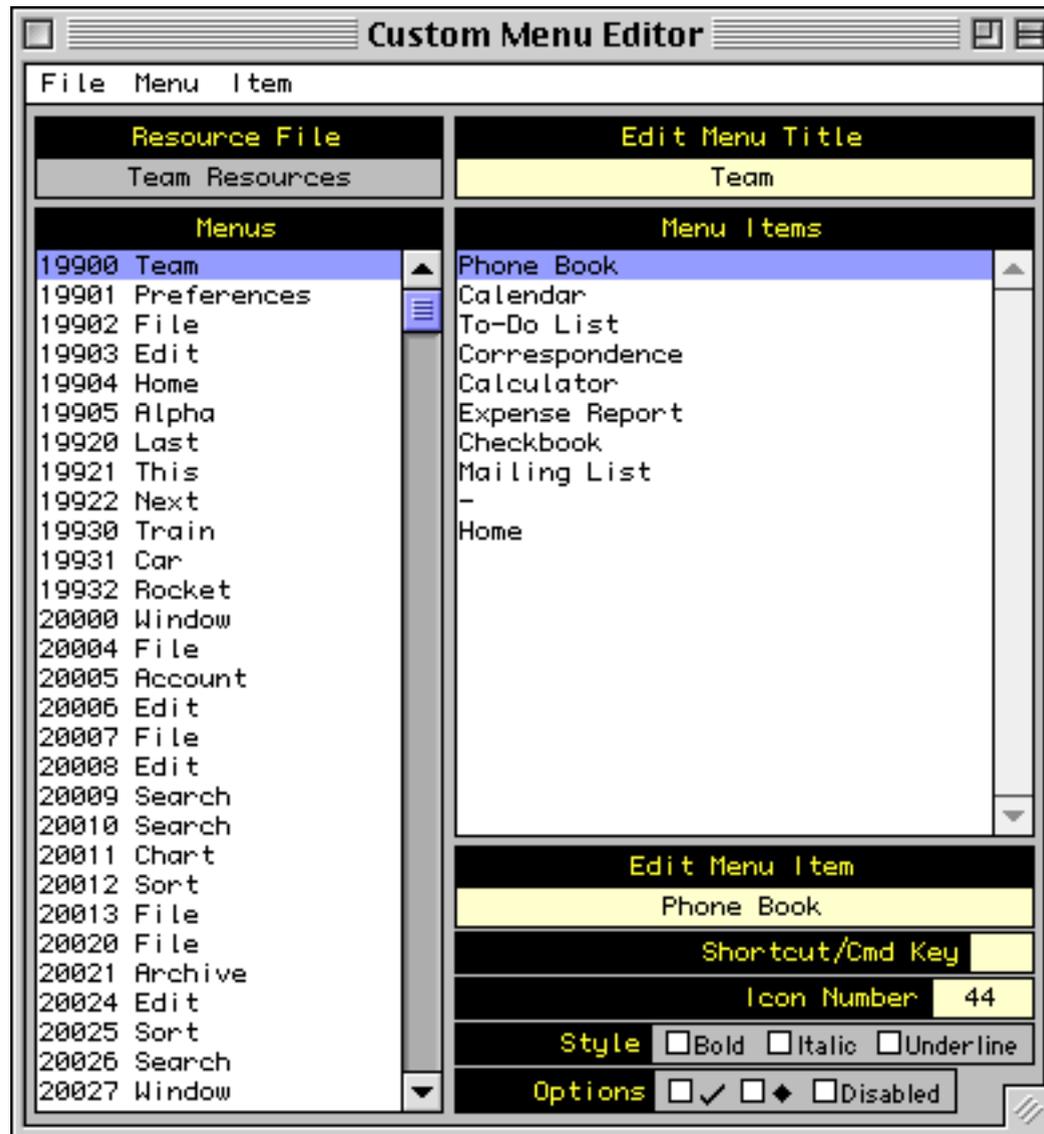
Many forms require borders, buttons and widgets need to be used over and over again but with different sizes. Any image can be stretched with the **Scale to Fit** option, but the result is often a distorted image. The **Elastic Picture Workshop** wizard can be used to add stretching information to an image so that it won't be distorted when it is stretched.



To learn more about this wizard see "[Elastic Pictures](#)" on page 928.

Resource Menu Editor

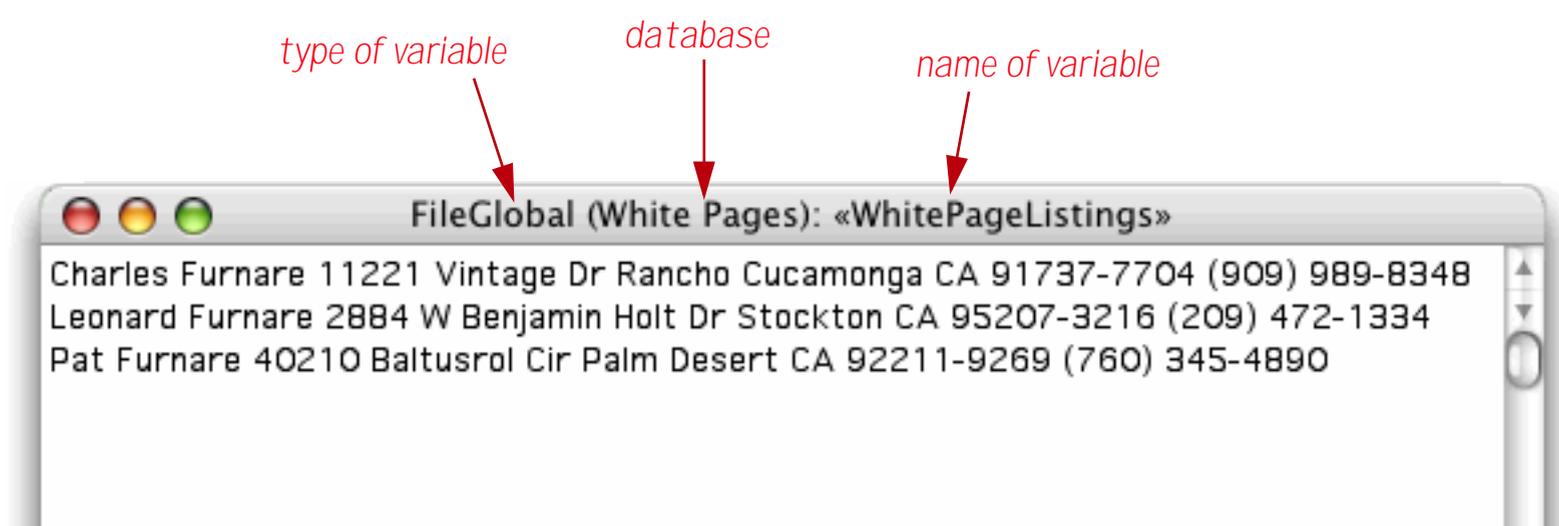
Resource based custom menus allow you to completely or partially override Panorama's standard menus (see "[Custom Menus \(Resource Based\)](#)" on page 1606). They also allow you to create submenus, attach icons, checkmarks, and other graphics to a menu, and to change menus on the fly. To create custom menus you'll need to create menu resources in a resource file. One way to do this is with Panorama's **Resource Menu Editor**, a database that is installed along with Panorama.



To learn more about this wizard see "[Preparing a Resource File](#)" on page 1607.

Variables

Global, fileglobal and permanent variables can be displayed and modified with the Variables wizard.



To learn more about this wizard see "[Displaying and Changing Variables](#)" on page 1504.

Documentation Wizards

The wizards in this submenu provide access to documentation, help and tutorials.

Panorama Handbook

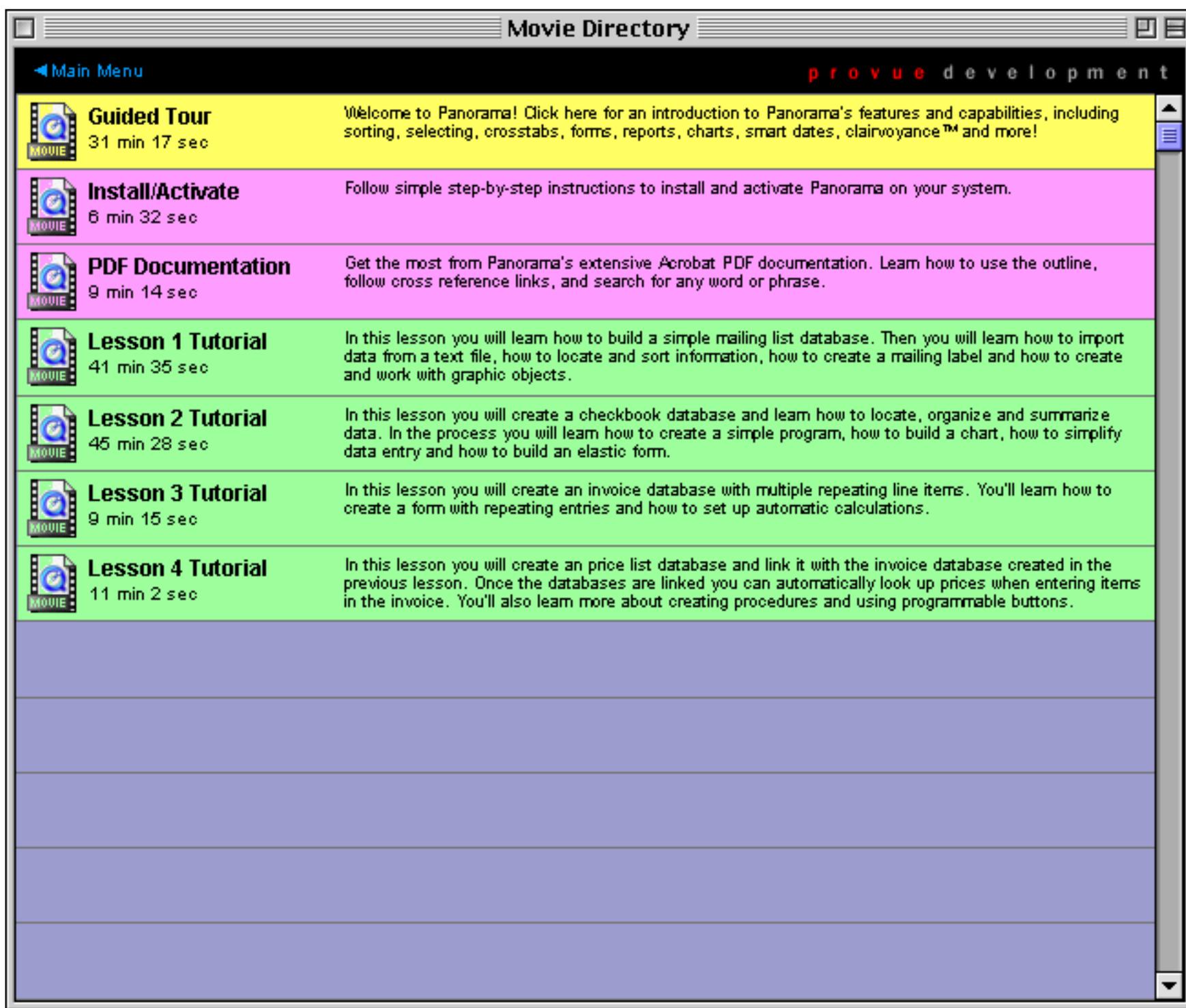
This wizard launches Adobe Acrobat and opens the Panorama Handbook (what you are reading right now!). If you installed the documentation on your hard drive the wizard will open the Handbook directly from the hard drive. If the documentation is not installed it will open the Handbook from the CD. If the documentation is not installed and the CD is not in the drive an alert will appear and Adobe Acrobat will not launch.

Panorama Movies

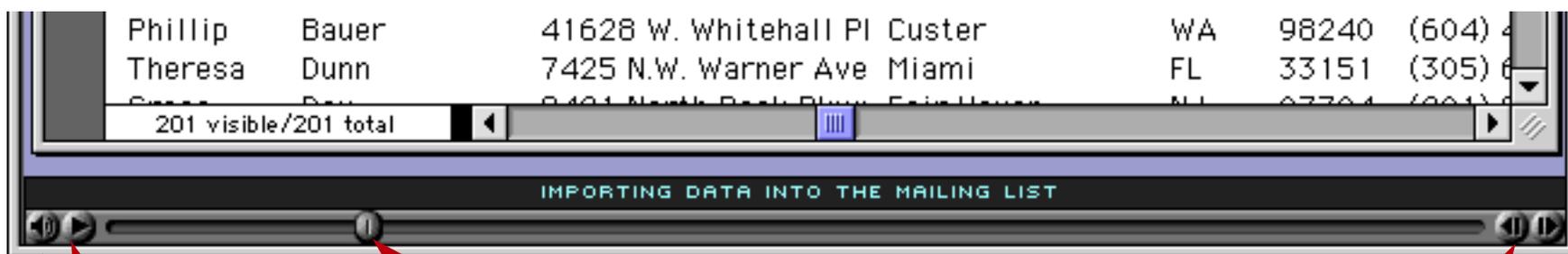
The **Panorama Movies** wizard allows you to view the QuickTime training movies included on the Panorama CD. You can also watch these movies using the standard QuickTime MoviePlayer, but if you use the **Panorama Movies** wizard you will be able to jump directly to any topic.



When you open the wizard a list of the available movies will appear. (If the CD is not in the drive an alert will appear, and the wizard will shut down.)



Click on the movie you want to watch. The beginning of the movie will appear, along with a window with a list of topics within the window. Use the control panel at the bottom of the movie window to control the movie.

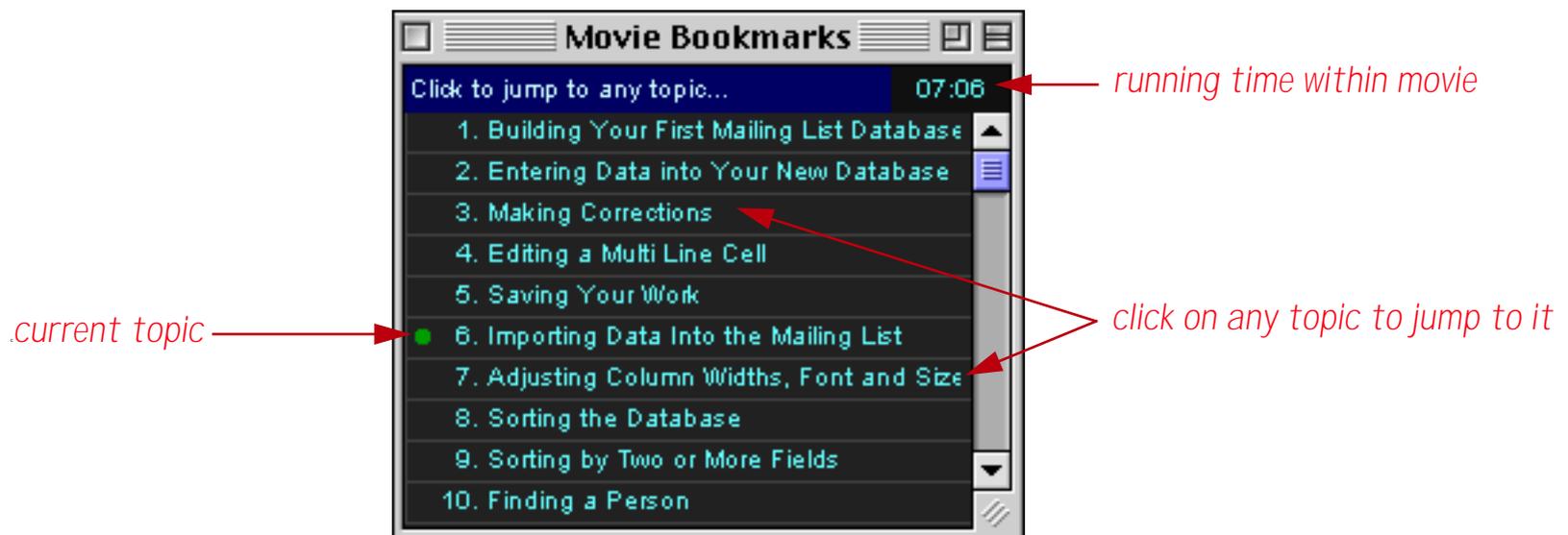


press to start/pause the movie
adjust audio volume

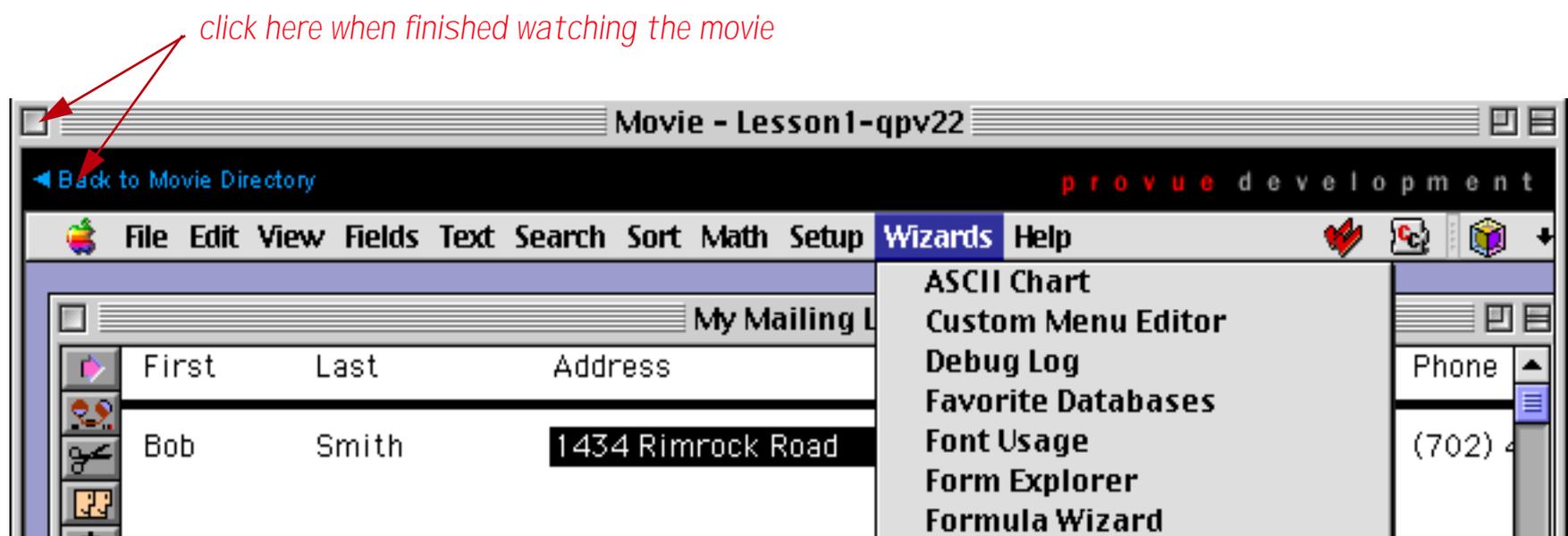
current location within movie (can be dragged into a new spot)

step forward/back a few frames

The **Movie Bookmarks** window displays a table of contents for the movie. It shows where you are within the movie and allows you to jump directly to any topic within the movie.



When you are done watching a movie you can either close the movie window or press the **Back to Movie Directory** button (the Bookmarks window will automatically close in either case).



You can now select a different movie or go back to the main installer movie. As long as the wizard is open Panorama will remember your spot within each movie you have watched. If you go back to a movie you have opened previously the remove will resume from the spot where you left off.

Programming Reference

The **Programming Reference** contains detailed reference information for every statement and function available in Panorama, as well as introductory information about related topics. Overall there are over 650 topics and over 900 pages of information. Each topic is cross-linked to other related topics for easy access, and the database is fully searchable.

Panorama Reference

FUNCTIONS

CALENDARDATE(...)

Syntax: `CALENDARDATE(date, boxnumber)`

Description: The `calendardate()` function is designed to help in creating monthly calendars. A standard monthly calendar has 6 rows and 7 columns (Sunday through Saturday) for a total of 42 boxes. For any given month from 28 to 31 of these boxes will be valid dates. The `calendarday()` function calculates what date corresponds to one of these 42 boxes.

Parameters: This function has two parameters: *date* and *boxnumber*.

date is any date in the month being displayed.

boxnumber is the box within the monthly calendar being displayed. The boxes are numbered from 1 to 42, starting with the upper left hand corner. The table below shows the position of all 42 monthly calendar boxes.

S	M	T	W	T	F	S
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

Result: This function returns a number corresponding to a date, or zero if the specified calendar box does not contain a day in this month.

Examples: The output of the `calendardate()` function is usually fed into a `lookupall()`, `lookupcalendar()`, or `lookupptime()` function. The last two functions can be used to lookup the events (appointments, to-do's, etc.) that occur on a particular day. You'll probably want to create your monthly calendar with a Matrix SuperObject™. The matrix should be 6 rows by 7 columns, with the cells numbered in horizontal order. To display the reminders that should appear in each of the calendar's 42 boxes use the formula below in an auto-wrap text object or a Text Display SuperObject™ inside the matrix frame. (This example assumes your reminders are stored in a database called `Reminders`. This database has at least two fields: `When` which contains the Reminder data type (see

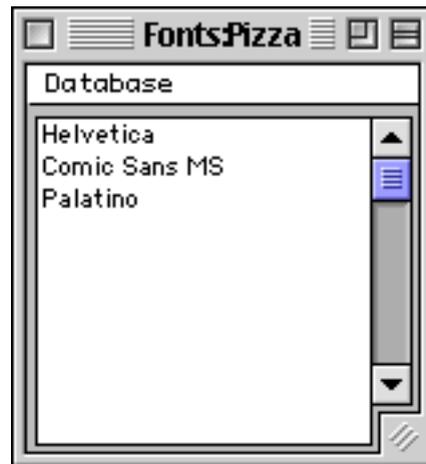
For more information on using the **Programming Reference** see “[Programming Reference Wizard](#)” on page 1489 or simply open the wizard (the first page contains instructions).

Form Tools Wizards

The wizards in this submenu help with working with forms.

Font Usage

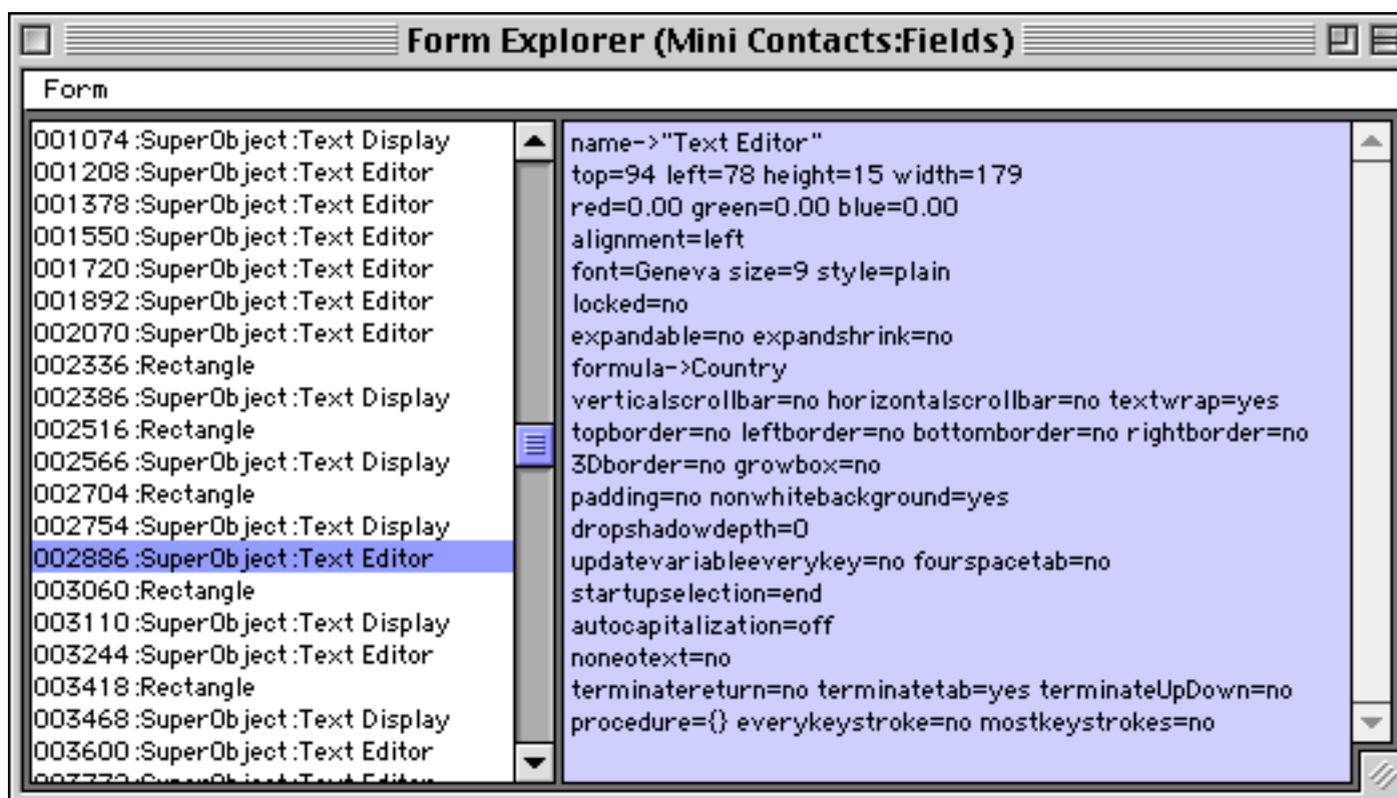
This wizard displays a list of all fonts used in a database's forms. All fonts will be listed except for Geneva, Chicago, New York and Monaco (Macintosh) or Alpine, City, Yankee and Block (Windows).



See "[Font](#)" on page 657 to learn how to select the fonts used in a form.

Form Explorer

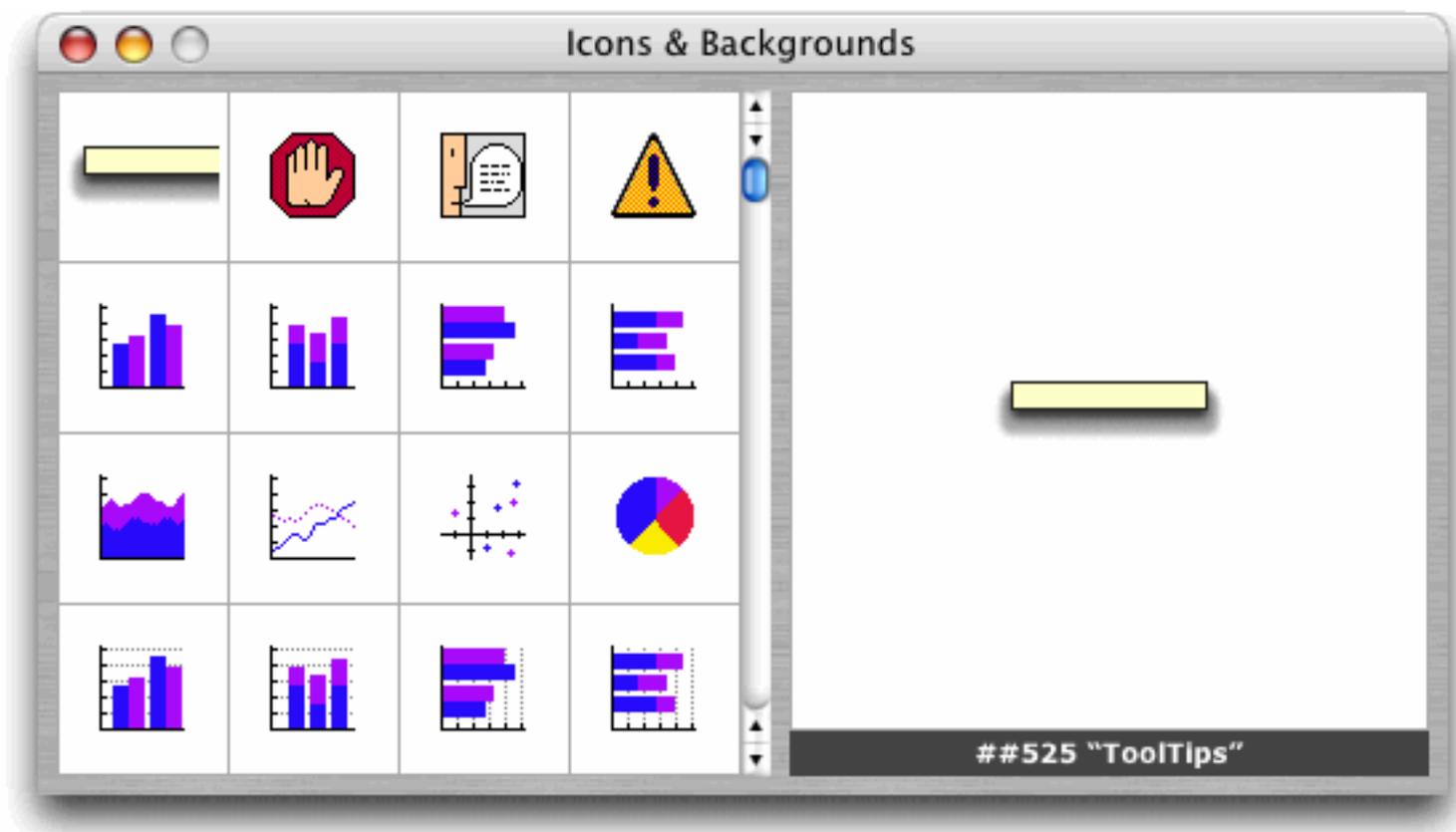
The **Form Explorer** wizard is an alternative tool for examining and (to some extent) modifying forms. The wizard displays a list of objects in a form, and displays the attributes for an object when you click on it. It's a great tool for exploring a form you are not familiar with to find out things like "what procedure is triggered by that button" or "what variable is being edited in that box"?



To learn more about this wizard see "[Using the Form Explorer Wizard](#)" on page 711.

Icons & Backgrounds

Panorama includes a number of resource based images within the application itself. Most of these are used by Panorama 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.



To learn more about this wizard and using these images see “[Displaying Images from Resource Files](#)” on page 921.

Window Size

The **Window Size** wizard measures the size of the currently open window.



To learn more about measuring window size see “[Measuring a Window \(Window Size Wizard\)](#)” on page 333.

Window Tweak

Using the **Window Tweak** wizard you can enable and disable the tool palette and scroll bars in a form.



To learn all the details see “[Turning Window Components On and Off \(Window Tweak Wizard\)](#)” on page 331.

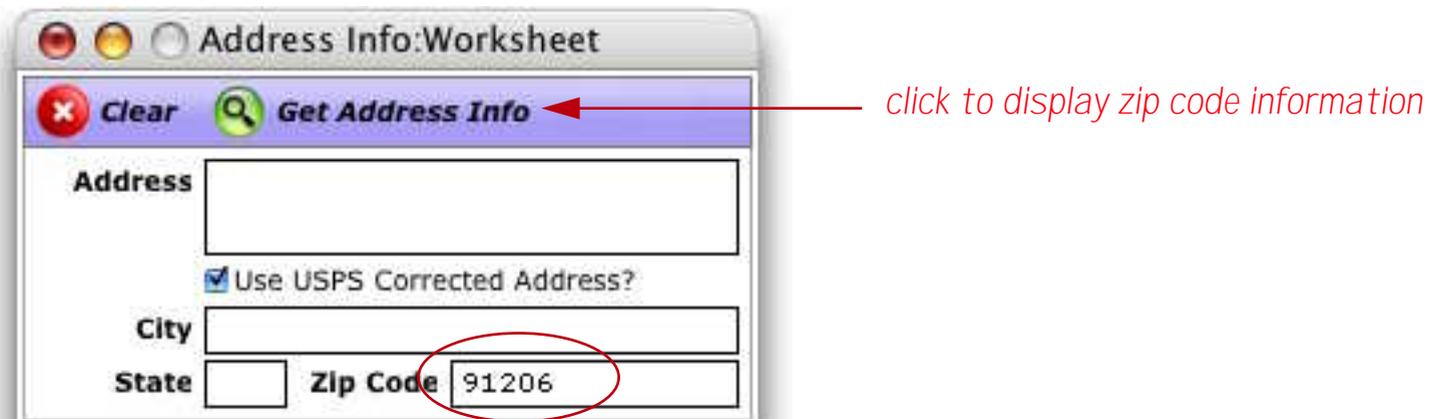
Internet Wizards

The wizards in this submenu bridge between Panorama and content on the Internet. Your computer must be connected to the Internet to use these wizards.

Address Info

This wizard gets information about US addresses and zip codes. If you enter a zip code it will display information about that zip code, including the city, state, county, area code, time zone, latitude and longitude, and the FIPS and MSA code. If you enter a full address it will display the zip+4 code and carrier route, and will check to make sure that this is a valid address according to the US Post Office.

To display information about a zip code, type in the zip code and press the **Get Address Info** checkbox.



The wizard will check on the Internet and display the information about this zip code.



To check and display information about an address, enter the address and press the **Get Address Info** button.

Address Info:Worksheet

Clear Get Address Info

Address 1807 Abbott Street

Use USPS Corrected Address?

City san luis obispo

State CA Zip Code

The wizard checks the Internet and displays the information (including looking up the nine digit zip code, since no zip code was supplied). Since the **Use USPS Corrected Address** option is checked, the wizard rewrites the address itself to conform to US Post Office standards (for example **1807 Abbott Street** is rewritten as **1807 ABBOT ST**).

Address Info:Worksheet

Clear Get Address Info

Address 1807 ABBOTT ST

Use USPS Corrected Address?

City SAN LUIS OBISPO

State CA Zip Code 93401-2660

Additional Address Information

County SAN LUIS OBISPO

Area Code 805 Carrier Route C033

Time Zone PST Daylight Savings?

Latitude 35.2383 (North)

Longitude 120.6214 (West)

FIPS 06079 MSA 7460

If the address is not valid it will turn red when you press the **Get Address Info** button. In this case there is no such address as **18070 Abbot Street**.

Address Info:Worksheet

Clear Get Address Info

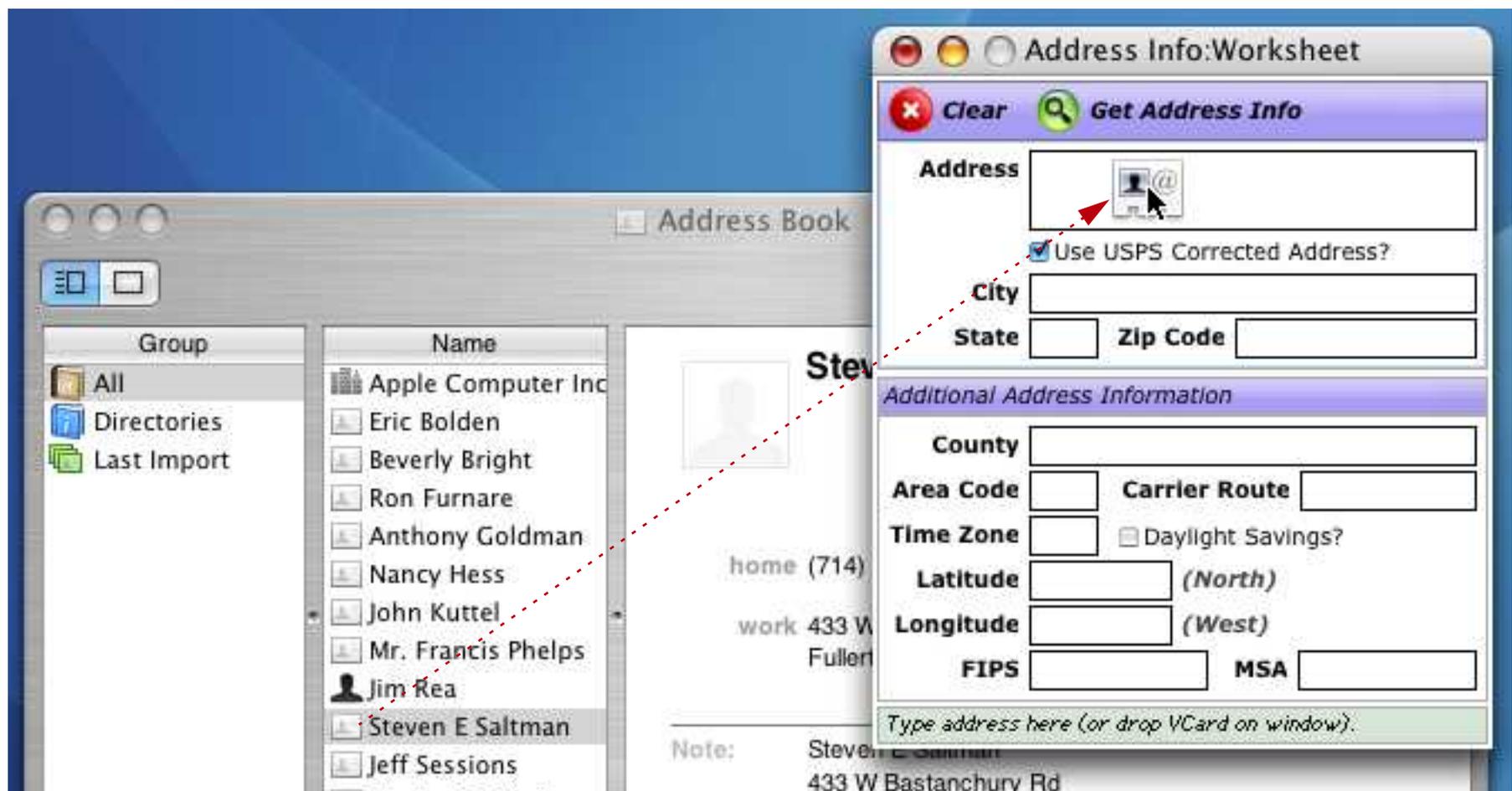
Address 18070 ABBOTT ST

Use USPS Corrected Address?

City SAN LUIS OBISPO

State CA Zip Code 93401-2660

The **Address Info** wizard also understands VCards, so you can drag from any database or application that supports VCards. For example, you can drag from Apple's **Address Book** application, as shown here.



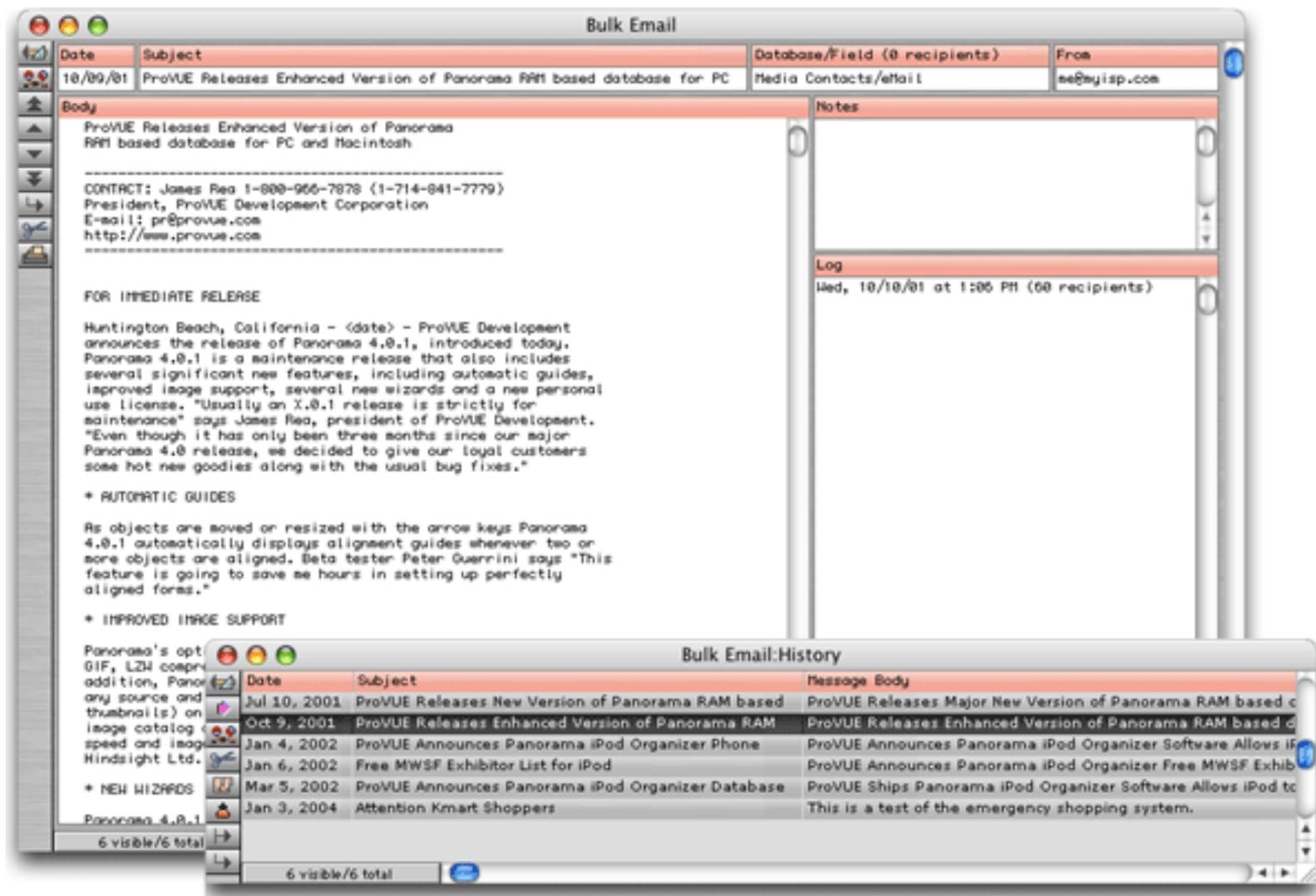
When the address is dropped on the wizard it will display the additional address information.



You can build the address checking functionality of this wizard directly into your own databases. See "[General Zip Code Information](#)" on page 1870 and "[Street Address Information](#)" on page 1871 to learn the details.

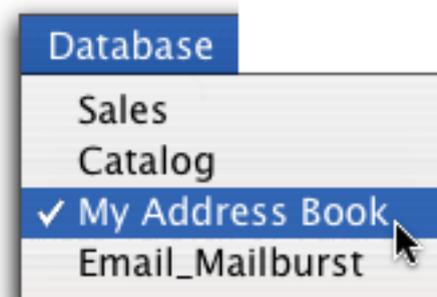
Bulk Email

The **Bulk Email** 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.



To create a new e-mail message use the **New Record** tool. Use the keyboard to fill in the date (defaults to today's date), subject, body of the message and any notes. You may also want to fill in the **From** e-mail address if it has changed.

The **Database** menu displays a list of all the other open databases. Select the database that contains the e-mail addresses you want to send to.



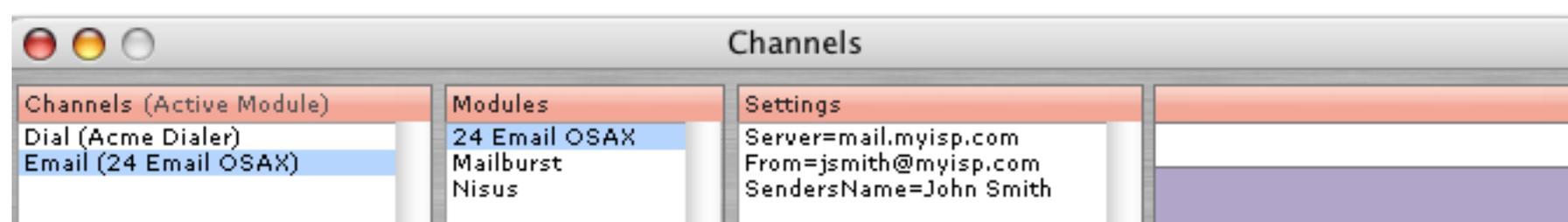
The **Fields** menu displays a list of the fields in the selected database. Select the field that contains the e-mail addresses you want to send to. (Note: If you have already used the *Generic Fields* wizard to define an e-mail field the wizard will select this field automatically. You can, however, choose a different field if you wish.)



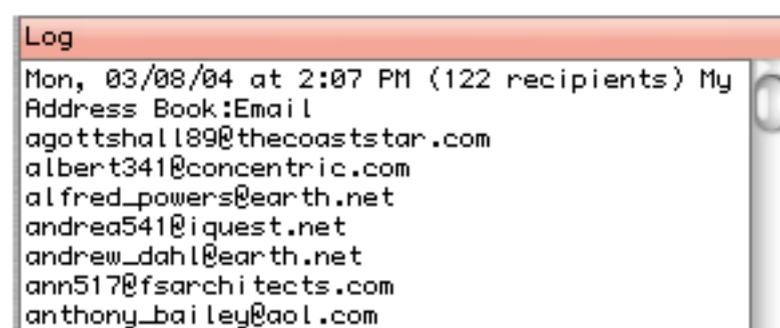
Note: If you are working with a database that has its generic fields set up (see “[Generic Fields](#)” on page 398) Panorama will automatically ask if you want to create a new e-mail message when you open the **Bulk Email** wizard. If you click **Yes** the wizard will automatically add a new record and set up the **Date**, **Database** and **Fields** options for you.

Make sure that the correct data is selected in the database that contains the e-mail addresses. For example, if you only want to send e-mails to recipients in New Jersey with blue eyes, make sure that only those records are currently selected.

Before you actually send the e-mail you may want to open the **Channels Wizard** to double check to that the correct e-mail module is selected and configured (see “[Channels](#)” on page 54).



To actually send the bulk e-mail choose **Send Bulk Email** from the Mail menu. After the e-mail has been transmitted the wizard will update the log for this e-mail.



The first line of the log entry records the date, number of recipients, database, and field used for this mailing. The subsequent lines contain each e-mail address that received the mailing, so you have a permanent record (of course you can delete this information if you want to).

If you later decide to send this message to additional e-mail addresses (perhaps from a different selection or a different database) the wizard will check the log before sending the e-mails. Any e-mail addresses that have already received the mailing will not be sent a duplicate copy. This makes it easy to send a large mailing based on several lists.

You can build the e-mail sending functionality of this wizard directly into your own databases. See “[Sending E-Mail](#)” on page 1877 to learn the details.

Fedex Tracking

This wizard helps you track the progress of FedEx shipments. To use this wizard just enter the tracking number.



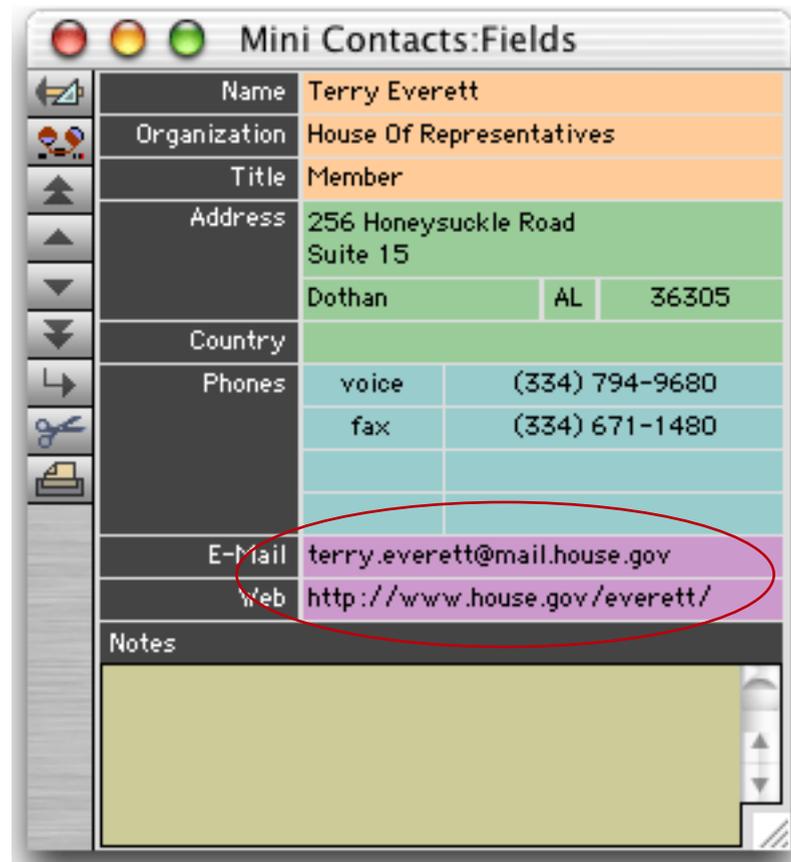
The wizard will display the status of this package. In this case the package has been delivered to the recipient.

Tracking Number	Status	Ship Date	Service Type	
829177393136	Delivery Complete	May 26, 2004	Priority Overnight	
Delivery Date	Location	Delivered To	Signed For By	
May 27, 2004 9:33 am	TOMBALL TX	Recipient	S. CALLAHAN	
Date	Time	Status	Location	Comments
May 27, 2004	9:33 am	Delivered	TOMBALL TX	
	9:32 am	On FedEx vehicle for delivery	HOUSTON TX	
	7:45 am	On FedEx vehicle for delivery	HOUSTON TX	
	7:41 am	Left FedEx Ramp	HOUSTON TX	
	6:47 am	Arrived at FedEx Destination Location	HOUSTON TX	
	4:08 am	Arrived at FedEx Ramp	HOUSTON TX	
	3:24 am	Left FedEx Sort Facility	FORT WORTH TX	
	1:34 am	Arrived at Sort Facility	FORT WORTH TX	
May 26, 2004	8:26 pm	Left FedEx Sort Facility	LOS ANGELES CA	
	7:25 pm	Arrived at Sort Facility	LOS ANGELES CA	
	7:25 pm	Left FedEx Origin Location	IRVINE CA	

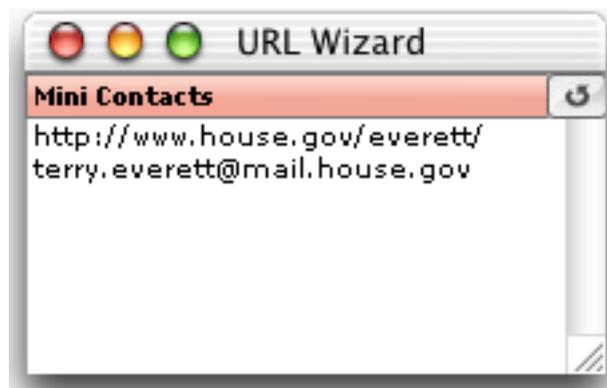
You can build the package tracking functionality of this wizard directly into your own databases. See “[FedEx Shipment Tracking](#)” on page 1873 to learn the details.

URL Wizard

The **URL Wizard** scans all of the fields in the current record looking for URL's (web and e-mail addresses). If it finds any, you can double click on them to open the corresponding web page or create a new e-mail message. To illustrate the **URL Wizard** we'll use the **Mini Contacts** wizard, which comes with Panorama. The records in this database contain addresses, phone numbers, e-mail addresses and web site URLs.



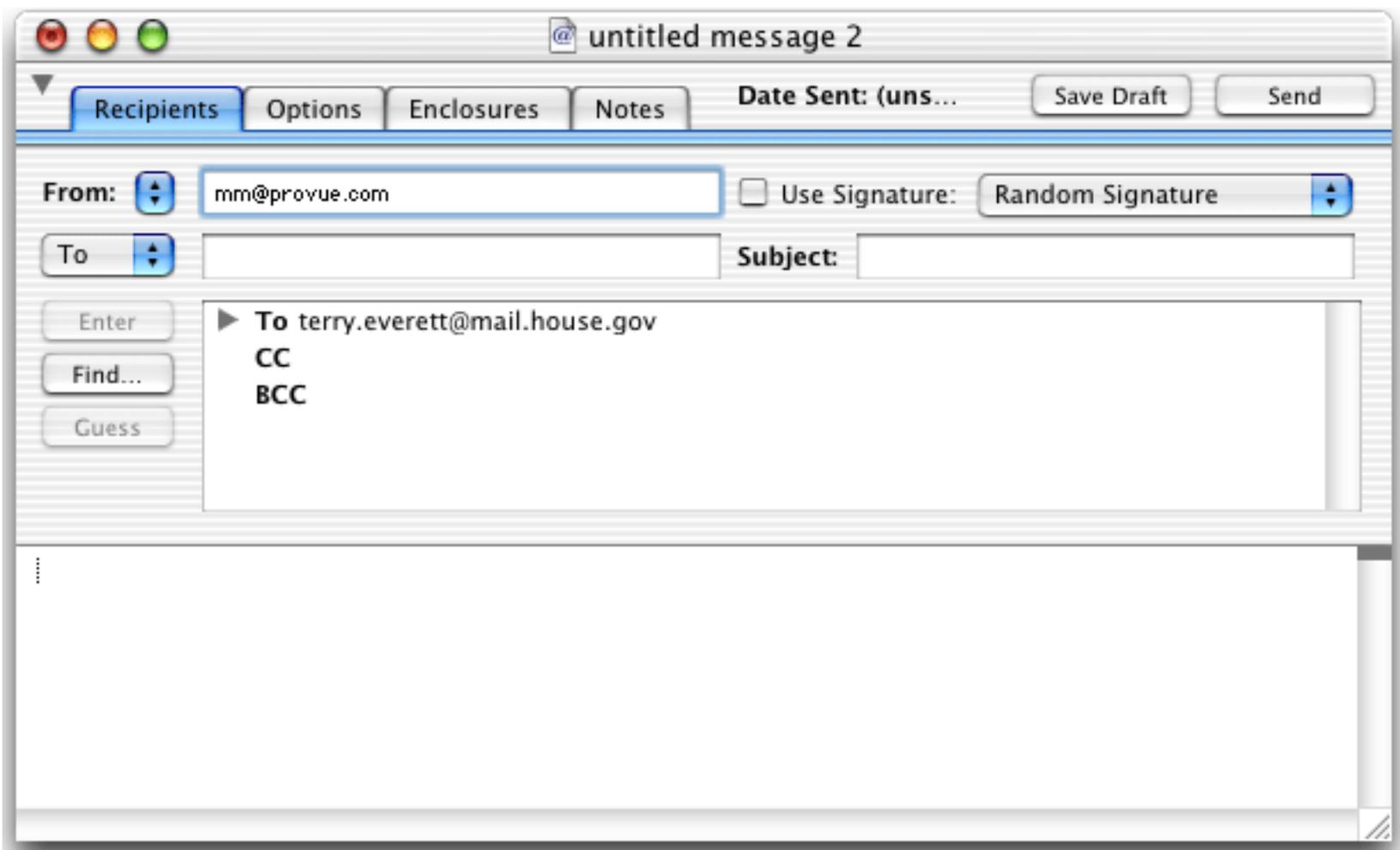
Open the **URL Wizard** to scan this record for internet addresses. As you can see, this record contains two: an e-mail address and a web site.



To open representative Everett's web site (using your default browser), double click on the first URL.



To send an e-mail to representative Everett double click on the e-mail address. The wizard will automatically open your default e-mail client and create a new pre-addressed message. (In case you are wondering, the default e-mail client on our system is *MailSmith* from Bare Bones Software, shown below.)



Each time you choose URL Wizard from the Wizard menu the wizard will re-scan the current record. Another way to re-scan is to press the re-scan button in the upper right hand corner of the window.

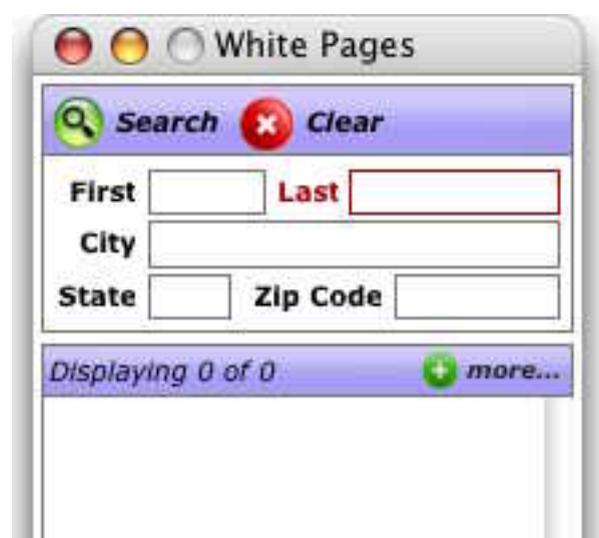


This is useful when you've moved to a different record or a different database and want to check for URLs in the new location.

You can build the functionality of this wizard directly into your own databases. See "[Displaying a Web Page](#)" on page 1874 and "[Sending E-Mail](#)" on page 1877 to learn the details.

White Pages

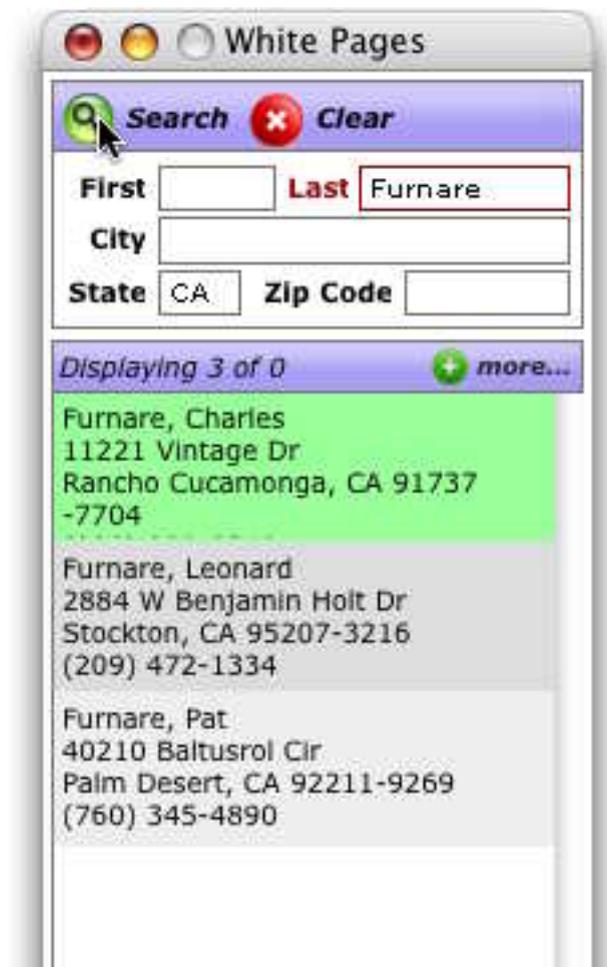
The **White Pages** wizard allows you to look up addresses and phone numbers.



To search for a person, enter as much information as you know. At a minimum, you must enter at least a partial last name. The more information you enter, the better the chance that the wizard will be able to locate the person.



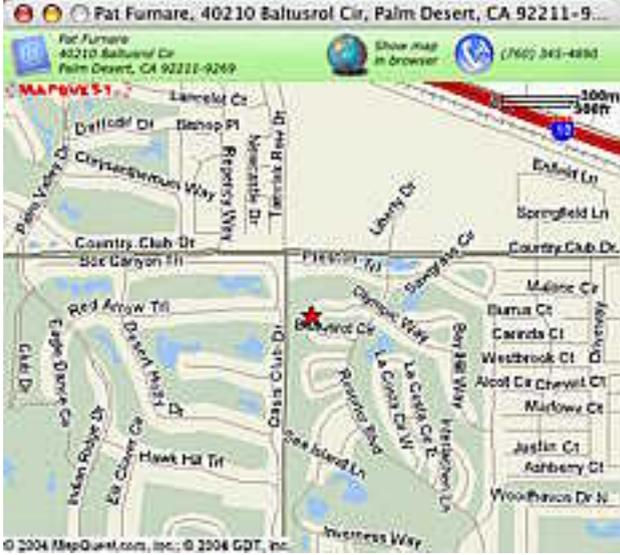
When you're ready to go, press the **Search** button. The wizard will display any people that match the criteria you have entered. In this case there are three people named **Furnare** in California.



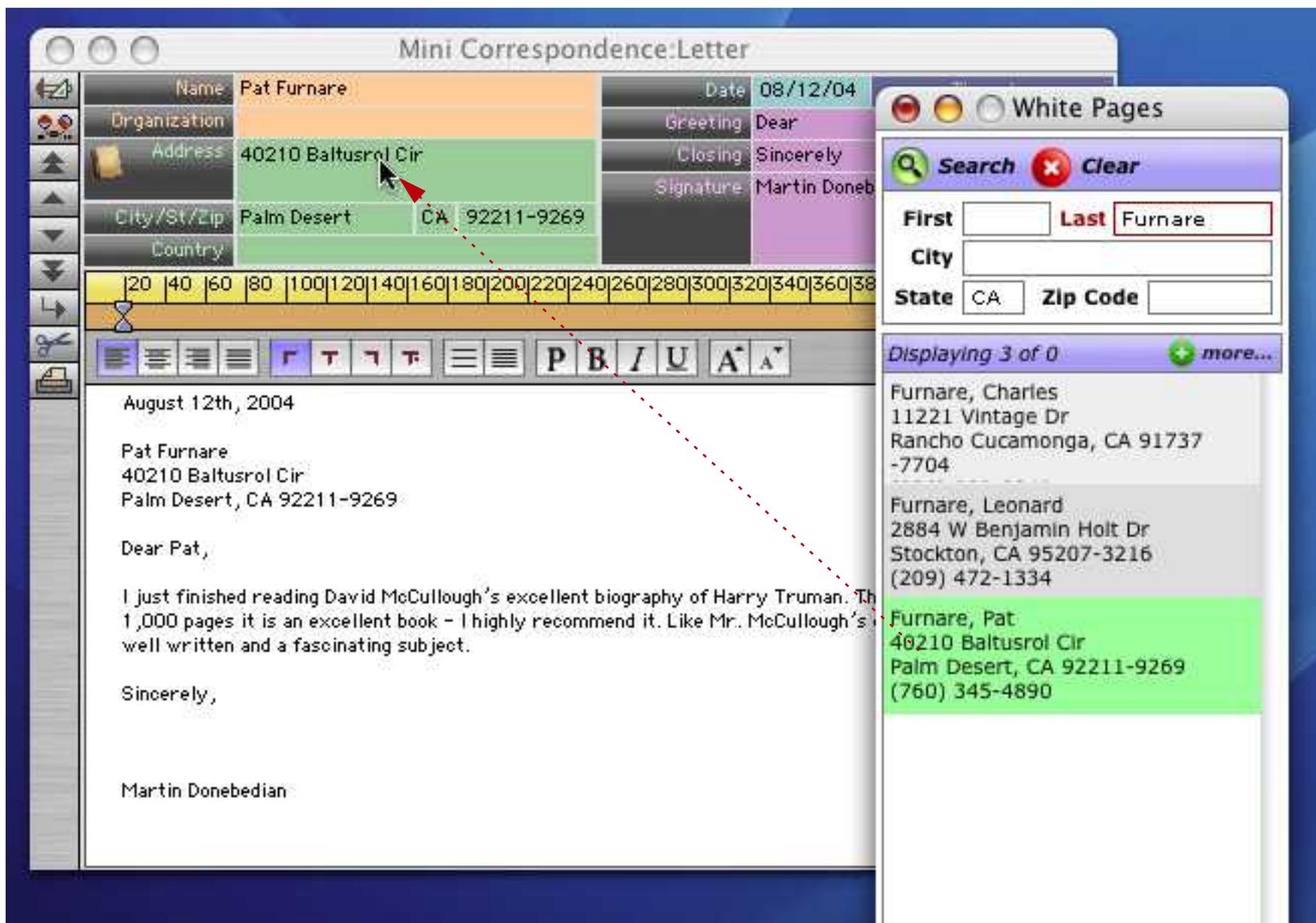
If you hold down the **Control** key (Macintosh) or right click (Windows) on an entry a context menu will appear.



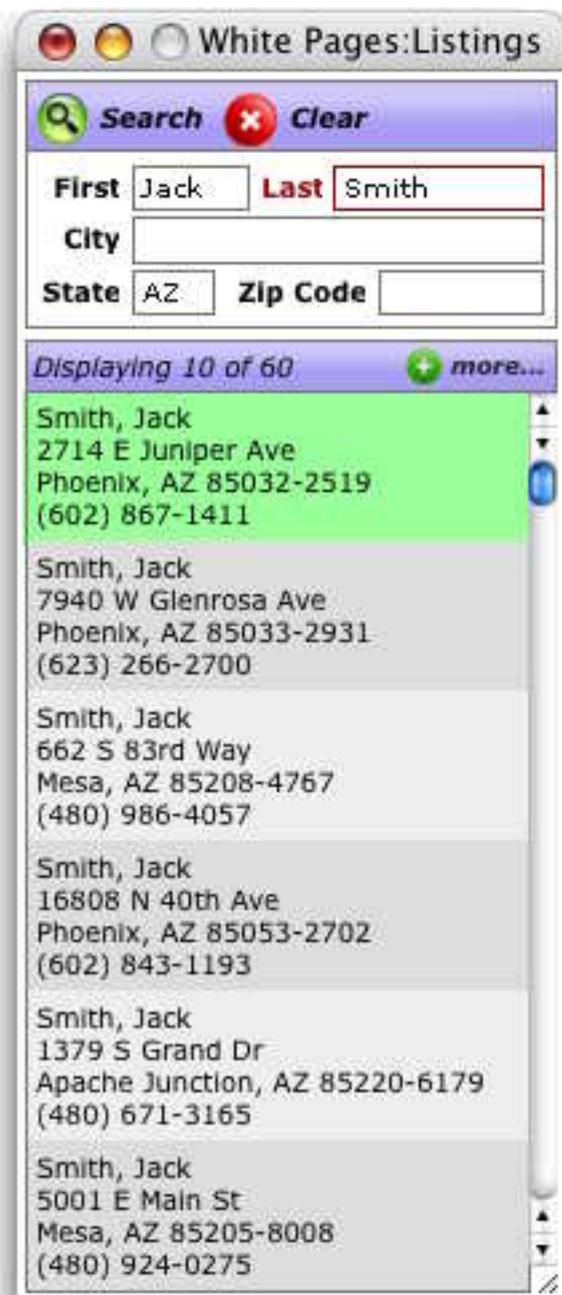
Choose an item from this menu to perform the operation on the selected address.

Menu Command	Description
Select This Name	This command is useful if you have entered a partial name. If you find a person with the name you are looking for in the list, choose this menu command to see if there is anyone else with this name in the list.
Select This Name & City	Like the Select This Name command, but only shows entries with the same name in the same city.
Display Map	<p>Displays a map showing this address in a separate window.</p> 
Open Web Map	<p>Opens your web browser and displays a map with this address.</p> 
Dial Phone	Dials this phone number using the currently selected dialing (see “Channels” on page 54).
Copy Label	Copies the address to the clipboard in standard label format, suitable for pasting into a text editor or word processor program.
Copy VCard	Copies the address to the clipboard in VCard format.
Export VCard...	Exports the address into a VCard file that can be imported by other VCard compatible programs.

You can also drag the person from the wizard to any VCard compatible database or application, for example Apple's **Address Book** program or the **Mini Correspondence** wizard, as shown here.



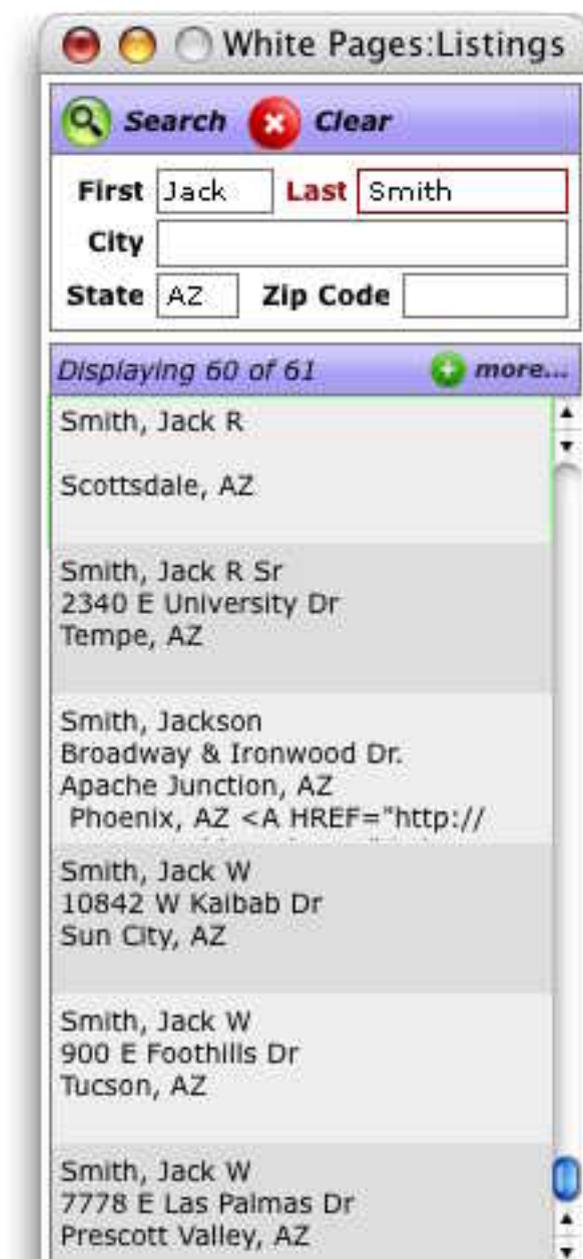
If your search turns up more than a few results, the wizard will only download the first ten. For example, there are sixty people named **Jack Smith** listed in **Arizona**, but the wizard initially displays only ten of them.



If the person you are looking for isn't listed in the first ten you can press the **more** button to display an additional ten.



If you hold down the **Option** key while you click the more button the wizard will load all of the remaining addresses from the Internet. This may take a few seconds.



As you display more and more people, you may find that there is less information displayed for each person. This is a function of the web site that Panorama is retrieving the information from. Sometimes you can display this additional information by narrowing your search. For example in the listing for all of Arizona there is no phone number listed for Jack Smith in Scottsdale. Narrowing the search to only include Scottsdale turns up the phone number and zip code.



If you try a really broad search that turns up hundreds or even thousands of matches the wizard will only indicate that there are 100 matches. For example, a search for every **Smith** in Arizona turns up 100 matches, even though there are thousands of Smith's living there. If your search turns up 100 matches, try using a narrower search.



You can build the functionality of this wizard directly into your own databases. See “[White Pages](#)” on page 1872 to learn the details.

Mini Application Wizards

The databases in this category provide basic tools for organizing personal information. Compared to many personal information managers (PIMs) that are available these tools are very basic. However, these databases do illustrate how to create such tools in Panorama, and also have the advantage that you can adapt and customize them exactly to your own needs.

Mini Contacts Wizard

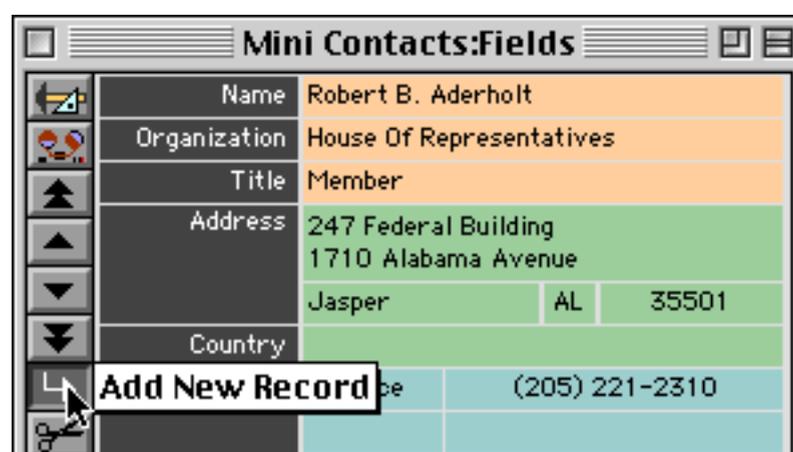
The **Mini Contacts** wizard is a very simple database for storing names, addresses and phone numbers.



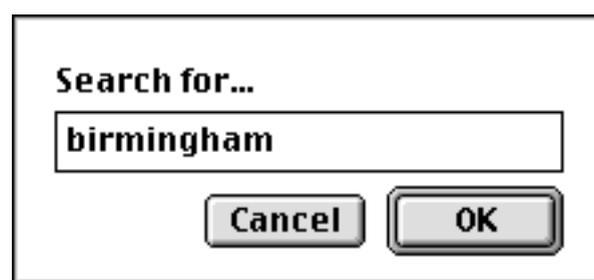
To edit any item simply click or drag on the item and begin editing. (The Mini Contacts database uses Text Editor SuperObjects for editing instead of data cells, so there is no expandable input window. See “[Types of Data Editing Objects](#)” on page 760 for more information). Press the **Enter** or **Tab** keys when you are finished editing an item.



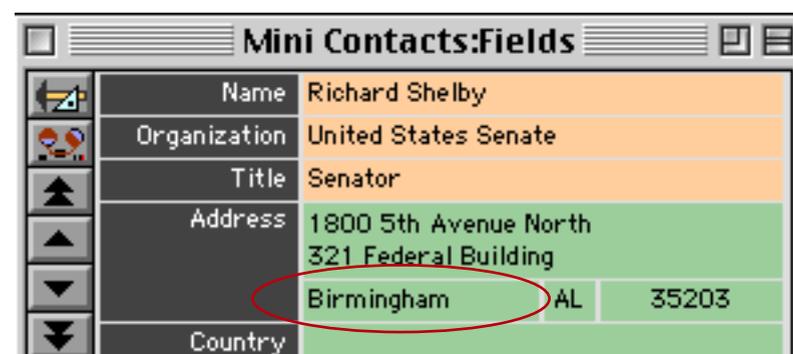
To add a new record use the Add New Record tool or the Add New Record command in the Edit menu.



To search for text anywhere within in the database choose the Find command from the Search menu. The database will ask you what you want to search for.



When you press the **OK** button Panorama will search all of the fields in the database for the word or phrase that has been typed in. (To learn how this search was set up see “[A Handy Universal Find Procedure](#)” on page 1806). In this case a record has been found that contains **birmingham** in the City field.



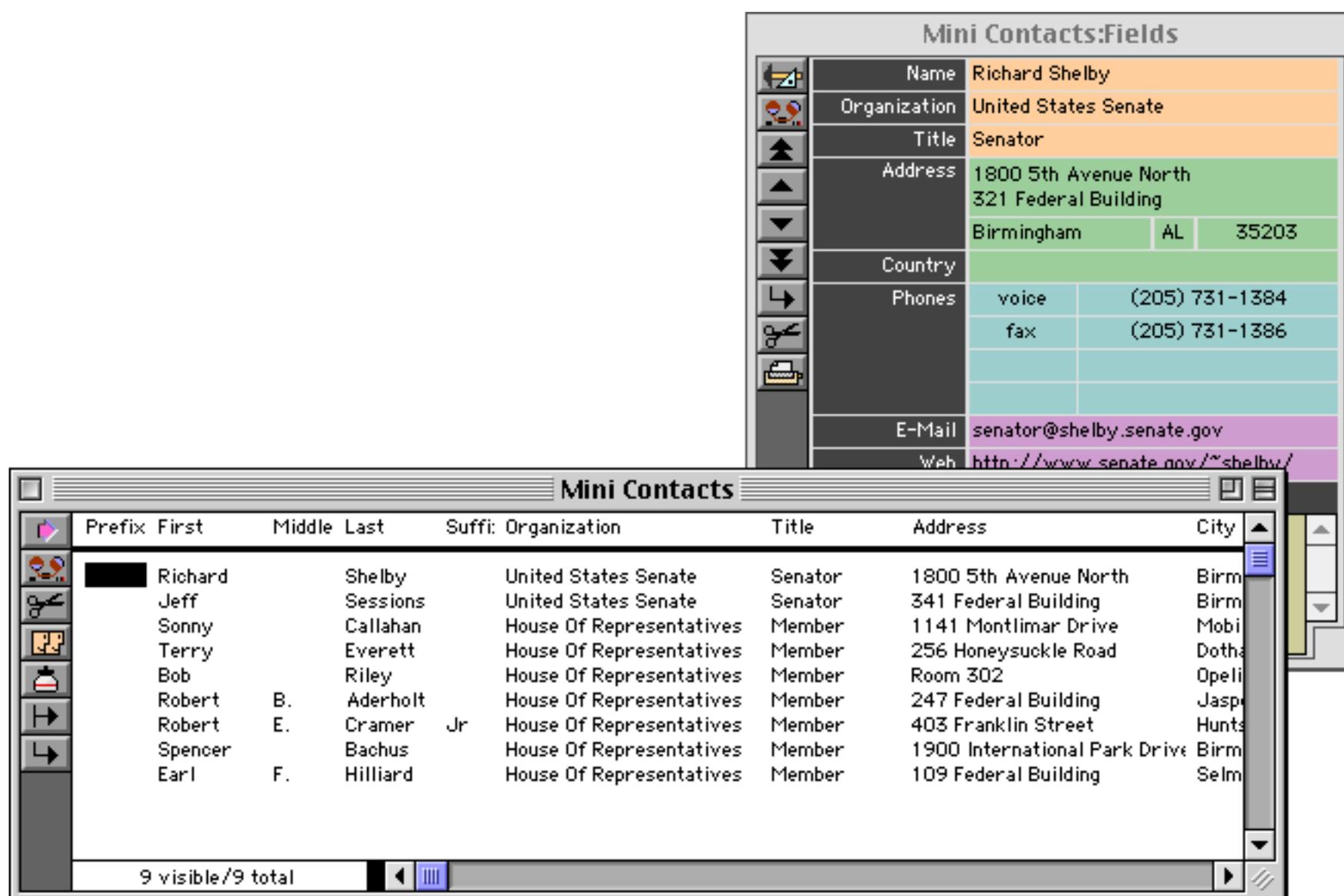
To find additional occurrences of the word or phrase use the Find Next command. You may continue to use this command until you have located every occurrence of the word or phrase in the database.

The Mini Contacts form is elastic and can be expanded up to the full screen size. See “[Elastic Forms](#)” on page 1040 to learn how to create an elastic form.

The image shows a software window titled "Mini Contacts:Fields". On the left side, there is a vertical toolbar with icons for editing, deleting, and printing. The main area of the window is a form with the following fields:

Name	Richard Shelby		
Organization	United States Senate		
Title	Senator		
Address	1800 5th Avenue North		
	321 Federal Building		
Country	Birmingham	AL	35203
Phones	voice	(205) 731-1384	
	fax	(205) 731-1386	
E-Mail	senator@shelby.senate.gov		
Web	http://www.senate.gov/~shelby/		
Notes	<div style="border: 1px solid gray; height: 150px;"></div>		

To open the data sheet use the **View** menu (see “[Switching Between Views](#)” on page 350). If you want the data sheet to open in its own separate window hold down the **Control** key (Macintosh) or **Alt** key (Windows) while you select from the menu (see “[Opening More Than One Window Per Database](#)” on page 351).



You may notice that in the data sheet the name is split up into five separate fields, while in the form the name appears to be a single field. The database has been set up to make this conversion automatically. When you enter a name into the form Panorama automatically splits it up into five separate components (Prefix, First, Middle, Last and Suffix) and when a name is displayed in the form these components are automatically combined together. To learn how this was set up see “[Natural Data Entry](#)” on page 1783 and “[Natural Data Display](#)” on page 1781.

Mini Calendar Wizard

The **Mini Calendar** wizard is a very simple database for keeping track of dates and events.



If a day has a black triangle in the upper left hand corner then there is a note attached to that day. Click on the day to see and/or edit the note.



To add a new note simply click on the day, then click in the note area and begin typing. Press the **Enter** key when you are done.



To search for a particular item press the **Find** button or choose Find from the Search menu.

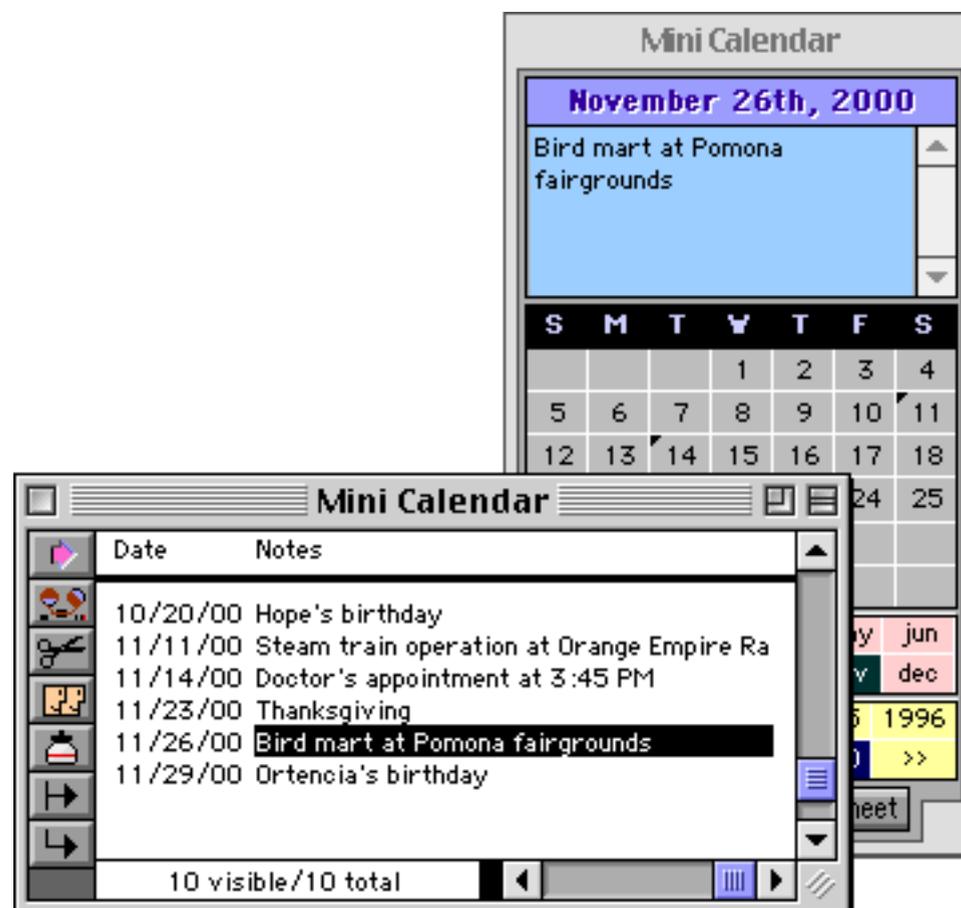


Press **OK** to locate the word or phrase. Panorama will search the database in date order.



If you think that there might be additional occurrences of this word or phrase you can press the **Next** button or choose Find Next from the Search menu.

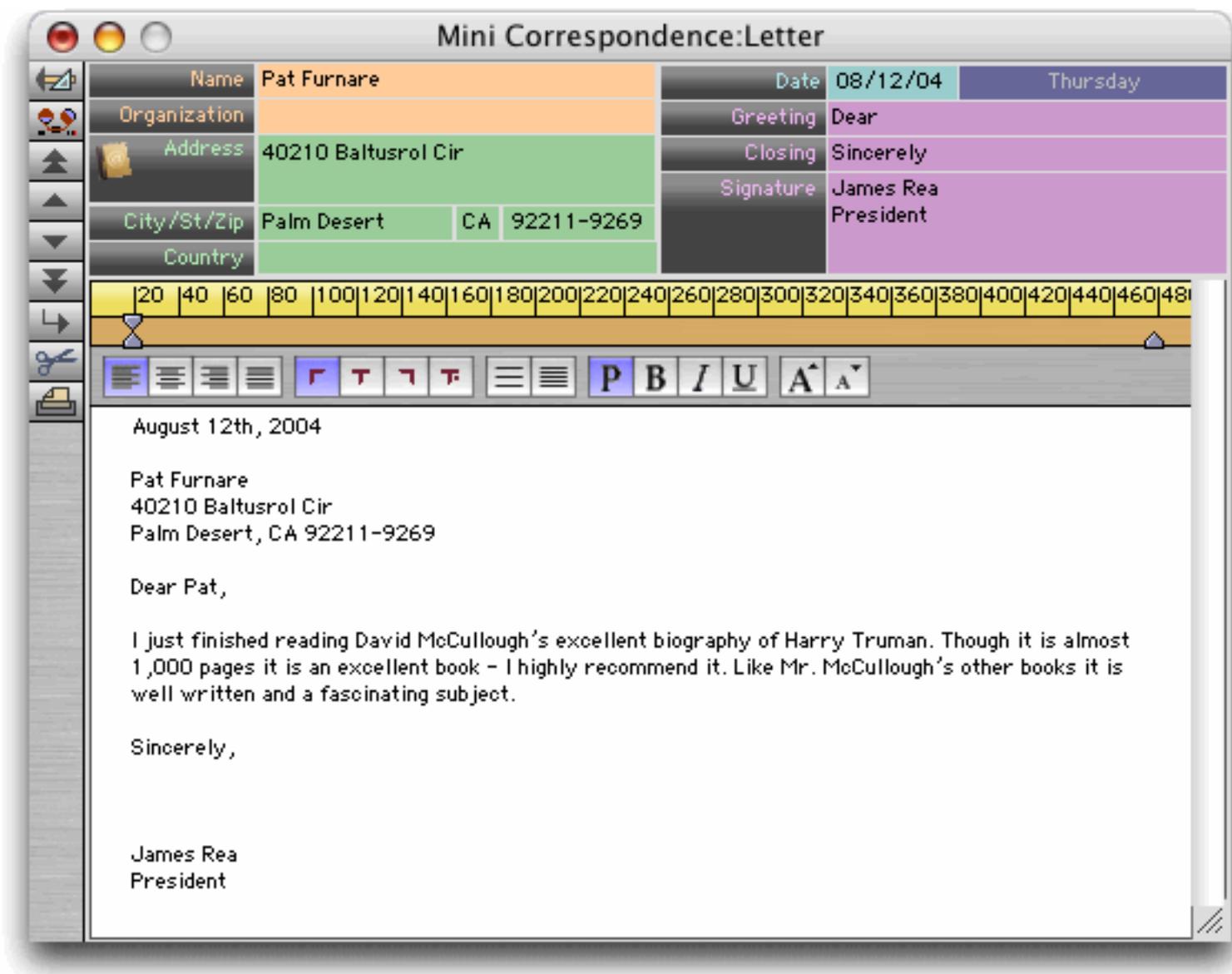
If you'd like to see the data sheet for this database you can use the View menu or you can simply press the **Data Sheet** button.



You can use the data sheet to add, edit or delete calendar entries.

Mini Correspondence Wizard

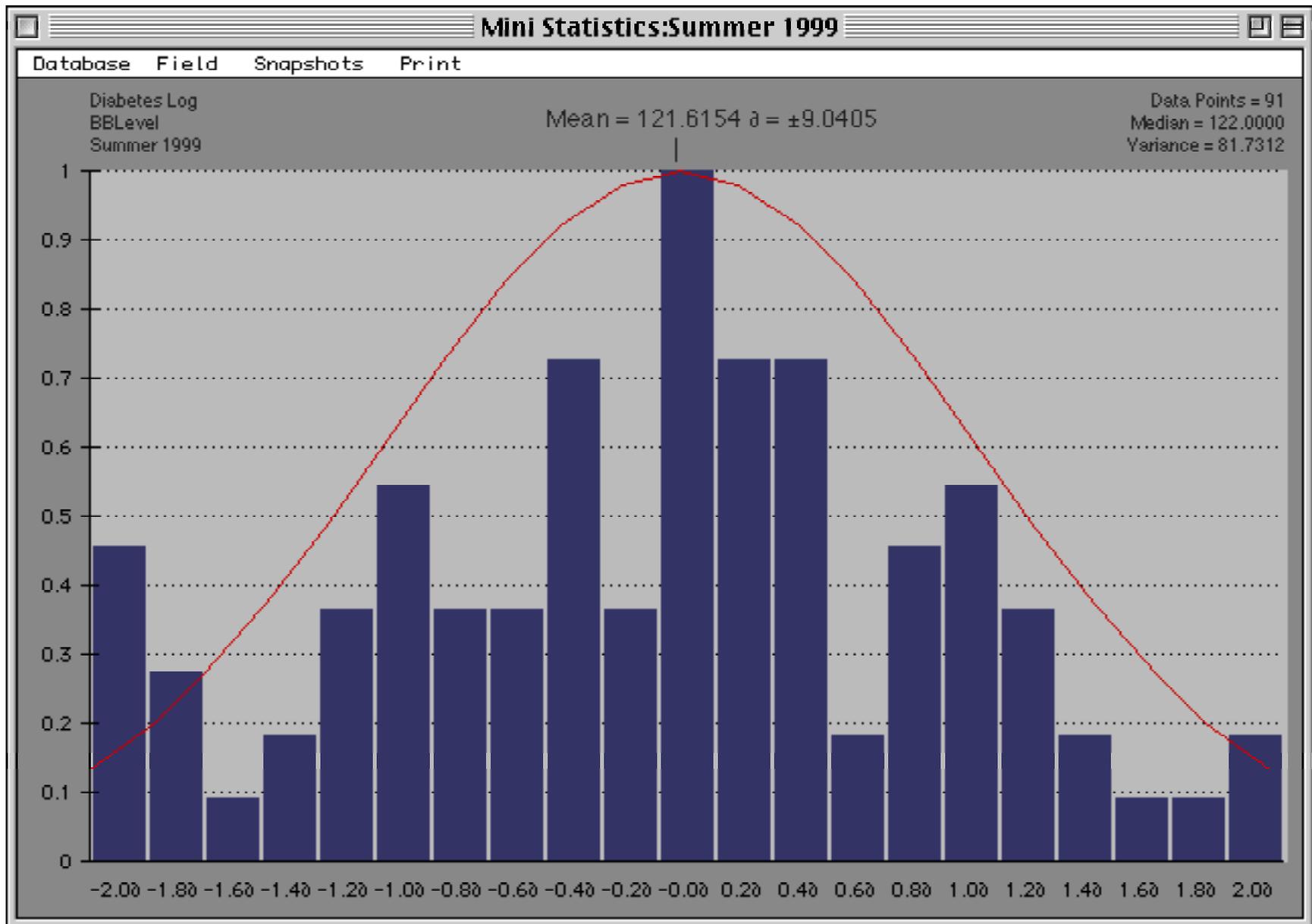
The **Mini Correspondence** database may be used for general correspondence (letters, memos, etc.) and to create mail merge letters that are customized and sent to a group of recipients. The wizard can be linked to any database that contains names and addresses to make it easy to create individual or mail-merge letters.



To learn more about this wizard see "[Using the Mini Correspondence Wizard](#)" on page 855.

Mini Statistics Wizard

The **Mini Statistics** 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). Here is an example of an analysis performed by this wizard.



To learn more about this wizard see "[The Mini Statistics Wizard](#)" on page 556.

Stopwatch Wizard

The **Stopwatch** wizard is a simple timer.



Press the **Start** button to start or re-start the timer. Press the **Stop** button to stop the timer. Press the Reset button to reset the timer to 0:00:00.

If you need more than one timer you can make a copy of the **Stopwatch** database file. To make the copy **Quit** from Panorama, open the Wizard folder and make one or more copies of the Stopwatch database. When you re-open Panorama you can start and stop each timer separately.



When a stopwatch is running the display will usually update once every second as long as Panorama is running and is the frontmost application. However, the display will not update when you are actually editing text. It also will not update when you are editing a form or a procedure.

Task Timer Wizard

The **Task Timer** wizard allows you to keep track of the time you spend at different tasks. You can set up a list of tasks to track.



When you start a task that you want to time click anywhere on the line for that time. An animated clock will appear to indicate that you are timing this task.



When you are done with the task you can click the line again or click the **Stop Timer** button at the bottom of the window. If you are starting a new task you can simply click on the new task to switch the timer. You can also type notes in the top section of the window. These notes will be included in the time log.



You can close the Task Timer or even quit from Panorama without affecting the timer. When you re-open the timer you will see that it has continued to keep track of the time of the last task started (if any). The task time updates when the Task Timer is in front, but not when any other window is in front. The time will update when you bring the Task Timer window forward.

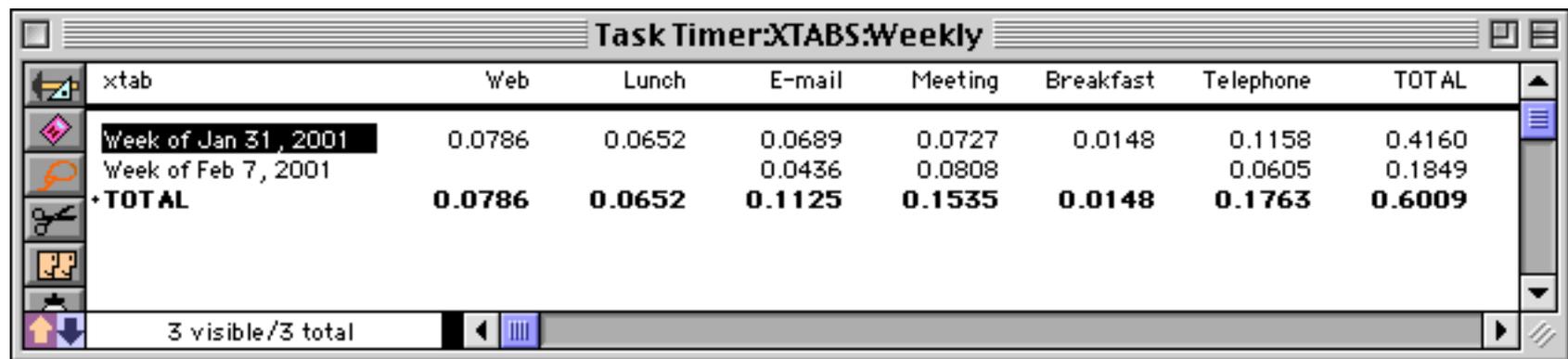
Click the **Time Log** button to view a log of the activities you have timed.

Task	Elapsed Time	Notes	Date	Start	Stop
Telephone	0.0365 hr		Wed, Feb 7, 2001	8:32:26 PM	8:34:38 PM
Telephone	0.0240 hr		Wed, Feb 7, 2001	8:34:40 PM	8:36:07 PM
Meeting	0.0808 hr	discussed xr23 status with	Wed, Feb 7, 2001	8:36:07 PM	8:40:58 PM
E-mail	0.0436 hr		Wed, Feb 7, 2001	8:42:05 PM	8:44:42 PM

Double click to edit the Notes for a time log entry. You can expand the Input Box to show as much text as you want (see [“Expanding the Input Box”](#) on page 439).

Task	Elapsed Time	Notes	Date	Start	Stop
Telephone	0.0365 hr		Wed, Feb 7, 2001	8:32:26 PM	8:34:38 PM
Telephone	0.0240 hr	called Phil at Acme Widgets	Wed, Feb 7, 2001	8:34:40 PM	8:36:07 PM
Meeting	0.0808 hr	discussed xr23 status with	Wed, Feb 7, 2001	8:36:07 PM	8:40:58 PM
E-mail	0.0436 hr		Wed, Feb 7, 2001	8:42:05 PM	8:44:42 PM

Use the **Crosstabs** menu to open a crosstab that summarizes the time log data by day, week, or month.

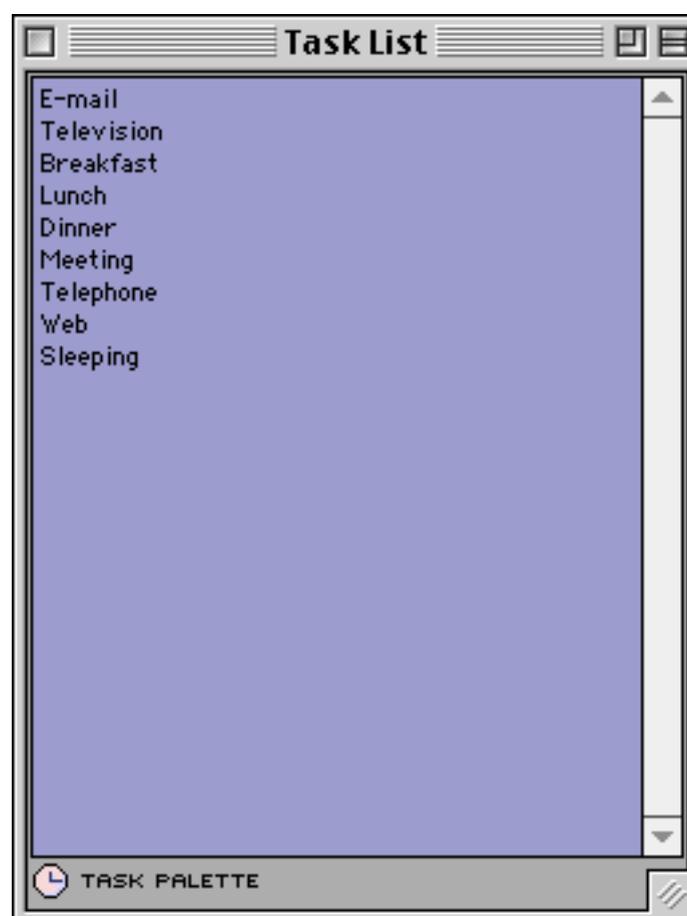


The screenshot shows a window titled "Task Timer:XTABS:Weekly" with a table of time log data. The table has columns for tasks and a total column. The data is summarized by week.

xtab	Web	Lunch	E-mail	Meeting	Breakfast	Telephone	TOTAL
Week of Jan 31, 2001	0.0786	0.0652	0.0689	0.0727	0.0148	0.1158	0.4160
Week of Feb 7, 2001			0.0436	0.0808		0.0605	0.1849
+TOTAL	0.0786	0.0652	0.1125	0.1535	0.0148	0.1763	0.6009

At the bottom of the window, it says "3 visible / 3 total".

To edit the list of tasks click on the **Edit Task List** button. You can type in any tasks you want, in any order. It's ok to remove a task that you have been timing — this does not affect any tasks you have already logged. When you've made all of the changes to the task list click the **Task Palette** button to switch back to the main timer window.



The Task Timer can display the cumulative time for each task for the current day, week, or month. Use the pop-up menu to select the period you want to use. The display will immediately update to reflect your choice.



Preferences Wizards

The wizards in this submenu set up preferences and options for Panorama and for individual databases.

Channels

Some Panorama applications require a connection between Panorama and an external program or resource. Panorama allows you to set up **channels** as a conduit between Panorama and the external resource. For example, suppose you have a Panorama application that needs to send an e-mail. To do that Panorama will need to make a connection with the Internet software installed on your computer. Panorama uses the Channel Wizard to configure that connection.

Panorma has special programming statements that take advantage of the connections set up by different channels. The table below lists each type of channel and the statements that use the connection set up by that channel.

Channel	Statement	Description
Dial	dialphone	Dial the phone, adding prefixes, country codes and area codes as needed.
	dialdigits	Dial one or more digits exactly as specified.
Email	sendoneemail	Send a single e-mail message.
	sendbulkemail	Send multiple e-mail messages, one for each currently selected record in a database.
	sendarrayemail	Send multiple e-mail messages, one for each element of an array.
	sendemail	Send multiple e-mail messages with advanced options.
WhitePages	querywhitepages	Look up a person's address and/or phone number.
ZipInfo	zipinfo	Look up information about a zip code — city, state, county, area code, time zone, etc.

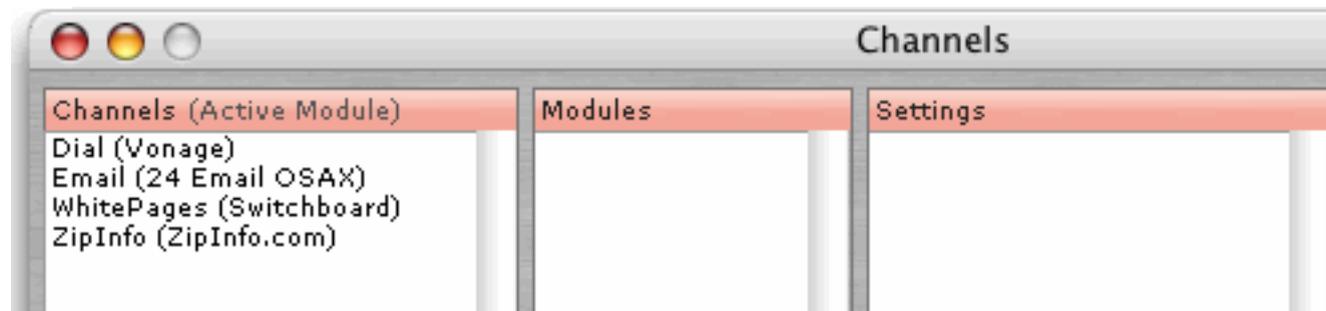
The exact operation of each of these statements will vary depending on how you have configured each channel. For example, the `dialphone` statement can dial the phone by creating tones on your computer speaker, by using a modem, with a bluetooth connection, or over the Internet if you have a Vonage phone. The programmer that writes the `dialphone` statement into his or her program doesn't know or care how the dialing is actually performed, he or she relies on the channel to do that job for them.

Even if you are not a programmer you may find that channels are useful for you. Many of the wizards and sample databases that are included with Panorama are already programmed to use channels. For example, the **White Pages** wizard can automatically dial the phone using the Dial channel, while the **Bulk Email** wizard will send mass e-mails using the Email channel. All you need to do is configure the channels for your needs and this wizards will be ready to go.

Note: The table above will grow as more channels become available. Check the **Channels** wizard for any additional channels that may have been added since this documentation was last updated. (You can also write your own channels, see "[Writing Your Own Channel Modules](#)" on page 1977).

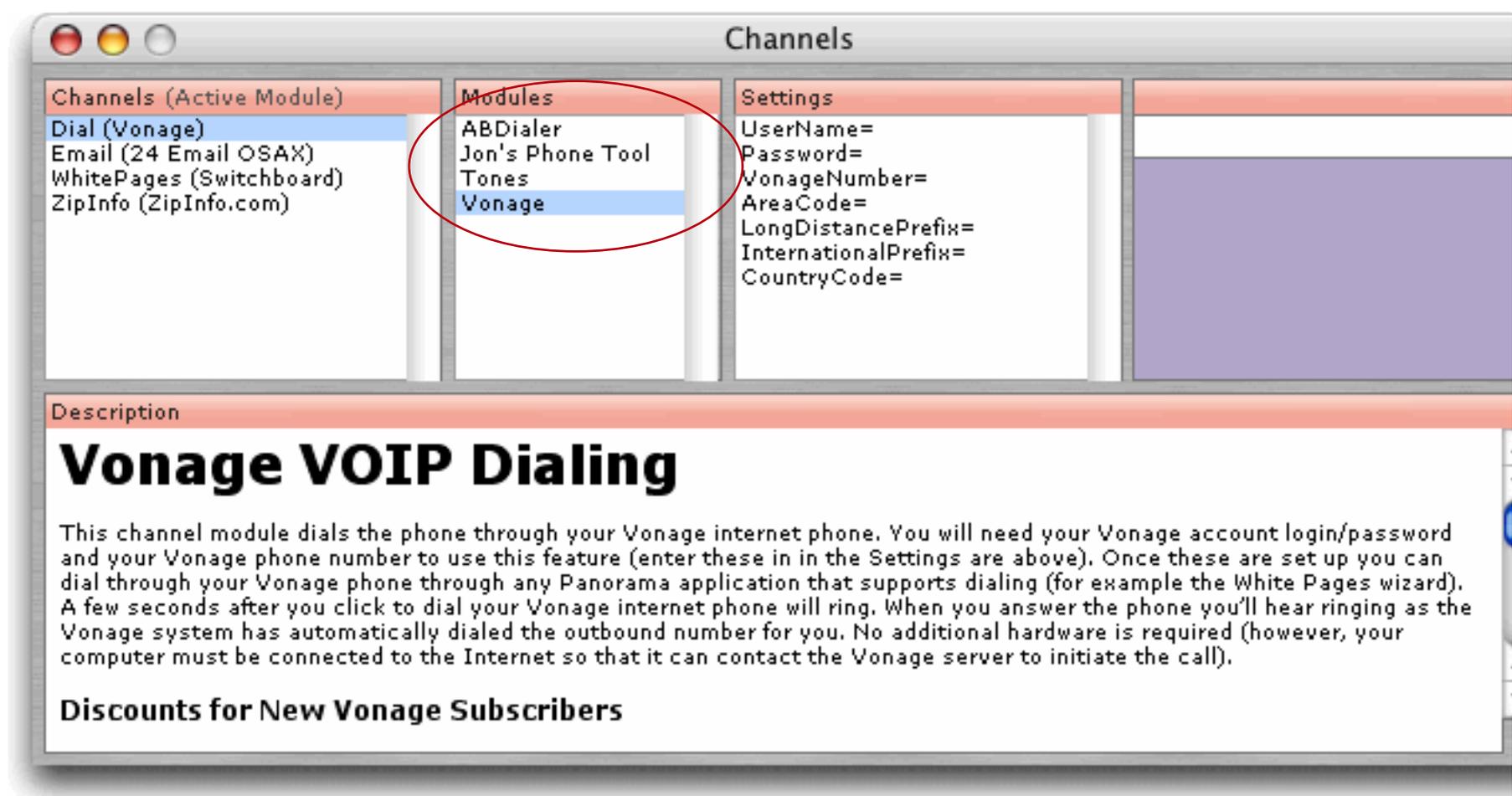
Selecting and Configuring a Channel

Each channel must be configured before it can be used. This configuration is done with the Channels wizard. When you first open this wizard it displays the types of channels available.

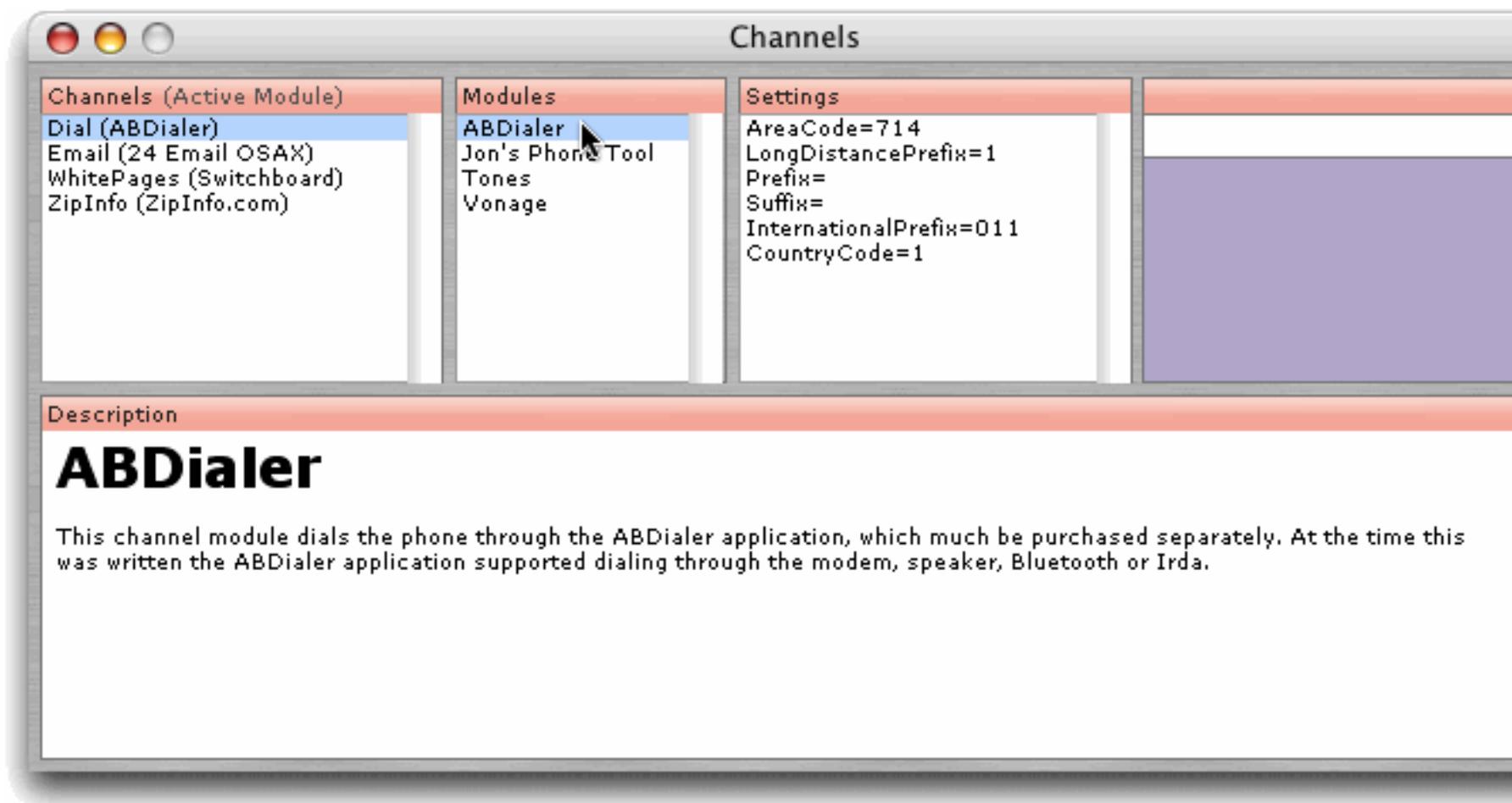


Each channel shows the channel name followed by the currently active module for that channel. For example, if I was to ask Panorama to dial the phone right now, it would do so through my *Vonage* internet phone connection. If I was to ask Panorama to send an e-mail, it would do so through *24 Email OSAX*, a shareware application I have purchased for sending e-mail.

The Channels wizard allows you to change the active module. For example, I might want to dial the phone using my modem instead through the *Vonage* internet phone connection. To see the choices available I click on the **Dial** channel.



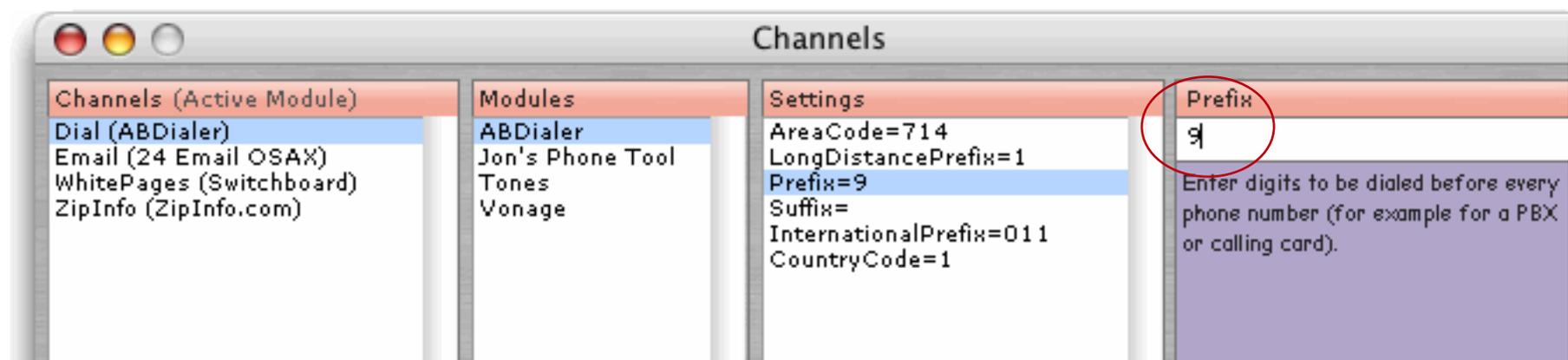
There are four different modules available for dialing. I know that I can use the *ABDialer* option to dial the phone with my modem, so I click on that.



When you select a module the wizard displays a description of the module in the bottom section of the wizard. In this case the description indicates that *ABDialer* is a program that must be purchased separately, and that it can dial through the modem, speaker, Bluetooth or Irda. Since this is a separate program it has it's own configuration, which I can set up by launching the ABDialer application.



Getting back to Panorama, most modules have one or more settings that need to be configured before you can use the module. Click to select a particular setting, then type in the settings value in the box on the right. For example, suppose your phone is on a PBX and you need to dial 9 for an outside line. To set this up, click on the **Prefix=** option, then type 9 as shown below.



Repeat until you have typed in all of the necessary settings.

Finding More Information about a Module

Many channel modules rely on other software or hardware to perform their operations. The bookmarks menu lists links to web sites that contain additional information about additional items you'll need to use this module.

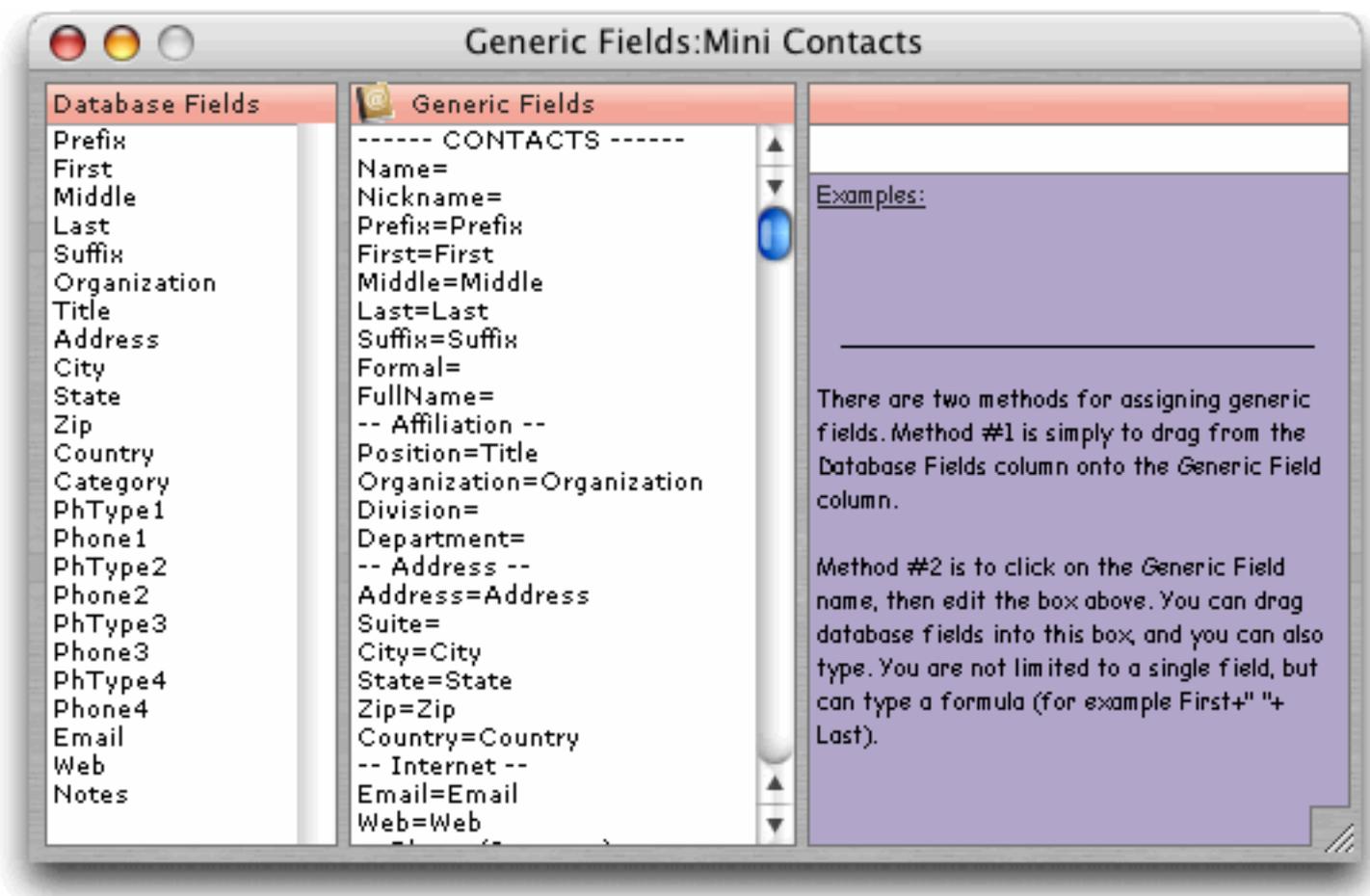


Selecting a link will automatically open your web browser to the specified page.



Generic Fields

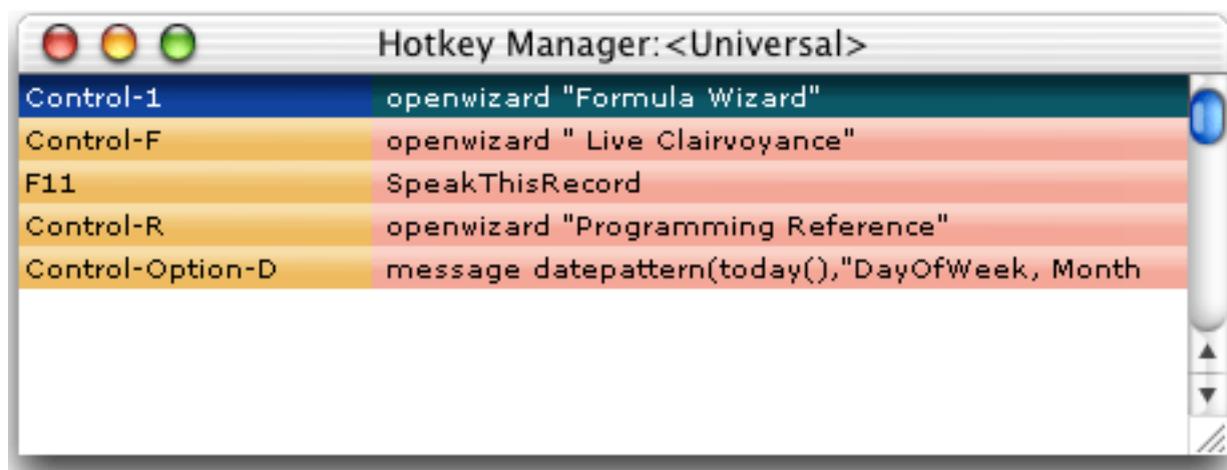
Databases come in all sizes and shapes. Generic fields allow different databases to share information even if they have different field names or slightly different configurations. For example, one database may store company names in a field named **Company**, while another may have a similar field named **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*). Panorama includes a special wizard for setting up generic fields for any database that contains contact information.



To learn how to use this wizard see "[Generic Fields](#)" on page 398.

Hotkey Manager

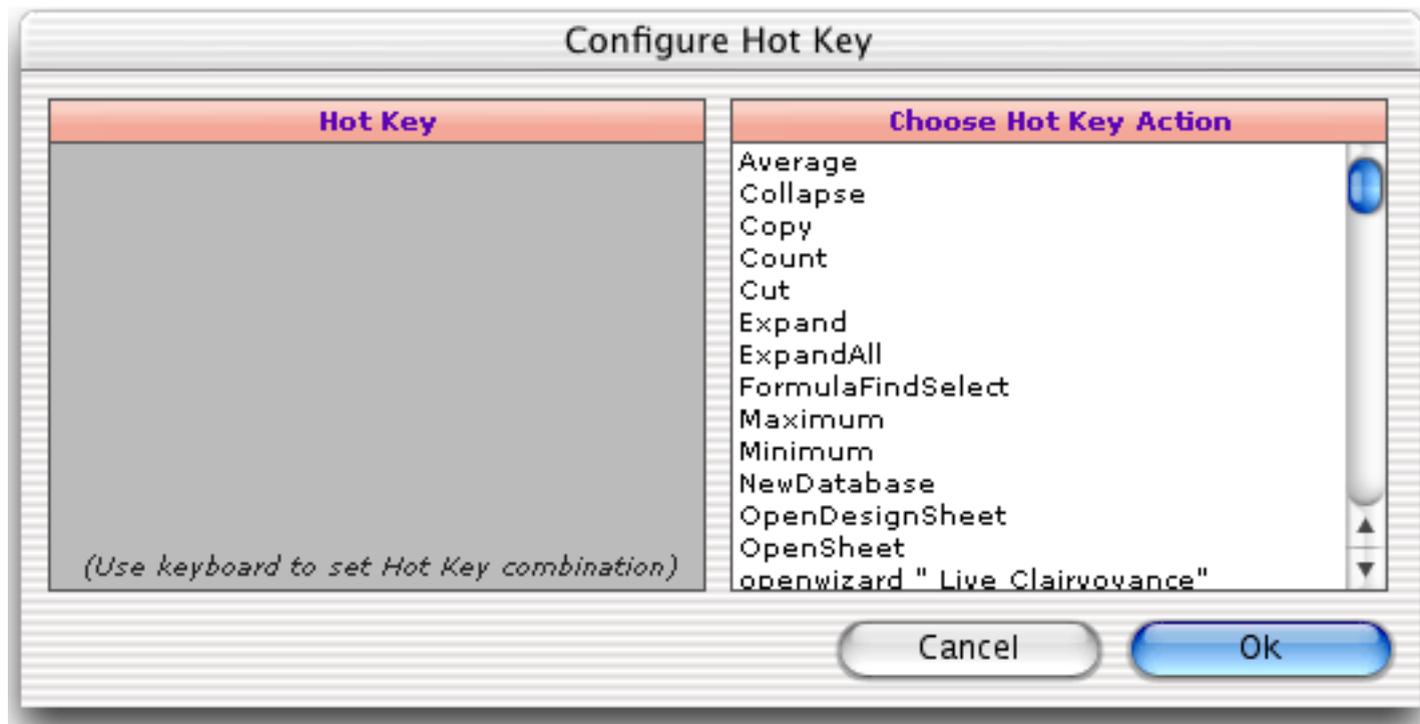
The **Hotkey Manager Wizard** allows you to set up database actions that will occur in response to different keystrokes and keystroke combinations. Each hotkey may be set up as a universal hotkey (active for all databases) or it may be made specific to a particular database. When the **Hotkey Manager** is first opened it displays the universal hotkeys that are already defined, if any.



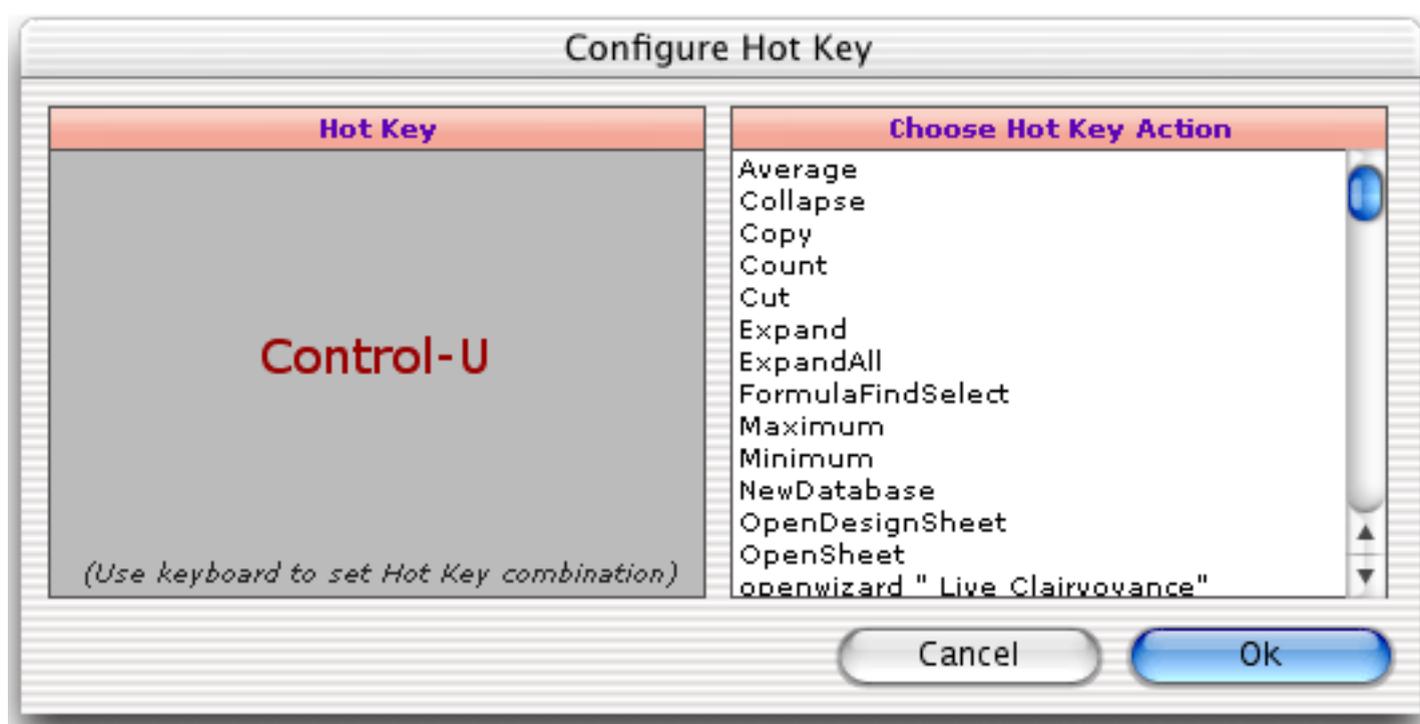
The window is divided into two columns. The first column displays each keystroke combination. The right side displays the action that will be performed when this keystroke combination is pressed.

Adding a New Universal Hotkey

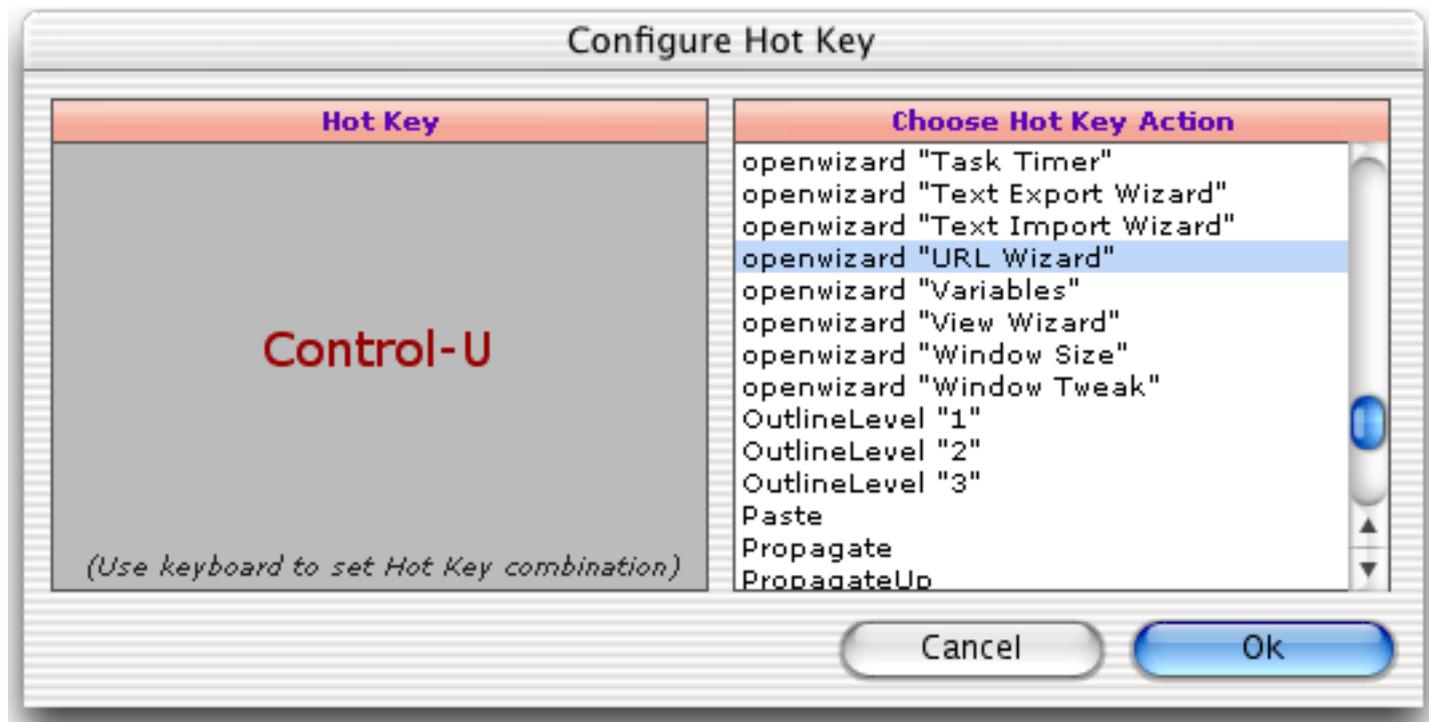
To create a new universal hotkey, choose **New Hotkey** from the Hotkey menu.



This dialog is divided into two sections. The section on the left displays the keystroke combination. To specify the combination simply press the key or key combination you want to use. You may use any character on the keyboard, optionally combined with the **Shift**, **Control**, **Option**, **Command** or **Alt** keys. (The **Option** and **Command** keys are available only on the Macintosh, the **Alt** key is available only on the PC.) If you decide you want to change the key combination, simply type another key or key combination. You can change the hot key as many times as you like. Each time you press a key or key combination the left side of the dialog will update to display your selection.



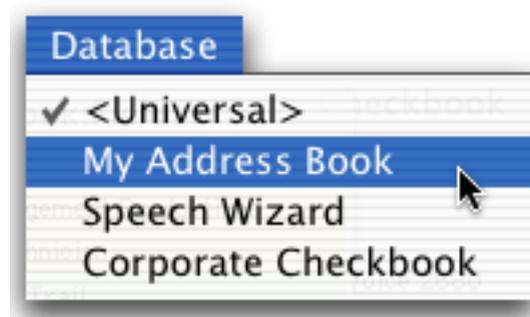
The right side of the dialog is a scrolling list. Select the action you want to perform from this list. (You can also set up a custom action -- more on that later). The actions in the list are all “universal” actions that could apply no matter what database is open (for example, opening a wizard).



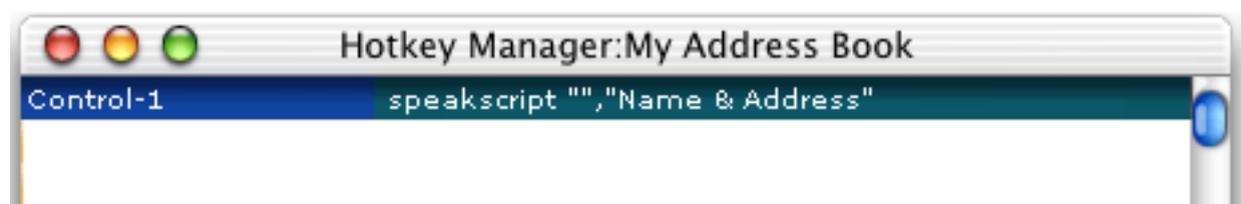
Once the action is selected, press the **Ok** button. The new Hotkey is ready to use immediately, and will be active no matter which Panorama database is currently active. In this case you can now press **Control-U** at any time to open the URL Wizard.

Creating a Database Specific Hotkey

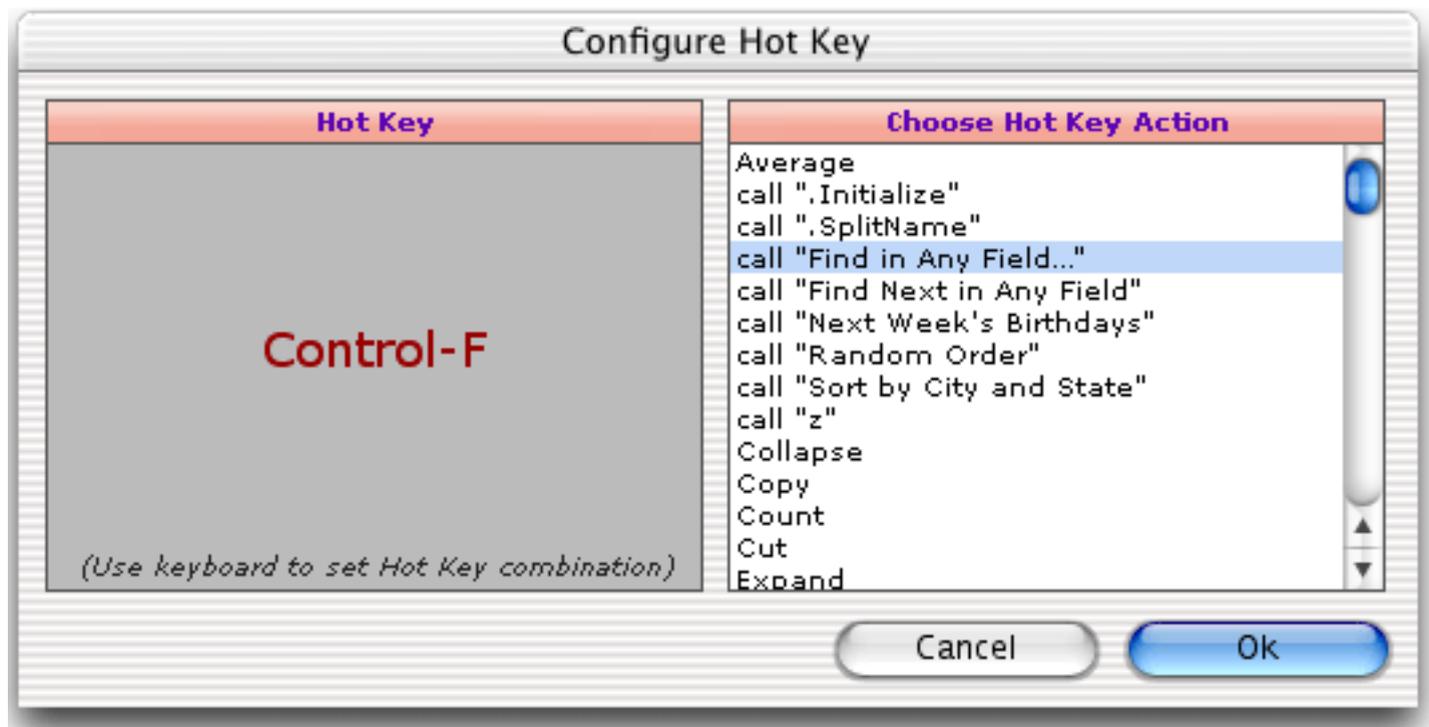
To create a database specific hotkey, first choose the database from the Database menu.



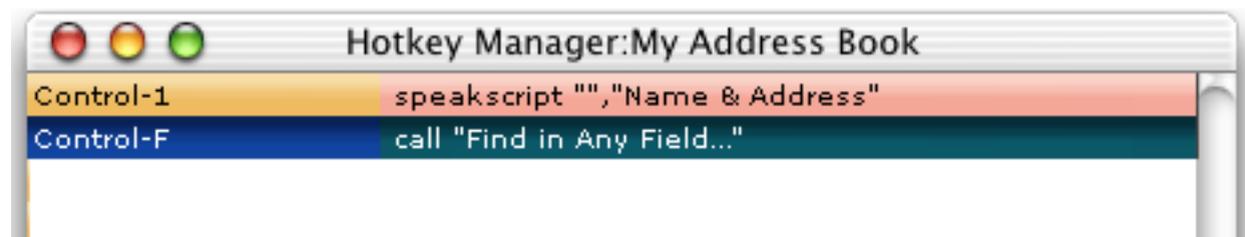
The wizard will display any hotkeys that have already been specifically defined for this database.



Now use the **New Hotkey** command in the Hotkey menu to define a new hotkey. The command works exactly the same as it did before, but the new hotkey it creates will be specific to the current database instead of universal. You'll also notice that there are more action choices on the right hand side of the dialog. In addition to the universal actions, the dialog also now lists actions that are specific to this database. For example, you can set up the hotkey to trigger any procedure in the database, as shown in this example.



When you press **Ok** the new hotkey is immediately defined and ready to use.



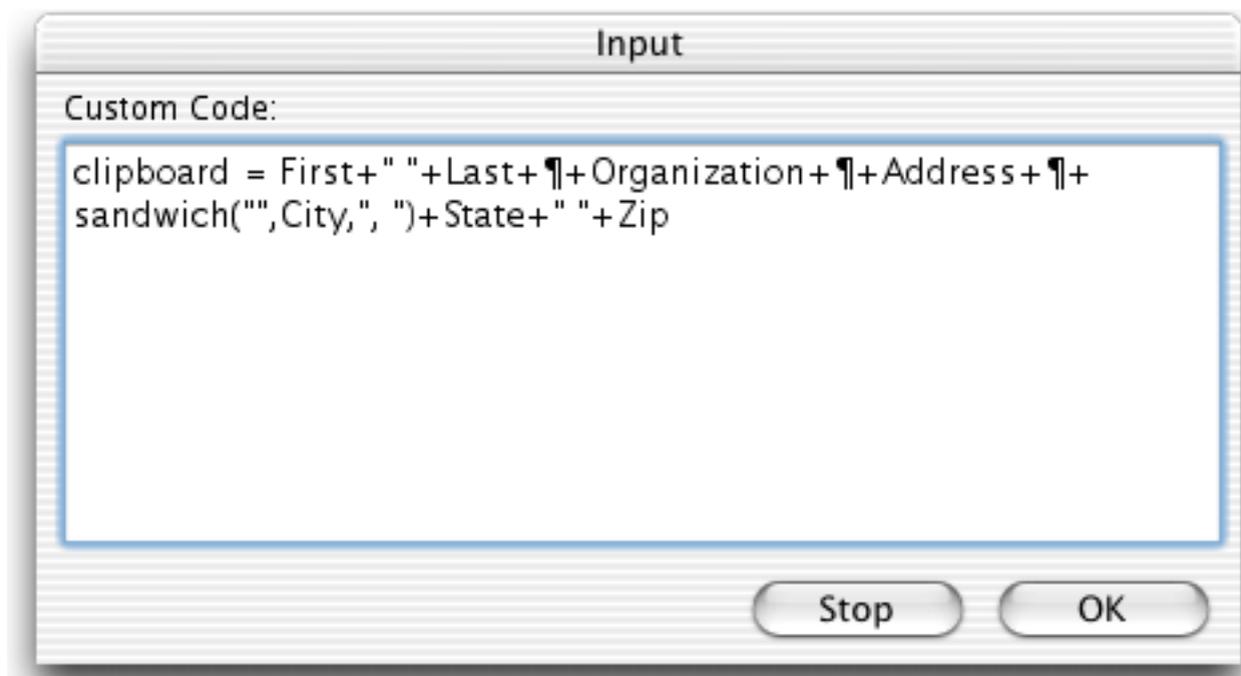
Notice that in this example the **Control-F** hotkey has been defined twice - once as a universal hotkey (to open the **Live Clairvoyance** wizard) and once as a database specific hotkey. In this case the database specific hotkey overrides the universal hotkey. As long as the **My Address Book** database is the active database (the top-most window) **Control-F** will activate the Find in Any Field procedure. When any other database is active **Control-F** will open the **Live Clairvoyance** wizard.

Database specific hotkeys are not stored in the wizard -- they are stored in the database itself. Your new hotkey will not be permanently saved until you save this database itself.

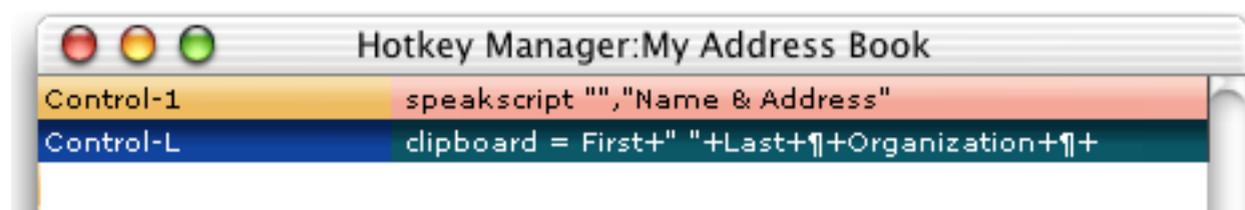
Custom Hotkey Actions

Normally hotkey actions are selected from the list in the hotkey configuration dialog. Sometimes, however, you may want to create a hotkey that performs a custom action that is not on the list. To do this, first create the hotkey the normal way. Since you are going to create a custom action, it doesn't matter which action you select.

Once the hotkey is created, select it and choose the **Custom Code** command from the Hotkey menu. This command opens a dialog that allows you to type in any procedure you like for the custom action. The example below shows how this dialog can be used to create a database specific hotkey that copies a mailing label into the clipboard, so that it can be pasted into another database or application. (Of course you could also create a procedure that did this, then select the procedure in the normal Hotkey Configuration dialog.)



When you press **OK** the hotkey list will show your new custom action.



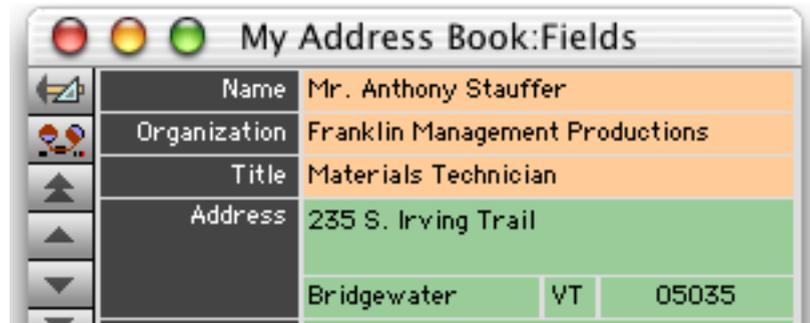
If you have created a universal hotkey, remember that this action may be performed with any database active. Be sure not to include any code that is specific to a particular database. Of course this isn't a problem if you are creating a database specific hotkey.

Speech Wizard

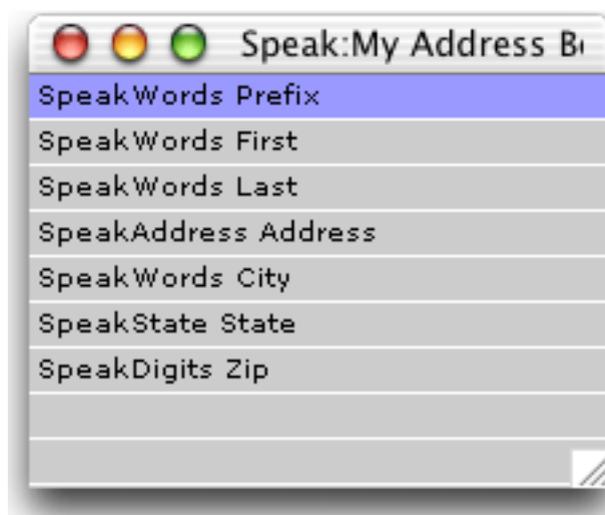
The **Speech Wizard** allows you to add speech synthesis to any Panorama database on a Macintosh computer. This allows Panorama to “read back” your data for voiced based data verification and auditing. Using a simple user interface you can create one or more scripts for reading back the information in a database.

Using Speech Scripts

The Address Book example database that comes with Panorama (in the Guided Tour folder) already has several speech scripts set up. To try these out, first open this database.



Now open the **Speech Wizard**. When you open the wizard, it displays the currently selected script (if any), as shown below.



To hear Panorama read back the name and address of the currently visible person, choose **Speak Script** from the Script menu. Notice that the script knows how to correctly pronounce abbreviations like **Mr.**, **S.** and **VT**.

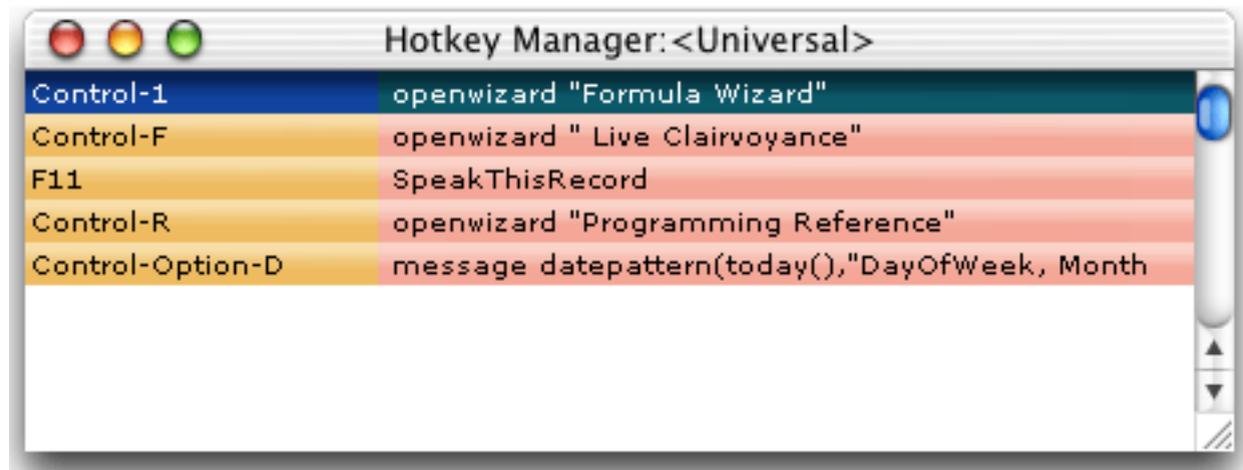
The **Script** menu allows you to select and manage scripts. Two scripts have been defined for this database **Name & Address** and **Phone Number**.



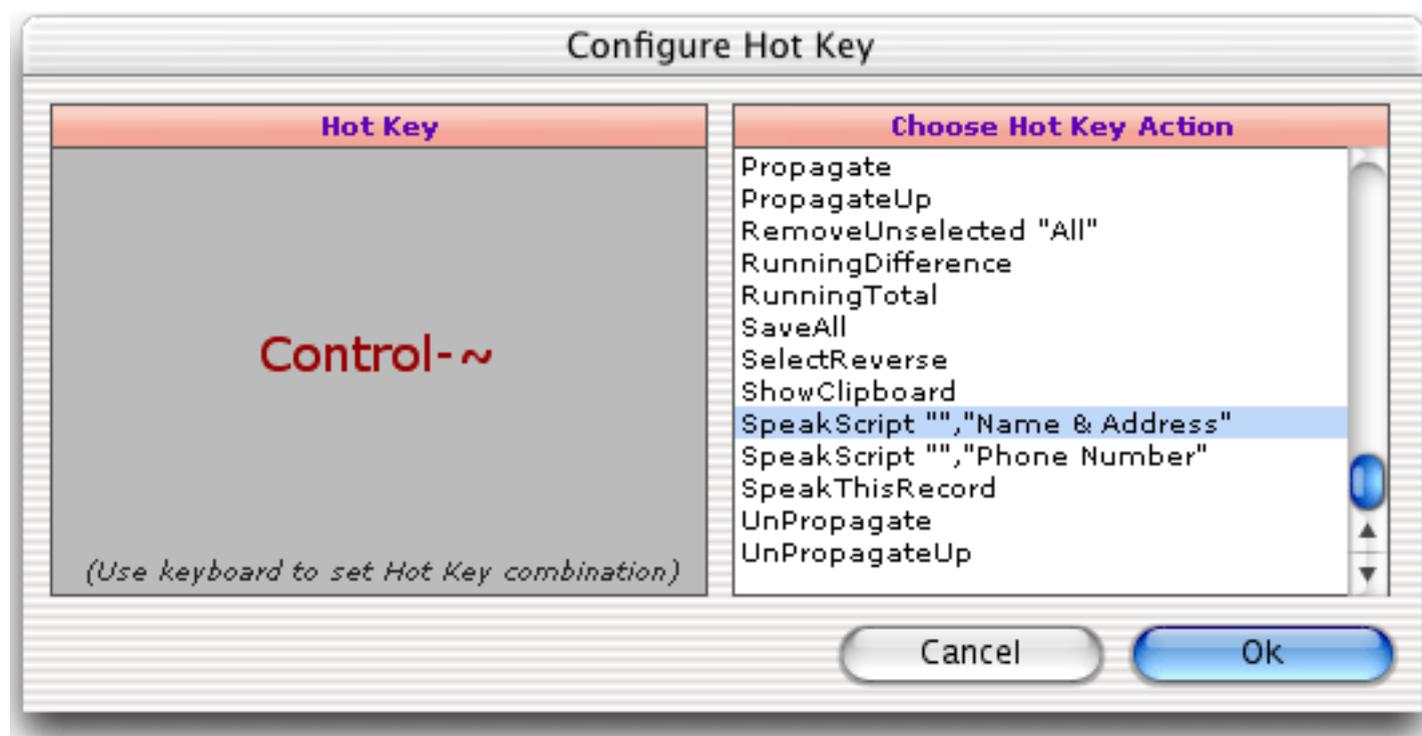
To switch to a different script simply select that script from the menu (for example **Phone Number**). You can then read back using that script or modify the script you have chosen.

Speaking Scripts with a Hotkey

The Hotkey manager comes pre-configured to speak the current script in any database when you press the **F11** key.



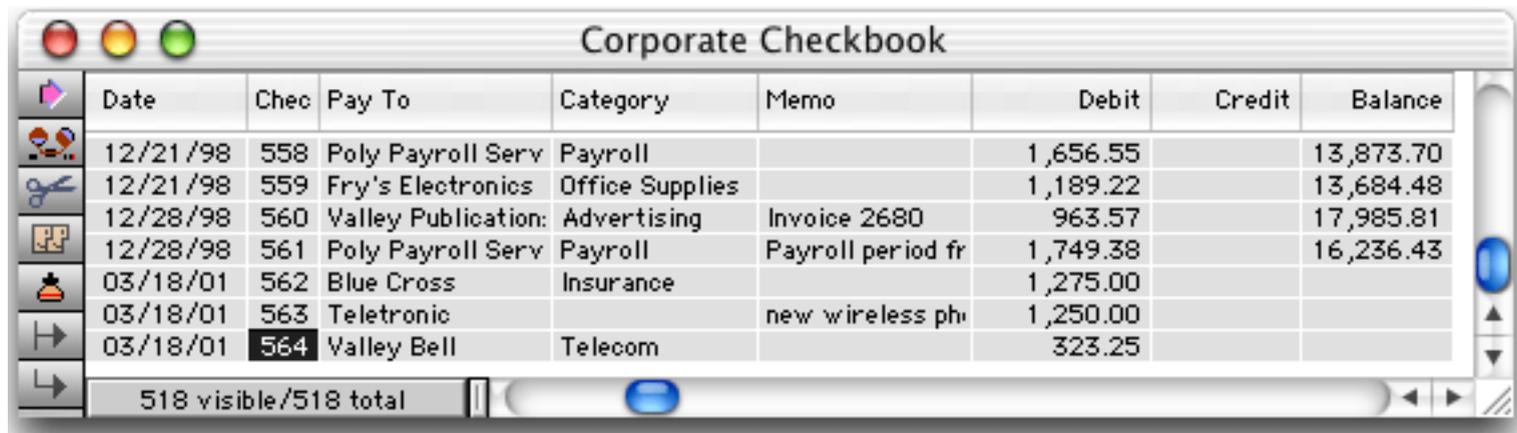
This means that in any database you can press the **F11** key to speak the current record (assuming a script has been set up). You can change the key assigned to this action using the Hotkey Manager wizard. You can change which script will be spoken using the **Script** menu (in the Speech Wizard). You can also set up a database specific hotkey to speak a specific script. Simply choose the script you want to use from the action list in the Hotkey Configuration dialog.



See the Hotkey Manager for more information on setting up hot keys ("[Hotkey Manager](#)" on page 58).

Creating a New Script

To create a new script use the **New Script** command in the Script menu. We'll illustrate this with the **Corporate Checkbook** database, which is also in the Guided Tour folder.

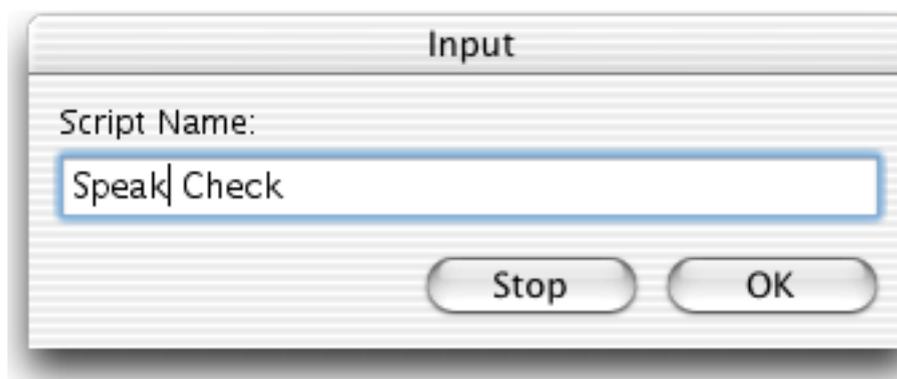


	Date	Chec	Pay To	Category	Memo	Debit	Credit	Balance
	12/21/98	558	Poly Payroll Serv	Payroll		1,656.55		13,873.70
	12/21/98	559	Fry's Electronics	Office Supplies		1,189.22		13,684.48
	12/28/98	560	Valley Publication:	Advertising	Invoice 2680	963.57		17,985.81
	12/28/98	561	Poly Payroll Serv	Payroll	Payroll period fr	1,749.38		16,236.43
	03/18/01	562	Blue Cross	Insurance		1,275.00		
	03/18/01	563	Teletronic		new wireless ph	1,250.00		
	03/18/01	564	Valley Bell	Telecom		323.25		

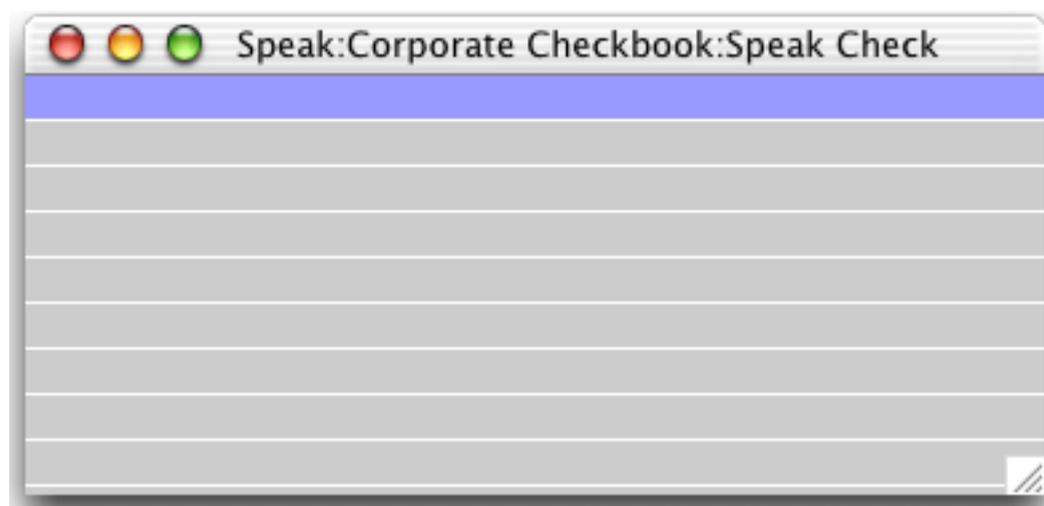
Our goal will be to create a script that reads the check data aloud like this:

Check number five-sixty-four to Valley Bell for three-hundred twenty- three dollars and twenty-five cents.

Start by choosing **New Script** from the Script menu, and assigning the new script a name.

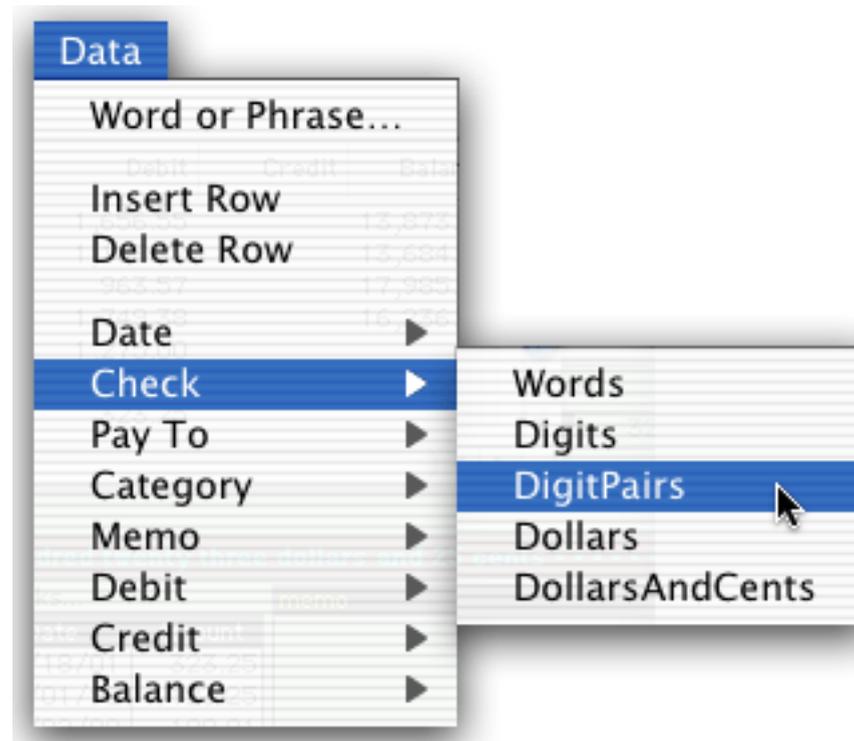


Press **OK** to create a new, empty script.

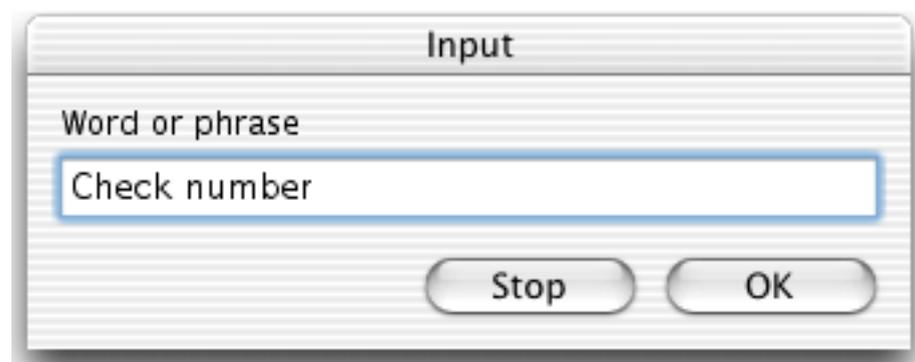


Using the Data Menu

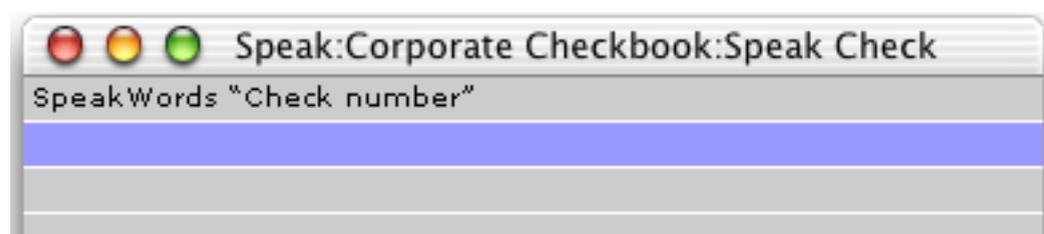
The **Data** menu is the primary method you'll use to create and modify scripts. This menu allows you to add a word or phrase, to insert or delete rows, and to add any field to the script. The bottom portion of this menu lists all of the fields in the current database. Each field has a submenu that lists the available formats for that field. For example, a numeric field like the Check number (shown below) can be spoken as **Words**, **Digits**, **Digit Pairs**, **Dollars** or **Dollars and Cents**.



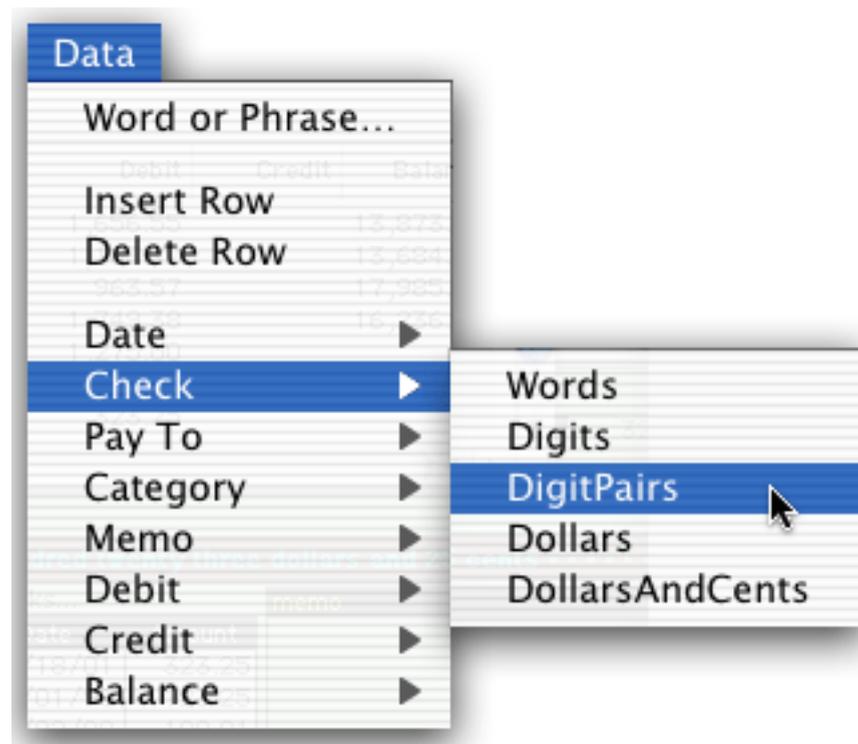
For this script we want to start by speaking the phrase check number, so you'll select the **Word or Phrase** menu item. A dialog appears for you to type in the word or phrase.



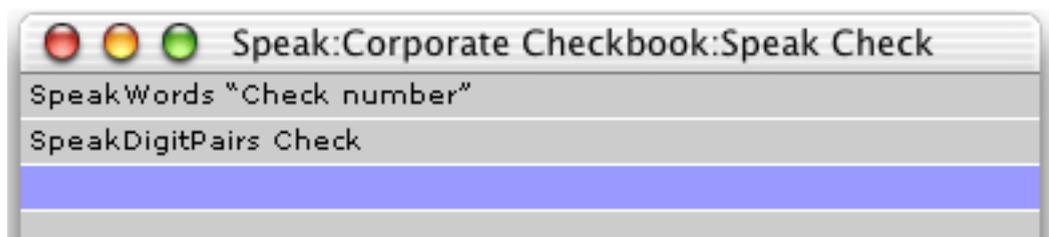
When you press the **OK** button this item is added to the script.



Next the script needs to speak the actual check number itself. Select **Check** from the **Data** menu, then select **DigitPairs** from the submenu.



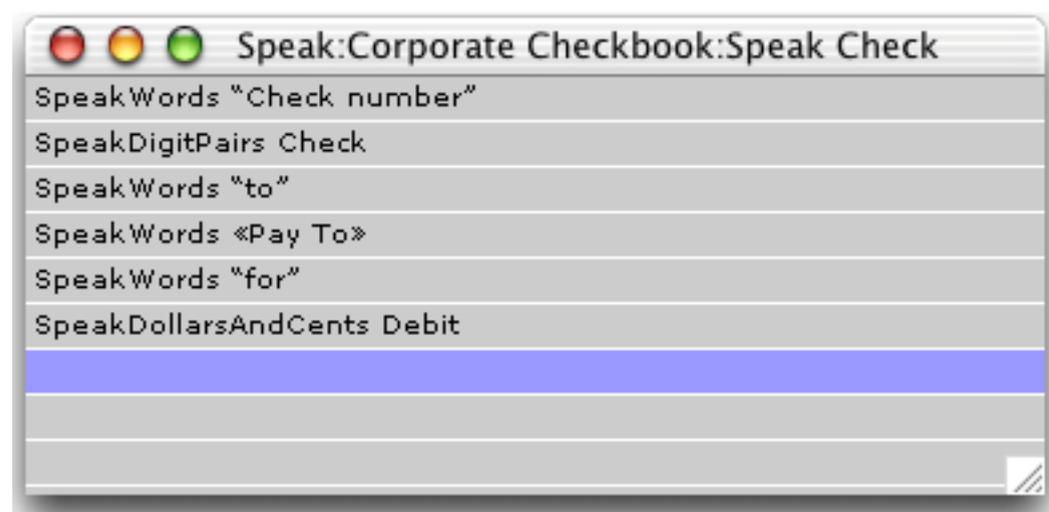
This item will be added to the script.



To complete the script perform the following steps.

- Select **Word or Phrase** and enter **to**.
- Select **Pay to > Words**.
- Select **Word or Phrase** and enter **for**.
- Select **Debit > DollarsAndCents**.

The finished script will look like this:



You can use the **Speak Script** command to try out your new script.

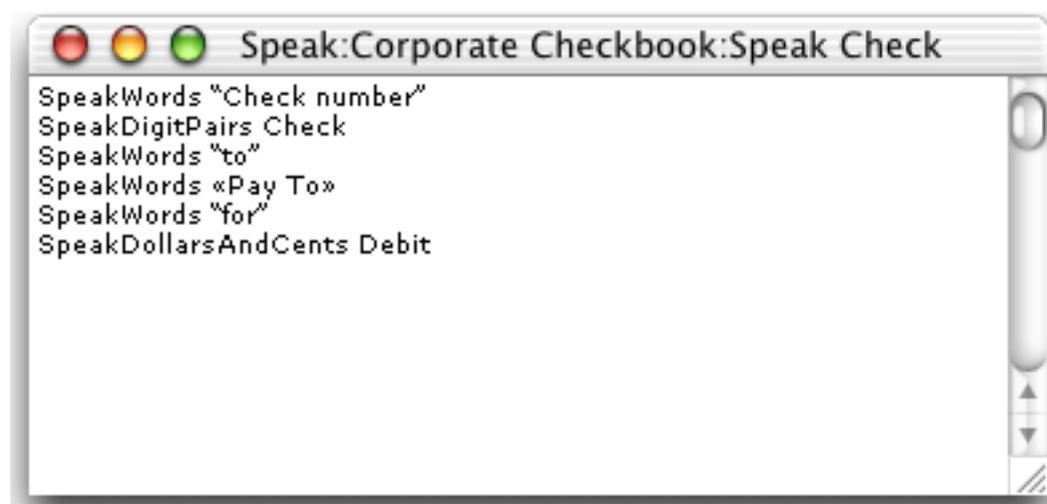
Speech Data Styles

Each type of data (text, numeric, date) has one or more styles that you can use to read the data. The table below lists and describes each of these styles.

Data Type	Statement	Description
TEXT	speakwords	The text is spoken using normal English.
	speakdigits	The data is spoken in English, but if the data contains any numbers they will be spoken as individual digits. For example, 4892 will be spoken as four eight nine two .
	speakdigitpairs	The data is spoken in English, but if there are any numbers they will be spoken as digit pairs. For example, 4892 will be spoken as forty-eight ninety-two .
	speakletters	The data is spoken letter by letter, including upper and lower case. For example Jim will be spoken as upper case J, lower case I, lower case M .
	speakcharacters	The data is spoken letter by letter. For example April will be spoken as A P R I L .
	speakcharactersslowly	The data is spoken letter by letter, with a delay between each letter. For example April will be spoken as A; P; R; I; L .
	speakaddress	The data is spoken in English, but any official USPS abbreviations are expanded as the text is spoken. For example S or S. is expanded to South , while Bl. is expanded to Boulevard . Any numbers in the text are spoken as digit pairs.
	speakstate	If the text is a two letter abbreviation of a U.S. state it will be spoken as the full name. For example CA will be spoken as California , while WV will be spoken as West Virginia .
	speakphonenumber	The first ten digits in the text are spoken as a phone number, along with any extension after that.
NUMBER	speakwords	The number is spelled out. For example, 4892 will be spoken as four-thousand eight-hundred and ninety-two .
	speakdigits	The number is spoken as individual digits. For example, 4892 will be spoken as four eight nine two .
	speakdigitpairs	The number is spoken as digit pairs. For example, 4892 will be spoken as forty-eight ninety-two .
	speakdollars	The integer portion of the number is spelled out, followed by the word Dollars. For example 378.93 will be spoken as Three-hundred seventy-eight dollars .
	speakdollarsandcents	The integer portion of the number is spelled out, followed by the word Dollars, followed by the two digits after the decimal point, followed by the word Cents. For example 378.93 will be spoken as Three-hundred seventy-eight dollars and ninety-three cents .
DATE	speakdate	The date is spelled out. For example 4/18/04 is spoken as April eighteenth, 2004 .

Advanced Mode vs. Simple Mode

The **Speech Wizard** actually has two modes: **Simple Mode** and **Advanced Mode**. So far we have only discussed the simple mode, which allows you to create and modify the script with the **Data** menu. Advanced mode allows you to modify the script directly, using a text editor.



To edit the script, simply click anywhere in the text and begin typing. You can also select text just as you would with any other text editing application.

In advanced mode, the script is actually a Panorama procedure. You can type any Panorama procedure code you like into the script, including if, loop, and call statements, as well as using variables.

Saving a Script

The script wizard doesn't have any command for saving a script. That's because the script is not saved as part of the script wizard. Instead it is saved as part of the database itself. To save the script you need to save the original database that the script is attached to.

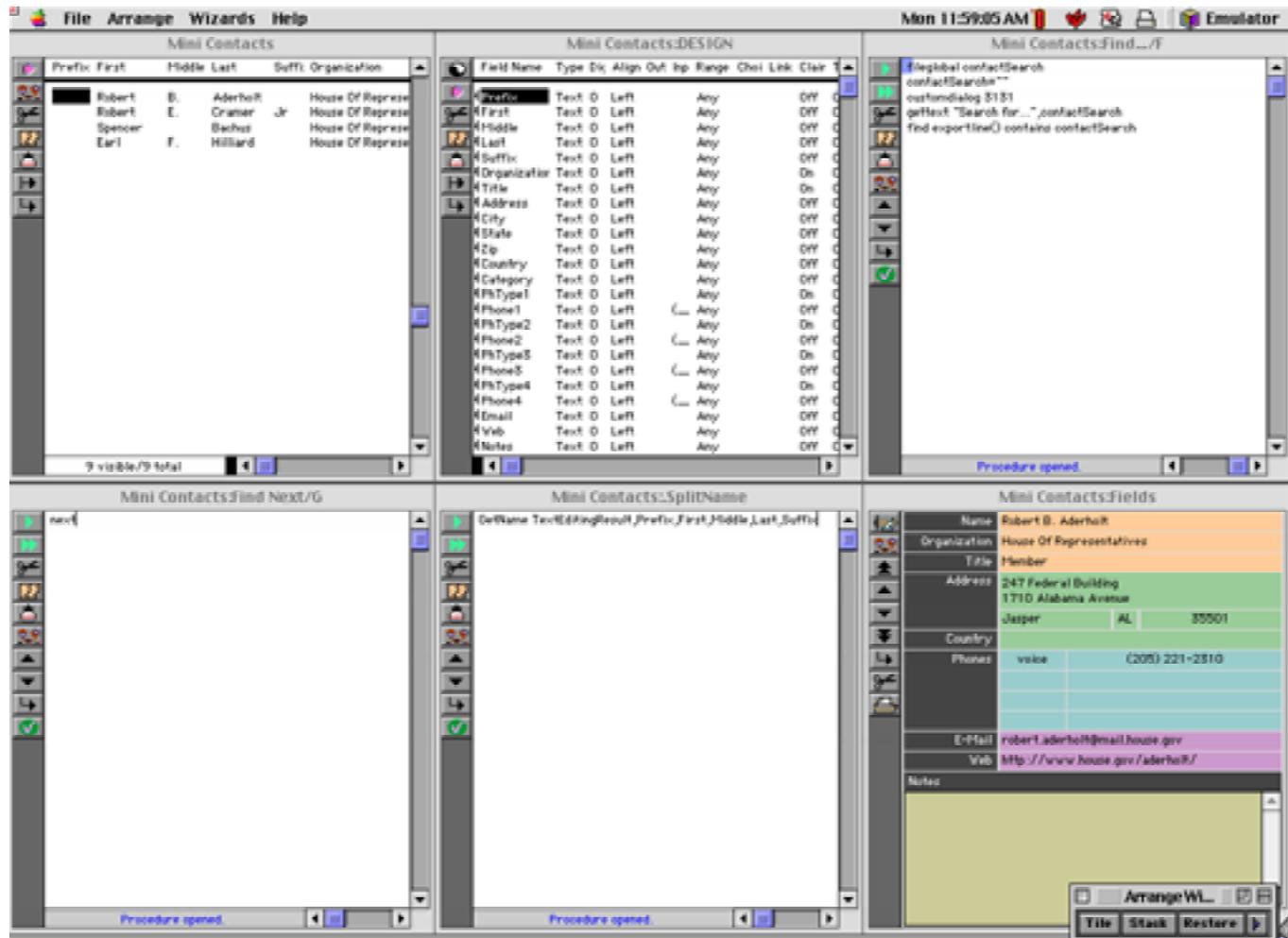
Because the script is saved along with the database, it doesn't matter if you move the database to a different folder or even a different computer. The script will remain as part of the database no matter where it goes. (Of course you can always use the **Delete Script** command to remove it.

Utilities Wizards

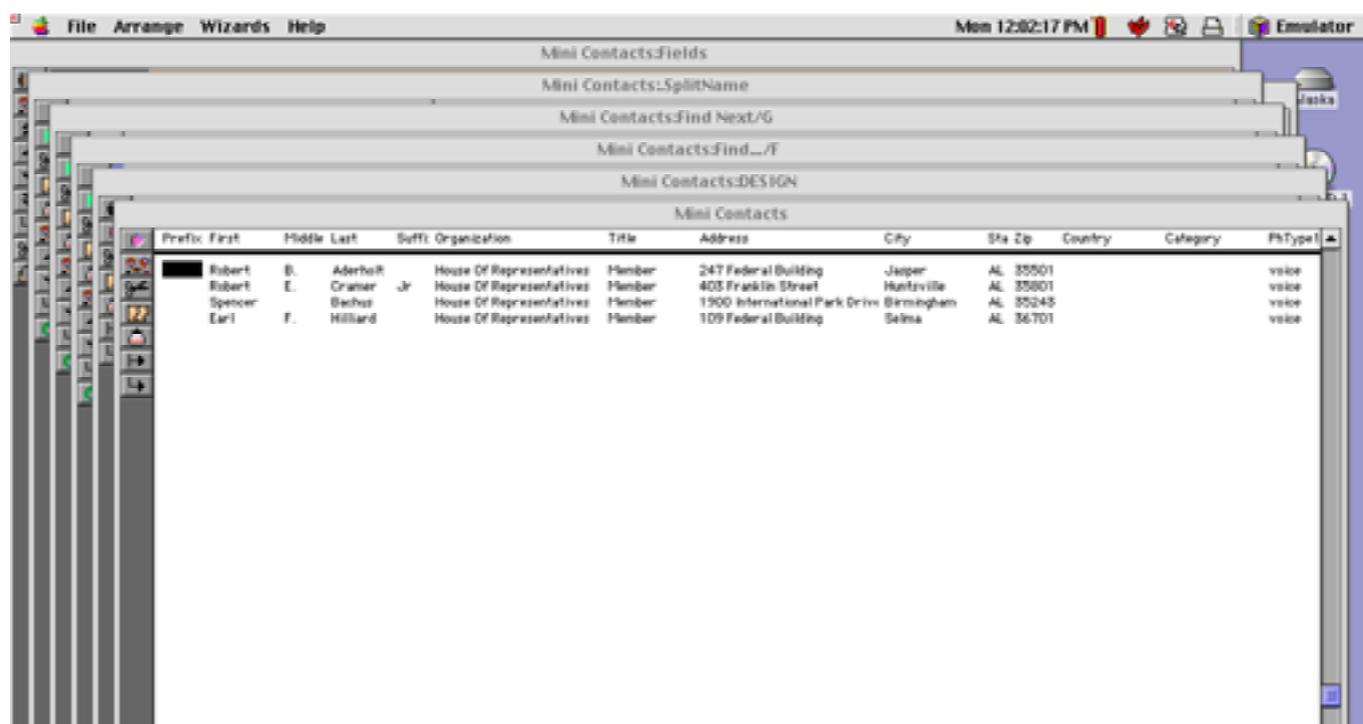
The wizards in this submenu provide tools to make working with Panorama databases easier. You don't need to use these wizards, but they can make some common database tasks easier.

Arrange Windows Wizard

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. This illustration shows an example of window tiling.



Here is an example of window stacking.



To learn more about this wizard see [“Arranging All Open Windows at Once \(Tiling and Stacking\)”](#) on page 337.

Disk Permissions

This wizard is for Mac OS X only. The wizard displays information about each of the disk drives currently mounted on your computer. For each drive the wizard lists the owner, the group, and the operations that can be performed by each class of user. For each class there are three possible operations: R (read), W (write), and X (execute). If the box is green, the operation is allowed. If it is red, the operation is not allowed.

Disk Name	Owner	Group	Other
Panther	r w x jr	r w x unknown	r w x
Jaguar	r w x root	r w x admin	r w x
Classic	r w x jr	r w x staff	r w x

This wizard is included primarily to assist the ProVUE Development technical staff with debugging unusual installation problems. If you have difficulty installing Panorama, our technical support staff may ask you to use this wizard to help diagnose the problem. If the permissions are incorrect, you can change them using the Terminal (recommended for UNIX experts only) or with a freeware program named *BatChmod*. To find out more about *BatChmod* (and possibly download the program), go to the *BatChmod* web site:

<http://macchampion.com/arbysoft/>

Open Database

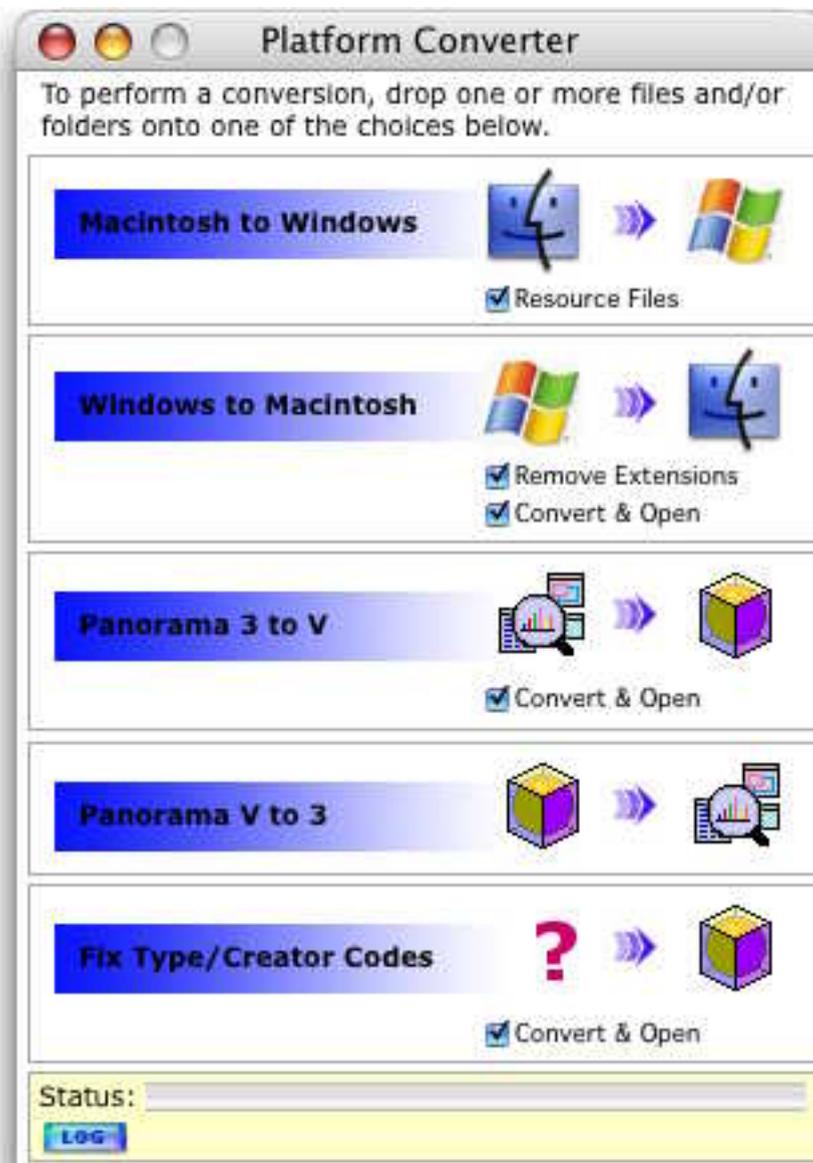
The standard techniques for opening a database (double clicking, **Open File** dialog, **Favorite Databases** wizard, etc.) will work fine in 99,999 of 100,000 cases. Sometimes, however, you may need to use a more specialized technique to open a database. For example, if a database has lost its MacOS 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 other cases you may need to open a database but bypass the normal initialization of that database. The Open Database wizard is included for these special needs.



To learn more about these wizards see “[Advanced Database Opening Techniques](#)” on page 246.

Platform Converter

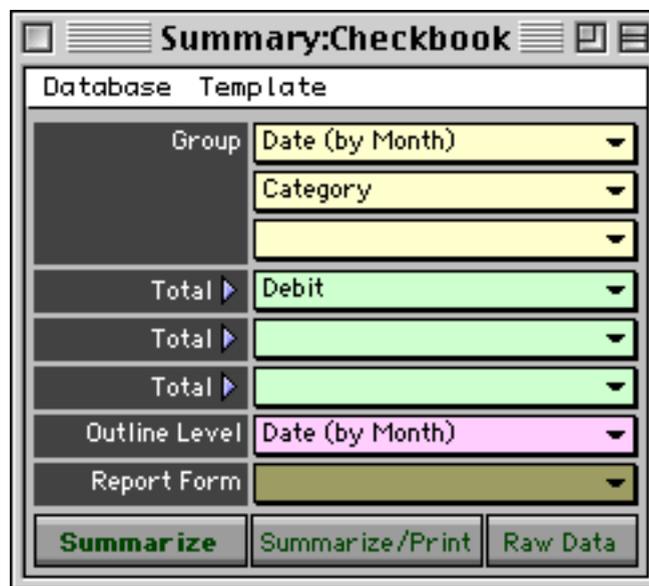
The **Platform Converter** converts databases between platforms and versions. It doesn't actually modify the contents of files, but it does control how databases interact with the operating system. You can use the platform converter to convert Panorama 3.1 databases for use with Panorama V, and also to add the `.pan` extension required to use databases on Windows.



For more information about this wizard see "[Platform Converter Wizard](#)" on page 1984.

Summaries & Outline Wizard

The **Summaries & Outline Wizard** automates the process of calculating summaries (see “[3-Step Summarizing](#)” on page 521). You can use this wizard to rapidly take pages and pages of information and distill them down into concise, useful summaries.



To learn more about this wizard see “[The Summaries & Outlines Wizard](#)” on page 551.

Text Export Wizard

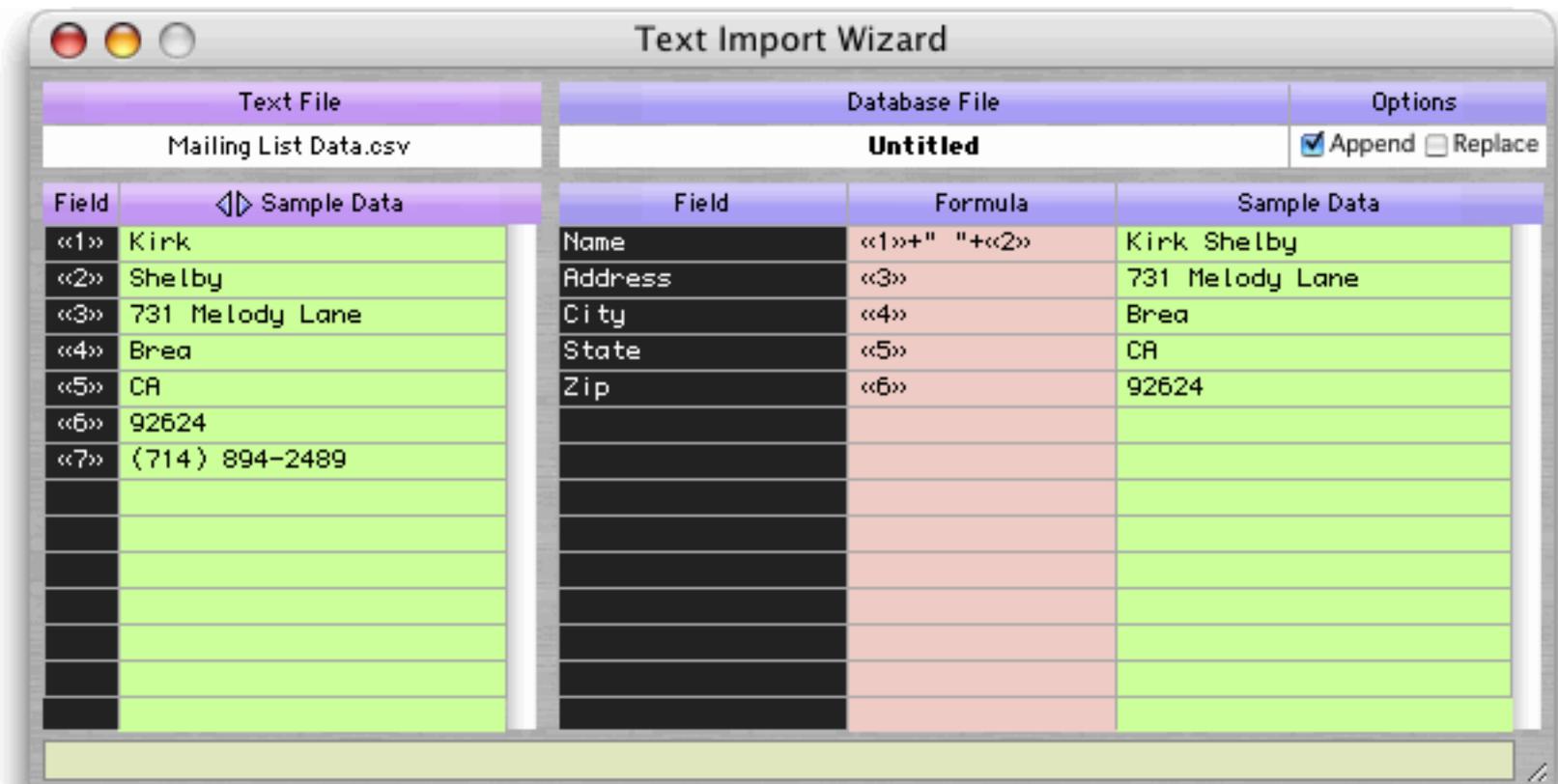
The **Text Export Wizard** allows you to export any database as a text file. Usually you’ll do this when you want to transfer information to another application. The wizard allows you to specify the order of the fields being exported, and to manipulate the data as it is being exported (converting it 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 so that it can be published on the web (see “[Exporting HTML Tables](#)” on page 306).



To learn more about this wizard see “[Exporting with the Text Export Wizard](#)” on page 297.

Text Import Wizard

The **Text Import Wizard** allows you to import almost any text file into a database. You'll use this wizard to help transfer data from other applications (Access, FileMaker, etc.) into Panorama. The data can be imported even if the arrangement of fields in the text file is completely different than the arrangement of fields in the database itself.



To learn more about importing data with this wizard see [“Using the Text Import Wizard”](#) on page 285.

VCard Wizard

Generic fields allow you 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 1904). 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. 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.)

original database

My Address Book:Fields			
Name	Ms. Nancy Hess		
Organization	Arkansas Research Intl		
Title	Asst Planning Director		
Address	21775 W. Marion Place		
	Oakland	CA	94609
Country			

VCard wizard displays the same information



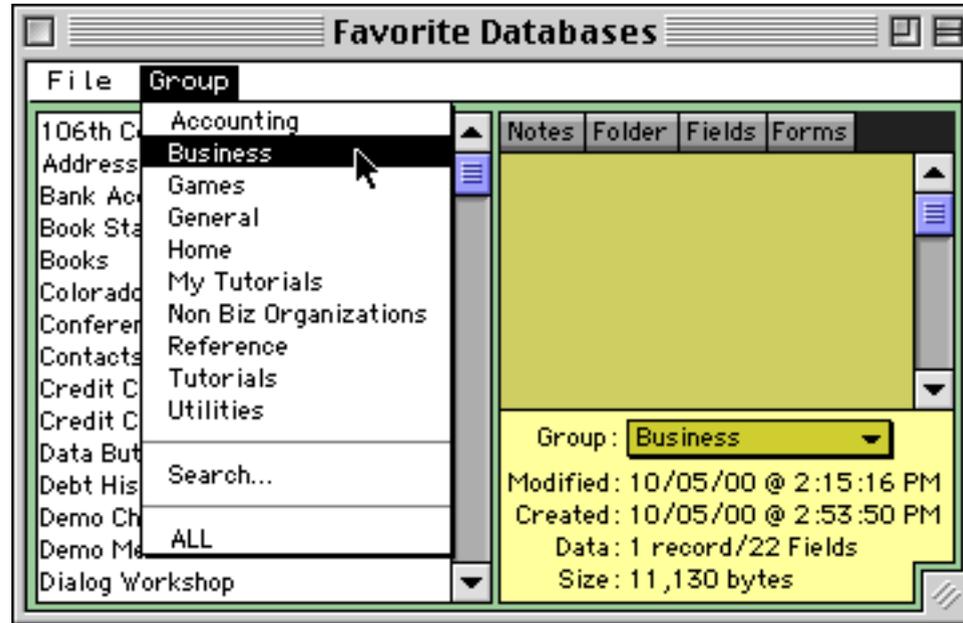
With the VCard Wizard you can:

- Drag contact information back and forth between this database and other databases or applications.
- Import or export groups of VCards.
- Display a map of the currently displayed address
- Send an e-mail to the currently displayed contact
- Automatically dial the phone

To learn more about this wizard see "[Using Generic Fields with the VCard Wizard](#)" on page 404.

Business Demo Files

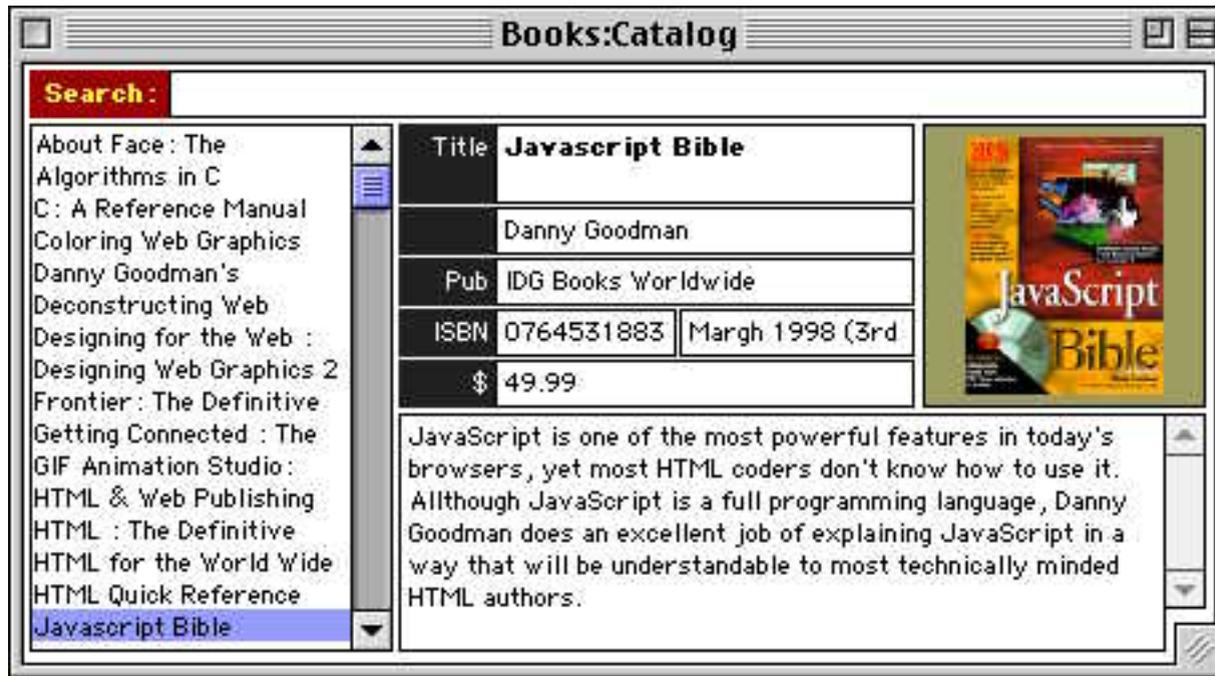
The demo databases in this category show examples of how Panorama can be used to build common business applications. To open these files open the **Favorite Databases** wizard and select the **Business** group.



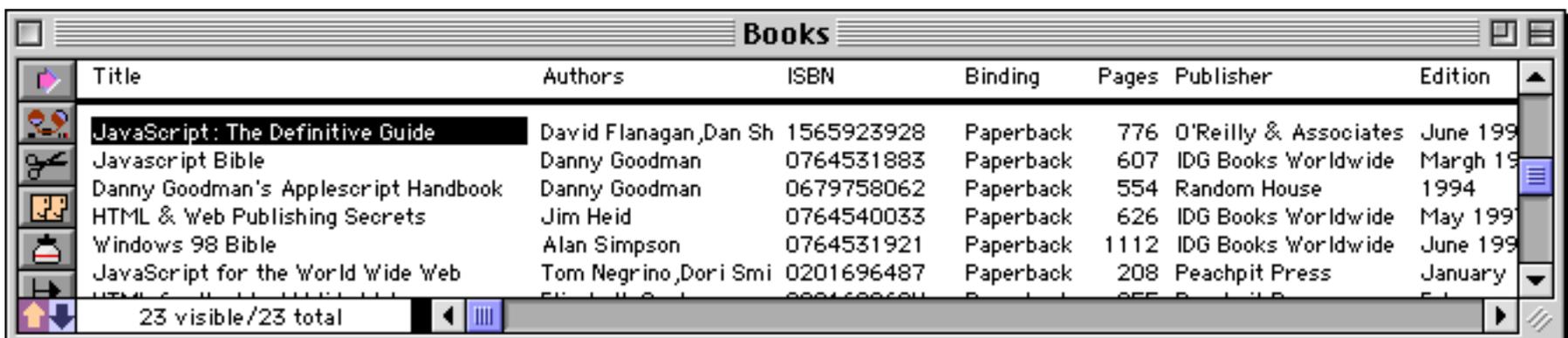
The databases in this category use some fairly advanced Panorama techniques.

Books (Product Catalog)

This database demonstrates one way to build a product catalog using Panorama.

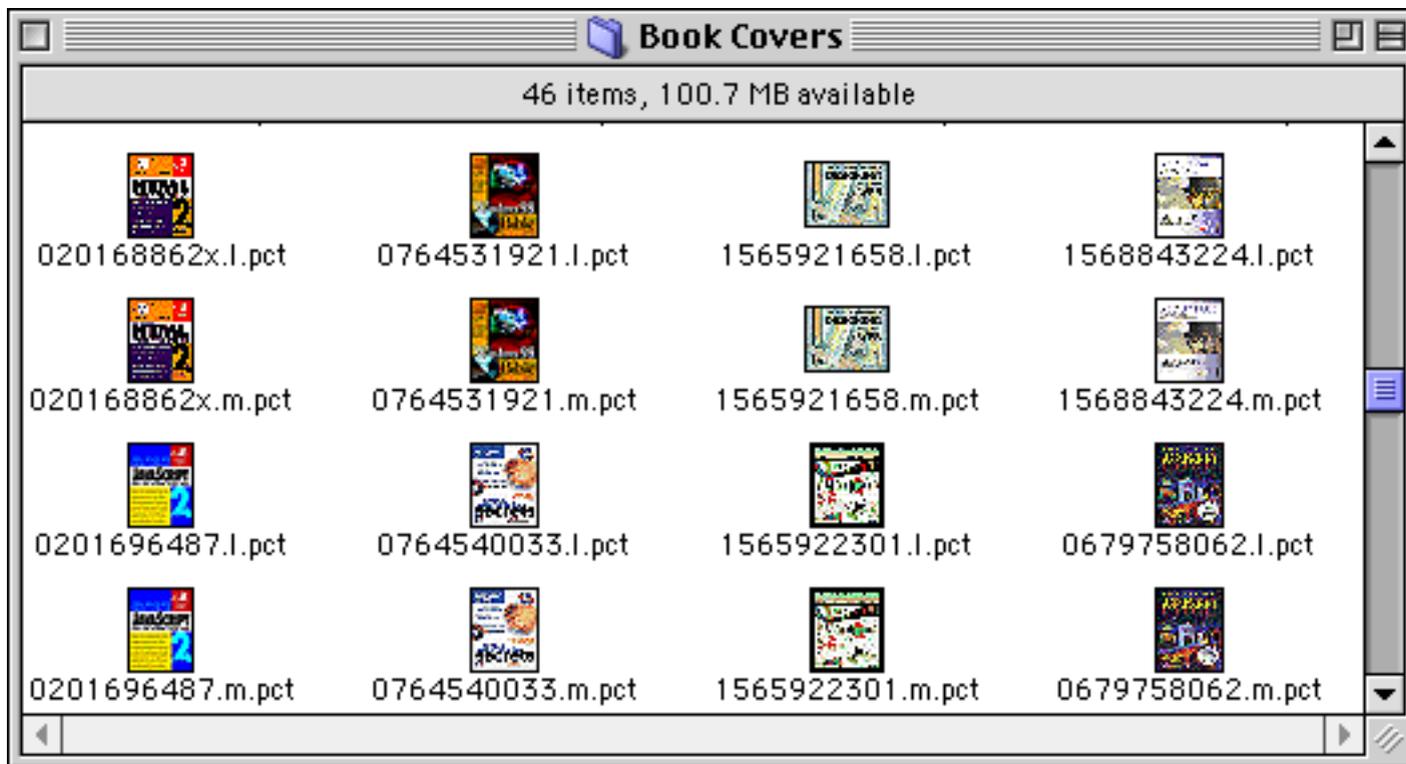


The database itself is fairly basic, as you can see if you use the **View** menu to open the data sheet (see [“Opening More Than One Window Per Database”](#) on page 351).

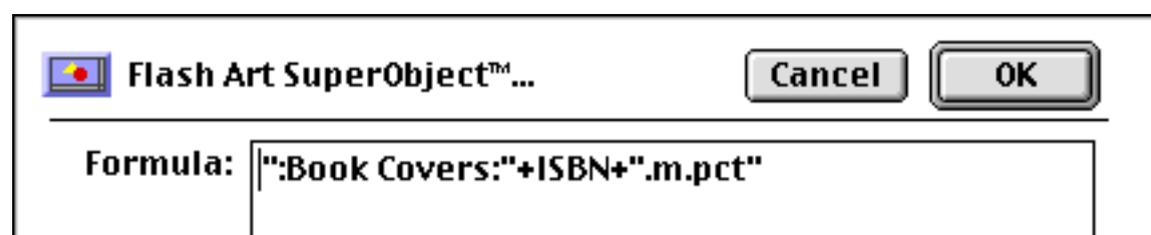


Displaying the Book Covers

The database uses **Flash Art** to display the book covers (see “[Flash Art™](#)” on page 876). The images are not stored in RAM as part of the database but are kept as separate files in a folder named **Book Covers** (see “[Displaying Images Directly From Disk Files](#)” on page 895). Each image has been named according to the ISBN number of the corresponding book.

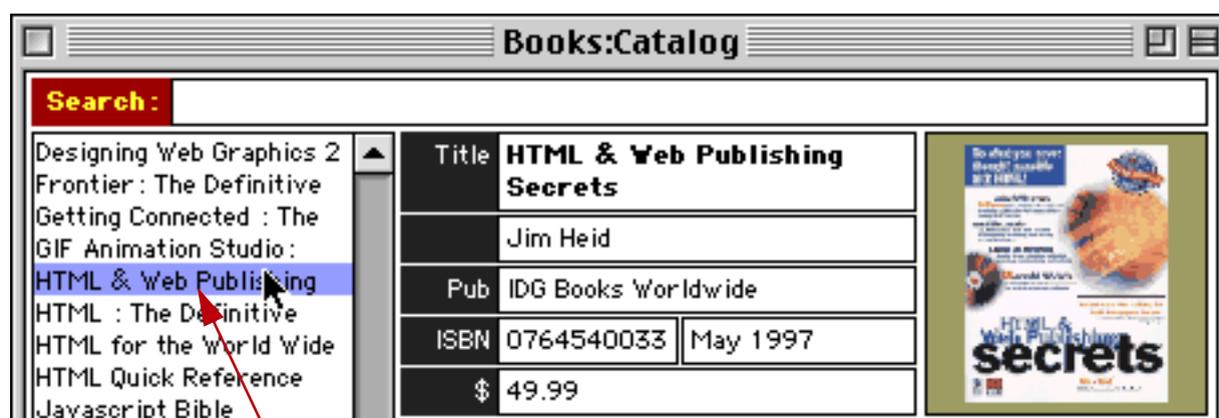


The Flash Art SuperObject uses a formula to convert the ISBN number stored in the database into the correct image name (see “[Displaying Images in a Different Folder \(Directory\)](#)” on page 897).



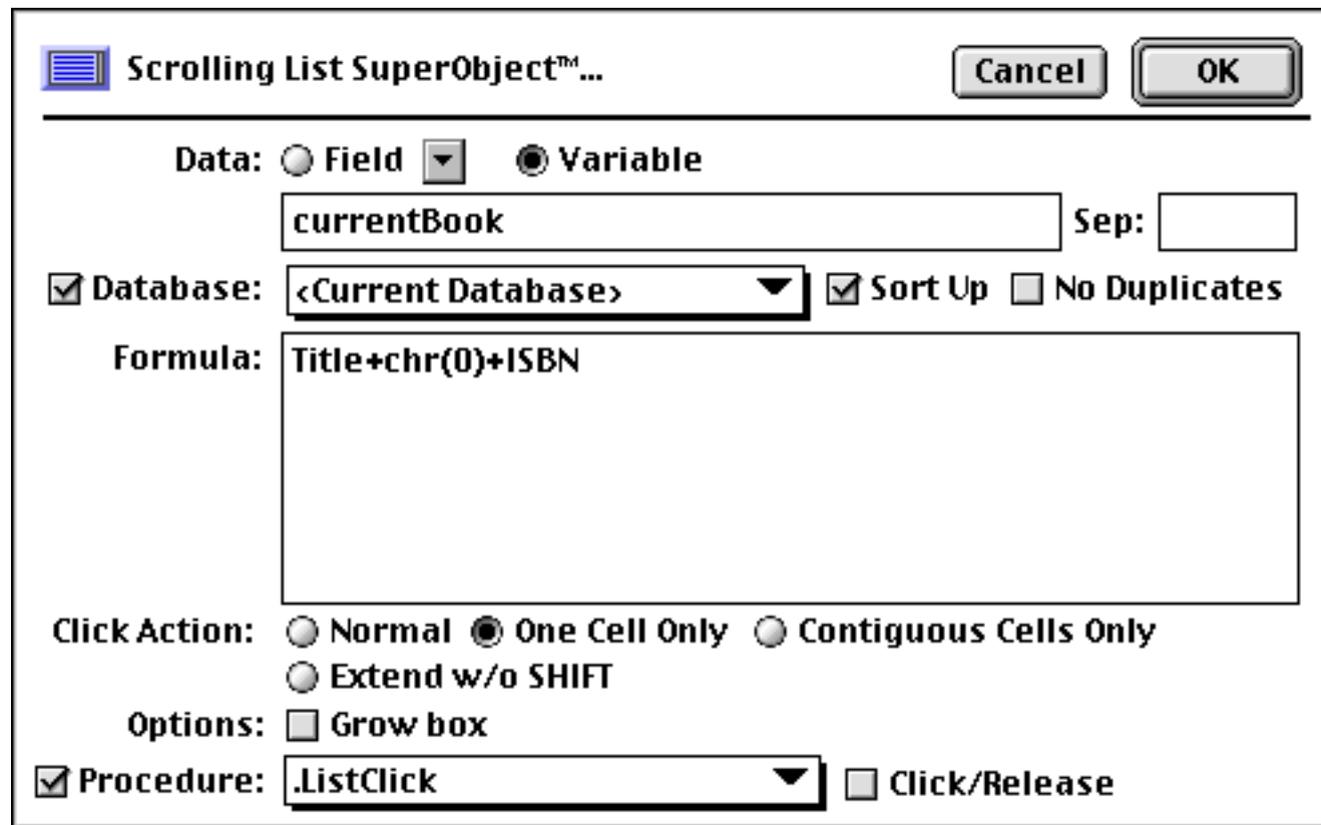
Navigation with a List SuperObject

One unusual aspect of this database is the use of a **List SuperObject** (see “[List SuperObjects](#)” on page 997) for navigating within the database. This is a fairly advanced technique that is probably best attempted after you have some experience with creating Panorama procedures (see “[Procedures](#)” on page 1467).

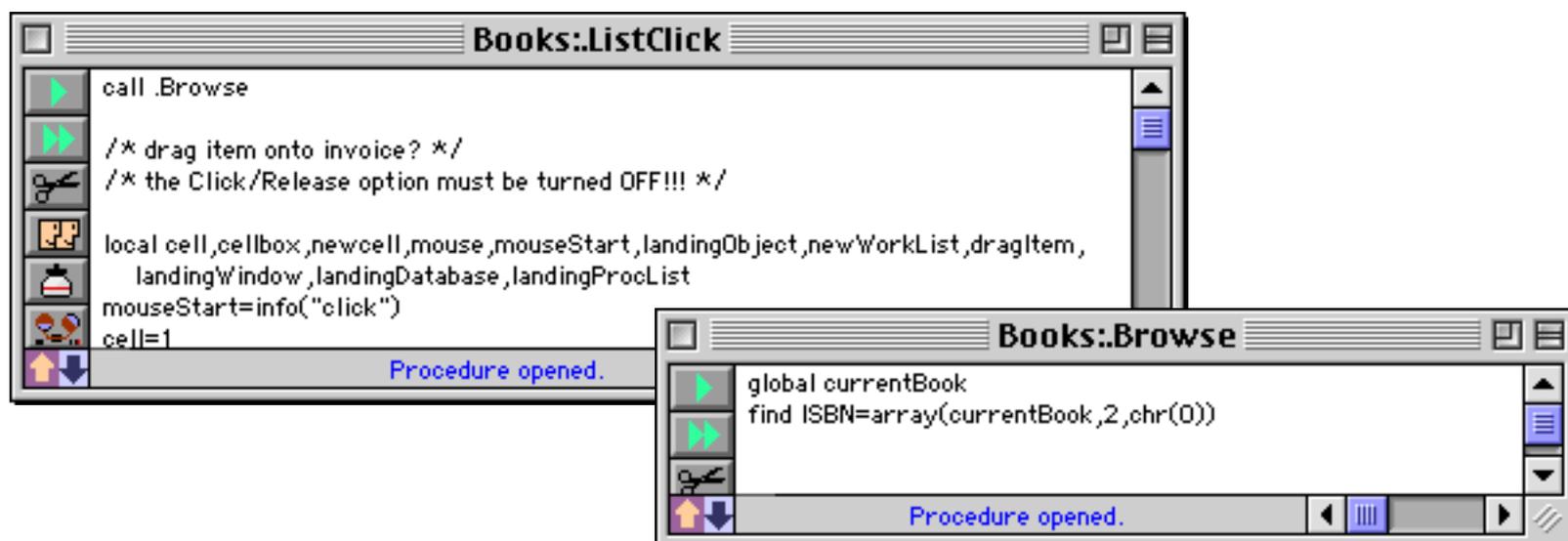


click in list to move to the corresponding record

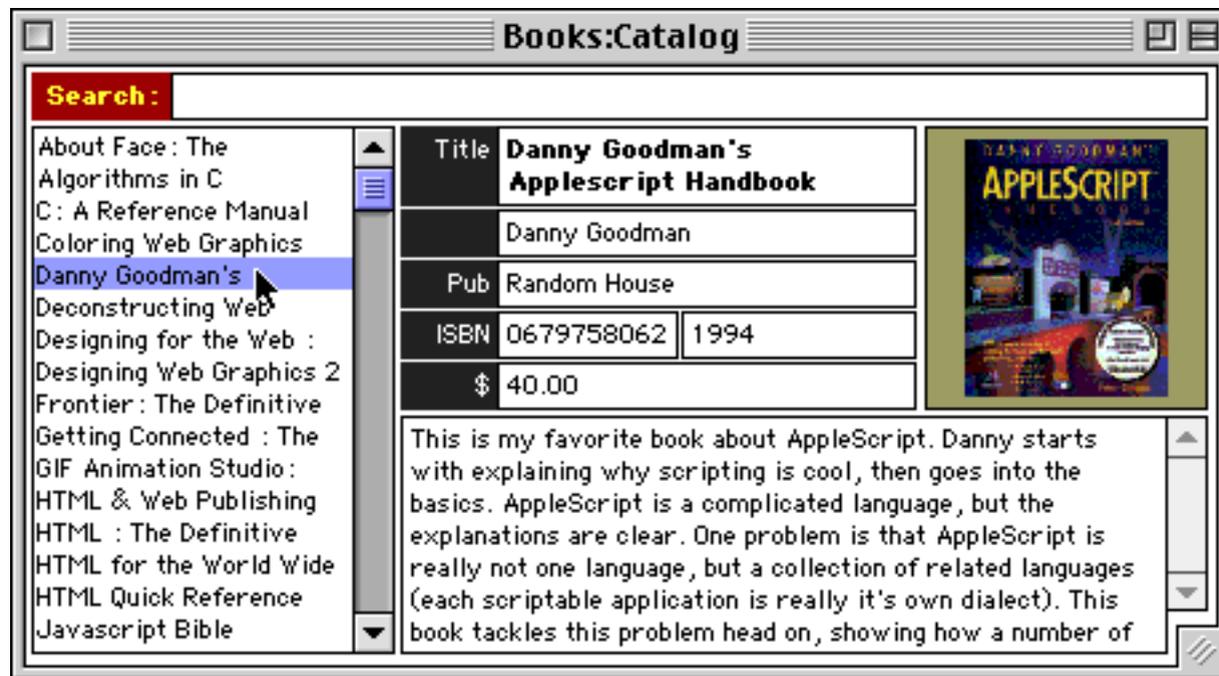
The default for this list is to display the name of every book in the database (see “[List Options](#)” on page 1001 for more information about this dialog). The list also contains the ISBN number for each book, but the ISBN number is hidden because it is after the null character (created by the `chr(0)` function — see “[Hiding](#)” Part of a List Item” on page 1015).



When you click on one of the items in the list the `.ListClick` procedure is triggered. This procedure in turn calls a subroutine procedure named `.Browse` (see “[Subroutines](#)” on page 1512).



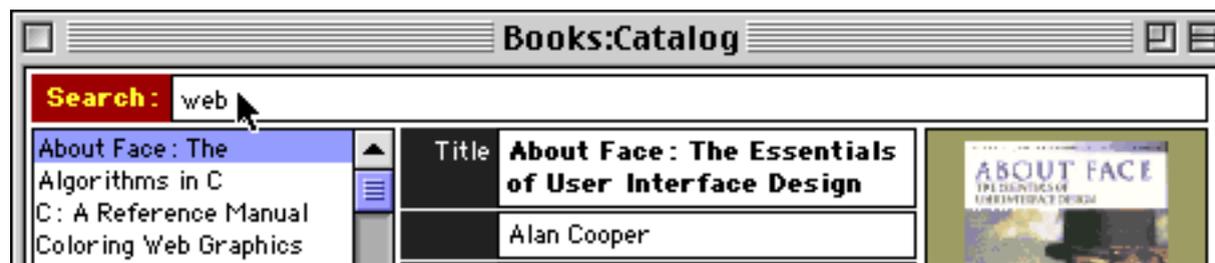
The `.Browse` procedure uses the `array()` function (see “[Text Arrays](#)” on page 1364) to extract the hidden ISBN number in the `currentBook` variable (this variable was set up using the configuration dialog for the list shown above). It then uses the `find` statement to locate the record corresponding to the book that was clicked on (see “[Finding Information](#)” on page 1805). The end result is that when you click on a book in the list, the information for that book appears.



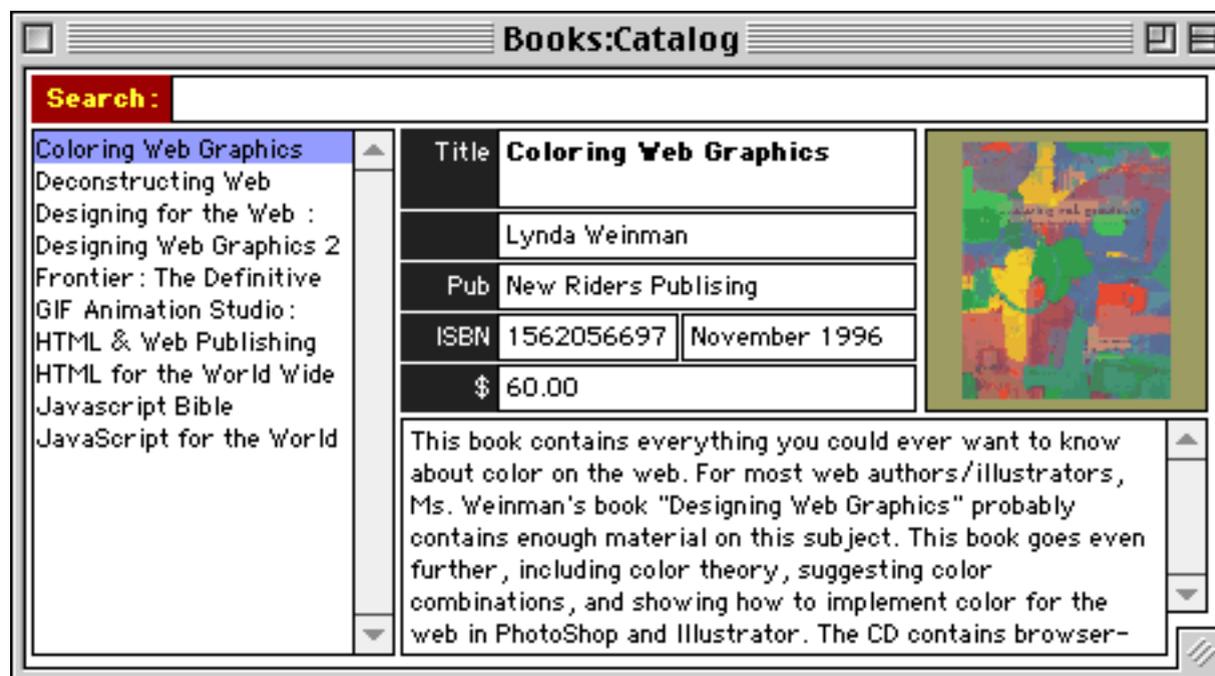
You may have noticed that the `.ListClick` procedure contains a bunch of additional code. This code allows you to drag an item from the catalog onto an invoice, and is discussed as part of the Invoice demo file.

Catalog “Search Engine”

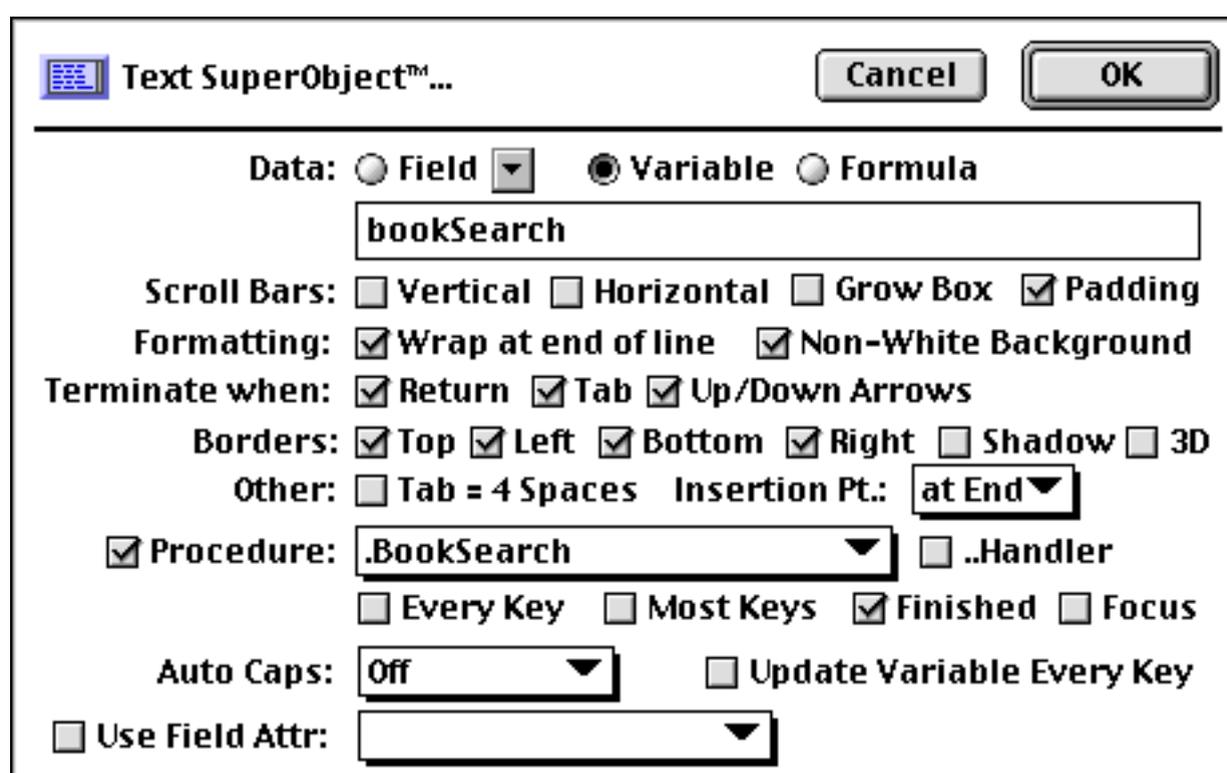
The catalog database has a “search engine” that makes it easy to locate items within the database. To search, click in the search area and type in a word or phrase, in this case [web](#).



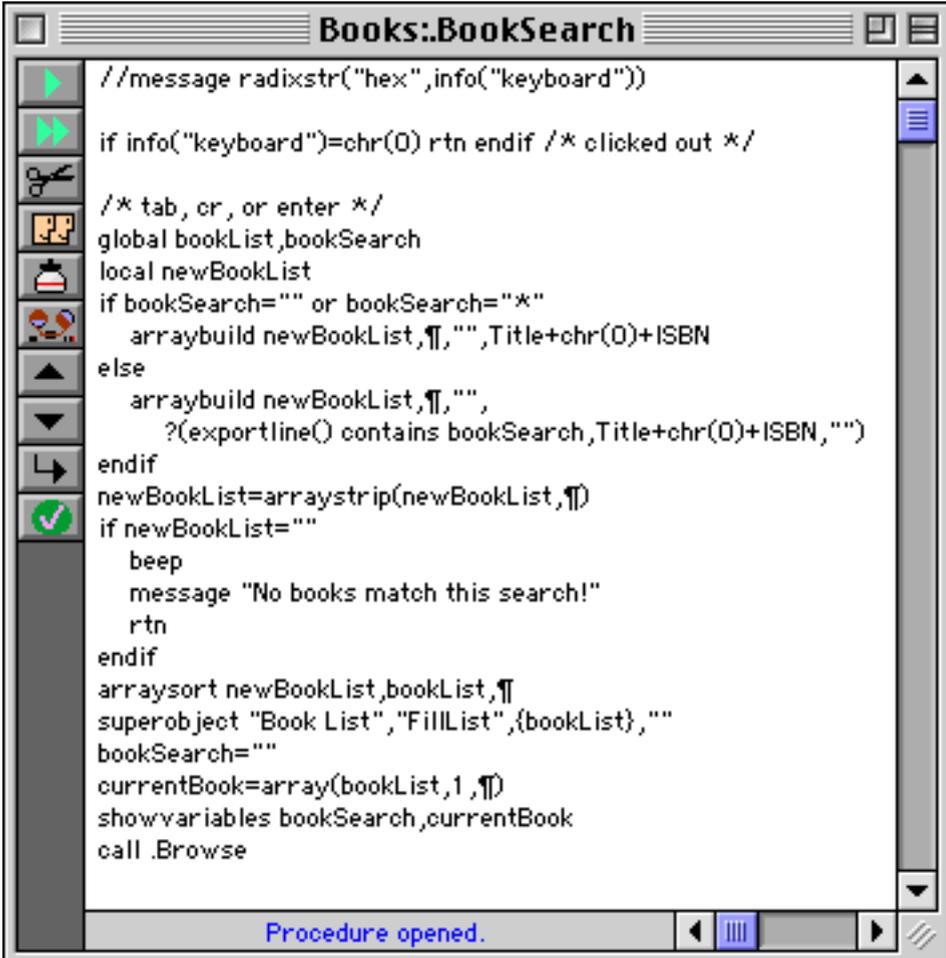
When you press the **Enter** key the database will search for books that contain the word or phrase and display them in the list. The word or phrase may be anywhere in the record - in the title, the description, the author or publisher's name, anywhere.



How does this search engine work? The top of the form contains a **Text Editor SuperObject** (see “[Text Editor SuperObject](#)” on page 767) for you to type the word or phrase into. The word or phrase you type goes into the variable named [bookSearch](#).



When you press the **Enter** key a procedure named `.BookSearch` is automatically triggered. Here is the code for that procedure.



```

//message radixstr("hex",info("keyboard"))
if info("keyboard")=chr(0) rtn endif /* clicked out */

/* tab, cr, or enter */
global bookList,bookSearch
local newBookList
if bookSearch="" or bookSearch="*"
  arraybuild newBookList,{},"",Title+chr(0)+ISBN
else
  arraybuild newBookList,{},"",
    ?(exportline() contains bookSearch,Title+chr(0)+ISBN,"")
endif
newBookList=arraystrip(newBookList,{} )
if newBookList=""
  beep
  message "No books match this search!"
  rtn
endif
arraysort newBookList,bookList,{}
superobject "Book List","FillList",{bookList},""
bookSearch=""
currentBook=array(bookList,1,{} )
showvariables bookSearch,currentBook
call .Browse

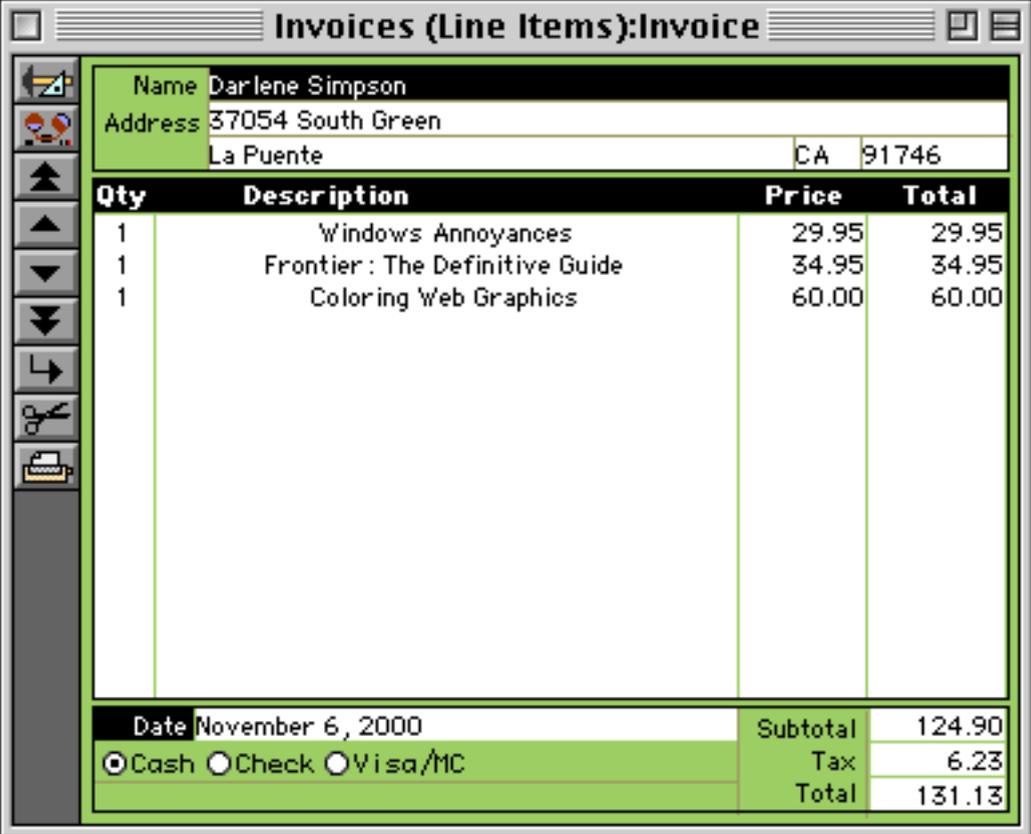
```

Procedure opened.

The procedure uses the `arraybuild` statement to scan the database searching for records that match the word or phrase in the `bookSearch` variable (see “[Building an Array from a Database](#)” on page 1847). It then uses the `superobject` statement to send a command to the list object telling it to re-display itself with the new list (see “[List SuperObject™ Commands](#)” on page 1955). You’ll notice that for this to work the list object must be named `Book List` (see “[Object Type/Object Name](#)” on page 661).

Invoices (Line Items)

This database demonstrates how to create an invoice with line item fields (see “[Repeating Fields \(Line Items\)](#)” on page 390). You’ve already learned how to create such a file in the Step-by-Step tutorials (see “[Lesson 3: Building an Invoice Database](#)” on page 169).



The screenshot shows a software window titled "Invoices (Line Items):Invoice". The window contains a form with the following sections:

- Customer Information:**
 - Name: Darlene Simpson
 - Address: 37054 South Green, La Puente, CA 91746
- Line Items Table:**

Qty	Description	Price	Total
1	Windows Annoyances	29.95	29.95
1	Frontier: The Definitive Guide	34.95	34.95
1	Coloring Web Graphics	60.00	60.00
- Summary Section:**
 - Date: November 6, 2000
 - Payment Method: Cash Check Visa/MC
 - Subtotal: 124.90
 - Tax: 6.23
 - Total: 131.13

How the Detail Lines are Stored

Let's take a look at the design sheet for this database (on the left) and compare it to the design sheet for the invoice database created using line item fields (on the right). Our new database stores all of the repeating data (invoice items) in a single field, **Items**. As you'll see, there is no limit to how many items can be stored in the invoice. The database on the right uses 60 fields to store the repeating data and has a limit of 15 items per invoice.

Field Name	Type	Dig	Align	Out	Inp	Range	Choi	Lin
Name	Text	0	Left			Any		
Organization	Text	0	Left			Any		
Address	Text	0	Left			Any		
City	Text	0	Left			Any		
State	Text	0	Left			Any		
Zip	Text	0	Left			Any		
Country	Text	0	Left			Any		
Internet	Text	0	Left			Any		
DayPhone	Text	0	Left			Any		
Fax	Text	0	Left			Any		
PaymentMe	Text	0	Left			Any		
NonTaxable	Text	0	Left			Any		
CardNumber	Text	0	Left			Any		
CardExpires	Text	0	Left			Any		
NameOnCar	Text	0	Left			Any		
Items	Text	0	Left			Any		
Subtotal	Num	2	Right	#	.	Any		
Tax	Num	2	Right	#	.	Any		
Total	Num	2	Right	#	.	Any		
ItemScroll	Num	0	Right			Any		
ItemWasScr	Num	0	Right			Any		

Field Name	Type	Dig	Align	Out	Inp	Range	Choi	Lin
Name	Text	0	Left			Any		
Address	Text	0	Left			Any		
City	Text	0	Left			Any		
State	Text	0	Left			Alphat		
Zip	Text	0	Left			Numer		
Payment Meth	Text	0	Left			Any		
Credit Card	Text	0	Left			Any		
Payment Numb	Text	0	Left			Any		
Expiration	Text	0	Left			Any		
Authorization	Text	0	Left			Any		
Quantity1	Num	0	Right			Numer		
Description1	Text	0	Left			Any		
Price1	Num	2	Right			Any		
Total1	Num	2	Right			Any		
Quantity2	Num	0	Right			Numer		
Description2	Text	0	Left			Any		
Price2	Num	2	Right			Any		
Total2	Num	2	Right			Any		
Quantity3	Num	0	Right			Numer		
Description3	Text	0	Left			Any		
Price3	Num	2	Right			Any		
Total3	Num	2	Right			Any		
Quantity4	Num	0	Right			Numer		
Total12	Num	2	Right			Any		
Quantity13	Num	0	Right			Numer		
Description13	Text	0	Left			Any		
Price13	Num	2	Right			Any		
Total13	Num	2	Right			Any		
Quantity14	Num	0	Right			Numer		
Description14	Text	0	Left			Any		
Price14	Num	2	Right			Any		
Total14	Num	2	Right			Any		
Quantity15	Num	0	Right			Numer		
Description15	Text	0	Left			Any		
Price15	Num	2	Right			Any		
Total15	Num	2	Right			Any		
Subtotal	Num	2	Right	#	.	Any		
Tax	Num	2	Right			Any		
GrandTotal	Num	2	Right	#	.	Any		

How does all of this data get stuffed into a single field? Let's look at the data sheet to see.

Name	Organization	Address	City	S	Items	Subtotal
Mark Doolittle	First Bank and T	One First Plaza	New York	N	1~1565921658~24.95~24.95	791.12
Alan Harrison		93 Morton Terr	San Deigo	C	1~0201514257~59.95~59.95	90
					1~0133262243~42.95~42.95	99
						83

Each line in this cell corresponds to a detail line in the invoice (this is a carriage return delimited array, see “[Picking a Separator Character](#)” on page 1364). This particular invoice has two lines, so there are two lines in the **Items** field. Since a data cell can contain an unlimited number of lines each invoice can contain an unlimited number of detail lines.

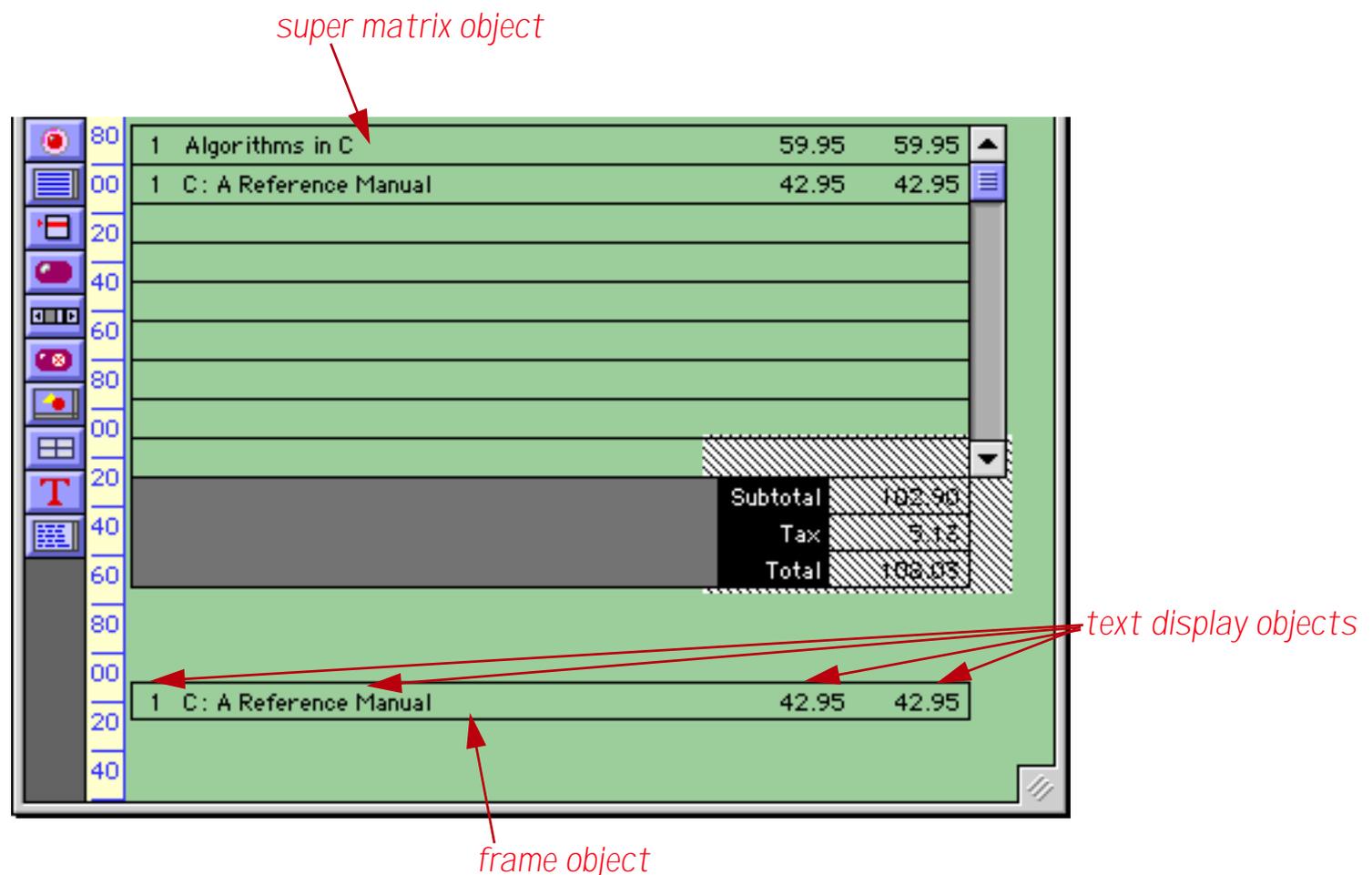
Within each line there are four “pseudo-cells”, each separated by the ~ character. The first pseudo-cell is the quantity. The second pseudo-cell identifies what is being sold, in this case the ISBN number for the book. Of course if you're invoice isn't for books you'll need to use some other for of identification, perhaps a catalog number or simply a description of the item. The third pseudo-cell is the price of the item, and the last is the quantity times the price.

Displaying the Detail Lines

Obviously no one would want to edit the **Items** cell in the data sheet manually. Instead, this database uses a **Super Matrix Object** to display the detail lines. The result looks like this.

1	Algorithms in C	59.95	59.95	▲
1	C: A Reference Manual	42.95	42.95	☰

Let's switch into Graphics Design Mode to see how this works. (You may want to review Super Matrix Objects before continuing, see "[Super Matrix Objects](#)" on page 1057). This illustration shows Super Matrix Object itself and the **Frame Object** (see "[The Matrix Template \(and Frame Object\)](#)" on page 1058). The frame object contains the template for the data displayed in the matrix. When the database is actually in use the window is shrunk so that the frame object and the template are invisible.



The actual data is displayed with four text display objects (see "[Text Display SuperObjects™](#)" on page 736). The table below shows the four formulas used by these objects.

Column	Formula
Qty	<code>array(array(Items,(ItemScroll-1)+info("matrixrow"),f),1,"~")</code>
Item	<code>lookup("Books",ISBN, array(array(Items,(ItemScroll-1)+info("matrixrow"),f),2,"~") ,Title,"",0)</code>
Price	<code>array(array(Items,(ItemScroll-1)+info("matrixrow"),f),3,"~")</code>
Total	<code>array(array(Items,(ItemScroll-1)+info("matrixrow"),f),4,"~")</code>

You'll notice that all four of these contain this core in common. This section of the formula calculates the line number being displayed. In this case `ItemScroll` is a global variable that is linked to the scroll bar (more on that later).

```
(ItemScroll-1)+info("matrixrow")
```

Actually, all four of these actually contain a larger core in common. This larger core takes the line number and uses it to extract the appropriate line of data from the `Items` array.

```
array(Items,(ItemScroll-1)+info("matrixrow"),f)
```

If you look closely, you'll see that there is even a larger commonality between each of these four formulas. A second `array()` function (displayed in orange below) extracts the actual cell from within the line of data. The four formulas aren't exactly the same because they extract different cells — 1, 2, 3, and 4.

```
array(array(Items,(ItemScroll-1)+info("matrixrow"),f),1,"~")
```

For the **Quantity**, **Price** and **Total** cells that's it - this is the complete formula. But for the **Item** we don't actually have the description, but just the ISBN number. To get the description we must use this ISBN number and look up from the **Books** database using the `lookup()` function (see "[Linking With Another Database](#)" on page 1400).

```
lookup("Books",ISBN,array(array(Items,(ItemScroll-1)+info("matrixrow"),f),2,"~"),
Title,"",0)
```

The end result is that the formulas are displayed over and over again by the Super Matrix Object, with the formula adjusting to display the information for each line.

1	Designing for the Web : Getting Started in a New	24.95	24.95	▲
1	GIF Animation Studio: Animating Your Web Site	39.95	39.95	☰
2	Javascript Bible	49.99	99.98	
1	Algorithms in C	59.95	59.95	
1	Danny Goodman's Applescript Handbook	40.00	40.00	
1	C: A Reference Manual	42.95	42.95	
1	About Face: The Essentials of User Interface	29.99	29.99	
1	Frontier: The Definitive Guide	34.95	34.95	
1	Getting Connected : The Internet at 56K and Up	23.96	23.96	▼

Scrolling the Detail Lines

An invoice may have more lines of data than will fit on the form. To handle this the database has a Scroll Bar SuperObject (see "[Scroll Bars](#)" on page 1096). In this case the scroll bar is linked to a numeric field named **ItemScroll** and to a procedure named `.ItemScroll`. The scroll bar could be linked to a variable, but by linking it to a field Panorama will remember how each invoice is scrolled.

Scroll Bar SuperObject™...
Cancel
OK

Data: Field Variable

ItemScroll

Min: (1-65535)

Max: (1-65535)

Page Up/Down: (< Max)

Format: 16 Pixel Width

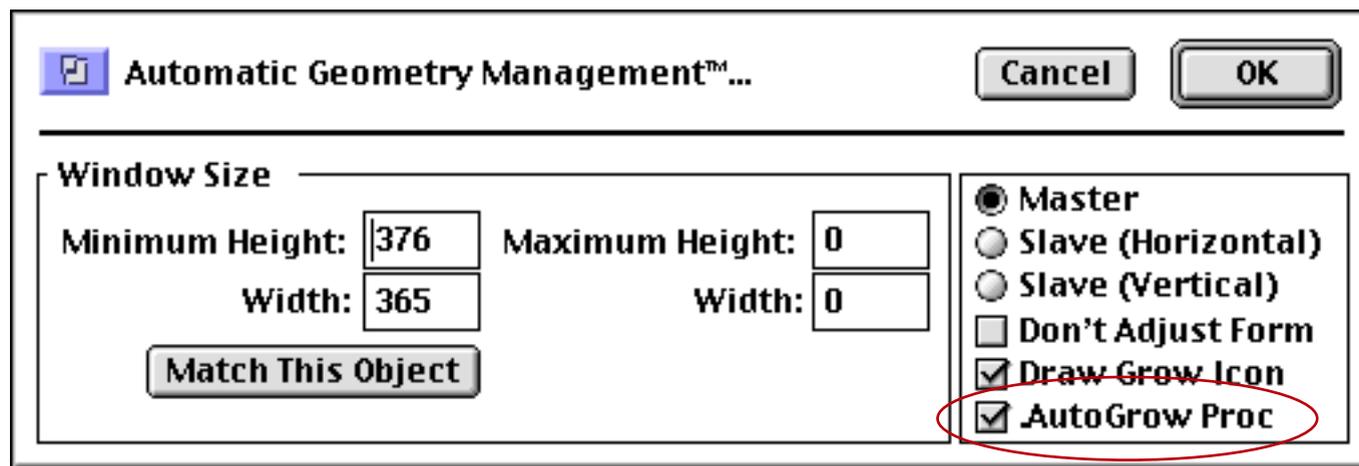
Procedure:

The procedure is very short and relies on the Matrix SuperObject to do most of the work (see “[Super Matrix SuperObject™ Commands](#)” on page 1962).

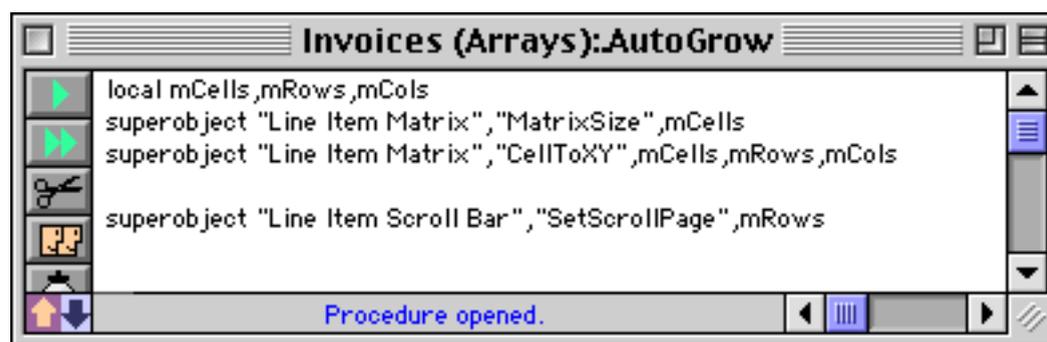


Adjusting for Window Size Variations

In addition to the normal elastic form adjustments the scroll bar must be adjusted for the number of visible invoice lines. To do this the **.AutoGrow Proc** option is turned on when creating the elastic form.



With this option enabled Panorama will automatically trigger this procedure every time the window dimensions are changed.



The second and third lines determine the number of lines that are currently being displayed (see “[Super Matrix SuperObject™ Commands](#)” on page 1962). The final line sets the scroll bar page height to this number (see “[Scroll Bar SuperObject™ Commands](#)” on page 1964). This adjusts the scroll bar so that clicking in the page up/down area will cause the invoice items to move up or down one page.

1	Algorithms in C	59.95	59.95	▲
1	Danny Goodman's Applescript Handbook	40.00	40.00	← page up
1	C: A Reference Manual	42.95	42.95	
1	About Face: The Essentials of User Interface	29.99	29.99	
1	Frontier: The Definitive Guide	34.95	34.95	
1	Getting Connected: The Internet at 56K and Up	23.96	23.96	← page down
10	HTML: The Definitive Guide (Nutsell Handbook)	32.95	329.50	
1	Teach Yourself C in 21 Days	29.99	29.99	
1	Teach Yourself Advanced C in 21 Days	34.95	34.95	▼

Mexican Restaurant

This database demonstrates another way to create an invoice. The menu items are listed on the left, with the current order on the right.

Food Orders:Small Menu		
<p>Breakfast</p> <p>Huevos Rancheros \$5.50 Chorizo & Eggs \$5.50 Green Chile & Eggs \$5.50 Scrambled Eggs & Potatoes \$3.99 Scrambled Eggs, Potatoes & Beans \$5.50 Machaca & Eggs \$5.50 Menudo (small) \$3.99 Menudo (large) \$5.50 Hevos A La Mexicana \$5.50 2 Eggs, Papas con Hole \$5.50</p> <p>Dinner</p> <p>Taco, Enchilada & Beans \$4.99 Enchilada, Rice & Beans \$4.99 2 Enchiladas, Taco & Beans \$5.99 Chile Relleno, Enchilada & Beans \$5.99 2 Beef Enchiladas, Rice & Beans \$5.99 2 Beef Tacos, Rice & Beans \$5.99 Green Chile, Rice Beans & Tortillas \$7.50 2 Taquitos, Rice & Beans \$5.99 Carne Azada, Rice, Beans Tortillas \$7.50 Machaca, Rice, Beans Tortillas \$7.50 Carnitas, Rice, Beans, Tortillas \$7.50 Taco, Rice & Beans \$4.99 3 Enchiladas w/Chile Verde \$7.50 Chciken a la Mexicana \$6.99 Chile Colorado, Rice & Beans \$6.99</p>	<p>A La Carte</p> <p>Nachos \$4.99 Cheese & Chips \$3.50 Chicken Taco \$1.65 Shredded Beef Taco \$1.65 Ground Beef Taco \$1.65 Carnitas Taco \$2.00 Carne Azada Taco \$2.60 Chile Relleno \$2.50 Quesadilla \$3.50 2 Chicken Tacquitos w/quac \$3.50 2 Ground Beef Taquitos w/quac \$3.25 Enchilada \$1.75 Rice \$1.75 Beans \$1.75 Potatoes \$1.75 Four Tortillas \$1.75 Corn Tortillas \$1.75 Sour Cream \$1.00 Guacamole \$2.00</p> <p>Extras</p> <p>potatoes \$0.50 cheese \$0.50 quacamole \$0.50 sour cream \$0.50 beans \$0.50 rice \$0.50</p> <p>Options</p> <p>flour corn shredded beef ground beef chicken</p>	<p>Chorizo & Eggs \$5.50 Chorizo & Eggs \$5.50 Carnitas Taco \$2.00 Chorizo & Eggs \$5.50 2 Eggs, Papas con Hole \$5.50 Chile Relleno \$2.50 potatoes \$0.50 corn shredded beef</p> <p>Clear 27.00 Cancel Item 2.09 29.09</p>

Use the Add New Record tool to start a new order.

Food Orders:Small Menu		
<p>Breakfast</p> <p>Huevos Rancheros \$5.50 Chorizo & Eggs \$5.50 Green Chile & Eggs \$5.50 Scrambled Eggs & Potatoes \$3.99 Scrambled Eggs, Potatoes & Beans \$5.50 Machaca & Eggs \$5.50 Menudo (small) \$3.99 Add New Record Hevos A La Mexicana \$5.50 2 Eggs, Papas con Hole \$5.50</p>	<p>A La Carte</p> <p>Nachos \$4.99 Cheese & Chips \$3.50 Chicken Taco \$1.65 Shredded Beef Taco \$1.65 Ground Beef Taco \$1.65 Carnitas Taco \$2.00 Carne Azada Taco \$2.60 Chile Relleno \$2.50 Quesadilla \$3.50 2 Chicken Tacquitos w/quac \$3.50 2 Ground Beef Taquitos w/quac \$3.25 Enchilada \$1.75</p>	<p>Chorizo & Eggs \$5.50 Chorizo & Eggs \$5.50 Carnitas Taco \$2.00 Chorizo & Eggs \$5.50 2 Eggs, Papas con Hole \$5.50 Chile Relleno \$2.50 potatoes \$0.50 corn shredded beef</p>

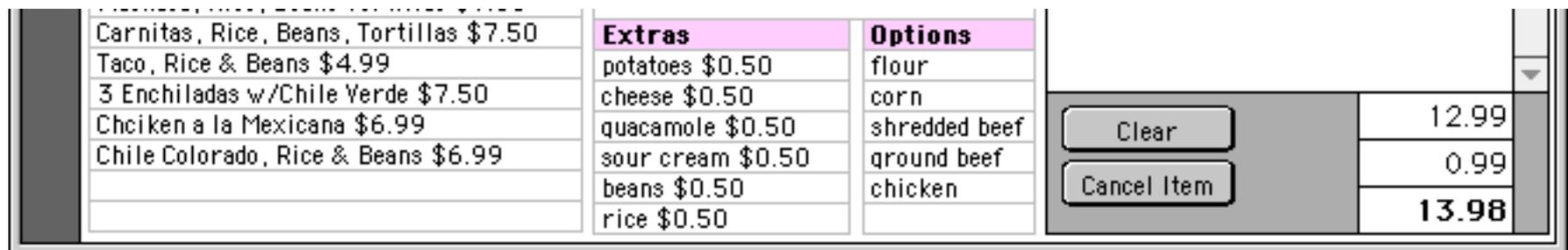
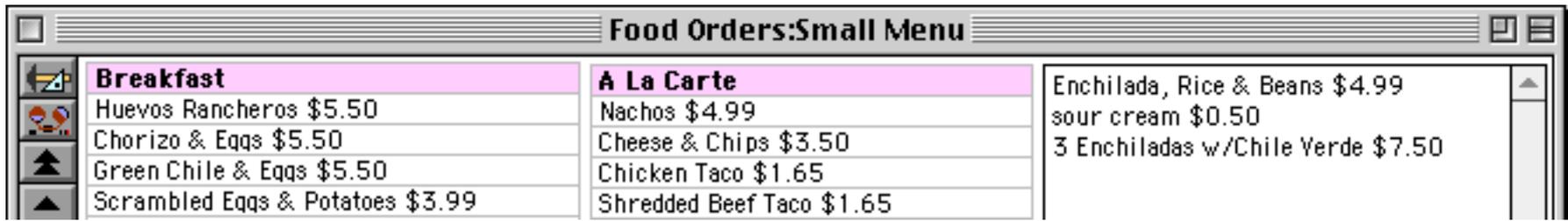
To add an item to the order, click on the item in the menu.

<p>Dinner</p> <p>Taco, Enchilada & Beans \$4.99 Enchilada, Rice & Beans \$4.99 2 Enchiladas, Taco & Beans \$5.99 Chile Relleno, Enchilada & Beans \$5.99</p>	<p>Enchilada \$1.75 Rice \$1.75 Beans \$1.75 Potatoes \$1.75 Four Tortillas \$1.75 Corn Tortillas \$1.75</p>
--	--

The item will appear in the box on the right.



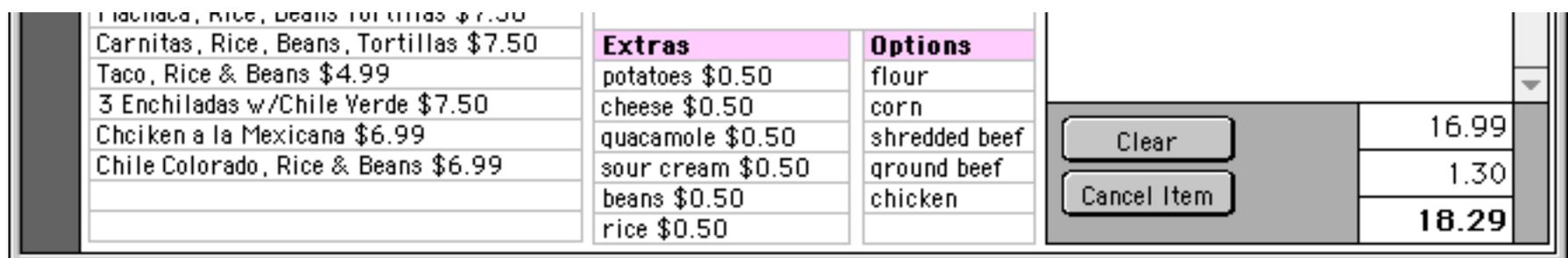
As items are added to the order the total is updated automatically.



An unusual feature of this database is that you can type in items “off the menu.” Simply click in the box on the right and type in the item. The cost of the item must be preceded with a dollar sign (\$) as shown below.

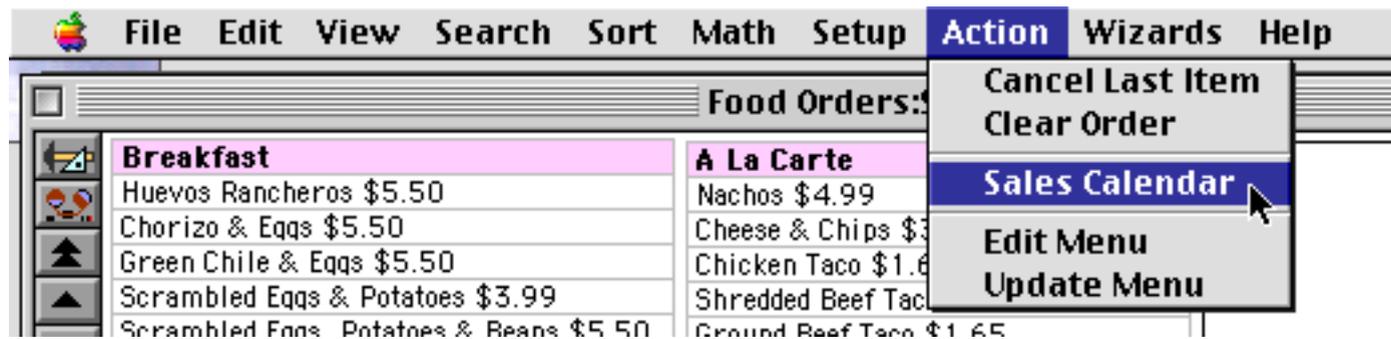


When you press the **Enter** key the database will calculate the new total, including the hand-entered “off the menu” item.



Sales Calendar

An unusual feature of this database is the Sales Calendar, which can be opened from the Action menu.



The Sales Calendar shows a summary of sales on each day. You can easily flip back and forth to compare revenues with prior months or years.

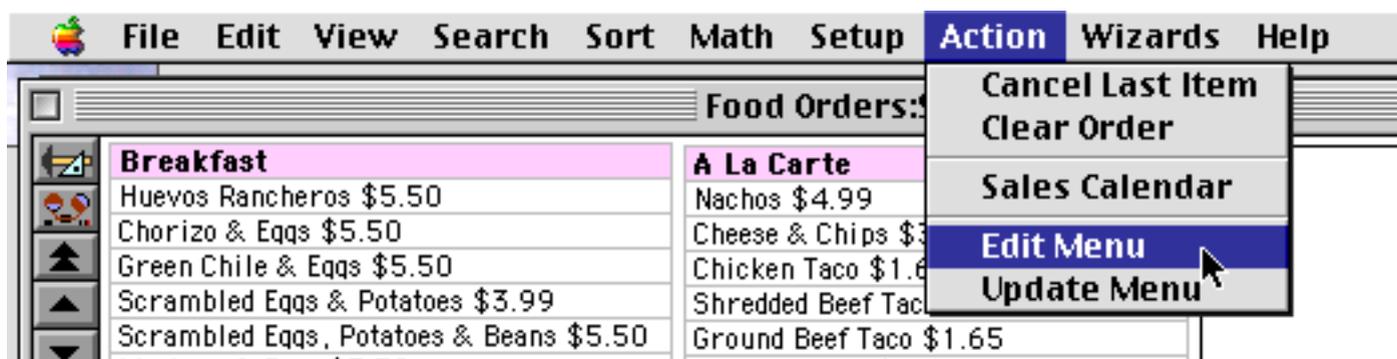
The screenshot shows the 'Food Orders:Calendar' window for November 1999. The calendar displays daily sales figures for each day of the month. The days of the week are Sun, Mon, Tue, Wed, Thu, Fri, and Sat. The sales figures are as follows:

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1	2 \$118.12	3 \$152.10	4 \$187.19	5 \$288.20	6 \$379.80
7 \$423.21	8	9 \$136.20	10 \$157.39	11 \$163.12	12 \$248.83	13 \$359.12
14 \$491.01	15	16 \$138.12	17 \$133.80	18 \$148.48	19 \$316.32	20 \$403.27
21 \$486.25	22	23 \$98.23	24 \$107.19	25	26 \$220.11	27 \$447.73
28 \$535.61	29	30 \$187.23				

To learn more about creating a calendar see "[Building a Calendar](#)" on page 1088.

Editing the Menu

To change a price or item description choose Edit Menu from the Action menu.



This opens a second database that contains all the items on the database.

Item	Price	Category
Huevos Rancheros	\$5.50	Breakfast
Chorizo & Eggs	\$5.50	Breakfast
Green Chile & Eggs	\$5.50	Breakfast
Scrambled Eggs & Potatoes	\$3.99	Breakfast
Scrambled Eggs, Potatoes & Beans	\$5.50	Breakfast
Machaca & Eggs	\$5.50	Breakfast
Menudo (small)	\$3.99	Breakfast
Menudo (large)	\$5.50	Breakfast
Hevos A La Mexicana	\$5.50	Breakfast
2 Eggs, Papas con Hole	\$5.50	Breakfast
Taco, Enchilada & Beans	\$4.99	Dinner
Enchilada, Rice & Beans	\$4.99	Dinner
2 Enchiladas, Taco & Beans	\$5.99	Dinner
Chile Relleno, Enchilada & Beans	\$5.99	Dinner
2 Beef Enchiladas, Rice & Beans	\$5.99	Dinner
2 Beef Tacos, Rice & Beans	\$5.99	Dinner
Green Chile, Rice Beans & Tortillas	\$7.50	Dinner
2 Taquitos, Rice & Beans	\$5.99	Dinner
Carne Azada, Rice, Beans Tortillas	\$7.50	Dinner
Machaca, Rice, Beans Tortillas	\$7.50	Dinner

83 visible/83 total

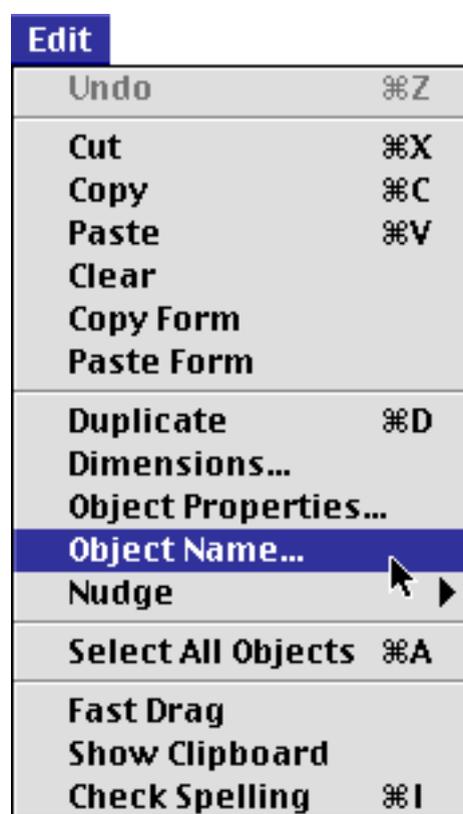
Once you have edited one or more items click back on the original database and choose **Update Menu** from the Action menu. In this case we have increased the price of **Hevos A La Mexicana** by \$1.00.

Breakfast	
Huevos Rancheros	\$5.50
Chorizo & Eggs	\$5.50
Green Chile & Eggs	\$5.50
Scrambled Eggs & Potatoes	\$3.99
Scrambled Eggs, Potatoes & Beans	\$5.50
Machaca & Eggs	\$5.50
Menudo (small)	\$3.99
Menudo (large)	\$5.50
Hevos A La Mexicana	\$6.50
2 Eggs, Papas con Hole	\$5.50

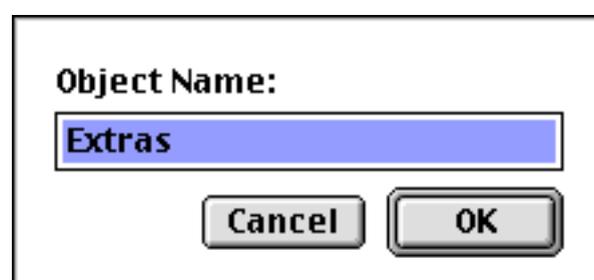
More drastic changes will require editing the menu form. You'll notice that the menu is divided into several different categories. Each category has a Super Matrix object to display the category (see "[Super Matrix Objects](#)" on page 1057). The easiest way to create a new category is to make a copy of one of the existing categories, as shown here (see "[Duplicating Objects](#)" on page 688).



The menu category displayed by this object is controlled by the object's name. To change the category choose the **Object Name** command from the Edit menu (see "[Object Type/Object Name](#)" on page 661).



The current name of this category is **Extras**.



Type in the new category name, for example **Drinks**, then press **OK**.

Object Name:

Drinks

Cancel OK

To make this category appear you must switch to Data Access Mode and then add one or more items in this category to the menu database (see above).

Item	Price	Category
Guacamole	\$2.00	A La Carte
potatoes	\$0.50	Extras
cheese	\$0.50	Extras
guacamole	\$0.50	Extras
sour cream	\$0.50	Extras
beans	\$0.50	Extras
rice	\$0.50	Extras
flour		Options
corn		Options
shredded beef		Options
ground beef		Options
chicken		Options
Coke	\$1.00	Drinks
Diet Coke	\$1.00	Drinks
Sprite	\$1.00	Drinks
Milk	\$1.25	Drinks

87 visible/87 total

Now switch back to the **Food Orders** database and use the **Update Menu** command in the Action menu to make the new **Drinks** category appear.

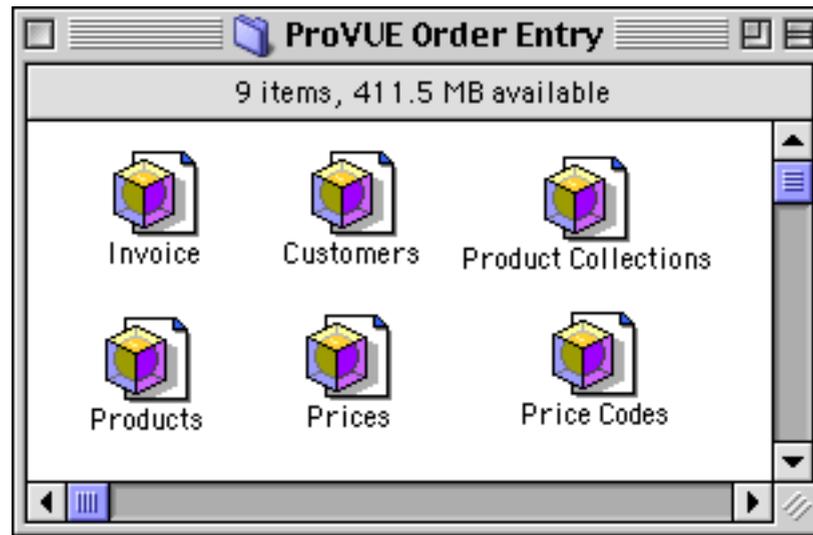
Breakfast	A La Carte	Drinks
Huevos Rancheros \$5.50	Nachos \$4.99	Coke \$1.00
Chorizo & Eggs \$5.50	Cheese & Chips \$3.50	Diet Coke \$1.00
Green Chile & Eggs \$5.50	Chicken Taco \$1.65	Sprite \$1.00
Scrambled Eggs & Potatoes \$3.99	Shredded Beef Taco \$1.65	Milk \$1.25
Scrambled Eggs, Potatoes & Beans \$5.50	Ground Beef Taco \$1.65	
Machaca & Eggs \$5.50	Carnitas Taco \$2.00	
Menudo (small) \$3.99	Carne Azada Taco \$2.60	
Menudo (large) \$5.50	Chile Relleno \$2.50	
Hevos A La Mexicana \$6.50	Quesadilla \$3.50	
2 Eggs, Papas con Hole \$5.50	2 Chicken Taquitos w/quac \$3.50	
	2 Ground Beef Taquitos w/quac \$3.25	

The final step, re-arranging the graphics to make room for the new category, is left up to you!

ProVUE Order Entry

This is not a single database but actually six databases that work together as a complete order entry system. This is actually a modified version of the order entry system we use here at ProVUE, so the design assumptions in this system are focused on a software or manufacturing company. However, the design can easily be adapted for many different types of businesses.

The six database files are shown here.



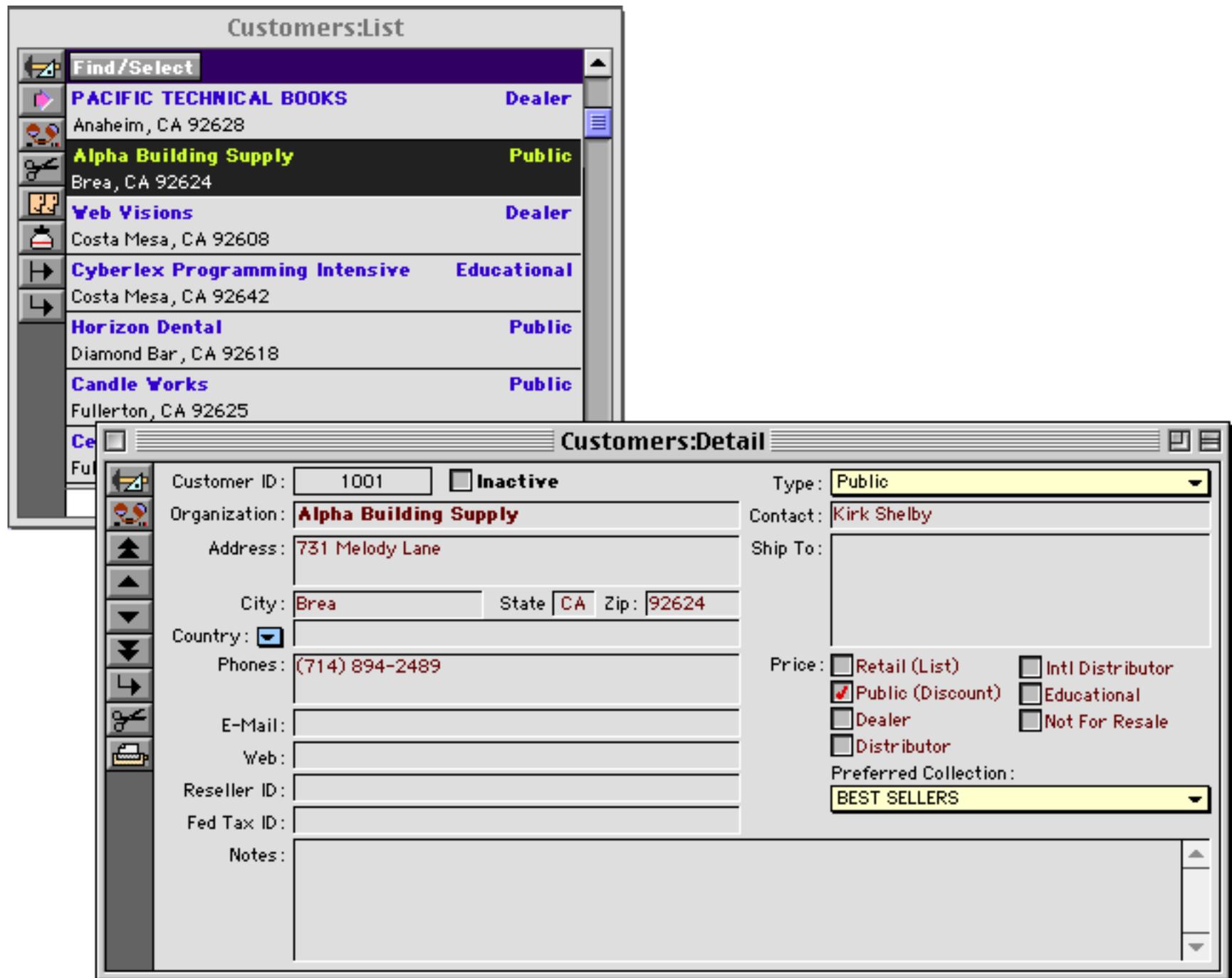
The **Invoice** file is the primary file for this system. It contains all of the information for each order.

The screenshot shows the "InvoiceWork" application window. The window title is "InvoiceWork" and the invoice number is "Invoice 66497" dated "08/18/98". The window is divided into several sections:

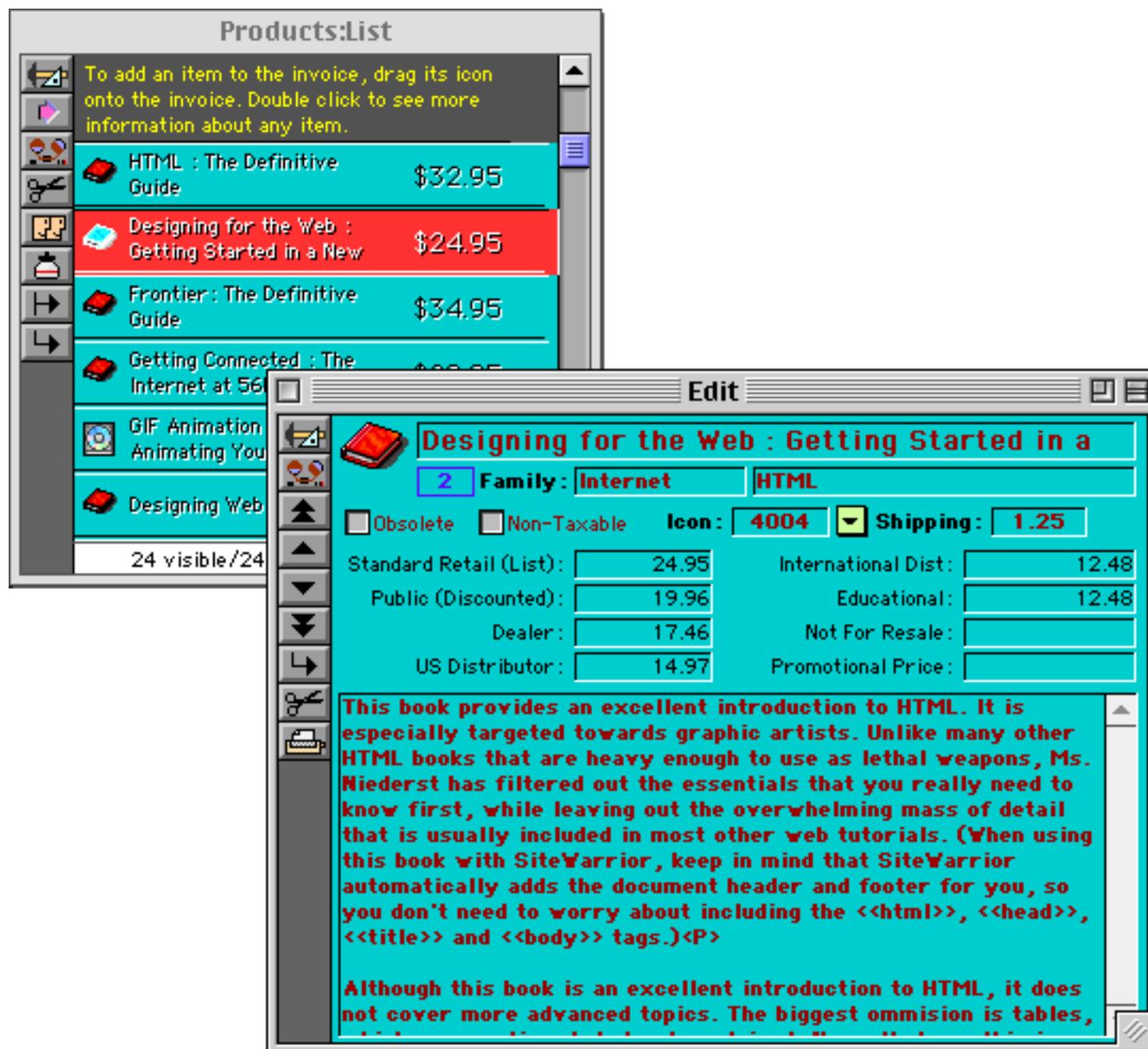
- Navigation:** Buttons for "Print", "List", "Detail", and "Find/Select".
- Customer Information:**
 - Name: MIKE CORNING
 - Organization: Guilford Software
 - Address: 53 Deerhaven, Mahwah, NJ 09631
 - Country: [Blank]
 - Phone: (201) 877-4924
 - E-mail: mcorning@guilford.com
 - Card/Check#: [Blank]
 - Expire/BnkID: [Blank]
- Notes and Private:** Two empty text areas for "Notes" and "Private".
- Item List:**

Quantity	Description	Unit Price	Total Price
4	HTML : The Definitive Guide	\$19.77	\$79.08
1	Getting Connected : The Internet at 56K and Up	\$17.97	\$17.97
1	GIF Animation Studio: Animating Your Web Site	\$23.97	\$23.97
1	Designing Web Graphics 2	\$33.00	\$33.00
1	JavaScript: The Definitive Guide	\$23.97	\$23.97
- Shipping and Billing Options:**
 - Rush
 - Void
 - Back Order
 - Ship Date: [Blank]
 - Printed: [Blank]
 - Free
- Summary:**
 - Subtotal: \$401.53
 - Priority Mail: \$44.25
 - Tax: \$0.00
 - Total: \$445.78
- Footer:**
 - UDP
 - Balance: \$0.00
 - 6 out of 6
 - 13 Line Items

The **Customers** database contains information and preferences for regular customers. This database is designed for customers that order regularly (for example dealers or distributors), not one-time or occasional customers. The system can use the information in this database to automatically give the correct discount to each order placed by a regular customer.



Product descriptions and pricing information are actually split up into three separate databases. The **Products** database contains the description of each product (the pricing information shown in the windows below is actually being looked up from the **Price List** database). Each product must be assigned a product number that is used to link this database with the **Prices** database (described below).

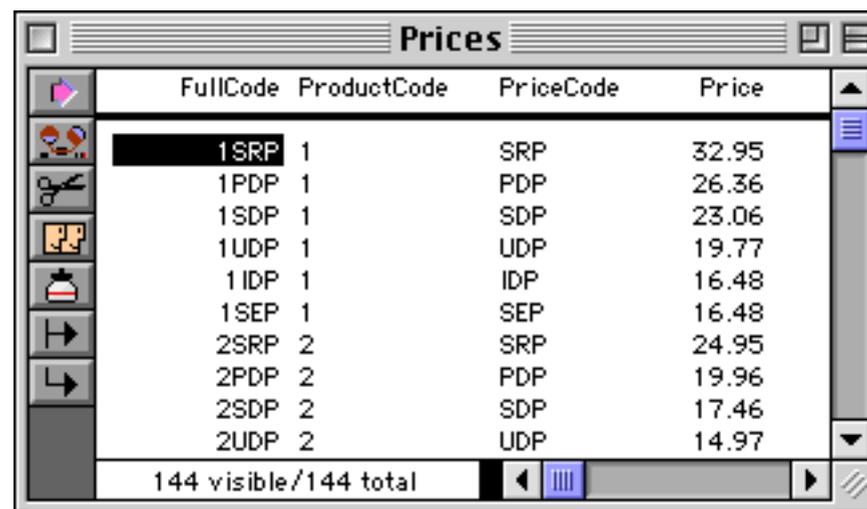


This system assumes that each product has a standard list price but also has other prices that are paid by different types of customers — dealers, distributors, educational institutions, etc. The system uses a three letter code for each price category. These codes are kept in the **Price Codes** database, along with the standard discounts for each of these categories (as you'll see later, you can customize these discounts for each individual product, or even for an individual invoice).

The image shows a window titled "Price Codes" containing a table with columns for PriceCode, PriceName, and Discount.

PriceCod	PriceName	Discount
SRP	Standard Retail Price	100.00
PDP	Public (Discount)	80.00
SDP	Standard Dealer Price	70.00
UDP	US Distributor Price	60.00
IDP	International Distributo	50.00
SEP	Standard Educational Pr	40.00
NFR	Not For Resale	10.00
SPP	Special Promo Price	

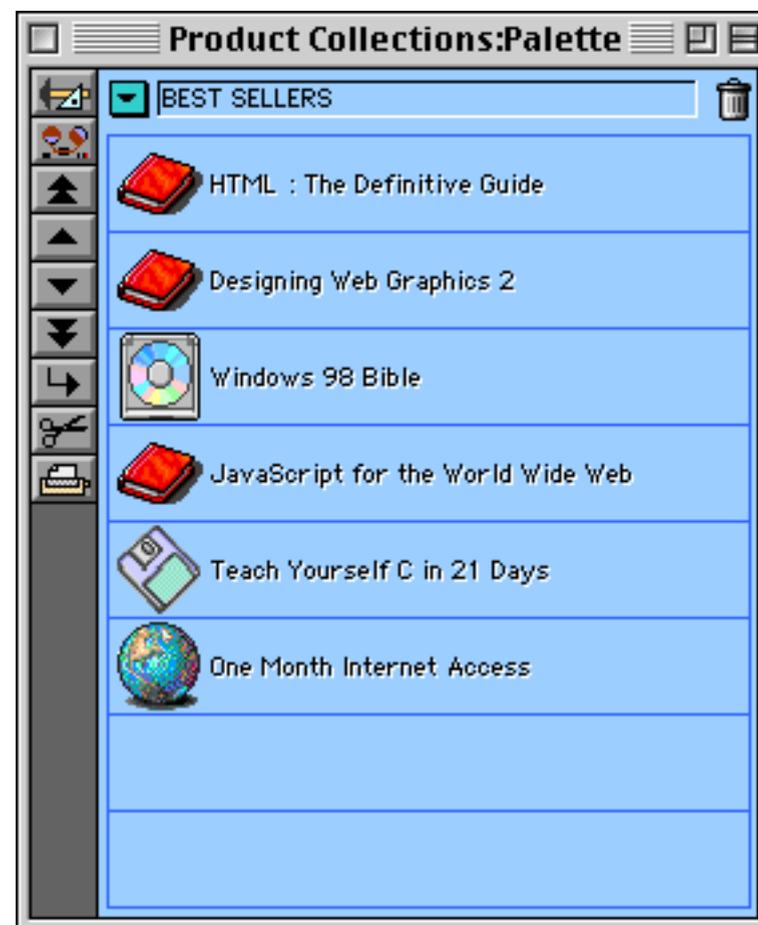
The **Prices** database contains the actual prices for each product in each category. You usually won't have to use this database directly because the system has special forms for editing this data.



FullCode	ProductCode	PriceCode	Price
1SRP	1	SRP	32.95
1PDP	1	PDP	26.36
1SDP	1	SDP	23.06
1UDP	1	UDP	19.77
1IDP	1	IDP	16.48
1SEP	1	SEP	16.48
2SRP	2	SRP	24.95
2PDP	2	PDP	19.96
2SDP	2	SDP	17.46
2UDP	2	UDP	14.97

144 visible/144 total

Your product database may contain hundreds or even thousands of products. The **Product Collections** database helps organize these products into logical groups. You'll usually use this to keep the most frequently ordered products at your fingertips. You can even set up the profile for each regular customer so that when a regular customer places an order the items they order most frequently automatically appear.



Placing an Order from a Regular Customer

When a regular customer places an order, locate that customer in the **Customers** database and drag their entry over the **Invoice** form. In this case we've received an order from a dealer named **Golden Web**.

The screenshot displays two windows from an invoice software application. The main window, titled "Invoice:Work", shows an invoice for "Invoice 66497" dated "08/18/98". The customer information is as follows:

Name	MIKE CORNING
Organization	Guilford Software
Address	53 Deerhaven Mahwah, NJ 09631
Country	
Phone	(201) 877-4934
E-mail	mcorning@guilford.com
Card/Check#	
Expire/BnkID	

The invoice items are listed below:

4	HTML : The Definitive Guide	\$19.95
1	Getting Connected : The Internet at 56K and Up	\$17.95
1	GIF Animation Studio: Animating Your Web Site	\$23.95
1	Designing Web Graphics 2	\$33.00
1	JavaScript: The Definitive Guide	\$23.95

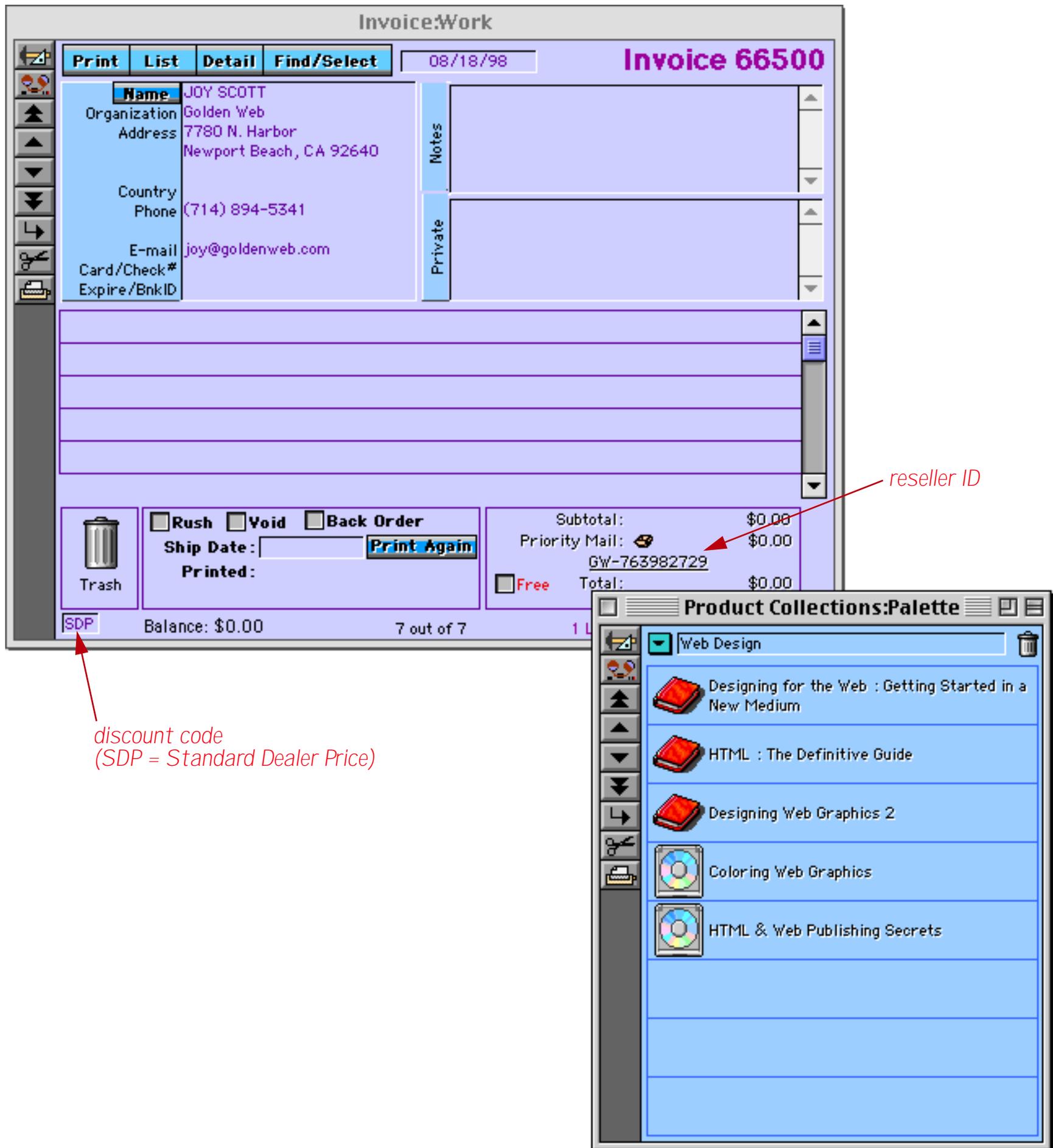
At the bottom of the invoice window, there are options for "Rush", "Void", and "Back Order", a "Ship Date" field, a "Printed:" field, and a "Print Again" button. The status bar shows "Balance: \$0.00" and "6 out of 6" items.

The "Customers:List" window is overlaid on the right, showing a list of customers. The "Golden Web" entry is highlighted, indicating it is the customer being used for the invoice. The list includes:

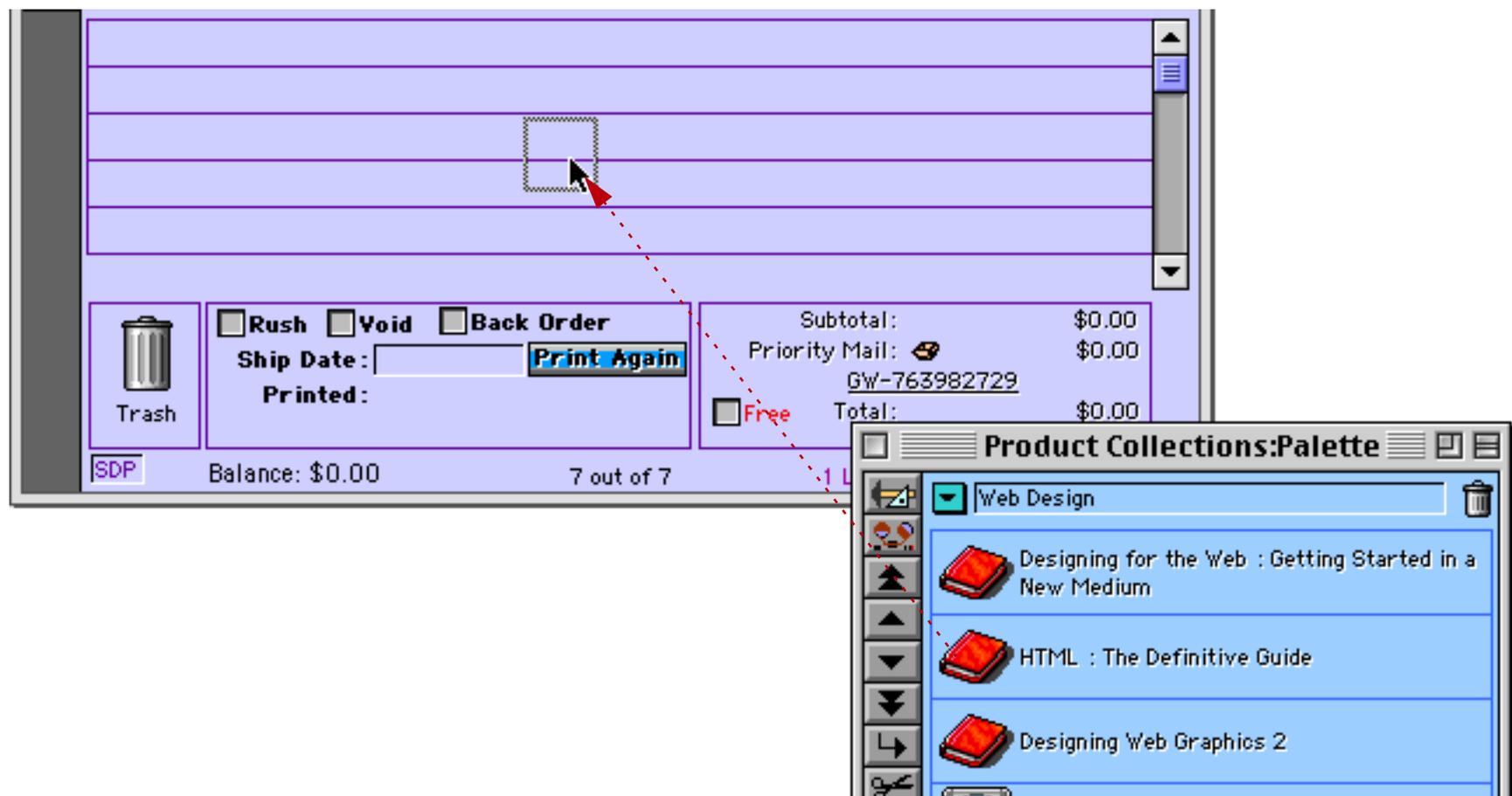
Embarcadero Labs	Distributor
Los Angeles, CA 94206	
Golden Web	Dealer
Newport Beach, CA 92640	
Cruz Consulting	Educational
Orange, CA 92450	
Southern Group	International Distributor
Orange, CA 92634	
Medical Digital	Public
Costa Mesa, CA 92604	
Adams Printing	Dealer
San Francisco, CA 98457	
Reed Market	Public
Seal Beach, CA 93106	

The status bar at the bottom of the Customers:List window shows "24 visible/24 total".

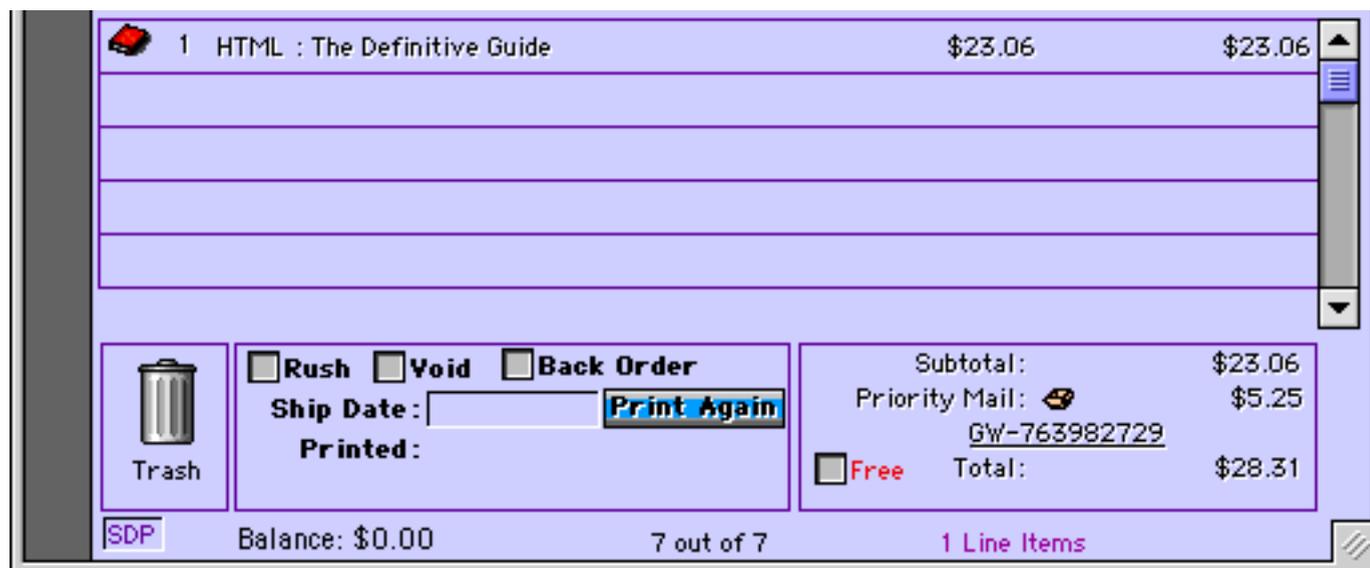
When you release the mouse the system will automatically create a new invoice. Using the information in the **Customers** database the system fills in the contact information, discount code, and in this case, the reseller ID (for sales tax exemption) as well). The system also brings forward the **Product Collections** window and selects the collection that is appropriate for this customer (as specify in the **Customers** database).



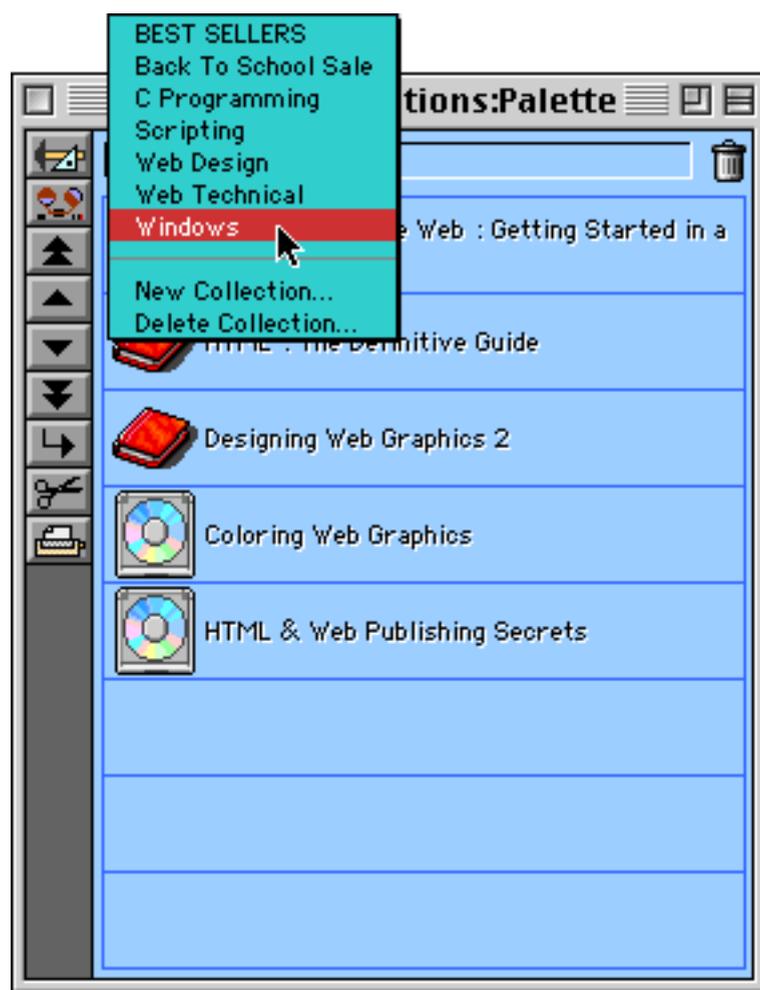
To add a product from this collection to this invoice, simply drag the product onto the invoice form. It doesn't matter exactly where you drag the product to on the form, anywhere will do. No matter where you release the mouse the new product will be added on the next available line.



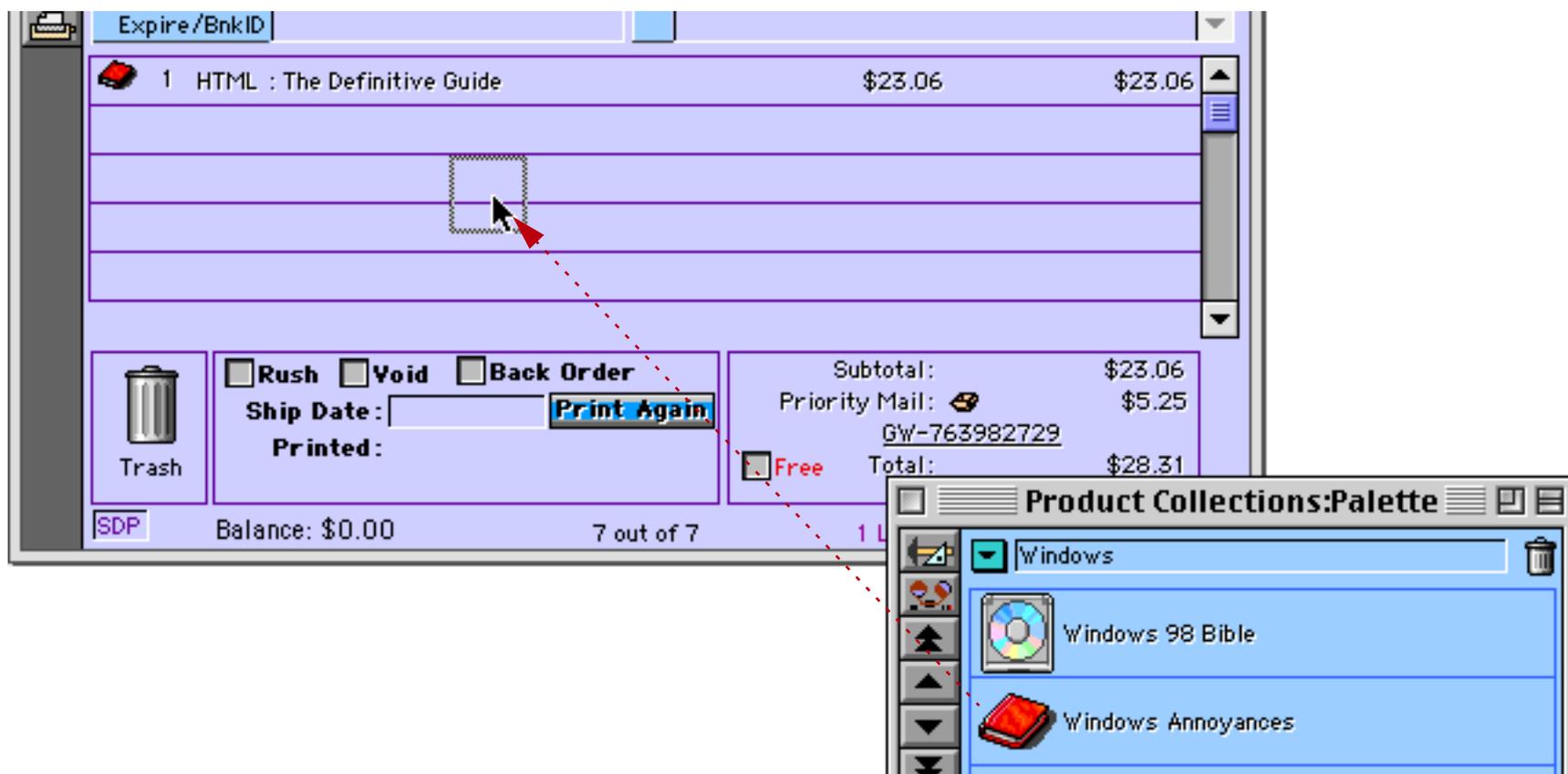
When the mouse is released the item is added to the invoice (the standard retail price of this book is \$32.95, but the system has automatically filled in the correct dealer price of \$23.06).



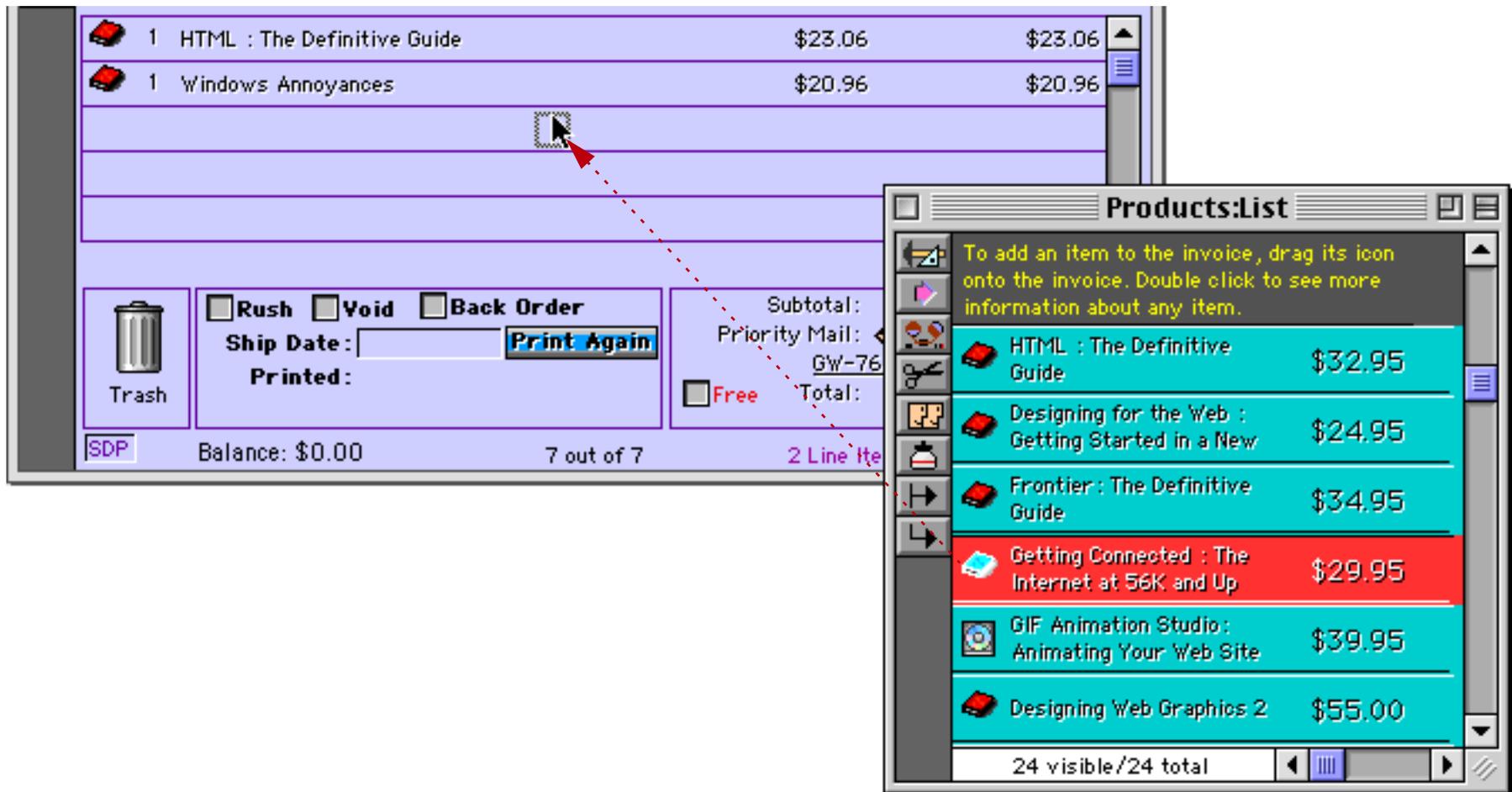
If you want to add a product from another collection, select the collection from the pop-up menu at the top of the Product Collections window.



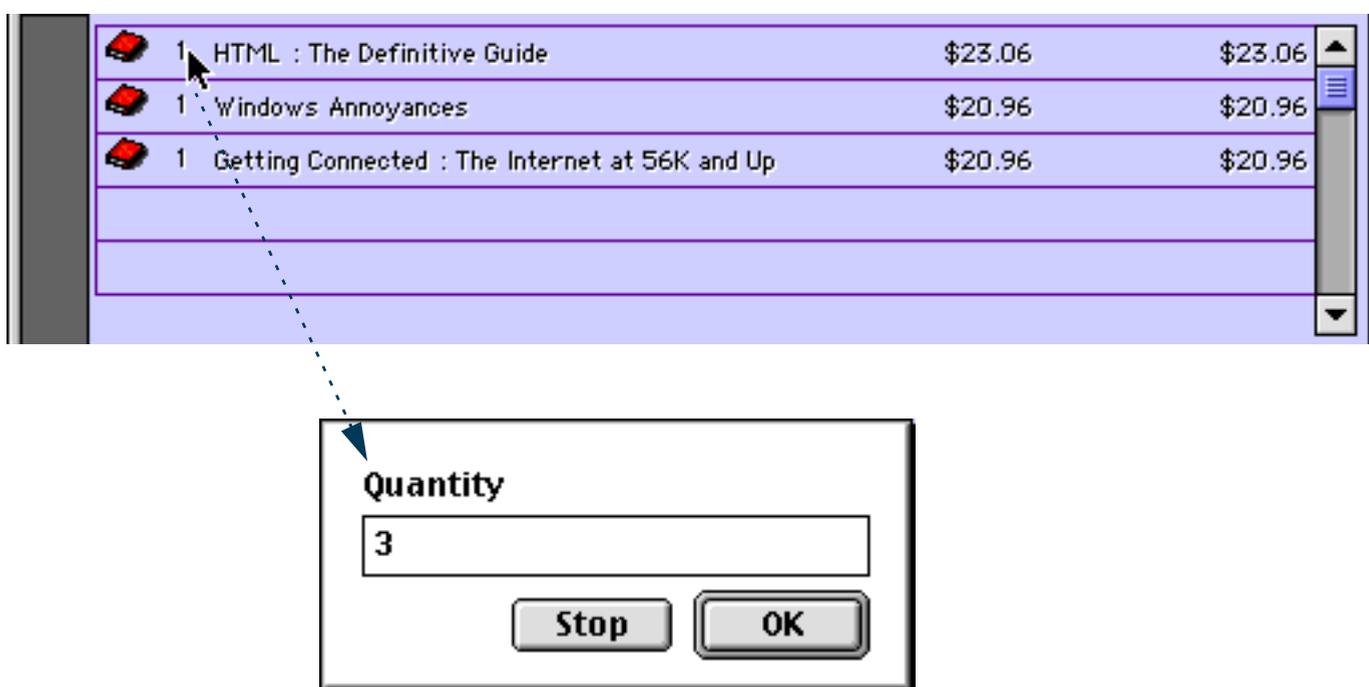
Once the new collection is selected you can drag items from it onto the invoice.



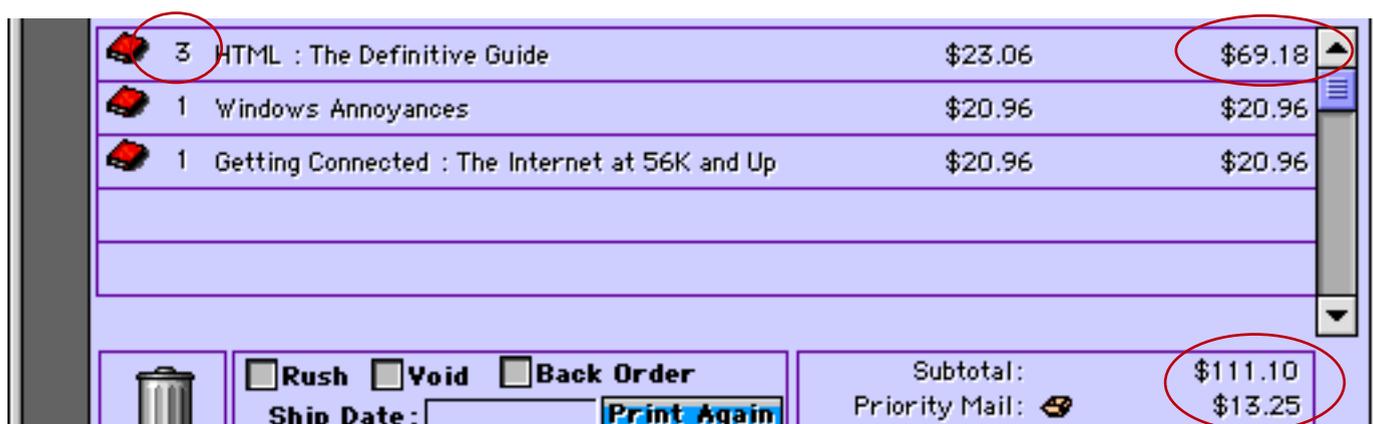
You can also drag items directly from the **Product List** onto the invoice.



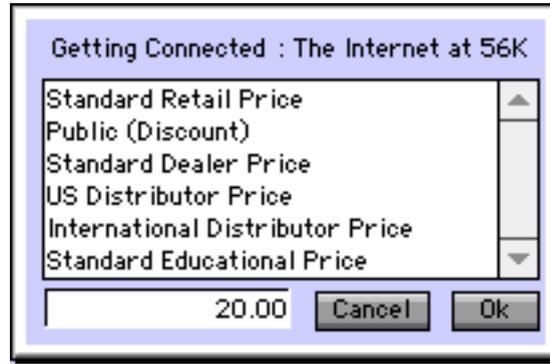
If you want to change the quantity, click on the number. This makes a dialog appear.



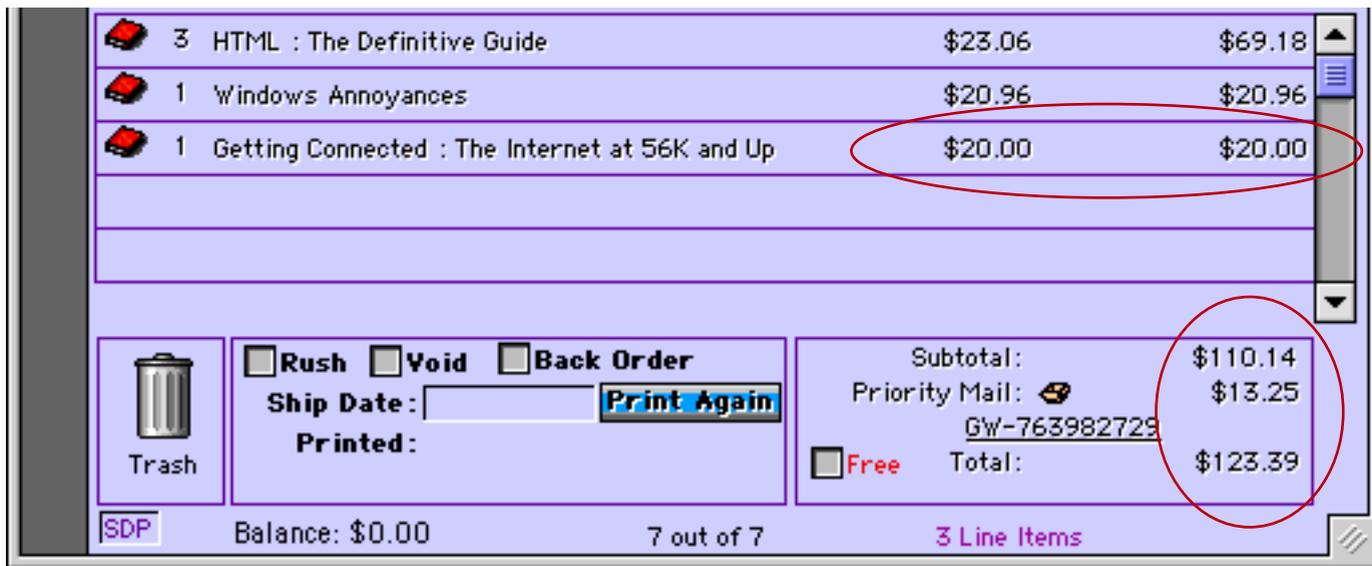
Enter the new quantity and press the **OK** button to update the invoice.



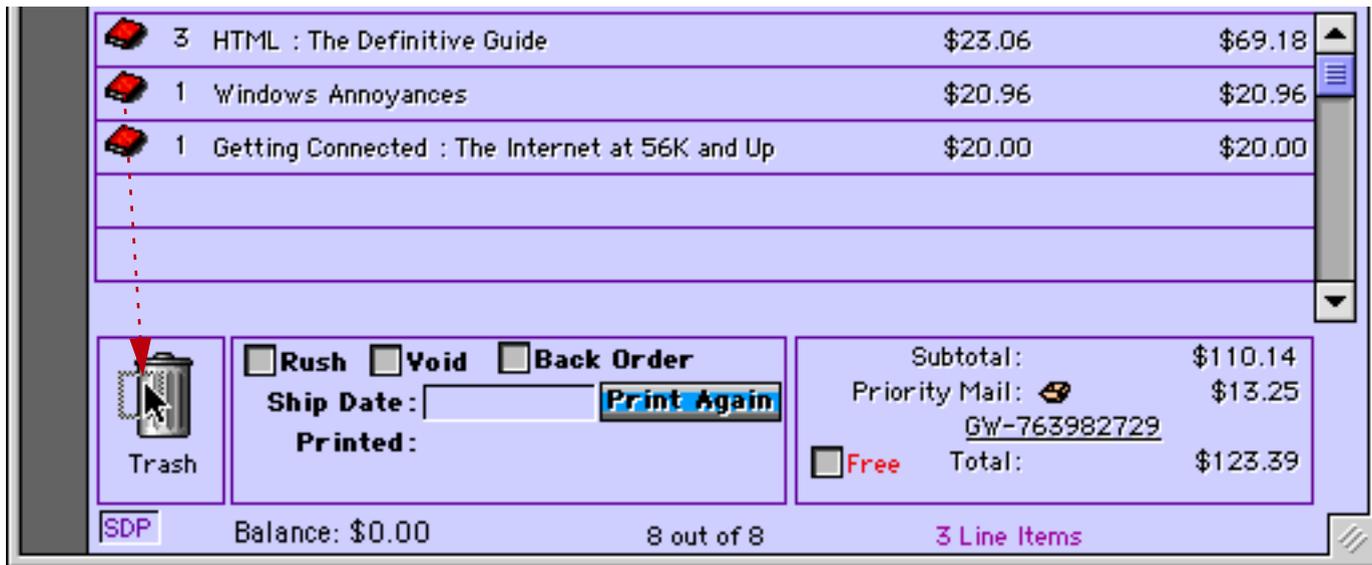
To change the price of an item click on the number. This opens a dialog that allows you to adjust the price.



You can either select from a list of standard prices for this item or type in the exact price you want to use, in this case \$20.00. Press **OK** or the **Enter** key to update the invoice.

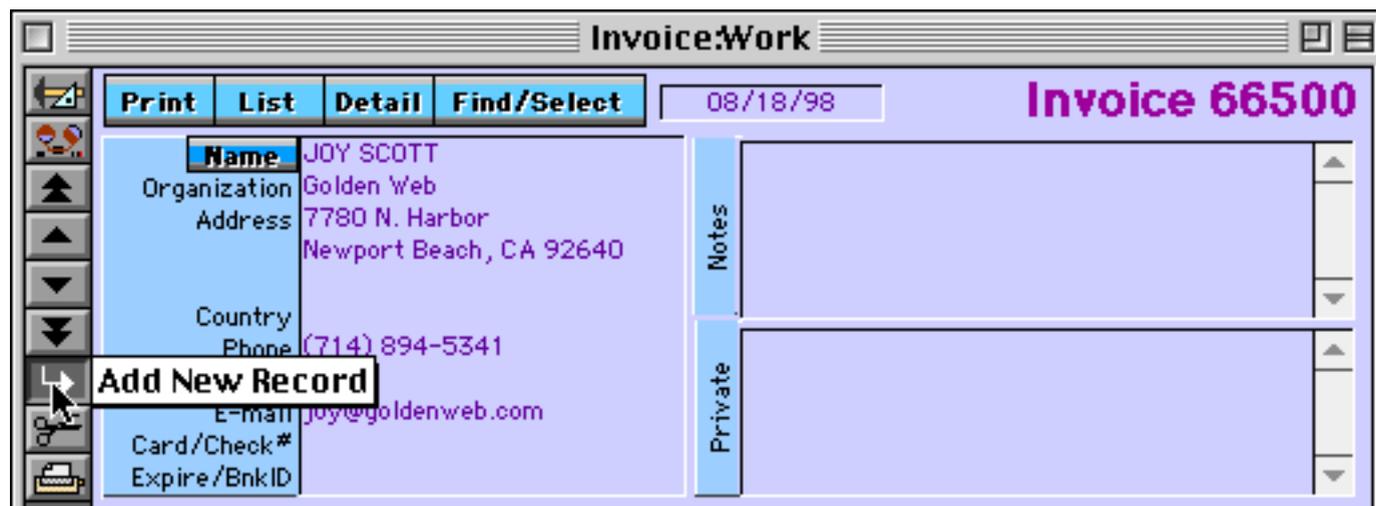


To completely remove an item from the order drag the item into the trash can.

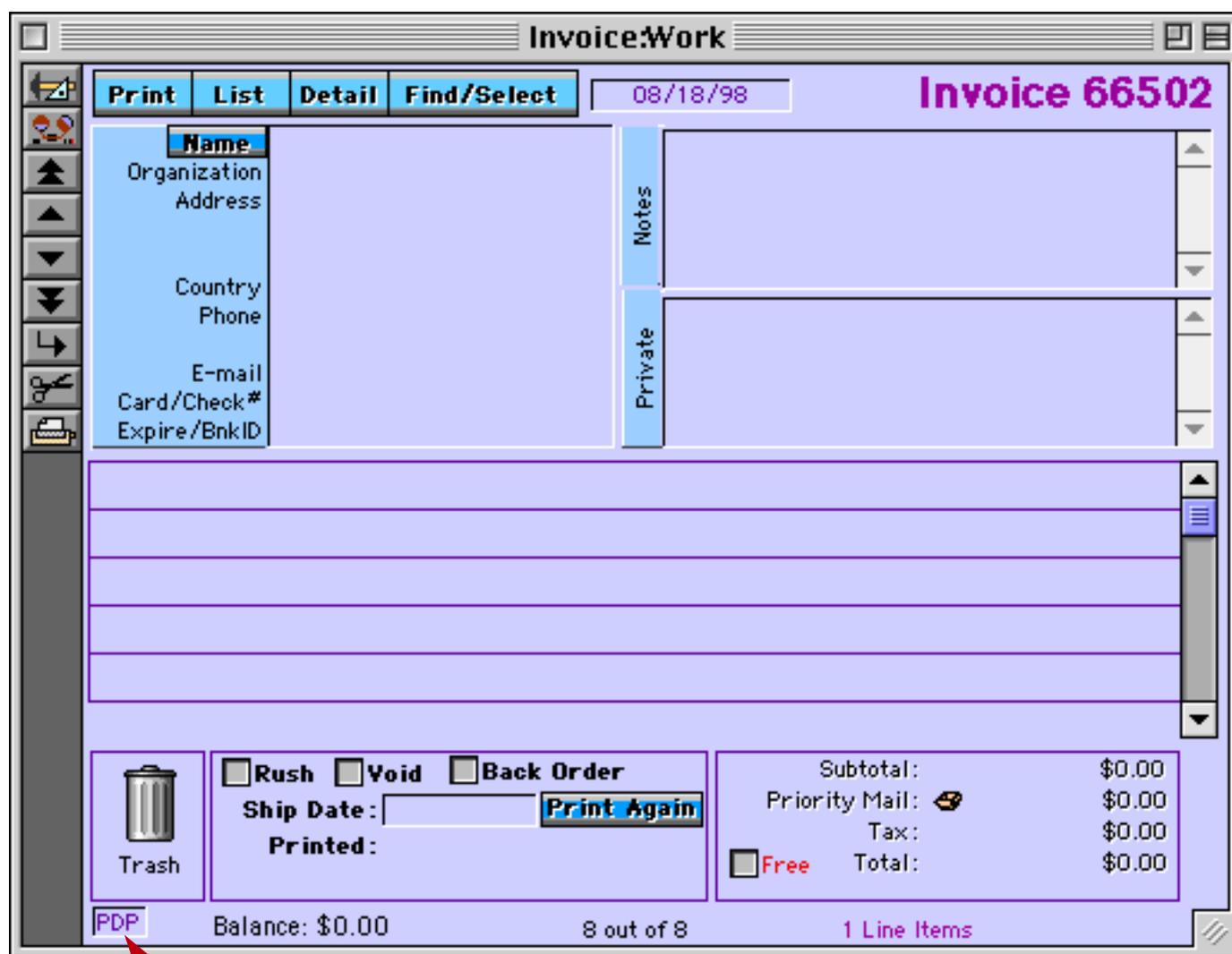


Placing an Order from an Occasional Customer

When a regular customer places an order use the **Add New Record** tool to create a new invoice.



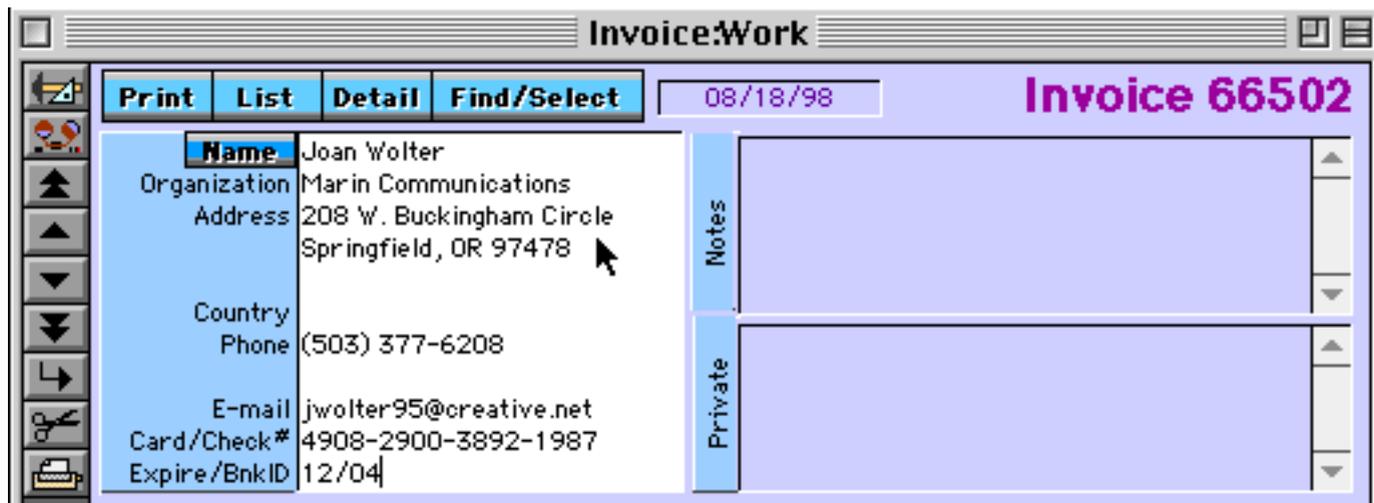
This creates a new, blank order.



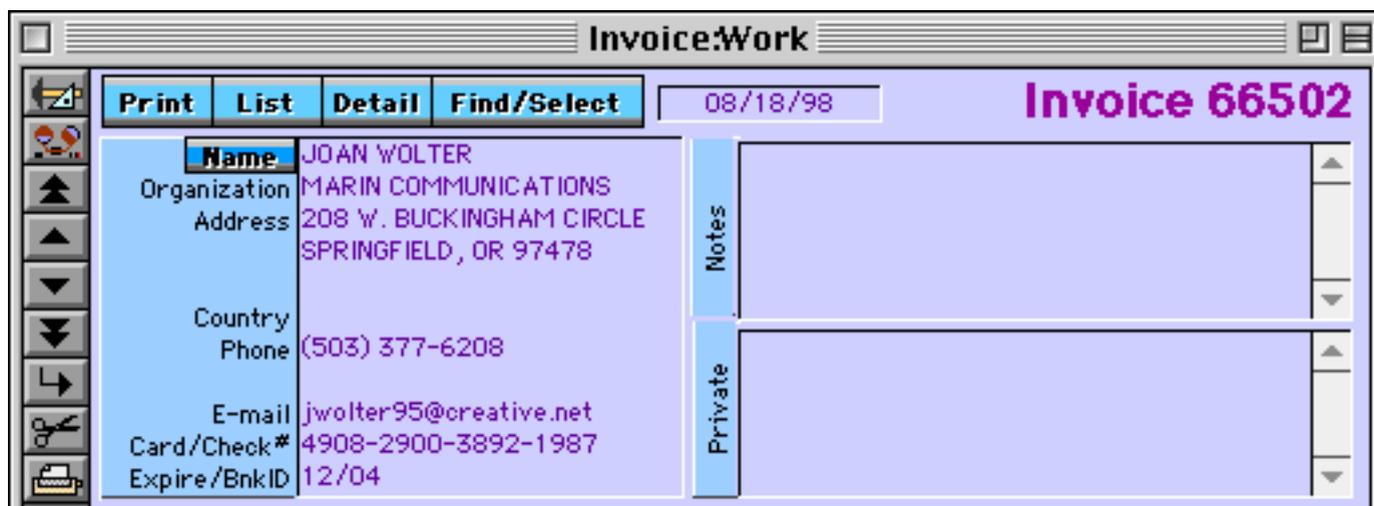
*Discount code
(PDP = Public Direct Price)*

The system assumes that this occasional customer will receive PDP pricing (Public Direct Price). If this is not the case you should edit this field now.

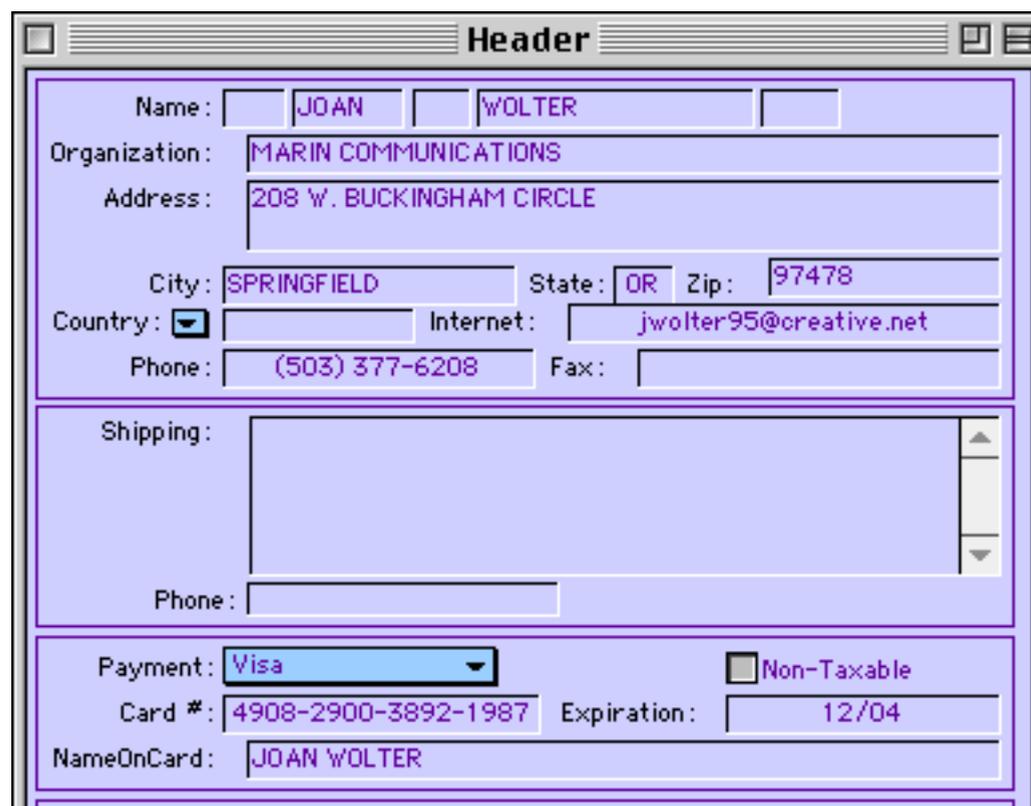
The next step is to fill in the contact and payment information for this order. Click in the box and then type in the information.



Press the **Enter** key to add this information to the database.



The system has actually analyzed this information and split it into separate fields (see "[Natural Data Entry](#)" on page 1783). To see the actual separate database fields press the **Detail** button. This opens the window shown here, which allows you to see and edit the individual database fields.



Close the detail window when you are through with it.

To add new items to the order drag them from the **Product Collections** or **Products** database just as you did for the previous order.

InvoiceWork 08/18/98 **Invoice 66502**

Print List Detail Find/Select

Name	JOAN WOLTER	Notes
Organization	MARIN COMMUNICATIONS	
Address	208 W. BUCKINGHAM CIRCLE SPRINGFIELD, OR 97478	Private
Country		
Phone	(503) 377-6208	
E-mail	jwolter95@creative.net	
Card/Check#	4908-2900-3892-1987	
Expire/BnkID	12/04	

Qty	Description	Unit Price	Total Price
1	HTML : The Definitive Guide	\$26.36	\$26.36
1	Teach Yourself C in 21 Days	\$23.96	\$23.96
1	Windows 98 Bible	\$31.99	\$31.99

Trash **Rush** **Void** **Back Order**

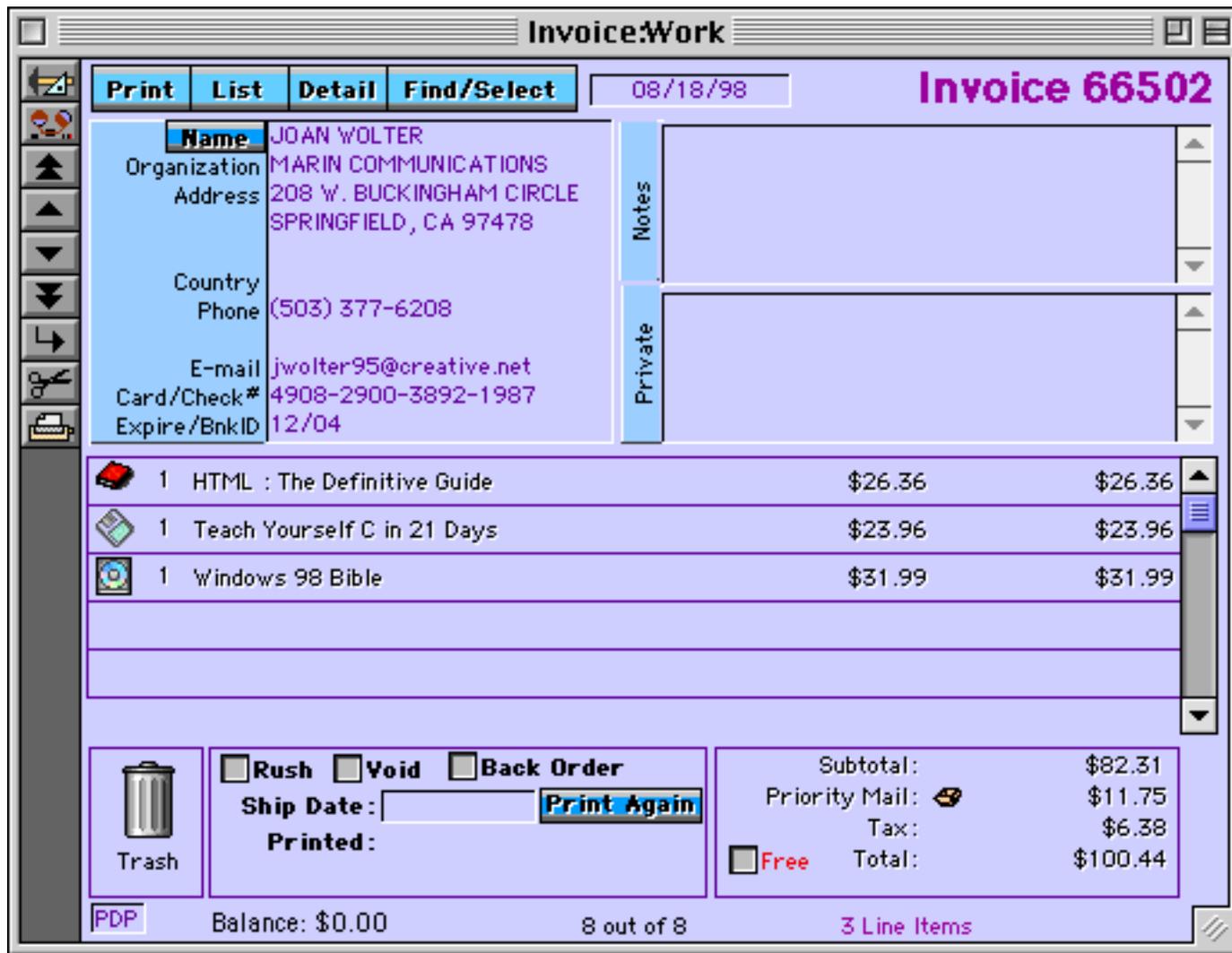
Ship Date: **Print Again**

Printed: **Free**

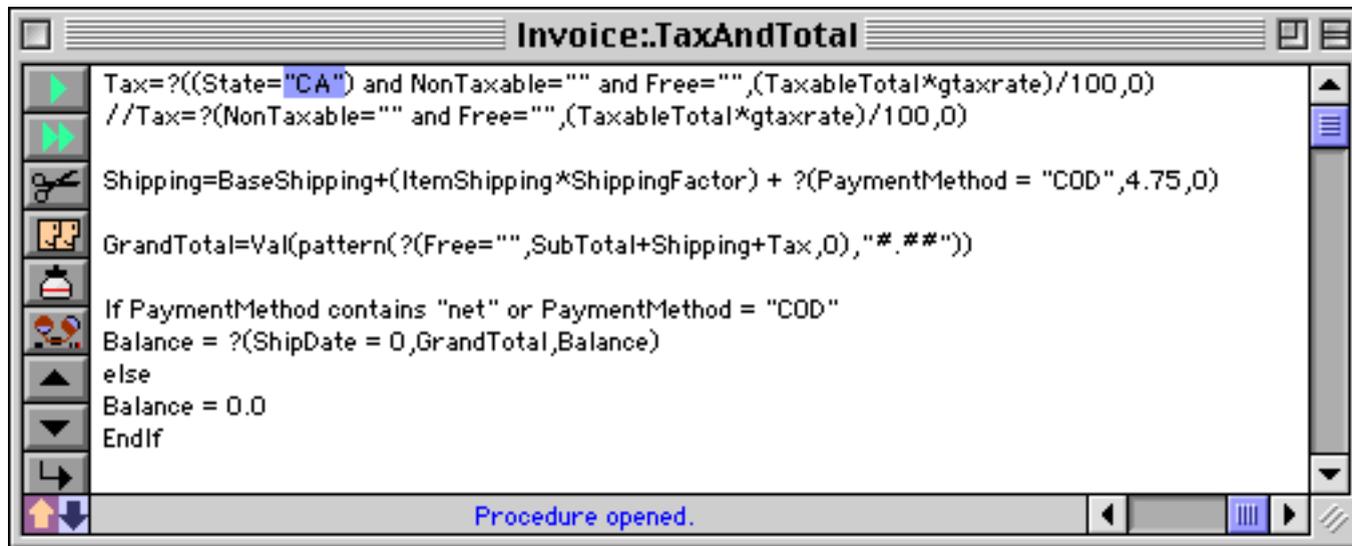
Subtotal:	\$82.31
Priority Mail:	\$11.75
Tax:	\$0.00
Total:	\$94.06

PDP Balance: \$0.00 8 out of 8 3 Line Items

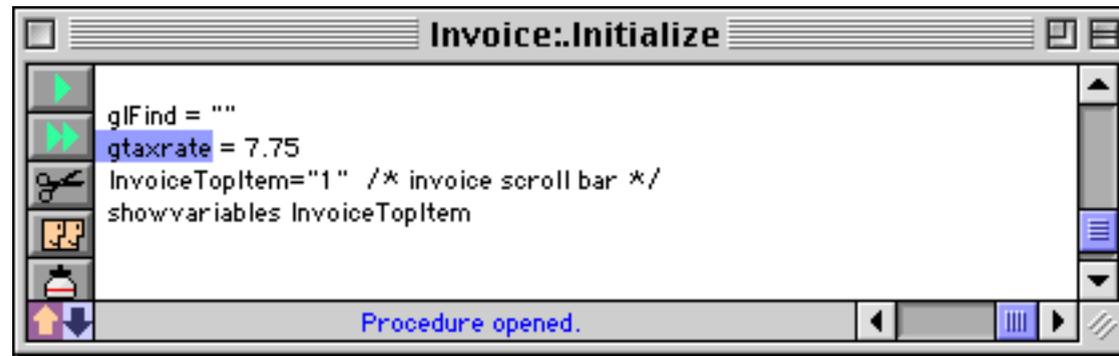
Since this order is outside of California, no sales tax is charged. If the address is changed to a California address sales tax will be added.



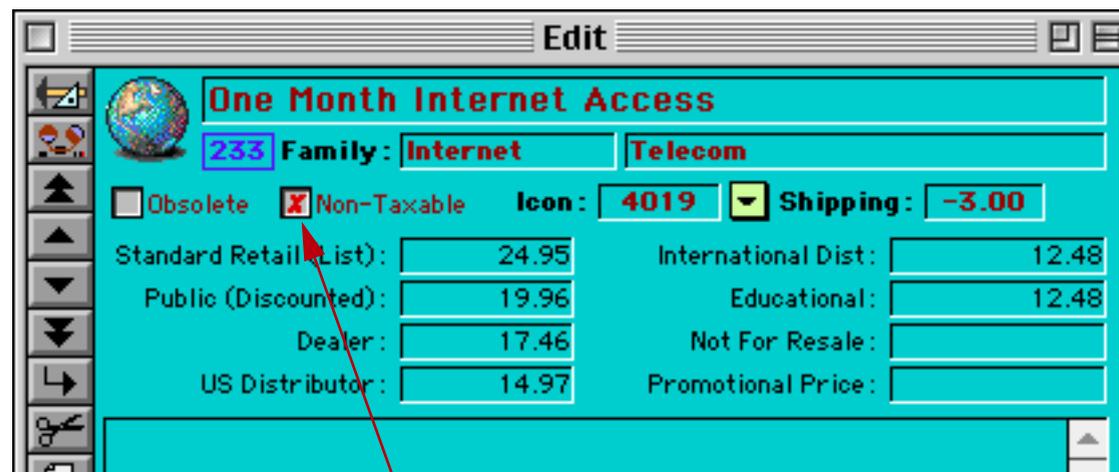
The state for which sales tax is charged is defined in the `TaxAndTotal` procedure. If your company is in a different state you'll need to modify this procedure.



The sales tax rate itself is defined in the `.Initialize` procedure.

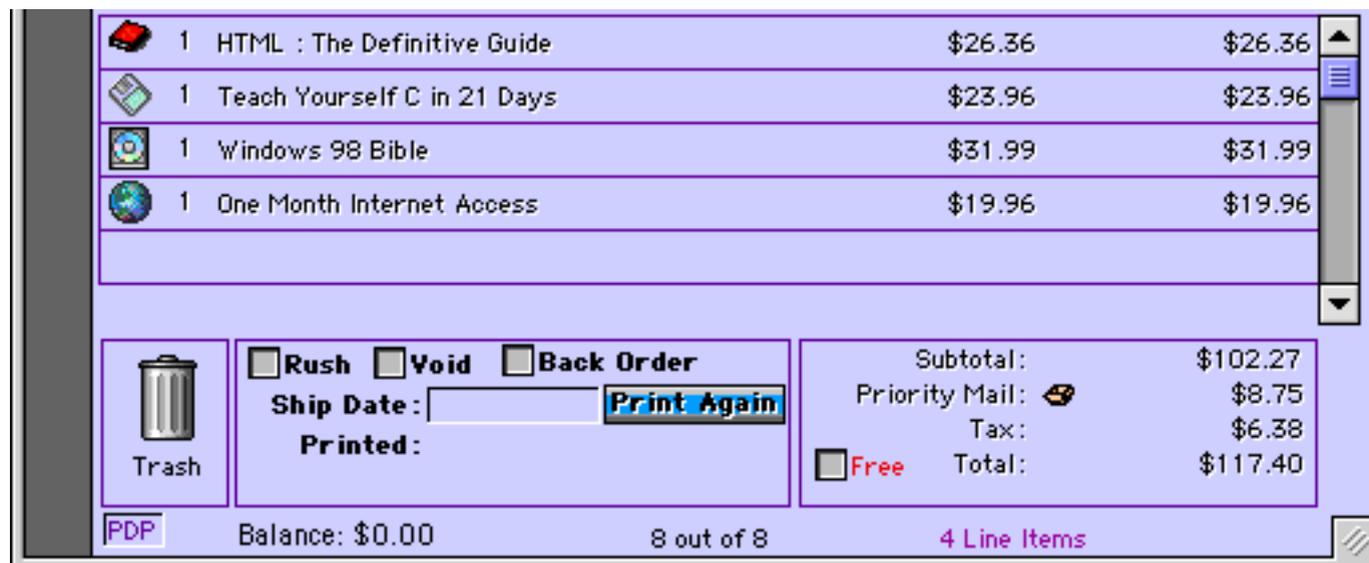


In the product database you can define an item as non-taxable.



tax should not be charged on this item

When a non-taxable item is added to the invoice that item is not included in the tax calculation.



To change the shipping method click on the tiny shipping box. You can select the shipping option from the list on the left. The system will calculate the price for you or you can manually type it in. If the customer wants to pay for the shipping directly you can enter the account number on the right.

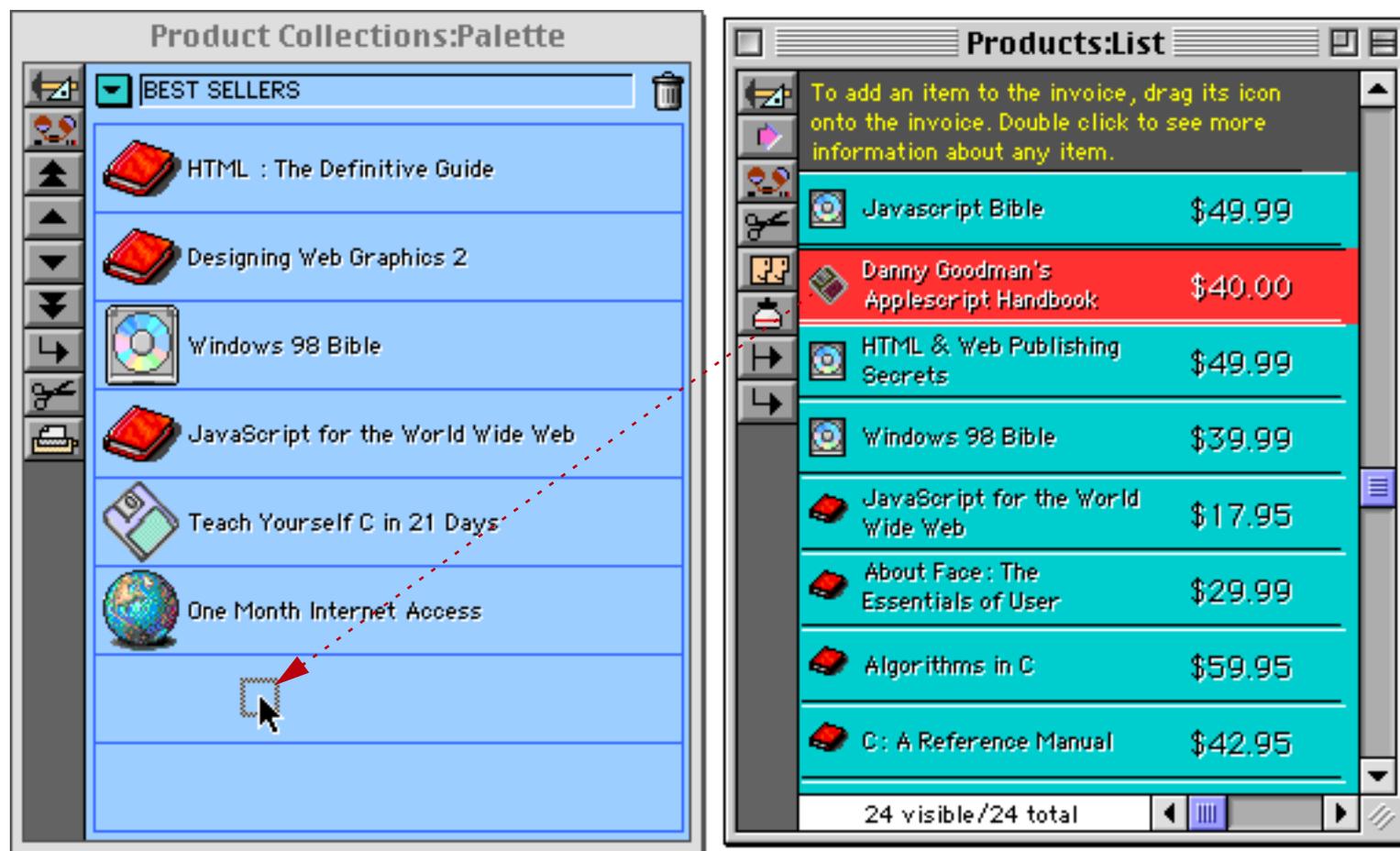


In some cases you may want to supply an order for no charge. To do this simply click the **Free** button.



Adding Products to a Product Collection

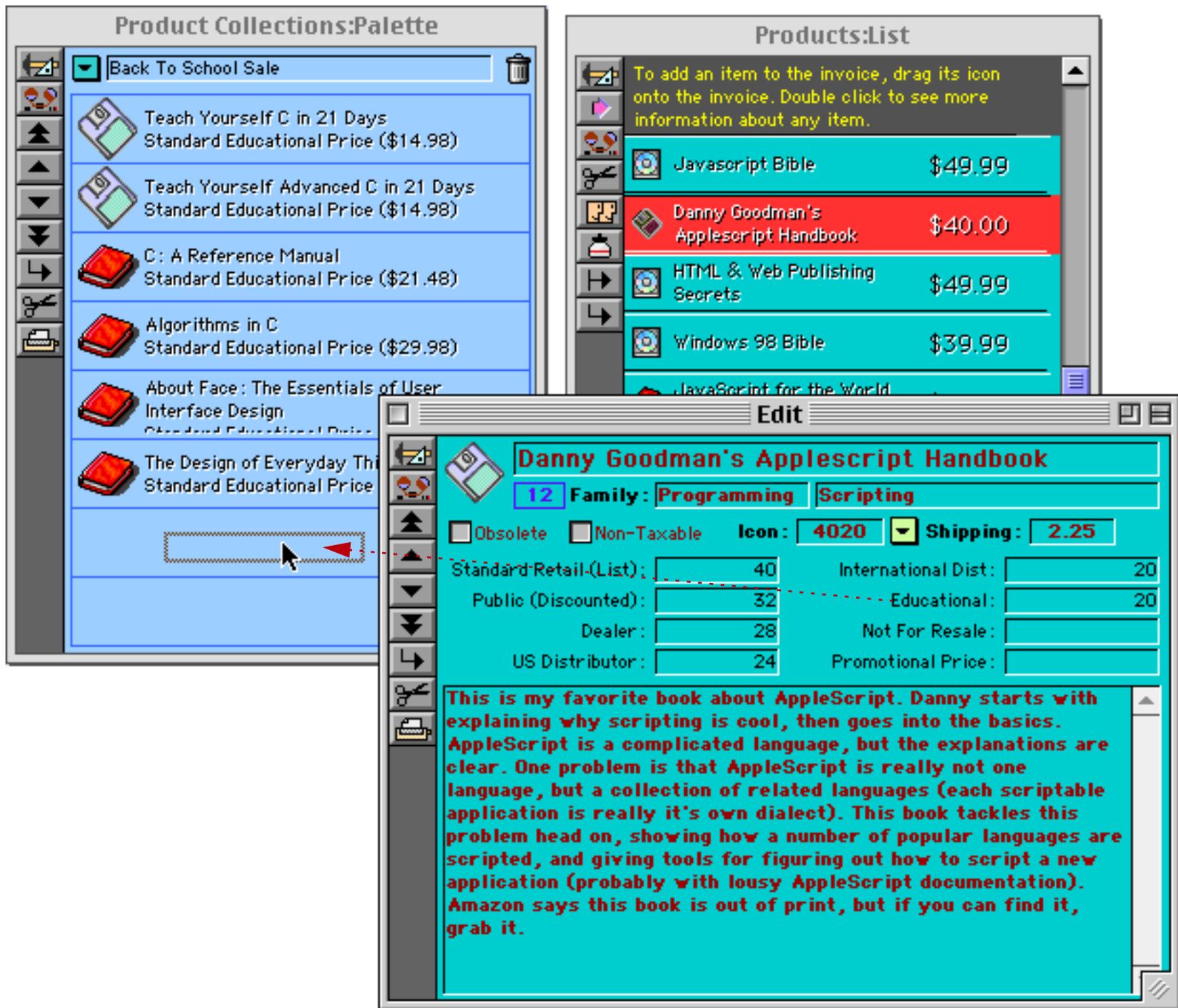
The **Product Collections** database contains lists of frequently ordered items. To add an item to a collection simply drag it from the **Product** database into the collection. (The illustration shows the item being dragged into an empty spot, but that is not necessary, you can drag anywhere in the form.)



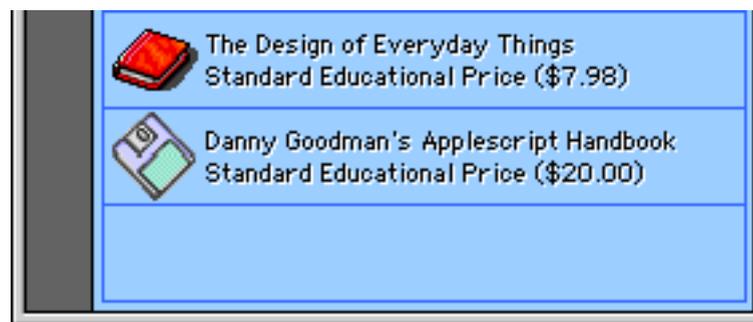
The item is added to the end of the collection.



If you open the detail window for a product (by double clicking on the product list) you can add the product to the collection with a specific price. Simply drag the price category onto the collection, in this case the educational price.



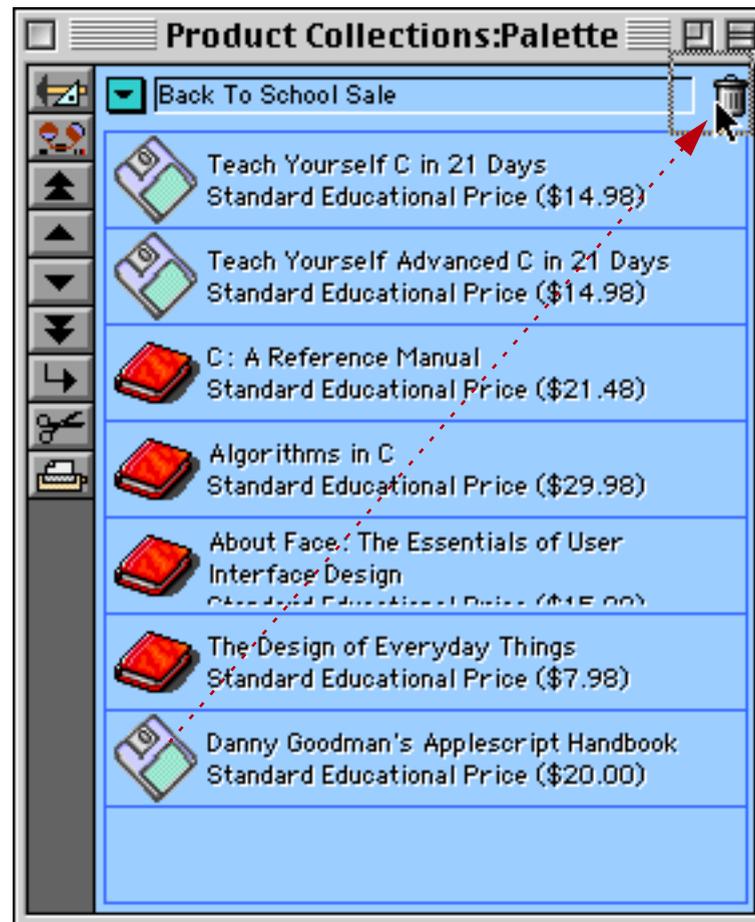
The educational price of the product is added to the collection.



If this product is dragged onto any invoice the item will appear at the educational price, no matter who the customer is. In this case the customer's normal discount level is ignored.

1	One Month Internet Access	\$19.96	\$19.96
1	Danny Goodman's Applescript Handbook	\$20.00	\$20.00

To remove an item from a collection simply drag it into the trash can at the top of the window.



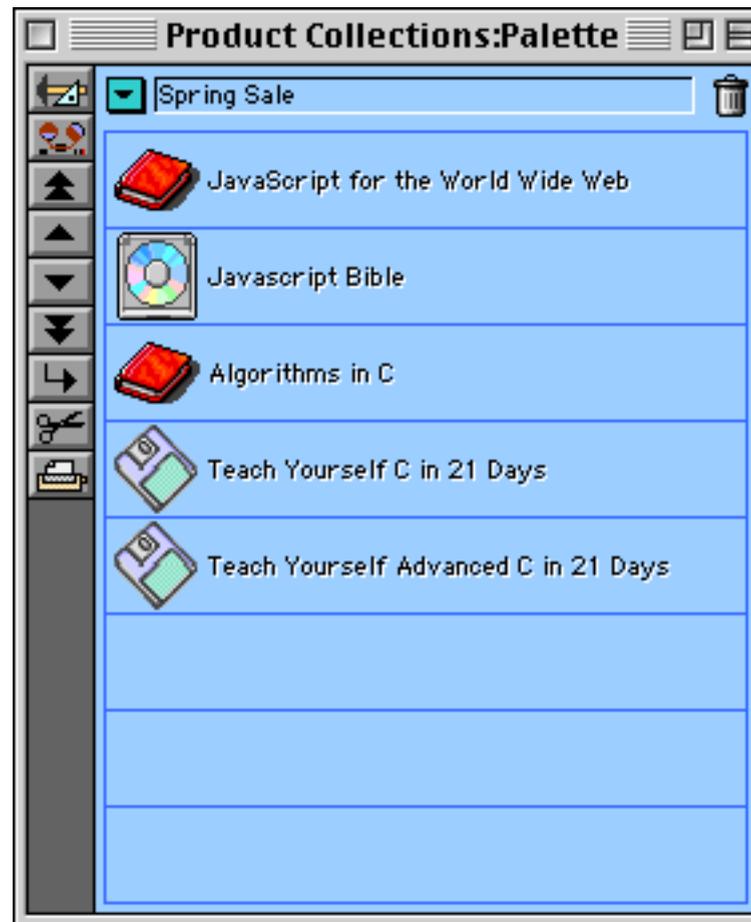
Use the pop-up menu to add a completely new collection.



The new collection is initially untitled, but you can type in any name you want.



To complete the new collection drag items from the **Products** database on to it.



Adding a New Product

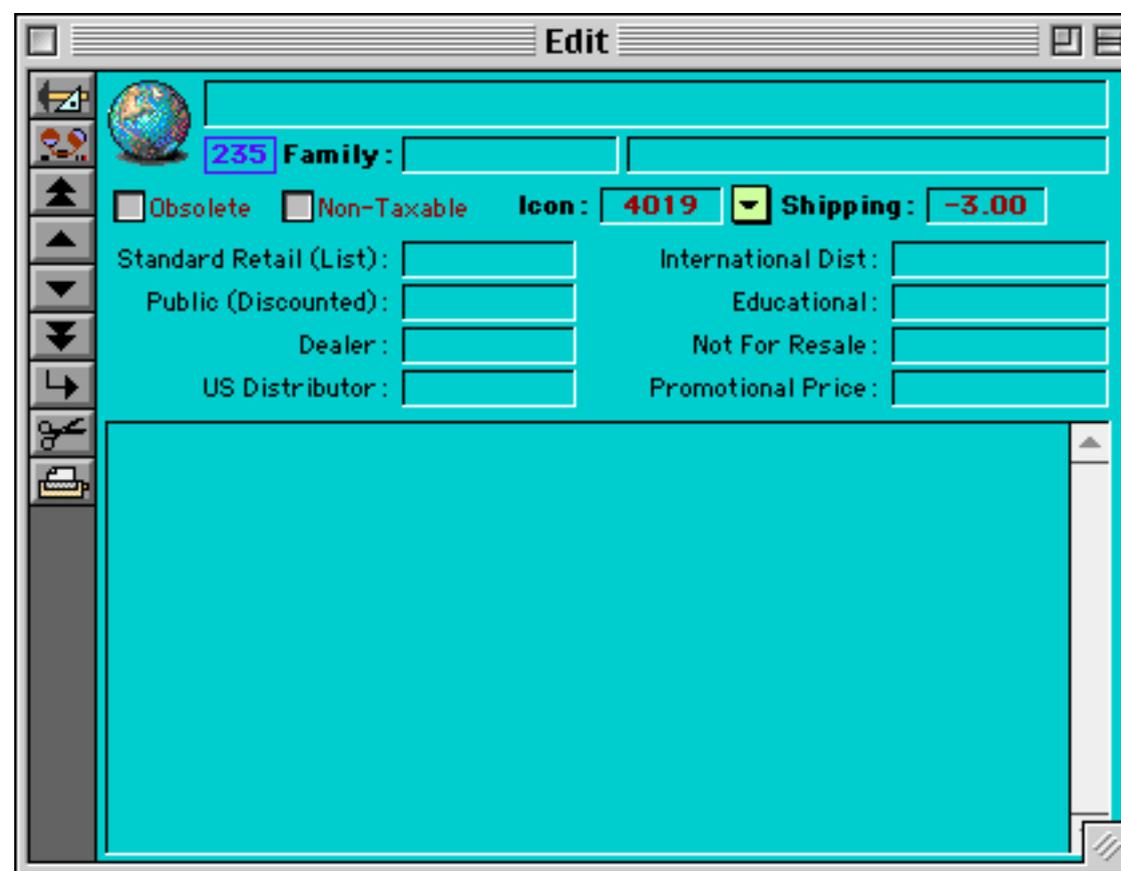
To add a new product, start by using the **Add New Record** tool.



A new, empty product is added to the bottom of the list.



Double click this empty product to open the detail window.



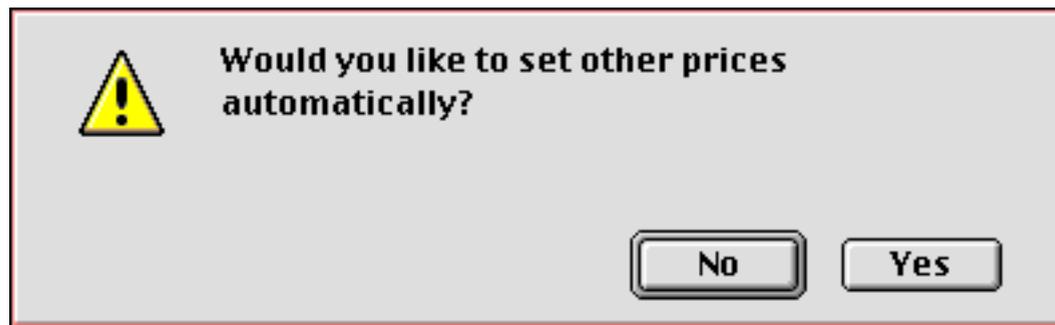
Enter the name, product family, subfamily, icon and shipping weight (pounds). The product number is assigned automatically (in this case 235). If the product is non-taxable click the **Non-Taxable** button.



Type in the standard retail price for the new product.



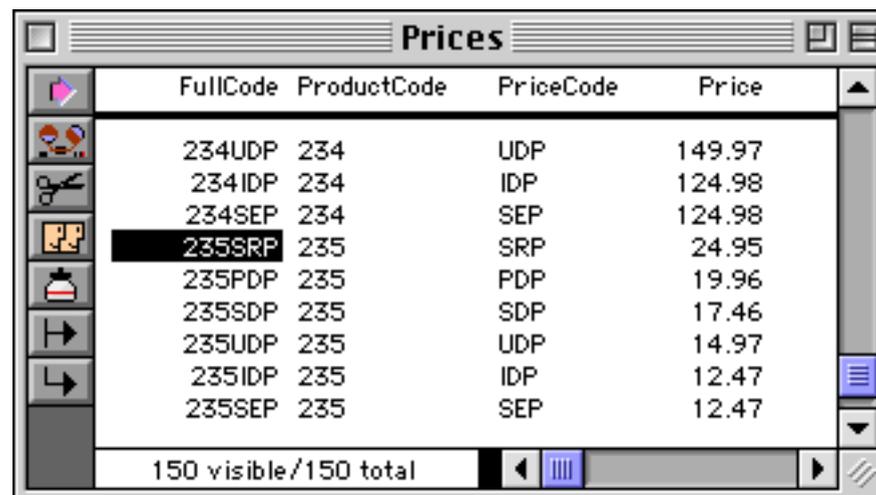
When you press the **Enter** key, the system asks if you would like it to calculate all of the other prices for you.



Press the **Yes** button. After a slight delay the other prices will appear. You can use these calculated prices as is or edit them for your needs.



The system as automatically added the prices to the Prices database for you. You don't ever need to edit this database directly.



The new product is ready to be used. Simply drag it onto the order form like any other product.

InvoiceWork 08/18/98 **Invoice 66503**

Print List Detail Find/Select

Name MIKE CORNING
Organization Guilford Software
Address 53 Deerhaven
 Mahwah, NJ 09631
Country
Phone (201) 877-4924
E-mail mcorning@guilford.com
Card/Check#
Expire/BnkID

Notes
Private

1	APL Programming for the New Millenium	\$14.97	\$14.97
---	---------------------------------------	---------	---------

Trash **Rush** **Void** **Back Order**
Ship Date: **Print Again**
Printed: **Free**

Subtotal: \$14.97
 Priority Mail: \$4.50
 Tax: \$0.00
Total: \$19.47

UDP Balance: \$0.00 9 out of 9 1 Line Items

Of course you can also add the new product to the [Product Collections](#) database.

Learning More About the ProVUE Order Entry System

To learn more about this order entry system you can purchase our ProVUE 98 and ProVUE 99 CD-sets.



The ProVUE 98 set contains a session showing how this system was built. The ProVUE 99 set shows how to add an on-line shopping cart to this order entry system, allowing users to enter their orders automatically over the web. See [Panorama Conferences](#) on page 2118 for more information on these CD-sets.

