# History of Panorama

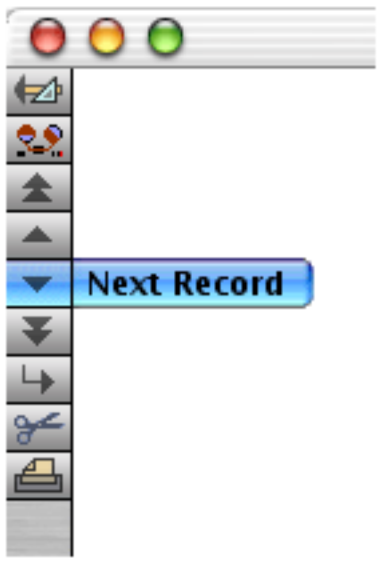
Software is always a work in progress. The first line of code for Panorama was written in 1986. Today Panorama contains over 300,000 lines of code, and we keep making progress (check our web site `www.provue.com` for information about the latest updates. If you are already familiar with a previous version of Panorama you can find out what has changed by examining the listings below. We've also included a general corporate history of ProVUE and it's products over the years (see "General Corporate History" on page 106).

## Version 5.0.0

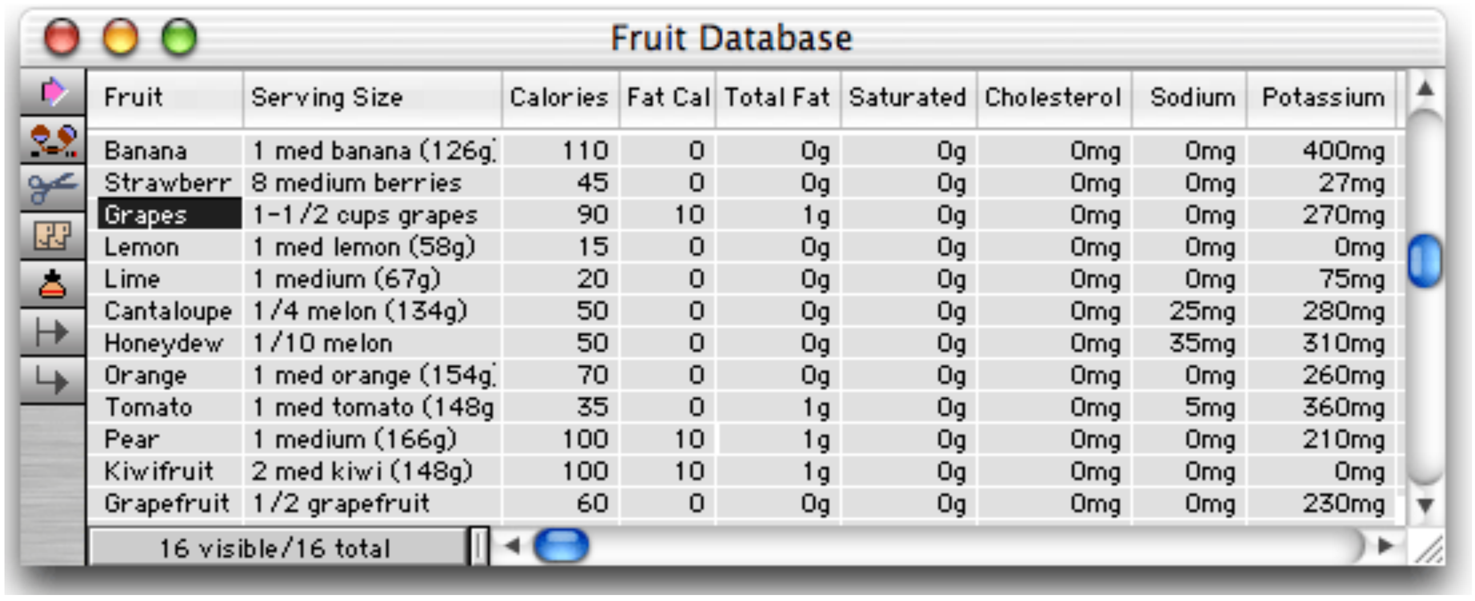
This version was released in October 2004 for Mac OS 9 and Mac OS X. This is the first version of Panorama that supports OS X in native mode, and also includes many new features.

### Updated User Interface

For Panorama V we've substantially upgraded the look and feel of the program. These changes were made primarily for OS X, but OS 9 and Windows users will see big improvements as well. All of the old "System 6" black and white interface elements have been eliminated. We started with a new look for the tool palette.



The data sheet is no longer a plain white but has a new "3D" look. The exact appearance varies depending on whether you are using OS X (shown below), OS 9 or Windows.

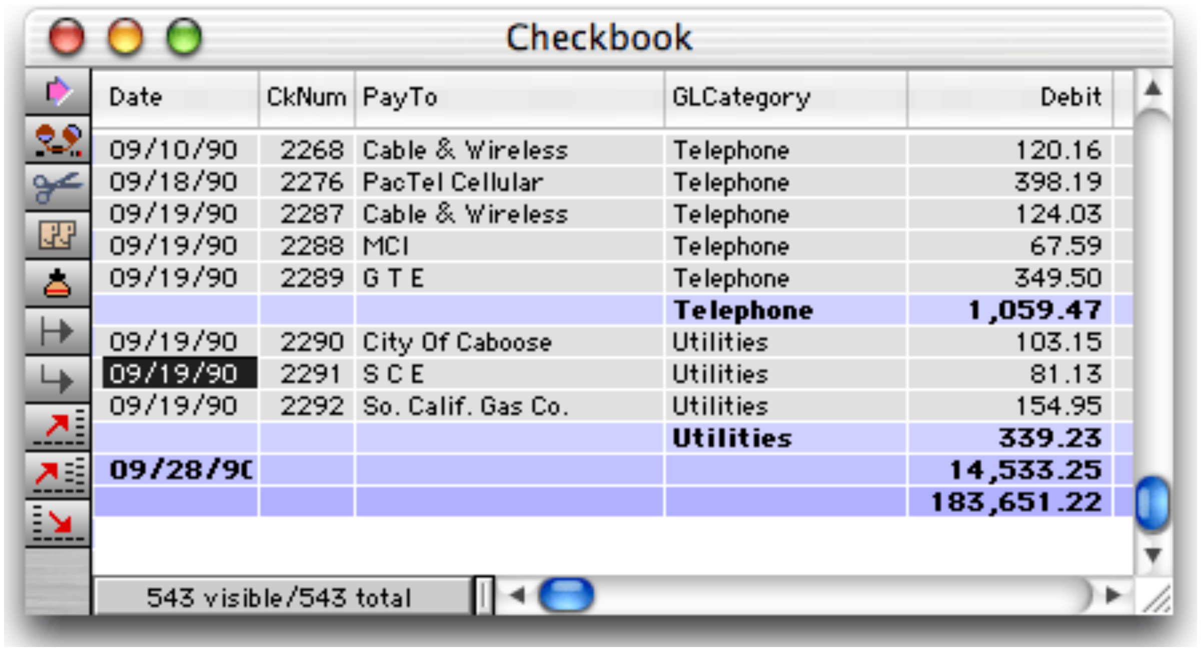


Fruit Database

| Fruit | Serving Size | Calories | Fat Cal | Total Fat | Saturated | Cholesterol | Sodium | Potassium |
|---|---|---|---|---|---|---|---|---|
| Banana | 1 med banana (126g | 110 | 0 | 0g | 0g | 0mg | 0mg | 400mg |
| Strawberr | 8 medium berries | 45 | 0 | 0g | 0g | 0mg | 0mg | 27mg |
| Grapes | 1-1/2 cups grapes | 90 | 10 | 1g | 0g | 0mg | 0mg | 270mg |
| Lemon | 1 med lemon (58g) | 15 | 0 | 0g | 0g | 0mg | 0mg | 0mg |
| Lime | 1 medium (67g) | 20 | 0 | 0g | 0g | 0mg | 0mg | 75mg |
| Cantaloupe | 1/4 melon (134g) | 50 | 0 | 0g | 0g | 0mg | 25mg | 280mg |
| Honeydew | 1/10 melon | 50 | 0 | 0g | 0g | 0mg | 35mg | 310mg |
| Orange | 1 med orange (154g | 70 | 0 | 0g | 0g | 0mg | 0mg | 260mg |
| Tomato | 1 med tomato (148g | 35 | 0 | 1g | 0g | 0mg | 5mg | 360mg |
| Pear | 1 medium (166g) | 100 | 10 | 1g | 0g | 0mg | 0mg | 210mg |
| Kiwifruit | 2 med kiwi (148g) | 100 | 10 | 1g | 0g | 0mg | 0mg | 0mg |
| Grapefruit | 1/2 grapefruit | 60 | 0 | 0g | 0g | 0mg | 0mg | 230mg |

16 visible/16 total

We've also changed the way summary records are handled. Instead of appearing with a + sign on the left hand edge, summary records appear with a colored background. The darkness of the color changes depending on the summary level (see below). You can no longer click on the left edge of the record to toggle a data record into a summary record, but this feature is still available in the Sort menu.

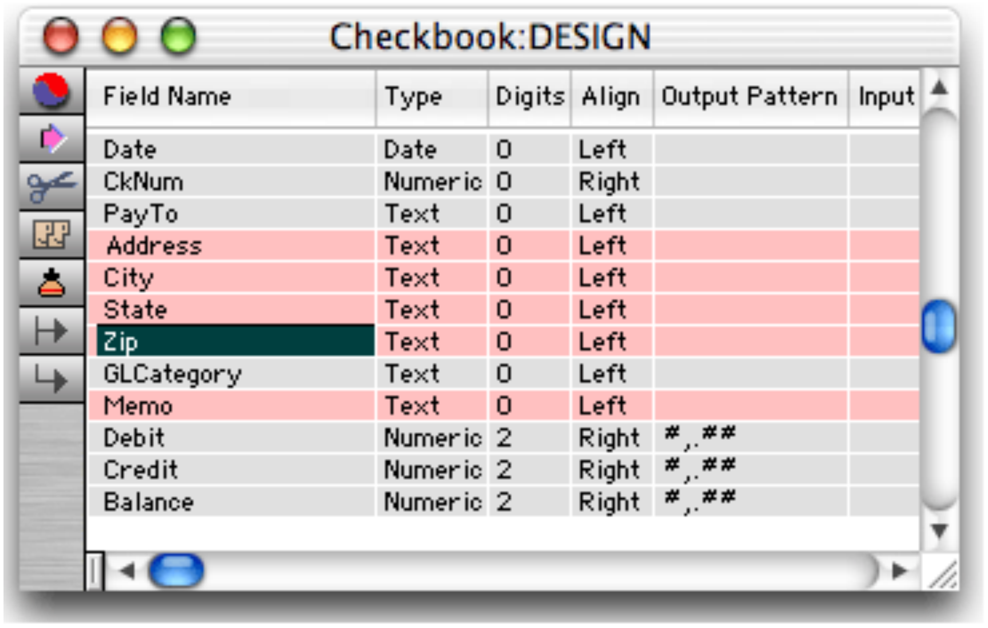


Checkbook

| Date | CkNum | PayTo | GLCategory | Debit |
|---|---|---|---|---|
| 09/10/90 | 2268 | Cable & Wireless | Telephone | 120.16 |
| 09/18/90 | 2276 | PacTel Cellular | Telephone | 398.19 |
| 09/19/90 | 2287 | Cable & Wireless | Telephone | 124.03 |
| 09/19/90 | 2288 | MCI | Telephone | 67.59 |
| 09/19/90 | 2289 | G T E | Telephone | 349.50 |
| | | | **Telephone** | **1,059.47** |
| 09/19/90 | 2290 | City Of Caboose | Utilities | 103.15 |
| 09/19/90 | 2291 | S C E | Utilities | 81.13 |
| 09/19/90 | 2292 | So. Calif. Gas Co. | Utilities | 154.95 |
| | | | **Utilities** | **339.23** |
| **09/28/9** | | | | **14,533.25** |
| | | | | **183,651.22** |

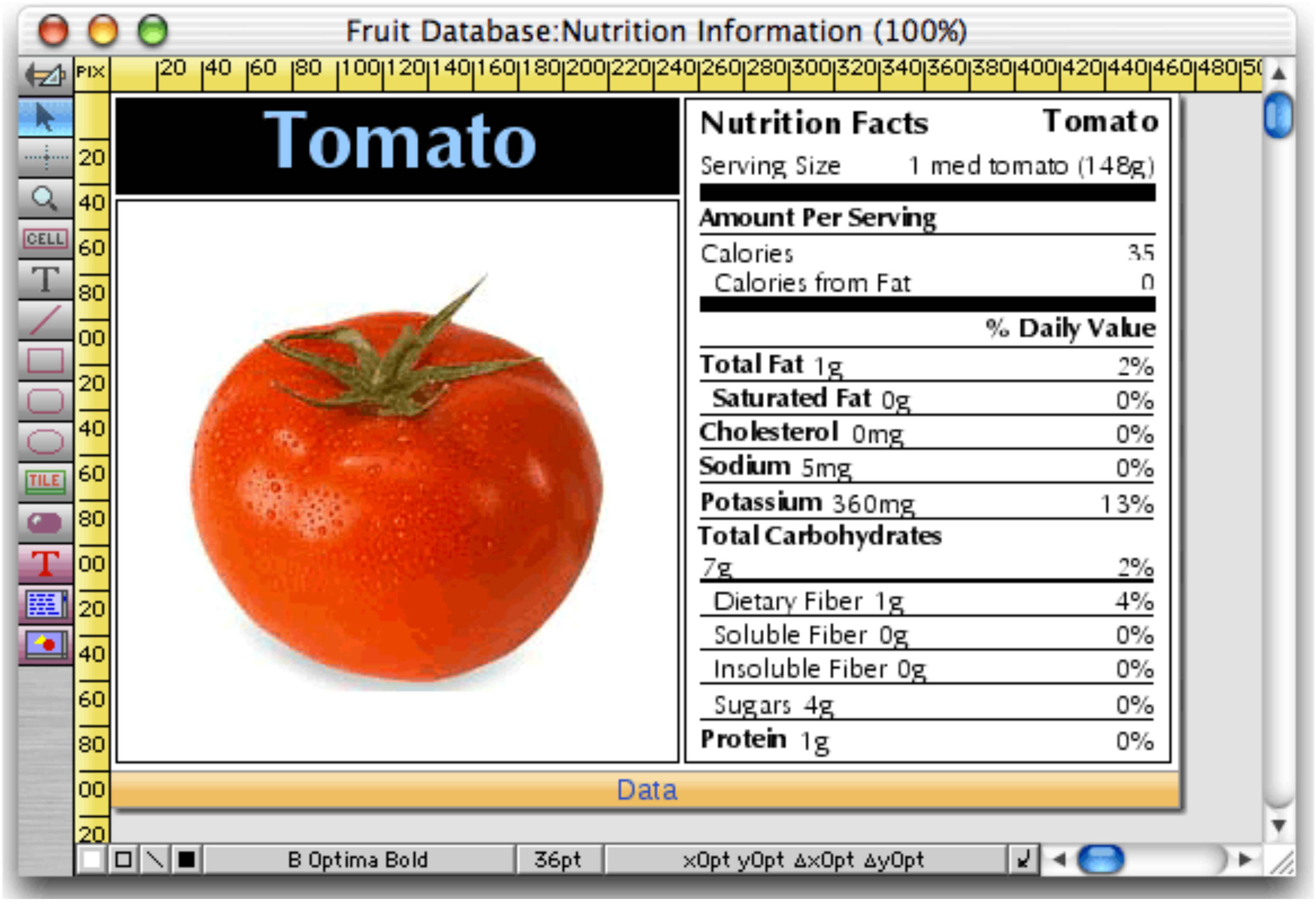
543 visible/543 total

The design sheet shares the same 3D look as the data sheet, with a slight twist. Fields that already exist are shown with a gray background, while new fields appear with a pink background until you use the **New Generation** tool.



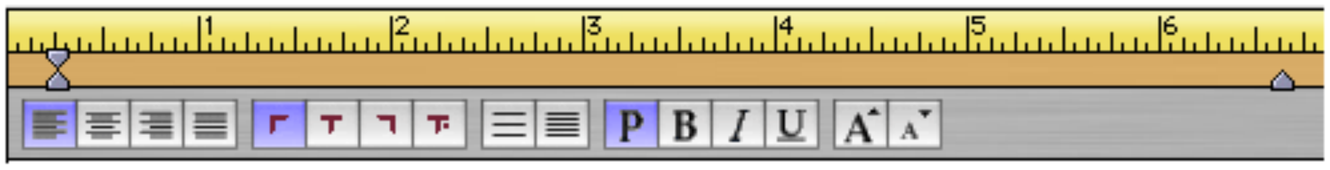
| Field Name | Type | Digits | Align | Output Pattern | Input |
|---|---|---|---|---|---|
| Date | Date | 0 | Left | | |
| CkNum | Numeric | 0 | Right | | |
| PayTo | Text | 0 | Left | | |
| Address | Text | 0 | Left | | |
| City | Text | 0 | Left | | |
| State | Text | 0 | Left | | |
| Zip | Text | 0 | Left | | |
| GLCategory | Text | 0 | Left | | |
| Memo | Text | 0 | Left | | |
| Debit | Numeric | 2 | Right | #,.## | |
| Credit | Numeric | 2 | Right | #,.## | |
| Balance | Numeric | 2 | Right | #,.## | |

Graphics mode is basically the same, but with a cooler 3D look to rulers, tiles and the graphics control strip.

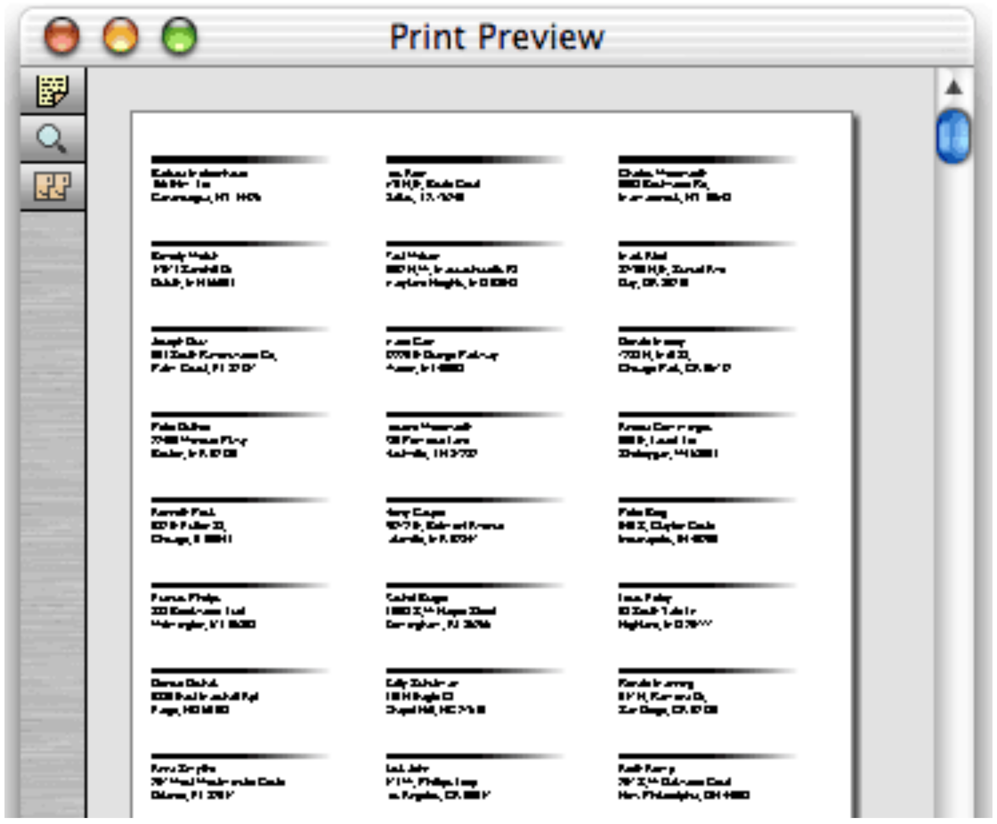


Nutrition Facts Tomato
Serving Size 1 med tomato (148g)
Amount Per Serving
Calories 35
Calories from Fat 0
% Daily Value
Total Fat 1g 2%
Saturated Fat 0g 0%
Cholesterol 0mg 0%
Sodium 5mg 0%
Potassium 360mg 13%
Total Carbohydrates 7g 2%
Dietary Fiber 1g 4%
Soluble Fiber 0g 0%
Insoluble Fiber 0g 0%
Sugars 4g 0%
Protein 1g 0%

We've also upgraded the look of the word processor superobject, as well as adding several new tools for changing styles (plain, bold, italic, and underline) and font size (increase / decrease).



The print preview window has been revised to more accurately show the appearance of the printed page, including the margins and borders.

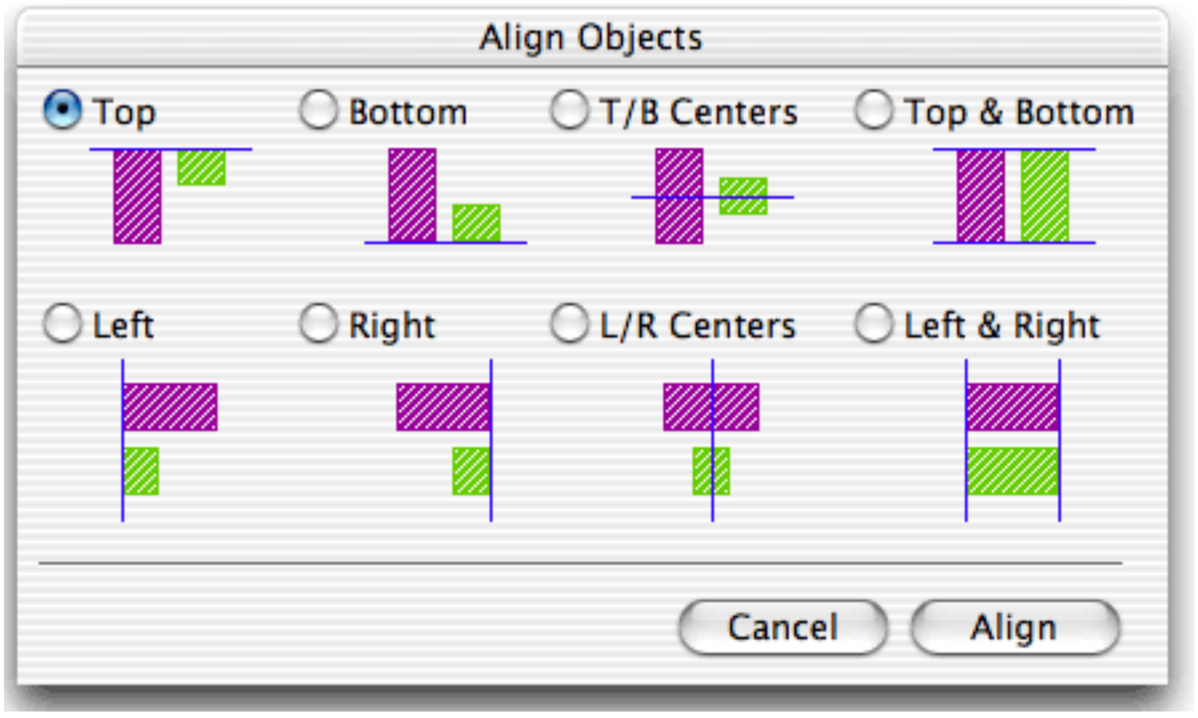


#### Improved Dialogs and Alerts

The biggest improvement in this area is that all dialogs and alerts are now movable and non-modal. This also means that even under OS 9 you can now click to another application when you are in a dialog.

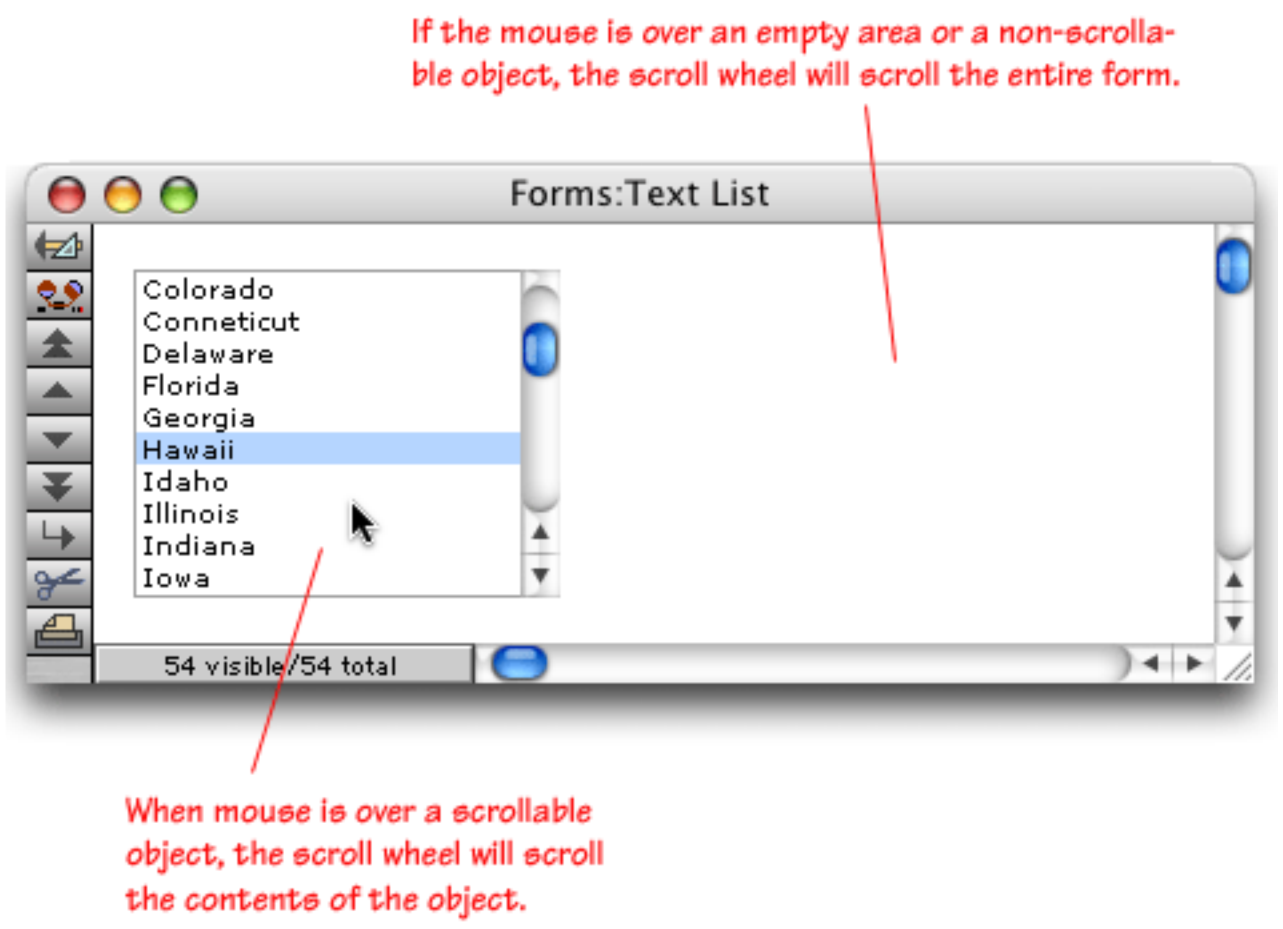
In earlier versions of Panorama all of the dialogs were designed to fit on the original "classic" Macintosh 512 by 384 pixel screen. This made for some very cramped and cluttered dialogs. All 140 of Panorama's dialogs have been redesigned for a cleaner, more organized appearance. (As a side effect, Panorama now requires a screen size of at least 600 by 800 pixels.)

A few dialogs deserve special mention. The **Find/Select** dialog no longer expands and shrinks - it always appears at its full six line maximum height. The **Tool Configuration** dialog (graphics mode) now has half a dozen buttons for setting up the most popular tool configurations. The **Align Objects** dialog now shows a graphical representation of each selection. You can double click on any of the options to align the currently selected objects.

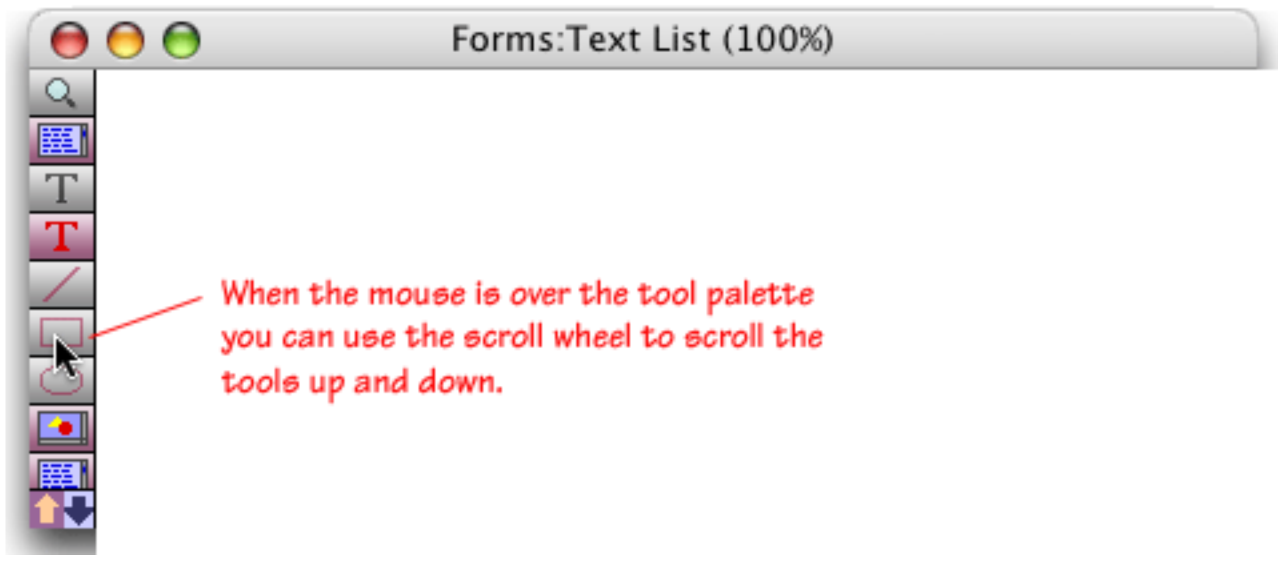


### Scroll Wheel Support

When using OS X Panorama now supports scroll wheels. The scroll wheel works everywhere, including dialogs. In a form window, moving the mouse over an object with a scroll bar and turning the wheel will scroll that object instead of the entire window. (This includes the Text Editor, Text Display, Super Flash Art, List, Word Processor, and even the new scrolling Super Matrix object).

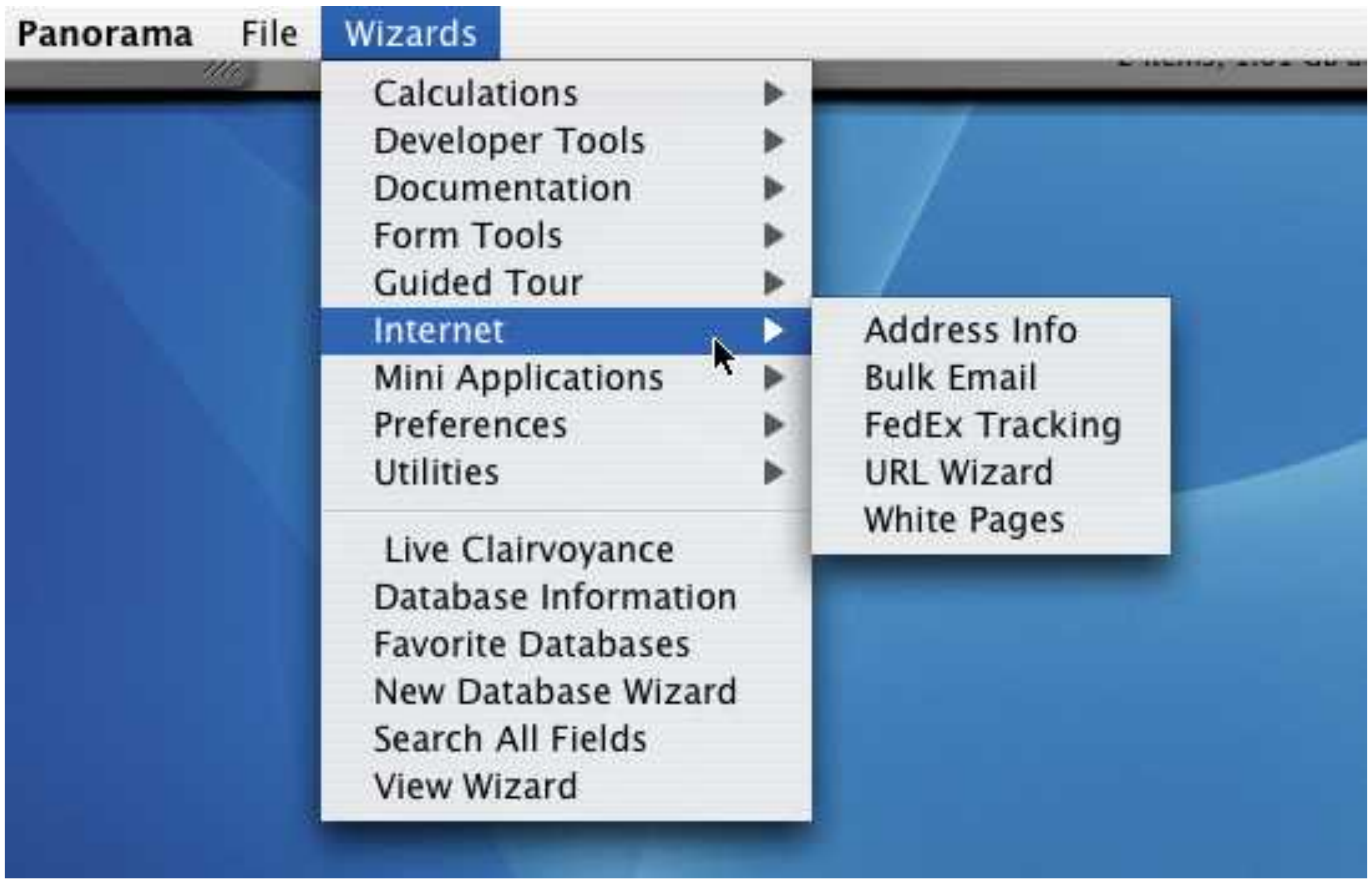

If the mouse is over an empty area or a non-scrollable object, the scroll wheel will scroll the entire form.
Forms:Text List
Colorado
Conneticut
Delaware
Florida
Georgia
Hawaii
Idaho
Illinois
Indiana
Iowa
54 visible/54 total
When mouse is over a scrollable object, the scroll wheel will scroll the contents of the object.

If the window is short you can move the mouse over the tool palette and scroll the tools with the wheel.


Forms:Text List (100%)
When the mouse is over the tool palette you can use the scroll wheel to scroll the tools up and down.

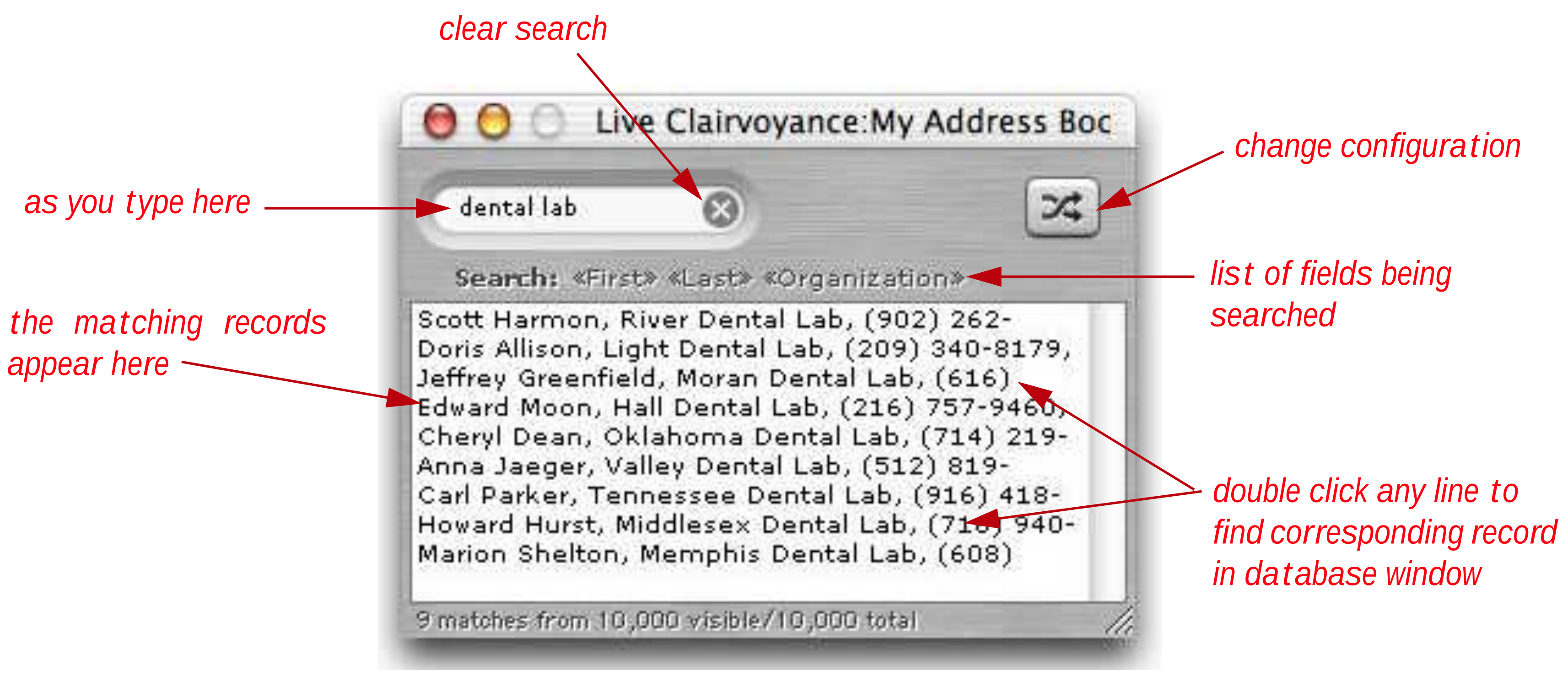
## Wizards

Panorama V includes dozens of new wizards and many of the existing wizards have been improved. To make it easier to use the large number of wizards now available, the Wizard menu has been divided into sub-menus.



### Live Clairvoyance™ Wizard

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.

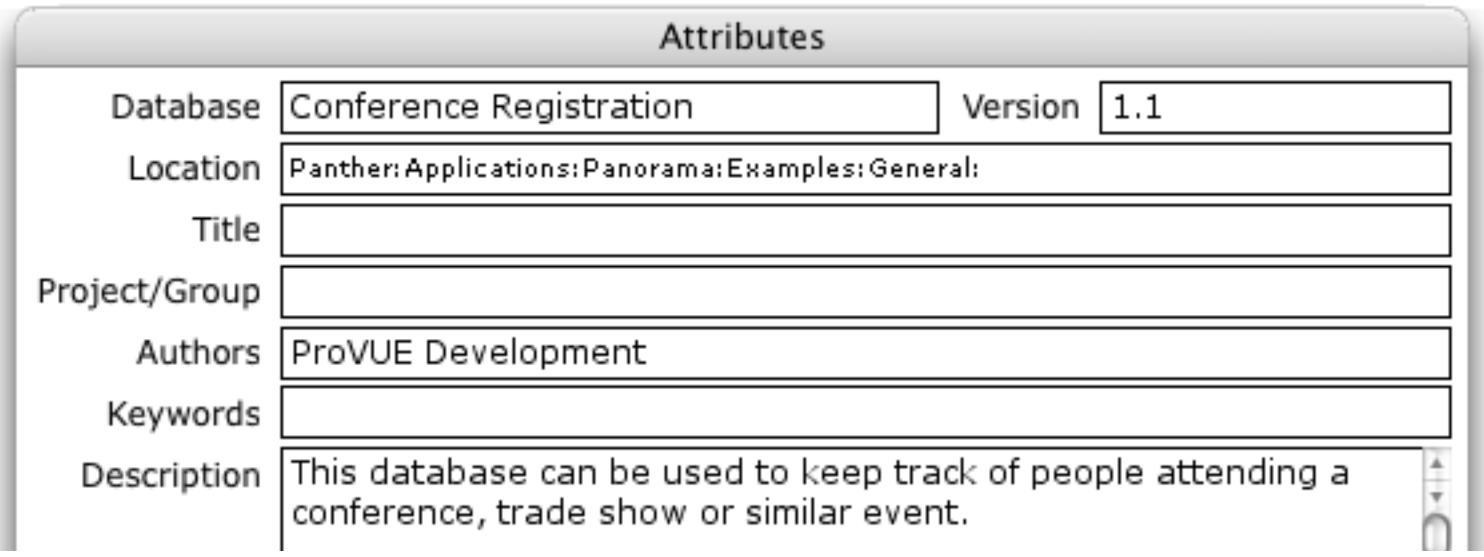

clear search
Live Clairvoyance:My Address Boc
change configuration
as you type here
dental lab
list of fields being searched
the matching records appear here
double click any line to find corresponding record in database window

```
Search: «First» «Last» «Organization»
Scott Harmon, River Dental Lab, (902) 262-
Doris Allison, Light Dental Lab, (209) 340-8179,
Jeffrey Greenfield, Moran Dental Lab, (616)
Edward Moon, Hall Dental Lab, (216) 757-9460,
Cheryl Dean, Oklahoma Dental Lab, (714) 219-
Anna Jaeger, Valley Dental Lab, (512) 819-
Carl Parker, Tennessee Dental Lab, (916) 418-
Howard Hurst, Middlesex Dental Lab, (714) 940-
Marion Shelton, Memphis Dental Lab, (608)
9 matches from 10,000 visible/10,000 total
```

To learn more about this wizard see "The Live Clairvoyance™ Wizard" on page 507.

### Database Information Wizard

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

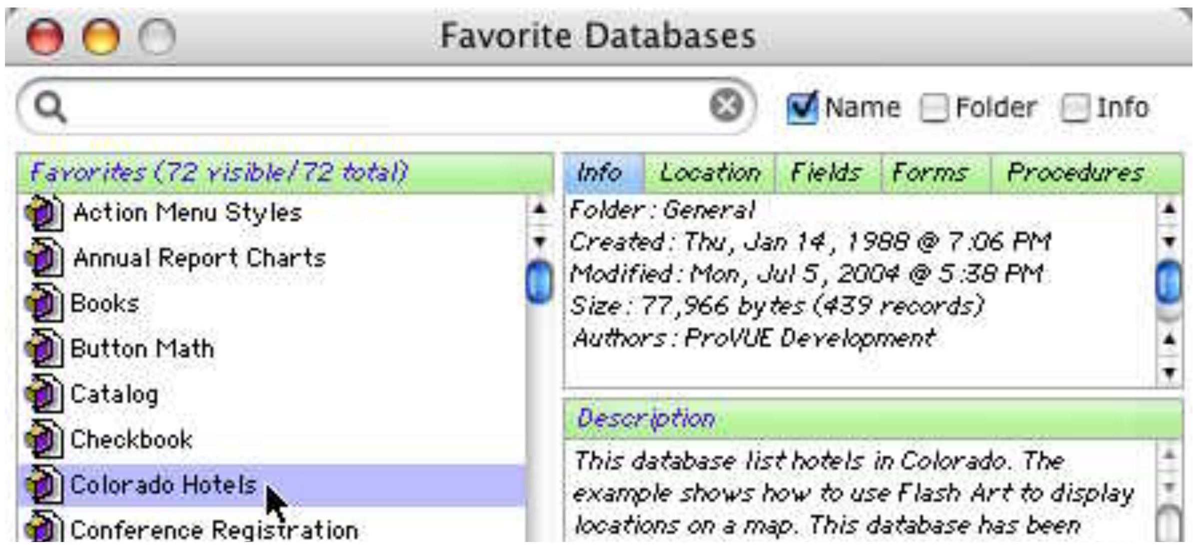


| | |
|---|---|
| Database | Conference Registration |
| Version | 1.1 |
| Location | Panther:Applications:Panorama:Examples:General: |
| Title | |
| Project/Group | |
| Authors | ProVUE Development |
| Keywords | |
| Description | This database can be used to keep track of people attending a conference,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

To learn more about this wizard see "Viewing and Modifying Database Metadata" on page 263.

### Favorite Databases Wizard

The **Favorite Databases** wizard keeps your favorite databases organized and at your fingertips. This wizard has been completely rewritten with a new streamlined interface.



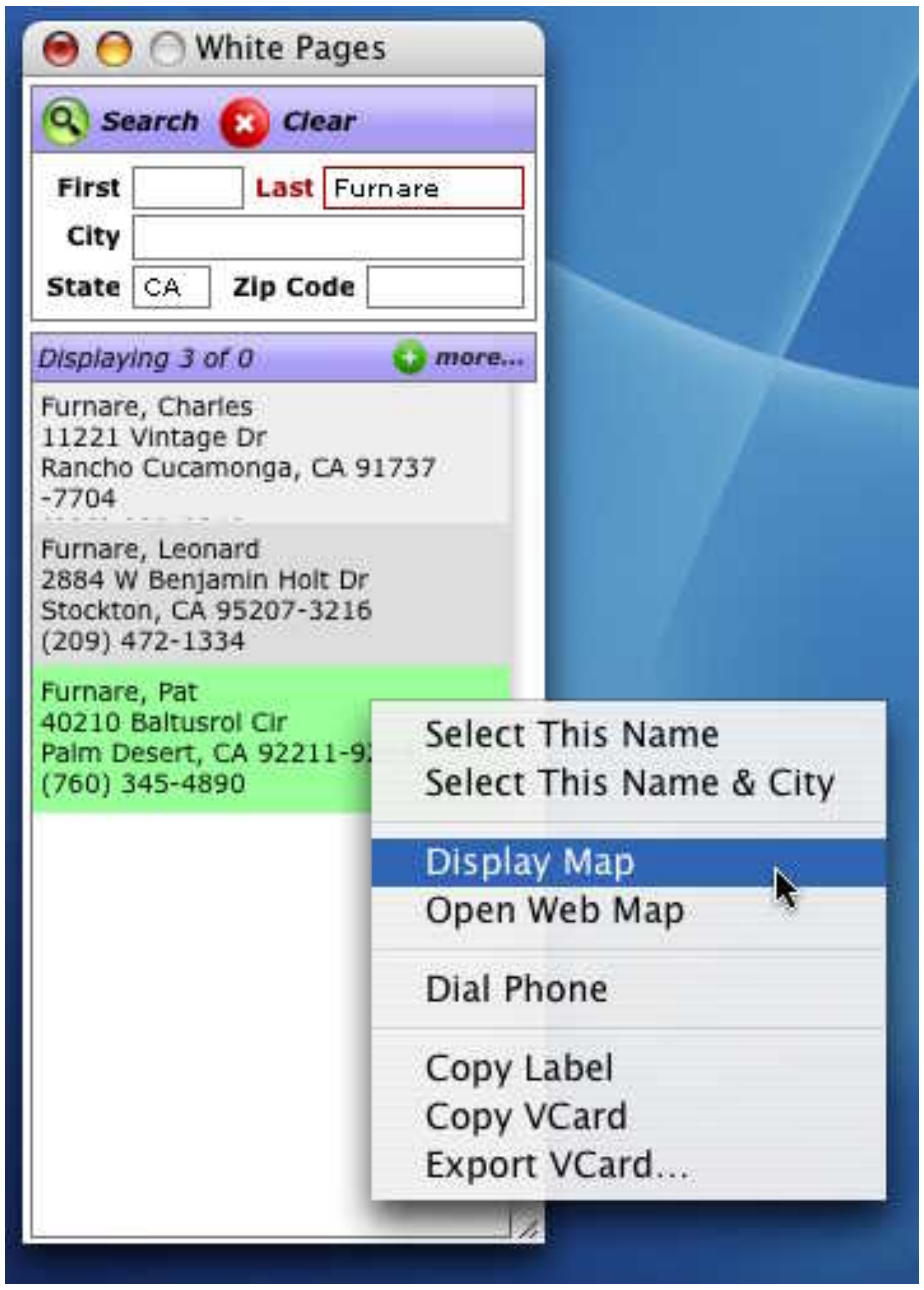
Folder: General
Created: Thu, Jan 14, 1988 @ 7:06 PM
Modified: Mon, Jul 5, 2004 @ 5:38 PM
Size: 77,966 bytes (439 records)
Authors: ProVUE Development

This database list hotels in Colorado. The example shows how to use Flash Art to display locations on a map. This database has been

To learn more about the new version of this wizard see "The Favorite Databases Wizard" on page 237.

### White Pages Wizard

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. The wizard will display any people that match the criteria you have entered. In this case there are three people named Furnare in California. Once you have located the person you want you can automatically dial them, display a map, or transfer the data to other VCard savvy applications and databases.



Last: Furnare
State: CA
Displaying 3 of 0

Furnare, Charles
11221 Vintage Dr
Rancho Cucamonga, CA 91737
-7704

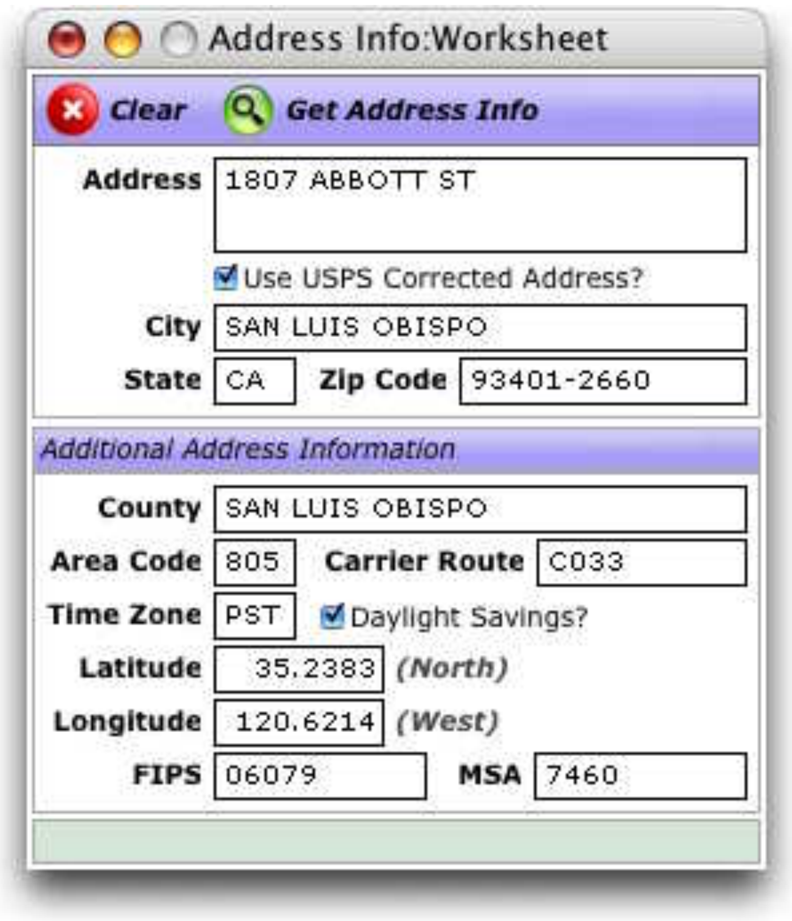
Furnare, Leonard
2884 W Benjamin Holt Dr
Stockton, CA 95207-3216
(209) 472-1334

Furnare, Pat
40210 Baltusrol Cir
Palm Desert, CA 92211-9
(760) 345-4890

For more details about this wizard see “White Pages” on page 35.

### Address Info Wizard

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.



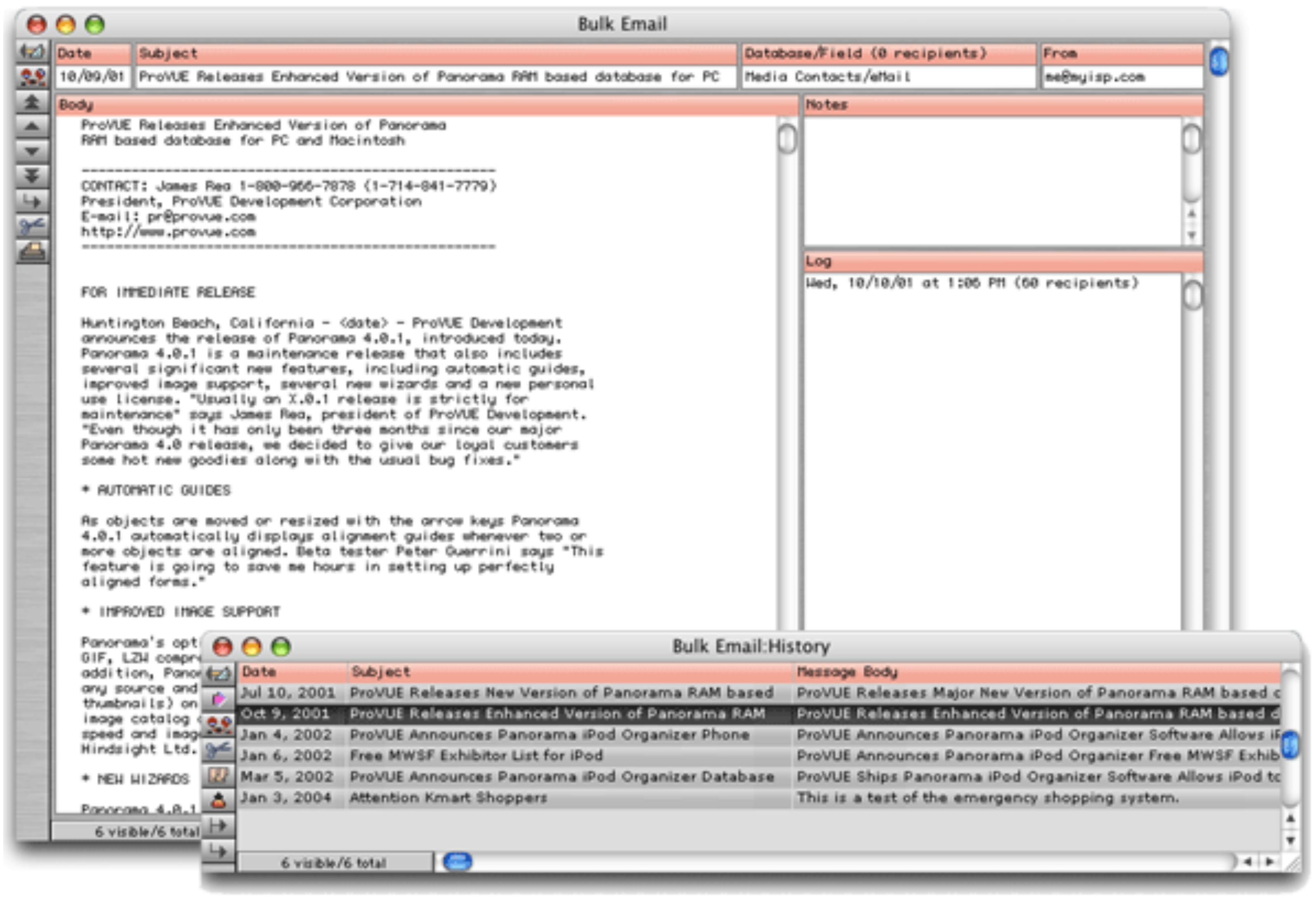
Address: 1807 ABBOTT ST
[✓] Use USPS Corrected Address?
City: SAN LUIS OBISPO
State: CA    Zip Code: 93401-2660

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

For more details about this wizard see “Address Info” on page 27.

### Bulk Email Wizard

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.



Bulk Email

| Date | Subject | Database/Field (0 recipients) | From |
|---|---|---|---|
| 10/09/01 | ProVUE Releases Enhanced Version of Panorama RAM based database for PC | Media Contacts/eMail | me@myisp.com |

Body

```
  ProVUE Releases Enhanced Version of Panorama
  RAM based database for PC and Macintosh

  -------------------------------------------------------
  CONTACT: James Rea 1-800-966-7878 (1-714-841-7779)
  President, ProVUE Development Corporation
  E-mail: pr@provue.com
  http://www.provue.com
  -------------------------------------------------------


  FOR IMMEDIATE RELEASE

  Huntington Beach, California - <date> - ProVUE Development
  announces the release of Panorama 4.0.1, introduced today.
  Panorama 4.0.1 is a maintenance release that also includes
  several significant new features, including automatic guides,
  improved image support, several new wizards and a new personal
  use license. "Usually an X.0.1 release is strictly for
  maintenance" says James Rea, president of ProVUE Development.
  "Even though it has only been three months since our major
  Panorama 4.0 release, we decided to give our loyal customers
  some hot new goodies along with the usual bug fixes."

  * AUTOMATIC GUIDES

  As objects are moved or resized with the arrow keys Panorama
  4.0.1 automatically displays alignment guides whenever two or
  more objects are aligned. Beta tester Peter Guerrini says "This
  feature is going to save me hours in setting up perfectly
  aligned forms."

  * IMPROVED IMAGE SUPPORT

  Panorama's opt
  GIF, LZW compr
  addition, Pano
  any source and
  thumbnails) on
  image catalog
  speed and imag
  Hindsight Ltd.

  * NEW WIZARDS

  Panorama 4.0.1
```

6 visible/6 total

Notes

Log

Wed, 10/10/01 at 1:06 PM (60 recipients)

Bulk Email:History

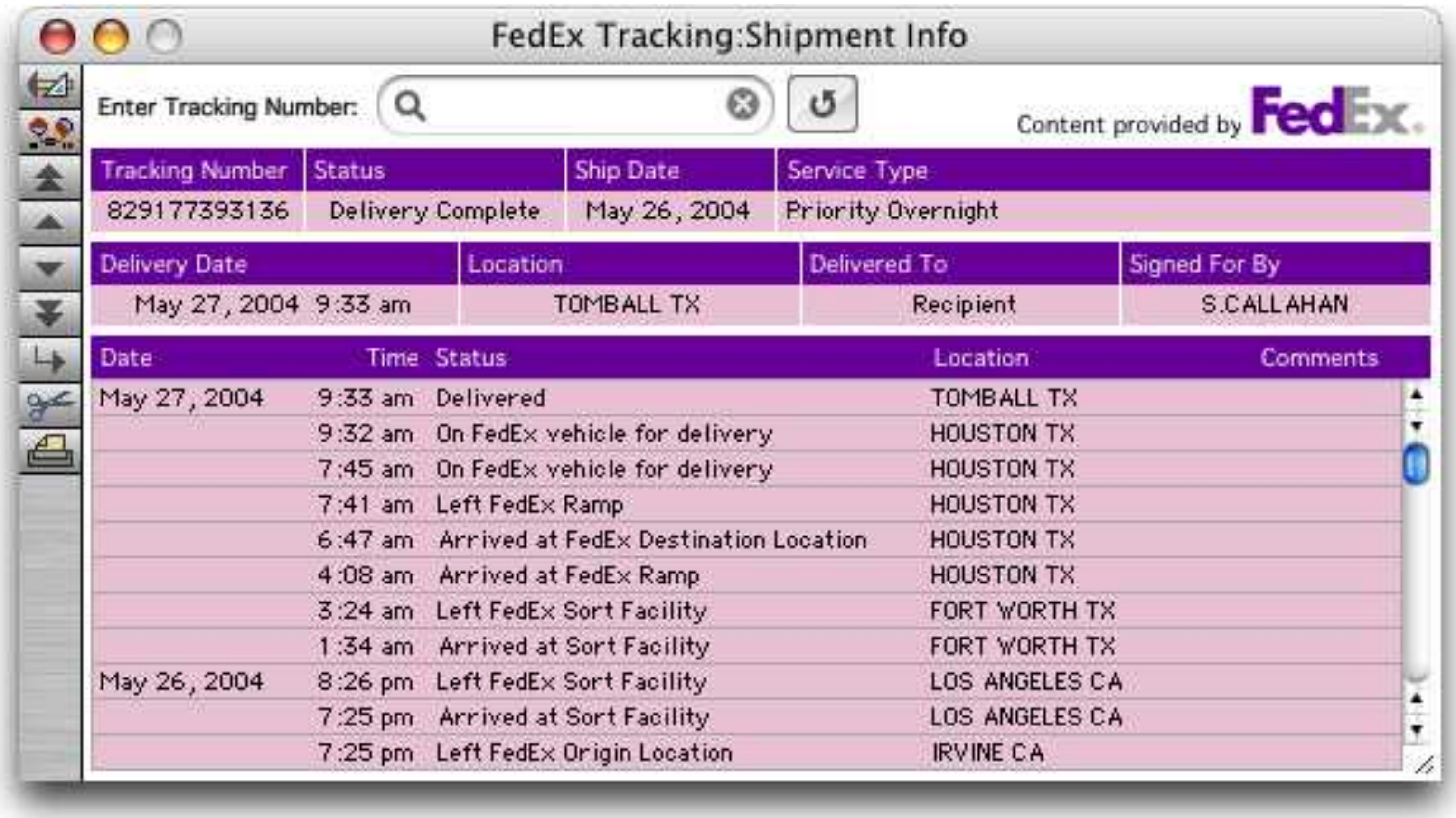
| Date | Subject | Message Body |
|---|---|---|
| Jul 10, 2001 | ProVUE Releases New Version of Panorama RAM based | ProVUE Releases Major New Version of Panorama RAM based c |
| Oct 9, 2001 | ProVUE Releases Enhanced Version of Panorama RAM | ProVUE Releases Enhanced Version of Panorama RAM based d |
| Jan 4, 2002 | ProVUE Announces Panorama iPod Organizer Phone | ProVUE Announces Panorama iPod Organizer Software Allows iP |
| Jan 6, 2002 | Free MWSF Exhibitor List for iPod | ProVUE Announces Panorama iPod Organizer Free MWSF Exhib |
| Mar 5, 2002 | ProVUE Announces Panorama iPod Organizer Database | ProVUE Ships Panorama iPod Organizer Software Allows iPod to |
| Jan 3, 2004 | Attention Kmart Shoppers | This is a test of the emergency shopping system. |

6 visible/6 total

For more details about this wizard see “Bulk Email” on page 30.

### FedEx Tracking Wizard

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 |

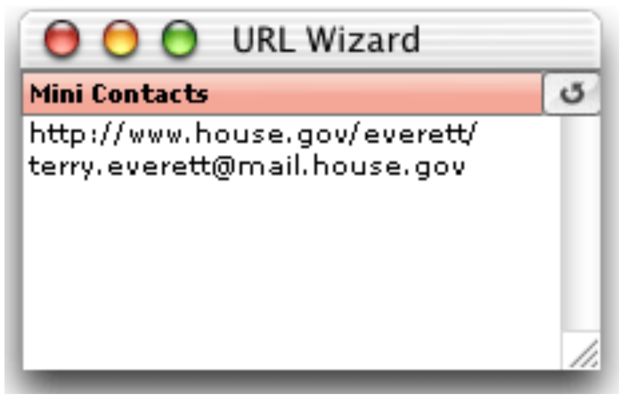
| Delivery Date | Location | Delivered To | Signed For By |
|---|---|---|---|
| May 27, 2004 9:33 am | TOMBALL TX | Recipient | S.CALLAHAN |

| 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 | |

For more details about this wizard see “Fedex Tracking” on page 32.

### 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.



http://www.house.gov/everett/
terry.everett@mail.house.gov

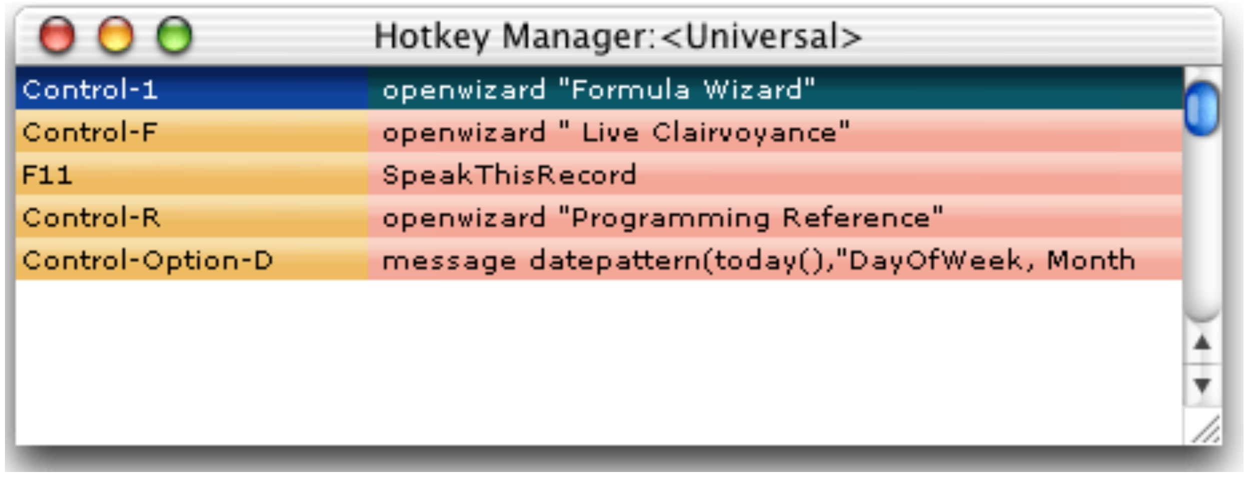
To learn more about this wizard see “URL Wizard” on page 33.

### Mini Correspondence Wizard

This wizard now understands VCards, so you can transfer address to or from your correspondence and other VCard savvy databases and applications. See “Using the Mini Correspondence Wizard” on page 855 for details.

### Hotkey Manager Wizard

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.



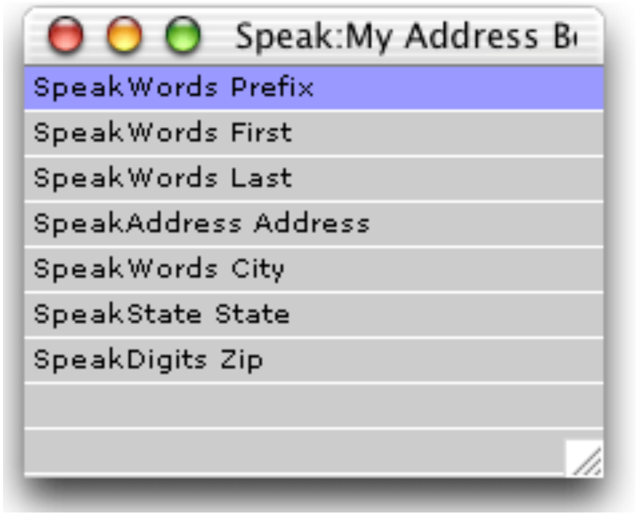
Hotkey Manager:<Universal>

| | |
|---|---|
| Control-1 | openwizard "Formula Wizard" |
| Control-F | openwizard " Live Clairvoyance" |
| F11 | SpeakThisRecord |
| Control-R | openwizard "Programming Reference" |
| Control-Option-D | message datepattern(today(),"DayOfWeek, Month |

To learn more about this wizard see “URL Wizard” on page 33.

### 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.



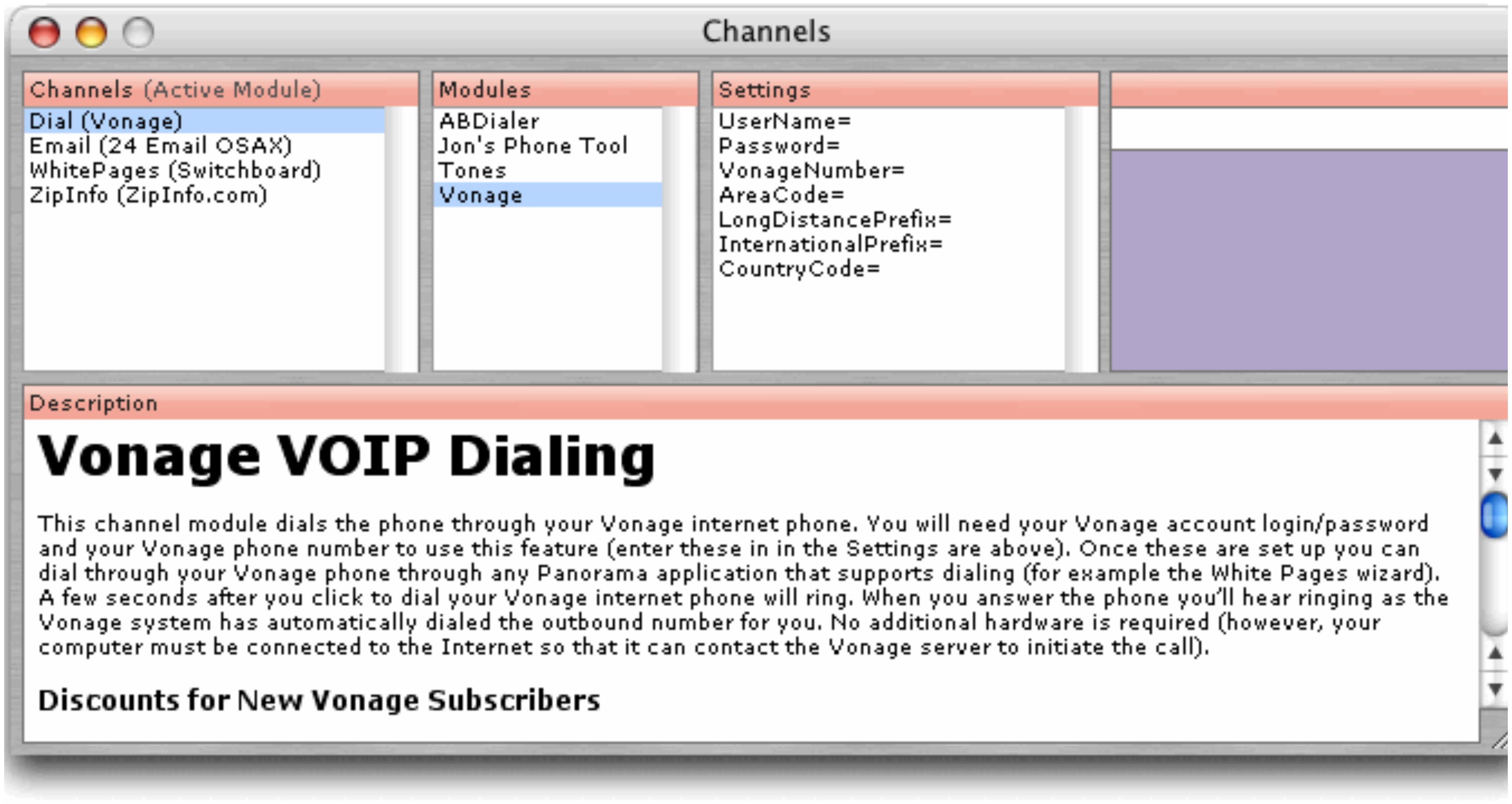
Speak:My Address B

```
SpeakWords Prefix
SpeakWords First
SpeakWords Last
SpeakAddress Address
SpeakWords City
SpeakState State
SpeakDigits Zip
```

To learn more about this wizard see “Speech Wizard” on page 62.

### Channels Wizard

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.



Dial (Vonage)
Email (24 Email OSAX)
WhitePages (Switchboard)
ZipInfo (ZipInfo.com)

ABDialer
Jon's Phone Tool
Tones
Vonage

UserName=
Password=
VonageNumber=
AreaCode=
LongDistancePrefix=
InternationalPrefix=
CountryCode=

Vonage VOIP Dialing

This channel module dials the phone through your Vonage internet phone. You will need your Vonage account login/password and your Vonage phone number to use this feature (enter these in in the Settings are above). Once these are set up you can dial through your Vonage phone through any Panorama application that supports dialing (for example the White Pages wizard). A few seconds after you click to dial your Vonage internet phone will ring. When you answer the phone you'll hear ringing as the Vonage system has automatically dialed the outbound number for you. No additional hardware is required (however, your computer must be connected to the Internet so that it can contact the Vonage server to initiate the call).

Discounts for New Vonage Subscribers

Panorama 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.

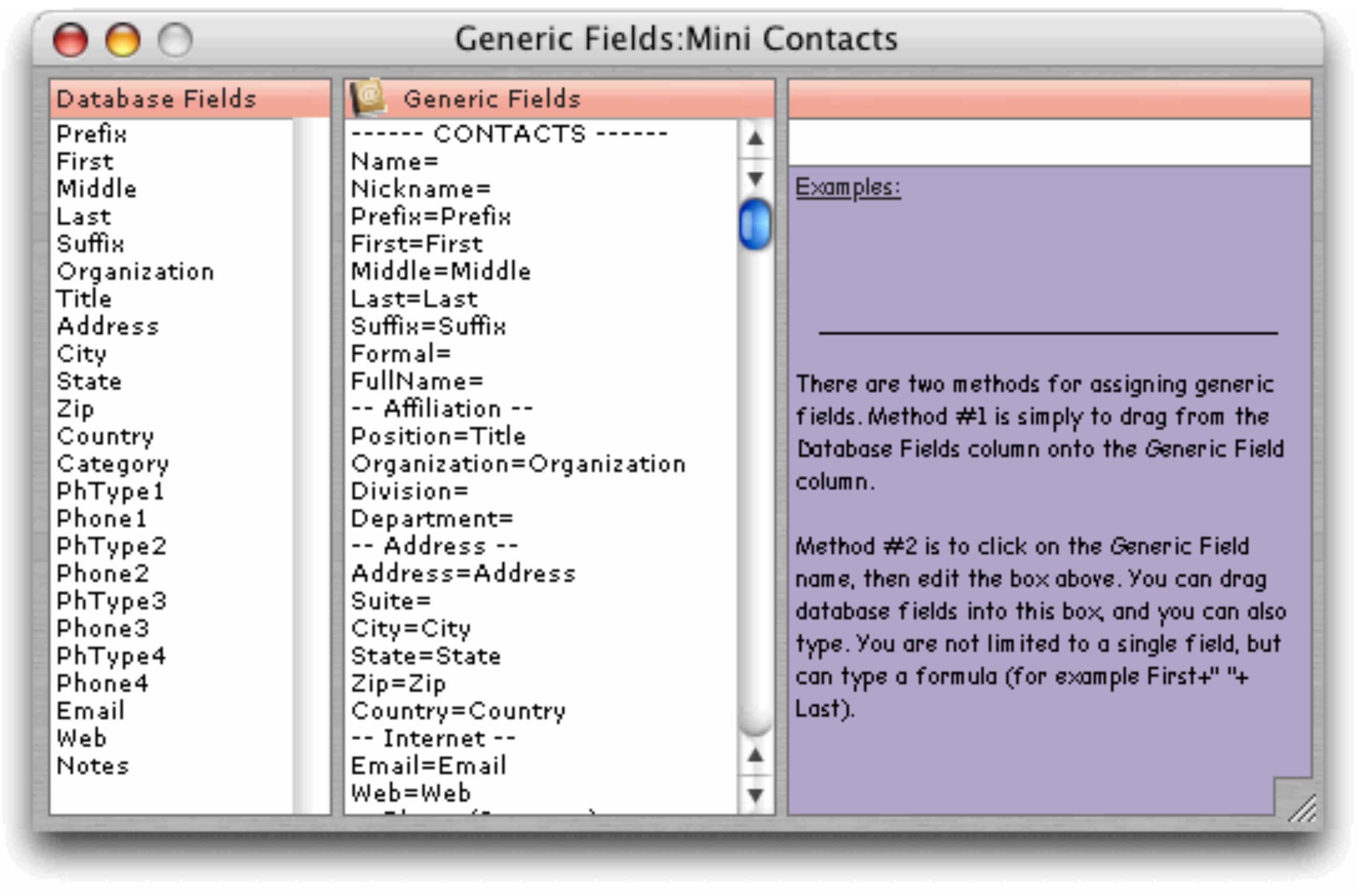
| Channel | Statement | Description |
|---|---|---|
| Dial | dialphone | Dial the phone, adding prefixes, country codes and area codes as needed. |
| | dialdigits | Dial one or more digits exactly as specified. |
| Email | sendoneemail | Send a single e-mail message. |
| | sendbulkemail | Send multiple 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. To learn more about channels see "Channels" on page 54.

### Generic Fields Wizard

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.



Database Fields:
Prefix
First
Middle
Last
Suffix
Organization
Title
Address
City
State
Zip
Country
Category
PhType1
Phone1
PhType2
Phone2
PhType3
Phone3
PhType4
Phone4
Email
Web
Notes

Generic Fields:
------ CONTACTS ------
Name=
Nickname=
Prefix=Prefix
First=First
Middle=Middle
Last=Last
Suffix=Suffix
Formal=
FullName=
-- Affiliation --
Position=Title
Organization=Organization
Division=
Department=
-- Address --
Address=Address
Suite=
City=City
State=State
Zip=Zip
Country=Country
-- Internet --
Email=Email
Web=Web

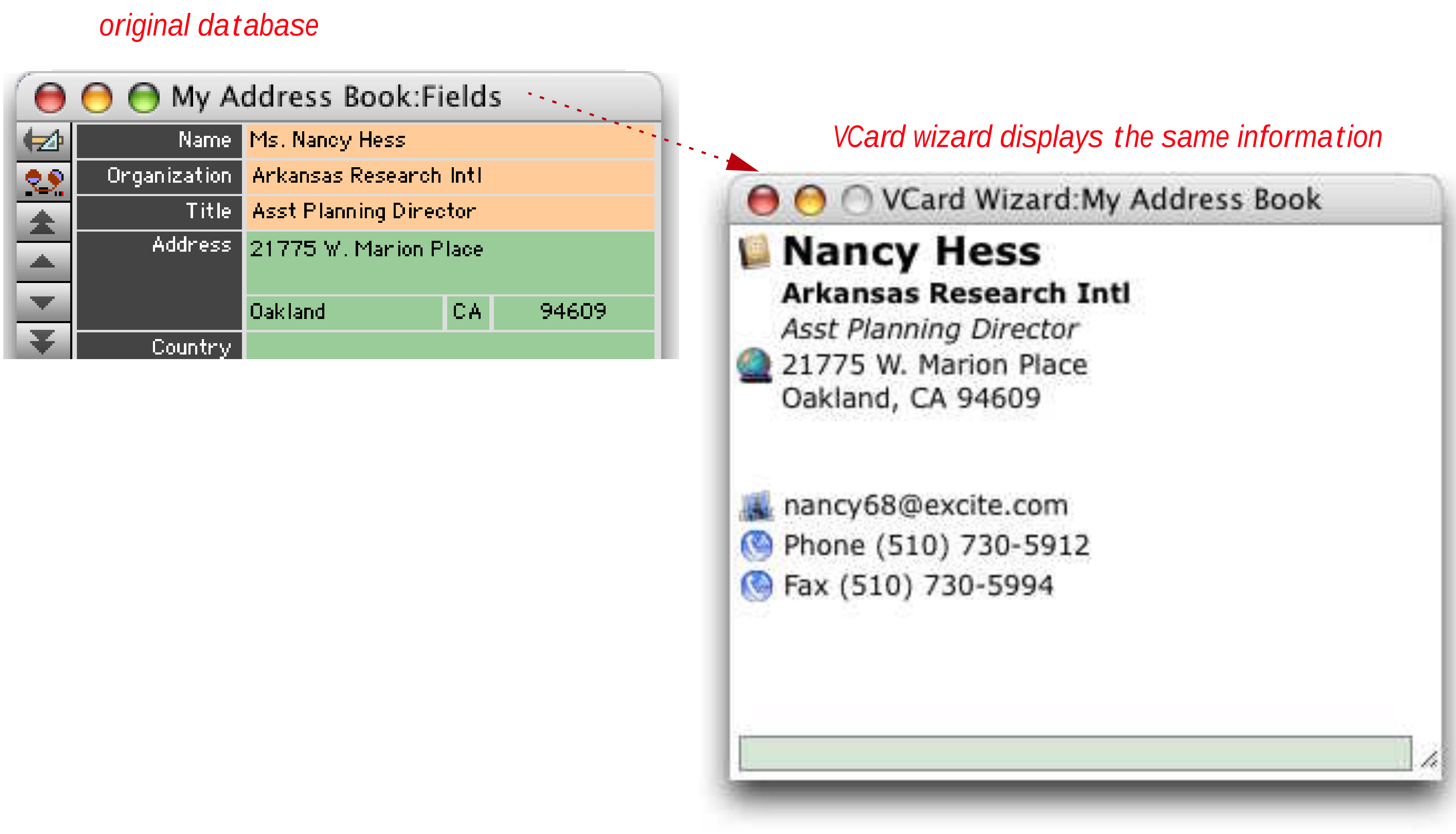
There are two methods for assigning generic fields. Method #1 is simply to drag from the Database Fields column onto the Generic Field column.

Method #2 is to click on the Generic Field name, then edit the box above. You can drag database fields into this box, and you can also type. You are not limited to a single field, but can type a formula (for example First+" "+Last).

To learn how to use this wizard see ""Generic" Fields" on page 398.

### 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.)



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:My Address Book

**Nancy Hess**
**Arkansas Research Intl**
*Asst Planning Director*
21775 W. Marion Place
Oakland, CA 94609

nancy68@excite.com
Phone (510) 730-5912
Fax (510) 730-5994

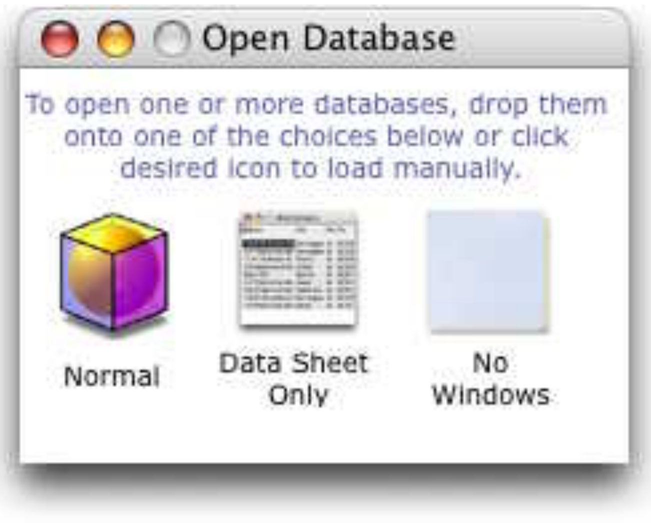
With the **VCard Wizard** you can:

- 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.

### Open Database Wizard

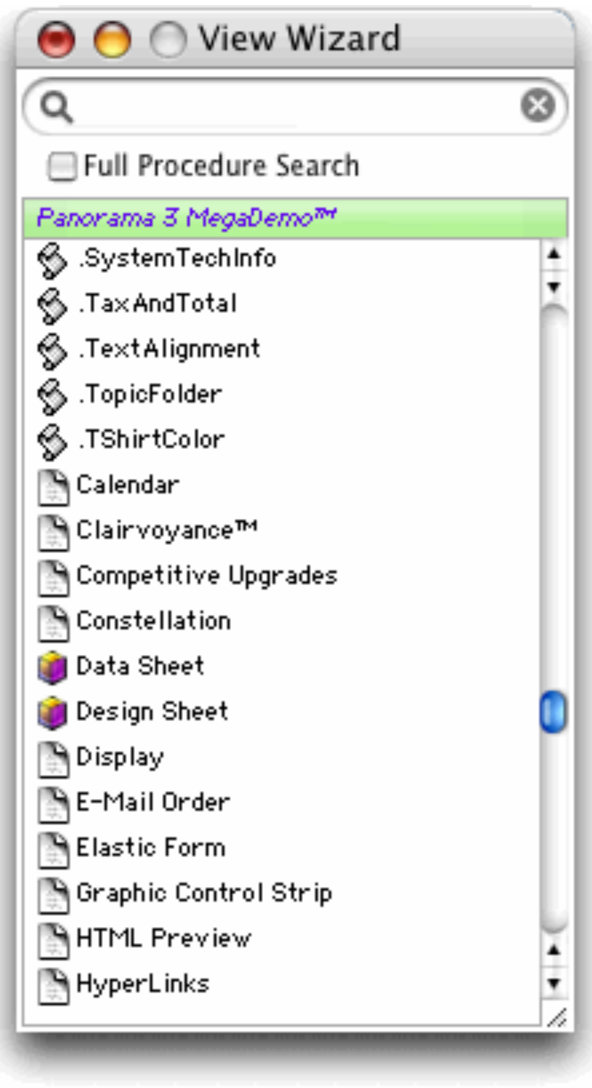
The standard techniques for opening a database (double clicking, **Open File** dialog, **Favorite Databases** wizard, etc.) will work fine in 99,999 of 100,000 cases. Sometimes, however, you may need to use a more specialized technique to open a database. For example, if a database has lost it's MacOS 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.


Open Database
To open one or more databases, drop them onto one of the choices below or click desired icon to load manually.
Normal
Data Sheet Only
No Windows

To learn more about these wizards see "Advanced Database Opening Techniques" on page 246.

### View Wizard

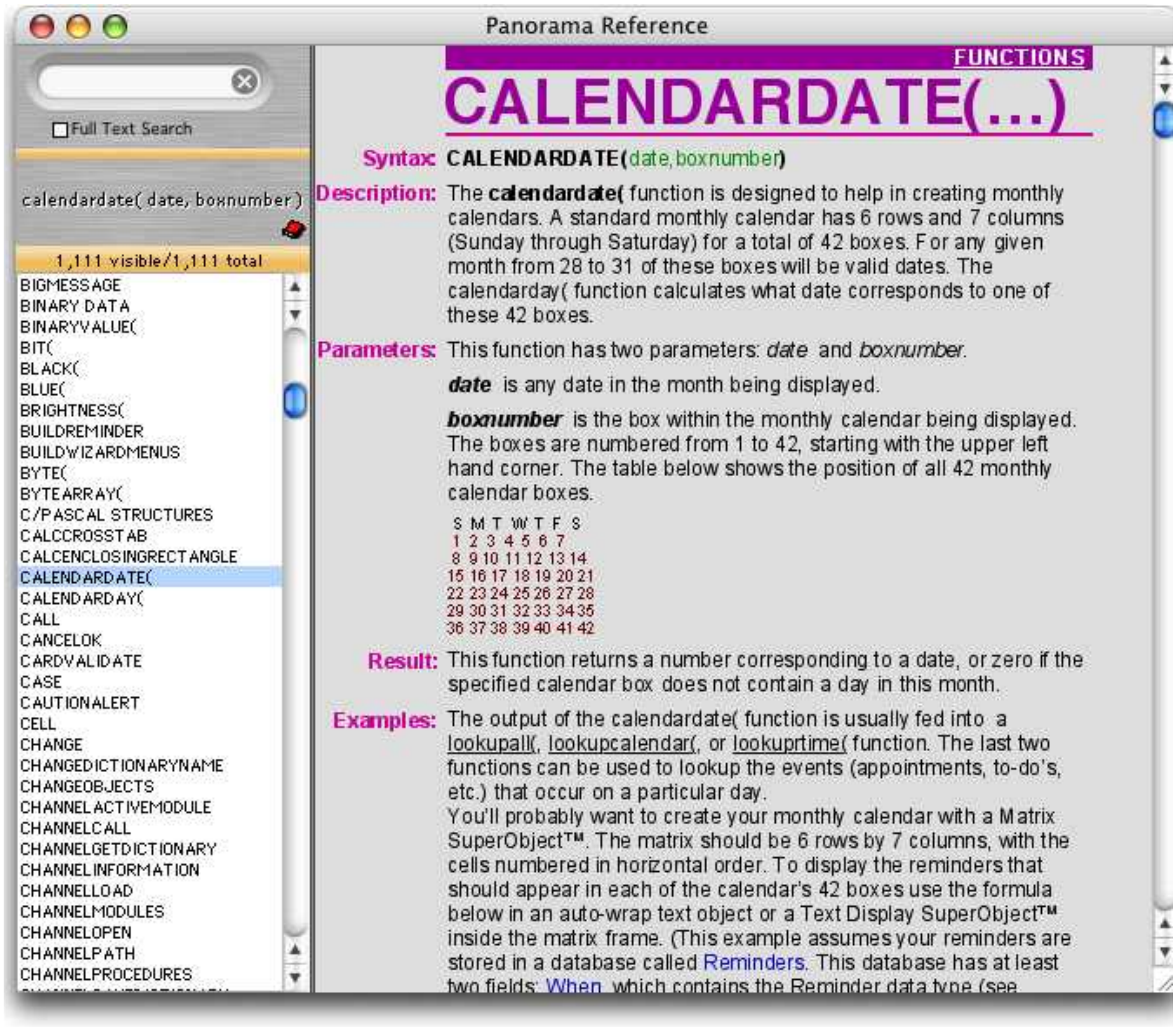
The **View Wizard** has been completely rewritten with a streamlined interface..



To learn more about the new version of this wizard see "The View Wizard" on page 355.

**Programming Reference Wizard**

The new **Programming Reference** features live searching and an improved user interface.



Panorama Reference

☐ Full Text Search

calendardate( date, boxnumber )

1,111 visible/1,111 total

BIGMESSAGE
BINARY DATA
BINARYVALUE(
BIT(
BLACK(
BLUE(
BRIGHTNESS(
BUILDREMINDER
BUILDWIZARDMENUS
BYTE(
BYTEARRAY(
C/PASCAL STRUCTURES
CALCCROSSTAB
CALCENCLOSINGRECTANGLE
CALENDARDATE(
CALENDARDAY(
CALL
CANCELOK
CARDVALIDATE
CASE
CAUTIONALERT
CELL
CHANGE
CHANGEDICTIONARYNAME
CHANGEOBJECTS
CHANNELACTIVEMODULE
CHANNELCALL
CHANNELGETDICTIONARY
CHANNELINFORMATION
CHANNELLOAD
CHANNELMODULES
CHANNELOPEN
CHANNELPATH
CHANNELPROCEDURES

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 |

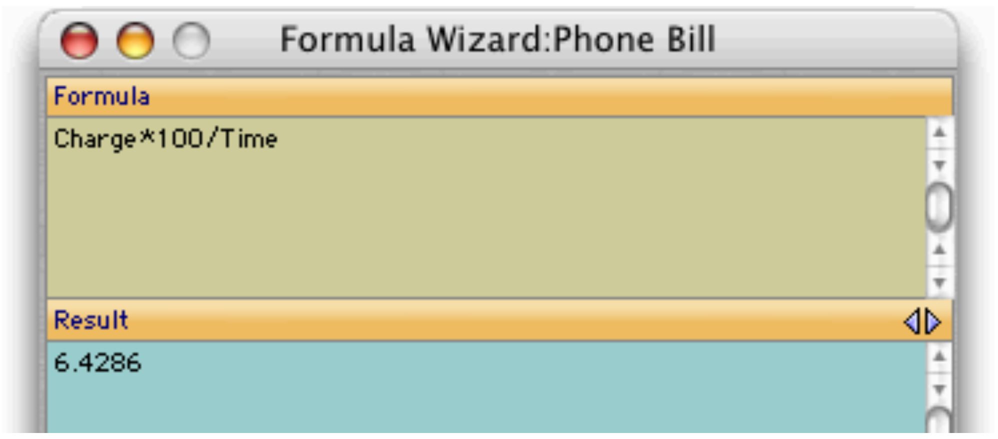
**Result:** This function returns a number corresponding to a date, or zero if the specified calendar box does not contain a day in this month.

**Examples:** The output of the calendardate( function is usually fed into a lookupall(, lookupcalendar(, or lookuprtime( 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).

### Formula Wizard

The **Formula Wizard** has an updated user interface, see “Using the Formula Wizard” on page 1303.

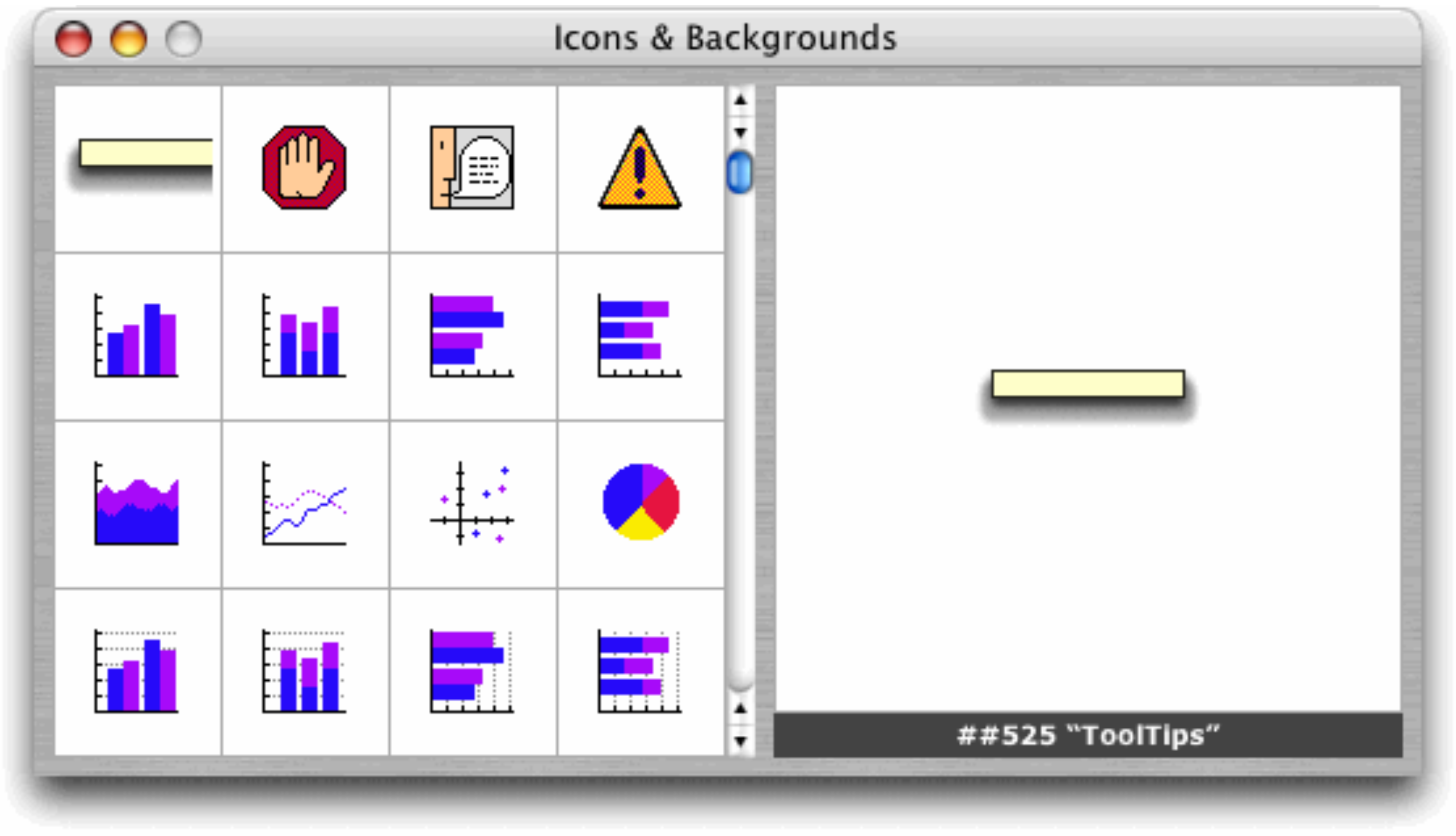


Charge*100/Time

6.4286

### Icons & Backgrounds Wizard

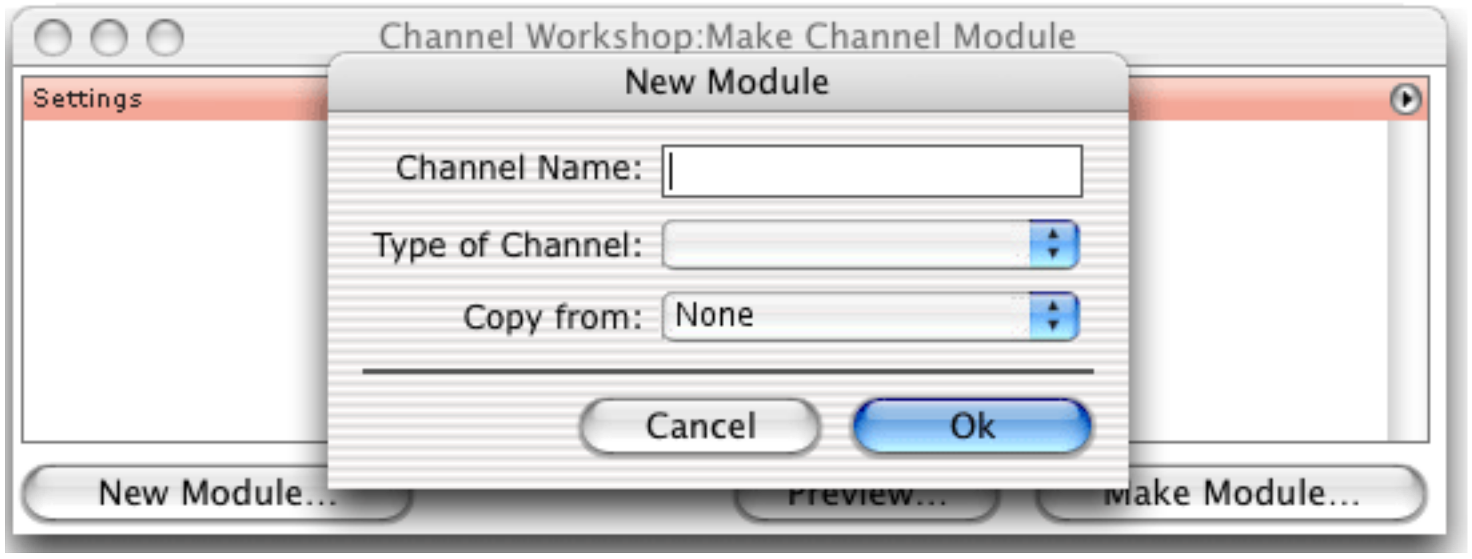
Panorama includes a number of resource based images within the application itself. Most of these are used by Panorama in various windows and dialogs, but they are available for use in your databases also. To see a list of these images open the **Icons & Backgrounds** wizard in the Form Tools submenu of the Wizard menu.



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

### Channel Workshop Wizard

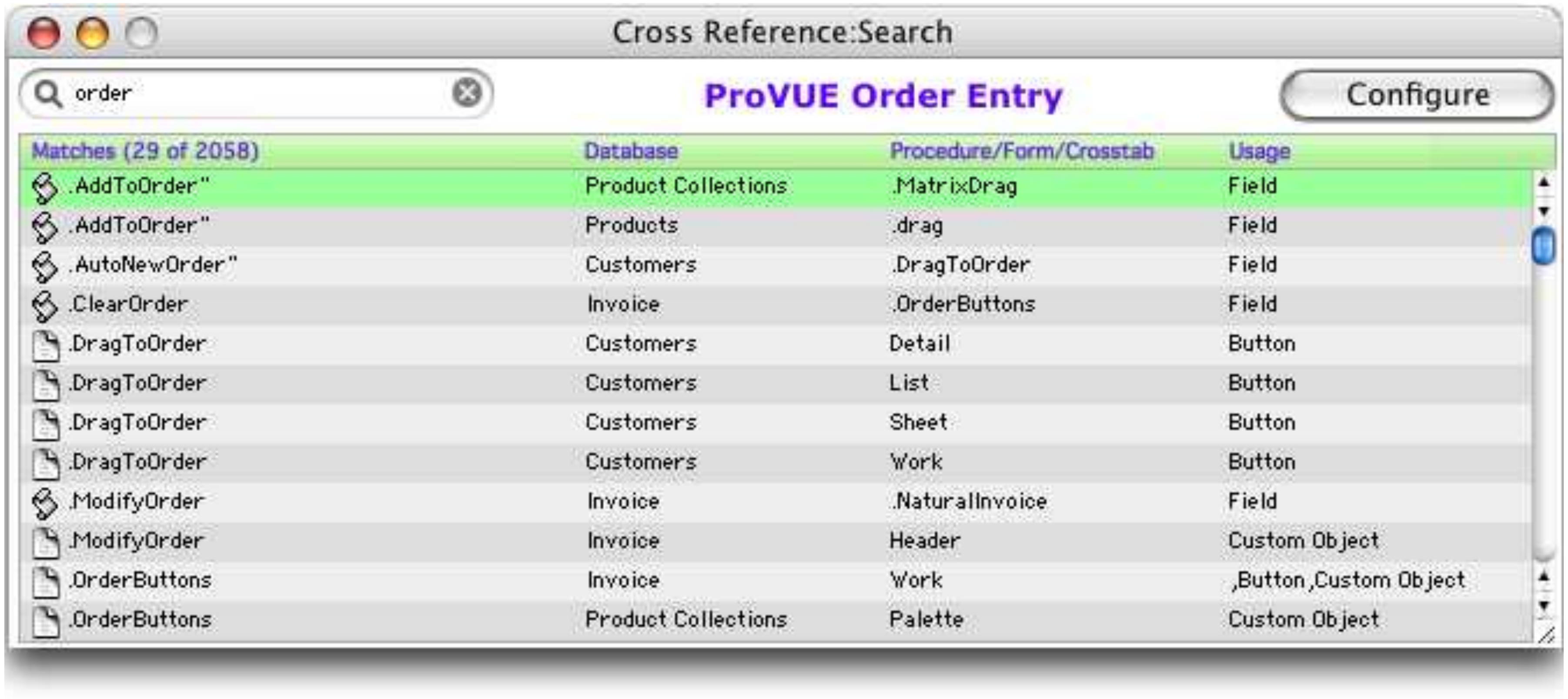
Panorama comes with a number of channel modules for sending e-mail, dialing the phone, and interfacing with other web sites and third party software. If you have programming experience you can write your own channel modules. To help make this easier we have created a **Channel Workshop** wizard that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

Panorama's **Cross Reference** feature has been turned into a wizard, and has an all new user interface!

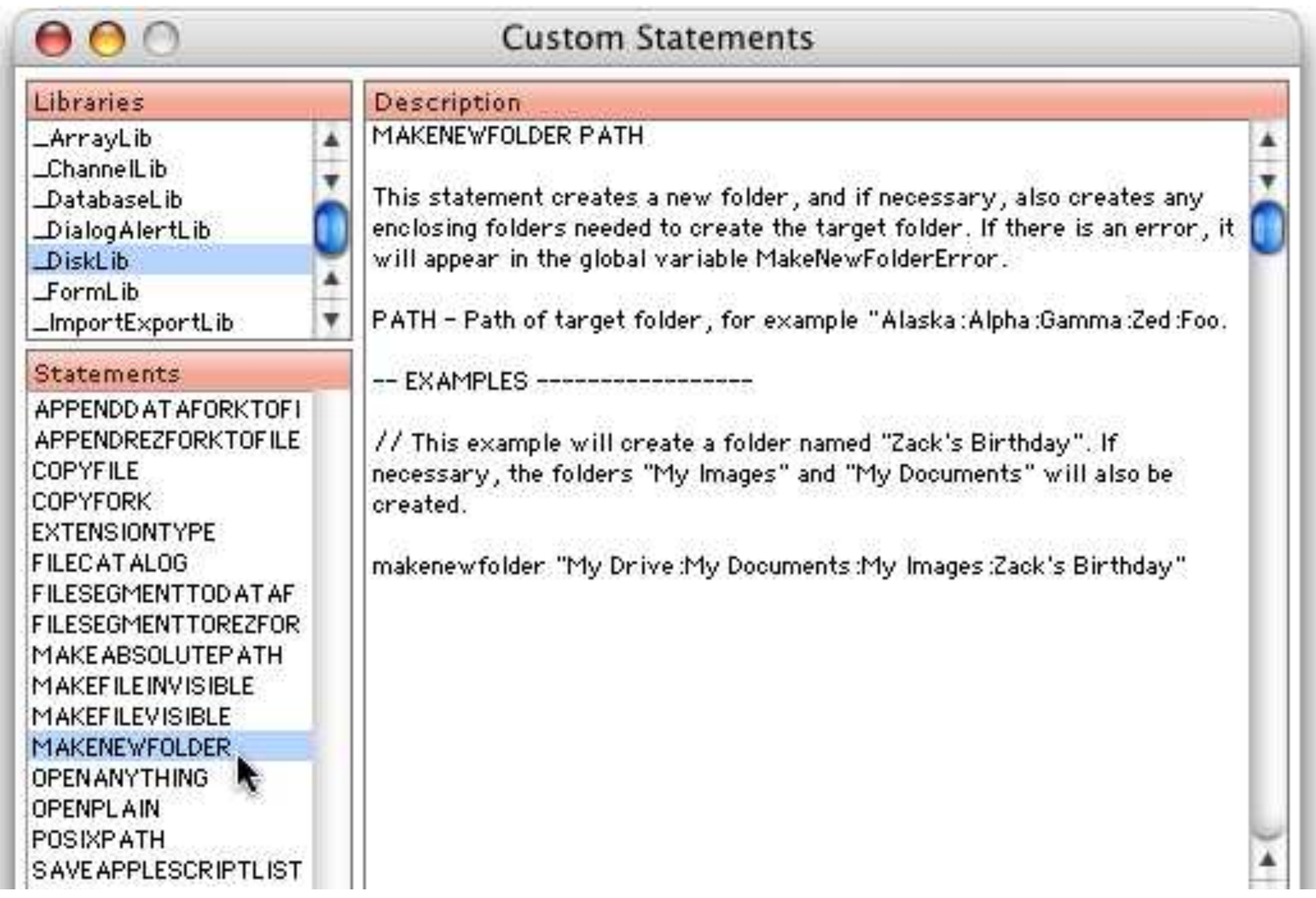


| Matches (29 of 2058) | Database | Procedure/Form/Crosstab | Usage |
|---|---|---|---|
| .AddToOrder" | Product Collections | .MatrixDrag | Field |
| .AddToOrder" | Products | .drag | Field |
| .AutoNewOrder" | Customers | .DragToOrder | Field |
| .ClearOrder | Invoice | .OrderButtons | Field |
| .DragToOrder | 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 Statement and Function Wizards

Panorama V allows you to define custom statements and functions, and there are three wizards to help.

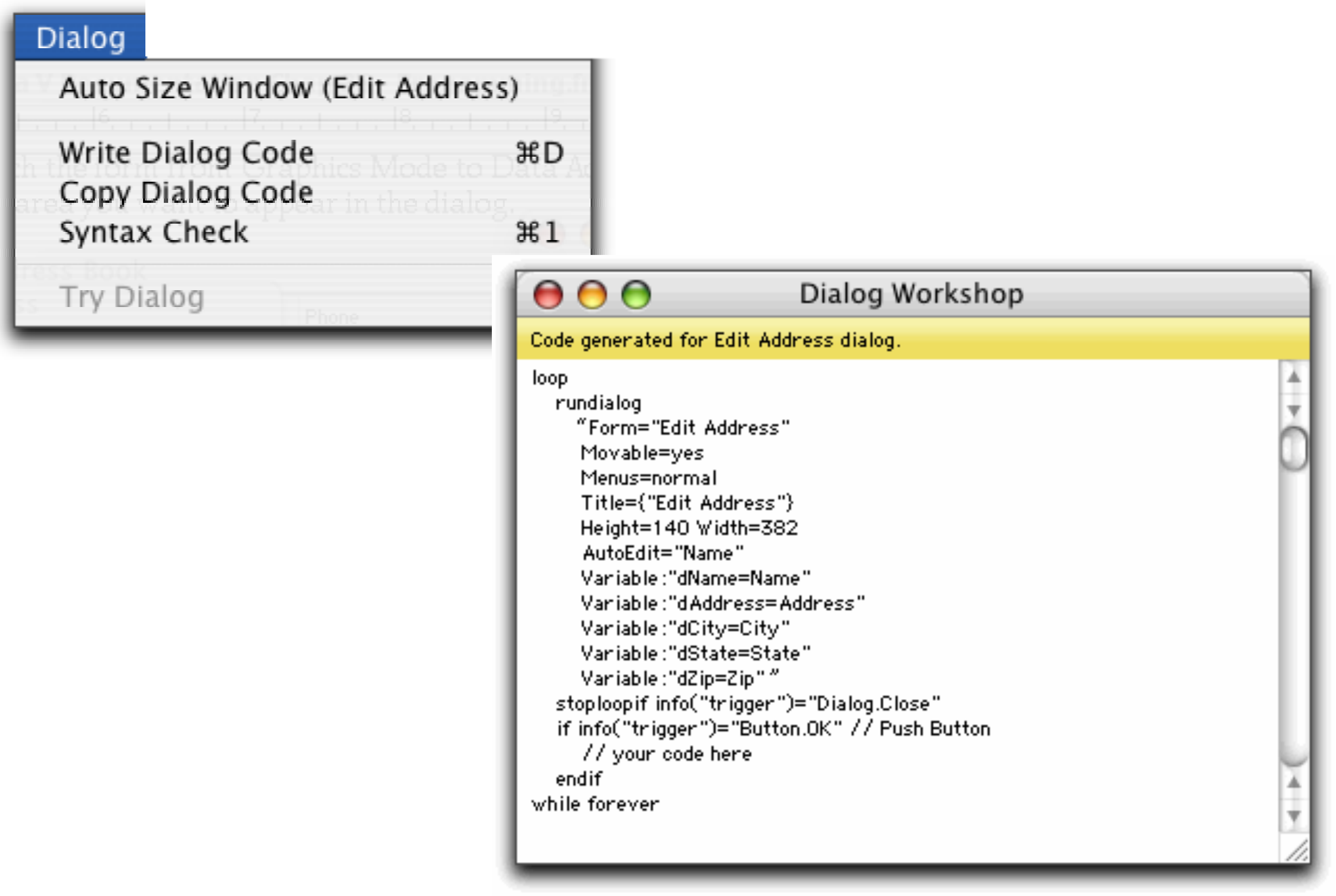


```
MAKENEWFOLDER PATH

This statement creates a new folder, and if necessary, also creates any
enclosing folders needed to create the target folder. If there is an error, it
will appear in the global variable MakeNewFolderError.

PATH - Path of target folder, for example "Alaska:Alpha:Gamma:Zed:Foo.

-- EXAMPLES -----------------

// This example will create a folder named "Zack's Birthday". If
necessary, the folders "My Images" and "My Documents" will also be
created.

makenewfolder "My Drive:My Documents:My Images:Zack's Birthday"
```

For more information on Custom Functions see “Custom Statements” on page 1536 and “Custom Functions” on page 1461.

### Dialog Workshop Wizard

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.



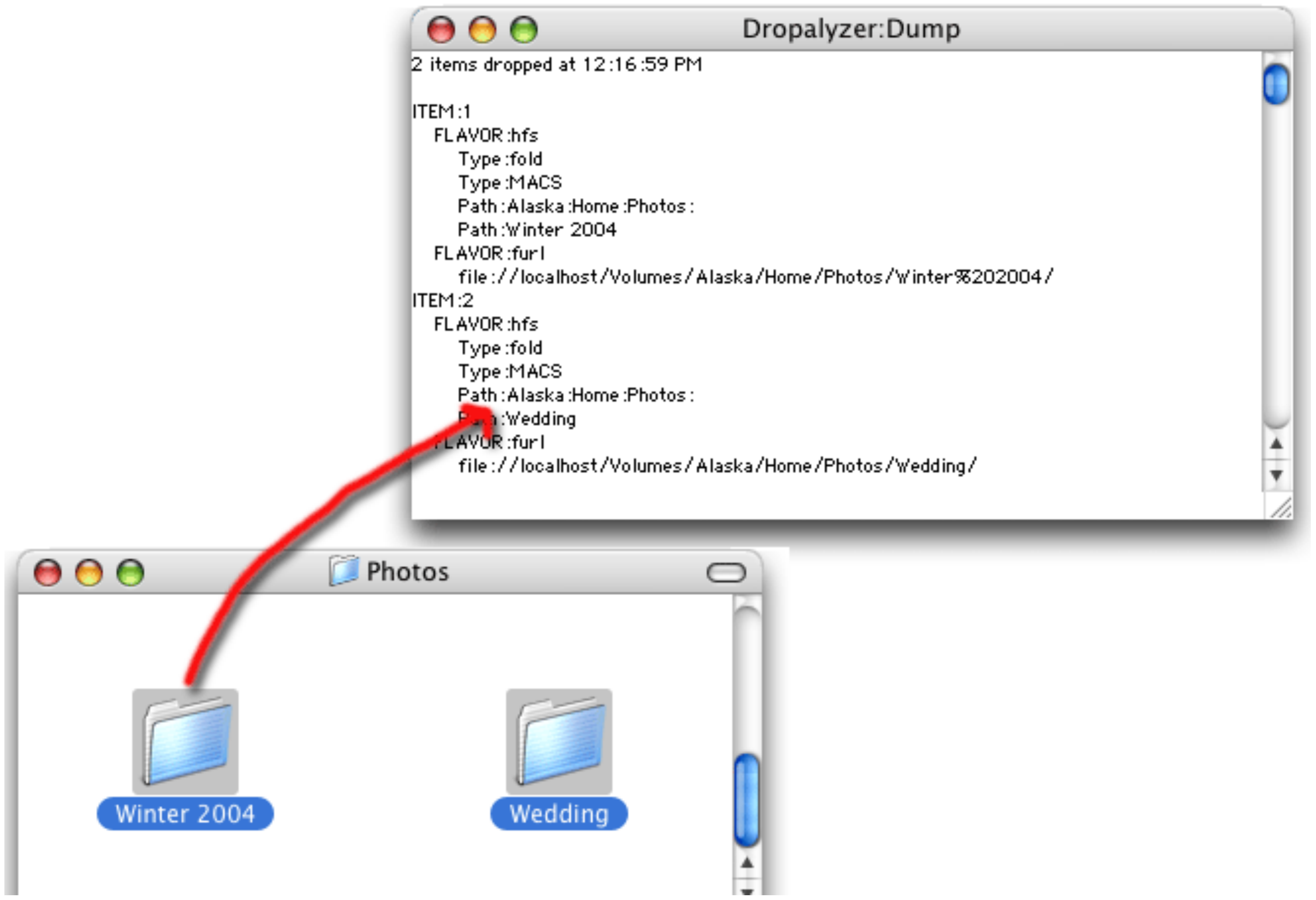
Code generated for Edit Address dialog.

```
loop
   rundialog
      “Form="Edit Address"
      Movable=yes
      Menus=normal
      Title={"Edit Address"}
      Height=140 Width=382
      AutoEdit="Name"
      Variable:"dName=Name"
      Variable:"dAddress=Address"
      Variable:"dCity=City"
      Variable:"dState=State"
      Variable:"dZip=Zip"”
   stoploopif info("trigger")="Dialog.Close"
   if info("trigger")="Button.OK" // Push Button
      // your code here
   endif
while forever
```

To learn more about this wizard see “Custom Dialogs” on page 1744.

### Dropalyzer Wizard

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.

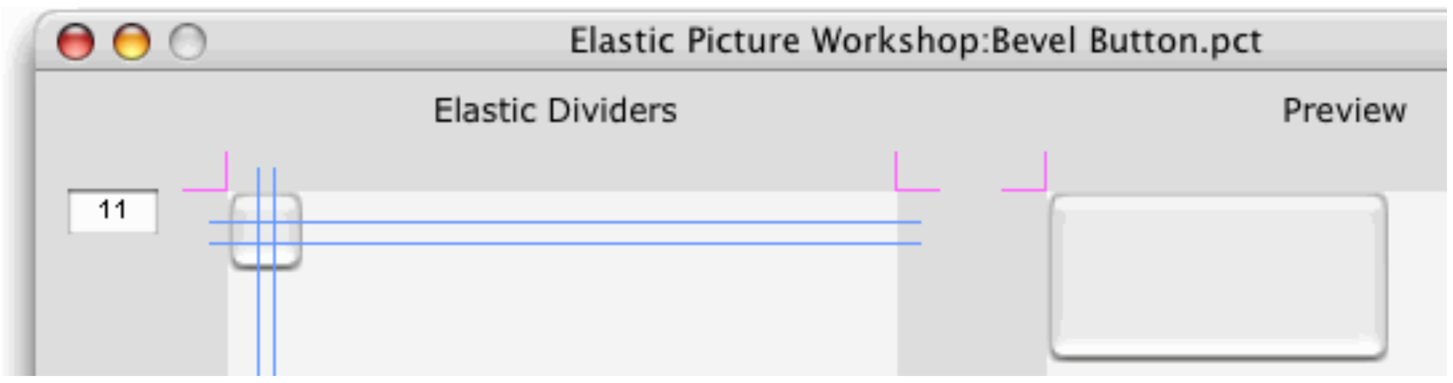


```
2 items dropped at 12:16:59 PM

ITEM:1
  FLAVOR:hfs
    Type:fold
    Type:MACS
    Path:Alaska:Home:Photos:
    Path:Winter 2004
  FLAVOR:furl
    file://localhost/Volumes/Alaska/Home/Photos/Winter%202004/
ITEM:2
  FLAVOR:hfs
    Type:fold
    Type:MACS
    Path:Alaska:Home:Photos:
    Path:Wedding
  FLAVOR:furl
    file://localhost/Volumes/Alaska/Home/Photos/Wedding/
```

To learn more about this wizard see “The Dropalyzer Wizard” on page 1899.

### Elastic Picture Workshop

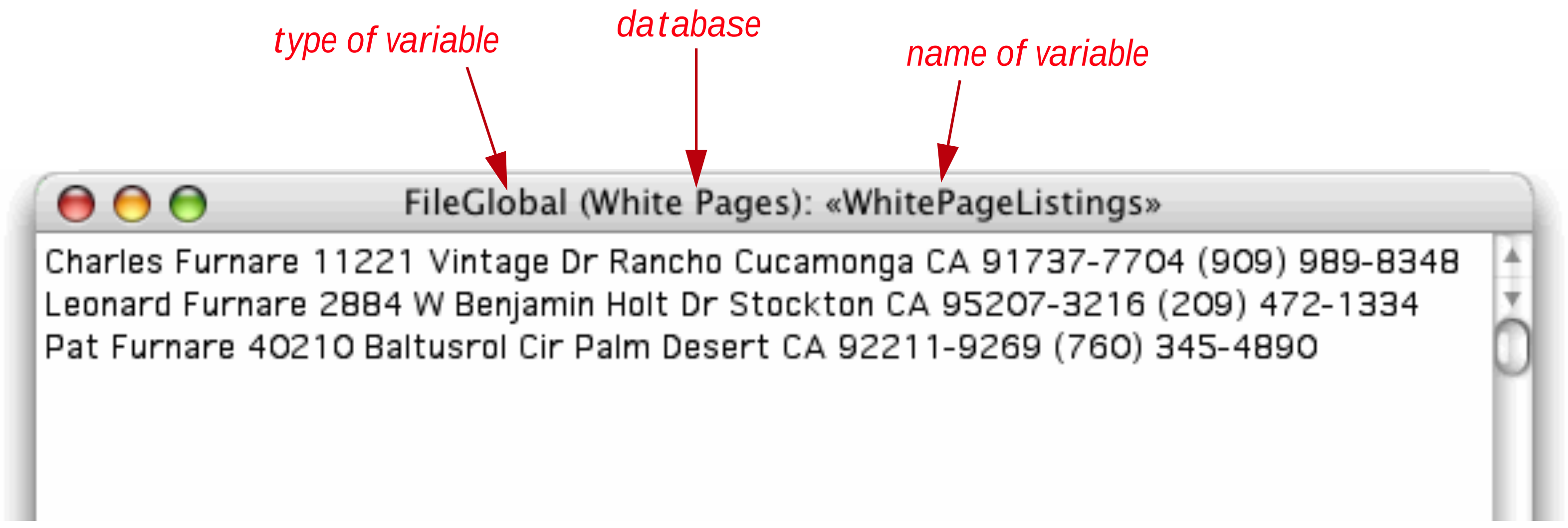
Many forms require borders, buttons and widgets need to be used over and over again but with different sizes. Any image can be stretched with the Scale to Fit option, but the result is often a distorted image. The **Elastic Picture Workshop** wizard can be used to add stretching information to an image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



To learn more about this wizard see “Elastic Pictures” on page 928.

### Variables Wizard

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

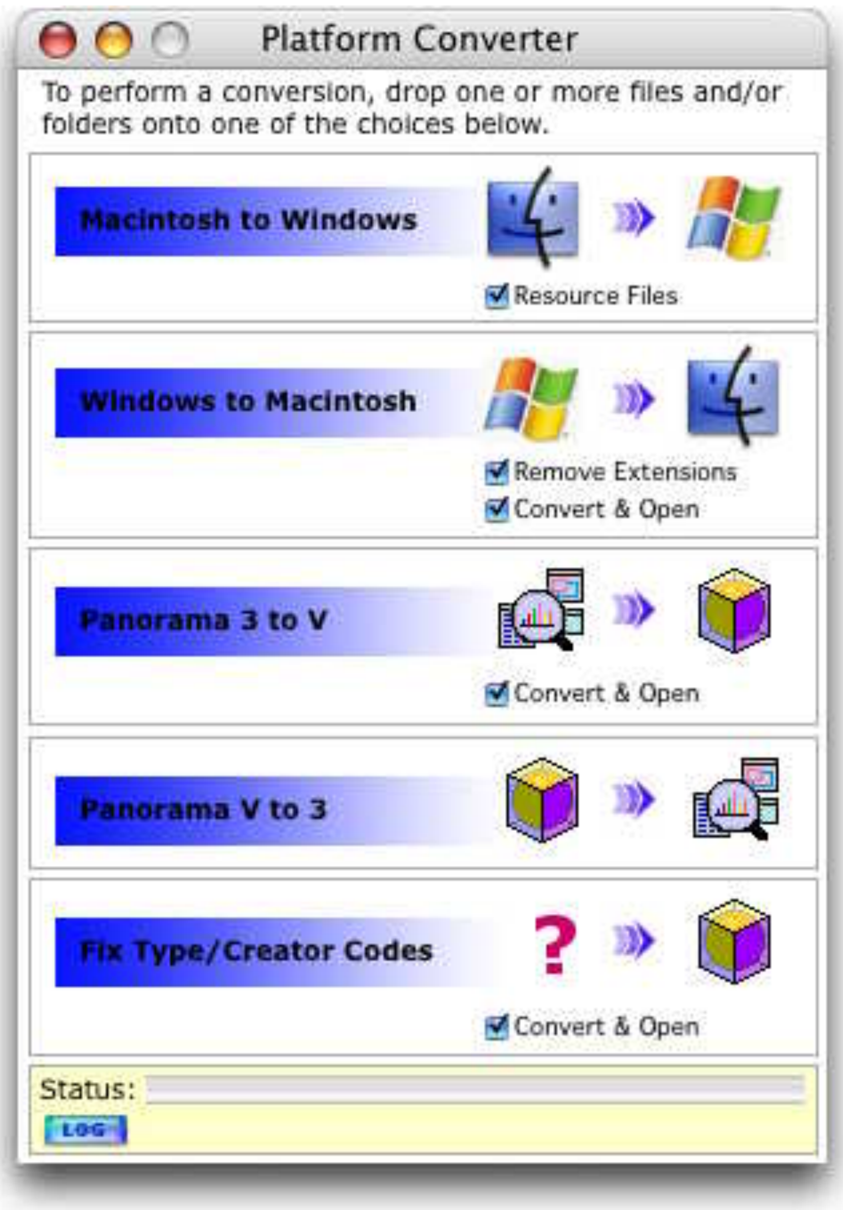


Charles Furnare 11221 Vintage Dr Rancho Cucamonga CA 91737-7704 (909) 989-8348
Leonard Furnare 2884 W Benjamin Holt Dr Stockton CA 95207-3216 (209) 472-1334
Pat Furnare 40210 Baltusrol Cir Palm Desert CA 92211-9269 (760) 345-4890

To learn more about this wizard see "Displaying and Changing Variables" on page 1504.

### Platform Converter Wizard

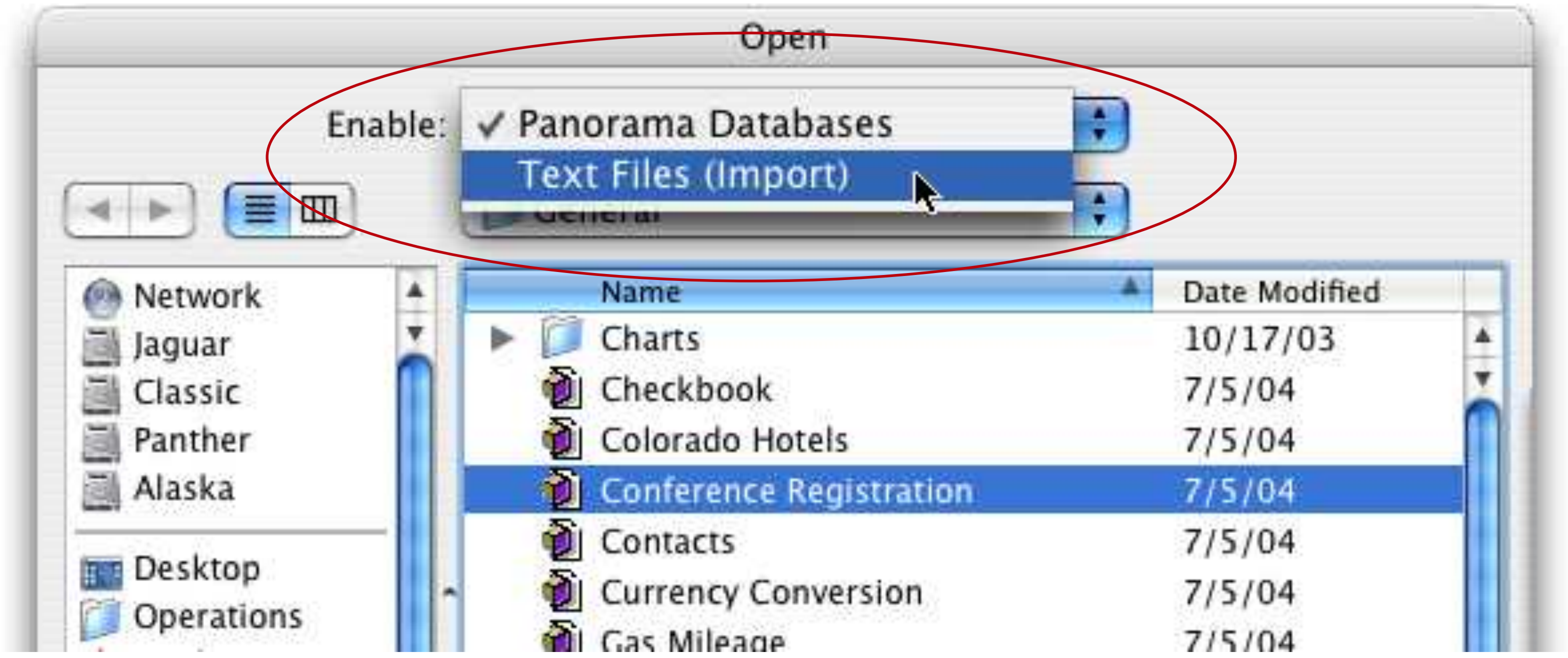
The **Platform Converter** has been completely rewritten to use drag-and-drop.



For more information about this wizard see "Platform Converter Wizard" on page 1984.

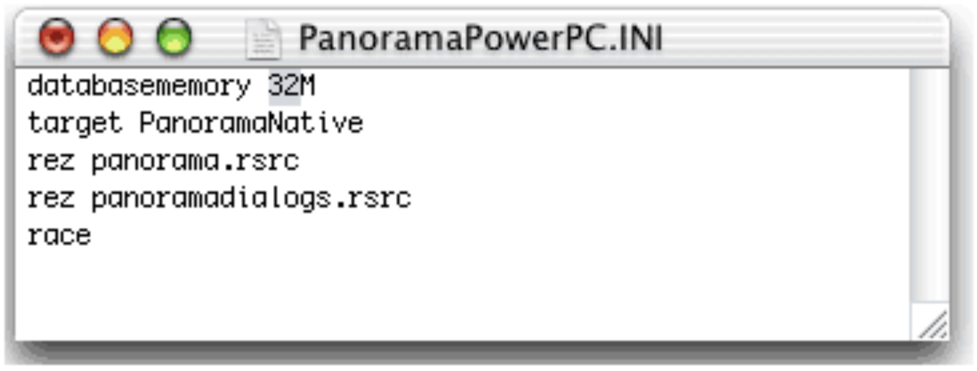
## Importing with the Open File Dialog

Panorama now uses the "navigation services" dialogs for opening and saving files on Mac OS X and OS 9. These dialogs are slightly different than the older Mac OS 6/7/8 style dialogs that Panorama 4.0 and earlier versions used. Instead of using radio buttons to select the type of file to import, these new dialogs use the Enable: pop-up menu at the top of the dialog.



## Panorama Memory Allocation

When using Mac OS 9, Panorama V's default scratch memory allocation has been increased to 2 megabytes. When using OS X memory allocation is handled differently. There is no scratch memory allocation under OS X. The default data allocation is 32 megabytes. If your databases are larger than this you must edit the PanoramaPowerPC.ini file. You can double click to open this file with the text editor. (Note: Be sure you open PanoramaPowerPC.ini and not Panorama.ini. If you open the wrong file, don't worry, just close it and open the correct file.) The file should look something like this:

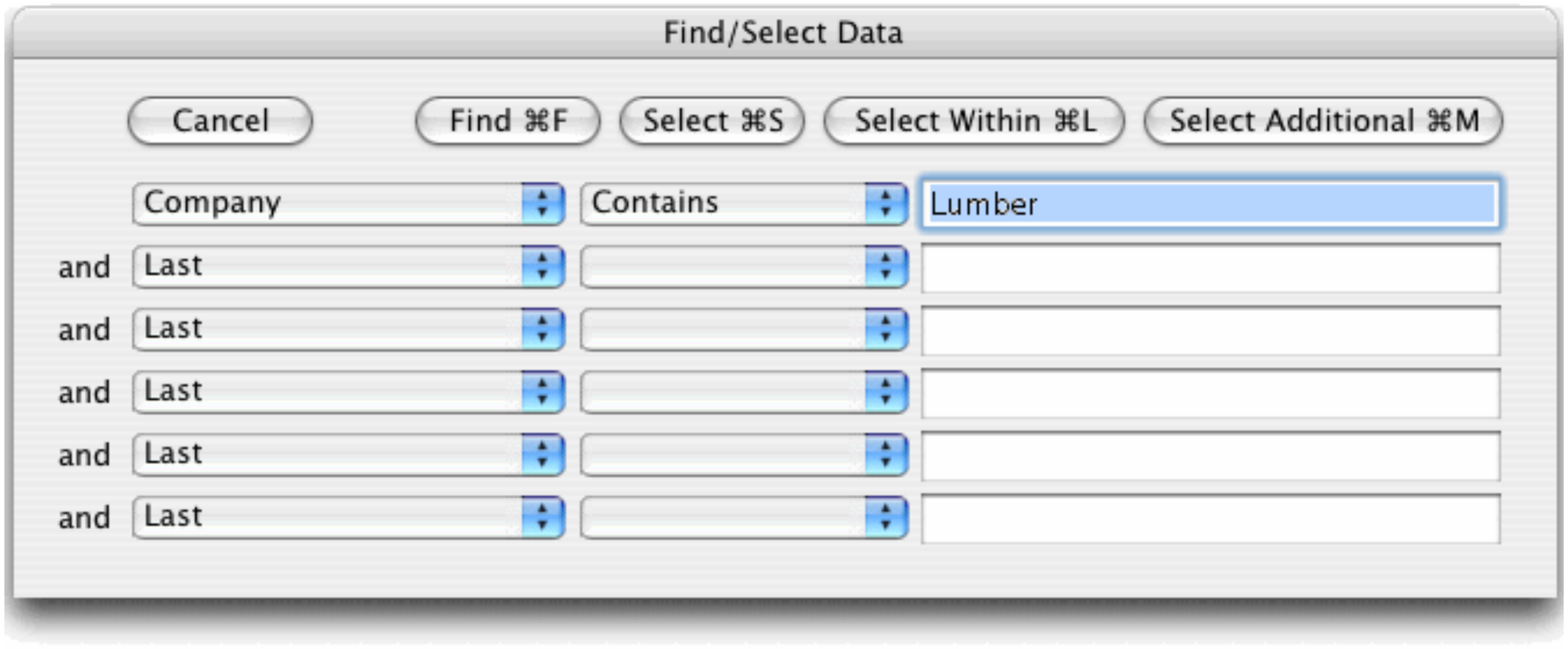

PanoramaPowerPC.INI

```
databasememory 32M
target PanoramaNative
rez panorama.rsrc
rez panoramadialogs.rsrc
race
```

The `databasememory` line controls the amount of memory allocated by Panorama for databases. You may set this to any value from 3M to 1999M. (Don't forget the M!). However, if you set this value to larger than the physical amount of memory available on your computer, you may reduce the amount of virtual memory available for other applications. We do not recommend opening databases that are larger than the physical memory size of your computer. Panorama will open the file and operate correctly, but it's performance may be severely degraded. Once you have set the new value save and close the window, then relaunch Panorama if necessary. For more information see "Adjusting Panorama's Memory Allocation (Windows and OS X)" on page 317.

## Find/Select Dialog

The **Find/Select** dialog no longer expands and shrinks - it always appears at its full six line maximum height, as shown here.

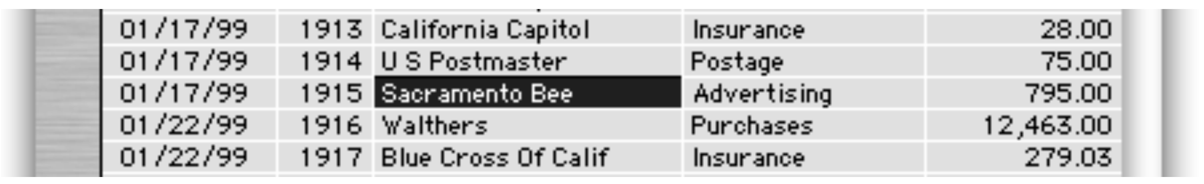


| | | | |
|---|---|---|---|
| | Company | Contains | Lumber |
| and | Last | | |
| and | Last | | |
| and | Last | | |
| and | Last | | |
| and | Last | | |

## Manually Toggling Summary Records

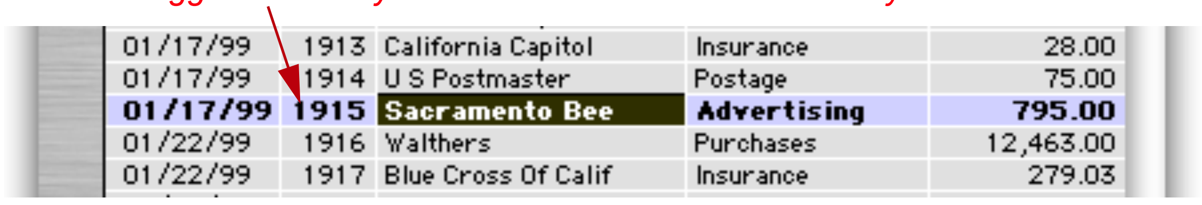
To turn a normal data record into a summary record, click anywhere in the record in the data sheet, then choose the **Toggle Summary Level** command in the Sort menu. Each time you choose this command will toggle between normal and summary. (In previous versions of Panorama you could click on the + sign at the left edge of the data sheet, but this feature has been removed because many users would click it accidentally and then wonder why their database no longer sorted correctly. Now you have to use the **Toggle Summary Level** command.)

*start with an ordinary record…*



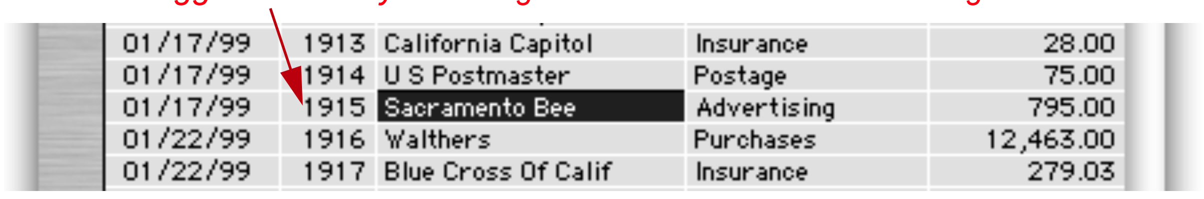
| | | | | |
|---|---|---|---|---|
| 01/17/99 | 1913 | California Capitol | Insurance | 28.00 |
| 01/17/99 | 1914 | U S Postmaster | Postage | 75.00 |
| 01/17/99 | 1915 | Sacramento Bee | Advertising | 795.00 |
| 01/22/99 | 1916 | Walthers | Purchases | 12,463.00 |
| 01/22/99 | 1917 | Blue Cross Of Calif | Insurance | 279.03 |

*Choose Toggle Summary Level to convert it to a summary record*



| | | | | |
|---|---|---|---|---|
| 01/17/99 | 1913 | California Capitol | Insurance | 28.00 |
| 01/17/99 | 1914 | U S Postmaster | Postage | 75.00 |
| **01/17/99** | **1915** | **Sacramento Bee** | **Advertising** | **795.00** |
| 01/22/99 | 1916 | Walthers | Purchases | 12,463.00 |
| 01/22/99 | 1917 | Blue Cross Of Calif | Insurance | 279.03 |

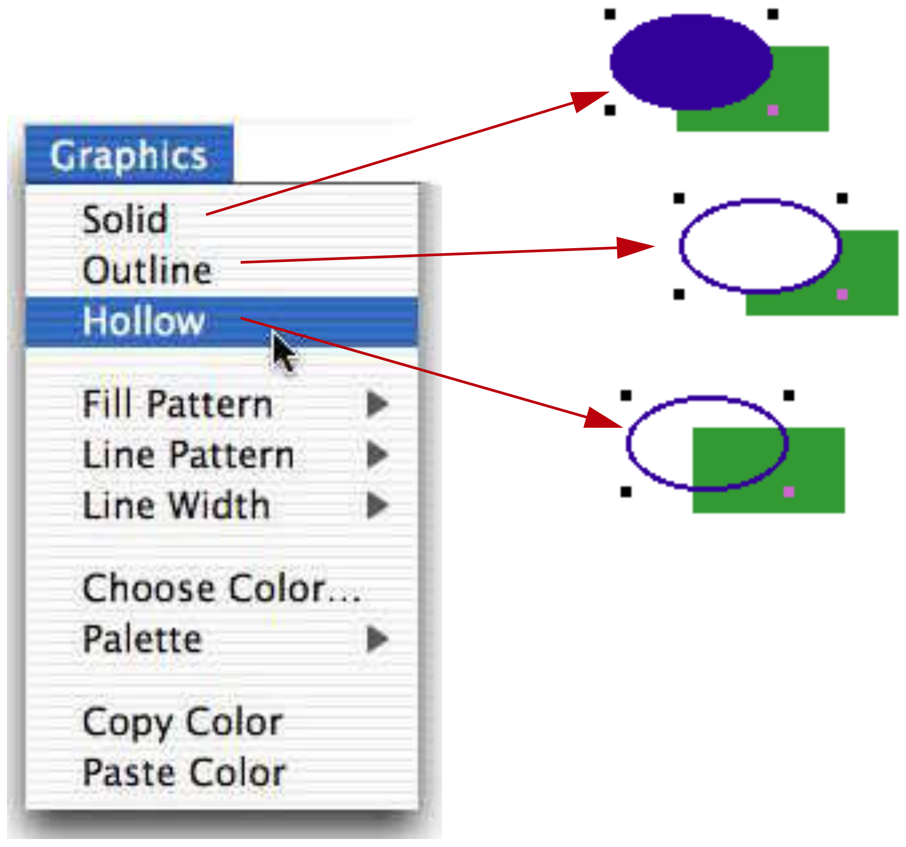
*Choose Toggle Summary Level again to convert it back to a regular record*



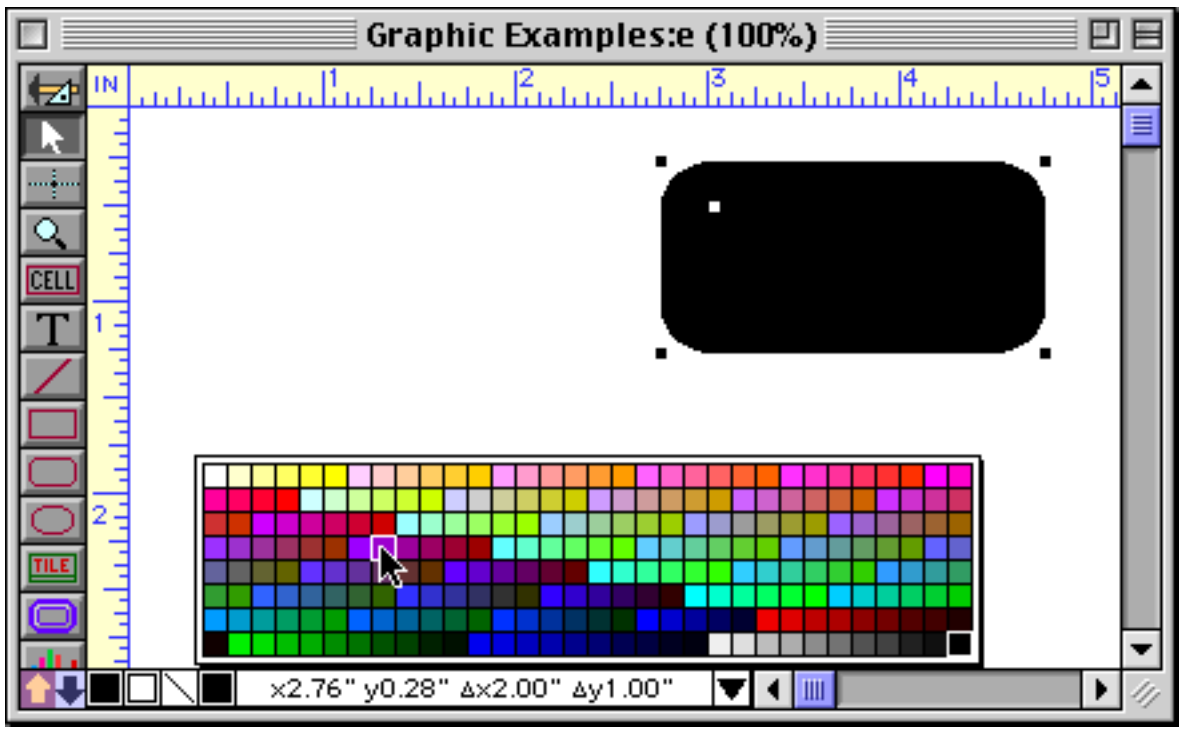
| | | | | |
|---|---|---|---|---|
| 01/17/99 | 1913 | California Capitol | Insurance | 28.00 |
| 01/17/99 | 1914 | U S Postmaster | Postage | 75.00 |
| 01/17/99 | 1915 | Sacramento Bee | Advertising | 795.00 |
| 01/22/99 | 1916 | Walthers | Purchases | 12,463.00 |
| 01/22/99 | 1917 | Blue Cross Of Calif | Insurance | 279.03 |

## Enhanced Graphics Menu

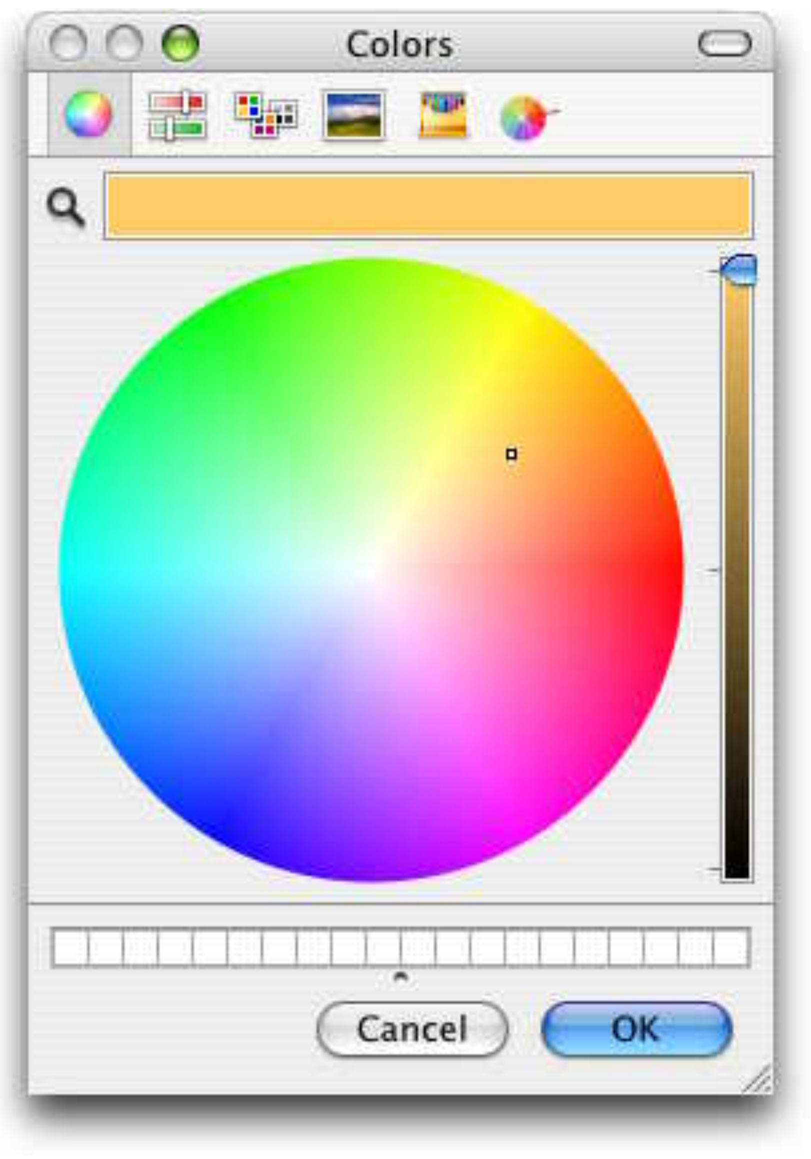
The **Graphics** menu (which appears in Graphics Mode) controls the texture and color of objects on a form. Panorama V adds several new items to this menu. The first three choices in the Graphics menu, **Solid**, **Outline** and **Hollow**, set the fill and line patterns of the selected objects to their most common choices, as shown in the diagram below (see "Solid, Outline and Hollow Objects" on page 648).



Previous versions of Panorama required that you choose object colors from a pre-defined 256 color palette.

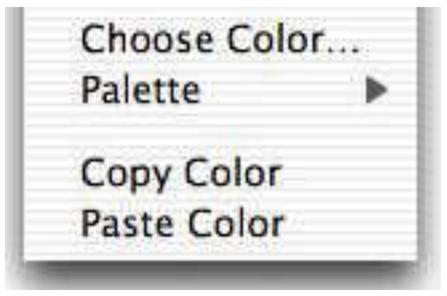


To choose a color that is not one of the 256 colors in the palette, use the **Choose Colors** command in the Graphics menu. The system's standard Color selection dialog will appear, allowing you to choose any of millions of colors.



You can also open this dialog by holding down the **Control** key (Mac) while clicking the color swatch in the Control strip. On PC systems you can right click the swatch. See "Color" on page 654.

Sometimes you'll want one object to exactly match the color of another object. You can use the **Copy Color** and **Paste Color** commands to transfer a color from one object to one or more other objects.



Start by selecting the object that has the color you want, then choose the **Copy Color** command. This copies the color into a special clipboard. Now select the other objects that you want to set to this color and choose the **Paste Color** command. The selected objects will change to the same color as the original object. (Note: The color clipboard is completely separate from the normal clipboard that is used for other copy and paste operations.) See "Copying and Pasting Colors" on page 656.

## Text Display and Editing

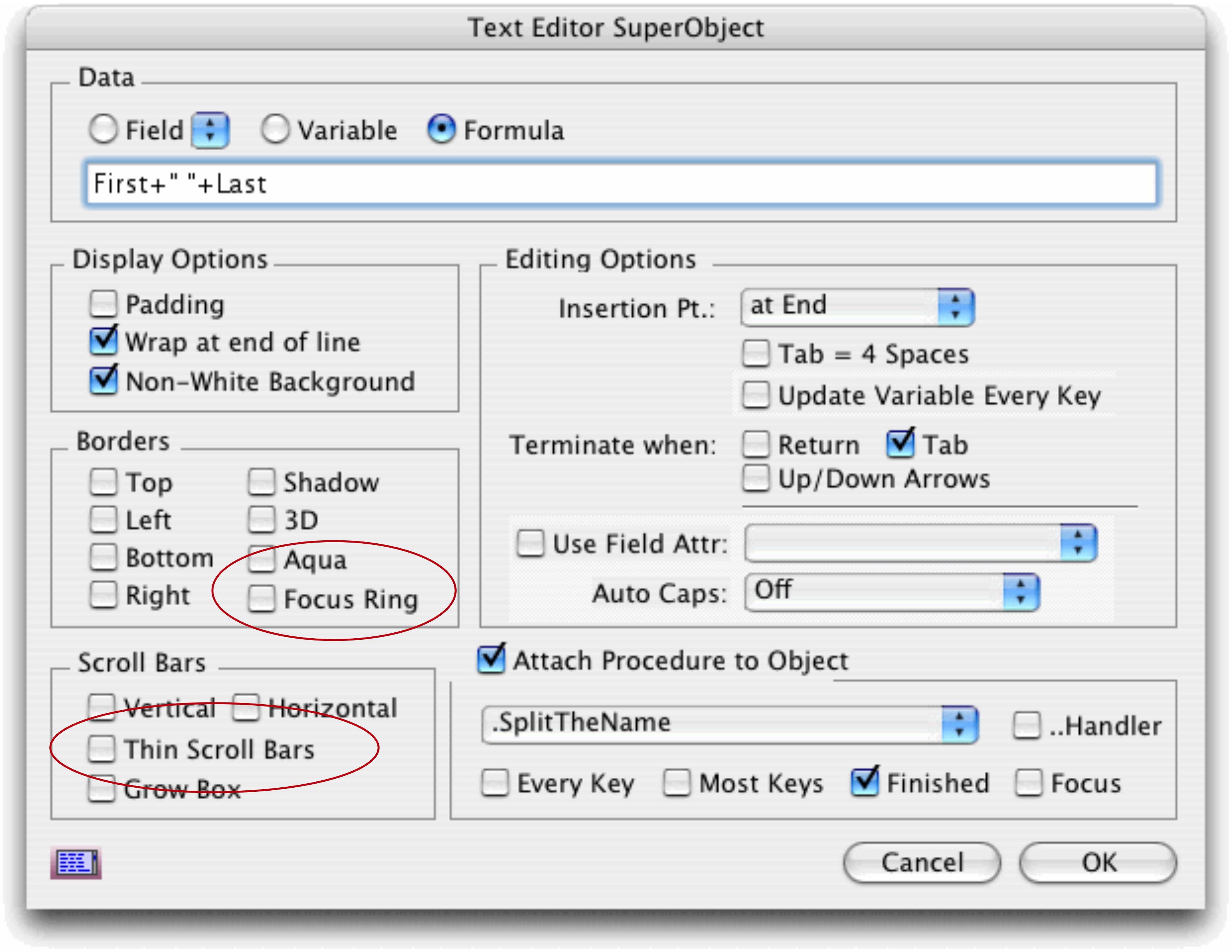
Panorama V includes minor but important enhancements to the Text Display and Text Editor SuperObjects.

### Text Display "Aqua" Text Option

The new Aqua option is smooths the text (using anti-aliasing) if the operating system supports that feature (currently only OS X supports this). See "Text Display Options" on page 739.

### Text Editor Options

The Text Editor SuperObject has three new options: Aqua, Focus Ring, and Thin Scroll Bars (see "Text Editor Options" on page 771).



Text Editor SuperObject

Data: Field Variable [✓ Formula]
First+" "+Last

Display Options: Padding [✓ Wrap at end of line] [✓ Non-White Background]

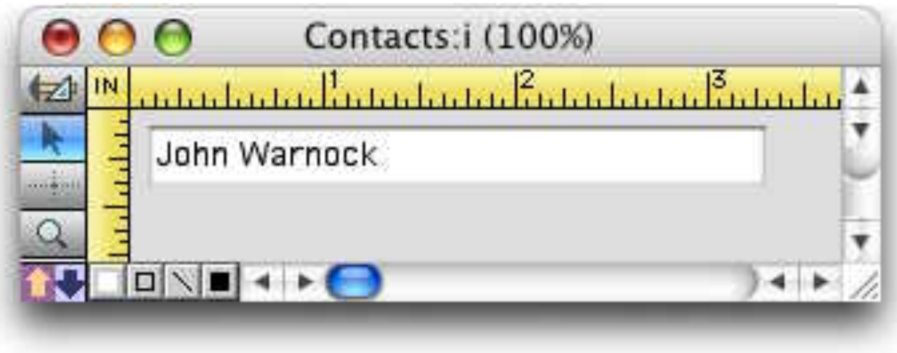
Borders: Top, Left, Bottom, Right, Shadow, 3D, Aqua, Focus Ring

Scroll Bars: Vertical, Horizontal, Thin Scroll Bars, Grow Box

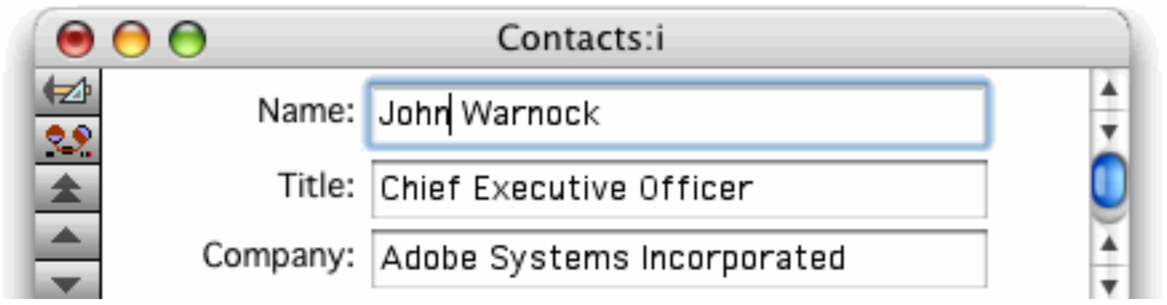
Editing Options:
Insertion Pt.: at End
Tab = 4 Spaces
Update Variable Every Key
Terminate when: Return [✓ Tab] Up/Down Arrows
Use Field Attr:
Auto Caps: Off

[✓ Attach Procedure to Object]
.SplitTheName ..Handler
Every Key Most Keys [✓ Finished] Focus

The Aqua option displays the same soft 3D borders that are used by most OS X applications. This option can work with a light gray or white background.

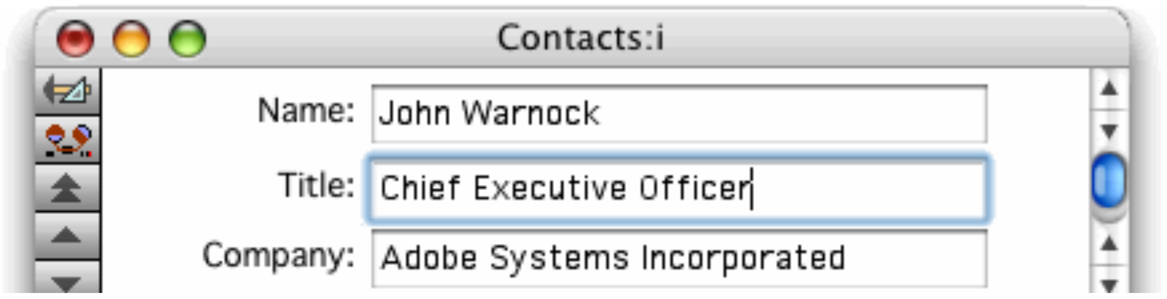


When the Focus Ring option is checked, Panorama will display a blue ring around the object when it is being actively edited.



Name: John Warnock
Title: Chief Executive Officer
Company: Adobe Systems Incorporated

When you shift to editing a different object, the blue ring will move to this new object.



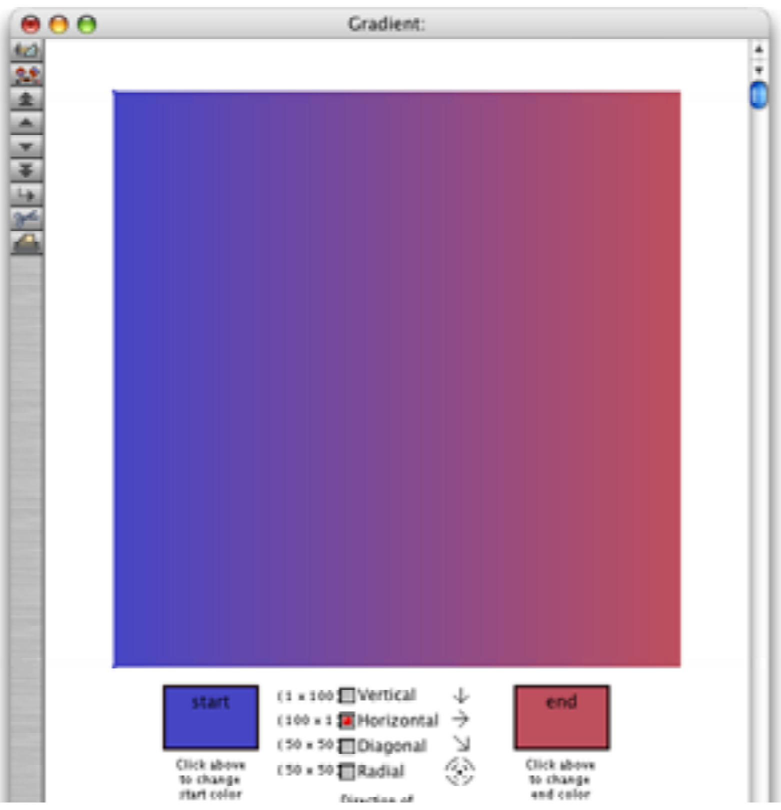
Name: John Warnock
Title: Chief Executive Officer
Company: Adobe Systems Incorporated

The Thin Scroll Bar option displays 11 pixel wide scroll bars instead of the standard 16.

### Using Super Flash Art™ to Display a Color

Super Flash Art objects are normally used to display images. Panorama V enhances these objects with the ability to display any of 65,535 colors. No image is required - the object generates the color on it's own. See "Using Flash Art to Display a Color" on page 887.

Panorama customer Gary Yonaites has created a cool demo that uses the solid color feature in combination with a Super Matrix object to create blends. This demo database, called Gradient, has been included with the Panorama example files.



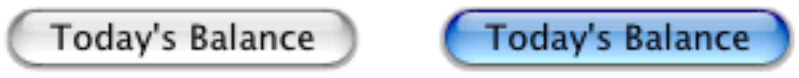
The gradient above was not created in Photocells or some other graphics program, but within Panorama itself. By clicking on the check boxes and color selections you can change the gradient on the fly. Thanks Gary!

## Buttons and Widgets

Buttons, data buttons, and pop-up menus have been enhanced to make them more compatible with OS X.

### Push Button SuperObject Styles

Two new styles — standard and default — make it easy to create buttons that “shape shift” to look great with whatever operating system you are using. Here’s what these buttons look like in OS X.

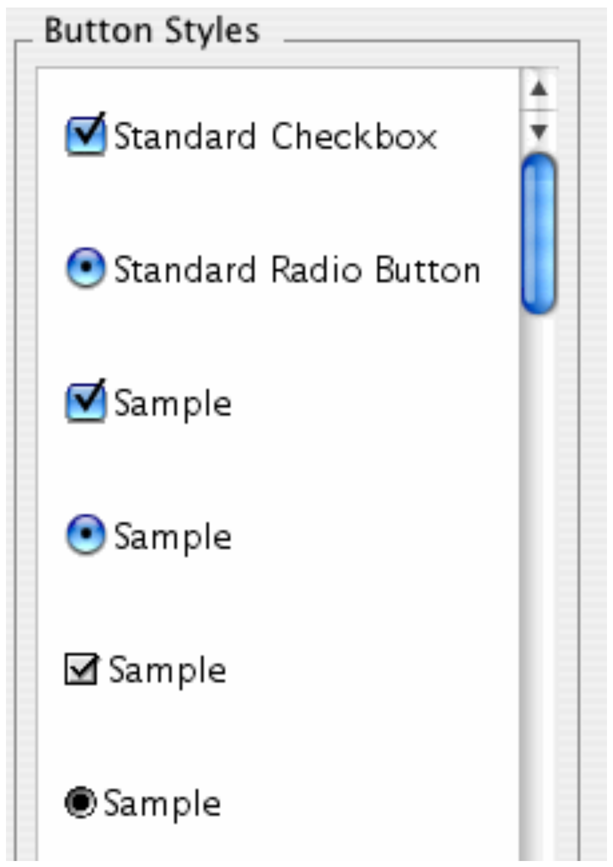


Push Button SuperObjects now have a transparent option, which makes the button completely invisible. This removes any need to use the old “Classic” push button.

For more information see “Push Button Styles” on page 944.

### Data Button SuperObject Styles

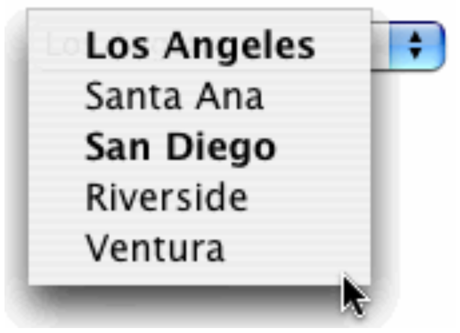
Over a dozen new data button styles have been added. The first two styles, Standard Checkbox and Standard Radio Button, are special. Data buttons created with these styles will adjust automatically depending on what operating system is being used. In other words, the same button will change appearance depending on whether the database is being used on Mac OS X, Mac OS 9, or Windows.



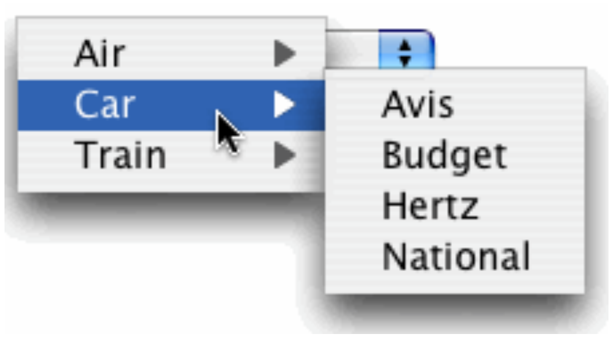
See “Super Data Button Options” on page 967 for more details.

### New Pop-Up Menu Features

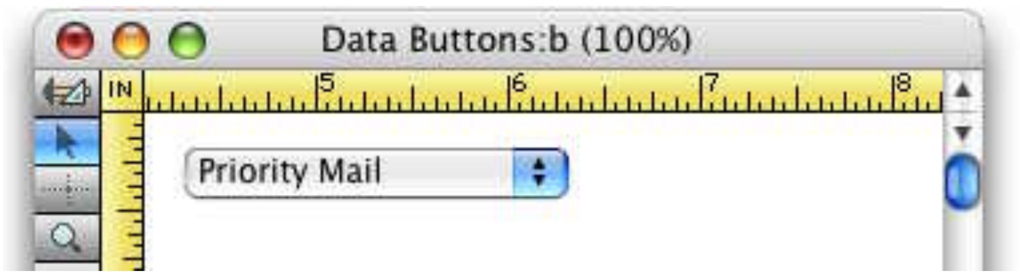
Using the new “Live Menus” feature you can create pop-up menus with different styles for each menu item (see ““Live” Pop-Up Menu Formulas” on page 983).



You can even create a pop-up menu with submenus (see “Pop Up Submenus” on page 984).



The new Standard Icon option is now the default choice, and displays the standard pop-up menu graphics for the operating system being used. Here is the standard icon for Mac OS X (see “Display Options” on page 988).



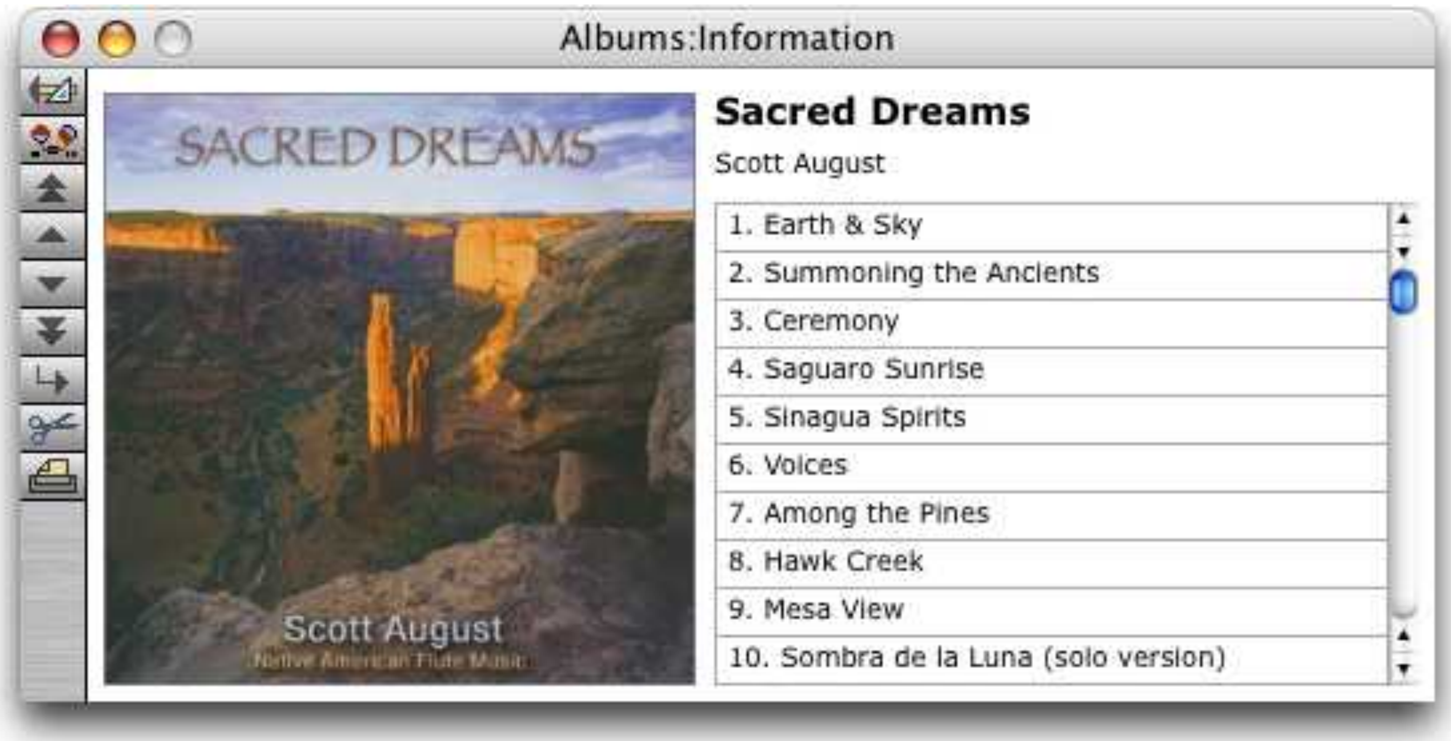
There are also several new statements that make it easier to create pop-up menu’s on the fly in a procedure. See “The PopUpButton Statement” on page 993, “The PopUpClick Statement” on page 994, “The PopUpFieldChoices Statement” on page 994 and “The PopUpDoubleFieldChoices Statement” on page 995. The last two statements automatically build a pop-up menu (or menu and submenus) from one or two fields in the database.

### List SuperObject Thin Scroll Bars

List SuperObjects are basically unchanged except for a new option to display “thin” (11 pixel) scroll bars. See “Thin Scroll Bars” on page 1012.

## Scrolling Super Matrix Objects

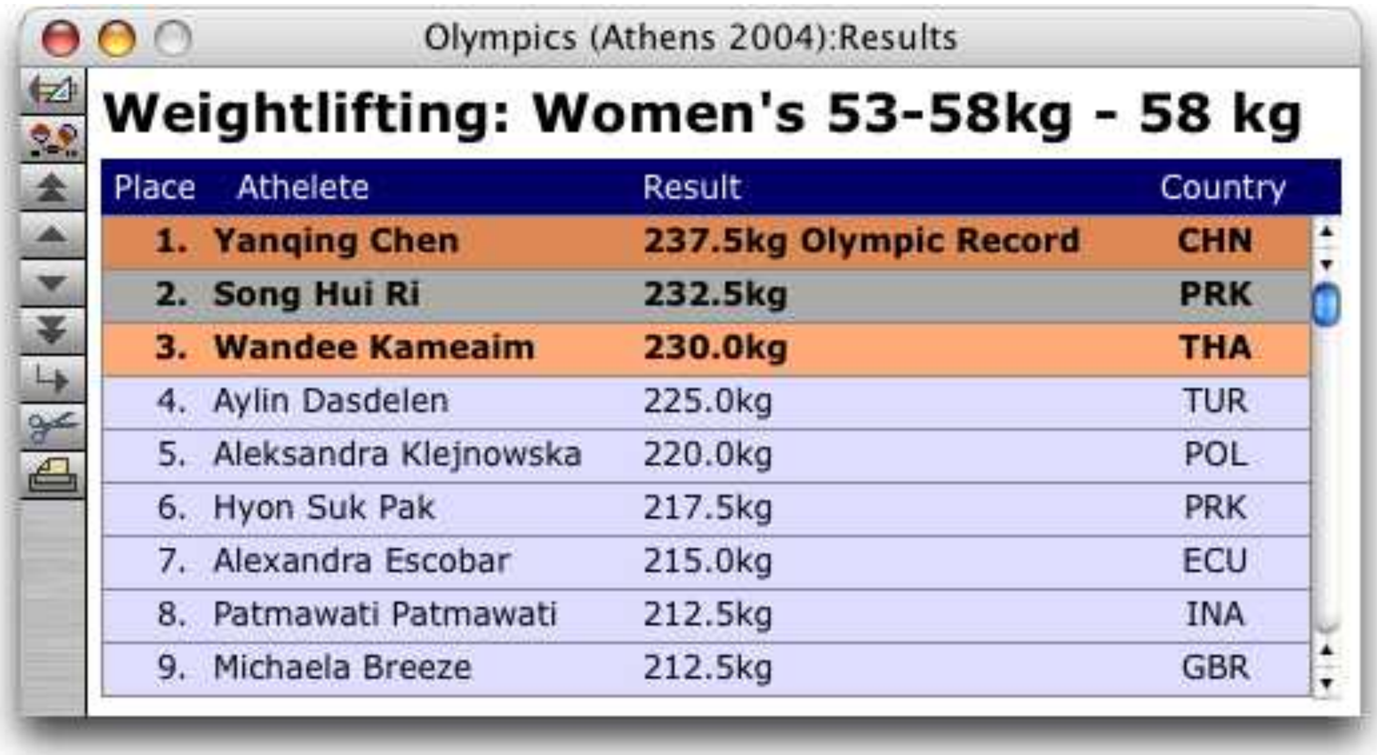
The Super Matrix Object now supports scroll bars, and can be linked to an array (see "Super Matrix Objects" on page 1057). At first glance this might appear to be a minor enhancement, but this really opens up major new possibilities in form design. For many applications, the Super Matrix object can now replace a Scrolling List object, but with full control over the graphical display. Many of the new wizards included with Panorama V use scrolling matrixes this way, including the White Pages, View Wizard, Favorite Databases, Cross Reference, and more. Here are some examples of forms that have been created with this new option. The first example shows a simple scrolling list.



Sacred Dreams
Scott August

1. Earth & Sky
2. Summoning the Ancients
3. Ceremony
4. Saguaro Sunrise
5. Sinagua Spirits
6. Voices
7. Among the Pines
8. Hawk Creek
9. Mesa View
10. Sombra de la Luna (solo version)

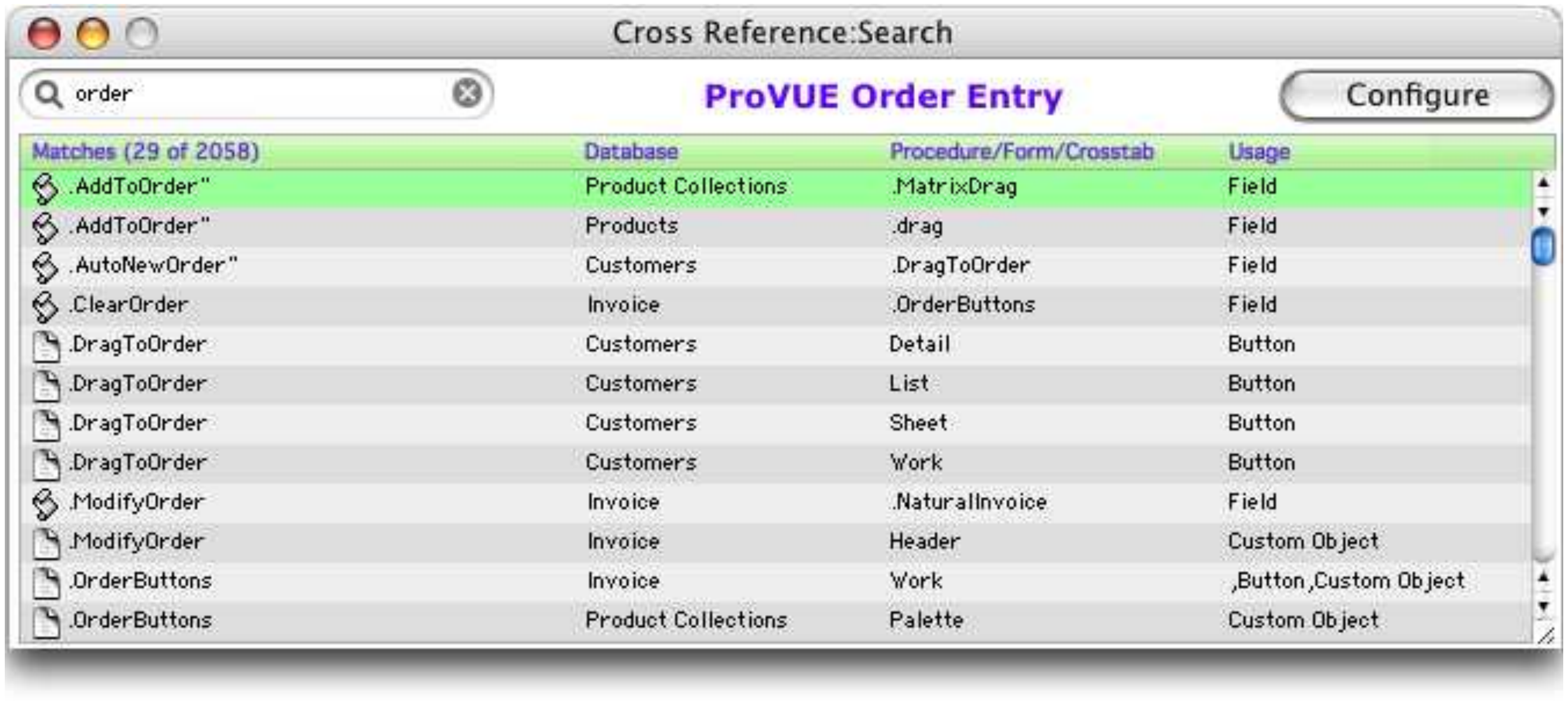
This example illustrates the graphic control available. The first three items in the list are displayed in bold, with backgrounds of gold, silver and bronze. This example also demonstrates the ability to create a multi-column scrolling list using a matrix.



Weightlifting: Women's 53-58kg - 58 kg

| Place | Athelete | Result | Country |
|---|---|---|---|
| **1.** | **Yanqing Chen** | **237.5kg Olympic Record** | **CHN** |
| **2.** | **Song Hui Ri** | **232.5kg** | **PRK** |
| **3.** | **Wandee Kameaim** | **230.0kg** | **THA** |
| 4. | Aylin Dasdelen | 225.0kg | TUR |
| 5. | Aleksandra Klejnowska | 220.0kg | POL |
| 6. | Hyon Suk Pak | 217.5kg | PRK |
| 7. | Alexandra Escobar | 215.0kg | ECU |
| 8. | Patmawati Patmawati | 212.5kg | INA |
| 9. | Michaela Breeze | 212.5kg | GBR |

Here is another example with alternating background colors, multiple columns and graphics in the list.



| 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 |

We're looking forward to seeing the cool designs you come up with using this new feature.

### Last Page Footer

Panorama has always had a **First Page Header** tile that allows you to print a title on the first page of a report (or a cover page). Panorama 4.9.5 now adds a **Last Page Footer** tile, which comes in three variations (left, center and right). These tiles work exactly like the **First Page Header** tiles except that they print at the very end of the report. You can access these new tiles through the specialized tile dialog. For more information on tiles see "Working with Tiles" on page 1178.

### Formulas and Functions

Panorama V includes hundreds of new functions, and also gives you the ability to create your own custom functions.

#### New Numeric Functions

These new functions manipulate numeric values.

| Function | Description |
|---|---|
| numsandwich(value,extra) | This function is similar to the sandwich function, but for numbers. If the value is zero the result is zero, but if the value is not zero the result is the value plus the extra. For example, this could be useful for calculating the size of an object plus a border. If the object size is zero, the border is omitted also, for example numsandwich(20,7) will be equal to 27, but numsandwich(0,7) will be equal to zero. |
| randominteger(startnum,endnum) | Returns a random integer value greater than or equal to the startnumber and less than or equal to the end number. |

### New Functions for Taking Strings Apart

These new functions return portions of a string.

| Function | Description |
|---|---|
| firstline(string) | This function extracts the first line from the text. |
| firstword(string) | This function extracts the first word from the text (the text up to the first space). |
| lastline(string) | This function extracts the last line from the text. |
| lastword(string) | This function extracts the last word from the text (the text from the last space to the end). |
| left(string,len) | Extracts characters from the left edge of the text. For example left(text,2) extracts the leftmost two characters. |
| mid(string,len) | Extracts characters from the middle of the text. For example mid(text,6,4) extracts four characters starting with the sixth character. |
| nthline(string,num) | This function extracts the nth line from the text. For example nthline(text,4) extracts fourth line. |
| nthword(string,num) | This function extracts the nth word from the text. For example nthword(text,7) extracts seventh word. |
| right(string,len) | Extracts characters from the right edge of the text. For example right(text,7) extracts the rightmost seven characters from the text. |
| snip(string,startposition,count) | This function removes (snips!) one or more characters from the middle of an item of text. The startposition specifies the first character removed, the count is the number of characters to remove. (Note: This function requires the startposition to be a positive number.) If count is -1 then all the text from the start position to the end of the text is snipped, otherwise the count must be a positive number. |
| textafter(string,tag) | This function extracts the text after the tag. The tag many be one or more characters long. If the tag doesn't occur in the text then the entire original string is returned. For example textafter("someone@isp.net","@") will return isp.net. |
| textbefore(string,tag) | This function extracts the text before the tag. The tag many be one or more characters long. For example textbefore("someone@isp.net","@") will return someone. If the tag doesn't occur in the text then the entire original string is returned. |
| trim(string,len) | This function removes characters from the right edge of the text. For example trim(text,4) removes the last four characters from the text. |
| trimleft(string,len) | This function removes characters from the left edge of the text. For example trimleft(text,2) removes the first two characters from the text. |

### New String Testing Functions

These new functions return information about the content of a string.

| Function | Description |
|---|---|
| linecount(string) | This function counts the number of lines in the text. |
| rangematch(string,range) | This function checks text to see if the text matches the specified range. The range must be a series of character pairs, for example AZ for upper case alphabetic characters, AZaz for upper and lower case, 09 for numeric digits, etc. If it matches the function returns true, if it doesn't match, it returns false. For example, rangematch(Address,"AZaz09  ") will return true if the address contains only letters, numbers and spaces, false if it contains any other characters. |
| wordcount(string) | This function counts the number of words in the text. |

### New String Modification Functions

These new functions modify the contents of a string.

| Function | Description |
|---|---|
| applescriptstring(string) | This function converts the string into an AppleScript string literal. It surrounds the text with double quote characters, and escapes any double quote and/or backslash characters within the text. This function is designed to be used with the executeapplescript statement. |
| connect(prefix,connector,suffix) | This function appends a prefix and suffix together with a connector in between. If either the prefix or the suffix is missing then the connector will also be left out. For example, connect(City,", ",State) combines the city and state with a comma and space in between, but if either the city or state is missing then the comma and space will also be left out. See also the sandwich( and yoke( functions in this table. |
| crtovtab(string) | This function converts carriage returns (ASCII 0x0D) into vertical tabs (ASCII 0x0B). Some programs (including Panorama) will convert vertical tabs into carriage returns when importing, allowing individual data cells to contain carriage returns. |
| fixedwidth(string,width) | This function makes the text a fixed width. If the text is shorter than the specified width, it is padded with spaces. If it is longer than the specified width, it is cut off. |
| fixedwidthright(string,width) | This function makes the text a fixed width. If the text is shorter than the specified width, it is padded with spaces on the left (i.e. the text is right justified). If it is longer than the specified width, it is cut off on the left. |
| onespace(string) | This function removes any extra spaces between words, so that there is exactly one and only one space between each word. |
| onewhitespace(string) | This function removes any extra whitespace between words, making sure that there is one and only one space between each word. Other whitespace characters (carriage returns, tabs) are converted to spaces and removed if there is more than one between words. |
| quoted(string) | This function surrounds the supplied text with double quote characters. If the text contains any double quotes they will be doubled, making this a legal string constant. This function is typically used in conjunction with the execute and executeapplescript statement. |
| randomletter(option) | This function returns a random letter. If the option is "U" then the letter will be between A and Z. If the option is "L" then the letter will be between a and z. If the option is any other value then the result may be either A-Z or a-z. |
| striphtmltags(text) | This function removes all HTML tags from the text. |
| stripprintable(text) | This function removes any non-displayable characters from the text. |
| vtabtocr(string) | This function converts vertical tabs (ASCII 0x0B) into carriage returns (ASCII 0x0D). Some programs (including Panorama) will convert vertical tabs into carriage returns when importing, allowing individual data cells to contain carriage returns. After the import you can use this function to turn the vertical tabs back into carriage returns. |
| yoke(prefix,joiner,suffix) | This function appends two text items (prefix and suffix) together. If both are non-blank, a joiner is placed in between. If either (or both) is blank, the joiner is not used. In some ways this is the reverse of the sandwich( function. |

### New Functions For Converting Between Numbers and Strings

These new functions convert numbers into strings and strings into numbers.

| Function | Reference Page | Description |
|---|---|---|
| dollarsandcents(number) | | This function converts a number to text formatted as dollars and cents (for example 98123.45 becomes Ninety eight thousand one hundred twenty three dollars and 45 cents). |
| hex(string) | | Converts text with hex characters into a number. For example the value of hex("0C2") is 194. |
| hexbyte(number) | | Converts a number to text formatted as a two digit hexadecimal number. For example the result of hexbyte(68) is 44. |
| hexlong(number) | | Converts a number to text formatted as a eight digit hexadecimal number. For example the result of hexlong(68) is 00000044. |
| hexstr(number) | | Converts a number to text formatted as a hexadecimal number. For example the result of hexstr(68) is 00000044. This function can also accept binary values with more than 4 bytes (see "Processing/Transforming Binary Data" on page 1851). |
| hexword(number) | | Converts a number to text formatted as a four digit hexadecimal number. For example the result of hexword(68) is 0044. |
| money(number) | | Converts a number to text, formatted with commas every three digits and two digits after the decimal point (for example 98,123.45). |
| scientificnotation(number) | | Converts a number to text, formatted in scientific notation with three places after the decimal point (for example 9.812e+4). |
| zbpattern(number,pattern) | | This function displays a number using a pattern. Unlike the normal pattern( function, the zbpattern( function will output "" if the number is zero. (Note: zb is short for zeroblank.) |

### ASCII Character Constant Functions

These new functions return common ASCII characters.

| Function | Description |
|---|---|
| info("lineseparator") | This function returns the line separator character on the current platform. On Macintosh systems this is a carriage return. On Windows PC systems this is a carriage return followed by a linefeed (CR-LF). |
| cr() | This function generates a carriage return. This is equivalent to chr(13) and is also the same as ¶. |
| crlf() | This function generates a carriage return line feed. This is equivalent to chr(13)+chr(10). |
| lf() | This function generates a line feed. This is equivalent to chr(10). |
| tab() | This function generates a tab character. This is equivalent to chr(9) and is also the same as ¬. |
| vtab() | This function generates a vertical tab character. This is equivalent to chr(11). |

## Working With Arrays

These new functions manipulate Text Arrays.

| Function | Description |
|---|---|
| arraycontains(text,item,sep) | This procedure checks to see if any element of an array matches the specified text. For the result to be true, the array element must match the specified text exactly, including upper and lower case. Otherwise the function will return false. So checking for "Green" will only match that exact array element, not "green" or "Olive Green". (Note that this is quite different from the contains operator, which ignores upper and lower case and allows a submatch.) |
| arraydeletevalue(text,value,sep) | This function deletes any array elements that match the value parameter. This mush be an exact match, including upper and lower case. If the value occurs multiple times in the array, every occurrence of the value will be removed, with one exception: If the value occurs in two consecutive array elements, only the first occurrence will be deleted. |
| arrayfirst(text,sep) | This function extracts the first element of an array. |
| arraylast(text,sep) | This function extracts the last element of an array. |
| arraylefttrim(text,count,sep) | Removes the first elements of an array. For example arraylefttrim(text,",",2) removes the first two elements from a comma separated array. |
| arraylookup(text,key,mainsep, subsep,default) | This function looks up a value in a double column table, similar to a lookup. The first column in the table is the key value, the second column is the data value. Each line in the table is separated by the mainsep character, while the two columns in each line are separated by the subsep character. If no match is found the default value is returned. For example this function: arraylookup("AL.ALABAMA;AK.ALASKA; ... WY.WYOMING",State,";",".","") can be used to look up a long state name given the two letter abbreviation. |
| arraymerge(array1,array2, separator,joiner) | This function merges two text arrays together. This function has four parameters: array1, array2, separator and joiner . Array1 is the first text array you want to merge, array2 is the second array. Separator is the separator character for both arrays (in other words, both arrays must use the same separator). This should be a single character. For carriage return delimited arrays, use the ¶ character (option-7). For tab delimited arrays use the ¬ character (option-L). Joiner is from 1 to 10 characters of text that will be used to join the individual elements of the two arrays.<br><br>The result is a new array with the elements of the original arrays joined together. This means that the first element of the first array will be joined with the first element of the second array, then the second element of the second array will be joined with the second element of the second array, and so on until both arrays are completely merged.<br><br>The example could be used to display names and phone numbers from a contact database in a Text Display SuperObject.<br><br>`arraymerge(`<br>`   lookupall( "Contacts","Company","Name",¶),`<br>`   lookupall( "Contacts","Company","Phone",¶),`<br>`   ¶,", ")`<br><br>The display will look something like the text shown below.<br><br>John Smith , (510) 323-4905<br>Susan Wilson , (510) 590-1341<br>Bill Franklin , (510) 323-6781 |

| Function | Description |
|---|---|
| arrayreplacevalue(text, oldvalue,newvalue,sep) | This function replaces any array elements that match the value parameter. This must be an exact match, including upper and lower case. If the value occurs multiple times in the array, every occurrence of the value will be replaced, with one exception. If the value occurs in two consecutive array elements, only the first occurrence will be replaced. |
| arrayreverselookup(text,key, mainsep,subsep,default) | This function looks up a value in a double column table, similar to a lookup. The first column in the table is the key value, the second column is the data value. However, this function reverses the function of these two columns. The key parameter is looked up in the second column, then the associated value is returned from the first column. This is the reverse of the arraylookup( function. Each line in the table is separated by the mainsep character, while the two columns in each line are separated by the subsep character. If no match is found the default value is returned. For example this function: arrayreverselookup("AL.ALABAMA;AK.ALASKA; ... WY.WYOMING",State,":",".","") can be used to look up a two letter state abbreviation given the full name of the state. |
| arraytrim(text,count,sep) | This function removes the last elements of an array. For example arraytrim(text,",",2) removes the last two elements from a comma separated array. |

### New HTML Tag and Tag Parsing Functions

This new function manipulates HTML tags.

| Function | Description |
|---|---|
| striphtmltags(text) | This function removes all HTML tags from the text. |

### New HTML Table Parsing Functions

These new functions are specifically designed for extracting data from an HTML table.

| Function | Description |
|---|---|
| htmltablecell(table,row,cell) | This function extracts the data from a cell in an HTML table. Any HTML tags in the cell are removed, leaving only the actual text. The thetable parameter must contain the body of an html table with <tr> and <td> tags (however, the actual <table> and </table> tags themselves are not required.) |
| htmltablecellexists(table,row,cell) | This function checks to see whether a cell in an HTML table exists or not. The result will be true if the cell exists, or false if it doesn't. The thetable parameter must contain the body of an html table with <tr> and <td> tags (however, the actual <table> and </table> tags themselves are not required.) |
| htmltablecellraw(table,row,cell) | This function extracts the data from a cell in an HTML table. Unlike the htmltablecell( function, any HTML tags in the cell are retained. The thetable parameter must contain the body of an html table with <tr> and <td> tags (however, the actual <table> and </table> tags themselves are not required.) |
| htmltableheight(table) | This function calculates the height (number of rows) in an HTML table. It assumes that the table is a regular matrix (no rowspan tags). |
| htmltablerowraw(table,row,cell) | This function extracts the data from a row in an HTML table. Any HTML tags in the row are retained. The the table parameter must contain the body of an html table with <tr> and <td> tags (however, the actual <table> and </table> tags themselves are not required.) |
| htmltablewidth(table) | This function calculates the height (number of rows) in an HTML table. It assumes that the table is a regular matrix (no colspan tags) and that all of the rows have the same number of columns as the top row in the table. |

### New HTML/URL Conversion Functions

These new functions help parse web URLs.

| Function | Description |
|---|---|
| urlfilename(url) | This function extracts the filename from a complete url. |
| urlpath(url) | This function extracts the path from a url. |

### New HTML Generating Functions

These new functions help with generating HTML.

| Function | Description |
|---|---|
| htmlbold(string) | This function takes the text and adds <b> and </b> tags to it. |
| htmlitalic(string) | This function takes the text and adds <i> and </i> tags to it. |

### New Functions for Converting Between Dates and Text

These new functions allow you to convert a date into text, or text into a date. Most of these are simply shortcuts for the `datepattern(` function.

| Function | Description |
|---|---|
| completedatestr(number) | Convert a date to text, including the day of the week (for example Sunday, April 20th, 2003). |
| datestr(number) | Convert a date to text using format mm/dd/yy (for example 4/20/03). |
| daystr(number) | Convert a date to the day of the week (for example Sunday). |
| eurodatestr(number) | Convert a date to text in European format (for example 20-APR-2003). |
| longdatestr(number) | Convert a date to text with format Month ddnth, yyyy (for example April 20th, 2003). |

### New Functions for Converting Between Times and Text

This new function is a shortcut for the `timepattern(` function.

| Function | Description |
|---|---|
| timestr(number) | Convert a number to text in am/pm time format (for example 9:34 AM). |

### Time Calculations with Text

These new functions operate with time values in strings. There aren't as many functions available as for times expressed as numbers, but if your input and output values will be in strings using these function saves the intermediate conversion steps.

| Function | Description |
|---|---|
| texttimedifference(start,end) | This function calculates the difference between two times. Instead of being expressed as numbers, the input output times are expressed as text (for example 12:45 pm). This function works correctly even if the interval between the two times crosses over midnight. This function returns a time interval between -12 and +12 hours. See also the timeinterval( function, which returns a time interval between 0 and 24 hours.<br><br>There are two parameters, start and end. Start is a string representing the starting point of the time interval. End is a string representing the ending point of the time interval. This function returns the time difference between the start and end. For example, if the start time is 9:30 PM and the end time is 2:05 AM, the difference would be 4:35. But if the parameters are reversed and the start is 2:05 AM and the end is 9:30 PM, the difference is -4:35. If the result is positive, the end is after the start. But if the result is negative, the start is after the end. |
| texttimeinterval(start,end) | This function calculates the time interval between two times. It works correctly even if the interval between the two times crosses over midnight. This function returns a time interval between 0 and 24 hours. See also the timedifference( function, which returns a time interval between -12 and +12 hours.<br><br>There are two parameters, start and end. Start is a string representing the starting point of the time interval. End is a string representing the ending point of the time interval. This function returns the time between the start and end. For example, if the start tine is 9:30 PM and the end time is 2:05 AM, the interval would be 4:35. But if the parameters are reversed and the start time is 2:05 AM and the end time is 9:30 PM, the interval is 19:25. |

### New SuperDate Conversion Functions

These new functions perform common calculations and conversions with superdates.

| Function | Description |
|---|---|
| superdatestr(number) | Converts a number containing a superdate to text in standard format (for example 4/20/03 9:56 AM). |
| supernow() | This function returns the number representing the current date and time as a superdate. |

### True/False Values

For purposes of calculation, Panorama treats true and false as numbers: true is -1 and false is zero. Panorama also has two new functions that directly generate these values.

| Function | Description |
|---|---|
| true() | This function always returns true (-1). |
| false() | This function always returns false (0). |

### Multiple Field LookupAll Functions

Panorama V includes seven new variations on the `lookupall(` function that lookup from two to eight fields from the target database, instead of just one. Each of these functions includes a parameter for controlling the separator between records and the separator between each fields.

| Function | Description |
|---|---|
| lookupalldouble(thedb, keyfield,keyvalue,datafield1, datafield2,mainsep,subsep) | This function does a lookupall for two fields (double). The lookup is of all records in thedb where the keyfield matches the supplied keyvalue. For each record datafield1 and datafield2 are joined together with the subsep separator (which may be more than one character) and each record is joined together with the mainsep characters. |
| lookupalltriple(thedb, keyfield,keyvalue,datafield1, datafield2,datafield3, mainsep,subsep) | This function does a lookupall for three fields (triple). The lookup is of all records in thedb where the keyfield matches the supplied keyvalue. For each record datafield1 through datafield3 are joined together with the subsep separator (which may be more than one character) and each record is joined together with the mainsep characters. |
| lookupallquadruple(thedb, keyfield,keyvalue,datafield1, datafield2,datafield3,datafield4, mainsep,subsep) | This function does a lookupall for four fields (quadruple). The lookup is of all records in thedb where the keyfield matches the supplied keyvalue. For each record datafield1 through datafield4 are joined together with the subsep separator (which may be more than one character) and each record is joined together with the mainsep characters. |
| lookupallquintuplet(thedb, keyfield,keyvalue,datafield1, datafield2,datafield3,datafield4, datafield5,mainsep,subsep) | This function does a lookupall for five fields (quintuplet). The lookup is of all records in thedb where the keyfield matches the supplied keyvalue. For each record datafield1 through datafield5 are joined together with the subsep separator (which may be more than one character) and each record is joined together with the mainsep characters. |
| lookupallsextet(thedb,keyfield, keyvalue,datafield1, datafield2,datafield3,datafield4, datafield5,datafield6, mainsep,subsep) | This function does a lookupall for six fields (sextet). The lookup is of all records in thedb where the keyfield matches the supplied keyvalue. For each record datafield1 through datafield6 are joined together with the subsep separator (which may be more than one character) and each record is joined together with the mainsep characters. |
| lookupallseptuplet(thedb,keyfield, keyvalue,datafield1, datafield2,datafield3,datafield4, datafield5,datafield6,datafield7, mainsep,subsep) | This function does a lookupall for seven fields (septuplet). The lookup is of all records in thedb where the keyfield matches the supplied keyvalue. For each record datafield1 through datafield7 are joined together with the subsep separator (which may be more than one character) and each record is joined together with the mainsep characters. |
| lookupalloctet(thedb,keyfield, keyvalue,datafield1, datafield2,datafield3,datafield4, datafield5,datafield6,datafield7, datafield8,mainsep,subsep) | This function does a lookupall for eight fields (octet). The lookup is of all records in thedb where the keyfield matches the supplied keyvalue. For each record datafield1 through datafield8 are joined together with the subsep separator (which may be more than one character) and each record is joined together with the mainsep characters. |

### New US Post Office Abbreviation Functions

These new functions return text arrays that contain lists of official US Post Office abbreviations. These functions are designed to be used with the `arraylookup(` and `arrayreverselookup(` functions.

| Function | Description |
|---|---|
| stateabbreviations() | This function returns a list of state abbreviations in this format: AL:ALABAMA;AK:ALASKA; ... This table is designed to be used with the arraylookup( and arraylookupreverse( functions. |
| statelookup(state) | This function looks up the name of a state from the state abbreviation (for example CALIFORNIA from CA). If the parameter does not match any state then the original value is returned. |
| uspssecondaryunits() | This function returns a list of USPS secondary suffix designation abbreviations in this format: APT:APARTMENT;RM:ROOM; ... This table is designed to be used with the arraylookup( and arraylookupreverse( functions. |
| uspsstreetsuffixes() | This function returns a list of USPS street suffix abbreviations in this format: ALY:ALLEY;AVE:AVENUE; ... This table is designed to be used with the arraylookup( and arraylookupreverse( functions. |

### Converting Points and Rectangles to Text

These new functions convert points and rectangles to text. This is handy if you want to display the location/dimensions of the point or rectangle in a dialog or report.

| Function | Description |
|---|---|
| pointstr(point) | This function converts a point value into text in the format V,H (for example 34,56). |
| rectanglesizestr(rect) | This function converts a rectangle into text in the format TOP,LEFT,HEIGHT,WIDTH (for example 100,20,80,30). |
| rectanglestr(rect) | Converts a rectangle into text in the format TOP,LEFT,BOTTOM,RIGHT (for example 100,20,180,50). |

### New Color Functions

These new functions help generate common colors and in converting colors from Panorama format to/from HTML format.

| Function | Description |
|---|---|
| black() | This function returns black (it is equivalent to rgb(0,0,0) ). |
| gray(saturation) | This function returns a gray color. The saturation value is between 0 (white) and 100 (black). |
| htmlrgb(string) | This function converts text formatted as an HTML color (for example FFFFFF for white or FF0000 for red) into a Panorama color value. |
| htmlrgbstr(color) | This function converts a Panorama color value into text formatted as an HTML color (for example BB4DFD). |
| white() | This function returns white (it is equivalent to rgb(65535,65535,65535) ). |

### New Binary Data Functions

These new functions process bits, bytes, words, and longwords.

| Function | Description |
|---|---|
| bit(number) | This function converts a bit number (1 to 32) into a number (1, 2, 4, 8, 16, etc.) |
| bytearray(data,index) | This function extracts a value from an array of bytes. This is not a Panorama style delimited array but a C style array of 8 bit values. The result is an integer. |
| chararray(data,index) | This function extracts a characters from an array of characters. This is not a Panorama style delimited array but a C style array of ASCII characters. The result is an single characters. |
| chunkarray(data,index, chunklength) | This function extracts a binary chunk from an array of chunks. This is not a Panorama style delimited array but a C style array of binary chunks. The result is a binary value (text). |
| getbit(number,bitnumber) | This function returns a true or false value by testing a bit. The bit number may be from 1 to 32. If the bit is set, the value will be true, if it is not set, the value will be false. |
| hex(string) | Converts text with hex characters into a number. For example the value of hex("0C2") is 194. |
| longwordarray(data,index) | This function extracts a value from an array of longwords. This is not a Panorama style delimited array but a C style array of 32 bit values. The result is an integer. |
| onescomplement(number) | This function returns the one's complement of a 32 bit number (all bits are reversed) |
| setbit(number,bitnumber,truefalse) | This function sets one bit within a number, without disturbing any of the other bits. The bit number may be from 1 to 32. The bit will be set based on the true/false parameter - set if true, cleared if false. |
| wordarray(data,index) | This function extracts a value from an array of words. This is not a Panorama style delimited array but a C style array of 16 bit values. The result is an integer. |

### New Functions for Accessing Disk Files and Folders

These new functions directly access files and directories on the disk. The functions below read information from the disk. For a more detailed discussion of file i/o, including writing to files, see “Directly Reading and Writing Disk Files” on page 1677.

| Function | Description |
|---|---|
| info("foldersepchar") | Returns the folder separator character for the current platform (: or \). |
| info("lineseparator") | This function returns the line separator character on the current platform. On Macintosh systems this is a carriage return. On Windows PC systems this is a carriage return followed by a linefeed (CR-LF). |
| filedate(folder,file) | Returns the creation date of the specified file. |
| fileexists(folder,file) | Checks to see if a file exists. Returns true or false. |
| fileextension(text) | This function extracts the extension (if any) from a complete path and filename. For example the function fileextension("Alaska:Denali:Image45.jpg") would return .jpg. |
| filename(text) | This function extracts the filename from a complete path and filename. For example the function filename("Alaska:Denali:Image45.jpg") would return Image45.jpg. |
| filepath(text) | This function extracts the path from a combined path and filename. For example the function filepath("Alaska:Denali:Image45.jpg") would return the text "Alaska:Denali:". |

| Function | Description |
|---|---|
| filetime(folder,file) | Returns the creation time of the current file. |
| filetypecreator(folder,file) | Returns 8 characters - 4 characters with the file type and 4 characters with the creator code (for example TEXTR*ch for BBEdit text files). |
| folderexists(folder,foldnername) | Checks to see if a folder exists. Returns true or false. |
| foldersepchar() | Returns the folder separator character for the current platform (: or \). |
| fullpath(path) | This function converts a filename or relative path (starting with the : or / symbol) into a full path, including the disk name. |
| listpatnoramafiles(folder) | Returns a list of Panorama database files in the specified folder (carriage return separated). |
| listtextfiles(folder) | Returns a list of text files in the specified folder (carriage return separated). |
| panoramafolder() | This function returns a **folderid** that unambiguously describes the location of the folder containing the Panorama application. This **folderid** can be used in other functions and statements. |
| posixpath(path) | This function converts a MacOS format path and filename into a POSIX path that can be used as a parameter to a shell command. The input parameter must be a FULL path, including the disk name. Relative pathnames are not allowed. |
| panoramasubfolder(subpath) | This function makes it easy to reference any subfolder of the Panorama folder. Or you can leave it blank ("") to reference the main Panorama folder. |
| pathexists(path) | Checks to see if a path exists. Returns true or false. |
| posixpath(path) | This function converts a MacOS format path and filename into a POSIX path that can be used as a parameter to a shell command. The input parameter must be a FULL path, including the disk name. Relative pathnames are not allowed. |
| subfolder(folder,subfolder) | This function returns the folder ID of a subfolder of a specified folder. For example the function subfolder(info("systemfolder"),"Extensions") returns the folder ID of the Extensions folder within the System folder. |
| urlfilename(url) | This function extracts the filename from a complete url. |
| urlpath(url) | This function extracts the path from a url. |

**New System Information Functions**

These functions return information about the computer system — the keyboard, mouse, memory, clipboard and Panorama itself.

| Function | Description |
|---|---|
| info("availablescreenrectangle") | This function returns a rectangle defining the edges of the main screen (the screen that contains the menu bar). Any area of the screen that is reserved for the operating system (for example the dock in OS X) is excluded from the rectangle. The rectangle is in screen relative coordinates |
| info("computername") | This function returns the short name of the computer (OS X only). This is the computer name that needs to be used in terminal sessions. |
| info("fonts") | This function returns a carriage return delimited array of all available fonts. This list is created when Panorama launches, and is not updated to include any new fonts that may have been added to the system since then. |
| info("unixusername") | This function returns the short user name the user has logged in under (Mac OS X only). This is the user name that needs to be used in terminal sessions. |

| Function | Description |
|---|---|
| os9() | This function returns true if running on Mac OS 9, otherwise false. |
| oswindows() | This function returns true if running on Microsoft Windows, otherwise false. |
| osx() | This function returns true if running on Mac OS X, otherwise false. |

### New User Information Functions

These new functions return information about the person that is currently using the computer.

| Function | Description |
|---|---|
| info("unixusername") | This function returns the short user name the user has logged in under (Mac OS X only). This is the user name that needs to be used in terminal sessions. |

### New Database Information Functions

These new functions return information about the currently active database.

| Function | Description |
|---|---|
| dbfolder() | This function returns the folder ID of the folder the current database is located in. |
| dbmetatag(database,attributes) | This function returns a piece of metadata information for the specified database (if any). This second parameter specifies the metadata item you want to retrieve - legal items are: Version, Title, Project, Authors, Keywords, Description. These are all case sensitive. For example, you can retrieve the document keywords with the formula dbmetatag(myDatabase,"Keywords"). |
| dbmetatagclose() | This function returns the tag that appears after the metadata database information. This tag helps the Tiger (Mac OS X 10.4) metadata import function to locate the metadata. |
| dbmetatagdictionary(database) | This function returns the metadata database information for the specified database (if any). This metadata contains information like the database author, keyword and description. |
| dbmetatagopen() | This function returns the tag that appears in front of the metadata database information. This tag helps the Tiger (Mac OS X 10.4) metadata import function to locate the metadata. |
| dbname() | This function returns the name of the current database. |
| dbpath() | This function returns the path of the folder the current database is located in. |
| dbsubfolder(subpath) | This function returns the folder ID of a subfolder within the same folder as the current database. For example if the current database is in the folder "MyDrive:My Stuff", the function dbsubfolder("Images") returns the folder ID of the "MyDrive:My Stuff:Images" folder. |
| info("proceduredatabase") | This function returns the name of the database that contains the procedure itself, even if another database is currently active. It's primarily useful when the farcall statement is used to call the procedure (or when the procedure is being used as a custom statement). Here's an example that opens the Help Window form in the database that contains the procedure, even if a window from another database is currently on top,<br>`window info("proceduredatabase")+":SECRET"`<br>`openform "Help Window"` |

| Function | Description |
|---|---|
| info("visible") | This function returns true/false result based on whether or not the current record is visible. Useful for situations where Panorama may scan invisible records, for example the arraybuild and select statements, also the Scrolling List SuperObject. |

### New Window, Form and Report Information Functions

These new functions return information about windows, forms and reports.

| Function | Description |
|---|---|
| info("matrixcelldata") | This function returns the data associated with the current matrix cell. This function is only valid if a formula has been defined for this Super Matrix Object. Note: It's up to you what to do with this data. You can display it using a Text or Flash Art object, or simply ignore it if you want. The Matrix object doesn't display this data automatically.<br><br>Example: The formula below could be used in a Text Display SuperObject to display the cell number and data.<br><br>`str(info("matrixcell"))+" "+info("matrixcelldata")` |
| info("matrixdata") | This function returns the all of the data associated with the current matrix. This function is only valid if a formula has been defined for this Super Matrix Object. Note: It's up to you what to do with this data. You can display it using a Text or Flash Art object, or simply ignore it if you want. The Matrix object doesn't display this data automatically.<br><br>Example: The formula below could be used in a Text Display SuperObject to display the data and the cell number and position, for example Orange [4 of 17] .<br><br>`info("matrixcelldata")+" ["`<br>`   +str(info("matrixcell")  )+" of  "+`<br>`   str(arraysize(info("matrixdata")+`<br>`,  info("matrixseparator")  ) +"]"` |
| info("matrixseparator") | This function returns the separator associated with the current matrix. This function is only valid if a formula has been defined for this Super Matrix Object.<br><br>Example: The formula below could be used in a Text Display SuperObject to display the data and the cell number and position, for example Orange [4 of 17] .<br><br>`info("matrixcelldata")+`<br>`  " ["+str(info("matrixcell"))+`<br>`  " of  "+str(arraysize(info("matrixdata")+`<br>`,  info("matrixseparator"))+"]"` |
| info("pagecount") | The new info("pagecount") function calculates the total number of pages that will be printed. For example, if you wanted to print Page 1 of 4, Page 2 of 4, etc. on the top of each page you would use a formula of<br><br>`"Page "+str(info("pagenumber"))+" of "`<br>`    +str(info("pagecount"))`<br><br>This function is only valid when used in an object in a form (Text Display SuperObject, auto-wrap text object, etc.) that is being printed. |

### The Assign Function

The `assign(` function is so different from every other Panorama V function that we gave it it’s own section, all by itself. Instead of calculating a new value based on its parameters, the assign( function allows you to assign the result of a partial formula to a field or variable. This is called a "side effect" because this assignment is in addition to the normal operation of the formula that contains the assign( function (or multiple assign( functions). To learn more about this function see “The Assign Function” on page 1413.

### Comments in Formulas

Panorama V now allows “comments” to be placed inside a formula. A comment is a note within the formula that is ignored when the formula is evaluated. A comment must start with `/*` and end with `*/`. Anything between these will be ignored. (C and JavaScript programmers will recognize this style.) For example, this formula:

```
«CRatio» /* CRatio must be updated every 24 hours */ * Amount
```

will produce the same value as this one:

```
«CRatio» * Amount
```

In addition to notes to yourself, comments are also useful for temporarily disabling a section of a long formula (for example if you are trying to debug the formula).

### Custom Functions

Panorama V doesn’t limit you to the built-in functions that are supplied with a Panorama. In fact for the first time you can actually create your own user defined functions that can be used in any formula. To build a custom function you assemble it from the functions and operators that already exist. For example, you could define a new `money(` function with one parameter:

```
money(number)
```

This custom function can be defined using Panorama's built in `pattern(` function, like this.

```
pattern(number,"#,.##")
```

Once the function has been defined you can use it in any formula. For example, the formula

```
money(54321.5678)
```

would result in the text value 54,321.56.

To learn how to create your own custom functions see “Custom Functions” on page 1461.

## Procedures

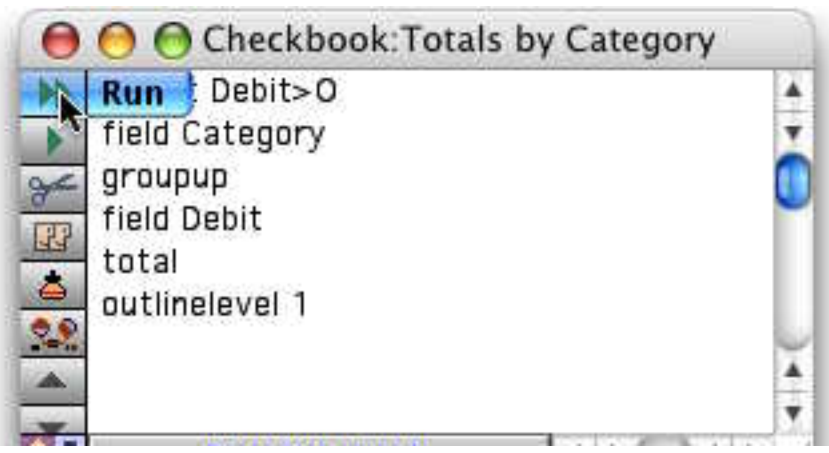
Panorama V includes hundreds of new statements as well as new features designed to make writing and debugging procedures easier. In addition to the enhancements listed below, we've also greatly enhanced several wizards relating to programming, see "View Wizard" on page 16, "Programming Reference Wizard" on page 17, "Formula Wizard" on page 18, "Icons & Backgrounds Wizard" on page 18, "Cross Reference Wizard" on page 19, "Custom Statement and Function Wizards" on page 20, "Dialog Workshop Wizard" on page 21, "Dropalyzer Wizard" on page 22, "Elastic Picture Workshop" on page 22 and "Variables Wizard" on page 23.

### Undo

The procedure editing window now supports the **Undo** command. You can **Undo** any operation that modifies the text of the procedure.

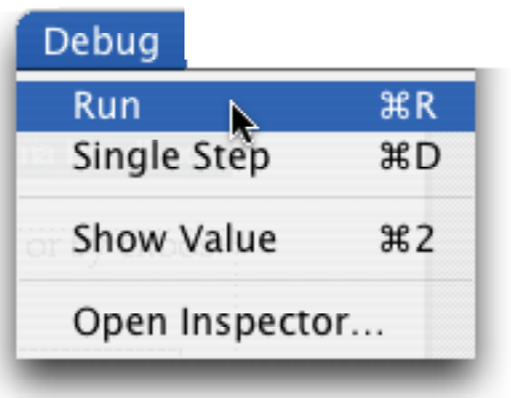
### Easy Procedure Triggering

In previous versions of Panorama a procedure had to be triggered from the Action menu, from a button, or using an automatic trigger. Panorama V now allows you to trigger a procedure directly from the procedure window itself. If the procedure itself is currently the top window you can trigger it by clicking on the **Run** tool, or by choosing **Run** from the Debug menu. Using this technique you can even run procedures that would normally be impossible to trigger manually, for example procedures with names that start with period.



```
Debit>0
field Category
groupup
field Debit
total
outlinelevel 1
```

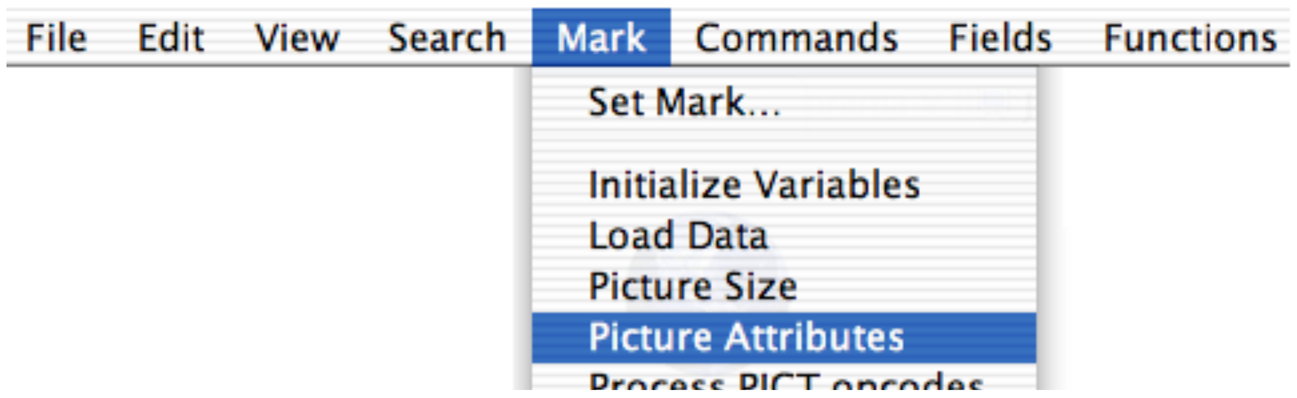
or



You can also use the **Single Step** command to start a procedure the same way. For more information see "Trying Out a Procedure" on page 1483.

### Organizing Large Procedures (The Mark Menu)

A single procedure may include up to 32,000 characters of text. A procedure that long would be more than 20 pages long if printed. As a procedure grows it can be difficult to navigate within the procedure itself. The **Mark** menu allows you to create "bookmarks" within the procedure. These marks are listed in the **Mark** menu.

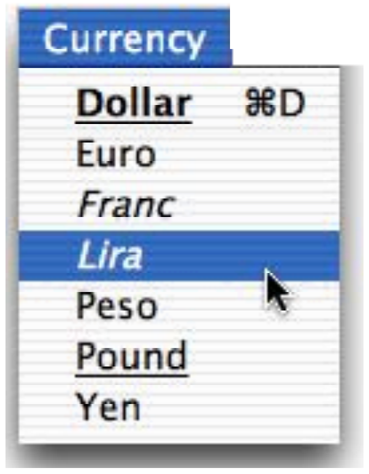


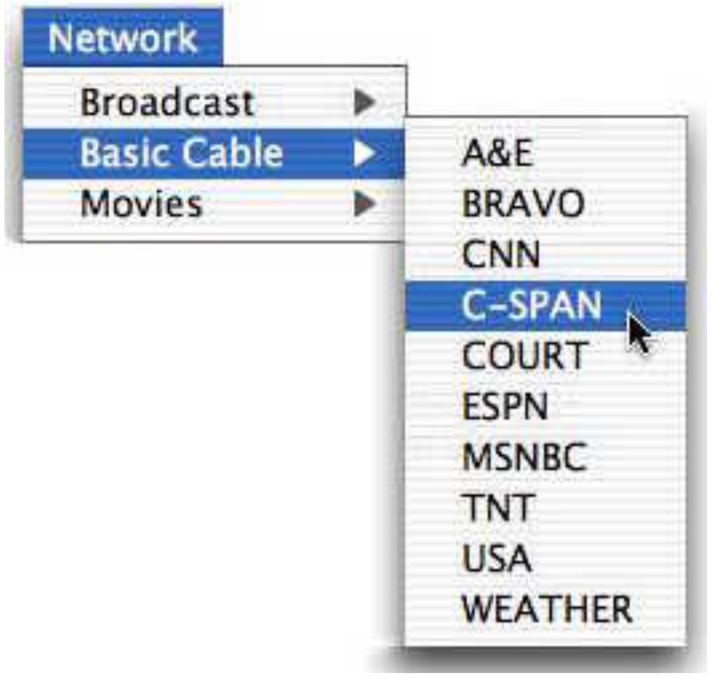
Choosing an item from this menu causes the editor to jump to the location in the procedure text corresponding to the mark. For more information see "Organizing Large Procedures (The Mark Menu)" on page 1553.

## Live Menus

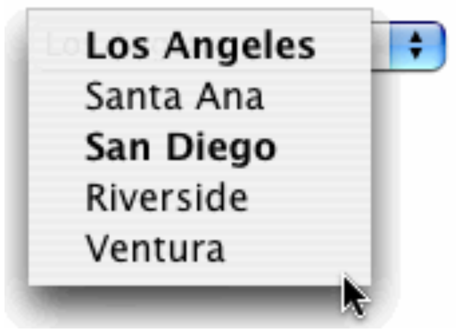
Prior to Panorama V there were two methods for creating menus in the menu bar: 1) Custom menus (created with resources) and 2) Action menus. Both of these methods have drawbacks in some applications. Creating custom menus with resources gives you pretty good control over the menus. Because it requires creating a separate resource file, this technique is very cumbersome. Action menus are very easy to set up, but provide only very limited control. For example, Action menus don't allow submenus, and they don't allow you to change menus on the fly.

Panorama V provides a new method for designing a custom menu bar: **Live Menus**. Unlike custom menus, no separate resource file is required. Unlike Action menus, Live Menus give you complete control over the content and appearance of each menu. In fact, you have even better control than resource based custom menus. If you are creating a new database that needs it's own menus, Live Menus are the way to go. You can still use resource based custom menus, but in most cases you'll find that you want to convert to the new Live Menu system. Here are some examples of Live Menus in action.

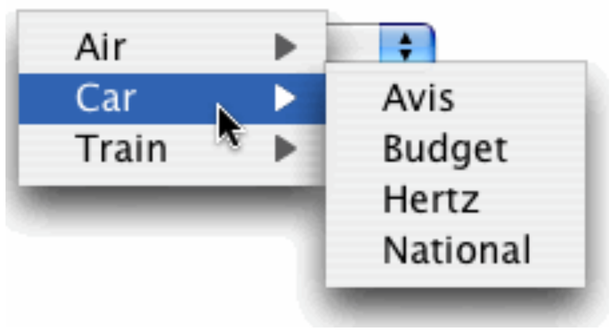




To learn how to set up your own Live Menus see "Live Menus" on page 1593. You can also create Live Pop-Up menus with different styles for each menu item (see "“Live” Pop-Up Menu Formulas" on page 983).



You can even create a pop-up menu with submenus (see "Pop Up Submenus" on page 984).



## Important Note for Custom Menu Developers

Starting with Panorama V, resource based custom menus need to avoid the area around menu #200. Live menus use numbers from 200 up. Wizard menus use menus from 199 down. So for now that means custom menus should avoid the area between 190 and 210. For future expansion we recommend avoiding the area between 170 and 230. Or better yet, switch your custom menus to Live menus!

## ..CloseDatabase

The new **..CloseDatabase** procedure allows you to customize the actions that occur when a database is closed. See "..CloseDatabase" on page 1653.

## New Programming Statements

Panorama V includes over 200 new statements, listed below in alphabetical order (we've **highlighted** some of the most interesting statements). For more information on any statement see the **Programming Reference** wizard.

| Statement | Parameters | Description |
|---|---|---|
| abortcheck | prompt | This statement checks to see if the user has pressed Command-Period to abort. If he or she has, info("trigger") is set to "Abort", otherwise it is set to "". |
| alertcanceldelete | message | This statement will produce a CancelDelete alert that uses the info("DialogTrigger") function to learn the users response. "Cancel" is the default. |
| alertcancelok | message | This statement will produce a CancelOK alert that uses the info("DialogTrigger") function to learn the users response instead of the clipboard. |
| alertdeletecancel | message | This statement will produce a DeleteCancel alert that uses the info("DialogTrigger") function to learn the users response. "Delete" is the default. |
| alertnoyes | message | This statement will produce a NoYes alert that uses the info("DialogTrigger") function to learn the users response instead of the clipboard. |
| alertok | message | This statement will produce an alert with just an Ok button (similar to the message statement). |
| alertokcancel | message | This statement will produce an OKCancel alert that uses the info("DialogTrigger") function to learn the users response instead of the clipboard. |
| alertoksmall | message | This statement will produce a small alert with just an Ok button (similar to the message statement). |
| alertrevertcancel | message | This statement will produce an alert with Revert and Cancel buttons. This is the same alert that appears when you choose the Revert to Saved command. The procedure can use the info("dialogtrigger") function to find out which button was pressed. |
| alertsavecancel | message | This statement will produce an alert with Save, DontSaveandCancel-buttons.Thisisthesamealertthatappearswhenyoucloseawindow(ifitisthelastopenwindowforadatabase)orquitPanorama.Theprocedurecanusetheinfo("dialogtrigger")functiontofindoutwhichbuttonwaspressed.' |
| alertyesno | message | This statement will produce a YesNo alert that uses the info("DialogTrigger") function to learn the users response instead of the clipboard. |
| alertyesnocancel | message | This statement will produce a YesNoCancel alert that uses the info("DialogTrigger") function to learn the users response. "Yes" is the default. |

| Statement | Parameters | Description |
|---|---|---|
| append | data,text | This statement appends a text string to a field or variable. If the field or variable doesnthaveavalueyet,thetextstringissimplyassigned-totheit.' |
| appenddataforktofile | source,destination, typecreator,progress, buffersize | The APPENDDATAFORKTOFILE statement copies the data fork of a file to the end of an existing file. If the destination file does not exist it is created. If the destination folder does not exist it is created. |
| appenddictionary-value | dictionary,name, separator,value | This statement is part of a suite that manipulates items in a key / value dictionary. This is not a language dictionary for spelling checks, but a dictionary that allows you to define words (names) and their values (definitions). The AppendDictionaryValue statement appends a value to an item, given its name. |
| appendline | data,text | This statement appends a text string to a field or variable on a new line. If the field or variable doesnthaveavalueyet,thetextstringissim-plyassignedtotheit.' |
| appendrezforktofile | source,destination, typecreator,progress, buffersize | The APPENDDATAFORKTOFILE statement copies the resource fork of a file to the end of an existing file. The data is appended to the data fork of the target file. If the destination file does not exist it is created. If the destination folder does not exist it is created. |
| **arrayclairvoyance** | input,outputlist,separa-tor,listobject, inputlist,compare | The ARRAYCLAIRVYOANCE statement searches an array to build an array. The array is updated "live" as it is built. |
| arraynumericsort | inputarray, outputarray,sep | This statement sorts all the numeric elements of a text array in proper numeric order. |
| arraynumerictotal | inputarray,sep, numerictotal | This statement totals all the numeric elements of a text array. |
| arrayrandomize | oldarray,newarray,sep | This statement reorders an array randomly. |
| arraystrip | array,separator | This statement strips blank elements from an array. |
| arraysubset | inputarray,outputarray, separator,formula | This statement filters an array based on a formula. It scans the array using the formula. If the formula is true, the array element will be retained in the final array. If the formula is false, the element will be removed from the output array. |
| arraytoggle | input,text,separator | This statement "toggles" a value within an array. If the value exists within the array, it is removed. If the value does not exist within the array, it is added to the end of the array. |
| arrayunpropagate | input,text,separator | This statement scans an array from top to bottom. If it finds two or more duplicate values in a row, it blanks out all but the first. This is similar to PanoramasUNPROPAGATEcommandintheMath-menu,butforanarrayinsteadofadatabasefield.' |
| basesixtyfourdecode | base64,raw | The BASE64DECODE statement converts BASE64 encoded data back into the original data. BASE64 is a common encoding format for e-mail and other internet protocols. |
| basesixtyfourencode | raw,base64 | The BASE64ENCODE statement converts data into encoded BASE64 data. BASE64 is a common encoding format for e-mail and other internet protocols. |
| batchreplace | data,array,mainsep, subsep | The BatchReplace statement performs multiple find and replace operations on a piece of text. |
| bigmessage | message | This statement will display a large message alert. Keep in mind that the text in an alert is limited to 255 characters. |
| buildwizardmenus |  | This statement scans the wizard folder to build the wizard menu and submenus. |
| calcenclosingrectangle | formula,rectangle | This statement will calculate the rectangle surrounding all of the specified objects. |

| Statement | Parameters | Description |
|---|---|---|
| cautionalert | resource,message | The cautionalert statement allows a Panorama procedure to open an alert dialog and display a specified message within that dialog. A "warning" icon will appear in the upper left hand corner of the alert, like this: |
| changedictionar-yname | dictionary, oldname,newname | This statement is part of a suite that manipulates items in a key/value dictionary. This is not a language dictionary for spelling checks, but a dictionary that allows you to define words (names) and their values (definitions). The ChangeDictionaryName statement changes the name of an of the item in a dictionary. The contents (value) of the item is not changed. |
| channelactivemodule | channel,module | This statement returns the currently active module for a channel, if any. |
| channelcall | type,procedure,extras | This statement calls a procedure in the active channel library. |
| channelgetdictionary | type,module,dictionary | This statement loads the channel settings dictionary into a field or variable. |
| channelinformation | type,plugin,option,value | This statement retrieves information about the this module. |
| channelload | type,plugin | This statement loads a channel module. |
| channelmodules | channel,module | This statement returns a carriage return delimited list of modules that are available for a specified channel. |
| channelopen | type,plugin | This statement opens a channel module for editing. |
| channelpath | type,module,path | This statement returns the path that contains a channel module. |
| channelprocedures | type,plugin,procedures | This statement returns a list of procedures available in a specified channel. |
| channelsavedictionary | type,module,dictionary | This statement saves the channel settings dictionary. |
| channelscript | plugin,script,result, timeout,data | This statement calls an applescript in the same folder as a channel module. It can also pass parameters to the script, and waits for a response from the script. |
| channelswitch | type,plugin | This statement switches the active channel module. |
| channeltypes | types | This statement returns a list of channel types. |
| characterfilter | oldtext,newtext,formula | The characterfilter statement scans text on a character by character basis. As it scans the input text, it builds a new text field or variable. The contents of the new text is based on the result of the formula which is applied to each character of the original text. The formula can use the import() function to retrieve the original character, or the seq() function to retrieve the position of the character within the text.. |
| checkword | word,status | This statement checks to see if a word is in the dictionary. If it is, the STATUS parameter is set to English. |
| chunkfilter | chunksize,oldtext, newtext,formula | The chunkfilter statement is almost the same as the characterfilter statement, but instead of single characters it allows you to process fixed length chunks. This statement is useful for base64 encryption, hex/ascii conversion, cryptography, etc. As it scans the input text, it builds a new text field or variable. The contents of the new text is based on the result of the formula which is applied to each character of the original text. The formula can use the import() function to retrieve the original chunks of characters, or the seq() function to retrieve the chunk number (first chunk is 1, next is 2, etc... |
| closelibrarywindow |  | This statement is intended to be used in place of the closewindow statement. Instead of closing the database, it makes it secret, keeping it in memory. Note: This command DOES NOT save the database. |

| Statement | Parameters | Description |
|---|---|---|
| closewindowkeepse-cret | | This statement is intended to be used in a ..CloseDatabase procedure. Instead of closing the database, it makes it secret, keeping it in memory. Especially useful for Library databases!! As a side effect, the database is also saved (since you wontgetanotherchanceonceitis-madesecret).' |
| continueclose | yesno | The continueclose statement is designed to be used as part of a ..CloseDatabase procedure. This procedure is automatically triggered whenever Panorama is about to close a database. The continueclose statement can allow this process to continue or it can prevent Panorama from closing the database. |
| cookies | folder,file,options | This statement launches cURL. This command will not work on OS 9. For information on cURL see http://curl.haxx.se |
| copyfile | source,destination, buffersize | The COPYFILE statement copies a file to a new file. On MacOS systems it copies both the data fork and the resource fork. If the destination folder does not exist it is created. |
| copyfork | source,destination, buffersize | The COPYFORK statement copies a fork of a file to a new file. If the destination folder does not exist it is created. Use the statement to copy the data and resource forks separately (Mac OS only). |
| createpassword | characters, numbers,option, password | This statement creates a random password using characters or numbers (or a mixture) set to the chosen length. |
| curl | data,url | This statement launches cURL. This command will not work on OS 9. For information on cURL see http://curl.haxx.se |
| customnumbers | option | The customnumbers statement gives a programmer control over the formats used for numbers and dates within a procedure. |
| databasetogeneric | database,dictionary | This statement converts separate fields into a CommonFields dictionary for export to other database or VCards. |
| deletechildren | database,keyfield, keyvalue | This deletes all the records in another database that have a value in the key field that is equal to the key value. NOTE: As a side effect, all remaining records in the target database will be selected. |
| deletedictionaryvalue | dictionary,name | This statement is part of a suite that manipulates items in a key/value dictionary. This is not a language dictionary for spelling checks, but a dictionary that allows you to define words (names) and their values (definitions). The SetDictionaryValue statement changes the value of an item, given its name. |
| deleterecchildrenwarn | database,keyfield, keyvalue | This statement warns you before deleting the current record from the active database and all the records in another database that have a value in the key field that is equal to the key value. |
| deleterecordandchil-dren | database,keyfield, keyvalue | This deletes the current record from the active database and all the records in another database that have a value in the key field that is equal to the key value. |
| dialdigits | digits | This statement dials one or more digits. The statement sends the digits exactly as specified, without attempting to adjust for area codes, etc. |
| **dialphone** | phonenumber | This statement dials a phone number. The statement will adjust the number according to the channel settings (area codes, country codes, prefix, etc.). |
| dictionaryvalueexists | dictionary,name,result | This statement is part of a suite that manipulates items in a key/value dictionary. This is not a language dictionary for spelling checks, but a dictionary that allows you to define words (names) and their values (definitions). The DictionaryValueExists statement checks to see if a value exists. |

| Statement | Parameters | Description |
|---|---|---|
| **displaydata** | message,options | This statement will display data in a large dialog with a scroll bar. The text displayed in the alert may be any length (it is NOT limited to 255 characters). |
| dragcomplete | | The dragcomplete statement may be used in a procedure that handles data that has been dropped on a form. This statement tells Panorama that you have finished processing the data that was dragged, allowing Panorama to reclaim the memory that was used to store the dragged information. |
| **dragdrop** | rectangle,flavor,data | The dragdrop statement is used to start a drag operation. On MacOS data can be dragged to other applications as well as within Panorama, on Windows dragging is only allowed within Panorama. |
| dragdropdata | | The dragdropdata statement is used in combination with the dragdrop and startdragdrop statements to start a multi-flavor drag operation. The dragdropdata statement is repeated for each flavor to be included in the drag operation. On MacOS data can be dragged to other applications as well as within Panorama, on Windows dragging is only allowed within Panorama. |
| draglistitem | flavor | This statement allows an item to be dragged from a list to any object that can received dragged text. This should be used in response to the user clicking on the list. The list object must have the click / release option turned OFF. |
| **dragvcard** | | This statement drags from the current record into VCard format. |
| dragwithinlist | list,list,list | This statement allows an item to be dragged within a list, rearranging the order of the items within the list. This should be used in response to the user clicking on the list. The list object must have the click / release option turned OFF. |
| **dropfromfinder** | filter,files | This statement processes any files or folders that have been dropped on a form from the finder. |
| **dropimportvcards** | | This statement is designed to be used in a .DropProcedure procedure to process any vCards that were stopped. |
| dumpdictionary | dictionary,dump | This statement is part of a suite that manipulates items in a key / value dictionary. This is not a language dictionary for spelling checks, but a dictionary that allows you to define words (names) and their values (definitions). The DumpDictionary statement returns the a cr separated array of dictionary values, each line displaying a key=value pair. |
| dumpdictionary-quoted | dictionary,dump | This statement is part of a suite that manipulates items in a key / value dictionary. This is not a language dictionary for spelling checks, but a dictionary that allows you to define words (names) and their values (definitions). The DumpDictionaryQuoted statement returns the a cr separated array of dictionary values, each line displaying a key=value pair. The value is quoted (for example Name="Jim") so the dump could be used directly in an Execute statement as a series of assignments. |
| **executeapplescript** | scripttext | The executeapplescript statement compiles and runs an AppleScript script. |
| **executeapplescript-formula** | scripttemplate | This statement executes an AppleScript. Using special tags, the script can access formulas that use Panorama fields and variables. (The formulas are actually calculated in advance, then substituted into the AppleScript code as constants.) |

| Statement | Parameters | Description |
|---|---|---|
| executeasap |  | Whenever Panorama finishes is not doing anything else (in other words not running any other procedure) it checks for a special variable named ExecuteASAP . If it finds this variable, Panorama takes its contents and executes them, just as if the variable was part of an execute statement. The most common use for this feature is to Handler procedures to perform operations they normally wouldn't be able to do, like open or switch windows. |
| **executelocal** | code | The EXECUTELOCAL statement works exactly like the EXECUTE statement, but it shares local variables with the procedure that calls it. Note: You MUST NOT use the RTN statement inside the procedure, or if you do, it must be preceded by the UseMyLocalVariables statement. |
| **executeunix** | shellcommand,result | This statement executes a UNIX shell command. |
| exportvcard | database,vcard | This statement exports the current record into VCard format. |
| extensiontype | filename,type | This statement determines the 4 letter type code for a file based on the extension. For example .txt files are TEXT. |
| **fedextracking** | trackingnumber, shipmentinfo | This statement queries the FedEx web site to determine the status of a shipment. |
| **filecatalog** | path,wildcard, typecreator,files | This statement creates a list of files in a folder, including any subfolders of that folder |
| filemenubar | standardmenus, custommenus | This statement creates a menu bar for every window in this file. (Note: Only data windows get the custom menus. Other windows, for example graphics mode or procedure windows, retain their standard menu configuration.) |
| filesegmenttodatafork | source,spot,length, destination,typecreator, progress,buffersize | The FILESEGMENTTODATAFORK statement extracts a portion of a file to the data fork of a separate file. If the destination file does not exist it is created. If the destination folder does not exist it is created. |
| filesegmenttorezfork | source,spot,length, destination,typecreator, progress,buffersize | The FILESEGMENTTODATAFORK statement extracts a portion of a file to the resource fork of a separate file. If the destination file does not exist it is created. If the destination folder does not exist it is created. |
| findallintext | thetext,searchitem, options,founditems | This statement builds a return separated array of the positions within a text string of all search items found. |
| fontinformation | font,size,style,ascent, descent,leading, maxwidth | The fontinformation statement allows a program to access information about a font. |
| formulamerge | template,result | This statement merges data into a template. Within the template you can place formulas inside { and } characters. |
| generictodatabase | dictionary | This statement converts the data in a GenericFields dictionary into separate fields in the current database. |
| generictovcard | dictionary,vcard | This statement exports the information from a dictionary into a VCard. Elements in the dictionary are: |
| getdictionarykey | dictionary,value,key | This statement is part of a suite that manipulates items in a key/value dictionary. This is not a language dictionary for spelling checks, but a dictionary that allows you to define words (names) and their values (definitions). The GetDictionaryKey statement returns the key of an item, given itsvalue.ThisisthereverseoftheGetDictionaryValuestatement.Ofcoursethisonlyworksproperlyifthereisonlyoneinstanceofthevalueinthedictionary.Note:Thisstatementmaybemuchslo werthantheGetDictionaryValuestatement.' |

| Statement | Parameters | Description |
|---|---|---|
| getdictionaryvalue | dictionary,name,value | This statement is part of a suite that manipulates items in a key / value dictionary. This is not a language dictionary for spelling checks, but a dictionary that allows you to define words (names) and their values (definitions). The GetDictionaryValue statement returns the value of an item, given itsname.' |
| getdragdata | item,flavor,data | The getdragdata statement may be used in a procedure that handles data that has been dropped on a form. The getdragdata statement allows you to determine what data was dropped. |
| getdragflavors | item,flavors | The getdragflavors statement may be used in a procedure that handles data that has been dropped on a form. The Mac operating system allows you to drag multiple flavors of data at a time (for example, you can drag a picture and text (perhaps the name of the picture) at the same time). The getdragflavors statement allows you to determine what flavors were dropped. The most common flavors are "TEXT" and "PICT". |
| getdragitemcount | count | The getdragitemcount statement may be used in a procedure that handles data that has been dropped on a form. The Mac operating system allows you to drag multiple items at a time (for example, you can select several icons in the Finder and drag them). The getdragitemcount statement allows you to determine how many items were dropped. (Note: Drag-and-drop operations that start within Panorama are limited to one item, so using this statement is unnecessary if you know the data you are receiving came from within Panorama.) |
| getfilepermissions | folder,filename, permissions | The getfilefinderpermissions statement (OS X only) retrieves a number that contains the permission settings for the file. |
| getformulatext | template,formula | Many statements require a formula as text, which usually requires using special quote characters like “ ” or { }. This can get confusing. The GETFORMULATEXT statement allows you to convert a formula into text without special quote characters. |
| getgenericfield | database,field,result | This statement gets the formula that corresponds to a generic field. |
| getgenericformula | database,field,result | This statement converts a formula using generic fields into a formula using the real database fields. |
| gettaglocation | page,prefix,suffix, start,length | This statement locates the first matching tag within some text. |
| gettaglocations | page,prefix,suffix, positions | This statement locates all matching tags within some text. |
| getwebcolor | rgb,webcolor,default | This statement will calculate an RGB color from a Netscape style web color. |
| giantmessage | message | This statement will display a giant message alert. Keep in mind that the text in an alert is limited to 255 characters. |
| grabformula | database,formula,result | This statement evaluates a formula using data from another database. |
| hardwrap | inputtext,outputtext, linesize | This statement will hard wrap text to what ever line width is set in the linesize parameter. |
| hexdump | binarydata,hextext | The HEXDUMP statement converts binary data into a hex dump format, with 16 bytes per line. |
| htmlextractimages | page,links | This statement extracts the image references from an HTML page. |
| htmlextractlinks | page,links,option | This statement extracts the links from an HTML page. |
| htmlformitemnames | page,elements | This statement returns a list of form elements (<INPUT tags, etc.). |
| htmltabletoarray | table,array,rowsep,colsep, colums | This statement converts an HTML table into a text array.. |

| Statement | Parameters | Description |
|---|---|---|
| importvcards | vcard | This statement imports the information from one or more VCards into the current database. |
| increment | data,value | This statement increments a field or variable. |
| initializedictionary | dictionary,name,value | This statement is part of a suite that manipulates items in a key/ value dictionary. This is not a language dictionary for spelling checks, but a dictionary that allows you to define words (names) and their values (definitions). The BuildDictionary statement builds a new dictionary and initializes several values. You could do this by repeatedly calling the SetDictionaryValue statement but this is faster. Note: The name and value parameters may be repeated for as many key/values as you need to initialize. You are responsible for making sure that you do not specify the same key twice, which will result in a corrupted dictionary. |
| listdictionarynames | dictionary,list | This statement is part of a suite that manipulates items in a key/ value dictionary. This is not a language dictionary for spelling checks, but a dictionary that allows you to define words (names) and their values (definitions). The ListDictionaryNames statement returns the names of all of the items in a dictionary in a carriage return separated array. |
| **liveclairvoyance** | input,outputlist, separator,listobject, database,query,compare, template,ticks,max, options | The LIVECLAIRVOYANCE statement searches a database to build an array. The array is updated "live" as it is built. |
| loadlibrary | path,file | This statement loads a library database into memory and registers the procedures in that library so that they will be available as Panorama statements. Only statements that are a single, all uppercase word will become statements. |
| **loadurl** | data,url | This statement loads a URL into a field or variable. If the data in the URL contains text, any line breaks in the text are converted to Macintosh format (CR only). Also, if the data contains text, this URL will become the base URL. Subsequent downloads can be made with URLsrelativetothislocation.' |
| makeabsolutepath | path,absolutepath | This statement converts a relative path (relative to the current database) to an absolute path. It first checks to see if the path is already an absolute path. Note: There is no guarantee that the specified path actually exists! |
| makeabsoluteurl | relativeurl,absoluteurl | This statement changes the base URL. Once the base URL has been set you can access the relative URLsfromthisbase.It'susuallynotnecessarytousethisstatement,itisusedautomaticallywhenaccessingURL's.' |
| makefileglobals | assignment | This statement creates one or more fileglobal variables, and assigns a value to each new variable. |
| makefileinvisible | folder,name | This statement makes a visible file invisible. |
| makefilesecret | file | This statement closes all of the windows associated with a file, but keeps the file open in memory. |
| makefilevisible | folder,name | This statement makes an invisible file visible. |
| makeglobals | assignment | This statement creates one or more global variables, and assigns a value to each new variable. |
| makelocals | assignment | This statement creates one or more local variables, and assigns a value to each new variable. |

| Statement | Parameters | Description |
|---|---|---|
| makemergeformula | template,database, formula | This statement makes a formula from a template. Within the template you can place fields inside « and » characters and formulas inside { and } characters. Unlike FORMULAMERGE, the formula is not evaluated. |
| **makenewalias** | filefolder,filename, aliasfolder,alias,filename | The makenewalias statement creates an alias file. |
| **makenewfolder** | path | This statement creates a new folder, and if necessary, also creates any enclosing folders needed to create the target folder. If there is an error, it will appear in the global variable MakeNewFolderError. |
| makenumberedarray | array,separator,start,end | This statement generates a numeric sequenced array, for example 1, 2, 3, 4, 5. |
| markallinwpso | searchitem,searchoptions, wpsoname,markoptions, failuremessage | This statement will first change all current text to Plain text and then mark all found search items in Word Processing SuperObject with the style selected. |
| markdatabasechanged | | This statement tells Panorama that the current database is changed (for example if you change a permanent variable. |
| measuretext | font,size,style,text,widths | The measuretext statement calculates the cumulative width of each character in a word or phrase. |
| measuretextarray | font,size,style,array, separator,widths | The measuretextarray statement calculates the display width of each element in an array. |
| moveobjects | objectname, nameoperator, deltav,deltah | This statement will move an object or group of objects up, down, left or right on the form. The objects are selected base upon the nameoperator (=. contains, beginswith, notcontains etc.) and the value in objectname. |
| noimplicitassignment | | The noimplicitassignment statement disables Panoramasimplicitassignmentfeature.' |
| notealert | resource,message | The notealert statement allows a Panorama procedure to open an alert dialog and display a specified message within that dialog. An "information" icon will appear in the upper left hand corner of the alert, like this: |
| **openanything** | folder,file | The OpenAnything command opens any application or document. The item to open is specified by a folder and file name. This has the same effect as double clicking on the application or document in the Finder or Explorer. |
| openplain | | This statement opens a database without opening any pre-saved windows (forms, etc.) Only the data sheet will be opened. If the database has a .Initialize procedure, it will not run. This statement may be useful for opening databases that cannot open normally for some reason. There are no parameters to this statement, instead it opens a dialog to allow the user to select the database to open. |
| **openwebmap** | street,city,state, postalcode,country | This statement takes a street address and opens your web browser to a page displaying an map of the corresponding location. |
| openwizard | wizard | This statement opens a wizard, just as it would be opened by selecting that wizard from the Wizard menu. If the same wizard appears in more than one submenu, the first one will be used. |
| originalwindow | | This statement goes back to the window remembered by the REMEMBERWINDOW statement. The RememberWindow and OriginalWindow statement must be in the same procedure. |
| plainalert | resource,message | The plainalert statement allows a Panorama procedure to open an alert dialog and display a specified message within that dialog. No icon will appear in the upper left hand corner. |

| Statement | Parameters | Description |
|---|---|---|
| popupatmouse | list,initial,choice | This statement can be used to produce a pop-up menu in response to clicking on a form. The menu will pop-up over the location where the mouse was pressed. This statement should not be called unless the original procedure was triggered by a mouse click. The button should have the click / release option turned off. |
| popupbutton | list,initial,choice | This statement can be used to produce a pop-up menu in response to clicking on a button. The menu will pop-up over the button that was pressed. This statement should not be called unless the original procedure was triggered by a button. The button should have the click / release option turned off. |
| **popupclick** | list,initial,choice | This statement can be used to produce a pop-up menu in response to clicking anywhere on a form. The menu will pop-up over the current mouse location. |
| popupdoublefield-choices | choice,firstfield,second-field,initial | This statement can be used to produce a pop-up menu containing a list of data values in a field. The statement must be called in response to clicking on a button. The menu will pop-up over the button that was pressed. This statement should not be called unless the original procedure was triggered by a button. The button should have the click / release option turned off. |
| popupfieldchoices | choice,field,initial | This statement can be used to produce a pop-up menu containing a list of data values in a field. The statement must be called in response to clicking on a button. The menu will pop-up over the button that was pressed. This statement should not be called unless the original procedure was triggered by a button. The button should have the click / release option turned off. |
| posixpath | folder,file,path | This command converts a file and folder into a posix path. |
| **post** | mode,database,keyfield, keyvalue,datafield, datavalue,datafield2, datavalue2 | This statement assigns a value to a field in another database. |
| **posturl** | data,url,name,value | This statement loads a URL into a field or variable. In addition to the data itself, you can supply one or more post arguments. These allow you to post data that would normally be supplied by an HTML form. If the data in the URL contains text, any line breaks in the text are converted to Macintosh format (CR only). Also, if the data contains text, this URL will become the base URL. Subsequent downloads can be made with URLsrelativetothislocation.Note:Thenameandvalueparametersmay-berepeatedforasmanykey / valuesasyouneedtopost.Youareresponsi-bleformakingsurethatyoudonotspecifythesamekeytwice.' |
| **progressbar** | bounds,mercury, temp,boiling,inset | This statement updates a progress bar on the current form. The progress bar consists of two objects, the bounds object (usually displays a background) and the "mercury" object, which grows as process is made. |
| **querywhitepages** | first,last,city,state,zip,url, listings,whiteinfo,channel | This statement queries the web to obtain information about a zip code. |
| registerfunction | folder,name,param-count,body | The registerfunction statement defines a new custom function. This is usually done with a wizard, but a program can use this statement to do so directly. Usually this would be done in the .Initialize procedure so that the function would be available for use throughout the database. |

| Statement | Parameters | Description |
|---|---|---|
| registerlibrary | database,librarydata | The registerlibrary statement registers one or more procedures so that they can be used as custom statements. You should never need to use this command directly. During initialization, Panorama automatically scans the databases in the Extensions:Libraries folder and uses the loadlibrary statement to register all of the procedures it finds there as custom commands. |
| rememberwindow | | This statement remembers the currently active window. You can get back to this window later with the ORIGINALWINDOW statement. The RememberWindow and OriginalWindow statement must be in the same procedure. |
| **rtnerror** | | The rtnerror statement may be used to help manage errors that are occur during the execution of a subroutine. It is especially useful when designing custom statements. When this statement is encountered, Panorama checks to see if any error handling applies. (Error handling is active if an onerror statement is active, or if the statement after the call or farcall statement that started this subroutine is if error.) If there is no error handling active, the message will be displayed and then the procedure will stop. If error handling is active, the message is placed in Panoramasinternalerrormessage-buffer(itcanberetrievedusingtheinfo("error")function)andtheerror-isprocessedasifitwereaninternallygeneratederror.' |
| rudemessage | message | This statement will display a very tall message alert rudely. Normally this alert would be used only during debugging (to display multiple lines of data). Keep in mind that the text in an alert is limited to 255 characters. |
| **rundialog** | options | This statement uses a form as a template to display a dialog window. The statement supervises the operation of the dialog until it is closed. |
| saveapplescriptlist | folder,file,items | This statement saves a series of parameters as an AppleScript List. This can be useful for quickly passing a bunch of parameters to an AppleScript. |
| **saveurl** | path,url | This statement saves a URL into a file. You can check info("httperror") to make the file was downloaded successfully.< |
| **savewebmap** | path,zoom,street,city,state,postalcode,country, mapurl | This statement takes a street address and opens your web browser to a page displaying an map of the corresponding location. |
| scanlibrary | database,data | This statement scans the procedures in a database and builds a data structure that describes the library procedures that are available. Only procedures that have single word all uppercase names will be included as library procedures. |
| **sendarrayemail** | from,to,subject,body | This statement sends a single e-mail to multiple recipients. For other applications see also SendEmail, SendBulkEmail and SendArrayEmail |
| **sendbulkemail** | from,database,recipient, subject,body | This statement sends a single e-mail to a single recipient. For more complex applications see also SendEmail, SendOneEmail and SendArrayEmail |
| sendemail | options,body | This statement sends an e-mail. It gives access to the maximum number of options available. For basic applications see also SendOneEmail, SendBulkEmail and SendArrayEmail |
| **sendoneemail** | from,to,subject,body | This statement sends a single e-mail to a single recipient. For more complex applications see also SendEmail, SendBulkEmail and SendArrayEmail |

| Statement | Parameters | Description |
|---|---|---|
| setbaseurl | url | This statement changes the base URL. Once the base URL has been set you can access the relative URLsfromthisbase.It'susuallynotnec-essarytousethisstatement,itisusedautomaticallywhenaccessin-gURL's.' |
| setdialogtrigger | value | The setdialogtrigger statement changes the value returned by the info("dialogtrigger") function. Usually this value is set by Panorama when a button in a dialog is clicked. The setdialogtrigger statement allows a procedure to simulate this action. |
| setdictionaryvalue | dictionary,name,value | This statement is part of a suite that manipulates items in a key / value dictionary. This is not a language dictionary for spelling checks, but a dictionary that allows you to define words (names) and their values (definitions). The SetDictionaryValue statement changes the value of an item, given itsname.' |
| setfilepermissions | folder,filename, permissions | The setfilefinderpermissions statement (OS X only) changes the per-mission settings for the file. |
| setfilevariable | database,variable,value | This statement changes the value of a fileglobal variable in another database. |
| setrectedges | rectangle,top,left, bottom,right | This statement will change one or more edges of the specified rectan-gle. |
| shellopendocument | document | The shellopendocument statement opens a document in another application. It can also be used to open web pages or to create e-mail messages. |
| **speak** | text | The speak statement speaks a word or phrase using the current voice. If the voice is already talking, it waits until the current text has been spoken before speaking the new text. The program continues running immediately - in other words, the next statement after the speak statement will be executed immediately, without waiting for the text to be spoken. See the info("speaking") function if you need to wait until the text has been spoken to procede. (Note: This statement is only available on MacOS computers.) |
| speakaddress | data | This statement buffers up an address to be spoken later by the SpeakNow statement. Various post office abbreviations are expanded, and numbers are spoken as digit pairs. |
| speakcharacters | data | This statement buffers up text to be spoken later by the SpeakNow statement. Instead of speaking words, each individual character is spoken. |
| speakcharactersslowly | data | This statement buffers up text to be spoken later by the SpeakNow statement. Instead of speaking words, each individual character is spoken separately and slowly. |
| speakdate | data | This statement buffers up a date to be spoken later by the SpeakNow statement. The date will be spoken in the format Month daynth, Year. |
| speakdigitpairs | data | This statement buffers up text to be spoken later by the SpeakNow statement. Integer numbers within the text will be spoken as pairs of digits, for example 2145 is "twenty-one fourty-five". However, if a number has more than four digits it will be spoken as individual dig-its. This statement is good for speaking addresses. |
| speakdigits | data | This statement buffers up text to be spoken later by the SpeakNow statement. Numbers will be spoken as individual digits. |
| speakdollars | data | This statement buffers up a number to be spoken later by the SpeakNow statement as dollars and cents. |
| speakdollarsandcents | data | This statement buffers up a number to be spoken later by the SpeakNow statement as dollars and cents. |

| Statement | Parameters | Description |
|---|---|---|
| speakletters | data | This statement buffers up text to be spoken later by the SpeakNow statement. Letters will be spoken individually, as upper or lower case. Numbers will be spoken as individual digits. |
| speaknow | | This statement causes any buffered speech to be spoken. |
| speakphonenumber | data | This statement buffers up an address to be spoken later by the SpeakNow statement. Various post office abbreviations are expanded, and numbers are spoken as digit pairs. |
| speakscript | database,script | This statement speaks a script created by the Speech Wizard. |
| speakstate | data | This statement buffers up the name of a US state to be spoken later by the SpeakNow statement. |
| speakthisrecord | | This statement speaks the current record in the current database. To do this, it uses the default script for this database (created by the Speech Wizard). |
| speakwords | data | This statement buffers up one or more words to be spoken later by the SpeakNow statement. |
| speechscripts | database,scripts | This statement returns a lists of speech scripts in an open database. These scripts are created by the Speech Wizard. |
| splitmenutrigger | menuname,menuitem | This statement splits info("trigger") into separate menu name and menu item variables. |
| standardclosealert | | This statement is designed to be used in the ..CloseDatabase procedure. It displays the standard "Do you want to save changes " alert, and processes the result. Use this statement if you want to do additional processing before or after . |
| startdragdrop | | The startdragdrop statement is used in combination with the dragdrop and dragdropdata statements to start a multi-flavor drag operation. The dragdropdata statement is repeated for each flavor to be included in the drag operation. On MacOS data can be dragged to other applications as well as within Panorama, on Windows dragging is only allowed within Panorama. |
| stopalert | resource,message | The alert statement allows a Panorama procedure to open an alert dialog and display a specified message within that dialog. Panorama will display an exlamation point icon in the upper left hand corner of the alert. |
| stopspeaking | | The stopspeaking statement tells Panorama to shut up now! Any text that is being spoken will stop immediately in mid-sentence. |
| stringreverse | result | This statement reverses the characters in a string of text. |
| stuff | archive,sources,options | This command compresses one or more files using Stuffit. It requires that you have Stuffit Deluxe 8.0 or later installed. |
| **superalert** | message,options | This statement will display an alert. You can control the size of the alert, as well as several appearance options. The text displayed in the alert may be any length (it is NOT limited to 255 characters). If the alert has more than one button, info("dialogtrigger") will contain the name of the button that was pressed. |
| **superarraybuild** | array,sepchar,database ,conditional,generate, options,maxticks, maxrecords,skiprecords, cachelevel | The superarraybuild statement scans a database to create an array. This statement is similar to arraybuild , but with a number of additional options. This statement was primarily designed for the Live Clairvoyance™ feature, but weresurethattherewillbeotherusefulapplications.IfyoudowanttousethisforLiveClairvoyancewerecommendthatinsteadofusingtheSuperArrayBuildstatementdirectlyyouusetheliveclairvoyancecustomstatement.' |

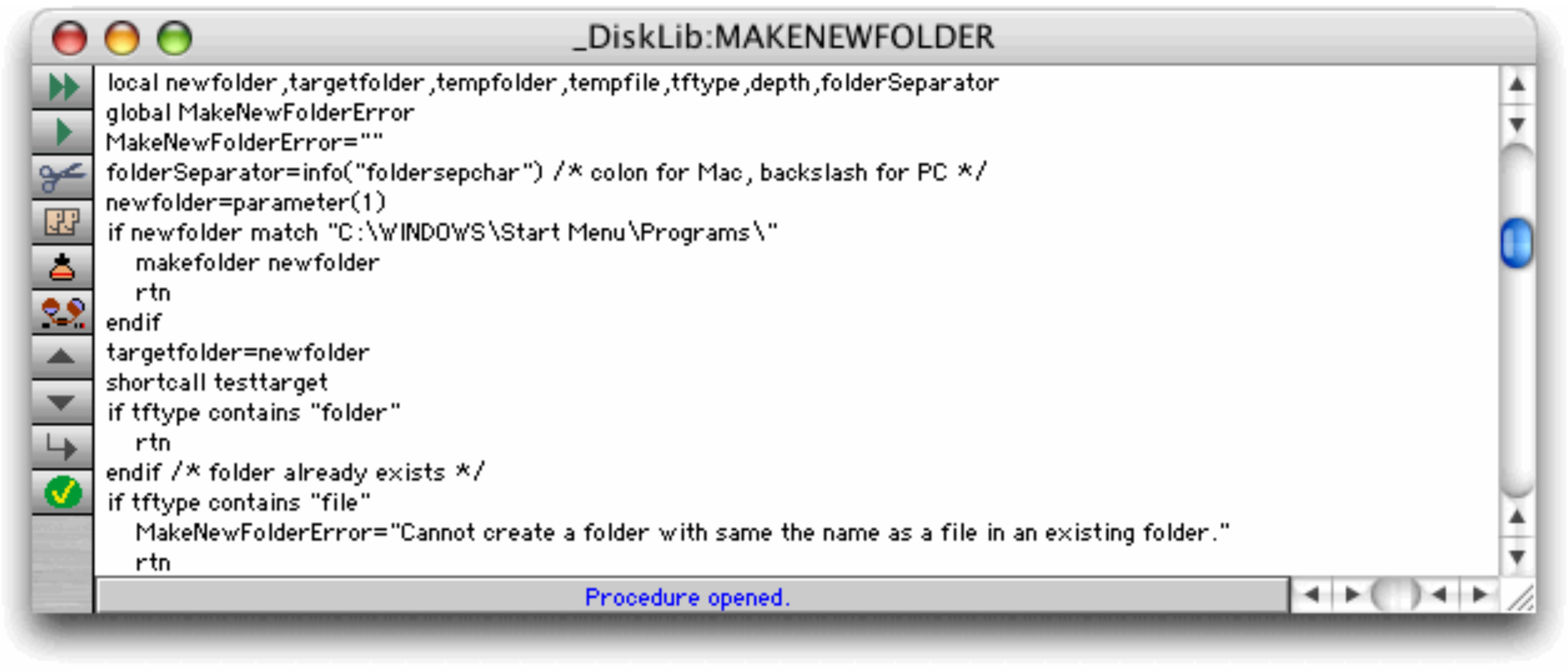
| Statement | Parameters | Description |
|---|---|---|
| **superchoicedialog** | choicelist,choice,options | This statement will display a dialog with a list of choices that can be selected. You can control the size of the alert, as well as several appearance options. If the alert has more than one button, info("dialogtrigger") will contain the name of the button that was pressed. |
| tallmessage | message | This statement will display a very tall message alert. Normally this alert would be used only during debugging (to display multiple lines of data). Keep in mind that the text in an alert is limited to 255 characters. |
| textfilter | oldtext,newtext,formula | The textfilter statement is similar to the characterfilter statement, but the textfilter statement doesntnecessarilyscanthetextcharacterby-character.Instead,itallowsyoutoskipoverasequenceofcharactersbase-donaformulabeforeitstartsscanningcharacterbycharacteragain.' |
| textwidth | font,size,style,text,width | The textwidth statement calculates the width of a word or phrase in a specified font, size and style. |
| togglesummarylevel | | The togglesummarylevel statement changes the current record from a data record into a summary record, or from a summary record into a data record. |
| updateballoonlocations | | The updateballoonlocations statement may be used after you move objects within a form. If any balloon help objects were moved, this statement will update Panoramasballoonhelpfeaturetoreflectthe-newlocations.' |
| usecallerslocalvariables | | The usecallerslocalvariables statement allows a procedure to access the local variables of the procedure that called the current procedure. |
| usemylocalvariables | | The usemylocalvariables statement reverses the action of the usecallerslocalvariables statement, which allows a procedure to access the local variables of the procedure that called the current procedure. |
| usnumbers | | The usnumbers statement allows a programmer to switch to the US format for numbers and dates within a procedure, regardless of the international settings that may be defined in the operating system preferences. |
| vcardtogeneric | vcard,dictionary | This statement imports the information from a single VCard into a dictionary. Elements in the dictionary are: |
| windowcornerinitialize | edges | This statement shifts a window to an edge or corner of the main screen. However, it only does so if the screen size has changed. This is used by wizards to make sure that the window is positioned correctly the first time it is opened. But if the user decides to reposition the window, they can without this routine interfering. |
| windowmenubar | standardmenus, custommenus | This statement creates a menu bar for this window. |
| windowtocorner | edges | This statement shifts a window to an edge or corner of the main screen. |
| writedialogcode | code | This statement scans the current form, and writes the procedure needed to handle this form as a dialog. |
| **zipinfo** | zipcode,zipcodeinfo, channel | This statement queries the web to obtain information about a zip code. |
| **zipinfoplus** | address1,address2,city, state,zip5,zipplusinfo | This statement queries the web to obtain information about a zip code. |

### Custom Statements

Panorama comes with hundreds of ready to use built-in statements, but you aren't limited to these built-in statements. If you don't find the statement you need you can build your own! If you are planning on using a particular sequence of steps frequently then it might pay to create a custom statement that you can use in any database.

As you might have guessed from the phrase "sequence of steps" in the previous paragraph, custom statements are very similar to subroutines. In fact, custom statements actually are Panorama subroutines, written using Panorama's standard procedure editor and the Panorama programming language. The only difference is that these subroutines are placed in a special location, where Panorama automatically loads them so. As it loads the database containing these special subroutines, Panorama also adds them to the programming language so that they are always available to procedures in any database.

To illustrate this, consider the subroutine shown below, which will make a new folder. This procedure is called MAKENEWFOLDER and is contained in the _DiskLib database.



```
local newfolder,targetfolder,tempfolder,tempfile,tftype,depth,folderSeparator
global MakeNewFolderError
MakeNewFolderError=""
folderSeparator=info("foldersepchar") /* colon for Mac, backslash for PC */
newfolder=parameter(1)
if newfolder match "C:\WINDOWS\Start Menu\Programs\"
   makefolder newfolder
   rtn
endif
targetfolder=newfolder
shortcall testtarget
if tftype contains "folder"
   rtn
endif /* folder already exists */
if tftype contains "file"
   MakeNewFolderError="Cannot create a folder with same the name as a file in an existing folder."
   rtn
```

Even without the ability to create custom statements you can still call this subroutine from another database using the line shown below. (see "Calling a Subroutine in Another Database" on page 1520).

```
farcall "_DiskLib","MAKENEWFOLDER","My Drive:My Documents:MyImages:Zack:"
```

This technique has some drawbacks — you have to remember that this subroutine is in the _DiskLib database, you have to make sure that the _DiskLib database has actually been opened, and you have to use the exact capitalization MAKENEWFOLDER because MakeNewFolder or makenewfolder won't work. Converting this procedure into a custom statement fixes these drawbacks. Here is the same subroutine used as a custom statement:

```
MakeNewFolder "My Drive:My Documents:MyImages:Zack:"
```

To learn how to create your own custom statements, see "Custom Statements" on page 1536.

### Programming Techniques

The chapter "Programming Techniques" on page 1655 includes many new techniques introduced in Panorama V.

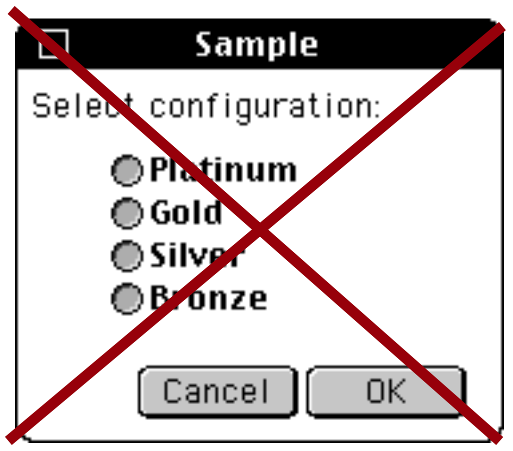
### Files

You can use the openanything statement to open any document on your hard drive in it's native application. See "Opening a Document in Another Application" on page 1672.

The MacOS X operating system is based on UNIX, and uses UNIX style file permissions. File permissions allow the system administrator to control who can read and write any file or folder. Panorama can access and modify these permissions with the getfilepermissions and setfilepermissions statements. To learn more about these statements see the **Programming Reference** wizard.

### Windows

In previous versions of Panorama window type 16 was a rounded corner window with a black drag bar. This window type is no longer available.



See "Non Standard Window Styles" on page 1704.

### Alerts

There are three new variations on the Message statement — BigMessage, GiantMessage and TallMessage. See "Displaying a Message" on page 1719.

There are a number of new statements for displaying standard alerts — alertyesno, alertnoyes, alertyesnocancel, alertokcancel, alertcancelok, alertdeletecancel, alertcanceldelete, alertsavecancel, alertrevertcancel, alertok and alertoksmall. See "Alerts With Multiple Buttons" on page 1721.

The new superalert statement displays a configurable alert. You can control over a dozen different options, including the overall alert size (height and width), the font, text size, title, color, background color, and more. You can even place images on the alert and specify up to three buttons on the alert. In addition, the alert may display up to 32,768 characters (it is *not* limited to 255 characters like the other alerts described in this section) and can even have a scroll bar. See "The SuperAlert Statement" on page 1727.

The displaydata statement is based on the superalert statement, and provides an easy way to display large amounts of information for debugging. See "The DisplayData Alert" on page 1734.

### Dialogs

The supergettext statement displays a configurable dialog for entering text. You can control over a dozen different options, including the overall dialog size (height and width), the font, text size, title, color, background color, and more. See "The SuperGetText Statement" on page 1737.

The supergetchoice statement displays a configurable dialog for choosing an item from a list. You can control over a dozen different options, similar to the supergettext statement. See "The SuperChoiceDialog Statement" on page 1740.

The custom dialog system introduced in Panorama 4 has been enhanced and is now built into Panorama, along with a new Custom Dialog wizard. Using this system you can turn any form into a dialog.See "Custom Dialogs" on page 1744.

### Moving Data Between Files

The `post` statement assigns values to one or more fields in another database. It’s kind of like a reverse lookup. See “The Post Statement” on page 1801. The `postadjust` statement adjusts the value of a numeric field in another database, by adding (or subtracting) a number. For example, you could use this to subtract from the quantity on hand field of an inventory database as an invoice is processed. See “The PostAdjust Statement” on page 1802.

### Finding Information

Panorama V introduced a new search method — **Live Clairvoyance™**. Live Clairvoyance 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 Live Clairvoyance familiar, although the underlying technology is not related.)

The easiest way to use Live Clairvoyance is with the wizard that comes with Panorama (see “Live Clairvoyance™” on page 4). This wizard performs the neat trick of allowing you to use Live Clairvoyance without doing any programming, and in fact without making any modification at all to your databases. However, for some applications you may want to build Live Clairvoyance into your forms. This allows you to customize it exactly for your needs, and to integrate it with other database operations. To learn how to do this see “Live Clairvoyance™” on page 1812.

### Processing and Transforming Binary Data

Panorama V includes several new functions for handling bits (see “Bits” on page 1851).

| Function | Description |
|---|---|
| bit(number) | This function converts a bit number (1 to 32) into a number (1, 2, 4, 8, 16, etc.) |
| getbit(number,bitnumber) | This function returns a true or false value by testing a bit. The bit number may be from 1 to 32. If the bit is set, the value will be true, if it is not set, the value will be false. |
| onescomplement(number) | This function returns the one's complement of a 32 bit number (all bits are reversed) |
| setbit(number,bitnumber,truefalse) | This function sets one bit within a number, without disturbing any of the other bits. The bit number may be from 1 to 32. The bit will be set based on the true/false parameter - set if true, cleared if false. |

### One DImensional Arrays of Binary Values

Programmers familiar with languages like C and Pascal will be familiar with the concept of an array as a sequence of binary values, for example a sequence of bytes, words, longwords, or some other length of binary data. This is quite different from Panorama's usual concept of arrays as variable length items separated by a special character. Panorama V has several functions for extracting a specific element from an array of binary values. The function you pick depends on the type of binary value in the array. See "One Dimensional Arrays of Binary Values" on page 1853.

| Function | Reference Page | Description |
|---|---|---|
| bytearray(data,index) | | This function extracts a value from an array of bytes. This is not a Panorama style delimited array but a C style array of 8 bit values. The result is an integer. |
| chararray(data,index) | | This function extracts a characters from an array of characters. This is not a Panorama style delimited array but a C style array of ASCII characters. The result is an single characters. |
| chunkarray(data,index, chunklength) | | This function extracts a binary chunk from an array of chunks. This is not a Panorama style delimited array but a C style array of binary chunks. The result is a binary value (text). |
| longwordarray(data,index) | | This function extracts a value from an array of longwords. This is not a Panorama style delimited array but a C style array of 32 bit values. The result is an integer. |
| wordarray(data,index) | | This function extracts a value from an array of words. This is not a Panorama style delimited array but a C style array of 16 bit values. The result is an integer. |

Panorama also has three new statements designed for rapidly filtering and / or processing arrays of binary or textual data. See "The CharacterFilter Statement" on page 1854, "The ChunkFilter Statement" on page 1854 and "The TextFilter Statement" on page 1855.

### Data Dictionaries

A conventional dictionary (Webster's, for example) contains a list of entries. Each entry comes as a pair — the word itself, and the definition of the word.

Panorama V supports a data structure called a **data dictionary**. Like a conventional dictionary, a data dictionary contains a list of entries, and each entry comes as a pair — the entry **key** (which identifies the entry) and the entry **value** (some data associated with this entry). Sometimes these entries are referred to as **key/value pairs**. If you know the key, you can find out what the value is. A data dictionary allows you to combine any number of these key / value pairs into a single structure that can be stored in a single variable, a single field or a single procedure parameter. For example, in a database you could use a data dictionary to store additional, seldom used data that you don't want to devote an entire field to, or to store information that you didn't anticipate when you created the database. When a procedure (or custom statement) has a large and variable number of parameters, you can combine these into a data dictionary that can be passed back and forth easily (many of Panorama's Internet access statements work this way). Data dictionaries are also an excellent way to store preferences, and they are used that way by many of Panorama's wizards (for example the **Hot Key** wizard and any application that works with Generic fields (see ""Generic" Fields" on page 398).)

To learn how to create, access and update data dictionaries see "Data Dictionaries" on page 1856.

### General Internet Access

In this millennium no computer is an island. Panorama allows you to tap into the Internet to automatically retrieve data and graphics from the web, submit information to web servers, and to send e-mail based on database information (see “Basic Web Access” on page 1860). The `loadurl` statement fetches web pages from any server (see “Fetching Web Pages” on page 1860). There are a number of new statements and function for parsing web pages (see “Parsing Web Pages” on page 1861). The `saveurl` statement fetches images from the web (.jpg, .gif, etc., see “Fetching Images” on page 1866). The `posturl` statement allows a Panorama program to submit a form to a web server and fetch the response (see “Submitting Forms” on page 1867). Panorama can also access web sites that require cookies (see “Cookies” on page 1869).

### Accessing Web Content

The `savewebmap` statement makes it easy to download a map for any US address (see “Maps” on page 1870). The `zipinfo` statement queries the web to get general information about a zip code: city, state, area code, etc. (see “General Zip Code Information” on page 1870). Given a US street address, the `zipinfoplus` statement uses the US Post Office web site to find out the zip+4, carrier route, and other information (see “Street Address Information” on page 1871). The `querywhitepages` statement queries the web to look up white page information (see “White Pages” on page 1872) The `fedextracking` statement queries the FedEx web site to determine the status of a shipment (see “FedEx Shipment Tracking” on page 1873).

### Controlling Web and E-Mail Clients

In addition to directly accessing web pages (see above) and sending e-mail (see below) Panorama can control your default web and e-mail client to view pages and set up outgoing e-mail. To display a web page use the `shellopendocument` statement (see “Displaying a Web Page” on page 1874). To display a web page that is on your local hard drive (not on the web) use the `openanything` statement (see “Looking Up a Dictionary Key Given Its Value” on page 1859). Use the `openwebmap` statement to display the map for any US address (see “Maps” on page 1870).

In addition to displaying web pages, the `shellopendocument` statement can also be used to initiate the process of creating a new e-mail. See “Maps” on page 1870.

### Sending E-Mail

Panorama cannot send e-mail by itself. However, through the use of a channel Panorama can interface with external software to send e-mails automatically. Panorama comes with several ready to use e-mail channels, and it is also possible to write your own channels. See “Channel Configuration” on page 1878 to learn how to prepare an e-mail channel for your system. Once the channel is configured you can use the `sendoneemail` statement to send a single e-mail to a single recipient (see “Sending a single e-mail” on page 1879). The `sendbulkemail` and `sendarrayemail` statements send multiple copies of the same e-mail to different recipients (see “Sending multiple e-mails” on page 1879). Use `sendbulkemail` if the recipient e-mail addresses are in a database field. Use `sendarrayemail` if the recipient e-mail addresses are in a text array.

### Drag and Drop

Panorama supports the ability to drag data from one location to another (usually called drag-and-drop). On MacOS computers you can drag data within Panorama, and also drag data from other applications to Panorama or drag data from Panorama to other applications. On Windows systems you can only drag within Panorama, drag and drop between Panorama and other applications is not supported. To learn how to add drag and / or drop capabilities to your databases see “Drag and Drop” on page 1898.

**VCard Drag and Drop.** Once generic fields have been set up for a database (see ““Generic” Fields” on page 398) it is very easy to add drag and drop support so that you can exchange data with Apple’s Address Book (or other databases or VCard enabled applications) without using a wizard. See “VCard Drag and Drop” on page 1904 for more information.

### Speech Synthesis

Speech synthesis is an exciting new feature introduced in Panorama V. (Note: Speech synthesis is available only on Macintosh systems. It is not available on Windows systems.) There are several new statements and functions that support speech synthesis — see "Speech Synthesis" on page 1966.

### Writing Your Own Channel Modules

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. See "Writing Your Own Channel Modules" on page 1977 for more information.

### Improved AppleScript Support

The `executeapplescript` statement allows you to build and execute an AppleScript on-the-fly within a Panorama procedure. This means that you don't have to keep track of a bunch of separate script files and you can easily change the script to match changing conditions. This statement also makes it possible for Panorama to easily access the result of a script. See "Building a Script Within a Panorama Procedure" on page 1994.

### Using the UNIX Command Line

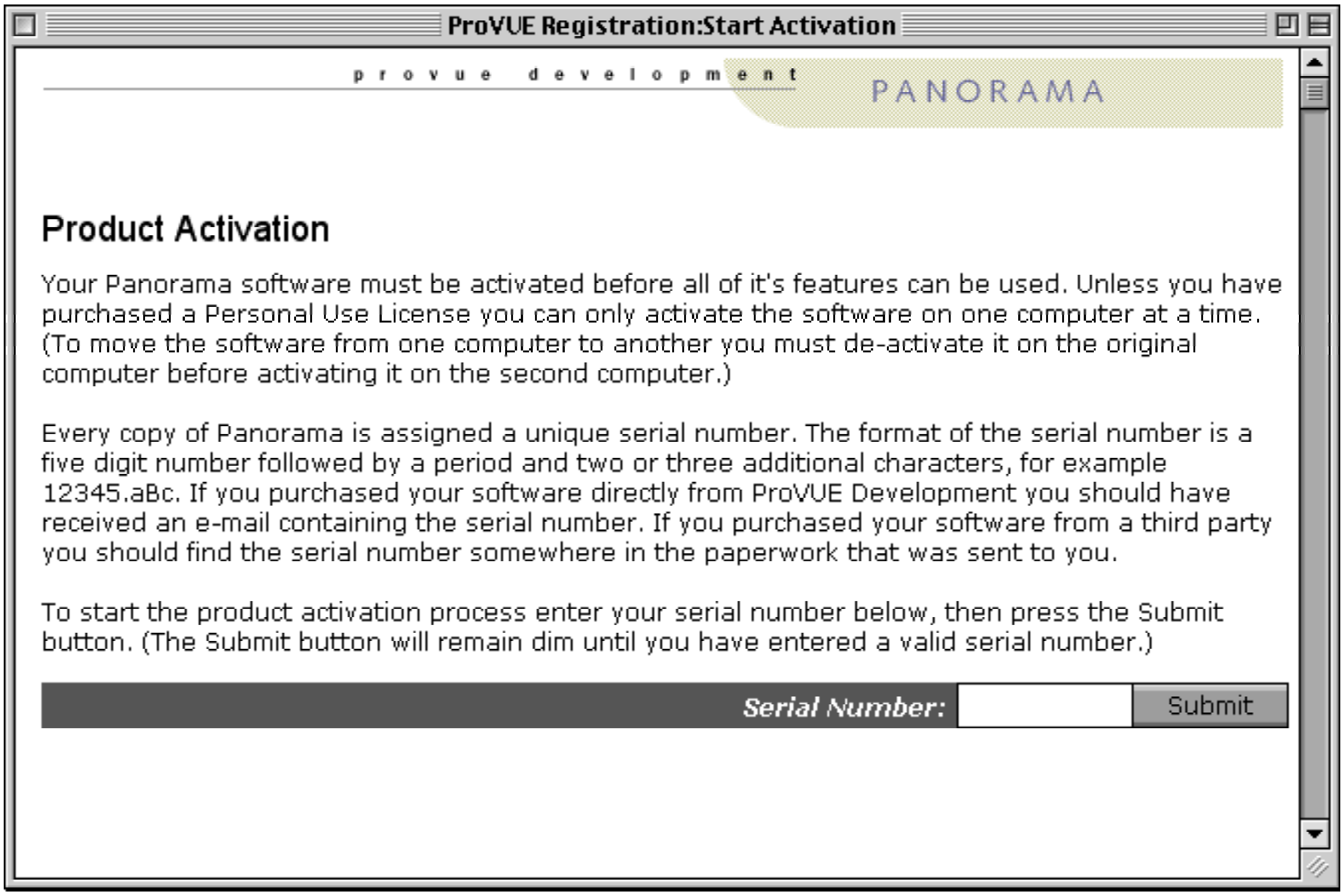
The `executeunix` statement executes a UNIX shell command. The `executeunix` statement opens the entire universe of the power of UNIX to Panorama programmers. See "Using the UNIX Command Line" on page 1995.

## Version 4.0.2

This version was released in September 2002. It was primarily a bug fix release, with only a few new features.

### New Activation Dialog

Panorama 4.0.2 includes a new version of the **ProVUE Registration.pan** database. This new version almost completely automates the process of activating Panorama. If your computer has an internet connection you no longer need to type product codes, activation codes, or personal license information. All you need to type is the serial number and Panorama will use your web browser to get the additional information from ProVUE's web server.



Product Activation

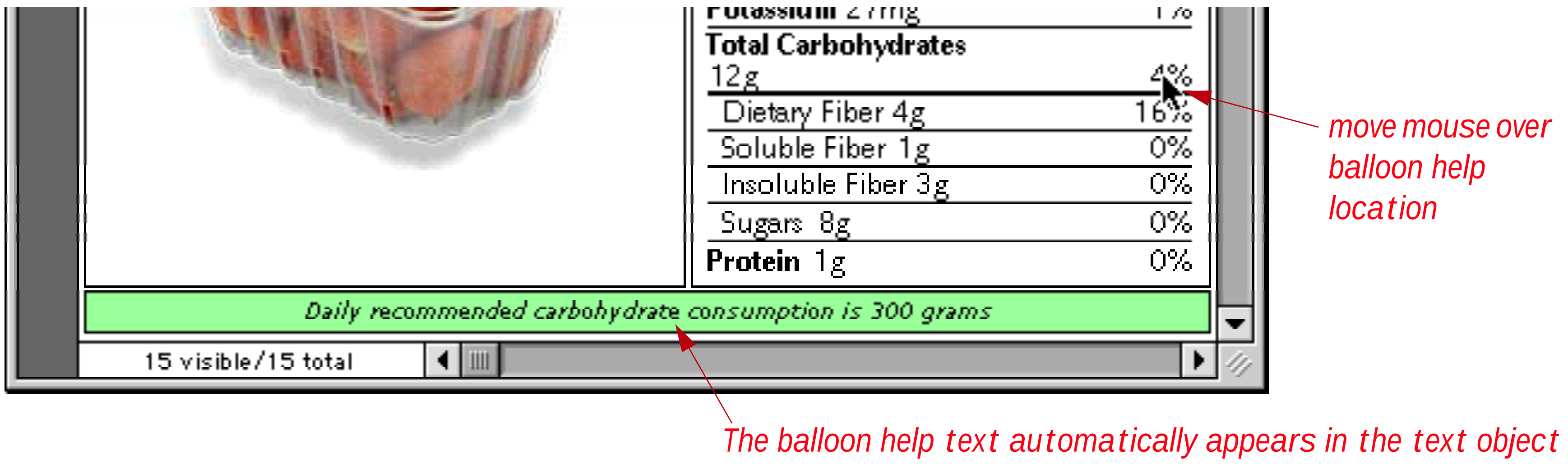
Your Panorama software must be activated before all of it's features can be used. Unless you have purchased a Personal Use License you can only activate the software on one computer at a time. (To move the software from one computer to another you must de-activate it on the original computer before activating it on the second computer.)

Every copy of Panorama is assigned a unique serial number. The format of the serial number is a five digit number followed by a period and two or three additional characters, for example 12345.aBc. If you purchased your software directly from ProVUE Development you should have received an e-mail containing the serial number. If you purchased your software from a third party you should find the serial number somewhere in the paperwork that was sent to you.

To start the product activation process enter your serial number below, then press the Submit button. (The Submit button will remain dim until you have entered a valid serial number.)

### Displaying Balloon Help Text Directly on the Form

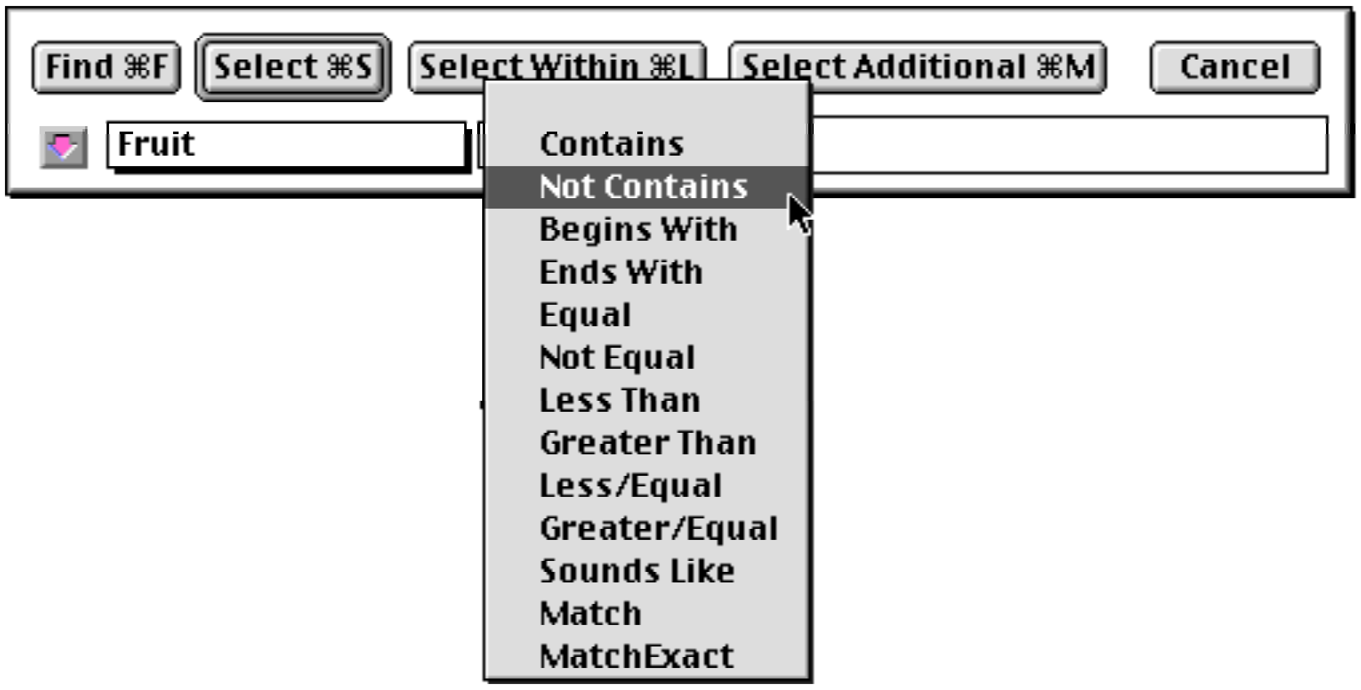
Balloon Help text can now be displayed on the form itself as well as using the Macintosh **Show Balloons** option (see See "Displaying Balloon Help Text Directly on the Form" on page 1109).


Potassium 27mg 1%
Total Carbohydrates
12g 4%
Dietary Fiber 4g 16%
Soluble Fiber 1g 0%
Insoluble Fiber 3g 0%
Sugars 8g 0%
Protein 1g 0%
Daily recommended carbohydrate consumption is 300 grams
15 visible/15 total
move mouse over balloon help location
The balloon help text automatically appears in the text object

When used this way the help text is visible even if the **Show Balloons** option is not turned on. This option also allows the balloon help text to be displayed on PC systems (kind of like tool tips).

### New Search Option

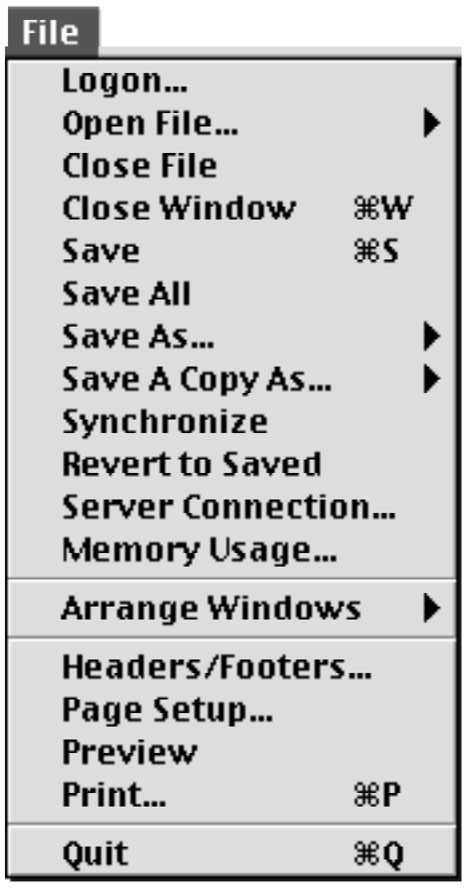
The **Find/Select** dialog includes a new option, **Not Contains**.



This option works exactly the opposite from the **Contains** option. See "The Find / Select Dialog" on page 497 for more information on this dialog.

## Separate Close File & Close Window Commands

Panorama 4.0.2 now includes two separate close commands in the **File** menu.



The **Close File** command closes the entire database. The new **Close Window** command closes just the current window (just like clicking on the window's close box).

## Assorted User Interface Fixes and Improvements

Panorama 4.0.2 includes a number of small changes for improving the general operation of the program.

| |
|---|
| Fixed a bug that sometimes caused clairvoyance to fire off prematurely. |
| Files sets ending in .pnz now work properly on the Macintosh as well as Windows. The databases in the set must have filenames that end with .pan. This improvement allows Mac and Windows computers to use the same file set on a shared server. |
| Fixed pop-up menu problem reported by some users. |
| When you double click on a data cell that contains more than 32k of text an alert appears (earlier versions of Panorama would often crash in this situation). |
| Fixed the Windows PC version so that windows can open partially off screen. In previous versions of Panorama 4 if a window was partially off screen it would be pushed completely off the screen, leaving you wondering “where is my window?” |
| Fixed the forward delete key in Windows, now it only deletes the next character. |
| Fixed problem with pasting text from another application into the word processor. |
| Fixed the Mini Correspondence wizard so it doesn't get hunter errors sometimes when opening. |
| Previous versions of the New Database Wizard wouldn't import a text file properly if the first line was longer 1000 characters. In Panorama 4.0.2 this limit has been increased to 10000 characters. |
| The Text Export Wizard now works properly even if the array of fields is scrolled. |
| Fixed append of Panorama files with .pan extension. |
| Attempting to create a Flash Sound object no longer crashes the program. |
| Removed font error message from the Panorama Handbook Wizard. |
| Previous versions of Panorama 4 had a problem if you copied graphic objects (or an entire form) onto the clipboard and then attempted to paste into text (data cell, procedure, etc.). The possibility of accidentally erasing data has been removed. |
| In the Design Sheet equation column whitespace (blanks) is now allowed after a procedure name. The whitespace will be ignored. |

## Improved Formula Calculations

Panorama 4.0.2 corrects a number of problems with numeric calculations and functions.

| |
|---|
| The min( function now works properly with negative numbers. |
| Fixed a rounding problem when dividing two integers. This problem also affected the **Average** command. |
| Panorama now correctly checks for divide by zero in floating point calculations, and produces an error if encountered. |
| Adjusted several scientific functions to give floating point error if an invalid input value is supplied, including log(, log10(, sqr(, arccos(, arccosh(, arcsin( and arctanh(. |
| When using a numeric field in an auto wrap text object it would not display 0's after the decimal point. For example 100.00 would be 100 while 100.10 would be 100.10. This was incompatible with Panorama 3.1, now it works the same. |
| Fixed the urldecode( function so that it works with hex values with letters (%4A, etc.) and so that it works properly with most 8 bit ASCII values. |
| Fixed the urlencode( function so that it works with 8 bit ASCII values (accents, special characters etc.) These characters are encoded as %nn. If a character cannot be expressed in a URL it is converted to %00. |
| On Windows systems, the folder( function now works correctly when the specified folder is C:\. |
| Fixed the exportcell(, sizeof(, fieldstyle and fieldmax( functions so that they can be used in the arraybuild statement. |

## Improved Procedures and Programming

Panorama 4.0.2 corrects a number of problems with program statements and tools.

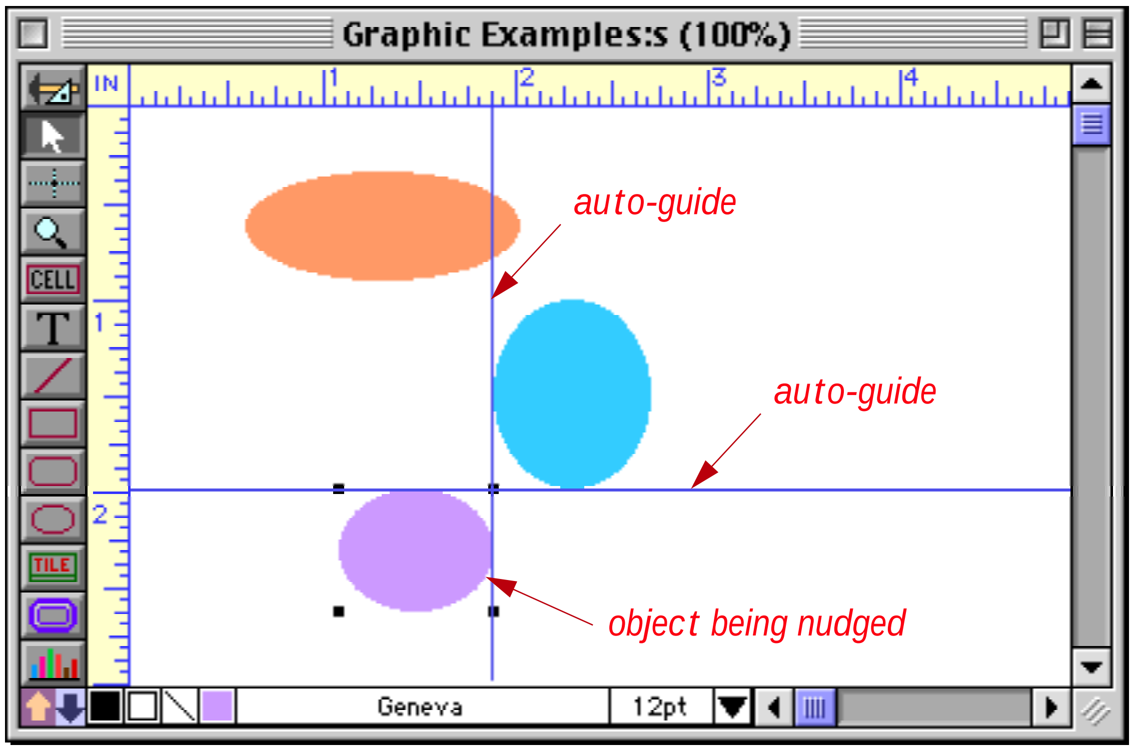
| |
|---|
| The AppleScript EXECUTE statement worked in Panorama 4.0 but was broken in Panorama 4.0.1. It now works again. |
| Subroutines may now be nested up to 32 levels (previous maximum was 8). If your program exceeds 32 levels of recursion it will stop with an error message without crashing. |
| The Command and Function help menus have been re-arranged into a more logical order. |
| Fixed the ZoomWindow and SetWindow statements so that they work properly when a rectangle function is used as one of the parameters, for example `Zoomwindow 10,10,rheight(info("ScreenRectangle")),450,""` |
| Panorama 4 did not switch windows properly when running a procedure in the background. Now it does, allowing it to work properly in server applications. |
| If a Panorama database is open the OpenFile statement now makes sure that a data window is open before continuing with the procedure. If a procedure or form window is the top window in the database being opened, this statement will automatically switch to the topmost open form or data sheet in that database. This greatly reduces accidental occurences of the dreaded “You can’t do that in this window” error message. |
| Fixed the SaveACopyAs statement so that it can write over an existing Panorama file (this bug was in the Windows PC version only). |
| The superobject "TextObject","Find" statment now works as documented in Text Editor SuperObjects (previously it worked in Word Processor SuperObjects but not Text Editor SuperObjects). |
| Fixed the ChangeObjects statement. Previouslly the EXPANDABLE and EXPANDSHRINK options did not work with a zero parameter. In other words, you could not make an object have a fixed size under program control. |
| Fixed several problems associated with the ONERROR statement. These fixes will make Panorama 4.0 more reliable in server applications. |

## Version 4.0.1

This version was released in September 2001, and includes an unusual number of new features for a x.0.1 release. In addition to the new features listed below version 4.0.1 also includes a number of bug fixes, see our website at `www.provue.com` if you are interested in the exact list.

### Automatic Guides when Nudging Graphic Objects

As you nudge the location or size of a graphic object (or objects) Panorama 4.0.1 now checks to see if the edges of the nudged object align with any other objects on the form. If so, guides appear to show the alignment.



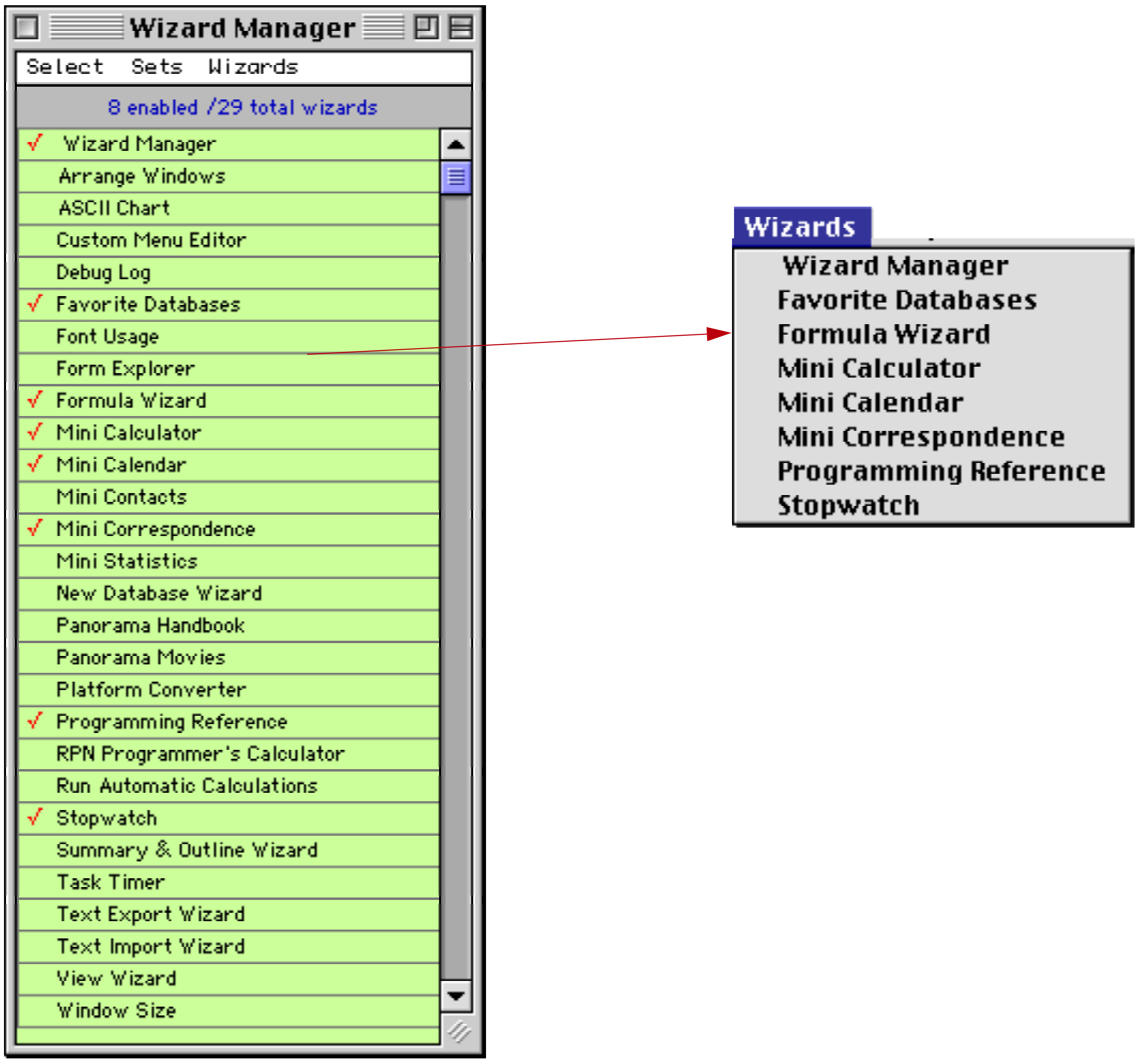
This is a great feature for quickly setting up perfectly aligned forms. See "Nudge "Auto Guides"" on page 638 for all the details.

### Improved Enhanced Image Pack

The **Enhanced Image Pack** has been rewritten to use Apple Quicktime to display and convert images (previously we used a library licensed from another third party vendor). Because of this, support for some infrequently used image types has been dropped, and support for GIF, LZW compressed TIFF and Photoshop files has been added. In addition, the Enhanced Image Pack is now more compatible with JPEG images from any source and can now print sharp reduced images (for example thumbnails) on Macintosh systems. For more information see "Displaying Non PICT Images (Enhanced Image Pack)" on page 901 and "Converting Between Image Formats" on page 1942.

## New Wizard Manager

Wizards here, wizards there, I see wizards everywhere! Seriously, the number of wizards is growing, and you can also create your own wizards. To help you keep all these wizards organized and manageable we've added a new **Wizard Manager** that gives you complete control over the **Wizard** menu.


Wizard Manager

Select Sets Wizards

8 enabled /29 total wizards

- ✓ Wizard Manager
- Arrange Windows
- ASCII Chart
- Custom Menu Editor
- Debug Log
- ✓ Favorite Databases
- Font Usage
- Form Explorer
- ✓ Formula Wizard
- ✓ Mini Calculator
- ✓ Mini Calendar
- Mini Contacts
- ✓ Mini Correspondence
- Mini Statistics
- New Database Wizard
- Panorama Handbook
- Panorama Movies
- Platform Converter
- ✓ Programming Reference
- RPN Programmer's Calculator
- Run Automatic Calculations
- ✓ Stopwatch
- Summary & Outline Wizard
- Task Timer
- Text Export Wizard
- Text Import Wizard
- View Wizard
- Window Size

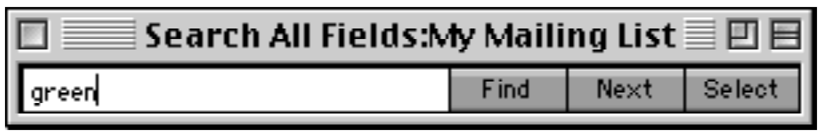
Wizards

- Wizard Manager
- Favorite Databases
- Formula Wizard
- Mini Calculator
- Mini Calendar
- Mini Correspondence
- Programming Reference
- Stopwatch

See "Primary Wizards" on page 4.

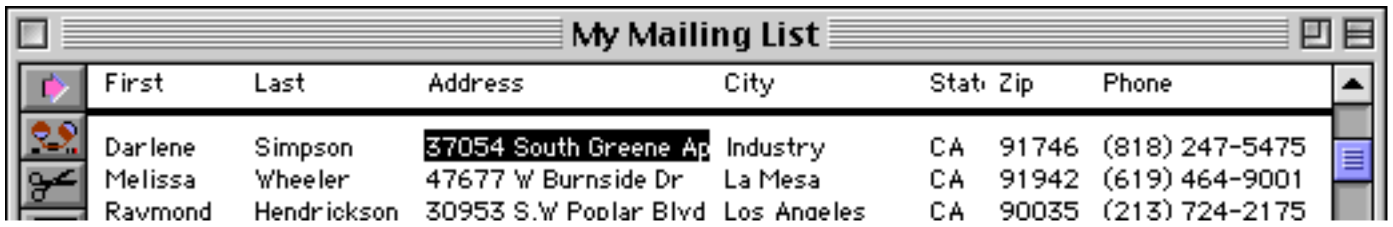
## New Search All Fields Wizard

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.


Search All Fields:My Mailing List

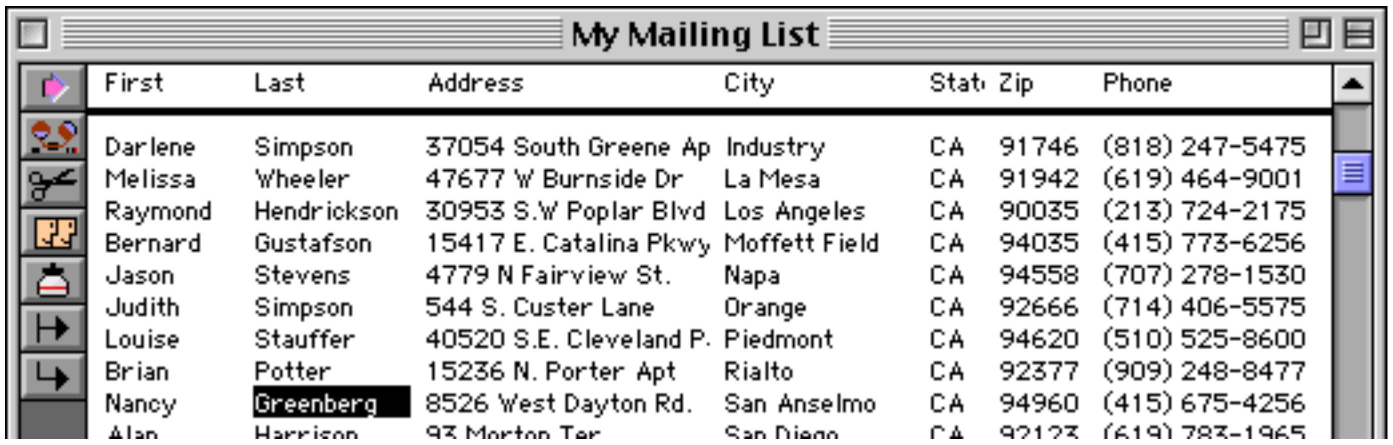
green

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).



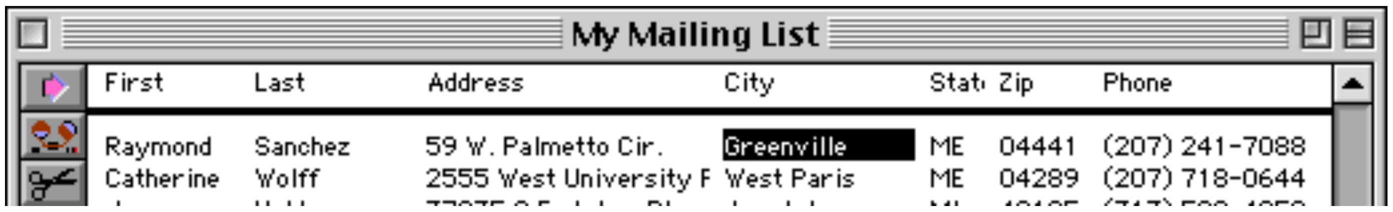
My Mailing List

| 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 |



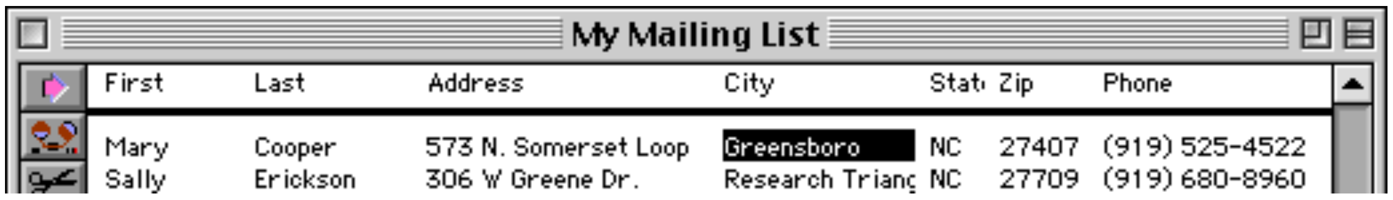
My Mailing List

| 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 |



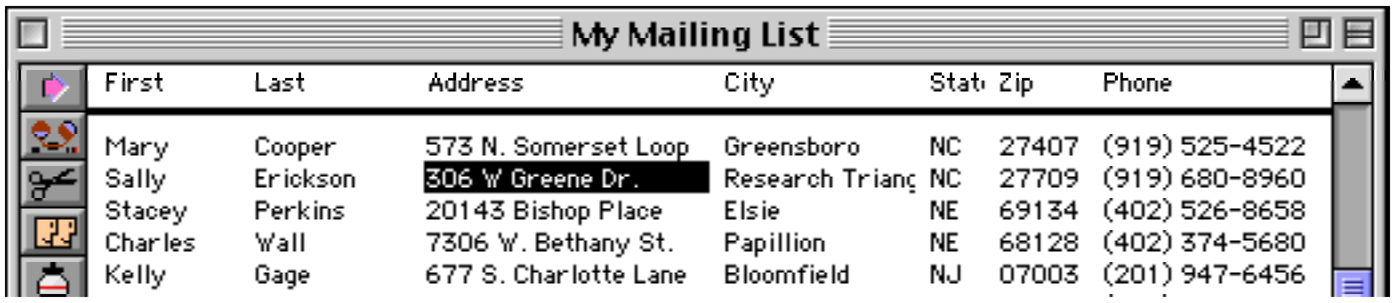
My Mailing List

| First | Last | Address | City | Stat | Zip | Phone |
|---|---|---|---|---|---|---|
| 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 |



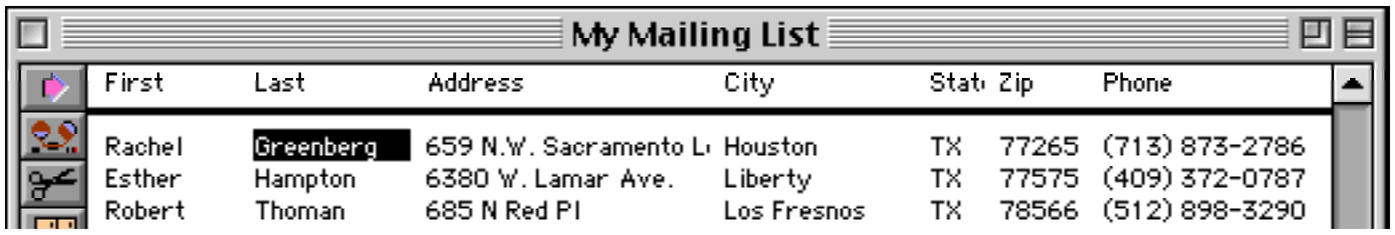
My Mailing List

| First | Last | Address | City | Stat | Zip | Phone |
|---|---|---|---|---|---|---|
| Mary | Cooper | 573 N. Somerset Loop | Greensboro | NC | 27407 | (919) 525-4522 |
| Sally | Erickson | 306 W Greene Dr. | Research Trianç | NC | 27709 | (919) 680-8960 |



My Mailing List

| First | Last | Address | City | Stat | Zip | Phone |
|---|---|---|---|---|---|---|
| Mary | Cooper | 573 N. Somerset Loop | Greensboro | NC | 27407 | (919) 525-4522 |
| Sally | Erickson | 306 W Greene Dr. | Research Trianç | 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 |



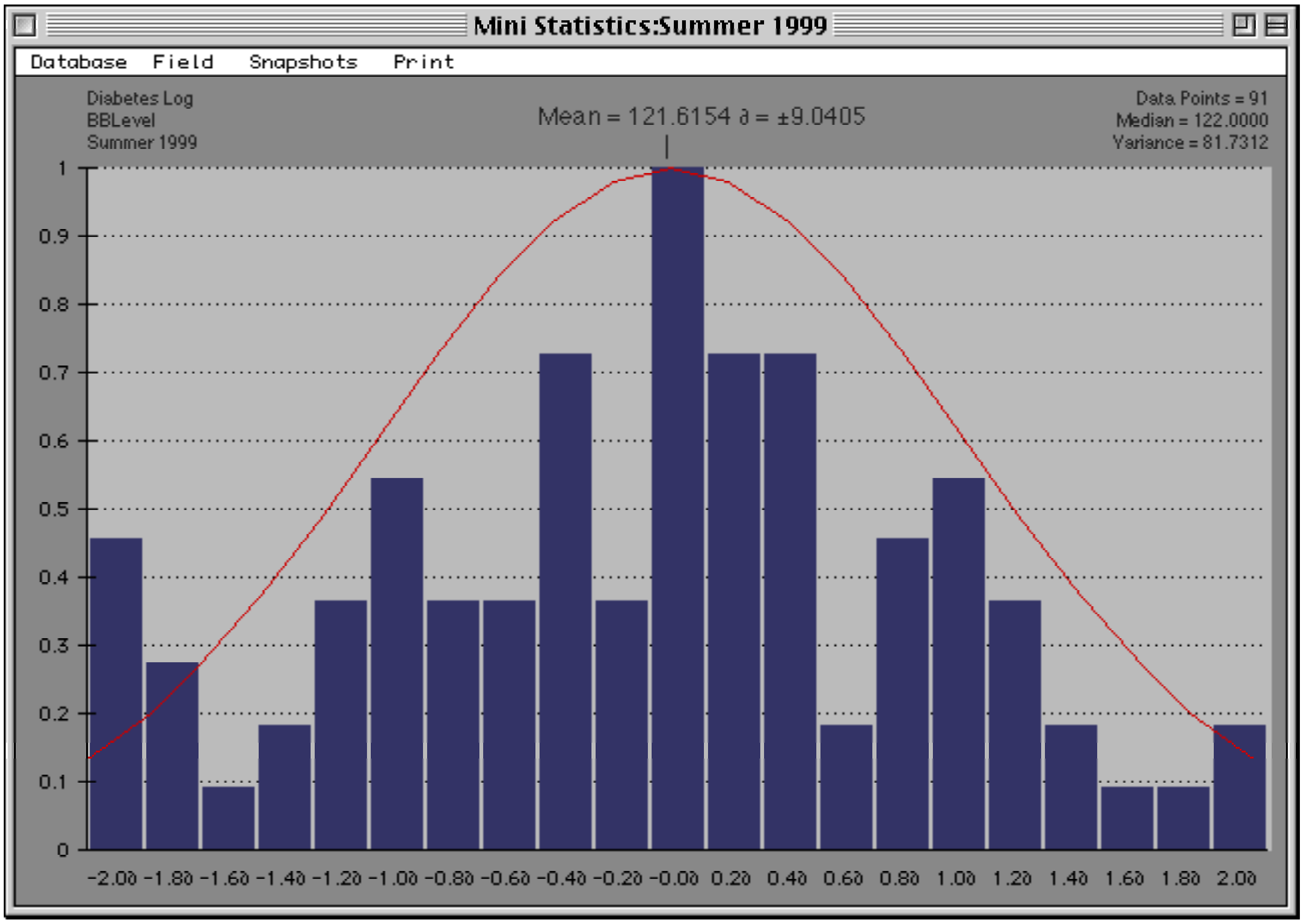
My Mailing List

| First | Last | Address | City | Stat | Zip | Phone |
|---|---|---|---|---|---|---|
| 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 |

For more information on this wizard see "The Search All Fields Wizard" on page 512.

## New Mini Statistics Wizard

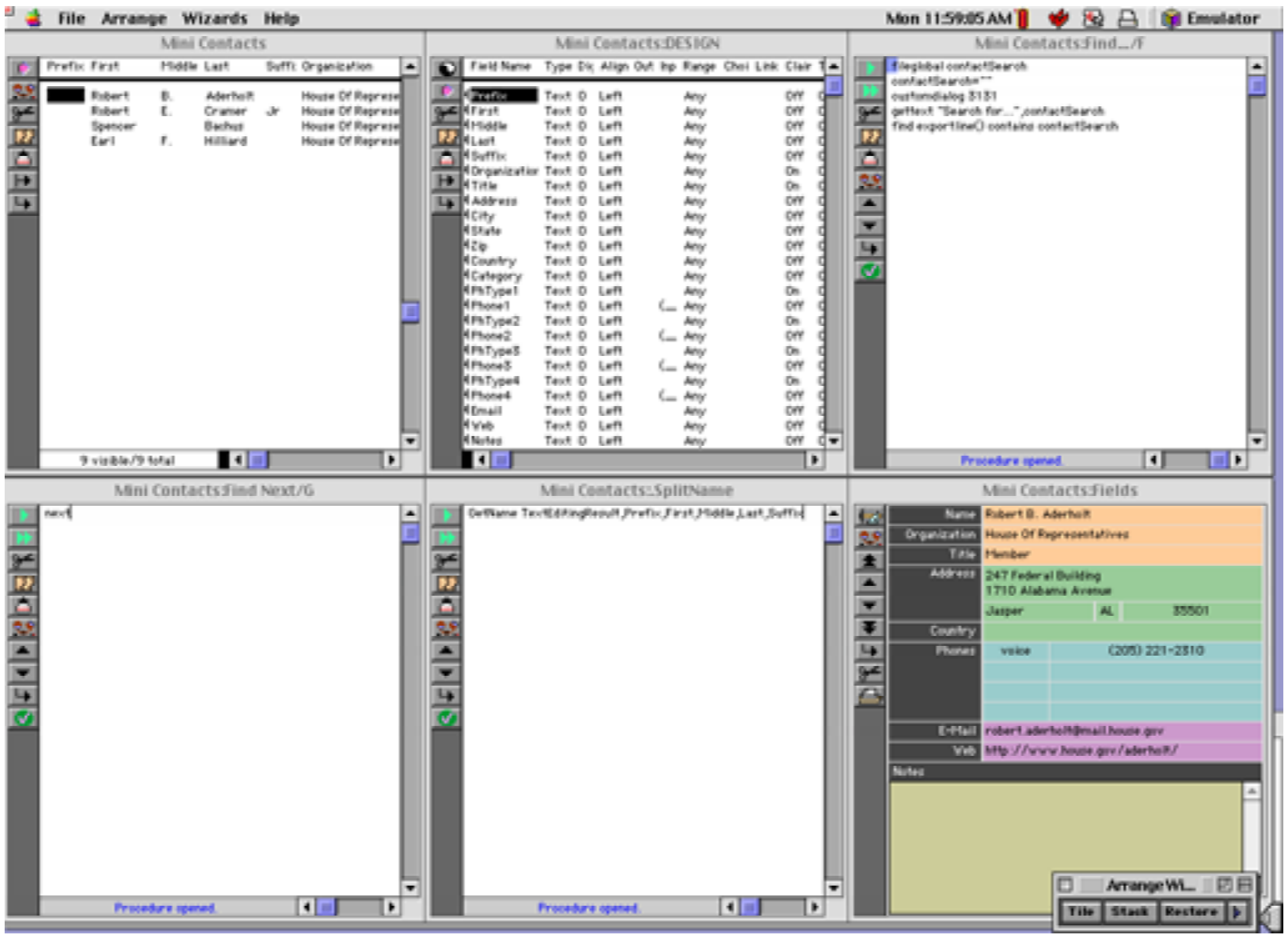
The new **Mini Statistics** wizard can automatically calculate the mean (average), median, and standard deviation of a data set. In addition the wizard can plot a normalized chart showing how the data is distributed around the mean. You can easily see how this distribution compares with the standard gaussian distribution (the famous bell shaped curve). Here is an example of an analysis performed by this wizard.



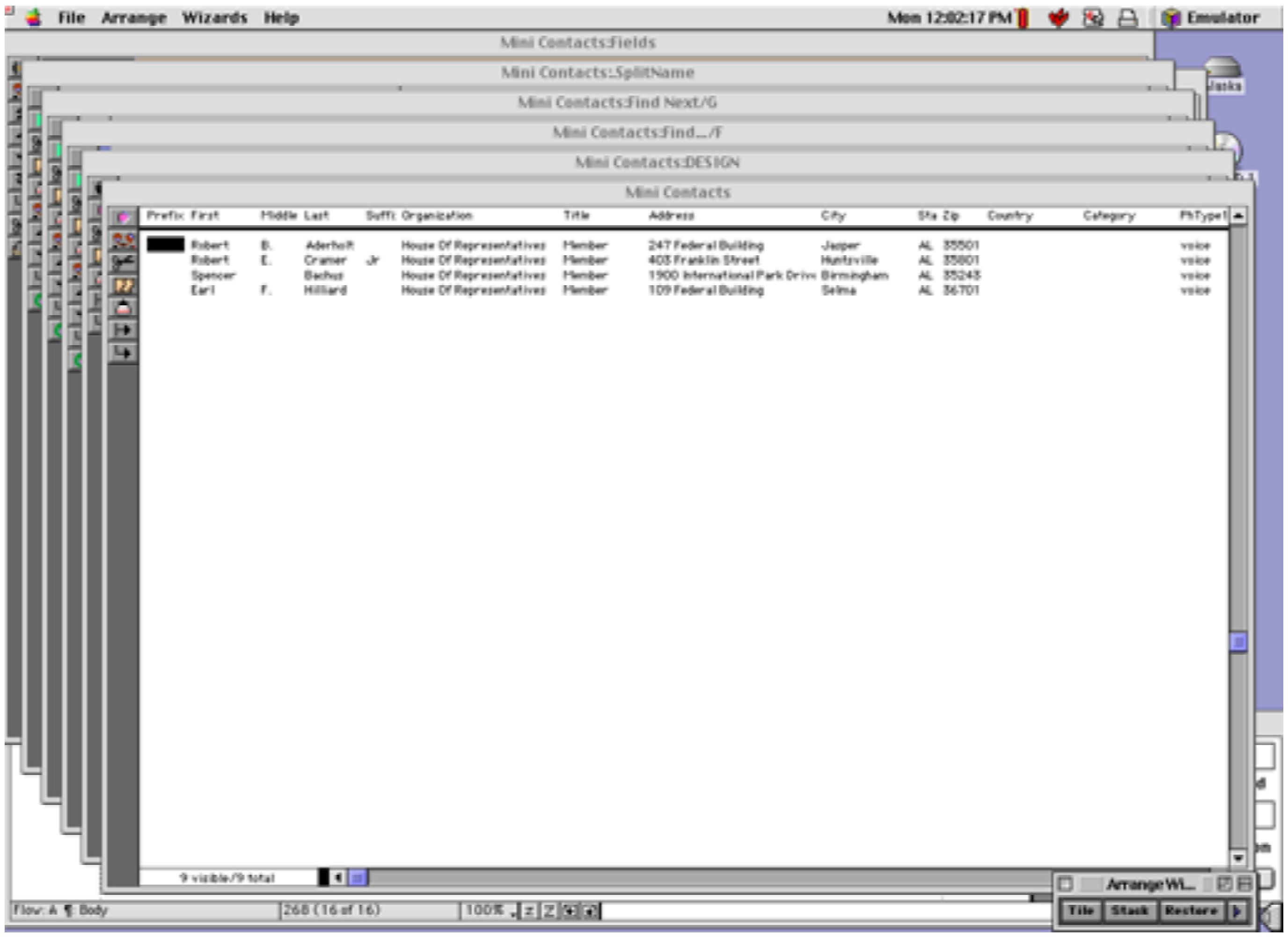
See “The Mini Statistics Wizard” on page 556 for more information.

## Tiling and Stacking Windows

The **Arrange Windows** wizard makes it easy to tile or stack all of the open windows. This illustration shows an example of window tiling.



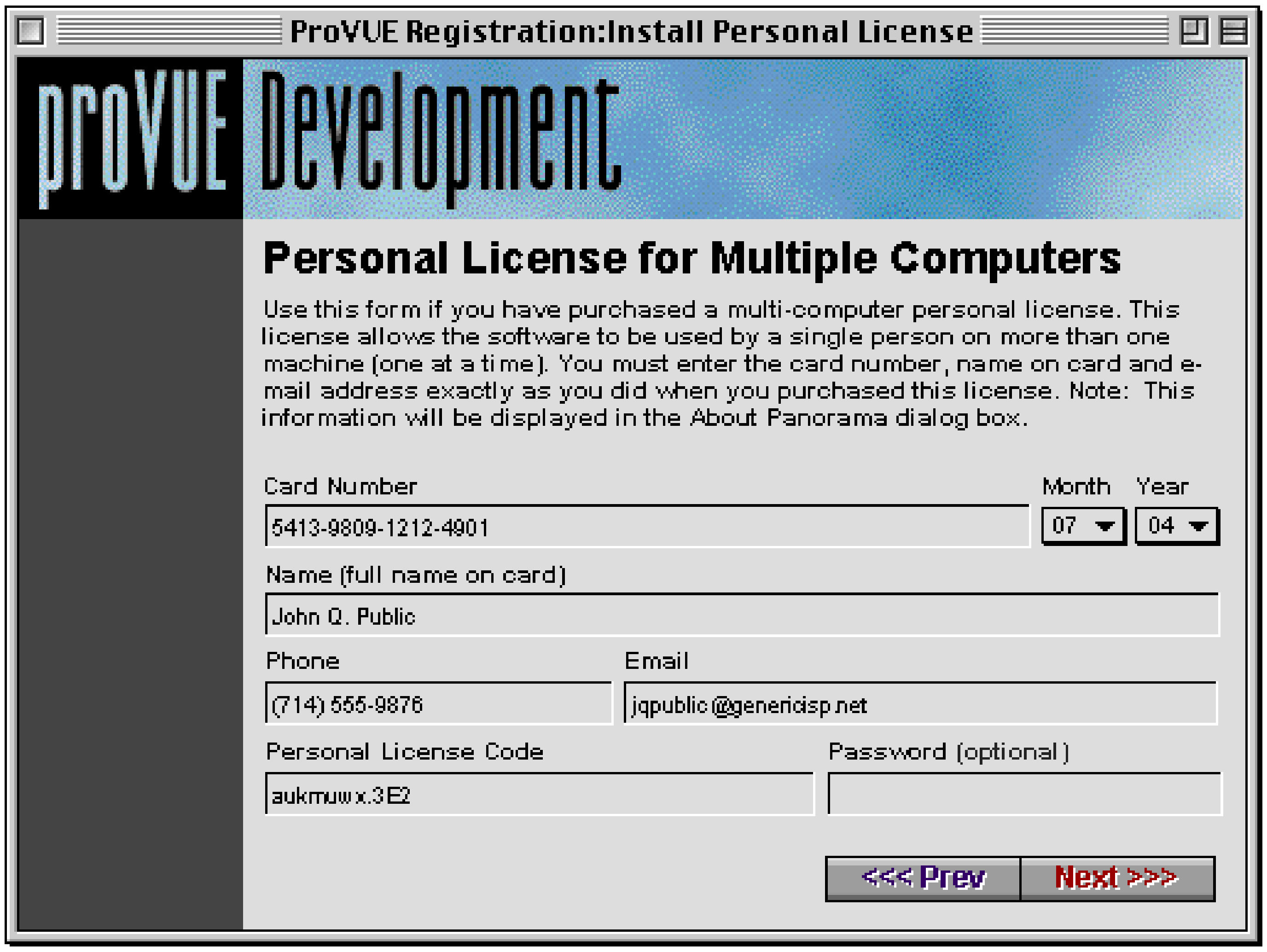
Here is an example of window stacking.



See "Arranging All Open Windows at Once (Tiling and Stacking)" on page 337 for more information.

### Personal Use License

Panorama is normally licensed for use on a single computer. Panorama 4.0.1 now supports a new personal use license which allows a single Panorama serial number to be used by a single person on multiple computers.


ProVUE Registration:Install Personal License

proVUE Development

Personal License for Multiple Computers

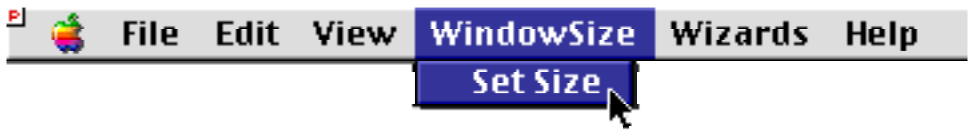
Use this form if you have purchased a multi-computer personal license. This license allows the software to be used by a single person on more than one machine (one at a time). You must enter the card number, name on card and e-mail address exactly as you did when you purchased this license. Note: This information will be displayed in the About Panorama dialog box.

Card Number: 5413-9809-1212-4901
Month: 07
Year: 04
Name (full name on card): John Q. Public
Phone: (714) 555-9876
Email: jqpublic@genericisp.net
Personal License Code: aukmuwx.3E2
Password (optional):

See our web site and "Using Panorama's "Demo Mode"" on page 113 for more information about this license.

### Setting Exact Window Dimensions

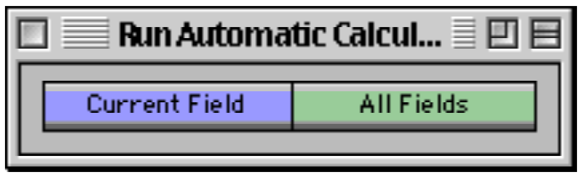
The **Window Size** wizard has been enhanced to allow you to specify the exact dimensions for any window.



See "Setting Exact Window Dimensions" on page 334 for more information.

### Run Automatic Calculations Wizard

This new wizard allows the formulas set up in the design sheet to be applied to existing data.



See "The Run Automatic Calculations Wizard" on page 480 for more information.

### Hiding Windows

The **Hide This Window**, **Hide Other Windows** and **Show All Windows** commands (in the **Arrange** menu) now work properly on Windows PC systems. See “Hiding Windows” on page 329 for more information.

### More Complex Charts

Panorama 4.0.1 allows charts with up to 5,000 data points (the previous maximum was 500 points). See “Maximum Number of Chart Points” on page 1132 for more information.

### Alternate Key for Opening New Windows

When using the **View** menu on the Macintosh, Panorama 4.0.1 allows either the **Control** key or the **Option** key to open an additional window (see “Opening More Than One Window Per Database” on page 351).

### Using the Esc Key to Cancel Data Entry

When editing a data cell pressing the **Esc** closes the Input Box without updating the cell (see “The Input Box” on page 438). Previously this could be done only by pressing **Command-Period** (Mac) or **Control-Period** (Windows).

### Using the Esc Key to Toggle Form Modes

Panorama 4 added the ability to use the Esc key to toggle between Data Entry and Graphic Design modes when using a form window. In Panorama 4.0.1 this feature is disabled if the window does not have a tool palette (see “Using the Keyboard to Select Common Tools” on page 628).

### Using the Option/Alt Key to Zoom Out

When using the **Zoom** tool in a form, pressing the **Shift** key has always shifted to “zoom out” mode. Many other applications use the **Option** key for zoom out, so Panorama 4.0.1 now allows you to use either. You can also use the **Space Bar**. See “Magnification and Reduction” on page 707 to learn more.

### Simulating Panorama Direct and Panorama Engine

Sometimes when developing a database for in-house or commercial distribution it may be useful to test the database on a copy of Panorama Direct or Panorama Engine. Panorama 4.0.1 now allows this testing to occur on your development system using the `simulatedirect` and `simulatengine` statements. See “SIMULATEDIRECT” on page 5770 and “SIMULATEENGINE” on page 5771.

### New Page Numbering for Panorama Reference

To help make it easier to follow references between the main **Panorama Handbook** and the **Panorama Reference**, all page numbers in the reference now start with 5000. Any page number in the 5xxx range refers to the **Panorama Reference**.

### Documentation Code Sample Corrections

Due to a font rendering problem when creating the PDF file, the code samples in the Panorama 4.0 documentation sometimes contained incorrect special symbols. For example the `›` symbol was frequently displayed as `>`, and other special symbols were also incorrect. This has been corrected throughout this new version of the documentation.

### New KeyNow Statement Simulates Keystrokes Immediately

Panorama 4.0.1 includes a new statement: `KeyNow`. This statement is similar to the `key` statement (see “KEY” on page 5461) but processes the key immediately, making it useful for automatic demos. See “KEYNOW” on page 5463 for more information.

### New info("imagepack") function

The new `info("imagepack")` function checks to see if the Enhanced Image Pack is installed. See "INFO("IMAGEPACK")" on page 5384 for more information.

### Displaying Images and Icons from Resource Files

Super Flash Art objects can display images and icons stored in resource files (see "Displaying Images from Resource Files" on page 921). This feature actually has been in Panorama for some time but was not previously documented.

## Version 4.0

First released in July 2001, Panorama 4.0 has been completely re-engineered to make it cross platform. This is the first version of Panorama that runs on Windows PC systems and the first version that is native on Power Macintosh computers.

### Cross Platform Compatibility

Panorama 4.0 allows the same database to be moved back and forth between Power Macintosh and Windows PC systems, or even accessed over a cross platform network. To learn how to set up your databases for cross platform compatibility see "Platform Converter Wizard" on page 1984.

### Performance Enhancements

The Macintosh version of Panorama 4.0 is now Power Mac native, which means that it is now optimized for speed on Power Macintosh computers. (It also means that Panorama 4.0 will not run on older 68K based Macintosh systems. We will continue to sell Panorama 3.1.5 for these older computers, but the 68K version will no longer be updated.) Depending on the operation being performed Panorama 4.0 is up to twice as fast as Panorama 3.1 on the same computer. We especially concentrated on the speed of sorting, searching and selecting data.

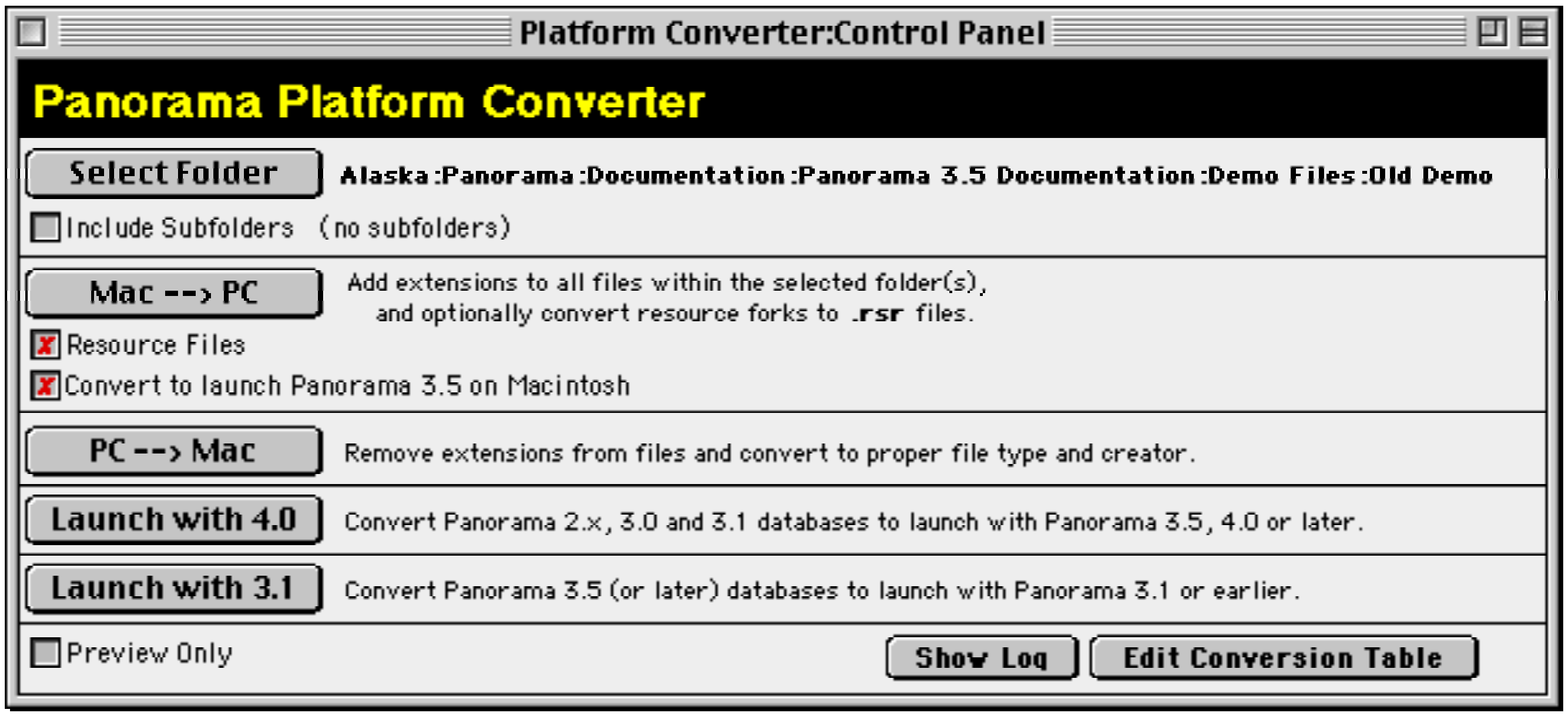
In addition to the overall speed improvements there is also a tremendous improvement in the speed of SuperMatrix objects (for calendars, photo thumbnails, etc.). The display speed of matrixes is up to 10 times faster than the previous version of Panorama (depending on the formulas being used).

### Converting from Panorama 3.x to 4.0 (Macintosh)

Panorama 3.1 and Panorama 4.0 can both co-exist on the same Power Macintosh computer, and in fact both can be running at the same time! Databases initially created with Panorama 3.1 will automatically open Panorama 3.1 when double clicked; databases created with Panorama 4.0 will automatically open Panorama 4.0 when double clicked. Panorama 4.0 can open databases created with Panorama 3.1 or earlier simply by dragging these files onto Panorama 4.0 or by using the **Open File** dialog. If you want Panorama 4.0 to launch automatically when a Panorama 3.1 database is double clicked, you must convert it using the Platform Converter (see "Platform Converter Wizard" on page 1984). After the database is converted it's icon will change from the old Panorama icon to a new icon.

*old icon (Panorama 3.1 or earlier)* *new icon (Panorama 4.0 or later)*

To convert all the databases in a folder so that they will automatically launch Panorama 4.0 instead of 3.1 you must use the Panorama Platform Converter. First, select the folder. Then choose the **Launch with 4.0** button. The Converter will scan the files and convert any Panorama 3.1 files to 4.0.



Alaska :Panorama :Documentation :Panorama 3.5 Documentation :Demo Files :Old Demo

☐ Include Subfolders (no subfolders)

Add extensions to all files within the selected folder(s), and optionally convert resource forks to .rsr files.

☒ Resource Files

☒ Convert to launch Panorama 3.5 on Macintosh

Remove extensions from files and convert to proper file type and creator.

Convert Panorama 2.x, 3.0 and 3.1 databases to launch with Panorama 3.5, 4.0 or later.

Convert Panorama 3.5 (or later) databases to launch with Panorama 3.1 or earlier.

☐ Preview Only

If you want to go back to 3.1, use the **Launch with 3.1** button. This converts the files so that they will automatically launch Panorama 3.1 (or whatever earlier version of Panorama you have installed). Note: If a database was lasted opened on a Windows computer Panorama 3.1 will not be able to open the file, and it will not be converted.

## Wizards

Panorama 4.0 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, which is just to the left of the **Help** menu and several of them can be accessed with the **Start** or **Apple** menu even when Panorama is not open The table below lists the wizards included with Panorama 4.0 and provides a short description of each one.

| Category | Wizard | Page | Description |
|---|---|---|---|
| General Productivity | Mini Contacts | Page 42 | Basic name & address database. |
| | Mini Calendar | Page 46 | Basic calendar / event database. |
| | Mini Calculator | Page 9 | Basic math calculator. |
| | Mini Correspondence | Page 48 | Basic correspondence / mail merge database. Can be linked with any database that contains names and addresses to create individual letters or mail merge letters. |
| | Stopwatch | Page 49 | Simple timer. |
| | Task Timer | Page 50 | Keep track of time spent on different tasks. |

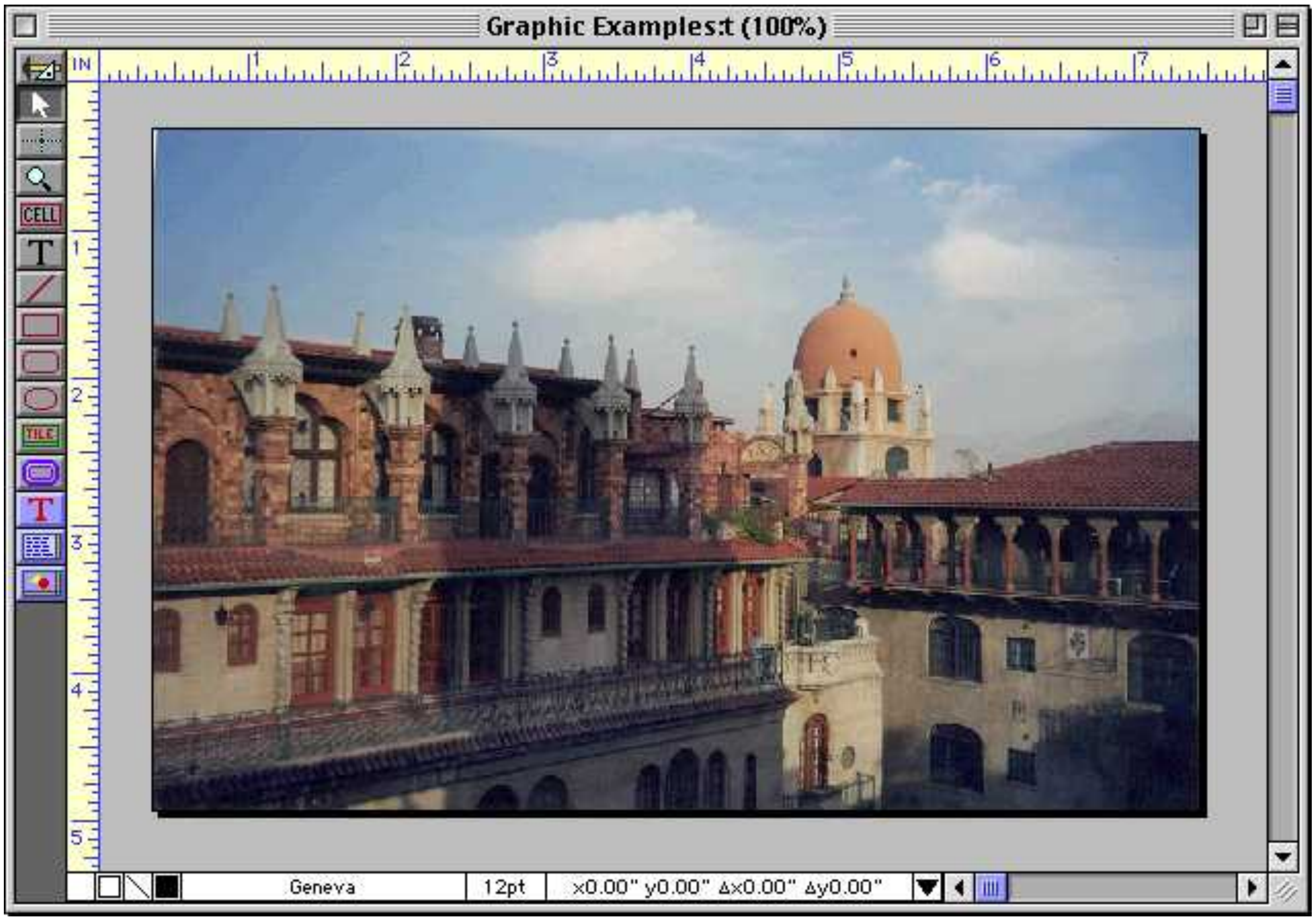
| Category | Wizard | Page | Description |
|---|---|---|---|
| Database Operation | New Database Wizard | Page 6 | Helps to design and create the field structure for a new databases. You can simply type in the field names you want or select from about two dozen templates. |
| | Favorite Databases Wizard | Page 5 | Helps to keep track of your frequently used databases. We've preloaded this with several dozen sample and tutorial databases. |
| | Summaries & Outline | Page 73 | Categorize and subtotal database information with a single click. |
| | Text Export | Page 73 | Export data into text files. You can control the format of the exported data, including exporting data as HTML tables. Export formats can be saved for later use. |
| | Text Import | Page 74 | Imports data from text files into existing databases. Drag and drop to define how columns in the text file are mapped to database fields, and save configurations as templates for later use. |
| Programming & Development | ASCII Chart | Page 12 | Displays a table of ASCII characters. |
| | Custom Menu Editor | Page 19 | Edits custom menu resource files. This wizard allows you to create and modify custom menus without a separate resource editor program. |
| | Debug Log | Page 15 | Traces the internal operation of a PanTalk procedure for quick debugging |
| | Font Usage | Page 25 | Display list of fonts used in forms. |
| | Form Explorer | Page 25 | Display / edit information about form objects. |
| | Formula Wizard | Page 9 | Workbench for experimenting with formulas. Allows you to test formulas before you use them for real. |
| | RPN Programmers Calculator | Page 10 | Calculator for decimal, hex, octal and binary. |
| | View Wizard | Page 8 | Opens form and procedure windows (an alternate to the View menu). Also allows you to search all procedures in a database for a word or phrase. |
| | Window Size | Page 26 | Display size of any window. |
| | Window Tweak | Page 26 | Disable and enable window tool palettes and scroll bars without changing the window size. |

### Font Management across Multiple Computers and Platforms

Panorama 4.0 keeps track of font usage within each database and checks that the necessary fonts are installed in the system each time the database is opened. As long as fonts have the correct name they may be used on any computer — even when switching platforms from Macintosh to PC and back. For more information see "Maintaining Fonts across Multiple Computers and Platforms" on page 657.

### Enhanced Image Pack

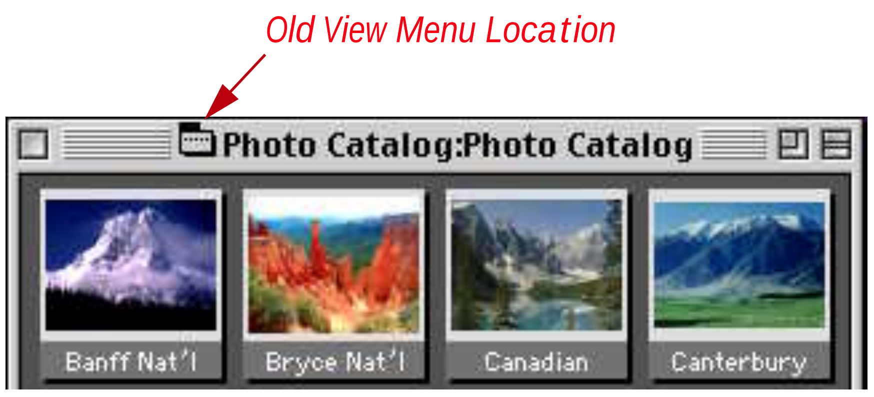
The optional **Enhanced Image Pack** allows a database form to display advanced format images including JPEG, TIFF (except for LZW compressed TIFF), PNG and many others. To learn how to use this package see "Displaying Non PICT Images (Enhanced Image Pack)" on page 901.



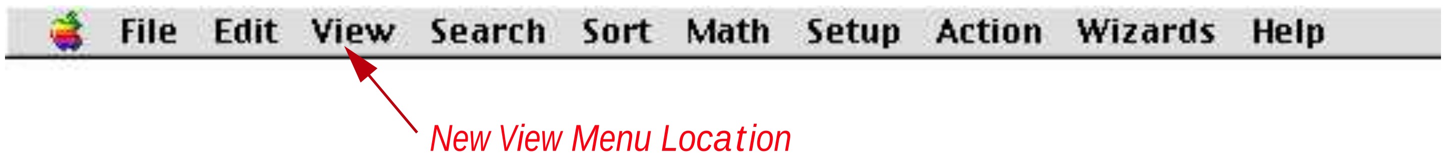
The **Enhanced Image Pack** also adds two new programming statements to Panorama — `convertimage` and `imagequality`. These two statements give Panorama the ability to convert images from one format to another (for example from TIFF to JPEG or from PICT to PNG). You can also change the size (height and width) of an image. For example, you can take an entire folder of images and create tiny thumbnails for them automatically. See "Converting Between Image Formats" on page 1942 to learn how to use these statements.

### View Menu Moved to Menu Bar

In previous versions of Panorama the **View** Menu appeared in the title bar of each window (as shown in the illustration below). The menu appeared when you clicked on the small menu location



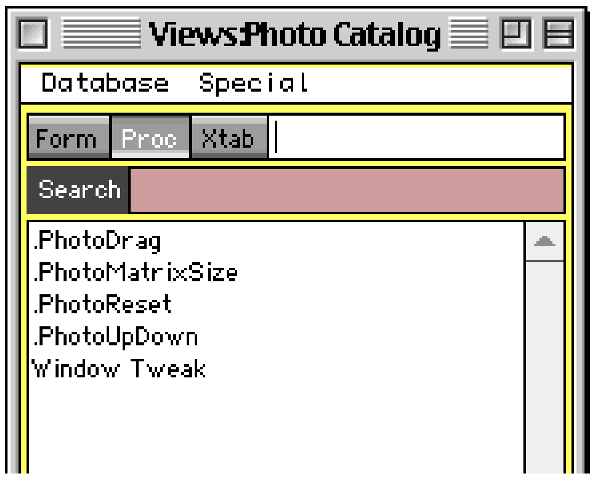
In Panorama 4.0 the **View** menu has been moved into the menu bar. The **View** menu always appears just after the **Edit** menu.



For more information on the **View** menu see "Switching Between Views" on page 350.

### View Wizard

Panorama 3 also provides an alternate method for opening views, the **View Wizard**.



The **View Wizard** is especially handy for complex databases with hundreds of forms and / or procedures. The Wizard lists the forms and procedures in alphabetical order and allows you to search for the form or procedure you want. For more information on this wizard see "The View Wizard" on page 355.

### Using the View Menu with Custom Menus

When using custom menus (see "Custom Menu Overview" on page 1606) Panorama automatically places the **View** menu immediately after the **Edit** menu. See "Assigning Custom Menus to a Form" on page 1619 if you want to move the **View** menu to a different location or even eliminate it altogether.

## Graphics Mode Keyboard Shortcuts

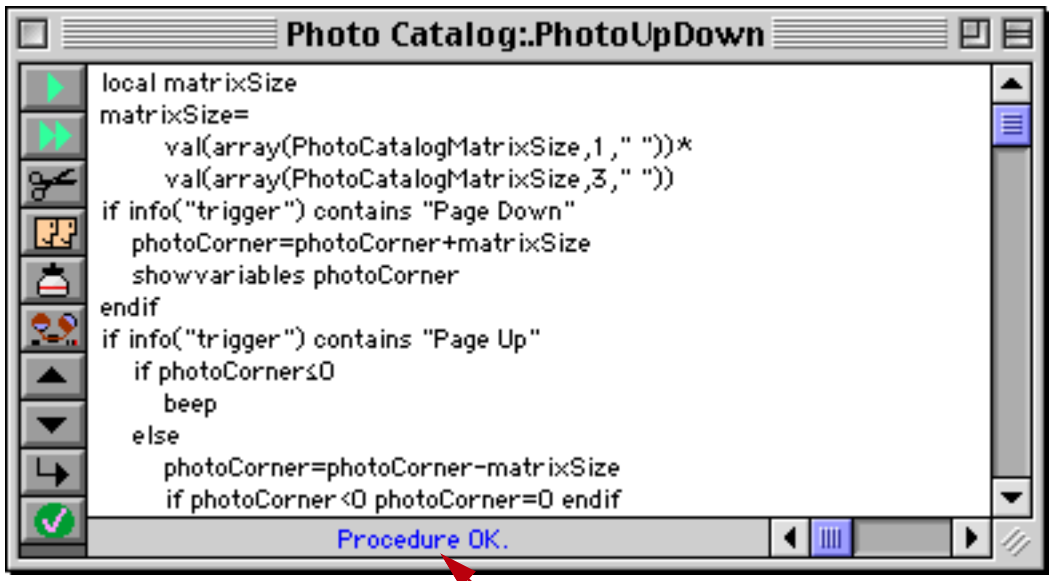
When editing a form you can now use the keyboard to select several common tools (pointer, text, rectangle, etc.). This can save many trips to the tool palette and back. See "Using the Keyboard to Select Common Tools" on page 628 for the details.

## Improved Procedure Editor

We've modified the procedure editor window to make it easier than ever to create and modify procedures.

### Status Bar

A new status bar at the bottom of each procedure window shows the current status of the procedure both when editing and debugging (see “Improved Debugging Tools” on page 91).



```
local matrixSize
matrixSize=
        val(array(PhotoCatalogMatrixSize,1," "))*
        val(array(PhotoCatalogMatrixSize,3," "))
if info("trigger") contains "Page Down"
    photoCorner=photoCorner+matrixSize
    showvariables photoCorner
endif
if info("trigger") contains "Page Up"
    if photoCorner≤0
        beep
    else
        photoCorner=photoCorner-matrixSize
        if photoCorner<0 photoCorner=0 endif
```

```
Procedure OK.
```

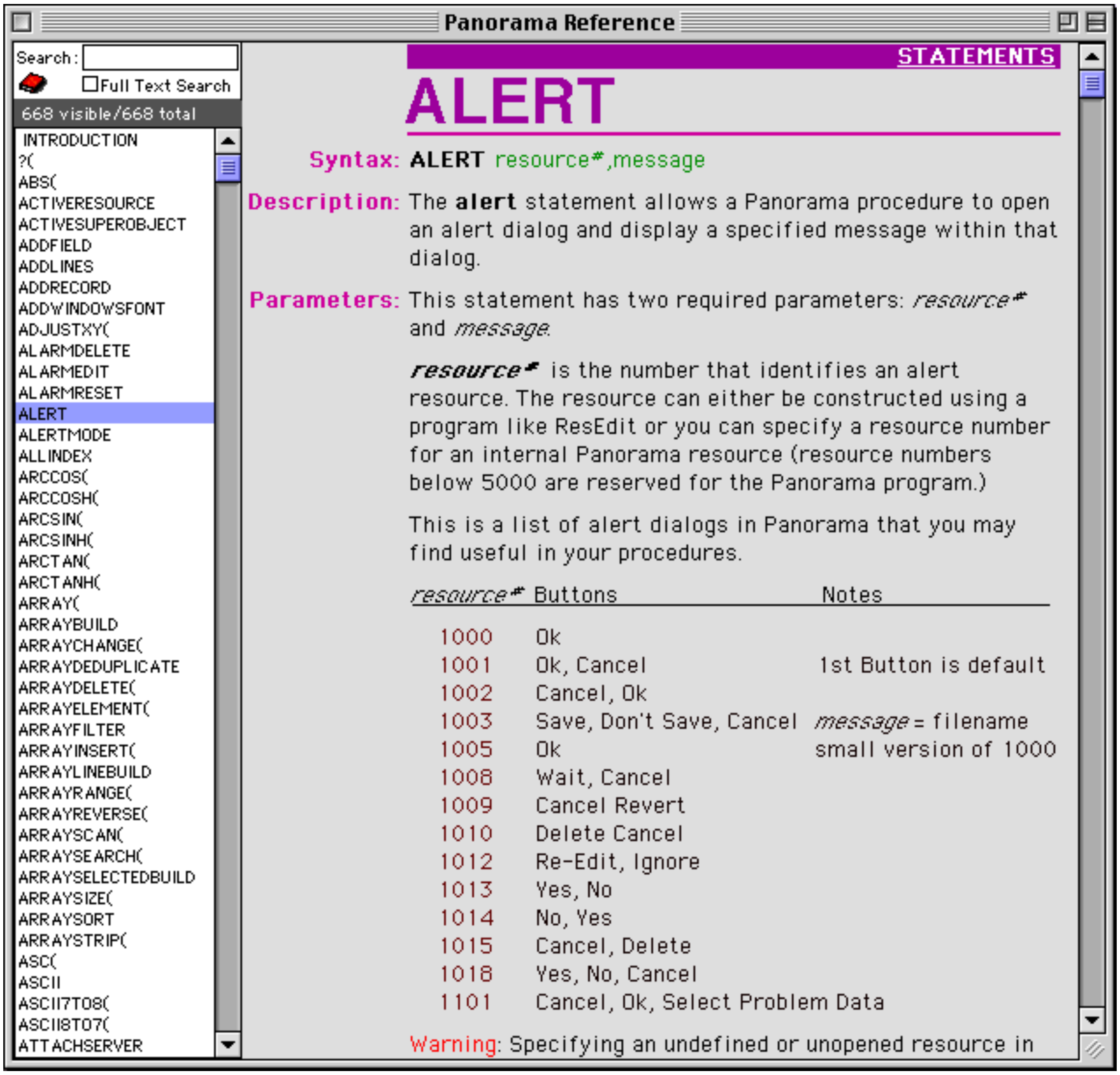
When a procedure contains an error Panorama no longer displays an alert. Instead, the error appears in the status bar (see “Checking for Mistakes” on page 1485). This makes it much easier to continue if you want to ignore the error and come back to it later, since you don’t have to bother pressing the **OK** button to continue your work.

### Shifting a Block of Text Left or Right

The **Edit** menu now contains commands that can shift an entire block of text left or right 4 spaces. This makes it easy to adjust the indentation of your program when you add another `if`, `case` or `loop` statement. See “Program Formatting” on page 1549 to learn more about this new editing tool.

## On-Line Programming Reference

Panorama now includes a complete on-line reference to all programming statements and functions. This on-line reference is searchable and includes numerous links between topics (see "Online Reference:" on page 5000).



ALERT

**Syntax:** ALERT resource#,message

**Description:** The **alert** statement allows a Panorama procedure to open an alert dialog and display a specified message within that dialog.

**Parameters:** This statement has two required parameters: *resource#* and *message*.

***resource#*** is the number that identifies an alert resource. The resource can either be constructed using a program like ResEdit or you can specify a resource number for an internal Panorama resource (resource numbers below 5000 are reserved for the Panorama program.)

This is a list of alert dialogs in Panorama that you may find useful in your procedures.

| *resource#* | Buttons | Notes |
|---|---|---|
| 1000 | Ok | |
| 1001 | Ok, Cancel | 1st Button is default |
| 1002 | Cancel, Ok | |
| 1003 | Save, Don't Save, Cancel | *message* = filename |
| 1005 | Ok | small version of 1000 |
| 1008 | Wait, Cancel | |
| 1009 | Cancel Revert | |
| 1010 | Delete Cancel | |
| 1012 | Re-Edit, Ignore | |
| 1013 | Yes, No | |
| 1014 | No, Yes | |
| 1015 | Cancel, Delete | |
| 1018 | Yes, No, Cancel | |
| 1101 | Cancel, Ok, Select Problem Data | |

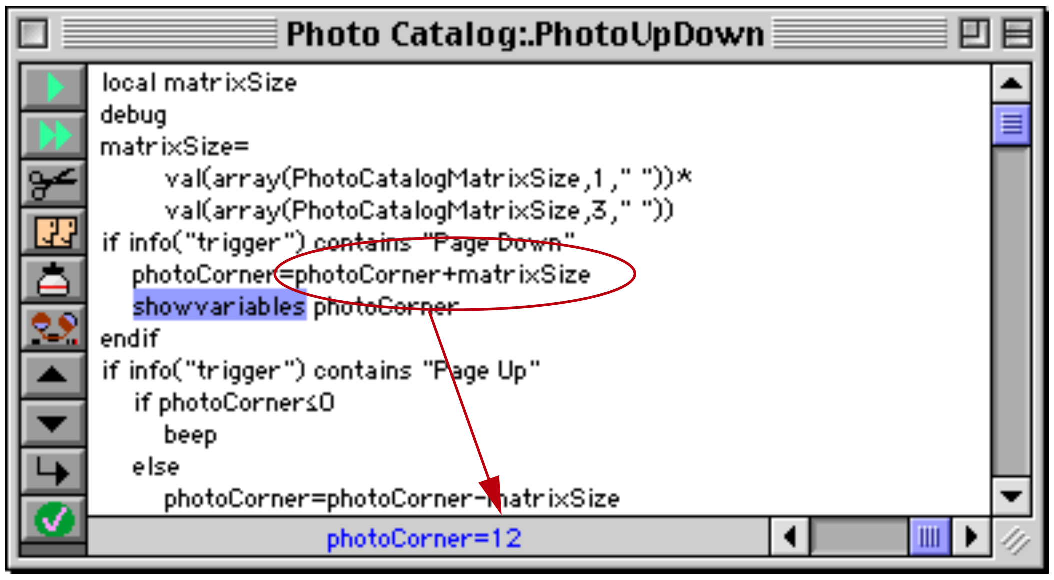
Warning: Specifying an undefined or unopened resource in

## Improved Debugging Tools

Debugging your procedures has never been easier or faster.

### Displaying Values While Single Stepping

The new procedure status bar automatically displays the result of every assignment statement while single stepping. This makes it much easier to “follow the action” as Panorama executes each step. See “Single Stepping” on page 1563 to learn more about single stepping.



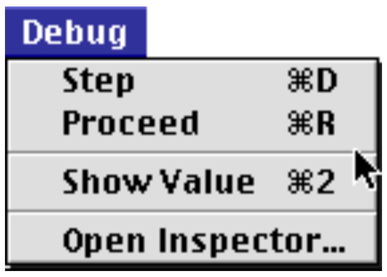
```
local matrixSize
debug
matrixSize=
    val(array(PhotoCatalogMatrixSize,1," "))*
    val(array(PhotoCatalogMatrixSize,3," "))
if info("trigger") contains "Page Down"
  photoCorner=photoCorner+matrixSize
  showvariables photoCorner
endif
if info("trigger") contains "Page Up"
  if photoCorner≤0
    beep
  else
    photoCorner=photoCorner-matrixSize
```

```
photoCorner=12
```

If the value you need to see is not the result of an assignment statement you can add one or more `statusmessage` statements to your procedure. This statement displays the result of any formula in the status bar, see “Watching Computations” on page 1565.

### New Command Key Equivalents (Shortcuts) for Debugging

In previous versions of Panorama the command key equivalents for debugging were the same as for the Jasik Debugger. Panorama 4.0 now uses the same command key equivalents as CodeWarrior.



### Debug Log

The debug log allows you to make a record of every step made by a procedure. If the procedure doesn’t work you can review the log to see where it went wrong — even if the computer crashed. We created the debug log to help us debug Panorama itself. Once we started using it we discovered that it is such a valuable tool that we had to share it with you. To learn more about this powerful tool see “Procedure Debug Log” on page 1572.

## Hot Keys

Panorama 4.0 allows you to assign any procedure to any keystroke. You can assign hot keys to a window, a database, or globally across all databases. See “Hot Key Procedures” on page 1646.

## Triggering a Procedure Every Minute or Second

Panorama 4.0 allows you to set up procedures that are triggered automatically every second or every minute. You can use these repeating procedures to create timers, alarms, and animations. See “Triggering a Procedure Every Second” on page 1647.

### Credit Card Data Entry Validation

Credit cards have an internal checksum that allows a number to be validated for simple data entry errors (for example missing or transposed digits). The new `cardvalidate` statement checks to make sure that a number is a potentially valid credit card number. See See "Validating a Credit Card Number" on page 1786.

### Calculating Time Intervals Smaller Than One Second

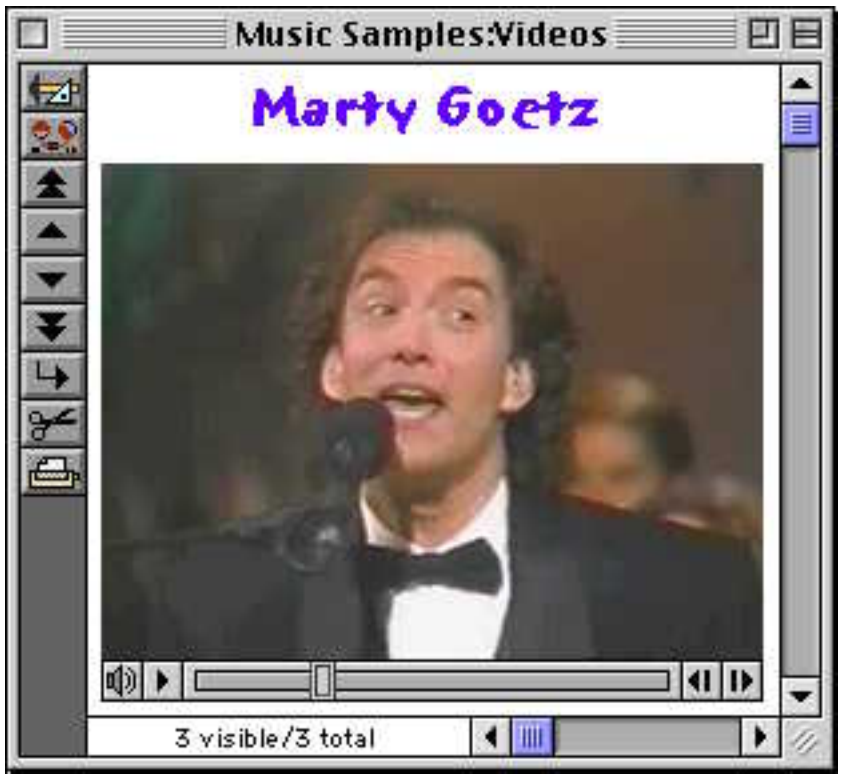
The new `info("tickcount")` function allows you to calculate time intervals and delays as small as 1/60th of a second. See "Calculating Time Intervals Smaller Than One Second" on page 1386.

### Elastic View-As-List Forms

Previously only regular forms could be made elastic, now view-as-list forms can be elastic too! See "Elastic View-As-List Forms" on page 1055 to learn how to create an elastic view-as-list form.

### New QuickTime Features

We've upgraded Panorama's QuickTime capabilities. Instead of only showing the QuickTime controls when you click on a movie the controls now appear whenever the form is visible. Existing databases that use movies will have to be slightly re-designed, see "Displaying Movies in a Form" on page 938 to learn how to use movies with Panorama 4.0.



A Panorama 4.0 procedure can exercise complete control over a movie. The procedure can start or stop a movie, control the playback speed, or even jump to a pre-defined spot in a movie. See "Super Flash Art Commands (Including Movie Control)" on page 1938 to learn how to program a movie.

### SuperObject Enhancements

A number of SuperObjects have been enhanced in Panorama 4.0. One change that affects almost all types of SuperObjects is the ability to access and modify the configuration of most SuperObjects (see "Accessing and Modifying a SuperObject's Internal Data" on page 1917).

Two other improvements apply to the `superobject` statement. First, you can now specify what objects are controlled "on-the-fly" (see "Program Control of SuperObjects™" on page 1914). In addition you can also now use this statement to send commands in any open window, not just the current window (see ""Magic" Windows" on page 1711).

### Text Display SuperObject

The Text Display SuperObject no longer displays error messages when the form is in data mode (only in graphics mode). This means that if you use a Text Display SuperObject to display a variable Panorama won't display an "undefined field or variable" message when the form first opens (before the variable is initialized with a value).

### Flash Art SuperObject

If the first character of the formula is @ Panorama treats the rest of the line as a variable name instead of a formula. The actual formula is stored in the variable. This allows you to easily change the formula on the fly, and also allows formulas longer than 255 characters. See "Formula in a Variable" on page 905.

Panorama 4.0 also allows a procedure to change the configuration of a Super Flash Art object on the fly. See "Super Flash Art Internal Data" on page 1941.

### List SuperObject

The List SuperObject hasn't actually changed, but there is a slight change in the documentation for changing the list formula on the fly - you must use { } around the formula. See "List SuperObject™ Commands" on page 1955.

### SuperMatrix SuperObject

A couple of minor programming revisions for this object. First there is a new programming command:

```
SuperObject "Object","scroll",RowDelta,ColDelta
```

This command allows a procedure to scroll the matrix in any direction (see "Super Matrix SuperObject™ Commands" on page 1962).

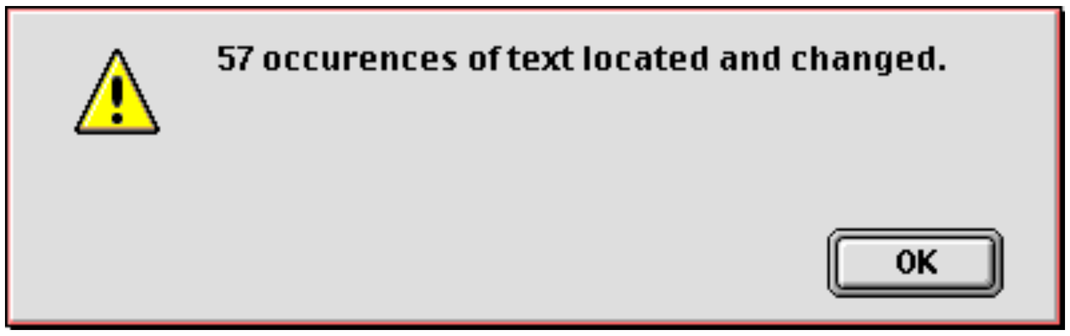
A new Super Matrix option, Sync Up / Dn, makes it easy to update the matrix as different records in the database are clicked on. See "Updating the Matrix Display" on page 1073.

## Form Preferences Dialog

This dialog has a new option — FileGlobal Variables. When this option is enabled any variables created by SuperObjects in the form will be fileglobal variables instead of global variables (see "Creating Variables with a SuperObject" on page 1502).

## Change Command Reports Changes

The **Change** command (in the Search menu) now tells you what it did, if anything.


57 occurences of text located and changed.

This command has also been modified to allow replacing text in fields containing up to 32,768 characters (this limit was 10,000 characters in previous versions).

## Stop Cursor Flashing

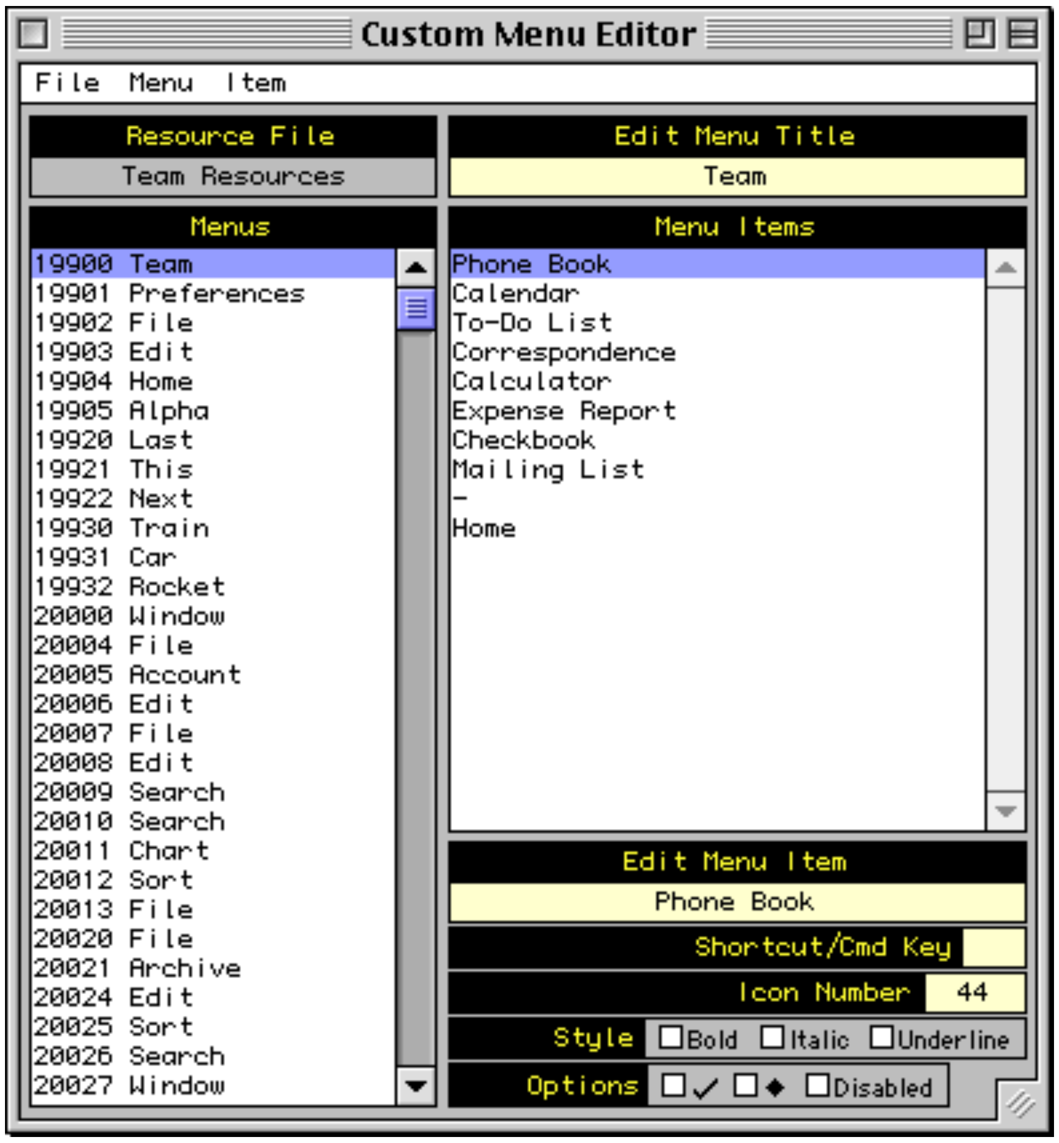
Panorama normally flips the mouse cursor from an arrow to a watch or pie chart when performing an operation that may take a while. With today's faster computers this often isn't necessary, and it can be somewhat annoying. To disable the watch and pie chart cursors during a procedure you can use the new `nowatchcursor` statement. See "Disabling the Watch Cursor" on page 1558.

### Destroy Variables At Any Time

The new `undefine` statement allows a program to destroy a variable that has been created with the local, windowglobal, fileglobal or global statement. See “Destroying a Variable” on page 1500 to learn how to do this.

### Improved Resource Editing Tools

Previous versions of Panorama had no capability to edit resource files. If you wanted to create custom menu resources you had to use a separate editing program like ResEdit or Resourcerer. Panorama now includes a menu resource editor that you can use within Panorama on both Macintosh and Windows PC systems (“Preparing a Resource File” on page 1607).



Resource File: Team Resources

Edit Menu Title: Team

Menus:

```
19900 Team
19901 Preferences
19902 File
19903 Edit
19904 Home
19905 Alpha
19920 Last
19921 This
19922 Next
19930 Train
19931 Car
19932 Rocket
20000 Window
20004 File
20005 Account
20006 Edit
20007 File
20008 Edit
20009 Search
20010 Search
20011 Chart
20012 Sort
20013 File
20020 File
20021 Archive
20024 Edit
20025 Sort
20026 Search
20027 Window
```

Menu Items:

```
Phone Book
Calendar
To-Do List
Correspondence
Calculator
Expense Report
Checkbook
Mailing List
-
Home
```

Edit Menu Item: Phone Book

Icon Number: 44

The custom menu resource editor was built using new statements and functions available with Panorama 4.0. If you need to modify resources in your PanTalk procedure see “Writing a Resource” on page 1692, “Deleting a Resource” on page 1693, “Renumbering a Resource” on page 1693 and “Working with Multiple Resource Files” on page 1695.

### Opening Documents with Other Applications

Since Panorama 3 the Macintosh version of Panorama has had the ability to open documents in other applications (using an AppleScript). The new `shellopendocument` statement extends this capability to the Windows operating system (see “Opening a Document in Another Application” on page 1672).

### Windows Registry

If you don’t know what the Window’s Registry is you probably shouldn’t be messing with it! Propellerheads (you know who you are) should turn straight to “Accessing the Windows Registry” on page 1696.

## Memory Allocation on Windows PC Systems

The default memory allocation for Panorama on Windows PC systems is 32 megabytes, which is enough for all but the largest databases. See "Adjusting Panorama's Memory Allocation (Windows and OS X)" on page 317 if your databases are larger than this. (Unlike the Macintosh there is no Scratch Memory allocation on Windows PC systems.)

## Autoload File Set

On PowerPC systems the name of the .AutoLoad file set has been changed to AutoLoad. (no period). On Windows PC systems the name of this file must be AutoLoad.pnz. See "The AutoLoad File Set" on page 268.

## Working with Files

Two new statements allow a program to access and modify the position, creation date, modification date and operating system flags for any file. For example, these statements can be used to make a file invisible. See "Getting and Setting Additional File Information" on page 1686.

Windows PC systems introduce a new concept not needed on Macintosh computers, the file extension. (The file extension is the three or four character suffix at the end of the file name, for example .pan or .txt). There are several new statements and functions to help you work with file extensions. See "Suppressing the Default Extension" on page 1661, "Importing a Text File into an Existing Database" on page 1665 (look for the `opentext` statement) and "INFO("DATABASEFILENAME")" on page 5366.

## New Procedure Statements

The table below lists the new procedure statements available in Panorama 4.0.

| Statement | Reference | Description |
|---|---|---|
| activeresource | Page 5011 | Select which open resource file to work with. |
| addwindowsfont | Page 5019 | Install font (Windows only). |
| cardvalidate | Page 5090 | Validate credit card number |
| convertimage | Page 5120 | Convert image file to a different format / resolution. |
| deleteresource | Page 5163 | Delete resource item. |
| drawobjects | Page 5183 | Draw selected objects. |
| getfilefinderinfo | Page 5296 | Get information about file position, date, etc. |
| getproceduretext | Page 5310 | Get text of procedure (source code). |
| imagequality | Page 5351 | JPEG compression setting for convertimage. |
| logmessage | Page 5494 | Write formula result to log file (for debugging). |
| magicformwindow | Page 5517 | Work with alternate window. |
| magicwindow | Page 5518 | Work with alternate window. |
| nodefaultextension | Page 5540 | Temporarily disable automatic .pan extension. |
| nowatchcursor | Page 5549 | Temporarily disable watch and pie chart cursors |
| opentext | Page 5585 | Open text file with any extension (.ini, .html, etc.) |
| registrydelete | Page 5639 | Delete registry value, subkey or key. |
| registrywrite | Page 5641 | Modify registry value. |
| renameresouce | Page 5659 | Change number and / or name of resource item. |
| scratchmemorytemporary | Page 5704 | Temporarily change scratch memory allocation. |

| Statement | Reference | Description |
|---|---|---|
| setfilefinderinfo | Page 5741 | Set information about file position, date, etc. |
| statusmessage | Page 5795 | Display message in status bar (for debugging). |
| shellopendocument | Page 5757 | Open document in another application (Windows) |
| undefine | Page 5866 | Destroy one or more variables. |
| watchcursor | Page 5889 | Enable watch and pie chart cursors |
| writeresource | Page 5908 | Modify value of resource item. |

### Revised Procedure Statements

A new function, `info("changecount")`, can be used to find out how many items were located and changed by the `change` statement. See "Change (Find and Replace)" on page 1837.

There are six new resource templates that can be used with the `gettext` statement — 3121, 3122, 3123, 3125, 3120 and 3131 (see "Basic Text Entry Dialogs" on page 1735). These templates contain **OK** and **Cancel** buttons (instead of **OK** and **Stop**). If you use one of these templates the procedure will not stop even if the **Cancel** button is pressed. The procedure can use the `info("dialogtrigger")` function to find out what button was pressed.

The dialog opened by the `alarmedit` statement now allows years up to 2020 A.D. (see "ALARMEDIT" on page 5023).

### New Functions

The table below lists the new formula functions available in Panorama 4.0.

| Statement | Reference | Return Value |
|---|---|---|
| info("applemenufolder") | Page 5359 | Location of Apple Menu folder. |
| info("changecount") | Page 5362 | Number of changes made by last change statement. |
| info("databasefilename") | Page 5366 | Actual file name of current database. |
| info("desktopfolder") | Page 5369 | Location of desktop folder. |
| info("magicwindow") | Page 5390 | Name of magic window, if any. |
| info("matrixname") | Page 5393 | Name of matrix that was clicked on. |
| info("openresourcefiles") | Page 5402 | List of open resource files. |
| info("panoramabuild") | Page 5404 | Time and date Panorama application was created. |
| info("preferencesfolder") | Page 5409 | Location of Preferences folder. |
| info("startupfolder") | Page 5425 | Location of Startup Items folder. |
| info("tempfolder") | Page 5431 | Location of folder for temporary items. |
| info("windowoptions") | Page 5444 | Window options (scroll bars, tool palette, drag bar). |
| info("windowview") | Page 5450 | Type of window. |
| registryinfo( | Page 5640 | Information about registry key or value. |

### Custom Dialog Wizard

The **Custom Dialog Wizard** was introduced at the ProVUE 98 conference (in August of 1998). This wizard is actually a set of procedures that you can copy into your database to make creating custom dialogs with forms a snap. The wizard actually writes the code for you! We are now including this wizard as part of Panorama, see Page 1744. (Note: If you attended the ProVUE 98 conference (or purchased the CD set afterwards) the version of the Custom Dialog Wizard included with Panorama 4.0 has been updated. You should update to the new version if you plan to create new dialogs.)

## New Documentation

The new Panorama documentation describes a number of topics in much greater detail than previous versions of the manual. Here is a list of some of these expanded topics.

“Importing a Text File” on page 273
“Importing HTML Tables” on page 278
“Exporting a Text File” on page 293
“Exporting HTML Tables” on page 306
“Opening More Than One Window Per Database” on page 351
“Automatic Time / Date Stamping” on page 466
“Automatic Calculations” on page 468
“3-Step Summarizing” on page 521
“Crosstabs” on page 561
“Filling a Field with a Formula” on page 581
“Graphic Design” on page 619
“Displaying Text” on page 715
“Editing Text” on page 760
“Word Processor SuperObject” on page 801
“Flash Art™” on page 876
“View-As-List Forms” on page 1017
“Elastic Forms” on page 1040
“Super Matrix Objects” on page 1057
“Building a Calendar” on page 1088
“Custom Reports” on page 1177
“Formulas In Action” on page 1293
“The Life Cycle of a Variable” on page 1328
“Text Formulas” on page 1340
“Text Arrays” on page 1364
“HTML Tag and Tag Parsing Functions” on page 1371
“Variables” on page 1498
“Subroutines” on page 1512
“Program Formatting” on page 1549
“Suppressing Display of Text and Graphics” on page 1555
“Debugging a Procedure” on page 1559
“The Action Menu” on page 1586
“Custom Menus (Resource Based)” on page 1606
“Building Subroutines On The Fly (The Execute Statement)” on page 1527
“Smart Merge Synchronization” on page 1673
“Window Clones” on page 1712
““Natural” Data Entry” on page 1780
“Reducing Screen “Flashing”” on page 1804
“A Handy Universal Find Procedure” on page 1806
“Handling Empty Selections” on page 1811
“Changing with the Replace( Function” on page 1840
“Programming Graphic Objects on the Fly” on page 1881
“Drag and Drop (Obsolete Method)” on page 1906
“Program Control of SuperObjects™” on page 1914
“Programming a HyperText Engine” on page 1946
“Printing Data in an Array” on page 1972

If you have read the **Panorama Real World Programming Guide** some of these topics will be familiar, while others are completely new.

### Unsupported Panorama 3.1 Features

Almost all Panorama 3.1 features are supported by Panorama 4.0 on both Macintosh and Windows PC platforms. However, external procedures (xcalls) are not supported by Panorama 4.0 on either platform. This feature will be added in a subsequent version of Panorama.

The Windows PC version of Panorama does not support Panorama's sound playing ability. This includes phone dialing through either the speaker or serial ports. This feature is on our list of possible future enhancements.

The Windows PC version of Panorama does not support the ability to customize the open file dialog and save file dialog with the `customdialog` statement.

The Windows PC version of Panorama does not support making windows "invisible" by opening them in an off screen location. It also does not support the **Hide This Window**, **Hide Other Windows** and **Show All Window** commands.

The Windows PC version of Panorama does not support use of the Butler SQL server for multi-user Partner/Server database operation. A future version of Panorama will support multi-user Partner/Server application with a new, cross platform, server.

The Windows PC version of Panorama does not support AppleScript (since AppleScript is not available for Windows PC systems!).

## Version 3.1.5

This version was released on December 16, 1998, and is the latest version available for 68K computers (early Macintosh systems).

### Mac OS 8.5 Bug Fix

Several Panorama dialogs did not work (crashed) when run under Mac OS 8.5, including: Custom Tool Palette Dialog, Quick Report Dialog, Access Privileges Dialog, Rearrange Form/Crosstab/Procedure Dialogs, Crosstab Setup Dialog and Rearrange Flash Art Dialog. These dialogs are all fixed.

### Improved Butler/SQL Performance

Improved performance when adding new records to a Butler SQL database (up to 400% improvement). Thanks to Mark Sanchez for discovering how to do this.

### New FileTypeCreator Statement

This version includes a new statement, filetypecreator. See "Changing a File's Type and Creator" on page 1684.

## Version 3.1.4

This version was released on August 29, 1998. This is a simple update, just one small but critical bug fix, plus a couple other minor cleanups. The critical bug would sometimes cause Panorama to ask the user to logon even when the database did not use security. This bug has been fixed. The `repeatloopif` statement has been fixed to work properly (see "Restarting a Loop in the Middle" on page 1512).

## Version 3.1.3

This version was released on December 31, 1997.

### Special Keyboard Support

Panorama now supports the following special keys on keyboards that have them.

**Page Up**

**Page Down**

**Home**

**End**

**Forward Delete**

**COMMAND-RIGHT ARROW to end of line**

**COMMAND-LEFT ARROW to start of line**

**COMMAND-UP ARROW (same as Home)**

**COMMAND-DOWN ARROW (same as End)**

Holding down the SHIFT key while using any of the arrow key combinations selects the text.

### Update Server Every Cell Option

When this option in the **SQL Local Setup** dialog (design sheet) is enabled, Panorama will immediately write your data to the server as soon as you enter it. (Normally, Panorama does not write the data until you move to another record.) If you have been experiencing problems with SQL, you might want to try this option. Be sure to set the option on every one of your client databases (this is a client option, not a server option). Using this option will make data entry somewhat slower, since there will be a delay after each cell you edit.

### MakeFolder Statement

This new statement allows a procedure to create new folders (see “Creating a New Folder” on page 1684).

### Minimum Window Size (Elastic Forms)

The `GetMinSize` command allows a procedure to find out what the minimum size of a window is, while the `SetMinSize` command allows the minimum size to be modified. See “Auto Grow SuperObject™ Commands (Elastic Forms)” on page 1961.

### AlertMode Statement

This new statement allows you to disable all alerts when Panorama is running. For example, you might want to do this when Panorama is running on a server. See “ALERTMODE” on page 5028.

### Info("FreeMemory") Function

This new function returns the amount of free memory available (not including scratch memory). See “INFO("FREEMEMORY")” on page 5382.

### New Action Menus Security Option

This option, found in the **Access Privileges** dialog, allows you to disable Action Menus if the user does not have a high enough security level. For example, you might set up custom menus for all users, with Action Menus only for high level users (or even only for the database developer).

### OS 8 Bug Fixes

Fixed bug that caused Panorama to crash if you clicked on the windowshade icon. This bug only occurred if Panorama was in the background, and only with OS 8. Fixed the **New Form** (QuickLabel) options (Mac OS 8 bug).Fixed the **FormSelect** and **FormComment** dialogs (Mac OS 8 bug).

## Version 3.1.2

This version was released on October 6, 1997.

### Info("Abort") Function

Added info("abort") function that can be used with the disableabort statement (see “Controlling the Abort Process” on page 1526).

### Long Window Names

The windowname statement (see “Changing the Name of a Window” on page 1706) now works with window names up to 100 characters long. (Previous limit was 48 characters).

### SetPlugAndRun Statement

The new setplugandrun statement allows you to change some of the parameters in the **Server>Local Setup** dialog via a procedure. See “SETPLUGANDRUN” on page 5749. Also added the info("plugandrun") function. This allows a procedure to find out what the settings in the **Server>Local Setup** dialog are. See “INFO("PLUGANDRUN")” on page 5408.

### Disabling Up/Down Arrows in a Form

Added the Enable Up / Down Arrows options to the **Form Preferences** dialog. If this is turned off (the default is on) pressing the **up** or **down** arrows will not move to the next or previous record. For example, suppose you are creating a dialog using a form. In that case, you probably don't want the user to be able to get to the next or previous record with the arrow keys, and this option disables that capability on a form by form basis.

### Window Management

The new **Hide This Window**, **Hide Other Windows** and **Show All Window** commands allow one or more windows to be hidden temporarily. See “Hiding Windows” on page 329. In addition, the maximum number of open windows has been raised to 32 (was 24).

## Version 3.1.1

This version was released on August 23, 1997.

### New HTML Parsing Functions

The new functions tagparameter( and tagparameterarray( are handy for parsing the options in an HTML tag. See “Tag Parameter Functions” on page 1373.

### Sleep Statement

This new statement puts Panorama to sleep for a while, letting other programs do their thing. This parameter should be followed by a number. Bigger numbers make Panorama sleep longer. According to the documentation for the Apple system call used by this command, the sleep time should be the number specified multiplied by 1/60 second, for instance 120 for 2 seconds. However, it doesn't work that way in real life. Nevertheless, the statement is very useful for allowing programs like Netscape Navigator to do their thing while Panorama is waiting for them to finish something.

Here is an example of how to use this statement. The AppleScript tells Netscape to save a disk file. However, Netscape returns to Panorama immediately without finishing this task, so Panorama must wait for the file to be finished. Without the sleep statement, Netscape will run very very slowly.

```
startscript "Grab Netscape Page"
loop
   websource=fileload("",theFile)
   if error
      sleep 10000
   else
      stoploopif 1=1
   endif
while forever
```

## Version 3.1

This version was released on July 17, 1997. Major new features include HTML table import, improved user interface and enhanced programming capabilities. This version was bundled with a copy of our SurfScout URL management utility.

### HTML Table Import

Panorama's text import capability has been enhanced to allow the import of HTML tables. Panorama automatically checks any text file you import for a `<table>` tag. If the text file contains a `<table>` tag Panorama will parse the HTML and input the data in the table. See "Importing HTML Tables" on page 278.

### HTML Tag Parsing Functions

Panorama 3.1 has six functions for working with text that contains data delimited by tags. These functions are not actually specific to HTML, and you may find other uses for them. See "HTML Tag and Tag Parsing Functions" on page 1371.

### HTML/URL Conversion Functions

Several new functions allow text to be converted from normal ASCII to the special format used by HTML or URL's. See "HTML Table Parsing Functions" on page 1374.

### Window Clones

Panorama normally allows only a single window per form. However, Panorama 3.1 allows a single form to be opened over and over again into multiple windows. This is called window "cloning." See "Window Clones" on page 1712 to learn how to set this up.

### Dragging To/From a List

Panorama 3.1 adds new features that make it possible to drag-and-drop to or from a List SuperObject. See "Using Drag and Drop to Change the Order of Items in a List" on page 1959.

### Suppressing Display of Text and Graphics

Previous versions of Panorama (up to 3.0) included the `hide` and `show` commands that allowed a programmer to turn off the display of text and graphics while the procedure was running. Unfortunately these commands did not give accurate control over the display, and worse, they could even crash if you attempted to use them across multiple windows.

Panorama 3.1 includes 7 new statements and 2 slightly modified old statements for suppressing and enabling the display of text and graphics. These statements are:

```
NoShow
EndNoShow
ShowPage
ShowLine
ShowFields field,field,…,field
ShowVariables var,var,…,var
ShowColumns field,field,…,field
ShowRecordCounter
ShowOther field?,op
```

See "Suppressing Display of Text and Graphics" on page 1555 for detailed information on how to use these statements.

### Unlisted Procedures

Panorama has always had the capability of unlisted procedures by starting the procedure name with a period (for example .Initialize or .ButtonClick). Panorama 3.1 adds the capability to unlist an entire group of procedures all at once, even if they don't start with a period. See "“Unlisted” Procedures" on page 1592.

### Disabling Command-Period

Pressing **Command-Period** normally stops any procedure right in it's tracks, no matter what the procedure is doing. This is normally an important safety valve, but you may have a procedure that should not be stopped in the middle with a job halfway done. For these types of cases Panorama 3.1 now allows you to disable **Command-Period** during some or all of a procedure. See "Controlling the Abort Process" on page 1526.

### Text Editor Padding and Grow Box Options

Two new options allow you to customize a Text Editor SuperObject — Padding and Grow Box. See "Text Editor Options" on page 771.

### Working With Complex Formulas

The new `formulabuffer` statement allows you to avoid the Expression Too Complicated error message. See "Working With Extremely Complex Formulas" on page 1332.

### ReplaceMultiple( Function

The `replacemultiple(` function is similar to the `replace(` function. However, instead of simply replacing one word or phrase with another, the `replacemultiple(` function takes an entire list of words or phrases and replaces them with the corresponding words and phrases in a second list. See "REPLACEMULTIPLE(" on page 5667.

### ExportCell( Function

This new function takes any database field and converts it to text. You do not have to know the type of data in the field (text, number or date). See "EXPORTCELL(" on page 5209.

### OnError Statement

The `onerror` statement can be used to catch all errors that are not trapped by `if error` statements. This has two benefits: 1) It allows the programmer to easily eliminate all error alert dialogs. This is very important for server applications because an alert dialog requires human intervention to get the server going again. 2) It makes it easy to build a log of errors. See "Catching Program Errors (Especially for Web and other Server Applications)" on page 1535.

### Customizing the About Panorama Menu Item

Panorama 3.1 allows you to customize the first item in the Apple Menu. This item normally says **About Panorama...** or **About Panorama Direct...**, but you can customize it to display any text you want when your database is active, for example **About This Database...** . See "..CustomAbout" on page 1653.

### SuperObjectClose Statement

This statement closes (terminates editing) the Text Editor SuperObject or Word Processor object currently being edited. See "The Active SuperObject" on page 1915.

## Customizing the Open File Dialog and Save File Dialog

Panorama has two statements that display a dialog for selecting a folder and file name: `openfiledialog` and `savefiledialog`. Panorama 3.1 extends this capability by allowing you to customize these dialogs (note — these dialogs cannot be customized on Windows PC systems). The customization options you have include changing the layout of the dialog, adding extra text to the dialog and adding extra push buttons to the dialog. See “Customizing the Standard File Dialogs” on page 1661.

## Loading/Saving Multiple Variables

Panorama 3.1 has the ability to combine multiple variables into a single array, or to take an array and split it into many separate variables. This capability can be useful for editing arrays (each array element can be edited in a separate variable) and for saving a collection of variables in a single disk file (for example to store preferences). See “Copying Between Multiple Variables and an Array” on page 1849.

## Version 3.0

This major version was released in January 1996. Major new features include Client/Server multiuser operation, SuperObjects, built in Word Processing, Elastic Forms and AppleScript support. If you are upgrading from Panorama 2.x we've summarized these changes here with links to the new documentation.

### Client/Server

Panorama 3 introduces a whole new dimension in client/server database management. Instead of a "dumb" client that simply displays forms and allows data to be edited, our **Partner/Server™** system combines the best of Panorama's incredibly fast single user RAM based database technology with an industry standard SQL server for co-ordinating data sharing across multiple computers. (This feature requires an optional SQL server, sold separately. The Client/Server system is documented in the separate **Panorama Partner/Server Handbook**, which is included with your optional SQL server software.)

### SuperObjects™

Our new SuperObject technology allows you to rapidly develop even the most complicated forms with prebuilt elements like 3D buttons and checkboxes, pop-up menus, scrolling lists, matrices, scalable text, scalable/scrollable pictures, hypertext, text editing and word processing. Any SuperObject can be automatically linked to any field or variable, and most have dozens of options for controlling the appearance and operation of the object. Now you can create virtually any user interface you want. See "SuperObjects" on page 629.

### Word Processing

Panorama 3 includes full built in word processing, with multiple fonts/styles/sizes in a single data cell, four tab stop styles, over 16 different text styles, multiple colors, discontinuous and rectangular selections, and mail merge. See "Word Processor SuperObject" on page 801.

### Graphics/Forms

Improvements include the customizable tool palette (see "Customizing the Tool Palette" on page 625) and the Graphic Control Strip with instant display of object specifications and pop-up menus for patterns, colors, fonts, sizes, and more (see "The Graphic Control Strip" on page 633).

### Elastic Forms

Panorama 3 can automatically resize and rearrange the elements of a form as the window containing the form is resized or zoomed. The form adapts automatically to different window sizes. See "Elastic Forms" on page 1040.

### Reports

Reports can now include text, word processing, or pictures that are longer than a single page, selectively printing different pages of a multi-page form (see "Printing Data that Overflows a Page" on page 1232).

### Duplicates

The new **Select Duplicates** command makes it easy to find and eliminate duplicate records (see "Select Duplicates" on page 516).

### AppleScript

Now Panorama can work with and exchange data with other applications automatically. AppleScript can access and modify Panorama windows, fields and variables, and can launch Panorama procedures (macros). Panorama procedures can also launch an AppleScript as part of their operation.

### Programming Language

Panorama's programming language has been vastly upgraded with over 100 new statements and over 100 new functions. New features include permanent variables (see “Long Life Variables” on page 1500), improved loop control (see “Stopping a Loop in the Middle” on page 1511 and “Restarting a Loop in the Middle” on page 1512), parameters to subroutines (see “Passing Values to a Subroutine (Parameters)” on page 1514 and “Passing Values Back From a Procedure” on page 1515), pause / resume (see “Custom Dialogs” on page 1744), direct form manipulation (see “Programming Graphic Objects on the Fly” on page 1881), and more access to the Macintosh toolbox (see “System and Database Information Functions” on page 1442). There are also new data types for arrays (see “Text Arrays” on page 1364), superdates (see “SuperDates (combined date and time)” on page 1387), graphic elements including points (see “Points” on page 1416), rectangles (see “Rectangles” on page 1418), colors (see “Colors” on page 1422) and more.

### Development Tools

Panorama 3 includes a built-in interactive debugger (see “The Panorama Interactive Debugger” on page 1562), complete cross-reference tools (“Cross Referencing” on page 1580), and improved procedure editing.

### Import/Export

Data can be rearranged and processed on the fly as it is being imported (see “Importing a Text File into an Existing Database” on page 1665), and database columns can be matched by field name instead of position (see “Appending One Database to Another” on page 269).

### Security

Panorama 3’s built-in, flexible security system safeguards your data automatically but does not interfere with authorized database use. (The security system is documented in the **Panorama Security Handbook**, sold separately.)

## Version 2.1

This version was released in December 1992. Features included the ability to use up to 256 colors in a form (see “Color” on page 654), QuickTime support (see “Displaying Movies in a Form” on page 938), Balloon Help (see “Balloon Help” on page 1102), and Custom paper sizes including DayRunner/DayTime organizer notebook pages (see “Special Paper Options” on page 1282).

## Version 2.0

This major version was released in April 1991. Over 450 new features were added, including pop-up data entry window (see “The Input Box” on page 438), Smart Dates™ (see “Entering Dates” on page 422), view-as-list forms (see “View-As-List Forms” on page 1017), instant labels (see “The QuickLabel Dialog” on page 1285) and reports (see “The QuickReport Dialog” on page 1227), auto-save (see “Auto-Save” on page 261), and improved programmability.

## Version 1.0, 1.1 and 1.5

Panorama 1.0 was released in November 1988. Frankly, we don’t remember much else about those versions!

## General Corporate History

Founded in 1978, ProVUE has been developing interactive productivity tools for over two decades. From the beginning, ProVUE products have been known for their innovation and performance. Since 1978 over 100,000 customers have used ProVUE products on the CP/M, Alpha Micro, PC, and Macintosh platforms. ProVUE was one of the first commercial developers of Macintosh software, shipping our first Mac program, OverVUE, in August of 1984 (only 8 months after the debut of the original Mac 128).

### PolyVUE

In 1978 ProVUE (then called Micro Concepts) was founded to market PolyVUE, a text editor for the CP/M operating system. That same year we attended our first trade show, the West Coast Computer Faire.

### SuperVUE and DataVUE

In 1980 ProVUE introduced SuperVUE, a WYSIWIG word processor for Alpha Micro minicomputers. This was one of the first word processors on any machine to include “what you see is what you get” on screen formatting, and quickly became the leading word processor in the Alpha Micro market. A PC version of SuperVUE was released in 1986. In 1983 ProVUE introduced DataVUE, a RAM based database for Alpha Micro minicomputers.

### OverVUE

In August of 1984 ProVUE introduced OverVUE, a RAM based database program for the Macintosh. OverVUE pioneered many of the unique features that later made Panorama unique, including ultra fast sorting, selecting, calculating and import, Clairvoyance™, macros, and charts. In 1985 MacUser magazine awarded OverVUE the very first "Eddy" award for best database. In January of 1985 we exhibited at the very first MacWorld Expo (in Brooks Hall in San Francisco) and we've been at almost every MacWorld Expo ever since.

### Panorama

In 1986 work was begun on an all new database designed specifically for the Macintosh. The result, Panorama, was first released in November 1988. Panorama retained the incredible RAM based speed of OverVUE while adding a full graphical multi-window interface, MacDraw like forms, Flash Art™, mail-merge, outlining, crosstabs and lookups. The result? In 1988 MacUser magazine awarded Panorama an "Eddy" award for best new database.

### Power Team

In 1993 ProVUE introduced Power Team, a complete organizer that combines seven modules into one integrated package: Phone Book, Calendar/To-Do List, Correspondence, Checkbook, Calculator, Expense Report, and Mailing List. All seven modules are designed from the ground up to work together and share data seamlessly. MacWorld magazine calls it a "Well thought out, easy to use package" while MacUser says that Power Team "Breaks new ground in the PIM and contact management arena."

### SurfScout

In the summer of 1997 ProVUE shipped our first Internet product, SurfScout. SurfScout makes web bookmarks manageable by putting an ultra-fast searchable bookmark database right at your fingertips! SurfScout also imports bookmarks from the web, and imports data tables too!

### SiteWarrior

In the fall of 1997 ProVUE started a new HTML industrial revolution with the introduction of SiteWarrior. Instead of concentrating on flashy WYSIWYG features for newbies, SiteWarrior is designed to maximize the productivity of HTML experts. SiteWarrior combines database technology with web authoring to turn the craft of web site creation on its head.

### iPod Organizer

In 2002 ProVUE made information mobile with the Panorama iPod Organizer. This package combines the power of Panorama's unique RAM based database technology with the portability and flexibility of the iPod. It allows you to store phone numbers, email addresses, flight numbers, appointment times ... all the important information you need to access on the go, then easily transfer the information to your iPod for instant access at home, at work or in the field.