About This Book

This book, *Inside Macintosh: More Macintosh Toolbox*, together with the book *Inside Macintosh: Macintosh Toolbox Essentials*, describes features you can build into your Macintosh application and documents the system software routines for implementing those features.

For information about events, windows, menus, controls, alert boxes, and dialog boxes and about how your application interacts with the Finder, see *Inside Macintosh: Macintosh Toolbox Essentials.*

This book, *More Macintosh Toolbox*, describes how you can enhance your application by supporting copy and paste and providing messages for help balloons. In addition, it describes other features you may want to use in your application, such as scrolling lists in dialog boxes and icons in windows. It also explains how to create resources, components, translation extensions, and control panels.

To read and write resources, see the chapter "Resource Manager." This chapter describes how you can use resources to store the descriptions of user interface elements such as menus, windows, controls, dialog boxes, and icons. You can also use resources to store variable settings, such as the location of the window at the time the user closes it. When the user opens the document again, your application can read the information in the resource and restore the window to its previous location.

To support copy-and-paste operations in your application, see the chapter "Scrap Manager." By using the Scrap Manager, you can allow users to copy and paste data between documents created by your application and documents created by other applications.

To provide messages for help balloons for elements of your application, see the chapter "Help Manager." Help balloons are rounded-rectangle windows that contain explanatory information for the user. With tips pointing at the objects they annotate, help balloons look like the bubbles used for dialog in comic strips. Help balloons are turned on by the user from the Help menu; when Balloon Help assistance is on, a help balloon appears whenever the user moves the cursor over the balloon's hot rectangle.

To create lists in your application's dialog boxes, including lists that contain scroll bars, see the chapter "List Manager." You can use the List Manager to create one-column or multicolumn lists. Lists are useful for allowing the user to select one or more items from a group of items.

To display icons in a window or dialog box of your application, see the chapter "Icon Utilities." By using Icon Utilities routines, you can automatically draw the icon from an icon family that is best suited for the current bit depth of the monitor.

To use or create components, see the chapter "Component Manager." Components can provide your application with various services such as image compression or decompression services. You can also provide services to other applications by creating your own component.

To direct the translation of documents from one format to another, see the chapter "Translation Manager." Macintosh Easy Open uses the Translation Manager to automatically provide some translation services for your application. Optionally, you can enhance your application's interaction with Macintosh Easy Open or provide your own translation services.

To create a control panel or an extension to the Monitors control panel, see the chapter "Control Panels." Control panels allow the user to set preferences for systemwide features, such as the the speaker volume, desktop pattern, or picture displayed by a screen saver. Extensions to the Monitors control panel should be created only by the manufacturer of a video device.

To get information from the desktop database, see the chapter "Desktop Manager." The desktop database contains information used by the Finder, such as icon definitions and their associated file types, as well as any comments that the user has added to the information window for desktop objects.

If you are new to programming on the Macintosh computer, you should read *Inside Macintosh: Overview* for an introduction to general concepts of Macintosh programming and read *Macintosh Human Interface Guidelines* for a complete discussion of user interface guidelines and principles that every Macintosh application should follow.

Some related topics can be found in other *Inside Macintosh* books. For information on how to read and write to the data fork of a file, see the chapter "Introduction to File Management" in *Inside Macintosh: Files*. For information about drawing into a window or other graphics port, see *Inside Macintosh: Imaging with QuickDraw*. For information on handling text in your application, see *Inside Macintosh: Text*. For information on communicating with other applications, see *Inside Macintosh: Interapplication Communication*.

Format of a Typical Chapter

Almost all chapters in this book follow a standard structure. For example, the chapter "Resource Manager" contains these sections:

- "Introduction to Resources." This section presents a general introduction to resources, resource types, and resource forks.
- "About the Resource Manager." This section provides an overview of the features provided by the Resource Manager.
- "Using the Resource Manager." This section describes the tasks you can accomplish using the Resource Manager. It describes how to use the most common routines, gives related user interface information, provides code samples, and supplies additional information.

- "Resource Manager Reference." This section provides a complete reference to the Resource Manager by describing the data structures, routines, and resources it uses. Each routine description also follows a standard format, which presents the routine declaration followed by a description of every parameter of the routine. Some routine descriptions also give additional descriptive information, such as assembly-language information or result codes.
- "Summary of the Resource Manager." This section provides the Pascal and C interfaces for the constants, data structures, routines, and result codes associated with the Resource Manager. It also includes relevant assembly-language interface information.

Conventions Used in This Book

Inside Macintosh uses various conventions to present information. Words that require special treatment appear in specific fonts or font styles. Certain information, such as the contents of registers, use special formats so that you can scan them quickly.

Special Fonts

All code listings, reserved words, and names of actual data structures, fields, constants, parameters, and routines are shown in Courier (`this is Courier`).

Words that appear in **boldface** are key terms or concepts and are defined in the Glossary.

Types of Notes

There are several types of notes used in this book.

Note
A note like this contains information that is interesting but not essential to an understanding of the main text. (An example appears on page 1-9.) ◆

IMPORTANT
A note like this contains information that is essential for an understanding of the main text. (An example appears on page 1-5.) ▲

▲ **WARNING**
Warnings like this indicate potential problems that you should be aware of as you design your application. Failure to heed these warnings could result in system crashes or loss of data. (An example appears on page page 1-5.) ▲

Empty Strings

This book occasionally instructs you to provide an empty string in routine parameters and resources. How you specify an empty string depends on what language and development environment you are using. In Rez input files and in C code, for example, you specify an empty string by using two double quotation marks (""), and in Pascal you specify an empty string by using two single quotation marks ('').

Assembly-Language Information

Inside Macintosh provides information about the registers for specific routines like this:

Registers on entry

A0 Contents of register A0 on entry

Registers on exit

D0 Contents of register D0 on exit

In the "Assembly-Language Summary" section at the end of each chapter, *Inside Macintosh* presents information about the fields of data structures in this format:

0	`what`	word	event code
2	`message`	long	event message
6	`when`	long	ticks since startup

The left column indicates the byte offset of the field from the beginning of the data structure. The second column shows the field name as defined in the MPW Pascal interface files; the third column indicates the size of that field. The fourth column provides a brief description of the use of the field. For a complete description of each field, see the discussion of the data structure in the reference section of the chapter.

The Development Environment

The system software routines described in this book are available using Pascal, C, or assembly-language interfaces. How you access these routines depends on the development environment you are using. When showing system software routines, this book uses the Pascal interface available with the Macintosh Programmer's Workshop (MPW).

All code listings in this book are shown in Pascal (except for listings that describe resources, which are shown in Rez-input format). They show methods of using various routines and illustrate techniques for accomplishing particular tasks. All code listings have been compiled and in many cases tested. However, Apple Computer, Inc., does not intend for you to use these

code samples in your application. You can find the location of code listings in the list of figures, tables, and listings beginning on page xvii. If you know the name of a particular routine (such as `DoPictBalloon` or `MyPlotAnICON`) shown in a code listing, you can find the page on which the routine occurs by looking under the entry "sample routines" in the index of this book.

To make the code listings in this book more readable, they show only limited error handling. You need to develop your own techniques for handling errors.

This book occasionally illustrates concepts by referring to a sample application called *SurfWriter;* this book also refers to the sample applications *SurfPaint* and *SurfDB*. These applications are not actual products of Apple Computer, Inc. This book also refers to a River control panel and SurfBoard display card. These are not actual products of Apple Computer, Inc. In addition, the name River Change Systems is used to represent a fictitious company.

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If you provide commercial products and services, call 408-974-4897 for information on the developer support programs available from Apple.

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