

Contents at a Glance

1	Grasping the Essentials of AppleScript	3
2	Up to Speed with AppleScript Editor	11
3	Creating Your First Script	27
4	Working with Variables, Classes, Operators, and Coercions	61
5	Working with Text, Numbers, and Dates	81
6	Working with the Finder, Files, and Folders	101
7	Making Decisions in Your Scripts	129
8	Using Dialog Boxes to Get User Input	137
9	Repeating Actions in Your Scripts	179
10	Debugging and Handling Errors	195

11	Running Scripts Automatically	219
12	Automating iTunes and iPhoto	249
13	Automating Apple Mail	271
14	Automating Microsoft Word	291
15	Automating Microsoft Excel	337
16	Automating Microsoft Entourage	377
	Index	411

Contents

ACKNOWLEDGMENTS	xix
INTRODUCTION	xxi

PART I Getting Started with AppleScript

1 Grasping the Essentials of AppleScript	3
Knowing What AppleScript Is and What You Can Do with It	4
What You Can Do with Scripts	4
Why AppleScript Is Easy to Learn	5
Understanding What Scripts Are	5
What a Script Is	5
Where Scripts Are Stored	5
How You Create Scripts	6
How You Run Scripts	6
Understanding Objects, Keywords, Commands, and Properties	7
What Objects Are	7
What Keywords Are	7
What Commands Are	8
What Properties and Values Are	9

2 Up to Speed with AppleScript Editor	11
Launching AppleScript Editor	12
Meeting the AppleScript Editor Window	13
Setting Up AppleScript Editor for Working Comfortably	16
Choosing General Preferences	16
Choosing Editing Preferences	18
Choosing Formatting Preferences	20
Choosing History Preferences	22
Choosing Plug-ins Preferences	23
Putting the Script Menu on the Menu Bar in Leopard	23
Running a Script from the Script Menu	25
3 Creating Your First Script	27
Opening AppleScript Editor	28
Creating tell Statements	29
Try This: Opening a Finder Window Showing the Documents Folder	30
Saving a Script	31
Try This: Saving Your Script	31
Creating tell Blocks	32
Creating a tell Block Manually	32
Try This: Using a tell Block	32
Using the Tell Application Pop-Up Menu	33
Adding Comments to Your Code	34
Creating End-of-Line Comments	35
Try This: Commenting Out a Line	36
Creating Block Comments	36
Try This: Creating a Comment Block	37
Recording Actions into a Script	37
Try This: Recording Actions: Repositioning and Resizing the Finder Window	38
Examining the Recorded Code	39
Activating an Application	39
Selecting the Finder Window	39
Setting the Position of the Window	39
Resizing the Window	40
Changing the View	41
Try This: Editing the Script	41
Dealing with Errors	43
Try This: Resolving an Error in Your Code	43
Wrapping a Line of Code	44
Try This: Breaking Lines of Code Manually	45
Opening a Dictionary File	46
Try This: Opening the Dictionary File forTextEdit	46

Finding the Terms You Need	48
Try This: Using the Dictionary File	48
Turning a Script into an Application	55
Try This: Making an Application from Your Script and Adding It to the Dock	56

PART II Learning Essential AppleScript Programming Techniques

4 Working with Variables, Classes, Operators, and Coercions	61
Working with Variables	62
Understanding the Seven Data Types	62
Creating a Variable	63
Understanding the Scope and Persistence of Variables	67
Try This: Using a Global Variable	69
Using Script Properties to Store Data Permanently in the Script	71
Try This: Using a Script Property	73
Performing Operations with Operators	74
Understanding Classes	77
Converting Data with Coercions	78
Try This: Creating a Variable and Applying a Coercion	80
5 Working with Text, Numbers, and Dates	81
Working with Text	82
Entering Normal Text in a Text Object	82
Joining Two or More Strings of Text	83
Adding Spaces, Tabs, Line Feeds, and Returns	83
Using Backslash and Double-Quote Characters	85
Returning Parts of a Text Object	86
Trimming a String	88
Finding a String Within Another String	88
Finding Out Whether One Text Object Contains Another Text Object	89
Choosing What to Ignore When Comparing Text	90
Transferring Text from One Application to Another	91
Try This: Using the Clipboard	92
Working with Numbers	93
Performing Arithmetic with Numbers	93
Coercing Numbers to Other Data Types	93
Coercing Other Data Types to Numbers	94
Working with Dates	94
Understanding How AppleScript Handles Dates	94
Working with the month Property of the Date Object	96
Working with the weekday Property of the Date Object	97
Coercing a Date Object to a String	97
Changing a Date	97

Calculating Hours, Minutes, Days, and Weeks	98
Finding Out How Far Off GMT Your Mac Is	98
Comparing Dates and Times	98
Try This: Working with Dates and Times	99
6 Working with the Finder, Files, and Folders	101
Working with Finder Windows	102
Referring to the Objects You Need	102
Try This: Using Special Folders	107
Opening a Finder Window	110
Try This: Using Nested References, Path References, and Alias References	110
Changing the View in a Finder Window	111
Changing the Position of a Finder Window	112
Changing the Size of a Finder Window	113
Minimizing and Restoring a Finder Window	113
Changing the Width of the Sidebar	113
Showing and Hiding the Toolbar	114
Hiding All Finder Windows	115
Closing Finder Windows	115
Try This: Opening, Configuring, and Closing Finder Windows	116
Working with Folders	117
Creating a Folder	118
Copying a Folder	119
Duplicating a Folder	119
Renaming a Folder	119
Moving a Folder	119
Deleting a Folder	120
Try This: Creating, Renaming, and Moving a Folder	120
Working with Files	121
Creating Files from the Finder	121
Copying a File	123
Duplicating a File	123
Deleting a File	124
Renaming a File	124
Moving a File	124
Try This: Creating a File and Opening It	125
Mounting and Unmounting Volumes	125
Mounting a Volume	126
Unmounting a Volume	128
7 Making Decisions in Your Scripts	129
Checking a Single Condition with an if... then Statement	131
Try This: Using an if... then Statement to Launch an Application If It's Not Running	131

Deciding Between Two Courses of Action with an if... then... else Statement	132
Try This: Using an if... then... else Statement	133
Choose Among Multiple Courses of Action with an if... then... else if... else Statement	134
Try This: Using an if... then... else if... else Statement	135
8 Using Dialog Boxes to Get User Input	137
Using Dialog Boxes	138
Displaying Multiple Paragraphs of Text in a Dialog Box	139
Adding a Title to a Dialog Box	140
Choosing the Buttons Displayed in the Dialog Box	141
Setting a Default Button in a Dialog Box	142
Creating a Cancel Button That's Not Called "Cancel"	143
Seeing Which Button the User Clicked in a Dialog Box	144
Adding an Icon to a Dialog Box	145
Try This: Adding a Custom Dialog Box to the Set Up Finder andTextEdit Script	147
Creating a Dialog Box That Closes Itself	149
Getting Text Input from the User	149
Try This: Returning Text from a Text-Entry Field	150
Using Alerts	151
Understanding How Alerts Differ from Standard Dialog Boxes	151
Choosing the Icon for an Alert	152
Try This: Creating an Alert	153
Choosing the Name Under Which to Save a File	154
Adding a Custom Prompt to the Choose File Name Dialog Box	154
Setting a Default Location and Filename	155
Letting the User Choose from a List of Items	156
Creating the List of Items	156
Seeing Which Item the User Chose	156
Adding a Title and Custom Prompt to the Choose From List Dialog Box	157
Changing the Buttons on the Choose From List Dialog Box	158
Choosing One or More Default Items	158
Letting the User Select Multiple Items or No Items	159
Try This: Creating a Choose From List Dialog Box	160
Letting the User Choose Files, Folders, Applications, and URLs	161
Letting the User Choose a File	162
Try This: Letting the User Choose a File	169
Letting the User Choose a Folder	170
Letting the User Choose an Application	172
Try This: Using the Choose Application Dialog Box to Open a Document in a Particular Application	174
Letting the User Choose a URL	175

9 Repeating Actions in Your Scripts	179
Getting an Overview of the Types of Loops That AppleScript Provides	180
Understanding What Hard-Coding Is and When to Use It	181
Repeating Actions Until a Termination Condition Becomes True	181
Try This: Using a repeat Loop to Close All Open Finder Windows Except One	183
Repeating Actions a Set Number of Times	184
Try This: Using a repeat... times Loop Controlled by a Dialog Box	185
Repeating Actions Using a Loop Controlled by a Loop Variable	186
Try This: Using a Loop Controlled by a Loop Variable	188
Repeating Actions for Each Item in a List	189
Try This: Using a repeat with list Command to Close Some Finder Windows	189
Repeating Actions as Long as a Condition Remains True	190
Try This: Using a repeat while Loop	191
Repeating Actions Until a Condition Becomes True	192
Try This: Using a repeat until Loop	193
10 Debugging and Handling Errors	195
Understanding What Happens When an Error Occurs	196
Try This: Causing Errors Deliberately	197
Suppressing an Error with a Try Block	198
Try This: Adding a Try Block to a Script	199
Creating an Error Handler	201
Understanding the Basics of Error Handlers	201
Returning the Error Number and Error Message	201
Dealing with the Error	202
Try This: Building an Error Handler	204
Finding Out Which Errors You Need	204
Handling a Cancel Button in a Dialog Box	205
Identifying Errors by Running a Script	205
Looking Up Errors in the Application's Documentation	206
Creating Your Own Errors	206
Making Your Scripts Resistant to Errors	209
Verifying That an Item Exists Before You Use It	209
Referring to an Application by Its Formal Name	210
Breaking Up a Script into Subroutines	213
Try This: Creating a Subroutine	214
11 Running Scripts Automatically	219
Running a Script Automatically Using a Droplet	220
Turning a Script into a Droplet	221
Saving the Droplet as an Application	223
Try This: Creating and Running a Droplet	224

Running a Script Automatically with a Folder Action	225
Turning On Folder Actions	226
Writing a Folder Action Script	227
Attaching a Folder Action Script to a Folder	233
Try This: Creating and Using a Folder Action Script	240
Running a Script at Login	243
Running a Script Repeatedly at Intervals	243
Try This: Creating an Application That Uses an Idle Handler	244
Running a Script Automatically at Specific Times	245

PART III Automating Major Applications with AppleScript

12 Automating iTunes and iPhoto	249
Working with iTunes	250
Working with Tracks	250
Working with Playlists	256
Try This: Dealing with All the Songs That Have an Intermediate Rating	258
Working with iPhoto	263
Working with Albums and Photos	263
Working with Photos	265
Working with Keywords	267
Try This: Creating an Album and Adding Photos to It	269
13 Automating Apple Mail	271
Working with Mail Accounts	272
Understanding the Four Types of Accounts	273
Checking and Changing the Settings for an E-mail Account	275
Working with Mailboxes	278
Creating a New Mailbox	278
Renaming a Mailbox	278
Deleting a Mailbox	279
Try This: Finding the Number of New Messages for Only Some Accounts	279
Creating and Sending Messages	281
Creating an Outgoing Message	281
Attaching a File to an Outgoing Message	283
Sending the Message	284
Dealing with Incoming Messages	284
Opening a Message in a Separate Window	285
Deleting a Message	285
Moving a Message to a Folder	285
Dealing with Incoming Attachments	286
Working with Tasks	287

14 Automating Microsoft Word	291
Launching Word—and Quitting Word	292
Understanding the Key Word Objects for AppleScript	293
Working with Documents	294
Creating a New Document	294
Working with the Template Attached to a Document	295
Opening an Existing Document	298
Saving a Document	298
Making a Document the Active Document	300
Closing a Document	301
Identifying the Document You Want to Work With	302
Printing a Document	303
Try This: Creating, Saving, and Closing a Document	304
Working with Windows and Views	306
Working with Windows	306
Working with Views	308
Working with Text	310
Returning a Text Object and Reaching Its Contents	310
Working with the Selection Object	311
Creating a Text Range	317
Extending, Shortening, or Moving a Range	319
Entering Text in a Document	319
Formatting Text	320
Try This: Entering and Formatting Text in a Document	322
Using Sections, Page Setup, and Headers and Footers	325
Breaking a Document into Sections	325
Choosing Page Setup	326
Adding Headers, Footers, and Page Numbers	326
Displaying Word's Built-in Dialog Boxes	329
Try This: Adding a Header, Adjusting Margins, and Displaying a Dialog Box	331
Running Your Scripts from Word	333
Adding a Script to Word's Script Menu	333
Creating a Keyboard Shortcut to Run a Script	334
15 Automating Microsoft Excel	337
Understanding Excel's Main Objects	338
Launching and Quitting Excel	339
Working with Workbooks	340
Creating a New Blank Workbook	340
Creating a New Workbook Based on a Template	341
Saving a Workbook	341
Opening an Existing Workbook	344
Closing a Workbook	344
Sharing a Workbook with Others	345

Protecting a Workbook Against Changes	346
Using the active workbook Class	347
Try This: Creating, Saving, and Closing a Workbook	348
Working with Worksheets and Other Sheets	349
Inserting a Worksheet in a Workbook	350
Renaming a Worksheet	351
Deleting a Worksheet	351
Moving or Copying a Worksheet	352
Finding Out Which Kind of Sheet You're Dealing With	353
Protecting a Worksheet	354
Using the active worksheet Class	355
Printing a Worksheet	355
Try This: Opening a Workbook and Adding a Worksheet to It	356
Creating and Using Ranges of Cells	357
Working with the Active Cell or the Selection	358
Referring to a Range of Cells	359
Using Named Ranges for Easy Reference	359
Working with a Worksheet's Used Range	359
Using Excel's Special Cells	360
Inserting a Formula in a Cell	361
Try This: Adding Data to a Workbook	361
Using Charts in Your Workbooks	363
Understanding How to Create a Chart from AppleScript	363
Adding a Chart Sheet to a Workbook	363
Adding a Chart Object to a Worksheet	364
Setting the Chart Type	365
Add a Series to the Chart	366
Adding a Caption to an Axis	366
Adding a Chart Title	367
Adding a Legend	367
Try This: Creating a Chart	368
Working with Excel Windows and Views	371
Opening a New Window	371
Activating a Window	371
Closing a Window	372
Repositioning and Resizing Windows	372
Rearranging Excel Windows	373
Changing the View	374
Zooming a Window	374
Using Find and Replace in Your Scripts	374
Using find to Search for Data	374
Continuing a Search	375
Using replace to Replace Data	376

16 Automating Microsoft Entourage	377
Creating Entourage Accounts	378
Creating an Exchange Account	380
Creating an IMAP Account	382
Creating a POP Account	384
Creating a Hotmail Account	386
Creating and Sending E-mail Messages	387
Understanding the message Object	387
Creating and Sending an E-mail Message	388
Creating an E-mail Message for the User to Work With	391
Setting a Signature for an E-mail Message	393
Attaching a File to a Message	394
Dealing with Incoming E-mail Messages	395
Forwarding a Message	395
Moving a Message to a Folder	396
Deleting a Message	396
Receiving an Attachment	397
Working with Contacts	398
Creating a New Contact	401
Adding E-mail Addresses to a Contact	401
Getting a vCard of Contact Data	404
Deleting a Contact	404
Working with Events	405
Working with Tasks	407
Working with Notes	408
Index	411