

CONTENTS

INTRODUCTION

xxiii

CHAPTER 1: NAVIGATION 1

Navigation Stack	2
The Navigation Bar	2
UINavigationControllerDelegate Protocol	2
Configuring Navigation Bars	2
Pushing and Popping Items	3
A Simple Navigation Bar	3
Development Steps: A Simple Navigation Bar	4
Test Your Application	17
The Toolbar	17
A Simple Toolbar	18
Development Steps: A Simple Toolbar	18
Test Your Application	26
The Tab Bar	26
UITabBarControllerDelegate Protocol	26
Customizing Tab Bars	26
A Simple Tab Bar	26
Development Steps: A Simple Tab Bar	27
Designing the View Controllers	30
Test Your Application	51
Summary	51

CHAPTER 2: ALERTS, ACTION SHEETS, AND MODAL VIEWS 53

Alerts	53
Alert View Design	54
The UIAlertViewDelegate Protocol	54
A Simple UIAlertView for the iPhone-iPod Touch and iPad	54
Development Steps: Loading a File into a UITextView	55
Test Your Application	66
Action Sheets	66
Action Sheet Design	66
The UIActionSheetDelegate Protocol	67

An Action Sheet for the iPhone-iPod Touch	67
Development Steps: Creating an Action Sheet for the iPhone or iPod Touch	68
Test Your Application	80
An Action Sheet for the iPad	80
Development Steps: Creating an Action Sheet for the iPad	81
Final Steps: Making the Connections	93
Test Your Application	95
Modal Views	95
Presenting and Dismissing the Modal View	95
Transition Styles	95
Modal Presentation Styles (iPad only)	95
A Modal View for the iPhone and iPod Touch	95
Development Steps: Creating a Modal View for the iPhone and iPod Touch	96
Test Your Application	105
A Modal View for the iPad	106
Development Steps: Creating a Modal View for the iPad	108
Test Your Application	119
Summary	119
CHAPTER 3: CUSTOM TABLE VIEWS	121
Table Views	121
The Table View Cell	122
The UITableViewDataSource Protocol	122
The UITableViewDelegate Protocol	122
A Custom Table View Application	122
Development Steps: A Custom Table View Application	122
Creating the Contacts.plist Property List File	133
Test Your Application	135
Summary	135
CHAPTER 4: THE SPLIT VIEW	137
The UISplitViewController Class	137
UIPopoverControllerDelegate Protocol	138
UISplitViewControllerDelegate Protocol	138
A Simple Split View Application	138
Development Steps: A Simple Split View Application for the iPad	141
Creating the DataSource.plist Property List File	145
Test Your Application	158
Summary	158

CHAPTER 5: TOUCH EVENTS	159
Touch Event Handling	159
Single Touch	160
Multi-Touch	160
Taps	160
Swipes and Gestures	161
A Simple Touch Handler	162
Development Steps: A Simple Touch Handler	163
Test Your Application	174
A Simple Gesture Recognizer	174
Development Steps: A Simple Gesture Recognizer	175
Test Your Application	197
Summary	197
CHAPTER 6: NOTIFICATION PROCESSING	199
NSNotificationCenter Concepts	200
The Notification Center	200
Registering for Local Notifications	200
Posting Local Notifications	200
Unregistering an Observer	201
A Local Named Notification	201
Development Steps: A Local Named Notification	202
Test Your Application	211
A Local Keyboard Notification	211
Development Steps: A Local Keyboard Notification	212
Test Your Application	225
Summary	225
CHAPTER 7: NETWORKING CONCEPTS	227
Communication over a Network	228
A Simple Network Browser	230
Development Steps: A Simple Network Browser	230
Peer-to-Peer Device Communications	244
Development Steps: Peer-to-Peer Device Communication	245
Test Your Application	262
Summary	262

CHAPTER 8: MULTIMEDIA	263
Frameworks for Audio	263
Media Player	263
AV Foundation	264
Audio Toolbox	264
Audio Unit	264
OpenAL	264
Frameworks for Video	265
MPMoviePlayerController	265
Supported Formats	265
Playing Audio from the iPod Library	265
Development Steps: Playing Audio from the iPod Library	266
Test Your Application	291
An Application That Plays Video from the iPod Library	291
Development Steps: An Application That Plays Video from the iPod Library	292
Test Your Application	312
Summary	312
CHAPTER 9: APPLICATION PREFERENCES	313
Application Configuration	313
Guidelines for Application Preferences	314
Preference Element Types	314
Implementing Preference Hierarchies	315
Accessing the Application's Preferences	315
Setting Simple Preferences	315
Development Steps: Setting Simple Preferences	315
Source Code Listings for Setting Simple Preferences	320
Test Your Application	325
Creating a Child Pane Preference Hierarchy	325
Development Steps: Creating a Child Pane Preference Hierarchy	326
Test Your Application	338
Summary	338
CHAPTER 10: DATA STORAGE	339
Property Lists	339
Uses for Property Lists	340
Suggested Data Element Types	340
Saving and Restoring a Property List	340
Core Data	341
The Core Data Stack	341
Managed Objects	341
Managed Object Context	341

The Managed Object Model	342
Persistent Store Coordinator	342
Xcode Modeling Tool	342
Fetching Managed Objects	343
Deleting Managed Objects	343
The Common Premise for Data Storage	343
Development Steps: A Simple Application Using Property Lists	344
Test Your Application	367
Development Steps: A Simple Application Using Core Data	367
Test Your Application	394
Summary	394
CHAPTER 11: THE PASTEBOARD	395
Pasteboard Concepts	396
Named Pasteboards	396
Persistence	396
The Editing Menu	397
Cutting the Selection	397
Pasting the Item	398
Dismissing the Editing Menu	398
Cutting and Pasting Text	398
Development Steps: Cutting and Pasting Text	398
Test Your Application	407
Cutting and Pasting Images	407
Development Steps: Cutting and Pasting Images	409
Test Your Application	416
Creating Custom Menus for the iPad	416
Development Steps: Creating Custom Menus for the iPad	418
Test Your Application	427
Summary	427
CHAPTER 12: UNIT TESTING	429
Setting Up the Environment	429
Using an Application-Testing Target	429
A Simple Unit Test	430
Development Steps: A Simple Unit Test	431
Creating the Data.plist Data Source	442
Test Your Application	445
Unit Test Creation Steps: A Simple Unit Test	446
Unit Testing Your Application	450
Registering your Device	451
Unit Testing Your Application	452
Summary	452

CHAPTER 13: PERFORMANCE TUNING AND OPTIMIZATION	453
Profiling	454
Using the Simulator	454
Using the Device	454
Benefits of Profiling	454
A Simple Memory Leak Test	455
Development Steps: A Memory Leak Test	459
Development Steps Continued: Using the Instruments Application	467
Development Steps Continued: Using Build and Analyze from the Main Menu	467
Summary	468
CHAPTER 14: INTEGRATING IADS	469
Joining the iAd Network	469
Setting Up Banking Information	470
Enabling Your Application for iAds	470
Configuring Your iAd Preferences	470
Preparing Your Application to Use the iAd Network	470
Implementing the ADBannerView	470
Integrating the iAd Framework	470
A Simple Application Using iAds	471
Development Steps: A Simple Application Using iAds	472
Test Your Application	479
Summary	479
CHAPTER 15: MULTITASKING	481
Multitasking Services	481
UIApplication Delegate Messages	482
Multitasking Responsibilities	482
Xcode Simulator Multitasking Limitations	483
Device Support of Multitasking	483
An Application That Multitasks Audio	483
Development Steps: An Application That Multitasks Audio	484
Test Your Application	503
Summary	503
APPENDIX A: YOUR INITIAL APP — FIRST STEPS	505
Xcode Project Builder	505
Available Application Types	506
The Project Window	508
Build and Run in the Simulator	512

Interface Builder	512
Creating an Interface Builder Document	513
The Document Window	513
The Library Window	513
The Inspector Window	514
The Connections Panel	514
Summary	514
 APPENDIX B: IPHONE DEVELOPER CENTER	 515
<hr/>	
Resources for the iOS 4 SDK	515
Downloads	516
iOS 4 Reference Library	516
Sample Code	517
iPhone Developer Program	518
iPhone Provisioning Portal	518
Apple Developer Forums	518
Developer Support Center	519
App Store Resource Center	519
iTunes Connect	520
News & Announcements	520
RSS Feed Subscription	520
Summary	520
 APPENDIX C: COCOA TOUCH STATIC LIBRARIES	 521
<hr/>	
Xcode Project Template	521
Choose Cocoa Static Library	522
Adding Classes to the Library	522
Source Code Listings for the DataSource Static Library	523
Building the Project	527
An Xcode Application Project	527
Creating Your New Application	528
Adding the Library to the New Project	528
Adding Library Headers to the App Project	530
Designing the App User Interface	530
Adding Source Code Using the Library Classes	535
Test Your Application	542
Summary	542

APPENDIX D: APPLE DEVELOPER RESOURCES	543
iPhone Developer Program	543
Developer Centers	543
iOS Resources	544
iOS Developer Resources	544
iOS Developer Guides	544
iTunes App Store	544
Application Distribution Procedures	545
iTunes Connect Developer Guide	545
 INDEX	 547