

iOS 7 in Action

BRENDAN G. LIM
MARTIN CONTE MAC DONELL



M A N N I N G

Published by:

dreamtech
P R E S S

The logo for dreamtech, featuring the word 'dreamtech' in a lowercase, sans-serif font. Above the 'e' in 'tech' is a thin horizontal line that curves upwards at both ends, resembling a stylized 'd' or a signal wave. Below the word 'dreamtech' is a solid black horizontal bar with the word 'PRESS' in white, uppercase, sans-serif letters.

brief contents

PART 1 BASICS AND NECESSITIES.....1

- 1 ■ Introduction to iOS development 3
- 2 ■ Views and view controller basics 24
- 3 ■ Using storyboards to organize and visualize your views 50
- 4 ■ Using and customizing table views 78
- 5 ■ Using collection views 103

PART 2 BUILDING REAL-WORLD APPLICATIONS 121

- 6 ■ Retrieving remote data 123
- 7 ■ Photos and videos and the Assets Library 145
- 8 ■ Social integration with Twitter and Facebook 178
- 9 ■ Advanced view customization 204
- 10 ■ Location and mapping with Core Location and MapKit 224
- 11 ■ Persistence and object management with Core Data 248

PART 3 APPLICATION EXTRAS281

- 12 ■ Using AirPlay for streaming and external display 283
- 13 ■ Integrating push notifications 303
- 14 ■ Applying motion effects and dynamics 316

contents

preface xi
acknowledgments xii
about this book xiv
about the cover illustration xvii

PART 1 BASICS AND NECESSITIES1

1 Introduction to iOS development 3

1.1 Developing for iOS 4

Different kind of design interaction 4 ▪ *Getting ready to develop for iOS 5*

1.2 Creating your first iOS application 5

Creating the Hello Time application in Xcode 5 ▪ *Creating the application interface 7* ▪ *Connecting your user interface to your code 11* ▪ *Implementing the clock functionality 12*
Building and running your application 13

1.3 iOS development fundamentals 14

Object-oriented programming 15 ▪ *Objective-C syntax and message passing 15* ▪ *The Model-View-Controller pattern 17*
Frameworks introduction 17

- 1.4 Overview of Apple’s development tools 18
 - Creating different types of projects in Xcode* 18
 - *Getting familiar with Xcode’s workspace* 19
 - *iOS Simulator* 20
- 1.5 Summary 23

2 **Views and view controller basics** 24

- 2.1 Enhancing Hello Time 25
 - Switching between night and day modes* 25
 - *Adding support for landscape mode* 30
- 2.2 Introducing views 31
 - Screens, windows, and views* 32
 - *Views and the coordinate system* 33
 - *User interface controls* 35
 - *Responding to actions and events* 35
 - *Custom tint colors* 38
- 2.3 View controller basics 38
 - Introducing view controllers* 38
 - *The view controller lifecycle* 39
 - Different types of view controllers* 41
 - *Different status bar styles* 43
- 2.4 Supporting different orientations 45
 - Enabling support for portrait and landscape* 45
 - Updating your views for different orientations* 47
- 2.5 Summary 48

3 **Using storyboards to organize and visualize your views** 50

- 3.1 Building a task management app 51
 - Creating the Tasks app project in Xcode* 51
 - *Creating the interface for listing tasks* 51
 - *Adding a navigation controller* 56
 - *Creating and viewing a task* 58
 - Connecting your views within the storyboard* 62
- 3.2 Exploring Xcode’s interface editor 67
 - Overview of Xcode’s interface editor* 67
 - The inspector sections* 68
- 3.3 Using storyboards to manage your views 71
 - How does storyboarding benefit you?* 71
 - *Scenes within storyboards* 73
 - *Transitioning between scenes with segues* 73
 - Passing data between view controllers with segues* 75
 - Problems with using storyboarding* 76
- 3.4 Summary 77

- 4 Using and customizing table views 78**
- 4.1 Introduction to table views 79
 - Anatomy of a table view 80*
 - 4.2 Using table views to display data 82
 - Setting up your Albums application 82* ■ *Providing data through a data source 86* ■ *Custom table view cells with prototype cells 90*
 - 4.3 Managing selection and deletion within a table view 96
 - Deleting rows within a table view 97* ■ *Handling the selection and deselection of rows 100*
 - 4.4 Summary 101

- 5 Using collection views 103**
- 5.1 Introducing collection views 104
 - 5.2 Using collection views to display data 106
 - Adding a `UICollectionViewController` as a new scene 107*
 - Supplying a collection view with data 107* ■ *Creating a custom collection view cell 113*
 - 5.3 Customizing a collection view layout 116
 - Collection view flow layouts 117* ■ *Using the flow layout delegate protocol 118*
 - 5.4 Summary 120

PART 2 BUILDING REAL-WORLD APPLICATIONS121

- 6 Retrieving remote data 123**
- 6.1 Retrieving data using `NSURLSession` 124
 - 6.2 Understanding data serialization and interacting with external services 131
 - 6.3 Advanced HTTP requests 134
 - 6.4 Using web views to display remote pages 138
 - 6.5 Popular open source networking libraries 142
 - AFNetworking 143* ■ *RestKit 143*
 - 6.6 Summary 144

- 7** *Photos and videos and the Assets Library* 145
- 7.1 Overview of the Assets Library framework 146
 - The Assets Library, groups, and individual assets* 147
 - Setting up the Media Info project* 150
 - 7.2 Retrieving photos and videos with the image picker 155
 - Preparing and presenting the image picker controller* 156
 - Selecting assets from the image picker* 159
 - 7.3 Capturing photos and videos with the camera 161
 - Checking for camera availability* 162
 - *Taking photos and videos with the camera* 164
 - *Saving newly captured photos and videos to the Assets Library* 166
 - 7.4 Retrieving assets and accessing metadata 169
 - Setting up your view to display the metadata* 169
 - Retrieving an asset from the Assets Library* 171
 - Accessing metadata for photos and videos* 173
 - 7.5 Summary 176
- 8** *Social integration with Twitter and Facebook* 178
- 8.1 Accessing accounts with the Accounts framework 179
 - Accessing Twitter accounts and account properties* 180
 - Accessing Facebook accounts* 186
 - 8.2 Using the Social framework to post content 189
 - Posting to Twitter using the Tweet Composer view* 190
 - Posting to Facebook* 196
 - 8.3 Making API requests with the Social framework 196
 - Retrieving a Twitter stream using an SLRequest* 197
 - Retrieving a Facebook news feed* 200
 - 8.4 Summary 203
- 9** *Advanced view customization* 204
- 9.1 Going beyond the Interface Builder with custom views 205
 - 9.2 Creating basic animations 212
 - 9.3 Using advanced animation techniques 219
 - 9.4 Summary 223

10 *Location and mapping with Core Location and MapKit* 224

- 10.1 Introduction to the Core Location framework 225
 - Representing a location with CLLocation* 226
 - The location manager* 227
 - Setting up Speed Map in Xcode* 230
- 10.2 Retrieving location, heading, and speed 233
 - Retrieving your current location with the location manager* 233
 - Geocoding a location* 237
- 10.3 Introduction to the MapKit framework 240
 - Using the map view to display a map* 240
 - Retrieving user location using MapKit* 242
 - Using annotations in a map* 242
 - Adding a map to your application* 244
- 10.4 Summary 247

11 *Persistence and object management with Core Data* 248

- 11.1 Introduction to Core Data 249
 - Differences between Core Data and traditional databases* 250
 - What Core Data doesn't do well* 251
 - Setting up your application* 252
- 11.2 Managed objects, entities, relationships 255
 - Managed object models and contexts* 256
 - Entities and managed objects* 258
 - Relationships between entities* 261
 - Generating managed object classes for your entities* 263
- 11.3 Working with managed objects 265
 - Creating, updating, and deleting managed objects* 266
 - Using fetch requests to retrieve managed objects* 268
 - Filtering results using predicates* 269
 - Using a fetched results controller to manage results in a table view* 270
 - Adding and removing tasks from a list* 274
- 11.4 Summary 280

PART 3 APPLICATION EXTRAS.....281

12 *Using AirPlay for streaming and external display* 283

- 12.1 Introduction to AirPlay 284
 - Examples of AirPlay integration* 284
 - Setting up your application* 286

- 12.2 Controlling and enabling AirPlay output 290
 - Enabling AirPlay support using built-in media players* 290
 - Displaying an AirPlay controller to a view* 291
 - *Streaming audio to an AirPlay destination in your application* 292
- 12.3 Using external screens with AirPlay 295
 - Creating a custom view controller for external screens* 296
 - Displaying content on an external screen* 298
- 12.4 Summary 301

13 *Integrating push notifications* 303

- 13.1 Apple's Push Notification service 304
- 13.2 Configuring your app to send and receive push notifications 306
- 13.3 Sending push notifications 309
- 13.4 Registering and scheduling local notifications 313
- 13.5 Summary 315

14 *Applying motion effects and dynamics* 316

- 14.1 Creating your application 317
- 14.2 Using motion effects 318
 - Adding the parallax effect* 318
- 14.3 Using UIKit Dynamics 322
 - Introduction to UIKit Dynamics* 322
 - *Applying the gravity behavior* 323
 - *Applying a collision behavior* 325
 - Adding dynamic behavior* 325
 - *Creating a custom UIDynamicBehavior subclass* 328
- 14.4 Summary 329
 - appendix* 331
 - index* 342