

iOS 7 Development Recipes

A Problem-Solution Approach



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Apress®

iOS 7 Development Recipes: A Problem-Solution Approach

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I dedicate this book to Amanda, my friends, and my family.

—Joe Hoffman

Contents at a Glance

About the Authors	xix
About the Technical Reviewer	xxi
Acknowledgments	xxiii
Introduction	xxv
■ Chapter 1: Application Recipes	1
■ Chapter 2: Storyboard Recipes	59
■ Chapter 3: Layout Recipes	93
■ Chapter 4: Table and Collection View Recipes	135
■ Chapter 5: Location Recipes	199
■ Chapter 6: Motion Recipes	241
■ Chapter 7: Map Recipes	273
■ Chapter 8: Social Network Recipes	343
■ Chapter 9: Camera Recipes	387
■ Chapter 10: Multimedia Recipes	439
■ Chapter 11: Image Recipes	477
■ Chapter 12: Graphics Recipes	511
■ Chapter 13: Animation and Physics Recipes	537

■ Chapter 14: User Data Recipes	571
■ Chapter 15: Data Storage Recipes	623
■ Chapter 16: Data Transmission Recipes	679
■ Chapter 17: Game Kit Recipes	711
Index.....	767

Contents

About the Authors	xix
About the Technical Reviewer	xxi
Acknowledgments	xxiii
Introduction	xxv
■ Chapter 1: Application Recipes	1
Recipe 1-1: Setting Up a Single View Application	1
An Alternate Way	5
Recipe 1-2: Linking a Framework	9
Recipe 1-3: Adding a User Interface Control View	11
Recipe 1-4: Creating an Outlet	14
Recipe 1-5: Creating an Action	17
Recipe 1-6: Creating a Class	21
Recipe 1-7: Adding an Info.plist Property	24
Recipe 1-8: Adding a Resource File.....	25
Using the Asset Catalog.....	27

Recipe 1-9: Handling Errors	29
Setting Up a Framework for Error Handling	29
Notifying the User	33
Implementing Recovery Options	38
Recipe 1-10: Handling Exceptions.....	40
A Strategy for Handling Exceptions	41
Setting Up a Test Application	41
Intercepting Uncaught Exceptions.....	42
Reporting Errors	44
Adding the Button.....	46
Emailing the Report.....	48
A Final Touch	50
Recipe 1-11: Adding a Lite Version.....	51
Adding a Build Target.....	51
Coding for a Specific Version.....	53
Recipe 1-12: Adding Launch Images.....	54
Designing Launch Images	54
Launch Image Files.....	55
Summary.....	57
Chapter 2: Storyboard Recipes.....	59
So, What's in a Story (board)?	59
Scenes.....	59
Segues.....	60
Recipe 2-1: Implementing a Navigation Controller.....	61
Adding a New Scene to the Storyboard.....	65
Recipe 2-2: Implementing a UITableViewController	69
Adding a Detail View	73
Setting Up a Custom View Controller	77
Using Cell Prototypes.....	82
Recipe 2-3: Implementing a UITabBarController	85
Summary.....	91

■ Chapter 3: Layout Recipes	93
Recipe 3-1: Using Auto Layout	93
Auto Layout Constraints.....	94
Constraint Priorities	102
Adding a Trailing Button.....	105
Recipe 3-2: Programming Auto Layout	110
Setting Up the Application	110
Visual Format Language	113
Adding Image Views	116
Defining the Image Views' Constraints	117
Recipe 3-3: Debugging Auto Layout Code	123
Dealing with Ambiguous Layouts	123
Handling Unsatisfiability	127
Summary	134
■ Chapter 4: Table and Collection View Recipes	135
Recipe 4-1: Creating an Ungrouped Table	136
Setting Up the Application	136
Adding a Model for Countries	139
Displaying Data in a Table View	142
Considerations for Cached Cells and Reuse	146
Configuring the Cells	146
Implementing the Accessory Views	149
Enhanced User Interaction	156
Considerations for Cell View Customization	158
Recipe 4-2: Editing a UITableView	159
UITableView Row Animations.....	161
But Wait, There's More!.....	162
Recipe 4-3: Reordering a UITableView	164
Recipe 4-4: Creating a Grouped UITableView	166
Recipe 4-5: Registering a Custom Cell Class	173

Creating a Custom Table View Cell Class.....	174
Registering Your Cell Class.....	176
Recipe 4-6: Creating a Flag Picker Collection View.....	177
Setting Up the Application.....	178
Creating a Data Model.....	180
Building the Flag Picker.....	181
Defining the Collection View Interface.....	186
Displaying the Flag Picker.....	191
Using Auto Layout to Center the Headers.....	195
Summary.....	197
■ Chapter 5: Location Recipes.....	199
About Core Location.....	199
Standard and Significant Change Services.....	200
Recipe 5-1: Getting Basic Location Information.....	200
Setting Up the Application.....	200
Starting and Stopping Location Updates.....	203
Receiving Location Updates.....	206
Testing Location Updates.....	208
Recipe 5-2: Significant Location Changes.....	210
Setting Up the Application.....	210
Enabling Background Updates.....	211
Adding Local Notifications.....	213
Recipe 5-3: Tracking Magnetic Bearing.....	215
About Heading Tracking.....	215
Setting Up the Application.....	216
Starting and Stopping Heading Updates.....	217
Implementing Delegate Methods.....	219
Recipe 5-4: Tracking True Bearing.....	221
Adding True Bearing.....	222

Recipe 5-5: Region Monitoring	226
A Thing or Two About Regions	226
Welcome to Denver!	227
Recipe 5-6: Implementing Geocoding	232
Implementing Reverse Geocoding.....	232
Implementing Forward Geocoding.....	237
Best Practices.....	240
Summary.....	240
Chapter 6: Motion Recipes	241
Recipe 6-1: Recognizing Shake Events	241
Intercepting Shake Events.....	241
Subclassing the Window	242
Implementing Shake Notifications.....	245
Testing Shake Events.....	246
Recipe 6-2: Accessing Raw Core Motion Data	247
Core Motion Sensors	247
Setting Up the Project.....	249
Accessing Sensor Data.....	250
Pushing or Pulling.....	256
Selecting an Update Interval	257
The Nature of Raw Motion Data.....	257
Recipe 6-3: Accessing Device Motion Data.....	258
The Device Motion Class	258
Setting Up the Application	259
Accessing Device Motion Data	261
Setting a Reference Frame.....	263
Recipe 6-4: Moving a Label with Gravity.....	265
Setting Up the Application	265
Moving the Label with Gravity	268
Adding Acceleration.....	269
Summary.....	271

Chapter 7: Map Recipes	273
Recipe 7-1: Showing a Map with the Current Location	273
Setting Up the Application	273
User-Controlled Tracking	279
Recipe 7-2: Marking Locations with Pins	281
Adding Annotation Objects	282
Changing the Pin Color	284
Recipe 7-3: Creating Custom Annotations	286
Setting Up the Application	286
Creating a Custom Annotation Class	287
Creating a Custom Annotation View	289
Customizing the Callouts	293
Adding a Detailed View	294
Recipe 7-4: Dragging a Pin	298
Adding a Draggable Pin	299
Recipe 7-5: Adding Overlays to a Map	301
Creating the Overlays	301
Recipe 7-6: Grouping Annotations Dynamically	303
A Forest of Pins	304
Implementing a Solution.....	309
Adding Color Coding	311
Recipe 7-7: Starting Maps from Your App	316
Adding Map Items.....	318
Launching in Directions Mode	321
Recipe 7-8: Registering a Routing App	322
Declaring a Routing App	323
Handling Launches	324
Testing the Routing App.....	326
Specifying a Coverage Area.....	329

Recipe 7-9: Getting Directions.....	331
Setting Up the Application	332
Drawing Directions on the Map	332
Adding ETA.....	336
Recipe 7-10: Using 3-D Mapping	337
Using the Properties Approach	337
Using the Convenience Method Approach	339
Creating a Fly-Over.....	340
Summary.....	341
Chapter 8: Social Network Recipes	343
Recipe 8-1: Sharing Content with the Activity View	343
Setting Up an Activity View Controller	345
Excluding Activity View Items	347
Including Activity View Items.....	350
Recipe 8-2: Sharing Content Using a Compose View	354
Recipe 8-3: Sharing Content Using SLRequest	357
Setting Up the Main View	358
Requesting Access to Twitter Accounts.....	359
Handling Multiple Accounts.....	364
Recipe 8-4: Retrieving Tweets.....	367
Setting Up a Navigation-Based Application	367
Displaying Available Feeds	369
Displaying Tweets.....	374
Showing Individual Tweets	380
Summary.....	385
Chapter 9: Camera Recipes	387
Recipe 9-1: Taking Pictures.....	387
Setting Up the User Interface	388
Accessing the Camera.....	389
Retrieving a Picture	392

Implementing Basic Editing.....	394
Saving Pictures to a Photos Album.....	395
Recipe 9-2: Recording Video	396
Recipe 9-3: Editing Videos.....	399
Recipe 9-4: Using Custom Camera Overlays.....	403
Recipe 9-5: Displaying Camera Preview with AVCaptureSession.....	407
Recipe 9-6: Capturing Still Images with AVCaptureSession	411
Adding a Capture Button.....	411
Recipe 9-7: Capturing Video with AVCaptureSession	418
Adding a Video Recording Mode.....	418
Recipe 9-8: Capturing Video Frames	427
Recipe 9-9: Capturing Machine-Readable Codes.....	431
Summary.....	437
Chapter 10: Multimedia Recipes	439
Recipe 10-1: Playing Audio.....	439
Setting Up the Application	439
Setting Up the Audio Player	442
Handling Errors and Interruptions	444
Recipe 10-2: Recording Audio	445
Setting Up an Audio Recorder.....	448
Handling Interruptions	452
Recipe 10-3: Accessing the Music Library	452
Setting Up a Basic Music Player	453
Handling Notifications	455
Picking Media to Play	457
Querying Media	460
Recipe 10-4: Playing Background Audio	464
Setting Up the User Interface	465
Declaring Background Mode Playback.....	466
Implementing the Player.....	468
Summary.....	475

■ Chapter 11: Image Recipes	477
Recipe 11-1: Using Image Views.....	477
Recipe 11-2: Scaling Images.....	484
Recipe 11-3: Manipulating Images with Filters.....	496
Combining Filters.....	501
Creating Thumbnail Images for the Table View.....	503
Recipe 11-4: Detecting Features.....	506
Summary.....	509
■ Chapter 12: Graphics Recipes	511
Recipe 12-1: Drawing Simple Shapes.....	511
Refactoring a Bit.....	514
Recipe 12-2: Drawing Paths.....	515
Recipe 12-3: Adding Fonts and Drawing Text.....	519
Making Use of Available Fonts.....	520
Importing Your Own Fonts	520
Recipe 12-4: Adding Shadows	523
Recipe 12-5: Creating Gradients	527
Recipe 12-6: Clipping a Drawing to a Mask	530
Recipe 12-7: Programming Screen Shots	532
Summary.....	536
■ Chapter 13: Animation and Physics Recipes	537
Recipe 13-1. View Animation Using UIKit.....	537
Changing Size and Transparency.....	541
Handling Rotation and Chaining Animation	542
Recipe 13-2. Implementing UIKit Dynamics.....	544
Using Gravity.....	545
Gravity and Collision	550
Using Item Properties	555
Adding Snap	558
Creating Push Behaviors	561

Spring and Attachment.....	564
Creating a Custom Behavior Class.....	568
Summary.....	570
Chapter 14: User Data Recipes.....	571
Recipe 14-1. Working with NSCalendar and NSDate	571
Recipe 14-2. Fetching Calendar Events	577
Recipe 14-3. Displaying Events in a Table View	582
Recipe 14-4. Viewing, Editing, and Deleting Events	589
Recipe 14-5. Creating Calendar Events.....	592
Creating Recurring Events.....	595
Recipe 14-6. Creating Reminders	597
Setting Up the Application	597
Requesting Access to Reminders	599
Creating Time-Based Reminders.....	601
Creating Location-Based Reminders.....	604
Recipe 14-7. Accessing the Address Book.....	609
Recipe 14-8. Setting Contact Information.....	616
Summary.....	622
Chapter 15: Data Storage Recipes.....	623
Recipe 15-1. Persisting Data with NSUserDefaults.....	623
Recipe 15-2. Persisting Data Using Files	629
Recipe 15-3. Using Core Data	633
Understanding Core Data.....	634
Setting Up Core Data	635
Designing the Data Model	636
Setting Up the Vocabularies Table View.....	641
Implementing the Words View Controller	650
Adding a Word Edit View.....	654
Persisting Data on iCloud	662

Recipe 15-4. Storing Key-Value Data in iCloud	663
Setting Up iCloud for an App.....	666
Persisting Data in an iCloud Key-Value Store	666
Caching iCloud Data Locally Using NSUserDefaults	670
Recipe 15-5. Storing UIDocuments in iCloud	671
Summary.....	678
Chapter 16: Data Transmission Recipes	679
Recipe 16-1: Composing Text Messages.....	679
Recipe 16-2: Composing Email	685
Attaching Data to Mail	688
Recipe 16-3: Printing an Image.....	694
Recipe 16-4: Printing Plain Text	701
Recipe 16-5: Printing a View	703
Recipe 16-6: Formatted Printing with Page Renderers.....	705
Summary.....	710
Chapter 17: Game Kit Recipes	711
Recipe 17-1. Making Your App Game Center Aware.....	711
Implementing the Game	711
Registering with iTunes Connect	722
Authenticating a Local Player	725
Displaying Game Center from Your App.....	728
Recipe 17-2. Implementing Leaderboards	730
Defining the Leaderboards	730
Reporting Scores to Game Center	733
Recipe 17-3. Implementing Achievements.....	735
Defining Achievements in iTunes Connect.....	735
Reporting the Achievements.....	738
Recipe 17-4. Creating a Simple Turn-Based Multiplayer Game	745
Building the Tic Tac Toe Game	746
Preparing the Game for Game Center.....	748

Implementing Matchmaking.....	751
Encoding and Decoding Match Data.....	757
Handling Turn-Based Events.....	763
Summary.....	766
Index.....	767

About the Authors



Joseph Hoffman is an electrical engineer who does freelance web and iOS development in his spare time. In 2012 he started NSCookbook.com, which is an iOS programming tutorial site that provides tutorials in recipe format.



Hans-Eric Grönlund has developed software professionally since 1990. He's currently an employee at Knowit, a leading Scandinavian IT consultancy company, where he helps teams develop software with agile methods.

Software development is not only Hans-Eric's profession; it's also his hobby. In his spare time, he has taught himself how to write programs in many different languages on various platforms. His latest passion, obviously, is Objective-C on iOS. Hans-Eric's Twitter ID is @hansEricG.



Colin Francis is an iOS developer originally from Maryland. After studying iOS development with the assistance of Shawn Grimes, the two of them authored *iOS 5 Recipes* (Apress). He currently lives in Miami, where he works primarily on music-based applications for iOS.



Shawn Grimes and his wife, Stephanie, run Campfire Apps, LLC, a mobile app development company focused on apps for children and families. Together, they have started the APPLIED Club program, which teaches mobile app development to high school students. Shawn is active in the Baltimore, Maryland, development scene and co-runs the Baltimore Mobile Developers group with Chris Stone.

About the Technical Reviewer

Matthew Knott has over 15 years of experience in software development and now leads a team of developers building ground-breaking software for the education sector. He is a lover of all things C-based and is an experienced C, C#, and Objective-C programmer.

Matthew took his passion for developing software that makes life easier and applied it to making iOS apps about four years ago, going on to release a number of apps. A real iOS development enthusiast and lover of all things Xcode, Matthew can regularly be found evangelizing about its virtues on Twitter or on his blog at www.mattnott.com.

More than anything else, he enjoys spending time with his wife and two children in a beautiful part of Wales, United Kingdom.

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I'd like to thank Amanda, my friends, and my family for their understanding and support along the way. I know I've been a hermit; I'll make it up to you all.

—Joe Hoffman

Introduction

The easy part of software development is knowing how to write code in the programming language at hand. The tougher part is mastering the programming interfaces of the platform and getting to the level where you can effectively turn ideas into working features with real values. iOS 7, although extremely powerful and easy to use, is no exception to this. Objective-C, considered by many to be a somewhat “funky” programming language, is a language you can get your head around quickly and even learn to appreciate. However, you’re likely to spend a lot of time learning the various APIs and frameworks.

We believe the best way to acquire the necessary knowledge and reach a plateau of high productivity is through hands-on experience. We think the best way to learn is to follow step-by-step procedures, creating small projects in which you can test and tweak the features and get a feel for them before you implement them in your real projects.

With this idea in mind, we created *iOS 7 Development Recipes*. This book contains over 600 pages of sample code accompanied by instructions about how to create small test apps that allow you to run the code on your iOS 7 device or in the iOS simulator.

We have tried to cover as many topics as possible based on the features of iOS 7. We hope this book provides the fundamentals you need to start converting your great ideas into fantastic apps.

Who This Book Is For

When you read this book, it will help if you have a basic knowledge of Objective-C, have taken your first steps in Xcode, and have written a couple of Hello World apps. If you haven’t, don’t worry; simply pay extra attention to the first eight recipes of Chapter 1. They should provide most of the basics you will need in order to follow along with the recipes in the rest of the book.

How This Book Is Structured

For the most part, the example-based chapters of this book do not build on one another; that is, you do not have to read the chapters sequentially. You should be able to read the chapters and build your apps in any order you want, depending on your specific interests. Whenever we do build on an example from a different chapter, we will let you know.

However, we recommend that you at least skim Chapter 1, “Application Recipes,” then Chapter 2, “Storyboard Recipes,” and finally Chapter 3, “Layout Recipes,” before moving on.

The first chapter contains recipes for common tasks, such as creating outlets and actions, which are referenced throughout the book and should be fully understood before you move ahead.

The second chapter covers storyboards. Storyboards are an alternative way of building user interfaces. Storyboards show both the individual screens (single view controllers) and the connections (segues) between them. Before the introduction of storyboards in iOS 5, .xib files were typically used to build the interface. The .xib files were individual scenes; that is, one .xib file per scene. The connections between .xib files were handled in code. While you still have the ability to use .xib files, it is clear that Apple is pushing developers more and more to use storyboards instead.

The third chapter provides basic knowledge of the layout tools for iOS 7. Reading that chapter might be helpful when you create the user interfaces of the recipes later, especially if you want your scenes to look good on multiple devices.

This book uses a mix of programmatic interface building, storyboards, and .xib files. For the most part, you will start every application with a single view application template for the iPhone that will include a storyboard. We will instruct you otherwise if this is not the case.

Throughout this book, we assume you are developing in the latest versions of iOS and Xcode, which at the time of writing are iOS 7.0 and Xcode 5.0.

Many of the recipes in this book cannot be fully tested on the iOS simulator, and as such will require both an iOS device and a provisioning profile, which you can acquire when you subscribe to the iOS Developer Program. At the time of this writing, the developer program costs \$99.00 USD. We’ve pointed out each recipe that cannot be tested in the iOS simulator.

Note Since the introduction of iPhone 5, there are two screen sizes to account for: the 3.5" screen and the 4" screen. The width in both screens is the same, but the 4" screen is taller. Most of the interfaces in this book are laid out to look good on a 3.5" screen and will have unused space if run on a 4" screen. Feel free to modify the interface to better fit a 4" screen if that is what you want. Chapter 3 discusses Auto Layout, which will give you the tools to make an interface look good on either size screen.

What's New in This Edition

By now you undoubtedly have seen the fresh look of iOS 7. Because of the new software, we've made numerous changes to the images and code we provided in the previous edition of this book, *iOS 6 Recipes: A Problem-Solution Approach*. While we couldn't address everything iOS 7 has to offer in this new edition, we tried to add some topics we found very useful to the average developer.

Because iOS 7 is a major overhaul in design, all the images and figures have been updated to reflect the new design. Apple has made numerous minor changes to existing APIs for iOS 7. We updated the code in this book to reflect those changes.

Due to Apple's added emphasis on storyboards, we have changed the examples in this book to take advantage of storyboards rather than .xib files. Previous editions of this book were largely based on .xib files. In addition, we created a new chapter for storyboards (Chapter 2), which now includes instructions for creating tab view controllers.

Auto Layout has changed with iOS 7, so we have updated Chapter 3 to reflect these changes. Auto Layout constraints no longer exist for the developer. This greatly increases developer freedom and flexibility.

Apple added nice features to the Map Kit framework, which allow you to get directions from Apple as well as take full advantage of 3-D map support. We have included recipes that show you how to use both of these new features in Chapter 7.

iOS 7 gives us the ability to detect and read QR codes with the camera natively. We added a new recipe to Chapter 9, "Camera Recipes," that shows how to read QR codes.

We also added Chapter 12, which focuses on Core Graphics. While the previous edition touched on Core Graphics, we have expanded the content in its own chapter.

The most exciting contribution to this new edition is a new chapter on animation (Chapter 13). This chapter introduces some UIView animation basics and then moves on to the new UIKit Dynamics framework. This framework allows for realistic, physics-inspired animation.

Downloading the Code

The code for the examples included in this book is available on the Apress web site at www.apress.com. You can find a link on the book's information page under the Source Code/Downloads tab. This tab is located under the Related Titles section of the page.

Contacting the Author

If you have any questions or comments regarding this book, I would be happy to hear them. Contact me at NSCookbook@gmail.com and include "iOS 7 Recipes" in the subject line, or write a comment on my blog at <http://www.NSCookbook.com>.