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# iOS eCommerce App Development with Parse

Liangjun Jiang

Apress®

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ISBN-13 (pbk): 978-1-4842-1318-6

ISBN-13 (electronic): 978-1-4842-1317-9

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# About the Author



**Liangjun Jiang** is a mobile app software engineer from Austin, Texas. Jiang has a PhD in electrical engineering from the University of Central Florida and an MS and BE from Zhejiang University, China. His software experience has led him to utilize many different technologies, including Objective-C, Java, JavaScript and, of course, iOS and Android. Aside from hacking codes, he enjoys spending time with his family, as well as running, golfing, and playing tennis.

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# About the Technical Reviewer



**Bruce Wade** is the founder of Warply Designed Inc. ([www.warplydesigned.com](http://www.warplydesigned.com)), a company specializing in using game technology for real-world applications. He has more than 16 years of software development experience with a strong focus on 2D/3D animation and interactive applications, primarily using Apple technology.

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# Introduction

In this comprehensive guide to creating an e-commerce iOS app using Objective-C and Parse, the most popular and powerful Backend as a Service (BaaS) provider. I will walk you through every step—from collecting requirements; prototyping the visual interface; setting up the project with Xcode and Parse; creating the data model with Parse; presenting, searching, filtering, and favoriting products; managing the shopping bag; processing the payment; and managing a user account—always with security best practices in mind.

The book uses a complete and functioning e-commerce iPhone app as the example, along with various Parse products, to present the most popular use case of an e-commerce mobile app, such as user account creation, logging in with Facebook, user e-mail verification, paying with Stripe and Apple Pay, sending e-mail with Mailgun, and managing customer payment methods and order history.

Chapter 1 presents a broad requirements overview of an e-commerce iOS app, based on the Apple Store iPhone app.

Chapter 2 walks you through the process of using Xcode to prototype the e-commerce iPhone app with minimum code.

Chapter 3 gives you an overview of what Parse offers, and Chapter 4 explains how to set up this project, including services, such as Facebook Developer, Mailgun, and Stripe, which you will need later.

Chapters 5, 6, and 7 detail how to build product categories, product lists, and product details, along with features such as searching, filtering, etc.

Chapters 8 and 9 present the user interface and functionality of signing up and logging in a user and Facebook Login.

Chapters 10–14 detail how to build a shopping bag, how to charge a credit card, or how to let a user pay with Apple Pay. It includes some back-end code that we have to write.

Chapter 15 focuses on a user's account. This is the place that the user can log out, view an order history, and create a favorites product list.

Chapter 16 demonstrates how to add products. This is a hidden feature available only to an admin.

Chapter 17 is a bonus chapter. I show you how to use push notification as a way of promotion.

Chapter 18 gives details about security.

Chapter 19 lists some extra features from Parse that you can use to make your product better, including e-mail verification, password reset, Parse Analytics, and Crash Reports.

## Audience

This book is for experienced iOS developers confident with Objective-C, iOS, Xcode, and some back-end knowledge; and for those interested in building an e-commerce iPhone app. In other words, intermediate knowledge of iOS development and object-oriented programming is assumed, and basic knowledge of e-commerce principles will also be of benefit.

If you don't have the experience of implementing a fully functional back end but still want to build a web services-based iPhone app, this book is for you. This book is also great for experienced mobile app developers wanting to enhance their skills and learn new tools.

## What You Will Learn

From this book, you will learn the following:

1. What it takes to develop a functional e-commerce iPhone app
2. Parse and its products and how it can help you accelerate your app development
3. How to incorporate a Stripe payment gateway and Mailgun e-mail service
4. How to develop a scalable app that is also easy to maintain
5. What you need to secure your app and user data
6. How to extend the examples from this book to match the needs of your own app

## iOS SDK Version and Source Code for the example

This book has been written to work with the latest versions of Xcode, iOS, Parse, and Stripe SDKs. Be sure to download the latest and greatest source code archive for examples from this book's page at <http://apress.com/9781484213186>. We'll update the code as new versions of the SDK are released, so be sure to check the site periodically.

# Requirements

This book is about understanding the steps involved in designing, architecting, building, and publishing an e-commerce mobile application. When using the term *e-commerce* in this book, I am referring to selling products and collecting money from customers. I will not cover how to put ads in a mobile app or provide a referral link when a customer makes a purchase on other sites or mobile apps.

This book is about about building a mobile app that enables users to purchase products. It involves collecting customers' names, addresses, and credit card information. The money collected will be transferred into a bank account, and the products ordered will subsequently be shipped and delivered. As challenging as this sounds, it's easier than having registered legal business entities take care of these details.

This book assumes that you have some iOS programming knowledge. However, if you are a business owner planning to sell your products through a mobile app and are thinking about hiring an iOS developer or a consulting firm to accomplish your goal, this book will help you to understand the process, the required steps, and the effort involved.

In this chapter you will learn about:

- Common requirements for an e-commerce mobile app
- Prerequisites for building, testing, and publishing iOS apps

## Common Application Requirements

What's your favorite e-commerce iOS app? Before you think too hard, consider this: every iPhone, iPad, and iPod Touch has one built in; it's the Apple Store app (see Figure 1-1). If you have never used it before, now is the time to explore it.





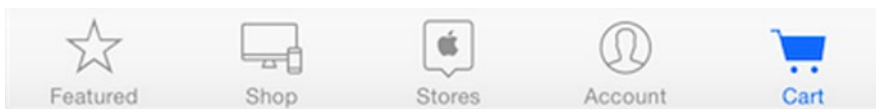
*Figure 1-1. The iPhone Apple Store app icon*

## The Apple Store App

At the time of writing, the Apple Store iOS app had received 53,706 reviews with an average rating of 3.5 stars. Version 3.5, released on September 24, 2015, has an average of 4 stars.

The app has five top-level content categories (see Figure 1-2):

- Featured
- Shop
- Stores
- Account
- Cart



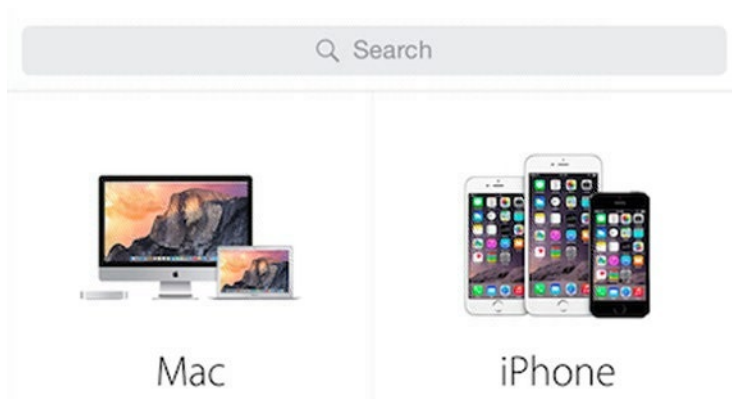
*Figure 1-2. The five content categories of the Apple Store iPhone app*

### Featured

The Featured category is the place for highlighting products (such as Apple Watch, for example). Tapping a highlighted product reveals the product detail.

### Shop

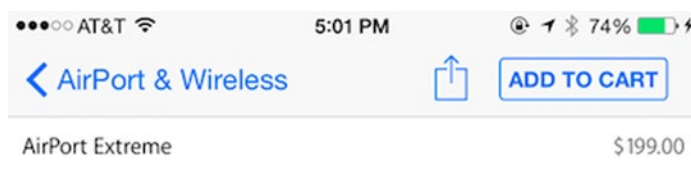
The Shop category displays all product categories in the Apple Store at a glance, including Mac computers, iPhone, Apple Watch, and Accessories. The Shop screen also includes a search bar at the top of the screen (see Figure 1-3).



**Figure 1-3.** Shop category of the Apple Store iPhone app

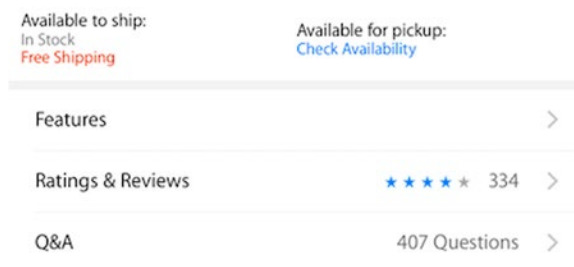
Tap a product category, and you will see all products that belong to this category. Note also that the title of the product list screen matches the category name. For example, if you tap the “Mac” category on the Shop screen, “Mac” appears as the title of the Mac computers list screen.

Tapping an item on the product list screen displays the product detail screen. In addition to the well-chosen product images, you will also see a product description, the price, an “ADD TO CART” button, and an action button at the top of the current screen (see Figure 1-4). You might also see an option to customize a product, which will lead you to more screens.



**Figure 1-4.** The “ADD TO CART” button at the top of a product detail screen

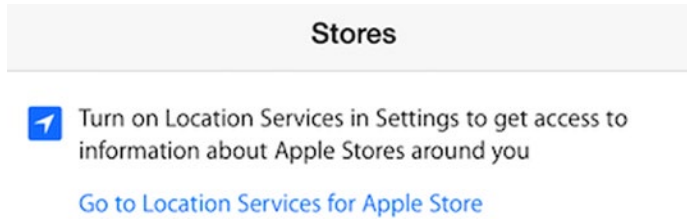
Other features include an availability check and the ability to read more about a product’s features, rate and review a product, and ask questions and find answers (Q&A) (see Figure 1-5).



**Figure 1-5.** More features on a product detail screen

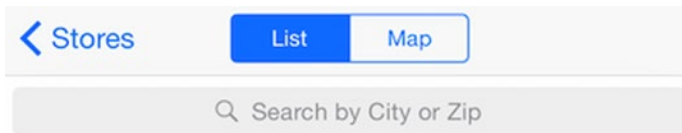
## Stores

The Stores category directs you to the nearest Apple stores. The app also detects whether Location Services are turned on and, if not, notifies you (see Figure 1-6).



*Figure 1-6. Location Services requirement while using the Apple Store app*

The app also provides a search feature that enables you to find stores by city or ZIP code and browse stores in list form or see them on a map (see Figure 1-7).



*Figure 1-7. Find a stores by city or ZIP code switche between List and Map views*

## Account

The Account category is where you manage your customer profile, such as favorites, order history, reservation with a genius at the Apple Store, and settings. This category is only accessible if you have an account and are logged in to the Apple Store. If you don't have an account or have not logged in, the app only displays the general about information such as terms, privacy policy, and app version as well as a button that asks you to log in.

## Favorites

The Favorites category lists the items you previously “favored” (by tapping the heart button on a product detail page). Tap “Favorites,” and you will see a product list. You can also edit the list, such as deleting a product. Another nice feature is that you can change views to view your favorites in list or grid mode.

## Orders

The Orders category is the place where you can view your order history (see Figure 1-8). By default, the list is sorted from most recent to oldest.



*Figure 1-8. A user's order history*

## Account Settings

Account Settings is where you can edit your payment methods and shipping address.

## More

There are more features. The Notification settings is the place where you specify whether you want to receive push notifications concerning your order status.

On this screen, you can also access the help page as well as sales and refund policy, privacy policy, and copyright information.

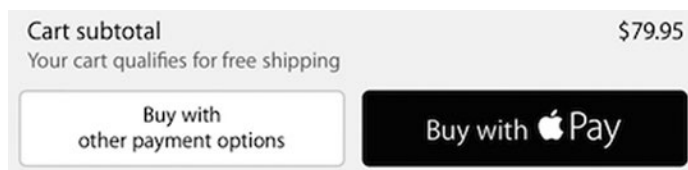
## Cart

Cart (or Bag in the most recent version of the app) is your shopping basket. You can review and edit what's in the cart as well as leave a gift message if you are about to purchase an item for someone else (see Figure 1-9).



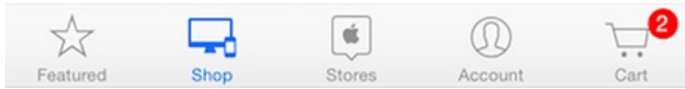
*Figure 1-9. An item in a shopping cart*

You can also see the subtotal of your purchase and, most important, your payment options (Figure 1-10).



*Figure 1-10. Subtotal and payment options in a shopping cart*

Note also that the cart icon includes a badge that indicates how many items are in the cart (see Figure 1-11). If your cart is empty, the badge won't show.



*Figure 1-11. The badge shows the number of items in your shopping cart*

## Required Features List

This quick overview of the Apple Store iPhone app provides a good example of the features that an e-commerce app should have. It should:

- List products by categories
- Show a product list for each category
- Show product details
- Have a search feature
- Have a shopping cart
- Show user's favorite (wish list) items
- Show user's order history
- Show company information such as about us, contact us, privacy policy, and copyright information

A good e-commerce app also should enable users to:

- Review products
- Mark a product as a favorite (or add it to a wish list)
- Add a product to a shopping cart
- Create a user account
- Log in and out
- Add and edit a shipping address
- Add and edit a payment method
- Log in with third-party credentials such as Facebook or Twitter
- Request a password reset (in case it slipped their minds)

To run a business, you also need some way to run a marketing campaign:

- Send new product or promotion push notifications to customers
- Ask users to give your app a good review on App Store