

Migrating to Android for iOS Developers



Sean Liao

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About the Author



Ever since working on a PalmOS PDA app in 2000, **Sean Liao** (PMP®) hasn't missed any major mobile evolutions. He has written mobile code for PalmOS, JavaME, Microsoft .NETCF, and BlackBerry, and he also has some Nokia Symbian experience. He has been a seasoned Java solution architect since 1998.

In 2009, Sean started iOS programming, and then began Android programming the same year by following the same porting strategy, based on years of hands-on mobile programming experience. Currently, Sean is primarily engaged in creating iOS apps and porting them to Android as a bonus.

About the Technical Reviewer



Alex Decker is a mobile application developer specializing in enterprise applications. He graduated from the University of Illinois and is currently living with his wife in California.

Acknowledgments

Looking back on the journey of my first book-writing experience, clearly, I realize now that I would have never started it without the encouragement from my lovely wife, Lily. I would never have completed the book without her support. I also got really motivated by my two little princesses, Megan and Melanie. As I was writing the book they would come by to ask me silly questions repeatedly, like: Can I help you, Daddy? Daddy, will the book be this thick? Daddy, can your book be my bedtime story? Will you play with me more after you finish it?

I knew I would never give up.

Special thanks to my publisher, who has faith in this topic, and the editors who never stopped making it better. Their professional services and guidance are unparalleled. I am really grateful to have had the publisher and the editorial team with me at all times.

Introduction

In 2000, I started my first PalmOS mobile app for an inventory-tracking project. The initial project was a full-staffed team effort that consisted of mobile developers, SAP consultants, supply-chain SME, J2EE middleware developers, QA testers, solution architects, business sponsors, and so forth. JavaME came up strong in 2002, followed by Pocket/Windows Mobile. I did several mobile projects converting the mobile apps to the PocketPC platform by blindly translating JavaME mobile code to C# .NETCF mobile code. The “translation” efforts prolonged the whole product life cycle. The project achieved higher ROI as the product life extended, because the extra cost of translating mobile code was surprisingly low. Ever since then, I have been translating front-end mobile apps among JavaME, BlackBerry, and Windows Mobile platforms.

In 2009, by repeating the same porting process, I created my first simple iOS app by translating a Windows mobile app. That started my iOS programming journey and which eventually led me to becoming a fulltime iOS developer. It was a no-brainer for me to try porting to Android later.

When you have the whole solution completed for your iOS app, all the issues have been verified and the other deliverables and project artifacts are already reusable. Knowing the Android market share, I always clone my iOS apps to Android. The return on investment (ROI) immediately gets improved because the level of efforts for the Android porting proves to be only a fraction of the entire project’s effort—again and again. It would be just a waste to not do it.

The primary objective of this book is to help experienced iOS developers leap into native Android mobile development. It is easier than you think, and this book will make it even easier with iOS analogies (and mapping guidelines) so you can immediately translate common mobile use cases to Android.

Who Is This Book For?

This book is specifically written for iOS developers who want to take advantage of their mobile knowledge and make the mobile applications available on the Android mobile platform. The book will show you that you already have the fundamentals for the Android platform. Let me show you that you are very close to becoming an Android developer. Let me show you the common programming subjects and frameworks using your familiar iOS vocabulary so that you immediately understand, without lengthy explanations, because you already know the mobile subjects from being an iOS developer.

You don't need experience in the Java language, although it does help a lot. The most important qualities of Android developers do not include Java programming language experience. It is the mobile SDK and framework knowledge that distinguishes you from other Java programmers.

You know one programming language already since you are an iOS developer, so you should be comfortable reading Java code. I also made the sample code extra-readable, so you will have no problem following through the programming subjects and the Java sample code.

There are tons of Java language references out there; you should find them handy sooner or later when you are ready to get serious.

How This Book Is Organized

In Part I, you will get the Android development toolkit up and running in no time. With the Android IDE, you will be guided in creating tutorial projects that will become your porting sample projects. I believe this is the best way for you to get hands-on experience while learning programming topics.

Part II of this book shows you how to plan and structure your Android apps by following the same iOS thinking process: create a storyboard and break the app into model-view-controller (MVC) classes. You will be able to reuse most of the existing software artifacts and design from the iOS counterparts. The common mobile topics are followed, including user interface, managing data, and networking with remote services. After you finish Part II, you will be able to create simple but meaningful Android apps with rich UI components, and to handle common CRUD (create, read, update, delete) operations locally and remotely. There are still more Android goodies to come.

In Part III, this book recaps the Android framework fundamentals with code instead of just descriptions. You will discover the uniqueness of the Android framework and appreciate many features that you normally don't have in iOS. Several powerful and repeatable mobile UX patterns are also introduced. Once you get here, you should be fully convinced that you can do everything in Android just like you do in iOS. The last chapter walks you through a case study that ports a complete iOS app to Android. It recaps how to use the iOS analogies and mapping guidelines from the topics in previous chapters. You can also use the book's table of contents to help find the porting guidelines as needed.

When you complete the journey, you will be able to use the right tools to effectively port your existing iOS apps to Android.