Android Essentials

Training Syllabus

Course Overview

This 4.5-day course teaches students how to write apps for the most popular mobile operating system on the planet using the Kotlin programming language. Students will learn Android best practices that would otherwise require years of experience to fully understand.

Who Should Take This Course

- Software engineers who want to learn the necessary skills to make apps on Android in a short amount of time.

- Developers with some Android experience that need better foundational knowledge of the platform to write more code with less bugs.

- Students in this class should already be familiar with basic programming concepts and should be comfortable with the Kotlin programming language.

Syllabus

Android Foundations

- Understand what an Activity is and how they are used to construct Android apps.
- Master the activity lifecycle to elegantly respond to device changes.
- Maintain UI state across rotation and process death
- Use the debugger to find and fix bugs.
- Safely communicate across Activities.
- Explore the differences between versions of Android and use new features while maintaining compatibility with older versions.

Full-Featured Android

- Use Fragments to create reusable components and to respond elegantly to different types of devices.
- Display lists of items performantly with the RecyclerView API.
- Peek behind the scenes at Android's layout system and understand how to use layout tools such as ConstraintLayout.
- Customize a dialog to present modal content to the user.
- Add navigation and menu options to the Toolbar.

Beyond the Basics

- Use Room to access a database to performantly store application data and explore the implications of Android's threading model.
- Master the main thread on Android. Understand how to communicate between threads to present data to the user.
- Seamlessly communicate with other applications using Android's intent system.
- Respond to device types to create an app that is optimized for both phones and tablets.
- Increase the potential user base of an app by supporting multiple languages and improving the accessibility.
- Explore the MVVM architecture, DataBinding, and unit testing to improve the quality of your code.
- Focus on the design of an application using Android's styles and themes APIs. Construct XML Drawables to further customize how users see an app.

Connecting to the Web

- Download, parse, and present data from a web service.
- Learn more about the Toolbar on Android and how to add custom views.
- Perform background work safely in your application.
- Receive and respond to system events.
- Display content from a web site in your application.

Adding Some Fun

- Learn how to create your own custom views when the default widgets just won't do.
- Receive and respond to raw touch events.
- Understand how to increase the delightfulness of an app through animation.