# AND-101 Android programming

**Duration: 5 days**

### Course Objectives

Android™ programming is a hands-on training for designing and building mobile applications using Android™ open-source platform. Android™ Bootcamp course explains the philosophy of developing for Android™ through its main application development building blocks and their interaction with one another.

This complete hands-on course encourages students to learn by building increasingly more sophisticated and meaningful mobile applications for Android™.

By the end of the course, each participant will build their own complete Android application incorporating most of the key aspects of the platform. Typically, we build a Twitter app for Android, but there are other choices depending on participants' interests.

### Who Can Benefit

This course is designed for software developers interested in designing, creating, deploying, and testing applications for the Android™ mobile phone platform. It is valuable to both novices and gurus, who already have experience in developing mobile applications for other platforms.

### Objectives

Upon completion of this course, you will be able to:

- Build your own Android apps
- Understand how Android™ applications work, their life cycle, manifest, Intents, and using external resources
- Design and develop useful Android™ applications with compelling user interfaces by using, extending, and creating your own layouts and Views and using Menus.
- Take advantage of Android's Application Framework API to build complex applications.
- Utilize the power of background services, threads, and notifications.
- Use Android's communication APIs for SMS, telephony, network management, and internet resources (HTTP).
- Secure, tune, package, and deploy Android™ applications

### Prerequisities

Java experience is required to get the most benefit from this training.

### Course Outline

### Android Overview

- Android Overview
- History
- Android Versions

**The Stack**

- Stack Overview
- Linux
- Native Libraries
- Dalvik
- App Framework
- Applications

**Quick Start**

- Installing SDK
- Hello, World!
- The Emulator

**Main Building Blocks**

- Main Building Blocks Overview
- A Real World Example
- Activities
- Intents
- Services
- Content Providers
- Broadcast Receivers
- Application Context

**Yamba Project Overview**

- The Yamba Application
- Project Design
- Part 1: Android User Interface
- Part 2: Preferences, File System, Menus
- Part 3: Android Services
- Part 4: Working with Databases
- Part 5: Lists and Adapters
- Part 6: Broadcast Receivers
- Part 7: Content Providers
- Part 8: System Services

**Android User Interface**

- Two Ways to Create User Interface
- Views and Layouts
- Starting Yamba Project
- StatusActivity Layout
- StatusActivity Java Class
- Logging in Android
- Threading in Android
- Other UI Events
- Adding Color and Graphics
- Alternative Resources
- Optimizing User Interface

**Preferences, File System, Options Menu**

- Preferences
- Options Menu
- Shared Preferences
- File System, Explained

**Services**

- Yamba Application Object
- UpdaterService
- Looping In The Service
- Pulling Data From Twitter

**Databases**

- About SQLite
- DbHelper
- First Example
- Update UpdaterService
- Refactoring Status Data

**Lists and Adapters**

- TimelineActivity
- Basic TimelineActivity Layout
- About Adapters
- Timeline Adapter
- ViewBinder: A Better Alternative
- Updating Manifest File
- Base Activity

**Broadcast Receivers**

- About Broadcast Receivers
- BootReceiver
- The TimelineReceiver
- Broadcasting Intents
- The Network Receiver
- Adding Custom Permissions

**Content Providers**

- Creating Content Provider
- Using Content Providers Through Widgets

**System Services**

- Compass Demo
- Location Service
- Updating Yamba to User the Location Service
- Intent Service

- Sending Notifications