Android level 1 course content (5-day)

Course Description

This course is a comprehensive look at the Android architecture that teaches how to build and deploy applications for Android phones and tablets using the Java programming language. Starting with the installation of the required developer tools, including Eclipse and the Android SDK, the course covers how to build the user interface, work with local data, integrate data from the accelerometer and other sensors, and deploy finished applications to the Android Market.

Pre-requisites

Java Essentials and Basic PC skills

Course Outline:

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Getting Started

- Installing the SDK tools on a Windows machine
- Installing the SDK tools on a Mac
- Installing platforms and samples
- Creating an Android Virtual Device (emulator)
- Installing Eclipse on a Mac
- Installing Eclipse on a Windows machine
- Installing the Android Development Tools
- Preparing an Android device for development

Android Application Development Fundamentals - What is Android?

- Overview of Android development
- Understanding project creation and structure
- Working with the AndroidManifest.xml file
- Creating and managing activities
- Using explicit intents
- Using implicit intents
- Creating and using resources
- Understanding security and permissions
- Debugging an app

User Interface and Controls

- Understanding units and layout
- Using layout managers
- Working with text controls
- Building button controls
- Building list controls
- Building custom list layouts
- Other interesting controls

Graphics and Styling

- Creating and using styles
- Creating and using themes
- Creating icons
- Creating NinePatch drawables

Supporting Multiple Screens

- Understanding screen size and density

- Providing alternate layouts

Animation and Graphics

- Setting up frame-by-frame animation

- Showing tween animation

- Working in 2D graphics

Menus and Dialogs

- Setting up options menus

- Building context menus

- Building alert dialogs

- Setting up progress dialogs

- Creating custom dialogs

Notifications and Toast

- Displaying status bar notifications

- Displaying toast notifications

Working with Media

- Setting up audio playback

- Establishing video playback

- Accessing the camera and camera roll

Preferences and Data Storage

- Using shared preferences

- Creating a preferences activity

- Using the SQLite database

- Setting up network access

- Using Content Providers

Location and Maps

- Incorporating Google Maps

- Using GPS to find the current location

Creating a Home Screen Widget

- Creating a simple home-screen widget
- Creating a widget configuration activity

Publishing the App

- Preparing for publishing
- Signing and building
- Preparing the graphics
- Publishing to the Android Market