Android Development Immersive Program

Weekly plan

Week 1: Java essentials

- The Android development ecosystem – Android Studio, Java, Android OS & Tool
- Control flow
- Data types
- Functions and Closures
- Classes and Objects
- Memory Management (Garbage collection) in Java
- Dalvik VM and new options
- Strings
- Collections

Week 2-3 : Introduction to Android development

- Android development fundamentals
- Essential ideas - MVP/ MVC, Http and Json

Week 4-5 : More on views and controllers

- List Views
- Intents
- Fragments
- Navigating between different screens of your app
- Arrays and array adaptors
- Gestures

Week 6 - 12 : Data persistence

- Data persistence strategy for mobile
- Storing user preference data using Shared Preferences
- Android independent, local storage using SQLite
- Advanced SQLite with Content Providers
- App project
- Launching the app

Contents covered:

➢ Introduction to Android

- What is Android?
- Setting up development environment
- Dalvik Virtual Machine & .apk file extension o Fundamentals:
  a. Basic Building blocks - Activities, Services, Broadcast Receivers & Content providers
  b. UI Components - Views & notifications
  c. Components for communication -Intents & Intent Filters o Android API levels (versions & version names)

➢ Application Structure (in detail)

- AndroidManifest.xml
- uses-permission & uses-sdk
- Resources & R.java
- Assets
- Layouts & Drawable Resources
- Activities and Activity lifecycle
- First sample Application

➢ Emulator-Android Virtual Device

- Launching emulator
- Editing emulator settings
- Emulator shortcuts
- Logcat usage
- Introduction to DDMS
- Second App:- (switching between activities) Develop an app for demonstrating the communication between Intents

➢ Basic UI design

- Form widgets
- Text Fields
- Layouts
- [dip, dp, sip, sp] versus px
- Examples

➢ Intents (in detail)

- Explicit Intents
- Implicit intents
- Examples

Mini Project

➢ Adapters and Widgtes

- Adapters:-
  a. ArrayAdapters
  b. BaseAdapters
- ListView and ListActivity
- Custom listview
- Examples

➢ Threads

- Threads running on UI thread (runOnUiThread)
- Worker thread
- Handlers & Runnable
- AsynTask (in detail)
- Examples

Mini Project

➢ Advanced

- SQLite Programming
- SQLiteOpenHelper
- SQLiteDatabse
- Cursor XML Parsing
- JSON Parsing

You will now work on a professional project which is live or going live shortly on the app store.