Android / Mobile App Development

Duration: 70 Hours
Prerequisites

- Knowledge of Basic Programming

Core Java Concepts (20 Hrs)

1. **Introduction to Java**
   - History of Java
   - Features of Java
2. **Overview of Java**
   - OOP's Concept
   - Data types and Variables
   - Operators
   - Control Structures
   - Strings
   - Arrays
3. **Objects and Classes**
   - Object, Classes and Methods
   - Method Overloading
   - Constructors
   - Garbage Collection
4. **Inheritance**
   - Types of Inheritance
   - Method Overriding
   - Dynamic method dispatch

5. **Packages and Interfaces**
   - Defining Packages
   - Extending Interfaces
6. **Exception Handling**
   - Fundamentals of Exception Handling
   - Exception types
   - Try and Catch and finally
   - Multiple Catch
   - Nested Try Statements
   - Throw , throws
   - Custom Exception
7. **Collections Framework**
   - Collection Interfaces and Classes
   - Iterators
   - Comparators
8. **Multithreading**
   - Life cycle of Thread
   - Thread priority

Android / Mobile Application Development (50 Hrs)

1. **Android Basics**
   - Android Overview
   - Android Environment Setup
   - Android Architecture
   - Simple Hello World Example
   - Explain Android Application Folder Structures
2. **Android User Interface**
   - Android SDK Overview
     - Explain the Application structure
     - different folders created for simple Android Application Project
     - Explain about different xml files used in Android Application
   - Explain AndroidMainifest.xml file
     - Configuring the Android Manifest File
     - Managing your App Identity
     - Registering Activities and other App Component
     - Use of Permissions
     - Other Manifest settings
   - Android UI Layout
     - Linear Layout
     - Grid Layout
     - Relative Layout
     - Frame Layout

- Android UI Controls
  - Text View
  - Edit Text
  - Auto Complete Text View
  - Button
  - Image Button
  - Check Box
  - Toggle Button
  - Radio Button
  - Progress Bar
  - Spinner
  - Time Picker
  - Date Picker

3. **Android Advanced Concepts**
- Use of Camera
- Use of Bluetooth

4. **Some Useful Examples**
  - How you can make your app to support multiple devices 3
  - Android Best Practices 25
- Android styles
  - Use of Styles
  - Style Inheritance
  - Android Themes
- Creating Custom Component
  - Explain how to create Custom Component.
  - Drag and Drop
- Drawing and working with Animation
  - Drawing on the Screen
  - Working with Canvas and Paints
  - Working with Text
  - Working with Bitmaps
  - Working with Shapes
  - Working with Animation
- Android Data Storage API
  - Storing data using SQLLite Storage API
  - Working with File and Directories
- Sharing Data between Application
  - Android Built-In Content Providers
  - Modifying Content Providers
  - Enhancing Applications by using Content Providers
  - Make your application to Act as a Content Provider.
- Location Based Services
  - Use of GPS
  - Geocoding Locations
  - Mapping Locations
- Android Multimedia API
  - Working with Images
  - Working with Videos
  - Working with Audio
- Android Telephony API
  - Sending SMS
  - Making and Receiving Phone Call
  - Sending Email