

# Android / Mobile App Development

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**Duration: 70 Hours**

**Prerequisites**

- Knowledge of Basic Programming

**Core Java Concepts (20 Hrs)**

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**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)**

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**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 AndroidManifest.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
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- **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 SQLite 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
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