



Mobile Application Development with Android

Android is the world's most popular mobile platform. It is an open source operating system having an extensive user base all across the globe. This course will walk you through the core concepts that you need to know when building mobile applications with Android along with practical implementation.

Why Android?

Almost 90% of the Fortune 500 companies use Java for their desktop as well as web applications, which clearly defines a large scope for the programming language. Android apps are also developed using Java. It is a highly portable language finding its use across various industries such as gaming, trading applications, embedded and electronic systems, mobile apps, TV devices and more.

It is the number one choice of Developers. The language is machine-independent. You write once and run it anywhere!

Why you must learn Android App Development?

- It will give you the technical skills to build your own app, whether you are working as an individual developer or in a start up or working on a group project.
- Once the app is built, you can reach a maximum audience with very low distribution costs.
- Around 75% of the total mobile users in the world use Android phones.

Course Duration:

- 1 Month

Course Syllabus:

1) JAVA Concepts

- OOPs Concepts
- Inheritance in detail
- Exception handling
- Packages & interfaces
- JVM & .jar file extension

- Multi threading (Thread class & Runnable Interface)

2) SQL

- DML & DDL Queries in brief

3) Introduction to Android

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

4) Application Structure (in detail)

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

5) 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

6) Basic UI design

- Form widgets
- Text Fields
- Layouts

- [dip, dp, sip, sp] versus px
- Examples

7) Preferences

- SharedPreferences
- Preferences from xml
- Examples

8) Menu

- Option menu
- Context menu
- Sub menu
- menu from xml
- menu via code
- Examples

9) Intents (in detail)

- Explicit Intents
- Implicit intents
- Example

10) UI design

- Time and Date
- Images and media
- Composite
- AlertDialogs & Toast
- Popup
- Examples

11) Tabs and Tab Activity

- Examples

12) Styles & Themes

- styles.xml
- drawable resources for shapes, gradients (selectors)

- style attribute in layout file
- Applying themes via code and manifest file
- Examples

13) Content Providers

- SQLite Programming
- SQLiteOpenHelper
- SQLiteDatabase
- Cursor
- Reading and updating Contacts
- Reading bookmarks
- Example :
- Develop an App to demonstrate database usage. CRUD operations must be implemented.
- Final details should be viewed in GridView as well as in ListView.

14) Android Debug Bridge (adb) tool

15) Linkify

- Web URLs, Email address, text, map address, phone numbers
- MatchFilter & TransformFilter
- Examples

16) Adapters and Widgets

- Adapters:-
- a. ArrayAdapter
- b. BaseAdapters
- ListView and ListActivity
- Custom listview
- GridView using adapters
- Gallery using adapters
- Examples

17) Notifications

- Broadcast Receivers
- Services and notifications

- Toast
- Alarms
- Examples

18) Custom components

- Custom Tabs
- Custom animated popup panels
- Other components
- Examples

19) Threads

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

20) Advanced

- Live Folders
- Using sdcards
- XML Parsing
- JSON Parsing
- Maps, GPS, Location based Services
- Accessing Phone services (Call, SMS, MMS)
- Network connectivity services
- Sensors