

# Core Android

(Duration: 2 Month)

## 1. Introduction to Android

- a. What is Android?
- b. Setting up development environment
- c. History of Android & .apk file extension
- d. Architecture of android
- e. Fundamentals:
  - i. Basic Building blocks - Activities, Services, Broadcast Receivers & Content providers
  - ii. UI Components - Views & notifications
  - iii. Components for communication - Intents & Intent Filters
- f. Android API levels (versions & version names)
- g. Lifecycle Methods

## 2. Application Structure (in detail)

- a. AndroidManifest.xml
- b. uses-permission & uses-sdk
- c. Resources & R.java
- d. Assets
- e. Layouts & Drawable Resources
- f. Activities and Activity lifecycle
- g. First sample Application

## 3. Emulator-Android Virtual Device

- a. Launching emulator
- b. Editing emulator settings
- c. Logcat usage
- d. Second App:- (switching between activities)  
-Develop an app for demonstrating the communication between Intents

## 4. Basic UI design

- a. Form widgets
- b. Text Fields
- c. Spinner
- d. Layouts
- e. [dip, dp, sip, sp] versus px
- f. Splash Screen
- g. Examples

## 5. Preferences

- a. SharedPreferences
- b. Preferences from xml
- c. Examples

## 6. Menu

- a. Option menu
- b. Context menu
- c. Sub menu
- d. PopUpMenu
- e. menu from xml
- f. menu via code
- g. Examples

## 7. Intents (in detail)

- a. Explicit Intents
- b. Implicit intents
- c. Examples

## 8. UI design

- a. Time and Date
- b. Images and media
- c. Composite
- d. AlertDialogs & Toast
- e. Floating Action Button & Snackbar
- f. Popup
- g. Examples

## 9. Tabs and Tab Activity

- a. Fixed Tabs
- b. Scrollable Tabs
- c. Tabs with Icon & Text
- d. Tabs with only Icon
- e. Custom Tab View with Icon & Text
- f. Examples

## 10. Styles & Themes

- a. styles.xml
- b. drawable resources for shapes, gradients (selectors)
- c. style attribute in layout file
- d. Applying themes via code and manifest file
- e. Examples

## 11. Working with WebView – Building a Simple In-App Browser

### 12. Content Providers

- a. SQLite Programming
- b. SQLiteOpenHelper
- c. SQLiteDatabase
- d. Cursor
- e. Example :
  - Develop an App to demonstrate database usage. CRUD operations must be implemented.

### 13. Adapters and Widgets

- a. Adapters:-
  - i. ArrayAdapter
  - ii. BaseAdapters
- b. ListView and ListActivity
- c. Custom listview
- d. MultiLevel ListView
- e. GridView using adapters
- f. Gallery using adapters
- g. Expandable ListView
- h. Horizontal & Vertical ListView
- i. CardView & RecyclerView
- j. Adding Search functionality in ListView
- k. Examples

### 14. Notifications

- a. Services and Push notifications
- b. Toast
- c. Examples

### 15. Android Working with Marshmallow (M) Runtime Permissions

### 16. Build Intro Slider for your App