

CORE ANDROID WITH KOTLIN

(Duration: 2 Month)

1. Kotlin Programming Basic

- a. Kotlin Overview
- b. variables
- c. Decision making
- d. Loop Controls
- e. Functions
- f. Array
- g. collections
- h. Exception handling

2. 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

3. 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

4. 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

5. 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

6. Preferences

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

7. Menu

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

8. Intents (in detail)

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

9. UI design

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

10. 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

11. 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

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

13. 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.

14. 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
- 15. **Notifications**
 - a. Services and Push notifications
 - b. Toast
 - c. Examples
- 16. **Android Working with Marshmallow (M) Runtime Permissions**
- 17. **Build Intro Slider for your App**

