**ANDROID APPLICATION DEVELOPMENT**

**Pre-Requisites**

• Java Programming Experience.

• Good understanding and practical experience in Object Oriented

Programming.

**Target Audience**

Software Professionals with working experience of Java programming Language.

**Duration**

4 days

**Day 1**

1. Introduction [1hr]

1.1. Android Ecosystem

1.2. Android Architecture

1.3. Android Versions and features

1.4. Android 6.0

2. Android Application Basics [.5 hr]

2.1. Physical Structure of an Android Application

2.2. Application Execution Environment

3. Android Development Tools [1 hr]

3.1. Android Studio

3.2. Android Emulator and Virtual Devices (AVD)

3.3. Android Project using Android Studio

3.3.1. Navigating a Project

3.4. Console and Logging

3.4.1. Console

3.4.2. Logcat

4. Application Essentials [2.0 hr]

4.1. Application Components

4.1.1. Activity

4.1.2. Service

4.1.3. Content Provider

4.1.4. Broadcast Receiver

4.2. Why component based architecture?

4.3. Resources

4.4. Intents

4.5. Manifest

5. Activities [1.5hr]

5.1. Activities and View

5.2. Activities in-Depth

5.3. Creating & Registering Activities

5.4. Launching Activities

5.5. Activity and Data Flow

5.6. Returning Data back from Activity

**Day 2**

6. Fragment [2hr]

6.1. Introduction to Fragments

6.2. Life-cycle of Fragment

6.3. Creating Fragments

6.4. Fragment Manager and Transaction

6.5. Fragment Backstack

6.6. Communication between Fragments

7. User Interface [3hr]

7.1. Introduction & Overview

7.2. View Architecture in Android

7.3. View, ViewGroup, Layout & Widget

7.4. Layouts

7.4.1. Linear

7.4.2. Frame

7.4.3. Relative

7.4.4. Grid

8. Common Widgets 1 hr

8.1. ImageView, TextView, Button etc.

8.2. WebView

**Day 3**

9. Adapter based Views 2hr

9.1. ListView

9.2. Introduction to Adapters

9.3. Built-in Adapters

9.4. Writing Custom Adapters

9.5. Best Practices for handling images

10. Background Work 3hr

10.1. Java Threading

10.2. Android Threading

10.3. Loopers

10.4. AsyncTask

10.5. Handlers

10.6. Messages & Runnables

11. Services .5hr

11.1. Services Application Component

11.2. IntentService

12. Intents .5hr

12.1. Intent Routing

12.2. Implicit Intents

12.3. Intent Resolution

12.4. Intents and Security

**Day 4**

13. Introduction to Material Design [1.5hr]

13.1. Basics

13.2. Navigation Drawer

13.3. Toolbar

13.4. RecyclerView and CardView

14. Android NDK [3hr]

14.1. NDK basics

14.2. Android JNI support

14.3. Creating JNI wrapper

14.4. Managed to Native data transfer

15. Android Tools [1.5hr]

15.1. Android Monitor

15.2. TraceView

15.3. Allocation Tracker

15.4. Memory Analyzer

15.5. Profile GPU rendering