**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