

## 6 Months Android Training

### Introduction to Android

- Introduction to Android
- Brief history of Android
- What is Android?
- Why is Android important?
- What benefits does Android have?
- What is OHA?
- Why to choose Android?
- Software architecture of Android
- Advantages of Android
- Android features
- Android market
- Comparing Android with other platform

### Getting Started

- How to select Android version?
- Step to create new project
- Running Your Application
- Creation of New AVD
- Creating run configuration
- Creating your first Android activity
- List of basic sample programs

### Android Component Life Cycle

- Activity Life Cycle with sample program
- Service Life Cycle with sample program

## Android Layouts

- What are views, Layouts and there classification?
- How Android Draws views and Layout?
- Classification
- Table Layout In detail with Example
- Tab Layout In detail with Example
- Frame Layout In detail with Example
- Linear Layout in detail with Example

## Android Views

- Grid View in Detail with Example
- Map View In detail with Example
- Cont. Sub Topical Views
- Web View In detail with Example
- Spinner In detail with Example
- Gallery In detail with Example
- Google Map View In detail with Example
- Introduction to creating activity user with views
- Different ways of creating views Using xml

## What are Fragments?

- Multipane & Singlepane
- Fragment Life Cycle
- Addition of Fragments
- Fragments Working without UI

## Introduction to Menus

- How to create menus?
- Types of Android Application Menus
- Option Menu
- Expanded - In detail with Example
- Context Menu In detail with example
- Sub Menu-In detail with example

## Introduction to Drawers

- Simple Side Drawer
- Tab Drawer
- Extra Drawer

## Handling User Interaction Events

- Handling user events
- Different types of event listener
- OnClickO
- OnLongClickO
- onFocusChangeO
- OnKeyO
- onTouchO
- onCreateContextMenuO
- Different types of event handler
- onKeyDown (int, KeyEvent)
- onKeyUp (int, KeyEvent)
- onTrackballEvent (MotionEvent)
- onTouchEvent (MotionEvent)
- onFocusChanged (boolean,int,Rect)

## Creating Dialogs

- Introduction to dialogs
- Showing and dismissing of dialog boxes
- Alert dialog In detail with example
- Progress dialog In detail with example
- Threading and handler
- Creating running applications-Events
- Creating running applications-Dialogs

## Notifications

- Notifying Users
- Status bar Notification
- Toast Notification
- Dialog Notification

## Intents, Broadcast Receivers

- Different types of intent?
- Launching sub-activities
- What is intent filter
- Intent objects---In detail with example
- Using intents to take pictures
- Handling sub activity results

## Data Storage

- Android techniques for data storage
- Creating and saving shared preferences
- Retrieving shared preferences
- Storing in files
- Loading from files.
- Storing in databases.

## Working with SQL Lite

- Working with Android databases.
- Using SQLiteOpenHelper.
- Cursors and content values.
- Opening and closing Database

## Working in Background

- Introducing services
- Creating and controlling services
- Registering a service in the manifest
- Starting, controlling, and interacting with a service

## Using the Camera, Taking Pictures and the Media AP

- Controlling the camera and taking pictures
- Playing audio and video

## Introduction SMS

- Using SMS and MMS in Your Application
- Sending SMS and MMS from your Application
- Using Intents and the Native Client
- Sending SMS Messages Manually
- Tracking and Conforming SMS Message Delivery
- Conforming to the Maximum SMS
- Message Size Sending DAT Messages

## Android Telephony

- Lanching the Dialer to Initiate Phone
- Calls Replacing the Native Dialer
- Accessing phone and Network Properties & Status
- Reading Phone Device Details
- Reading Data Connection and Transfer State
- Reading Network Details

## Sensor Device

- Using sensors and the sensor manager
- Introducing Sensors
- Supported Android Sensors
- Finding Sensors
- Using Sensors
- Interpreting the sensor values
- Using the compass , accelerometer and orientation sensors
- Introducing Accelerometers
- Detecting Acceleration Changes
- Creating a G-Forceometer

## Web Services with Architecture(Project Based)

- What are webservice
- Web service Architecture
- Asyn task
- REST & SOAP
- Parsing Techniques JSON, XML
- Consuming WebServices
- CRUD over Server

### JSON(Project Based)

- Introduction to JSON
- Advantage of JSON over XML
- Synatx & Structure of JSON
- Why is JSON is preferred for mobile applications
- Different types JSON Parsers, simple json

### Volley Library(Project Based)

- Introdocation Volley Library
- Volley Library Advantages
- Volley Library Components
- How to setup the environment
- Creating Volley singleton class
- Different Types of Requests
- Adding request headers
- Handling Volley Cache

### Retrofit(Project Based)

- Retrofit introduction
- Add library in Gradle
- Configure Web API

### Git implementation(Project Based)

- Get contents
- Create a file
- Update a file
- Delete a file

- Get archive link
- Custom media types

## KOTLIN

### Kotlin Overview

- What is new in Kotlin
- Kotlin setup process
- IntelliJ IDEA installation Process

### Variables

- Program concept
- Run first App
- Variable Concept
- Define Variables
- Var vs Val
- Input data – ReadLine
- Add Comments
- Null safety

### Operation and priorities

- Convert between Data Type
- Math operations.
- Priorities
- Increment and Decrement
- What is the Output
- Debug your Code step by step

### Decision Making

- Logic statement
- Simple IF
- IF- Else
- IF- ElseIF

- Nested IF
- When
- Expression If and When.

## Loop Control

- Simple For Loop
- Nested For Loop
- While Loop
- Do While Loop
- Returns and Jumps

## Collections and Strings

- String
- One-Dimension Array structure
- One-Dimension Array implementation
- ArrayList
- HashMap
- mapOf, Arrayof, listOf and mutableListOf
- setOf and mutableSetOf

## Functions

- Simple Function
- Function Overload
- Polymorphism
- Global and Local Variables

## Object Oriented Programming

- What is oops
- Simple Class
- Constructor
- Inheritance
- Visibility Modifiers
- Overriding
- Casting



- super and this
- interface
- Abstract
- Generic
- Extensions
- Packages
- Inner and Nested Class
- Lazy and Singleton design pattern

