

*Mission- To bring in Continuous improvement and achieve excellent customer satisfaction at all levels of software training and development, through its modular and systematic approach in accomplishing our goal of becoming a global giant.*



### Android Pre-requisites Module (Level 1)

- Introduction to Java's dual nature (language and platform)
- Introduction to Sun's/Oracle's Java SE
- Download and install the Java SE Development Kit (JDK)
- Setting PATH and CLASSPATH environment variables
- Executing Simple HelloWorld java programs using command prompt
- Introduction to Eclipse IDE
- Create simple Java Project, write and execute HelloWorld using IDE
- Using breakpoints and Java Debugger to step through in Eclipse
- Concept of java packages, naming convention of java packages
- Concept of encapsulation and classes, inheritance, polymorphism
- Concept of Overriding and overloading of methods
- Casting objects
- Concept of inner classes, anonymous inner classes
- Introduction to Interfaces and its uses
- Introduction to Java's collections framework - Lists, Set and Maps
- Introduction to Threads
- Create Threads - Runnable and Extending examples
- Multiple threading
- Thread Synchronization and its importance
- Thread interrupted Exception
- Reading and Writing to files
- Introduction to Serialization and Deserialization
- Introduction to XML



### Android Basic Module (Level 2)

#### GETTING STARTED WITH ANDROID PROGRAMMING (2 hrs)

- What is Android?
- Features of Android
- Android Architecture
- Android runtime, Processes and the Zygote
- Android Application Launch sequence
- Dalvik Virtual Machine
- Setting up the Android Development Environment
- Creating Android Virtual Device
- Using DDMS View and Log Cat to debug
- Creating your First Android Application
- Anatomy of Android Application

#### Android Application Components (5 hrs)

- Android Application Life Cycle
- Intents
- Resolving Intent filter collision
- Returning results from Intent
- Passing Data using Intent
- Calling built in applications using Intents
- Displaying Notifications

#### Android User Interface (5 hrs)

- Activity and Components of a screen
- Views and View groups (Layouts)
- Screen Sizes and Density Independent Pixel calculation
- Converting DIP to Pixel
- Handling display orientation changes
- Programmatic UI Creation vs XML based UI
- Event Handling of Views

#### Exploring Views and View Groups (5 hrs)

- TextView, EditText, Button, CheckBox, Toggle Button, Radio Button
- Timepicker and Datepicker views
- ListView and SpinnerView
- Progressbar view
- Autocomplete TextView
- WebView

#### Exploring Menus (5 hrs)

- Option Menu
- Context Menu

#### Fragments (6 hrs)

- What are Fragments?
- Advantages of using Fragments
- Declaring Fragments using XML
- Adding Fragments Dynamically
- Lifecycle of Fragment
- Communication between Fragments
- Specialized Fragments -
- ListFragment
- DialogFragment
- PreferenceFragment

#### Data Persistence (6 hrs)

- Using shared preferences
- Using File System
- Reading/Writing data to SD card
- Using SQLiteDatabase
- Pre-creating database and bundling with application
- Using SQLiteManager Eclipse plugin
- Guidelines on choosing data persistence technique

#### Content Providers (6 hrs)

- What are content providers?
- Why should you use content providers?
- Using Contacts Content Provider
- Concept of CursorLoaders
- Using Projection, filtering and sorting content provider data
- Writing custom content provider

## Android

### Android Services (6 hrs)

- What is a Service?
- Where to use a Service?
- Performing long running tasks
- Performing repeated tasks using Timer

### Intent Service - Running Asynchronous task in separate thread (6 hrs)

- Communication between Service and Activity
- Binding Activities to Services
- How to avoid Application Not Responding message (ANR)?
- UI Thread event loop
- Non UI or Worker Threads
- Using AsyncTask to avoid overloading UI Thread



## Advanced Android Module (Level 3)

### Connecting to outside world (6 hrs)

- Download binary and text data using HTTP
- Accessing web services using HTTP
- Parsing XML returned by web services
- Consuming JSON web services

### Telephony and SMS (6 hrs)

- Sending SMS messages
- Sending e-mail
- Initiating Phone Calls
- Accessing Telephony Properties and Phone State
- Monitoring Changes in Phone State Using the Phone State Listener

### Location Based Services (4 hrs)

- Location Providers and selection criteria
- Finding current location
- Reverse Geocoding
- Forward Geocoding

### Using Google Maps v2 (4 hrs)

- Downloading and configuring Google Play
- Using Google API console
- Obtaining Map Keys using SHA-1 fingerprint
- Using MapFragment to display maps

### Preparing your App for Publishing (4 hrs)

- Development Lifecycle for Android applications
- Digitally Signing Android Applications
- Signing in Debug Mode
- Creating Release Keystore and Signing in release mode
- Using Keytool and Jarsigner utility
- Application signing strategy
- Application Signing using Eclipse ADT
- Publishing on the Android Market
- Application Versioning
- Using ADB tool to deploy APK files



## PROJECT