

Android Syllabus

- **Android Overview and History**
 - How it all get started.
 - Why Android is different.

- **Android Stack**
 - Overview of the stack.
 - Linux kernel.
 - Native libraries.
 - Dalvik.
 - App framework.
 - Apps.

- **SDK Overview**
 - Platforms.
 - Tools & Versions.
 - Hello World App.
 - Creating your first project.
 - The manifest file.
 - Layout resource.
 - Running your app on Emulator.

- **Main Building Blocks / Components**
 - Activities.
 - Activity lifecycle.
 - Intents.
 - Services.
 - Content Providers.
 - Broadcast Receivers.

- **Basic Android User Interface**
 - XML versus Java UI.
 - Pixels, dp and sp.
 - Views and layouts.
 - Common UI components.
 - Handling user events.



- **Android System Overview**
 - File System.
 - Preferences.
 - Notifications.

- **Advanced UI**
 - Spinner.
 - List View.
 - Gallery.
 - Autocomplete Text View.
 - Selection components.
 - Adapters.
 - Complex UI components.
 - Building UI for performance.
 - Menus and Dialogs.
 - Graphics & animations.
 - Web View.
 - Fragments.
 - Custom Adapters.

- **Multimedia in Android**
 - Media Player.
 - Video View.
 - Audio Recording.
 - Video Recording.
 - Camera.

- **Android Telephony**
 - SMS.
 - Calls, Emails.
 - Email using JavaMailAPI.
 - SQL Database.
 - Introducing SQLite.
 - SQLite Open Helper and creating a database.
 - Opening and closing a database.
 - Working with cursors Inserts, Updates and Deletes.



- **Android Service**
 - Overview of services in Android.
 - Implementing a Service.
 - Service lifecycle.
 - Bound versus unbound services.

- **WiFi Service**
 - Monitoring and managing Internet connectivity.
 - Managing active connections.
 - Managing WiFi.

- **Sensors**
 - How Sensors work.
 - Listening to Sensor readings.

- **Bluetooth**
 - Controlling local Bluetooth device.
 - Discovering and bonding with Bluetooth Devices.
 - Managing Bluetooth connections.
 - Communicating with Bluetooth.

- **Vibrator**
 - How to get the Vibrator Service.
 - How to Vibrate the device.

- **Notifications**
 - About Notifications.
 - How to get Notification Service.
 - Pending Intent.

- **Broadcast Receivers**
 - What are Broadcast Receivers.
 - Implementing broadcast receiver.
 - System broadcasts and how to use them.

- **Basic Content Providers**
 - Content provider MIME types.
 - Searching for content.
 - Adding, changing, and removing content.
 - Working with content files.



➤ Google Maps

- Introduction to LocationBased Services in Android.
- Introduction to Google Maps.
- MapView.
- MapFragment.
- Markers.
- Changing the GoogleView.
- Android emulator and Google Maps.
- Install Google Playservices.
- Getting the Google Map key.

➤ Overview

- Creating the SHA-1 for your signature key.
- Register with the Google APIs Console.
- Create key for your application.
- Google Maps Example.
- Create Project.
- Adjust layout file.
- Activity , Run and Test.
- Placing multiple position.
- How to track the location.
- How to find the distance between 2 points.

➤ Google Places

- Get Google Places API Access.
- List of search options to get data (like airports, cafes ...).
- Build a Places Search Query to select particular positions.
- Create an AsyncTask to Fetch Place JSON Data in the Background.
- How to place the places data on GoogleMaps.

➤ XML

- Introduction to XML.
- Advantages of XML.
- Rules to write an XML.
- XSD & DTD's.
- XML Parsers.
- JAXP [DOM , SAX].
- JAXB.



➤ JSON

- Introduction to JSON.
- Advantages of JSON over XML.
- Syntax & Structure of JSON.
- Why is JSON is preferred for mobile applications.
- different types JSON Parsers [simplejson, Jackson, GSON] to parse the JSON.

➤ Web Services

- Introduction to Web Service.
- Advantages of Web Services.
- Architecture of Web Service.
- Types of Web Services.
- Web Service Components.
- SOAP Based Web Service.
- How to Call SOAP Web Service.
- Detailed Explanation about WSDL, SOAP & UDDI.
- Why SOAP is not preferred for mobile Applications ?
- What are the disadvantages with SOAP.
- Working with REST.

➤ Graphics Programing

- Java Threads.
- Android Graphics Components.
- Surface View.
- Surface Holder.
- Canvas.
- Paint class.
- How to Different Shapes on Surface.
- How to draw different resources (images, videos, text) on surface.
- How to display animations.
- Sample Animations.
- Sample Game using Graphic components.
- What are the problems with built in graphics components.
- Introduction to different 3rd party libraries for displaying graphics, animations and game development.



➤ COCOS – 2D

- Introduction to COCOS-2D.
- How to setup the Environment for COCOS-2D.
- COCOS-2D Components.
- CCDirector.
- CCLayer.
- CCNode.
- CCSprite.
- CCMenus.
- Cocos-2D Actions(CCMoveTo , CCRotateTo, CCJumpTo, CCScale , CCRorbit , CCBlink , CCFadeIn/Out).
- CCSequence & CCRepeat actions.

➤ zJUNIT

- Android automated testing.
- Android test strategy.
- How to test Android applications.
- What to test on Android applications.
- Testing preconditions.
- User interface tests.
- Which tests require an Android system to run?
- Testing standard Java classes.
- Testing Java classes which use the Android.
- Android test projects and running tests.
- Android test projects.
- Creating a test project & Running tests.

➤ Google Cloud Messaging [GCM]

- Introduction to Google Cloud Messaging.
- How to integrate GCM service into the SDK.
- How to get the GCM API Key.
- GCM Architecture.
- GCM components.
- How to develop GCM server application in java.
- How to develop the GCM Client application.
- GCM Client dependencies.



➤ Volley Library

- Introduction 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.