

Android Course Content:

Android Overview and History

How it all got 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

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 Play services

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 [simple json ,

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 ingraphics 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 ,
CCOrbit , CCblink , CCFadeIn/Out)
CCSequence&CCRepeat actions.

JUNIT

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
Hot 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

PHONE GAP

Introduction Apache Cordova Phone Gap
Advantages of Phone Gap
Phone Gap Components
How to setup Phone Gap Environment
Sample projects on Phone Gap