



# Android Syllabus

## • **1: Getting Started with Basics of Java**

- Java - What, Where and Why?
- History and Features of Java
- Internals of Java Program
- Difference between JDK, JRE and JVM
- Internal Details of JVM
- Variable and Data Type
- Unicode System
- Naming Convention
- The Structure of Java Code
- How to Run your Java Programs
- Printing to the Output Window

## • **2: OOPS Concepts**

- Advantage of OOPs
- Object and Class
- Method Overloading
- Constructor
- Static variable, method and block
- this keyword Ø Inheritance (IS-A)

- Aggregation and Composition(HAS-A)
- Method Overriding
- Covariant Return Type
- super keyword
- Instance Initializer block
- final keyword
- Runtime Polymorphism
- static and Dynamic binding
- Abstract class and Interface
- Downcasting with instanceof operator
- Package and Access Modifiers
- Encapsulation
- Object Cloning
- Java Array
- Call By Value and Call By Reference
- Strictfp keyword
- Creating API Document

### • **3: String Handling**

- String: What and Why?
- Immutable String
- String Comparison
- String Concatenation
- Substring
- Methods of String class
- StringBuffer class
- StringBuilder class
- Creating Immutable class
- toString method
- StringTokenizer class
- Upper and LowerCase
- The compare Method
- The equals Method
- The replace Method
- Printing Formatted Strings

## • **4 : Exception Handling**

- Exception Handling: What and Why?
- try and catch block
- Multiple catch block
- Nested try
- finally block
- throw keyword
- Exception Propagation
- throws keyword
- Exception Handling with Method Overriding
- Custom Exception

## • **5 : Multithreading**

- Multithreading : What and Why?
- Life Cycle of a Thread Creating Thread
- Thread Scheduler
- Sleeping a thread
- Joining a thread
- Thread Priority
- Daemon Thread
- Thread Pooling
- Thread Group
- ShutdownHook
- Performing multiple task by multiple thread
- Garbage Collection
- Runnable class

## • **6 : Control Flow**

- If Statements in Java
- If Else Statements
- Boolean Values
- Switch Statements
- Java for Loops
- Java While Loops

- **7 : Arrays in Java**

- Java Arrays
- Arrays and Loops
- Sorting Arrays
- Arrays and Strings
- Multi -Dimensional Arrays
- Array Lists

- **8: Java Methods**

- Java Methods
- Calling your Java Methods
- Passing Values to Methods
- Multiple Method Parameters

- **9: Synchronization**

- Synchronization : What and Why?
- Synchronized method
- Synchronized block
- Static synchronization
- Deadlock
- Inter-thread Communication
- Interrupting Thread

- **10: Java Form Controls**

- Java Forms
- The Different Form Views in NetBeans/Eclipse
- Add a Text Box to a Java Form
- Add a Button to the Form
- Button Properties
- Java Form Events
- Java and Combo Boxes
- Java Check Boxes
- Radio Buttons
- Adding Menus to a Java Form

- Open File Dialogue Boxes
- Opening Files
- Save File Dialogue Boxes

## • **11: Java and Databases**

- Java and Databases
- Creating a Database with Java
- Adding Records to Table
- SQL Commands
- Connect to a Database with Java code
- Connecting to the Table

## • **12: Databases and Java Forms**

- Databases and Java Forms
- Database Scrolling Buttons
- Move Back Through the Database
- Move to the First and Last Records
- Update a Record
- Add a New Record
- Save a New Record
- Delete a Record from a Database

## • **13: A Java Calculator Project (This is Done By Student Himself)**

# SQL Server/MySql/SQL

## • **1: Work with Store Procedure & Data Base**

- Learn Database Models
- Overview of SQL Server Management Studio
- Creating the Data Base
- Creating the table
- Select,Insert,Delete,Update in Data Base
- Writing simple and complex queries that retrieve data from the Database
- Creating the Store Procedure

- Types of Store Procedure (Input,Output)
- Types of Joins
- Sub-Queries
- Create and Managing View
- Create Function and Use with Procedure

## •      **2: Basic Android Studio**

## •      **3 : Basics of Android**

- What is Android
- History and Version
- Installing Softwares
- Setup Android Studio
- Hello Android example
- Internal Details
- Dalvik VM
- Software Stack
- Android Core Building Blocks
- Android Emulator
- AndroidManifest.xml
- R.java file
- Hide Title Bar
- Screen Orientation

## •      **4 : UI Widgets**

- Working with Button
- Toast
- Custom Toast
- Button
- Toggle Button
- Switch Button
- Image Button
- CheckBox
- AlertDialog
- Spinner
- AutoCompleteTextView

- RatingBar
- DatePicker
- TimePicker
- ProgressBar
- Quick Contact Budge
- Analog Clock and Digital Clock
- Working with hardware Button
- File Download

## •      **5 : Activity, Intent & Fragment**

- Activity Lifecycle
- Activity Example
- Implicit Intent
- Explicit Intent
- Fragment Lifecycle
- Fragment Example
- Dynamic Fragment

## •      **6 : Android Menu**

- Option Menu
- Context Menu
- Popup Menu

## •      **7: Layout Manager**

- Relative Layout
- Linear Layout
- Table Layout
- Grid Layout

## •      **7 : Adaptor**

- Array Adaptor
- ArrayList Adaptor
- Base Adaptor

## •      **9 : View**

- GridView
- WebView
- ScrollView
- SearchView
- TabHost
- DynamicListView
- ExpandedListView

## **Advanced Android Syllabus**

- **1 : Android Service**

- Android Service
- Android Service API
- Android Started Service
- Android Bound Service
- Android Service Life Cycle
- Android Service Example

- **2 : Data Storage**

- Shared Preferences
- Internal Storage
- External Storage

- **3 : SQLite**

- SQLite API
- SQLite Spinner
- SQLite ListView

- **4 : XML & JSON**



- XML Parsing SAX
- XML Parsing DOM
- XML Pull Parser
- JSON Parsing

- **5 : Content Provider**

- Content Provider Fundamental
- Contact Content Provider
- Other Built-in Content Providers
- Creating Custom Content Provider
- Understanding Content URI
- ContentResolver
- Sharing Information from custom content provider

- **6 : Android Notification**

- Notification API
- Creating Notification Builder
- Setting Notification Properties
- Attaching Actions
- Issuing Notification
- NotificationCompat.Builder class
- Android Notification Examples

- **7 : Multimedia**

- Wallpapers
- Live Wallpaper
- Multimedia API
- Playing Audio
- Creating Audio Player
- Playing Video
- Alarm Manager
- Gallery

- **8 : Speech API**

- TextToSpeech API

- TextToSpeech Example
- Managing speed and pitch
- Speech To Text

## • **9 : Telephony API**

- Telephony Manager
- Get Call State
- Call State BroadcastReceiver
- Simple Caller Talker
- Making Phone Call
- Send SMS
- Send Email

## • **10 : Location API**

- Location API Fundamental
- Example of Android Location API
- Working with Google Maps

## • **11 : Animation**

- Android Animation API
- Android Drawable class
- Android Animation Example
- Android Rotate Animation
- Android Fade Animation
- Android Zoom Animation

## • **Section 12 : Device Connectivity**

- Bluetooth Tutorial
- List Paired Devices
- Working with WiFi
- Working with Camera

## • **Section 13 : Sensor**

- Sensor API

- Motion Sensor
- Position Sensor
- Environmental Sensor
- Sensor Values
- SensorManager class
- Sensor Class
- SensorEvent class
- SensorEventListener interface
- Compass Accelerometer and Orientation Sensors
- Sensor Examples

## • **Section 14 : Android Graphics**

- Graphics API
- 2D Graphics
- android.graphics.Canvas
- android.graphics.Paint class

## • **Section 15 : Android P2P Communication**

- Introducing Instant Messaging
- Using the GTalk Service
- Monitoring the ROSTER for Changes
- Sending and Receiving Data Messages
- Transmitting Data Messages
- Receiving Data Messages

## • **Section 16 : Android Web Services**

- What is web service
- SOAP Vs RESTful web service
- Android RESTful web service example with Java Servlet
- Storing data into external Oracle database
- Verifying data in Android with external Oracle database

## • **Section 17 : Android Google Map**

- Android Map V2 API
- Adding Map

- Customizing Map
- GoogleMap class
- Android Google Map Application