

Android

History and platform-independence.

Introduction to Java,JSE,JEE,JME,Web services,Other technologies.

JVM,JRE and JDK

Simple Java Program Structure

- Documentation section
- Package statement
- Import statement
- Interface statement
- Class definition
- Main class method

Creating, compiling and running program

Command Line argument

Object Orientation

- **Classes:** Introduction, Definition, Field, Methods.
- **Objects:** Concept, Creation, Accessing Members.
- **Constructors:** Types, Overloading.
- Static Members

Java Beans: Concept, getters and setters.

- **Inheritance:** Subclassing, Constructor chain, Method Overriding.
- **Final:** Class, Variable, Methods .
- **Abstract:** Classes ,Methods.
- **Varargs** Methods
- **Visibility** Controls.
- **Interfaces:** Defining, Extending, Implementing
- **Package:** naming, creating, accessing, usage.
- Understanding IS-A,HAS-A Relationship Polymorphism, Encapsulation, Abstraction, Inheritance

Arrays: Declaration,creation,initialization,1-D,2-D,n-D

String: Methods, Immutable Objects, Regex, toString(), StringBuilder, StringBuffer.
Enumerations and Annotations **JVM:** Java Heap, Stack, Garbage collection, hashCode(),equals(). Wrapper Classes and Static Imports Socket Programming

Exception Handling: Throwable, Errors, Exceptions, try ...catch.... finally, throws, Exception classes.

Multithreading: Thread creation by extending Thread and implementing Runnable, Life cycle, Thread Exceptions, Priorities, Synchronisation.

IO: Stream Classes, Byte Stream, CharacterStream, File Handling, IO Exceptions, Serialization.

Generics: Concept, Generic Methods and Classes.

Inner Classes: Method-local inner classes, Anonymous inner classes, Static nested classes.

Collection: Set, List, Map, Collection Interface, Collections class, Sorted-Unsorted, Order-Unordered, Queue, Autoboxing with collections, Comparable Interface Event Handling with Swings.

Introduction to Android Programming

- Android OS
- Architecture
- Dalvik Virtual Machine
- Android SDK
- Android Development Tools(ADT)
- Android Virtual Devices(AVD)

Activities

- Activity Life cycle
- Style and Themes
- Activity Title
- Dialog Windows
- Progress Dialog

Intents

- Linking activities using intents
- Filter Collision
- Intent Object and usage.
- Calling built-in application.
- Intent object
- Intent filters

Notifications

- Displaying notifications

Fragments

- Life cycle
- Adding fragments Dynamically
- Fragment Interaction

User Interface

- Views and ViewGroups
- Layouts-Linear, Absolute, Table, Relative, Frame
- Scroll View • Display Orientation
- Managing Screen Orientation
- Action Bar
- Programatically creating UI
- Listening to UI Notifications

Basic Views

- TextView, Button, ImageButton, EditText, CheckBox, ToggleButton, RadioButton, RadioGroup, ProgressBar View, AutoCompleteTextView View
- Picker View-TimePicker and DatePicker
- ListView and Spinner View
- Specialized Fragments

Image Views

- Gallery and ImageView
- ImageSwitcher
- GridView

Menus

- Helper methods
- Options Menu
- Context Menu
- Additional Views-AnalogClock, DigitalClock, Web View

Persisting Data

- Saving and Loading Preferences
- Saving data to files
- Creating and Using Databases

Content Providers

- Data sharing
- Using a content provider.
- Creating content provider.

Messaging

- SMS Messaging
- Sending Email

Location Based Services

- Displaying Maps
- Location data
- Monitoring Location

Networking

- Consuming Web Service via HTTP.
- Consuming JSON Services.
- Socket programming

Android Service Development

- Creating service
- Services communication
- Activity and Service binding.
- Understanding Threading.

Publishing Android Application

- Preparing application for publishing.
- Deploying APK Files.