

# CORE JAVA & ANDROID SYLLABUS



## CORE JAVA

### Introduction

- Programming language Types and Paradigms
- Why Java ?
- Flavors of Java
- Java Designing Goal
- Role of Java Programmer in Industry
- Features of Java Language
- JVM –The heart of Java
- Java's Magic Bytecode
- Language Fundamentals

### The Java Environment:

- Installing Java.
- Java Program Development
- Java Source File Structure
- Compilation
- Executions

### Basic Language Elements:

- Lexical Tokens, Identifiers
- Keywords, Literals, Comments
- Primitive Datatypes, Operators

### Object Oriented Programming

- Class Fundamentals
- Object & Object reference
- Object Life time & Garbage Collection.
- Creating and Operating Objects
- Constructor & initialization code block
- Access Control, Modifiers, methods
- Nested , Inner Class
- Abstract Class & Interfaces
- Defining Methods, Argument Passing Mechanism
- Method Overloading
- Use of Modifiers with Classes & Methods.
- Extending Classes and Inheritance
- Use and Benefits of Inheritance in OOP
- Types of Inheritance in Java

- Inheriting Data Members and Methods
- Role of Constructors in inheritance
- Overriding Super Class Methods.
- Use of “super”.
- Polymorphism in inheritance.
- Type Compatibility and Conversion
- Implementing interfaces.

### **Package**

- Organizing Classes and Interfaces in Packages
- Package as Access Protection
- Defining Package.
- CLASSPATH Setting for Packages.
- Making JAR Files for Library Packages
- Import and Static Import
- Naming Convention For Packages

### **Exception Handling:**

- The Idea behind Exception
- Exceptions & Errors
- Types of Exception
- Control Flow In Exceptions

- JVM reaction to Exceptions
- Use of try, catch, finally, throw, throws in Exception Handling.
- In-built and User Defined Exceptions
- Checked and Un-Checked Exceptions

### **Array & String :**

- Defining an Array
- Initializing & Accessing Array
- Multi –Dimensional Array
- Operation on String
- Mutable & Immutable String
- Using Collection Bases Loop for String
- Tokenizing a String
- Creating Strings using StringBuffer

### **The Collection Framework**

- Collections of Objects
- Collection Types
- Sets
- Sequence
- Map

# Android

## Introduction to Android

- What is Android?
- Setting up development environment
- Dalvik Virtual Machine & .apk file extension
- Fundamentals:
  - Basic Building blocks - Activities, Services, Broadcast Receivers & Content providers
  - b. UI Components - Views & notifications
  - c. Components for communication - Intents & Intent Filters
- Android API levels (versions & version names)

## Application Structure (in detail)

- AndroidManifest.xml
- uses-permission & uses-sdk
- Resources & R.java
- Assets
  
- Layouts & Drawable Resources

- Activities and Activity lifecycle
- First sample Application
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## Emulator-Android Virtual Device

- Launching emulator
- Editing emulator settings
- Emulator shortcuts
- Logcat usage
- Introduction to DDMS
- Second App:- (switching between activities)
- Develop an app for demonstrating the communication between Intents

## Basic UI design

- Form widgets
- Text Fields
- Layouts
- [dip, dp, sip, sp] versus px
- Examples

## Preferences

- 1. SharedPreferences
- 2. Preferences from xml

- 3. Examples

- **Menu**

- Option menu
- Context menu
- Sub menu
- menu from xml
- menu via code
- Examples

- **Intents (in detail)**

- Explicit Intents
- Implicit intents
- Examples
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- **UI design**

- Time and Date
- Images and media
- Composite
- AlertDialogs & Toast
- Popup
- Examples

- **Styles & Themes**

- styles.xml
- drawable resources for shapes, gradients (selectors)

- style attribute in layout file
- Applying themes via code and manifest file
- Examples

- **Content Providers**

- SQLite Programming
- SQLiteOpenHelper
- SQLiteDatabase
- Cursor
- Reading and updating Contacts
- Reading bookmarks
- Example :
- Develop an App to demonstrate database usage. CRUD operations must be implemented. Final details should be viewed in GridView as well as in ListView.

- **Linkify**

- Web URLs, Email address, text, map address, phone numbers
- MatchFilter & TransformFilter
- Examples

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### **Adapters and Widgtes**

- Adapters:-
- ArrayAdapter
- BaseAdapters
- ListView and ListActivity
- Custom listview
- GridView using adapters
- Gallery using adapters
- Examples

### **Notifications**

- Broadcast Receivers
- Services and notifications
- Toast
- Alarms

### **Custom components**

- Custom Tabs
- Custom animated popup panels
- Other components
- Examples

### **Threads**

- Threads running on UI thread (runOnUiThread)
- Worker thread
- Handlers & Runnable
- AsyncTask (in detail)
- Examples

### **Advanced**

- Live Folders
- Using sdcards
- XML Parsing
- JSON Parsing
- Maps, GPS, Location based Services
- Accessing Phone services (Call, SMS, MMS)
- Network connectivity services
- Sensors

**We are also providing training on Core & Adv java, Android, Web Designing, Graphics designing, PHP & MySQL training, C & C++ Programing, asp.net & C#.net & Final year project for computer science student.**

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