

Core Java Syllabus

Introduction to Java(Properties, Oops, JDK & JVM & JRE) 4 Hours - 5 Topics

- **Why Java is called Platform Independent? (Explanation with practical Architecture)**
- **Methods and Variable types (Theory and 2 Examples)**
- **Data types with sizes (Theory and Example)**
- **Class, objects (Theory and 2 Examples)**
- **Method overloading (Theory and 3 Examples)**

Concept of Constructor 2 Hours - 3 Topics

- **What is Constructor (Theory and 2 Examples)**
- **Specification and Constructor Types (Theory and 1 Example each of Constructor types)**
- **Constructor Techniques(Constructor Overloading Copy Constructor) (Theory and 2 Examples)**

Encapsulation 2 Hours - 1 Topic

- **Advantages of Using Encapsulation in Java (Theory and 2 Examples)**

Inheritance Concepts and Java Keywords 4 Hours - 3 Topics

- **Advantages, features of Inheritance (Theory and 3 Examples)**
- **Method Overriding (Theory and 2 Examples)**
- **Discussion about Keywords (this, super, final, static) (Theory and 2 examples each)**

Access Modifiers and Packages 3 Hours - 2 Topics

- **Use of Access modifiers in Java Programming (Theory and 2 Examples of Default, Private, Public and Protected access modifiers)**
- **Types of Packages and its implementation (Theory and 2 Examples)**

Concept of Polymorphism 2 Hours - 1 Topic

- **Types and implementation in programming (Theory and 3 Examples)**

Abstraction and Scanner Class 3 Hours - 3 Topics

- **How to achieve abstraction in Java? (Theory and 2 Examples)**
- **Abstract keyword, Abstract Class, Interface (Theory and 3 Examples each)**
- **Importance of Scanner Class in Programming (Theory and 4 Examples)**

Exception Handling in Java 3 Hours - 2 Topics

- **What is Exception and it's types (Theory and 3 Examples)**
- **Use of Java Exception Handling Keywords (try, catch, finally, throw, throws) (Theory and 2 Examples each)**

Thread Programming **3 Hours - 3 Topics**

- **Advantages, Concept of Multithreading, Lifecycle (Theory and 2 Examples)**
- **Creating Thread, Thread Scheduler, Sleeping, joining a thread (Theory and 2 Examples each)**
- **Thread priority and synchronization (Theory and 2 Examples each)**

GUI Concepts and Application Development **4 Hours - 3 Topics**

- **Java AWT, Event-Handling (Theory and 3 Examples each)**
- **Java Applet (Theory and 4 Examples each)**
- **Java Swing (Theory and 4 Applications each)**

Connectivity in Java **3 Hours - 4 Topics**

- **Concepts of JDBC (Java Data Base Connection) (Theory)**
- **API (Theory)**
- **Interfaces (Theory)**
- **JDBC programming (3 Examples)**

Java I/O **2 Hours - 2 Topics**

- **Reading and Writing file and data/Object (Theory and 4 Examples)**
- **Serialization and De-Serialization (Theory and 2 Examples)**

Wrapper Class & Java Strings **2 Hours - 3 Topics**

- **Concepts of auto-boxing and un-boxing (Theory and 2 Examples)**
- **What is String? How to create String? (Theory and 3 Examples)**
- **Java String Buffer and String Builder (Theory and 5 Examples each)**

Projects on Java Swing and JDBC **3 Hours - 2 Topics**

- **Implement Jdbc -Swing GUI Application to Store, Update, Delete and View the Employee Details (Emp_Id, Emp_Name, Emp_Address, Emp_DOB, Emp_Salary) (Front End- UI Designing in JFrame form and Back End: Java Coding and Database connection between Java and Oracle Database)**
- **Implement Registration Form GUI Application Using Java Swing (Front End- UI Designing in JFrame form and Back End: Java Coding) etc.**