

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 4 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 4 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 2 Hours - 2 Topics

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

Thread Programming 4 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	4 Hours - 4 Topics
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- **Concepts of JDBC (Java Data Base Connection) (Theory)**
- **API (Theory)**
- **Interfaces (Theory)**
- **JDBC programming (3 Examples)**

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

