



Certification in Core Java Programming Language

Syllabus

Duration: 40 Hours

1. Introduction

- What is java
- History and features of java
- JDK, JVM and JRE
- Deep architecture of JVM
- What is IDE, examples of IDE's
- Simple Hello java program
- Explanation of java program, compile and run
- Setting temporary and permanent of java classpath
- Program run by bat file
- Data Types
- Operators
- Variables
- Keywords
- Identifiers

2. Control Statements

- Conditional statements
- Iteration/looping statements
- Jump statements
- Arrays
- 50 Programs (including recursion)

3. OOP's Concept

- Class
- Methods
- Objects
- → Different ways of creating objects
- → Cloning Objects, shallow and deep cloning
- → Object life cycle
- Garbage collection and finalize method
- Constructors
- Inheritance (IS-A & HAS-A Relationship)
- Polymorphism
- → Compile Time Polymorphism (Method Overloading)
- → Run Time Polymorphism (Method Overriding)

- Encapsulation (Getter & Setter)
- Abstraction
- Interfaces
- Keywords (this, super, static, final, strictfp)
- Packages
 - → 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
- Access modifiers
- Nested class & interface
- Relationship Between Classes (aggregation(HAS-A), association, etc)
- Covariant return type

4. Exception Handling

- Exceptions and errors with diagram
- Types of exceptions
- Checked and unchecked exceptions
- Control Flow In Exceptions
- try, catch, finally, throw, throws in Exception Handling
- In-built and User Defined (custom) Exceptions

5. Strings

- Character
- What is String
- CharSequence Interface
- String class
- Methods of String class
- How to create String (2 ways)
- String constant pool
- Explanation of creating objects with new and without new keyword (with memory in heap and String constant pool)
- Garbage collection for strings
- StringBuffer and StringBuilder classes and methods
- Difference between String and StringBuffer and StringBuilder
- Encryption and Decryption of Strings

6. Project Work

7. Placement Assistance Sessions

- **Mock Interviews**
- **GDs**
- **Preplacement Talks**
- **Industry Exposer Sessions**

8. Internship

