

## INTRODUCTION TO JAVA

- History and Features of Java
- Comparison of C, C++, and Java
- Java Versions and its domain areas
- Life cycle of Java program
- Writing first Java program
- Analyze the tokens of Java program

## DATA TYPES, IDENTIFIERS AND VARIABLES

- Java data types
- concept of Variables, Operators, and control Statements

## INPUT/OUTPUT

- Getting Input from the keyboard using Scanner class
- Displaying Output with printf, println, and print method

## CLASSES & OBJECTS

- The concepts of OOPS
- What is the class and object
- How to create a class and object
- The content of class
- (blocks, variables, constructors, methods etc)
- Access modifiers
- The Constructors (the internals)

## METHODS IN JAVA

- Method prototype and signature
- Method overloading and methods with var-args
- Method with parameters (primitives and reference)
- How to return primitive/reference from a method

## RELATIONSHIP BETWEEN OBJECTS

- The implementation of Association
- How to implement association and aggregation in java

## INHERITANCE & POLYMORPHISM

- Concept of Inheritance
- The 'this' and 'super' keyword
- The introduction to Object class (the ultimate super-class)
- The garbage collection in java
- The Concept of Abstract Class and abstract methods
- Concept of Interface and their internals
- Multiple Inheritance using interfaces
- Abstract Class Versus Interface

## EXCEPTION HANDLING

- What is Exception in Java
- Need of exception in Java
- Difference of exception and error
- The try/catch/throw/throws/finally keywords
- Multiple Exceptions
- Custom Exception
- Assertions in Java and their usage

## MULTI THREADING

- What is a Java thread
- Need of thread in Java
- The constructor and methods of Thread class
- Life cycle of Java thread
- Writing Thread using Thread Class and Runnable Interface
- Daemon and Non-Daemon threads
- Synchronization in java
- Thread collaboration

## DATABASE CONNECTIVITY (THE JDBC)

- Concepts of JDBC
- Types Of JDBC Drivers
- Type1: Jdbc-Odbc bridge Driver
- Type2: Native API Driver
- Type3: Middleware layer Driver
- Type4: Pure Java Driver

## ARRAYS

- Why java arrays are diff from the array of C & C++
- How array can be created in java
- How is array iterated in java
- The zigzag array
- How array can be used in software development

## PACKAGES

- Concept of Packages
- Need of packages
- How to create packages using compiler
- How to use packages
- Concept of JAR file
- How to create the JAR file

## STRING

- What is String
- Creating String literals
- The constructors of String
- The methods of String
- String immutability and its use

## STRING BUFFER & STRING BUILDER

- What is String Buffer class
- The constructors of String Buffer
- The methods of String Buffer
- The String Builder and its usage

## REFLECTION API

- What is reflection API
- Need of reflection
- The Method, Field, Constructor, and Modifier class
- Implementation of the reflection concepts
- Access private members of a class using Reflection API

## SERVLETS AND JSP

- Introduction of Servlet
- Difference b/w CGI, PHP, ASP, and Servlet
- Lifecycle (callback) Methods Of Servlet
- Servlet Implementation & Configuration
- Servlet Request and Servlet Response Interface and their method
- Servlet Config and Servlet Context Interface and their method
- Introduction of Web server i.e. Sun Glassfish, Apache Tomcat,
- Introduction to IDE (Integrated Development Environment)
- The JSP (Java Server Pages)
- The concept of Java Beans
- Using Java Beans with the JSP

**Project work is mandatory after the completion of the training program.**

**REGISTER ONLINE!**