JAVA

🌟 BECOME A JAVA PROGRAMMER 🌟

WHY LEARN JAVA?

- Highly in-demand language worldwide.

- Powers software, web, mobile apps (Android), games, banking systems.

- Strong career opportunities.

- Builds solid programming and OOPS skills.

COURSE HIGHLIGHTS

- Hands-on coding sessions
- Real-world projects & assignments
- Interview preparation & placement guidance
- Learn from experienced instructors

TECHSQUARE SOLUTIONS

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📞 **98720-65086**

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Module 1: Introduction to Java

- Evolution of Java / Features of Java
- JDK, JRE, and JVM / Java Editions: SE, EE, and ME
- Java Development Tools (Eclipse, IntelliJ IDEA, NetBeans)
- Setting up Java Development Environment
- Running the Java Program

Module 2: Java Basics & Syntax

- Java Program Structure / Naming Conventions
- Writing and Running the First Java Program
- Command line arguments / Main function overloading
- Variables, Constants, and Data Types
- Type Casting & Type Promotion / Operators

Module 3: Control Flow Statements

- Decision-Making Statements - if, if-else, nested if
  - switch-case
- Looping Constructs - for, while, do-while, Nested Loops, Enhanced for loop
- Jump Statements - break, continue, return

Module 4: Java Arrays

- Single & Multi-Dimensional Arrays
- Array Operations & Methods, jagged Arrays
- Sorting & Searching in Arrays, Cloning of Arrays

Module 5: Object-Oriented Programming in Java

- Introduction to OOP, Classes and Objects
- Constructors, Instance & Static Variables
- Instance & Static Methods, The 'this' Keyword
- Method Overloading
- Garbage Collection & finalization
- Upcasting and Downcasting
- Static initialization blocks (sib)
- Instance initialization blocks(iib)
- Enums, Inner Classes / Static Inner Classes

Module 6: Inheritance and Polymorphism

- Types of Inheritance (Single, Multilevel, Hierarchical, Multiple via Interfaces)
- super & final keywords / Method Overriding
- Abstract Classes & Abstract Methods
- Polymorphism (Compile-time and Runtime)

Module 7: Interfaces & Packages

- Defining and Implementing Interfaces
- Extending Interfaces
- Default and Static Methods in Interface
- Functional Interfaces / Creating and Using Packages
- Importing Packages and Access Modifiers

Module 8: Exception Handling

- Types of Exceptions (Checked and Unchecked)
- try, catch, finally / Multiple catch Blocks
- throw and throws Keywords
- Custom Exception Handling / Best Practices

Module 9: Java Strings & String Handling

- String, StringBuffer, StringBuilder
- Immutable vs Mutable Strings , String Methods
- String Tokenizer , String Manipulation Techniques

Module 10: Multi-Threading in Java

- Thread Lifecycle, Creating Threads
- Thread Synchronization
- Inter-thread Communication (wait, notify, notifyAll)
- Deadlock & Starvation, Executor Framework

Module 11: AWT and Swings

- Introduction to AWT and Swings
- AWT Components and Containers
- Layout Managers and Event Handling in AWT
- AWT Graphics and Swing Components

Module 12: JDBC (Java Database Connectivity)

- Database Concepts / JDBC Architecture
- Connecting with MySQL
- Statement, PreparedStatement, CallableStatement
- ResultSet & ResultSetMetaData
- Transaction Management in JDBC
- Batch Processing

Module 13: Memory Management in Java

- Stack vs Heap Memory
- Garbage Collection Mechanisms
- Soft, Weak, and Phantom References

Module 14: Advanced Topics

- Java Modules (Java 9+)
- Jigsaw Project
- JShell (Java 9+)
- Java Records (Java 14+)

PROJECT WORK /INTERVIEW QUESTIONS

Master Programming

📚 Learn. Code. Succeed.

OFFLINE CLASSES (IN-PERSON)

- Interactive classroom sessions
- Personalized mentorship
- Real-time problem solving

ONLINE CLASSES (LIVE SESSIONS)

- Attend from anywhere in the world
- Live doubt-clearing sessions
- Full access to assignments & notes
- International time zone flexibility

WHY CHOOSE US?

- Industry-aligned curriculum
- Experienced and certified trainer
- Real-world projects and assessments

DATA STRUCTURES

MACHINE LEARNING

INTERVIEW PREPARATION

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