



Core Java Training Curriculum

STRUCTURE



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Dive deep into Core Java Concepts with our comprehensive Java Training Program

Course Objectives:

- You will learn Java programming through practical sessions.
- New to coding? No worries. This course covers coding from scratch.
- Get an in-depth understanding of Core Java concepts
- Learn Object Oriented Programming (OOPS) Concepts in detail.
- Learn Data Structures, Regular Expressions, Exception Handling in Java
- Learn working with File System in Java, database connections, web services, and more.
- Get Instructor Guidance and Query Resolution Support

Why Join Java Training Program?

- There are nearly 9 million Java developers in the world, and they earn a median salary of \$83,975.00
- 95% of enterprises use Java for programming in some form or another
- Java runs on more than 1 billion smartphones since Google's Android OS uses Java APIs

Course Description:

Java Programming language is one of the most used and most popular languages in the world of IT development. Given its properties of platform independence, object-oriented approach, reusable code and dynamic classes – Java has emerged to be the most preferred language for programmers.

The cherry on the cake is that it is quite easy to learn and implement, thus making it highly favourable in the programming community. Its popularity also stems from the fact that it was built keeping Security in mind, and thus enables programmers to write code with fewer bugs, in lesser time.

Our Java programming courses cover the length and breadth of this platform-independent and object-oriented language that one can learn and implement easily for programming purposes. As the language enables faster coding with fewer bugs, it is the favourite of programmers. Our training course offers the expertise of Java to all who want to use it for coding on different devices.

Course Content:

Module 1: Java Programming Basics

- Introduction to Java
- Bytecode
- Class Files
- Compilation Process
- JDK 10 Installation
- Eclipse IDE Installation
- Writing First Java Program
- Primitive Data Types in Java
- Arithmetic Operators in Java
- Logical and Bitwise Operators
- Relational Operators in Java
- If - Condition
- Nested If - Condition
- For Loop in Java
- Nested “For” Loop
- 'While' & 'Do While' Loop in Java
- Loop 'Break' & 'Continue' Statements
- What’s new in Java 10
- 'var' Keyword
- Concept of Garbage Collector (GC)
- Java 10 Update in GC
- Other Updates in Java 10

Module 2: Object-Oriented Programming in Java

- Concept of Object Orientation
- Classes and Objects
- Attributes, and Methods
- Method Overloading
- Method Overriding
- Access Specifiers in Java
- Constructors in Java
- Default constructors
- Constructors with arguments
- Data Encapsulation
- Static Keyword
- Concept of Main Method
- Inheritance
- Polymorphism
- Super Keyword
- Super Class Constructor

- Protected Access
- Abstraction
- Interface
- Final Keyword

Module 3: Data Handling and Functions

- Arrays
 - Array Objects
 - Single Dimensional Arrays
 - Multidimensional arrays
- Functions
 - Function with Arguments
 - Function Overloading
 - The concept of Static Polymorphism
- String Handling
 - String Basics
 - String Comparison Operations
 - String Search Operations
 - String (Cut) Slice Operations
 - String Replace Operations
 - String Conversion Operations
- Special Classes in Java
 - Math Class
 - StringBuilder Class
 - StringBuilder Methods
 - Scanner Class
 - Random Class
 - UUID Class
 - String Buffer Classes

Module 4: Packages, Multithreading, Exceptional Handling in Java

- Packages and Interfaces
- Access Specifiers: Public, Private, Protected and Package
- Exception Handling: Try, Catch, Finally, Throw and Throws
- What is an Exception?
- Error Vs Exception
- Checked and Unchecked Exception
- Throws Declaration
- Try and Catch Block (Exception Handling)
- 'Finally' Block
- Multi-Threading
- Runnable Interface
- Extending a Thread Class
- Synchronization in Threads

Module 5: Data structure Concepts in Java

- Lists
 - Array List
 - Linked List Structure
 - Linked List
 - ArrayList vs LinkedList
 - List Iterator
- Sets
 - Hash Set
 - Linked Hash Set
 - Tree Set
 - Iterating over Sets
- Maps
 - Hash Map
 - Tree Map
 - Iterating on Maps
- Regular Expressions
 - Introduction to Reg Ex
 - Quantifiers in Reg Ex
 - Character Classes in Reg Ex
 - Bracket Expressions in Reg Ex
 - OR Operator
 - Dot Operator
 - Greedy and Lazy Matching
 - Regularizing Number Ranges

Module 6: Data and Time Operations in Java

- Local Date and Time
- Custom Date and Time
- Future and Past Date
- Future and Past Time
- Date Difference
- Time Difference
- Date Time Formatter

Module 7: Working with Text files and Excel Files in Java

- Text Files Handling
 - Read Text File using Apache Commons IO
 - Edit Text File using Apache Commons IO
 - Sort Line from Text File
 - Copy & Move Text Files
 - Remove Duplicate Words from Text File
- Excel Files in Java/Apache POI
 - Apache POI Setup
 - Read Excel using POI

- Read Excel Data into 2D Array
- Write Excel using POI

Module 8: Java Collections

- Wrapper Classes and Inner Classes
 - Integer,
 - Character,
 - Boolean,
 - Float, etc
- Applet Programs
- How to write UI programs with Applet, Java.lang, Java.io, Java.util?
- Collections
 - ArrayList,
 - Vector,
 - HashSet,
 - TreeSet,
 - HashMap,
 - HashTable, etc.

Module 9: XML in Java

- Introduction to XML
- Writing XML files
- DOM Parser
- Writing into an XML file
- Parsing an XML file
- SAX Parser
- XSL

Module 10: JDBC

- Introduction to SQL
- SQL Commands
- Connect, Insert, Update, Delete, Select
- Introduction to JDBC and Architecture of JDBC
- Types of Drivers: Type 1/2/3/4 drivers
- Insert/Update/Delete/Select Operations using JDBC
- Batch Processing Transaction
- Management: Commit and Rollback

Module 11: Servlets

- Introduction to Web Technologies
- Type of Servlets
- Generic Servlet
- Http Servlet
- Request Dispatchers

- Forward and Include 4 types of Session
- Tracking and Filters

Module 12: Java Server Page / JSP

- Introduction to JSP
- Architecture of JSP
- tags (Scripts, declarative, expression)
- Implicit objects
- JSP Directives
- JSP and JDBC

Module 13: Hibernate

- Introduction to Hibernate
- Architecture of Hibernate
- Database Operations: Insert/Update/Delete/Select
- Inheritance
- Collections
- HQL and Restrictions
- Caching in Hibernate

Module 14: Springs in Java

- Introduction to Spring Framework
- Architecture
- Display a Sample Message
- IoC Containers
- Bean Definition
- Bean Scopes
- Bean Post Processors
- Dependency Injection Auto-Wiring

Module 15: AJAX and Design Patterns

- Aspect Oriented Programming (AOP)
- Integrating Spring framework with Hibernate
- Transaction Management
- Ajax Framework and Design Patterns: DAO, DTO, MVC
- Intercepting filters
- Front Controller
- Business Delegate

Module 16: SOA

- Introduction to SOA
- SOA Architecture
- Business layer of SOA

- Advantages of SOA
- What is Contract
- Address, and Binding in SOA
- Composition of Service
- Relation between SOA and Web Services

Module 17: Web Services and Projects

- Introduction to Web Services
- WSDL file
- WSDL and UDDI
- SOAP, RESTful Web Service
- JAX-WS Implementation
- Java Projects

Module 18: Placement Guide

- Tips to clear an Interview
- Common Interview questions and answers
- Core Java Interview Questions and Answers
- Resume Building Guide
- Attempt for Core Java Global Certification Exam
- Start applying for Jobs