

COREJAVA 8

Module 1: Introduction to Java

- 1.1 History and evolution of Java.
- 1.2 Setting up the Java development environment.
- 1.3 Basic syntax and structure of Java programs.
- 1.4 Writing and running your first Java program.

Module 2: Data Types and Variables

- 2.1 Primitive data types (int, float, double, boolean, etc.).
- 2.2 Reference data types (objects).
- 2.3 Variables and constants.
- 2.4 Type casting and conversion.

Module 3: Control Flow

- 3.1 Conditional statements (if, else, switch).
- 3.2 Looping statements (for, while, do-while).
- 3.3 Break and continue statements.
- 3.4 Exception handling with try-catch blocks.

Module 4: Object-Oriented Programming (OOP)

- 4.1 Classes and objects.
- 4.2 Constructors and methods.



4.3 Inheritance and polymorphism.

4.5 Encapsulation and access modifiers (public, private, protected).

Module 5: Collections Framework (Java 8 Enhancements)

5.1 Lists, sets, and maps.

5.2 Iterating through collections (for-each loop).

5.3 Lambda expressions (introduced in Java 8).

Stream API for data manipulation (introduced in Java8).

Module 6: Functional Programming with Lambdas

6.1 What are lambda expressions?

6.2 Syntax and usage of lambda expressions.

6.3 Functional interfaces (e.g., Predicate, Consumer, Function).

6.4 Method references.

Module 7: Java 8 Date and Time API

7.1 Overview of the new Date and Time API (java.time package).

7.2 Working with dates, times, and durations.

7.3 Formatting and parsing date and time objects.



Module 8: File Handling

- 8.1 Reading from and writing to files.
- 8.2 Working with directories.
- 8.3 Exception handling in file operations.

Module 9: Concurrency and Multithreading

- 9.1 Introduction to threads.
- 9.2 Creating and managing threads.
- 9.3 Synchronization and thread safety.
- 9.4 Java 8 Completable Future for asynchronous programming.

Module 10: Java Streams

- 10.1 Understanding the Stream API in Java 8.
- 10.2 Stream operations (filter, map, reduce, collect).
- 10.3 Parallel streams for concurrent processing.

Module 11: Java 8 Features (Optional)

- 11.1 Default and static methods in interfaces.
- 11.2 The `java.util.Optional` class.
- 11.3 New features in the Java 8 API.

