Java Course Syllabus

1. Introduction to Java

- What is Java?

- Features of Java

- Java Development Kit (JDK), Java Runtime Environment (JRE), and Java Virtual Machine (JVM)

- Setting up the development environment (Installing JDK and IDEs)

2. Basics of Java Programming

- Writing your first Java program

- Understanding the structure of a Java program

- Compiling and executing Java programs

- Understanding Java's main method

3. Java Syntax and Variables

- Variables and data types

- Primitive and non-primitive data types

- Variable declaration and initialization

- Typecasting in Java

4. Control Flow Statements

- If-else statements

- Switch-case statements

- Loops:

    o For Loop

    o While Loop

    o Do-While Loop

5. Java Operators

- Arithmetic operators

- Relational operators

- Logical operators

- Bitwise operators

- Unary and Assignment operators

6. Arrays in Java

- Declaring, initializing, and accessing arrays

- Multidimensional arrays

- Array operations

7. Object-Oriented Programming (OOPs)

- Core concepts of OOPs:

    o Classes and Objects

    o Constructors

    o Inheritance

    o Polymorphism

    o Abstraction

    o Encapsulation

8. Strings in Java

- String class and its methods

- StringBuilder and StringBuffer

- Manipulating strings

9. Java Collections Framework

- Introduction to the Collections Framework

- Core interfaces of the Collections Framework:

    o List, Set, Queue, and Map

Selenium WebDriver Course Syllabus

1. Introduction to Selenium

- Basics of Selenium

- Overview of Selenium WebDriver

2. Locators in Selenium

- Types of locators (ID, Name, XPath, CSS, etc.)

- Dynamic XPath

- Dynamic CSS

3. Handling Web Elements

- Handle dropdowns

- File upload functionality

- Handling alerts and popups

- Managing multiple windows

4. Advanced User Interactions

- Mouse hover events

- Right-click operations

- Double-click actions

- Drag-and-drop operations

5. Utility Features

- Capturing screenshots in Selenium

- Parameterization in Selenium tests

6. Synchronization in Selenium

- Implicit wait, explicit wait, and fluent wait

- Differences and use cases:

    - Implicit Waits

    - Explicit WebDriver Waits

    - Fluent Wait

7. Working with External Data

- Apache POI for Excel handling:

    o Reading data from Excel files

    o Writing data into Excel files

- Database testing using MySQL

8. Advanced Topics

- Handling Ajax calls

- Listeners in Selenium

- Handling JavaScript using Selenium WebDriver

- Stale Element Reference Exception

9. Headless Browser Testing

- Introduction and implementation