

Java

FA-0495

Software Development · DevOps, Cloud & Infrastructure · Data & Analytics

Introduction

This 3-day course provides participants with a comprehensive understanding of Java programming concepts and techniques. It covers the fundamentals of Java language, object-oriented programming principles, exception handling, Java collections, input/output, networking, Java Database Connectivity (JDBC), Java Servlets, and JavaServer Pages (JSP). The course is suitable for individuals who are new to Java programming or have some programming experience in another language and want to learn Java. The course is delivered through a combination of lectures, hands-on programming exercises, and demonstrations. By the end of the course, participants will have a solid foundation in Java programming and be able to write Java applications using object-oriented programming principles.

Duration

Total Duration: **3 days**

Each day consists of: 9am to 5pm

1 hour of lunch break

Intermediary breaks to keep the trainees engaged efficiently

Learning outcomes

- Understand the basics of Java programming and its syntax.
- Understand object-oriented programming concepts and how they are implemented in Java.
- Know how to handle exceptions and create custom exceptions in Java.
- Understand Java collections and how to use them in Java programming.
- Familiarize with Java input and output and networking.
- Understand Java Database Connectivity (JDBC) and how to connect to databases.
- Understand Java Servlets and JavaServer Pages (JSP) and how they are used in web development.

Prerequisites

- Computer science or engineering grads
- Programming experience in any discipline
- Ability to communicate fluently in English Language
- Dual Screen computer system with admin / sudo access
- Zoom conferencing software (MS Teams shall not be used for this under any circumstance)
- Working audio video system (video of each individual participant must remain on during the duration of this training)
- A minimum internet speed of 10mbps per workstation.

Training outline

1. Introduction to Java Programming

1. What is Java?
2. Java Development Kit (JDK)
3. Java Virtual Machine (JVM)
4. Java Development Environment (IDE)

2. Java Language Fundamentals

1. Data types
2. Operators
3. Control statements
4. Methods
5. Arrays

3. Object-Oriented Programming in Java

1. Classes and Objects
2. Inheritance
3. Polymorphism
4. Abstraction
5. Encapsulation

4. Exception Handling in Java

1. Handling Exceptions
2. Creating Custom Exceptions

5. Java Collections Framework

1. Introduction to Collections
2. Collection interfaces
3. Collection classes
4. Maps

6. Java Input and Output

1. File Input/Output
2. Character streams
3. Byte streams

7. Java Networking

1. Introduction to networking
2. Socket programming
3. URL processing
4. Datagram sockets

8. Java Database Connectivity

1. Introduction to JDBC
2. Establishing database connections
3. SQL statements
4. Querying databases

9. Java Servlets and JavaServer Pages (JSP)

1. Introduction to servlets
2. Servlet API
3. JavaServer Pages (JSP)

