SPYPRO SECURITY SOLUTIONS Pvt. Ltd.,
C Y B E R S E C U R I T Y

5-Day Workshop on Java Full Stack Development

Day 1: Core Java & Web Fundamentals

Session 1: Introduction to Core Java

- What is Java? Importance & real-world applications
- JDK, JRE, JVM overview
- Variables, data types & operators
- Control statements (if-else, loops, switch)
- OOP concepts (Class, Object, Inheritance, Polymorphism)

Hands-On
- Writing basic Java programs
- Implementing OOP concepts

Session 2: Web Development Basics

- Introduction to Web & Full Stack development
- HTML5 structure & elements
- CSS3 styling & layouts
- JavaScript basics

Hands-On
- Creating a responsive webpage
- Adding client-side validations

Day 2: Backend Development with Java

Session 1: Java Backend (Spring / Spring Boot)

- Introduction to backend & MVC architecture
- Spring vs Spring Boot
- Controllers, Services & Repositories

• Building RESTful applications

Hands-On
• Creating a Spring Boot project
• Developing REST APIs

Session 2: Database & Persistence

• Introduction to databases (MySQL)
• JDBC basics
• JPA & Hibernate ORM
• CRUD operations

Hands-On
• Connecting Spring Boot with MySQL
• Performing CRUD operations

Day 3: Advanced Backend & APIs

Session 1: REST APIs & Microservices Basics

• REST architecture & HTTP methods
• JSON data handling
• API documentation (Swagger basics)
• Intro to microservices concept

Hands-On
• Testing APIs using Postman
• API documentation using Swagger

Session 2: Authentication & Security

• Authentication & authorization concepts
• Spring Security basics
• Role-based access control
• JWT introduction

Hands-On
• Implementing login & registration
• Securing APIs with roles

Day 4: Frontend Integration & Deployment

Session 1: Frontend-Backend Integration

• Connecting frontend with Spring Boot APIs
• Handling form submissions
• Displaying dynamic data

Hands-On
- Integrating frontend with backend APIs
- Building dynamic pages

Session 2: Tools, Git & Deployment

- Version control using Git & GitHub
- Application packaging & deployment basics
- Environment configuration

Hands-On
- Pushing project to GitHub
- Deploying Java application

Day 5: Project Development & Future Scope

Session 1: Project Development

- Full-stack application development
- Debugging & exception handling
- Logging & best practices

Session 2: Presentation & Closing

- Project demos & presentations
- Challenges & solutions discussion
- Career roadmap for Java Full Stack

Capstone Project Example

Java Full Stack Web Application

- **Frontend:** HTML, CSS, JavaScript
  - **Backend:** Java (Spring Boot)
  - **Database:** MySQL
  - **Features:** User authentication & authorization , CRUD operations , REST API integration , Role-based access control

Tools Used:
- Java
- Spring Boot
- MySQL
- Postman
- Git & GitHub

Closing Session

- Certificates distribution
    - Feedback & Q&A