Java Full Stack Web Developer

Course Duration: 40 Hours **Course Code : JFSWD-101**

1. Course Overview

The **Java Full Stack Web Developer** course is designed to equip learners with the skills required to build modern, end-to-end web applications. Covering both **front-end and back-end development**, this program introduces Java, Spring Boot, REST APIs, databases, and popular front-end technologies like HTML, CSS, JavaScript, and Angular/React. By the end of this course, learners will be capable of developing, testing, and deploying scalable full-stack applications.

2. 2. What You'll Learn?

- Master **front-end technologies**: HTML5, CSS3, JavaScript, and frameworks (Angular/React).
- Develop **server-side applications** using Java, Servlets, JSP, and Spring Boot.
- Build and consume **RESTful APIs** for communication between client and server.
- Work with **databases**: SQL (MySQL/PostgreSQL) and NoSQL (MongoDB).
- Implement **authentication, authorization, and security** in applications.
- Use **Git/GitHub** for version control and **CI/CD pipelines** for DevOps practices.

- Deploy applications on **cloud platforms** like AWS, Azure, or Docker containers.
- Gain **real-world project experience** with end-to-end application development.

3. 3. Target Audience

- Students and fresh graduates aspiring to become full-stack developers.
- Software engineers who want to upskill in **Java full stack development**.
- Backend or frontend developers looking to transition into full-stack roles.
- IT professionals seeking career advancement in web development.
- Anyone preparing for **developer job interviews** in the IT industry.

4. 4. Pre-Requisites

- Basic knowledge of programming concepts (preferably in Java).
- Familiarity with web technologies (HTML, CSS, JavaScript) is an added advantage.
- No prior full-stack development experience required.

5. 5. Course Content

Module 1: Introduction to Full Stack Development

- Understanding front-end, back-end, and full-stack roles
- Overview of Java ecosystem
- Tools and development environment setup (IDE, Git, Maven, etc.)

Module 2: Front-End Development Basics

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- HTML5: structure and elements
- CSS3: styling and responsive design
- JavaScript fundamentals (ES6+ features)
- DOM manipulation and event handling

Module 3: Advanced Front-End Frameworks

- Introduction to Angular / React
- Components, routing, and services
- State management and API integration
- Building dynamic and interactive UIs

Module 4: Core Java Programming

- OOP principles (inheritance, polymorphism, encapsulation)
- Exception handling and collections framework
- Multithreading and concurrency basics
- Java I/O and streams

Module 5: Server-Side Development with Java

- Servlets and JSP basics
- MVC architecture
- Building REST APIs with Spring Boot
- Dependency Injection and Spring Framework essentials

Module 6: Database Management

- Relational databases: MySQL/PostgreSQL
- SQL queries: CRUD operations, joins, indexing
- JDBC and Hibernate ORM for Java
- Introduction to NoSQL with MongoDB

Module 7: Security and Authentication

- Introduction to authentication and authorization
- Spring Security for user management
- JWT (JSON Web Tokens) authentication
- Securing REST APIs

Module 8: DevOps, Tools, and Deployment

- Version control with Git & GitHub
- CI/CD pipeline setup with Jenkins or GitHub Actions
- Containerization with Docker
- Deploying full-stack apps on AWS/Azure/Heroku

Module 9: Testing and Debugging

- Unit testing with JUnit
- Integration testing of APIs
- Debugging techniques in IDEs
- Test automation basics

Module 10: Capstone Project

- End-to-end full-stack web application development
- Integrating front-end, back-end, and database
- Implementing authentication and authorization
- Cloud deployment and presentation