Faysal Aziz

Full Stack Java with Spring Boot and ReactJS

FA-0218 · 10-day

Software Development

Introduction

This comprehensive 10-day course is designed to equip learners with practical, hands-on knowledge in Java, Spring Boot, and ReactJS. Unlike the more traditional academic approach, our focus is on imparting industry-oriented expertise that prepares participants to tackle real-world development projects efficiently.

The training sessions involve real-world project scenarios and challenges to mimic actual industry demands. This approach ensures that learners gain expertise that is immediately applicable in the workforce, enabling them to hit the ground running on their job.

Learning outcomes

By the end of the course, learners will be able to:

1. Understand and use Java's fundamental syntax and constructs for creating robust and maintainable software.
2. Build secure, efficient, and scalable backend services using Spring Boot.
3. Create modern, responsive front-end applications using ReactJS.
4. Leverage the integration capabilities of Java, Spring Boot, and ReactJS to build full-stack applications.
5. Debug and test applications built with Java, Spring Boot, and ReactJS.
6. Familiarize with best practices in developing and maintaining code in a professional setting.

Prerequisites

Before participating in this course, learners should have:

1. Basic understanding of software development and object-oriented programming concepts.
2. Familiarity with HTML, CSS, and JavaScript.

3. Basic knowledge of database concepts.
4. Knowledge of a text editor or integrated development environment (IDE), like IntelliJ IDEA, VSCode, etc.

Assessment Methodology

1. In-course lab (daily hands-on lab)
2. Short quiz (online MCQ)
3. Group Project (hands-on lab)
4. Individual Capstone project (lab, development, integration, deployment)

Lab

1. Remote hosted Linux Ubuntu lab
2. Local SSH enabled PC
3. VS Code
4. IntelliJ IDE (community Edition)
5. MS SQL Development Server

Supporting Materials

1. Reference materials
2. Libraries
3. Resource locations
4. Training manual

Reporting

- Individual performance will be provided daily via online spreadsheet.
- Detailed assessment results and reflection of the capstone project.

Training outline

1. Day 1: Introduction and Fundamentals of Java

- Introduction to Java: history, features, and ecosystem.
- Java Syntax and Basic Language Features: variables, data types, operators, control statements, loops.

2. Day 2: Intermediate Java

- Object-Oriented Programming in Java: classes, objects, inheritance, polymorphism, encapsulation.
- Exception Handling and Collections Framework in Java.

3. Day 3: Advanced Java

- Multithreading and Concurrency in Java.
- Introduction to Java I/O, Networking, and JDBC.

4. Day 4: Introduction to Spring Boot

- Overview of Spring Boot: advantages, architecture, and ecosystem.
- Setting up a Spring Boot Application: project structure, dependencies, application properties.

5. Day 5: Spring Boot Core Concepts

- Building RESTful APIs with Spring Boot.
- Spring Boot Data JPA: connecting to databases, performing CRUD operations.

6. Day 6: Advanced Spring Boot

- Spring Boot Security: Authentication and Authorization.
- Testing in Spring Boot.

7. Day 7: Introduction to ReactJS

- What is ReactJS? Advantages, architecture, and ecosystem.
- JSX, Components, Props, and State in ReactJS.

8. Day 8: Intermediate ReactJS

- Event Handling, Conditional Rendering, and List Rendering in ReactJS.
- Lifecycle Methods, Hooks, and Context API in ReactJS.
- Routing in ReactJS with React Router.
- State Management with Redux.
- Testing in ReactJS.

9. Day 9-10: Capstone Project

- Building a Full-Stack Application
- Integrating Java Spring Boot as backend and ReactJS as frontend.
- Debugging, testing, and deploying the application.

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