Mastering Spring and Spring Boot (TT3335) Training

Duration: **2 Day**

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Learn Spring Framework and Spring Boot development through hands-on labs while building modern enterprise Java applications, REST APIs, and scalable backend systems.

The **Mastering Spring and Spring Boot** course is a comprehensive hands-on training program designed for experienced Java developers who want to master **Spring Framework**, **Spring Boot**, **Spring Data JPA**, **Spring MVC**, **AOP**, and enterprise application development.

This intensive Spring Boot training helps developers understand how the Spring ecosystem fits into modern software architectures and how it integrates with enterprise technologies and frameworks.

Throughout the course, participants explore advanced concepts including:

- **Inversion of Control (IoC)**
- **Dependency Injection (DI)**
- **Aspect-Oriented Programming (AOP)**
- **Spring Security**
- **Spring MVC**
- **RESTful API development**
- **Spring Data JPA**
- **Reactive Programming**
- Enterprise integration patterns

The course covers the latest technologies including **Spring Framework 6.x**, **Spring Boot 3.x**, **Java SE 17**, and **Java SE 21**, ensuring alignment with modern enterprise Java development standards.

Participants gain practical experience building scalable Java applications, configuring Spring Boot environments, managing dependencies with Maven, and implementing modern backend architectures using Spring technologies.

Technologies Covered

Participants will work with:

- **Spring Framework 6.x**
- **Spring Boot 3.x**
- **Java SE 17**
- **Java SE 21**
- **Maven**
- **Spring Data JPA**
- **REST APIs**
- **Project Reactor**
- **Spring MVC**

Prerequisites

Participants should have:

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- **Intermediate-level Java programming skills**
- Practical hands-on Java development experience
- Basic Java/JEE application development knowledge
- Understanding of object-oriented programming concepts

Who Should Attend

This course is ideal for:

- **Experienced Java developers**
- Developers new to **Spring Framework**
- **Enterprise Java application developers**
- **Backend developers**
- **Java/JEE developers**
- Technical teams working with modern Java frameworks

This program is specifically designed for developers with intermediate Java skills who want to learn Spring development best practices.

What You Will Learn

Participants will learn how to:

- Understand the **Spring Framework architecture**
- Develop applications using **Spring Boot**
- Apply **IoC** and **Dependency Injection**
- Implement **Aspect-Oriented Programming (AOP)**
- Work with the Spring container
- Build persistence layers using **Spring Data JPA**
- Develop RESTful web services
- Apply Spring Security fundamentals
- Manage dependencies with Maven
- Use **Reactive Programming** concepts in Spring

Training Outline

1. Spring Framework Fundamentals

- Introduction to Spring Framework
- Enterprise Java development concepts
- Spring architecture
- Lightweight container concepts
- Modern Java system architectures

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2. Core Spring Framework

- **Inversion of Control (IoC)**
- **Dependency Injection (DI)**
- Spring container management
- Bean lifecycle
- Component-based architectures

3. Spring Boot

- Spring Boot architecture
- Auto configuration
- Spring Boot setup and configuration
- Maven dependency management
- Building Spring Boot applications

4. Aspect-Oriented Programming (AOP)

- AOP fundamentals
- Cross-cutting concerns
- Spring AOP implementation
- Logging and transaction management

5. Spring and Persistence

- Spring DAOs
- Transaction management
- ORM integration
- **Spring Data JPA**
- Persistence layer development

6. Spring MVC and Web Development

- Spring MVC architecture
- RESTful API development
- Web application development
- HTML5 integration
- Asynchronous processing

7. Enterprise Integration

- Spring Integration
- JMS integration
- Remote communication
- Enterprise messaging systems

8. Reactive Programming with Spring

- Project Reactor

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- Reactive streams
- Reactive web applications
- Event-driven architectures

9. Spring Security and Advanced Features

- Spring Security fundamentals
- Application events
- Secure enterprise applications
- Authentication and authorization