Java Spring Boot

Duration: **4 Days**

Prerequisites:

To successfully undertake training in the Java Spring Boot course, it is recommended that students possess the following minimum prerequisites:

- Basic understanding of the Java programming language, including concepts like classes, objects, inheritance, and polymorphism.
- Familiarity with Integrated Development Environments (IDEs) such as Eclipse, IntelliJ IDEA, or Spring Tool Suite (STS), which will be used for writing and testing code.
- Knowledge of building applications using Maven or Gradle, which are build automation tools commonly used in Java projects.
- Understanding of web development fundamentals, including HTTP, HTML, and the general concept of client-server architecture.
- Familiarity with relational databases and SQL, as data persistence is a crucial part of enterprise applications.
- Previous experience with the Spring Framework is beneficial but not mandatory, as the course covers Spring Core and its modules.
- These prerequisites are intended to ensure that learners can comfortably grasp the course content and actively participate in the hands-on aspects of the training. However, enthusiastic beginners with a strong desire to learn and a willingness to invest time in understanding the basics may also consider taking this course with additional preparation.

Course Description:

The Java Spring Boot course offers comprehensive training for learners looking to master the Spring framework, particularly focusing on the convention-over-configuration centric Spring Boot. It provides a deep dive into the world of Spring, starting with an introduction to the Spring Modules and progressing through to advanced concepts like Spring Boot Security. Throughout the course, participants will engage with various modules including Spring Core, where they'll learn about Inversion of Control (IoC), Dependency Injection (DI), bean scopes, and lifecycles. Spring AOP will introduce aspects and advice types, while Spring MVC covers web development essentials. The Spring Boot training equips learners with skills to create efficient, stand-alone applications with minimal configuration. With lessons on RESTful Web Services and database integration, this spring java course is ideal for those aspiring to develop modern, robust Java applications. By the end of the course, students will be well-versed in Spring Boot's best practices, enabling them to build and secure professional-grade applications.

Target Audience:

Koenig Solutions' Java Spring Boot course offers comprehensive training for building modern, secure Java applications efficiently.

Target audience for the Java Spring Boot course:

- Java Developers seeking to enhance their skill set with the Spring framework.
- Software Engineers transitioning from other programming languages to Java.
- Back-end Developers looking to adopt Spring Boot for microservice architecture.
- Full Stack Developers interested in mastering both front-end and back-end development with Spring.
- Application Architects designing Java-based enterprise solutions.
- Technical Leads and Development Managers overseeing Java application development.
- Systems Analysts and Designers who require in-depth knowledge of Spring-based applications.
- IT Professionals interested in learning about modern Java frameworks and Spring Boot.
- Computer Science students or graduates specializing in software development.
- Technology Consultants providing advice on Java application strategies and frameworks.

Course Outlines:

1. Introduction to Spring
   - Spring Modules

2. Spring Core
   - Introduction to IOC
   - Types of DI
   - Setter VS Constructor
   - Collection DI
   - Bean Inheritance
   - Inner Beans
   - Bean Scopes
   - Inner Beans
   - Bean auto wiring
   - Static Factory Method
   - Instance Factory Method
   - Bean Lifecycle

3. Spring AOP
   - AOP Concepts
   - Programmatic VS Declarative AOP
   - Programmatic AOP
   - Types of Advice
   - Types of Pointcuts

4. Spring MVC
   - Introduction to Spring MVC
   - Handler Mapping
   - Controllers
   - Validations
   - Views
   - Form tags

5. Introduction to Spring Boot
   - Intro to Spring Boot - What is Spring Boot and What It Does
   - Spring Boot Hello World / Spring Application
   - Download and Install STS IDE
   - Brief maven Overview
   - Spring Beans & Dependency Injection
   - Configuration
   - Configuration Properties
   - Application Properties & YAML Configuration

Spring Boot Annotations
   - SpringBootApplication
   - EnableAutoConfiguration
   - SpringBootConfiguration
   - Embedded server and its uses
   - What is Spring Boot Actuator

6. RESTFUL WEB SERVICES
   - REST Overview (Characteristics/Capabilities, URI Templates,
   - REST vs SOAP
   - REST and Spring MVC
   - Spring support for REST
   - @RequestMapping/@PathVariable, @RequestBody,
   - @ResponseBody, HTTP Method conversion
   - URI Templates and @PathVariable
   - Writing RESTful Controllers / @RestController

7. Accessing Data with Spring Boot and Database Support
   - Data Access Introduction
   - Spring Data JDBC
   - Basic Auto-configuration - Data source
   - Configuration Properties
   - Spring Boot's JPA Support - spring-boot-starter-data-JPA

8. SPRING BOOT SECURITY
   - Adding the spring boot security starter
   - Apply the security configuration by writing our own authorization and authentication