Spring Boot (2 Day)

Introduction

This course provides an introduction to Spring Boot, the features the project provides, and some of the most common ways it is used. Upon completion of the Spring Boot Training, students will know how to utilize Spring Boot to rapidly define, configure, and add features to Spring applications using Spring Boot.

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In this course, attendees will learn how to:

- Develop Spring web applications with Spring MVC
- Understand the features of the Spring Boot project
- Use Spring Boot to create and configure a Spring application
- Customize Spring Boot features
- Develop REST web services with Spring Boot
- Utilize various Spring database support including Spring Data
- Secure an application with Spring Security
- Use JMS support of Spring

Our Spring Boot course continues to be in high demand. The topics covered in the course are

- Spring framework configuration
- Introduction to Spring Bot
- Spring MVC
- Overview of Spring Database integration
- Using Spring with JPA or Hibernate
- Spring REST services
- Spring security
- Spring JMS

Outline of Spring Boot Training

Chapter 1. Spring Framework Configuration
- Java @Configuration Classes
- Defining @Configuration Classes
- Loading @Configuration Classes
- Modularizing @Configuration Classes
- Qualifying @Bean Methods
- Trouble with Prototype Scope
- Configuration with Spring Expression Language
- Resolving Text Messages
- Spring Property Conversion
- Spring Converter Interface
- Using Custom Converters
- Spring PropertyEditors
- Registering Custom PropertyEditors

Chapter 2. Introduction to Spring Boot

- What is Spring Boot?
- Spring Boot Main Features
- Spring Boot on the PaaS
- Understanding Java Annotations
- Spring MVC Annotations
- Example of Spring MVC-based RESTful Web Service
- Spring Booting Your RESTful Web Service
- Spring Boot Skeletal Application Example
- Converting a Spring Boot Application to a WAR File
- Externalized Configuration
- Starters
- The 'pom.xml' File
- Spring Boot Maven Plugin
- HOWTO: Create a Spring Boot Application

Chapter 3. Spring MVC

- Spring MVC
- Spring Web Modules
- Spring MVC Components
- DispatcherServlet
- Template Engines
- Spring Boot MVC Example
- Spring MVC Mapping of Requests
- Advanced @RequestMapping

- Composed Request Mappings
- Spring MVC Annotation Controllers
- Controller Handler Method Parameters
- Controller Handler Method Return Types
- View Resolution
- Spring Boot Considerations

Chapter 4. Overview of Spring Boot Database Integration
- DAO Support in Spring
- Spring Data Access Modules
- Spring JDBC and ORM Module
- DataAccessException
- @Repository Annotation
- Using DataSources
- DAO Templates
- DAO Templates and Callbacks
- ORM Tool Support in Spring

Chapter 5. Using Spring with JPA or Hibernate

- Spring JPA
- Benefits of Using Spring with ORM
- Spring @Repository
- Using JPA with Spring
- Configure Spring Boot JPA EntityManagerFactory
- Application JPA Code
- "Classic" Spring ORM Usage
- Spring JpaTemplate
- Spring JpaCallback
- JpaTemplate Convenience Features
- Spring Boot Considerations
- Spring Data JPA Repositories

Chapter 6. Spring REST Services

- Many Flavors of Services
- Understanding REST
- RESTful Services
- REST Resource Examples
- REST vs SOAP
- REST Services With Spring MVC
- Spring MVC @RequestMapping with REST
- Working With the Request Body and Response Body
- @RestController Annotation

- Implementing JAX-RS Services and Spring
- JAX-RS Annotations
- Java Clients Using RestTemplate
- RestTemplate Methods

Chapter 7. Spring Security

- Securing Web Applications with Spring Security 3.0
- Spring Security 3.0
- Authentication and Authorization
- Programmatic v Declarative Security
- Getting Spring Security from Maven
- Spring Security Configuration
- Spring Security Configuration Example
- Authentication Manager
- Using Database User Authentication
- LDAP Authentication

Chapter 8. Spring JMS

- Spring JMS
- JmsTemplate
- Connection and Destination
- JmsTemplate Configuration
- Transaction Management
- Example Transaction Configuration
- Producer Example
- Consumer Example
- Converting Messages
- Message Listener Containers
- Message-Driven POJO's Async Receiver Example
- Message-Driven POJO's Async Receiver Configuration
- Spring Boot Considerations

Lab Exercises

Lab 1. A Simple RESTful API in Spring Boot
Lab 2. Use the Spring Web MVC Web Framework under Spring Boot
Lab 3. Use the Spring JDBCTemplate under Spring Boot
Lab 4. Use the Spring Data JPA under Spring Boot
Lab 5. Create a RESTful API with Spring Boot
Lab 6. Create a RESTful Client with Spring Boot
Lab 7. Enable Basic Security
Lab 8. Use AMQP Messaging with Spring Boot