Spring Boot Fundamentals

The Spring Boot Fundamentals course provides a comprehensive, developer's eye understanding of the Spring and Spring Boot ecosystem. It covers everything from basic Spring concepts, to advanced Spring Boot configuration, to creating and consuming REST applications connected to databases. In addition, this course provides an introduction to cloud computing concepts and explores several useful Design Patterns and techniques along the way.

Productivity Objectives:

This Class Does Include:

- Spring
- Spring Boot
- REST services
- Database Access
- Spring Security
- Spring Boot Monitoring
- Introduction to Cloud concepts

This Class Does Not Include:

- Java, including Java 8 concepts like Lambdas and Streams

Course Duration: This course will be delivered in 3 Days

Course Outline:

Introduction to Spring
- Factory Pattern
- Dependency Injection and Inversion of Control
- The Application Context and Spring Beans
- Xml and Java Configuration
- Dependency Injection Techniques
- Profiles

Spring Boot
- What does Spring Boot give you?
- start.spring.io
- application.properties and application.yaml
- Logging - Logback/Log4j
- Externalize Configuration - @ConfigurationProperties

REST Services
- What is REST?
- Controllers and RestControllers
- Configuration
- Content Negotiation
- Controller Mappings
- Customizing Controller Responses
- Testing Rest Services

Consuming REST Services
- RestTemplate
- HttpClient (Java 11+)

Spring Data
- Overview of JDBC and JPA/Hibernate
- Spring Boot and databases
- DataSource configuration
- Initializing Databases
- Spring Data Repositories
- Spring Data REST

Spring Security

- Security Overview
    - Authentication
    - Authorization
- Spring Security Architecture
    - Filters
    - AOP
- Security Configuration
- Authentication Providers and UserDetailsService

Spring Boot Actuators

- Exploring available Endpoints
- Configuring Endpoint availability
- Securing Endpoints
- Creating custom Endpoints

Overview of Cloud Design Patterns with Spring Cloud Netflix

- Service Discovery (Eureka)
- Circuit Breaker (Hystrix)
- Intelligent Routing (Zuul)
- Client Side Load Balancing (Ribbon)