Lesson 0

Basic Spring 5.0

Capgemini

Document History

Date	Course Version No.	Software Version No.	Developer / SME	Change Record Remarks
21-Jul-2006	Ver1.0	1.2.6	Shrilata Tavargeri	NA
Jan-2009	Ver2.0	2.5	Shrilata Tavargeri	Changed material with new changes introduced in ver 2.5 and inputs from BU
Aug-2011	Ver 3.0	3.0	Shrilata Tavargeri	Changed material with new changes introduced in ver 3.0 and inputs from BU
June 2013	Ver 4.0	3.0	Mohan Chinnaiah	Revamped materials according to new requirements
May 2015	Ver 5.0	4.0	Rathnajothi Perumalsamy	Changed material with new changes introduced in ver 4.0
June-2016	Ver 6.0	4.0	Vinod Satpute Yukti Valecha Tanmaya Acharya	Modified as per Toc for ELTP
Feb-2018	Ver 7.0	5.0	Bharati Thorat	Modified as per TOC of ELTP

Course Goals and Non Goals

- Course Goals
  - Understand the benefits of using Spring
  - Understand the principles of IoC
  - Understand the Java Based Configuration
  - Connect business objects to persistent stores using Spring's DAO modules
  - Use the Spring MVC web framework to develop flexible web applications
  - Use the Spring MVC Java Based Configuration to develop flexible web application
- Course Non Goals
  - Design patterns, Spring Integration with different technologies

Pre-requisites

- Core Java , Java 8 features and JDBC
- XML, DBMS/SQL
- Servlets, JSP
- Concepts of MVC, Design patterns

Intended Audience

- All Java application developers especially Enterprise Java Programmers
- Software designers

Day Wise Schedule

Day 1

- Lesson 1: Introduction to Spring Platform
- Lesson 2: Basics

Day 2

- Lesson 2: Basics
- Lesson 3: Spring MVC Framework

Day 3

- Lesson 3: Spring MVC Framework
- Lesson 4 : Spring JPA

Day 4 :

Lesson : Spring JPA continues.

Day 5

- Lesson 5 : Spring Boot
- Lesson 6 : Spring RESTful

Day 6

- Lesson 7 : Exception Handling in Spring RESTful
- Lesson 8 : Spring Micro Services Overview

Day 7

- Lesson 9:Environment Management with Centralized Configuration
- Lesson 10: Performance Issues Using Distributed Tracing

Day 8

- Lesson 11 : Locating Services at Runtime Using Service Discovery
- Lesson 12 : Protecting Systems with Circuit Breakers

Day 9 (half Day)

- Lesson 13 :Routing Your Micro services Traffic

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Lesson 1: Introduction to Spring Platform and Environment

1.1 Introduction to Spring Platform and environment
1.2 Spring 5 features

1.3 Spring Projects At a Glance

1.4 Spring IO Platform

1.4.1 Spring Framework
1.4.2 Spring Boot

Lesson 2: Basics

2.1 What is Spring Framework, Benefits of Spring

2.2 The Spring architecture

2.3 Dependency Injection

2.4 IOC – Inversion of control, wiring beans

2.5 Bean containers, lifecycle of beans in containers, Bean Scopes

2.6 Customizing beans with PostProcessors

2.7 Annotation-based configuration

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Lesson 3: Spring MVC framework

3.1 Introduction: DispatcherServlet, Handler mappings, Resolving views

3.2 Annotation-based controller configuration

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Lesson 4: Spring JPA

- 4.1 Spring support for JPA
- 4.2 Implementing Spring JPA integration
- 4.3 Spring Data JPA

Lesson 5: Spring Boot

Lesson 6: Spring RESTful

Lesson 7: Exception Handling in Spring RESTful

Lesson 8: Microservices Overview

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Lesson 9: Environment Management with Centralized Configuration

Lesson 10: Performance Issues Using Distributed Tracing

Lesson 11:Locating Services at Runtime Using Service Discovery

Lesson 12:Protecting Systems with Circuit Breakers

Lesson 13:Routing Your Microservices Traffic

References

- Spring in Action, Fourth Edition, Manning publications by Craig Walls
- Spring-framework-reference.pdf from SpringSource (this is available in the downloaded Spring software)

Software required

- JDK version 1.8 + with help, Netscape or IE
- MS-Access/Connectivity to Oracle database
- WildFly
- Eclipse Luna with Spring Tool Suite
- Spring 4.0 API with docs

Other Parallel Technology Areas

- EJB 3.0
- PicoContainer
- NanoContainer
- Keel Framework
- Google Guice