

# Lesson 0

## Basic Spring 4.0

# 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	4.0	Vaishali Srivastava	Modified as per TOC of ELTP



# Course Goals and Non Goals

## ■ Course Goals

- Understand the benefits of using Spring
- Understand the principles of IoC and AOP
- Be able to use AOP to handle cross-cutting concerns
- Connect business objects to persistent stores using Spring's DAO modules
- Use the Spring MVC web framework to develop flexible web applications

## ■ 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 and environment
- Lesson 2: Introduction to Spring Framework, IoC

## Day 2

- Lesson 3 : Spring Java Base Configuration
- Lesson 4: Spring MVC framework

## Day 3

- Lesson 5: Spring JPA Integration

## Day 4

- Lesson 6: AOP (Aspect Oriented Programming)



## Lesson 1: Introduction to Spring Platform and Environment

- 1.1 Introduction to Spring Platform and environment
- 1.2 Spring Projects At a Glance
- 1.3 Spring IO Platform
  - 1.3.1 Spring Framework
  - 1.3.2 Spring Boot

## Lesson 2: Introduction to Spring Framework, IoC

- 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
- 2.6 Customizing beans with PostProcessors
- 2.7 Annotation-based configuration



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## Lesson 3 : Spring Java Base Configuration

3.1 Spring Application Using Java Base Configuration

3.2 Java Configuration Class

@Configuration

@Bean

3.3 Implementing Bean Lifecycle Callbacks and Bean Scope

3.4 Registering Configuration Using AnnotationConfigApplicationContext

## Lesson 4: Spring MVC framework

4.1 Introduction: DispatcherServlet, Handler mappings, Resolving views

4.2 Annotation-based controller configuration





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## Lesson 5: Spring JPA Integration

- 5.1 Spring support for JPA
- 5.2 Implementing Spring JPA integration
- 5.3 Spring Data JPA

## Lesson 6: AOP (Aspect Oriented Programming)

- 6.1 AOP concepts
- 6.2 AOP support in Spring using @AspectJ support
- 6.3 AOP support in Spring using Schema-based AOP support



# 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