

Course Code	
Course Name	Building REST services with Spring

Duration (in days)	07	Proficiency Level	Fundamentals
Pre-requisites	None	Target Audience	Interns

Learning Outcome

At the end of the program, participants will be able to learn:

- Hibernate Framework
- Spring Introduction
- Container Extensions Points
- DAO Introduction
- Spring Transaction Management
- Spring Web Integration
- Spring Boot Introduction
- Spring Boot Database Support"
- Spring Boot Web/REST

Day-wise Session Plan

Day	Unit	Objective(s)	Hours
1	Hibernate Framework	<ul style="list-style-type: none"> • Advantages of Hibernate compared to JDBC • ORM (Object Relational Mapping) • Hibernate Architecture • Hibernate Resources • Object Life Cycle in Hibernate • CRUD operations using Session methods • Problem of Granularity, Inheritance and Relationship 	8
2	Spring Introduction	<ul style="list-style-type: none"> • Spring Architecture • Spring Framework • Declaring and Managing Beans • Inversion of Control Pattern • BeanFactory vs ApplicationContext • Dependencies and Dependency Injection (DI) • XML Configuration of DI • Spring Bean Autowiring • Injection with @Autowire • Java Based Configuration 	8
3	Container Extensions Points	<ul style="list-style-type: none"> • Bean Scope and Lifecycle • Singleton, Prototype, and Other Scopes • Configuring Scope • Bean Lifecycle / Callbacks 	8
4	DAO Introduction	<ul style="list-style-type: none"> • JDBC limitations • Spring JDBC/DAO Advantages • Working with different Data Sources • JdbcTemplate • Spring JDBC/DAO with Annotations 	4

4	Spring Transaction Management	<ul style="list-style-type: none"> Transaction Management Local Transaction Vs Distributed Transaction Need of Spring Transaction Management Spring ORM with HibernateTemplate Spring Transaction management 	4
5	Spring Web Integration	<ul style="list-style-type: none"> MVC MVC1, MVC2 Architectures Front Controller Design Pattern Spring MVC Basics Configuration and the DispatcherServlet @Controller, @RequestMapping @RequestParam and Parameter Binding View Resolvers @RequestParam, @PathVariable Model Data and @ModelAttribute 	8
6	Spring Boot Introduction	<ul style="list-style-type: none"> Introduction to Spring Boot Spring Boot Hello World SpringBootApplication 	2
6	Spring Boot Database Support"	<ul style="list-style-type: none"> Basic Auto-configuration - DataSource and Pooling Configuring Spring Data Repositories and JPA Repositories Using CrudRepository Spring Data Querying 	6
7	Spring Boot Web/REST	<ul style="list-style-type: none"> RESTful Services with Spring REST Overview, URI Templates REST and Spring MVC Spring support for REST @RequestMapping/@PathVariable, @RequestBody, @ResponseBody URI Templates and @PathVariable Controllers with @RestController Functional Testing with Postman 	8
		Total	56