

# **Spring**

## **Lesson 1: Introduction to Spring Platform and environment**

- 1) Discuss Spring Boot usage.
- 2) Which spring module is helpful to develop the application to be connected with third party applications
- 3) Discuss spring boot features.

## **Lesson 2: Introduction to Spring Framework, IoC**

- 1) Discuss the Life cycle of Beans in Spring factory container
- 2) Discuss all the ways of bean initialization and destruction(through xml,implementing interface & using annotations @PostConstruct, @PreDestroy)
- 3) Discuss all the features of Application context(eg internalization,ect) and BeanFactory(responsibilities)
- 4) Discuss the bean scopes and prototyping and singleton behavior
- 5) Discuss PropertyPlaceholderConfigurer
- 6) Discuss all the annotations @ComponentScan, @EnableAutoConfiguration, @Configuration, @Component, @Controller, @Repository,@service,@AutoWired
- 7) Discuss <context:component-scan> and <context:annotation-config>.
- 8) Discuss dependency injection.i.e Constructor injection(by index and by type)and Setter injection
- 9) Discuss using collections for injection
- 10) Discuss getBean()
- 11) Discuss all the three spring layers
- 12) Discuss on spring architecture.
- 13) Dependency injection/ IoC pg 2-12,2-13
- 14) How many ways a spring bean can be configured?
- 15) Responsibilities of IoC container
- 16) Go thru the Demo codes of day 1 for xmls configuration and autowiring thru xml
- 17) Different types of injection
- 18) Inner beans and Outer beans - Can i use inner beans also ?
- 19) Drawback of inner bean
- 20) Autowiring types
- 21) Difference between application context and Bean factory(I18N,etc)
- 22) Go through the life cycle of bean factory and Applicaiton context
- 23) Bean scopes, What is the default bean scope
- 24) Bean factory PostProcessor- discuss
- 25) Dispatcher Servlet is the front
- 26) controller.
- 27) 2Go through the complete syntax of viewResolver tag
- 28) discuss on multiple spring config files using listener class in web.xml

### Lesson 3 : SpEL (Spring Expression Language)

- 1) Discuss on how to read properties file data using SpEL
- 2) Discuss on SpEL Selection and projection
- 3) Discussion on SpEL syntax.
- 4) Discuss about SpEL Operator.
- 5) How to write SpEL Expression
- 6) Discuss about functionalities supported by SpEL
- 7) SpEL functionalities supports arithmetic, regular expression, literals, method invocation etc
- 8) - projection, selection, (!,?) #, T -
- 9) discuss
- 10) T() operator

### Lesson 4: Spring MVC framework

- 1) Discuss Spring MVC Lifecycle
- 2) Discuss ViewResolver
- 3) **handleRequest**(or userdefined method) that returns ModelAndView  
("index", "msg", values).....Discuss each parameter
  - a. ( msg is the model name, index is the jsp view name and values is the model data)
- 4) Discuss InternalResourceView
- 5) Discuss Configuring the ContextLoaderListener in web.xml
- 6) Discuss the below annotations @RequestMapping(discuss both at class level and method level with code), @Controller, @RequestParam, @ModelAttribute
- 7) Discuss @Valid, @Size, @NotNull, @Pattern, @Email annotations
- 8) Discuss `bindingResult.hasErrors()`
- 9) Discuss @PathVariable
- 10) Discuss view resolver with suffix and prefix properties
- 11) `<property name="prefix" value="/jsp/" />`
- 12) `<property name="suffix" value=".jsp" />`
- 13) `</bean>`
- 14) View Resolver maps logical view names into view objects
- 15) Discuss `<context:property-placeholder location="classpath:jdbc.properties" />`
- 16) Discuss `<mvc:annotation-driven />`
- 17) . Importance of @Valid
- 18) RESTful RESTless
- 19) discuss on return new ModelAndView(...) parameters
- 20) discuss on @RequestParam

Sample code

@RequestMapping

```
Public class LoginController{
```

```
@RequestMapping("loadForm")
```

```
public String loadData(){ } }
```

<http://localhost:8080/projectname/loadForm.obj>

ii) @RequestParam

@Controller

```
Public class LoginController{
```

```
@RequestMapping("checkLogin")
```

```
public String isValidUser(@RequestParam("username" String uname){ } }
```

URL need to be used for making the request for the above mentioned controller is

<http://localhost:8080/projectname/checkLogin.obj?username=capgemin>

### **Lesson-5-Spring with JPA**

- 1) Which tag definition is used in the xml file to configure the entity Manager Factory Bean?List down the nested tag definition for that bean definition.
- 2) List down the annotation require to inject the entity manager bean in DAO
- 3) Which tag is used in the xml to handle the transactions via annotations?
- 4) Which annotation is used in spring to inject the EntityManagerFactory?
- 5) Which tag is require in xml to configure Spring Data ?
- 6) List the names of interfaces used to interact JPA at Runtime.

### **Lesson-6 AOP**

- 1.) What Is Asect Oriented Programming.
- 2.) What Is aspect?
- 3.) What is JoinPoint?
- 4.) What is PointCut?
- 5.) What is advice? And What are the different advices which can be applied at several points during the execution of a method?

- 6.) Explain about **Before, After, After-returning, After-throwing, and Around** advice.
- 7.) Explain the different point cut expression syntax using example.
- 8.) What is Proxy object in AOP?
- 9.) List down the different annotation used for tagging aspects and advices.
- 10.) List down the xml tag with attributes used to configure the different advices.
- 11.) Features of AOP
- 12.) 27. AOP and Spring True/False
- 13.) 28. AOP Terminologies Aspect advice ,proxy target etc
- 14.) 29. Different types of advice
- 15.) 30. Discuss the Difference between After advice and After-returning advice
- 16.) what is proceeding join point

## **JPA With Hibernate**

### **Lesson-3-**

- 1) Explain the significance of EntityManagerFactory and EntityManager and explain about the functions available in JPA2.0 EntityManager?
- 2) Explain the life cycle of entity in JPA ORM?
- 3) Explain the Significance of @Entity, @Table, @ID, @Column, @Transient annotation?
- 4) Explain about the important 9 functions of EntityManager.
- 5) Which xml file we require for JPA persistence configuration for specifying the database information?
- 6) Which 3 mapping strategies are used in JPA for mapping the inherited classes? List all the annotation and their parameter for mapping all type of strategies.

## **Web Services**

- 1) What is WSDL
- 2) Discuss about the structure of WSDL
- 3) Discuss REST annotation

## **jQuery**

- 1) Discuss class methods in jQuery.
- 2) Syntax of trigger method
- 3) Discuss jQuery selectors.
- 4) Discuss how to parse the JSON string

## **Angular JS**

### **Lesson-1-Introduction To Angular**

- 1) What is the significance of config() and run() function angular?
- 2) What is controller? Which directive is used in the angular create the controller?
- 3) What are the different ways of creating the custom directives? Which specifies the custom functionality of page in Angular?

#### **Lesson-2-Angular Directives**

- 1) What is significance of ng-model directive?

#### **Lesson-3-Angular JS Filter**

- 1) What is filter? What is the different correct syntax of applying the filters on the expression?

#### **Lesson-4-Angular JS Services**

- 1) What are the services? What are the advantages of Angular predefined and user defined services?

#### **Lesson-5-Angular JS Routing**

- 1) What is Routing in Angular? What is the significance \$routeparam in Angular JS routing app?