Phase 3 : total 8 days

Implements framework the devops way

Day 1 : 25-07-2022

Spring Framework, Spring boot, Web Service and testing (junit)

Spring framework

According to phase 2

View -🡪 JSP or HTML

Controller 🡪 Servlet

Model -🡪 JavaBean / Entity, Service class, Dao class and resource class. Or EJB.

Container is a part of server responsible to create and maintain the life of object of servlet and jsp but not Model layer.

To improve the model layer we use EJB. Enterprise Java Bean.

To run the ejb program we require EJB container. EJB container is a part of application server.

EJB is very complex. Developing application using EJB is / was very complex.

Spring Framework came in picture.

Using spring framework we can improve model layer.

Difference Spring framework and EJB.

Framework : framework provide set of API which help to develop application very easily. Framework follow standard. The implementation of all design pattern is taken care by framework. If we develop any application using framework 70 to 80 percentage task is taken care by framework. Framework is just like a template or protocol but not a final product.

Struts : Struts is a open source web framework provided by apache company. It internally follow MVC architecture. It provided of classes to improve controller and model layer. It provided lot of tags to improve view layer. It internally follow front controller design pattern.

Struts is known as controller centric framework.

JSF : Java Server Faces : It is open source web framework provided by oracle company. It internally follow MVC architecture. It provided of classes to improve controller and model layer. It provided lot of tags to improve view layer. It internally follow front controller design pattern.

JSF is known as view centric framework.

Hibernate : Hibernate is ORM framework. It is replacement of JDBC. JDBC is use to improve view layer.

Spring framework : spring open source light weighted layer or onion architecture framework. Spring framework is replacement of EJB.

Spring framework provided lot of pre-defined modules

Like

1. Core module
2. Context module
3. Spring web
4. Spring MVC
5. Spring DAO
6. Spring MVC : Spring mvc internally follow MVC design pattern. And it provided lot of pre-defined classes and interfaces to improve all layer. Spring MVC is known as model centric framework.
7. Spring ORM
8. Spring AOP
9. Spring security
10. Spring cloud
11. Spring web service
12. Spring micro service
13. Spring data
14. Spring boot
15. Spring security
16. Spring WebFlux which allow use to use RxJS features

Etc

Spring core and context

Spring IOC : Inversion of control

Spring DI : Dependency Injection

IOC : Inversion of control : IOC is a concept. It is a design pattern or programming pattern. In place of creating or maintaining any resource or object explicitly. Allow to create and maintain by container. You have to pull it from a container whenever it required, use it and leave it. The life of resource maintain by container.

DI : DI is a implementation of IOC. Using DI container is push the dependencies for us base upon our requirement. As a developer we have to pull the any dependencies (resource or object) from a container whenever it required.

We can achieve DI lot of ways

1. Constructor base DI
2. Setter base DI

We can achieve using constructor base or setter base with

1. XML file configuration
2. Annotation base

Spring constructor and Setter base DI with XML configuration

Spring framework help us to create the object of POJO class (Plain Old Java Object). Spring container is a light weighted container part of jar file.

Web container or EJB container are heavy weighted container part of server. Those container will create the object of only those classes if class is type of servlet, or ejb or jsp file. For normal class those container doesn’t create the object.

To run the EJB Program we require application server like WebLogic or Jboss or WAS. Which contains EJB container .

By default spring container will create singleton object for every POJO class.

Singleton means only one memory created.