**API End Points and Communication**

**Day 1: 21 Feb. 25**

Application programming interface

Spring framework, Spring boot, Spring rest full web service, Testing in Java using Junit etc.

JEE: Java Enterprise Edition

Servlet / JSP (Java Server Pages) and EJB (Enterprise Java Bean)

Servlet -🡪Controller

Html/JSP 🡪View

EJB -🡪 Model layer (java bean class, service class, dao class and resource class). To run the EJB application we need application server ie web logic, jboss, web sphere etc Application server are heavy weighted server. EJB is known as heavy weighted components.

Framework : Framework provide set of classes and interfaces which internally connected with each other to perform a specific task. Framework internally follows standard using design pattern. Design pattern is best practise or solution of repeating problem. If we develop any application using any language, we need to follow standard. But if we develop any application using any framework the framework internally follows design pattern. Framework provided the implementation of design pattern.

List of framework

Angular framework

Python with Django

.net framework

Express Node JS framework

Struts Framework

JSF (Java Server Faces) Framework

Spring framework

Spring boot

Struts framework: Struts is an open source web framework provided by Apache. Struts internally follows standard. Struts internally use MVC design pattern. It provide lot classes/interfaces which help to improve view layer, controller layer as well as model layer. Among all those layer struts is known as controller centric framework.

JSF (Java Servers Faces): JSF is an open source web framework provided by oracle. JSF internally follows MVC architecture. It provided lot of classes and interfaces which help to improve all layer. But among all those layer JSF is known as view centric framework.

JSP ---🡪 JSF Vs Angular Framework / React JS

Spring framework : Spring framework is an open source as well as light weighted layer architecture or onion architecture framework.

Spring framework provided lot of modules and each module help to improve different layer of our application.

Spring modules

1. Spring core
2. Spring context
3. Spring web or Spring MVC : it is one of module of spring framework. Which internally follow MVC. It provided lot of classes and interfaces to improve all layer. Spring MVC is known as model centric framework.
4. Spring rest
5. Spring security
6. Spring dao Data access object
7. Spring orm object relation mapping
8. Spring boot
9. Spring aop aspect oriented programming
10. Spring cloud
11. Spring micro service

Etc

IOC: Inversion of control

IOC is a design pattern. According to IOC, in place of creating or maintaining any resource like object creation, database connection, security, connection pooling, thread management etc explicitly allow to create by container. If container create it maintain properly. Base upon our requirement you need to pull it from container user it and leave it. The life of the resources taken care by container. Spring framework container is a part of light weighted jar file which is responsible to create the object of normal java bean class.

IOC is a concept like object.

Web container: part of tomcat server : web container take care the life of servlet and jsp not normal classes.

EJB container: part of application server : EJB container create the object of those classes if the class is type of EJB.

Docker container: it maintains docker images.

DI: Dependency injection: DI is an implementation of IOC. DI only help us to pull the resource from container.

Types of DI.

1. Constructor base DI
2. Setter base DI

To achieve both the type of DI we need to do configuration

1. Using XML file
2. Using annotation

**IOC and DI using XML Configuration**