Day 3 – 20 Mar 2024

Spring Framework or Adv Spring Framework

40 hours training

Spring boot, Spring reactive modules, spring web client, spring with hibernate.

Spring transaction management, spring security etc.

Spring micro service

Spring MVC with ORM tool like Hibernate or JPA.

Before spring boot if we want to use any spring modules like spring core, context, orm, dao, aop, rest, security , testing etc.

We need to do lot of configuration using xml file and maintain dependencies.

But after spring boot we can do less configuration

Spring Boot

ORM

MVC

Spring MVC : Spring MVC is a module provided by spring framework which help to develop web application.

Model layer : java Bean , service class, dao class using jdbc or jdbctempalte, resource using xml file.

In DAO layer we can use ORM tools like hibernate or jpa etc.

Spring ORM doesn’t provide any orm tools. They allow us to integrate to existing orm tools like JPA or Hibernate.

Spring Data or Spring JPA Data (JPA data is base upon JPA).

1. Core JDBC
2. JdbcTemplate
3. JPA
4. Hibernate
5. Spring JPA Data

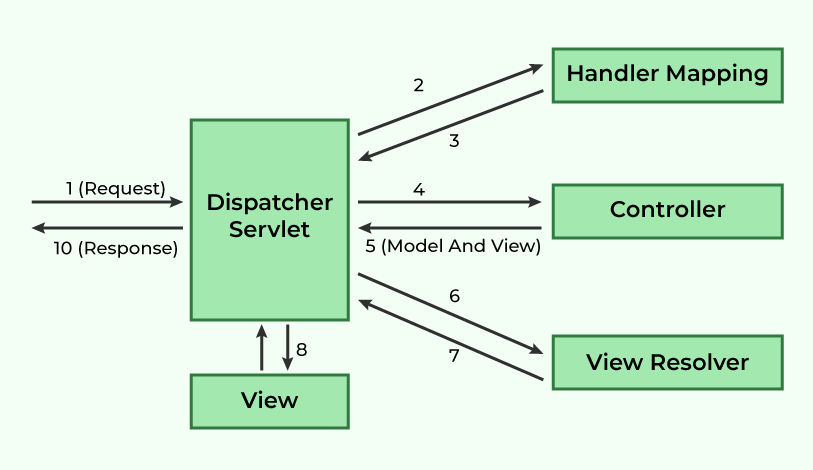
Spring MVC alone :

Servlet or JSP.

Tomcat 9.x or 10.x

In Spring MVC we can’t call any controller directly. According to Spring MVC we need to configure front controller in web.xml file or in java classes.

Front controller is a type of design pattern which control the flow of the application. Spring MVC internally provided pre defined class ie DispatcherServlet.



In spring MVC without spring boot we need to configure dispatcher servlet pre defined class in web.xml file or any configuration class.

DispatcherServlet is a type of servlet class provided by spring framework which behave like a front controller.

JDBC Limitation or JdbcTemplate limitation

1. Using JDBC in DAO layer we can’t store object we call as we can’t retrieve object from database. We need convert.
2. JDBC use SQL language. SQL is database dependent.
3. JDBC doesn’t support relationship not is a as well as has a.
4. JDBC throw checked exception and all exceptions are database dependent.

ORM : Object relation mapping

Object

@Entity Relation

class Employee { Employee

@Id

id,name,salary Id,Name,Salary

}

Mapping

Employee = Employee table

Id = ID PK

Name = Name

Salary = Salary

Mapping we can do using XML or annotation

ORM is a concept.

JPA, iBaties, Hibernate etc are provide the implementation of ORM tool

JPA or Hibernate

JPA : Java Persistence API, JPA is technology part of JEE. It is a type of EJB. JPA is a type of EJB. It is a part of java.

Hibernate : Hibernate is a framework, part of Jboss.

JPA is a specification and Hibernate is a one of the implementation of JPA.

Spring MVC with Hibernate or JPA

Spring Boot with JPA starter Because spring boot doesn’t hibernate from spring boot 1.56 version.

Hibernate alone core java projects

JPA alone core java projects.

Spring MVC with JPA web project

Spring MVC with Hibernate web project

If we do hibernate alone with help of core java project we need to create hibernate.cfg.xml file. Which contains all database details.

url,username,password, drivername etc

If we do jpa alone with help of core java projects we need to create persistence.xml file. Which contains all database details.

url,username,password, drivername etc

Both doesn’t provide IOC and DI.

Spring framework doesn’t provide its own ORM tools.

But spring framework provide orm module which help to integrate with existing orm tools.

LocalSessionFactoryBean: this class help us to do DI for SessionFactory. SessionFactory is a type of interface. Which provide session object which contains lot of pre defined method to do operation on entity class.

LocalContainerEntityManagerFactoryBean: this class help us to do DI for Entity ManagerFactory

Hibernate JPA

SessionFactory EntityManagerFactory

Both are like a connection

Session EntityManagger

Both are like statement or preparedstatement

Transaction EntityTransaction

Save persist

Delete remove

Get find

Update merge

By default JDBC is auto commit.

By default ORM like hibernate or jpa is not auto commit.

create table product(pid int primary key auto\_increment, pname varchar(50), price float);