Backend and Database Development

13 classes

Day 10 : May 15 2024

Java Technologies

JSP : Java Server Pages. JSP is tag base interpreter object oriented server side scripting language.

JSP provide lot of pre defined tags which help to create dynamic web page on server side.

JSP tags

1. Scripting tag
   1. Scriptlet tag

<% opening tag

Java coding or the code which we write inside a method ie doGet or doPost

%> closing tag

* 1. Declarative tag :

<%! Opening tag

Variable declaration or object creation or the code which we write outside a method but inside a class.

%>

* 1. Expression tag :

<%= expression %>

<%=10+20 %>

<%=sum %>

1. Implicit object
   1. out : out is like PrintWriter class object. In Servlet we need to create the object using respose.getWriter() and we can write any name for that object as pw or obj etc. But in JSP the object name must out. This out is not equal to System.out.prinlnt();
   2. request : request is an implicit object of type HttpServletRequest interface. In doGet or doPost we can change the reference from request to req or obj1. But in JSP the object name must be request we can’t change.
   3. response : response is an implicit object of type HttpServletResponse interface. In doGet or doPost we can change the reference from response to res or obj2. But in jsp the object name must be response we can’t change.
2. Action tags
   1. jsp:include
   2. jsp:forward
3. Directive tags

There are 3 types of directive tags

All directive tags start with pre-fix <% @ page/taglib/include %>

* 1. page directive tags
     1. language = “java” inside scriplet tag <% %> which language it support ie java.
     2. contentType=”text/html” it is equal to response.setContentType(“text/html”);
     3. import=”java.sql.\*” or import=”java.util.\*” if we want to create any pre defined class object inside scriptlet then we need to import the package.
  2. include directive tags

this include is use to include static page.

Jsp action include is use to include dynamic page.

* 1. taglib directive tags : this tag is use to link to custom or jstl tag library

syntax

tab library

<%@ taglib uri=”path or fileurl” prefix=”anyname”%>

1. JSTL tags

JSP Life cycle : whenever we run the jsp page on browser internally it convert to servlet. And then it start servlet life cycle like init, service and destroy methods.

So In action jsp include both page executed separately and result get include. It included at dynamic time.

But in directive include first both the page included and then it convet to servlet and execute. It included at static time

JSP doesn’t provide nested tags concept.

Login example using jsp pages.

JSTL : Java /JSP Standard Tag Library

JSTL provided lot of pre defined tags which help to do core functionality, sql functionality, number format functionality as well as xml functionality using tag base.

If we want to use jstl features in our application then we need to add external jar file.

If we want to learn JSTL first we need to understand EL (Expression Language). Because JSTL use EL to do core as well as sql functionality.

EL syntax

$ { code }

MVC : Model View Controller

In Course 2 : After Servlet and JSP you need to develop course 2 end project with MVC style.

In Course 3 : Spring Framework and Spring boot

Using spring boot we learn how to create rest api those rest api connected database using jdbc or orm or spring data etc.

Using fetch function or axios module you called some rest api.

After course3 using spring boot we will learn how to create backend technologies with database mysql

Course 1 : react with redux with axios

React js using axios they can communicate with spring rest api with database mysql

Course 4 you will learn how to deploy this application using docker with ci and cd tool ie Jenkins on AWS ec2 instance.

Limitation of JSP

1. When we run jsp program internally it convert to servlet. So performance wise JSP is slower than servlet. Converting jsp to servlet is known as page translation.
2. If we write any business logic or database in jsp. It not secure.
3. We can’t do re-usability of jsp code. We can include or forward whole jsp page. But we can use part of the code from the jsp page.

While developing any web application using java (jee) technologies we use servlet and jsp both together.

MVC : Model View Controller : MVC is type of architecture. According to architecture we need to divide our code base upon functionality which help to achieve loosely couple.

View ----🡪 HTML(static contents) / JSP (dynamic contents)

Controller -🡪 Servlet is controller

Model -🡪 JavaBean, Service class , Dao class and resource class etc.

CSS or bootstrap for validation we can use html5 or javascript

Login.jsp --🡪(View)-----🡪LoginController (doPost methods) --🡪

doPost method

receive value from form

set those values to java bean class

create the service class object and pass the value to service method

LoginBean class

Which contains

Variable and setter and getter method

This class object is use to pass from one class to another class as well as this class map to table.

LoginService --🡪 LoginDao resource class

Inside this class providing

We do business logic using jdbc we database connection

If condition true then check username taken care by resource

We can call dao method and password from database