Phase 2

Day 1

14-05-2022

9 Days

JavaEE (JEE ) : Java Enterprise Edition

Servlet

JSP

JDBC

Hibernate

My SQL Database (self-learning).

Self learning (spring framework)

Phase 3 :

Spring framework and Spring boot

Phase 4 :

UI : HTML,CSS,JS (Self learning) Typescript and Angular framework

Phase 5 :

Testing

Docker

Jenkin

Kubernetes overview

AWS Overview

Java

J2SE J2EE J2ME

JavaSE JavaEE JavaME

JSE JEE JME

Java Standard edition Java Enterprise Edition Java Micro edition

Core Java It is use to create the

Standalone application web application.

Or

Desktop application

https://[www.google.com](http://www.google.com) --🡪 URL (Uniform resource locator)

http : hyper text transfer protocol secure (protocol)

www : world wide web

google 🡪 domain

com 🡪 commercial

http/https (req)-----🡪 server

Client Server

🡨----------http/https(res)

HTML/HTML5

CSS/CSS3

JS (JavaScript)

JEE

Spring and spring boot

Asp.net

Php

Python

Node JS

HTML 🡪 it is use to display the content on browser.

CSS 🡪 it is use to apply good look and feel of the contents.

JS🡪 Programming on web page or action on web page.

JEE : Java Enterprise Edition

JEE contains three modules ie Servlet, JSP (Java Server Pages ) and EJB (Enterprise Java Bean).

To run and deploy the server side technologies we required server.

Application point of view the server are divided into 2 types.

1. Web Server : Tomcat (Apache company), JEE Server
2. Application server or app server : Glashfish, web logic, jboss etc.

In Servlet, JSP and EJB no main method.

In server side technologies we compile the program and deploy this application on server.

Server contain container. Container is a part of server which is also known as engine or run time environment. Container is responsible to execute servlet, jsp and EJB program means load the class, create the object of that class, call the life cycle method and destroy the object.

If Server is type of web server which contains only one type of container ie web container. Web container is responsible to execute servlet and jsp program.

If server is type of application server which container different type of container like web container, ejb container, jms container etc. web container is responsible to execute servlet and jsp program and ejb container is responsible to execute ejb programs.

Application server provide extra features like connection pooling, thread management, resource management, security etc.

Development mode we use web server

Production mode we use application server.

Core java (AWT and swing).

Servlet : Servlet is a normal java program(but no main method) which help to create the dynamic web page on server side.

Servlet API : Application Programming interface.

import javax.servlet.\*; servlet is a package which contains set of classes and interfaces.

Import javax.servlet.Servlet; it is a interface which contains set of abstract method.

5 methods

init, service, destroy, getServletInfo, getServletConfig

among that init, service and destroy is known as life cycle method. life cycle methods means it will call automatically.

public class Demo implements Servlet {

we have to override all five methods mandatory.

}

GenericServlet : It is a type of abstract class which internally implements Servlet interface and provided the body for all method except service methods.

public class Demo extends GenericServlet {

so we have to override only one method ie service mandatory.

}

HttpServlet : it is a type of abstract class which internally extends GenericServlet. This class provided the body for service method as well as provided some extra method in the form of doXXX like doGet, doPost, doPut, doDelete etc.

doXXX is not a life cycle method. They wrap service method and provide some extra functionality.

public class Demo extends HttpServlet {

we have to override doGet, doPost, service(but not advisable). Don’t use service method use doGet or doPost.

}

GenericServlet use all type of protocol it http, ftp, smpt

HttpServlet : it is use only http protocol.

Web.xml is known as DD file (Deployment descriptor file).

Servlet and servlet-mapping tag is use to map the request.

<http://localhost:9393/SimpleServletApp/Hi>

<http://localhost:portnumber/ProjectName/UrlPattern>

through hyperlink or form (default) method consider as get. And it will call servlet doGet method.

if method is get the information send through url using url re-writing technique.

Syntax

URL?key=value&key=value&key=value

If method is post , then information send through body part. So post method is secure.

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We can call doGet method through URL, Using hyperlink as well as form with method as get (by default method consider as get).

If method is get it will send the data through URL in the form of key-value pairs like

URL?key=value&key=value&key=value

Through get method we can send maximum 255 character data.

Get method is not secure.

We can call doPost method with form method as post we can’t call doPost method through URL as well as hyperlink. If method is post it will send the data through request body part. Post method is secure. But performance wise it is slower than get method.

RequestDispatcher : It is a interface which provided set of methods which help to navigate from one page to another page base upon the conditions.

Syntax

RequestDispatcher rd1 = request.getReqeustDispatcher(“path”);

If target page is servlet page then we have to write the URL pattern as path.

If target page is html page then we have to write the pageName.html

rd1.forward(request,response); : we can get the output of only target page.

rd1.include(request,response); : we can get the output of source + target page.

Session Tracking :

Http protocol is known as state less protocol. If any client send the request to server base upon the request it will give the response back to client. Next time if client send once again same request it consider as new client

Session : it is a collection of http request and response within a particular period of a time.

To track the session is known as session tracking.

1st request -----------🡪

2nd request + cookies file (session id)-🡪

Client Server

🡨-------1st response + cookies (with session id)

Using some technique and API we can track the session.

1. Cookies : Cookies is a small text file created by server when client send first request to server. Cookies files contains lot of information with session id and this file stored in client machine.

Limitation of cookies : Client can make disable cookies option in browser.

Cookies not a secure. Any one can hack the cookies files.

1. URL re-writing technique : this is technique we were use if cookies option is disable in client machine we were adding session through URL.

?sessionId=asfsaf&AS^^ASFafsafs666as6fsaf

This technique is good if cookies is disable in client machine.

But it work only with get method not with post method.

1. HttpSession : HttpSession is a interface which provide set of method which help to track the session.
2. SSL : secure socket layer : using application server or with certification we can make https call to do secure session.

JWT (Json Web Token)

JSP (Java Server Pages)

Limitation of Servlet

1. Servlet is normal Java program if we do any changes in servlet program we have to re-compile and re-deploy the application on server once again.
2. In Servlet if we want to write any html code or (presentation logic). It must be written in pw.println(“<b>Welcome to Servlet</b>”); inside pw.prinltn everything string consider. So IDE doesn’t provide any help to write html code.
3. Servlet is complex. If we want to display any simple message through servlet we have to make normal java class that class must be extends or implements type of servlet. Then we have to override life cycle method, then we have to create the PrintWriter class object and we have to provide the servlet class details in web.xml file or using annotation.

JSP : Java Server Pages .JSP is tag based scripting language which help to create dynamic web page on server side.

JSP Tags

1. Scripting tag
   1. scriptlet

<%

Java code (The code which we write inside doGet or doPost)

%>

* 1. declarative tag

<%!

Variable declaration

%>

* 1. expression tag :

<%=

Expression or varaibleName

%>

* 1. <%-- JSP Comments -- %>

1. Implicit object
   1. out : out is equal to PrintWriter class object.
   2. request : it is equal to HttpServletRequest interface reference.
   3. response : it is equal to HttpServletResponse interface reference.
2. Action tags
   1. Jsp include
   2. Jsp forward
3. JSTL Tags

Day 3

21-05-2022

Limitation of JSP

1. JSP is not a secure. If we write business logic or database logic everyone can see the code.
2. JSP is a type of servlet. Mean when we run the jsp program internally It will convert to servlet. Ie phase is known as page translation phase. So performance wise jsp is slower than servlet.
3. In JSP we can’t use set of line code again and again like method. We can include whole jsp jsp or forward jsp page. But can’t include set of line of code.

Can we write the business logic or database logic in servlet inside doGet or doPost method?

Yes we can write, But if we write simple or complex business logic or database logic inside doGet or doPost method that logic become local to that servlet. We are not calling doGet or doPost method it will call by container. So same logic we can’t use once again.

So we have to write the business logic in separate normal java classes and those classes is known as service class. Service class which contains pure business logic. Inside doGet or doPost method we have to create the object of service class and call the business method.

According to standard if html or jsp page contains forms tag with property that form must be map to Java bean class.

JavaBean : it is a type of normal class but we have to follow some rules

1. Class must be public
2. All instance variable part of Java bean class must be private .
3. For each variable we have to write two method ie setter and getter.
4. Setter method is use to set the value and getter method is use to get the value.

Login.jsp (View )------------------🡪LoginController (Servlet )------🡪 (in controller receive the value from form, then create the JavaBean class object, set the value . Then create service class object class service method and pass the JavaBean class object --------------🡪LoginService (check the username and password) if correct it return success or failure.

In Servlet base upon the result it will re-direct to success or failure page.

Scope object :