**1 .Write a Servlet to display “Hello World” on browser.**

package edu.scet;

import java.io.IOException;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/HW")

public class HW extends HttpServlet {

private static final long serialVersionUID = 1L;

public HW() {

super();

}

protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// TODO Auto-generated method stub

response.getWriter().append("Served at:Hello world ");//.append(request.getContextPath());

}

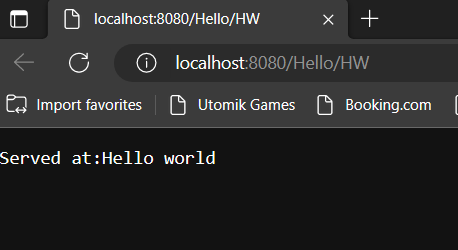
protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// TODO Auto-generated method stub

doGet(request, response);

}

}



**2 Write a Servlet to display all the headers, parameters and attributes available from request.**

package edu.scet;

import java.io.IOException;

import java.io.PrintWriter;

import java.util.Enumeration;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

/\*\*

\* Servlet implementation class HeaderList

\*/

@WebServlet("/HeaderList")

public class HeaderList extends HttpServlet {

private static final long serialVersionUID = 1L;

public HeaderList() {

super();

// TODO Auto-generated constructor stub

}

protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// TODO Auto-generated method stub

// response.getWriter().append("Served at: ").append(request.getContextPath());

PrintWriter out=response.getWriter();

response.setContentType("text/html");

Enumeration<String> headerNames=request.getHeaderNames();

out.println("<html><head><title>Headers</title></head><body><table border='1'>"+"<tr><th>Header Names </th><th>Header value</th></tr>");

while(headerNames.hasMoreElements()) {

String headerName=headerNames.nextElement();

out.println("<tr><td>"+headerName+"</td><td>"+request.getHeader(headerName)+"</td></tr>");

}

out.println("</body></table></html>");

}

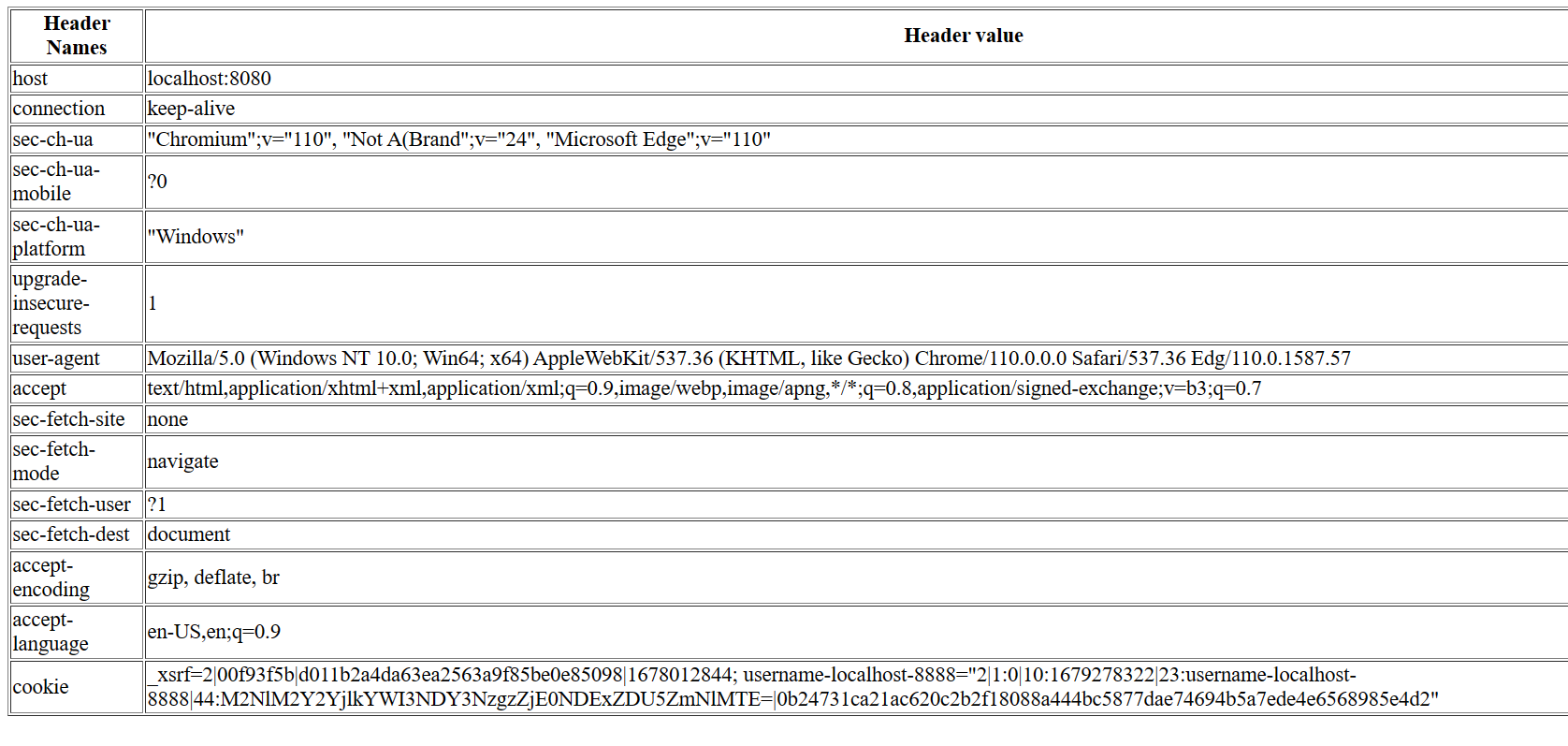
protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// TODO Auto-generated method stub

doGet(request, response);

}

}



**3. Write a Servlet, Demonstrating Session Cookies and Persistent**

**Cookies.**

package edu.scet;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.Cookie;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/Program3")

public class Program3 extends HttpServlet{

private static final long serialVersionUID = 1L;

public Program3() {

super();

}

public void doGet(HttpServletRequest request,HttpServletResponse response) throws ServletException,IOException {

response.setContentType("text/html");

for (int i=0;i<3;i++) {

Cookie cookie=new Cookie("Session\_Cookie :"+i,"Cookie\_values :"+i);

response.addCookie(cookie);

//presistent cookies

cookie = new Cookie("Presistent\_Cookie :"+i,"Cookie\_value"+i);

cookie.setMaxAge(3600);

response.addCookie(cookie);

}

Cookie[] cookies=request.getCookies();

PrintWriter out=response.getWriter();

if(cookies==null) {

out.println("<table border ='1'><tr><th colspan='2'>No cookies found.</th></tr></table>");

}

else {

out.println("<table border='1'>");

Cookie cookie;

for(int i=0;i<cookies.length;i++) {

cookie=cookies[i];

out.println("<tr>"+"<td>"+cookie.getName()+"</td>"+"<td>"+cookie.getValue()+"</td>"+"</tr>");

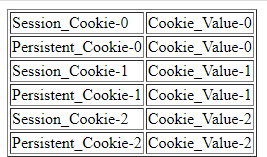
}

out.println("</table>");

}

}

}



**4 .Write a Servlet which displays a message and also displays how many times the message has been displayed (how many times the page has been visited).**

**Hint: Use servlet instance variable as well as ServletContext attribut.**

package edu.scet;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/Count")

public class Count extends HttpServlet {

private static final long serialVersionUID = 1L;

int count;

public Count() {

super();

count=0;

}

protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// TODO Auto-generated method stub

//response.getWriter().append("Number of times visited the pade : "+count);//.append(request.getContextPath());

//count++;

}

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// TODO Auto-generated method stub

// doGet(request, response);

PrintWriter out=response.getWriter();

out.println("Number of times to visited the page :"+count);

out.println(request.getParameter("Name"));

out.println(request.getParameter("FName"));

out.println(request.getParameter("MName"));

out.println(request.getParameter("address"));

out.println(request.getParameter("phoneNo"));

count++;

}

}

**HTML:-**

<!DOCTYPE html>

<html>

<head>

<meta charset="ISO-8859-1">

<title>Form</title>

</head>

<body>

<form action="Count" method="post">

<div>

<h1><center>REGISTRATION FORM</center></h1>

</div>

<lable>Full Name :</lable>

<input type="text" placeholder="FUll name" name="Name"><br>

<lable> Father Name:</lable>

<input type="text" placeholder="Father name" name="FName"><br>

<lable>Mother Name :</lable>

<input type="text" placeholder="Mother name" name="MName"><br>

<lable>Addressh :</lable>

<input type="text" placeholder="Address" name="address"><br>

<lable>Phone Number:</lable>

<input type="number" placeholder="Phone number" name="phoneNo"><br>

<lable>Gender :</lable><br>

<input type="radio" name="male" >male

<input type="radio" name="female" >female

<br>

<lable>Courses :</lable>

<select>

<option value="course" readonly=" ">Course:</option>

<option value="MCA" >MCA</option>

<option value="BCA" >BCA</option>

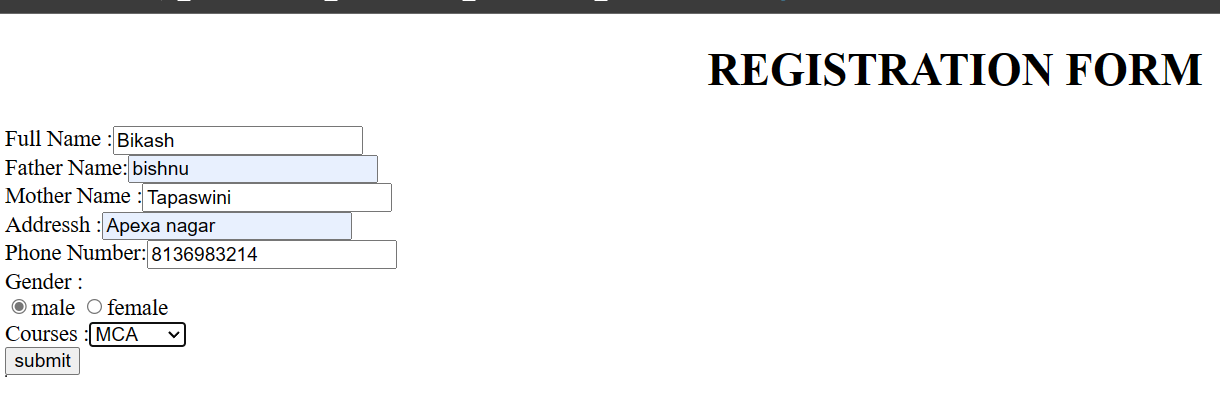
</select><br>

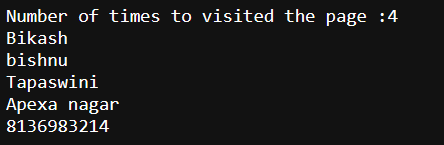
<input type="submit" value="submit">

</form>

</body>

</html>





**5 .Write a Servlet which displays the number of times a user has visited that servlet page.**

**Hint: Use Cookies**

**Servlet1:-**

package edu.scet;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.Cookie;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/CookiesProject")

public class CookiesProject extends HttpServlet {

private static final long serialVersionUID = 1L;

public CookiesProject() {

super();

// TODO Auto-generated constructor stub

}

/\*\*

\* @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)

\*/

protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// TODO Auto-generated method stub

//response.getWriter().append("Served at: ").append(request.getContextPath());

//

PrintWriter out=response.getWriter();

out.println("<!DOCTYPE html>");

out.println("<html>");

out.println("<head>");

out.println("<title>Servlet servlet1</title>");

out.println("</head>");

out.println("<body>");

String name=request.getParameter("name");

out.println("<h1> Hello "+name+" welcome to our website .</h1>");

//getting all the cookies

out.println("<h1><a href='Cok'> Go to servlet 2</a></h1>");

Cookie c=new Cookie("User\_name",name);

response.addCookie(c);

out.println("</body>");

out.println("</html>");

}

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// TODO Auto-generated method stub

doGet(request, response);

}

}

**Servlet2:-**

package edu.scet;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.Cookie;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

/\*\*

\* Servlet implementation class Cok

\*/

@WebServlet("/Cok")

public class Cok extends HttpServlet {

private static final long serialVersionUID = 1L;

/\*\*

\* @see HttpServlet#HttpServlet()

\*/

public Cok() {

super();

// TODO Auto-generated constructor stub

}

/\*\*

\* @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)

\*/

protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// TODO Auto-generated method stub

PrintWriter out=response.getWriter();

out.println("<!DOCTYPE html>");

out.println("<html>");

out.println("<head>");

out.println("<title>Servlet servlet1</title>");

out.println("</head>");

out.println("<body>");

//getting all the cookies

Cookie[] cookies=request.getCookies();

boolean f=false;

String name="";

if(cookies==null) {

out.println("<h1>You are a new user go to home page submit your name .</h1>");

return;

}

else {

for(Cookie c:cookies) {

String tname=c.getName();

if(tname.equals("User\_name")) {

f=true;

name=c.getValue();

}

}

}

if(f) {

//String name=request.getParameter("name");

out.println("<h1>Hello ,"+name +" Welcom to my websiter again ....</h1>");

out.println("<h1>Thanks visite .</h1>");

}

else {

out.println("<h1>You are a new user go to home page submit your name .</h1>");

}

out.println("</body>");

out.println("</html>");

}

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// TODO Auto-generated method stub

doGet(request, response);

}

}

**HTML:-**

<!DOCTYPE html>

<html>

<head>

<meta charset="ISO-8859-1">

<title>Servlet 1</title>

</head>

<body>

<form action="CookiesProject" method="get">

<input type="text" placeholder="Enter your name here" name="name" style="font-size: 25px">

<button type="submit" style="font-size :25px">

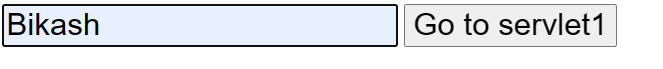
Go to servlet1

</button>

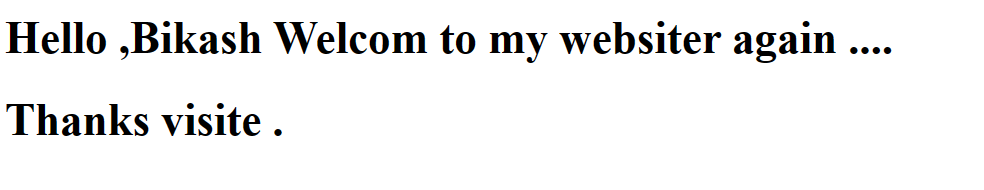
</form>

</body>

</html>







**6. Write a Servlet which demonstrates Set Attribute, Session Attribute & Context Attribut.**

package edu.scet;

import java.io.IOException;

import javax.servlet.RequestDispatcher;

import javax.servlet.ServletContext;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import javax.servlet.http.HttpSession;

@WebServlet("/Problem6")

public class Problem6 extends HttpServlet {

private static final long serialVersionUID = 1L;

public Problem6() {

super();

}

protected void doGet(HttpServletRequest req, HttpServletResponse res) throws ServletException, IOException, ServletException {

//response.getWriter().append("Servedat: ").append(request.getContextPath());

req.setAttribute("att1","Request Attribute1");

req.setAttribute("att2","Request Attribute2");

HttpSession session= req.getSession(true);

session.setAttribute("att1","Request Attribute1");

session.setAttribute("att2","Request Attribute2");

ServletContext context =req.getServletContext();

context.setAttribute("att1","Request Attribute1");

context.setAttribute("att2","Request Attribute2");

res.sendRedirect("http://localhost:8080/problem6/GetAttribute");

//RequestDispatcher dis=req.getRequestDispatcher("/GetAttribute");

//dis.forward(req,res);

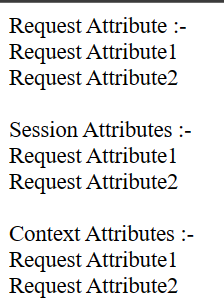
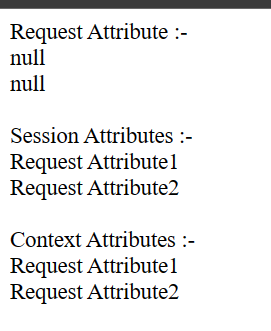
}

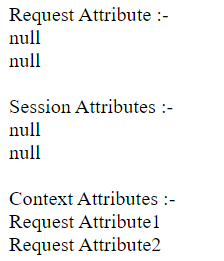
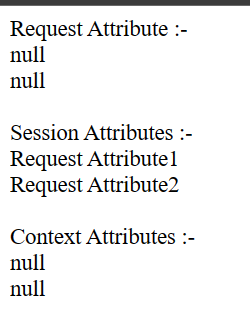
protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

doGet(request, response);

}

}





**7.Assume that we have got three pdf files for the MCA-1 Syllabus, MCA-2 Syllabus and MCA-3 Syllabus respectively, now write a Servlet which displays the appropriate PDF file to the client, by looking at a request parameter for the year (1, 2 or 3).**

package edu.scet;

import java.io.IOException;

import java.io.InputStream;

import java.io.OutputStream;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

/\*\*

\* Servlet implementation class Program5

\*/

@WebServlet("/Program5")

public class Program5 extends HttpServlet {

private static final long serialVersionUID = 1L;

/\*\*

\* @see HttpServlet#HttpServlet()

\*/

public Program5() {

super();

// TODO Auto-generated constructor stub

}

/\*\*

\* @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)

\*/

protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// TODO Auto-generated method stub

//response.getWriter().append("Served at: ").append(request.getContextPath());

}

/\*\*

\* @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)

\*/

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// TODO Auto-generated method stub

//doGet(request, response);

String syllabus=request.getParameter("syllabus");

String path=null;

switch(syllabus)

{

case "JWT":path="/WEB-INF/JAVA WEB TECHNOLOGIES.pdf";

break;

case "PPDS":path="/WEB-INF/PPDS.pdf";

break;

case "FON":path="/WEB-INF/Fundamentals of networking.pdf";

break;

case "CCDO":path="/WEB-INF/CCDO.pdf";

break;

case ".Net":path="/WEB-INF/C#.pdf";

break;

case "SP-2":path="/WEB-INF/SP-2.pdf";

break;

default :path="/WEB-INF/JAVA WEB TECHNOLOGIES.pdf";

break;

}

InputStream is =getServletContext().getResourceAsStream(path);

int b;

response.setContentType("application/pdf");

OutputStream os = response.getOutputStream();

while ((b= is.read())!=-1) {

os.write(b);

}

}

}

**HTML FILE:-**

<!DOCTYPE html>

<html>

<head>

<meta charset="ISO-8859-1">

<title>SCET SYLLABUS</title>

</head>

<body>

<form action="Program5" method="post">

<label style="size:300px;color:white;background-color:black">MCA DEPARTEMNT</label>

<br><br>

<label for="syllabus">Choose a syllabus :</label>

<select name="syllabus">

<option value="JWT">Java Web Technologies</option>

<option value="PPDS">Python Programming and Data Science</option>

<option value="FON">Fundamentals of Networking </option>

<option value="CCDO">Cloud computing for and DevOps</option>

<option value=".Net">.NET Programming with C#</option>

<option value="SP-2">Software project 2</option>

</select>

<br><br>

<center>

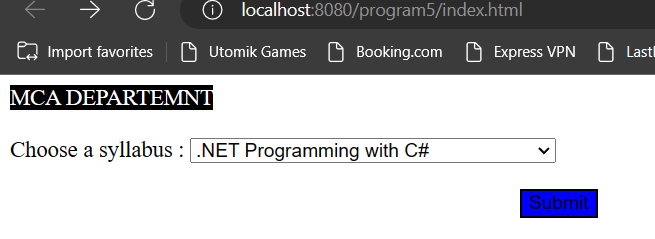
<input type="submit" value="Submit" style="background-color:blue">

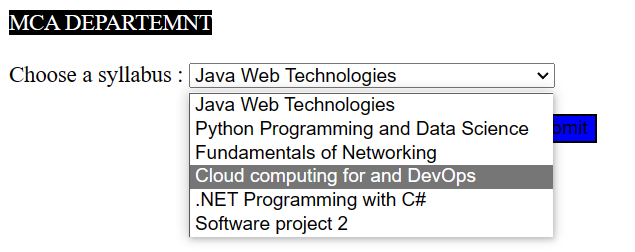
</center>

</form>

</body>

</html>





**8. Write a JSP page which demonstrates different JSP tags.**

<%@ page language="java"contentType="text/html; charset=ISO-8859-1"

pageEncoding="ISO-8859-1"%>

<!DOCTYPE html>

<html>

<head>

<meta charset="ISO-8859-1">

<title>First JSP project</title>

</head>

<body>

<h1>This is simple jsp page</h1>

<%--Declerative tag --%>

<%!

int a=10;

int b=50;

String str="Bikash";

public int sum(){

return a+b;

}

public String reverse(){

StringBuffer br=new StringBuffer(str);

return br.reverse().toString();

}

%>

<%--<%= str --%>

<%--Scriplate tag --%>

<%

out.println(a);

out.println("<br>");

out.println(b);

out.println("<br>");

out.println("sum ="+sum());

out.println("<br>");

out.println("Reverse of ' "+str+" 'the stirng ="+reverse());

%>

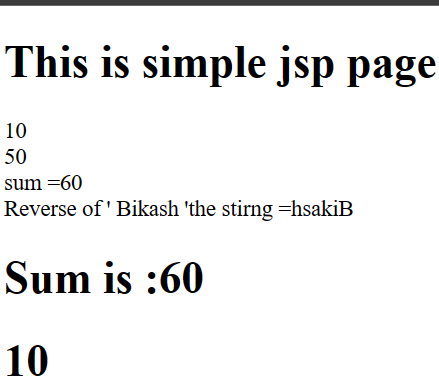
<h1>Sum is :<%=sum() %></h1>

<%--Expression tag --%>

<h1><%= a %></h1>

</body>

</html>



**10. Develop a Servlet to authenticate a user, where the loginid and password are available as request parameters. In case the authentication is successful, it should setup a new session and store the user's information in the session before forwarding to home.jsp using**

**response.sendRedirect, which displays the user's information like full name, address, etc.**

<!DOCTYPE html>

<html>

<head>

<meta charset="ISO-8859-1">

<title>Insert title here</title>

</head>

<body>

<form action="Project7" method="get">

Enter your user name<input type="text" name="name" placeholder="User name"><br>

Enter your password<input type="text" name="password" placeholder="Password"><br>

<button type="submit" >submit<button></button>

</form>

</body>

</html>

servlet:-

package edu.scet;

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import javax.servlet.http.HttpSession;

/\*\*

\* Servlet implementation class Project7

\*/

@WebServlet("/Project7")

public class Project7 extends HttpServlet {

private static final long serialVersionUID = 1L;

String User\_name="Bikash";

String User\_password="1234@";

/\*\*

\* @see HttpServlet#HttpServlet()

\*/

public Project7() {

super();

// TODO Auto-generated constructor stub

}

/\*\*

\* @see HttpServlet#doGet(HttpServletRequest request, HttpServletResponse response)

\*/

protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// TODO Auto-generated method stub

//response.getWriter().append("Served at: ").append(request.getContextPath());

response.setContentType("text/html");

String name=request.getParameter("name");

String password=request.getParameter("password");

PrintWriter out=response.getWriter();

out.println("User name :"+name+"<br>");

out.println("password :"+password+"<br>");

if(User\_name.equals(name) && User\_password.equals(password)) {

out.println("Login succefully");

HttpSession session= request.getSession();

session.setAttribute("name", name);

session.setAttribute("password",password);

response.sendRedirect("project7.jsp");

}

else {

out.println("Incorrect user\_name and password !.");

response.sendRedirect("proj7.html");

}

}

/\*\*

\* @see HttpServlet#doPost(HttpServletRequest request, HttpServletResponse response)

\*/

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// TODO Auto-generated method stub

doGet(request, response);

}

}

<%@ page language="java" contentType="text/html; charset=ISO-8859-1"

pageEncoding="ISO-8859-1"%>

<!DOCTYPE html>

<html>

<head>

<meta charset="ISO-8859-1">

<title>Login form</title>

</head>

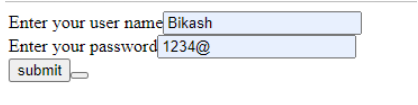
<body>

<% out.println("Welcome to my website ."+session.getAttribute("name"));

%>

</body>

</html>





JSP1:

<%@ page language="java" contentType="text/html; charset=ISO-8859-1"

pageEncoding="ISO-8859-1"%>

<!DOCTYPE html>

<html>

<head>

<meta charset="ISO-8859-1">

<title>First JSP page </title>

</head>

<body>

<%!

String str="Jsp 1";

public int a=10;

public int b=20;

%>

Printing using the expression tag in body:

<%= str %><br><br>

sum of 2 number :

<%= a+b %><br><br>

<%

out.println("Print my first jsp page in scriptlet : "+str);

out.println("value p1 = "+request.getParameter("p1"));

out.println("sum ="+(a+b));

%>

<br><br>

Printing using the expression tag in HTML comment:

<!-- <%= str %> -->

<br><br>

Printing using expression tag in JSP comment:

<%-- <%= str %> --%>

<br><br>

<%

String newStr="New string ";

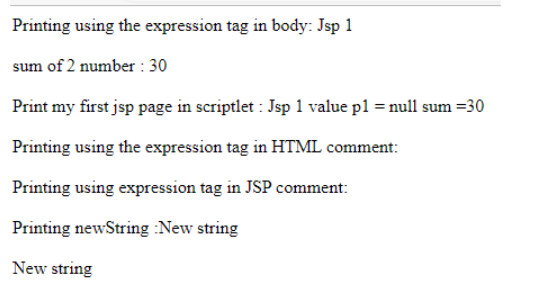
out.println("Printing newString :"+newStr);

%><br><br>

<%= newStr %>

</body>

</html>



**11. Modify the above program to use the RequestDisapatcher to forward**

**instead of response.sendRedirect package edu.scet;**

**Servlet :-**

import java.io.IOException;

import java.io.PrintWriter;

import javax.servlet.RequestDispatcher;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import javax.servlet.http.HttpSession;

@WebServlet("/Program11")

public class Program11 extends HttpServlet {

private static final long serialVersionUID = 1L;

private String UserName="Bikash";

//private String UserPassword="123@";

private int UserPassword=2468;

public Program11() {

super();

// TODO Auto-generated constructor stub

}

protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

//response.getWriter().append("Served at: ").append(request.getContextPath());

response.setContentType("text/html");

String U\_name=request.getParameter("name");

String U\_pass=request.getParameter("password");

PrintWriter out=response.getWriter();

out.println("Your Entered User\_name is :"+U\_name+"<br>");

out.println("Your Entered User\_Password is :"+U\_pass+"<br>");

if(U\_name.equals(UserName) && Integer.valueOf(U\_pass).equals(UserPassword)) {

out.println("Login Succesfully .");

HttpSession session=request.getSession(true);

session.setAttribute("name", U\_name);

session.setAttribute("password", U\_pass);

RequestDispatcher rd=request.getRequestDispatcher("login.jsp");

rd.forward(request, response);

}

else {

if(U\_name.equals(null) ) {

out.println("Enter correct username.");

RequestDispatcher rd=request.getRequestDispatcher("Login.html");

rd.forward(request, response);

}

else if (U\_pass.equals(null)) {

out.println("Enter correct Password.");

RequestDispatcher rd=request.getRequestDispatcher("Login.html");

rd.forward(request, response);

}

else {

out.println("Enter correct details");

RequestDispatcher rd=request.getRequestDispatcher("Login.html");

rd.forward(request, response);

}

}

}

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

// TODO Auto-generated method stub

doGet(request, response);

}

}

**HTML:-**

<!DOCTYPE html>

<html>

<head>

<meta charset="ISO-8859-1">

<title>SCET From</title>

</head>

<body>

<form action="Program11" method="get">

<h1 >Login form </h1>

<label>Enter your name</label>

<input type="text" name="name" placeholder="Enter name"><br>

<label>Enter your password</label>

<input type="text" name="password" placeholder="Enter password">

<br><br>

<button type="submit" name="submit" style="background-color:lightblue">Submit</button>

</form>

</body>

</html>

**JSP page:-**

<%@ page language="java" contentType="text/html; charset=ISO-8859-1"

pageEncoding="ISO-8859-1"%>

<!DOCTYPE html>

<html>

<head>

<meta charset="ISO-8859-1">

<title>JSP PAGE</title>

</head>

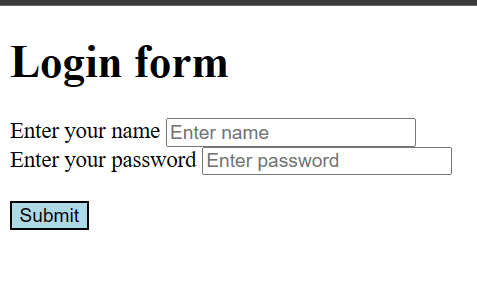
<body>

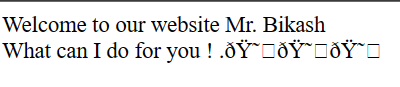
<% out.println("Welcome to our website Mr. "+request.getParameter("name")+"<br>"); %>

<% out.println("What can I do for you ! .😁😁😁"); %>

</body>

</html>





**12 . Write a program to create a filter on a servlet to display the below information**

* **Time the request was received**
* **Time the response was sent**
* **How much time it took to process the request**

package edu.scet;

import java.io.IOException;

import javax.servlet.Filter;

import javax.servlet.FilterChain;

import javax.servlet.FilterConfig;

import javax.servlet.ServletException;

import javax.servlet.ServletRequest;

import javax.servlet.ServletResponse;

import javax.servlet.annotation.WebFilter;

import javax.servlet.http.HttpFilter;

import java.util.Date;

@WebFilter("/\*")

public class TimeFilter extends HttpFilter implements Filter {

public TimeFilter() {

super();

}

public void init(FilterConfig fConfig) throws ServletException {

}

public void destroy() {

}

public void doFilter(ServletRequest request, ServletResponse response, FilterChain chain) throws IOException, ServletException {

long startTime = System.currentTimeMillis();

chain.doFilter(request, response);

long endTime = System.currentTimeMillis();

long processingTime = endTime - startTime;

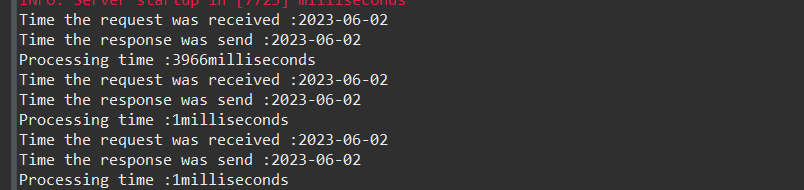
System.out.println("Time the request was received: " + new Date(startTime));

System.out.println("Time the response was sent: " + new Date(endTime));

System.out.println("Time taken to process the request: " + processingTime + " milliseconds");

}

}



**13. Create a small project to demonstrate the MVC implementation using RequestDispatcher as explained below:**

1. **Create a Registration page to take Student details input.**
2. **On clicking Submit, insert the details in the Student table in the database and redirect the user to Home page which displays Welcome message.**
3. **Home page should display a link to fetch Student details. On clicking this link, the student details should be fetched from the database and be displayed on the page.**

**Use Model, View and Controller pattern to implement the above. Also use DAO classes to insert and fetch data from the database.**

**Home.html**

<!DOCTYPE html>

<html>

<head>

<meta charset="ISO-8859-1">

<title>Registration</title>

</head>

<body>

<form action="RegisterStudent" method="POST">

<label>Name</label>

<input type="text" name="name" ><br>

<label>Email Address</label>

<input type="email" name="email" ><br>

<label>Password</label>

<input type="Password" name="Password" ><br>

<label>Address</label>

<input type="text" name="address" ><br>

<input type="submit" name="btnSubmit"><br>

</form>

</body>

</html>

**FetchData.java**

package edu.scet.beans;

public class FetchStudentBean {

private String name;

private String email;

private String address;

public String getName() {

return name;

}

public void setName(String name) {

this.name = name;

}

public String getEmail() {

return email;

}

public void setEmail(String email) {

this.email = email;

}

public String getAddress() {

return address;

}

public void setAddress(String address) {

this.address = address;

}

}

**StudentBean.java**

package edu.scet.beans;

public class StudentBean {

private String name;

private String email;

private String password;

private String address;

public String getName() {

return name;

}

public void setName(String name) {

this.name = name;

}

public String getEmail() {

return email;

}

public void setEmail(String email) {

this.email = email;

}

public String getPassword() {

return password;

}

public void setPassword(String password) {

this.password = password;

}

public String getAddress() {

return address;

}

public void setAddress(String address) {

this.address = address;

}

}

**FetchDAO.java**

package edu.scet.dao;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.ResultSet;

import java.sql.Statement;

import edu.scet.beans.FetchStudentBean;

public class FetchDAO {

public FetchStudentBean fetchStudent(String name) {

try {

Class.forName("com.mysql.jdbc.Driver");

Connection con =

DriverManager.getConnection("jdbc:mysql://localhost:3306/java\_db","root","");

Statement stmt=con.createStatement();

ResultSet rs=stmt.executeQuery("select \* from student where name='"+name+"'");

rs.next();

FetchStudentBean sb=new FetchStudentBean();

sb.setName(rs.getString("name"));

sb.setEmail(rs.getString("email"));

sb.setAddress(rs.getString("address"));

con.close();

return sb;

}catch(Exception e)

{

e.printStackTrace();

return null;

}

}

}

**RegisterDAO.java**

package edu.scet.dao;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.PreparedStatement;

import edu.scet.beans.StudentBean;

public class RegisterDAO {

public boolean registerStudent(StudentBean sb)

{

try {

Class.forName("com.mysql.jdbc.Driver");

Connection con =

DriverManager.getConnection("jdbc:mysql://localhost:3306/java\_db","root","");

String name = sb.getName();

String email = sb.getEmail();

String password = sb.getPassword();

String address = sb.getAddress();

PreparedStatement pstmt = con.prepareStatement("insert into student(name,email,password,address) values(?,?,?,?)");

pstmt.setString(1, name);

pstmt.setString(2, email);

pstmt.setString(3, password);

pstmt.setString(4, address);

pstmt.executeUpdate();

con.close();

return true;

}catch(Exception e)

{

e.printStackTrace();

return false;

}

}

}

**Registerstudent.java**

package edu.scet.controller;

import java.io.IOException;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import javax.servlet.http.HttpSession;

import edu.scet.beans.StudentBean;

import edu.scet.dao.RegisterDAO;

@WebServlet("/RegisterStudent")

public class RegisterStudent extends HttpServlet {

private static final long serialVersionUID = 1L;

public RegisterStudent() {

super();

}

protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

response.getWriter().append("Served at: ").append(request.getContextPath());

}

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

try {

StudentBean sb = new StudentBean();

sb.setName(request.getParameter("name"));

sb.setEmail(request.getParameter("email"));

sb.setPassword(request.getParameter("password"));

sb.setAddress(request.getParameter("address"));

RegisterDAO dao = new RegisterDAO();

boolean result = dao.registerStudent(sb);

if(result == true)

{

HttpSession session = request.getSession(true);

session.setAttribute("studentName",sb.getName());

request.getRequestDispatcher("Welcome.jsp").forward(request, response);

}

else

{

request.getRequestDispatcher("Error.jsp").forward(request, response);

}

} catch (Exception e) {

e.printStackTrace();

}

}

}

**Error.html**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Error Page</title>

</head>

<body>

<h1>Something want wrong.Please try again.</h1>

</body>

</html>

**StudentDetail.html**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Display Student Data</title>

</head>

<body>

<jsp:useBean id=*"sb"* class=*"edu.scet.beans.FetchStudentBean"* scope=*"request"*></jsp:useBean>

<table>

<tr>

<td>Student name: <jsp:getProperty property=*"name"* name=*"sb"*/>

</tr>

<tr>

<td>Student Address: <jsp:getProperty property=*"email"* name=*"sb"*/>

</tr>

<tr>

<td>Student Email ID: <jsp:getProperty property=*"address"* name=*"sb"*/>

</tr>

</table>

</body>

</html>

**Welcome.html**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Welcome Page</title>

</head>

<body>

<h1>Welcome UserName : </h1><%=session.getAttribute("studentName") %>

<p><a href="FetchStudent">View Student Data</a></p>

</body>

</html>

**FetchStudentBean.java**

package edu.scet.beans;

public class FetchStudentBean {

private String name;

private String email;

private String address;

public String getName() {

return name;

}

public void setName(String name) {

this.name = name;

}

public String getEmail() {

return email;

}

public void setEmail(String email) {

this.email = email;

}

public String getAddress() {

return address;

}

public void setAddress(String address) {

this.address = address;

}

}

**FetchDAO.java**

package edu.scet.dao;

import java.sql.Connection; import java.sql.DriverManager; import java.sql.ResultSet;

import java.sql.Statement;

import edu.scet.beans.FetchStudentBean;

public class FetchDAO {

public FetchStudentBean fetchStudent(String name)

{

try {

Class.forName("com.mysql.jdbc.Driver");

Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/java\_db","root","");

Statement stmt=con.createStatement();

ResultSet rs=stmt.executeQuery("select \* from student where name='"+name+"'");

FetchStudentBean sb = null;

if(rs.next())

{

sb=new FetchStudentBean();

sb.setName(rs.getString("name"));

sb.setEmail(rs.getString("email"));

sb.setAddress(rs.getString("address"));

}

con.close();

return sb;

}catch(Exception e)

{

e.printStackTrace();

return null;

}

}

}

**FetchStudent.java**

package edu.scet.controller;

import java.io.IOException;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

import edu.scet.beans.FetchStudentBean;

import edu.scet.dao.FetchDAO;

@WebServlet("/FetchStudent") public class FetchStudent extends HttpServlet {

private static final long serialVersionUID = 1L;

public FetchStudent() {

super();

}

protected void doGet(HttpServletRequest request, HttpServletResponse response) throws

ServletException, IOException {

try {

FetchDAO dao = new FetchDAO();

FetchStudentBean sb = dao.fetchStudent((String)request.getSession().getAttribute("studentName"));

if(sb!=null)

{

System.out.println("message");

request.setAttribute("sb", sb);

request.getRequestDispatcher("ViewStudentDetails.jsp").forward(request, response);

}

else

{

request.getRequestDispatcher("Error.jsp").forward(request, response);

}

} catch (Exception e) {

e.printStackTrace();

}

}

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

doGet(request, response);

}

}

**ViewStudentDetails.jsp**

<%@ page language="java" contentType="text/html; charset=ISO-8859-1" pageEncoding="ISO-8859-1"%>

<!DOCTYPE html>

<html>

<head>

<meta charset="ISO-8859-1">

<title>View Student Data</title>

</head>

<body>

<h1>View Student Page</h1>

<jsp:useBean id="sb" scope="request"

class="edu.scet.beans.FetchStudentBean"></jsp:useBean>

<table>

<tr>

<td>Name : <jsp:getProperty property="name" name="sb"/></td>

</tr>

<tr>

<td>Email : <jsp:getProperty property="email" name="sb"/></td>

</tr>

<tr>

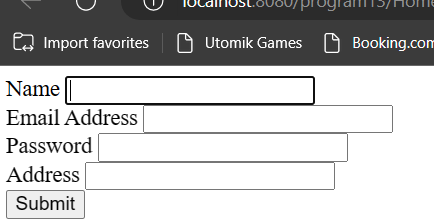
<td>Address : <jsp:getProperty property="address" name="sb"/></td>

</tr>

</table>

</body>

</html>





**14.Write a program to demonstrate JDBC using Normal (Create) statement.**

**Employee.java**

package edu.scet; import java.util.Date; public class Employee { private int empId; private String empName;

private Date doj;

public int getEmpId() {

return empId;

}

public void setEmpId(int empId) { this.empId = empId;

}

public String getEmpName() {

return empName;

}

public void setEmpName(String empName) { this.empName = empName;

}

public Date getDoj() {

return doj;

}

public void setDoj(Date doj) {

this.doj = doj;

}

}

**FetchData.java**

package edu.scet;

import java.io.IOException;

import java.io.PrintWriter;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.ResultSet;

import java.sql.Statement;

import java.util.ArrayList;

import java.util.List;

import javax.servlet.ServletException; import javax.servlet.annotation.WebServlet; import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/FetchData")

public class FetchData extends HttpServlet { private static final long serialVersionUID = 1L;

public FetchData() {

super();

}

protected void doGet(HttpServletRequest request, HttpServletResponse response) throws

ServletException, IOException {

PrintWriter out = response.getWriter();

try {

Class.forName("com.mysql.jdbc.Driver");

Connection con =

DriverManager.getConnection("jdbc:mysql://localhost:3306/java\_db","root","");

Employee e;

List<Employee> al = new ArrayList<Employee>();

ResultSet rs = null;

Statement st = con.createStatement();

rs = st.executeQuery("select \* from emp");

while(rs.next())

{

e = new Employee();

e.setEmpId(rs.getInt(1));

e.setEmpName(rs.getString(2));

e.setDoj(rs.getDate(3)); al.add(e);

}

request.setAttribute("emps", al);

request.getRequestDispatcher("Result.jsp").forward(request, response);

}catch(Exception e) {

out.print(e.getMessage());

}

}

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

doGet(request, response);

}

}

**Result.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"* import=*"java.util.List, edu.scet.Employee"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Employee Data</title>

<link href=*"https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha3/dist/css/bootstrap.min.css"* rel=*"stylesheet"* />

<script src=*"https://cdn.jsdelivr.net/npm/bootstrap@5.3.0alpha3/dist/js/bootstrap.bundle.min.js"*></script>

</head>

<body>

<div class=*"container mt-5"*>

<div class=*"row justify-content-center"*>

<div class=*"col-md-6"*>

<table class=*"table"*>

<tr>

<td><strong>Employee Id</strong></td>

<td><strong>Employee Name</strong></td>

<td><strong>Employee DOJ</strong></td>

</tr>

<%

List<Employee> al =

# (List<Employee>)request.getAttribute("emps");

for(Employee e : al)

{

out.print("<tr><td>"+ e.getEmpId() +"</td><td>"+

e.getEmpName() +"</td><td>"+ e.getDoj() +"</td></tr>");

}

%>

</table>

</div>

</div>

</div>

</body>

</html>



**15 . Write a program to demonstrate JDBC using prepared statement.**

**Employee.java**

package edu.scet; import java.util.Date; public class Employee { private int empId; private String empName;

private Date doj;

public int getEmpId() {

return empId;

}

public void setEmpId(int empId) { this.empId = empId;

}

public String getEmpName() {

return empName;

}

public void setEmpName(String empName) { this.empName = empName;

}

public Date getDoj() {

return doj;

}

public void setDoj(Date doj) {

this.doj = doj;

}

}

**EmpPrepareStat.java**

package edu.scet;

import java.io.IOException;

import java.io.PrintWriter;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.PreparedStatement;

import java.sql.ResultSet;

import java.util.ArrayList;

import java.util.List;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/EmpPrepareStat") public class EmpPrepareStat extends HttpServlet {

private static final long serialVersionUID = 1L;

public EmpPrepareStat() { super();

}

protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

PrintWriter out = response.getWriter();

try {

Class.forName("com.mysql.jdbc.Driver");

Connection con =

DriverManager.getConnection("jdbc:mysql://localhost:3306/java\_db","root","");

Employee e;

List<Employee> al = new ArrayList<Employee>();

ResultSet rs = null;

PreparedStatement pstmt = con.prepareStatement("select \* from emp where id=?");

pstmt.setInt(1, 1);

rs = pstmt.executeQuery();

while(rs.next())

{

e = new Employee();

e.setEmpId(rs.getInt(1));

e.setEmpName(rs.getString(2));

e.setDoj(rs.getDate(3));

al.add(e);

}

request.setAttribute("emps", al);

request.getRequestDispatcher("Result.jsp").forward(request, response);

}catch(Exception e) {

out.print(e.getMessage());

}

}

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

doGet(request, response);

}

}

**Result.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"* import=*"java.util.List, edu.scet.Employee"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Employee Data</title>

<link href=*"https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha3/dist/css/bootstrap.min.css"* rel=*"stylesheet"* />

<script src=*"https://cdn.jsdelivr.net/npm/bootstrap@5.3.0alpha3/dist/js/bootstrap.bundle.min.js"*></script>

</head>

<body>

<div class=*"container mt-5"*>

<div class=*"row justify-content-center"*>

<div class=*"col-md-6"*>

<table class=*"table"*>

<tr>

<td><strong>Employee Id</strong></td>

<td><strong>Employee Name</strong></td>

<td><strong>Employee DOJ</strong></td>

</tr>

<%

List<Employee> al =

# (List<Employee>)request.getAttribute("emps");

for(Employee e : al)

{

out.print("<tr><td>"+ e.getEmpId() +"</td><td>"+

e.getEmpName() +"</td><td>"+ e.getDoj() +"</td></tr>");

}

%>

</table>

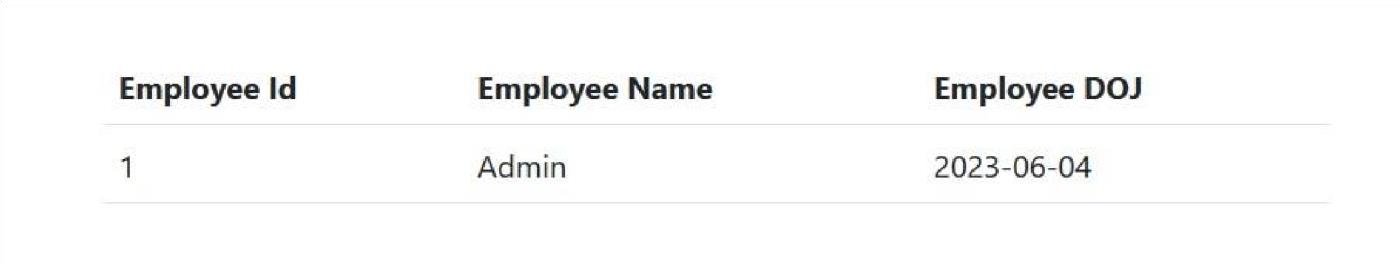
</div>

</div>

</div>

</body>

</html>



**16. Write a program to demonstrate JDBC using callable statement.**

**Employee.java**

package edu.scet;

import java.util.Date;

public class Employee {

private int empId;

private String empName;

}

private Date doj;

public int getEmpId() {

return empId;

}

public void setEmpId(int empId) { this.empId = empId;

}

public String getEmpName() {

return empName;

}

public void setEmpName(String empName) { this.empName = empName;

}

public Date getDoj() {

return doj;

}

public void setDoj(Date doj) {

this.doj = doj;

}

}

**Emp.html**

<!DOCTYPE html>

<html>

<head>

<meta charset="ISO-8859-1">

<title>Insert title here</title>

<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha3/dist/css/bootstrap.min.css" rel="stylesheet" />

<script src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0alpha3/dist/js/bootstrap.bundle.min.js"></script>

</head>

<body>

<div class="container mt-5">

<div class="row justify-content-center">

<div class="col-md-6">

<form action="EmpCallableStat" method="GET">

<table class="table">

<tr>

<td colspan="2"><h1 class="text-center">Search

Data</h1></td>

</tr>

<tr>

<td>Enter Employee No</td>

<td><input type="search" name="txtEmpno" class="formcontrol" required placeholder="Enter Employee No" /></td>

</tr>

<tr>

<td colspan="2"><input type="submit" name="btnSubmit" class="btn btn-outline-success" value="Save" /></td>

</tr>

</table>

</form>

</div>

</div>

</div>

</body>

</html>

**EmpCallableStat.java**

package edu.scet;

import java.io.IOException;

import java.io.PrintWriter;

import java.sql.CallableStatement;

import java.sql.Connection;

import java.sql.DriverManager;

import java.sql.PreparedStatement;

import java.sql.ResultSet;

import java.util.ArrayList;

import java.util.List;

import javax.servlet.ServletException;

import javax.servlet.annotation.WebServlet;

import javax.servlet.http.HttpServlet;

import javax.servlet.http.HttpServletRequest;

import javax.servlet.http.HttpServletResponse;

@WebServlet("/EmpCallableStat") public class EmpCallableStat extends HttpServlet {

private static final long serialVersionUID = 1L;

public EmpCallableStat() { super();

}

protected void doGet(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

PrintWriter out = response.getWriter();

int empId = Integer.parseInt(request.getParameter("txtEmpno"));

try {

Class.forName("com.mysql.jdbc.Driver");

Connection con =

DriverManager.getConnection("jdbc:mysql://localhost:3306/java\_db","root","");

Employee e;

List<Employee> al = new ArrayList<Employee>();

ResultSet rs = null;

CallableStatement stmt = con.prepareCall("{call get\_record(?)}");

stmt.setInt(1, empId);

rs = stmt.executeQuery();

while(rs.next())

{

e = new Employee();

e.setEmpId(rs.getInt(1));

e.setEmpName(rs.getString(2));

e.setDoj(rs.getDate(3));

al.add(e);

}

request.setAttribute("emps", al);

request.getRequestDispatcher("Result.jsp").forward(request, response);

}catch(Exception e) {

out.print(e.getMessage());

}

}

protected void doPost(HttpServletRequest request, HttpServletResponse response) throws ServletException, IOException {

}

}

**Result.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"* import=*"java.util.List, edu.scet.Employee"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Employee Data</title>

<link href=*"https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha3/dist/css/bootstrap.min.css"* rel=*"stylesheet"* />

<script src=*"https://cdn.jsdelivr.net/npm/bootstrap@5.3.0alpha3/dist/js/bootstrap.bundle.min.js"*></script>

</head>

<body>

<div class=*"container mt-5"*>

<div class=*"row justify-content-center"*>

<div class=*"col-md-6"*>

<table class=*"table"*>

<tr>

<td><strong>Employee Id</strong></td>

<td><strong>Employee Name</strong></td>

<td><strong>Employee DOJ</strong></td>

</tr>

<%

List<Employee> al =

# (List<Employee>)request.getAttribute("emps");

for(Employee e : al)

{

out.print("<tr><td>"+ e.getEmpId() +"</td><td>"+

e.getEmpName() +"</td><td>"+ e.getDoj() +"</td></tr>");

}

%>

</table>

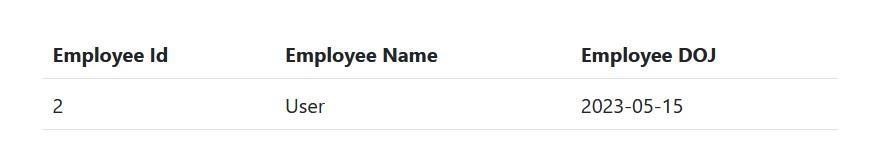
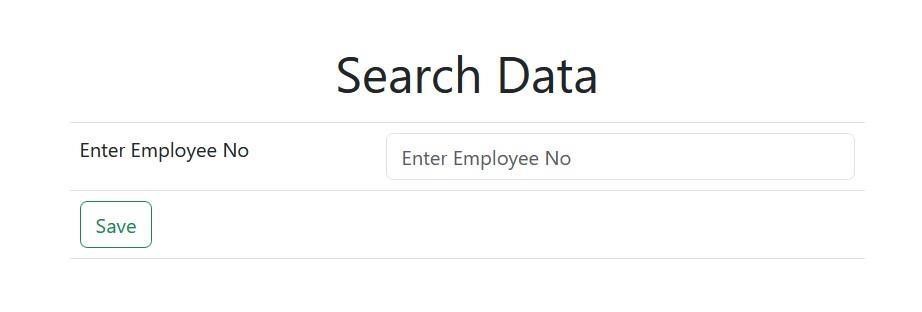
</div>

</div>

</div>

</body>

</html>



**17.Write a program to demonstrate JSP Beans. Register.html**

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Register Page</title>

<link href=*"https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha3/dist/css/bootstrap.min.css"* rel=*"stylesheet"* />

<script src=*"https://cdn.jsdelivr.net/npm/bootstrap@5.3.0alpha3/dist/js/bootstrap.bundle.min.js"*></script>

</head>

<body>

<div class=*"container mt-5"*>

<div class=*"row justify-content-center"*>

<div class=*"col-md-6"*>

<form action=*"setBean.jsp"* method=*"POST"*>

<table class=*"table"*>

<tr>

<td>Enter Enrollment No</td>

<td><input type=*"text"* name=*"txtEno"* class=*"formcontrol"* placeholder=*"Enter Enrollment No"* /></td>

</tr>

<tr>

<td>Enter Name</td>

<td><input type=*"text"* name=*"txtName"* class=*"formcontrol"* placeholder=*"Enter Name"* /></td>

</tr>

<tr>

<td>Enter Gender</td>

<td>

<input type=*"radio"* name=*"rbGender"* value=*"male"* />Male

<input type=*"radio"* name=*"rbGender"* value=*"female"* />Female

</td>

</tr>

<tr>

<td colspan=*"2"*><input type=*"submit"* name=*"btnSubmit"* class=*"btn btn-outline-success"* /></td>

</tr>

</table>

</form>

</div>

</div>

</div>

</body>

</html>

**SetBean.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Set Bean</title>

</head>

<body>

<jsp:useBean id=*"student"* class=*"edu.scet.Name"* scope=*"request"*></jsp:useBean>

<jsp:setProperty property=*"nm"* param=*"txtName"* name=*"student"*/>

<jsp:setProperty property=*"eno"* param=*"txtEno"* name=*"student"*/>

<jsp:setProperty property=*"gender"* param=*"rbGender"* name=*"student"*/>

<jsp:forward page=*"DisplayBean.jsp"*></jsp:forward>

</body>

</html>

**DisplayBean.jsp**

<%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"* pageEncoding=*"ISO-8859-1"*%>

<!DOCTYPE html>

<html>

<head>

<meta charset=*"ISO-8859-1"*>

<title>Display Beans Data</title>

</head>

<body>

<h1>Display Beans Data</h1>

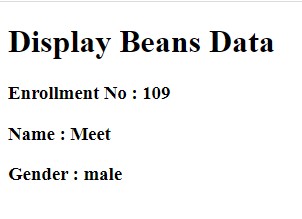
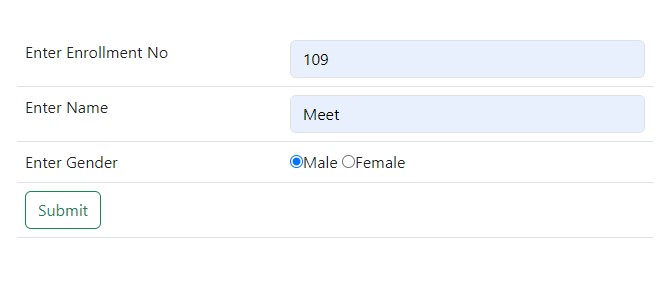
<jsp:useBean id=*"student"* class=*"edu.scet.Name"* scope=*"request"*></jsp:useBean>

<h3>Enrollment No : <jsp:getProperty property=*"eno"* name=*"student"*/></h3>

<h3>Name : <jsp:getProperty property=*"nm"* name=*"student"*/></h3>

<h3>Gender : <jsp:getProperty property=*"gender"* name=*"student"*/></h3> </body>

</html>



**18. Write a program to demonstrate JSP Expression Language using operators.**

**Home.html**

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta http-equiv="X-UA-Compatible" content="IE=edge">

<meta name="viewport" content="width=device-width, initial-scale=1.0"> <title>EL Operator</title>

</head>

<body>

<table border=1 align="center">

<tr>

<th class="colored" colspan="2">Arithmetic Operators</th>

<th class="colored" colspan="2">Relational Operators</th>

</tr>

<tr>

<td>Expression</td>

<td>Result</td>

<td>Expression</td>

<td>Result</td>

</tr>

<tr>

<td>\${3+2-1}</td>

<td>${3+2-1}</td>

<td>\${1&lt;2}</td>

<td>${1<2}</td>

</tr>

<tr>

<td>\${"1"+2}</td>

<td>${"1"+2}</td>

<td>\${"a"&lt;"b"}</td>

<td>${"a"<"b"}</td>

</tr>

<tr>

<td>\${1 + 2\*3 + 3/4}</td>

<td>${1 + 2\*3 + 3/4}</td>

<td>\${2/3 &gt;= 3/2}</td>

<td>${2/3 >= 3/2}</td>

</tr>

<tr>

<td>\${3%2}</td>

<td>${3%2}</td>

<td>\${3/4 == 0.75}</td>

<td>${3/4 == 0.75}</td>

</tr>

<tr>

<td>\${(8 div 2) mod 3}</td>

<td>${(8 div 2) mod 3}</td>

<td>\${null == "test"}</td>

<td>${null == "test"}</td>

</tr>

<tr>

<th class="colored" colspan="2">Logical Operators</th>

<th class="colored" colspan="2"><code>empty</code> Operator</th> </tr>

<tr>

<td>Expression</td>

<td>Result</td>

<td>Expression</td>

<td>Result</td>

</tr>

<tr>

<td>\${(1&lt;2) && (4&lt;3)}</td>

<td>${(1<2) && (4<3)}</td>

<td>\${empty ""}</td>

<td>${empty ""}</td>

</tr>

<tr>

<td>\${(1&lt;2) || (4&lt;3)}</td>

<td>${(1<2) || (4<3)}</td>

<td>\${empty null}</td>

<td>${empty null}</td>

</tr>

<tr>

<td>\${!(1&lt;2)}</td>

<td>${!(1<2)}</td>

<td>\${empty param.blah}</td>

<td>${empty param.blah}</td>

</tr>

</table>

</body>

</html>

.