

## 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;
```

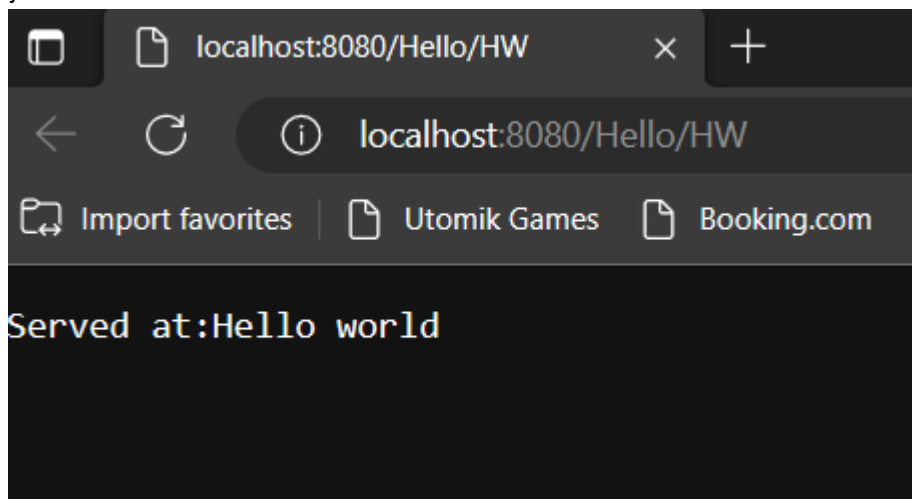
```
@WebServlet("/HW")
```

```
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);
    }
}

```

Header Names	Header value
host	localhost:8080
connection	keep-alive
sec-ch-ua	"Chromium";v="110", "Not A(Brand";v="24", "Microsoft Edge";v="110"
sec-ch-ua-mobile	?0
sec-ch-ua-platform	"Windows"
upgrade-insecure-requests	1
user-agent	Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/110.0.0.0 Safari/537.36 Edg/110.0.1587.57
accept	text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.7
sec-fetch-site	none
sec-fetch-mode	navigate
sec-fetch-user	?1
sec-fetch-dest	document
accept-encoding	gzip, deflate, br
accept-language	en-US,en;q=0.9
cookie	xsrf=2 00f93f5b d011b2a4da63ea2563a9f85be0e85098 1678012844; username=localhost-8888="2 1:0 10:1679278322 23:username=localhost-8888 44:M2NIM2Y2YjlkYWl3NDY3NzgZjE0NDExZDU5ZmNIMTE= 0b24731ca21ac620c2b2f18088a444bc5877dae74694b5a7ede4e6568985e4d2"

### 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()+"</t
d>"+ "</tr>");

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

Session_Cookie-0	Cookie_Value-0
Persistent_Cookie-0	Cookie_Value-0
Session_Cookie-1	Cookie_Value-1
Persistent_Cookie-1	Cookie_Value-1
Session_Cookie-2	Cookie_Value-2
Persistent_Cookie-2	Cookie_Value-2

**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 page :
```

```
        "+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>
    <label>Full Name :</label>
    <input type="text" placeholder="FULL name" name="Name"><br>
    <label> Father Name:</label>
    <input type="text" placeholder="Father name" name="FName"><br>
    <label>Mother Name :</label>
    <input type="text" placeholder="Mother name" name="MName"><br>
    <label>Address :</label>
    <input type="text" placeholder="Address" name="address"><br>
    <label>Phone Number:</label>
    <input type="number" placeholder="Phone number" name="phoneNo"><br>
    <label>Gender :</label><br>
    <input type="radio" name="male" >male
    <input type="radio" name="female" >female
    <br>
    <label>Courses :</label>
    <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>

## REGISTRATION FORM

Full Name :   
Father Name:   
Mother Name :   
Addressh :   
Phone Number:   
Gender :  
☒ male ☐ female  
Courses :

```
Number of times to visited the page :4
Bikash
bishnu
Tapaswini
Apexa nagar
8136983214
```

**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>
```

**Hello Bikash welcome to our website .**

**[Go to servlet 2](#)**

**Hello ,Bikash Welcom to my websiter again ....**

**Thanks visite .**

**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);

    }
}
```

---

Request Attribute :-  
Request Attribute1  
Request Attribute2

Session Attributes :-  
Request Attribute1  
Request Attribute2

Context Attributes :-  
Request Attribute1  
Request Attribute2

---

Request Attribute :-  
null  
null

Session Attributes :-  
Request Attribute1  
Request Attribute2

Context Attributes :-  
Request Attribute1  
Request Attribute2

---

Request Attribute :-  
null  
null

Session Attributes :-  
Request Attribute1  
Request Attribute2

Context Attributes :-  
null  
null

Request Attribute :-  
null  
null

Session Attributes :-  
null  
null

Context Attributes :-  
Request Attribute1  
Request Attribute2

**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;

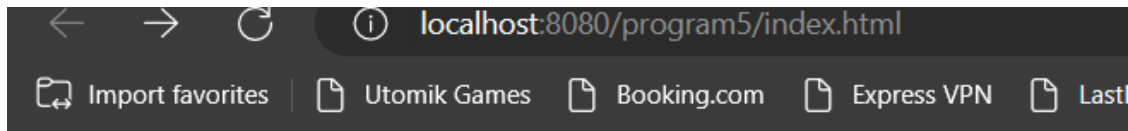
        case "SP-2":path="/WEB-INF/SP-2.pdf";
        break;

        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>
```



## MCA DEPARTEMNT

Choose a syllabus : .NET Programming with C#

Submit

## MCA DEPARTEMNT

Choose a syllabus : Java Web Technologies

Java Web Technologies  
Python Programming and Data Science  
Fundamentals of Networking  
Cloud computing for and DevOps  
.NET Programming with C#  
Software project 2

Submit

### 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>
```

```
<%--Declarative 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>
```

**This is simple jsp page**

10  
50  
sum =60  
Reverse of ' Bikash 'the stirng =hsakiB

**Sum is :60**

**10**

**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>

</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:");
```

```
    response.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>
```

---

Enter your user name

Enter your password

---

Welcome to my website .Bikash

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>
```

---

Printing using the expression tag in body: Jsp 1

sum of 2 number : 30

Print my first jsp page in scriptlet : Jsp 1 value p1 = null sum =30

Printing using the expression tag in HTML comment:

Printing using expression tag in JSP comment:

Printing newString :New string

New string

## 11. Modify the above program to use the RequestDispatcher 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 Successfully.");
    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>
```

# Login form

Enter your name

Enter your password

---

Welcome to our website Mr. Bikash  
What can I do for you ! .ðŸ˜˜ðŸ˜˜ðŸ˜˜

Name:Bikash Bishnu Charana Pradhan  
RollNo:ET22MTCA005

## **Java Web Technologies**

Div:A



**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");
    }
}
```

```
INFO: Server startup in [7723] milliseconds
Time the request was received :2023-06-02
Time the response was send :2023-06-02
Processing time :3966milliseconds
Time the request was received :2023-06-02
Time the response was send :2023-06-02
Processing time :1milliseconds
Time the request was received :2023-06-02
Time the response was send :2023-06-02
Processing time :1milliseconds
```

### **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 went 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 : <%=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>
```

The screenshot shows a web browser window with the address bar displaying 'localhost:8080/programs/home'. The browser's bookmark bar includes 'Import favorites', 'Utomik Games', and 'Booking.com'. Below the browser, there is a login form with the following fields: 'Name' (with a text input), 'Email Address' (with a text input), 'Password' (with a text input), and 'Address' (with a text input). A 'Submit' button is located below the 'Address' field. Below the form, there is a white box with a black border containing the text 'Welcome UserName :', followed by 'vasu' and a purple underlined link 'View Student Data'. Below this box, there is another white box with a black border containing the text 'View Student Page', followed by 'Name : vasu', 'Email : vasu@gmail.com', and 'Address : vesu'.

**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 empld;
private String
empName;
    private Date doj;

    public int getEmpId() {
        return empld;
    }
}
```

```
        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.WebS  
ervlet; 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>
```

Employee Id	Employee Name	Employee DOJ
1	Meet	2023-05-10
2	Sagar	2023-05-09
3	Vasu	2023-05-02
4	Nikhil	2023-05-07

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

### Employee.java

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

    public int getEmpld() {
        return empld;
    }
    public void setEmpld(int
empld) {          this.empld =
empld;
    }
    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>
```

Employee Id	Employee Name	Employee DOJ
1	Admin	2023-06-04

## 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>
```

## Search Data

Enter Employee No	Enter Employee No
<input type="button" value="Save"/>	

Employee Id	Employee Name	Employee DOJ
2	User	2023-05-15

## 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@5.3.0-alpha3/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>
```

Enter Enrollment No	<input type="text" value="109"/>
Enter Name	<input type="text" value="Meet"/>
Enter Gender	<input checked="" type="radio"/> Male <input type="radio"/> Female
<input type="button" value="Submit"/>	

## Display Beans Data

**Enrollment No : 109**

**Name : Meet**

**Gender : male**

### 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>
    </tr>
  </table>
</body>
</html>
```

```

        <td>\${1<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>
<tr>
  <td>\${!(1<2)}</td>
  <td>\${!(1<2)}</td>
  <td>\${empty param.blah}</td>
  <td>\${empty param.blah}</td>
</tr>
</table>
</body>
</html>

```

## EL Operators

Arithmetic Operators		Relational Operators	
Expression	Result	Expression	Result
$\${3+2-1}$	4	$\${1<2}$	true
$\${"1"+2}$	3	$\${"a"<"b"}$	true
$\${1 + 2*3 + 3/4}$	7.75	$\${2/3 >= 3/2}$	false
$\${3\%2}$	1	$\${3/4 == 0.75}$	true
$\${(8 \text{ div } 2) \text{ mod } 3}$	1.0	$\${null == "test"}$	false
Logical Operators		empty Operator	
Expression	Result	Expression	Result
$\${(1<2) \&\& (4<3)}$	false	$\${empty ""}$	true
$\${(1<2)    (4<3)}$	true	$\${empty null}$	true
$\${!(1<2)}$	false	$\${empty param.blah}$	true