



JAMAL MOHAMED COLLEGE
(AUTONOMOUS) TIRUCHIRAPPALLI.

DEPARTMENT OF COMPUTER SCIENCE &IT

MIDDLEWARE TECHNOLOGY LAB MANUAL

PREPARED BY

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1. Welcome Message

Index.html

```
<html>
  <head>
    <title>welcome</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
    <form action="welcome" method="get">
      <input type="submit" value="ok" size="20">
    </form>
    <div>welcome</div>
  </body>
</html>
```

Welcome

```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;

public class welcome extends HttpServlet {

    protected void processRequest(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter()) {
            /* TODO output your page here. You may use following sample code. */
            out.println("<!DOCTYPE html>");
            out.println("<html>");
            out.println("<head>");
            out.println("<title>Servlet welcome</title>");
            out.println("</head>");
            out.println("<body>");
            out.println("<h1><center>Servlet program</center></br>welcome to
jmc</h1>");
            out.println("</body>");
            out.println("</html>");
        }
    }
}
```

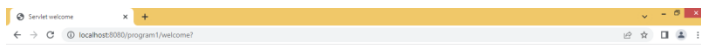
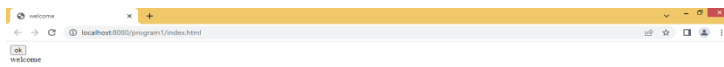
```
}  
}
```

```
@Override  
protected void doGet(HttpServletRequest request, HttpServletResponse response)  
    throws ServletException, IOException {  
    processRequest(request, response);  
}
```

```
@Override  
protected void doPost(HttpServletRequest request, HttpServletResponse response)  
    throws ServletException, IOException {  
    processRequest(request, response);  
}
```

```
@Override  
public String getServletInfo() {  
    return "Short description";  
} // </editor-fold>
```

```
}
```



Servlet program

welcome to jmc



2. Factorial of the Given Number

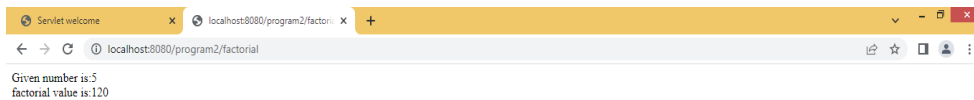
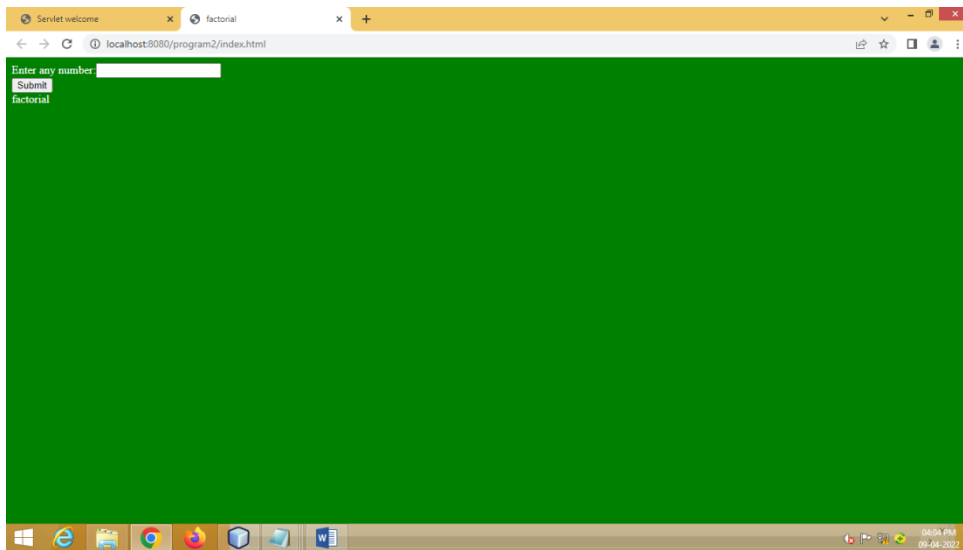
Index.html

```
<html>
  <head>
    <title>factorial</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body bgcolor="green" text="white">
    <form action="factorial" method="post">
      Enter any number:<input type="text" name="t1"><br>
      <input type="submit">
    </form>
    <div>factorial</div>
  </body>
</html>
```

Factorial

```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
public class factorial extends HttpServlet {
    protected void processRequest(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter()) {
            int n=Integer.parseInt(request.getParameter("t1"));
            int f=1;
            out.println("Given number is:"+n);
            for(;n>0;n--)
                f=f*n;
            out.println("<br> factorial value is:"+f);
        }
    }
    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        processRequest(request, response);
    }
}
```

```
@Override
protected void doPost(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException {
    processRequest(request, response);
}
public String getServletInfo() {
    return "Short description";
}
}
```



3. Authenticating and Personal details form filling

```
<html>
  <head>
    <title>authentication</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
    <form action="authentication" method="post">
      <center><h2>user authentication</h2>
        <br>
      </center>
      <b>Enter user name:</b>
      <input type="text" name="username"><br><br>
      <b>enter password:<b>
        <input type="password" name="password"><br><br>
        <input type="submit" name="login"><br><br>
    </form>
  </body>
</html>
```

Authentication

```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
public class authentication extends HttpServlet {
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
```

```

String un=request.getParameter("username");
String pw=request.getParameter("password");
response.setContentType("text/html;charset=UTF-8");
try (PrintWriter out = response.getWriter()) {
    /* TODO output your page here. You may use following sample code. */
    if(un.equals("admin")&&pw.equals("admin"))
        {out.println("<h2> your username is correct</h2>");
        }
    else
        {
            out.println("<h2> your username is incorrect</h2>");
        }
    }
}

@Override
protected void doGet(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException {
    processRequest(request, response);
}

@Override
protected void doPost(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException {
    processRequest(request, response);
}

public String getServletInfo() {
    return "Short description";
}

}

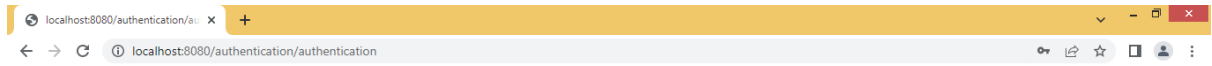
```



user authentication

Enter user name:

enter password:



your username is correct



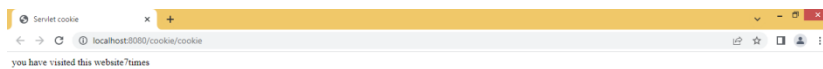
4. Creating Cookies

```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
import javax.servlet.http.Cookie;
public class cookie extends HttpServlet {
    static int i=1;
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter()) {
            /* TODO output your page here. You may use following sample code. */
            out.println("<!DOCTYPE html>");
            out.println("<html>");
            out.println("<head>");
            out.println("<title>Servlet cookie</title>");
            out.println("</head>");
            out.println("<body>");
            Cookie c=new Cookie("visit",String.valueOf(i));
            response.addCookie(c);
            int j = Integer.parseInt(c.getValue());
            if(j==1)
            {
                out.println("welcome user");
            }
            else
            {
```

```

        out.println("you have visited this website" + j + "times");
    }
    i++;
    out.println("</body>");
    out.println("</html>");
}
}
@Override
protected void doGet(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException {
    processRequest(request, response);
}
@Override
protected void doPost(HttpServletRequest request, HttpServletResponse response)
    throws ServletException, IOException {
    processRequest(request, response);
}
public String getServletInfo() {
    return "Short description";
}
}

```



5. Eligible to Vote or not

```
<html>
  <head>
    <title>vote</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
    <form action="voting" method="get">
      person name:<input type="text" name="pname"><br>
      <br>
      <br>
      person age:<input type="text" name="page"><br>
      <br>
      <br>
      <input type="submit" value="check voting eligibility">
    </form>
  </body>
</html>
```

Voting

```
import java.io.IOException;
import java.io.PrintWriter;
import javax.servlet.ServletException;
import javax.servlet.http.HttpServlet;
import javax.servlet.http.HttpServletRequest;
import javax.servlet.http.HttpServletResponse;
public class voting extends HttpServlet {

    protected void processRequest(HttpServletRequest request, HttpServletResponse
response)
        throws ServletException, IOException {
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter()) {
            /* TODO output your page here. You may use following sample code. */
            String name=null;
            String age=null;
            int age1=0;
            name=request.getParameter("pname");
            age=request.getParameter("page");
            age1=Integer.parseInt(age);
            out.println("<h1 style='text-align: center; color:blue'>"
+ "hello"+name+"</h1>");
```

```

    if(age1 < 18)
    {
        out.println("<h2 style='text-align: center; color:red'>"
            +"you are not eligible for voting.</h2>"
            +"<h3 style='text-align: center; color:green'>"
            +"please wait for more" +(18-age1) + "years.<br>"
            +"thank you.<h3>");
    }
    else
    {
        out.println("<h2 style='text-align: center; color:green'>"
            +"you are eligible for voting.</h2>"
            +"<h3 style='text-align: center'>"
            +"thank you.</h3>");
    }
}
}
}

```

@Override

```

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

```

```

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

```

@Override

```

public String getServletInfo() {
    return "Short description";
} // </editor-fold>

```

```

}

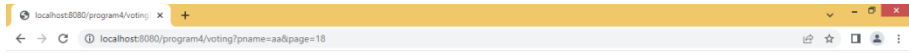
```

vote

localhost:8080/program4/index.html

person name:

person age:



helloaa

you are eligible for voting.

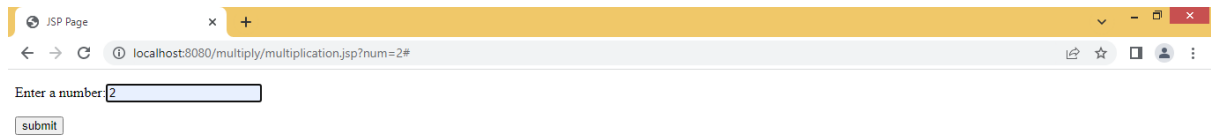
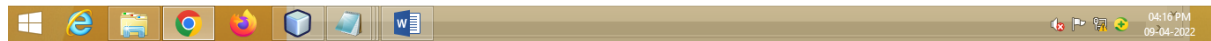
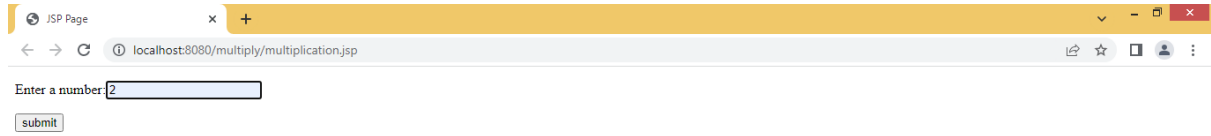
thank you.



6. Multiplies of 2 using JSP

```
<% @page contentType="text/html" pageEncoding="UTF-8"% >
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>JSP Page</title>
  </head>
  <body>
    <form action="#">
      <p> Enter a number:<input type="text" name="num"/></p>
      <input type="submit" value="submit"/>
    </form>
    <%
      String n=request.getParameter("num");
      if(!(n == null||(n.equals(""))))
      {
        int num=Integer.parseInt(n);
        %>
        <p>multiplication table of<%=num%>is:</p>
        <%
          for(int i=1;i<=10;i++)
          {
            %>
            <table><tr>
              <td><%=num%>*<%=i%>=<%=num*i%></td>
            </tr></table>
            <%
          }
        %>
      }
    %>
```

```
}  
%>  
</body>  
</html>
```



multiplication table of 2 is:

- 2*1=2
- 2*2=4
- 2*3=6
- 2*4=8
- 2*5=10
- 2*6=12
- 2*7=14
- 2*8=16
- 2*9=18
- 2*10=20

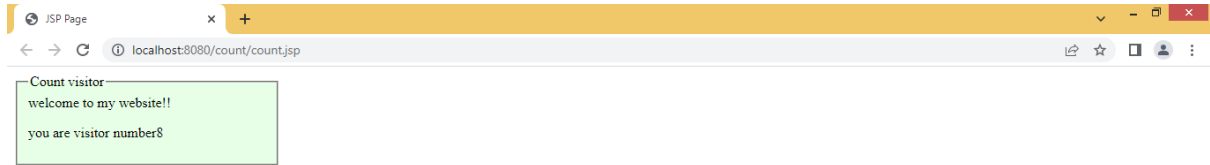


7. Count the total number of visites on your website

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>JSP Page</title>
  </head>
  <body>
    <form>
      <fieldset style="width:20%;background-color:#e6ffe6">
        <legend>Count visitor</legend>
        <%
          Integer hitsCount=
            (Integer)application.getAttribute("hitCounter");
          if(hitsCount == null || hitsCount == 0)
          {
            out.println("welcome to my website!!");
            hitsCount=1;
          }
          else
          {
            out.println("welcome to my website!!");
            hitsCount+=1;
          }
          application.setAttribute("hitCounter",hitsCount);
        %>
        <p>you are visitor number<%=hitsCount%></p>
      </fieldset>
    </form>
  </body>
</html>
```



```
</form>  
</body>  
</html>
```



8. Validate the username and password from the database

Login.asp

```
<body>
  <form action="loginaction.jsp" method="get">
    <table>
      <tr>
        <td>User Name:<input type="text" name="uname"></td>
      </tr>
      <tr>
        <td>Password:<input type="password" name="pword"></td>
      </tr>
      <tr>
        <td><input type="submit" name="submit"></td>
      </tr>
    </table>
  </form>
</body>
</html>
```

Loginaction.jsp

```
<% @page contentType="text/html" pageEncoding="UTF-8"%>
<% @page import="java.util.*"%>
<% @page import="java.sql.*"%>
<% @page import="java.io.*"%>
<% @page import="java.text.*"%>
<%
  Statement st=null;
  Connection con=null;
  ResultSet rs=null;
  String user=request.getParameter("uname");
  String pass=request.getParameter("pword");
  try
  {
    Class.forName("org.apache.derby.jdbc.ClientDriver");
    con=DriverManager.getConnection("jdbc:derby://localhost:1527/sample","app","app");
    st=con.createStatement();
    String Query="select uname,pword from auth where uname='"+user+"'and
pword='"+pass+"'";
    rs=st.executeQuery(Query);
    if(rs.next())
    {
      out.println("Login successfully");
    }
    else
      out.println("Username and password not valid....");
  }
  catch(Exception e)
  {
    out.println(e);
  }
%>
```

```
}  
finally  
{  
  st.close();  
  rs.close();  
  con.close();  
}  
%>
```

9. To Design Student Marksheet Preparation

Design .jsp

```
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<!DOCTYPE html>
<html>
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
    <title>JSP Page</title>
  </head>
  <body>
    <h1>inserting data to the data table</h1>
    <form method="post" action="insert.jsp">
      <table>
        <tr>
          <td>name:</td>
          <td><input type="text" name="name"></td>
        </tr>
        <tr>
          <td>rollno:</td>
          <td><input type="text" name="rollno"></td>
        </tr>
        <tr>
          <td>m1</td>
          <td><input type="text" name="m1"></td>
        </tr>
        <tr>
          <td>m2:</td>
          <td><input type="text" name="m2"></td>
        </tr>
        <tr>
          <td></td>
          <td></td>
        </tr>
      </table>
    </form>
  </body>
</html>
```

```
<td>m3:</td>
<td><input type="text" name="m3"></td>
</tr>
<tr>
<td>m4:</td>
<td><input type="text" name="m4"></td>
</tr>
<tr>
<td>m5:</td>
<td><input type="text" name="m5"></td>
</tr>
<tr>
<td>total:</td>
<td><input type="text" name="total"></td>
</tr>
<tr>
<td>grade:</td>
<td><input type="text" name="grade"></td>
</tr>
<tr>
<td><input type="submit" name="submit"></td>
</tr>
</table>
</form>
</body>
</html>
```

Insert.jsp

```
<% @page contentType="text/html" pageEncoding="UTF-8"%>
```

```
<% @page import="java.sql.*,java.util.*"%>
```

```
<% Class.forName("org.apache.derby.jdbc.ClientDriver");%>
```

```

<%
    String nm=request.getParameter("name");
    String rollno=request.getParameter("rollno");
    String m1=request.getParameter("m1");
    String m2=request.getParameter("m2");
    String m3=request.getParameter("m3");
    String m4=request.getParameter("m4");
    String m5=request.getParameter("m5");
    String total=request.getParameter("total");
    String grade=request.getParameter("grade");

    Connection
con=DriverManager.getConnection("jdbc:derby://localhost:1527/sample","app","app");

    Statement st=con.createStatement();

    int i=st.executeUpdate("insert into
mark(name,rollno,m1,m2,m3,m4,m5,total,grade)values("+nm+"",""+rollno+"",""+m1+"",""+m2
+",""+m3+"",""+m4+"",""+m5+"",""+total+"",""+grade+"");

    out.println("record inserted successfully");

%>

```

localhost:8080/student/insert.jsp x JSP Page x +

localhost:8080/student/design.jsp

inserting data to the data table

name:

rollno:

m1:

m2:

m3:

m4:

m5:

total:

grade:

The image shows a web browser window with two tabs. The active tab is titled "localhost:8080/student/insert.jsp". The address bar contains the URL "localhost:8080/student/insert.jsp". The main content area of the browser displays the text "record inserted successfully". The browser's interface includes a back button, a forward button, a refresh button, and a search icon. The window title bar shows standard minimize, maximize, and close buttons.

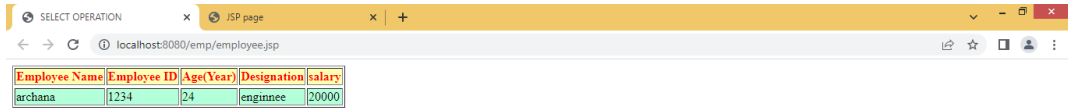
The image shows a Windows taskbar. On the left side, there are several application icons: the Windows Start button, Microsoft Edge, File Explorer, Google Chrome, Mozilla Firefox, a blue cube icon, a folder icon, and Microsoft Word. On the right side, the system tray contains icons for network, volume, and power. The system clock displays the time "04:22 PM" and the date "09-04-2022".

10. To select the record from the database

```
<% @page contentType="text/html" pageEncoding="UTF-8"%>
<% @page import="java.sql.*,java.util.*"%>
<html>
  <head>
    <title>SELECT OPERATION</title>
  </head>
  <body>
    <%!
      Connection con;
      PreparedStatement ps;
      public void jspInit()
    {
      try
      {
        Class.forName("org.apache.derby.jdbc.ClientDriver");
        con=DriverManager.getConnection("jdbc:derby://localhost:1527/sample","app","app"
        );
        ps=con.prepareStatement("select * from employee");
      }
      catch(Exception ex)
      {
        ex.printStackTrace();
      }
    }
    %>
    <%
      ResultSet rs=ps.executeQuery();
      out.println("<table border=1>");
      out.println("<tr style='background-color:#ffffb3;color:red'>");
      out.println("<th>Employee Name</th>");
      out.println("<th>Employee ID</th>");
      out.println("<th>Age(Year)</th>");
      out.println("<th>Designation</th>");
      out.println("<th>salary</th>");
      out.println("<tr>");
      while(rs.next())
      {
        out.println("<tr style='background-color:#b3ffd9;'>");
        out.println("<td>"+rs.getString(1)+"</td>");
        out.println("<td>"+rs.getString(2)+"</td>");
        out.println("<td>"+rs.getString(3)+"</td>");
        out.println("<td>"+rs.getString(4)+"</td>");
        out.println("<td>"+rs.getString(5)+"</td>");
        out.println("</tr>");
      }
    %>
  </body>
</html>
```



```
    }  
    out.println("</table>");  
    rs.close();  
    %>  
</body>  
</html>
```



The screenshot shows a web browser window with the address bar displaying 'localhost:8080/emp/employee.jsp'. The browser content displays a table with the following data:

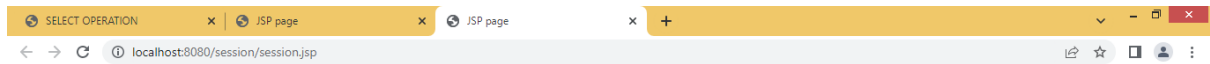
Employee Name	Employee ID	Age(Year)	Designation	Salary
archana	1234	24	engineer	20000



11. Session ID

```
<%@page import="java.io.*, java.util.*" %>
<%@page contentType="text/html" pageEncoding="UTF-8"%>
<%
    Date createTime = new Date(session.getCreationTime());
    Date lastAccessTime = new Date(session.getLastAccessedTime());
    String title="welcome back to my website";
    Integer visitCount = new Integer(0);
    String visitCountkey = new String("visitCount");
    if(session.isNew()){
        title="welcome to my website";
        session.setAttribute(visitCountkey, visitCount);
    }
    visitCount=(Integer)session.getAttribute(visitCountkey);
    visitCount=visitCount + 1;
    session.setAttribute(visitCountkey, visitCount);
%>
<!DOCTYPE html>
<html>
<head>
    <title>JSP page</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
</head>
<body>
<center>
    <h1>session tracking</h1>
</center>
<table border="1" align="center"><tr bgcolor="#949494">
```

```
<th>session info</th>
<th>value</th>
</tr>
<tr><td>id</td>
<td><% out.print(session.getId());%></td></tr>
<tr><td>creation time</td>
<td><% out.print(createTime);%></td>
</tr>
<tr><td>Time of Last Access</td>
<td><%out.print(lastAccessTime);%></td></tr>
</table>
</body>
</html>
```



session tracking

session info	value
id	e082f3e3f1971bbd580d6a6fa123
creation time	Sat Apr 09 16:44:19 IST 2022
Time of Last Access	Sat Apr 09 16:44:19 IST 2022

