

Department of Computer Science and Engineering

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UCS1611 - Internet Programming Lab

Ex 04: Java Servlets and MySQL

Java Servlets

Objective:

Write a servlet program which reads all form details, finds the gross pay based on basic pay and designation. The servlet returns all details (a-j, gross pay) in table format to the client.

Code:

HTML:

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4     <title>Employee Registration</title>
5     <meta charset="utf-8">
6     <link rel="stylesheet" href="styles.css">
7 </head>
8
9 <body>
10     <h1>Employee Registration</h1>
11     <hr><br>
12     <table>
13         <form name="regform" id="regform" action="http://
localhost:8080/employee/Servlet" >
14             <tr>
15                 <td><label for="id">Employee ID: </label></td>
16                 <td><input name="id" id="id" type="number"
required></td>
17             </tr>
18             <tr>
19                 <td><label for="name">Employee Name: </label>
20                 <td><input name="name" id="name" type="text"
required></td>
21             </tr>
22             <tr>
23                 <td><label for="designation">Designation: </
label></td>
24                 <td><select name="designation" id="
designation" required>
25                     <option value="none"></option>
26                     <option value="RA">Research Assistant</
option>
27                     <option value="TA">Teaching Assistant</
option>
28                     <option value="AP">Associate Professor</
option>
29                     <option value="Prof">Professor</option>
30                 </select></td>
31             </tr>
32             <tr>
33                 <td><label for="dept">Department: </label></
td>
34                 <td><select name="dept" id="dept">

```

```

35         <option value="none"></option>
36         <option value="CSE">CSE</option>
37         <option value="IT">IT</option>
38         <option value="ECE">ECE</option>
39         <option value="Mech">Mech</option>
40         <option value="Chem">Chem</option>
41         <option value="BME">BME</option>
42         <option value="EEE">EEE</option>
43         <option value="Civil">Civil</option>
44     </select></td>
45 </tr>
46 <tr>
47     <td><label for="salary">Basic Salary: </label
></td>
48     <td><input name="salary" id="salary" type="
number" required></td>
49 </tr>
50 <tr>
51     <td><label for="phone">Contact number: </
label></td>
52     <td><input name="phone" id="phone" type="tel"
required></td>
53 </tr>
54 <tr>
55     <td><label for="address">Address: </label></
td>
56     <td><textarea name="address" id="address"
required>Enter full address</textarea></td>
57 </tr>
58 <tr>
59     <td><label for="dob">Date of Birth: </label><
/td>
60     <td><input name="dob" id="dob" type="date"
placeholder="dd/mm/yyyy"></td>
61 </tr>
62 <tr>
63     <td><label >Gender: </label></td>
64     <td><input id="male" type="radio" value="Male
" name="gender"><label for="male">Male</label>
        <input id="female" type="radio" value="Female
" name="gender"><label for="female">Female</label>
        <input id="other" type="radio" value="Other"
name="gender"><label for="other">Other</label>
65 </td>
66 </tr>
67 </tr>
68

```

```

69         <tr>
70             <td><label for="status">Marital Status: </
label></td>
71             <td><select name="status" id="status">
72                 <option value="none"></option>
73                 <option value="Married">Married</option>
74                 <option value="single">Single</option>
75             </select></td>
76         </tr>
77         <tr>
78             <td><input type="submit" value="Submit" id="
submit" ></td>
79             <td><input type="button" value="Reset" id="
resetBtn" onclick="myReset()"></td>
80         </tr>
81     </form>
82 </table>
83 <script src="script.js"></script>
84 </body>
85 </html>

```

Stylesheet:

```

1 body{
2     font-size: 16pt;
3     font-family: -apple-system, BlinkMacSystemFont, 'Segoe UI
', 'Roboto', 'Oxygen',
4     'Ubuntu', 'Cantarell', 'Fira Sans', 'Droid Sans', '
Helvetica Neue',
5     sans-serif;
6     background: rgb(133,30,18);
7     background: linear-gradient(135deg, rgba(133,30,18,1)
32%, rgba(27,41,10,1) 62%);
8     color: white;
9 }
10
11 h1{
12     font-size: 50pt;
13     text-align: center;
14     color: white;
15 }
16

```

```

17 table{
18     width: 100%;
19     text-align: center;
20     border-spacing: 15px;
21 }

```

Script file:

```

1 function myReset(){
2     document.getElementById("regform").reset();
3 }

```

Java file:

```

1 import java.io.*;
2 import javax.servlet.*;
3 import javax.servlet.http.*;
4 public class Servlet extends HttpServlet{
5     public void doGet(HttpServletRequest request,
6         HttpServletResponse response)
7         throws ServletException, IOException{
8         response.setContentType("text/html");
9
10        PrintWriter out = response.getWriter();
11        String id= request.getParameter("id");
12        String name = request.getParameter("name");
13        String designation = request.getParameter("
14        designation");
15        String dept = request.getParameter("dept");
16        String salary = request.getParameter("salary");
17        String phone = request.getParameter("phone");
18        String address = request.getParameter("address");
19        String dob = request.getParameter("dob");
20        String gender = request.getParameter("gender");
21        String status = request.getParameter("status");
22
23        int sal = Integer.parseInt(salary);
24        if ("RA".equals(designation)) {
25            designation = "Research Assistant";

```

```

24         sal *= 1;
25     }
26     else if ("TA".equals(designation)) {
27         designation = "Teaching Assistant";
28         sal *= 1.25;
29     }
30     else if ("AP".equals(designation)) {
31         designation = "Associate Professor";
32         sal *= 2;
33     }
34     else if ("Prof".equals(designation)) {
35         designation = "Professor";
36         sal *= 2.5;
37     }
38
39     out.println("<html>");
40     out.println("<head><title>Details Obtained</title>
><link rel='stylesheet' href='styles_servlet.css'></head>"
);
41     out.println("<body><h1>Employee Details</h1>");
42     out.println("<hr><br>");
43     out.println(
44         "<table align='center'><tr><th>ID</th><td>
>" + id + "</td></tr><tr><th>Name</th><td>" + name + "</td>
></tr><tr><th>Designation</th><td>" + designation + "</td>
></tr><tr><th>Department</th><td>" + dept + "</td></tr><tr><th>
Basic Pay:</th><td>" + salary + "</td></tr><tr><th>
Gross Pay:</th><td>" + sal + "</td></tr><tr><th>Contact</
th><td>" + phone + "</td></tr><tr><th>Address</th><td>" +
address + "</td></tr><tr><th>DOB</th><td>" + dob + "</td>
></tr><tr><th>Gender</th><td>" + gender + "</td></tr><tr><
th>Marital Status</th><td>" + status + "</td></tr></table>
");
45     out.println("</body></html>");
46     out.close();
47 }
48 }

```

Java stylesheet:

```

1 body{
2     font-family: -apple-system, BlinkMacSystemFont, 'Segoe UI
', 'Roboto', 'Oxygen',

```

```

3         'Ubuntu', 'Cantarell', 'Fira Sans', 'Droid
    Sans', 'Helvetica Neue', sans-serif;
4     background: rgb(133,30,18);
5     background: linear-gradient(135deg, rgba(133,30,18,1)
    32%, rgba(27,41,10,1) 62%);
6     color:white;
7     padding:2rem;
8 }
9
10 h1{
11     text-align: center;
12     font-size: 50pt;
13 }
14
15 table {
16     border: 2px solid black;
17     font-size: 25px;
18     border-spacing: 25px;
19 }

```

XML file:

```

1 <web-app>
2     <servlet>
3         <servlet-name>Servlet</servlet-name>
4         <servlet-class>Servlet</servlet-class>
5     </servlet>
6
7     <servlet-mapping>
8         <servlet-name>Servlet</servlet-name>
9         <url-pattern>/Servlet</url-pattern>
10    </servlet-mapping>
11 </web-app>

```

Output:

Employee Registration

Employee ID:	<input type="text" value="1"/>
Employee Name:	<input type="text" value="Shivanirudh S G"/>
Designation:	<input type="text" value="Associate Professor"/>
Department:	<input type="text" value="CSE"/>
Basic Salary:	<input type="text" value="100000"/>
Contact number:	<input type="text" value="9445435407"/>
Address:	<input type="text" value="Chennai"/>
Date of Birth:	<input type="text" value="15 / 02 / 2001"/>
Gender:	<input checked="" type="radio"/> Male <input type="radio"/> Female <input type="radio"/> Other
Marital Status:	<input type="text" value="Single"/>
<input type="button" value="Submit"/>	<input type="button" value="Reset"/>

Employee Details

ID	1
Name	Shivanirudh S G
Designation	Associate Professor
Department	CSE
Basic Pay:	100000
Gross Pay:	200000
Contact	9445435407
Address	Chennai
DOB	2001-02-15
Gender	Male
Marital Status	single

Patient Management System (PMS)

Objective:

Develop a Patient Management System (PMS) in a Hospital that maintains the patient records.

Code:

Login Page

HTML:

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4     <title>Patient Management System</title>
5     <meta charset="utf-8">
6     <link rel="stylesheet" href="styles.css">
7 </head>
8
9 <body>
10    <h1>Patient Management System</h1>
11    <hr><br>
12    <table>
13        <form id="loginform">
14            <tr>
15                <td><label for="username">Username: </label><
16                <td><input name="username" id="username" type
17                </td></tr>
18                <tr>
19                <td><label for="password">Password: </label><
20                <td><input name="password" id="password" type
21                </td></tr>
```

```

22         <tr>
23             <td><input type="submit" value="Submit" id="
submit" onclick="checkCreds()"></td>
24             <td><input type="button" value="Reset" id="
resetBtn" onclick="myReset()"></td>
25         </tr>
26     </form>
27 </table>
28 <script>
29     function myReset(){
30         document.getElementById("loginform").reset();
31     }
32
33     function checkCreds(){
34         var user = document.getElementById("username").
value;
35         var pass = document.getElementById("password").
value;
36
37         if(user === "admin" && pass === "12345"){
38             document.getElementById("username").value = "
";
39             document.getElementById("password").value = "
";
40             window.open("homepage.html");
41         }
42         else{
43             alert("Invalid credentials. Please re-enter")
;
44             document.getElementById("username").value = "
";
45             document.getElementById("password").value = "
";
46             document.getElementById("username").focus();
47         }
48     }
49 </script>
50 </body>

```

Stylesheet:

```

1 body{

```

```

2     font-size: 16pt;
3     font-family: -apple-system, BlinkMacSystemFont, 'Segoe UI
    ', 'Roboto', 'Oxygen',
4     'Ubuntu', 'Cantarell', 'Fira Sans', 'Droid Sans', '
    Helvetica Neue',
5     sans-serif;
6     background: rgb(10,11,41);
7     background: radial-gradient(circle, rgba(10,11,41,1) 12%,
    rgba(11,49,13,1) 69%);
8     color: white;
9     height: 100vh;
10 }
11
12 h1{
13     font-size: 50pt;
14     text-align: center;
15     color: white;
16 }
17
18 table{
19     display: block;
20     margin-left: auto;
21     margin-right: auto;
22     width: 25%;
23     text-align: center;
24     border-spacing: 25px;
25 }

```

Script file:

Home Page

HTML:

```

1 <!DOCTYPE html>
2 <html>
3 <head>

```

```

4     <title>Patient Management System</title>
5     <meta charset="utf-8">
6     <link rel="stylesheet" href="styles_home.css">
7 </head>
8
9 <body>
10    <h1>Home Page</h1>
11    <hr><br>
12    <table>
13        <tr>
14            <td><a href="add.html">-> Add Patient</a></td>
15            <td>Add new patient record to the database</td>
16        </tr>
17        <tr>
18            <td><a href="update.html">-> Update Patient
19 Record</a></td>
20            <td>Update patient record in the database</td>
21        </tr>
22        <tr>
23            <td><a href="delete.html">-> Delete Patient
24 Record</a></td>
25            <td>Delete patient record from the database</td>
26        </tr>
27        <tr>
28            <td><a href="view.html">-> View Patient Record</a>
29 ></td>
30            <td>View a patient record from the database</td>
31        </tr>
32        <tr>
33            <td><a href="search.html">-> Search Patient</a></
34 td>
35            <td>Search for a patient record in the database</
36 td>
37        </tr>
38    </table>
39 </body>
40 </html>

```

Stylesheet:

```

1 body{

```

```

2     font-size: 16pt;
3     font-family: -apple-system, BlinkMacSystemFont, 'Segoe UI
    ', 'Roboto', 'Oxygen',
4     'Ubuntu', 'Cantarell', 'Fira Sans', 'Droid Sans', '
    Helvetica Neue',
5     sans-serif;
6     background: rgb(11,49,13);
7     background: radial-gradient(circle, rgba(11,49,13,1) 12%,
    rgba(10,11,41,1) 69%);
8     color: white;
9     height: 100vh;
10 }
11
12 h1{
13     font-size: 50pt;
14     text-align: center;
15     color: white;
16 }
17
18 table{
19     width: 100%;
20     text-align: center;
21     border-spacing: 15px;
22 }
23
24 a{
25     text-decoration: none;
26     color: white;
27     font-weight: bolder;
28 }

```

Add Page

HTML:

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4     <title>Patient Management System</title>
5     <meta charset="utf-8">
6     <link rel="stylesheet" href="styles_add.css">

```

```

7 </head>
8
9 <body>
10     <h1>Add Patient</h1>
11     <hr><br>
12     <table>
13         <form name="regform" id="regform" action="http://
localhost:8080/PMS/AddServlet" >
14             <tr>
15                 <td><label for="name">Name: </label></td>
16                 <td><input name="name" id="name" type="text"
required></td>
17             </tr>
18             <tr>
19                 <td><label for="age">Age: </label></td>
20                 <td><input name="age" id="age" type="number"
required></td>
21             </tr>
22             <tr>
23                 <td><label for="id">ID: </label></td>
24                 <td><input name="id" id="id" type="number"
required></td>
25             </tr>
26             <tr>
27                 <td><label >Gender: </label></td>
28                 <td><input id="male" type="radio" value="
Male" name="gender"><label for="male">Male</label>
29                 <input id="female" type="radio" value="
Female" name="gender"><label for="female">Female</label>
30                 <input id="other" type="radio" value="
Other" name="gender"><label for="other">Other</label>
31                 </td>
32             </tr>
33             <tr>
34                 <td><label for="address">Address: </label></
td>
35                 <td><textarea name="address" id="address"
placeholder="Enter full address" required></textarea></td>
36             </tr>
37             <tr>
38                 <td><label for="status">Marital Status: </
label></td>
39                 <td><select name="status" id="status">
40                     <option value="none"></option>
41                     <option value="Married">Married</option>

```

```

42         <option value="single">Single</option>
43     </select></td>
44 </tr>
45 <tr>
46     <td><label for="dov">Date of Visit: </label><
47 /td>
48     <td><input name="dov" id="dov" type="date"
49 placeholder="dd/mm/yyyy"></td>
50 </tr>
51 <tr>
52     <td><input type="submit" value="Submit" id="
53 submit" ></td>
54     <td><input type="button" value="Reset" id="
55 resetBtn" onclick="myReset()"></td>
56 </tr>
57 </form>
58 </table>
59 <script>
60     localStorage.setItem("source", 1);
61 </script>
62 </body>
63 </html>

```

Stylesheet:

```

1 body{
2     font-size: 16pt;
3     font-family: -apple-system, BlinkMacSystemFont, 'Segoe UI
4     ', 'Roboto', 'Oxygen',
5     'Ubuntu', 'Cantarell', 'Fira Sans', 'Droid Sans', '
6     Helvetica Neue',
7     sans-serif;
8     background: rgb(10,11,41);
9     background: linear-gradient(135deg, rgba(10,11,41,1) 20%,
10    rgba(11,49,13,1) 80%);
11    color: white;
12    height: 100vh;
13 }
14
15 h1{
16     font-size: 50pt;
17     text-align: center;

```

```

15     color: white;
16 }
17
18 table{
19     width: 100%;
20     text-align: center;
21     border-spacing: 15px;
22 }

```

Java file:

```

1  import java.io.*;
2  import java.util.*;
3  import javax.servlet.*;
4  import javax.servlet.http.*;
5  import java.sql.*;
6
7  public class AddServlet extends HttpServlet {
8      public void doGet(HttpServletRequest request,
9          HttpServletResponse response) throws ServletException,
10         IOException {
11
12         String JDBC_DRIVER = "com.mysql.cj.jdbc.Driver";
13         String DB_URL = "jdbc:mysql://localhost:3306/mysql?
14         autoReconnect=true&useSSL=false";
15
16         String USER = "shiva";
17         String PASS = "$$Shiva123";
18
19         PrintWriter out = response.getWriter();
20         String age = request.getParameter("age");
21         String id = request.getParameter("id");
22         String name = request.getParameter("name");
23         String gender = request.getParameter("gender");
24         String addr = request.getParameter("address");
25         String status = request.getParameter("status");
26         String dov = request.getParameter("dov");
27
28         try {
29             Class.forName(JDBC_DRIVER);
30             Connection conn = DriverManager.getConnection(
31                 DB_URL, USER, PASS);

```



```

29         Statement stmt = conn.createStatement();
30         String sql = "INSERT INTO Patient_Details VALUES
    (?, ?, ?, ?, ?, ?, ?)";
31         PreparedStatement pst = conn.prepareStatement(sql
    );
32         pst.setString(1, name);
33         pst.setInt(2, Integer.parseInt(age));
34         pst.setInt(3, Integer.parseInt(id));
35         pst.setString(4, gender);
36         pst.setString(5, addr);
37         pst.setString(6, status);
38         pst.setString(7, dov);
39
40         pst.executeUpdate();
41         pst.close();
42         conn.close();
43
44         out.println("<B> Record added successfully</B><br
    >");
45
46         RequestDispatcher rd = request.
    getRequestDispatcher("/view.html");
47         rd.forward(request, response);
48
49     } catch (SQLException sql) {
50         sql.printStackTrace();
51         out.println(sql);
52     } catch (Exception e) {
53         e.printStackTrace();
54         out.println(e);
55     }
56 }
57 }

```

Update Page

HTML:

```

1 <!DOCTYPE html>
2 <html>
3 <head>

```

```

4     <title>Patient Management System</title>
5     <meta charset="utf-8">
6     <link rel="stylesheet" href="styles_update.css">
7 </head>
8
9 <body>
10    <h1>Update Patient</h1>
11    <hr><br>
12    <table>
13        <form name="regform" id="regform" action="http://
localhost:8080/PMS/UpdateServlet" >
14            <tr>
15                <td><label for="age">Age: </label></td>
16                <td><input name="age" id="age" type="number"
required></td>
17            </tr>
18            <tr>
19                <td><label for="id">ID: </label></td>
20                <td><input name="id" id="id" type="number"
required></td>
21            </tr>
22            <tr>
23                <td><label for="address">Address: </label></
td>
24                <td><textarea name="address" id="address"
placeholder="Enter full address" required></textarea></td>
25            </tr>
26            <tr>
27                <td><label for="status">Marital Status: </
label></td>
28                <td><select name="status" id="status">
29                    <option value="none"></option>
30                    <option value="Married">Married</option>
31                    <option value="single">Single</option>
32                </select></td>
33            </tr>
34            <tr>
35                <td><input type="submit" value="Submit" id="
submit" ></td>
36                <td><input type="button" value="Reset" id="
resetBtn" onclick="myReset()"></td>
37            </tr>
38        </form>
39    </table>
40    <script>

```

```

41         localStorage.setItem("source", 2);
42     </script>
43 </body>
44 </html>

```

Stylesheet:

```

1 body{
2     font-size: 16pt;
3     font-family: -apple-system, BlinkMacSystemFont, 'Segoe UI
4     ', 'Roboto', 'Oxygen',
5     'Ubuntu', 'Cantarell', 'Fira Sans', 'Droid Sans', '
6     Helvetica Neue',
7     sans-serif;
8     background: rgb(10,11,41);
9     background: linear-gradient(135deg, rgba(10,11,41,1) 30%,
10    rgba(11,49,13,1) 70%);
11    color: white;
12    height: 100vh;
13 }
14
15 h1{
16     font-size: 50pt;
17     text-align: center;
18     color: white;
19 }
20
21 table{
22     width: 100%;
23     text-align: center;
24     border-spacing: 15px;
25 }

```

Java file:

```

1 import java.io.*;
2 import java.util.*;
3 import javax.servlet.*;
4 import javax.servlet.http.*;

```

```

5 import java.sql.*;
6
7 public class UpdateServlet extends HttpServlet {
8     public void doGet(HttpServletRequest request,
9         HttpServletResponse response) throws ServletException,
10        IOException {
11
12        String JDBC_DRIVER = "com.mysql.cj.jdbc.Driver";
13        String DB_URL = "jdbc:mysql://localhost:3306/mysql?
14        autoReconnect=true&useSSL=false";
15
16
17        String USER = "shiva";
18        String PASS = "$$Shiva123";
19
20        PrintWriter out = response.getWriter();
21        String age = request.getParameter("age");
22        String id = request.getParameter("id");
23        String addr = request.getParameter("address");
24        String status = request.getParameter("status");
25
26        try {
27            Class.forName(JDBC_DRIVER);
28            Connection conn = DriverManager.getConnection(
29                DB_URL, USER, PASS);
30            Statement stmt = conn.createStatement();
31            String sql = "UPDATE Patient_Details SET age=?,
32                address=?, marital_status=? WHERE id = ?";
33            PreparedStatement pst = conn.prepareStatement(sql
34                );
35            pst.setInt(1, Integer.parseInt(age));
36            pst.setString(2, addr);
37            pst.setString(3, status);
38            pst.setInt(4, Integer.parseInt(id));
39
40            pst.executeUpdate();
41            pst.close();
42            conn.close();
43
44            out.println("<B> Record updated successfully</B><
45                br>");
46
47            RequestDispatcher rd = request.
48                getRequestDispatcher("/view.html");

```

```

42         rd.forward(request, response);
43
44     } catch (SQLException sql) {
45         sql.printStackTrace();
46         out.println(sql);
47     } catch (Exception e) {
48         e.printStackTrace();
49         out.println(e);
50     }
51 }
52 }

```

Delete Page

HTML:

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4     <title>Patient Management System</title>
5     <meta charset="utf-8">
6     <link rel="stylesheet" href="styles_delete.css">
7 </head>
8
9 <body>
10    <h1>Delete Patient</h1>
11    <hr><br>
12    <table>
13        <form name="regform" id="regform" action="http://
localhost:8080/PMS/DeleteServlet" >
14            <tr>
15                <td><label for="id">ID: </label></td>
16                <td><input name="id" id="id" type="number"
required></td>
17            </tr>
18            <tr>
19                <td><input type="submit" value="Submit" id="
submit" ></td>
20                <td><input type="button" value="Reset" id="
resetBtn" onclick="myReset()"></td>
21            </tr>

```

```

22         </form>
23     </table>
24     <script>
25         localStorage.setItem("source", 3);
26     </script>
27 </body>
28 </html>

```

Stylesheet:

```

1 body{
2     font-size: 16pt;
3     font-family: -apple-system, BlinkMacSystemFont, 'Segoe UI
4     ', 'Roboto', 'Oxygen',
5     'Ubuntu', 'Cantarell', 'Fira Sans', 'Droid Sans', '
6     Helvetica Neue',
7     sans-serif;
8     background: rgb(10,11,41);
9     background: linear-gradient(135deg, rgba(10,11,41,1) 40%,
10    rgba(11,49,13,1) 60%);
11    color: white;
12    height: 100vh;
13 }
14
15 h1{
16     font-size: 50pt;
17     text-align: center;
18     color: white;
19 }
20
21 table{
22     width: 100%;
23     text-align: center;
24     border-spacing: 15px;
25 }

```

Java file:

```

1 import java.io.*;
2 import java.util.*;
3 import javax.servlet.*;
4 import javax.servlet.http.*;
5 import java.sql.*;
6
7 public class DeleteServlet extends HttpServlet {
8     public void doGet(HttpServletRequest request,
9         HttpServletResponse response) throws ServletException,
10         IOException {
11
12         String JDBC_DRIVER = "com.mysql.cj.jdbc.Driver";
13         String DB_URL = "jdbc:mysql://localhost:3306/mysql?
14             autoReconnect=true&useSSL=false";
15
16         String USER = "shiva";
17         String PASS = "$$Shiva123";
18
19         PrintWriter out = response.getWriter();
20         String id = request.getParameter("id");
21
22         try {
23             Class.forName(JDBC_DRIVER);
24             Connection conn = DriverManager.getConnection(
25                 DB_URL, USER, PASS);
26             Statement stmt = conn.createStatement();
27             String sql = "DELETE FROM Patient_Details WHERE
28                 id = ?";
29             PreparedStatement pst = conn.prepareStatement(sql
30                 );
31             pst.setInt(1, Integer.parseInt(id));
32
33             pst.executeUpdate();
34             pst.close();
35             conn.close();
36
37             out.println("<B> Record deleted successfully</B><
38                 br>");
39
40             RequestDispatcher rd = request.
41                 getRequestDispatcher("/view.html");
42             rd.forward(request, response);
43
44         } catch (SQLException sql) {

```

```

38         sql.printStackTrace();
39         out.println(sql);
40     } catch (Exception e) {
41         e.printStackTrace();
42         out.println(e);
43     }
44 }
45 }

```

View Page

HTML:

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4     <title>Patient Management System</title>
5     <meta charset="utf-8">
6     <link rel="stylesheet" href="styles_view.css">
7 </head>
8
9 <body>
10    <h1>View Patient</h1>
11    <hr><br>
12    <table>
13        <form name="regform" id="regform" action="http://
localhost:8080/PMS/ViewServlet" >
14            <tr>
15                <td colspan="2"><h2 id="msg"></h2></td>
16            </tr>
17            <tr>
18                <td><input type="submit" value="View Records"
id="submit" ></td>
19            </tr>
20        </form>
21    </table>
22    <script>
23        var val = localStorage.getItem("source");
24        var msg;
25        if(val == 1){
26            msg = "Record Added Successfully";

```



```

27     }
28     else if(val == 2){
29         msg = "Record Updated Successfully";
30     }
31     else if(val == 3){
32         msg = "Record Deleted Successfully";
33     }
34     else{
35
36     }
37     document.getElementById("msg").innerHTML = msg;
38     </script>
39 </body>
40 </html>

```

Stylesheet:

```

1 body{
2     font-size: 16pt;
3     font-family: -apple-system, BlinkMacSystemFont, 'Segoe UI
4     ', 'Roboto', 'Oxygen',
5     'Ubuntu', 'Cantarell', 'Fira Sans', 'Droid Sans', '
6     Helvetica Neue',
7     sans-serif;
8     background: rgb(11,49,13);
9     background: linear-gradient(135deg, rgba(11,49,13,1) 40%,
10    rgba(10,11,41,1) 60%);
11    color: white;
12    height: 100vh;
13 }
14
15 h1{
16     font-size: 50pt;
17     text-align: center;
18     color: white;
19 }
20
21 table{
22     width: 100%;
23     text-align: center;
24     border-spacing: 15px;
25 }

```

Java file:

```
1 import java.io.*;
2 import java.util.*;
3 import javax.servlet.*;
4 import javax.servlet.http.*;
5 import java.sql.*;
6
7 public class ViewServlet extends HttpServlet{
8     public void doGet(HttpServletRequest request,
9         HttpServletResponse response) throws ServletException,
10         IOException {
11
12         String JDBC_DRIVER = "com.mysql.cj.jdbc.Driver";
13         String DB_URL = "jdbc:mysql://localhost:3306/mysql?
14             autoReconnect=true&useSSL=false";
15
16         String USER = "shiva";
17         String PASS = "$$Shiva123";
18
19         PrintWriter out = response.getWriter();
20
21         try {
22             Class.forName(JDBC_DRIVER);
23             Connection conn = DriverManager.getConnection(
24                 DB_URL, USER, PASS);
25             Statement stmt = conn.createStatement();
26             String sql = "SELECT * FROM Patient_Details";
27             Statement pst = conn.createStatement();
28
29             ResultSet rs = pst.executeQuery(sql);
30             out.println("<!DOCTYPE html>");
31             out.println("<html><head></head><body style='font
32                 -size:15pt'>");
33             out.println("<table style='border-spacing:50px'>"
34
35                 );
36             out.println("<tr><th>Name</th><th>Age</th><th>ID
37                 </th><th>Gender</th><th>Address</th><th>Marital Status</th>
38                 <th>Date of visit</th></tr>");
39             while (rs.next()) {
40                 response.setContentType("text/html");
41                 int id = rs.getInt("id");
```

```

34         int age = rs.getInt("age");
35         String name = rs.getString("name");
36         String gender = rs.getString("gender");
37         String addr = rs.getString("address");
38         String status = rs.getString("marital_status"
);
39         String dov = rs.getString("date_of_visit");
40
41         out.println("<tr><td>" + name + "</td><td>" +
age + "</td><td>" + id + "</td><td>" + gender
42             + "</td><td>" + addr + "</td><td>" +
status + "</td><td>" + dov + "</td></tr>");
43     }
44
45     pst.close();
46     conn.close();
47
48
49     } catch (SQLException sql) {
50         sql.printStackTrace();
51         out.println(sql);
52     } catch (Exception e) {
53         e.printStackTrace();
54         out.println(e);
55     }
56 }
57 }

```

Search Page

HTML:

```

1 <!DOCTYPE html>
2 <html>
3 <head>
4     <title>Patient Management System</title>
5     <meta charset="utf-8">
6     <link rel="stylesheet" href="styles_search.css">
7 </head>
8
9 <body>

```

```

10     <h1>Search Patient</h1>
11     <hr><br>
12     <table>
13         <form name="regform" id="regform" action="http://
localhost:8080/PMS/SearchServlet" >
14             <tr>
15                 <td><label for="id">ID: </label></td>
16                 <td><input name="id" id="id" type="number"
required></td>
17             </tr>
18
19             <tr>
20                 <td><input type="submit" value="Search" id="
submit" ></td>
21                 <td><input type="button" value="Reset" id="
resetBtn" onclick="myReset()"></td>
22             </tr>
23         </form>
24     </table>
25     <script src="script.js"></script>
26 </body>
27 </html>

```

Stylesheet:

```

1 body{
2     font-size: 16pt;
3     font-family: -apple-system, BlinkMacSystemFont, 'Segoe UI
', 'Roboto', 'Oxygen',
4     'Ubuntu', 'Cantarell', 'Fira Sans', 'Droid Sans', '
Helvetica Neue',
5     sans-serif;
6     background: rgb(11,49,13);
7     background: linear-gradient(135deg, rgba(11,49,13,1) 30%,
      rgba(10,11,41,1) 70%);
8     color: white;
9     height: 100vh;
10 }
11
12 h1{
13     font-size: 50pt;
14     text-align: center;

```

```

15     color: white;
16 }
17
18 table{
19     width: 100%;
20     text-align: center;
21     border-spacing: 15px;
22 }

```

Java file:

```

1  import java.io.*;
2  import java.util.*;
3  import javax.servlet.*;
4  import javax.servlet.http.*;
5  import java.sql.*;
6
7  public class SearchServlet extends HttpServlet{
8      public void doGet(HttpServletRequest request,
9          HttpServletResponse response) throws ServletException,
10         IOException {
11
12         String JDBC_DRIVER = "com.mysql.cj.jdbc.Driver";
13         String DB_URL = "jdbc:mysql://localhost:3306/mysql?
14             autoReconnect=true&useSSL=false";
15
16         String USER = "shiva";
17         String PASS = "$$Shiva123";
18
19         PrintWriter out = response.getWriter();
20         String pid = request.getParameter("id");
21
22         try {
23             Class.forName(JDBC_DRIVER);
24             Connection conn = DriverManager.getConnection(
25                 DB_URL, USER, PASS);
26             Statement stmt = conn.createStatement();
27             String sql = "select * from Patient_Details where
28                 id = " + Integer.parseInt(pid);
29
30             ResultSet rs = stmt.executeQuery(sql);

```

```

27         if(rs.next()) {
28             response.setContentType("text/html");
29             int id = rs.getInt("id");
30             int age = rs.getInt("age");
31             String name = rs.getString("name");
32             String gender = rs.getString("gender");
33             String addr = rs.getString("address");
34             String status = rs.getString("marital_status");
35
36             String dov = rs.getString("date_of_visit");
37
38             out.println("Name:" + name + "<br>");
39             out.println("ID:" + id + "<br>");
40             out.println("Age:" + age + "<br>");
41             out.println("Gender:" + gender + "<br>");
42             out.println("Address:" + addr + "<br>");
43             out.println("Marital Status:" + status + "<br>");
44
45             out.println("Date of visit:" + dov + "<br>");
46             out.println("<br><br>");
47         }
48         else {
49             out.println("No such record found<br>");
50         }
51
52         stmt.close();
53         conn.close();
54
55     } catch (SQLException sql) {
56         sql.printStackTrace();
57         out.println(sql);
58     } catch (Exception e) {
59         e.printStackTrace();
60         out.println(e);
61     }
62 }

```

XML file:

```

1 <web-app>

```

```

2      <servlet>
3          <servlet-name>AddServlet</servlet-name>
4          <servlet-class>AddServlet</servlet-class>
5      </servlet>
6      <servlet-mapping>
7          <servlet-name>AddServlet</servlet-name>
8          <url-pattern>/AddServlet</url-pattern>
9      </servlet-mapping>
10
11     <servlet>
12         <servlet-name>UpdateServlet</servlet-name>
13         <servlet-class>UpdateServlet</servlet-class>
14     </servlet>
15     <servlet-mapping>
16         <servlet-name>UpdateServlet</servlet-name>
17         <url-pattern>/UpdateServlet</url-pattern>
18     </servlet-mapping>
19
20     <servlet>
21         <servlet-name>DeleteServlet</servlet-name>
22         <servlet-class>DeleteServlet</servlet-class>
23     </servlet>
24     <servlet-mapping>
25         <servlet-name>DeleteServlet</servlet-name>
26         <url-pattern>/DeleteServlet</url-pattern>
27     </servlet-mapping>
28
29     <servlet>
30         <servlet-name>ViewServlet</servlet-name>
31         <servlet-class>ViewServlet</servlet-class>
32     </servlet>
33     <servlet-mapping>
34         <servlet-name>ViewServlet</servlet-name>
35         <url-pattern>/ViewServlet</url-pattern>
36     </servlet-mapping>
37
38     <servlet>
39         <servlet-name>SearchServlet</servlet-name>
40         <servlet-class>SearchServlet</servlet-class>
41     </servlet>
42     <servlet-mapping>
43         <servlet-name>SearchServlet</servlet-name>
44         <url-pattern>/SearchServlet</url-pattern>
45     </servlet-mapping>
46

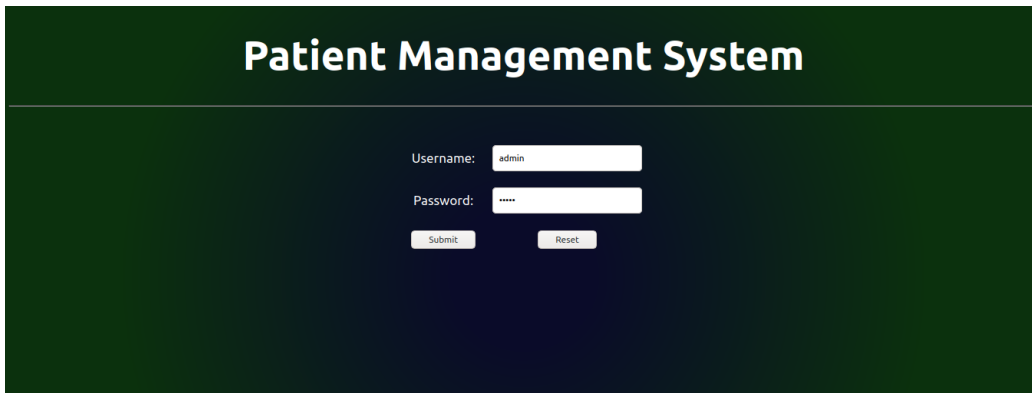
```

47

48 `</web-app>`

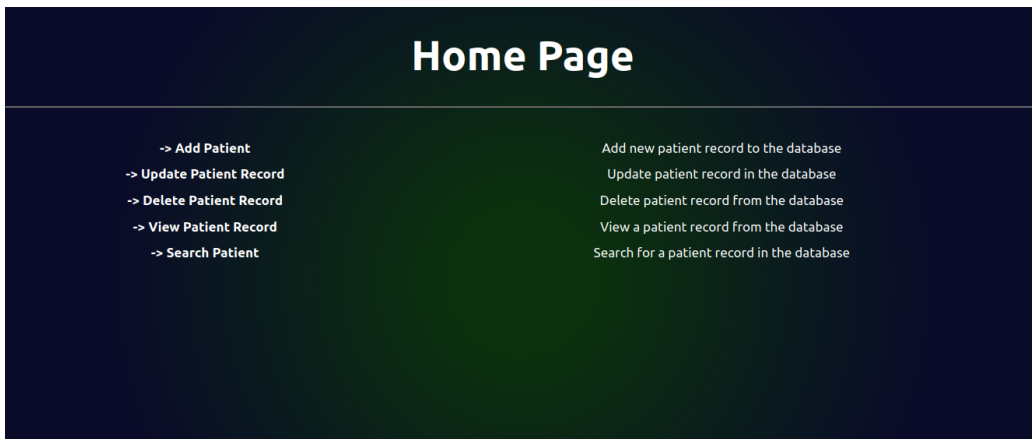
Output:

Login Page:



The screenshot shows the login page of a Patient Management System. The page has a dark green header with the title "Patient Management System" in white. Below the header, there is a login form with two input fields: "Username:" with the value "admin" and "Password:" with the value "*****". Below the password field, there are two buttons: "Submit" and "Reset".

Home Page:



The screenshot shows the home page of the Patient Management System. The page has a dark blue header with the title "Home Page" in white. Below the header, there is a list of menu items on the left and a list of descriptions on the right. The menu items are: "-> Add Patient", "-> Update Patient Record", "-> Delete Patient Record", "-> View Patient Record", and "-> Search Patient". The descriptions are: "Add new patient record to the database", "Update patient record in the database", "Delete patient record from the database", "View a patient record from the database", and "Search for a patient record in the database".

Add Page:

Add Patient

Name:	<input type="text" value="Shivanirudh"/>
Age:	<input type="text" value="20"/>
ID:	<input type="text" value="4"/>
Gender:	<input checked="" type="radio"/> Male <input type="radio"/> Female <input type="radio"/> Other
Address:	<input type="text" value="Chennai"/>
Marital Status:	<input type="text" value="Single"/>
Date of Visit:	<input type="text" value="25 / 03 / 2021"/>
<input type="button" value="Submit"/>	<input type="button" value="Reset"/>

View Patient

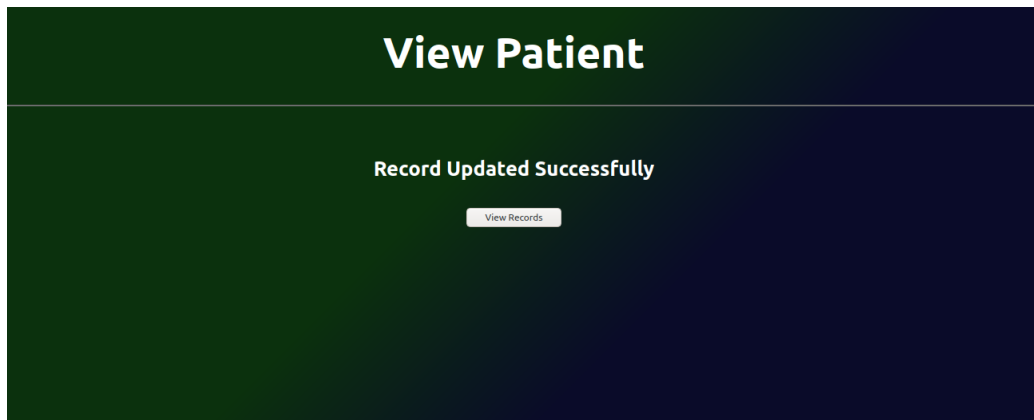
Record Added Successfully

Name	Age	ID	Gender	Address	Marital Status	Date of visit
Shiva	21	1	M	Chennai	single	2021-03-23
Sharvan	20	2	Male	Chennai	single	2021-03-25
Shashu	20	3	Male	Chennai	single	2021-03-25
Shivanirudh	20	4	Male	Chennai	single	2021-03-25

Update Page:

Update Patient

Age:
ID:
Address:
Marital Status:



Name	Age	ID	Gender	Address	Marital Status	Date of visit
Shiva	21	1	M	Chennai	single	2021-03-23
Sharvan	21	2	Male	Chennai	single	2021-03-25
Shashu	20	3	Male	Chennai	single	2021-03-25
Shivanirudh	20	4	Male	Chennai	single	2021-03-25

Delete Page:

Delete Patient

ID:

Submit

Reset

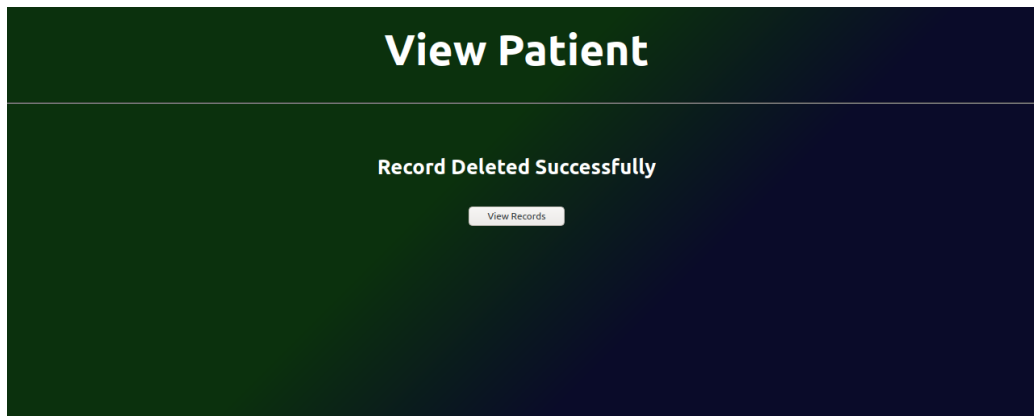
View Patient

Record Deleted Successfully

[View Records](#)

Name	Age	ID	Gender	Address	Marital Status	Date of visit
Shiva	21	1	M	Chennai	single	2021-03-23
Sharvan	21	2	Male	Chennai	single	2021-03-25
Shivanirudh	20	4	Male	Chennai	single	2021-03-25

View Page:



Name	Age	ID	Gender	Address	Marital Status	Date of visit
Shiva	21	1	M	Chennai	single	2021-03-23
Sharvan	21	2	Male	Chennai	single	2021-03-25
Shivanirudh	20	4	Male	Chennai	single	2021-03-25

Search Page:

Search Patient

ID:

Name:Shivanirudh
ID:4
Age:20
Gender:Male
Address:Chennai
Marital Status:single
Date of visit:2021-03-25

Learning Outcomes:

- Learnt to build a servlet with Apache Tomcat, Java and JDBC for MySQL.
- Learnt to use servlets to control behaviour of forms and updating databases.
- Learnt to use **action** tag for loading servlets.

- Learnt the different types of getting info from HTML forms in Java and inserting/deleting/modifying them in databases.
 - Learnt to use styling, and behaviour of HTML items in Java.
-