
30/03/21

Ex. 4

Vanathi

185001188

CSE C

Java Servlets and MySQL

LEARNING OBJECTIVE :

To write a servlet program which reads all form details, finds the gross pay based on basic pay and designation and returns the details in a table format. To develop a Patient Management System (PMS) using Java Servlets and MySQL

PROGRAMS :

1) Employee Pay Form -

index.html :

```
<!DOCTYPE html>
<html>
<head>
  <title>Sample Servlet</title>
  <meta charset="utf-8">
  <link rel="stylesheet" href="styles.css">
  <script src="https://kit.fontawesome.com/cc7d8d5698.js"
crossorigin="anonymous"></script>
</head>

<body>
  <div class="form-container">
    <div class="form-header">
      <i class="user-icon fas fa-3x fa-user-tie"></i>
      <h1 class="form-heading">Employee Details</h1>
    </div>
    <form action="servlet/Register" method="GET" action="echo">
      <table>
        <tbody>
```

```

<tr>
  <td class="right-align"><label for="ename">Name :</label></td>
  <td><input type="text" name="ename" id="ename"></td>
</tr>
<tr>
  <td class="right-align"><label for="desig">Designation :</label></td>
  <td><select style="font-size: 1.25rem" name="desig" id="desig">
    <option style="font-size: 1.25rem" value="Manager">Manager</option>
    <option style="font-size: 1.25rem" value="Developer">Developer</option>
    <option style="font-size: 1.25rem" value="Tester">Tester</option>
    <option style="font-size: 1.25rem" value="Intern">Intern</option>
  </select>
</td>
</tr>
<tr>
  <td class="right-align"><label for="dept">Department :</label></td>
  <td><input type="text" name="dept" id="dept"></td>
</tr>
<tr>
  <td class="right-align"><label for="salary">Basic Salary :</label></td>
  <td><input type="text" name="salary" id="salary"></td>
</tr>
<tr>
  <td class="right-align"><label for="phone">Phone No :</label></td>
  <td><input type="tel" name="phone" id="phone" pattern="[0-9]{10}"></td>
</tr>
<tr>
  <td class="right-align"><label for="address">Address :</label></td>
  <td><input type="text" name="address" id="address"></td>
</tr>
<tr>
  <td class="right-align"><label for="dob">Date of Birth :</label></td>
  <td><input type="date" id="dob" name="dob"></td>
</tr>
<tr>
  <td class="right-align"><label for="gender">Gender :</label></td>
  <td><input type="radio" id="male" name="gender" value="male">
    <label for="male" style="font-weight: 500">Male</label>
    <input type="radio" id="female" name="gender" value="female">
    <label for="female" style="font-weight: 500">Female</label>
  </td>
</tr>

```

```

        <input type="radio" id="other" name="gender" value="other">
        <label for="other" style="font-weight: 500">Other</label>
    </td>
</tr>
<tr>
    <td class="right-align"><label for="married">Marital Status :</label></td>
    <td><select style="font-size: 1.25rem" name="married" id="married">
        <option style="font-size: 1.25rem" value="single">Single</option>
        <option style="font-size: 1.25rem" value="married">Married</option>
        <option style="font-size: 1.25rem" value="divorced">Divorced</option>
        <option style="font-size: 1.25rem" value="widowed">Widowed</option>
    </select>
    </td>
</tr>
</tbody>
</table>
<div class="button-div">
    <input class="btn" type="submit" value="Submit"/>
    <input class="btn" type="reset" value="Reset"/>
</div>
</form>
</div>
</body>
</html>

```

styles.css:

```

body{
    background-color: #1687a7;
    font-family: Helvetica, Verdana, sans-serif;
}

.form-container {
    display: flex;
    flex-direction: column;
    width: 40%;
    margin: 5% auto;
    padding: 2% 5%;
    background-color: #f6f5f5;
    border-radius: 1.5em;
}

```

```
        box-shadow: rgba(50, 50, 93, 0.25) 0px 13px 27px -5px, rgba(0, 0, 0, 0.3) 0px 8px 16px -8px;
```

```
}
```

```
.form-header, .button-div {  
    display: flex;  
    flex-direction: row;  
    margin-bottom: 3%;  
}
```

```
.button-div {  
    justify-content: center;  
}
```

```
.form-heading {  
    margin: 0;  
    margin-left: 3%;  
    width: 80%;  
    padding-bottom: 5px;  
    border-bottom: 4px solid #276678;  
    font-size: 2.5rem;  
    color: #0f3057;  
}
```

```
label {  
    font-size: 1.25rem;  
    font-weight: bold;  
}
```

```
input {  
    margin: 15px 0;  
    outline: none;  
    border: none;  
    border-bottom: 3px solid #276678;  
    background-color: #f6f5f5;  
    font-size: 1.25rem;  
}
```

```
input:focus{
    border-bottom: 3px solid #28abb9;
}
```

```
td {
    padding: 5px 20px;
}
```

```
.right-align {
    text-align: right;
}
```

```
.btn {
    margin: 15px;
    padding: 1%;
    border: 3px solid #276678;
    border-radius: 0.25em;
    background-color: #276678;
    color: white;
    font-size: 1.25rem;
    font-weight: 900;
    cursor: pointer;
}
```

```
.btn:hover{
    border: 3px solid #28abb9;
    background-color: #28abb9;
}
```

```
.user-icon{
    color: #0f3057;
}
```

```
.user-icon:hover {
    color: #276678;
}
```

Register.java:

```
import java.io.*;
```

```

import javax.servlet.ServletException;
import javax.servlet.*;
import javax.servlet.http.*;

public class Register extends HttpServlet{
    public void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException{
        // for GET method
        response.setContentType("text/html;charset=UTF-8");
        PrintWriter out = response.getWriter();

        try{
            String[] params = {"ename","desig","dept","phone","salary","address", "dob",
"gender", "married"};
            String[] labels = {"Name", "Designation", "Department", "Phone No", "Base Salary",
"Address", "Date of Birth", "Gender", "Marital Status"};
            String value, desig = "";
            int basic = 0;
            double gross;

            // displaying html table
            out.println("<!DOCTYPE html>");
            out.println("<html>");
            out.println("<head><title>Details Obtained</title></head>");
            out.println("<body style='background-color: #1687a7; font-family: Helvetica, Verdana,
sans-serif;'>");
            out.println("<div style='text-align: center; margin: 5% auto; width: 30%; padding: 2%
5%; background-color: #f6f5f5; border-radius: 1.5em; box-shadow: rgba(50, 50, 93, 0.25)
0px 13px 27px -5px, rgba(0, 0, 0, 0.3) 0px 8px 16px -8px;'>");
            out.println("<h1 style='padding-bottom: 5px; border-bottom: 4px solid #276678;
font-size: 2.5rem; color: #0f3057;'>Employee Details</h1>");
            out.println("<table cellpadding=10px style='font-size: 1.25rem; text-align:left'>");
            for(int i=0; i<params.length; i++)
            {
                value = request.getParameter(params[i]).trim();
                if(i == 1)
                    desig = value;
                if(i == 4)
                    basic = Integer.parseInt(value);

```

```

        out.println("<tr><th style='text-align:right'>" + labels[i] + " :</th><td>" + value +
"</td></tr>");
    }
    gross = basic + 0.2*basic + 0.5*basic - 0.11*basic;
    switch(desig)
    {
        case "Manager":
            gross += 3000;
            break;
        case "Developer":
            gross += 2500;
            break;
        case "Tester":
            gross += 2000;
            break;
        case "Intern":
            gross += 1500;
            break;
        default:
            break;
    }
    out.println("<tr><th style='text-align:right'>Gross Salary :</th><td>" + gross +
"</td></tr>");
    out.println("</body></html>");
}
finally{
    out.close();
}

}
}

```

web.xml :

```

<web-app>
    <servlet>
        <servlet-name>Register</servlet-name>
        <servlet-class>Register</servlet-class>
    </servlet>

```

```
<servlet-mapping>
    <servlet-name>Register</servlet-name>
    <url-pattern>/servlet/Register</url-pattern>
</servlet-mapping>

<welcome-file-list>
    <welcome-file>index.html</welcome-file>
</welcome-file-list>
</web-app>
```

2) Patient Management System -

index.html :

```
<!DOCTYPE html>
<html>
<head>
    <title>Home</title>
    <script src="https://kit.fontawesome.com/cc7d8d5698.js"
crossorigin="anonymous"></script>
    <link rel="stylesheet" type="text/css" href="/style.css">
</head>

<body>
    <div class="home-div">
        <h1>Welcome to the Patient Management System</h1>
        <hr>
        <div class="card-deck">
            <a href="addRecord.html">
                <div class="card">
                    <i class="fas fa-4x fa-plus-circle"></i>
                    <h2>Add Record</h2>
                </div>
            </a>

            <a href="updateRecord.html">
                <div class="card">
                    <i class="fas fa-4x fa-edit"></i>
                    <h2>Update Record</h2>
                </div>
            </a>
        </div>
    </div>
</body>
</html>
```



```
</a>

<a href="deleteRecord.html">
  <div class="card">
    <i class="fas fa-4x fa-trash-alt"></i>
    <h2>Delete Record</h2>
  </div>
</a>

<a href="view">
  <div class="card">
    <i class="fas fa-4x fa-eye"></i>
    <h2>View Records</h2>
  </div>
</a>

<a href="searchRecord.html">
  <div class="card">
    <i class="fas fa-4x fa-search"></i>
    <h2>Search Record</h2>
  </div>
</a>
</div>
</body>
</html>
```

style.css :

```
* {
    font-family: Tahoma, Arial, sans-serif;
}

a {
    text-decoration: none;
}

body {
    background-color: #94b5c0;
```

```
}
```

```
label {  
    font-weight: bold;  
}
```

```
button, input[type=submit] {  
    border: 3px solid #204051;  
    border-radius: 0.3em;  
    display: block;  
    margin: 0 auto;  
    margin-top: 3%;  
  
    color: white;  
    background-color: #204051;  
  
    font-weight: bold;  
    font-size: 1.25rem;  
    padding: 1% 3%;  
}
```

```
button:hover, input[type=submit]:hover{  
    background-color: #84a9ac;  
    cursor: pointer;  
}
```

```
input[type=text], input[type=password], input[type=number] {  
    border: none;  
    border-bottom: 3px solid #84a9ac;  
    font-size: 1.25rem;  
}
```

```
input[type=text]:focus, input[type=password]:focus, input[type=number]:focus{  
    outline: none;  
    border-bottom: 3px solid #204051;  
}
```

```
input[type=date], textarea {
```

```
        border: 3px solid #84a9ac;
        font-size: 1.25rem;
    }
```

```
input[type=date]:focus, textarea:focus {
    outline: none;
    border: 3px solid #204051;
}
```

```
select {
    font-size: 1.25rem;
}
```

```
h1, h2 {
    color: #204051;
    margin: 0;
}
```

```
hr {
    margin-bottom: 20px;
    border: 2px solid #84a9ac;
}
```

```
.login-div {
    margin: 10% auto;
    padding: 3%;
    width: 30%;

    display: flex;
    flex-direction: column;
    justify-content: center;
    align-items: center;

    background-color: white;
```

```
    box-shadow: rgba(0, 0, 0, 0.07) 0px 1px 2px, rgba(0, 0, 0, 0.07) 0px 2px 4px,
    rgba(0, 0, 0, 0.07) 0px 4px 8px, rgba(0, 0, 0, 0.07) 0px 8px 16px, rgba(0, 0, 0, 0.07) 0px
    16px 32px, rgba(0, 0, 0, 0.07) 0px 32px 64px;
}
```

```
.login-div input {  
    margin: 3%;  
}
```

```
.login-div h1 {  
    font-size: 2.25rem;  
    font-weight: 900;  
}
```

```
.login-div h2 {  
    font-size: 2rem;  
    color: #204051;  
}
```

```
.login-div hr {  
    width: 75%;  
}
```

```
.home-div {  
    width: 80%;  
    background-color: white;  
    margin: 3% auto;  
    padding: 5% 3%;  
    text-align: center;  
    box-shadow: rgba(0, 0, 0, 0.07) 0px 1px 2px, rgba(0, 0, 0, 0.07) 0px 2px 4px,  
    rgba(0, 0, 0, 0.07) 0px 4px 8px, rgba(0, 0, 0, 0.07) 0px 8px 16px, rgba(0, 0, 0, 0.07) 0px  
    16px 32px, rgba(0, 0, 0, 0.07) 0px 32px 64px;  
}
```

```
.home-div h1 {  
    font-size: 3rem;  
}
```

```
.home-div hr {  
    width: 75%;  
}
```

```
.card-deck {  
    display: flex;  
    width: 80%;  
    margin: 6% auto;  
    justify-content: space-around;  
}
```

```
.card-deck a {  
    color: white;  
}
```

```
.card {  
    background-color: #3b6978;  
    border-radius: 0.5em;  
    width: 200px;  
    height: 200px;  
  
    display: flex;  
    flex-direction: column;  
    justify-content: center;  
    align-items: center;  
}
```

```
.card:hover {  
    background-color: #204051;  
}
```

```
.card h2 {  
    margin-top: 20px;  
    color: white;  
    font-size: 1.25rem;  
}
```

```
.form-container, .records-div, .redirect-div, .search-div {  
    width: 50%;  
    margin: 3% auto;  
    background-color: white;  
    padding: 5%;  
    box-shadow: rgba(0, 0, 0, 0.07) 0px 1px 2px, rgba(0, 0, 0, 0.07) 0px 2px 4px,  
    rgba(0, 0, 0, 0.07) 0px 4px 8px, rgba(0, 0, 0, 0.07) 0px 8px 16px, rgba(0, 0, 0, 0.07) 0px  
    16px 32px, rgba(0, 0, 0, 0.07) 0px 32px 64px;
```

```

}
.form-container h2, .records-div h2, .redirect-div h2, .search-div h2 {
    font-size: 2rem;
}
.form-container table td {
    padding: 10px 0px;
    padding-right: 30px;
    font-size: 1.25rem;
}
.records-div {
    background-color: white;
    width: 75%;
}
.records-div table, .search-div table {
    border-collapse: collapse;
    width: 100%;
}
.search-div th, td {
    text-align: left;
    padding: 8px;
    font-size: 1.25rem;
}

.records-div th, td {
    text-align: left;
    padding: 8px;
    font-size: 1.25rem;
}

.records-div tr:nth-child(even), .search-div tr:nth-child(even) {
    background-color: whitesmoke;
}

```

login.html :

```

<!DOCTYPE html>
<html>
<head>
<title>Login</title>
<link rel="stylesheet" type="text/css" href="style.css">

```

```

</head>
<body>
<div class="login-div">
  <h1> Patient Management System</h1>
  <hr>
  <h2> Admin Login </h2>
  <input type="text" id="uname" name="uname" placeholder="Username"><br><br>
  <input type="password" id="pwd" name="pwd" placeholder="Password"><br><br>
  <button onclick="authenticate()">Submit</button>
</div>

<script>
function authenticate()
{
  const uname = document.getElementById("uname").value;
  const pwd = document.getElementById("pwd").value;
  if(uname==="admin" && pwd==="12345")
    window.location.href = "/pms/index.html";
  else {
    alert("Login failed! Please enter the correct details.");
    document.getElementById("uname").value = "";
    document.getElementById("uname").focus();
    document.getElementById("pwd").value = "";
  }
}
</script>

</body>
</html>

```

addRecord.html :

```

<!DOCTYPE html>
<html>
<head>
  <title>Add Record</title>
  <link rel='stylesheet' type='text/css' href='./style.css'>
</head>
<body>
  <div class="form-container">

```

<h2>Add a New Record</h2>

<hr>

<form method=post action='add'>

<table>

<tr>

<td><label for='id'>Patient ID</label></td>

<td><input type='text' name='id' id='id'></td>

</tr>

<tr>

<td><label for='pname'>Name</label></td>

<td><input type='text' name='pname' id='pname'></td>

</tr>

<tr>

<td><label for='age'>Age</label></td>

<td><input type='number' name='age' id='age'></td>

</tr>

<tr>

<td><label for='gender'>Gender</label></td>

<!-- <td><input type='text' name='gender' id='gender'></td> -->

<td>

<input type="radio" id="male" name="gender" value="Male">

<label style="font-weight: normal;" for="male">Male</label>

<input type="radio" id="female" name="gender" value="Female">

<label style="font-weight: normal;" for="female">Female</label>

<input type="radio" id="other" name="gender" value="Other">

<label style="font-weight: normal;" for="other">Other</label>

</td>

</tr>

<tr>

<td><label for='address'>Address</label></td>

<td><textarea name='address' id='address' cols="25" rows="5"></textarea></td>

</tr>

<tr>

<td><label for='married'>Marital Status</label></td>

<!-- <td><input type='text' name='married' id='married'></td> -->

<td>

<select name="married" id="married">

<option value="Single">Single</option>

<option value="Married">Married</option>


```

        <option value="Divorced">Divorced</option>
        <option value="Widowed">Widowed</option>
    </select>
</td>
</tr>
<tr>
    <td><label for='dov'>Date of Visit</label></td>
    <td><input type='date' name='dov' id='dov'></td>
</tr>

</table>
<input type='submit' value="Add Record">
</form>
</div>

</body>
</html>

```

deleteRecord.html

```

<!DOCTYPE html>
<html>
<head>
    <title>Delete Record</title>
    <link rel='stylesheet' type='text/css' href='./style.css'>
</head>
<body>
    <div class="form-container">
        <h2>Delete a Patient's Record</h2>
        <hr>

        <form method=post action='delete'>
            <table>
                <tr>
                    <td><label for='id'>Patient ID</label></td>
                    <td><input type='text' name='id' id='id'></td>
                </tr>

            </table>
            <input type='submit' value="Submit">

```

```
</form>
</div>
```

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

searchRecord.html :

```
<!DOCTYPE html>
<html>
<head>
<title>Search Record</title>
<link rel='stylesheet' type='text/css' href='./style.css'>
</head>
<body>
<div class="form-container">
<h2>Search for a Patient's Record</h2>
<hr>

<form method=post action='search'>
<table>
<tr>
<td><label for='id'>Patient ID</label></td>
<td><input type='text' name='id' id='id'></td>
</tr>

</table>
<input type='submit' value="Submit">
</form>
</div>

</body>
</html>
```

updateRecord.html :

```
<!DOCTYPE html>
<html>
<head>
<title>Update Record</title>
```

```

<link rel='stylesheet' type='text/css' href='./style.css'>
</head>
<body>
<div class="form-container">
<h2>Update a Patient's Record</h2>
<hr>

<form method=post action='update'>
<table>
<tr>
<td><label for='id'>Patient ID</label></td>
<td><input type='text' name='id' id='id'></td>
</tr>

<tr>
<td><label for='address'>Updated Address</label></td>
<td><textarea name='address' id='address' cols="26" rows="5"></textarea></td>
</tr>

</table>
<input type='submit' value="Submit">
</form>
</div>

</body>
</html>

```

web.xml :

```

<web-app>

<welcome-file-list>
<welcome-file>login.html</welcome-file>
</welcome-file-list>

<servlet>
<servlet-name>ViewServlet</servlet-name>
<servlet-class>ViewServlet</servlet-class>
</servlet>

```

```
<servlet>
    <servlet-name>AddServlet</servlet-name>
    <servlet-class>AddServlet</servlet-class>
</servlet>
<servlet>
    <servlet-name>UpdateServlet</servlet-name>
    <servlet-class>UpdateServlet</servlet-class>
</servlet>
<servlet>
    <servlet-name>SearchServlet</servlet-name>
    <servlet-class>SearchServlet</servlet-class>
</servlet>
<servlet>
    <servlet-name>DeleteServlet</servlet-name>
    <servlet-class>DeleteServlet</servlet-class>
</servlet>

<servlet-mapping>
    <servlet-name>ViewServlet</servlet-name>
    <url-pattern>/view</url-pattern>
</servlet-mapping>
<servlet-mapping>
    <servlet-name>AddServlet</servlet-name>
    <url-pattern>/add</url-pattern>
</servlet-mapping>
<servlet-mapping>
    <servlet-name>UpdateServlet</servlet-name>
    <url-pattern>/update</url-pattern>
</servlet-mapping>
<servlet-mapping>
    <servlet-name>DeleteServlet</servlet-name>
    <url-pattern>/delete</url-pattern>
</servlet-mapping>
<servlet-mapping>
    <servlet-name>SearchServlet</servlet-name>
    <url-pattern>/search</url-pattern>
</servlet-mapping>
</web-app>
```

AddServlet.java :

```
import javax.servlet.http.*;
import javax.servlet.*;
import java.io.*;
import java.util.*;

import java.sql.*;

public class AddServlet extends HttpServlet{
    public void doPost(HttpServletRequest req, HttpServletResponse res)
        throws ServletException,IOException
    {
        res.setContentType("text/html");
        PrintWriter pw=res.getWriter();
        pw.println("<html><head><title>Add Record</title><link rel='stylesheet'
type='text/css' href='./style.css'></head><body>");

        try {
            // JDBC driver and database
            final String url = "jdbc:mysql://localhost:3306/hospital";
            final String user = "root";
            final String password = "vanathi21";

            Connection con = DriverManager.getConnection(url, user, password);

            Statement stmt = con.createStatement();
            String id = req.getParameter("id");
            String name = req.getParameter("pname");
            String age = req.getParameter("age");
            String gender = req.getParameter("gender");
            String address = req.getParameter("address");
            String marital_status = req.getParameter("married");
            String date = req.getParameter("dov");

            String query = "INSERT INTO patient_details " + "VALUES
(\""+id+"\", \""+name+"\", \""+age+"\", \""+gender+"\", \""+address+"\", \""+marital_status+"\", \""+date+"\" )";
            stmt.executeUpdate(query);
```

```
stmt.close();
con.close();
```

```
pw.println("<div class='redirect-div'><h2>Successfully Added a New  
Record!</h2><hr><a href='/pms/view'><button>View Records</button></a></div>");
```

```
}
```

```
catch (Exception e){
    pw.println("Error occurred"+e);
    e.printStackTrace();
}
pw.println("</body></html>");
pw.close();
```

```
}
```

```
}
```

DeleteServlet.java :

```
import javax.servlet.http.*;
import javax.servlet.*;
import java.io.*;
import java.util.*;
```

```
import java.sql.*;
```

```
public class DeleteServlet extends HttpServlet{
    public void doPost(HttpServletRequest req, HttpServletResponse res)
        throws ServletException,IOException
    {
        res.setContentType("text/html");
        PrintWriter pw=res.getWriter();
        pw.println("<html><head><title>Delete Record</title><link rel='stylesheet'
        type='text/css' href='./style.css'></head><body>");
```

```
try {
    // JDBC driver and database
```

```

final String url = "jdbc:mysql://localhost:3306/hospital";
final String user = "root";
final String password = "vanathi21";

Connection con = DriverManager.getConnection(url, user, password);

Statement stmt = con.createStatement();
String id = req.getParameter("id");

String query = "DELETE FROM patient_details WHERE id="+id;
stmt.executeQuery(query);

stmt.close();
con.close();

pw.println("<div class='redirect-div'><h2>Successfully Deleted the
Record!</h2><hr><a href='/pms/view'><button>View Records</button></a></div>");

}
catch (Exception e){
    pw.println("Error occurred"+e);
    e.printStackTrace();
}
pw.println("</body></html>");
pw.close();

}
}

```

SearchServlet.java :

```

import javax.servlet.http.*;
import javax.servlet.*;
import java.io.*;
import java.util.*;

import java.sql.*;

public class SearchServlet extends HttpServlet{
    public void doPost(HttpServletRequest req, HttpServletResponse res)

```

```

throws ServletException,IOException
{
    res.setContentType("text/html");
    PrintWriter pw=res.getWriter();
    pw.println("<html><head><title>Search Record</title><link rel='stylesheet'
type='text/css' href='./style.css'></head><body>");

    try {
        // JDBC driver and database
        final String url = "jdbc:mysql://localhost:3306/hospital";
        final String user = "root";
        final String password = "vanathi21";

        Connection con = DriverManager.getConnection(url, user, password);

        Statement stmt = con.createStatement();
        String id = req.getParameter("id");

        String query = "SELECT * FROM patient_details WHERE id="+id;

        ResultSet rs = stmt.executeQuery(query);
        pw.println("<div class='search-div'><h2>Record was
Found!</h2><hr><table><tbody>");

        rs.next();

        int pid = rs.getInt("id");
        String name = rs.getString("name");
        int age = rs.getInt("age");
        String gender = rs.getString("gender");
        String address = rs.getString("address");
        String marital_status = rs.getString("marital_status");
        String date = rs.getString("date");

        pw.println("<tr><td>Patient ID</td><td>"+pid+"</td></tr>");
        pw.println("<tr><td>Name</td><td>"+name+"</td></tr>");
        pw.println("<tr><td>Age</td><td>"+age+"</td></tr>");
        pw.println("<tr><td>Gender</td><td>"+gender+"</td></tr>");
        pw.println("<tr><td>Address</td><td>"+address+"</td></tr>");
        pw.println("<tr><td>Marital Status</td><td>"+marital_status+"</td></tr>");
    }
}

```



```

pw.println("<tr><td>Date of Visit</td><td>"+date+"</td></tr>");

pw.println("</tbody></table></div>");

stmt.close();
con.close();

}
catch (Exception e){
    pw.println("Error occured"+e);
    e.printStackTrace();
}
pw.println("</body></html>");
pw.close();

}
}

```

UpdateServlet.java :

```

import javax.servlet.http.*;
import javax.servlet.*;
import java.io.*;
import java.util.*;

import java.sql.*;

public class UpdateServlet extends HttpServlet{
    public void doPost(HttpServletRequest req, HttpServletResponse res)
    throws ServletException,IOException
    {
        res.setContentType("text/html");
        PrintWriter pw=res.getWriter();
        pw.println("<html><head><title>Update Record</title><link rel='stylesheet'
        type='text/css' href='./style.css'></head><body>");

        try {
            // JDBC driver and database
            final String url = "jdbc:mysql://localhost:3306/hospital";

```

```

final String user = "root";
final String password = "vanathi21";

Connection con = DriverManager.getConnection(url, user, password);

Statement stmt = con.createStatement();
String id = req.getParameter("id");
String address = req.getParameter("address");

String query = "UPDATE patient_details SET address = '" + address + "' WHERE id="+id;
stmt.executeQuery(query);

stmt.close();
con.close();

pw.println("<div class='redirect-div'><h2>Successfully Updated the
Record!</h2><hr><a href='/pms/view'><button>View Records</button></a></div>");

}
catch (Exception e){
    pw.println("Error occurred"+e);
    e.printStackTrace();
}
pw.println("</body></html>");
pw.close();

}
}

```

ViewServlet.java :

```

import javax.servlet.http.*;
import javax.servlet.*;
import java.io.*;
import java.util.*;

import java.sql.*;

public class ViewServlet extends HttpServlet{
    public void doGet(HttpServletRequest req, HttpServletResponse res)

```

```

throws ServletException,IOException
{
    res.setContentType("text/html");//setting the content type
    PrintWriter pw=res.getWriter();//get the stream to write the data
    pw.println("<html><head><title>View Records</title><link rel='stylesheet'
type='text/css' href='./style.css'></head><body>");

    try {
        // JDBC driver and database
        final String url = "jdbc:mysql://localhost:3306/hospital";
        final String user = "root";
        final String password = "vanathi21";

        Connection con = DriverManager.getConnection(url, user, password);

        Statement stmt = con.createStatement();
        String sql;
        sql = "SELECT * FROM patient_details";
        ResultSet rs = stmt.executeQuery(sql);

        pw.println("<div class='records-div'><h2>Viewing All Patient Records</h2><hr>");

        pw.println("<table cellpadding=10px
style='text-align:left'><tbody><tr><th>ID</th><th>Name</th><th>Age</th><th>Gender
</th><th>Address</th><th>Marital Status</th><th>Date of Visit</th></tr>");

        while(rs.next())
        {
            int id = rs.getInt("id");
            String name = rs.getString("name");
            int age = rs.getInt("age");
            String gender = rs.getString("gender");
            String address = rs.getString("address");
            String marital_status = rs.getString("marital_status");
            String date = rs.getString("date");

            pw.println("<tr><td>"+id+"</td><td>"+name+"</td><td>"+age+"</td><td>"+gender+"<
/td><td>"+address+"</td><td>"+marital_status+"</td><td>"+date+"</td></tr>");
        }
    }
}

```


```
stmt.close();
con.close();

}
catch (Exception e){
    pw.println("Error occurred"+e);
    e.printStackTrace();
}
pw.println("</tbody></table></div></body></html>");
pw.close();//closing the stream

}
}
```

OUTPUTS :

1) Employee Pay Form -

 **Employee Details**

Name :


Designation :

Department :

Basic Salary :

Phone No :

Address :

Date of Birth : 

Gender : ☒ Male ☐ Female ☐ Other

Marital Status :

Employee Details

Name : John Doe

Designation : Developer

Department : Web App Dev

Phone No : 1023456789

Base Salary : 35000

Address : Random City, Random State

Date of Birth : 1995-01-01

Gender : male

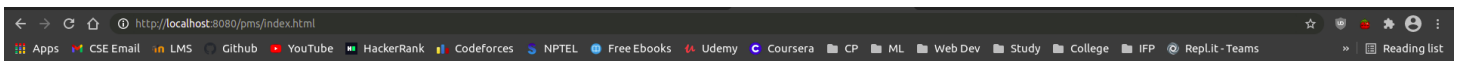
Marital Status : married

Gross Salary : 58150.0


2) Patient Management System -


Patient Management System


Admin Login





Welcome to the Patient Management System


Add Record


Update Record


Delete Record


View Records


Search Record

← → ↻ ⌂ http://localhost:8080/pms/updateRecord.html ☆ 📧 ⚙️ 👤 ⋮
📱 Apps 📧 CSE Email 📱 LMS 📱 Github 📺 YouTube 📺 HackerRank 📱 Codeforces 📺 NPTEL 📺 Free Ebooks 📺 Udemy 📺 Coursera 📁 CP 📁 ML 📁 Web Dev 📁 Study 📁 College 📁 IFP 📺 Repl.it - Teams » 📖 Reading list

Update a Patient's Record

Patient ID

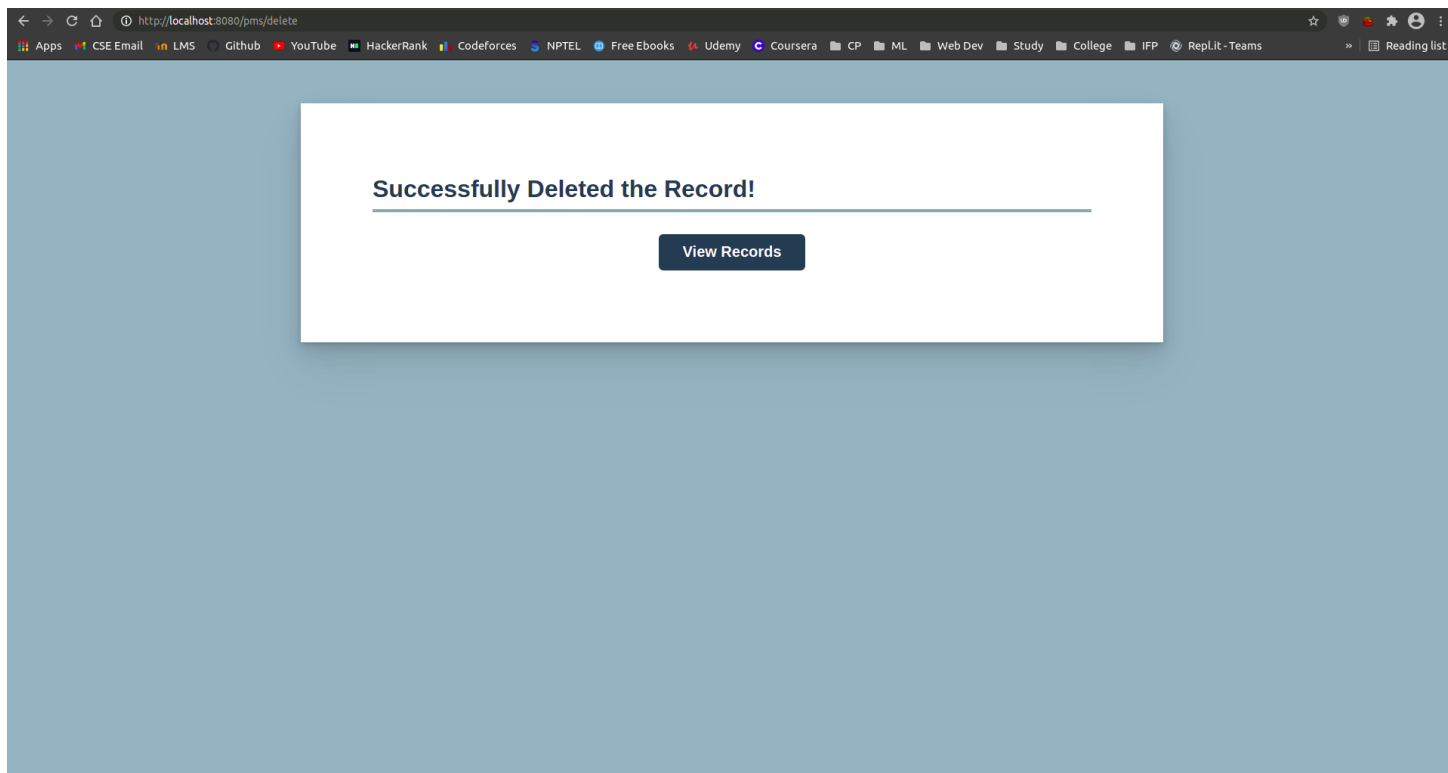
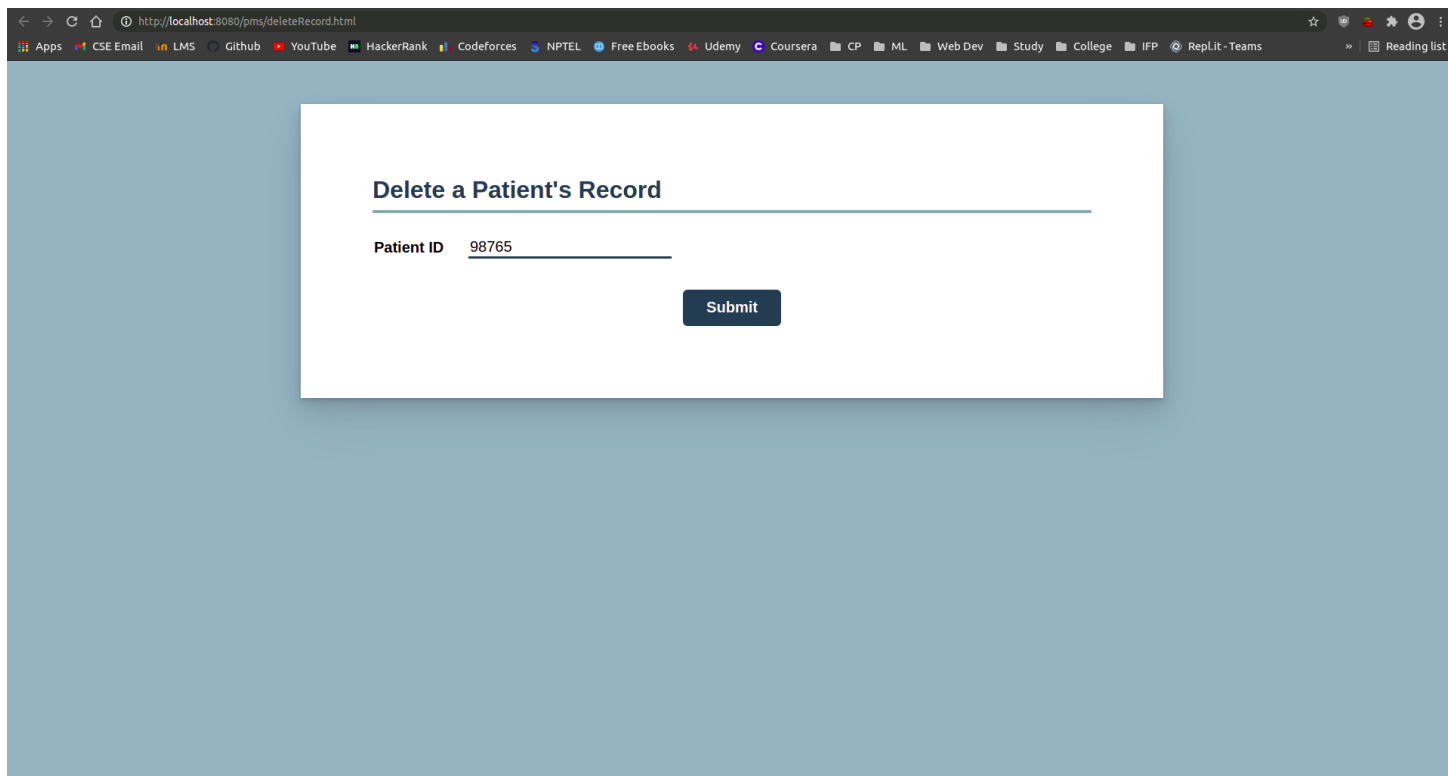
Updated Address

[Submit](#)

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Successfully Updated the Record!

[View Records](#)



← → ↻ ⓘ http://localhost:8080/pms/searchRecord.html ☆ 🌐 🔒 👤 ⋮
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Search for a Patient's Record

Patient ID

Submit

← → ↻ ⓘ http://localhost:8080/pms/search 🌐 🔒 👤 ⋮
📱 Apps 📧 CSE Email 📅 LMS 🐙 Github 📺 YouTube 🎮 HackerRank 🏆 Codeforces 📺 NPTEL 📺 Free Ebooks 📺 Udemy 📺 Coursera 📁 CP 📁 ML 📁 Web Dev 📁 Study 📁 College 📁 IFP 📺 Replit - Teams » 📖 Reading list

Record was Found!

Patient ID	28291
Name	Janet
Age	43
Gender	Female
Address	Old Apts., Old City, Old State
Marital Status	Single
Date of Visit	2021-03-13

Viewing All Patient Records

ID	Name	Age	Gender	Address	Marital Status	Date of Visit
12341	Alice	45	Female	Flat 25B, New Apts., Old City	Married	2021-01-05
23456	Bob	42	Male	HJK Apts., PQR City	Divorced	2021-03-18
28291	Janet	43	Female	Old Apts., Old City, Old State	Single	2021-03-13
34278	Charlie	22	Other	Flat 1A, PQR Building, XYZ City	Married	2021-02-18
37231	Frank	23	Male	New place, old city	Single	2021-03-13
37849	Emily	33	Female	Random place, random city	Married	2020-12-14
38648	John	31	Male	LMN Street, RST City	Married	2021-02-23
48921	Kate	72	Female	XYZ Street, ABC City	Widowed	2021-03-11
63487	Dan	41	Male	QWERTY state, ABC City	Single	2021-03-12
76543	Kim	25	Other	XYZ Street, ABC City	Single	2021-02-12

LEARNING OUTCOMES -

1. I successfully wrote a Java servlet to calculate the gross pay of an employee based on basic pay and designation after reading the form details submitted.
2. I successfully designed a web application for a “Patient Management System” using Java Servlets and MySQL database.
3. I learnt how to write proper servlet code, i.e. by extending the correct classes and overriding the appropriate methods to handle get requests and post requests. I also understood how to use the request and response objects.
4. I learnt how to create and close a database connection to MySQL from the servlet using JDBC drivers.
5. I also was able to perform the required create, update, delete and fetch queries to the database from the servlets.
6. Overall, it was a good learning experience about various Java Servlet and server side programming concepts.