CaseStudy

Aim: Develop an application similar to irctc.com – show the login page and validate the login details (username, password) with the initialization parameters of the servlet and if the user is valid, then show the search page where user selects source station, destination station, date of journey and then show the list of trains retrieving from database using SERVLETS.

index.html:

```
<!DOCTYPE html>

<html lang="en">

<head>

   <meta charset="UTF-8">

   <meta name="viewport" content="width=device-width, initial-scale=1.0">

   <title>Login</title>

   <style>

     body {

       background: linear-gradient(135deg, #6c5ce7, #a29bfe);

       font-family: 'Roboto', sans-serif;

       display: flex;

       justify-content: center;

       align-items: center;

       height: 100vh;

       margin: 0;

     }


     .login-container {

       background: rgba(255, 255, 255, 0.95);

       padding: 40px;

       border-radius: 12px;

       box-shadow: 0 8px 20px rgba(0, 0, 0, 0.2);

       width: 100%;

       max-width: 400px;

       text-align: center;
```

```css
    }

.login-container h2 {
    font-size: 24px;

    color: #2d3436;

    margin-bottom: 15px;

    font-weight: 700;
}

label {
    font-size: 14px;

    color: #2d3436;

    display: block;

    margin-bottom: 6px;

    text-align: left;
}

input[type="text"], input[type="password"] {
    width: 100%;

    padding: 14px;

    border: 1px solid #dfe6e9;

    border-radius: 8px;

    margin-bottom: 20px;

    font-size: 16px;

    transition: all 0.3s ease;

    background-color: #f8f9fa;
}

input[type="text"]:focus, input[type="password"]:focus {
    border-color: #6c5ce7;

    outline: none;
```

```css
    background-color: #ffffff;

    box-shadow: 0 4px 8px rgba(108, 92, 247, 0.2);

}


button {

    background: linear-gradient(135deg, #6c5ce7, #a29bfe);

    color: white;

    padding: 14px;

    border: none;

    border-radius: 8px;

    font-size: 16px;

    cursor: pointer;

    width: 100%;

    transition: all 0.3s ease;

    font-weight: 600;

}


button:hover {

    background: linear-gradient(135deg, #a29bfe, #6c5ce7);

    box-shadow: 0 6px 15px rgba(108, 92, 247, 0.3);

}


.footer {

    margin-top: 15px;

    font-size: 14px;

    color: #636e72;

}


.footer a {

    text-decoration: none;

    color: #6c5ce7;
```

```
      font-weight: 500;

    }


    .footer a:hover {

      text-decoration: underline;

    }

  </style>

</head>

<body>

  <div class="login-container">

    <h2>22251A0568</h2>

    <h2>Login to Train System</h2>

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

      <label for="username">Username</label>

      <input type="text" id="username" name="username" required>

      <label for="password">Password</label>

      <input type="password" id="password" name="password" required>

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

    </form>

    <div class="footer">

      <p>Don't have an account? <a href="#">Sign Up</a></p>

    </div>

  </div>

</body>

</html>
```

search.html:

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>Search Trains</title>

  <style>

    body {

      background: linear-gradient(120deg, #74b9ff, #81ecec);

      font-family: 'Roboto', sans-serif;

      display: flex;

      justify-content: center;

      align-items: center;

      height: 100vh;

      margin: 0;

    }


    .search-container {

      background: rgba(255, 255, 255, 0.95);

      padding: 40px;

      border-radius: 15px;

      box-shadow: 0 8px 20px rgba(0, 0, 0, 0.2);

      width: 100%;

      max-width: 500px;

    }


    .search-container h2 {

      font-size: 28px;

      color: #2d3436;

      margin-bottom: 20px;
```

```css
    text-align: center;

    font-weight: 700;

}


label {

    font-size: 16px;

    color: #2d3436;

    display: block;

    margin-bottom: 6px;

    text-align: left;

}


input[type="text"], input[type="date"] {

    width: 100%;

    padding: 14px;

    border: 1px solid #dfe6e9;

    border-radius: 8px;

    margin-bottom: 20px;

    font-size: 16px;

    background-color: #f8f9fa;

    transition: all 0.3s ease;

}


input[type="text"]:focus, input[type="date"]:focus {

    border-color: #0984e3;

    outline: none;

    background-color: #ffffff;

    box-shadow: 0 4px 8px rgba(9, 132, 227, 0.2);

}


button {
```

```css
    background: linear-gradient(135deg, #0984e3, #74b9ff);

    color: white;

    padding: 14px;

    border: none;

    border-radius: 8px;

    font-size: 16px;

    cursor: pointer;

    width: 100%;

    transition: all 0.3s ease;

    font-weight: 600;

}


button:hover {

    background: linear-gradient(135deg, #74b9ff, #0984e3);

    box-shadow: 0 6px 15px rgba(9, 132, 227, 0.3);

}


table {

    margin-top: 20px;

    width: 100%;

    border-collapse: collapse;

    background-color: #ffffff;

    border-radius: 8px;

    overflow: hidden;

}


th, td {

    padding: 14px;

    text-align: center;

    border-bottom: 1px solid #dfe6e9;

}
```

```css
    th {

      background-color: #0984e3;

      color: white;

    }


    tr:hover {

      background-color: #dfe6e9;

    }


    tr:last-child td {

      border-bottom: none;

    }
  </style>
</head>
<body>
  <div class="search-container">
    <h2>Search Trains</h2>
    <form action="SearchServlet" method="post">
      <label for="source">Source Country</label>
      <input type="text" id="source" name="source" required>


      <label for="destination">Destination Country</label>
      <input type="text" id="destination" name="destination" required>


      <label for="date">Date</label>
      <input type="date" id="date" name="date" required>


      <button type="submit">Search</button>
    </form>
```

```
                    <!-- Table to display results -->


    </div>

</body>

</html>
```

SearchServlet.java:

```java
import java.io.*;

import java.sql.*;

import javax.servlet.*;

import javax.servlet.http.*;


public class SearchServlet extends HttpServlet {

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

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

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

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


        response.setContentType("text/html");

        PrintWriter out = response.getWriter();


        try {

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

            Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/demo", "root",
"password");


            PreparedStatement ps = con.prepareStatement(

                "SELECT * FROM trains WHERE source = ? AND destination = ? AND date = ?"

            );

            ps.setString(1, source);

            ps.setString(2, destination);
```

```java
        ps.setDate(3, java.sql.Date.valueOf(date));


        ResultSet rs = ps.executeQuery();


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

        out.println("<html lang='en'>");

        out.println("<head>");

        out.println("<meta charset='UTF-8'>");

        out.println("<meta name='viewport' content='width=device-width, initial-scale=1.0'>");

        out.println("<title>Train Search Results</title>");

        out.println("<style>");

        out.println("body {font-family: 'Roboto', sans-serif; background: linear-gradient(135deg,
#74b9ff, #81ecec); margin: 0; padding: 20px;}");

        out.println("h2 {text-align: center; color: #2d3436;}");

        out.println("table {width: 80%; margin: 20px auto; border-collapse: collapse;}");

        out.println("th, td {padding: 12px; text-align: center; border: 1px solid #ddd;}");

        out.println("th {background-color: #0984e3; color: white;}");

        out.println("tr:hover {background-color: #f1f1f1;}");

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

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

        out.println("<body>");

        out.println("<h2>Train Search Results</h2>");


        out.println("<table>");

        out.println("<thead>");

        out.println("<tr><th>Train
Name</th><th>Source</th><th>Destination</th><th>Date</th><th>Departure
Time</th><th>Arrival Time</th></tr>");

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

        out.println("<tbody>");


        boolean hasResults = false;
```

```java
        while (rs.next()) {

            hasResults = true;

            out.println("<tr>");

            out.println("<td>" + rs.getString("name") + "</td>");

            out.println("<td>" + rs.getString("source") + "</td>");

            out.println("<td>" + rs.getString("destination") + "</td>");

            out.println("<td>" + rs.getDate("date") + "</td>");

            out.println("<td>" + rs.getTime("departure_time") + "</td>");

            out.println("<td>" + rs.getTime("arrival_time") + "</td>");

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

        }


        if (!hasResults) {

            out.println("<tr><td colspan='6'>No trains found for the given criteria.</td></tr>");

        }


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

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

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

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

    } catch (Exception e) {

        e.printStackTrace();

        out.println("<p>Error: " + e.getMessage() + "</p>");

    }

  }

}
```

LoginServlet.java:

```java
import java.io.*;

import java.sql.*;

import javax.servlet.*;

import javax.servlet.http.*;
```

```java
public class LoginServlet extends HttpServlet {

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

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

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


        response.setContentType("text/html");

        PrintWriter out = response.getWriter();


        try {

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

            Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/demo", "root",
"password");


            PreparedStatement ps = con.prepareStatement("SELECT * FROM users WHERE name = ? AND
password = ?");

            ps.setString(1, username);

            ps.setString(2, password);

            ResultSet rs = ps.executeQuery();


            if (rs.next()) {

                response.sendRedirect("search.html");

            } else {

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

                out.println("<html lang='en'>");

                out.println("<head>");

                out.println("<meta charset='UTF-8'>");

                out.println("<meta name='viewport' content='width=device-width, initial-scale=1.0'>");

                out.println("<title>Login Failed</title>");

                out.println("<style>");

                out.println("body {");
```
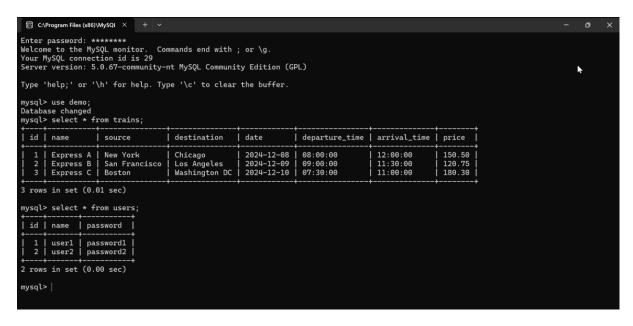
```
out.println("   background-color: #f7f7f7;");

out.println("   font-family: 'Roboto', sans-serif;");

out.println("   display: flex;");

out.println("   justify-content: center;");

out.println("   align-items: center;");

out.println("   height: 100vh;");

out.println("   margin: 0;");

out.println("}");

out.println(".message-container {");

out.println("   text-align: center;");

out.println("   background: white;");

out.println("   padding: 30px;");

out.println("   border-radius: 10px;");

out.println("   box-shadow: 0 8px 20px rgba(0, 0, 0, 0.2);");

out.println("}");

out.println(".message-container h2 {");

out.println("   color: #e74c3c;");

out.println("   font-size: 24px;");

out.println("   margin-bottom: 10px;");

out.println("}");

out.println(".message-container a {");

out.println("   display: inline-block;");

out.println("   margin-top: 15px;");

out.println("   padding: 10px 20px;");

out.println("   color: white;");

out.println("   background-color: #0984e3;");

out.println("   text-decoration: none;");

out.println("   border-radius: 5px;");

out.println("   transition: background-color 0.3s;");

out.println("}");

out.println(".message-container a:hover {");
```

```java
            out.println("    background-color: #74b9ff;");

            out.println("}");

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

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

            out.println("<body>");

            out.println("<div class='message-container'>");

            out.println("<h2>Invalid Credentials</h2>");

            out.println("<p>Please check your username and password.</p>");

            out.println("<a href='login.html'>Try Again</a>");

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

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

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

        }

    } catch (Exception e) {

        e.printStackTrace();

        out.println("<p>Error: " + e.getMessage() + "</p>");

    }

  }

}
```

Web.xml:

```xml
<web-app xmlns="http://java.sun.com/xml/ns/javaee"

        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

        xsi:schemaLocation="http://java.sun.com/xml/ns/javaee

http://java.sun.com/xml/ns/javaee/web-app_3_0.xsd"

        version="3.0">

   <servlet>

      <servlet-name>LoginServlet</servlet-name>

      <servlet-class>LoginServlet</servlet-class>

   </servlet>

   <servlet-mapping>

      <servlet-name>LoginServlet</servlet-name>
```

```xml
      <url-pattern>/LoginServlet</url-pattern>
   </servlet-mapping>
   <servlet>
      <servlet-name>SearchServlet</servlet-name>
      <servlet-class>SearchServlet</servlet-class>
   </servlet>
   <servlet-mapping>
      <servlet-name>SearchServlet</servlet-name>
      <url-pattern>/SearchServlet</url-pattern>
   </servlet-mapping>
</web-app>
```

Outputs:

Database:

Video: