UCS 1611 - Internet Programming Lab **Exercise 5: Profile Servlet using Session and MySQL**

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**Learning objective:**

To implement Profile Servlet using Http Sessions. The specifications are given below:

1. The login page should contain username, password, login button and

logout button. On clicking login button, invoke the LoginServlet.

2. The LoginServlet should authenticate the user and store the username in

session for viewing his profile and display a message “Welcome username”.

3. The LoginServlet should also display a link “View Profile in Detail”. The link

when clicked, should invoke ProfileServlet.

4. ProfileServlet should display the username retrieved from the session with

the message “Welcome username to the profile page”. Also retrieve and

display the detail information of the user from the database in that page. It

also displays a link to the Login page to logout.

5. When Logout button is pressed, invoke the LogoutServlet.

6. LogoutServlet should invalidate the user session and display “Successfully

Logged out”

**Code-**

**index.html**

<head>

  <link rel="stylesheet" href="style.css">

</head>

<body>

<div class="page">

  <div class="container">

    <div class="left">

      <div class="login">Login</div>

      <div class="eula">To view your profile.</div>

    </div>

    <div class="right">

      <form action="login" method="POST">

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

        <input type="name" id="username" name="username" class="getip">

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

        <input type="password" id="password" name="password" class="getip">

        <input type="submit" id="submit" value="Submit" style="margin-left: 95px;">

      </form>

    </div>

  </div>

</div>

<script src="script.js"></script>

</body>

**style.css**

body {

*font-family*: 'Inter UI', sans-serif;

*margin*: 0;

*padding*: 20px;

}

.page {

*background*: #e2e2e5;

*display*: flex;

*flex-direction*: column;

*height*: calc(100% - 40px);

*position*: absolute;

*place-content*: center;

*width*: calc(100% - 40px);

}

.container {

*display*: flex;

*height*: 320px;

*margin*: 0 auto;

*width*: 640px;

}

.left {

*background*: white;

*height*: calc(100% - 40px);

*top*: 20px;

*position*: relative;

*width*: 50%;

}

.login {

*font-size*: 50px;

*font-weight*: 900;

*margin*: 50px 40px 40px;

}

.eula {

*color*: #999;

*font-size*: 14px;

*line-height*: 1.5;

*margin*: 40px;

}

.right {

*background*: #474A59;

*box-shadow*: 0px 0px 40px 16px rgba(0,0,0,0.22);

*color*: #F1F1F2;

*position*: relative;

*width*: 50%;

}

.form {

*margin*: 40px;

*position*: absolute;

}

label {

*margin-left*: 20px;

*color*:  #c2c2c5;

*display*: block;

*font-size*: 14px;

*height*: 16px;

*margin-top*: 20px;

*margin-bottom*: 5px;

}

input {

*background*: transparent;

*border*: 0;

*color*: #837d7d;

*font-size*: 15px;

*height*: 30px;

*line-height*: 30px;

*outline*: none !important;

}

.getip{

*padding*: 16px 10px;

*margin-left*: 20px;

*border*: none;

*border-radius*: 4px;

*background-color*: #fffefe;

}

#submit {

*color*: #f3f3f5;

*margin-top*: 40px;

*transition*: color 300ms;

*width*:100px;

*border-radius*: 5px;

}

#submit:focus {

*color*: #f2f2f2;

*background-color*: #2D2F36;

}

#submit:active {

*color*: #d0d0d2;

}

.cont {

*background-color*: white;

*width*: 35vw;

*margin-top*: 90px;

*display*: flex;

*flex-direction*: column;

*box-shadow*: 0 6px 16px 0 rgba(0, 0, 0, 0.4);

*justify-content*: space-around;

*padding*: 35px;

  }

  .top-container {

*display*: flex;

*justify-content*: space-between;

*align-items*: center;

  }

  a {

*text-decoration*:none;

*background-color*:#6d6767;

*color*: white;

*padding*:10px;

*border-radius*:20px;

*cursor*:pointer;

  }

  .bottom-container {

*text-align*: left;

*font-size*: 18px;

*font-weight*: 600;

*line-height*: 2.5rem;

*margin-top*: 20px;

  }

**login.java**

import java.io.\*;

import jakarta.servlet.\*;

import jakarta.servlet.http.\*;

import java.sql.\*;

import java.util.\*;

//javac -d WEB-INF/classes login.java

public class login extends *HttpServlet*

{

  public *void* doPost(*HttpServletRequest* *request*,*HttpServletResponse* *response*) throws *ServletException*, *IOException*

  {

    response.setContentType("text/html");

*PrintWriter* out = response.getWriter();

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

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

    //SQL Connection

*String* JDBC\_DRIVER = "com.mysql.jdbc.Driver";

*String* DB\_URL="jdbc:mysql://localhost:3306/users";

*String* USER = "root";

*String* PASS = "mysql";

    try

    {

*Connection* conn = DriverManager.getConnection(DB\_URL,USER, PASS);

*Statement* stmt = conn.createStatement();

*String* query;

      query = "SELECT \* FROM `Persons` WHERE `username`='"+username+"'";

*ResultSet* rs = stmt.executeQuery(query);

      while(rs.next())

      {

*String* pwd = rs.getString("password");

*String* name = rs.getString("firstname")+rs.getString("lastname");

        if(password.equals(pwd))

        {

*HttpSession* session = request.getSession();

          session.setAttribute("user", username);

          out.println("<html><head><title>Login-Page</title><link rel='stylesheet' href='style.css'></head>"+

          "<body><div class='page'><center><div class='login-button'><h1>Welcome "+name+

          "!</h1><a href='profile'> View Profile</a><div></center></div></body></html>");

        }

        else

        {

          out.println("<html><head><title>Login-Page</title><link rel='stylesheet' href='style.css'></head>"+

          "<body><div class='page'><center><div class='login-button'><h1 style='color:red;'>Invalid Credentials!</h1><a href='index.html'>Try Again</a><div></center></div></body></html>");

        }

      }

      out.close();

      conn.close();

    }

    catch(*Exception* *e*)

    {

      //Handle errors for Class.forName

      e.printStackTrace();

    }

  }

}

**profile.java**

import java.io.\*;

import jakarta.servlet.\*;

import jakarta.servlet.http.\*;

import java.sql.\*;

import java.util.\*;

//javac -d WEB-INF/classes profile.java

public class profile extends *HttpServlet*

{

    public *void* doGet(*HttpServletRequest* *request*,*HttpServletResponse* *response*) throws *ServletException*, *IOException*

    {

        response.setContentType("text/html");

*PrintWriter* out = response.getWriter();

*HttpSession* session = request.getSession();

*String* username = (String) session.getAttribute("user");

        //SQL Connection

*String* JDBC\_DRIVER = "com.mysql.jdbc.Driver";

*String* DB\_URL="jdbc:mysql://localhost:3306/users";

*String* USER = "root";

*String* PASS = "mysql";

        try

        {

*Connection* conn = DriverManager.getConnection(DB\_URL,USER, PASS);

*Statement* stmt = conn.createStatement();

*String* query;

            query = "SELECT \* FROM `Persons` WHERE `username`='"+username+"'";

*ResultSet* rs = stmt.executeQuery(query);

            while(rs.next())

            {

*String* fname = rs.getString("firstname");

*String* lname = rs.getString("lastname");

*String* age = rs.getString("age");

*String* prof = rs.getString("prof");

                out.println("<html><head><title>Login-Page</title><link rel='stylesheet' href='style.css'></head>"+

                            "<body><div class='page'><center><div><h1>"+fname+" "+lname+"'s Profile Page</h1>");

                out.println("<div class='cont'><div class='top-container'>"+

                            "<a href='logout'>Log Out</a></div><div class='bottom-container'>" +

                            "<p><em style="color:grey">First Name:</em>\t\t"+fname+"</td></tr>"+

                            "<p><em style="color:grey">Last Name:</em>\t\t"+lname+"</td></tr>"+

                            "<p><em style="color:grey">Age:</em>\t\t"+age+"</td></tr>"+

                            "<p><em style="color:grey">Profession:</em>\t\t"+prof+"</td></tr>"+

                            "</div></div>");

                out.println("</center></div></body></html>");

            }

            out.close();

            conn.close();

        }

        catch(*Exception* *e*)

        {

            //Handle errors for Class.forName

            e.printStackTrace();

        }

    }

}

**logout.java**

import java.io.\*;

import jakarta.servlet.\*;

import jakarta.servlet.http.\*;

import java.sql.\*;

import java.util.\*;

//javac -d WEB-INF/classes logout.java

public class logout extends *HttpServlet*

{

    public *void* doGet(*HttpServletRequest* *request*, *HttpServletResponse* *response*)throws *ServletException*, *IOException*

    {

      response.setContentType("text/html");

*PrintWriter* out = response.getWriter();

*HttpSession* session = request.getSession(false);

*String* username = (String)session.getAttribute("user");

      session.invalidate();

      out.println("<html><head><title>LogOut-Page</title><link rel='stylesheet' href='style.css'></head>"+

          "<body><div class='page'><center><div><h1 style='color:green;'><center>Sucessfully Logged Out "+username+"<center></h1><a href='index.html'> Go Back to Home </a><div></center></div></body></html>");

      out.close();

    }

  }

**web.xml**

<web-app>

    <servlet>

        <servlet-name>Login</servlet-name>

        <servlet-class>login</servlet-class>

    </servlet>

    <servlet-mapping>

        <servlet-name>Login</servlet-name>

        <url-pattern>/login</url-pattern>

    </servlet-mapping>

    <servlet>

        <servlet-name>Profile</servlet-name>

        <servlet-class>profile</servlet-class>

    </servlet>

    <servlet-mapping>

        <servlet-name>Profile</servlet-name>

        <url-pattern>/profile</url-pattern>

    </servlet-mapping>

    <servlet>

        <servlet-name>LogOut</servlet-name>

        <servlet-class>logout</servlet-class>

    </servlet>

    <servlet-mapping>

        <servlet-name>LogOut</servlet-name>

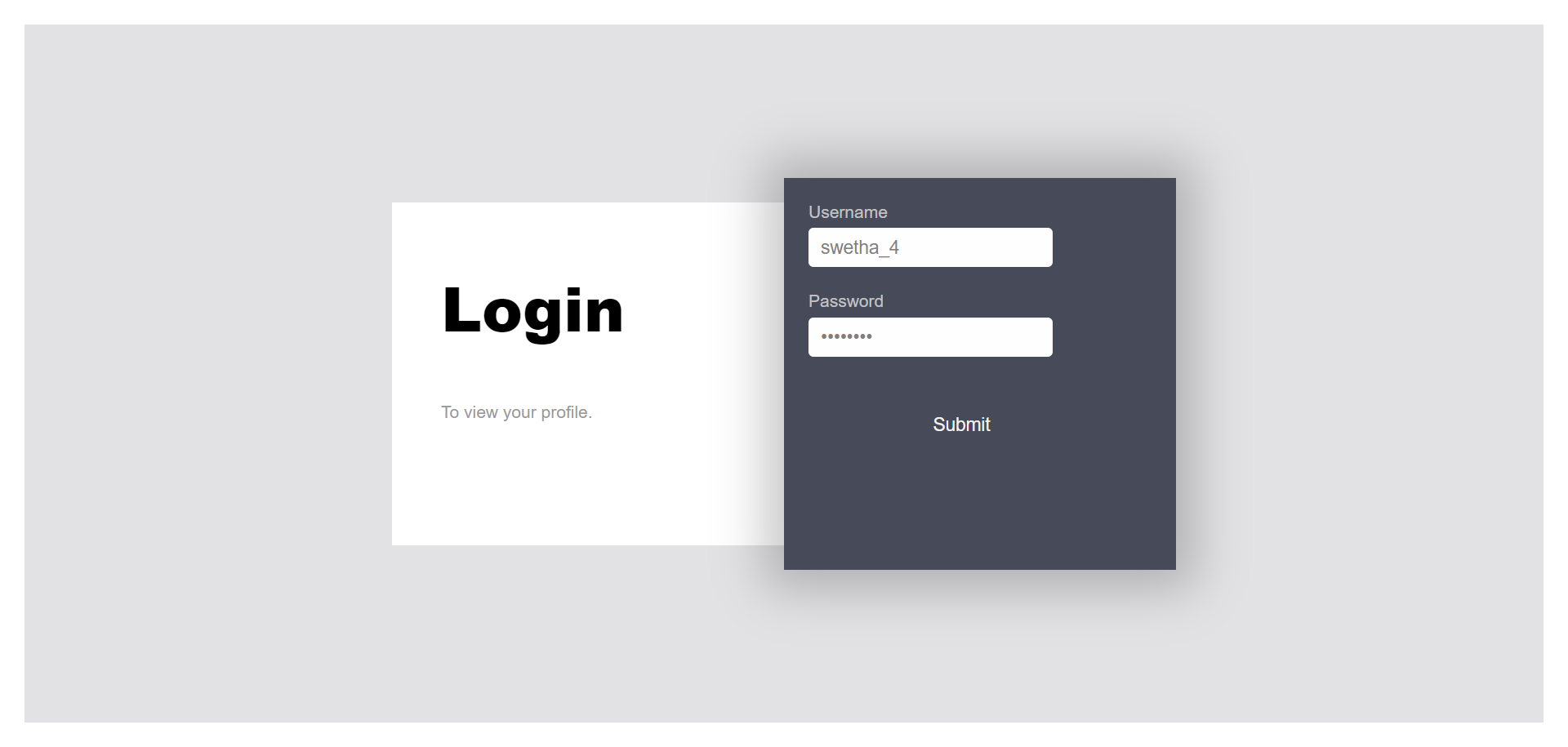
        <url-pattern>/logout</url-pattern>

    </servlet-mapping>

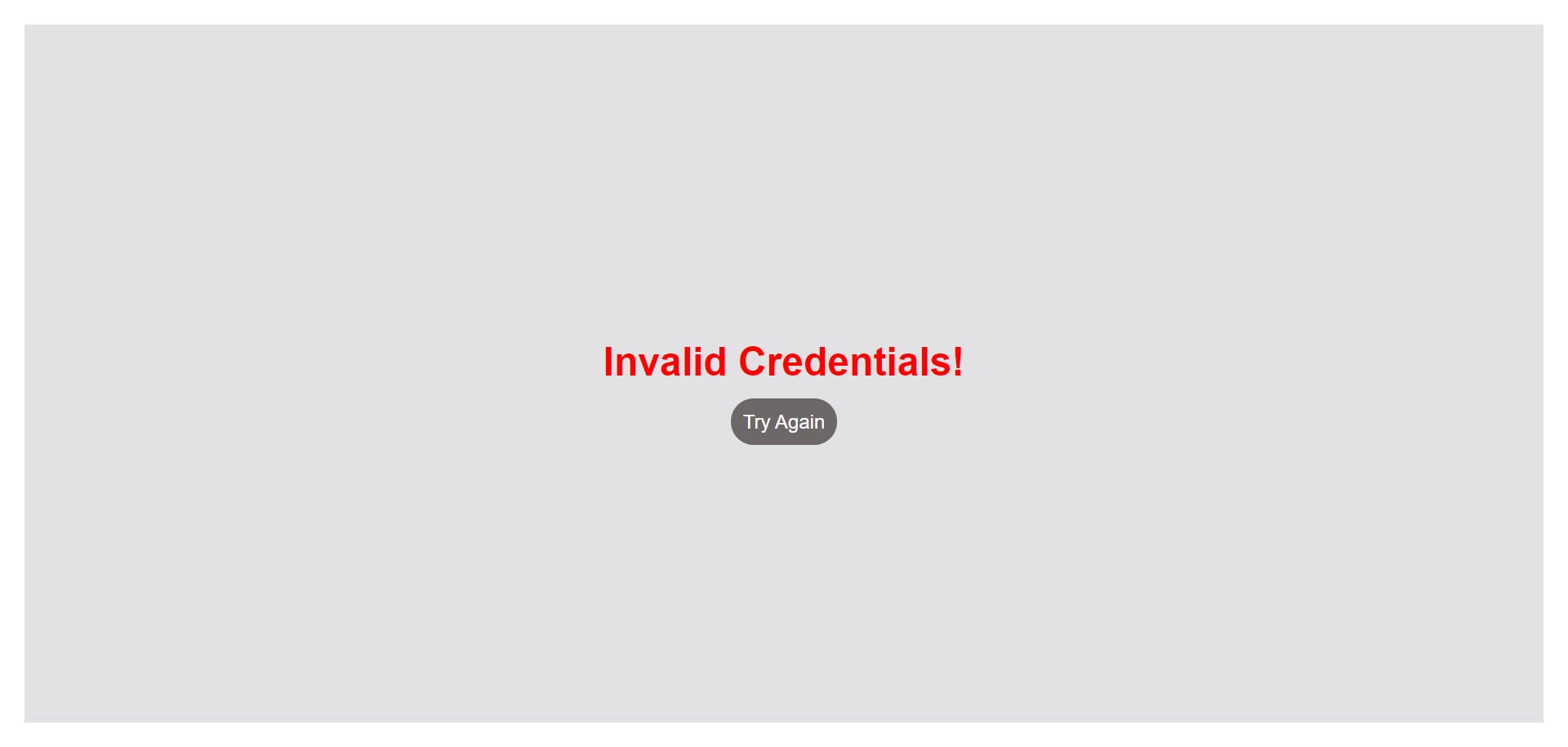
</web-app>

**OUTPUTS:**

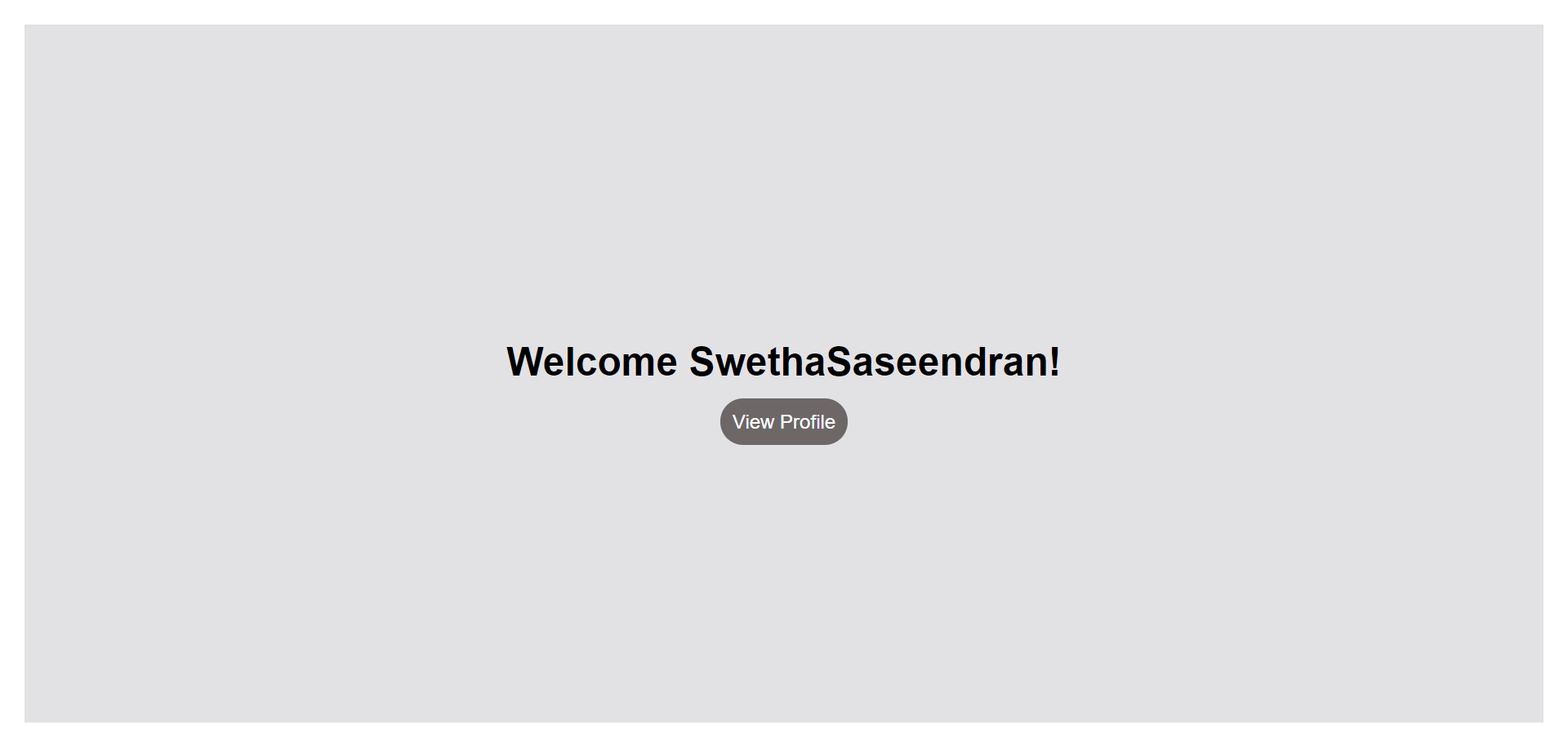
Login Page for first user:



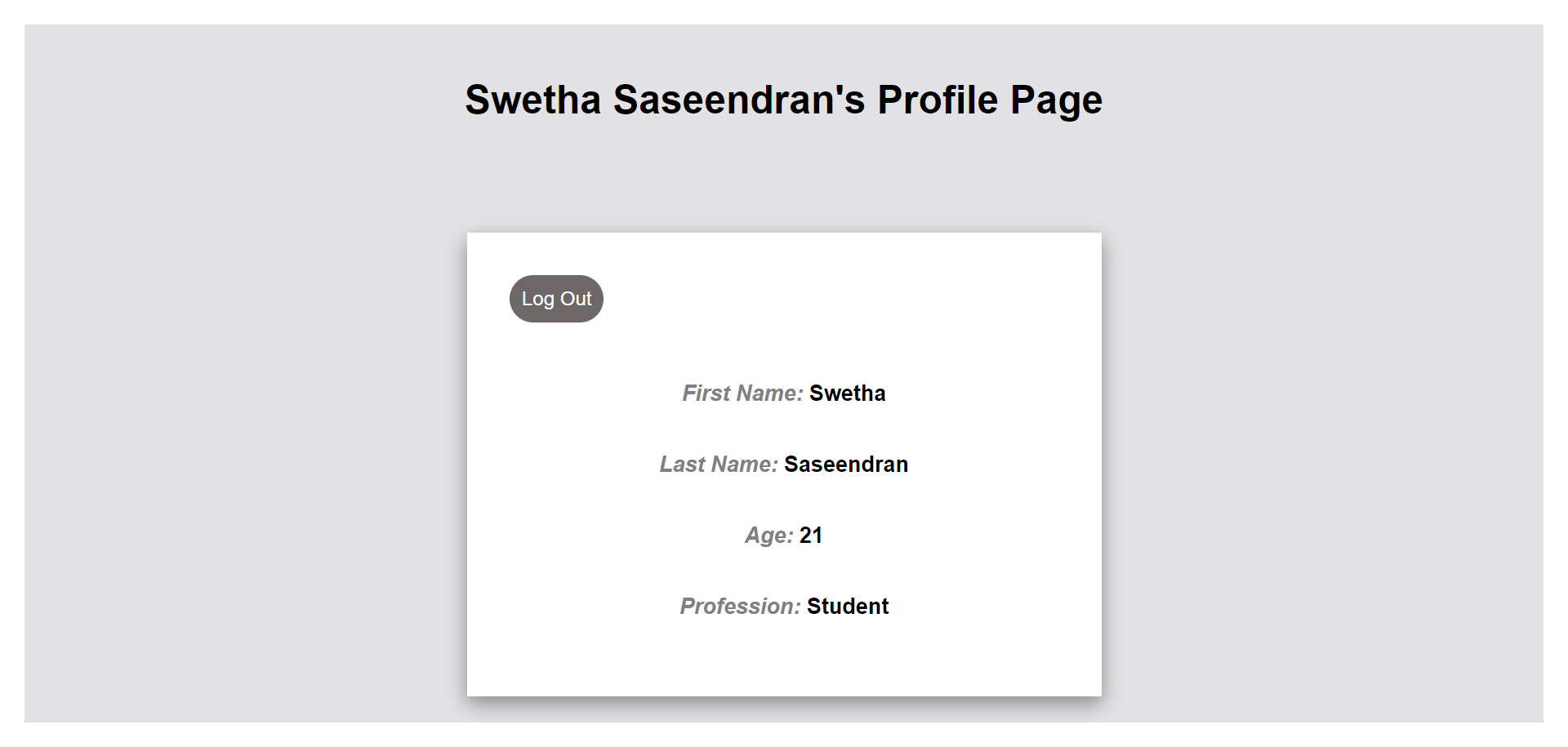
Incase invalid credentials are given as input:



Login Sucessfully: (Welcome Page)



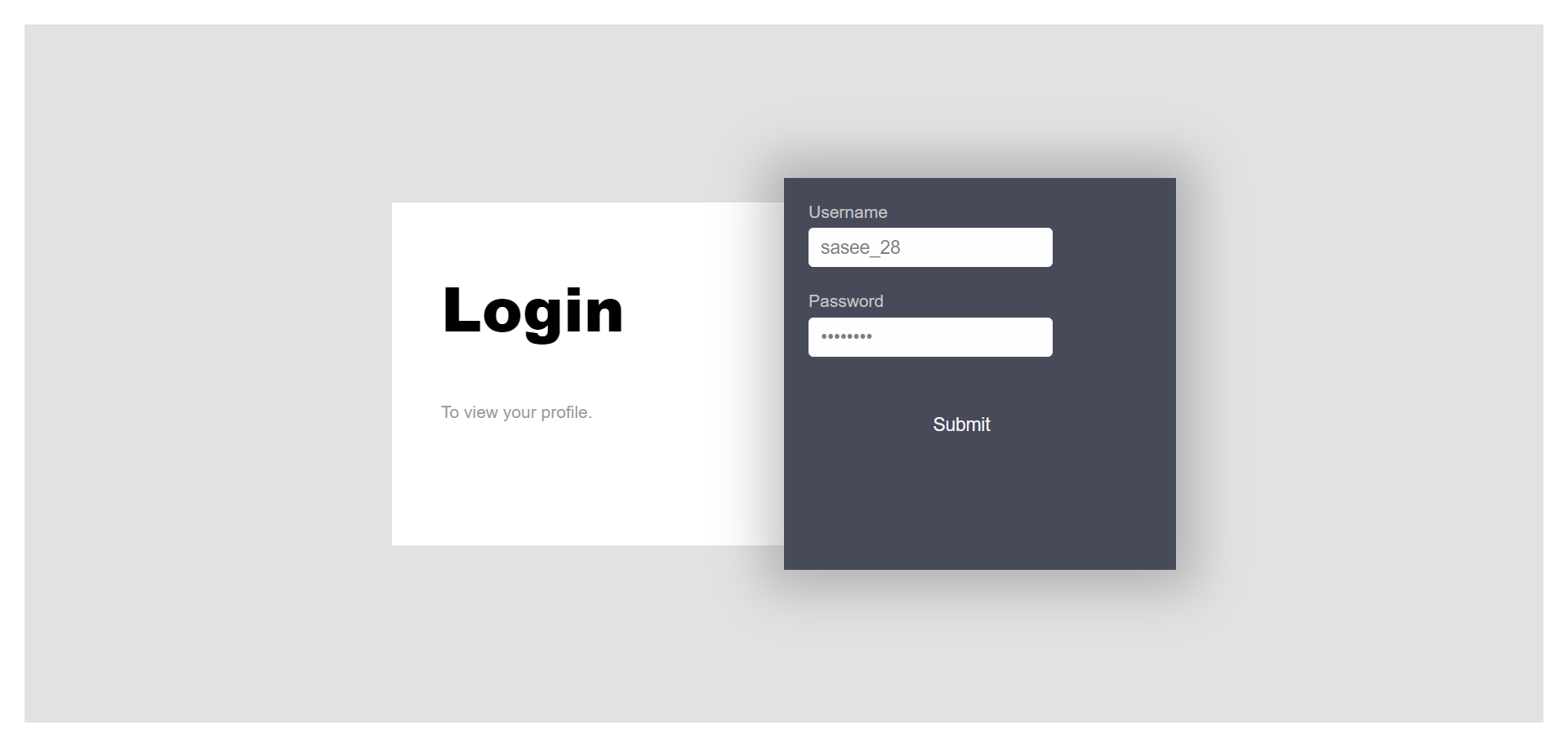
Profile Page:



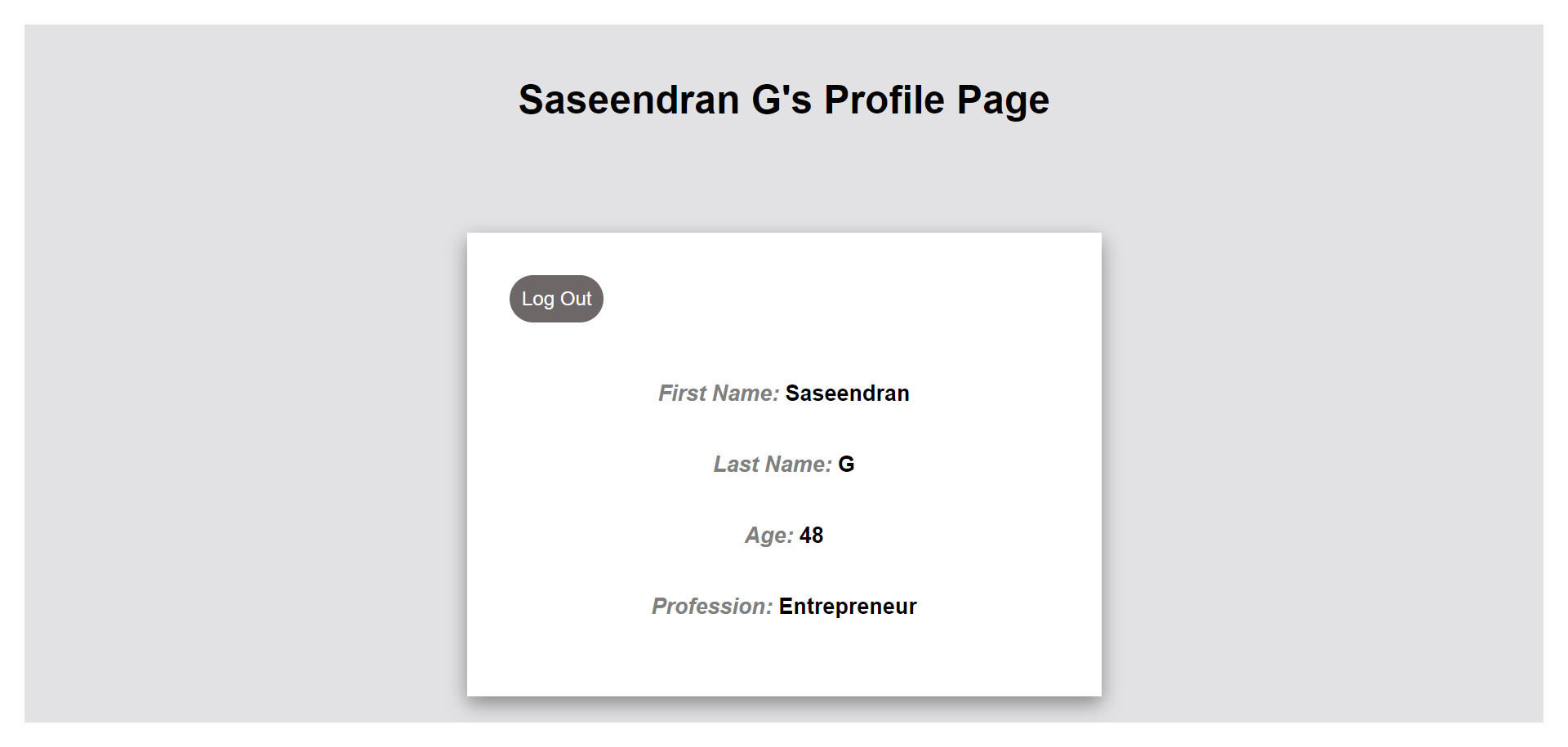
Log Out Page:



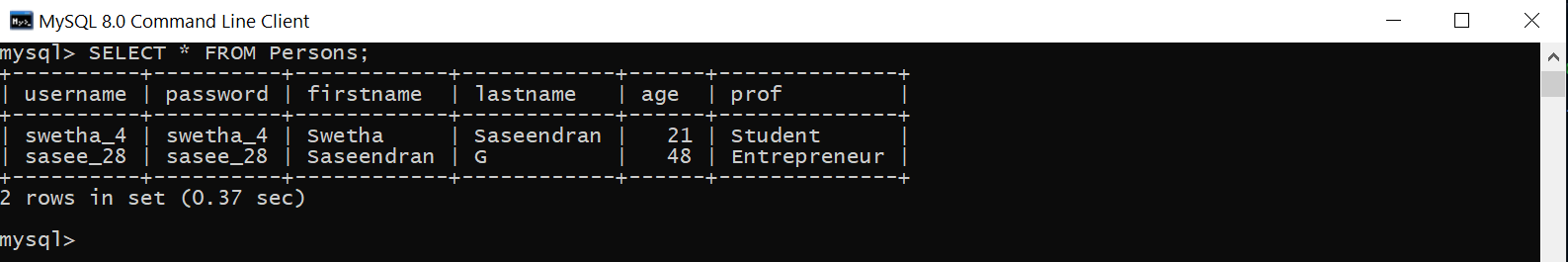
New Session for another User:



Profile Page of the new user:



**MySQL Database:**



**LEARNING OUTCOME:**

* Learnt how to connect to a JDBC-compliant database (MySQL), and retrieve data to display them in a readable format on HTTP page using the servlet response object.
* Learnt to write query for relational data, and parse result using SQL actions.
* Learnt to bind the objects on HttpSession instance and get the objects by using setAttribute and getAttribute methods.
* To use methods of the HttpServlet class such as doPost and doGet to create servlet applications and handle form data.
* Understood that each session is created for each user to identify the particular user. To set the attribute in the session scope in one servlet and getting that value from the session scope in another servlet. To set the attribute in the session scope, we have used the setAttribute() method of HttpSession interface and to get the attribute, we have used the getAttribute method.
* Understood the importance of making web pages accessible, well-formed and user friendly.