Login JSP Hibernate Phase End Project

In order to setup this application we setup all the valid Hibernate and MySQL connector jars. Once that is setup, we create a registration form presented to the user in registration.jsp. The form collects a name and password to pass to our Registration servlet.

In order for our Registration Servlet to work with our database we must configure Hibernate in the hibernate.cfg.xml file as well as setup the utility that will allow us to open a session. Once these files are configured and our POJO class is setup with their corresponding annotations, we are ready to code within our Servlet.

We extract out the parameters sent via the registration form, and establish and open a session to our database by creating a session factory. We will do an initial check when registering a user to see if the name (username) already exists in our database if it does, we will alert the user that the username already exists and that they have to choose another username.

Whether the username is allowed to our database is controlled by an HQL query that we return as a list. We iterate through the list using a lambda function that sets a false flag in the case it does. Otherwise, we instantiate an object of user and save the session and commit the transaction.

Once the user is added to the database, we display a success message that the user has been registered. If the user wasn’t added we display a message to inform the user that the username is already in use.

Once the user has been successfully registered, they can proceed to logging in. The login.jsp is a simple form that passes the name and password to the Login Servlet. The Login Servlet establishes a session and extracts the parameters. A session factory is created to establish a connection with the database. We run a query to return the values of users present in the database. We iterate the list of users to find the correct match and validate that the password is correct. This sets a flag to true. Only then is the web session established and the username attribute is set with a redirect to the dashboard.jsp page which welcomes the successfully logged in user. If the flag is false then the user will be redirected to the login page and be notified that there’s something wrong with the credentials provided.

The dashboard.jsp contains logic to prevent the user from accessing the page without being logged in by checking whether a session exists. If it exists the user can view the welcome page, else they will be redirected to the login page with a message displayed that tells them they can only view the page if they’re logged in.

While on the dashboard page the user can logout, if they do the information is passed to the Logout Servlet, which invalidates the session and redirects the user to the login page.

# Screenshots

We set the application up with the Hibernate and MySQL database jars.

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The user starts off at the registration page

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If the user already has an account they can click on Login via the link above. However, a new user can register by filling in their details

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Upon succesful registrationi the user will see the below message

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but if a user tries to register with an already existing username in the database

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Once succesfully registered a user can proceed to login to their account

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A successful login wil direct the user to the dashboard

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An unsuccesful login attempt will display

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Clicking the Logout button will invalidate the session and take you back to login page displayed above.

If the user tries to enter the dashboard page directly without being logged in they will see this page

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# Source Code

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| <%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*  pageEncoding=*"ISO-8859-1"*%>  <!DOCTYPE html>  <html>  <head>  <meta charset=*"ISO-8859-1"*>  <title>Registration</title>  </head>  <body>  <div style="text-align: *center*">  <nav style="margin-left:*30%*"><a href=*"login.jsp"*>Login</a></nav>  <h1>Registration</h1>  <form action=*"registration"* method=*"post"*>  Name: <input style="margin-left: *28px*; margin-bottom:*10px*" type=*"text"* name=*"name"* required=*"required"*> <br>  Password: <input style="margin-left: *5px*; margin-bottom:*10px*" type=*"password"* name=*"password"* required=*"required"*>  <br> <input type=*"submit"* value=*"Register"*>  </form>  </div>  </body>  </html> |

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| **package** com.servlets;  **import** java.io.IOException;  **import** java.io.PrintWriter;  **import** java.util.List;  **import** javax.servlet.ServletException;  **import** javax.servlet.annotation.WebServlet;  **import** javax.servlet.http.HttpServlet;  **import** javax.servlet.http.HttpServletRequest;  **import** javax.servlet.http.HttpServletResponse;  **import** org.hibernate.Session;  **import** org.hibernate.SessionFactory;  **import** org.hibernate.Transaction;  **import** com.model.User;  **import** com.util.HibernateUtil;  @WebServlet("/registration")  **public** **class** Registration **extends** HttpServlet {  **private** **static** **final** **long** ***serialVersionUID*** = 1L;  @SuppressWarnings("unchecked")  **protected** **void** doGet(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {    String name = request.getParameter("name");  String password = request.getParameter("password");  PrintWriter out = response.getWriter();  response.setContentType("text/html");    SessionFactory sessionFactory = HibernateUtil.*getSessionFactory*();  Session sess = sessionFactory.openSession();    **try** {  Transaction transaction = sess.beginTransaction();  User u = **new** User();  **boolean** isAvailable[] = {**true**};    List<User> userList = sess.createQuery("from User").list();  userList.forEach(user -> {  **if** (user.getName().equalsIgnoreCase(name)) {  isAvailable[0] = **false**;  }  });    **if** (isAvailable[0]) {  u = **new** User(name, password);  sess.save(u);  transaction.commit();    request.getRequestDispatcher("registration.jsp").include(request, response);  out.println("<h4 style='text-align:center'>Congratualations " + name+ " you have successfully registered<h4>");  }  **else** {  request.getRequestDispatcher("registration.jsp").include(request, response);  out.println("<p style='color:red;text-align:center;'>Please select another username this one already exists<p>");  }  } **catch** (Exception e) {  e.printStackTrace();  } **finally** {  sess.close();  }  }  **protected** **void** doPost(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {  doGet(request, response);  }  } |

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| <%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*  pageEncoding=*"ISO-8859-1"*%>  <!DOCTYPE html>  <html>  <head>  <meta charset=*"ISO-8859-1"*>  <title>Insert title here</title>  </head>  <body>  <div style="text-align: *center*">  <nav style="margin-left:*30%*"><a href=*"registration.jsp"*>Register</a></nav>  <h1>Login</h1>  <form action=*"login"* method=*"post"*>  Name: <input style="margin-left: *28px*; margin-bottom:*10px*"type=*"text"* name=*"name"* required=*"required"*> <br>  Password: <input style="margin-left: *5px*; margin-bottom:*10px*"type=*"password"* name=*"password"* required=*"required"*>  <br> <input type=*"submit"* value=*"Login"*>  </form>  </div>  </body>  </html> |

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| **package** com.servlets;  **import** java.io.IOException;  **import** java.io.PrintWriter;  **import** java.util.List;  **import** javax.servlet.ServletException;  **import** javax.servlet.annotation.WebServlet;  **import** javax.servlet.http.HttpServlet;  **import** javax.servlet.http.HttpServletRequest;  **import** javax.servlet.http.HttpServletResponse;  **import** javax.servlet.http.HttpSession;  **import** org.hibernate.Session;  **import** org.hibernate.SessionFactory;  **import** org.hibernate.Transaction;  **import** com.model.User;  **import** com.util.HibernateUtil;  @WebServlet("/login")  **public** **class** Login **extends** HttpServlet {  **private** **static** **final** **long** ***serialVersionUID*** = 1L;    **protected** **void** doGet(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {  HttpSession session = request.getSession();  String name = request.getParameter("name");  String password = request.getParameter("password");  PrintWriter out = response.getWriter();  response.setContentType("text/html");    SessionFactory sessionFactory = HibernateUtil.*getSessionFactory*();  Session sess = sessionFactory.openSession();      **try** {  Transaction transaction = sess.beginTransaction();  **boolean** isCorrect[] = {**false**};    List<User> userList = sess.createQuery("from User").list();  userList.forEach(user -> {  **if** (user.getName().equalsIgnoreCase(name) && user.getPassword().equals(password)) {  isCorrect[0] = **true**;  }  });    **if** (isCorrect[0]) {  session.setAttribute("name", name);  response.sendRedirect("dashboard.jsp");  }  **else** {  session.invalidate();  request.getRequestDispatcher("login.jsp").include(request, response);  out.println("<p style='color:red;text-align:center;'>Login credentials are not valid, please try again!<p>");  }  } **catch** (Exception e) {  e.printStackTrace();  } **finally** {  sess.close();  }  }    **protected** **void** doPost(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {  doGet(request, response);  }  } |
| <%@ page language=*"java"* contentType=*"text/html; charset=ISO-8859-1"*  pageEncoding=*"ISO-8859-1"*%>  <!DOCTYPE html>  <html>  <head>  <meta charset=*"ISO-8859-1"*>  <title>Welcome <%  session.getAttribute("name");  %></title>  </head>  <body>  <div>  <%  **if** (session.getAttribute("name") != **null**) {  out.print("<a href='logout'>Logout</a>");  out.println("<h1>Welcome " + session.getAttribute("name") + "</h1>");  }  **else** **if** (session.getAttribute("name") == **null**) {  out.println("<p style='color:red;text-align:center;'>You need to be logged in to view this page<p>");  request.getRequestDispatcher("login.jsp").include(request, response);  }  %>  </div>  </body>  </html> |

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| **package** com.model;  **import** javax.persistence.Column;  **import** javax.persistence.Entity;  **import** javax.persistence.GeneratedValue;  **import** javax.persistence.GenerationType;  **import** javax.persistence.Id;  **import** javax.persistence.Table;  @Entity  @Table  **public** **class** User {  @Id  @GeneratedValue (strategy = GenerationType.***IDENTITY***)  **private** **int** id;  @Column(name = "name")  **private** String name;  **private** String password;  **public** User(String name, String password) {  **super**();  **this**.name = name;  **this**.password = password;  }  **public** User() {  **super**();  }  **public** **int** getId() {  **return** id;  }  **public** **void** setId(**int** id) {  **this**.id = id;  }  **public** String getName() {  **return** name;  }  **public** **void** setName(String name) {  **this**.name = name;  }  **public** String getPassword() {  **return** password;  }  **public** **void** setPassword(String password) {  **this**.password = password;  }  @Override  **public** String toString() {  **return** "User [id=" + id + ", name=" + name + ", password=" + password + "]";  }  } |

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| **package** com.servlets;  **import** java.io.IOException;  **import** javax.servlet.ServletException;  **import** javax.servlet.annotation.WebServlet;  **import** javax.servlet.http.HttpServlet;  **import** javax.servlet.http.HttpServletRequest;  **import** javax.servlet.http.HttpServletResponse;  **import** javax.servlet.http.HttpSession;  @WebServlet("/logout")  **public** **class** Logout **extends** HttpServlet {  **private** **static** **final** **long** ***serialVersionUID*** = 1L;  **protected** **void** doGet(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {  HttpSession session = request.getSession(**false**);  session.removeAttribute("name");  session.invalidate();  response.sendRedirect("login.jsp");  }  **protected** **void** doPost(HttpServletRequest request, HttpServletResponse response) **throws** ServletException, IOException {  // **TODO** Auto-generated method stub  doGet(request, response);  }  } |

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| **package** com.util;  **import** org.hibernate.SessionFactory;  **import** org.hibernate.cfg.Configuration;  **import** com.model.User;  **public** **class** HibernateUtil {    **private** **static** SessionFactory *sessionFactory*;    **static** {  *sessionFactory* = **new** Configuration().addAnnotatedClass(User.**class**).configure().buildSessionFactory();  }    **public** **static** SessionFactory getSessionFactory() {  **return** *sessionFactory*;  }  } |

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| <?xml version=*"1.0"* encoding=*"UTF-8"*?>  <!DOCTYPE hibernate-configuration PUBLIC "-//Hibernate/Hibernate Configuration DTD 3.0//EN"  "http://www.hibernate.org/dtd/hibernate-configuration-3.0.dtd">  <hibernate-configuration>  <session-factory>  <property name=*"hibernate.connection.driver\_class"*>com.mysql.cj.jdbc.Driver</property>  <property name=*"hibernate.connection.url"*>jdbc:mysql://localhost:3306/login\_project</property>  <property name=*"hibernate.connection.username"*>testuser</property>  <property name=*"hibernate.connection.password"*>test123!</property>  <property name=*"hibernate.show\_sql"*>true</property>  <property name=*"hibernate.hbm2ddl.auto"*>update</property>  </session-factory>  </hibernate-configuration> |

The GitHub link for the project is <https://github.com/altafmquadri/Login-Hibernate-JSP-phase-end-project-java>