F28WP Web programming
Lab Sheet – session 5

Building a User Authentication System with Node.js, Express, MySQL, and Handlebars

Objective

This lab exercise aims to guide you in creating a user authentication system. You will develop a web application where users can sign up, log in, and log out. After logging in, users will be directed to their profile page.

Tasks

Task 1: Project Setup

- **Initialize** a new Node.js project: Create a new folder for your project and initialize it with npm init.
- **Install Required Packages**: Run npm install express mysql dotenv express-handlebars, and bcrypt.

express-handlebars: (**hbs**) This is a Handlebars view engine for Express. It allows you to use Handlebars templates in your Express application. Handlebars is a templating engine similar to EJS or Pug, which helps in generating HTML with minimal coding.

bcrypt: This is a library for Node.js used to hash passwords. It's a crucial part of security in web applications, ensuring that stored passwords are not in plain text.

Task 2: Database Setup and Connection

- **Create a MySQL Database**: Name it for example : user_auth. Or any other name you wish.
- Create a Users Table with the following fields:
  - **id** as incremented integers
  - **user name** as varchar(100)
  - **email** as varchar(100)
  - **password** as varchar(255).

Task 3: Express Server Setup

1. **Initialize Express App**: Create a file named **index.js**.
2. **Set up Express to Use Handlebars**: Configure Handlebars as the templating engine.
3. **Implement dotenv for Sensitive Data**: Use dotenv to manage database credentials.

Task 4: Implementing User Authentication

1. **Create Routes**: Implement routes for **/**, **/signup**, **/login**, and **/profile**.
2. **Registration Logic**: Implement logic to handle user registration.
3. **Login Logic:** Implement logic to authenticate users.
4. **Logout Logic**: Implement a logout route.
5. Password Hashing: Use bcrypt to hash passwords before storing them in the database.

Task 5: Front-End Setup

1. **HTML Templates**: Create Handlebars templates for the home page, Registration, login, and profile.
2. **Static Files**: Place the provided CSS in a public folder and configure Express to serve static files.

Task 6: Testing and Debugging

1. **Test User Registration**: Ensure that new users can sign up.
2. **Test User Login/Logout**: Ensure that users can log in and log out.
3. **Profile Page**: After login, users should see their profile page with an avatar.

Task 7: Submit your project

Submit all your projects files to your GitHub repository and include a short screen record for your working project on your browser, showing your name, and id at the beginning of the screen record video.

Note: make sure that your screen record is less than 25MB.

CSS

```css
nav {
    background-color: #563d7c;
    color: #fff;
    padding: 30px 60px;
    display: flex;
    justify-content: space-between;
  }

  nav ul {
    display: flex;
    justify-content: space-around;
    align-items: center;
  }

  nav li {
    list-style: none;
  }

  nav li a {
    color: #fff;
    text-decoration: none;
    font-weight: bold;
    padding: 5px 8px;
  }

  nav li a:hover {
    color: yellow;
    text-decoration: none;
  }

  .avatar-ctn {
    background-color: orange;
    text-align: center;
  }

  .avatar {
    width: 65%;
    border-bottom: 1px solid rgba(0,0,0,0.125);
  }
```

Profile.hbs:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
T3c6CoIi6uLrA9TneNEoa7RxnatzjcDSCmG1MXxSR1GAsXEV/Dwwykc2MPK8M2HN"
crossorigin="anonymous">
    <link rel ="stylesheet" href="/style.css">
    <title>User Authentication System</title>
</head>
<body>
    <nav>
        <h1>User Authentication System With Node and Mysql</h1>
        <ul>
            <li><a href="/">Home</a></li>
            <li><a href="/profile">Profile</a></li>
            <li><a href="/auth/logout">Logout</a></li>

        </ul>
    </nav>
  <div class="container mt-4">
    <div class="row">
      <div class="col-4">
        <div class="card">
          <div class="avatar-ctn">
            <img src="/avatar.png" class="avatar" alt="user profile picture"/>
          </div>
          <div class="card-body">
            <h5 class="card-title">{{user.name}}</h5>
            <p class="card-text">Some quick example text to build on the card
title and make up the bulk of the card's content.</p>
          </div>
        </div>
      </div>

      <div class="col-8">
        <div class="card text-center">
          <div class="card-header">
            Profile Page
          </div>
```

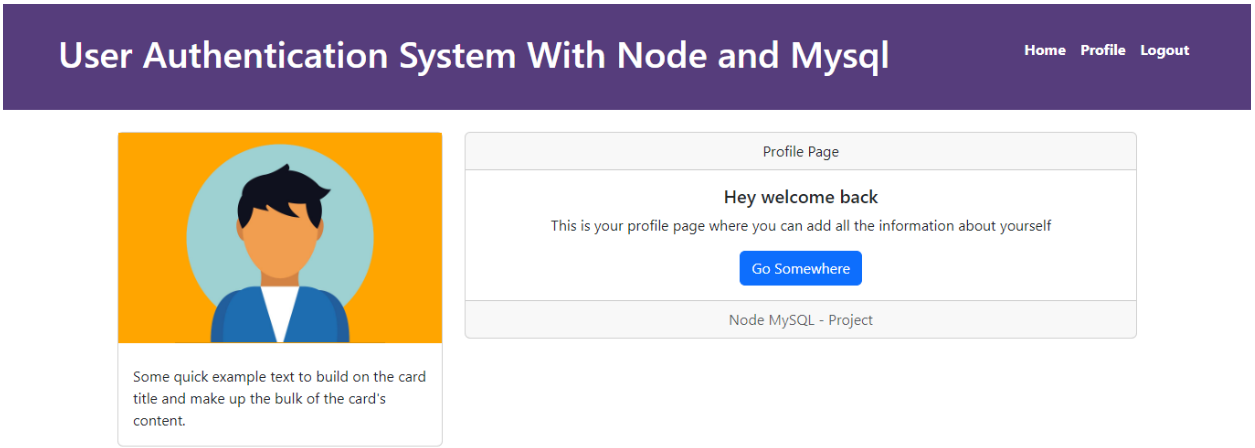
```
     <div class="card-body">
      <h5 class="card-title">Hey {{user.name}} welcome back</h5>
      <p class="card-text">This is your profile page where you can add all
the information about yourself</p>
      <a href="#" class="btn btn-primary">Go Somewhere</a>
     </div>
     <div class="card-footer text-muted">
      Node MySQL - Project
     </div>
    </div>
   </div>
  </div>


 </div>


  <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.2/dist/js/bootstrap.bundle.min.js
" integrity="sha384-
C6RzsynM9kWDrMNeT87bh95OGNyZPhcTNXj1NW7RuBCsyN/o0jlpcV8Qyq46cDfL"
crossorigin="anonymous"></script>

</body>
</html>
```

And this is how it will look :



User Authentication System With Node and Mysql

Some quick example text to build on the card title and make up the bulk of the card's content.

Profile Page

Hey welcome back

This is your profile page where you can add all the information about yourself

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Avatar picture: