**Database Development and Class Registration**

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CST 499 Capstone for Computer Software Technology

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During the implementation phase, I encountered numerous challenges while developing the PHP codes for my project. The process involved a considerable amount of trial and error, particularly in debugging and refining the code to achieve the desired functionality. Despite these challenges, I persevered and successfully navigated through them.

Here’s a brief overview of the implemented PHP codes:

**database.php**

This file contains a PHP class named DatabaseHandler responsible for establishing a connection to the database and executing SQL queries. It utilizes the mysqli extension for database operations and implements methods for executing select, insert, and general queries.

**index.php**

The index file serves as the landing page for the online class platform. It features a simple yet visually appealing layout with sections for introducing the platform and highlighting its key features.

**login.php**

This PHP file handles user authentication. Upon receiving POST data from a login form, it queries the database to verify the user's credentials. If the login is successful, it initiates a session and redirects the user to their profile page.

**profile.php**

The profile page displays information about the logged-in user, including their registered classes. It allows users to add additional classes to their schedule or delete existing ones through forms processed by PHP code.

**registration.php**

This file facilitates user registration. It validates form inputs, checks for existing email addresses in the database, and securely stores user data upon successful registration. The user is then redirected to the login page.

**footer.php**

A common footer file included in each page, providing copyright information.

Through the implementation phase, I gained valuable experience in PHP development, database interaction, and web application architecture. Despite the challenges faced, I was able to overcome them through persistence and problem-solving, ultimately achieving the project objectives.

**Screenshots Below:**

**MySQL ‘Users’ Table Before:**

A screenshot of a computer

Description automatically generated

**MySQL ‘Users’ Table After:**

A screenshot of a computer

Description automatically generated

**A screenshot of a web page

Description automatically generatedLanding Page (index.php):**

**A screenshot of a log in

Description automatically generatedRegistration Form (registration.php):**

**A screenshot of a login screen

Description automatically generatedLogin (login.php):**

**User Profile (profile.php):**

A screenshot of a user profile

Description automatically generated

A screenshot of a computer program

Description automatically generated**Add More Courses to Semester:**

A screenshot of a user profile

Description automatically generated**Delete Classes from Schedule:**

**PHP codes:**

**Database.php:**

<?php

class DatabaseHandler {

    private $dbHost;

    private $dbUsername;

    private $dbPassword;

    private $dbName;

    private $conn;

    public function \_\_construct($dbHost, $dbUsername, $dbPassword, $dbName) {

        $this->dbHost = $dbHost;

        $this->dbUsername = $dbUsername;

        $this->dbPassword = $dbPassword;

        $this->dbName = $dbName;

        // Create a database connection

        $this->conn = new mysqli($this->dbHost, $this->dbUsername, $this->dbPassword, $this->dbName);

        // Check if connection was successful

        if ($this->conn->connect\_error) {

            // Throw an exception if connection fails

            throw new Exception("Connection failed: " . $this->conn->connect\_error);

        }

    }

    public function executeSelectQuery($sql) {

        $result = $this->conn->query($sql);

        if (!$result) {

            die("Error executing query: " . $this->conn->error);

        }

        $rows = array();

        while ($row = $result->fetch\_assoc()) {

            $rows[] = $row;

        }

        return $rows;

    }

    public function executeQuery($sql) {

        $result = $this->conn->query($sql);

        if (!$result) {

            die("Error executing query: " . $this->conn->error);

        }

        return $this->conn->affected\_rows;

    }

    public function executeInsertQuery($sql) {

        $result = $this->conn->query($sql);

        if (!$result) {

            die("Error executing insert query: " . $this->conn->error);

        }

        return $this->conn->insert\_id; // Return the ID of the last inserted row

    }

}

// Database connection details

$dbHost = "localhost";

$dbUsername = "root";

$dbPassword = "";

$dbName = "landing, login, and enrollment pages development";

// Create an instance of DatabaseHandler

try {

    $databaseHandler = new DatabaseHandler($dbHost, $dbUsername, $dbPassword, $dbName);

} catch (Exception $e) {

    die("Database connection failed: " . $e->getMessage());

}

?>

**Footer.php:**

<footer>

    <Copyright © 2023 My University>

</footer>

**Index.php:**

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

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

    <title>Landing Page</title>

    <style>

        body {

            font-family: Arial, sans-serif;

            margin: 0;

            padding: 0;

        }

        header {

            background-color: #333;

            color: #fff;

            padding: 10px 0;

            text-align: center;

        }

        nav ul {

            list-style-type: none;

            padding: 0;

        }

        nav ul li {

            display: inline;

            margin-right: 20px;

        }

        nav ul li a {

            color: #fff;

            text-decoration: none;

        }

        .hero {

            text-align: center;

            padding: 50px 0;

        }

        .hero h1 {

            font-size: 36px;

            margin-bottom: 20px;

        }

        .hero p {

            font-size: 18px;

            margin-bottom: 20px;

        }

        .btn {

            display: inline-block;

            padding: 10px 20px;

            background-color: #007bff;

            color: #fff;

            text-decoration: none;

            border-radius: 5px;

        }

        .btn:hover {

            background-color: #0056b3;

        }

        .features {

            text-align: center;

            padding: 50px 0;

        }

        .features h2 {

            font-size: 24px;

            margin-bottom: 20px;

        }

        .features ul {

            list-style-type: none;

            padding: 0;

        }

        .features ul li {

            font-size: 18px;

            margin-bottom: 10px;

        }

    </style>

</head>

<body>

    <header>

        <nav>

            <ul>

                <li><a href="index.php">Home</a></li>

                <li><a href="login.php">Login</a></li>

                <li><a href="registration.php">Register</a></li>

            </ul>

        </nav>

    </header>

    <main>

        <section class="hero">

            <h1>Welcome to Our Online Class Platform</h1>

            <p>Enhance your learning experience with our interactive online classes.</p>

            <a href="registration.php" class="btn">Get Started</a>

        </section>

        <section class="features">

            <h2>Key Features</h2>

            <ul>

                <li>Interactive lessons</li>

                <li>Flexible scheduling</li>

                <li>Expert instructors</li>

            </ul>

        </section>

    </main>

    <?php include 'footer.php'; ?>

</body>

</html>

**Login.php:**

<?php

error\_reporting(E\_ALL);

ini\_set('display\_errors', 1);

// Include the database handler

require\_once 'database.php';

if ($\_SERVER["REQUEST\_METHOD"] == "POST") {

    // Retrieve form data

    $email = $\_POST["email"];

    $password = $\_POST["password"];

    // Retrieve user data from the database

    $sql = "SELECT \* FROM users WHERE email='$email'";

    $userData = $databaseHandler->executeSelectQuery($sql);

    if (count($userData) == 1) {

        $hashedPassword = $userData[0]['password'];

        // Verify password

        if (password\_verify($password, $hashedPassword)) {

            // Password is correct, set session and redirect to profile page

            session\_start();

            $\_SESSION['user\_id'] = $userData[0]['user\_id'];

            header("Location: profile.php");

            exit();

        } else {

            // Password is incorrect, redirect back to login page with an error message

            header("Location: login.php?error=incorrect\_password");

            exit();

        }

    } else {

        // User not found, redirect back to login page with an error message

        header("Location: login.php?error=user\_not\_found");

        exit();

    }

}

?>

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

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

    <title>Login</title>

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

    <style>

        body {

            font-family: Arial, sans-serif;

            margin: 0;

            padding: 0;

            background-color: #f0f0f0;

        }

        header {

            background-color: #333;

            color: #fff;

            padding: 10px 0;

            text-align: center;

        }

        main {

            padding: 20px;

            text-align: center;

        }

        h1 {

            font-size: 24px;

            margin-bottom: 20px;

        }

        form {

            background-color: #fff;

            padding: 20px;

            border-radius: 5px;

            display: inline-block;

        }

        form label {

            display: block;

            margin-bottom: 10px;

        }

        form input[type="email"],

        form input[type="password"] {

            width: 100%;

            padding: 10px;

            margin-bottom: 20px;

            border: 1px solid #ccc;

            border-radius: 5px;

            box-sizing: border-box;

        }

        form button {

            padding: 10px 20px;

            background-color: #007bff;

            color: #fff;

            border: none;

            border-radius: 5px;

            cursor: pointer;

        }

        form button:hover {

            background-color: #0056b3;

        }

    </style>

</head>

<body>

    <header>

        <!-- Header content here -->

    </header>

    <main>

        <h1>Login</h1>

        <!-- Login form here -->

        <form action="<?php echo htmlspecialchars($\_SERVER["PHP\_SELF"]); ?>" method="post">

            <label for="email">Email:</label><br>

            <input type="email" id="email" name="email" required><br>

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

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

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

        </form>

    </main>

    <?php include 'footer.php'; ?>

</body>

</html>

**Profile.php:**

<?php

error\_reporting(E\_ALL);

ini\_set('display\_errors', 1);

// Include the database handler

require\_once 'database.php';

// Check if the user is logged in

session\_start();

if (!isset($\_SESSION['user\_id'])) {

    header("Location: login.php");

    exit();

}

// Get the user ID from the session

$userId = $\_SESSION['user\_id'];

// Function to fetch classes registered for a particular user

function getClassesRegisteredForUser($db, $userId) {

    $sql = "SELECT classes.class\_id, classes.class\_name, classes.instructor, classes.schedule

        FROM registrations

        INNER JOIN classes ON registrations.class\_id = classes.class\_id

        WHERE registrations.user\_id = $userId";

    return $db->executeSelectQuery($sql);

}

// Fetch registered classes for the user

$registeredClasses = getClassesRegisteredForUser($databaseHandler, $userId);

// Function to fetch all available classes

function getAllClasses($db) {

    $sql = "SELECT \* FROM classes";

    return $db->executeSelectQuery($sql);

}

// Fetch all available classes

$classes = getAllClasses($databaseHandler);

// Process adding new classes

if ($\_SERVER["REQUEST\_METHOD"] == "POST" && isset($\_POST['add\_class'])) {

    // Retrieve form data

    $classId = $\_POST["class\_id"];

    // Insert the selected class into the registrations table

    $sql = "INSERT INTO registrations (user\_id, class\_id) VALUES ('$userId', '$classId')";

    $databaseHandler->executeQuery($sql);

    // Redirect to avoid form resubmission on page refresh

    header("Location: profile.php");

    exit();

}

// Process deleting classes

if ($\_SERVER["REQUEST\_METHOD"] == "POST" && isset($\_POST['delete\_class'])) {

    // Retrieve form data

    $deleteClassId = $\_POST["delete\_class\_id"];

    // Delete the selected class from the registrations table

    $sql = "DELETE FROM registrations WHERE user\_id = '$userId' AND class\_id = '$deleteClassId'";

    $databaseHandler->executeQuery($sql);

    // Redirect to avoid form resubmission on page refresh

    header("Location: profile.php");

    exit();

}

?>

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

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

    <title>User Profile</title>

    <style>

        body {

            font-family: Arial, sans-serif;

            margin: 0;

            padding: 0;

            background-color: #f0f0f0;

        }

        header {

            background-color: #333;

            color: #fff;

            padding: 10px 0;

            text-align: center;

        }

        main {

            padding: 20px;

        }

        h1 {

            font-size: 24px;

            margin-bottom: 20px;

            text-align: center;

        }

        ul {

            list-style-type: none;

            padding: 0;

        }

        li {

            background-color: #fff;

            padding: 20px;

            margin-bottom: 20px;

            border-radius: 5px;

        }

        li strong {

            font-weight: bold;

            margin-right: 10px;

        }

        .form-container {

            background-color: #fff;

            padding: 20px;

            margin-top: 20px;

            border-radius: 5px;

        }

        .form-container h2 {

            font-size: 20px;

            margin-bottom: 10px;

        }

        .form-container form label {

            display: block;

            margin-bottom: 10px;

        }

        .form-container form select, .form-container form button {

            margin-top: 10px;

        }

    </style>

</head>

<body>

    <header>

        <!-- Header content here -->

    </header>

    <main>

        <h1>User Profile</h1>

        <h2>Registered Classes</h2>

        <ul>

            <?php foreach ($registeredClasses as $class): ?>

                <li>

                    <strong>Class Name:</strong> <?php echo $class['class\_name']; ?><br>

                    <strong>Instructor:</strong> <?php echo $class['instructor']; ?><br>

                    <strong>Schedule:</strong> <?php echo $class['schedule']; ?><br>

                </li>

            <?php endforeach; ?>

        </ul>

        <div class="form-container">

            <h2>Add More Courses to Your Semester</h2>

            <!-- Form for adding classes -->

            <form action="<?php echo htmlspecialchars($\_SERVER["PHP\_SELF"]); ?>" method="post">

                <label for="class\_id">Select Additional Class:</label>

                <select id="class\_id" name="class\_id">

                    <?php foreach ($classes as $class): ?>

                        <option value="<?php echo $class['class\_id']; ?>"><?php echo $class['class\_name']; ?></option>

                    <?php endforeach; ?>

                </select><br>

                <button type="submit" name="add\_class">Add Class</button>

            </form>

            <h2>Delete Classes from Your Schedule</h2>

            <!-- Form for deleting classes -->

            <form action="<?php echo htmlspecialchars($\_SERVER["PHP\_SELF"]); ?>" method="post">

                <label for="delete\_class\_id">Select Class to Delete:</label>

                <select id="delete\_class\_id" name="delete\_class\_id">

                    <?php foreach ($registeredClasses as $class): ?>

                        <option value="<?php echo $class['class\_id']; ?>"><?php echo $class['class\_name']; ?></option>

                    <?php endforeach; ?>

                </select><br>

                <button type="submit" name="delete\_class">Delete Class</button>

            </form>

        </div>

    </main>

    <?php include 'footer.php'; ?>

</body>

</html>

**Registration.php:**

<?php

error\_reporting(E\_ALL);

ini\_set('display\_errors', 1);

// Include the database handler

require\_once 'database.php';

$registrationStatus = ''; // Initialize registration status message

if ($\_SERVER["REQUEST\_METHOD"] == "POST") {

    // Retrieve form data

    $email = $\_POST["email"];

    $password = $\_POST["password"];

    $confirmPassword = $\_POST["confirm\_password"];

    $firstName = $\_POST["first\_name"];

    $lastName = $\_POST["last\_name"];

    $address = $\_POST["address"];

    $phone = $\_POST["phone"];

    // Check if passwords match

    if ($password !== $confirmPassword) {

        $registrationStatus = "Passwords do not match";

    } else {

        // Check if the email already exists in the database

        $sql = "SELECT \* FROM users WHERE email='$email'";

        $userData = $databaseHandler->executeSelectQuery($sql);

        if (count($userData) > 0) {

            $registrationStatus = "Email already exists";

        } else {

            // Insert user data into the database

            $hashedPassword = password\_hash($password, PASSWORD\_DEFAULT);

            $sql = "INSERT INTO users (email, password, firstName, lastName, address, phone)

                    VALUES ('$email', '$hashedPassword', '$firstName', '$lastName', '$address', '$phone')";

            $databaseHandler->executeQuery($sql);

            $registrationStatus = "Registration successful"; // Update registration status

            header("Location: login.php"); // Redirect to login page

            exit(); // Stop execution after redirect

        }

    }

}

?>

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

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

    <title>Registration</title>

    <style>

        body {

            font-family: Arial, sans-serif;

            margin: 0;

            padding: 0;

            background-color: #f0f0f0;

        }

        header {

            background-color: #333;

            color: #fff;

            padding: 10px 0;

            text-align: center;

        }

        main {

            padding: 20px;

        }

        h1 {

            font-size: 24px;

            margin-bottom: 20px;

            text-align: center;

        }

        .form-container {

            background-color: #fff;

            padding: 20px;

            margin-top: 20px;

            border-radius: 5px;

        }

        .form-container h2 {

            font-size: 20px;

            margin-bottom: 10px;

        }

        .form-container form label {

            display: block;

            margin-bottom: 10px;

        }

        .form-container form input[type="text"],

        .form-container form input[type="email"],

        .form-container form input[type="password"] {

            width: 100%;

            padding: 10px;

            margin-bottom: 20px;

            border: 1px solid #ccc;

            border-radius: 5px;

            box-sizing: border-box;

        }

        .form-container form button {

            padding: 10px 20px;

            background-color: #007bff;

            color: #fff;

            border: none;

            border-radius: 5px;

            cursor: pointer;

        }

        .form-container form button:hover {

            background-color: #0056b3;

        }

        .form-container form p {

            color: #ff0000;

            margin-top: 10px;

        }

    </style>

</head>

<body>

    <header>

        <!-- Header content here -->

    </header>

    <main>

        <h1>Registration</h1>

        <div class="form-container">

            <!-- Registration form here -->

            <form action="<?php echo htmlspecialchars($\_SERVER["PHP\_SELF"]); ?>" method="post">

                <label for="email">Email:</label><br>

                <input type="email" id="email" name="email" required><br>

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

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

                <label for="confirm\_password">Confirm Password:</label><br>

                <input type="password" id="confirm\_password" name="confirm\_password" required><br>

                <label for="first\_name">First Name:</label><br>

                <input type="text" id="first\_name" name="first\_name" required><br>

                <label for="last\_name">Last Name:</label><br>

                <input type="text" id="last\_name" name="last\_name" required><br>

                <label for="address">Address:</label><br>

                <input type="text" id="address" name="address"><br>

                <label for="phone">Phone:</label><br>

                <input type="text" id="phone" name="phone"><br>

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

            </form>

            <!-- Display registration status message -->

            <p><?php echo $registrationStatus; ?></p>

        </div>

    </main>

    <?php include 'footer.php'; ?>

</body>

</html>