# Web Application Development Assignment Report

## Web Application Development Assignment Report

Title: User Registration and Login Web Application

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## 1. Introduction

The purpose of this project was to create a simple web application that enables users to register and log in securely. This task is part of CLO3 for the Web Application Development course. The goal was to build a functional, beginner-friendly, and secure web app using core web technologies such as HTML, PHP, and MySQL. This application mimics real-world login systems and helps understand backend integration and database handling.

## 2. Technologies Used

HTML5   
PHP 8.   
MySQL

phpMyAdmin

## 3. Database Design

Database: `webapp\_db`

## Table: `users`

- `id` (INT, AUTO\_INCREMENT, PRIMARY KEY)  
- `username` (VARCHAR(50))  
- `email` (VARCHAR(100), UNIQUE)  
- `password` (VARCHAR(255))

The password is stored securely using PHP’s `password\_hash()` function.

## 4. Development Process

The application was structured as follows:

## - `register.html`: Front-end page where users enter a username, email, and password.

- `register.php`: Accepts form input, hashes the password, and saves it to the database.  
- `login.html`: Front-end page for user login.  
- `login.php`: Validates user email and password using `password\_verify()`.  
- `welcome.php`: A simple welcome page that only appears if the session is valid.  
- `logout.php`: Ends the session and redirects to login.  
- `db.php`: Handles the database connection using `mysqli`.

PHP session variables are used to keep users logged in across pages. SQL errors are handled to avoid application crashes.

## 5. Testing and Debugging

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Testing was performed manually:  
- Tried registering new users (valid/duplicate emails)  
- Tried logging in with correct and incorrect credentials  
- Verified password hashing in the database  
- Checked redirection to welcome and logout functionality

## Common issues faced:

- MySQL password mismatch  
- File path misplacement in `htdocs`  
- Apache/MySQL not running

All issues were resolved with XAMPP configuration and by checking database connections.

## 6. Challenges Faced

- The initial AMPPS environment was problematic due to MySQL access restrictions.  
- Switching to XAMPP provided more control and consistent results.  
- Setting up database permissions and folder structure was slightly confusing but resolved through systematic testing.

## 7. Future Improvements

- Add email validation and strong password checks  
- Implement password reset via email  
- Create an admin panel to view registered users  
- Use a frontend framework like Bootstrap for better design

## 8. Certification

[Insert your online certificate screenshot or ID here, if required.]

## 9. Peer Evaluation

[Add peer name and evaluation remarks if peer review is required.]

## 10. Conclusion

This project successfully achieved the goal of building a simple yet secure user registration and login system. It allowed us to understand database interaction, form handling, sessions, and local server setup. The completed application demonstrates a solid grasp of back-end logic and real-world web development.