DSE501 Final Assignment: Reference Letter Submission System

Instructor: Prof. Dr. Hasan Dağ

Due: January 19, 2025, 18:00

1 Introduction

The goal of this assignment is to develop a **Reference Letter Submission System**. This project will give you hands-on experience with account management, emailing services, database integration using MySQL with XAMPP, and file handling on a local server. You will work on both front-end and back-end aspects of web development, learning about security practices, form handling, and session management. You are encouraged to incorporate best practices and security measures such as input validation, parameterized queries to prevent SQL injection, and secure file upload handling.

2 Project Requirements

Your system should include the following core functionalities. Each requirement is accompanied by additional guidance to aid in implementation:

1. User Registration and Login:

- **Registration:** Create a form for new students to create accounts with fields like username, password, email, etc.
- **Authentication:** Use secure hashing (e.g., bcrypt) for storing passwords.
- **Login:** Implement session management for maintaining user sessions after login.
- **Database:** Create a MySQL table (e.g., `users`) to store user credentials and profile information.

2. Reference Writer Invitation:

- Add an option on the user dashboard for students to input email addresses of reference letter writers.
- Use PHPMailer or the native `mail()` function in PHP to send an email.
- Generate a unique token for each invitation. Store this token in the database associated with the reference writer's record.

3. Tokenized Link and Account Access:

- The email should contain a secure, unique link that includes the token as a URL parameter
- Validate the token when the reference writer accesses the link, ensuring it matches a record in the database and has not expired.
- Once validated, direct the reference writer to a secure submission form.

4. Submission Form and File Upload:

- Design a form for reference writers that collects necessary information (e.g., relationship with student, comments, etc.).
- Include a file upload field to allow uploading of recommendation letters or supporting documents.
- Validate file types and sizes on both client and server sides to ensure security.
- Use PHP's "FILES" array to handle file uploads.

5. Data Storage:

- Create a MySQL database schema (e.g., tables such as `users`, `invitations`, `submissions`, etc.) to store all information.
- Use PHP Data Objects (PDO) for secure database interactions.
- Save uploaded files to a designated directory on the server, and store file paths in the database.
- Ensure proper permissions are set on file upload directories for security.

6. Admin Panel:

- Develop a basic admin panel that allows students to:
  - View and update their profile.
  - Check the status of their reference letter submissions.
  - Manage invitations (e.g., resend emails, view which references have submitted letters).
- Implement user management features for administrators:
  - View all user accounts.
  - View all submissions.
  - Modify or delete submissions or user data.
- Use HTML/CSS/JavaScript to create a simple and user-friendly interface. Libraries like Bootstrap can be used for responsiveness.

3 Optional Bonus Feature

For a bonus grade, implement a feature where the system can save information from an unfinished reference letter submission:

- Add functionality to temporarily save form data and uploaded files without final submission.
- Use sessions or save partial data in the database linked to the unique token.
- When the reference writer returns using the same tokenized link, preload the saved data into the form for editing or completion.

4 Submission Guidelines

4.1 Deadline

All project files must be submitted by **January 19, 2025, 18:00**. Late submissions may result in a penalty unless prior arrangements are made.

4.2 What to Submit

- A compressed file (e.g., ZIP) containing all source code, database scripts (e.g., `.sql` files for creating tables), and necessary resources.
- A `README.md` file with clear instructions on how to set up and run your system on a local XAMPP server:
  - How to import the database.
  - Configuration steps (e.g., updating database credentials in your code).
  - How to configure the mailer settings.
- Documentation explaining:
  - Your design choices and architecture of the system.
  - Features implemented and how to use them.
  - Any assumptions, limitations, or known issues.
- (Optional) If you implemented the bonus feature, clearly indicate this in your documentation and explain how it works.

4.3 Evaluation Criteria

Your project will be evaluated based on:

- **Functionality:** Completeness and correctness of the required features.
- **Code Quality:** Readability, structure, and adherence to best practices (e.g., secure coding practices, proper use of comments).
- **Security:** How well the system handles user authentication, token usage, input validation, and file uploads.
- **Bonus:** Quality and completeness of the unfinished submission saving feature, if implemented.

5 Additional Notes

- **Development Environment:** Use XAMPP for local development and MySQL for the database. Ensure that you have the correct version of PHP and MySQL installed.
- **Security Measures:**
  - Sanitize and validate all user inputs.
  - Use prepared statements for database queries.
  - Implement proper error handling without exposing sensitive system information.
- **Time Management:** Break down the project into smaller tasks and plan your work schedule to ensure timely completion.
- **Testing:** Test each component of your system thoroughly. Consider edge cases, such as invalid tokens, large file uploads, and incomplete submissions.

6 Helpful Resources

- PHP Official Documentation
- PHP mail() function
- PHPMailer on GitHub
- PHP PDO for MySQL
- Bootstrap Framework
- W3Schools PHP Tutorial
- MySQL Documentation
- You can find Youtube or similar tutorials on handling file uploads securely in PHP.

Good luck with your assignment, and if you have any questions, do not hesitate to contact me at mertilhan.ecevit@khas.edu.tr.