Week 3 Assignment

Kevin Vang

The University of Arizona Global Campus

CST499: Capstone Computer Software Technology

Charmelia Butler

11/29/2023

In the development of a web application, creating a secure and efficient user registration system is a fundamental aspect (Tsui, Karam, & Bernal, 2018). This paper outlines the steps taken to implement a user registration page and the process of saving user information in a MySQL database. Additionally, it discusses the MySQL database functions utilized and the creation of a custom class for establishing a database connection.  
  
 The journey commences with the creation of a landing page (index.php). This page serves as the digital foyer for users, offering them the choice to either register or log in. Users are seamlessly directed to the registration page (register.php).  
A screenshot of a computer code

Description automatically generated The registration page layout (register.php) is meticulously crafted to provide an intuitive and aesthetically pleasing user experience. The utilization of HTML and CSS ensures a visually appealing and user-friendly registration form.  
A screenshot of a computer code

Description automatically generated

To fortify security, a robust user input validation process is implemented in the PHP code (register\_process.php). The validateInput function is incorporated, encompassing operations such as trimming whitespace, removing HTML and PHP tags, and thwarting SQL injection.

A screenshot of a computer program

Description automatically generated

Prior to engaging in database interactions, the creation of a MySQL database (user\_registration) is imperative. Within this database, meticulous attention is given to the design of a table named users. This table is conceived to judiciously store user information, including fields such as id, username, password, email, and registration\_date. Facilitating database connections necessitates the development of a bespoke class (DBConnection.php). This class encapsulates the intricate details of the connection, providing not only a secure but also a reusable and organized approach to establishing a connection with the database.

A screenshot of a computer program

Description automatically generated

Within the PHP code (register\_process.php), subsequent to validating user input, the process of securely saving the hashed password and additional details into the MySQL database unfolds. The instantiation of the custom class DBConnection takes place to seamlessly establish a connection, ensuring the integrity of the registration process.

In conclusion, the development of a user registration system involves a harmonious orchestration of design, security, and database management. Each step, from user interface design to database connection, plays a pivotal role in ensuring a robust and user-friendly registration process. As the web development landscape continues to evolve, the methodologies and practices employed in this project serve as a solid foundation for future endeavors, emphasizing not only functionality but also the paramount importance of user experience and data security.

Reference

Connolly, R., & Hoar, R. (2018). Fundamentals of web development (2nd ed.). Pearson.

Mikoluk, K. (2013, September 18). XAMPP tutorial: How to use XAMPP to run your own web server. Udemy. <https://blog.udemy.com/xampp-tutorial>

Tsui, F., Karam, O., & Bernal, B. (2018). Essentials of software engineering (4th ed.). Jones & Bartlett Learning.

Wang, X., Sun, W., Hu, L., Zhao, Y., Wong, W. E., & Chen, Z. (2019). Software-testing contests: Observations and lessons learned. Computer, 52(10), 61–69. <https://doi.org/10.1109/MC.2019.2905533>