

1. You have been tasked with creating a simple web application that allows users to register and login to their accounts. The application should have the following functionality:
 - a) User registration form with fields for username, email, and password.
 - b) Passwords should be securely hashed before being stored in the database.
 - c) Email addresses should be unique for each user.
 - d) User login form with fields for email and password.
 - e) Upon successful login, users should be directed to a dashboard page that displays their username and a welcome message.
 - f) Users should be able to logout from any page in the application.

Using PHP, MySQL and HTML, create a functional web application that meets the above requirements. Make sure to include validation for form inputs and error messages for failed login attempts.

2. Write a PHP function that takes an array of integers as an argument and returns the sum of all even numbers in the array.
3. Create a PHP script that takes in a string as input and returns the number of vowels in the string. Vowels are the letters "a", "e", "i", "o", and "u", regardless of case.

Your script should:

- Ignore any non-alphabetic characters in the input string
- Treat upper- and lowercase letters as equivalent
- Output the number of vowels as an integer

For example, given the input string "Hello, world!", the output should be 3.

4. Create a PHP script that takes a user's input (name and email) from a form and stores it in a MySQL database. The script should also display a confirmation message to the user indicating that their information has been successfully saved.

Assuming you have a MySQL database with a table named "users" that has columns "id" (auto incremented), "name" (varchar), and "email" (varchar).

5. Create a PHP script that takes in two numbers as input and then calculates and displays the sum, difference, product, and quotient of those two numbers.

6. Suppose you have an array of integers called \$numbers with the following values:

`$numbers = array(2, 4, 6, 8, 10);` Write a PHP code to perform the following tasks:

- i. Print the first element of the array.
- ii. Print the last element of the array.
- iii. Add a new element with the value of 12 to the end of the array.
- iv. Calculate the sum of all the elements in the array and print the result.