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INTRODUCTION

The **IdeaHub User Management and Login System** is designed to provide a secure, scalable, and efficient platform for managing user accounts, authentication, and access control for the IdeaHub platform. IdeaHub aims to be a collaborative space where users can share ideas, interact with blogs, and foster creativity. To support this vision, the platform requires a robust system that can handle user registration, authentication, role-based access, and secure session management.

This system serves as the backbone of the platform's user interactions, ensuring that users can easily sign up, log in, and manage their accounts while keeping their data safe and secure. By implementing modern security practices such as password encryption, session management, and integration with social media login options (Google, Facebook), the project aims to enhance the user experience while maintaining high standards of data protection.

The project was developed using **PHP** as the backend language and **MySQL** as the database, with **HTML, CSS, and JavaScript** powering the frontend interface. The system also integrates social media logins through **OAuth**, providing users with the flexibility to authenticate using third-party services, making it user-friendly while ensuring data security.

This report outlines the entire development process, from requirement gathering to final deployment, highlighting key features, security considerations, and the overall architecture of the system. The following sections detail each phase of the development process, including system design, implementation, and testing procedures.

LITERATURE REVIEW

The concept of user management systems is not new; they have evolved significantly over the years. Various studies and projects have focused on improving the security and functionality of user authentication systems, given their importance in today’s ecommerce platforms.

One of the most critical aspects of user security is password management. According to Chaudhary et al. (2020), password hashing is essential to prevent attackers from retrieving plain-text passwords in case of a database breach. The use of bcrypt and similar algorithms, as discussed in Juels et al. (2019), is considered an industry standard for securely storing passwords. In this project, we use password_hash() to hash the user's password and password_verify() to authenticate users during login, ensuring high-level security.

Session management is another key element, as highlighted in Sandhu et al.'s (1996) work on Role-Based Access Control (RBAC). The ability to manage user sessions securely allows a web application to differentiate between logged-in users and nonlogged-in users and restrict access based on user roles (admin, customer). Research from Anderson (2018) emphasizes the importance of protecting session data from vulnerabilities like session hijacking or cross-site scripting (XSS). The implementation of PHP sessions in this project ensures that users can access their accounts securely without exposing session data to potential threats.

Lastly, Juels et al. (2019) discuss the growing importance of differentiating user roles within a system. An admin, for example, needs to have access to more features than a regular customer. This principle is implemented in this project through the account_type field, where users are categorized as either admins or customers, granting them different levels of access to the platform.

METHODOLOGY

The methodology for developing the User Management System involves a combination of frontend and backend development, focusing on database design, secure authentication, and session management. Below is a breakdown of the core phases of this project:

1. Database Design:

The system is built around a MySQL relational database, with the users table serving as the core for managing user information. The table contains fields for user details such as username, email, password (hashed), address, phone, and account_type (to differentiate between admins and customers). The created_at field uses the TIMESTAMP data type to automatically capture the user's registration date and time. The database is designed to be scalable, supporting future expansion to include additional tables such as products and orders.

2. Frontend Development:

The frontend of the system is developed using HTML and CSS. The user registration and login forms collect user input, such as email, password, and personal information. Basic form validation is implemented using HTML5 attributes like required, ensuring that all necessary fields are filled before form submission. The visual layout is kept simple and intuitive to ensure a smooth user experience.

3. Backend Development:

On the backend, PHP is used to handle form submissions and interact with the MySQL database. When a user registers, their password is hashed using PHP's password_hash() function, ensuring secure storage. During login, the password_verify() function is used to check the entered password against the hashed password in the database. If the credentials are correct, a session is created, and the user is redirected to the homepage. The backend also handles error messages, such as invalid login attempts or duplicate email registrations, and displays appropriate feedback to the user.

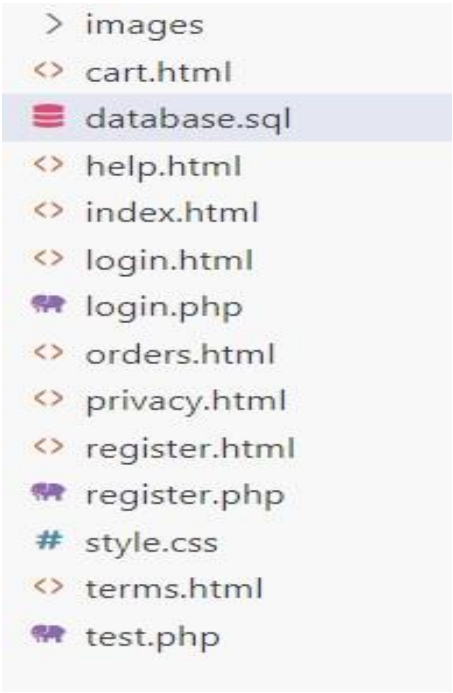
4. Testing and Validation:

The system undergoes rigorous testing to ensure that it meets the required functionality. Unit tests are conducted to verify that users can successfully register and log in. The system is also tested against common vulnerabilities like SQL injection and cross-site scripting (XSS) to ensure that it is secure.

RESULT

i) Input:

This is our workflow -



This is our main page index.html -

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta name="viewport" content="width=device-width, initial-scale=1.0">
   <title>Welcome to IdeaHub</title>
   <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/6.5.1/css/all.min.css">
   <link rel="stylesheet" href="main.css">
</head>
<body>
   <div class="hero-section">
      <nav>
         <ul>
            <li><a href="index.html">Home</a></li>
            <li><a href="#">About Us</a></li>
            <li><a href="#">Blog</a></li>
            <li><a href="index.html" class="btn">Register/Login</a></li> <!-- Linking to your
registration page -->
         </ul>
```

```
      </nav>
      <div class="hero-content">
        <h1>Welcome to IdeaHub!</h1>
        <p>Join the community where ideas flourish, blogs inspire, and creativity knows no bounds.</p>
        <a href="index.html" class="btn">Join Now</a>
      </div>
    </div>

    <section class="features">
      <h2>Why Join IdeaHub?</h2>
      <div class="feature-cards">
        <div class="card">
          <i class="fas fa-lightbulb"></i>
          <h3>Share Your Ideas</h3>
          <p>Post your innovative ideas, get feedback, and collaborate with like-minded thinkers.</p>
        </div>
        <div class="card">
          <i class="fas fa-blog"></i>
          <h3>Write Blogs</h3>
          <p>Contribute to our community with insightful blogs and showcase your expertise.</p>
        </div>
        <div class="card">
          <i class="fas fa-users"></i>
          <h3>Connect with Others</h3>
          <p>Build your network by connecting with people who share your passions and interests.</p>
        </div>
      </div>
    </section>

    <footer>
      <p>© 2024 IdeaHub. Where ideas become reality.</p>
    </footer>
</body>
</html>
```

- This is our main.css code –

```
* {
```

```
    margin: 0;
    padding: 0;
    box-sizing: border-box;
    font-family: "Poppins", sans-serif;
}

body {
    background-color: #f4f4f4;
    color: #333;
}

nav {
    background-color: #333;
    padding: 1rem;
    text-align: center;
}

nav ul {
    list-style: none;
    display: flex;
    justify-content: center;
}

nav ul li {
    margin: 0 20px;
}

nav ul li a {
    color: white;
    text-decoration: none;
    font-weight: bold;
    padding: 0.5rem 1rem;
    border-radius: 5px;
    transition: background 0.3s ease;
}

nav ul li a:hover {
    background-color: #555;
}

.hero-section {
    height: 100vh;
    background: linear-gradient(rgba(0, 0, 0, 0.5), rgba(0, 0, 0, 0.5)),
url('https://via.placeholder.com/1920x1080') no-repeat center center/cover;
    display: flex;
    flex-direction: column;
```

```
    justify-content: center;
    align-items: center;
    text-align: center;
    color: white;
}

.hero-content h1 {
    font-size: 3rem;
    margin-bottom: 1rem;
}

.hero-content p {
    font-size: 1.5rem;
    margin-bottom: 2rem;
}

.btn {
    background-color: rgb(125, 125, 235);
    color: white;
    padding: 1rem 2rem;
    border: none;
    border-radius: 5px;
    text-decoration: none;
    font-size: 1.1rem;
    cursor: pointer;
    transition: background 0.3s ease;
}

.btn:hover {
    background-color: #07001f;
}

footer {
    background-color: #333;
    color: white;
    text-align: center;
    padding: 1rem;
    position: absolute;
    bottom: 0;
    width: 100%;
}
```

- This is our login.php code -

```php
<?php
session_start();
$servername = "localhost";
$username = "root";
$password = "";
$dbname = "user_management";

$conn = new mysqli($servername, $username, $password, $dbname);

if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}

if (isset($_POST['signIn'])) {
    $email = $_POST['email'];
    $password = $_POST['password'];

    $sql = "SELECT * FROM users WHERE email = '$email'";
    $result = $conn->query($sql);
        if ($result->num_rows > 0) {

        $user = $result->fetch_assoc();


        if (password_verify($password, $user['password'])) {
            $_SESSION['user'] = $user['first_name'];
echo "<script>alert('Login successful! Welcome, " . $_SESSION['user'] . "."); window.location.href='index.html';</script>";
        } else {
            echo "<script>alert('Invalid password!');</script>";
        }
    } else {
        echo "<script>alert('No account found with this email!');</script>";
    }
}

$conn->close();
?>
```

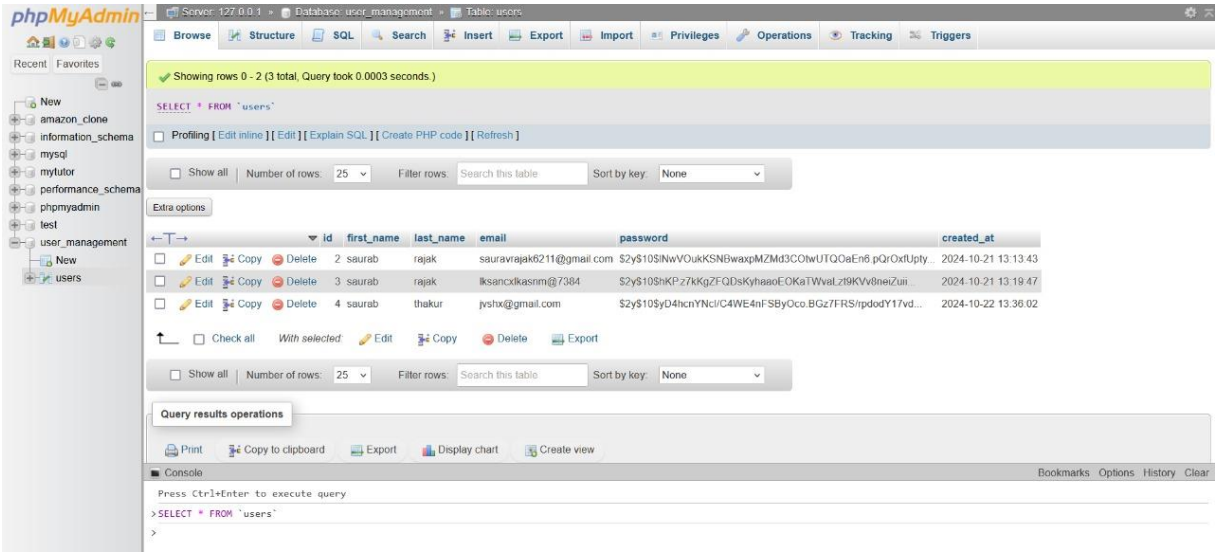
-
-
-

- This is our register.php –

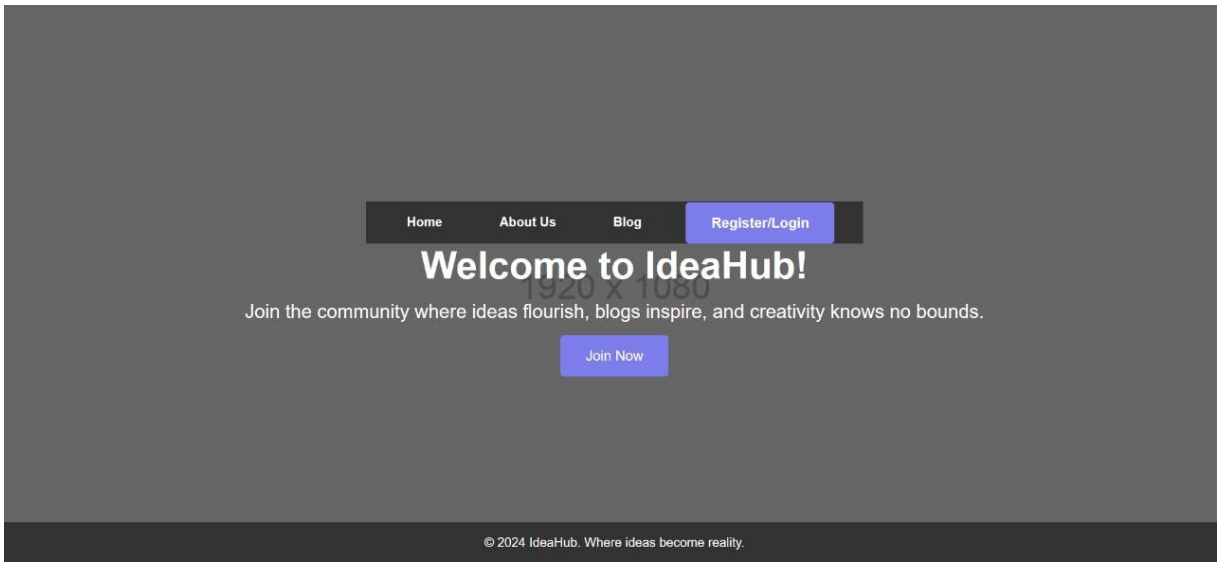
```php
<?php
session_start();


$servername = "localhost";
$username = "root";
$password = "";
$dbname = "user_management";
$conn = new mysqli($servername, $username, $password, $dbname);

if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}

if (isset($_POST['signUp'])) {
    $first_name = $_POST['fName'];
    $last_name = $_POST['lName'];
    $email = $_POST['email'];
    $password = password_hash($_POST['password'], PASSWORD_DEFAULT); // Hash password


    $checkEmail = "SELECT * FROM users WHERE email = '$email'";
    $result = $conn->query($checkEmail);

    if ($result->num_rows > 0) {
        echo "<script>alert('Email already registered. Try another.');</script>";
    } else {

        $sql = "INSERT INTO users (first_name, last_name, email, password)
                VALUES ('$first_name', '$last_name', '$email', '$password')";

        if ($conn->query($sql) === TRUE) {
            echo "<script>alert('Registration successful!'); window.location.href='index.html';</script>";
        } else {
            echo "<script>alert('Error: " . $sql . "<br>" . $conn->error . "');</script>";
        }
    }
}

$conn->close();
?>
```

ii) Output:

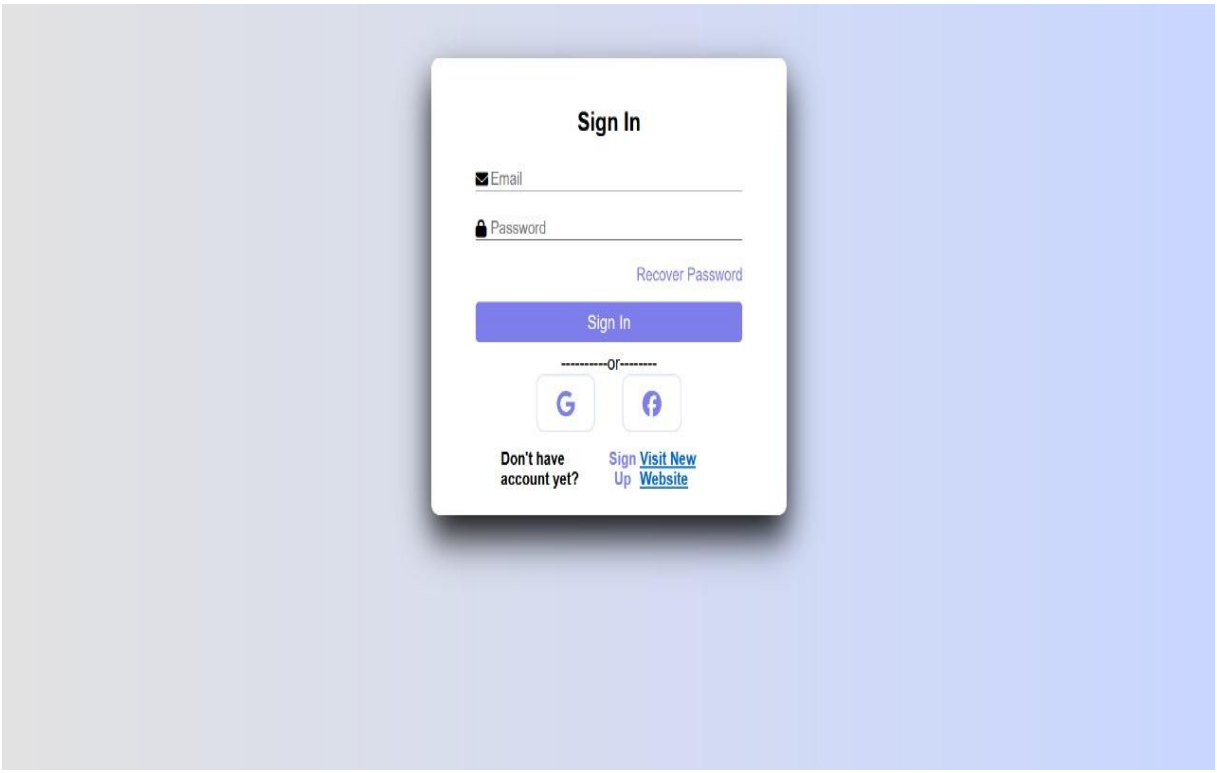
This is where our data is being in our database –



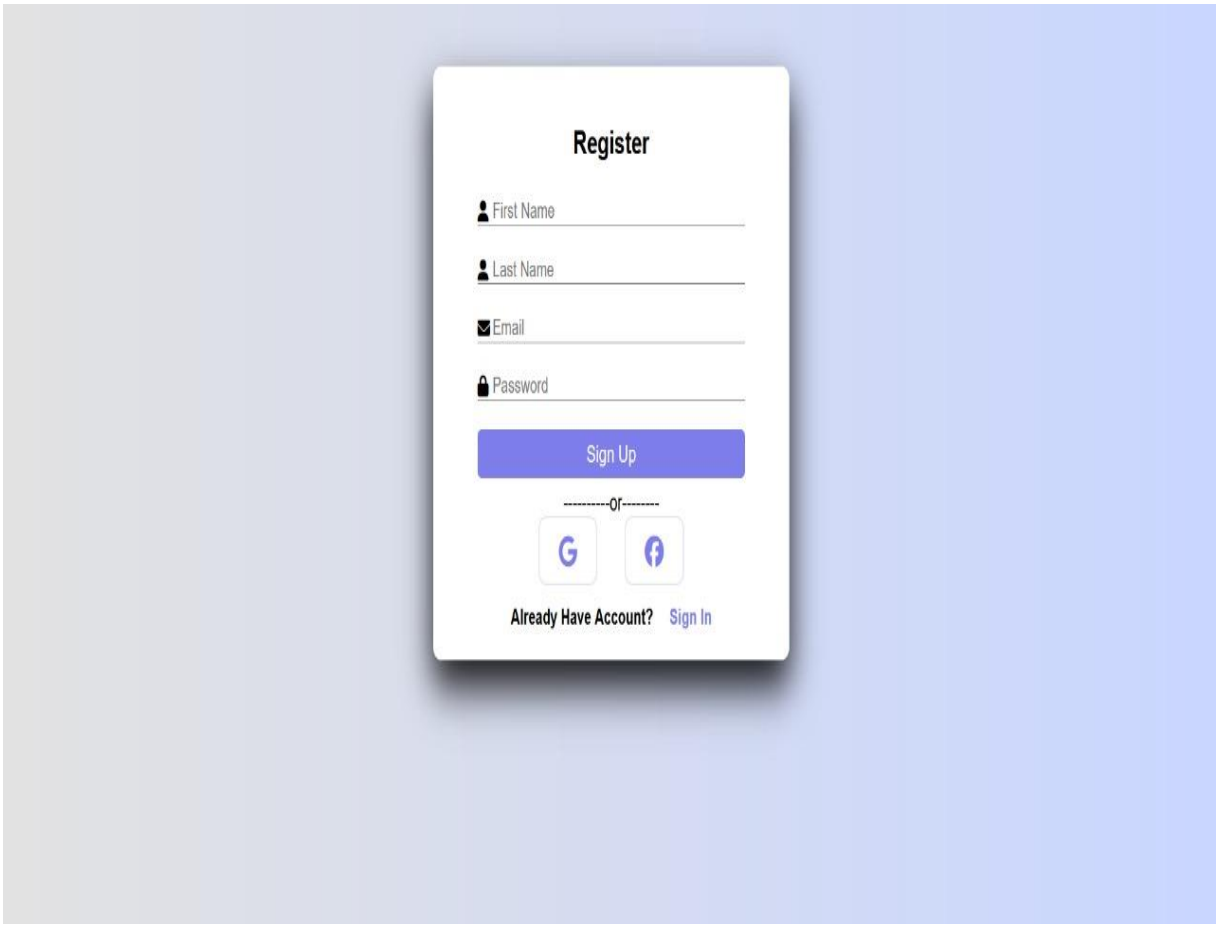
Our website homepage –



Our website login page –



Our website registration form –



- Conclusion and Future Enhancements

The **IdeaHub User Management and Login System** successfully provides a secure, intuitive, and scalable platform for users to manage their accounts and interact with the IdeaHub community.

Future Enhancements:

- **Two-Factor Authentication (2FA)**: Adding 2FA for an extra layer of security.

- **User Activity Tracking**: Implement a feature to track user engagement.

- **API Integration**: Extend functionality by providing APIs for third-party apps.

References

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