

CS 174

ARI'S DREAM

Final Report

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1. Introduction

Ari's Dream represents a fusion of creativity and technology, offering users a personalized space to share images, poems, and a dedicated place to store their dreams. Ari's Dream features a lively and user-centered platform, accessible through a user-friendly interface that can cater to a broad audience. Users have the ability to upload multiple image files and poems simultaneously, creating a repository for their cherished memories. My report aims to provide the development process, highlighting Ari's Dream's key technologies, design, and database structure.

2. Databases

In this database implementation, I created two essential tables: user table and user_images table.

The "user" table stores user information, including id, the unique username, the user's name, and the password.

```
[MariaDB [aridream]> describe users;
```

Field	Type	Null	Key	Default	Extra
id	int(11)	NO	PRI	NULL	auto_increment
username	varchar(255)	YES	UNI	NULL	
name	varchar(255)	NO		NULL	
password	varchar(255)	NO		NULL	

```
4 rows in set (0.054 sec)
```

Figure 1: Users table

On the other hand, the user_images table is designed to store the dreams and preferences of users. It includes fields for id, poem, image, username (linked as a foreign key to the "user" table), and a column to track users' favorite images.

```
[MariaDB [aridream]> describe user_images;
```

Field	Type	Null	Key	Default	Extra
id	int(11)	NO	PRI	NULL	auto_increment
poem	varchar(255)	YES		NULL	
image	longblob	YES		NULL	
username	varchar(255)	YES	MUL	NULL	
favorite	tinyint(1)	YES		0	

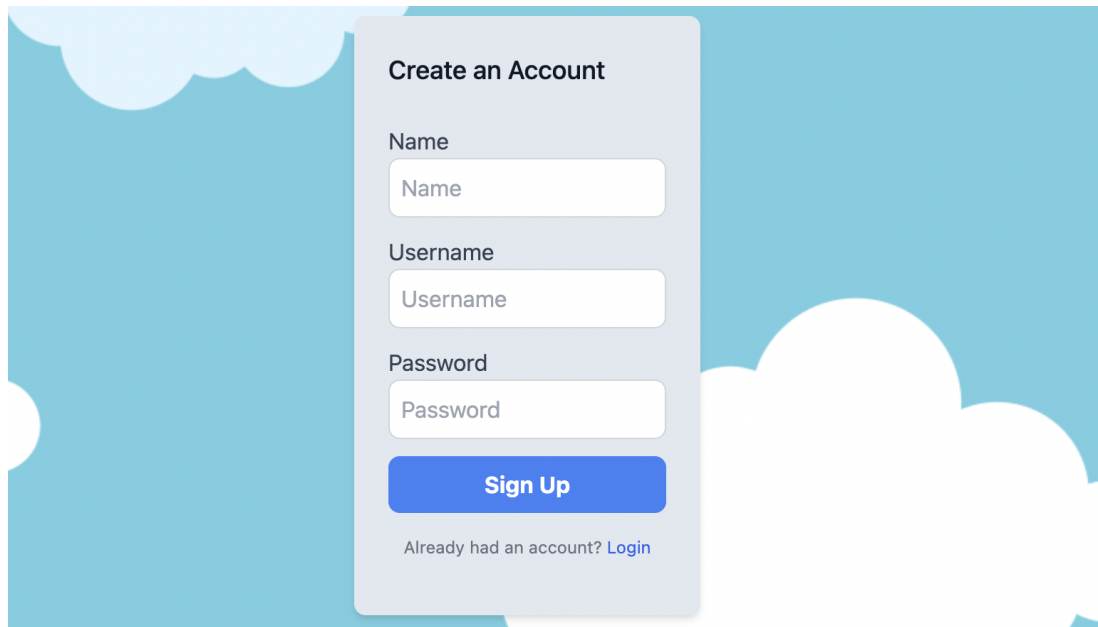
```
5 rows in set (0.035 sec)
```

Figure 2: User_images table

3. User authentication

3.1 Sign Up

On the sign-up page, users can easily create accounts by providing a unique username, a secure password, and a name for a personalized touch. With an attractive and easy-to-navigate interface, users can swiftly create an account to become a part of Ari's Dream. For existing users, the option to log in is available. It can direct them to the login page with a simple click.

A sign-up form titled "Create an Account" is centered on a light blue background with white cloud graphics. The form is a light gray rounded rectangle containing three input fields: "Name", "Username", and "Password", each with its label above it. Below the "Password" field is a blue "Sign Up" button. At the bottom of the form, there is a link that says "Already had an account? [Login](#)".

Create an Account

Name

Username

Password

Sign Up

Already had an account? [Login](#)

Figure 3: Sign up page

3.2 Log In

On the log in page, users can login using their credentials with passwords are stored securely. In case of entering invalid credentials, the user will receive a warning message about the error so they can re-enter the correct information.

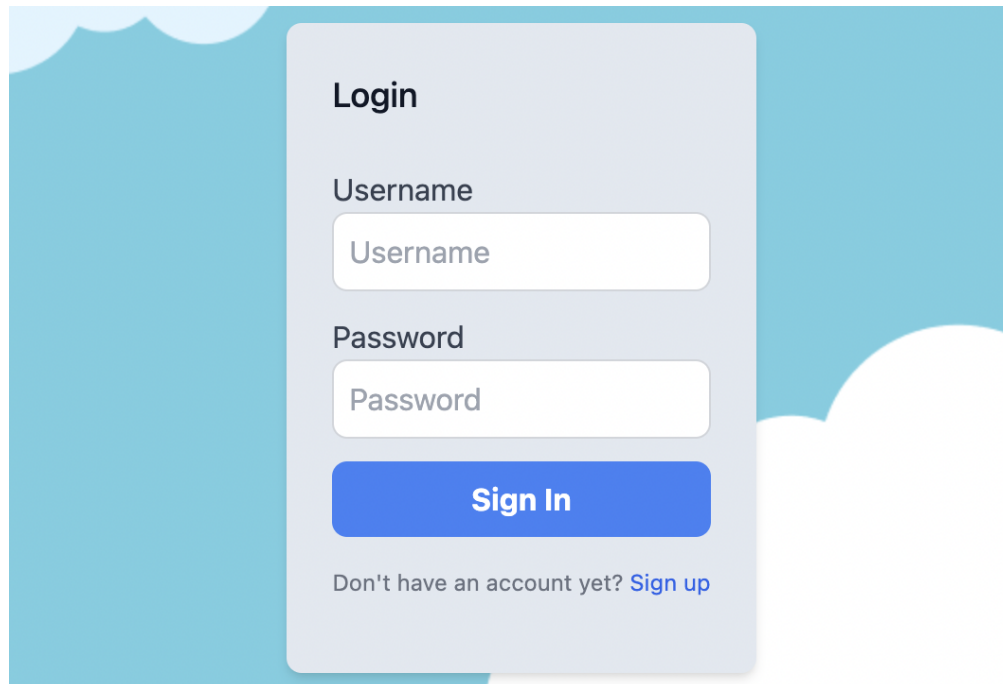
The image shows a login form titled "Login" centered on a light blue background with abstract white cloud-like shapes. The form is a light gray rounded rectangle. It contains a "Username" label above a white input field with "Username" placeholder text. Below that is a "Password" label above another white input field with "Password" placeholder text. A blue "Sign In" button is positioned below the password field. At the bottom of the form, it says "Don't have an account yet? [Sign up](#)".

Figure 4: Log in page

3.3 Error Handle

For both the login and sign-up pages, distinct error-handling mechanisms have been implemented to address user input issues. Every time a user enters login or sign up information that is either too long or includes disallowed characters, they will receive notifications about these errors.

```

function validate($name, $username, $password)
{
    $allowed = '/^[a-zA-Z0-9_]*$/';
    $fail = "";

    if ($username === '' || $password === '') {
        $fail .= "<div style='color:red;'>Username and password must be filled</div>";
    } else if (strlen($username) > 255 || strlen($password) > 255) {
        $fail .= "<div style='color:red;'>Username/password is too long</div>";
    } else if (!preg_match($allowed, $username)) {
        $fail .= "<div style='color:red;'>Invalid characters in username</div>";
    } else if (!preg_match($allowed, $name)) {
        $fail .= "<div style='color:red;'>Name can contain a-z, A-Z, and underscore</div>";
    }

    return $fail;
}

```

Figure 5: Validate function handle for log in page

```

function validate($username, $password)
{
    $allowed = '/^[a-zA-Z0-9_]*$/';
    $fail = "";

    if ($username === '' || $password === '') {
        $fail .= "<div style='color:red;'>Username and password must be filled</div>";
    } else if (strlen($username) > 255 || strlen($password) > 255) {
        $fail .= "<div style='color:red;'>Username/password is too long</div>";
    } else if (!preg_match($allowed, $username)) {
        $fail .= "<div style='color:red;'>Invalid characters in username</div>";
    }

    return $fail;
}

```

Figure 6: Validate function handle for sign up page

3.4 Password Security

To secure passwords, a two-salt strategy is used—\$salt1 and \$salt2. Salting involves adding random data at the beginning and end to each password before hashing, enhancing security to prevent attackers from being able to crack the password.

```
[MariaDB [aridream]> select * from users;
```

id	username	name	password
1	uyen1	Uyen	65ff2ca812fd8060f30659bd591a2fd1
2	uyenle	uyenle	65ff2ca812fd8060f30659bd591a2fd1
3	hannah1	Hannah	65ff2ca812fd8060f30659bd591a2fd1
4	uyen	uyen	65ff2ca812fd8060f30659bd591a2fd1
5	user1	Yellow	1e1939ab02f265c26d3ebb9dbe065732
6	user2	Red	22e1bd543a7fdaa0789a6218c79a8c84
7	user3	Blue	79c4cb29a28fee5d6880838be3507f94

```
7 rows in set (0.003 sec)
```

```
function getHash($string)
{
    $salt1 = '!@#@$!@#';
    $salt2 = 'sugar';
    $token = hash('ripemd128', "$salt1$string$salt2");

    return $token;
}
```

Figure 7: Secure Password

4. Ari's Dream Features

4.1 Home Page

Ari's Dream provides users with a creative space to express their thoughts through poem submissions. Users can text their poetic works directly into the platform, along with photos they like or that are related to the poem's content. The application allows them to upload multiple JPEG and JPG files. The user-friendly interface assists them in submitting their poems and images easily and quickly.

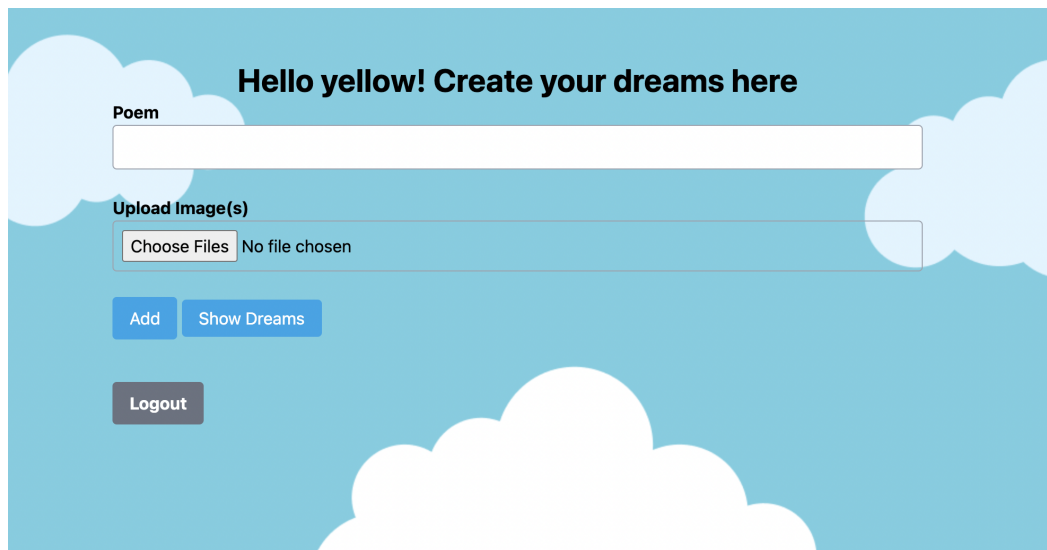
The screenshot shows a web interface for 'Ari's Dream' with a light blue background and white cloud graphics. At the top, the text 'Hello yellow! Create your dreams here' is displayed in bold. Below this, there is a text input field labeled 'Poem'. Underneath the poem field is an 'Upload Image(s)' section, which includes a 'Choose Files' button and the text 'No file chosen'. At the bottom of the form area, there are two blue buttons: 'Add' and 'Show Dreams'. Further down, there is a dark grey button labeled 'Logout'.

Figure 8: Home page

4.2 Display user's dreams page

Ari's Dream provides users with a dedicated space to display their content, including poems and images. Additionally, the platform introduces interactive features, allowing users to express their

love for images by liking them. For added convenience, users have the ability to manage their content by providing the option to delete content that they no longer wish to be displayed.

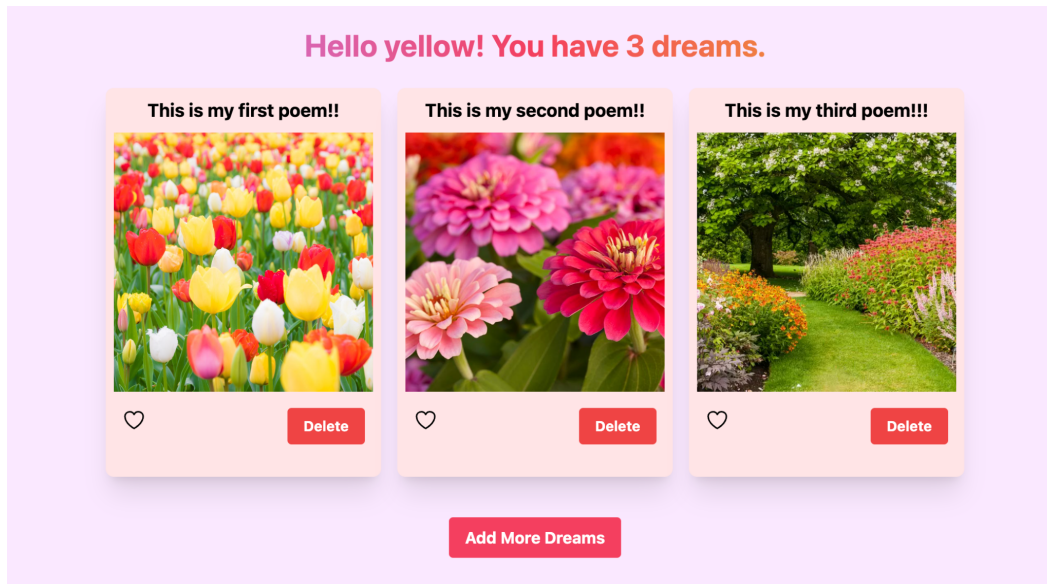


Figure 9: Dreamer's page

5. Technologies Used

- PHP: handles user authentication, form submissions, and interacts with the database.
- HTML: defines the structure web pages.
- CSS: with the Tailwind framework, contributes to the visual of Ari's Dream.
- MySQL: storing and managing user information.

6. Future Addition

5.1 Image favorites list

Ari's Dream already includes the functionality to mark each user's favorite images. Building on this, I will enhance the 'Favorites List' feature, which gathers images marked as favorites into a comprehensive list. Users can easily view the images marked as favorites by clicking on Favorites list button.

5.2 Custom Page Option

In the future, the website will also provide a unique customization feature, allowing users to adjust themes, colors and text fonts based on the dreamer's own preferences. This customization allows users to turn Ari's Dream into their own unique space to share personal interests.

5.3 Security

To enhance user data protection, Ari's Dream will implement additional strong security measures. This requires increased encryption protocols and more secure password storage techniques to address potential vulnerabilities. User security will be provided with a safe and trustworthy environment so that all dreamers can freely express themselves without fear of personal information leaking.

7. Conclusion

In conclusion, Ari's Dream provides users with a personalized website to archive through poems and images. User-friendly interface, secure login mechanism, and additional features like favorites images, and delete button, those will bring Dreamer a safe and enjoyable experience. Ari's Dream prioritizes user security and continuously enhances features to provide a private place to store user memories.