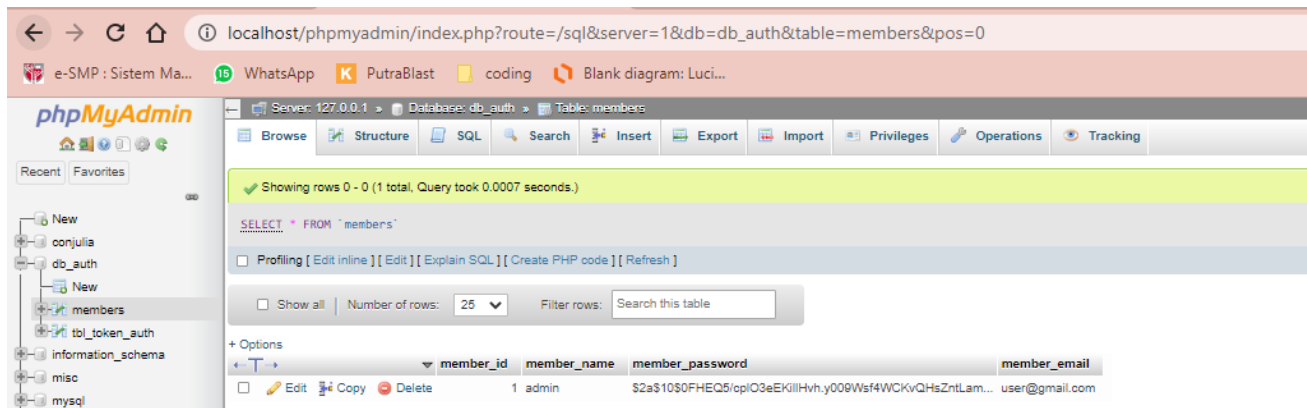


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1. Source code to all php files  
<https://github.com/juliaxy0/SSE3150/tree/main/LAB7>
2. MySQL screenshot

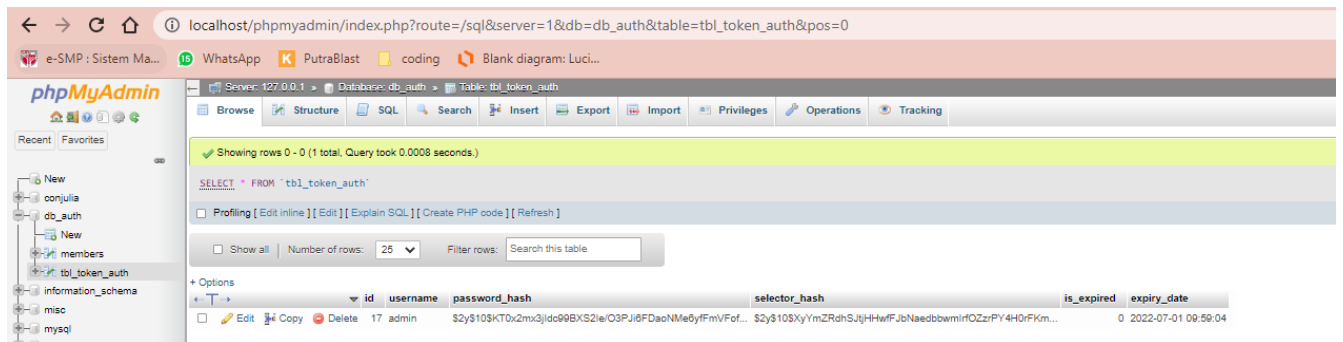
a) Members



The screenshot shows the phpMyAdmin interface for the 'db\_auth' database, specifically the 'members' table. The table structure is as follows:

member_id	member_name	member_password	member_email
1	admin	\$2a\$10\$0FHEQ5/cplO3eEKllHvh.y009Ws4WCKvQHsZntLam...	user@gmail.com

b) Tbl\_token\_auth

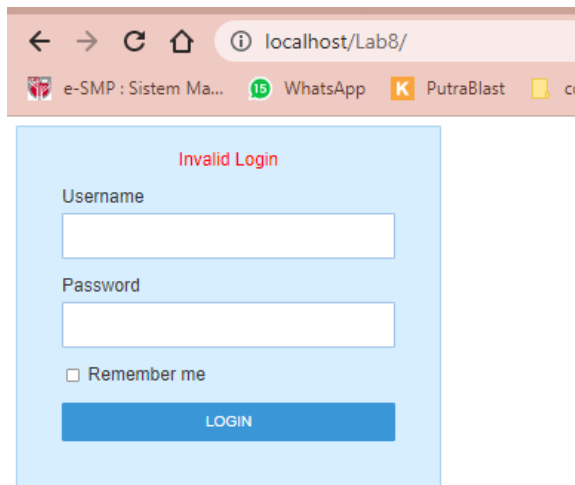


The screenshot shows the phpMyAdmin interface for the 'db\_auth' database, specifically the 'tbl\_token\_auth' table. The table structure is as follows:

id	username	password_hash	selector_hash	is_expired	expiry_date
17	admin	\$2y\$10\$KT0x2m3jdc90BXs2le/O3PJdFDaoNM6yIFmVfOf...	\$2y\$10\$XyYmZRhSjJHwFJbNaedbbwmiFOZrPY4H0rFKm...	0	2022-07-01 09:59:04

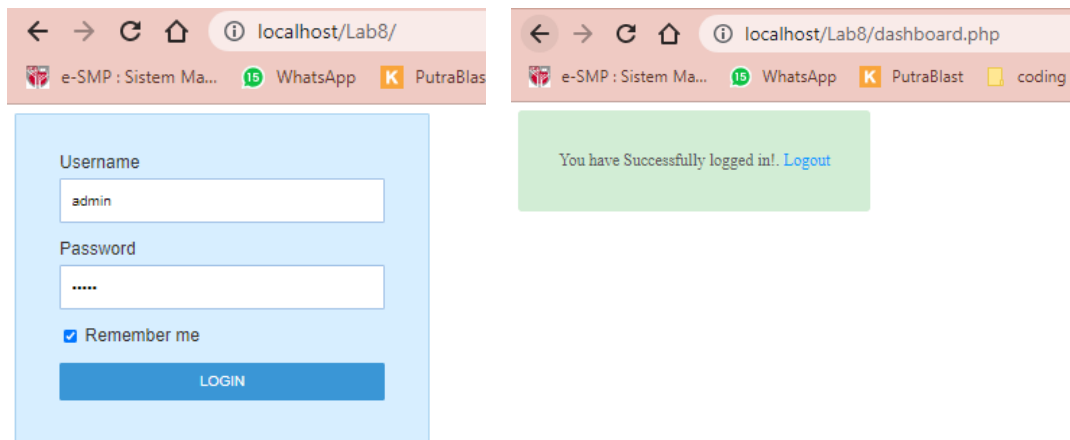
### 3. Execution Outputs

#### a) Invalid Password



The screenshot shows a web browser window with the address bar displaying 'localhost/Lab8/'. The browser's taskbar includes icons for 'e-SMP : Sistem Ma...', 'WhatsApp', 'PutraBlast', and 'cc'. The main content area shows a light blue login form with the title 'Invalid Login' in red. The form contains two input fields: 'Username' and 'Password'. Below the password field is a checkbox labeled 'Remember me'. At the bottom of the form is a blue button labeled 'LOGIN'.

#### b) Valid Password



The first screenshot shows a web browser window with the address bar displaying 'localhost/Lab8/'. The browser's taskbar includes icons for 'e-SMP : Sistem Ma...', 'WhatsApp', 'PutraBlast', and 'coding'. The main content area shows a light blue login form with the title 'Invalid Login' in red. The form contains two input fields: 'Username' and 'Password'. Below the password field is a checkbox labeled 'Remember me'. At the bottom of the form is a blue button labeled 'LOGIN'.

The second screenshot shows a web browser window with the address bar displaying 'localhost/Lab8/dashboard.php'. The browser's taskbar includes icons for 'e-SMP : Sistem Ma...', 'WhatsApp', 'PutraBlast', and 'coding'. The main content area shows a green message box with the text 'You have Successfully logged in! [Logout](#)'.

### 4. Explanation Reports

#### a) index.php

Index act as login page. Here, user's username and password will be crosschecked with the database. When user clicks 'Remember me' before logging in, user will be saved in tbl\_token\_auth with given id, hashed random password, hashed random selector and cookie expiration time. If the user has logged in before, and cookie is not expired, the same data will be retrieved for the user. If the user has logged in before, and cookie is already expired, new cookie details will be set for the user.

b) auth.php

This class holds all the sql query and variables to be compiled with query. Both data will then be sent to DBController to be compiled and executed.

c) DBController.php

In controller, the constructor will make a connection to the database using pdo. Then, auth.php will call method in DBController.php to execute query. This class will bind the sent parameter with query sent using bindQueryParams() before executing.

For insert and update, the query will be executed and updated to database. For select statements using runQuery() and runBaseQuery(), the result will be returned to calling method in form of array.

d) Util.php

In this class, tokens will be created to be kept in database as keys. Random numbers are also generated for keys to ensure security. When clearAuthCookie() is triggered, it will clear all cookie according to the user log.

e) authCookieSessionValidate.php

The session and cookie-based logged-in state validation logic is contained in this class. It appears at the top of any application pages that need the user to be authorised. This code will set the \$loggedIn flag to true if the logged-in state is present in the session or cookie array. The user will be permitted to continue with the programme or diverted back to the login page depending on this boolean value.

First, the PHP session is compared to the memorised login. If it returns false, the function will look in the cookies for the authentication keys. If the keys aren't empty, they'll be hashed and checked against the database. When a match is identified, the expiration date is checked against the current date and time. The user will be sent to the dashboard after the code has passed all of the validation checks.

f) dashboard.php

The dashboard will indicate whether the user is logged in or not. If the user is not logged in, the user will be redirected to login page. Otherwise, user is successfully logged in and the user can see a hyperlink to logout and will be redirected to login page.

g) logout.php

On clicking the logout link on dashboard, the remembered login state will be unset from the PHP session and cookies.