

Auth App

CIS-25 Midterm

Explanation of Program:

This program creates users with passwords based on user input using `getline(cin)` and stores it in a `users.txt` file that is then opened to look for users you can Register a new user, Login, Display users and exit the program.

One challenge I faced was that I was originally not passing by reference and just passing by value, and I was having some issues with overflows.

A current bug / unintended flaw in the program is that if you enter a username like “username password”, it is separated and taken in as username password instead of a username with a space.

I was planning on using JSON or XML library so that I could use those for easier data parsing and possibly adding hashing/encryption on the passwords in `users.txt` after the program is closed, although if you had a debugger, you could still see the values of the passwords.

Features:

Concept	Where Used
Data types/sizes	int, string, sizeof usage
File types	users.txt for storing data
Pointers	User* users dynamically allocated array
Arrays	Array of users stored as User* users
Binary Search	Used to find users during login
Strings	std::string used for usernames/passwords
File I/O	ifstream and ofstream in AuthSystem
Classes	User and AuthSystem

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OOP in C++ (CIS-25)

Output:

```
Enter password: password
User registered successfully.

1. Register
2. Login
3. Display Users
4. Exit
Enter choice: 1
Enter username: superhackerdaru
Enter password: hacker
User registered successfully.

1. Register
2. Login
3. Display Users
4. Exit
Enter choice: 1
Enter username: cybersec+
Enter password: twentytwenty
User registered successfully.

1. Register
2. Login
3. Display Users
4. Exit
Enter choice: 1
Enter username: admin
Enter password: admin
User registered successfully.

1. Register
2. Login
3. Display Users
4. Exit
Enter choice: 2
Enter username: admin
Enter password: admin
Login successful!

1. Register
2. Login
3. Display Users
4. Exit
Enter choice: |
```



^^^^^^

This shows me adding users and logging in successfully with a user I created. (admin,admin)

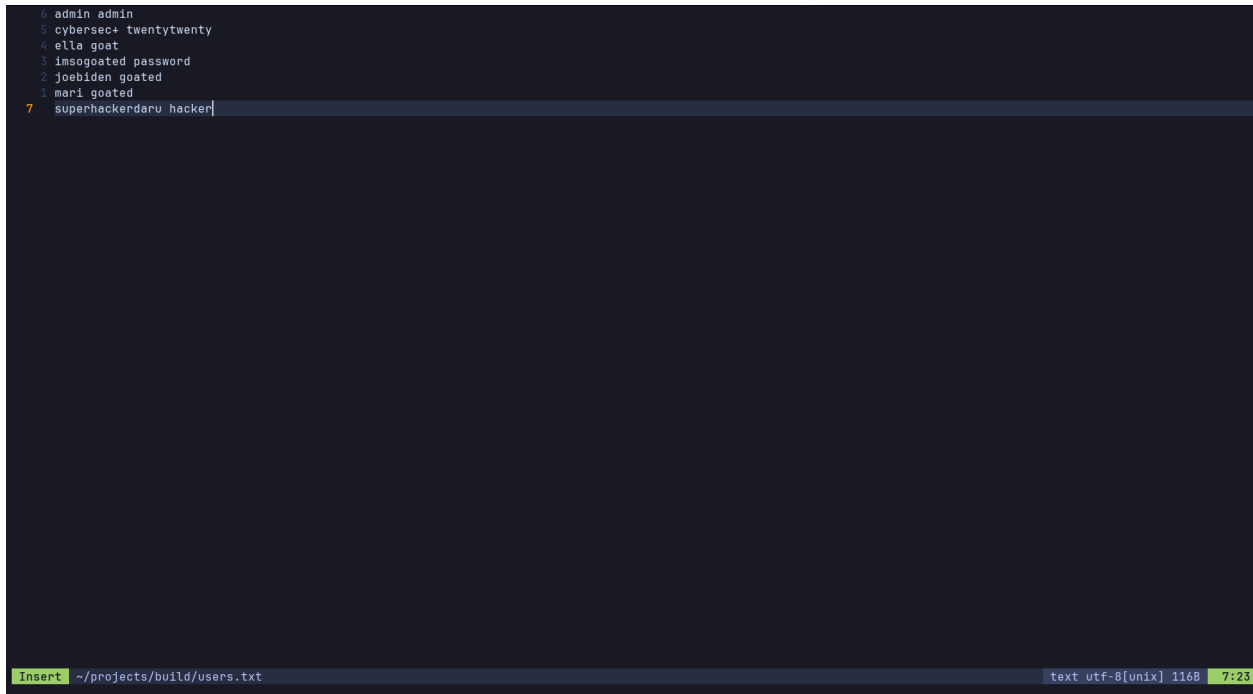
After Entering Invalid creds:

```
1. Register
2. Login
3. Display Users
4. Exit
Enter choice: 2
Enter username: joe
Enter password: fortnite
Invalid credentials.
```

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Checking Users.txt (nvimbtw): vvvvvv



```
6 admin admin
5 cybersec+ twentytwenty
4 ella goat
3 imsoagoated password
2 joebiden goated
1 mari goated
7 superhackerdaru hacker|
```

Insert ~/projects/build/users.txt text utf-8[unix] 116B 7:23

Challenges Faced:

I had originally faced some challenges when I was passing by value instead of reference and I was also having challenges because I wasn't using a destructor in the beginning I now know its best practice in C++ to use a destructor pretty much everytime. I overcame that by having issues and then realizing the issues lied in the memory not being freed.