

Programming Project Write-up

Analysis

Main Project	Frontend (JS)	Main System	Display User Info	Authentication Details	Backend	User Database	Hashing & Salting	Compare Passwords	Authentication Flow	Frontend (JS)	Backend	Main System	Display User Info	Input Authentication Details	User Database	Hashing & Salting	Compare Passwords	Authentication Flow
Main Project	Frontend (JS)	Main Project	Frontend (JS)	Frontend (JS)	Frontend (JS)	Backend	Backend	Backend	Backend	Backend	Backend	Backend	Backend	Backend	Backend	Backend	Backend	Backend

The problem

- Write a backend and a frontend for robust user authentication, implementing modern security.

Success criteria

- Provide a mostly intuitive user interface (not just a cli tool)
 - Something like a TUI
 - The UI must handle user error gracefully
- Separate the frontend and backend
 - The backend need not know of the frontend
 - Use dependency injection over inheritance
- Have the option to sign in and to sign up, and when signing in, if the user provided an email address and a username, they can use either to sign in
- Use modern hashing algorithms (hashing the password using SHA256 or similar, not just MD5) to store the password, the password must NEVER be kept in plain text
- Store the user credentials in a separate file (a 'database' if you will)
- Helpfully suggest options through the frontend menu system, such as to generate a random password, either randomly or invoking a tool like diceware.
- Allow code to be reusable and useable for other projects that require user auth.