Terminal Application Presentation

AN INTERACTIVE APPLICATION WITH USER MANAGEMENT & SYSTEM MONITORING

About the Terminal Application

Purpose of the Application

- A terminal-based user management system.
- Real-time system performance monitoring.
- SQLite database integration for data storage and retrieval.

Terminal Application Overview

Main Features

- User Registration: Create a new user profile.
- User Login: Securely log into an existing profile.
- Account Information Management: View and modify user details.
- System Performance Monitoring: Monitor CPU and memory usage.

Feature - User Registration

User Credentials

- Username: Unique identifier.
- Password: Must be secure (8+ chars, 1 uppercase, 1 number).

Security

- Passwords are hashed using MD5 before storing.

Username Check

- The application ensures username uniqueness.

Feature - User Login

Login Mechanism

- Input password is hashed and checked against stored hash.
- After 3 failed attempts, login is temporarily locked for 60 seconds.

Feature - Account Management

Display Account Info - User can view all registered details.

Edit Account Info - Options to modify

- First Name
- Last Name
- Email (with validation)
- Phone Number (with validation)

Feature - System Performance Monitoring

Real-time Stats

- Displays CPU usage percentage.
- Displays memory usage percentage.

Technology

- Built using psutil for data and curses for UI.

Inside the Code

Password Hashing:

- MD5 is used for hashing passwords before storing.

Database Interaction:

- SQLite3 ensures data persistence and easy retrieval.

Robustness:

- Exception handling is employed throughout the app for better user experience.

Behind the Scenes

Challenges:

- Efficient real-time monitoring.
- Rate-limiting mechanism.
- Password security.

Ethical Issues:

- Secure storage and retrieval of sensitive user data.

Favourite Parts:

- Building the real-time system performance UI.
- Integrating with SQLite3 for data management.