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Topic	**Password Strength Analyzer**

Password Strength Analyzer with Custom Wordlist Generator

Introduction:

In today's digital world, securing passwords is essential to prevent unauthorized access and cyber attacks. This project focuses on developing a GUI-based application that helps users evaluate password strength,generate SHA-256 hashes, and store them securely.it also assists in password verification and exporting reports for auditing purposes.

Abstract:

The project is a python-based desktop tool with a user-friendly interface developed using Tkinter. It integrates zxcvnb, an advanced password strength estimator, and hashlib for SHA-256 hashing. It helps users create strong, secure passwords by analyzing them and giving suggestions. Users can also save password hashes and verify them later, and export password reports for reference.

Tools Used:

- **Python-** Core programming language
- **Tkinter-** For GUI development
- **Zxcvbn-** For password strength analysis
- **Hashlib-** For secure hashing (SHA-256)
- **PIL(Pillow)-** To handle background images in the GUI

Steps Involved in Building the Project:

- Designed a GUI using Tkinter with dark-themed styling.
- Integrated zxcvbn for analyzing password strength and giving real-time feedback.
- Implemented hashlib to hash passwords using SHA-256.
- Enabled saving hashed passwords to a local file securely.
- Added password verification feature using stored hash.
- Added a report export feature to generate a password summary(suggestions,score,hash)
- Made UI responsive and included background image support.

Conclusion:

This tool provides users a simple yet effective way to evaluate and strengthen their passwords. It promotes awareness of password security and hashing concepts. The GUI interface makes it accessible for non-technical users as well. Future versions can include database integration or multi-user support.