

Password Strength Analyzer & Custom Wordlist Generator

Abstract

This project implements a Password Strength Analyzer and a Custom Wordlist Generator using Python. The analyzer evaluates password strength using the zxcvbn library and provides an estimated crack time along with suggestions for improvement. The custom wordlist generator creates potential passwords based on personal details and common patterns, making it useful for ethical hacking, penetration testing, and password auditing purposes.

Introduction

Passwords are the most commonly used authentication method, but weak passwords are still a major cause of security breaches. This project addresses two aspects: evaluating the strength of a given password and generating a list of possible passwords that attackers might try. The project is designed for cybersecurity enthusiasts and interns to understand password cracking techniques and defensive measures.

Tools Used

- Python 3 (programming language)
- zxcvbn (password strength estimation library)
- itertools (to generate combinations)
- FPDF (for report generation)
- Terminal/Nano editor on macOS (for development)

Steps Involved in Building the Project

1. Installed required libraries such as zxcvbn using pip.
2. Wrote Python code to take user input for password analysis.
3. Integrated zxcvbn to evaluate strength score and crack time.
4. Implemented a custom wordlist generator using common password patterns, leetspeak substitutions, and personal details.
5. Saved the generated wordlist in a text file for penetration testing purposes.
6. Tested the tool by running it on sample passwords and verifying generated wordlists.

Conclusion

The Password Strength Analyzer with Custom Wordlist Generator is a useful security tool for both ethical hackers and general users. It demonstrates how attackers generate password lists based on common patterns and highlights the importance of choosing strong, unpredictable passwords. The project also serves

as a learning exercise in Python programming and basic cybersecurity concepts.