Cyber Security Internship Task 6

Password Strength Evaluation - Final Report

Introduction

This report presents the results of the password strength evaluation conducted as part of Cyber Security Internship Task 6. The primary objective of this task was to develop strong, secure passwords and analyze their robustness using a structured scoring system. The evaluation focused on assessing password strength based on length, character diversity (uppercase, lowercase, digits, special characters), and overall entropy.

Methodology

Passwords were analyzed using the following evaluation criteria:

- Length: Longer passwords generally offer greater resistance to brute-force attacks and score higher.
- Character Variety: Additional points were awarded for including:
  - Uppercase letters (A-Z)
  - Lowercase letters (a-z)
  - Digits (0-9)
  - Special characters (e.g., !, @, #, $, etc.)
- Complexity Score: A composite score reflecting resistance to common password attacks such as dictionary attacks or pattern-based guessing.
- Strength Categories:
  - Weak: Score less than 4
  - Medium: Score between 4 and 6
  - Strong: Score between 6 and 8.5
  - Very Strong: Score above 8.5

Summary and Recommendations

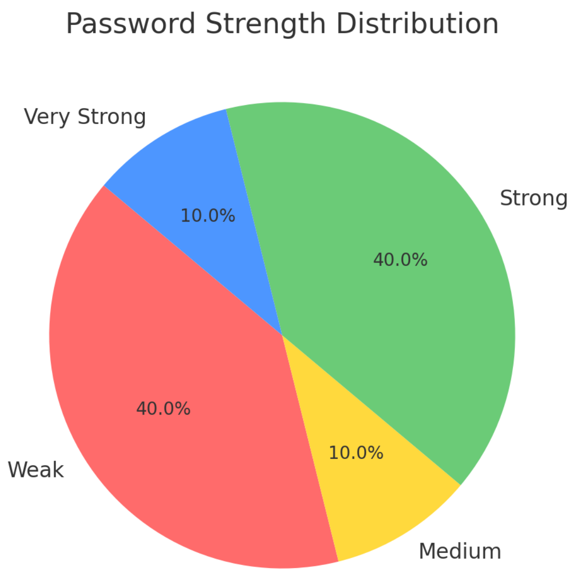
- Total Passwords Evaluated: 10

- Weak Passwords: 4

- Medium Passwords: 1

- Strong Passwords: 4

- Very Strong Passwords: 1



Recommendations:

1. Incorporate Variety: Always use a mix of uppercase letters, lowercase letters, numbers, and special characters.

2. Prioritize Length: Passwords longer than 8 characters significantly enhance security.

3. Avoid Predictability: Refrain from using common words, patterns, or simple numeric sequences.

4. Use Password Managers: To generate and manage complex, unique passwords for each account.

Conclusion

The analysis demonstrates that password strength can be effectively enhanced through simple strategies: extending length and incorporating character diversity. Adhering to strong password practices is a foundational step in mitigating cybersecurity risks and protecting personal and organizational data.