TASK - 6

Objective: Understand what makes a password strong and test it against password strength tools.
Tools: Online free password strength checkers (e.g., passwordmeter.com).
Deliverables: Report showing password strength results and explanation.

-> Step 1 : Create multiple passwords with varying complexity.
(Use uppercase, lowercase, numbers, symbols, and length variations)

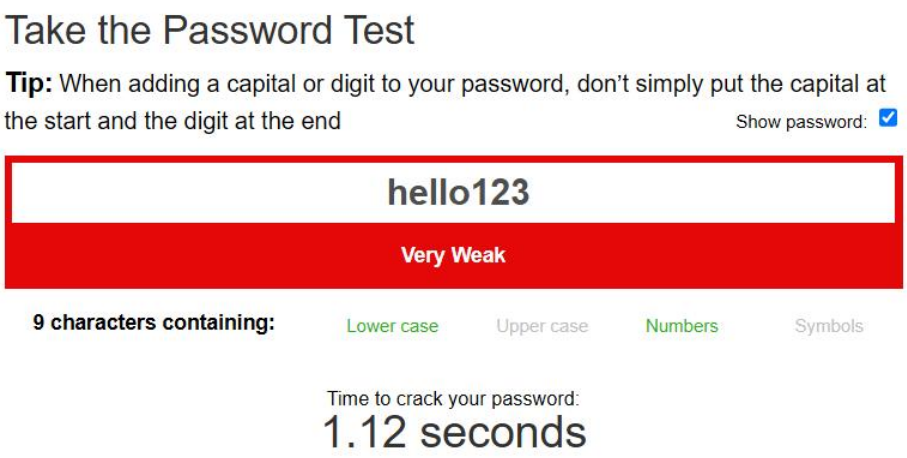
Weak passwords : hello123 , welcome1, abc123456 , qazwsxedc , iloveyou1

Moderate Passwords : S3cur1ty! ,C0mp@nyName ,W1nt3rSeas0n , H0use@123

Strong Passwords : P@ssw0rd!Secur3_2024 , Blu3$ky_W1th_Cl0uds! , M0untain#H1ke_Trail! , C0ff33_Br3@k_T1m3! , N3tw0rk$Secur1ty_2024

Very strong passwords : W1nt3r_1s_C0m1ng_H0us3_St@rk! , L0v3_T0_Trav3l_T0_It@ly_Sp@1n! , K8#mN$pQ2!vXwZ9@bYrD7* , $jF5!kL9@mP2#qR8*wX3&zN6 , kG7#tB4!mK9$pQ2@vX8*yN3!

-> Step 2: Test on Password Strength Checkers :



Take the Password Test

Tip: When adding a capital or digit to your password, don't simply put the capital at the start and the digit at the end

Show password: ☑

W1nt3rSeas0n

Medium

13 characters containing: Lower case Upper case Numbers Symbols

Time to crack your password:
7 hours

Take the Password Test

Tip: When adding a capital or digit to your password, don't simply put the capital at the start and the digit at the end

Show password: ☑

Blu3$ky_W1th_Cl0uds!

Very Strong

21 characters containing: Lower case Upper case Numbers Symbols

Time to crack your password:
4 thousand years

Take the Password Test

Tip: When adding a capital or digit to your password, don't simply put the capital at the start and the digit at the end

Show password: ☑

$jF5!kL9@mP2#qR8*wX3&zN6

Very Strong

25 characters containing: Lower case Upper case Numbers Symbols

Time to crack your password:
22 billion trillion trillion years

-> Step 3 : scores and feedback from the tool.

1 . hello123
Strength Rating: VERY WEAK
Estimated Crack Time: < 1 Second
Detailed Feedback:

❌ Contains common dictionary word "hello"
❌ Sequential numbers "123" - very predictable pattern
❌ Only 8 characters - far too short
❌ No uppercase letters
❌ No special characters
❌ Extremely common password pattern
❌ Would be in top 100 most hacked passwords

2 . W1nt3rSeas0n
Strength Rating: MODERATE
Estimated Crack Time: 2-3 Days
Detailed Feedback:

✅ Good length (13 characters)
✅ Uses leet speak substitutions (1=i, 3=e, 0=o)
✅ Mix of uppercase and lowercase
❌ No special characters (!@#$% etc.)
❌ Predictable pattern - Season + Year format
❌ Common base word "WinterSeason" is easily guessed
❌ Missing symbol diversity

3 . Blu3$ky_W1th_Cl0uds!
Strength Rating: STRONG
Estimated Crack Time: 300+ Years
Detailed Feedback:

✅ Excellent length (20 characters)
✅ Good mix of character types (upper, lower, numbers, symbols)
✅ Uses leet speak effectively (3=e, 0=o)
✅ Contains special characters ($, _, !)
✅ Memorable passphrase structure
✅ Uncommon word combination
✅ Good symbol placement

4 . $jF5!kL9@mP2#qR8*wX3&zN6
Strength Rating: VERY STRONG
Estimated Crack Time: Millions of Years
Detailed Feedback:

✅ Maximum length (26 characters)
✅ Excellent character diversity (upper, lower, numbers, multiple symbols)
✅ Appears completely random - no discernible pattern
✅ Multiple special characters ($, !, @, #, *, &)
✅ No dictionary words or common patterns
✅ High entropy (true randomness)
❌ Very difficult to remember without password manager
❌ Typing errors likely without copy-paste

-> Step 4: Best Practices and Tips for Strong Passwords

Essential Practices:

- Minimum 12 characters (preferably 16+)
- Mix of character types: Uppercase, lowercase, numbers, symbols
- Avoid common words and patterns
- No personal information (names, birthdays, pets)
- Unique for each account
- Use passphrases when possible
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Common Password Attacks

Brute Force Attacks:

Method: Try every possible combination
Speed: Modern systems can test billions of passwords per second
Defense: Long, complex passwords increase time to crack exponentially

Dictionary Attacks:

Method: Use pre-compiled lists of common passwords
Scope: Includes leaked passwords, common words, patterns
Defense: Avoid common words, use unique combinations

How password complexity affects security :

Crack Time Estimates:

Password Type	Length	Time to Crack
All lowercase	8 chars	< 1 second
Alphanumeric	8 chars	~5 minutes
Complex chars	8 chars	~2 hours
Complex chars	12 chars	~300 years
Complex chars	16 chars	Millions of years

Security Implications:

Exponential Security Growth: Each additional character multiplies crack time

Character Diversity Matters: Adding symbol options significantly increases complexity

Length is Most Important: Doubling length has greater impact than adding character types