Task 6: Create a Strong Password and Evaluate Its Strength

Objective

To understand what makes a password strong by creating multiple passwords of varying complexity, testing them using an online password strength checker, and analyzing the results.

Step-by-Step Process

1. **Understanding Strong Passwords**
   - Minimum 12–16 characters
   - Combination of uppercase & lowercase letters
   - Inclusion of numbers and symbols
   - Avoid dictionary words, patterns, or personal details

2. **Passwords Created**

No.	Password (Test)	Complexity Level
1	password123	Simple
2	HelloWorld2025	Medium
3	H3llo_W0rld!	Strong
4	T!g#rL!0n_2025	Very Strong
5	V@9X#pL2qW$r8Z!tM1	Extremely Strong

(Note: These are sample test passwords, not actual personal passwords.)

3. **Testing Method**
   - Tool used: https://passwordmeter.com
   - Each password was entered into the checker.
   - Recorded: **Score**, **Time to Crack**, and **Feedback** from the tool.
4. **Results Table**

Password	Score	Feedback
password123	43%	Too common, lacks symbols, short length
HelloWorld2025	99%	Needs more symbols, predictable pattern
H3llo_W0rld!	98%	Strong, could be slightly longer
T!g#rL!0n_2025	90%	Very strong, good length & randomness
V@9X#pL2qW$r8Z!tM1	100%	Extremely strong, highly random & complex

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Best Practices Identified

- Use at least **12–16 characters**.
- Mix uppercase, lowercase, numbers, and symbols.
- Avoid dictionary words and personal information.
- Make the password random, not based on patterns.
- Longer passwords greatly increase time to crack.

Common Password Attacks

- **Brute Force Attack** – Tries every possible combination until correct.
- **Dictionary Attack** – Tries common words and password lists.
- **Credential Stuffing** – Uses leaked username-password combinations from breaches.

Impact of Complexity on Security

Password complexity directly affects resistance to attacks. A short, simple password can be cracked in seconds, while a long, random, and complex password may take centuries. The combination of length, character variety, and unpredictability is crucial for maximum security.