# Password Strength Report

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## Passwords Tested:

S.No	Password	Strength Tool Used	Strength/Score	Crack Time	Feedback
1	123456	passwordmeter.com	Very Weak (4%)	Instant	Too short, only numbers
2	Hello2	howsecureismypassword.net	Weak	A few seconds	No symbols, dictionary word
3	G@l@xy!	passwordmeter.com	Strong (67%)	2 minutes	Good mix of characters
4	T!gerL1ly+Sun$et25	security.org/how-secure-is-my...	Very Strong(100%)	7 quadrillion years	Excellent complexity and length

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## Summary of Analysis:

- Short and simple passwords (like "123456") are extremely weak.

- Adding just one capital letter or number helps, but not enough.

- Special characters and increased length boost strength greatly.

- Strongest passwords had 14+ characters, with mixed types.

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## Best Practices for Strong Passwords:

- Use **12 or more characters**
- Combine **uppercase, lowercase, numbers, and special symbols**
- Avoid common patterns (e.g., "password", "1234")
- Use **passphrases** that are easy to remember, hard to guess
- Never reuse the same password across websites
- Store passwords securely using a **password manager**

## Common Password Attacks:

### 1. Brute Force Attack

Tries every possible character combination until it gets the right one. More characters = longer time.

2. Dictionary Attack

Uses a predefined list of common words or passwords. Avoid real words to defend against this.

3. Phishing & Social Engineering

Trick users into giving passwords. Not technical, but very common.

Why Complexity & Length Matter:

A password with 12+ mixed characters could take **centuries** to crack vs. one with 6 letters which could be broken **in seconds**.

What is Multi-Factor Authentication (MFA)?

An extra layer of securityrequires something you know (password) + something you have (OTP, device).

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## Password Managers:

Secure tools that:

- Generate strong passwords

- Store them encrypted

- Auto-fill credentials when needed (e.g., Bitwarden, LastPass, 1Password)

## What Are Passphrases?

A sentence or phrase that is long but memorable.

Example: `My_D0g_E@ts_@pples_@t_7PM!` is better than `Apples123`