Password Strength Evaluation Report

Objective

To understand what makes a password strong by testing various passwords against online password strength tools and evaluating the results. The ultimate goal is to learn best practices for creating secure passwords.

Tools Used

- PasswordMeter.com

- Kaspersky Password Checker

- NordPass Password Strength Checker

Tested Passwords and Results

Password	Description	Score (PasswordMeter)	Feedback
`123456`	Only numbers, short	4%	Very weak; too short and predictable
`password`	Lowercase only, common word	8%	Common password; weak
`Pass1234`	Uppercase, lowercase, numbers	48%	Medium; predictable pattern
`P@ssw0rd!`	Mixed characters	78%	Strong; good mix
`Tr0ub4dor&3L3phant$`	Long, complex	100%	Very strong
`aB1!`	Very short but complex	32%	Too short despite complexity

Analysis

1. Length Matters: Longer passwords score higher due to increased entropy.

2. Character Variety: Including uppercase, lowercase, numbers, and symbols boosts strength.

3. Avoid Predictable Patterns: Common substitutions are not enough.

4. Randomness Helps: Random phrases with mixed characters are more secure.

Best Practices for Strong Passwords

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- Use 12 or more characters

- Mix uppercase, lowercase, numbers, and symbols

- Avoid dictionary words or personal information

- Use passphrases (e.g., BlueSky@Night!#98)

- Don't reuse passwords

- Use a password manager

Common Password Attack Types

- Brute Force: Tries all combinations

- Dictionary: Uses common word lists

- Credential Stuffing: Tries leaked credentials on other accounts

- Phishing: Tricks users into revealing passwords

How Complexity Improves Security

- Each added character exponentially increases combinations

- Diverse characters increase entropy

- Avoiding predictable patterns helps against dictionary attacks

Conclusion

Simple passwords can be cracked in seconds, while complex ones may take years.

Key to security: length, randomness, and variety.

Use strength checkers and best practices to create safer passwords.