**Objective**

To understand what makes a password strong by creating passwords of different complexities, testing them using an online password strength checker, and identifying best practices for secure password creation.

**Passwords Created and Tested**

| **Password Example** | **Complexity Level** | **Score (%)** | **Feedback** |
| --- | --- | --- | --- |
| password123 | Weak | 25% | Too common, no symbols or uppercase |
| Password@123 | Moderate | 75% | Better with uppercase, numbers, symbol |
| Pa$$w0rd#2024! | Strong | 95% | Excellent mix of characters and length |
| an$H00l\_!N@!k2025 | Very Strong | 100% | Long, complex, non-dictionary based |

**Password Strength Analysis**

* **Weak Passwords** like password123 are easily cracked using **dictionary or brute-force attacks**.
* **Moderate Passwords** add symbols and casing but can still be guessed with targeted attacks.
* **Strong Passwords** include:
  + Uppercase + lowercase letters
  + Numbers and symbols
  + At least 12 characters or more
  + No dictionary words or personal info

**Tips for Creating Strong Passwords**

1. Use at least **12 characters**.
2. Include **uppercase, lowercase, numbers, and symbols**.
3. Avoid using **dictionary words, names, or dates**.
4. Use **passphrases** with uncommon words or gibberish.
5. Never reuse passwords across multiple sites.
6. Consider using a **password manager** to store complex passwords.

**Common Password Attacks Researched**

| **Attack Type** | **Description** |
| --- | --- |
| **Brute Force** | Tries every possible combination until the password is found |
| **Dictionary** | Uses common words and variations from a pre-built wordlist |
| **Phishing** | Tricks users into revealing passwords via fake websites/emails |
| **Credential Stuffing** | Reuses leaked username/password combos from other breaches |

**Conclusion**

Through this task, I learned that **password complexity greatly improves security**. A strong password reduces the risk of being cracked through brute-force or dictionary attacks. Using a mix of characters and a good password manager are essential steps toward digital safety.