

```
Jul 28 21:31
ubuntu@ubuntu: ~/password_project
GNU nano 7.2 password_checker.py
def check_strength(p):
    score = sum([len(p) >= 8, any(c.isupper() for c in p),
    any(c.islower() for c in p), any(c.isdigit() for c in p),
    any(not c.isalnum() for c in p)])
    return ["Weak", "Moderate", "Very Strong"][score//2]

import hashlib
with open("users.txt") as f:
    for line in f:
        u, p = line.strip().split(":")
        print(f"User: {u}")
        print(f"Hash: {hashlib.sha512(p.encode()).hexdigest()}")
        print(f"Strength: {check_strength(p)}\n")

^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute   ^C Location
^X Exit      ^R Read File ^N Replace   ^U Paste     ^J Justify   ^_ Go To Line
```

1. The source code was developed to implement the password strength checker.

```
Jul 28 21:25
ubuntu@ubuntu: ~/password_project
GNU nano 7.2 users.txt
John:Password123
alice:qwerty
bob:letmein
eve:correcthorsebatterystaple

[ Read 4 lines ]
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute   ^C Location
^X Exit      ^R Read File ^N Replace   ^U Paste     ^J Justify
```

2. A collection of passwords submitted by multiple users for strength evaluation.

```
Jul 28 21:28
ubuntu@ubuntu: ~/password_project
ubuntu@ubuntu:~/password_project$ python3 password_checker.py
User: John
Hash: 804f50ddbbaab7f28c933a95c162d019acbf96afde56dba10e4c7dfcfe453dec4ba
cf5e78b1ddbdc1695a793bcb5d7d409425db4cc3370e71c4965e4ef992e8c4
Strength: Very Strong

User: alice
Hash: 0dd3e512642c97ca3f747f9a76e374fbda73f9292823c0313be9d78add7cdd8f72
235af0c553dd26797e78e1854edee0ae002f8aba074b066dfce1af114e32f8
Strength: Weak

User: bob
Hash: adfb6dd1ab1238afc37acd8ca24c1279f8d46f61907dd842faab35b0cc41c6e8ad
84cdbbef4964b8334c22c4985c2387d53bc47e6c3d0940ac962f521a127d9f
Strength: Weak

User: eve
Hash: a83e2a21b827b45329811a22c200088598504be804b3348c36d435b3a28f506eb3
96417721cf5e9da1ac43999ce28098cf507b4dfda9ea3b7b0d885022a51c8a
Strength: Moderate

ubuntu@ubuntu:~/password_project$ sudo apt install git
Reading package lists... Done
```

3. After running the code on the Virtual Machine with various user passwords, the results showed that John’s password was rated as “Very Strong”, Alice’s and Bob’s passwords were “Weak”, and Eve’s password was “Moderate”. Additionally, the corresponding password hashes were generated using SHA-512 and displayed alongside the strength ratings.