HW1: Password Cracking

Submission: Monay, March 15, 2021

1971060

Cyber Security

Seohyun Kim

1. Goals

Implement ad password cracker in Python and find out as many passwords as possible with a given '1MillionPassword_hashed.txt' file.

2. Development environment

- Python, Python 3.8.7

- Window

- Run on VSCode with using extension 'Code Runner'

3. Code

- In abstract, the process is done by the following order:

  ①　Open and read the '1MillionPassword_hashed.txt' file.

  ②　Load 'wordlist.txt' file that I found online　and hash it to md5.

  ③　Compare the two files.

  ④　Print the cracking results.

- Details are commented on the source code bellow.

```
1. import hashlib  # module used to Use MD5 hash function using
2.
3. PWname = '1MillionPassword_hashed.txt'  # file to crack
4.
5. # After opening and reading the file,
6. # all elements divided by lines of PWname is appended in to a list.
```

```
7.  # The list is then used to be crack each elements.
8.  PWlist = open(PWname, 'r').readlines()
9.  PWlist = list(map(str.strip, PWlist))
10.
11.     count = 0  # number of elements cracked
12.     totalcount = 0  # number of elements checked
13.
14.     # Hashing the elements.
15.     for PWlist in PWlist:
16.         with open('wordlist.txt', 'r') as wordlist:
17.             for line in wordlist:
18.                 line = line.strip()
19.                 if hashlib.md5(line.encode('utf-
    8')).hexdigest() == PWlist:
20.                     # 'utf-8' is used to prevent encoding problems
21.                     # the cracked results are converted to string usin
    g the function 'hexdigest()'
22.
23.                     # prints out like the format of the assignment
24.                     print(count, ' / 1000000 password has been cracked
    ', end='')
25.                     print(', hashed: ', PWlist, end='')
26.                     print(", cracked: " + line)
27.                     count += 1
28.             totalcount += 1
29.
30.     # Indication methods to know if cracking is over and done to all e
    lements
31.     print("\n--------------------------------------------")
32.     print("Cracking has been completed.")
33.     print(totalcount, "passwords have been checked.")
34.     print(count, "passwords have been cracked.")
35.     print("--------------------------------------------")
36.
    -
```

4. output

- A million words were too many, so I checked only part of them.

- A screenshot of the output in like the bellow.

PROBLEMS 6   **OUTPUT**   DEBUG CONSOLE   TERMINAL

```
1187  / 1000000 password has been cracked, hashed:  ac34fd158369ebc3235ef4d46ee8beb7, cracked: nylons
1188  / 1000000 password has been cracked, hashed:  25c01ee98de2048ca62f81da22b928f0, cracked: irish
1189  / 1000000 password has been cracked, hashed:  4102e8103ea89d32f745de41c4e711a0, cracked: holmes
1190  / 1000000 password has been cracked, hashed:  821ae63dbe0c573eff8b69d451fb21bc, cracked: curious
1191  / 1000000 password has been cracked, hashed:  0d61130a6dd5eea85c2c5facfe1c15a7, cracked: kiki
1192  / 1000000 password has been cracked, hashed:  6c64383bfd8d7b0ed84b7d78dadb4b98, cracked: kennedy
1193  / 1000000 password has been cracked, hashed:  5f202e7ab75f00af194c61cc07ae6b0c, cracked: groovy
1194  / 1000000 password has been cracked, hashed:  96853c0e2dd18a1ef79b19f485d60290, cracked: foster
1195  / 1000000 password has been cracked, hashed:  e2a874aaa3e1853e4ed6f94f902cf481, cracked: twister
1196  / 1000000 password has been cracked, hashed:  9d630db6fcf053cd0b15e4ca69068579, cracked: snapper
1197  / 1000000 password has been cracked, hashed:  b154356eddac45e2b8af33c5ed24028c, cracked: pacific
```

PROBLEMS 7   **OUTPUT**   DEBUG CONSOLE   TERMINAL

```
5668  / 1000000 password has been cracked, hashed:  0880951996a0f176c44ba83c325279b0, cracked: bushman
5669  / 1000000 password has been cracked, hashed:  da835e74cce702d4c3336d12e800f659, cracked: britt
5670  / 1000000 password has been cracked, hashed:  e744ff6758af846a8b5e5a8b1f4112ae, cracked: brisbane
5671  / 1000000 password has been cracked, hashed:  7e9bb1f2c4290bb6e1ee7319db7f92f4, cracked: boohoo
5672  / 1000000 password has been cracked, hashed:  6ad3f51635d6b2f23329fd8f56a2bb14, cracked: bluenose
5673  / 1000000 password has been cracked, hashed:  6013221752df892237d0fc99fd8a328f, cracked: blind
5674  / 1000000 password has been cracked, hashed:  3188c31a53151637bcfe0b97ef70a397, cracked: avalanche
5675  / 1000000 password has been cracked, hashed:  2e92d0ae281932fc7347d819fec36b0b, cracked: augustin
5676  / 1000000 password has been cracked, hashed:  f679ca1293f318860df9d5b966e6fac0, cracked: allie
5677  / 1000000 password has been cracked, hashed:  cbe7855c7afdb4a521ee4d1a63d89e89, cracked: albino
5678  / 1000000 password has been cracked, hashed:  54a8723466e5d487247f3d93d51c66bc, cracked: abba
```