CSCI 336/536 **Ringenberg**

Lab #5 **Fall 2021**

Password Verification

It is typically “bad” practice to reuse passwords, and/or variations of old passwords. Given a list of passwords, write a program that reads them in from a file and stores them as set. The user will input individual strings from the terminal and your program will ouptut whether each is a "good" or “bad” password. Do this in a loop until the user enters ###. For simplicity in this lab, assume "good" means that it satisfies all of the following (assume the set contains “hello”, “world”, “link”, “racecar”):

(i) At least 4 characters long

(ii) Not a word in the set

(iii) Is not a word in the set preceded or followed by a single digit 0-9 (e.g., hello5, 8link)

(iv) Not two words in the set back-to-back (e.g. helloworld) or separated by a single digit (e.g., hello2world)

(v) Once (i) – (iv) are satisfied, update them so that each is satisfied for reverses of words in the set as well (e.g., olleh5, hello2dlrow, racecar, olleh2dlrow would all be “bad” passwords).

(vi) These checks should all be case insensitive. For instance, “The” would match “THE” and “the.” Hint: insert the words into the dictionary using `.upper()` and change the user input to `.upper()` before checking if it is in the dictionary.

(vii) **Graduate students only**: For all passwords being checked, use `hashlib` to output an MD5 hash of the password.

You may use a file with whatever words you want for testing. A good option to populate your set is the Unix word list located in the file `/usr/share/dict/words`. **I will be testing with a file containing the words at the bottom of this page** (which you may also use).

This project is worth **80** points and is **due on Wednesday, 11/10** **before the end of the day**. Submission must include:

- Canvas submission of your python code file, and a file containing your output (explained below)
- A digital printout from one program run displaying the results of searching for the following 20 words, using the list of words provided on this handout in your set: cat, 8dog, jackal, jackal2jackal, antant, aeyna, ayna, moose0goose, KoaLa8, catdog, emu_frog, newt!frog, newt2frog#, lemuR2rumel, dog5dog8dog, frog1log, quickquail5, tac8TAC, kayak, yak5

ant
axolotl
bird
cat
dog
emu
frog
goose
hyena
impala
jackal
koala
lemur
moose
newt
otter
penguin
quail
rhino
salamander
toad
uakari
vulture
whale
xenops
yak
zebra