Homework 1

Python Practice

Due 11:59 pm, 10 April, 2020

Your goal for this assignment is to practice some of the Python we've covered in class.

Task 1:

Create a program that
(1) Asks the user for a sentence
(2) Counts the words in that sentence (where 'words' are considered to be sequences of letters with spaces between them)
(3) Counts the occurrences of the letter 'e' in the sentence, and returns an error message if none are found.

You can use the file HW1_frame.py from the course website as a starting point for this homework. You will see some of the code written for you, so all you need to do is fill in what is missing.

Task 2

Read in the file shakespeare-hamlet.txt, and print out
(1) a word count for the file, and
(2) the number of occurrences of the letter 'e'.

You should get:

```
There are 28545 words, and 16118 instances of the letter 'e' in Shakespeare's Hamlet
```

Task 3

Try to determine how many characters are in Hamlet. Use the character names at the beginning of each character's speech. In this file, they are always some abbreviation followed by a period, as in:

```
Fran. You come most carefully vpon your houre
Bar. 'Tis now strook twelue, get thee to bed Francisco
```

(1) Read in the shakespeare-hamlet.txt file line by line.
(2) Strip the whitespace out of the *beginning* of the line. That is, remove all the spaces and/or tabs before the first character.

(3) If the first word of the line ends with a period, assume it is a character's abbreviation, and add it to a list containing all the abbreviations IF it is not in that list already.
(4) Print out the number of unique character abbreviations your code found. you should get 87.

What went wrong here? There are not 87 characters in Hamlet... Explain how this strategy for counting characters failed, and how we could make it better.

Task 4

Write regular expressions that match the following entities. For just this question, pretend that English orthography mirrors phonology. That is, pretend that each consonant letter is a consonant, and each vowel letter is a vowel.

(1) Strings which consist of a single vowel letter in English.
(2) Strings beginning with 'str'
(3) Strings beginning with two consonants, where the first one is NOT s.
(4) Strings ending in a vowel
(5) Strings ending in one of the following suffixes: "-tion","-sion","-ity","-ic"

What to turn in:

(1) Your code, in HW1_yourname.py
(2) Your answer to the question at the end of Task 3
(3) Your answers for Task 4