Computer Science — Python — HW #5

Assigned on snow day, 2017-02-06. No code to write, and nothing to turn in.

1. Read chapter 3 of Think Python, 2nd ed.
2. [By Bob O'Hara] Consider the following program.

k = 0

while k < 20

if k % 3 == 1:

print(k)

k = k + 2

When it is executed, what is printed?

1. B. C. D. E.

4 4 0 1 0

16 10 6 4 2

16 12 7 4

18 10 6

13 8

16 10

19 12

14

16

18

1. Here are two slightly different ways to print out a list. Do you have a preference? If so, for which one, and why?

def print\_list\_v1(items):

print('[', end='') **# Note: Setting end='' prevents a new line from being added.**

for i in range(0, len(items)):

if i > 0: # Skip the separator before the first item

print(', ', end='')

print(items[i], end='')

print(']')

def print\_list\_v2(items):

sep = '' # Start with the separator "disabled"

print('[', end='')

for i in range(0, len(items)):

print('{0:s}{1:s}'.format(sep, items[i]), end='')

sep = ', ' # Turn on the separator

print(']')

1. What does the following script do?

from collections import Counter

word2counter = dict() # Create an empty dictionary

for word in open('wordlist.txt').readlines():

word = word.rstrip() # Strip off extra spaces+newline at end of string

word2counter[word] = Counter(word)

for w1 in word2counter.keys():

for w2 in word2counter.keys():

if w2 == w1:

continue

if word2counter[w1] == word2counter[w2]:

print('Found a pair: {0:s}, {1:s}'.format(w1, w2))

1. **[Optional]** Last Monday (2017-01-30) we mentioned leap seconds (<https://en.wikipedia.org/wiki/Leap_second>), and how there can be bugs relating to them.
2. Using the Gregorian calendar in the United States, how many different possible month lengths are there? There are months with 28, 29, 30, and 31 days, so the number of different lengths would be at least four.
3. Do you expect that the answer could be different outside of the United States? If so, how?