CS-UY 1114: Lab 11

Dictionaries and Review

You must get checked out by your lab CA **prior to leaving early.** If you leave without being checked out, you will receive 0 credits for the lab.

Restrictions

The Python structures that you use in this lab should be restricted to those you have learned in lecture so far. Please check with your teaching assistants in case you are unsure whether something is or is not allowed!

Create a new python file for each of the following problems.

Your files should be named _lab[num]*q[num].py* **similar to homework naming conventions.**

Problem 1: *Dictionary Warmup*

Given the following code, predict the output of the lines below:

```
def f1(my_dict):
    temp = 0
    for val in my_dict.values():
        temp = temp + val
    return temp
```

```
def f2(my_dict):
    temp = ""
    for key in my_dict:
        if temp < key :
            temp = key
    return temp
```

```
def f3 (my_dict, k, v):
    if k in my_dict:
        my_dict[k] = v
```

```
def main ():
    a_dict = {"Kim" : 13, "Sarah" : 27, "Semi" : 19, "Kevin" : 23}
    print(f1(a_dict)) # line 1
    print(f2(a_dict)) # line 2
    f3(a_dict, "Sarah", 30)
    print(a_dict) # line 3
```

(a) What is the output produced by the line `print(f1(a_dict))` (line 1)?

(b) What is the output produced by the line `print(f2(a_dict))` (line 2)?

(c) What is the output produced by the line `print(a_dict)` (line 3)?

Problem 2: *Dictionary Fun*

Given the dictionary:

```
my_dict = {"a": 15 , "c": 35 , "b": 20}
```

Write Python code to do the following:

(a) Print all the keys

(b) Print all the values

(c) Print all the key, value pairs

(d) Print all the key, value pairs in order by key

Hints:

- Use the list method `sort()`. If given a list of tuples, the method will sort on the first items in the tuple.

Problem 3: *Vowel Tracking*

Define the function `count_vowels()` below. `count_vowels()` will accept a `filename` string and count the total number of each vowel in the file. This information will be stored into a dictionary. If a certain vowel does not exist in the file, it should not appear in the final dictionary. Finally, return this dictionary.

```
def count_vowels(filename):
    """
    Counts total number of each vowel in the given file.

    :param filename: str of the file to read from
    :return: dict of format {"vowel": int}
    """
```

If the function is ran on `sample_text.txt` whose content looks like this:

```
Desperate, they asked for the help
of a fairy godmother
who had them lock the princess
away in a tower,
```

```
there to await the kiss...
of the handsome Prince Charming.
```

The expected output should be:

```
{'E': 18, 'A': 12, 'O': 10, 'I': 7}
```