CMPSC-122: Intermediate Programming
Spring 2018

Lab #6

Due Date: 02/23/2018, 11:59PM

Instructions:

- The work in this lab must be completed alone.
- If you need guidance, attend to your recitation class.
- Read the "Submitting assignments to Vocareum" file for instructions on how to submit this lab
- Do not change the function names or given code on your script
- The file name must be LAB6.py (incorrect name files will get a 0 score)
- You are responsible for testing your code. Use `python -i LAB6.py` in your terminal (or command prompt) to provide input to your functions. Test with as many data as you feel comfortable
- Each function must return the output (Do not use print in your final submission)
- Do not include test code outside any function in the upload. Remove all your testing code before uploading your file. If you are using input() to insert values in your functions and print to see the values, remove them.

Exercise 1 [5 pts]. In class, we worked on the arithmetic operations for our *Fraction* class. Write three special methods for the *Fraction* class that overload operators to perform rich comparisons between *a* and *b*. (a < b, a > b, a==b). Hint: https://docs.python.org/3.6/library/operator.html

EXAMPLE:

```
>>> a = Fraction(1, 2)
>>> b = Fraction(1, 3)
>>> a== b
    False       # Boolean value, not a string
>>> a > b
    True        # Boolean value, not a string
>>> a < b
    False       # Boolean value, not a string
>>> a = Fraction(4, 8)
>>> b = Fraction(2, 4)
>>> a== b
    True         # Boolean value, not a string
>>> a > b
    False       # Boolean value, not a string
>>> a < b
    False      # Boolean value, not a string
```

Exercise 2 [5 pts]. Write the class *Book* that stores the title, author and number of pages of a book. Write the class method *inventory*() that **returns** the number of instances created. Write the special (or magic) methods, *str*, *del* and *len* that will **return** information to the user in the format shown below.

```
>>>book1 = Book("Beneath a Scarlet Sky", "Mark Sullivan", 526)
>>>book2 = Book("Love in the Time of Cholera", "Gabriel G. Marquez",
357)
>>>book3 = Book("We Were the Lucky Ones", "Georgia Hunter", 414)
>>>Book.inventory()
3
>>>print(book1)
TITLE: Beneath a Scarlet Sky by Mark Sullivan
>>>len(book1)
526
>>>del book1
>>>Book.inventory()
2
```