CSC 242: Introduction to Computer Science II

Lab exercise set 3

Due Wednesday, April 15th, 11:59 pm

Logistics

These exercises should be completed during the lab session. In order to receive full credit for the lab, submit a file that contains solutions to all these exercises

You are encouraged to work in groups on lab exercises. If you do work with someone, you must include the name(s) of your collaborator(s) at the top of the file you submit. For more information about collaboration policies in this class, see the Academic Integrity policy.

If you complete the lab exercise early, please review Chapter 8 and read Chapter 9 in the textbook and work on the fourth assignment. You are only allowed to work on assignments with at most two-other people, either directly or indirectly, who must be formally identified as part of your assignment submission.

Exercise

1. Implement a container class **Stat** that is a subclass of object. The class stores a sequence of numbers and provides statistical information about the numbers. It supports an overloaded constructor that initializes the container either using a list or with no parameter which creates an empty sequence. The class also includes the methods necessary to provide the following behaviors:

```
>>> s=Stat()
>>> s.min()
0.0
>>> s.max()
0.0
>>> s.sum()
0
>>> s.mean()
0.0
>>> s.add(3)
>>> s.add('four')
four not added. Value must be a number.
>>> s.add(4)
>>> s.add('Five')
Five not added. Value must be a number.
>>> s.add(5)
>>> s.min()
3
>>> s.max()
5
>>> s.sum()
12
>>> s.mean()
4.0
>>> s.clear()
>>> str(s)
'Stat object with 0 items.'
>>> sl = Stat([10,20,30])
>>> sl.mean()
20.0
>>> s.max()
0.0
>>> sl.max()
30
>>>
```

This class also implements the == operator (__eq__). It returns true if the SUM of the values is the same. Example:

```
>>> s1=Stat([1,2,3])
>>> s2=Stat([3,2,1])
>>> s1==s2
True
>>> s2=Stat([3,2,2])
>>> s1==s2
False
```

Note that part of the exercise is to determine which methods you need to implement in order to obtain the functionality shown above. Ask the lab assistant if you get stuck on any of the methods. Look the behaviors above carefully. Notice what happens if you try to add a value that is not a number.

Submitting the exercises

You must submit your solutions to the exercises using the lab 3 dropbox on the D2L site. Submit only a single Python file (e.g. **csc242lab3.py**) with each of the completed functions and classes for the lab exercises in it. Submissions after the deadline listed above will be automatically rejected by the system. See the syllabus for the grading policy.

Grading

The lab session is worth 10 points.

If you complete the lab exercises before the end of the lab session, please work on the third assignment. Remember that the rules for collaboration on assignments is different from labs. Please review the Academic Integrity policy for more information. If you have questions about the assignment, please ask the teaching assistant for help.