Lab exercise Week 2

Logistics

To receive full credit for the lab, you must attend the session, remain in the lab for at least 45 minutes, and 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 read Chapters 7 and 8 in the textbook and work on the second 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. Please see the assignment description and the course Academic Integrity policy for the full description of the process you must follow when completing assignments. If you need additional help on the assignment, please ask the lab assistant.

Begin the lab by downloading the zip file found on the D2L site. It contains a template file **csc242lab2.py**.

1. Implement a class **Die** (that is a subclass of the object class) representing a Die with many sides, default of 6. You need to implement a die with these three methods:
   a. **roll**() – randomly chooses a new value for the die. The value is stored within the object.
   b. **get**() - which returns the value of the die.
   c. **numSides()** – returns how many sides the die has.

Additionally, there are three other operators you need to implement not specified above that you must infer from the screenshots. Hint: look at how the class is initialized, its string representation and what happens when you reference the variable in the interpreter.

The following shows how the **Die** class and its methods could be used:

```
RESTART: C:\Users\azoko\Desktop\CSC 242\CSC 242 - D
>>> d1=Die()
>>> d2=Die(30)
>>> d1.numSides()
6
>>> d2.numSides()
30
>>> d1.roll()
>>> d1.get()
4
>>> d1.roll()
>>> d1.get()
1
>>> d2.roll()
>>> d2.get()
15
>>> d2.get()
15
>>> d1
Die(6)
>>> d2
Die(30)
>>> str(d1)
'6'
>>> str(d2)
'30'
>>> |
```

2. Implement the function **rollDice**() that takes as a parameter how many times the function will roll two dice and how many sides those two dice have. You must create and reuse two instances of the Die class from part 1.

   The format of the output is the number of the roll, followed by a colon, the face value of die 1 followed by a dash followed by the face value of die 2.

   Here is an example of usage.

```
>>> rollDice(2,6)
Roll 0 : 1 - 5
Roll 1 : 1 - 1
>>> rollDice(10,6)
Roll 0 : 5 - 1
Roll 1 : 6 - 6
Roll 2 : 5 - 1
Roll 3 : 2 - 6
Roll 4 : 1 - 4
Roll 5 : 4 - 6
Roll 6 : 2 - 5
Roll 7 : 1 - 4
Roll 8 : 1 - 6
Roll 9 : 4 - 4
>>> rollDice(1,20)
Roll 0 : 12 - 9
>>> rollDice(5,100)
Roll 0 : 38 - 32
Roll 1 : 5 - 81
Roll 2 : 63 - 18
Roll 3 : 80 - 83
Roll 4 : 58 - 37
```

Submitting the exercises

You must submit your solution to the exercises using the lab 2 dropbox on the D2L site. Submit only a single text file (**csc242lab2.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 second assignment. Remember that the rules for collaboration on assignments is different from labs. Please review the Academic Integrity pledge for more information. If you have questions about the assignment, please ask the teaching assistant for help.