Lab 12 – Objects

Goals

- Practice with objects
- Practice with instance variables
- Practice with instance method
- Understanding of Python input and output

Setup

- Create a new .py file in your desired directory
- Use the following naming convention

  `ITP115_l#_lastname_firstname`

  (replace # with this lab number)
- Your new file must begin with comments in the following format *(replace the name and email with your actual information):*

```
# Name
# ITP 115, Spring 2016
# Lab practical L^ (replace ^ with this lab number)
# USC email
```

Requirements

Your program must perform the following:

- Write a **`Die`** class and a **`main`** function that creates two **`Die`** objects
- In your **`Die`** class, have the following:
  - Instance attributes / variables (to be assigned inside **`__init__`**)
    - **`mResult:`** holds result of dice roll
    - **`mNumSides:`** number of sides of dice
  - Instance methods
    - **`__init__(numSides)`**
      - Input arguments (1): **`numSides`**
        - the number of sides you would like your die to have; if no input argument is provided, a default value of 6 should be assigned
      - Output value: none
      - set **`mNumSides`** equal to **`numSides`**
      - set **`mResult`** equal to **`0`**

        - **roll**
            - Input arguments (0): none
            - Output value: the number the die rolled
            - Simulate "rolling" a die by choosing a random number from 1 through **mNumSides**
            - Store the number of the die rolled internally to **mResult**
        - **__str__**
            - Input arguments (0): none
            - Output value: **mResult** as a string
            - Convert **mResult** to a string and return it
- You will write two additional functions (not part of the class)
    - **main()**
        - create two Die objects
        - roll each die
        - Use **__str__** to print the numbers rolled by each die
        - pass each roll into **findSum()**
        - print the result of **findSum()** to the screen
    - **findSum(dieNum1, dieNum2)**
        - Input arguments (2): the results of one dice rolled and a second dice rolled
        - Output: the sum **dieNum1** and **dieNum2**

Sample Output

```
Output 1:
Do you want to use a default dice for your first dice (y/n)?: y
Do you want to use a default dice for your second dice (y/n)?: y
Dice 1 rolled a 3.  Dice 2 rolled a 5.
The sum of Dice 1 and Dice 2 is 8.

Output 2:
Do you want to use a default dice for your first dice (y/n)?: y
Do you want to use a default dice for your second dice (y/n)?: n
How many sides would you like for your second dice? 9
Dice 1 rolled a 4.  Dice 2 rolled a 8.
The sum of Dice 1 and Dice 2 is 12.

Output 3:
Do you want to use a default dice for your first dice (y/n)?: n
How many sides would you like for your first dice? 8
Do you want to use a default dice for your second dice (y/n)?: y
```

```
Dice 1 rolled a 7.  Dice 2 rolled a 6.
The sum of Dice 1 and Dice 2 is 13.

Output 4:
Do you want to use a default dice for your first dice (y/n)?: n
How many sides would you like for your first dice? 8
Do you want to use a default dice for your second dice (y/n)?: n
How many sides would you like for your second dice? 8
Dice 1 rolled a 7.  Dice 2 rolled a 7.
The sum of Dice 1 and Dice 2 is 14.
```

Deliverables and Submission Instructions

- A compressed folder (zip file) containing you Python code. This can be done by:
    a. Windows *(you must find the folder on your computer—this can't be done within PyCharm):*
        i. Select your lab file
        ii. Right click
        iii. Send to ->
        iv. Compressed (zipped) folder
        v. Rename this folder with the following name:
            `ITP115_l#_lastname_firstname`
            (replace # with this assignment number)
        vi. Submit this zipped folder through Blackboard
    b. OSX *(you must find the folder on your computer—this can't be done within PyCharm)*:
        i. Select your lab file
        ii. Right click
        iii. Compress 1 item
        iv. Rename this folder with the following name:
            `ITP115_l#_lastname_firstname`
            (replace # with this assignment number)
        v. Submit this zipped folder through Blackboard