Assignment #11

Simulating Dice Rolls

Write definitions for each of the following Python functions, and for each function, include a clear and concise comment to describe its purpose. Use only the Python topics covered so far in class.

1. `TotalScore( dice )`

   The sum of the scores obtained by rolling '`dice`' dice; the result here varies randomly

   ```
   TotalScore( 3 ) ⇒ 14
   TotalScore( 3 ) ⇒  8
   TotalScore( 3 ) ⇒ 17
   ```

2. `Percent( part, whole )`

   The percentage which the non-negative integer '`part`' forms of the positive integer '`whole`', with the result rounded to the closest integer

   ```
   Percent( 10, 20 ) ⇒ 50
   Percent( 15, 20 ) ⇒ 75
   Percent( 16, 37 ) ⇒ 43
   ```

3. `DiceRolls( )`

   - repeatedly input a number of dice and a number of rolls
   - simulate rolling the given number of dice for the given number of rolls
   - each time the dice are rolled, calculate the total score obtained
   - output a histogram of the percentage of times each total score is obtained
   - stop when a value of zero is supplied for the number of dice

   ```
   DiceRolls( )
   Number of Dice  = 2
   Number of Rolls = 1000

    2 :  3% : ***
    3 :  5% : *****
    4 :  9% : *********
    5 : 11% : ***********
    6 : 13% : *************
    7 : 16% : ****************
    8 : 14% : **************
    9 : 11% : ***********
   10 :  9% : *********
   11 :  6% : ******
   12 :  3% : ***

   Number of Dice  = 0
   ```

Program Submission:

Store the function definitions in a file named '`a11.py`', and turn it in for grading by typing:

```
submit-cs1117 a11.py
```

Due Date: Fri Nov 27, 11:00am