CS 115 - Introduction to Programming in Python

Lab 02

Lab Objectives: Strings, Loops, Nested Loops, Numerical Programs

Instructions: For this assignment, you can use your favorite IDE (Spyder or Jupyter recommended). Upload your solutions as a single .zip file to the Lab01 assignment on Moodle before the end of your lab session. Use the following naming convention: **SS_Lab02_Surname_FirstName.zip** where SS is the section number 01, 02, 03, ..., & and Surname is your family name, & FirstName is first name. You must show and explain your solutions to your TA during your lab session and must answer their questions to get your grade by the end of your lab session (the week of Oct 14).

Important Note: You must be present in the lab from the beginning of your lab sessions. **Otherwise, you will get 0 from this lab assignment.**

Note: Sample runs show the user input in red.

1. Write a program that prompts the user for an integer, calculates the factorial of the input integer and displays the result as a string with a comma at every third position, starting from the right. Assume that user input is valid. ***Hint*:** Think about representing a number as a string.

Sample Run 1:	**Sample Run 3:**
`Enter an int: 0` `0! = 1`	`Enter an int: 10` `10! = 3,628,800`
Sample Run 2:	**Sample Run 4:**
`Enter an int: 4` `4! = 24`	`Enter an int: 20` `20! = 2,432,902,008,176,640,000`

2. Write a program that prompts the user for a desired sum, then repeatedly rolls two six-sided dice until their sum is the desired sum.

Sample Run 1:	**Sample Run 1:**

`Desired dice sum: 5`
`1 and 3 = 4`
`1 and 3 = 4`
`4 and 2 = 6`
`2 and 3 = 5`
`4 rolls`
	`Desired dice sum: 8`
	`5 and 5 = 10`
	`6 and 1 = 7`
	`5 and 3 = 8`
	`3 rolls`

3. Write a program that prompts the user for an integer and returns the number of even-valued digits in the specified number. An even-valued digit is either 0, 2, 4, 6, or 8. Assume that the input values are either a positive or a negative integer until 0 is entered by the user.

Sample Run:

Enter an int: 5
5 has 0 even digits

Enter a new int: 5555
5555 has 0 even digits

Enter a new int: 123
123 has 1 even digits

Enter a new int: -123
-123 has 1 even digits

Enter a new int: 12345678
12345678 has 4 even digits

Enter a new int: -12345678
-12345678 has 4 even digits

Enter a new int: -1234567811112222
-1234567811112222 has 8 even digits

Enter a new int: 111122223333
111122223333 has 4 even digits

Enter a new int: 111122223333468468
111122223333468468 has 10 even digits

Enter a new int: 0
good bye!