COSC 1306
Spring 2020

Assignment 4: Loops

[1] **Objectives**: The primary purpose of this assignment is to make sure everyone is familiar with the while and for loops. In addition to that, we are practicing other statements introduced in class: print(), input(), assignment, and if statements. Guidance will be given regarding the random number generation and specific seed to use so we get the same answers. You are required to use at least one while loop and one for loop.

[2] **Requirements**: You will be doing some experiments with the random number generator function. Please read the documentation on the Python's "random" module. When you roll a dice, you get a number between 1 and 6 randomly. The number "1" has 1/6 of a chance being the outcome. If we roll a dice twice, the sum of the two numbers is between 2 and 12. Now the probability is not equal in this case. We would like to find out the probabilities of 2 to 12 as the sum by experiment. We want to roll two dices 1000 times and count the number of times the sum is 2, 3, …, and 12.

During the testing, you may want to set the seed to a particular number, say 1. This allows you to test the same "random" sequence. Because we cannot save the 1000 numbers yet, we are forced to generate the same 1000 number 11 times.

It is clearly better to solve the problem by using for-loops, in fact, nested for-loop. But just for practice do it twice, once with for-loops, and once with while loops.

[3] **Output**: See a sample output.

For Loop	While Loop
sum = 2 count = 26	sum = 2 count = 26
sum = 3 count = 57	sum = 3 count = 57
sum = 4 count = 82	sum = 4 count = 82
sum = 5 count = 122	sum = 5 count = 122
sum = 6 count = 133	sum = 6 count = 133
sum = 7 count = 178	sum = 7 count = 178
sum = 8 count = 154	sum = 8 count = 154
sum = 9 count = 112	sum = 9 count = 112
sum = 10 count = 85	sum = 10 count = 85
sum = 11 count = 60	sum = 11 count = 60
sum = 12 count = 23	sum = 12 count = 23

[4] **Deadline**: 2:15 pm, Wednesday, February 19, 2020.