Chapter 4 Lab: Decisions

Goal: This project is intended to help you understand *while* and *for* loops. Use only coding techniques that are discussed in this chapter or previously-covered chapters. You should hand in a *.py* file for each of the below problems. Please name and number the problems appropriately (something like *Ch4Lab_1_YourName.py*). Each should contain extensive comments in the style discussed in class.

1. Create a code which prompts the user for an integer n, then computes:
$$(1) + (1 + 2) + (1 + 2 + 3) + (1 + 2 + 3 + 4) + \ldots + (1 + 2 + 3 + 4 + \ldots + n).$$
You must use a loop and compute each without using any built-in mathematics functions. Return the results to the user.

2. Revisit the menu for the Taco Shop. Create a menu that asks the user

   – To choose from a taco ($.89), soft taco ($.99), burrito ($1.89), or nachos ($2.99). They can choose any combination of items (an order of 2 tacos, 3 burritos and 2 nachos is perfectly fine).
   – If they want to add an order of cinnamon chips ($.99) and how many.
   – If they want a drink ($.99). If so, have them choose between R.C. Cola, Dr. Pepper, 7UP, or Iced Tea.

   Every choice should use input verification and re-display the given menu items if the user enters in an incorrect choice. Output the total cost of the order.

3. Find the course average for someone in one of my mathematics class. The grading scheme is as follows:

   – An unknown number of homework assignments,10 points each, worth a total of 25% of the final grade
   – 3 regular exams, 100 points each, worth a total of 50% of the final grade
   – 1 final exam, 100 points, worth a total of 25% of the final grade

   Prompt the user to enter in each grade. For the homework assignments, have the user enter in a -1 when they have finished entering in all of their homework grades.

4. Algorithmically create a W on the screen using all star characters, *. Each output statement should consist of a single star, a single space, or a newline. You should have at least two *for* loops and one set of *if* , *elif* , *else* statements. Prompt a user for a number, n, then create a W that is n characters high (judge the width appropriately). Do not allow the user to enter in a number greater than 40. Below is example output for a W made with $n = 7$: