**CS 1150 Design Notebook Example**

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**Assignment #5**

**Due Oct 3**

**Step 1: Problem Statement**

In this assignment, I will write a simple while loop. It will involve prompting the user for an unspecified number of integers, positive or negative. The number 0 will be used as a sentinel value to indicate the end of the list of values.

**Step 2: Understandings**

**What I Do Know**

* I know how to do increment Variables
* I know how to close scanner

**What I Don’t Know – What I’m struggling with – Questions I have**

* Struggled to output the smallest value without including the value 0 as the lowest value

**Step 3: Pseudocode for Main**

* Create integer variables and equal them to 0:
  + For example, the integer variables I used are smallestCount, largestCount, smallest, largest, totalSum, and totalCount.
* Prompt the user to enter numbers and assign to an integer number variable.
* If the user enters 0 as the first number, display that no numbers were entered except for 0.
* Intitialize the smallest, largest, and totalSum variables with the first number variable and initialize the smallestCount, largestCount, and totalCount variables with the number 1.
* Create a while loop that will process every number entered by the user until a number 0 is entered.
* Within the while loop, create an (if/else if) condition that does the following:
  + Adds each number value to totalSum and increments totalCount by 1
  + Updates smallest and smallestCount
  + Updates largest and largestCount
* Display the results that inlcude:
  + The number of values entered
  + The smallest value entered and how many times it appeared
  + The largest value entered and how many times it appeared
  + Sum of all the numbers
* Assign a variable called average with a double data type and equal it to the computed average (don’t forget to cast double on the computation):
  + average = TotalSum / totalCount
* Display the average
* Close the scanner

**Step 4: Lessons Learned**

* Learned how to do a while loop with including any System.exit() or break statements to break out of a loop.
* Fixed the issue of output the value 0 as the smallest value by adding “&& number != 0” in the if conditions
* Learned about using the “return” value in the if condition before the while loop that returns to the block of the code if the “if (number == 0)” condition is met.