Comp124 Report

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Requirements:

We are required to create an assembly language program, which takes an "n" number of integer values (n being set by the user), read these values in a loop, keeping track of the number of the input integers which are greater than zero, which are less than zero and which are equal to zero. At the end of the loop, we are required to print out a summary of these three counts. This will require us to use

Approach:

For my approach, I am going to first display a message for the user, in order to inform them to choose how many integers they would like to input. This will act as a count of the integers, allowing me to use this as a loop counter, decreasing this value with each cycle through the loop. On top of this, I will set up 3 other counters, one positive integer counter, one negative integer counter and one zero counter. I will then take a separate input for each integer, which the user would like to input. This will be a single variable, which will be overwritten with each cycle through the loop. With each cycle through the loop, I will compare the input integer with 0, 1 and -1, allowing me to know what actions to take (i.e. which count to increase – positive, negative or zero). Once overwritten, this integer will be lost, as there is no need to store it (hence no need for an array). Once the loop counter / integer count reaches zero, I will print out the number of positive integers, negative integers and zero integers, which the user input on separate lines, in order to allow for the most accurate understanding of the output. We are told to assume that the user will input correct values (i.e. not characters, Booleans, floats, etc.) however, the user could input a negative number of integers which they would like to input (or equal to zero). If this is the case, I will make sure that the program will skip to the end of the code, resulting in the program to stop running without crashing.

Testing:

Input	Expected Output	Actual Output	Pass or Fail
Number of integers 0	Skip to end of program	How many integers would you like to enter? 0 Press any key to continue . . .	Pass
Number of integers 1, Integer = 1	Print number of 0 = 0, number of positive = 1, number of negative = 0	How many integers would you like to enter? 1 Please enter an integer 1 The number of integers you have entered, which are equal to zero are: 0 The number of integers you have entered, which are greater than zero (a.k.a positive integers) are: 1 The number of integers you have entered, which are less than zero (a.k.a negative integers) are: 0 Press any key to continue . . .	Pass

Number of integers 1, Integer = 0	Print number of 0 = 1, number of positive = 0, number of negative = 0	How many integers would you like to enter? 1 Please enter an integer 0 The number of integers you have entered, which are equal to zero are: 1 The number of integers you have entered, which are greater than zero (a.k.a positive integers) are: 0 The number of integers you have entered, which are less than zero (a.k.a negative integers) are: 0 Press any key to continue . . .	Pass
Number of integers 1, Integer = -1	Print number of 0 = 0, number of positive = 0, number of negative = 1	How many integers would you like to enter? 1 Please enter an integer -1 The number of integers you have entered, which are equal to zero are: 0 The number of integers you have entered, which are greater than zero (a.k.a positive integers) are: 0 The number of integers you have entered, which are less than zero (a.k.a negative integers) are: 1 Press any key to continue . . .	Pass
Number of integers 3, Integers = 1, 2, 3	Print number of 0 = 0, number of positive = 3, number of negative = 0	How many integers would you like to enter? 3 Please enter an integer 1 Please enter an integer 2 Please enter an integer 3 The number of integers you have entered, which are equal to zero are: 0 The number of integers you have entered, which are greater than zero (a.k.a positive integers) are: 3 The number of integers you have entered, which are less than zero (a.k.a negative integers) are: 0 Press any key to continue . . .	Pass
Number of integers 3, Integers = 0, 0, 0	Print number of 0 = 3, number of positive = 0, number of negative = 0	How many integers would you like to enter? 3 Please enter an integer 0 Please enter an integer 0 Please enter an integer 0 The number of integers you have entered, which are equal to zero are: 3 The number of integers you have entered, which are greater than zero (a.k.a positive integers) are: 0 The number of integers you have entered, which are less than zero (a.k.a negative integers) are: 0 Press any key to continue . . .	Pass
Number of integers 3, Integers = -1, -2, -3	Print number of 0 = 0, number of positive = 0, number of negative = 3	How many integers would you like to enter? 3 Please enter an integer -1 Please enter an integer -2 Please enter an integer -3 The number of integers you have entered, which are equal to zero are: 0 The number of integers you have entered, which are greater than zero (a.k.a positive integers) are: 0 The number of integers you have entered, which are less than zero (a.k.a negative integers) are: 3 Press any key to continue . . .	Pass

			Pass
| Number of integers 3, Integers = 1, 0, -1 | Print number of 0 = 1, number of positive = 1, number of negative = 1 | ```
How many integers would you like to enter?
3
Please enter an integer
1
Please enter an integer
0
Please enter an integer
-1
The number of integers you have entered, which are equal to zero are: 1
The number of integers you have entered, which are greater than zero (a.k.a positive integers) are: 1
The number of integers you have entered, which are less than zero (a.k.a negative integers) are: 1
Press any key to continue . . .
``` | Pass |
| Number of integers 7, Integers = 107, 2045674, -124564, -39423, 0, 0, 20202020 | Print number of 0 = 2, number of positive = 3, number of negative = 2 | ```
How many integers would you like to enter?
7
Please enter an integer
107
Please enter an integer
2045674
Please enter an integer
-124564
Please enter an integer
-39423
Please enter an integer
0
Please enter an integer
0
Please enter an integer
20202020
The number of integers you have entered, which are equal to zero are: 2
The number of integers you have entered, which are greater than zero (a.k.a positive integers) are: 3
The number of integers you have entered, which are less than zero (a.k.a negative integers) are: 2
Press any key to continue . . .
``` | Pass |