**Computer Science 2**   **Lab # 01**



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**CS2 Section # 01**

**Due:** Problem A by the **end of the lab** and Problems B by the end of **Saturday** of the same week.

**TOPIC:**

**Project A:**

**Problem Description:**

1) Problem A is at MyProgrammingLab # 71009 (chapter 5, Programming Projects)

**Analysis:**

(Describe the problem including input and output in your own words. Type your answer in the following with **BLUE font color**)

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| **…**  **INPUT: The input will be a random set of both positive and negative numbers until the user decides to end the program when they enter 0.**  **OUTPUT: The output will be the amount of positive and negative numbers present in the program as well as the total and the average, which both will be a double.** |

**Design:**

(Describe the major steps for solving the problem. Type your answer in the following with **BLUE font color**)

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| **The major steps for solving this problem was figuring out was how to utilize the while loop to correctly get the amount of both positive and negative numbers. Also, another step for solving this problem was counting how many numbers the user inputted before entering zero so that the average is not calculated wrong. Lastly, determining when in the while loop to let the next input value be calculated and run through the while loop was also a major step in solving this problem.** |

**Coding:** (Copy and Paste Source Code here. Type your answer in the following with **BLUE font color**)

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| import java.util.Scanner;  public class AvgWithLoop{  public static void main(String[] args) {  Scanner input= new Scanner(System.in);  System.out.print("Enter an integer, the input ends if it is 0:");  int x= input.nextInt();  int positive=0;  int negative=0;  double total=0;  double average=0;  int counter=0;  while (x !=0) {  total +=x;  if (x>0) {  positive++;  }  else {  negative++;  }  counter++;  x= input.nextInt();  }  System.out.println("The number of positives is "+ positive);  System.out.println("The number of negatives is "+ negative);  System.out.println("The total is "+ total);  System.out.printf("The average is %.2f%n", total/counter);  }  } |

**Testing:** (Describe how you test this program. Type your answer in the following with **BLUE font color**)

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| **RUN three times, using the same input as in the sample runs:**  **Test 1:**  Enter an integer, the input ends if it is 0: -1 4 2 12 -2 -4 8 5 19 0  The number of positives is 6  The number of negatives is 3  The total is 43.0  The average is 4.78  **Test 2:**  Enter an integer, the input ends if it is 0: 9 100 -87 23 -44 83 -24 0  The number of positives is 4  The number of negatives is 3  The total is 60.0  The average is 8.57  **Test 3:**  Enter an integer, the input ends if it is 0: -100 -48 137 -25 8 -77 14 0  The number of positives is 3  The number of negatives is 4  The total is -91.0  The average is -13.00 |