

Lab 5 Flow of Control (II): Looping Statements

Please test the correctness of your **programs in Question-1 and Question-2** using PASS.

Question-1.

Write a program **factor.cpp** which reads a positive integer **n** and outputs all the factors of **n**, total factors and sum of factors. A number **i** is a factor of **n** if **i** divides **n**, and $1 < i < n$.

Let's use **for-loop** in your program.

Hint: Write a **for-loop** with an integer counter **i**. In each iteration, check if **n** is divisible by **i** (one way to perform such check is to use the **modulo operator**).

Expected Output:

Example 1 Enter a Number in Range [2 to N]: -12 Error! Due to Negative Number	Example 2 Enter a Number in Range [2 to N]: 7 No Factor for the Number 7 Total Factors are: 0 Sum of Factors is: 0
Example 3 Enter a Number in Range [2 to N]: 0 Error! Due to Zero	Example 4 Enter a Number in Range [2 to N]: 1 Error! Due to One
Example 5 Enter a Number in Range [2 to N]: 12 The Factor(s) of 12 are: 2 3 4 6 Total Factors are: 4 Sum of Factors is: 15	Example 6 Enter a Number in Range [2 to N]: 2 No Factor for the Number 2 Total Factors are: 0 Sum of Factors is: 0

NOTE: Your program **MUST** follow the **EXACT** input/output format! Otherwise, you may not pass the test cases even your calculation is correct.

Question-2.

Write a program **Calculate.cpp** which reads numbers until -999 is entered and compute the following.

- How many Positive Numbers are entered?
- How many Negative Numbers are entered?
- How many Zeros are entered?
- Sum of Positive Numbers
- Sum of Negative Numbers
- Average of Positive Numbers

Hints: 1) Exclude -999 from all computations.

2) Use **while-loop** in your program.

Expected Output:

Example 1	Example 2
Enter Numbers! Enter -999 to Stop: <pre> -2 3 -4 1 4 0 -1 0 2 -999 Total Positive Numbers are: 4 Total Negative Numbers are: 3 Total Zeros are: 2 Sum of Positive Numbers is: 10 Sum of Negative Numbers is: -7 Average of Positive Numbers is: 2.5 </pre>	Enter Numbers! Enter -999 to Stop: <pre> -999 Total Positive Numbers are: 0 Total Negative Numbers are: 0 Total Zeros are: 0 Sum of Positive Numbers is: 0 Sum of Negative Numbers is: 0 Average of Positive Numbers is: 0 </pre>
Example 3	Example 4
Enter Numbers! Enter -999 to Stop: <pre> -2 -3 -4 -1 -4 0 -1 0 -2 -999 Total Positive Numbers are: 0 Total Negative Numbers are: 7 Total Zeros are: 2 Sum of Positive Numbers is: 0 Sum of Negative Numbers is: -17 Average of Positive Numbers is: 0 </pre>	Enter Numbers! Enter -999 to Stop: <pre> 2 3 4 1 4 0 1 0 2 -999 Total Positive Numbers are: 7 Total Negative Numbers are: 0 Total Zeros are: 2 Sum of Positive Numbers is: 17 Sum of Negative Numbers is: 0 Average of Positive Numbers is: 2.42857 </pre>