Assignment 1 – C/C++ Review

Problem 1. We want to get *n* real numbers and compute the average of the positive numbers. We know that *n* is less than 1000 and some numbers are very small (< 0.01). We will resolve this problem by three different approaches, then compare the obtained results.

   a) We use an array of 1000 elements, compute the sum and divide by the number of positive elements.
   b) We use an array of 1000 elements, compute the sum of very small elements (< 0.01) and the sum of other elements, and then compute the average from these two variables.
   c) We use a real variable to store the element entered and then apply the second approach to compute the average.

Suggesstion

Input : n=4

a[0]=2; a[1]=4; a[2]=0.002; a[3]=0.004

ouput:

a) average=1.5015

b) average1 = 0.0030; average2 = 3.0000

c) average1 = 0.0030; average2 = 3.0000

Problem 2. Write a program converting the Arabic numbers to Roman numbers. Note that Arabic numerals corresponding to Roman numerals as follows:

I = 1, II = 2, III = 3, IV = 4, V = 5, IX = 9, X = 10, XL = 40, L = 50, XC = 90, C = 100, CD = 400, D = 500, CM = 900, M = 1000.

Suggesstion

Input: Enter the number: 500

Output: Roman number is be: D

Problem 3. Write a program to perform addition, subtraction, multiplication and division of two real numbers.

a) Using user-defined function.

b) Using pointers as parameters of functions.