

Practical work 4

Exercise 1:

1. Write a program in C to display the first 10 natural numbers.
2. Modify this program so that it calculates their sum.

Exercise 2:

Write a C++ algorithm so it can calculate factorial of a given positive integer by the user n

$$\text{fact}(n) = n \times (n - 1) \times \dots \times 2 \times 1 \text{ if } n \geq 1$$

exercise 3:

1. Write a C++ program that displays the multiplication table of a digit N.
2. Modify your program so that it checks that the number entered by the user is indeed a digit (i.e. a number between 1 and 9).
3. Modify the program so that it displays the multiplication tables of all numbers less than or equal to N. (if N=6 for example it displays the multiplication tables of 1,2,3,4,5,6.

Exercise 4:

Using the While loop, write a program in C++ which allows you to calculate the sum of the first N terms of the harmonic series:

$$1 + 1/2 + 1/3 + \dots + 1/N$$

Exercise 5:

Write a program in C++ which asks you to enter an integer and which indicates whether this integer is prime or not.

Exercise 6:

Write a C++ program to calculate x^y where x and y are two integers given by the user

Exercise 6:

Write a program in C to display a pattern like a right-angle triangle using an asterisk.

The pattern like:

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