

**Lab's Scope:**

- **Recursive Functions**
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**Problem 1:**

Write a program that has a recursive function that calculates the sum of the first N natural numbers. For example if  $n=5$  then the function should calculate  $5+4+3+2+1$ .

**Problem 2:**

Write a program that has a recursive function ***findMin*** that given an array of positive integers, the function should calculate the minimum number in the array recursively.

***Hint: you could use the C++ built-in function min to get the minimum between two numbers.***

**Problem 3:**

Extend Problem number 2, to add the following functions:

- A recursive function ***findMax*** that calculates the maximum number in an array.
- A function ***findDiff*** that finds the difference between the maximum and minimum number of the array, by calling the two recursive functions of finding minimum and maximum.

Your main application should call the function ***findDiff***.

***Hint: you could use the C++ built-in function max to get the maximum between two numbers.***

**Problem 4:**

Write a program that has a recursive function that prints the mathematical sequence that adds 5 to its previous term given that the first term is value 5. For example, if I need to print till the term 10, the outputs should be:

**5 10 15 20 25 30 35 40 45 50**