**C# Programming**

**Lab 4:**

**Due date:** as indicated on Moodle

***Could work individually or in groups of 2***

**Objectives:**

* Develop a recursive method
* Compare between recursion and loops

**Instructions:**

Create a C# Fibonacci calculator. Please check <http://en.wikipedia.org/wiki/Fibonacci_number> to know more about Fibonacci numbers and how they are calculated.

**Requirements:**

1. Your task is to develop a form that takes a number N as an input. The program should calculate Fibonacci (N) using 2 different approaches: The first one is to use recursion. The second one is to use loops.
2. The program should display the result obtained from each approach.
3. The program should calculate and display how much time it took the computer to calculate the answer using each approach.
4. Determine the maximum value of N where the recursive function does not result in stack overflow. Write that number on the form as the upper limit of the recursive function.
5. What is the upper limit of the loop version of the function and why? Write that down on the form as well.
6. The code MUST be divided into methods following the guidelines and principles discussed in class.
7. Make sure to minimize the use of global variables.
8. Project name, control names, variable names must be meaningful.
9. Internal documentation is a must.
10. Once you are done, you need to **zip the whole folder of the project** and upload it to Moodle.

**Have fun ☺**