Activity 1. Measuring execution times

1. how many more years can we continue using this way of counting?

It can continue from now till 292.471.156,5171606 years.

2. What does it mean that the time measured is 0?

It means that the computer runs the algorithm so fast that it cannot reflect it with such a small number. For that the number of times should be increased until we get a reliable time

3. From what size of problem (n) do we start to get reliable times?

Activity 2. Grow of the problem size

1.What happens with time if the size of the problem is multiplied by 5?

2. Are the times obtained those that were expected from linear complexity O(n)?

3. Use a spreadsheet to draw a graph with Excel. On the X axis we can put the time and on the Y axis the size of the problem.

Activity 3. Taking small execution times

You should use the previous concepts for the three following methods: fillIn(), sum() and maximum(). With the values obtained, you should complete the following table:

1. What are the main components of the computer in which you did the work (process, memory)?

Mostly in cpu and RAM memory, but the hardwork was done by the cpu.

2. Do the values obtained meet the expectations? For that, you should calculate and indicate the theoretical values (a couple of examples per column) of the time complexity. Briefly explain the results.

Activity 4. Operations on matrices

1. What are the main components of the computer in which you did the work (process, memory)?

2. Do the values obtained meet the expectations? For that, you should calculate and indicate the theoretical values (a couple of examples per column) of the time complexity. Briefly explain the results.

Activity 5. Benchmarking

1. Why you get differences in execution time between the two programs?

Because each programming language has different times at execution, python is known to be way slower than C for example.

2. Regardless of the specific times, is there any analogy in the behavior of the two implementations?

The code is almost the same however due to the difference of the languages the python variables are dynamically selected the type and an import must be done to take the time. It is probably there where the times are increased.