

Algorithmics	Student information	Date	Number of session
	UO: 283428		0
	Surname: Triana Fernández		
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Activity 1. [Power of the CPUs]

1. Write down the processor model and the system memory.

Intel(R) Core(TM) i7-1065G7 CPU @ 1.30GHz 1.50 GHz

16,0 GB (15,6 GB usable)

2. Find and take note of the average index of integer and float operations per unit of time.

Memory 66.3

1-core 112

2-core 207

3. Write down the time it took to execute.

288 milis, 276 milis, 268 milis.

The mean is 277.33.

4. The approximate index of integer and float operations performed by the program.

$277.33 * 112 = 31,060.96$ operations performed.

5. Extend the table with data from other computers to which you have Access.

#	CPU	Milliseconds	SC Mix (avg.)	Operations (aprox.)
1.	i7-4500U	285	85.7	24424.5
2.	i3-3220	267	91.4	24403.8
3.	i5-4590	219	106	23214
4.	i7-4790	207	115	23805
5.	Intel Pentium Gold G5400	215	112	24080
6.	i7-1065G7	277.33	112	31060.96

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7.	i7-3770	240	108	25920
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6. Do you think you could mix values from different CPUs in the same analytical study of the execution times of an algorithm?

It depends on the model from the CPU.

For example, it is easily seen that a i7 has a better performance than a i3 from the same generation (3rd). The i7 has a SC Mix of 108 and the i3 a 91.4, so the execution is faster on the i7 (240) than on the i3(267). However, when the performance is not the most important feature, such us in a laptop's CPU, it can be harder to differentiate the CPU by the performance. For example, the Intel Pentium Gold G5400 has the same SC Mix than the i7-1065G7 and it performs better than the i7.

Activity 2. [Influence of the operating system]

Measurements (Means)

High performance: 278.8

Balanced: 284.2

Economizer: 451

CPU burn

High performance: 451

Economizer: 621

1. Which energy plan do you think is the most appropriate for making measurements?

Taking measurements in other energy plan than "High performance" will lead to poor performance, high response times and lower CPU usage.

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2. If you had to perform a very long experiment, could you use the computer to, for example, watch a YouTube video in the meantime?

As seen in the measurements taken while the CPU burn process was executed, multitasking can affect the performance of the CPU. It is necessary to consider that a high CPU usage also leads to high temperatures that influence the speed of the CPU.

3. Do you think it is convenient to make several measurements simultaneously on the same computer?

Taking several measurements simultaneously doesn't represent how a program would be processed when ran alone, because of the usage of shared resources and the impact of one process in others.