Algorithmics	Student information	Date	Number of session
	UO:300809	30/01/2025	0
	Surname: González Bajo		
	Name: Javier		

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Activity 1. Factor 1 (problem size)

n	T(ms)
10000	1557
20000	6350
40000	25602
80000	Oot
160000	Oot
320000	Oot
640000	Oot

Activity 2. Factor 2 (computer power)

n	C1	C2
10000	1557	1718
20000	6350	6882
40000	25602	27557
80000	Oot	Oot
160000	Oot	Oot
320000	Oot	Oot
640000	Oot	Oot
	C1	C2
CPU	i5-12400	i9-10900KF
RAM	3200MHz	3600MHz

Activity 3. Factor 3 (implementation environment)

n	JavaA1	Python
10000	94	1557
20000	285	6350
40000	1118	25602
80000	4452	Oot
160000	18046	Oot
320000	Oot	Oot
640000	Oot	Oot

As we can see from the table java is much more efficient.

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Activity 4. Factor 4 (algorithm that is used)

n	PythonA1	PythonA2	PythonA3
10000	1557	181	96
20000	6350	689	344
40000	25602	2565	1374
80000	Oot	9908	5013
160000	Oot	36288	18187
320000	Oot	Oot	Out
640000	Oot	Oot	Out

n	JavaA1	JavaA2	JavaA3
10000	321	38	19
20000	1284	139	69
40000	4909	486	254
80000	19740	1834	931
160000	Out	6905	3541
320000	Out	25812	13376
640000	Out	Oot	49954

n	JavaA1(OPTIMIZED)	JavaA2(OPTIMIZED)	JavaA3(OPTIMIZED)
10000	73	10	5
20000	280	32	16
40000	1116	112	58
80000	4514	417	208
160000	17845	1541	784
320000	Out	5797	2971
640000	Out	21982	11017

As stated in the previous section, java is much more efficient than python. By using the optimization feature of the compiler, you can obtain a huge difference in the times.