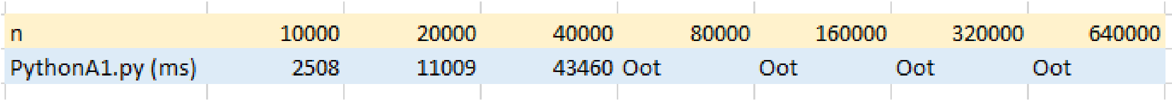
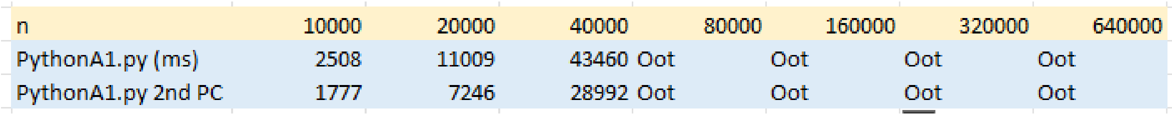
Algorithmics	Student information	Date	Number of session
	UO: UO293860	30/01/2024	0
	Surname: López Álvarez		
	Name: Juan		

Activity 1. Factor 1: problem size



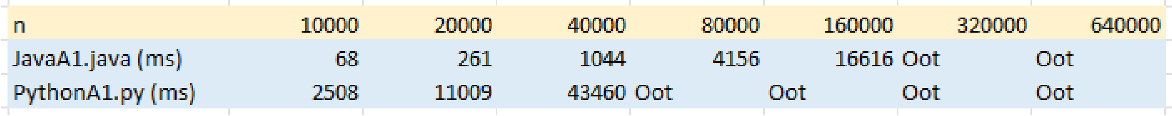
n	10000	20000	40000	80000	160000	320000	640000
PythonA1.py (ms)	2508	11009	43460	Oot	Oot	Oot	Oot

Activity 2. Factor 2: computer performance



n	10000	20000	40000	80000	160000	320000	640000
PythonA1.py (ms)	2508	11009	43460	Oot	Oot	Oot	Oot
PythonA1.py 2nd PC	1777	7246	28992	Oot	Oot	Oot	Oot

Activity 3. Factor 3: implementation environment



n	10000	20000	40000	80000	160000	320000	640000
JavaA1.java (ms)	68	261	1044	4156	16616	Oot	Oot
PythonA1.py (ms)	2508	11009	43460	Oot	Oot	Oot	Oot

Algorithmics	Student information	Date	Number of session
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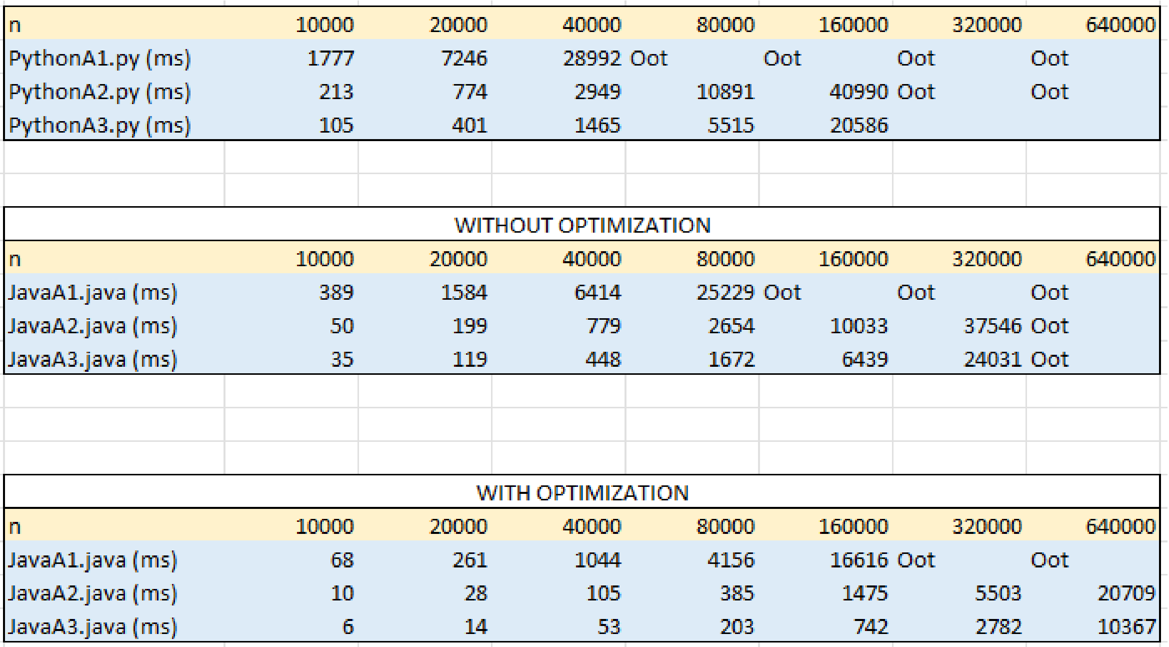
Activity 4. Factor 4: algorithm that is used



n	10000	20000	40000	80000	160000	320000	640000
PythonA1.py (ms)	1777	7246	28992	Oot	Oot	Oot	Oot
PythonA2.py (ms)	213	774	2949	10891	40990	Oot	Oot
PythonA3.py (ms)	105	401	1465	5515	20586		

WITHOUT OPTIMIZATION

n	10000	20000	40000	80000	160000	320000	640000
JavaA1.java (ms)	389	1584	6414	25229	Oot	Oot	Oot
JavaA2.java (ms)	50	199	779	2654	10033	37546	Oot
JavaA3.java (ms)	35	119	448	1672	6439	24031	Oot

WITH OPTIMIZATION

n	10000	20000	40000	80000	160000	320000	640000
JavaA1.java (ms)	68	261	1044	4156	16616	Oot	Oot
JavaA2.java (ms)	10	28	105	385	1475	5503	20709
JavaA3.java (ms)	6	14	53	203	742	2782	10367

As we can see the algorithm used is really important when measuring time, the first algorithm makes useless iterations in most of the cases because it assigns the False value to a variable and returns the variable when the loop ends while in the second version, whenever the variable would be changed to false, it simply returns false. In the last version it takes advantage of the mathematical concept and since the biggest integer divisor of a number is the number itself divided by two, it only iterates until that number. Finally the java optimizations clearly improve the time spent, however we can’t see the improvements in our code.