

Algorithmics	Student information	Date	Number of session
	UO: 258220	18-03-21	4
	Surname: Cuesta Martínez		
	Name: Miguel		



Activity 1. Execution times

n	$t_{Greedy1}(ns)$	$t_{Greedy2}(ns)$	$t_{Greedy3}(ns)$
100	649	698	632
200	880	874	949
400	1698	1681	1886
800	3221	3554	3401
1600	6875	7038	6506
3200	14025	13348	13091
6400	27588	26120	26224
12800	54423	52792	53403
25600	107533	109850	108533

NOTE: For each measurement, the parts of the code that printed result were commented (4 lines per method). Also, a value of Ntimes = 1000000 was used, meaning the times taken by subtracting results of currentTimeMillis are actually representative of nanoseconds.

Activity 2. Answer the following questions

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1) The algorithm Greedy2 is of the best interest to the company, as starting with the highest segment length means high values will accumulate into the sum of

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pufosos from the start; consequentially, the heuristic of choosing max value is the optimal from their point of view.

2) The algorithm Greedy3 is of the best interest to the players, as starting with the lowest segment length means the most “pufoso-adding” values will be saved for the end and not accumulate; consequentially, the heuristic of choosing min value is the optimal from their point of view.

3) Time complexities are of $O(n)$ according to the designed algorithm, for every case, because the recursive implementation doesn’t alter the fact that each node of the list is only inspected once before all values are returned and accumulated into the sum of pufoso.

4) The values in the table increase at the same rate as n , so they are indeed in tune with the expected complexity of the algorithm.