Algorithmics	Student information	Date	Number of session
	UO: 300084	17-3-2025	4
	Surname: Seijo Martínez		
	Name: Sergio		

Activity 1. Complexity

Since in my implementation of the algorithm, I iterate over the number of nodes with a for loop the complexity of the is O(n) n the number of nodes.

Activity 2. Coloring measurements

The measurements of my algorithm for the graphs given.

n	t Coloring (ms)
8	125 / 1000 = 0,125
16	145 / 1000 = 0,145
32	200 / 1000 = 0,2
64	300 / 1000 = 0,3
128	498 / 1000 = 0,498
256	952 / 1000 = 0,952
512	1915 / 1000 = 1,915
1024	4195 / 1000 = 4,195
2048	8411 / 1000 = 8,411
4096	17406 / 1000 = 17,406
8192	36683 / 1000 = 36,683
16384	836 / 10 = 83,6
32768	1876 / 10 = 187,6
65536	3980 / 10 = 398

We can see that the timings follow the complexity given. It is hard to see with the lower n's but after n = 128 we can perfectly see how the milliseconds double as you double n.

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