Algorithmics	Student information	Date	Number of session
	UO: UO282276	21/03/2022	5
	Surname: Cadenas Blanco		
	Name: Andrés		

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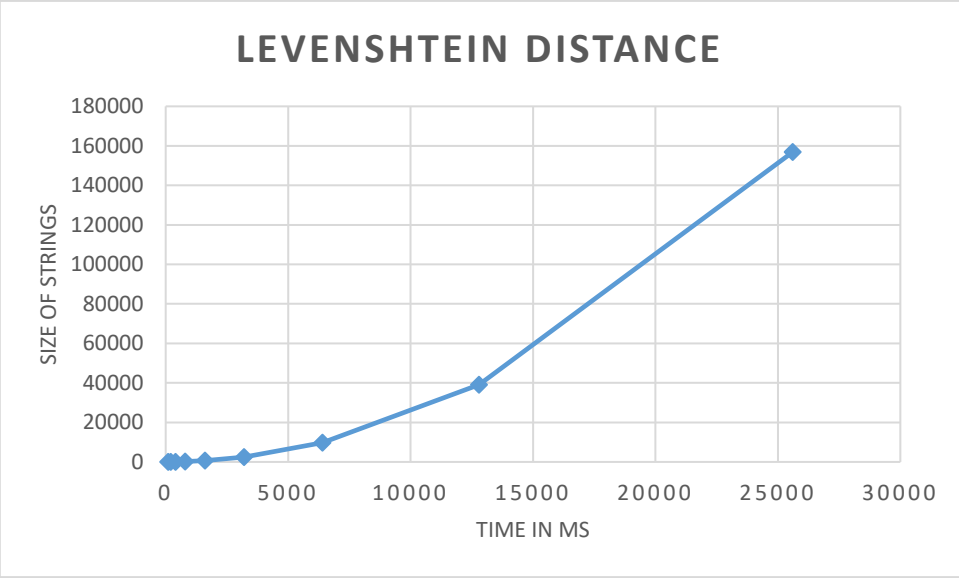
Activity 1. Create a table with the times you get for the different sizes of the problem using LevenshteinDistanceTest.java.

Size n	Time in ms
100	19
200	19
400	36
800	153
1600	605
3200	2426
6400	9726
12800	39099
25600	156823



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What is the complexity of the algorithm?

The complexity of the algorithm is O(n*m) being n the length of the first string and m the length of the second string. As this experiment obeys the rule that n = m in this case O is quadratic.

Do the empirical results make sense?

Yes, it does make sense applying that we have O(n^2) the formula says:

$$t2 = t1\frac{n2^2}{n1^2}$$

From here we can obtain the theoretical result of:

800	153
1600	605

The theoretical time with n2 being 1600 would be

$$t_{1600} = 153\frac{1600^2}{800^2}$$

The result is 612 ms in theory which is near to the 605 ms that were real. So we can agree the empirical results make sense.