

# ***E-ROUTE: AN ELECTRIC VEHICLE ROUTING PROBLEM***

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# Data Structures

Arrays: to store vehicles.

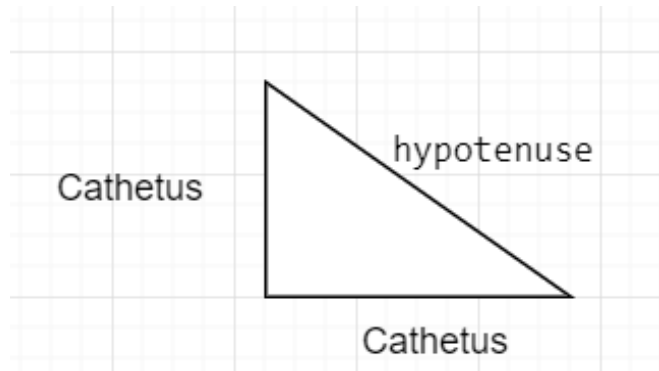
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ArrayList: What is the route to travel the nodes for a specific vehicle.

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Matrix: To store nodes


# Algorithm and Complexity



**Figure 1:** CalculateDistance: Applies the Pythagorean Theorem. First get the positions in X and Y for the two nodes. Subtract the b-a to obtain the value of the side of the triangle known as cathetus

Methods	Complexity
CreateStation	$O(1)$
CreateDepot	$O(1)$
CreateClient	$O(1)$
CalculateDistance	$O(n)$
CalculateEnergy	$O(n)$
<b>Complexity total:</b>	$O(n^2)$

**Table 1:** Complexity of the methods without adding the battery, therefore, it can be more.

# *Algorithm design criteria*

We chose to make a Greedy-type implementation because as a first idea we had planned a Tabu search but it was difficult for us to implement it and we decided to do something more tangible and close to our knowledge.

We took this decision regardless of the fact that it would probably not be the most optimal algorithm.

# Teamwork

What to do	Doing	Complete
Template and Presentation	Code Search Algorithms	Report 1

What to do	Doing	Complete
		Code Template and Presentation Report 1 Search Algorithms



KANBAN TOOL

# Report accepted in Arxiv

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Article submitted

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