

Laboratory practice No. 4: Greedy algorithm

Maria Paulina Ocampo Duque
Universidad Eafit
Medellín, Colombia
mpocampod@eafit.edu.co

Jose Manuel Fonseca Palacio
Universidad Eafit
Medellín, Colombia
jmfonsecap@eafit.edu.co

3) Practice for final project defense presentation

3.1 The data structure that we use was a matrix to make the graph because is the most efficient way to realize operations. And we use an arraylist because with that we do not need to go through all the lists, it's stored at once each node in one. The objective of the algorithm is builds up a solution piece by piece, always choosing the next piece that offers the most obvious and immediate benefit.

3.2 Is not effective at all because besides gives a solution, not always gives de best one; and to give any solution the algorithm traverses the graph by choosing the closest node which hasn't been visited and finally goes back to the starter node.

3.3 To adapt this solution in Medellín, we can explore the node like a client, with that we are going to find the distances between two clients and deliver the order

3.4 We use arrays to store the routes. The objective of the algorithm is to find the shortest hours in a route to assign to a driver. Each route is going to be add to the driver and then it's going to be sum, finally the result is going to be subtract and if is greater to 0 is because the driver works overtime.

3.5 $O(n^2)$

3.6 The n represents the number of drivers that are available in the company

4) Practice for midterms

4.1 $i=j$

4.2 $\min > \text{adjacencyMatrix}[\text{element}][i];$

4.4

1. $\text{temp} = \text{math.max}(\text{minimo}, \text{temp});$

2. return temp

3. $O(1)$

ESTRUCTURA DE DATOS 2
Código ST0247

4.6

1. if ($x[i] == (i+1)$)
2. $res = +1$;
3. $last = i$;
4. 2