

## Laboratory practice No. 4: Greedy algorithms

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### 3) Practice for final project defense presentation

#### 3.1

Using a stack in which we take out the node we choose and in turn we have a Boolean matrix that stores the nodes that are already visited. the method is done by each neighbor, the closest one is chosen. you do this until you visit all and return to the initial one at the end of the whole algorithm.

#### 3.2

Primarily that the graph is complete to be able to implement the greedy algorithm if the graph is not complete, an optimal implementation of the algorithm can not be made.

#### 3.3

Having the problem of the peddler and the greedy algorithm we could get to apply it to that problem for mode of delivery, going to the nodes in which the seller delivered the product.

#### 3.4

the algorithm is mainly responsible for arranging the matrices so that the routes are the same, combining the route of the morning with the shortest duration with that of the longest day.

matrices were used to give an idea of the routes available in the morning and afternoon.

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3.5

Is  $O(N \log N)$

3.6

N is the number of routes

4) Practice for midterms

4.1  $i=j$

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

4.3  $\text{length}-1$

4.3.1

Paso	A	B	C	D	E	F	G	H
1	A	20,A	$\infty$	80, A	$\infty$	$\infty$	90, A	$\infty$
2	B	20,A	$\infty$	80, A	$\infty$	30,B	90,A	$\infty$
3								
4								
5								
6								
7								
8								

completing

Paso B C D E F G H

1 A 20,A  $\infty$  80,A  $\infty$   $\infty$  90,A  $\infty$

2 B 20,A  $\infty$  80,A  $\infty$  30,B 90,A  $\infty$

3 F 20,A 40,F 70,F  $\infty$  30,B 90,A  $\infty$

4 C 20,A 40,F 50,C  $\infty$  30,B 90,A 60,C

5 D 20,A 40,F 50,C  $\infty$  30,B 70,D 60,C

6 H 20,A 40,F 50,C  $\infty$  30,B 70,D 60,C

7 G 20,A 40,F 50,C  $\infty$  30,B 70,D 60,C

8 H 20,A 40,F 50,C  $\infty$  30,B 70.C 60,C

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4.3.2

A-B-F-C-D-G hay un costo de 70.

4.4.1

*R// temp / 2*

4.4.2

*R// temp + minimo*

4.4.3

b)

4.5.1

d)

4.5.2

the algorithm orders the  
elements of the matrix and its  
complexity is  $O(n)$

4.6

4.6.1

*R//i+1*

4.6.2

*R//res+1*

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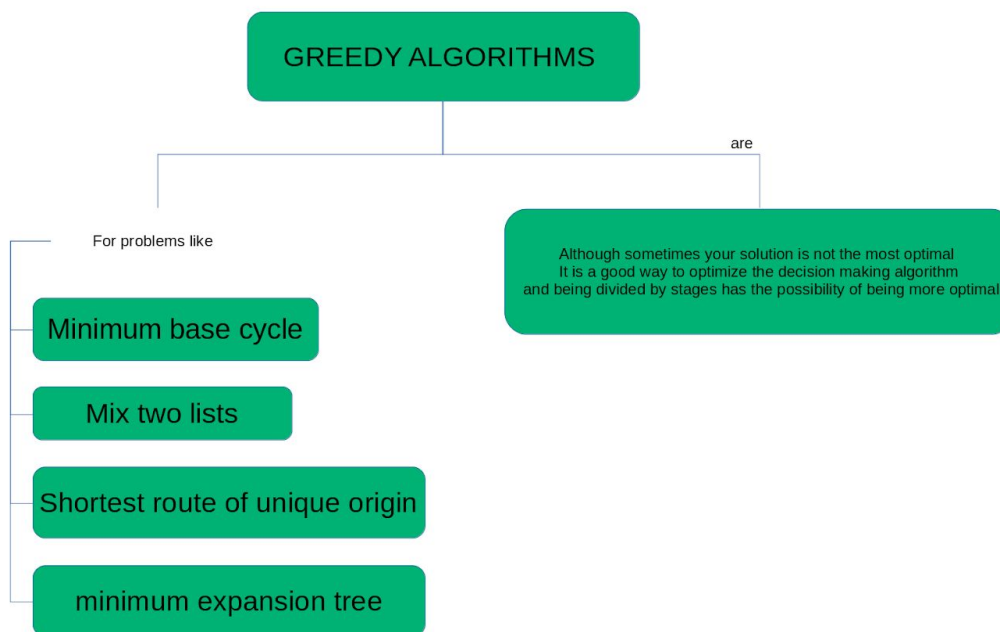
### 4.6.3

*R// i*

### 4.6.4

*the answer is 2*

## 5) Recommended reading (optional)



## 6) Team work and gradual progress (optional)

### 6.1

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<b><i>work hours/day</i></b>	<b><i>11/04/2019</i></b>	<b><i>12/04/2019</i></b>	<b><i>14/04/2019</i></b>
<b><i>1.</i></b>	<b><i>working valeria</i></b>		
<b><i>3hr</i></b>		<b><i>working valeria and santiago</i></b>	
<b><i>2hr</i></b>			<b><i>working valeria and santiago</i></b>

**6.2**

<b><i>modifier / day</i></b>	<b><i>11/04/2019</i></b>	<b><i>12/04/2019</i></b>	<b><i>14/04/2019</i></b>
<b><i>Santiago</i></b>	<b><i>6:02pm modification time</i></b>		<b><i>2:47pm modification time</i></b>
<b><i>Valeria</i></b>	<b><i>6:52pm modification</i></b>	<b><i>5:12pm modification</i></b>	<b><i>12:36pm modification</i></b>

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	<i>time</i>	<i>time</i> <i>7:43pm</i> <i>modification</i> <i>time</i>	<i>time</i> <i>4:10pm</i> <i>modification</i> <i>time</i>
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6.3

<i>modifier / day</i>	<i>11/04/2019</i>	<i>12/04/2019</i>	<i>14/04/2019</i>
<b>Santiago</b>		<i>4:22pm</i> <i>modification</i> <i>time</i>	<i>1:12pm</i> <i>modification</i> <i>time</i> <i>8:27pm</i> <i>modification</i> <i>time</i>
<b>Valeria</b>	<i>2:17pm</i> <i>modification</i> <i>time</i>	<i>7:01pm</i> <i>modification</i> <i>time</i>	<i>1:55pm</i> <i>modification</i> <i>time</i>