Laboratory practice No. 4: Greedy algorithms

Juan David Echeverri Villada
Universidad Eafit
Medellín, Colombia
jdecheverv@eafit.edu.co

Juan Sebastian Guerra Hernandez
Universidad Eafit
Medellín, Colombia
jsguerrah@eafit.edu.co

3) Practice for final project defense presentation

3.1
3.2
3.3
3.4
3.5
3.6

4) Practice for midterms

4.1 *i = j*
4.2 *min>adjacencyMatrix[element][i]*
4.3
4.3.1

Step	A	B	C	D	E	F	G	H
1	A	20,A	inf	80,A	inf	inf	90, A	inf
2	B	20,A	inf	80,A	inf	30, B	90, A	inf
3	F	20, A	40, F	70, F	inf	30, B	90, A	inf
4	C	20, A	40, F	50, C	inf	30, B	90, A	60, C
5	D	20, A	40, F	50, C	inf	30, B	70, D	60, C
6	H	20, A	40, F	50, C	inf	30, B	70, D	60, C
7	G	20, A	40, F	50, C	inf	30, B	70, D	60, C
8	E	20, A	40, F	50, C	inf	30, B	70, D	60, C

4.3.2 The best route to go from A to G is: A – B – F – D – G.
4.4
4.4.1 Line 10: temp/2
4.4.2 Line 11: temp + minimo
4.4.3 B
4.5
4.5.1 D

4.5.2 By making mergeSort to the set of n numbers, we can ensure that the smallest are in the first positions. The sum of the first k numbers, arranged from least to greatest, will always be the minimum sum with k numbers. The complexity of making mergeSort is O (nlog n), and the access to the k numbers is O (k), but by multiplicity the final complexity of the algorithm is O (nlog n).

4.6

4.6.1 i+1
4.6.2 res+1
4.6.3 last = i
4.6.4 2

PhD. Mauricio Toro Bermúdez
Professor | School of Engineering | Informatics and Systems
Email: mtorobe@eafit.edu.co | Office: Building 19 – 627
Phone: (+57) (4) 261 95 00 Ext. 9473