Laboratory practice No. 4: Greedy Algoritms

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3) Practice for final project defense presentation

3.1 The data structure used was an arraylist. The arraylist stores the successors of a graph and an array is going to verify if the node has been visited, and if the following condition is validated, the cost between the initial node and the successors is less than the minimun, we get the new minimun cost and then we proceed with the next node repeating the above steps.
3.2 No, the graph must be a complete graph to show us an optimal solucion, otherwise there will be unreachable nodes that would be unvisited.
3.3 This algorithm can be implemnted in the delivery-services problem, only visiting the nodes where the delivery of a product must be made.
3.4 The data structure used were arrays in both morning and afternoon routes to represent them, and sort them in ascending order based on duration. Then the least-time-duration-morning route would be paired with the longest-time-duration-afternoon route, and then we calculate the amount that has to be paid for all of the extra hours the drivers had to work.
3.5 O(nlogn)
3.6 n is the number of routes, this is defined at the beginning in the problem statement.

4) Practice for midterms

4.1 *i = j*
4.2 *min > adjacencyMatrix[element][i]*
4.4
- ***4.4.1*** *temp / 2*
- ***4.4.2*** *temp + minimo*
- ***4.4.3*** *b) O(1)*

4.5
- ***4.5.1*** *d)*
- ***4.5.2*** *We can sort the “n” numbers from the smallest to the largest and chose the first “k” numbers and sum them. We can sort the “n” numbers by the radix sort which its time complexity is o(wm) (where w is the number of bits required and m the number of elements) and its faster than pther comparing-sorting-algorithms such as the quicksort and heapsort, and after that choose the first k numbers to sum them together.*

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4.6

4.6.1 *i + 1*
4.6.2 *res + 1*
4.6.3 *i*
4.6.4 *2*

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