Laboratorio Nro. 2
Fuerza Bruta

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3) Simulacro de preguntas de sustentación de Proyectos

3.1

To find a minimum cost of a complete graph, first we determine the different permutations of possible path of graph, after that, we select the specific permutations in which the Hamilton circuit is fulfilled.
The Hamilton circuit is a path when I can visit all the nodes without repeating them and get back to the start.
When we find the specific permutations, we calculate the cost of each of them and select the minimum cost.

3.2

O(n x m)

M means the number of nodes
N means the number of edges

3.3

When we do the test, with 5 nodes and 10 arcs, the execution time is 2 seconds. By making a rule of three, we have:

n x m -------- 2 seg
M means the number of nodes
N means the number of edges

50 ---------- 2 seg
n x m --------- x seg
x seg = 2 x m

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The execution time would be 2 x m, when M means the number of edges.
To determine if it is possible to execute the program with 50 clients, we need to know the number of edge in the graph,

3.4

The data structure that we implemented for the solution of the problem were two Lists (List) of integer array type (int []), where in one of them we keep the arrangements of the positions of the queens where they do not collide, while that in the other arrangement we keep the arrays which have the blank spaces, in order that the solution of the problem is nothing else to find the boards that meet the conditions of the blank space with a simple comparison of arrangements.

3.5

Because it simply make a comparison of Lists where one of them is n! And the other n, the order of the algorithm is O (n).

3.6

N, is the number of queens. To find all the possible boards where the queens do not collide on an n x n board, the order of this algorithm is n! (Which makes code execution slow).

M, is the list of possible boards.

C, is the list of restrictions.

Where for each element of the list m is compared with the elements of the list c, making the O (n).

4) Simulacro de Parcial

4.1.1 If(actual > máximo)
4.1.2 $O(n^2)$
4.2.1 ordenar(arr,i)
4.2.2 $O(n^k)$
4.3.1 if (j == m) return txt.charAt(i);
4.3.2 else return pat.length();
4.3.3 O (n x m)
4.4.1 Int rem = temp % 10;
4.4.2 b) O (|N−M|).log10 M
4.5.1 for (int j=i+1; j<n; j++) {
4.5.2 can = can || (left==right);

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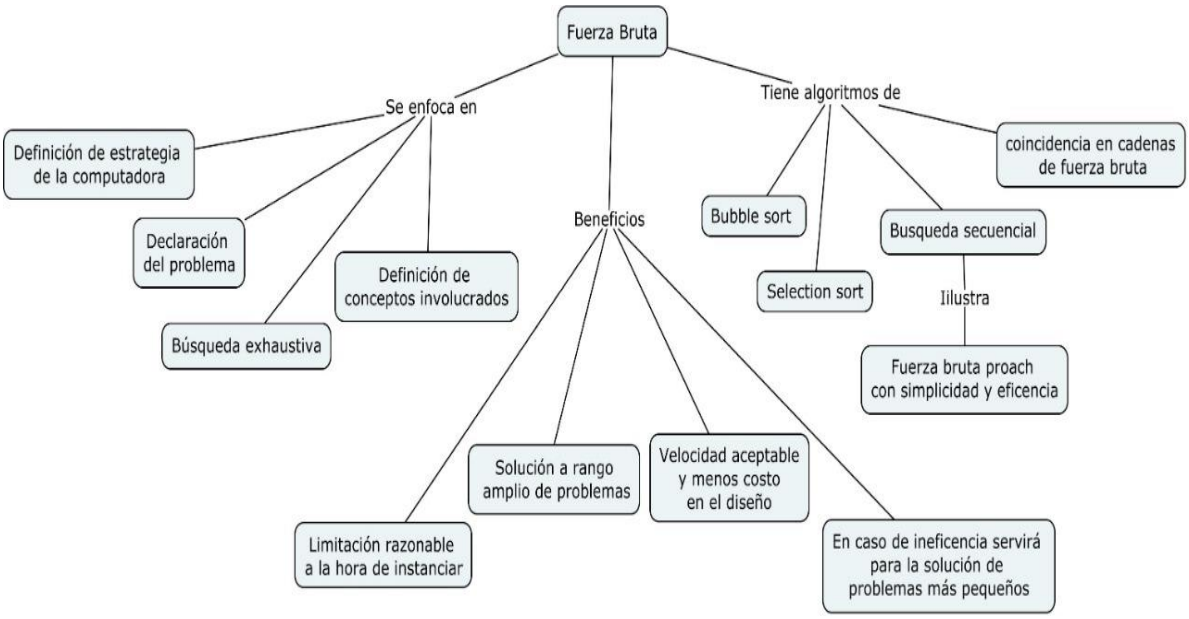
5) Lectura recomendada (opcional)



CHANGE REPORT

INTEGRANTE	FECHA	HECHO	HACIENDO	POR HACER
Daniel Felipe Gómez Martínez, Cesar Andrés García Posada y Daniel García García	22/02/2019		Reading and understanding the laboratory.	Analyze data structures.
Daniel Felipe Gómez Martínez	22/02/2019	choose data structure	Reading file ".txt" and elaborating the new method for the Queens class already elaborated in workshop 3 (For point 2)	Implementation of the data structure
Cesar Andres Garcia Posada	22/02/2019	Select data structures to	Algorithm to do permutations of the	Algorithm to analyze the

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		use to do the laboratory	paths of the graph (For point 1).	Hamilton circuit on a graph.
Daniel García García	22/02/2019	Analyze algorithms	Determine possible answers	Test and check answers.
Cesar Andres Garcia Posada	22/02/2019	Algorithm to do permutations of the paths of the graph.	Algorithm to analyze the Hamilton circuit on a graph. Condition to determine minimum cost of the permutations (paths of graph) <For point 1>.	Advance in the report
Daniel Felipe Gómez Martinez	22/02/2019	Preparation of lists of type int [].	Modifying the reading method so that it executes the code while reading the file(For point 2)	Elaboration of the comparison algorithm of the two lists
Cesar Andres Garcia Posada	23/02/2019	Algorithm test (point 1)	Answer questions about algorithm point 1 Code documentation	Report of laboratory
Daniel Garcia Garcia	23/02/2019	Determine the correct answers and complete algorithms. Point 4	Answer questions about algorithm point 1 and point 2	Report of laboratory
Daniel Gómez Martinez	23/02/2019	Algorithm which compares the two lists	Code documentation	
Daniel Felipe Gómez Martínez, Cesar Andrés García Posada y Daniel García García	24/02/2019	Algorithms point 1 and point 2 Complete algorithms point 4	Report of laboratory	Optional point

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Daniel Felipe Gómez Martínez, Cesar Andrés García Posada y Daniel García García	24/02/2019	Report of laboratory		

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