

Programming Assignment #2

Maximum Planar Subset

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1. Preprocessing

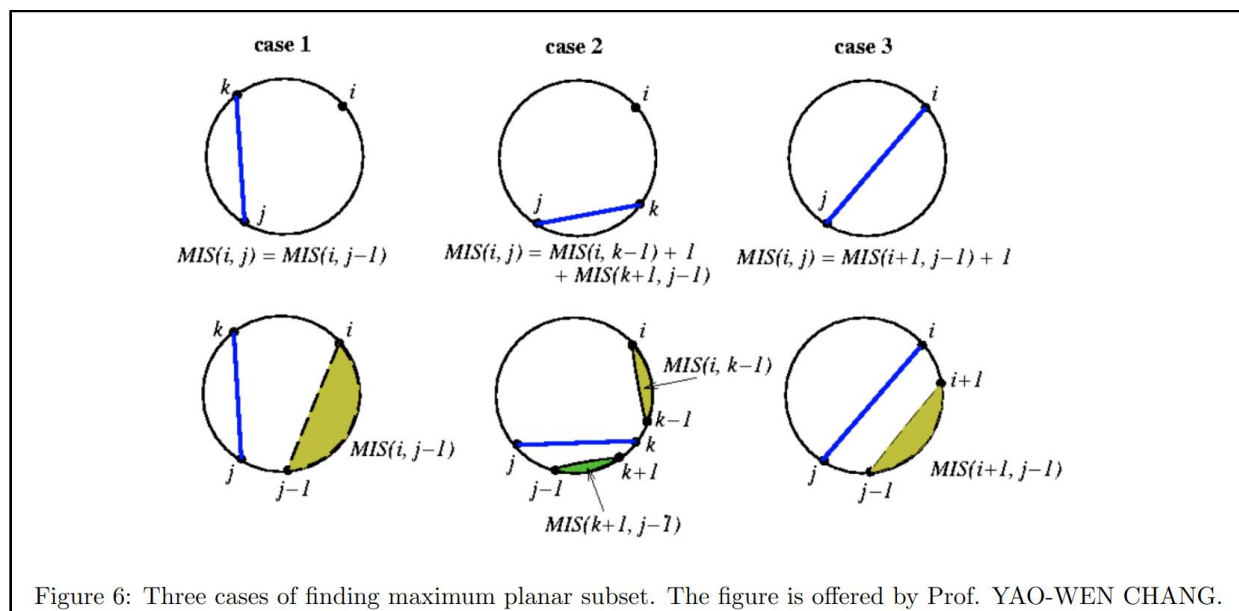
Transform each input data into a pair and store them into a vector. For example, 0 4 -> (0, 4), 1 9 -> (1, 9), and so on.

Sample Input
12
0 4
1 9
2 6
3 10
5 7
8 11
0

Storing both directions enables us to get the other endpoint from one known endpoint without additional computations.

2. Construct Tables

A function called ConstructTable is the core of the algorithm. Table M stores the maximum chords and Table C stores what case it is. And call the TraceBack function to trace back the result with Table C.



3. Trace Back

A function called TraceBack recursively calls itself to save the start point of the chord into the result.

4. Time Complexity

In the function ConstructTable, we have to fill up 2 n by n tables M and C, so it costs $O(n^2)$ -time

5. Result of public test cases

Run on EDA union lab machines

Input size	CPU time (ms)	Memory (KB)
12.in	0.074	5912
1000.in	10.133	8948
10000.in	1024.43	299852
100000.in	272498	29355992