

# CSN-261 L5 REPORT

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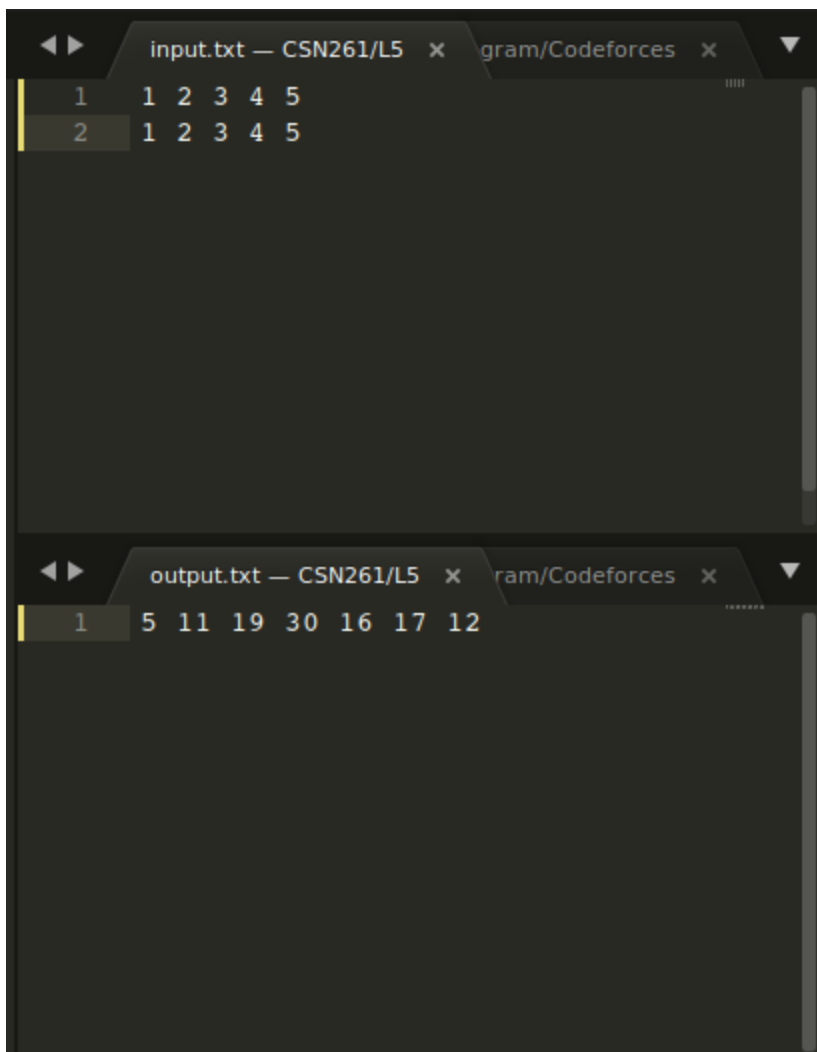
PROBLEM STATEMENT 1:

Objective:

1) Multiply 2 cubic equations..

Algo's:

Brute force



The screenshot shows a code editor with two tabs: 'input.txt — CSN261/L5' and 'output.txt — CSN261/L5'. The 'input.txt' tab is active, showing two lines of input: '1 1 2 3 4 5' and '2 1 2 3 4 5'. The 'output.txt' tab is also visible, showing one line of output: '1 5 11 19 30 16 17 12'.

```
input.txt — CSN261/L5 x program/Codeforces x
1 1 2 3 4 5
2 1 2 3 4 5

output.txt — CSN261/L5 x program/Codeforces x
1 5 11 19 30 16 17 12
```

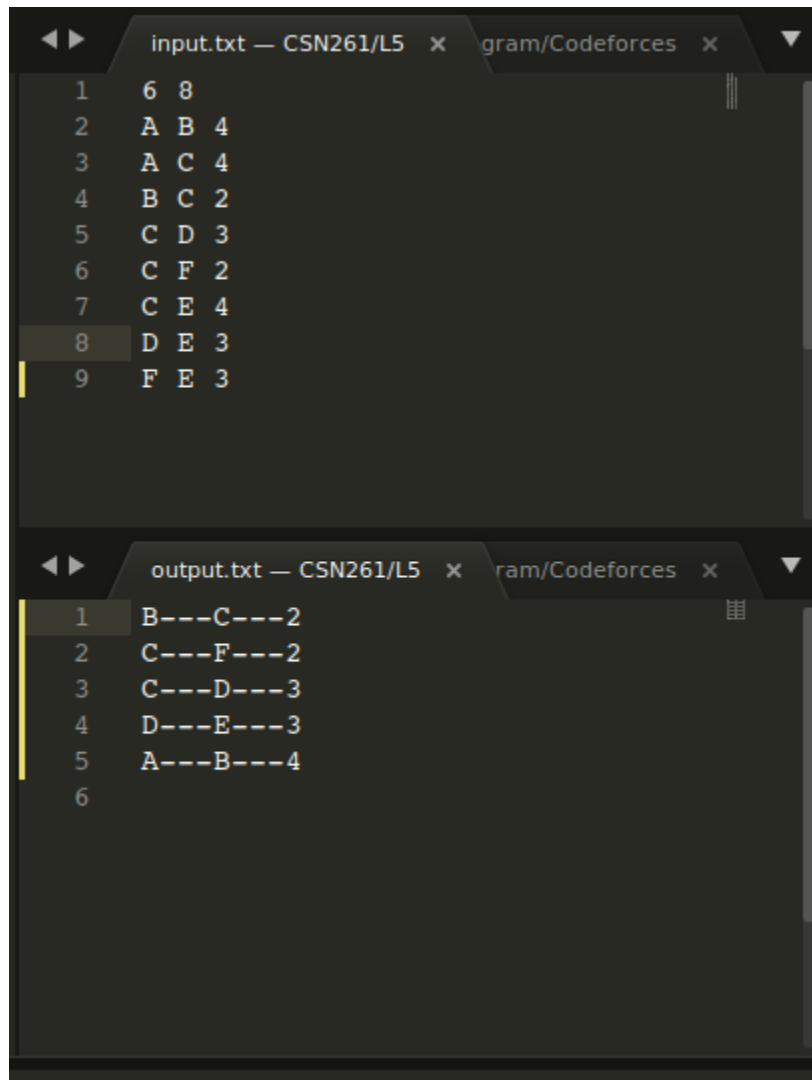
PROBLEM STATEMENT 2:

Objective:

1) Implement Kruskal's algorithm to find minimum spanning tree.

Algo's discuss:

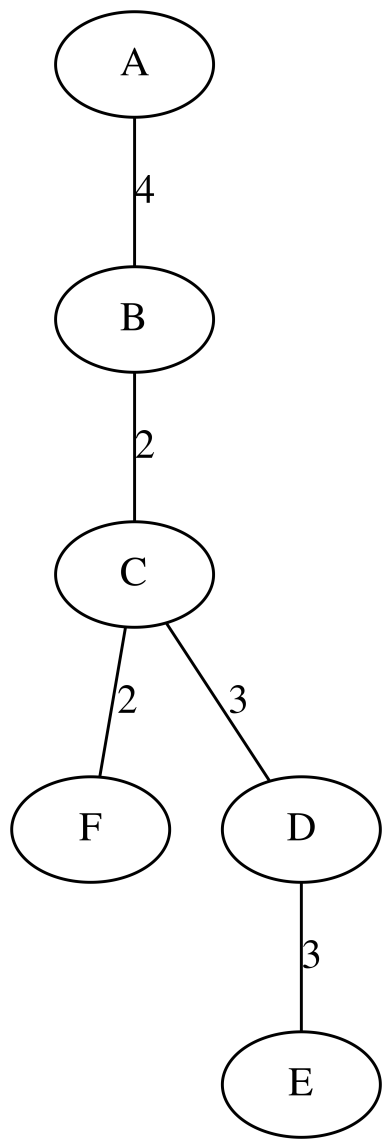
Greedy, Kruskals, union by ranks, DSU



The image shows a code editor with two tabs: 'input.txt — CSN261/L5' and 'gram/Codeforces'. The 'input.txt' tab is active, displaying a list of 9 edges with their weights. The 'output.txt' tab is also visible, showing the selected edges for the minimum spanning tree.

```
input.txt — CSN261/L5 x gram/Codeforces x
1 6 8
2 A B 4
3 A C 4
4 B C 2
5 C D 3
6 C F 2
7 C E 4
8 D E 3
9 F E 3
```

```
output.txt — CSN261/L5 x gram/Codeforces x
1 B---C---2
2 C---F---2
3 C---D---3
4 D---E---3
5 A---B---4
6
```



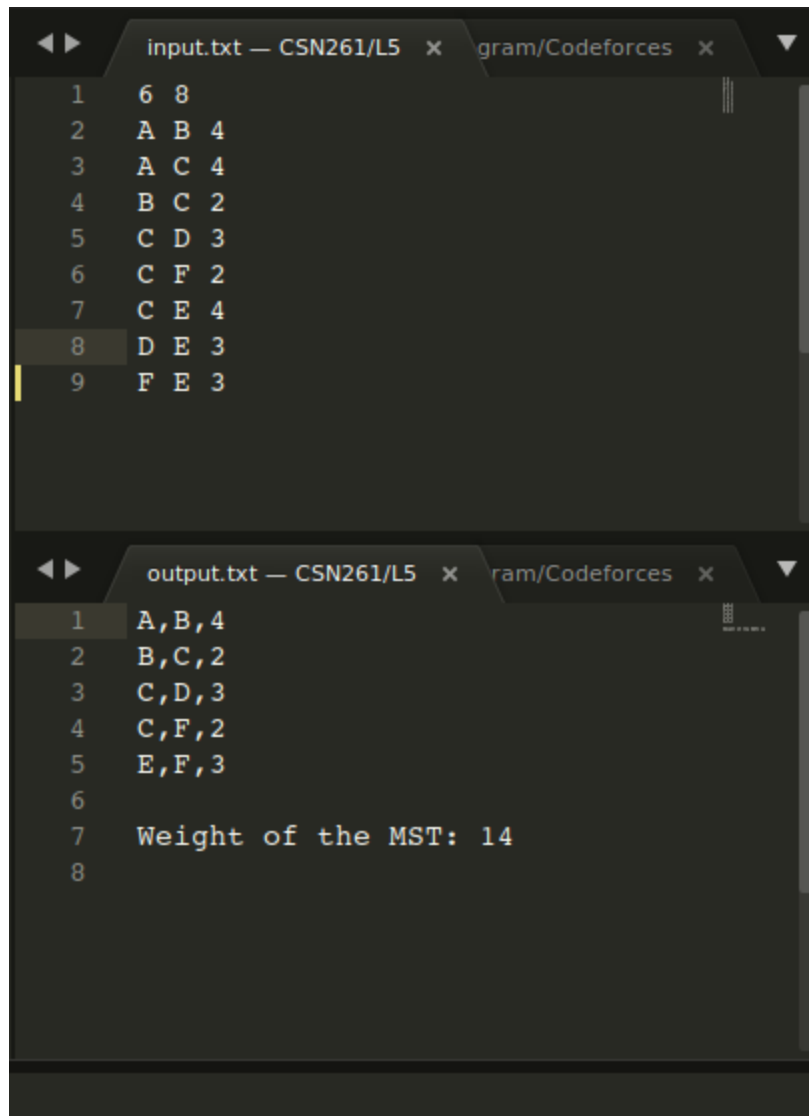
### PROBLEM STATEMENT 3:

Objective:

1) Implement Prims algorithm with fibonacci heap instead of priority\_queue to find minimum spanning tree.

Algo's discuss:

Greedy, Prims, Fibonacci heap, union by ranks, DSU



The image shows a code editor with two tabs: 'input.txt — CSN261/L5' and 'output.txt — CSN261/L5'. The 'input.txt' tab is active, displaying a list of 9 edges with their weights. The 'output.txt' tab is also visible, showing the output of the algorithm, including the selected edges and the total weight of the Minimum Spanning Tree (MST).

```
input.txt — CSN261/L5 x gram/Codeforces x
1 6 8
2 A B 4
3 A C 4
4 B C 2
5 C D 3
6 C F 2
7 C E 4
8 D E 3
9 F E 3

output.txt — CSN261/L5 x gram/Codeforces x
1 A,B,4
2 B,C,2
3 C,D,3
4 C,F,2
5 E,F,3
6
7 Weight of the MST: 14
8
```