Algorithms on Graphs

Module 2

Task 5

Floyd-Warshall algorithm

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Task

Implement the Floyd-Warshall algorithm in a program that builds the distance matrix for the given directed graph.

The complete implementation of this task gives you 10 pts.

Task: input

Input file (text format):

- The 1st line: names of vertices, separated by spaces.

E.g.: `A B C D E F`

- Other lines contain edges *and their weights*. Each line describes one edge as two incident vertices together with the edge's weight, separated by space. Weights are fixed point decimal numbers; they should be represented with float numeric values.

E.g., line

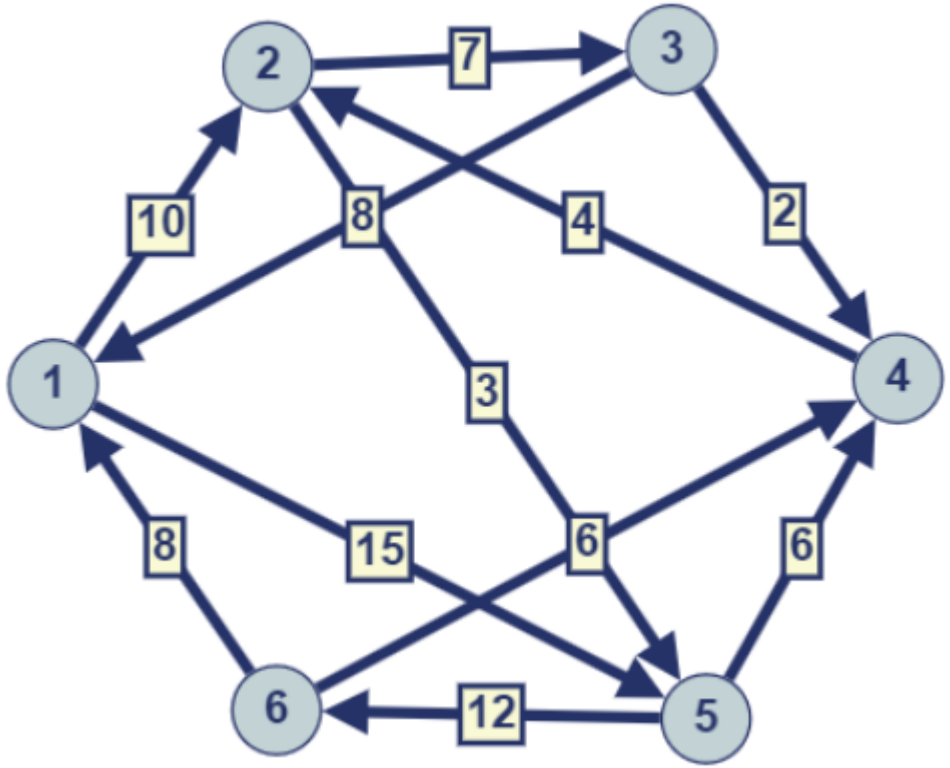
```
B C 5
```

represents edge (B,C) which has weight 5.

Task: input

Sample input:

```
1 2 3 4 5 6
1 2 10
1 5 15
2 3 7
2 5 3
3 1 8
3 4 2
4 2 4
5 4 6
5 6 12
6 1 8
6 4 6
```



Task: output

Output file (text format):

The output file must contain the distance matrix. Entries must be separated by commas.

```
0, 10, 17, 19, 13, 25
15, 0, 7, 9, 3, 15
8, 6, 0, 2, 9, 21
19, 4, 11, 0, 7, 19
20, 10, 17, 6, 0, 12
8, 10, 17, 6, 13, 0
```