

# Problem A. Floyd-Warshall

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Input file: input.txt

Output file: output.txt

Time limit: 1 sec

Memory limit: 8 Mb

## Statement

You are to write a program that finds shortest distances between all pairs of vertices in a directed weighted graph. Graph consists of  $N$  vertices, numbered from 1 to  $N$ , and  $M$  edges.

## Input file format

Input file contains two integers  $N$  and  $M$ , followed by  $M$  triplets of integers  $u_i v_i w_i$  — starting vertex, ending vertex and weight of the edge. There is at most one edge connecting two vertices in every direction. There are no cycles of negative weight.

## Output file format

Output file must contain a matrix of size  $N \times N$ . Element in the  $j$ -th column of  $i$ -th row must be the shortest distance between vertices  $i$  and  $j$ . The distance from the vertex to itself is considered to be 0. If some vertex is not reachable from some other, there must be empty space in corresponding cell of matrix.

## Constraints

$0 \leq N \leq 100$ . All weights are less than 1000 by absolute value.

## Sample tests

No.	Input file (input.txt)	Output file (output.txt)
1	3 3 1 2 5 1 3 10 2 3 2	0 5 7 0 2 0