



(/en/),
v1.1.0

CSD Testing System

(/en/)

Kruskal's algorithm

Cost: 6 | Solved: 56

Memory limit: 256 MBs

Time limit: 1 s

Input: input.txt

Output: output.txt

Task:

You are given an undirected weighted graph with n vertexes.

You have to find and build its minimal spanning tree, using Kruskal's algorithm.

A minimal spanning tree is such subtree of a graph that connects all its vertexes and has the minimal possible weight (the sum of edges). ANY minimal spanning tree includes $n-1$ edge.

A subtree is a set of edges connecting all vertexes with an opportunity to reach any vertex from another with one unique path.

Input:

The first line contains two naturals n ($1 \leq n \leq 100$) – the quantity of the graph's vertexes and m – the quantity of the graph's edges ($1 \leq m \leq n*(n-1)$).

The next m lines contain three numbers each: the first two mean vertexes which have an edge connecting them, the third is the edge's weight.

Output:

The first line should contain the length of the minimal spanning tree.

The next n lines should represent its adjacency matrix.

Example:

Input	Output
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4 8	
1 2 723	
2 1 723	929
2 3 137	0 723 0 0
2 4 470	723 0 137 0
3 2 137	0 137 0 69
3 4 69	0 0 69 0
4 2 470	
4 3 69	