Prim’s algorithm

Cost: 6 | Solved: 68

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 Prim’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 a natural ***n*** (1 ≤ ***n*** ≤100) **–** the quantity of the graph’s vertexes.

The next ***n*** lines represent the graph’s adjacency matrix.

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

7 0 0 13 19 0 0 0 0 0 20 4 15 0 0 13 20 0 0 0 0 0 19 4 0 0 0 0 17 0 15 0 0 0 22 8 0 0 0 0 22 0 10 0 0 0 17 8 10 0	69 0 0 13 19 0 0 0 0 0 0 4 15 0 0 13 0 0 0 0 0 0 19 4 0 0 0 0 0 0 15 0 0 0 0 8 0 0 0 0 0 0 10 0 0 0 0 8 10 0