Generating a Hamiltonian cycle

Cost: 6 | Solved: 50

Memory limit: 256 MBs

Time limit: 1 s

Input: input.txt

Output: output.txt

Task:

You are given a graph with ***n*** vertexes.

You have to find its Hamiltonian cycle.

A Hamiltonian cycle is a closed path of a graph which goes through every vertex only once.

Input:

The first line contains a natural ***n*** (1 ≤ ***n*** ≤ 100) – the quantity of the graph's vertexes, and a natural ***s*** – the number of the initial vertex.

The next ***n*** lines contain the adjacency matrix of the graph.

Output:

A Hamiltonian cycle of the graph. Output it, writing each vertex you visit consecutively.

If it's impossible to output a Hamiltonian cycle, write -1.

*All vertexes should be output on the same line. You should end the cycle with the vertex **s** as well.*

Example:

Input	Output

5 4 0 1 1 0 0 1 0 0 1 0 1 0 0 1 1 0 1 1 0 1 0 0 1 1 0	4 5 3 1 2 4