B. Dijkstra?

Time limit: 1s Memory limit: 64 MB

You are given a weighted undirected graph. The vertices are enumerated from 1 to n. Your task is to find the shortest path between the vertex 1 and the vertex n.

Input

The first line contains two integers n and m ($2 \le n \le 10^5, 0 \le m \le 10^5$), where n is the number of vertices and m is the number of edges. Following m lines contain one edge each in form a_i, b_i and w_i ($1 \le a_i, b_i \le n, 1 \le w_i \le 10^6$), where a_i, b_i are edge endpoints and w_i is the length of the edge.

It is possible that the graph has loops and multiple edges between pair of vertices.

Output

Write the only integer -1 in case of no path. Write the shortest path in opposite case. If there are many solutions, print any of them.

Examples

input
5 6 1 2 2 2 5 5 2 3 4 1 4 1 4 3 3 3 5 1
output
1 4 3 5

input
5 6 1 2 2 2 5 5 2 3 4 1 4 1 4 3 3 3 5 1
output
1 4 3 5