Shortest Path in a Small Town

In a small town, there are n intersections connected by m one-way roads. Each road has a certain travel time associated with it. You are currently at intersection 1 and want to reach intersection n as quickly as possible. Your task is to find the minimum time required to reach intersection n from intersection 1.

Input

The first line contains two integers n and m ($2 \leq n \leq 100,\ 1 \leq m \leq 1000$), representing the number of intersections and roads respectively.

The next m lines each contain three integers u, v, and w ($1 \leq u, v \leq n,\ 1 \leq w \leq 100$), describing a one-way road from intersection u to intersection v with a travel time of w minutes.

Output

Output a single integer representing the minimum time required to reach intersection n from intersection 1. If it's impossible to reach intersection n, output -1.

Sample

Input	Output
4 5 1 2 5 1 3 3 2 3 2 2 4 3 3 4 1	4

Notes

The optimal path is 1 → 3 → 4, with a total travel time of 3 + 1 = 4 minutes.