Problem A: Traveling

Time Limit: 1 Sec Memory Limit: 128 MB Submit: 948 Solved: 183

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Description

Yuki is a playful girl and she enjoys traveling.

One day, she is planning to play in the *Disneyland*. The resort is so large that she cannot find the shortest path between two sights immediately, so she wants to ask for your help.

Specifically, there are n sights and m roads in the *Disneyland*. Each road, with a certain distance, connects two sights. The sights are numbered from 1 to n and the roads are all **bidirectional**, that is the road from sight u to sight v can be passed from sight v to u. You are asked to find the **shortest** distance between sight v and sight v.

Input

The first line contains two integers: n and m ($1 \le n \le 1000$, $1 \le m \le 5000$) — the number of sights and roads in *Disneyland*.

Each of the next m lines contains three space-separated integers: u, v and w $(1 \le u, v \le n, 1 \le w \le 10^5)$, meaning that there is a bidirectional road from sight u to sight v with distance w.

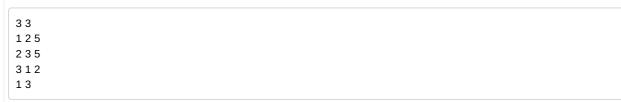
The last line contains two integers: S and T ($1 \le S$, $T \le n$) — the origin and destination.

Output

Print the result — the shortest distance between sight S and sight T.

If there are no paths from sight S to sight T, print -1 instead.

Sample Input



Sample Output

2

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