Shortest Path

Given are 2 vertices, S and T, in a weighted graph. Find the shortest path between S and T.

Input Specifications:

First line contains 2 integers N and M. N is the number of vertices and M is the number of edges.The next M lines contain 3 integers each: U, V and W. This means that there is an edge between vertex u and vertex v with weight w. Then follows 1 more line of input containing two integers S and T.

Output Specifications:

Print the shortest distance between S and T. Print “NO” (quotes for clarification), if there is no path between vertex S and vertex T.

Constraints

1<= N<= 100000

0<= M<= min(5*10^5 , [N(N-1)]/2)

1<= U,V <=N

U !=V

0<W<=10^9

1<=S,T<=N

Example

Input 1

3 3

1 2 10

1 3 5
2 3 2
1 2

Output 1
7

Input 2
2 0
1 2

Output 2
NO