Maiting and Girlfriends

Assignment 3
Data Structures
Algorithms
Due date: xx March, 2020

Problem Statement: Maiting is trapped in a maze called "Vindhya". There are N rooms in the maze. The rooms are connected via M passages. K girlfriends of Maiting ,each in K different rooms, are waiting for him. Maiting wants to reach any one of his K girlfriends as early as possible. But Bayantan, who opposes all forms of love on campus makes Maiting's journey difficult. If at any instant Maiting is at room J, then Bayantan can block any 1 of the passages connecting room J to any other room. Note that Bayantan can not block a passage while Maiting is in the passage. Maiting can start his journey from any room. Find the minimum time Maiting takes to reach any of his K girlfriends if he starts at room number 0.

Input
The first line of input contains 3 integers- N , M , K. Each of the next M lines contains 3 integers u , v, t indicating that there is a passage from room u to v with t time required to cover it. It is followed by a line containing K integers : the room numbers of the girlfriends.
Output
Output a single integer denoting the minimum time Maiting takes to reach any of his girlfriends if he starts from room 0. If he can't reach any of his girlfriend on starting from room 0, print -1 .

Constraints
$1 \leq N \leq 100000$
$1 \leq M \leq 200000$
$1 \leq K \leq N$
$0 \leq u \leq n - 1$
$0 \leq v \leq n - 1$
$0 \leq t \leq 10^9$

Time Limit: 2 sec
Memory Limit: 256 MB

Sample Test Case

Input	Output
5 7 2	14
0 2 4	
0 3 3	
3 2 2	
2 1 10	
0 1 100	
0 4 7	
3 4 9	
1 3	