Description | Hints | Submissions | Discussions | Notes

Shortest Path II

Difficulty	Time Limit	Memory	Score
[illegible]	3 sec	256000KB	100

80/80 XP | 30/30

Description

There are n cities and m roads between them. Your task is to process q queries where you have to determine the length of the shortest route between two given cities.

Input Format

The first input line has three integers n, m and q: the number of cities, roads, and queries.

Then, there are m lines describing the roads. Each line has three integers a, b and c: there is a road between cities a and b whose length is c. All roads are two-way roads.

Finally, there are q lines describing the queries. Each line has two integers a and b: determine the length of the shortest route between cities a and b.

Output Format

Print the length of the shortest route for each query. If there is no route, print -1 instead.

Constraints

$1 \le n \le 500$

$1 \le m \le n^2$

$1 \le q \le 10^5$

$1 \le a, b \le n$

$1 \le c \le 10^9$

Sample Input 1 Copy

```
4 3 5
1 2 5
1 3 9
2 3 3
```

C++14 | 00:00:00 | 12 px

```
#include<bits/stdc++.h>
using namespace std;
#define endl "\n"
using lli=long long int;
lli dis[501][501];


int main(){
    ios_base::sync_with_stdio(0);
    cin.tie(0);
    cout.tie(0);
    int n,m,q;
    cin>>n>>m>>q;
    for(int i=1;i<=n;i++){
        for(int j=1;j<=n;j++){
            if(i!=j)dis[i][j]=1e18;
        }
    }
    for(int i=1;i<=m;i++){
        lli a,b,c;
        cin>>a>>b>>c;
        dis[a][b]=min(c,dis[a][b]);
        dis[b][a]=min(c,dis[b][a]);
    }

    for(int k=1;k<=n;k++){
        for(int i=1;i<=n;i++){
            for(int j=1;j<=n;j++){
```

Sample Tests | Manual Tests

Test Case 1 | Test Case 2

Console | Run on Sample