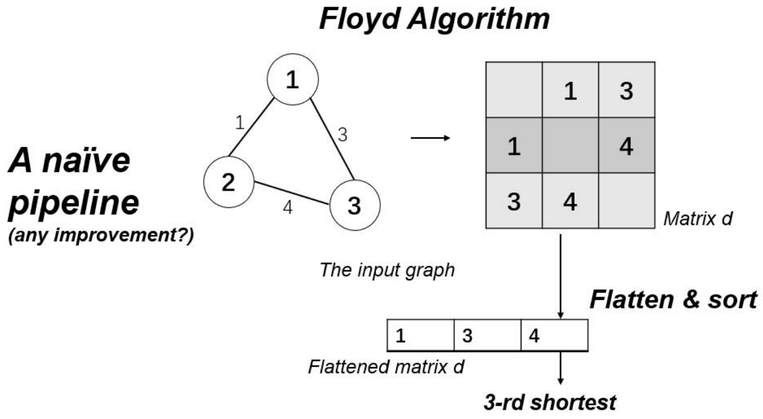
APSP k-shortest path

Description

In lectures, by floyd-warshall algorithm, we can compute APSP(all pairs shortest paths).

In this task, you are required to find the length of k-th shortest path among all pairs of vertices,given an undirected weighted graph.



In other words, assume d is the matrix of shortest path. the length of k-shortest path is the k-th element in the sorted array consisting of all d[i][j], where 1<=i<j<=n and n is the quantity of vertices.

Update 11/14 1:59: Fix the example of directed graph.

Input

1. The first line: three integers n,m,k (2<=n<=2*10^5, n - 1 <= m <= 2*10^5, 1<=k<=400), indicating n vertices, m edges and k-shortest
2. For next m lines: three integers x, y, w (1<=x, y <=n, 1<=w<=10^9, x!=y), indicating an edge between vertices x and y with weight w.

All inputs are legal. It is guaranteed that the given graph is connected, no self-loops and multiple edges.

Output

An integer, the length of k-th shortest path (path from vertex to itself not counted, paths from i to j and j to i are counted as one)

Sample Input 1

```
5 10 7
1 2 35
1 3 43
4 5 79
5 3 61
5 2 97
2 4 54
1 4 52
1 5 38
3 2 86
3 4 11
```

Sample Output 1

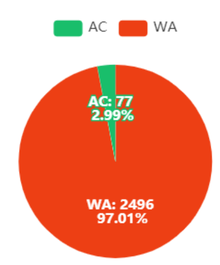
```
61
```

Problems
Announcements
Submissions
Rankings
View Contest

Information

ID	302
Time Limit	1000MS
Memory Limit	256MB
IO Mode	Standard IO
Created By	admin
Level	Mid
Score	100
Tags	Show

Statistic Details



Language: C++ Theme: Solarized Light

You have solved the problem

Submit