
Jianzhi's Runway Show

Input file: standard input
Output file: standard output
Time limit: 1 second
Memory limit: 256 megabytes

Jianzhi has gotten into fashion recently, and would like to show off. As such, he has organised a runway fashion show for himself. Instead of walking on a normal runway on stage, he decides to be one with the community, and use the town roads as his runway instead!

However, there is one problem. The town roads are often dirty, and Jianzhi does not want to get his beautiful clothes soiled. Jianzhi's town can be described as a graph, with N intersections and E roads, with the i th bidirectional roads connecting intersections A_i and B_i ($1 \leq A_i \neq B_i \leq N$) and having a dirtiness level D_i ($1 \leq D_i \leq 10^9$). No two roads will connect the same two intersections. He wants to plan a path from his home, conveniently located at intersection 1, to his performance venue, located at intersection N , to use for his community runway show. There is guaranteed to be a valid path between these two intersections.

Jianzhi defines the *filthiness* of his runway path as the K th maximum dirtiness level of the roads within that path. Help Jianzhi find the lowest possible *filthiness* of a runway path. If there exists a possible runway path that consists of less than K roads, Jianzhi would love to choose that path! In that case, output -1 as your answer.

Input

The first line of input will contain three integers, N , E and K . The next E lines of input will contain three integers each, with the i th line containing A_i , B_i and D_i .

Output

The output should contain one line with one integer, the minimum possible *filthiness* of Jianzhi's runway path.

Examples

standard input	standard output
4 3 2 1 2 5 2 4 3 1 3 7	3
5 6 1 1 2 3 2 4 7 1 3 4 3 5 8 4 5 6 3 4 5	6
3 3 2 1 3 1 1 2 4 2 3 2	-1

Note

Your program will be tested on 8 sets of input instances as follows:

Subtask 1 (points: 9)

$2 \leq N \leq 9, 1 \leq E \leq 50, 1 \leq K \leq N$

Subtask 2 (points: 11)

$2 \leq N \leq 700, 1 \leq E \leq 1500, K = 2$

Subtask 3 (points: 13)

$2 \leq N \leq 700, 1 \leq E \leq 1500, 1 \leq K \leq N$

Subtask 4 (points: 14)

$2 \leq N \leq 100000, E = N - 1, 1 \leq K \leq N$, the graph is a tree.

Subtask 5 (points: 16)

$2 \leq N \leq 100000, 1 \leq E \leq 300000, K = 1$

Subtask 6 (points: 17)

$2 \leq N \leq 100000, 1 \leq E \leq 300000, 1 \leq K \leq N, 1 \leq D_i \leq 2$

Subtask 7 (points: 20)

$2 \leq N \leq 100000, 1 \leq E \leq 300000, 1 \leq K \leq N$

Subtask 8 (points: 0)

Refer to sample input and output.