Problem 11. K-th Graph Cut

Time Limit : 3 second
Memory Limit : 512 megabytes

Description

Ji Song likes studying graph theory.

The first, he studied about minimum spanning tree.

And next, he studied about shortest path.

And now, he is studying about cutting problem of the graph.

An directed, weighted graph (it is not required to be connected) and the source and destination are given.

Needless to say, source and destination are one of nodes of the graph.

Then you can must remove some edges from the graph so that there is no path from source to destination on the remained graph.

In that time, total sum of all removed edges is called "**cut**".

Ji Song already knows the result that the smallest cut is equal to the maximum flow from source to destination on the original graph.

And now he want to know the K-th smallest cut of the graph.

He can calculate K-th minimum spanning tree and K-th shortest path, but he can't calculate K-th smallest cut.

Please help him.

Input

The first line contains 5 integers $N\ M\ K\ S\ T$.

N $(1 \le N \le 100)$ – indicating the number of nodes of the graph,

M $(1 \le M \le 1000)$ – indicating the number of edges of the graph,

K $(1 \le K \le 100)$,

S $(0 \le S < N)$ – indicating the index of source,

T $(0 \leq T < N)$ – indicating the index of destination. $(S \neq T)$

The next M lines contains three integers a b c – indicating the edge between a and b, and its weight is c. $(0 \leq a, b < N,\ a \neq b)$

To make problem easy, for every i $(0 \leq i < N,\ i \neq S,\ i \neq T)$, there is at least one edge between i and T.

Output

Print the answer of the problem.

If there is no K-th smallest cut, print -1.

Sample Input

```
3 3 3 0 2
0 1 1
0 2 3
1 2 2
```

Sample Output

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6
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