Complete the graph

Submit solution

All submissions
Best submissions

Points: 100 (partial)
Time limit: 4.0s
Memory limit: 256M

Author:
admin

Problem type

Allowed languages
C, C++

Problem Statement

Tanay the Coder has drawn an undirected graph of *n* vertices numbered from 0 to *n - 1* and *m* edges between them.
Each edge of the graph is weighted, each weight is a **positive integer**.

The next day, Tanay the Coder realized that some of the weights were erased and the remaining modified! So his task is to reassign
positive integer weight to each of the edges which weights were erased, so that the length of the shortest path between vertices *s* and *t* in the resulting graph is exactly *L*.
Can you help him determine if this task is possible?

Input

- The first line contains five integers *n*, *m*, *L*, *s*, *t* , The number of vertices, number of edges, the desired length of shortest path, starting vertex and ending vertex respectively.
  - $2 \leq n \leq 300000$
  - $1 \leq m \leq 400000$
  - $1 \leq L \leq 1 * 10^{15}$
  - $0 \leq s, t \leq n - 1$
  - $s \neq t$
- Then, *m* lines describing the edges of the graph follow. *i*-th of them contains three integers, u_i, v_i, w_i, where u_i and v_i denote the endpoints of the edge and w_i denotes its weight.

- It is guaranteed that there is at most one edge between any pair of vertices.

Output

Print whether the task is possible or not. Print "YES" or "NO".

Sample Input

```
5 5 13 0 4
0 1 5
2 1 2
3 2 3
1 4 0
4 3 4
```

Copy

Sample Output

```
YES
```

Copy

Sample Input

```
2 1 123456789 0 1
0 1 0
```

Copy

Sample Output

```
YES
```

Copy

Sample Input

```
2 1 999999999 1 0
0 1 1000000000
```

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```
NO
```

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Clarifications

Request clarification

No clarifications have been made at this time.