Minimum Distance Tree

Input file:	`standard input`
Output file:	`standard output`
Time limit:	2 seconds
Memory limit:	1024 megabytes

You are given a connected, undirected, weighted simple graph G with N vertices numbered from 1 to N and M edges. The i-th edge connects vertices u_i and v_i with weight w_i.

Determine whether there exists a weighted tree T with N vertices also numbered from 1 to N such that, for every pair of vertices u and v, the shortest path length between u and v in G is equal to the shortest path length between u and v in T.

Input

The input is given in the following format:

N M
u_1 v_1 w_1
u_2 v_2 w_2
$\vdots$
u_M v_M w_M

- All input values are integers.
- $2 \leq N \leq 5 \times 10^5$.
- $N - 1 \leq M \leq 5 \times 10^5$.
- $1 \leq u_i, v_i \leq N$.
- $1 \leq w_i \leq 10^9$.
- The given graph is simple and connected.

Output

If such a tree T exists, output:

Yes

Otherwise, output:

No

Examples

standard input	standard output
3 3 1 2 3 2 3 4 3 1 100	Yes
3 3 1 2 3 2 3 4 3 1 2	No

Note

In the first example, a tree T with 3 vertices, in which vertex 1 is connected to vertex 2 with weight 3, and vertex 2 is connected to vertex 3 with weight 4, satisfies the condition.

In the second example, no such tree T exists. For example, a tree where vertex 1 is connected to vertex 2 with weight 2, and vertex 1 is connected to vertex 3 with weight 2 does not satisfy the condition, because the shortest path between 1 and 2 in G is 3, while in this tree it is 2, which is not equal.