Problem J: Path Queries

Time limit: 1s; Memory limit: 512 MB

In graph theory, a tree is a connected undirected graph which does not have any cycles. A tree containing n vertices has exactly n - 1 edges. For every pair of vertices (u; v) in the tree, there is exactly one simple path between u and v. A simple path is a path which passes through each vertex at most once.

You are given a tree containing n vertices. These vertices are numbered from 1 to n, inclusive. You are also given q queries. In each query, you are given 3 distinct integers x; y and z. You need to determine if there exists a simple path starting at vertex x, passing through vertex y and ending at vertex z

Input
- The first line contains two integers n and q safety ($3 \leq n \leq 10^5$, $1 \leq q \leq 10^5$).
- In the next n - 1 lines, each contains two integers u and v safety ($1 \leq u, v \leq n$) indicating that two vertices u and v is connected by an edge.
- In the last q lines, each contains three distinct integers x, y, z ($1 \leq x, y, z \leq n$) describing a query.
- It is guaranteed that the given edges form a tree.

Output
- For each query, print **YES** if there exists a simple path satisfying the above conditons, otherwise print **NO**.

Sample

Input	Output
5 3	YES
1 2	NO
2 3	YES
2 4	
1 5	
1 2 3	
2 3 4	
4 2 1	