# Problem D. Connect the Tree

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|---|---|
| Input file | stdin |
| Output file | stdout |

## Task

You are given a tree with $N$ nodes. You should process $M$ queries of two types:

1 $x$ $y$: $(x, y)$ is an edge from the initial tree. If the edge $(x, y)$ is still in the tree, delete it, else add it back.

2 $x$ $y$: this output is either 0 or 1. Consider that total is the sum of all the previous type 2 queries. Then compute $x_{new} = (x + total) \bmod N + 1$, $y_{new} = (y + total) \bmod N + 1$.

Output 1 if you can reach $y_{new}$ from $x_{new}$, or 0 if you cannot.

## Input Data

The first line of the input will contain $N, M$.

On the next $N - 1$ lines you will find the description of the tree. On each line there will be a pair $(x, y)$, representing that there will be an edge between $x$ and $y$.

On the next $M$ lines you will find a triplet $(t, x, y)$ representing a query, $t$ is 1 or 2.

## Output Data

The output will contain as many lines as there are type 2 queries in the input. The $i^{th}$ line will contain the answer for the $i^{th}$ type 2 query.

## Constraints and clarifications

- $2 \leq N, M \leq 2.5 \cdot 10^5$

## Examples

| Input file | Output file |
|---|---|
| 5 3<br>1 4<br>4 2<br>5 2<br>3 5<br>2 1 3<br>1 2 5<br>2 1 3 | 1<br>1 |