Query on Tree

You are given a tree with N vertices (labeled from 1 to N), each node in the tree has a value (V) associated with it and the tree is rooted at node 1. You need to perform two types of queries on the tree.

- First type: 0 x v, that is update value of node numbered “x” to min(value(x), v).
- Second type: 1 x, return the minimum value of any node values present in the subtree of node “x”.

Constraints:

1 <= N <= 5*10^5
-10^9 <= V <= 10^9
1 <= Q <= 10^5 (Number of queries)
Time = 2 sec

Input:

First line contains N, Q
Next N-1 pair of numbers u and v, denoting that there is an edge between node u and v
Next N numbers follow i'th number denotes the value associated with node i.

Output:

For each query of type 1, output the corresponding answer.

Sample Input:

```
9 4
1 2
2 4
2 5
5 8
5 9
2 6
1 3
3 7
4 6 3 4 3 7 1 6 7
1 1
1 2
0 7 -1
1 1
```

Sample Output:

```
1
3
-1
```