



# Heavy Light White Falcon ★

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Our lazy white falcon finally decided to learn heavy-light decomposition. Her teacher gave an assignment for her to practice this new technique. Please help her by solving this problem.

You are given a tree with  $N$  nodes and each node's value is initially  $0$ . The problem asks you to operate the following two types of queries:

- "1 u x" assign  $x$  to the value of the node  $u$ .
- "2 u v" print the maximum value of the nodes on the unique path between  $u$  and  $v$ .

## Input Format

First line consists of two integers seperated by a space:  $N$  and  $Q$ .

Following  $N - 1$  lines consisting of two integers denotes the undirectional edges of the tree.

Following  $Q$  lines consist of the queries you are asked to operate.

## Constraints

$$1 \leq N, Q, x \leq 50000$$

It is guaranteed that input denotes a connected tree with  $N$  nodes. Nodes are enumerated with 0-based indexing.

## Output Format

For each second type of query print single integer in a single line, denoting the asked maximum value.

## Sample Input

```
3 3
0 1
1 2
1 0 1
1 1 2
2 0 2
```

## Sample Output

```
2
```

## Explanation

After the first two updates value of the  $0$ th node is  $1$  and  $1$ st node is  $2$ . That is why maxiumum value on the path between  $0$  and  $2$  is  $\max(1, 2) = 2$ .

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Difficulty **Hard**

Max Score 100

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