

3009

Prepare > Data Structures > Advanced > Lazy White Falcon

Lazy White Falcon ★

1300.34 more points to get your next star!

Rank: 222788 | Points: 899.66/2200



Problem Submissions Leaderboard Discussions

White Falcon just solved the data structure problem below using heavy-light decomposition. Can you help her find a new solution that doesn't require implementing any fancy techniques?

There are 2 types of query operations that can be performed on a tree:

1. 1 u x: Assign \boldsymbol{x} as the value of node \boldsymbol{u} .

2. 2 u v: Print the sum of the node values in the unique path from node u to node v.

Given a tree with $m{N}$ nodes where each node's value is initially $m{0}$, execute $m{Q}$ queries.

Input Format

The first line contains ${f 2}$ space-separated integers, ${f N}$ and ${f Q}$, respectively.

The N-1 subsequent lines each contain 2 space-separated integers describing an undirected edge in the tree. Each of the Q subsequent lines contains a query you must execute.

Constraints

- $1 \le N, Q \le 10^5$
- $1 \le x \le 1000$
- ullet It is guaranteed that the input describes a connected tree with $oldsymbol{N}$ nodes.
- Nodes are enumerated with **0**-based indexing.

Output Format

For each type-2 query, print its integer result on a new line.

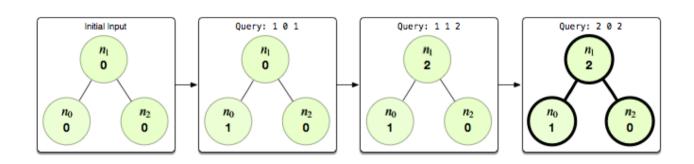
Sample Input

- 3 3
- 0 1 1 2
- 1 0 1
- 1 1 2
- 2 0 2

Sample Output

3

Explanation



After the first 2 queries, the value of node $n_0 = 1$ and the value of node $n_1 = 2$. The third query requires us to print the sum of the node values in the path from nodes 0 to 2, which is 1 + 2 + 0 = 3. Thus, we print 3 on a new line.

Author ikbalkazar

Difficulty Hard

Max Score 100

NEED HELP?

Submitted By

View discussions

View top submissions

RATE THIS CHALLENGE



MORE DETAILS

Suggest Edits

F 😈 F