BUET INTER-UNIVERSITY PROGRAMMING CONTEST

PROBLEM A – ANSWERING QUERIES ON A TREE

Problem

You are given a tree with **N** nodes. The tree nodes are numbered from **1** to **N** and have colors $C_1, C_2 \ldots C_N$ initially. You have to handle **M** instructions on the tree of the following forms:

- **0 u c**: Change the color of node **u** to **c**.
- **1 u v**: Output the maximum number of times a color appeared on the unique path from node **u** to node **v**.

Input

The first line of input contains **T** ($1 \le T \le 10$) which is the number of test cases. The first line of each test case contains two integers **N** and **M** ($1 \le N, M \le 10^5$). Next line contains **N** space separated integers $C_1, C_2, \ldots C_N$ ($1 \le C_i \le 10$) denoting the initial colors of the nodes. Each of the next **N-1** lines contain two integers **a** and **b** ($1 \le a, b \le N$ and $a \ne b$) meaning that there is an edge between node **a** and node **b**. Each of the next **M** lines contains an instruction of one of the two forms described above. For all the instructions: $1 \le u, v \le N \; and \; 1 \le c \le 10$.

Output

For each of the second type instruction output the answer in one line.

Sample Input	Output for Sample Input
2 5 6 3 2 1 2 3 1 2 2 3 2 4 1 5 1 3 5 0 1 1 0 2 1 1 3 5 0 2 4 1 2 4 2 1 5 6 1 2 1 2 2	2 3 1 1

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