You are given a rooted tree consisting of \( n \) nodes. The nodes are numbered 1, 2, \ldots, \( n \), and node 1 is the root. Each node has a color.

Your task is to determine for each node the number of distinct colors in the subtree of the node.

**Input**
The first input line contains an integer \( n \): the number of nodes. The nodes are numbered 1, 2, \ldots, \( n \).

The next line consists of \( n \) integers \( c_1, c_2, \ldots, c_n \): the color of each node.

Then there are \( n - 1 \) lines describing the edges. Each line contains two integers \( a \) and \( b \): there is an edge between nodes \( a \) and \( b \).

**Output**
Print \( n \) integers: for each node 1, 2, \ldots, \( n \), the number of distinct colors.

**Constraints**
- \( 1 \leq n \leq 2 \cdot 10^5 \)
- \( 1 \leq a, b \leq n \)
- \( 1 \leq c_i \leq 10^9 \)

<table>
<thead>
<tr>
<th>Sample Input 1</th>
<th>Sample Output 1</th>
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</table>
| 5
| 2 3 2 2 1
| 1 2
| 1 3
| 3 4
| 3 5 | 3 1 2 1 1 |