2246. Longest Path With Different Adjacent Characters

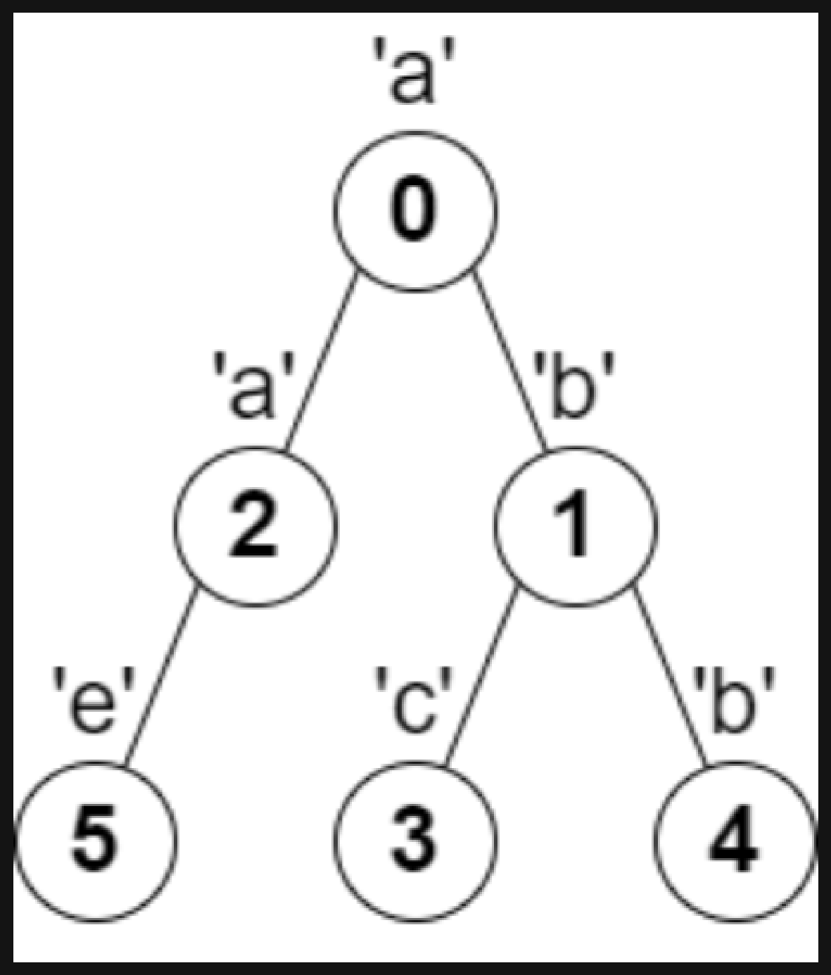
Description

You are given a **tree** (i.e. a connected, undirected graph that has no cycles) **rooted** at node `0` consisting of `n` nodes numbered from `0` to `n - 1`. The tree is represented by a **0-indexed** array `parent` of size `n`, where `parent[i]` is the parent of node `i`. Since node `0` is the root, `parent[0] == -1`.

You are also given a string `s` of length `n`, where `s[i]` is the character assigned to node `i`.

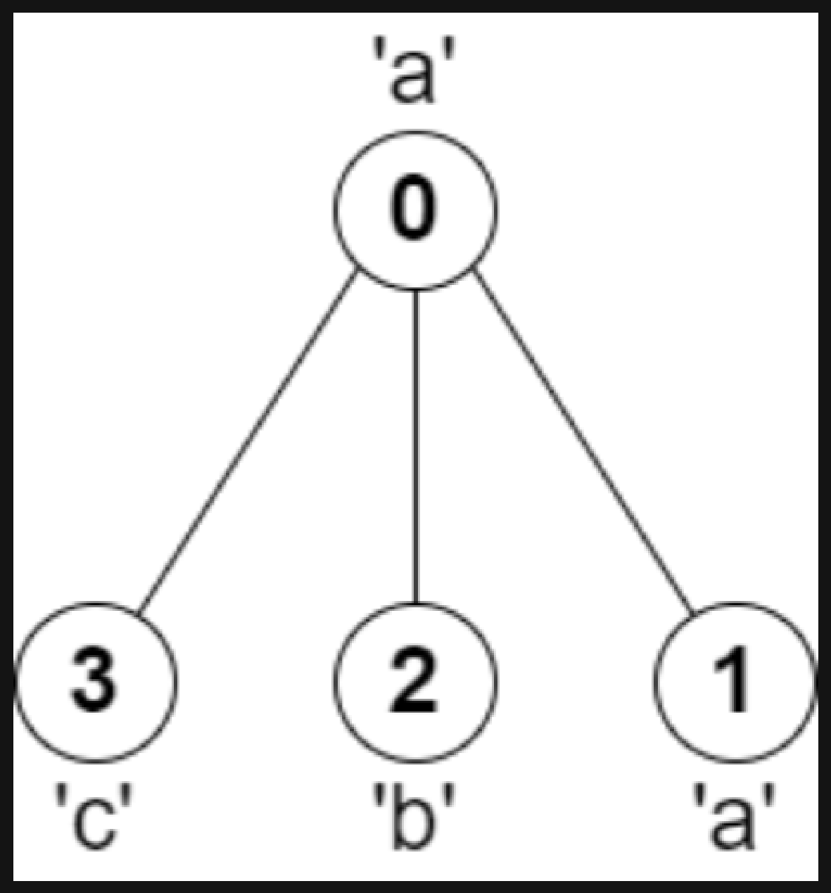
Return *the length of the **longest path** in the tree such that no pair of **adjacent** nodes on the path have the same character assigned to them.*

Example 1:



```
Input: parent = [-1,0,0,1,1,2], s = "abacbe"
Output: 3
Explanation: The longest path where each two adjacent nodes have different characters in the tree is the path: 0 -> 1 -> 3. The length of this path is 3, so 3 is returned.
It can be proven that there is no longer path that satisfies the conditions.
```

Example 2:



```
Input: parent = [-1,0,0,0], s = "aabc"
Output: 3
Explanation: The longest path where each two adjacent nodes have different characters is the path: 2 -> 0 -> 3. The length of this path is 3, so 3 is returned.
```

Constraints:

- `n == parent.length == s.length`
- `1 <= n <= 10`^{5}
- `0 <= parent[i] <= n - 1` for all `i >= 1`
- `parent[0] == -1`
- `parent` represents a valid tree.
- `s` consists of only lowercase English letters.