Problem 1578: Minimum Time to Make Rope Colorful

Problem Information

Difficulty: Medium
Acceptance Rate: 65.26%
Paid Only: No
Tags: Array, String, Dynamic Programming, Greedy

Problem Description

Alice has `n` balloons arranged on a rope. You are given a **0-indexed** string `colors` where `colors[i]` is the color of the `ith` balloon.

Alice wants the rope to be **colorful**. She does not want **two consecutive balloons** to be of the same color, so she asks Bob for help. Bob can remove some balloons from the rope to make it **colorful**. You are given a **0-indexed** integer array `neededTime` where `neededTime[i]` is the time (in seconds) that Bob needs to remove the `ith` balloon from the rope.

Return _the**minimum time** Bob needs to make the rope **colorful**_.

Example 1:

Input: colors = "abaac", neededTime = [1,2,3,4,5] **Output:** 3 **Explanation:** In the above image, 'a' is blue, 'b' is red, and 'c' is green. Bob can remove the blue balloon at index 2. This takes 3 seconds. There are no longer two consecutive balloons of the same color. Total time = 3.

Example 2:

Input: colors = "abc", neededTime = [1,2,3] **Output:** 0 **Explanation:** The rope is already colorful. Bob does not need to remove any balloons from the rope.

Example 3:

Input: colors = "aabaa", neededTime = [1,2,3,4,1] **Output:** 2 **Explanation:** Bob will remove the balloons at indices 0 and 4. Each balloons takes 1 second to remove. There are no longer two consecutive balloons of the same color. Total time = 1 + 1 = 2.

Constraints:

* `n == colors.length == neededTime.length` * `1 <= n <= 105` * `1 <= neededTime[i] <= 104` * `colors` contains only lowercase English letters.

Code Snippets

C++:

```
class Solution {
public:
int minCost(string colors, vector<int>& neededTime) {

}
};
```

Java:

```
class Solution {
public int minCost(String colors, int[] neededTime) {

}
}
```

Python3:

```
class Solution:
def minCost(self, colors: str, neededTime: List[int]) -> int:
```