Problem 2460: Apply Operations to an Array

Problem Information

Difficulty: Easy
Acceptance Rate: 74.74%
Paid Only: No
Tags: Array, Two Pointers, Simulation

Problem Description

You are given a **0-indexed** array `nums` of size `n` consisting of **non- negative** integers.

You need to apply `n - 1` operations to this array where, in the `ith` operation (**0-indexed**), you will apply the following on the `ith` element of `nums`:

* If `nums[i] == nums[i + 1]`, then multiply `nums[i]` by `2` and set `nums[i + 1]` to `0`. Otherwise, you skip this operation.

After performing **all** the operations, **shift** all the `0`'s to the **end** of the array.

* For example, the array `[1,0,2,0,0,1]` after shifting all its `0`'s to the end, is `[1,2,1,0,0,0]`.

Return _the resulting array_.

Note that the operations are applied **sequentially** , not all at once.

Example 1:

Input: nums = [1,2,2,1,1,0] **Output:** [1,4,2,0,0,0] **Explanation:** We do the following operations: - i = 0: nums[0] and nums[1] are not equal, so we skip this operation. - i = 1: nums[1] and nums[2] are equal, we multiply nums[1] by 2 and change nums[2] to 0. The array becomes [1,**_4_** ,**_0_** ,1,1,0]. - i = 2: nums[2] and nums[3] are not equal, so we skip this operation. - i = 3: nums[3] and nums[4] are equal, we multiply nums[3] by 2 and change nums[4] to 0. The array becomes [1,4,0,**_2_** ,**_0_** ,0]. - i = 4: nums[4] and nums[5] are equal, we multiply nums[4] by 2 and change nums[5] to 0. The array becomes [1,4,0,2,**_0_**

,**_0_**]. After that, we shift the 0's to the end, which gives the array [1,4,2,0,0,0].

Example 2:

Input: nums = [0,1] **Output:** [1,0] **Explanation:** No operation can be applied, we just shift the 0 to the end.

Constraints:

* `2 <= nums.length <= 2000` * `0 <= nums[i] <= 1000`

Code Snippets

C++:

```
class Solution {
public:
vector<int> applyOperations(vector<int>& nums) {

}
};
```

Java:

```
class Solution {
public int[] applyOperations(int[] nums) {

}
}
```

Python3:

```
class Solution:
def applyOperations(self, nums: List[int]) -> List[int]:
```