1071 Binary Prefix Divisible By 5 (link)

Description

You are given a binary array `nums` (**0-indexed**).

We define x_i as the number whose binary representation is the subarray `nums[0..i]` (from most-significant-bit to least-significant-bit).

- For example, if `nums = [1,0,1]`, then $x_0 = 1$, $x_1 = 2$, and $x_2 = 5$.

Return *an array of booleans* `answer` *where* `answer[i]` *is* `true` *if* x_i *is divisible by* `5`.

Example 1:

```
Input: nums = [0,1,1]
Output: [true,false,false]
Explanation: The input numbers in binary are 0, 01, 011; which are 0, 1, and 3 in base
Only the first number is divisible by 5, so answer[0] is true.
```

Example 2:

```
Input: nums = [1,1,1]
Output: [false,false,false]
```

Constraints:

- `1 <= nums.length <= 10^5`
- `nums[i]` is either `0` or `1`.

(scroll down for solution)

Solution

Language: cpp

Status: Accepted

```cpp
#include <vector>
using namespace std;

class Solution {
public:
    vector<bool> prefixesDivBy5(vector<int>& nums) {
        vector<bool> result;
        int current = 0;

        for (int num : nums) {

            current = (current * 2 + num) % 5;

            result.push_back(current == 0);
        }

        return result;
    }
};
```