

238. Product of Array Except Self

Given an integer array `nums`, return *an array answer such that `answer[i]` is equal to the product of all the elements of `nums` except `nums[i]`*.

The product of any prefix or suffix of `nums` is **guaranteed** to fit in a **32-bit** integer.

You must write an algorithm that runs in $O(n)$ time and without using the division operation.

Example 1:

Input: `nums = [1,2,3,4]`

Output: `[24,12,8,6]`

Example 2:

Input: `nums = [-1,1,0,-3,3]`

Output: `[0,0,9,0,0]`

Constraints:

- $2 \leq \text{nums.length} \leq 10^5$
- $-30 \leq \text{nums}[i] \leq 30$
- The product of any prefix or suffix of `nums` is **guaranteed** to fit in a **32-bit** integer.

Follow up: Can you solve the problem in $O(1)$ extra space complexity? (The output array **does not** count as extra space for space complexity analysis.)