## 6105. Maximum XOR After Operations

My Submissions (/contest/biweekly-contest-81/problems/maximum-xor-after-operations/submissions/) Back to Contest (/contest/biweekly-contest-81/) You are given a  $\mathbf{0}$ -indexed integer array nums. In one operation, select  $\mathbf{any}$  non-negative integer  $\mathbf{x}$  and an index  $\mathbf{i}$ , then User Accepted: 0  $\mbox{\bf update } \mbox{\bf nums} \mbox{\bf [i] to be equal to } \mbox{\bf nums} \mbox{\bf [i] AND } \mbox{\bf (nums} \mbox{\bf [i] XOR } \mbox{\bf x)} \; .$ User Tried: 0 Note that AND is the bitwise AND operation and XOR is the bitwise XOR operation. Return the maximum possible bitwise XOR of all elements of nums after applying the operation any number of times. Total Accepted: 0 **Total Submissions:** 0 Example 1: Difficulty: (Medium)

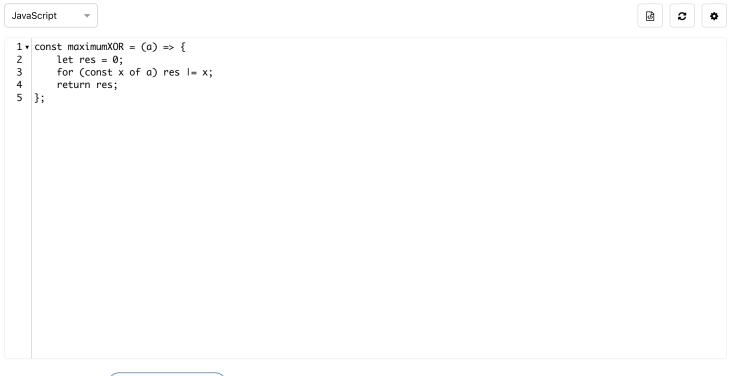
```
Input: nums = [3,2,4,6]
Output: 7
Explanation: Apply the operation with x = 4 and i = 3, num[3] = 6 AND (6 XOR 4) = 6 AND 2 = 2.
Now, nums = [3, 2, 4, 2] and the bitwise XOR of all the elements = 3 XOR 2 XOR 4 XOR 2 = 7.
It can be shown that 7 is the maximum possible bitwise XOR.
Note that other operations may be used to achieve a bitwise XOR of 7.
```

## Example 2:

```
Input: nums = [1,2,3,9,2]
Output: 11
Explanation: Apply the operation zero times.
The bitwise XOR of all the elements = 1 XOR 2 XOR 3 XOR 9 XOR 2 = 11.
It can be shown that 11 is the maximum possible bitwise XOR.
```

## **Constraints:**

- 1 <= nums.length <= 10<sup>5</sup>
- $0 \le nums[i] \le 10^8$



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