Topics to discuss

Bit manipulation Problem - 9

Missing Number

268. Missing Number

nums = [3, 0, 1, ?]
i° 0 1 2 3

nums = [3, 0, 1] → Given
n = 3
[0, n] → range
[0, 1, 2, 3] → array ans

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Given an array `nums` containing `n` distinct numbers in the range `[0, n]`, return *the only number in the range that is missing from the array.*

Example 1:

> **Input:** nums = [3,0,1]
> **Output:** 2
> **Explanation:** n = 3 since there are 3 numbers, so all numbers are in the range [0,3]. 2 is the missing number in the range since it does not appear in nums.

Example 2:

> **Input:** nums = [0,1]
> **Output:** 2
> **Explanation:** n = 2 since there are 2 numbers, so all numbers are in the range [0,2]. 2 is the missing number in the range since it does not appear in nums.

Example 3:

> **Input:** nums = [9,6,4,2,3,5,7,0,1]
> **Output:** 8
> **Explanation:** n = 9 since there are 9 numbers, so all numbers are in the range [0,9]. 8 is the missing number in the range since it does not appear in nums.

```
class solution {
    public int missing number (int[] nums){
        int n = nums.length;
        int result = n;
        for (int i = 0; i<n; i++) {
            result ^= (i ^ nums[i]);
        }
        return result;
    }
}
```

nums = [3, 0, 1]
0 1 2

n = 3

res = 3

for ① i = 0

res = 3 ^ 0 ^ 3
= 0

for ② i = 1

res = 0 ^ 1 ^ 0
= 1

for ③ i = 2

res = 1 ^ 2 ^ 1
= 2

for ④ i = 3
i < n
3 < 3 X stop.

Follow Now

Start Practicing

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