

LEETCODE - 136. Single Number,

① Non-empty array — nums.

every element appears twice except one.  
find that one element.

class Solution {

public :

int singleNumber(vector<int>(1) nums) {

int ans = 0;

for( int val : nums) {

ans = ans ^ val;

}

return ans;

}

used to. (so that changes are  
→ "pass by reference" reflected in  
reference of array)

Explanation (136)

Ques. Given an array of size n.

Explain how to find unique element in array.

XOR

eg:

4	1	2	1	2
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unique?

use Bitwise XOR

we know,  $0 \wedge 0 = 0$  &  $1 \wedge 0 = 1$

$1 \wedge 1 = 0$ ,  $0 \wedge 1 = 0$ ,  $0 \wedge 1 = 1$ .

so,  $n \wedge n = 0$ .  $\star$

Now take

we take XOR of whole array

i.e.  $4 \wedge 1 \wedge 2 \wedge 1 \wedge 2$ .

$\Rightarrow 4 \wedge 0$

$(100) \wedge 0000 = 1000 = (4) \rightarrow \text{unique}$

$n \wedge 0 = n$   $\star$