136. Single Number

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Given a **non-empty** array of integers `nums`, every element appears *twice* except for one. Find that single one.

You must implement a solution with a linear runtime complexity and use only constant extra space.

Example 1:

```
Input: nums = [2,2,1]
Output: 1
```

1 2 1 2 4

XOR

1 ^ 1 = 0

2 ^ 2 = 0

x ^ x = 0

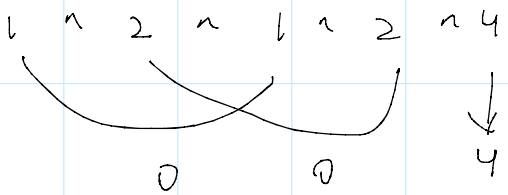
0 ^ 1 = 1

1 ^ 0 = 0

0 ^ x = x

1) Traverse the array

2) Do XOR



0 ^ 0 ^ 4 = 4

T.C = O(N) S.C → O(1)

```java
class Solution {
    public int singleNumber(int[] nums) {
        int ans = 0;
        for(int i = 0; i < nums.length; i++){
            ans ^= nums[i];
        }
        return ans;
    }
}
```