

540. Single Element in a Sorted Array

You are given a sorted array consisting of only integers where every element appears exactly twice, except for one element which appears exactly once. Find this single element that appears only once.

Follow up: Your solution should run in $O(\log n)$ time and $O(1)$ space.

Example 1:

Input: nums = [1,1,2,3,3,4,4,8,8]

Output: 2

Example 2:

Input: nums = [3,3,7,7,10,11,11]

Output: 10

```
def singleNonDuplicate(self, nums: List[int]) -> int:
    if len(nums)==1:
        return nums[0]
    lo = 0
    n = len(nums)
    hi = len(nums)-1
    ans = 0
    while lo<hi:
        mid = (lo+hi)//2
        if (mid%2!=0 and nums[mid]==nums[mid-1]) or (mid%2==0 and
nums[mid]==nums[mid+1]):
            lo = mid+1
        else:
            hi=mid
    return nums[lo]
```