

Find the element that appears once in sorted array

Given a sorted array `arr[]` of size `N`. Find the element that appears only once in the array. All other elements appear exactly twice.

Example 1:

```
Input:
N = 11
arr[] = {1, 1, 2, 2, 3, 3, 4, 50, 50, 65, 65}
Output: 4
Explanation: 4 is the only element that
appears exactly once.
```

Your Task:

You don't need to read input or print anything. Complete the function **findOnce()** which takes sorted array and its size as its input parameter and returns the element that appears only once.

Expected Time Complexity: $O(\log N)$

Expected Auxiliary Space: $O(1)$

Constraints:

$1 \leq N \leq 10^5$

$-10^5 \leq arr[i] \leq 10^5$

```
def findOnce(self, arr : list, n : int):
    # Complete this function
    if n == 1:
        return arr[0]
    if arr[0] != arr[1]:
        return arr[0]
    if arr[-1] != arr[-2]:
        return arr[-1]

    lo = 0
    hi = n-1

    while lo <= hi:
        mid = (lo+hi)//2
        if arr[mid] != arr[mid-1] and arr[mid] != arr[mid+1]:
```

```
        return arr[mid]
    elif arr[mid]==arr[mid-1]:
        lc = mid-lo+1
        if lc%2==0:
            lo = mid+1
        else:
            hi = mid-2
    elif arr[mid]==arr[mid+1]:
        rc = hi-mid+1
        if rc%2==0:
            hi = mid-1
        else:
            lo = mid+2
```