

# Find Transition Point

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Given a sorted array containing only 0s and 1s, find the transition point.

## Example 1:

```
Input:
N = 5
arr[] = {0,0,0,1,1}
Output: 3
Explanation: index 3 is the transition
point where 1 begins.
```

## Example 2:

```
Input:
N = 4
arr[] = {0,0,0,0}
Output: -1
Explanation: Since, there is no "1",
the answer is -1.
```

## Your Task:

You don't need to read input or print anything. The task is to complete the function **transitionPoint()** that takes array and N as input parameters and returns the 0 based index of the position where "0" ends and "1" begins. If array does not have any 1s, return -1. If array does not have any 0s, return 0.

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

**Expected Auxiliary Space:**  $O(1)$

## Constraints:

$1 \leq N \leq 500000$

$0 \leq \text{arr}[i] \leq 1$

```
def transitionPoint(arr, n):
    #Code here
    lo = 0
    hi = n-1
    if arr[0]==1:
        return 0
    ans = -1
    while lo<=hi:
        mid = (lo+hi)//2
```

```
    if arr[mid]==0:
        lo = mid+1
    elif arr[mid]==1:
        ans = mid
        hi = mid-1
return ans
```