

KARTHIK J 2024-IT ▾**K2****Started on** Friday, 3 October 2025, 1:32 PM**State** Finished**Completed on** Friday, 3 October 2025, 1:34 PM**Time taken** 2 mins 14 secs**Marks** 1.00/1.00**Grade** **10.00** out of 10.00 (**100%**)

Question 1 | Correct Mark 1.00 out of 1.00**Problem Statement**

Given an array of 1s and 0s this has all 1s first followed by all 0s. Aim is to find the number of 0s. Write a program using Divide and Conquer to Count the number of zeroes in the given array.

Input Format

First Line Contains Integer m – Size of array

Next m lines Contains m numbers – Elements of an array

Output Format

First Line Contains Integer – Number of zeroes present in the given array.

Answer: (penalty regime: 0 %)

```
1 #include <stdio.h>
2 int findFirstZero(int arr[], int left, int right) {
3     if (left > right) {
4         return -1;
5     }
6
7     int mid = (left + right) / 2;
8     if (arr[mid] == 0) {
9         if (mid == 0 || arr[mid - 1] == 1) {
10            return mid;
11        } else {
12            return findFirstZero(arr, left, mid - 1);
13        }
14    } else {
15        return findFirstZero(arr, mid + 1, right);
16    }
17 }
18 int countZeroes(int arr[], int size) {
19     int firstZeroIndex = findFirstZero(arr, 0, size - 1);
20     if (firstZeroIndex == -1) {
21         return 0;
22     }
23     return size - firstZeroIndex;
24 }
25
26 int main() {
27     int m;
28     scanf("%d", &m);
29
30     int arr[m];
31     for (int i = 0; i < m; i++) {
32         scanf("%d", &arr[i]);
33     }
34     printf("%d\n", countZeroes(arr, m));
35
36     return 0;
37 }
38 }
```

	Input	Expected	Got	
✓	5 1 1 1 0 0	2	2	✓
✓	10 1 1 1 1 1 1 1 1 1	0	0	✓
✓	8 0 0 0 0 0 0 0 0	8	8	✓
✓	17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 0 0	2	2	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

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