

HARSHITHA L S 2024-CSD-A**H2****Started on** Monday, 1 September 2025, 3:30 PM**State** Finished**Completed on** Monday, 1 September 2025, 3:57 PM**Time taken** 27 mins 11 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 count(int arr[], int low, int high, int size) {
3     if (low > high)
4         return 0;
5     int mid = (low + high) / 2;
6     if (arr[mid] == 0 && (mid == 0 || arr[mid - 1] == 1)) {
7         return size - mid;
8     }
9     if (arr[mid] == 1) {
10         return count(arr, mid + 1, high, size);
11     }
12     else {
13         return count(arr, low, mid - 1, size);
14     }
15 }
16 int main() {
17     int m;
18     scanf("%d", &m);
19
20     int arr[m];
21     for (int i = 0; i < m; i++) {
22         scanf("%d", &arr[i]);
23     }
24     int zeroCount = count(arr, 0, m - 1, m);
25     printf("%d\n", zeroCount);
26 }
27

```

	Input	Expected	Got	
✓	5 1 1 1 0 0	2	2	✓

	Input	Expected	Got	
✓	10 1 1 1 1 1 1 1 1 1	0	0	✓
✓	8 0 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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