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CS23331-DAA-2024-CSE / 1-Number of Zeros in a Given Array



1-Number of Zeros in a Given Array

Started on	Wednesday, 17 September 2025, 8:08 AM
State	Finished
Completed on	Wednesday, 17 September 2025, 8:27 AM
Time taken	19 mins 3 secs
Marks	1.00/1.00
Grade	10.00 out of 10.00 (100%)

Question 1 | Correct Mark 1.00 out of 1.00  [Flag question](#)

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

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

1			
1			
1			
1			
1			
1			
1			
1			
1			
0			
0			

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

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