

MUKESH V A 2024-CSD-A ▾**M2****Started on** Tuesday, 2 September 2025, 12:04 PM**State** Finished**Completed on** Thursday, 4 September 2025, 9:02 AM**Time taken** 1 day 20 hours**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 main()
3 {
4     int m;
5     scanf("%d", &m);
6     int arr[m];
7     for (int i = 0; i < m; i++) scanf("%d", &arr[i]);
8     int low = 0, high = m - 1, firstZero = -1;
9     while (low <= high)
10    {
11        int mid = low + (high - low) / 2;
12        if ((mid == 0 || arr[mid - 1] == 1) && arr[mid] == 0)
13        {
14            firstZero = mid;
15            break;
16        }
17        if (arr[mid] == 1) low = mid + 1;
18        else high = mid - 1;
19    }
20    printf("%d\n", firstZero == -1 ? 0 : m - firstZero);
21    return 0;
22 }
```

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

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