RAJALAKSHMI ENGINEERING COLLEGE

RAKSHITA N 2024-IT

R2

Started on	Thursday, 18 September 2025, 10:18 AM
State	Finished
Completed on	Thursday, 18 September 2025, 10:21 AM
Time taken	2 mins 45 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 %)

```c
#include <stdio.h>

int countZeros(int arr[], int low, int high) {
    if (low > high) {
        return -1; // zero not found
    }

    int mid = low + (high - low) / 2;

    // Check if mid is the first zero
    if (arr[mid] == 0 && (mid == 0 || arr[mid - 1] == 1)) {
        return mid;
    }
    else if (arr[mid] == 1) {
        // zeros start after mid
        return countZeros(arr, mid + 1, high);
    }
    else {
        // arr[mid] == 0 but not first zero, search left half
        return countZeros(arr, low, mid - 1);
    }
}

int main() {
    int m;
    scanf("%d", &m);

    int arr[m];
    for (int i = 0; i < m; i++) {
        scanf("%d", &arr[i]);
    }

    int firstZeroIndex = countZeros(arr, 0, m - 1);

    if (firstZeroIndex == -1) {
        printf("0\n");
    } else {
        printf("%d\n", m - firstZeroIndex);
    }

    return 0;
}
```

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

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

Back to Course