**RAJALAKSHMI
ENGINEERING
COLLEGE**

🔔 7   **SIVA S 2024-CSE** ∨   **S2**

Started on	Wednesday, 8 October 2025, 3:49 PM
State	Finished
Completed on	Wednesday, 8 October 2025, 3:50 PM
Time taken	1 min 1 sec
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>

// Function to find the first occurrence of 0 using binary search
int countZeroes(int arr[], int low, int high, int size) {
    if (high >= low) {
        int mid = low + (high - low) / 2;

        // Check if mid is first 0
        if ((mid == 0 || arr[mid - 1] == 1) && arr[mid] == 0)
            return size - mid;

        // If mid is 1, search right half
        else if (arr[mid] == 1)
            return countZeroes(arr, mid + 1, high, size);

        // If mid is 0 but not first, search left half
        else
            return countZeroes(arr, low, mid - 1, size);
    }
    return 0;
}

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

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

    int result = countZeroes(arr, 0, m - 1, m);
    printf("%d\n", result);

    return 0;
}
```

	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	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.

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