RAJALAKSHMI ENGINEERING COLLEGE

Started on	Wednesday, 17 September 2025, 8:18 AM
State	Finished
Completed on	Wednesday, 17 September 2025, 8:32 AM
Time taken	13 mins 49 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
1   #include <stdio.h>
2
3   int count_zeros(int arr[], int low, int high) {
4       if (low > high) {
5           return 0;
6       }
7       int mid = (low + high) / 2;
8       if (arr[mid] == 0) {
9           if (mid == 0 || arr[mid - 1] == 1) {
10              return high - mid + 1;
11          } else {
12              return count_zeros(arr, low, mid - 1);
13          }
14      } else {
15          return count_zeros(arr, mid + 1, high);
16      }
17  }
18
19  int main() {
20      int m;
21      scanf("%d", &m);
22      int arr[m];
23      for (int i = 0; i < m; i++) {
24          scanf("%d", &arr[i]);
25      }
26
27      if (arr[0] == 1) {
28          int zero_count = count_zeros(arr, 0, m - 1);
29          printf("%d\n", zero_count);
30      } else {
31          printf("%d\n", m); // If the array is all zeros
32      }
33      return 0;
34  }
35
```

	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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