DIVIDE AND CONQUER

PROBLEM 1:

1-NUMBER OF ZEROS IN A GIVEN ARRAY

AIM:

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.

CODE:

```
#include <stdio.h>
int countZeros(int arr[], int low, int high) {
   if (low > high) {
      return 0;
   }
   if (low == high) {
      return arr[low] == 0 ? 1 : 0;
   }
   int mid = (low + high) / 2;
   if (arr[mid] == 0) {
      return (high - mid + 1) + countZeros(arr, low, mid - 1);
   } else {
      return countZeros(arr, mid + 1, high);
   }
}

int main() {
```

```
    int m;
    scanf("%d", &m);
    int arr[m];
    for (int i = 0; i < m; i++) {
        scanf("%d", &arr[i]);
    }
    int result = countZeros(arr, 0, m - 1);
    printf("%d\n", result);
    return 0;
}
```

INPUT AND OUTPUT:

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