**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:

