

Find the number of zeroes

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#include <stdio.h>
#include <stdlib.h>

int getFirstZero(int *arr, int start, int end)
{
    if( end >= start )
    {
        int middle = start + (end - start) / 2;
        if (( middle == 0 || arr[middle - 1] == 1) && arr[middle] == 0)
            return middle;

        return (arr[middle] == 1) ? getFirstZero(arr, (middle + 1), end):
            getFirstZero(arr, start, (middle - 1));
    }
    return -1;
}

int countNumberOfZeroes(int *arr, int size)
{
    int first = getFirstZero(arr, 0, size-1);
    return first == -1 ? 0: size - first;
}

int main()
{
    int *arr, size;
    printf("Enter size of an array\n");
    scanf("%d", &size);
    //allocate memory for array
    arr = (int *)malloc(size * sizeof(int));

    printf("Enter Array elements ");
    for(int index = 0; index < size; index++)
        scanf("%d", &arr[index]);

    printf("The number of zeroes present is = %d",
        countNumberOfZeroes(arr, size));
    return 0;
}
```

Time complexity: $O(\log n)$

Space Complexity: $O(\log n)$