# Count the Zeros

> 给定数组arr，其中包含0、1两种元素，且0元素全部出现在1之后，求0元素的个数

## 二分法

```
#include <bits/stdc++.h>

using namespace std;
using vi = vector<int>;

int countZeros(vi &arr, int N, int low, int high) {
    if (*arr.begin() == 0) return N;
    int counts = 0;
    while (low <= high) {
        int mid = low + (high - low) / 2;
        if (mid > 0 && arr[mid] == 0 && arr[mid - 1] == 1) {
            counts = N - mid;
            break;
        } else if (arr[mid] == 1) low = mid + 1;
        else high = mid - 1;
    }
    return counts;
}

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

## count_if

```
#include <bits/stdc++.h>

using namespace std;
using vi = vector<int>;

int countZeros(vi &arr) {
    return count_if(arr.begin(), arr.end(), [](const int &a) { return a == 0; });
}

int main() {
    int T;
    scanf("%d", &T);
    while (T--) {
        int N;
        scanf("%d", &N);
        vi arr(N);
        for (int i = 0; i < N; ++i) scanf("%d", &arr[i]);
        printf("%d\n", countZeros(arr));
    }
    return 0;
}
```