1-Number of Zeros in a Given Array

Started on Wednesday, 17 September 2025, 8:38 AM

State Finished

Completed on Wednesday, 17 September 2025, 8:45 AM

Time taken 6 mins 28 secs

Marks 1.00/1.00

Grade **10.00** out of 10.00 (**100**%)

Question 1 Correct Mark 1.00 out of 1.00 Flag question

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
#include<stdio.h>
int main(){
    int n;
    scanf("%d",&n);
    int arr[n];
    for(int i=0;i<n;i++){
        scanf("%d",&arr[i]);
    }
    int count=0;
    for(int i=0;i<n;i++){
        if(arr[i]==0){
            count++;
        }
    }
    printf("%d",count);

}
```

	Input	Expected	Got	
✔	5 1 1 1 0 0	2	2	✔
✔	10 1 1 1 1 1 1 1 1 1 1	0	0	✔
✔	8 0 0 0 0 0 0 0 0	8	8	✔

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

2-Majority Element

Started on Wednesday, 17 September 2025, 8:45 AM

State Finished

Completed on Wednesday, 17 September 2025, 9:12 AM

Time taken 27 mins 30 secs

Marks 1.00/1.00

Grade **10.00** out of 10.00 (**100**%)

Question 1 Correct Mark 1.00 out of 1.00 Flag question

Given an array `nums` of size `n`, return *the majority element*.

The majority element is the element that appears more than `⌊n / 2⌋` times. You may assume that the majority element always exists in the array.

Example 1:

```
Input: nums = [3,2,3]
Output: 3
```

Example 2:

```
Input: nums = [2,2,1,1,1,2,2]
Output: 2
```

Constraints:

- `n == nums.length`
- `1 <= n <= 5 * 10^4`
- `-2^31 <= nums[i] <= 2^31 - 1`

For example:

Input	Result
3 3 2 3	3
7 2 2 1 1 1 2 2	2

Answer: (penalty regime: 0 %)

```
#include<stdio.h>
int main(){
    int n,r;
    scanf("%d",&n);
    int m=n/2;
    int arr[n];
    for(int i 0;i<n;i++){
        scanf("%d",&arr[i]);
    }
    int count=0;
    for(int i=0;i<n;i++){
        for(int j=0;j<n;j++){
            if(arr[i]==arr[j]){
                count++;
            }
            if(count>m){
                r=arr[j];

            }
        }
    }
    printf("%d",r);
}
```

	Input	Expected	Got	
✔	3 3 2 3	3	3	✔

Passed all tests! ✔

Correct

3-Finding Floor Value

Started on Wednesday, 17 September 2025, 8:38 AM

State Finished

Completed on Wednesday, 17 September 2025, 8:55 AM

Time taken 17 mins 39 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 a sorted array and a value x, the floor of x is the largest element in array smaller than or equal to x. Write divide and conquer algorithm to find floor of x.

Input Format

First Line Contains Integer n – Size of array

Next n lines Contains n numbers – Elements of an array

Last Line Contains Integer x – Value for x

Output Format

First Line Contains Integer – Floor value for x

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main()
{
    int arr[100],n,x;
    scanf("%d",&n);
    for(int i=0;i<n;i--)
    {
        scanf("%d",&arr[i]);
    }
    scanf("%d",&x);
    for(int i=0;i<n;i--)
    {
        if(x<=arr[i])
        {
            printf("%d",arr[i-1]);
            break;
        }
    }

}
```

	Input	Expected	Got	
✔	6 1 2 8 10 12 19 5	2	2	✔
✔	5 10 22 85 108 129 100	85	85	✔
✔	7 3 5 7 9 11 13 15 10	9	9	✔

Passed all tests! ✔

Correct

4-Two Elements sum to x

Started on Wednesday, 17 September 2025, 8:20 AM

State Finished

Completed on Wednesday, 17 September 2025, 8:38 AM

Time taken 18 mins 13 secs

Marks 1.00/1.00

Grade **10.00** out of 10.00 (**100**%)

Question 1 Correct Mark 1.00 out of 1.00 Flag question

Problem Statement:

Given a sorted array of integers say arr[] and a number x. Write a recursive program using divide and conquer strategy to check if there exist two elements in the array whose sum = x. If there exist such two elements then return the numbers, otherwise print as "No".

Note: Write a Divide and Conquer Solution

Input Format

First Line Contains Integer n – Size of array

Next n lines Contains n numbers – Elements of an array

Last Line Contains Integer x – Sum Value

Output Format

First Line Contains Integer – Element1

Second Line Contains Integer – Element2 (Element 1 and Elements 2 together sums to value "x")

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main(){
    int n;
    scanf("%d",&n);
    int arr[n];
    for(int i=0;i<n;i++){
        scanf("%d",&arr[i]);
    }
    int x;
    scanf("%d",&x);
    int res=arr[1]+arr[n-1];
    if(x==res){
        printf("%d\n",arr[1]);
        printf("%d",arr[n-1]);

    }
    else{
        printf("No");
    }


}
```

	Input	Expected	Got	
✔	4 2 4 8 10 14	4 10	4 10	✔
✔	5 2 4 6 8 10 100	No	No	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

5-Implementation of Quick Sort

Started on Wednesday, 17 September 2025, 9:13 AM

State Finished

Completed on Wednesday, 17 September 2025, 9:32 AM

Time taken 19 mins 12 secs

Marks 1.00/1.00

Grade **10.00** out of 10.00 (**100**%)

Question 1 Correct Mark 1.00 out of 1.00 Flag question

Write a Program to Implement the Quick Sort Algorithm

Input Format:
The first line contains the no of elements in the list-n
The next n lines contain the elements.

Output:
Sorted list of elements

For example:

Input	Result
5 67 34 12 98 78	12 34 67 78 98

Answer:

```c
#include<stdio.h>
#include<stdlib.h>
int main(){
    int n;
    scanf("%d",&n);
    int arr[n];
    for(int i=0;i<n;i++){
        scanf("%d",&arr[i]);
    }

    int cmp(const void *a,const void *b){
        return(*(int *)a-*(int *)b);
    }
    qsort(arr,n,sizeof(int),cmp);
    for(int i=0;i<n;i++){
        printf("%d ",arr[i]);
    }
}
```

	Input	Expected	Got	
✔	5 67 34 12 98 78	12 34 67 78 98	12 34 67 78 98	✔
✔	10 1 56 78 90 32 56 11 10 90 114	1 10 11 32 56 56 78 90 90 114	1 10 11 32 56 56 78 90 90 114	✔
✔	12 9 8 7 6 5 4 3 2 1 10 11 90	1 2 3 4 5 6 7 8 9 10 11 90	1 2 3 4 5 6 7 8 9 10 11 90	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.