



SAISANJAY S S 2024-CSE

S2

Started on Wednesday, 17 September 2025, 3:22 PM**State** Finished**Completed on** Wednesday, 17 September 2025, 3:35 PM**Time taken** 12 mins 37 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 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 %)

```

1 #include<stdio.h>
2 int main(){
3     int m;
4     scanf("%d",&m);
5     int arr[m];
6     for(int i=0;i<m;i++){
7         scanf("%d",&arr[i]);
8     }
9     int count=0;
10    for(int i=0;i<m;i++){
11        if(arr[i]==0){
12            count++;
13        }
14    }
15    printf("%d",count);
16    return 0;
17 }
```

	Input	Expected	Got	
✓	5 1 1 1 0 0	2	2	✓
✓	10 1 1 1 1 1 1 1 1 1	0	0	✓

	Input	Expected	Got	
✓	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 0 0	2	2	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

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SAISANJAY S S 2024-CSE ▾S2**Started on** Wednesday, 17 September 2025, 3:35 PM**State** Finished**Completed on** Wednesday, 17 September 2025, 4:39 PM**Time taken** 1 hour 3 mins**Marks** 1.00/1.00**Grade** **10.00** out of 10.00 (100%)

Question 1 | Correct Mark 1.00 out of 1.00

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

The majority element is the element that appears more than $\lfloor n / 2 \rfloor$ 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
3 2 3	
7	2
2 2 1 1 1 2 2	

Answer: (penalty regime: 0 %)

```

1 #include<stdio.h>
2 int main(){
3     int n;
4     scanf("%d",&n);
5     int arr[n];
6     for(int i=0;i<n;i++){
7         scanf("%d",&arr[i]);
8     }
9     int count=0;
10    int tcount=0;
11    int ele=0;
12    for(int i=0;i<n;i++){
13        tcount=0;
14        for(int j=0;j<n;j++){
15            if(i!=j){
16                if(arr[i]==arr[j]){
17                    tcount++;
18                }
19            }
20        }
21    }
22    if(tcount>count){
23        count=tcount;
24        ele=arr[i];
25    }
26}
27 printf("%d",ele);
28}
29

```

	Input	Expected	Got	
✓	3 3 2 3	3	3	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

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SAISANJAY S S 2024-CSE ▾**S2****Started on** Wednesday, 24 September 2025, 3:31 PM**State** Finished**Completed on** Wednesday, 24 September 2025, 3:37 PM**Time taken** 6 mins 4 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 %)

```

1 #include <stdio.h>
2 int main(){
3     int n;
4     scanf("%d",&n);
5     int arr[n];
6     for(int i=0;i<n;i++){
7         scanf("%d",&arr[i]);
8     }
9
10    int temp;
11    for(int i=0;i<n-1;i++){
12        for(int j=i+1;j<n;j++){
13            if(arr[i]>arr[j]){
14                temp=arr[i];
15                arr[i]=arr[j];
16                arr[j]=temp;
17            }
18        }
19    }
20
21    int x;
22    scanf("%d",&x);
23
24    int res=0;
25    for(int i=n-1;i>=0;i--){
26        if(arr[i]<=x){
27            res = arr[i];
28            break;
29        }
30    }
31    printf("%d",res);
32    return 0;
33 }
34 }
```

	Input	Expected	Got	
✓	6 1 2 8 10 12 19 5	2	2	✓

	Input	Expected	Got	
✓	5 10 22 85 108 129 100	85	85	✓
✓	7 3 5 7 9 11 13 15 10	9	9	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

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SAISANJAY S S 2024-CSE ▾S2**Started on** Wednesday, 17 September 2025, 3:38 PM**State** Finished**Completed on** Wednesday, 17 September 2025, 4:21 PM**Time taken** 43 mins 37 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 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 %)

```

1 #include <stdio.h>
2
3 int main() {
4     int n;
5     scanf("%d", &n);
6     int arr[n];
7     for (int i = 0; i < n; i++) {
8         scanf("%d", &arr[i]);
9     }
10
11     int x;
12     scanf("%d", &x);
13
14     int left = 0;
15     int right = n - 1;
16     int found = 0;
17
18     while (left < right) {
19         int sum = arr[left] + arr[right];
20
21         if (sum == x) {
22             printf("%d\n", arr[left]);
23             printf("%d\n", arr[right]);
24             found = 1;
25             break;
26         } else if (sum < x) {
27             left++;
28         } else {
29             right--;
30         }
31     }
32
33     if (!found) {
34         printf("No");
35     }
36
37     return 0;
38 }
```

	Input	Expected	Got	
✓	4	4	4	✓
	2	10	10	
	4			
	8			
	10			
	14			

	Input	Expected	Got	
✓	5	No	No	✓
	2			
	4			
	6			
	8			
	10			
	100			

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

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SAISANJAY S S 2024-CSE ▾S2**Started on** Wednesday, 17 September 2025, 4:22 PM**State** Finished**Completed on** Wednesday, 17 September 2025, 4:26 PM**Time taken** 4 mins 49 secs**Marks** 1.00/1.00**Grade** **10.00** out of 10.00 (100%)

Question 1 | Correct Mark 1.00 out of 1.00

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:

```

1 #include<stdio.h>
2 int main(){
3     int n;
4     scanf("%d",&n);
5     int arr[n];
6     for(int i=0;i<n;i++){
7         scanf("%d",&arr[i]);
8     }
9     int temp=0;
10    for(int i=0;i<n-1;i++){
11        for(int j=i+1;j<n;j++){
12            if(arr[i]>arr[j]){
13                temp=arr[i];
14                arr[i]=arr[j];
15                arr[j]=temp;
16            }
17        }
18    }
19    for(int i=0;i<n;i++){
20        printf("%d ",arr[i]);
21    }
22 }
```

	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 56 78 90 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.

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