

GE23131-Programming Using C-2024

Quiz navigation



Show one page at a time

[Finish review](#)

Status	Finished
Started	Monday, 23 December 2024, 5:33 PM
Completed	Saturday, 7 December 2024, 9:09 PM
Duration	15 days 20 hours

Question 1

Correct

Marked out of
3.00

[Flag question](#)

Given an array A of sorted integers and another non negative integer k, find if there exists 2 indices i and j such that $A[i] - A[j] = k$, $i \neq j$.

Input Format

1. First line is number of test cases T. Following T lines contain:
2. N, followed by N integers of the array
3. The non-negative integer k

Output format

Print 1 if such a pair exists and 0 if it doesn't.

Example

Input:

```
1  
3 1 3 5  
4
```

Output:

```
1
```

Input:

```
1  
3 1 3 5  
99
```

Output:

```
0
```

Answer: (penalty regime: 0 %)

```
1 #include<stdio.h>  
2 int main(){  
3     int a;  
4     scanf("%d",&a);  
5     for(int p=0;p<a;p++)  
6     {int b;  
7         scanf("%d",&b);int c[b];  
8         for(int j=0;j<b;j++)  
9             {scanf("%d",&c[j]);}  
10        int k;
```

```

11  scanf("%d",&k);
12  int f=0;
13  for(int l=0;l<b;l++)
14  {for(int m=l+1;m<b;m++)
15  if(c[l]-c[m]==k||c[m]-c[l]==k)
16  {f=1;
17  break;}if(f)break;
18 }
19
20 printf("%d\n",f);
21 }
22

```

	Input	Expected	Got	
✓	1 3 1 3 5 4	1	1	✓
✓	1 3 1 3 5 99	0	0	✓

Passed all tests! ✓

Question 2

Correct

Marked out of
5.00

[Flag question](#)

Sam loves chocolates and starts buying them on the 1st day of the year. Each day of the year, x , is numbered from 1 to Y . On days when x is odd, Sam will buy x chocolates; on days when x is even, Sam will not purchase any chocolates.

Complete the code in the editor so that for each day N_i (where $1 \leq x \leq N \leq Y$) in array arr, the number of chocolates Sam purchased (during days 1 through N) is printed on a new line. This is a function-only challenge, so input is handled for you by the locked stub code in the editor.

Input Format

The program takes an array of integers as a parameter.

The locked code in the editor handles reading the following input from `stdin`, assembling it into an array of integers (`arr`), and calling `calculate(arr)`.

The first line of input contains an integer, T (the number of test cases). Each line i of the T subsequent lines describes the i th test case as an integer, N_i (the number of days).

Constraints

$$1 \leq T \leq 2 \times 10^5$$

$$1 \leq N \leq 2 \times 10^6$$

$$1 \leq x \leq N \leq Y$$

Output Format

For each test case, T_i in `arr`, your `calculate` method should print the total number of chocolates Sam purchased by day N_i on a new line.

Sample Input 0

3

1

2

2

Sample Output 0

```
1  
1  
4
```

Explanation

Test Case 0: N = 1

Sam buys 1 chocolate on day 1, giving us a total of 1 chocolate. Thus, we print 1 on a new line.

Test Case 1: N = 2

Sam buys 1 chocolate on day 1 and 0 on day 2. This gives us a total of 1 chocolate. Thus, we print 1 on a new line.

Test Case 2: N = 3

Sam buys 1 chocolate on day 1, 0 on day 2, and 3 on day 3. This gives us a total of 4 chocolates. Thus, we print 4 on a new line.

Answer: (penalty regime: 0 %)

```
1 #include<stdio.h>  
2 int main()  
3 {int a,s;  
4 scanf("%d",&a);  
5 int b[a];
```

```
6 | for(int i=0;i<a;i++)
7 | {
8 |     scanf("%d",&b[i]);}
9 |     for(int i=0;i<a;i++){s=0;
10|      for(int j=1;j<=b[i];j++)
11|          {if(j%2==1)
12|             {s=s+j;}}
13|             printf("%d\n",s);}
14| }
15|
```

	Input	Expected	Got	
✓	3	1	1	✓
	1	1	1	
	2	4	4	
	3			
✓	10	1296	1296	✓
	71	2500	2500	
	100	1849	1849	
	86	729	729	
	54	400	400	
	40	25	25	
	9	1521	1521	
	77	25	25	
	9	49	49	
	13	2401	2401	
	98			

Passed all tests! ✓

Question 3

Correct

Marked out of
7.00

 [Flag question](#)

The number of goals achieved by two football teams in matches in a league is given in the form of two lists. Consider:

- Football team A, has played three matches, and has scored { 1 , 2 , 3 } goals in each match respectively.
- Football team B, has played two matches, and has scored { 2 , 4 } goals in each match respectively.
- Your task is to compute, for each match of team B, the total number of matches of team A, where team A has scored less than or equal to the number of goals scored by team B in that match.
- In the above case:
 - For 2 goals scored by team B in its first match, team A has 2 matches with scores 1 and 2.
 - For 4 goals scored by team B in its second match, team A has 3 matches with scores 1, 2 and 3.

Hence, the answer: {2, 3}.

Complete the code in the editor below. The program must return an array of m positive integers, one for each `maxes[i]` representing the total number of elements `nums[j]` satisfying $\text{nums}[j] \leq \text{maxes}[i]$ where $0 \leq j < n$ and $0 \leq i < m$, in the given order.

It has the following:

`nums[nums[0],...nums[n-1]]`: first array of positive integers

`maxes[maxes[0],...maxes[n-1]]`: second array of positive integers

Constraints

- $2 \leq n, m \leq 105$
- $1 \leq \text{nums}[j] \leq 109$, where $0 \leq j < n$.
- $1 \leq \text{maxes}[i] \leq 109$, where $0 \leq i < m$.

Input Format For Custom Testing

Input from `stdin` will be processed as follows and passed to the function.

The first line contains an integer n , the number of elements in `nums`.

The next n lines each contain an integer describing $\text{nums}[j]$ where $0 \leq j < n$.

The next line contains an integer m , the number of elements in `maxes`.

The next m lines each contain an integer describing $\text{maxes}[i]$ where $0 \leq i < m$.

Sample Case 0

Sample Input 0

```
4
1
4
2
4
2
3
```

5

Sample Output 0

2

4

Explanation 0

We are given $n = 4$, $\text{nums} = [1, 4, 2, 4]$, $m = 2$, and $\text{maxes} = [3, 5]$.

1. For $\text{maxes}[0] = 3$, we have 2 elements in nums ($\text{nums}[0] = 1$ and $\text{nums}[2] = 2$) that are $\leq \text{maxes}[0]$.
2. For $\text{maxes}[1] = 5$, we have 4 elements in nums ($\text{nums}[0] = 1$, $\text{nums}[1] = 4$, $\text{nums}[2] = 2$, and $\text{nums}[3] = 4$) that are $\leq \text{maxes}[1]$.

Thus, the function returns the array $[2, 4]$ as the answer.

Sample Case 1

Sample Input 1

5

2

10

5

4

8

```
4  
3  
1  
7  
8
```

Sample Output 1

```
1  
0  
3  
4
```

Explanation 1

We are given, $n = 5$, $\text{nums} = [2, 10, 5, 4, 8]$, $m = 4$, and $\text{maxes} = [3, 1, 7, 8]$.

1. For $\text{maxes}[0] = 3$, we have 1 element in nums ($\text{nums}[0] = 2$) that is $\leq \text{maxes}[0]$.
2. For $\text{maxes}[1] = 1$, there are 0 elements in nums that are $\leq \text{maxes}[1]$.
3. For $\text{maxes}[2] = 7$, we have 3 elements in nums ($\text{nums}[0] = 2$, $\text{nums}[2] = 5$, and $\text{nums}[3] = 4$) that are $\leq \text{maxes}[2]$.
4. For $\text{maxes}[3] = 8$, we have 4 elements in nums ($\text{nums}[0] = 2$, $\text{nums}[2] = 5$, $\text{nums}[3] = 4$, and $\text{nums}[4] = 8$) that are $\leq \text{maxes}[3]$.

Thus, the function returns the array $[1, 0, 3, 4]$ as the answer.

Answer: (penalty regime: 0 %)

```
1 | #include<stdio.h>
```

```
2 int main()
3 {int a,s;
4 scanf("%d",&a);
5 int b[a];
6 for(int i=0;i<a;i++)
7 {scanf("%d",&b[i]);}
8 int c;
9 scanf("%d",&c);
10 int d[c];
11 for(int i=0;i<c;i++)
12 scanf("%d",&d[i]);
13 for(int i=0;i<c;i++)
14 {s=0;for(int j=0;j<a;j++)
15 {if(d[i]>=b[j])
16 s++;}
17 printf("%d\n",s);}}
```

	Input	Expected	Got	
✓	4 1 4 2 4 2 - 5	2 4	2 4	✓
✓	5 2 10 5 4 8 4	1 0 3 4	1 0 3 4	✓

	3				
	1				
	7				
	8				

Passed all tests! ✓

Finish review