Week-06-One-Dimensional Arrays

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 != j.

```c
#include<stdio.h>
int main()
{
    int t;
    scanf("%d",&t);
    while(t--){
        int n;
        scanf("%d",&n);
        int a[n];
        for (int i=0;i<n;i++)
        {
            scanf("%d",&a[i]);
        }
        int k;
        scanf("%d",&k);
        int flag =0;
        for (int i=0;i<n;i++){
            for (int j=i+1;j<n;j++){
                if((a[i]-a[j]==k)||(a[j]-a[i]==k)){
                    flag=1;
                    break;
                }
            }
            if (flag)
            break;
        }
        printf("%d\n",flag);
    }
    return 0;
}
```

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

Passed all tests! ✓

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 Ni (where 1 ≤ x ≤ N ≤ 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.

```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 a=arr[i],sum=0;
for(int j=1;j<=a;j++){
    if(j%2==1){
        sum+=j;
    }
}
printf("%d\n",sum);
    }
    return 0;
}
```

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

Passed all tests! ✓

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 nums[j] ≤ maxes[i] where 0 ≤ j < n and 0 ≤ i < m, in the given order.

Answer: (penalty regime: 0 %)

```c
#include<stdio.h>
int main (){
    int n,m;
    scanf("%d",&n);
    int num[n];
    for(int i=0;i<n;i++){
        scanf("%d",&num[i]);
    }
    scanf("%d",&m);
    int max[m],result[m];
    for (int i=0;i<m;i++){
        scanf("%d",&max[i]);
    }
    for(int i=0;i<m;i++){
        int c =0;
        for (int j=0;j<n;j++){
            if(num[j]<=max[i]){
                c++;
            }
        }
        result[i]=c;
    }
    for(int i=0;i<m;i++){
        printf("%d\n",result[i]);

    }
    return 0;
}
```

	Input	Expected	Got	
✓	4 1 4 2 4 2 3 5	2 4	2 4	✓
✓	5 2 10 5 4 8 4 3 1 7 8	1 0 3 4	1 0 3 4	✓

Passed all tests! ✓