

# CS23331-Design and Analysis of Algorithms-2023 Batch-CSE

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## Quiz navigation



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<b>Started on</b>	Tuesday, 5 November 2024, 2:22 PM
<b>State</b>	Finished
<b>Completed on</b>	Tuesday, 5 November 2024, 2:49 PM
<b>Time taken</b>	27 mins
<b>Marks</b>	1.00/1.00
<b>Grade</b>	4.00 out of 4.00 (100%)

### Question 1

Correct

Mark 1.00 out of 1.00

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  $A[j] - A[i] = k$ ,  $i \neq j$ .

Input Format:

First Line n - Number of elements in an array

Next n Lines - N elements in the array

k - Non - Negative Integer

Output Format:

1 - If pair exists

0 - If no pair exists

Explanation for the given Sample Testcase:

YES as  $5 - 1 = 4$

So Return 1.

For example:

Input	Result
3 1 3 5 4	1

Answer: (penalty regime: 0 %)

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

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

	1 3 5 4			
✓	10 1 4 6 8 12 14 15 20 21 25 1	1	1	✓
✓	10 1 2 3 5 11 14 16 24 28 29 0	0	0	✓
✓	10 0 2 3 7 13 14 15 20 24 25 10	1	1	✓

Passed all tests! ✓

**Correct**

Marks for this submission: 1.00/1.00.

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→ [5-Pair with Difference- \$O\(n^2\)\$ Time Complexity, \$O\(1\)\$  Space Complexity](#)

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