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Started on	Wednesday, 20 November 2024, 7:47 PM
State	Finished
Completed on	Wednesday, 20 November 2024, 7:48 PM
Time taken	58 secs
Marks	1.00/1.00
Grade	4.00 out of 4.00 (100%)

Question 1

Correct

Mark 1.00 out of 1.00

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
3  int findPairWithDifference(int arr[], int n, int k) {
4      int i = 0, j = 1;
5
6      while (j < n) {
7          int diff = arr[j] - arr[i];
8
9          if (diff == k) {
10             return 1; // Pair found
11         } else if (diff < k) {
12             j++; // Increase j to make the difference larger
13         } else {
14             i++; // Increase i to make the difference smaller
15             if (i == j) {
16                 j++; // Ensure i is not equal to j
17             }
18         }
19     }
20
21     return 0; // No pair found
22 }
23
24 int main() {
25     int n, k;
26
27     // Read input
28     scanf("%d", &n); // Number of elements in the array
29     int arr[n];
30
31     for (int i = 0; i < n; i++) {
32         scanf("%d", &arr[i]); // Array elements
33     }
34
35     scanf("%d", &k); // The given non-negative integer k
36
37     // Call the function and output the result
38     printf("%d\n", findPairWithDifference(arr, n, k));
39
40     return 0;

```

```
41 |}
```

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

◀ 5-Pair with Difference-O(n^2)Time Complexity,O(1) Space Complexity

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