Find Pair Given Difference

Easy Accuracy: **49.01%** Submissions: **31834** Points: **2**

Given an array **Arr[]** of size **L** and a number **N,** you need to write a program to find if there exists a pair of elements in the array whose difference is **N**.

Example 1:

 Input:
L = 6, N = 78
arr[] = {5, 20, 3, 2, 5, 80}
Output: 1
Explanation: (2, 80) have difference of 78.

Example 2:

Input:
L = 5, N = 45
arr[] = {90, 70, 20, 80, 50}
Output: -1
Explanation: There is no pair with difference of 45.

Your Task:

You need not take input or print anything. Your task is to complete the function **findPair()** which takes array arr, size of the array L and N as input parameters and returns True if required pair exists, else return False.

Expected Time Complexity: $O(L * Log(L))$.
Expected Auxiliary Space: $O(1)$.

Constraints:
$1 \leq L \leq 10^4$
$1 \leq Arr[i], N \leq 10^5$

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```java
// Java program to find a pair with the given difference
import java.io.*;

class PairDifference
{
    // The function assumes that the array is sorted
    static boolean findPair(int arr[],int n)
    {
        int size = arr.length;

        // Initialize positions of two elements
        int i = 0, j = 1;

        // Search for a pair
        while (i < size && j < size)
        {
```

```java
            if (i != j && (arr[j] - arr[i] == n || arr[i] - arr[j] == n))
            {
                System.out.print("Pair Found: "+
                                 "( "+arr[i]+", "+ arr[j]+" )");
                return true;
            }
            else if (arr[j] - arr[i] < n)
                j++;
            else
                i++;
        }

        System.out.print("No such pair");
        return false;
    }

    // Driver program to test above function
    public static void main (String[] args)
    {
        int arr[] = {1, 8, 30, 40, 100};
        int n = -60;
        findPair(arr,n);
    }
}
/*This code is contributed by Devesh Agrawal*/
```