Approach : Brute force

1. 2 nested loops find every pair difference

Time = O(n^2)

Space = O(1)

Approach: Binary search and sort

1. Sort elements
2. Left = 0, right = 1
3. While left< n and right < n:
4. Find pair such that arr[right] - arr[left] = diff and left!=right, if lesser, increment right
5. If greater increment left
6. Finally return False if not found

Time = O(nlogn)

Space = O(1)

Code:

left = 0

right = 1

arr = sorted(arr)

while left < L and right < L:

if arr[right] - arr[left] == N and right != left:

return True

# if difference is greater than n, move right

elif arr[right] - arr[left] < N:

right += 1

else:

left += 1

return False