Problem 719: Find K-th Smallest Pair Distance

Problem Information

Difficulty: Hard
Acceptance Rate: 0.00%
Paid Only: No

Problem Description

The

distance of a pair

of integers

a

and

b

is defined as the absolute difference between

a

and

b

.

Given an integer array

nums

and an integer

k

, return

the

k

th

smallest

distance among all the pairs

nums[i]

and

nums[j]

where

0 <= i < j < nums.length

.

Example 1:

Input:

nums = [1,3,1], k = 1

Output:

0

Explanation:

Here are all the pairs: (1,3) -> 2 (1,1) -> 0 (3,1) -> 2 Then the 1

st

smallest distance pair is (1,1), and its distance is 0.

Example 2:

Input:

nums = [1,1,1], k = 2

Output:

0

Example 3:

Input:

nums = [1,6,1], k = 3

Output:

5

Constraints:

n == nums.length

2 <= n <= 10

4

0 <= nums[i] <= 10

6

1 <= k <= n * (n - 1) / 2

Code Snippets

C++:

```
class Solution {
public:
int smallestDistancePair(vector<int>& nums, int k) {

}
};
```

Java:

```
class Solution {
public int smallestDistancePair(int[] nums, int k) {

}
}
```

Python3:

```
class Solution:
def smallestDistancePair(self, nums: List[int], k: int) -> int:
```

Python:

```
class Solution(object):
def smallestDistancePair(self, nums, k):
"""
:type nums: List[int]
:type k: int
:rtype: int
"""
```

JavaScript:

```
/**
* @param {number[]} nums
* @param {number} k
```

```
 * @return {number}
 */
var smallestDistancePair = function(nums, k) {

};
```

TypeScript:

```
function smallestDistancePair(nums: number[], k: number): number {

};
```

C#:

```
public class Solution {
public int SmallestDistancePair(int[] nums, int k) {

}
}
```

C:

```
int smallestDistancePair(int* nums, int numsSize, int k) {

}
```

Go:

```
func smallestDistancePair(nums []int, k int) int {

}
```

Kotlin:

```
class Solution {
fun smallestDistancePair(nums: IntArray, k: Int): Int {

}
}
```

Swift:

```
class Solution {
func smallestDistancePair(_ nums: [Int], _ k: Int) -> Int {

}
}
```

Rust:

```
impl Solution {
pub fn smallest_distance_pair(nums: Vec<i32>, k: i32) -> i32 {

}
}
```

Ruby:

```
# @param {Integer[]} nums
# @param {Integer} k
# @return {Integer}
def smallest_distance_pair(nums, k)

end
```

PHP:

```
class Solution {

/**
* @param Integer[] $nums
* @param Integer $k
* @return Integer
*/
function smallestDistancePair($nums, $k) {

}
}
```

Dart:

```
class Solution {
int smallestDistancePair(List<int> nums, int k) {

}
```

```
}
```

Scala:

```
object Solution {
def smallestDistancePair(nums: Array[Int], k: Int): Int = {

}
}
```

Elixir:

```
defmodule Solution do
@spec smallest_distance_pair(nums :: [integer], k :: integer) :: integer
def smallest_distance_pair(nums, k) do

end
end
```

Erlang:

```
-spec smallest_distance_pair(Nums :: [integer()], K :: integer()) ->
integer().
smallest_distance_pair(Nums, K) ->
.
```

Racket:

```
(define/contract (smallest-distance-pair nums k)
(-> (listof exact-integer?) exact-integer? exact-integer?)
)
```

Solutions

C++ Solution:

```
/*
* Problem: Find K-th Smallest Pair Distance
* Difficulty: Hard
* Tags: array, sort, search
```

```
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(1) to O(n) depending on approach
*/

class Solution {
public:
int smallestDistancePair(vector<int>& nums, int k) {

}
};
```

Java Solution:

```
/**
* Problem: Find K-th Smallest Pair Distance
* Difficulty: Hard
* Tags: array, sort, search
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(1) to O(n) depending on approach
*/

class Solution {
public int smallestDistancePair(int[] nums, int k) {

}
}
```

Python3 Solution:

```
"""
Problem: Find K-th Smallest Pair Distance
Difficulty: Hard
Tags: array, sort, search

Approach: Use two pointers or sliding window technique
Time Complexity: O(n) or O(n log n)
Space Complexity: O(1) to O(n) depending on approach
```

```
"""

class Solution:
def smallestDistancePair(self, nums: List[int], k: int) -> int:
# TODO: Implement optimized solution
pass
```

Python Solution:

```
class Solution(object):
def smallestDistancePair(self, nums, k):
"""
:type nums: List[int]
:type k: int
:rtype: int
"""
```

JavaScript Solution:

```
/**
* Problem: Find K-th Smallest Pair Distance
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function smallestDistancePair(nums: number[], k: number): number {

};
```

C# Solution:

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public class Solution {
public int SmallestDistancePair(int[] nums, int k) {

}
}
```

C Solution:

```
/*
* Problem: Find K-th Smallest Pair Distance
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* Tags: array, sort, search
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```
*/

int smallestDistancePair(int* nums, int numsSize, int k) {

}
```

Go Solution:

```
// Problem: Find K-th Smallest Pair Distance
// Difficulty: Hard
// Tags: array, sort, search
//
// Approach: Use two pointers or sliding window technique
// Time Complexity: O(n) or O(n log n)
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func smallestDistancePair(nums []int, k int) int {

}
```

Kotlin Solution:

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Ruby Solution:

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PHP Solution:

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