Problem 3397: Maximum Number of Distinct Elements After Operations

Problem Information

Difficulty: Medium
Acceptance Rate: 52.07%
Paid Only: No
Tags: Array, Greedy, Sorting

Problem Description

You are given an integer array `nums` and an integer `k`.

You are allowed to perform the following **operation** on each element of the array **at most** _once_ :

* Add an integer in the range `[-k, k]` to the element.

Return the **maximum** possible number of **distinct** elements in `nums` after performing the **operations**.

Example 1:

Input: nums = [1,2,2,3,3,4], k = 2

Output: 6

Explanation:

`nums` changes to `[-1, 0, 1, 2, 3, 4]` after performing operations on the first four elements.

Example 2:

Input: nums = [4,4,4,4], k = 1

Output: 3

Explanation:

By adding -1 to `nums[0]` and 1 to `nums[1]`, `nums` changes to `[3, 5, 4, 4]`.

Constraints:

* `1 <= nums.length <= 105` * `1 <= nums[i] <= 109` * `0 <= k <= 109`

Code Snippets

C++:

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


    }
};
```

Java:

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


    }
}
```

Python3:

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