Problem 3659: Partition Array Into K-Distinct Groups

Problem Information

Difficulty: Medium
Acceptance Rate: 43.49%
Paid Only: No
Tags: Array, Hash Table, Counting

Problem Description

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

Your task is to determine whether it is possible to partition all elements of `nums` into one or more groups such that:

* Each group contains **exactly** `k` elements. * All elements in each group are **distinct**. * Each element in `nums` must be assigned to **exactly** one group.

Return `true` if such a partition is possible, otherwise return `false`.

Example 1:

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

Output: true

Explanation:

One possible partition is to have 2 groups:

* Group 1: `[1, 2]` * Group 2: `[3, 4]`

Each group contains `k = 2` distinct elements, and all elements are used exactly once.

Example 2:

Input: nums = [3,5,2,2], k = 2

Output: true

Explanation:

One possible partition is to have 2 groups:

* Group 1: `[2, 3]` * Group 2: `[2, 5]`

Each group contains `k = 2` distinct elements, and all elements are used exactly once.

Example 3:

Input: nums = [1,5,2,3], k = 3

Output: false

Explanation:

We cannot form groups of `k = 3` distinct elements using all values exactly once.

Constraints:

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

Code Snippets

C++:

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

}
};
```

Java:

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

}
}
```

Python3:

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