Problem 2610: Convert an Array Into a 2D Array With Conditions

Problem Information

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

Problem Description

You are given an integer array

nums

. You need to create a 2D array from

nums

satisfying the following conditions:

The 2D array should contain

only

the elements of the array

nums

.

Each row in the 2D array contains

distinct

integers.

The number of rows in the 2D array should be

minimal

.

Return

the resulting array

. If there are multiple answers, return any of them.

Note

that the 2D array can have a different number of elements on each row.

Example 1:

Input:

nums = [1,3,4,1,2,3,1]

Output:

[[1,3,4,2],[1,3],[1]]

Explanation:

We can create a 2D array that contains the following rows: - 1,3,4,2 - 1,3 - 1 All elements of nums were used, and each row of the 2D array contains distinct integers, so it is a valid answer. It can be shown that we cannot have less than 3 rows in a valid array.

Example 2:

Input:

nums = [1,2,3,4]

Output:

[[4,3,2,1]]

Explanation:

All elements of the array are distinct, so we can keep all of them in the first row of the 2D array.

Constraints:

1 <= nums.length <= 200

1 <= nums[i] <= nums.length

Code Snippets

C++:

```
class Solution {
public:
vector<vector<int>> findMatrix(vector<int>& nums) {

}
};
```

Java:

```
class Solution {
public List<List<Integer>> findMatrix(int[] nums) {

}
}
```

Python3:

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

Python:

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

JavaScript:

```
/**
* @param {number[]} nums
* @return {number[][]}
*/
var findMatrix = function(nums) {

};
```

TypeScript:

```
function findMatrix(nums: number[]): number[][] {

};
```

C#:

```
public class Solution {
public IList<IList<int>> FindMatrix(int[] nums) {

}
}
```

C:

```
/**
* Return an array of arrays of size *returnSize.
* The sizes of the arrays are returned as *returnColumnSizes array.
* Note: Both returned array and *columnSizes array must be malloced, assume
caller calls free().
*/
int** findMatrix(int* nums, int numsSize, int* returnSize, int**
returnColumnSizes) {

}
```

Go:

```
func findMatrix(nums []int) [][]int {

}
```

Kotlin:

```
class Solution {
fun findMatrix(nums: IntArray): List<List<Int>> {

}
}
```

Swift:

```
class Solution {
func findMatrix(_ nums: [Int]) -> [[Int]] {

}
}
```

Rust:

```
impl Solution {
pub fn find_matrix(nums: Vec<i32>) -> Vec<Vec<i32>> {

}
}
```

Ruby:

```
# @param {Integer[]} nums
# @return {Integer[][]}
def find_matrix(nums)

end
```

PHP:

```
class Solution {

/**
```

```
* @param Integer[] $nums
* @return Integer[][]
*/
function findMatrix($nums) {

}
}
```

Dart:

```
class Solution {
List<List<int>> findMatrix(List<int> nums) {

}
}
```

Scala:

```
object Solution {
def findMatrix(nums: Array[Int]): List[List[Int]] = {

}
}
```

Elixir:

```
defmodule Solution do
@spec find_matrix(nums :: [integer]) :: [[integer]]
def find_matrix(nums) do

end
end
```

Erlang:

```
-spec find_matrix(Nums :: [integer()]) -> [[integer()]].
find_matrix(Nums) ->
.
```

Racket:

```
(define/contract (find-matrix nums)
(-> (listof exact-integer?) (listof (listof exact-integer?)))
)
```

Solutions

C++ Solution:

```
/*
* Problem: Convert an Array Into a 2D Array With Conditions
* Difficulty: Medium
* Tags: array, hash
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(n) for hash map
*/

class Solution {
public:
vector<vector<int>> findMatrix(vector<int>& nums) {

}
};
```

Java Solution:

```
/**
* Problem: Convert an Array Into a 2D Array With Conditions
* Difficulty: Medium
* Tags: array, hash
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(n) for hash map
*/

class Solution {
public List<List<Integer>> findMatrix(int[] nums) {

}
```

```
}
```

Python3 Solution:

```
"""
Problem: Convert an Array Into a 2D Array With Conditions
Difficulty: Medium
Tags: array, hash

Approach: Use two pointers or sliding window technique
Time Complexity: O(n) or O(n log n)
Space Complexity: O(n) for hash map
"""

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

Python Solution:

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

JavaScript Solution:

```
/**
* Problem: Convert an Array Into a 2D Array With Conditions
* Difficulty: Medium
* Tags: array, hash
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(n) for hash map
*/

/**
```

```
* @param {number[]} nums
* @return {number[][]}
*/
var findMatrix = function(nums) {

};
```

TypeScript Solution:

```
/**
* Problem: Convert an Array Into a 2D Array With Conditions
* Difficulty: Medium
* Tags: array, hash
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(n) for hash map
*/

function findMatrix(nums: number[]): number[][] {

};
```

C# Solution:

```
/*
* Problem: Convert an Array Into a 2D Array With Conditions
* Difficulty: Medium
* Tags: array, hash
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(n) for hash map
*/

public class Solution {
public IList<IList<int>> FindMatrix(int[] nums) {

}
}
```

C Solution:

```
/*
* Problem: Convert an Array Into a 2D Array With Conditions
* Difficulty: Medium
* Tags: array, hash
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(n) for hash map
*/

/**
* Return an array of arrays of size *returnSize.
* The sizes of the arrays are returned as *returnColumnSizes array.
* Note: Both returned array and *columnSizes array must be malloced, assume
caller calls free().
*/
int** findMatrix(int* nums, int numsSize, int* returnSize, int**
returnColumnSizes) {

}
```

Go Solution:

```
// Problem: Convert an Array Into a 2D Array With Conditions
// Difficulty: Medium
// Tags: array, hash
//
// Approach: Use two pointers or sliding window technique
// Time Complexity: O(n) or O(n log n)
// Space Complexity: O(n) for hash map

func findMatrix(nums []int) [][]int {

}
```

Kotlin Solution:

```
class Solution {
fun findMatrix(nums: IntArray): List<List<Int>> {

}
```

```
}
```

Swift Solution:

```
class Solution {
func findMatrix(_ nums: [Int]) -> [[Int]] {

}
}
```

Rust Solution:

```
// Problem: Convert an Array Into a 2D Array With Conditions
// Difficulty: Medium
// Tags: array, hash
//
// Approach: Use two pointers or sliding window technique
// Time Complexity: O(n) or O(n log n)
// Space Complexity: O(n) for hash map

impl Solution {
pub fn find_matrix(nums: Vec<i32>) -> Vec<Vec<i32>> {

}
}
```

Ruby Solution:

```
# @param {Integer[]} nums
# @return {Integer[][]}
def find_matrix(nums)

end
```

PHP Solution:

```
class Solution {

/**
* @param Integer[] $nums
* @return Integer[][]
```

```
*/
function findMatrix($nums) {

}
}
```

Dart Solution:

```
class Solution {
List<List<int>> findMatrix(List<int> nums) {

}
}
```

Scala Solution:

```
object Solution {
def findMatrix(nums: Array[Int]): List[List[Int]] = {

}
}
```

Elixir Solution:

```
defmodule Solution do
@spec find_matrix(nums :: [integer]) :: [[integer]]
def find_matrix(nums) do

end
end
```

Erlang Solution:

```
-spec find_matrix(Nums :: [integer()]) -> [[integer()]].
find_matrix(Nums) ->
.
```

Racket Solution:

```
(define/contract (find-matrix nums)
(-> (listof exact-integer?) (listof (listof exact-integer?)))
```

```
)
```