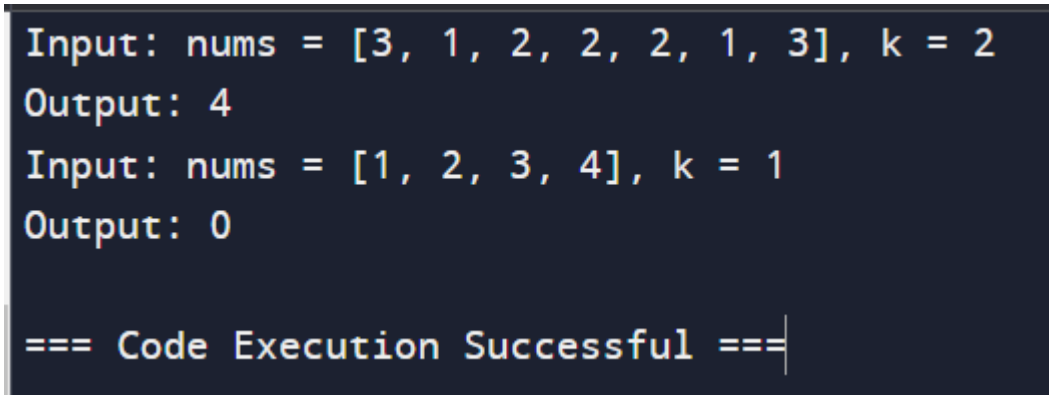
1. 128. Given a 0-indexed integer array nums of length n and an integer k, return *the number of pairs* (i, j) *where* 0 <= i < j < n, *such that* nums[i] == nums[j] *and* (i * j) *is divisible by* k.
   Example 1:
   Input: nums = [3,1,2,2,2,1,3], k = 2
   Output: 4
   Explanation:
   There are 4 pairs that meet all the requirements:
   - nums[0] == nums[6], and 0 * 6 == 0, which is divisible by 2.
   - nums[2] == nums[3], and 2 * 3 == 6, which is divisible by 2.
   - nums[2] == nums[4], and 2 * 4 == 8, which is divisible by 2.
   - nums[3] == nums[4], and 3 * 4 == 12, which is divisible by 2.
   Example 2:
   Input: nums = [1,2,3,4], k = 1
   Output: 0
   Explanation: Since no value in nums is repeated, there are no pairs (i,j) that meet all the requirements.

PROGRAM:-

```
def count_pairs(nums, k):
    index_map = {}
    count = 0

    for i, num in enumerate(nums):
        if num in index_map:
            for j in index_map[num]:
                if (i * j) % k == 0:
                    count += 1
            index_map[num].append(i)
        else:
            index_map[num] = [i]

    return count

# Example 1
```

```
nums1 = [3, 1, 2, 2, 2, 1, 3]

k1 = 2

output1 = count_pairs(nums1, k1)

print(f"Input: nums = {nums1}, k = {k1}\nOutput: {output1}")


# Example 2

nums2 = [1, 2, 3, 4]

k2 = 1

output2 = count_pairs(nums2, k2)

print(f"Input: nums = {nums2}, k = {k2}\nOutput: {output2}")
```

OUTPUT:-



TIME COMPLEXITY:-O(n)