**Problem #2176: Count Equal and Divisible Pairs in an Array (Easy)**

<https://leetcode.com/problems/count-equal-and-divisible-pairs-in-an-array/description/>

**My Solution:**

**Solution 1:**

1. Create a dictionary mydict in which the key is each unique number in nums array and the value consists of a list of indexes where the key occurred.
2. Initialize count to 0.
3. Traverse through the keys in mydict. For each key, get its value and call it val which is a list.

If length of val is 1, there is not thing to do since we are looking only for pairs.

If length of val is 2, then get the two values from val list and multiply them. If the product is divisible by k, then increment count by 1.

If the length of val is greater than 2, look for pairs where the first index is less than the second index and if the product of the two indexes is divisible by k, then increment count by 1.

1. Return count.

Solution 1: O(n) time

class Solution:

def countPairs(self, nums: List[int], k: int) -> int:

mydict = {}

for i in range(len(nums)):

if nums[i] not in mydict.keys():

mydict[nums[i]] = [i]

else:

mydict[nums[i]].append(i)

#print("mydict = ", mydict)

count = 0

for key in mydict.keys():

val = mydict[key]

#print("key = ", key, "val = ", val)

if len(val) == 2:

if val[0] \* val[1] % k == 0:

count += 1

elif len(val) > 2:

for i in range(len(val) - 1):

for j in range(i + 1, len(val)):

if val[i] \* val[j] % k == 0:

count += 1

#print("i = ", i, "j = ", j, "val[i] = ", val[i], "val[j] = ", val[j])

#print("count = ", count)

return count

**Solution 2: O(n \*\* 2) time**

1. Initialize count to 0.
2. For I in range of (length of nums - 1) and for j in range of 1 to length of nums, if the product of nums at index I and nums at index j is divisible by k, then increment count by 1.
3. Return count.

class Solution:

def countPairs(self, nums: List[int], k: int) -> int

count = 0

for i in range(len(nums) - 1):

for j in range(i + 1, len(nums)):

if nums[i] == nums[j] and (i \* j) % k == 0:

count += 1

return count