Problem 974: Subarray Sums Divisible by K

Problem Information

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

Problem Description

Given an integer array

nums

and an integer

k

, return

the number of non-empty

subarrays

that have a sum divisible by

k

.

A

subarray

is a

contiguous

part of an array.

Example 1:

Input:

nums = [4,5,0,-2,-3,1], k = 5

Output:

7

Explanation:

There are 7 subarrays with a sum divisible by k = 5: [4, 5, 0, -2, -3, 1], [5], [5, 0], [5, 0, -2, -3], [0], [0, -2, -3], [-2, -3]

Example 2:

Input:

nums = [5], k = 9

Output:

0

Constraints:

1 <= nums.length <= 3 * 10

4

-10

4

<= nums[i] <= 10

4

2 <= k <= 10

4

Code Snippets

C++:

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

}
};
```

Java:

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

}
}
```

Python3:

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

Python:

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

JavaScript:

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

};
```

TypeScript:

```
function subarraysDivByK(nums: number[], k: number): number {

};
```

C#:

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

}
}
```

C:

```
int subarraysDivByK(int* nums, int numsSize, int k) {

}
```

Go:

```
func subarraysDivByK(nums []int, k int) int {

}
```

Kotlin:

```
class Solution {
fun subarraysDivByK(nums: IntArray, k: Int): Int {

}
}
```

Swift:

```
class Solution {
func subarraysDivByK(_ nums: [Int], _ k: Int) -> Int {

}
}
```

Rust:

```
impl Solution {
pub fn subarrays_div_by_k(nums: Vec<i32>, k: i32) -> i32 {

}
}
```

Ruby:

```
# @param {Integer[]} nums
# @param {Integer} k
# @return {Integer}
def subarrays_div_by_k(nums, k)

end
```

PHP:

```
class Solution {

/**
* @param Integer[] $nums
* @param Integer $k
* @return Integer
*/
function subarraysDivByK($nums, $k) {

}
}
```

Dart:

```
class Solution {
int subarraysDivByK(List<int> nums, int k) {

}
}
```

Scala:

```
object Solution {
def subarraysDivByK(nums: Array[Int], k: Int): Int = {

}
}
```

Elixir:

```
defmodule Solution do
@spec subarrays_div_by_k(nums :: [integer], k :: integer) :: integer
def subarrays_div_by_k(nums, k) do

end
end
```

Erlang:

```
-spec subarrays_div_by_k(Nums :: [integer()], K :: integer()) -> integer().
subarrays_div_by_k(Nums, K) ->
.
```

Racket:

```
(define/contract (subarrays-div-by-k nums k)
(-> (listof exact-integer?) exact-integer? exact-integer?)
)
```

Solutions

C++ Solution:

```
/*
* Problem: Subarray Sums Divisible by K
* 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:
int subarraysDivByK(vector<int>& nums, int k) {

}
};
```

Java Solution:

```
/**
* Problem: Subarray Sums Divisible by K
* 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 int subarraysDivByK(int[] nums, int k) {

}
}
```

Python3 Solution:

```
"""
Problem: Subarray Sums Divisible by K
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 subarraysDivByK(self, nums: List[int], k: int) -> int:
# TODO: Implement optimized solution
pass
```

Python Solution:

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

JavaScript Solution:

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function subarraysDivByK(nums: number[], k: number): number {

};
```

C# Solution:

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

}
}
```

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```
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```
*/

int subarraysDivByK(int* nums, int numsSize, int k) {

}
```

Go Solution:

```
// Problem: Subarray Sums Divisible by K
// Difficulty: Medium
// Tags: array, hash
//
// Approach: Use two pointers or sliding window technique
// Time Complexity: O(n) or O(n log n)
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func subarraysDivByK(nums []int, k int) int {

}
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impl Solution {
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