

Problem 3199: Count Triplets with Even XOR Set Bits I

Problem Information

Difficulty: Easy

Acceptance Rate: 0.00%

Paid Only: No

Problem Description

Given three integer arrays

a

,

b

, and

c

, return the number of triplets

$(a[i], b[j], c[k])$

, such that the bitwise

XOR

of the elements of each triplet has an

even

number of

set bits

.

Example 1:

Input:

$a = [1]$, $b = [2]$, $c = [3]$

Output:

1

Explanation:

The only triplet is

$(a[0], b[0], c[0])$

and their

XOR

is:

$1 \text{ XOR } 2 \text{ XOR } 3 = 00$

2

.

Example 2:

Input:

$a = [1, 1]$, $b = [2, 3]$, $c = [1, 5]$

Output:

4

Explanation:

Consider these four triplets:

(a[0], b[1], c[0])

:

1 XOR 3 XOR 1 = 011

2

(a[1], b[1], c[0])

:

1 XOR 3 XOR 1 = 011

2

(a[0], b[0], c[1])

:

1 XOR 2 XOR 5 = 110

2

(a[1], b[0], c[1])

:

1 XOR 2 XOR 5 = 110

2

Constraints:

$1 \leq a.length, b.length, c.length \leq 100$

$0 \leq a[i], b[i], c[i] \leq 100$

Code Snippets

C++:

```
class Solution {
public:
    int tripletCount(vector<int>& a, vector<int>& b, vector<int>& c) {

    }
};
```

Java:

```
class Solution {
    public int tripletCount(int[] a, int[] b, int[] c) {

    }
}
```

Python3:

```
class Solution:
    def tripletCount(self, a: List[int], b: List[int], c: List[int]) -> int:
```

Python:

```
class Solution(object):
    def tripletCount(self, a, b, c):
        """
        :type a: List[int]
        :type b: List[int]
        :type c: List[int]
        :rtype: int
        """
```

JavaScript:

```
/**
 * @param {number[]} a
 * @param {number[]} b
 * @param {number[]} c
 * @return {number}
 */
var tripletCount = function(a, b, c) {

};
```

TypeScript:

```
function tripletCount(a: number[], b: number[], c: number[]): number {

};
```

C#:

```
public class Solution {
    public int TripletCount(int[] a, int[] b, int[] c) {

    }
}
```

C:

```
int tripletCount(int* a, int aSize, int* b, int bSize, int* c, int cSize) {

}
```

Go:

```
func tripletCount(a []int, b []int, c []int) int {

}
```

Kotlin:

```
class Solution {
    fun tripletCount(a: IntArray, b: IntArray, c: IntArray): Int {
```

```
}  
}
```

Swift:

```
class Solution {  
    func tripletCount(_ a: [Int], _ b: [Int], _ c: [Int]) -> Int {  
  
    }  
}
```

Rust:

```
impl Solution {  
    pub fn triplet_count(a: Vec<i32>, b: Vec<i32>, c: Vec<i32>) -> i32 {  
  
    }  
}
```

Ruby:

```
# @param {Integer[]} a  
# @param {Integer[]} b  
# @param {Integer[]} c  
# @return {Integer}  
def triplet_count(a, b, c)  
  
end
```

PHP:

```
class Solution {  
  
    /**  
     * @param Integer[] $a  
     * @param Integer[] $b  
     * @param Integer[] $c  
     * @return Integer  
     */  
    function tripletCount($a, $b, $c) {  
  
    }  
}
```

```
}
```

Dart:

```
class Solution {  
  int tripletCount(List<int> a, List<int> b, List<int> c) {  
  
  }  
}
```

Scala:

```
object Solution {  
  def tripletCount(a: Array[Int], b: Array[Int], c: Array[Int]): Int = {  
  
  }  
}
```

Elixir:

```
defmodule Solution do  
  @spec triplet_count(a :: [integer], b :: [integer], c :: [integer]) ::  
    integer  
  def triplet_count(a, b, c) do  
  
  end  
end
```

Erlang:

```
-spec triplet_count(A :: [integer()], B :: [integer()], C :: [integer()]) ->  
integer().  
triplet_count(A, B, C) ->  
.
```

Racket:

```
(define/contract (triplet-count a b c)  
  (-> (listof exact-integer?) (listof exact-integer?) (listof exact-integer?)  
    exact-integer?)  
)
```

Solutions

C++ Solution:

```
/*
 * Problem: Count Triplets with Even XOR Set Bits I
 * Difficulty: Easy
 * Tags: array
 *
 * Approach: Use two pointers or sliding window technique
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(1) to O(n) depending on approach
 */

class Solution {
public:
    int tripletCount(vector<int>& a, vector<int>& b, vector<int>& c) {

    }
};
```

Java Solution:

```
/**
 * Problem: Count Triplets with Even XOR Set Bits I
 * Difficulty: Easy
 * Tags: array
 *
 * Approach: Use two pointers or sliding window technique
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(1) to O(n) depending on approach
 */

class Solution {
    public int tripletCount(int[] a, int[] b, int[] c) {

    }
}
```

Python3 Solution:


```

"""
Problem: Count Triplets with Even XOR Set Bits I
Difficulty: Easy
Tags: array

Approach: Use two pointers or sliding window technique
Time Complexity: O(n) or O(n log n)
Space Complexity: O(1) to O(n) depending on approach
"""

class Solution:
    def tripletCount(self, a: List[int], b: List[int], c: List[int]) -> int:
        # TODO: Implement optimized solution
        pass

```

Python Solution:

```

class Solution(object):
    def tripletCount(self, a, b, c):
        """
        :type a: List[int]
        :type b: List[int]
        :type c: List[int]
        :rtype: int
        """

```

JavaScript Solution:

```

/**
 * Problem: Count Triplets with Even XOR Set Bits I
 * Difficulty: Easy
 * Tags: array
 *
 * Approach: Use two pointers or sliding window technique
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(1) to O(n) depending on approach
 */

/**
 * @param {number[]} a
 * @param {number[]} b
 * @param {number[]} c

```

```

* @return {number}
*/
var tripletCount = function(a, b, c) {

};

```

TypeScript Solution:

```

/**
 * Problem: Count Triplets with Even XOR Set Bits I
 * Difficulty: Easy
 * Tags: array
 *
 * Approach: Use two pointers or sliding window technique
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(1) to O(n) depending on approach
 */

function tripletCount(a: number[], b: number[], c: number[]): number {

};

```

C# Solution:

```

/*
 * Problem: Count Triplets with Even XOR Set Bits I
 * Difficulty: Easy
 * Tags: array
 *
 * Approach: Use two pointers or sliding window technique
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(1) to O(n) depending on approach
 */

public class Solution {
    public int TripletCount(int[] a, int[] b, int[] c) {

    }
}

```

C Solution:

```

/*
 * Problem: Count Triplets with Even XOR Set Bits I
 * Difficulty: Easy
 * Tags: array
 *
 * Approach: Use two pointers or sliding window technique
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(1) to O(n) depending on approach
 */

int tripletCount(int* a, int aSize, int* b, int bSize, int* c, int cSize) {

}

```

Go Solution:

```

// Problem: Count Triplets with Even XOR Set Bits I
// Difficulty: Easy
// Tags: array
//
// Approach: Use two pointers or sliding window technique
// Time Complexity: O(n) or O(n log n)
// Space Complexity: O(1) to O(n) depending on approach

func tripletCount(a []int, b []int, c []int) int {

}

```

Kotlin Solution:

```

class Solution {
    fun tripletCount(a: IntArray, b: IntArray, c: IntArray): Int {

    }
}

```

Swift Solution:

```

class Solution {
    func tripletCount(_ a: [Int], _ b: [Int], _ c: [Int]) -> Int {

    }
}

```

```
}
```

Rust Solution:

```
// Problem: Count Triplets with Even XOR Set Bits I
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// Tags: array
//
// Approach: Use two pointers or sliding window technique
// Time Complexity: O(n) or O(n log n)
// Space Complexity: O(1) to O(n) depending on approach

impl Solution {
    pub fn triplet_count(a: Vec<i32>, b: Vec<i32>, c: Vec<i32>) -> i32 {

    }
}
```

Ruby Solution:

```
# @param {Integer[]} a
# @param {Integer[]} b
# @param {Integer[]} c
# @return {Integer}
def triplet_count(a, b, c)

end
```

PHP Solution:

```
class Solution {

    /**
     * @param Integer[] $a
     * @param Integer[] $b
     * @param Integer[] $c
     * @return Integer
     */
    function tripletCount($a, $b, $c) {

    }

}
```

```
}
```

Dart Solution:

```
class Solution {  
  int tripletCount(List<int> a, List<int> b, List<int> c) {  
  
  }  
}
```

Scala Solution:

```
object Solution {  
  def tripletCount(a: Array[Int], b: Array[Int], c: Array[Int]): Int = {  
  
  }  
}
```

Elixir Solution:

```
defmodule Solution do  
  @spec triplet_count(a :: [integer], b :: [integer], c :: [integer]) ::  
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  def triplet_count(a, b, c) do  
  
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end
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-spec triplet_count(A :: [integer()], B :: [integer()], C :: [integer()]) ->  
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    exact-integer?)  
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```

