

# Problem 3234: Count the Number of Substrings With Dominant Ones

## Problem Information

Difficulty: Medium

Acceptance Rate: 0.00%

Paid Only: No

## Problem Description

You are given a binary string

s

Return the number of

substrings

with

dominant

ones.

A string has

dominant

ones if the number of ones in the string is

greater than or equal to

the

square

of the number of zeros in the string.

Example 1:

Input:

$s = "00011"$

Output:

5

Explanation:

The substrings with dominant ones are shown in the table below.

i

j

$s[i..j]$

Number of Zeros

Number of Ones

3

3

1

0

1

4

4

1

0

1

2

3

01

1

1

3

4

11

0

2

2

4

011

1

2

Example 2:

Input:

$s = "101101"$

Output:

16

Explanation:

The substrings with

non-dominant

ones are shown in the table below.

Since there are 21 substrings total and 5 of them have non-dominant ones, it follows that there are 16 substrings with dominant ones.

i

j

$s[i..j]$

Number of Zeros

Number of Ones

1

1

0

1

0

4

4

0

1

0

1

4

0110

2

2

0

4

10110

2

3

1

5

01101

2

3

Constraints:

$1 \leq s.length \leq 4 * 10$

4

s

consists only of characters

'0'

and

'1'

## Code Snippets

**C++:**

```
class Solution {
public:
    int numberOfSubstrings(string s) {
        }
};
```

**Java:**

```
class Solution {
    public int numberOfSubstrings(String s) {
        }
```

```
}
```

### Python3:

```
class Solution:  
    def number_of_substrings(self, s: str) -> int:
```

### Python:

```
class Solution(object):  
    def number_of_substrings(self, s):  
        """  
        :type s: str  
        :rtype: int  
        """
```

### JavaScript:

```
/**  
 * @param {string} s  
 * @return {number}  
 */  
var number_of_substrings = function(s) {  
  
};
```

### TypeScript:

```
function number_of_substrings(s: string): number {  
  
};
```

### C#:

```
public class Solution {  
    public int Number_of_substrings(string s) {  
  
    }  
}
```

### C:

```
int numberOfSubstrings(char* s) {  
}  
}
```

**Go:**

```
func numberOfSubstrings(s string) int {  
}  
}
```

**Kotlin:**

```
class Solution {  
    fun numberOfSubstrings(s: String): Int {  
        }  
    }  
}
```

**Swift:**

```
class Solution {  
    func numberOfSubstrings(_ s: String) -> Int {  
        }  
    }  
}
```

**Rust:**

```
impl Solution {  
    pub fn number_of_substrings(s: String) -> i32 {  
        }  
    }  
}
```

**Ruby:**

```
# @param {String} s  
# @return {Integer}  
def number_of_substrings(s)  
  
end
```

**PHP:**

```
class Solution {  
  
    /**  
     * @param String $s  
     * @return Integer  
     */  
    function numberOfSubstrings($s) {  
  
    }  
}
```

### Dart:

```
class Solution {  
int numberOfSubstrings(String s) {  
  
}  
}
```

### Scala:

```
object Solution {  
def numberOfSubstrings(s: String): Int = {  
  
}  
}
```

### Elixir:

```
defmodule Solution do  
@spec number_of_substrings(s :: String.t) :: integer  
def number_of_substrings(s) do  
  
end  
end
```

### Erlang:

```
-spec number_of_substrings(S :: unicode:unicode_binary()) -> integer().  
number_of_substrings(S) ->  
.
```

### Racket:

```
(define/contract (number-of-substrings s)
  (-> string? exact-integer?))
```

## Solutions

### C++ Solution:

```
/*
 * Problem: Count the Number of Substrings With Dominant Ones
 * Difficulty: Medium
 * Tags: string, tree
 *
 * Approach: String manipulation with hash map or two pointers
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(h) for recursion stack where h is height
 */

class Solution {
public:
    int numberOfSubstrings(string s) {

    }
};
```

### Java Solution:

```
/**
 * Problem: Count the Number of Substrings With Dominant Ones
 * Difficulty: Medium
 * Tags: string, tree
 *
 * Approach: String manipulation with hash map or two pointers
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(h) for recursion stack where h is height
 */

class Solution {
    public int numberOfSubstrings(String s) {

    }
}
```

```
}
```

### Python3 Solution:

```
"""
Problem: Count the Number of Substrings With Dominant Ones
Difficulty: Medium
Tags: string, tree

Approach: String manipulation with hash map or two pointers
Time Complexity: O(n) or O(n log n)
Space Complexity: O(h) for recursion stack where h is height
"""

class Solution:

    def number_of_substrings(self, s: str) -> int:
        # TODO: Implement optimized solution
        pass
```

### Python Solution:

```
class Solution(object):

    def number_of_substrings(self, s):
        """
        :type s: str
        :rtype: int
        """
```

### JavaScript Solution:

```
/**
 * Problem: Count the Number of Substrings With Dominant Ones
 * Difficulty: Medium
 * Tags: string, tree
 *
 * Approach: String manipulation with hash map or two pointers
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(h) for recursion stack where h is height
 */

/**
```

```

* @param {string} s
* @return {number}
*/
var numberOfSubstrings = function(s) {

};

```

### TypeScript Solution:

```

/**
 * Problem: Count the Number of Substrings With Dominant Ones
 * Difficulty: Medium
 * Tags: string, tree
 *
 * Approach: String manipulation with hash map or two pointers
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(h) for recursion stack where h is height
 */

function numberOfSubstrings(s: string): number {

};

```

### C# Solution:

```

/*
 * Problem: Count the Number of Substrings With Dominant Ones
 * Difficulty: Medium
 * Tags: string, tree
 *
 * Approach: String manipulation with hash map or two pointers
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(h) for recursion stack where h is height
 */

public class Solution {
    public int NumberOfSubstrings(string s) {

    }
}

```

### C Solution:

```
/*
 * Problem: Count the Number of Substrings With Dominant Ones
 * Difficulty: Medium
 * Tags: string, tree
 *
 * Approach: String manipulation with hash map or two pointers
 * Time Complexity: O(n) or O(n log n)
 * Space Complexity: O(h) for recursion stack where h is height
 */

int numberOfSubstrings(char* s) {

}
```

### Go Solution:

```
// Problem: Count the Number of Substrings With Dominant Ones
// Difficulty: Medium
// Tags: string, tree
//
// Approach: String manipulation with hash map or two pointers
// Time Complexity: O(n) or O(n log n)
// Space Complexity: O(h) for recursion stack where h is height

func numberOfSubstrings(s string) int {

}
```

### Kotlin Solution:

```
class Solution {
    fun numberOfSubstrings(s: String): Int {
        return 0
    }
}
```

### Swift Solution:

```
class Solution {
    func numberOfSubstrings(_ s: String) -> Int {
```

```
}
```

```
}
```

### Rust Solution:

```
// Problem: Count the Number of Substrings With Dominant Ones
// Difficulty: Medium
// Tags: string, tree
//
// Approach: String manipulation with hash map or two pointers
// Time Complexity: O(n) or O(n log n)
// Space Complexity: O(h) for recursion stack where h is height

impl Solution {
    pub fn number_of_substrings(s: String) -> i32 {
        }

    }
}
```

### Ruby Solution:

```
# @param {String} s
# @return {Integer}
def number_of_substrings(s)

end
```

### PHP Solution:

```
class Solution {

    /**
     * @param String $s
     * @return Integer
     */
    function numberOfSubstrings($s) {

    }
}
```

### Dart Solution:

```
class Solution {  
    int numberOfSubstrings(String s) {  
  
    }  
}
```

### Scala Solution:

```
object Solution {  
    def numberOfSubstrings(s: String): Int = {  
  
    }  
}
```

### Elixir Solution:

```
defmodule Solution do  
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  def number_of_substrings(s) do  
  
  end  
end
```

### Erlang Solution:

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### Racket Solution:

```
(define/contract (number-of-substrings s)  
  (-> string? exact-integer?)  
)
```