Problem 562: Longest Line of Consecutive One in Matrix

Problem Information

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

Problem Description

Given an

m x n

binary matrix

mat

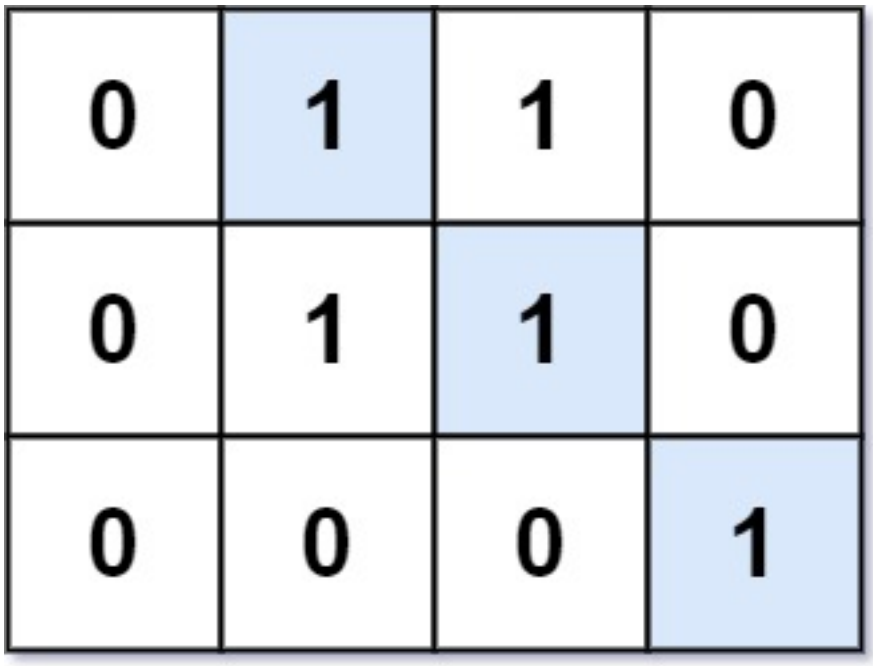
, return

the length of the longest line of consecutive one in the matrix

.

The line could be horizontal, vertical, diagonal, or anti-diagonal.

Example 1:



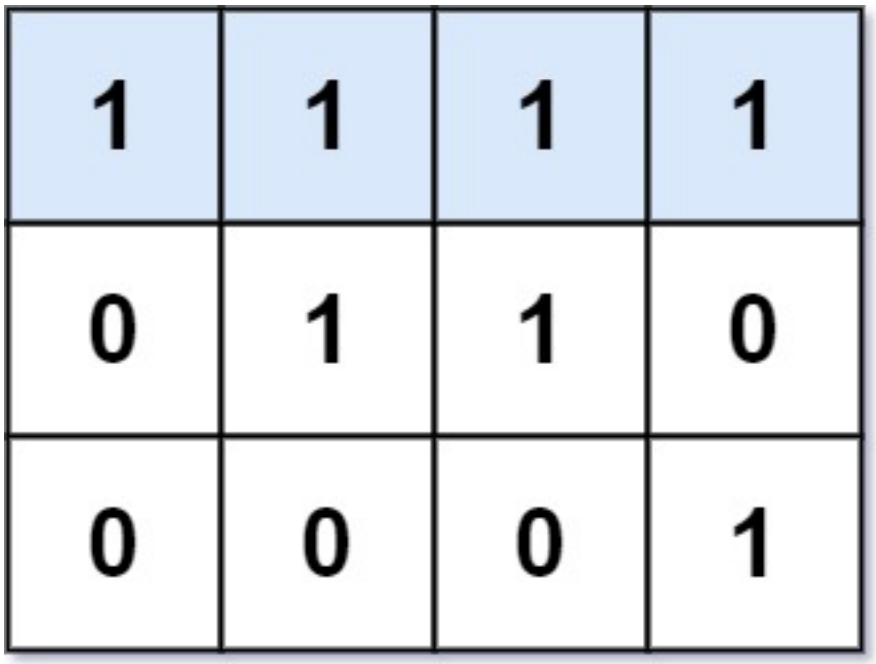
Input:

mat = [[0,1,1,0],[0,1,1,0],[0,0,0,1]]

Output:

3

Example 2:



Input:

mat = [[1,1,1,1],[0,1,1,0],[0,0,0,1]]

Output:

4

Constraints:

m == mat.length

n == mat[i].length

1 <= m, n <= 10

4

1 <= m * n <= 10

4

mat[i][j]

is either

0

or

1

.

Code Snippets

C++:

```
class Solution {
public:
int longestLine(vector<vector<int>>& mat) {

}
};
```

Java:

```
class Solution {
public int longestLine(int[][] mat) {

}
}
```

Python3:

```
class Solution:
def longestLine(self, mat: List[List[int]]) -> int:
```

Python:

```
class Solution(object):
def longestLine(self, mat):
"""
:type mat: List[List[int]]
```

```
:rtype: int
"""
```

JavaScript:

```
/**
* @param {number[][]} mat
* @return {number}
*/
var longestLine = function(mat) {

};
```

TypeScript:

```
function longestLine(mat: number[][]): number {

};
```

C#:

```
public class Solution {
public int LongestLine(int[][] mat) {

}
}
```

C:

```
int longestLine(int** mat, int matSize, int* matColSize) {

}
```

Go:

```
func longestLine(mat [][]int) int {

}
```

Kotlin:

```
class Solution {
fun longestLine(mat: Array<IntArray>): Int {

}
}
```

Swift:

```
class Solution {
func longestLine(_ mat: [[Int]]) -> Int {

}
}
```

Rust:

```
impl Solution {
pub fn longest_line(mat: Vec<Vec<i32>>) -> i32 {

}
}
```

Ruby:

```
# @param {Integer[][]} mat
# @return {Integer}
def longest_line(mat)

end
```

PHP:

```
class Solution {

/**
* @param Integer[][] $mat
* @return Integer
*/
function longestLine($mat) {

}
}
```

Dart:

```
class Solution {
int longestLine(List<List<int>> mat) {

}
}
```

Scala:

```
object Solution {
def longestLine(mat: Array[Array[Int]]): Int = {

}
}
```

Elixir:

```
defmodule Solution do
@spec longest_line(mat :: [[integer]]) :: integer
def longest_line(mat) do

end
end
```

Erlang:

```
-spec longest_line(Mat :: [[integer()]]) -> integer().
longest_line(Mat) ->
.
```

Racket:

```
(define/contract (longest-line mat)
(-> (listof (listof exact-integer?)) exact-integer?)
)
```

Solutions

C++ Solution:

```
/*
* Problem: Longest Line of Consecutive One in Matrix
* Difficulty: Medium
* Tags: array, dp
*
* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(n) or O(n * m) for DP table
*/

class Solution {
public:
int longestLine(vector<vector<int>>& mat) {

}
};
```

Java Solution:

```
/**
* Problem: Longest Line of Consecutive One in Matrix
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* Approach: Use two pointers or sliding window technique
* Time Complexity: O(n) or O(n log n)
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*/

class Solution {
public int longestLine(int[][] mat) {

}
}
```

Python3 Solution:

```
"""
Problem: Longest Line of Consecutive One in Matrix
Difficulty: Medium
Tags: array, dp
```

```
Approach: Use two pointers or sliding window technique
Time Complexity: O(n) or O(n log n)
Space Complexity: O(n) or O(n * m) for DP table
"""

class Solution:
def longestLine(self, mat: List[List[int]]) -> int:
# TODO: Implement optimized solution
pass
```

Python Solution:

```
class Solution(object):
def longestLine(self, mat):
"""
:type mat: List[List[int]]
:rtype: int
"""
```

JavaScript Solution:

```
/**
* Problem: Longest Line of Consecutive One in Matrix
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var longestLine = function(mat) {

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TypeScript Solution:

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*/

function longestLine(mat: number[][]): number {

};
```

C# Solution:

```
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public class Solution {
public int LongestLine(int[][] mat) {

}
}
```

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```
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* Problem: Longest Line of Consecutive One in Matrix
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```

```
*/

int longestLine(int** mat, int matSize, int* matColSize) {

}
```

Go Solution:

```
// Problem: Longest Line of Consecutive One in Matrix
// Difficulty: Medium
// Tags: array, dp
//
// Approach: Use two pointers or sliding window technique
// Time Complexity: O(n) or O(n log n)
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func longestLine(mat [][]int) int {

}
```

Kotlin Solution:

```
class Solution {
fun longestLine(mat: Array<IntArray>): Int {

}
}
```

Swift Solution:

```
class Solution {
func longestLine(_ mat: [[Int]]) -> Int {

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Rust Solution:

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// Problem: Longest Line of Consecutive One in Matrix
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impl Solution {
pub fn longest_line(mat: Vec<Vec<i32>>) -> i32 {

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Ruby Solution:

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# @param {Integer[][]} mat
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