

766. Toeplitz Matrix

Tags	
Property	@October 31, 2022
URL	

Question

原文：

766. Toeplitz Matrix

Easy 2289 131 Add to List Share

Given an $m \times n$ matrix, return `true` if the matrix is Toeplitz. Otherwise, return `false`.

A matrix is **Toeplitz** if every diagonal from top-left to bottom-right has the same elements.

Example 1:

1	2	3	4
5	1	2	3
9	5	1	2

我的理解：

給定一矩陣，確認矩陣是否是Toeplitz矩陣，也就是左上到右下的斜線都是相同

翻譯：

自評翻譯正確性：

- Word Memory：

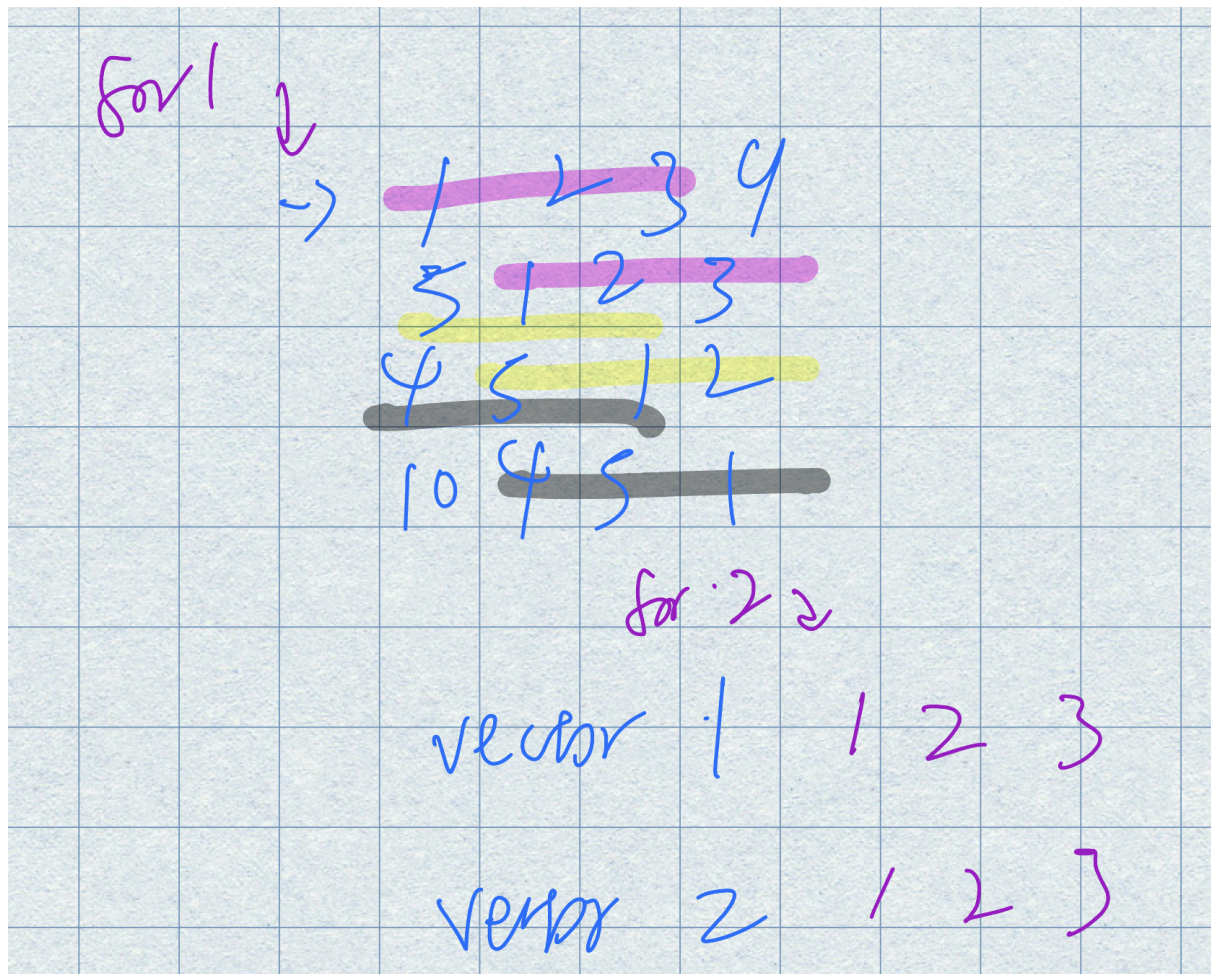
Code

```
class Solution {
public:
    bool isToeplitzMatrix(vector<vector<int>>& matrix) {
        int i=0,j=0;
        int high = matrix.size()-1;
        int length = matrix[0].size()-1;
        int check_num=0;
        vector<int>com1;
        vector<int>com2;

        for( i=0;i<high;i++){
            for( j=0;j<length;j++){
                com1.push_back(matrix[i][j]);
                com2.push_back(matrix[i+1][j+1]);
            }
            if(com1!=com2){
                check_num=1;
            }
        }

        if(check_num==1)
            return false;
        else
            return true;
    }
};
```

思路：上一行的除了最後一個元素會跟下一行的除了第一個元素相同，思路如下圖



LeetCode Explore Problems Interview ^{New} Contest Discuss Store

Description Solution Discuss (999+) Submissions




Success Details >

Runtime: 36 ms, faster than 32.22% of C++ online submissions for Toeplitz Matrix.

Memory Usage: 18.5 MB, less than 5.32% of C++ online submissions for Toeplitz Matrix.

Next challenges:

Valid Word Square

Show off your acceptance:   

Time Submitted	Status	Runtime	Memory	Language
10/31/2022 11:53	Accepted	36 ms	18.5 MB	cpp

優良code參考

```
static bool isToeplitzMatrix(const vector<vector<int>>& matrix) {  
    const int rows = matrix.size();  
    const int cols = matrix[0].size();  
    for (int r = 1; r < rows; ++r)  
        for (int c = 1; c < cols; ++c)  
            if (matrix[r][c] != matrix[r - 1][c - 1]) return false;  
  
    return true;  
}
```

思路：逐個向自身 左上 的元素比較