Problem 498: Diagonal Traverse

Problem Information

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

Problem Description

Given an

m x n

matrix

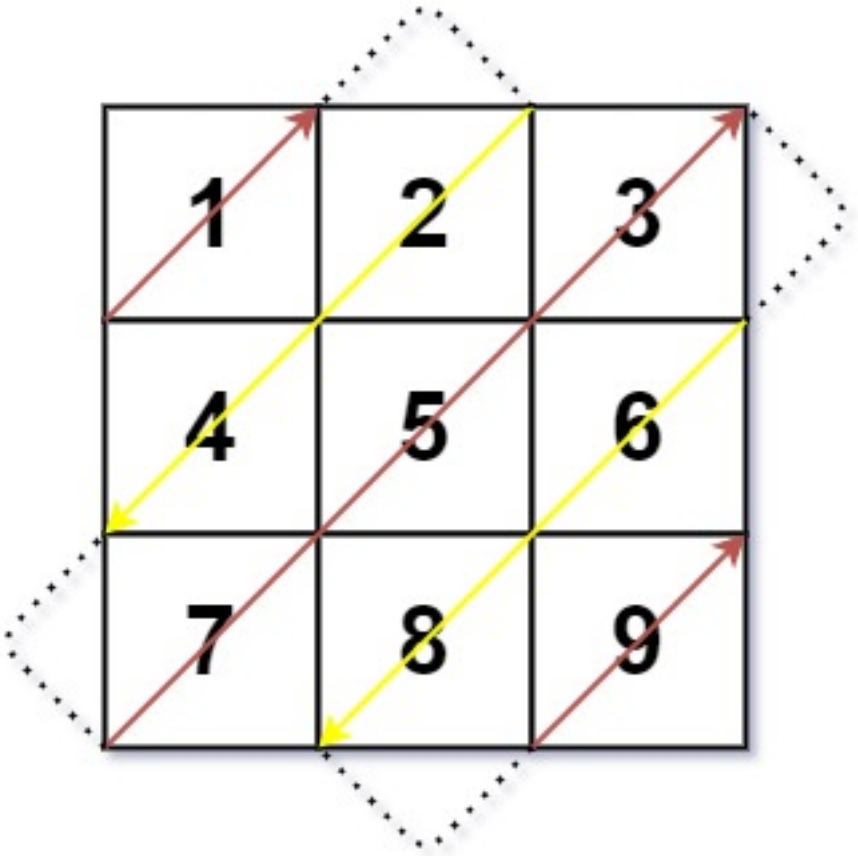
mat

, return

an array of all the elements of the array in a diagonal order

.

Example 1:



Input:

mat = [[1,2,3],[4,5,6],[7,8,9]]

Output:

[1,2,4,7,5,3,6,8,9]

Example 2:

Input:

mat = [[1,2],[3,4]]

Output:

[1,2,3,4]

Constraints:

m == mat.length

n == mat[i].length

1 <= m, n <= 10

4

1 <= m * n <= 10

4

-10

5

<= mat[i][j] <= 10

5

Code Snippets

C++:

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

}
};
```

Java:

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

}
}
```

Python3:

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

Python:

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

JavaScript:

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

};
```

TypeScript:

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

};
```

C#:

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

}
}
```

C:

```
/**
* Note: The returned array must be malloced, assume caller calls free().
*/
```

```
int* findDiagonalOrder(int** mat, int matSize, int* matColSize, int*
returnSize) {

}
```

Go:

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

}
```

Kotlin:

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

}
}
```

Swift:

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

}
}
```

Rust:

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

}
}
```

Ruby:

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

end
```

PHP:

```
class Solution {

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

}
}
```

Dart:

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

}
}
```

Scala:

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

}
}
```

Elixir:

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

end
end
```

Erlang:

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

Racket:

```
(define/contract (find-diagonal-order mat)
(-> (listof (listof exact-integer?)) (listof exact-integer?))
)
```

Solutions

C++ Solution:

```
/*
* Problem: Diagonal Traverse
* Difficulty: Medium
* 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:
vector<int> findDiagonalOrder(vector<vector<int>>& mat) {

}
};
```

Java Solution:

```
/**
* Problem: Diagonal Traverse
* Difficulty: Medium
* 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[] findDiagonalOrder(int[][] mat) {
```

```
}
}
```

Python3 Solution:

```
"""
Problem: Diagonal Traverse
Difficulty: Medium
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 findDiagonalOrder(self, mat: List[List[int]]) -> List[int]:
# TODO: Implement optimized solution
pass
```

Python Solution:

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

JavaScript Solution:

```
/**
* Problem: Diagonal Traverse
* Difficulty: Medium
* Tags: array
*
* Approach: Use two pointers or sliding window technique
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*/
```

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

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TypeScript Solution:

```
/**
* Problem: Diagonal Traverse
* Difficulty: Medium
* Tags: array
*
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* Time Complexity: O(n) or O(n log n)
* Space Complexity: O(1) to O(n) depending on approach
*/

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

};
```

C# Solution:

```
/*
* Problem: Diagonal Traverse
* Difficulty: Medium
* 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[] FindDiagonalOrder(int[][] mat) {

}
```

```
}
```

C Solution:

```
/*
* Problem: Diagonal Traverse
* Difficulty: Medium
* Tags: array
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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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*/

/**
* Note: The returned array must be malloced, assume caller calls free().
*/
int* findDiagonalOrder(int** mat, int matSize, int* matColSize, int*
returnSize) {

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```

Go Solution:

```
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// Difficulty: Medium
// 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 findDiagonalOrder(mat [][]int) []int {

}
```

Kotlin Solution:

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

```
}
}
```

Swift Solution:

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

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Rust Solution:

```
// Problem: Diagonal Traverse
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impl Solution {
pub fn find_diagonal_order(mat: Vec<Vec<i32>>) -> Vec<i32> {

}
}
```

Ruby Solution:

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

end
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PHP Solution:

```
class Solution {

/**
* @param Integer[][] $mat
```

```
* @return Integer[]
*/
function findDiagonalOrder($mat) {

}
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Dart Solution:

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class Solution {
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