**6 kyu**

**Find number in an array # 5**

4094% of918[myjinxin2015](https://www.codewars.com/users/myjinxin2015)

JavaScript

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When no more interesting kata can be resolved, I just choose to create the new kata, to solve their own, to enjoy the process --myjinxin2015 said

**Description:**

Give an 2D integer array arr that contains some integers. Array arr has the following properties:

* Integers in each row are sorted from left to right.
* Integers in each column are sorted from up to bottom.
* No duplicate integers in each row or column. For example:
* arr = [
* [1, 3, 5, 7],
* [2, 4, 7, 8],
* [3, 5, 9, 10]
* ]

Then give a target number num, your task is to count how many num in arr.

arr = [...see above]

num = 3

countNumber(arr,num) === 2

arr = [

[62,63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80],

[63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81],

[64,65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82],

[65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83],

[66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84],

[67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85]],

num=81

countNumber(arr,num) === 5

**Note:**

* + Arguments arr always be an 2D array;
  + Please pay attention to optimizing the code to avoid time out.
  + In the performance test(5000x5000 elements x 100 testcases), the time consuming of each test case should be within 5ms. This means, Your algorithm should be faster than O(mn), your code should run as fast as a rocket ;-)

<https://www.codewars.com/kata/find-number-in-an-array-number-5/javascript>

using System;

using System.Collections.Generic;

using System.Linq;

using System.Text;

using System.Threading.Tasks;

namespace ConsoleApp1

{

class Program

{

static int FindElem(int[][] mat, int elem, int M, int N)

{

int row = 0;

int col = N - 1;

int cont = 0;

while (row < M && col >= 0)

{

if (mat[row][col] == elem)

{

cont++;

//return true;

}

if (mat[row][col] > elem)

{

col--;

}

else

{

row++;

}

}

return cont;

}

static void Main(string[] args)

{

int[][] arr = {

new int[] { 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80 },

new int[] { 63,64,65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81 },

new int[] { 64,65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82 },

new int[] { 65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83 },

new int[] { 66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84 },

new int[] { 67,68,69,70,71,72,73,74,75,76,77,78,79,80,81,82,83,84,85} };

int num = 81;

Console.WriteLine(FindElem(arr, num, arr.Length, arr[0].Length));

Console.ReadLine();

}

}

}

**function**  FindElem( mat, elem,  M,  N)

        {

**var** row = 0;

**var** col = N - 1;

**var** cont = 0;

            while (row < M && col >= 0)

            {

**if** (mat[row][col] == elem)

                {

                    cont++;

*//return true;*

                }

**if** (mat[row][col] > elem)

                {

                    col--;

                }

**else**

                {

                    row++;

                }

            }

**return** cont;

        }

**function** countNumber(arr,num){

*//coding and coding..*

**return** FindElem( arr, num, arr.length, arr[0].length);

}