Array : Video - 169

CodestorywithMIK

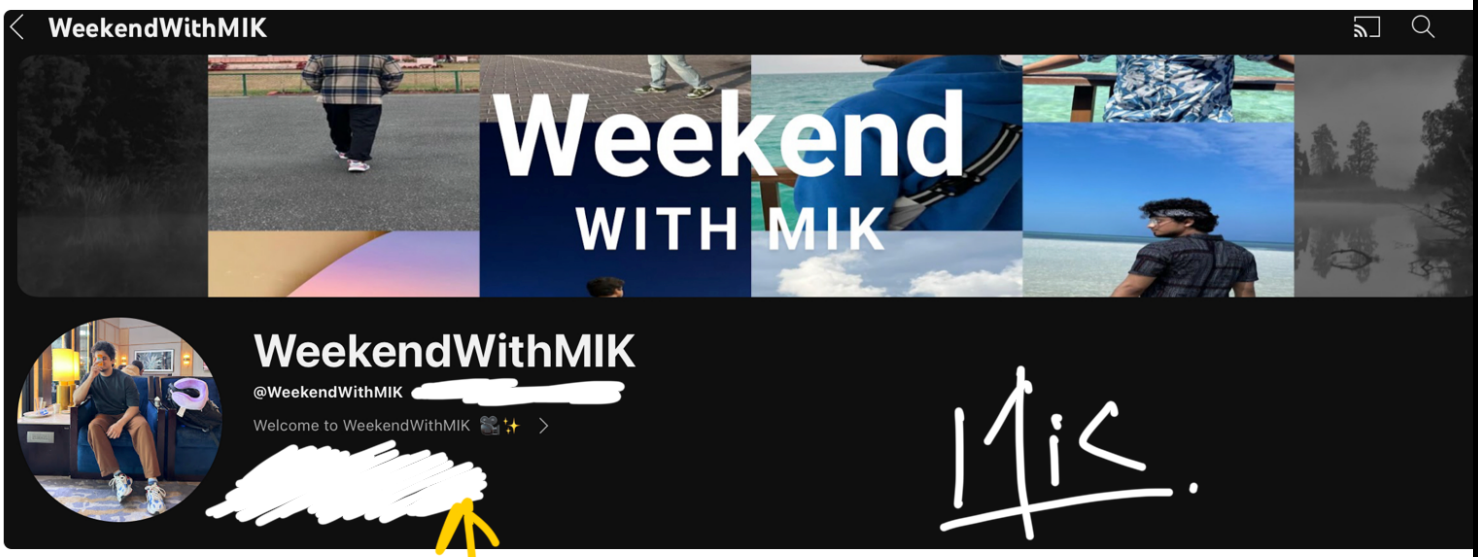
Leetcode - 2943

Medium

codestorywithmik

CSwithMIK

codestorywithMIK



Mic.

Try this channel to

see "Life behind the Scenes + Tech News

Motivation -

If you can do focused study for even 45 minutes, you are already on the path to the growth.

MIK...

2943. Maximize Area of Square Hole in Grid

Medium | Topics | Companies | Hint

You are given the two integers, `n` and `m` and two integer arrays, `hBars` and `vBars`. The grid has `n + 2` horizontal and `m + 2` vertical bars, creating 1 x 1 unit cells. The bars are indexed starting from `1`.

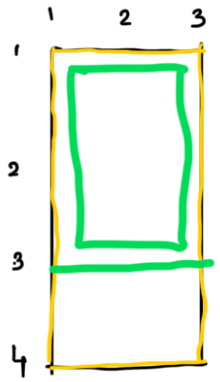
You can **remove** some of the bars in `hBars` from horizontal bars and some of the bars in `vBars` from vertical bars. Note that other bars are fixed and cannot be removed.

Return an integer denoting the **maximum area** of a *square-shaped* hole in the grid, after removing some bars (possibly none).

Example:- $n = 2$, $m = 1$

hBars = {2, 3}

vBars = {2}



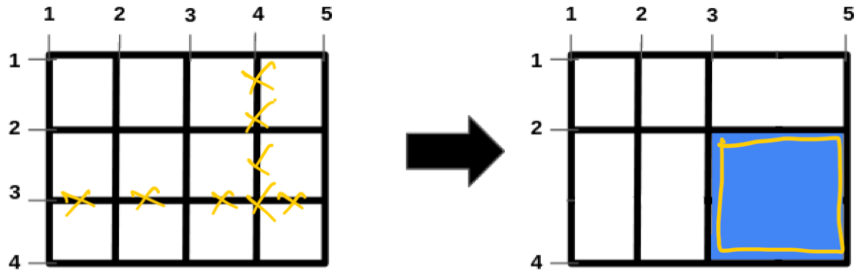
Output: 4

$n = 2$

$m = 3$

hBars = {2, 3}

vBars = {2, 4}



2 x 2 = 4

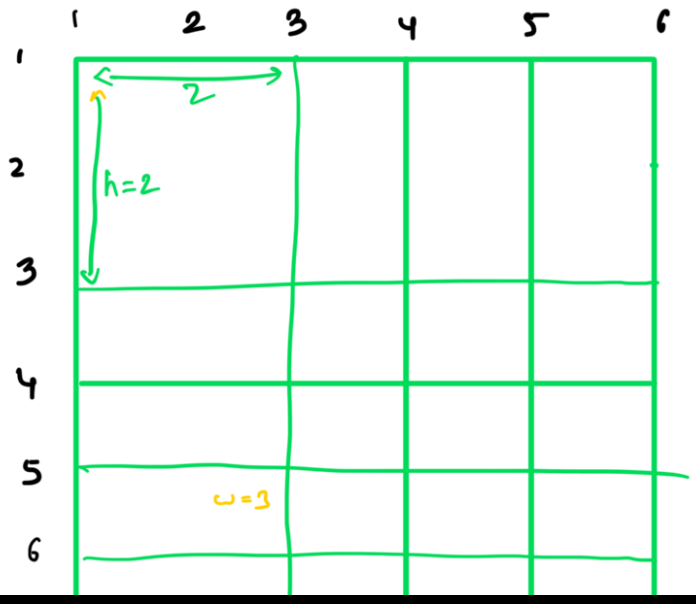
Thought Process

Intuition

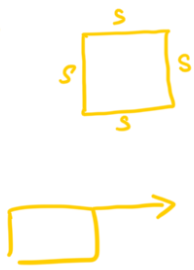
vBars = {2, 3, 5}

hBar = {2, 6}

3x3 = 9.



3x



2 vertBars = 3 width

2 HBar = 3 heigh

7

x Bars = (x+1) width/height

width ↑ remove vBars → consecutive Bars removal.

height ↑ remove hBars → consecutive Bars removal.

Observation : → Sort the inputs.

→ I will find "longest consecutive subarray" → length

in hBars
vBars

$$\begin{cases} x \text{ vBars} = (x+1) \text{ width (vBars)} \\ y \text{ hBars} = (y+1) \text{ height (hBars)} \end{cases}$$

side = min (x+1, y+1)

return side * side.

width = 3
hei = 2

min (wid, h) = min (3, 2) = 2

Sq = 2 * 2.

$T.C = O(h\log h + v\log v + h + v)$.

$S.C = O(1)$.