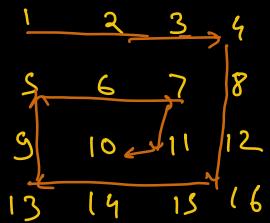


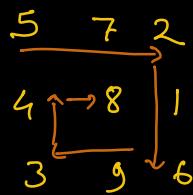
Q

Given a matrix. Print it in spiral order.

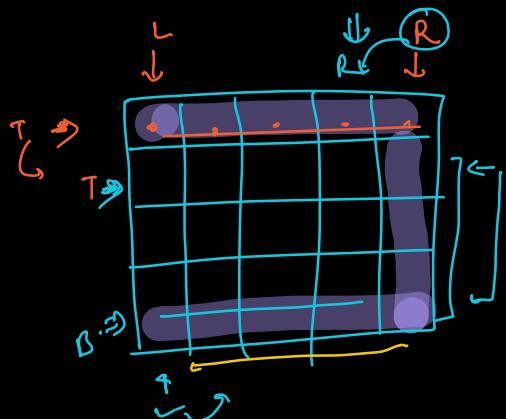
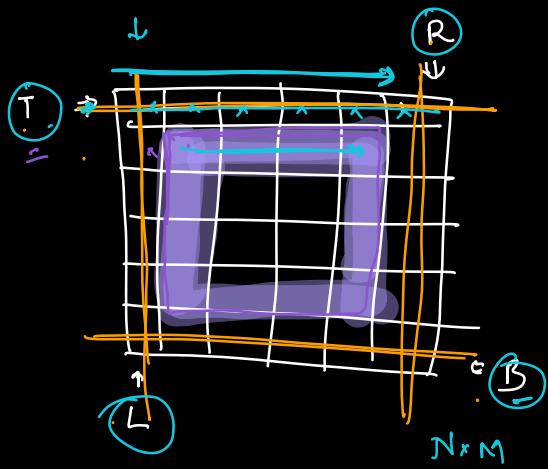


$$\boxed{\text{Performance} = \text{Potential} - \text{Interference}}$$

1, 2, 3, 4, 8, 12, 16, 15, 14, 13, 9, 5, 6, 7, 11, 10



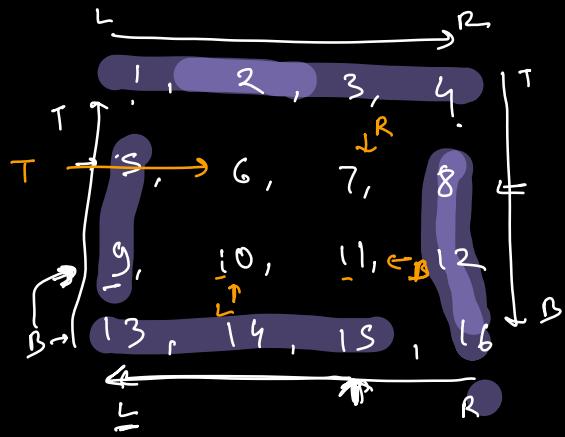
$\Rightarrow 5, 7, 2, 1, 6, 9, 3, 4, 8$



```

 $T = 0; R = M-1;$ 
 $L = 0; B = N-1;$ 
while ( $T \leq B \text{ & } R \geq L$ ) {
    for ( $K = L; K \leq R; K++$ )
         $T^{th}$  row  $\rightarrow$  Print(A[T][K]);
    }
     $\Rightarrow T++;$ 
    for ( $K = T; K \leq B; K++$ )
         $R^{th}$  col  $\rightarrow$  Print(A[K][R]);
    }
     $R--;$ 
    for ( $K = R; K \geq L; K--$ )
         $B^{th}$  row  $\rightarrow$  Print(A[B][K]);
    }
     $B--;$ 
    for ( $K = B; K \geq T; K--$ )
         $L^{th}$  col  $\rightarrow$  Print(A[K][L]);
    }
     $L++;$ 
}

```



1, 2, 3, 4, 8, 12, 16, 15, 14, 13
9, 5

$T = 0 \rightarrow$ Top most row
 $R = M-1 \rightarrow$ Right most col
 $B = N-1 \rightarrow$ Bottom most row
 $L = 0 \rightarrow$ Left most col

① $A[T][K] \quad R=L \rightarrow R$
 $T=0$

② $A[K][R] \quad K=T \rightarrow B$
 $T=1$

③ $A[B][K] \quad K=R \rightarrow L$

④ $A[K][L] \quad K=B \rightarrow T$

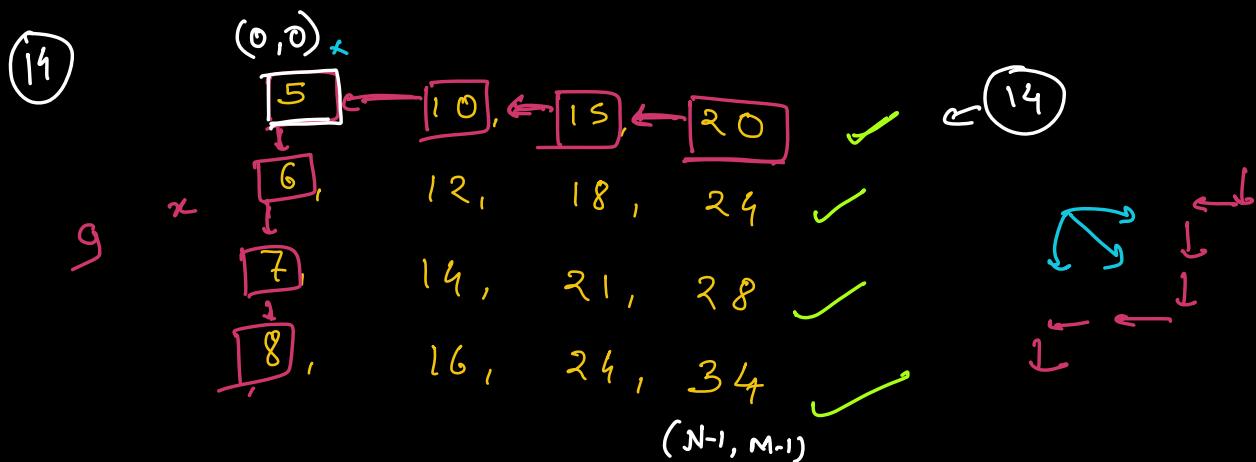
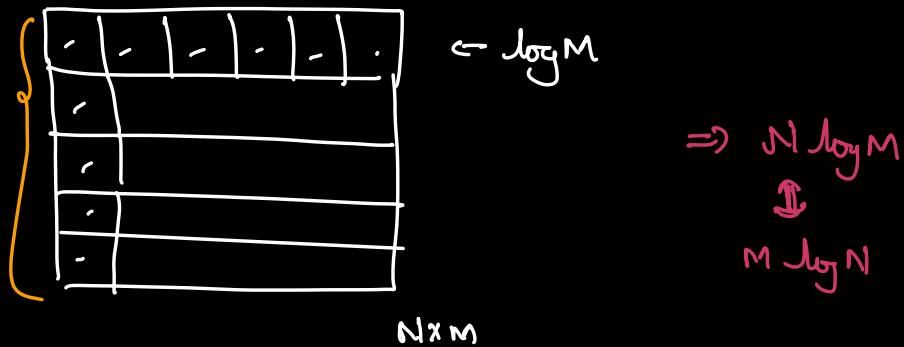
$\boxed{TC : O(NM)}$

Q Given a matrix. All the rows are sorted & all the cols are sorted) Asc
 Amazon
 MS
 Flipkart
 Myndian
 ;
 Snapdeal
Oracle

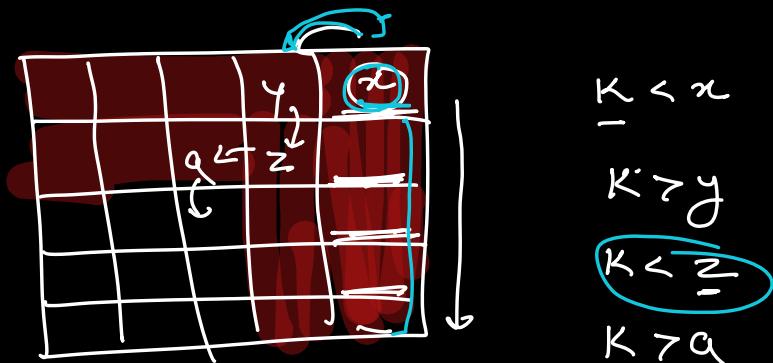
Given a no. K find if it exists in the matrix.

5,	10,	15,	20 -	
6,	12,	18,	24	$K = 14 \Rightarrow T$
7,	14,	21,	28	$K = 22 \Rightarrow F$
8,	16,	24,	34	

Please don't write anything while I (instructor) is speaking.



$\neg (K < A[0]\Gamma_0) \quad || \quad K > A[N-1][M-1]$
ret false.



$i = 0;$

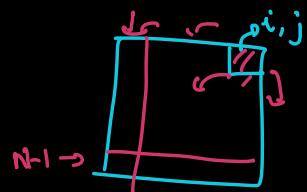
$j = M-1;$

$i \leq (N-1)$

$j \geq -1$

while ($i < N$ $\&$ $j \geq 0$) {

if ($A[i][j] == K$)
 set true;



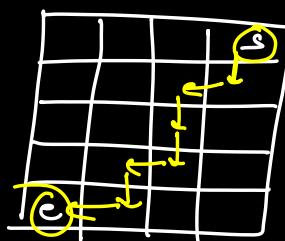
if ($A[i][j] > K$) {

$j \underline{-} ;$

else if ($A[i][j] < K$) {

$i \underline{+} ;$

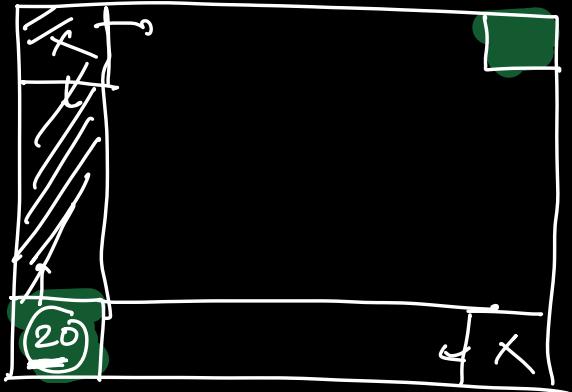
}



$N \rightarrow$ column
 $M \rightarrow$ Left

total
steps = $N+M$

$\boxed{TC : O(N+M)}$

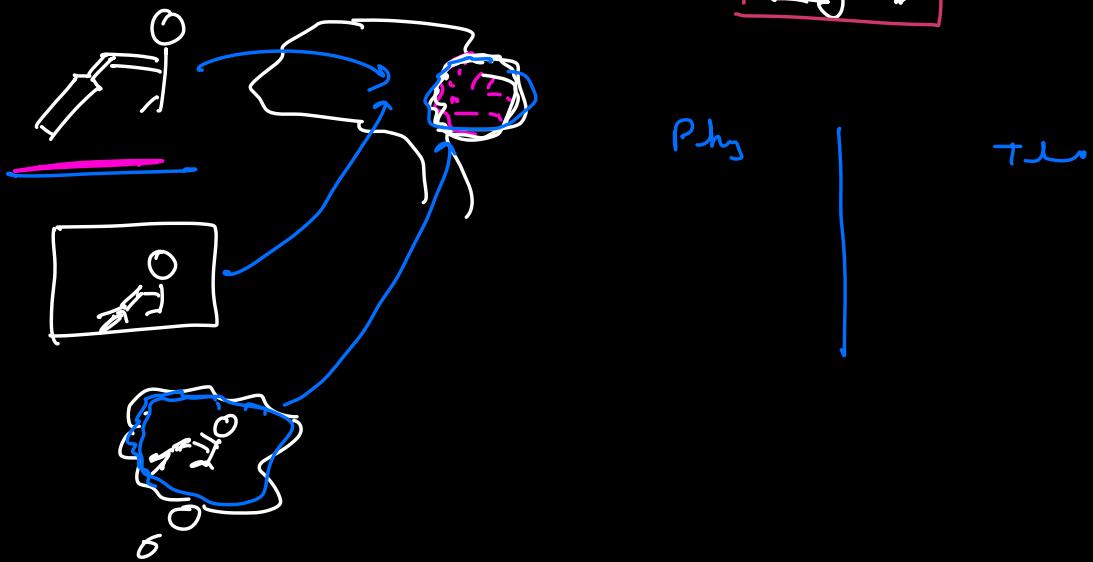


81

Break till 10:28 pm

Come over the fear of interview / exam

- Practice ↗
- Imagine ✓



Q

Given a 2D matrix of 1s & 0s.

Amazon

Every row is sorted. (Asc)

MS

Adobe

Find the row, that has the max no. of 1s.

⋮

0	0	0	1	1
1	0	0	0	0
2	0	0	1	1

1 0 1 0 0 0 1 1
0 0 0 0 1 1 1 1

3	0	1	1	1	1
4	0	0	0	0	1

0 1 1 1

0 0 0 1

0 1 0 1

1 1 1 1

X Invalid

O(NM)

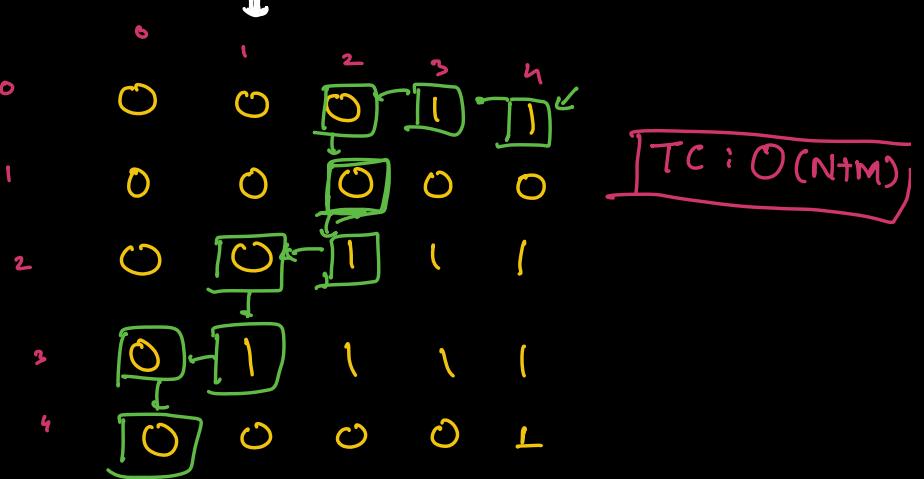
If every row is sorted \Rightarrow

All the zero's will be before all the ones

ans = 6 7 8

0	0	0	1	1	1	1	1	1	1	1
0	0	0	1	1	1	1	1	1	1	1
0	0	0	0	0	1	1	1	1	1	1
0	0	1	1	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1	1	1	1

Count = 6 7 8 9
ans-min. 6 7 8



Q
Direct i

Given an array of size N.
Pick B elements from the corners such that
the sum of those elements is max.

$$\Rightarrow \underline{5}, \underline{-2}, 3, \underline{1}, \underline{2} \quad B = 3$$

$$5 - 2 + 2 \\ \Rightarrow 5$$

$$\underline{-2}, 3, 1, \underline{2}$$

$$5 + 2 + 1 \Rightarrow 8$$

$$3, 1, \underline{2}$$

$$B = \frac{A[B-1] + B[1]}{2}$$

$$B = \frac{A[B-1] + B[1]}{2}$$

- Have two pointers

$$i \rightarrow 0; j \rightarrow n-1$$

- Pick $\min(A[i], A[j])$
move the pointer.

} Greedy

$$B = \frac{A[B-1] + B[1]}{2}$$

$$10 + 6 + 3 + 4 \Rightarrow 23$$

$$B = \frac{A[B-1] + B[1]}{2}$$

$$S_L = \text{Sum of first } B \text{ elements.}$$

$$S_L' = S_L - A[B-1] + A[N-1]$$

$$S_L'' = S_L' - A[B-2] + A[N-2]$$

$$S_L''' = S_L'' - A[B-3] + A[N-3]$$

$$S_L'''' = S_L''' - A[B-4] + A[N-4]$$

$\boxed{7, 4, 2, 1}$ \leftarrow^{B-1}
 $B : 4$

// Get sum of first B elements.

Sum = 0;

for ($i=0$; $i < B$; $i++$) {

 Sum += A(i);

}

ans = sum;

for ($i=1$; $i \leq B$; $i++$) {

 Sum = Sum - A[B-i] + A[N-i];

 ans = max (ans, sum);

}

$\boxed{2, 4, 2, 1}$ \leftarrow^i \leftarrow^{B-1}
 $B : 4$

Sum ans

$7+4+2+1$ 14

$7+4+2+8$ 21

$7+4+8+6$ 35

$7+8+6+0$ 25

$8+6+0+1$ 25

i

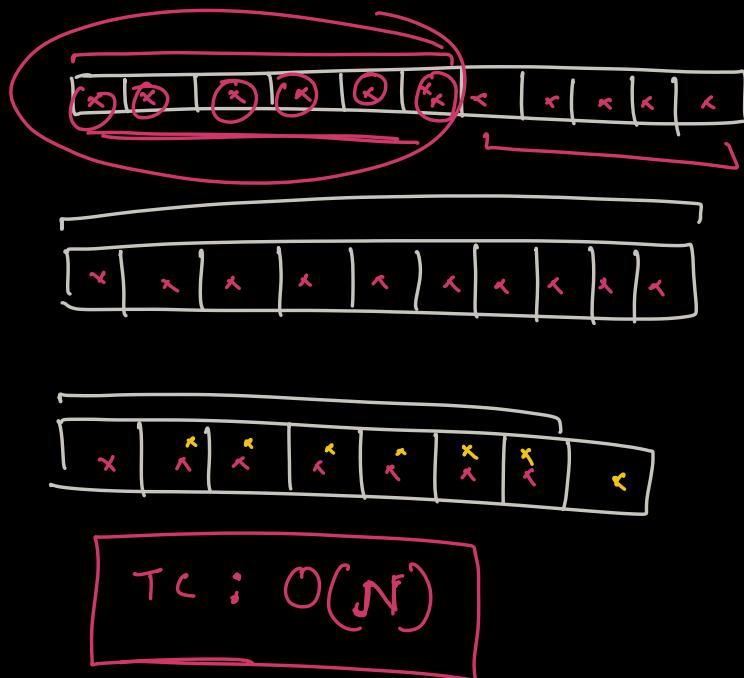
1

2

3

4

Break



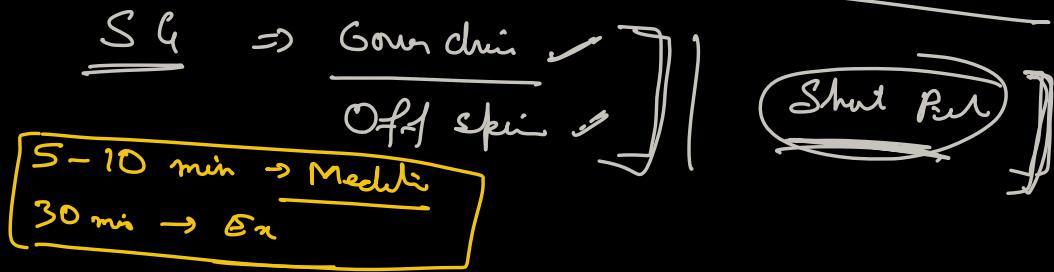
80% of (Ass - HW)

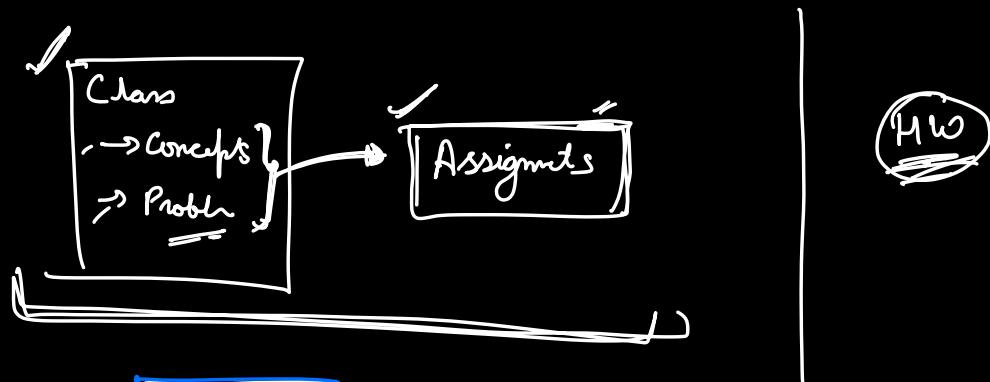
Amazon / MS / Adobe
 ↳ Repeat

Google / CockNation / Directi / Utsav
 ↳ New Problem

3-4 weeks

Smart Work \Rightarrow Hand Work in Right direction



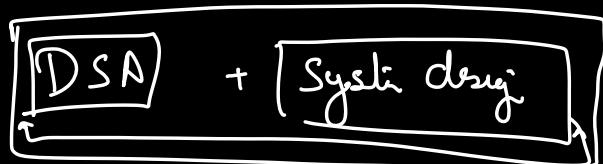


1	2	3
4	5	6
7	8	9
10	11	12

↔

1	4	7	10
2	5	8	11
3	6	9	12

$$\boxed{(\underline{i}, j) \Rightarrow (\underline{j}, i)}$$



$\left\{ f_i \mid i = 0 \rightarrow n \right\}$

3
1

200 MB

۶۱

int A[N]

10

10/
↓
~~1500~~ N

$4B \times N_{\text{max}}$



Ⓐ Ⓑ Ⓒ Ⓓ Ⓔ Ⓕ Ⓖ Ⓗ Ⓘ Ⓙ