

# Search in 2d matrix II

lowest  $[0][0]$   $0, n-1$

|    |    |    |    |    |
|----|----|----|----|----|
| 1  | 4  | 7  | 11 | 15 |
| 2  | 5  | 8  | 12 | 19 |
| 3  | 6  | 9  | 16 | 22 |
| 10 | 13 | 14 | 17 | 24 |
| 18 | 21 | 23 | 26 | 30 |

$(m-1, 0)$  target = 5 highest  $[m-1][n-1]$

$(m-1, 0)$  target = 5

highest  $[m-1][n-1]$

- integers in each row are sorted in ascending from left  $\rightarrow$  right
- integers in each column are sorted in ascending from top  $\rightarrow$  bottom

$r=0, c=n-1$  while  $(r < m \ \&\& \ c \geq 0)$

① if  $(tar == m[r][c])$   
return true

② if  $(tar < m[r][c])$

discard whole column  
because 5 the won't  
exist in a column where  
is 15 onwards ascending

$c--$   
③ if  $(tar > m[r][c])$

$r++$

discard that row kyunki  
whole element ke left side  
mein chota value hi hoga