

37. [Spiral traversal on a Matrix](#)

- 4 variables top,bottom,right,left
- Direction variable

38. [Search an element in a matrix](#)

- Start traversing from last row
- If the last element of row \geq and first \leq target than search in that row and return
- Return false at end

39. [Find median in a row wise sorted matrix](#)

- In given range of int apply binary search for No of elements lesser than the mid
- If $\text{no} \leq n/2 \rightarrow \text{start} = \text{mid} + 1$
- Else $\text{end} = \text{mid} - 1$
- Start contains the ans at the end

40. [Find row with maximum no. of 1's](#)

- Find the first index of 1 in each row(count = m-index) - Linear Approach & binary approach
- Find max from all rows

41. [Print elements in sorted order using row-column wise sorted matrix](#)

- Store all the element in array
- Sort the array
- Store element of array in matrix

42. [Maximum size rectangle](#)

- Problem can be reduced to [Largest Rectangle in Histogram](#)
- For each row add element of upper row if element of current row is not 0
- Then find Largest rectangle for each row and find max from those

44. [Rotate matrix by 90 degrees Clockwise](#)

Method 1 : Dummy matrix

- Write $a[i][j]$ at $\text{dummy}[j][n - i - 1]$

Method 2 : In-Place rotation

- Transpose the matrix
- Reverse individual row

45. Kth smallest element in a **row-column wise** sorted matrix

- In given range of int apply binary search for No of elements lesser than the mid
- If $no < k \rightarrow start = mid + 1$
- Else $end = mid - 1$
- Start contains the ans at the end

46. Common elements in all rows of a given matrix

- In map, make value of elements in first row 1
- Start traversing from 1st row (0-indexed)
- if (value of element in map is equal to current row) then change it to $i + 1$
- At end traverse the map and if second value of map is equal to no of col add to ans