

- 1)  $a[i][j]$  is less than or equal to every other element in the same row  
 2)  $a[i][j]$  is greater than or equal to every other element in the same column  
 eg)

consider a matrix

$$\begin{bmatrix} 3 & 8 & 7 \\ 5 & 6 & 4 \\ 9 & 2 & 1 \end{bmatrix}$$

### Identification

Row 1 - minimum is 3

Row 2 - minimum is 4

Row 3 - minimum is 1

Check for saddle point  
 ↴ (at  $a[2][2]$ )

The element 1 is the saddle point of the matrix

### \* Algorithm

Step 1) start

Step 2) Input the matrix

Step 3) for each row i from 0 to m-1

Step 4) check if min row value is a saddle point

Step 5) If is saddle point is true

Step 6) end

\* Flowchart

(Start)



Read number of rows &  
number of column c, of  
matrix 1



Read number of rows m,  
and number of column  
c of matrix 2



If  $m_1 \neq m_2$   
and  $c_1 \neq c_2$

True

Read matrices A & B

False

$i = 0$

$j = 0$

display invalid/  
order of

matrix

$i < m_1$ ,  
 $j < c_1$

$\downarrow$

$j = 0$

$j = 0$

$\downarrow$

$j++$

$j++$

$\downarrow$

$c[i][j] = a[i][j] * b[j][i]$

print result matrix /

(Stop)

\* Conclusion  
By this way we can determine location of saddle point in matrix successfully