# Lecture (7)

## 2- Adding new elements to the matrix :.

When adding an element to the matrix in matlab, the oreder of the matrix increase by addition.

عند اضافة عنصر او اكثر لعناصر المصفوفة تزداد رتبتها في برنامج matlab

For example :.

$$A = \begin{bmatrix} 9 & 4 & 4 \\ 2 & 8 & 0 \\ 6 & 7 & 8 \end{bmatrix}$$

Add the element A(5, 2) = 1

```
>> A = [ 9  4  4 ; 2  8  0 ; 6  7  8 ]; ↵
>> A(5, 2) = 1 ↵
```

```
A =
     9     4     4
     2     8     0
     6     7     8
     0     0     0
     0     1     0
```

## 3- Delete some elements of the matrix.

The symbol [ ] is used to delete a row or Column

Remark ; one element cannot be deleted

Ex If

$$A = \begin{bmatrix} 9 & 4 & 4 \\ 2 & 8 & 0 \\ 6 & 7 & 8 \end{bmatrix}$$

Find

① Deleting $R_3$ from matrix (A).

② Deleting $C_1$ and $C_2$ from matrix (A).

Sol

```
>> A = [ matrix writing ] ; ↵
```

(1) `>> A(3,:) = [ ] ↵`

```
A =
     9     4     4
     2     8     0
```

(2) `>> A(:,[1 2]) = [ ] ↵`

```
A =
     4
     0
```

Ex How (3)

If $A = \begin{bmatrix} 9 & 7 & 10 & 6 & 2 \\ 3 & 8 & 2 & -6 & 5 \\ 2 & 4 & 3 & 4 & 6 \\ 0 & 6 & -1 & 11 & 3 \\ 1 & 0 & 4 & 0 & -3 \\ 5 & 0 & 2 & 3 & 1 \end{bmatrix}_{6\times5}$

Find

① Deleting $R_3$, $R_5$ and $R_6$ from (A)

② Deleting $C_3$ $C_4$ & $C_5$ from (A)

③ Deleting all elements of $R_1$ from (A)

Remark1 If $A_{6\times6}$ ; when deleting $C_2$, $C_3$ and $C_4$ there are two cases

① >> A(:, [2 3 4]) = [ ]

or

② >> A(:, [2 ! 4]) = [ ]

the same is the case if they are rows

Remark2 : A(:, end) represents the deletion of all column elements.

and

A(end, :) represents the deletion of all row elements.

As follows:

```
>> A(:, end) = [ ]
>> A(end, :) = [ ]
```

4- Changing the values of some elements of the matrix :

Ex :

$$A = \begin{bmatrix} 9 & 4 & 4 \\ 2 & 8 & 0 \\ 6 & 7 & 8 \end{bmatrix}$$

Find the value of element A(1,1) Changed from (9) to (-10)

Sol.

```
>> A = [ matrix writing ] ; ↵
>> A(1,1) = -10 ↵
```

Ex/2 $A = \begin{bmatrix} 9 & 4 & 4 \\ 2 & 8 & 0 \\ 6 & 7 & 8 \end{bmatrix}$

Find the value change of $R_2$ elements from [2 8 0] to [1 5 3].

Sol/

```
>> A(2,:) = [1 5 3] ↵
```

As for changing the value of the elements of $C_1$ from [9 1 6] to [13 17 0]

result

```
>> A(:,1) = [13 17 0]
```

```
A =  9  4  4
     1  5  3
     6  7  8
```

result

```
A =  13  4  4
     17  5  3
     0   7  8
```

## 5- Partial matrices :

Ex

$A = \begin{bmatrix} 9 & 4 & 4 \\ 2 & 8 & 0 \\ 6 & 7 & 8 \end{bmatrix}$

Create a partial matrix B from matrix(A) and elements of matrix B are $\begin{bmatrix} 2 & 8 \\ 6 & 7 \end{bmatrix}$

```
>> A = [ matrix writing ] ; ↵
>> B = A ( [ 2   3 ] , [ 1   2 ] ) ↵
          ↓   ↓     ↓   ↓
          R2  R3    C1  C2
```

B =

| | |
|---|---|
| 2 | 8 |
| 6 | 7 |