Types of Matrix

➤ **Row matrix** : A matrix with only **one row** is called a *row matrix.*

Example:

$A = \begin{bmatrix} 2 & 3 & -1 & 4 \end{bmatrix}$ is a row matrix of **1** × 4

➤ **Column matrix** : A matrix with only **one column** is called a column matrix

Example:

$B = \begin{bmatrix} 0 \\ -3 \\ 8 \\ 5 \\ -8 \end{bmatrix}$ is a column matrix of 5 × **1**

➤ **Square matrix**: A matrix in which the number of column is equal to number of rows is called a **square matrix.**

Example:

$X = \begin{bmatrix} 3 & 7 \\ 5 & -9 \end{bmatrix}$ is a square matrix of 2 × 2

➤ **Rectangular matrix** : A matrix in which the number of rows is not equal to the number of columns is called a rectangular matrix.

Example:

$F = \begin{bmatrix} 9 & -4 & 3 \\ 4 & 3 & 0 \end{bmatrix}$

➢ **Null matrix/ Zero matrix :** A matrix in which all the elements are zero is called a zero matrix or a null matrix .

Example:

$$Z = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

Identity matrix / Unit matrix: If a square matrix has all elements 0 and leading diagonal/principal diagonal elements are 1, it is called identity matrix and denoted by I.

Example:

$$I = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$