Types of Matrix:

- Diagonal Matrix : A square matrix $[a_{ij}]_n$ is said to be a diagonal matrix if

$$a_{ij} = 0 \, , \forall \, i \neq j.$$

  - A diagonal matrix is represented as : $A = diag.(a_{11}, a_{22}, .., a_{nn})$

Example:

$$A = \begin{bmatrix} -3 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & -10 \end{bmatrix}_{3\times 3}$$

$$A = diag.(-3,2,-10)$$

$$B = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 2 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -4 \end{bmatrix}_{4\times 4}$$

$$B = diag.(1,2,0,-4)$$

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