Special Matrices

Identity Matrix : $AI_n = I_nA \rightarrow I_n$ is identity matrix

diagonal is 1 and rest elements are 0

eye → returns the scalar 1

eye(m) → returns identity matrix of m x m

eye(m,n) → returns matrix with main diagonal 1 and rest 0

eye(size(A)) → returns identity of matrix of size of A

- zero matrix
  → all elements are equal to zero
  used to save memory and time (decrease computation time)

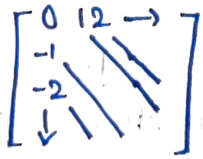
  zeros → returns the scalar 0
  zeros(m) → creates the zero matrix of (m×n)

- one's matrix
  → all elements having elements equal to 1
  ones → returns scalar
  ones(m) → m×m
  ones(m,n) → m×n
  ones(size(A)) → size of A

- Diagonal command

  diag(A) → returns column vector extract of matrix A
  (for rectangular, for main diagonal)

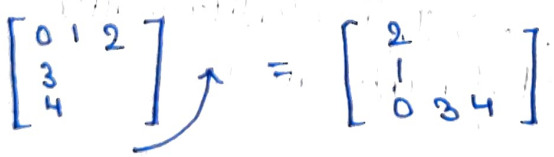
  diag(A,k) → k^{th} diagonal (starting from (k, ±j))

  → for values of k ...-2,-1,0,1,2...

  diag(v) → create a matrix with diagonal vector v
  and rest elements are zero.

- rot90 : rotates the matrix by 90° ANTI CLOCKWISE

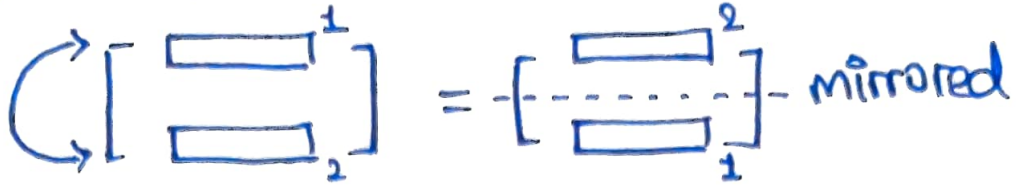
  

  rot90(A, k)
  ⇒ rotates anticlockwise by k*90° for k=1,2,3,4
  ⇒ rotates clockwise by k*90° for k=-1,-2,-3,-4

- fliplr(A) → flip columns matrix A from left to right to right to left

- flipud(A) → rows flipped up-down to down-up



fliplr(A) → columns
flipud(A) → rows

- tril(A) → returns lower triangle including main diag
  tril(A,k) → returns lower triangle including k^{th} diag (k = ...-1,0,1...)

- triu(A) → retuns upper triangular including main diag
  triu(A,k) → returns upper triangular including k^{th} diag (k = ...-1,0,1...)