

# data structure

## 1- Arrays: \*\*\*\*\*

### sorts:

- 01- Bubble sort
- 02- Insertion sort
- 03- Selection sort
- 04- Bubble sort recursion
- 05- Insertion sort recursion
- 06- Selection sort recursion
  
- 07- Odd even sort
- 08- Merge sort
- 09- Quick sort

### More Functions on arrays:

- 01- Find sum negatives and positive integers
- 02- Max & Min of given numbers
- 03- Find two first maximum numbers
- 04- Separate Even, odd numbers
- 05- Insert an element at a specified position
- 06- Delete a specified element
- 07- Remove repeated elements
- 08- Merge two arrays in sorted order
- 09- Union & intersection of the given array
- 10- Sum of two numbers equal to X, X integer given
- 11- Average of numbers at even position
- 12- Array elements in reverse order using swapping
- 13- Search for a specific element
- 14- Binary search

## 2- Linked List: \*\*\*\*\*

### Singly:

- inserting:
  - at the beginning
  - at the end
  - at a position
- deleting:
  - from the beginning
  - from the end
  - from a position

### Doubly:

- inserting:
  - at the beginning
  - at the end
  - at a position
- deleting:
  - from the beginning
  - from the end
  - from a position

### More Function on linked list:

- 01- size of the linked list
- 02- display linked list in reverse order

## 3- Queues: \*\*\*\*\*

- Using arrays
- Using linked list
- concept is FIFO (First In First Out)

## 4- Stacks: \*\*\*\*\*

- Using arrays
- Using linked list
- concept is LIFO (Last In First Out)

## 5- Trees: \*\*\*\*\*

- Binary Trees
- Binary search Trees
- Multiway Trees
- AVL Search Trees
- Trees Traversals

