Assignment 3 – Sorting, Stacks, Queues, Linked lists

1. Perform sorting on 100,1000,10000 ,100000 numbers using
   i)   Bubble sort ii) merge sort iii) Insertion sort iv) Quick sort

   For each sorting for the different values of n, find the actual time used by the algorithm.

   Can you justify the time taken for different values of n , based on complexity analysis?

2. Realize all the operations on stacks and queues using
   a) Arrays
   b) linked lists

3. Realize the following operations of a singly linked list. Output the results for each operation.
   a. Insert Node at beginning
   b. Insert node at last
   c. Insert node at position
   d. Sort Linked List
   e. Delete a Particular Node
   f. Update Node Value
   g. Search Element
   h. Display Linked List
   i. Reverse Linked List