

**K. J. Somaiya College of Engineering, Mumbai - 77**  
**(A Constituent College of Somaiya Vidyavihar University)**  
**Department of Electronics and Computer Engineering**

**List of programs for DS practical exam**

- 1 Write a C/C++ program to implement addition and subtraction of rational numbers using Abstract Data Type(ADT).
- 2 Write a C/C++ program to implement addition and subtraction of complex numbers using Abstract Data Type(ADT).
- 3 Write a C/C++ program to implement multiplication and equality check of rational numbers using Abstract Data Type(ADT).
- 4 Write a C/C++ program to implement multiplication and equality check of complex numbers using Abstract Data Type(ADT).
- 5 Write a C/C++ program to insert and delete a number from a given location in an array.
- 6 Write a C/C++ program to create a singly linked list.
- 7 Write a C/C++ program to create a circular linked list.
- 8 Write a C/C++ program to create a doubly linked list.
- 9 Write a C/C++ program to create a circular doubly linked list.
- 10 Write a C/C++ program to count the number of nodes in the singly linked list.
- 11 Write a C/C++ program to delete element at the beginning/middle/end of singly linkedlist.
- 12 Write a C/C++ program to insert element at the beginning/middle/end of singly linkedlist.
- 13 Write a C/C++ program to search a particular number in singly linked list/circular linked list/circular doubly linked list/doubly linked list.
- 14 Write a C/C++ program to delete a particular node in linked list/circular linked list/circular doubly linked sort/doubly linked list.
- 15 Write a C/C++ program to count the number of nodes in a circular linked list/circular doubly linked list/doubly linked list.
- 16 Write a C/C++ program to implement stack operations (PUSH) using array.
- 17 Write a C/C++ program to implement stack operations (PUSH and POP) using array.
- 18 Write a C/C++ program to implement stack operation (PUSH) using linked list.
- 19 Write a C/C++ program to evaluate postfix expressions using stack.
- 20 Write a C/C++ program to reverse a list of given numbers using stack.
- 21 Write a C/C++ program to implement Circular/ Priority/Double Ended queue & operation (insert and delete) using array.
- 22 Write a C/C++ program to implement Circular/ Priority/Double Ended queue & operation (insert and delete) using linked list.
- 23 Write a C/C++ program to implement BST and find largest node in the tree.
- 24 Write a C/C++ program to implement BST Traversal - preorder, postorder and inorder.
- 25 Write a C/C++ program to count the number of nodes in binary search tree.
- 26 Write a C/C++ program for sorting using Insertion Sort.
- 27 Write a C/C++ program to implement BST and find smallest node in the tree.
- 28 Write a C/C++ program for sorting using bubble Sort.
- 29 Write a C/C++ program for searching a number using linear search.
- 30 Write a C/C++ program for searching a number using binary search.
- 31 Implement a set and perform addition/ deletion of elements in it in C++ using standard template libraries (STL).
- 32 Implement a dictionary and display its elements with values in C++ using standard template libraries (STL).

**NOTE: Display function needs to be implemented wherever required.**

All the programs must be menu driven



