Data Structures using C++

Lab Cycle

Module 1

1. Program to perform array operations like insertion, deletion, display.
2. Perform polynomial addition using array.
3. Triplet representation of sparse matrix.
4. Sparse matrix addition.
5. Transpose of a matrix.
6. Linear search
7. Binary search
8. Selection sort using array.
9. Insertion sort.
10. Quick sort.

Module 2

1. Stack operations using array (push, pop, peek, display).
2. Infix to postfix conversion.
3. Postfix evaluation.
4. Queue operations using array (insertion, deletion, display).
5. Circular queue operations.

Module 3

1. Create a linked list which stores integer values and display it.
2. Implement singly linked list operations (insertion, deletion, display).
3. Sort a linked list.
4. Concatenate two linked lists.
5. Swap two data fields in a linked list.
6. Implement search in a linked list.
7. Create a student database using linked list (creation, display, search).
8. Implement circular linked list.
9. Implement basic operations of doubly linked list.
10. Implement circular doubly linked list.
11. Implement stack using linked list.
12. Implement queue using linked list.

Module 4

1. Create a binary tree and perform tree traversal.
2. Program to sort a binary tree