1. **Linear Search Implementation**

Write a program in C to implement Linear Search

- The program should accept distinct values of numbers from user.
- The program should accept the number (key) to be searched from user.
- The program should return the index of the number in the array if present in the array or display proper message if number is not present in the array.

2. **Binary Search Implementation**

Write a program in C to implement Recursive Binary Search

- The program should accept distinct values of numbers from user in any order.
- The program should accept the number (key) to be searched from user.
- Then program should sort the number in ascending order
- The program should return the index of the number in the array if present in the array or display proper message if number is not present in the array.

3. **Stack Implementation using arrays or structures**

Write a program in C to implement Stack, Following operations should be performed

- PUSH operation
- POP Operation
- Display the stack

4. **Postfix Expression Evaluation using Array based implementation of stack**

Write a program in C to implement postfix expression evaluation using array based implementation of Stack.

- The program should accept the valid postfix expression from user.
- Each operand can be of a single digit (0 to 9) or multiple digits
- The program should support 4 operators as +, -, / and *
- The program should return evaluated value of the entered postfix expression.

5. **Infix to Postfix Expression Conversion using stack**

Write a program in C to convert infix expression to the postfix expression using stack.

- The program should accept the valid infix expression from user.
- The program should convert infix expression to the postfix expression and display the postfix expression.

6. Reversing the string using stack

Write a program in C to reverse the string using stack.

- The program should accept the string from user.
- The program should reverse the string by making use of stack and display the reversed string to the user.

7. Solve Tower of Hanoi Problem using Recursion

Write a program in C to Solve Tower of Hanoi Problem using Recursion.

The Tower of Hanoi is a mathematical puzzle. It consists of three rods, and a number of disks of different sizes which can slide onto any rod. The puzzle starts with the disks in a neat stack in ascending order of size on one rod, the smallest at the top. We have to obtain the same stack on the third rod.

8. Simple Queue Implementation

Write a program in C to implement the Simple Queue. The program should have following functionality

- Insert element in queue
- Delete element from a queue
- Display the Queue

Implement queue either using array based implementation or linked list based implementation.

9. Circular Queue Implementation

Write a program in C to implement the Circular Queue using array. The program should have following functionality

- Insert element in queue
- Delete element from a queue
- Display the Queue

10. Implementation of Binary Search Tree

Write a program in C to implement Binary Search Tree and apply Recursive Traversals.

- The program should accept distinct elements to be inserted into binary search tree.
- Write a function for Node Insertion.
- Write a function for searching in a BST
- Write a function for in-order traversal, pre-order traversal and post-order traversal
- Write a function for deleting a node from the BST. Consider following cases.
    - Delete a terminal node (leaf node)
    - Delete a node with one child
    - Delete a node with two children