Ch-7 Data Structure-II

Beginner Level: Understanding Stack Basics

1. **Push and Pop**
   Write a program to:
   - Create an empty stack
   - Push elements 10, 20, 30
   - Pop one element and display the remaining stack
2. **Peek (Top of Stack)**
   Display the top element of a stack without removing it.
3. **Check Empty Stack**
   Write a program that checks if a stack is empty before performing pop.
4. **Push User Input**
   Accept 5 numbers from the user and push them into a stack.
5. **Count Items**
   Count and display how many elements are present in the stack.

Intermediate Level: Using Loops and Conditions

6. **Reverse a Stack**
   Push elements from a list into a stack and then pop all elements to reverse the list.
7. **Accept Only Even Numbers**
   From n user inputs, push only even numbers to a stack.
8. **Find Maximum Element**
   Push a few integers into the stack and find the maximum number.
9. **Palindrome String Check**
   Check whether a string is a palindrome using stack logic.
10. **Menu Driven Stack Program**
    Create a menu-driven stack program with the following options:
    1. Push
    2. Pop
    3. Display
    4. Exit