Week 4 : Lab A Recursion/Recursion removal using Stack

Q. No. 1 Write a program to sort the element in the stack using recursion.

Example:
Stack before sorting: - 5 | -2 | 9 | -7 | 3, where 3 is the top element
Stack after sorting: - 7 | -2 | 3 | 5 | 9, where 9 is the top element
Idea: recursively remove values from the stack until the stack becomes empty and then insert those values (from the call stack) back into the stack in a sorted position.

Q. No. 2 Consider a string as an input, print all the possible palindromic partitions.

Example:
Input: nitin
Output: n iti n
Input: good
Output: g oo d

Q. No. 3 Write a program to reverse a string using stack.

Q. No. 4 Write a program to implement Tower of Hanoi using stack.

Q. No. 5 Write a program in C/C++ to find the Hailstone Sequence of a given number upto 1

Test Data:
Input any number (positive) to start for Hailstone Sequence: 13
Expected Output: The hailstone sequence starting at 13 is:
13 40 20 10 5 16 8 4 2 1
The length of the sequence is 10.