Lab Sheet 3

STACK DATA STRUCTURE

1. Design a Stack ADT. You may use the following sample code snippet for creating your stack.

```
 // Define a stack structure
Stack:
        maxSize // Maximum size of the stack
        top // Points to the top element
        array[] // Array to store elements //

// Initialize the stack
        InitializeStack(size):
                maxSize = size
                top = -1 // Indicates stack is empty
                array = new array[maxSize]

//methods

        Push(value): // Push operation: Add an element to the stack

        Pop():// Pop operation: Remove and return the top element

        Peek():// Peek operation: View the top element without removing

        IsEmpty(): // Check if the stack is empty

        IsFull(): // Check if the stack is full
```

2. Using the Stack ADT, write a program to print the elements of the stack from bottom to top, such that the elements are still present in the stack without their order being changed in the stack.
3. Write a program to sort the integers of a stack in ascending order using another temporary stack.