EXPERIMENT NO:-1

AIM- Implement Stack ADT using an array.

THEORY:

Stack can be represented using an array. Stack is open at one end and operations can be performed on a single end. We can have different primitive operations on Stack Data Structure.

A. Push Operation on Stack : **Push** is the operation used to add an element to the top of a stack.

B. Pop Operation on Stack : **Pop** is the operation used to remove the topmost element from the stack.

ALGORITHM:

Push ( ):

Description: Here STACK is an array with MAX locations. TOP points to the top most element and ITEM is the value to be inserted.

1. If (TOP == MAX-1) Then [Check for overflow]
2. Print: Overflow
3. Else
4. Set TOP = TOP + 1 [Increment TOP by 1]
5. Set STACK[TOP] = ITEM [Assign ITEM to top of STACK]
6. Print: ITEM inserted

[End of If]

7. Exit

Pop ( ):

Description: Here STACK is an array with MAX locations. TOP points to the top most element.

1. If (TOP == -1) Then [Check for underflow]
2. Print: Underflow
3. Else
4. Set ITEM = STACK[TOP] [Assign top of STACK to ITEM]
5. Set TOP = TOP - 1 [Decrement TOP by 1]
6. Print: ITEM deleted

[End of If]

7. Exit

Conclusion:

(Students write conclusion in your own words. U have to describe what u you understood from the experiment and the concept of the experiment. Conclusion carry 4 marks out of 10)