

Assignment No. 6**Stack ADT as an Array****Aim**

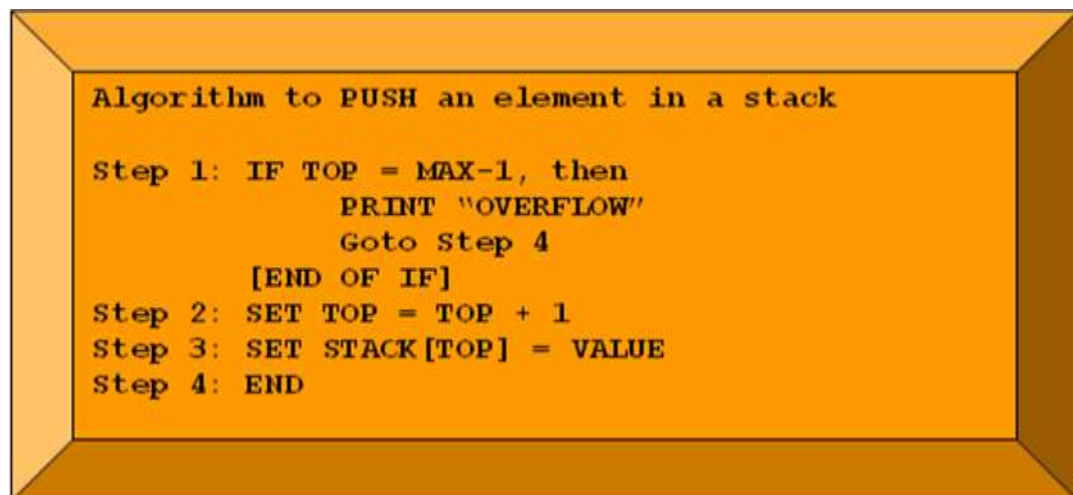
In any language program mostly syntax error occurs due to unbalancing delimiter such as (), { }, []. Write C++ program using stack to check whether given expression is well-parenthesized or not. Implement Stack ADT as an Array.

Objective(s)

1	To study basics of stack
2	To learn the stack operations
3	To understand the concept of Stack ADT as an Array

Theory

1. Define: Stack.
2. What are different operations that can be performed on a stack?
3. What are the applications of stack?
4. Comment on: Stack ADT as an Array.
5. Write algorithms for PUSH, POP and PEEK/TOP operations of the stack.

Algorithms:**a) PUSH Operation:**

b) POP Operation:

Algorithm to POP an element from a stack

```
Step 1: IF TOP = NULL, then
        PRINT "UNDERFLOW"
        Goto Step 4
    [END OF IF]
Step 2: SET VAL = STACK[TOP]
Step 3: SET TOP = TOP - 1
Step 4: END
```

c) PEEK/TOP Operation:

Algorithm for Peek Operation

```
Step 1: IF TOP = NULL, then
        PRINT "STACK IS EMPTY"
        Go TO Step 3
    [END OF IF]
Step 2: RETURN STACK[TOP]
Step 3: END
```

Conclusion