**Lab Assignment AP Tuesday Oct 17, 2017 ( 4.00-6.00 PM)**

**Stack** is one of the **linear data structure** (**Non-primitive data structure)**.  In stack, Insert Operation & delete Operation are performed at one end i.e. on the **top of the stack** and follows **LIFO (Last In First Out**) pattern i.e. element which comes last is served first.

Basic operations required to manipulate a stack are:

* **Push()** : To insert an item into the stack
* **Pop()** : To remove an item from a stack.
* **Top()** : To read the top element( without removal) from stack.
* **Isempty()**: To check stack is empty or not.
* **Isfull():** To check that the stack is full or not

**Application of Stack:**

* Recursion
* Polish expressions and their compilation
* Backtracking

Develop your own Stack classes in Java which can store Integer and character type elements.

Now write a Java program to demonstrate the use of Stack classes for the following operations:

1. To convert any infix expression into postfix. ( Infix expression may contain parenthesis)
2. To evaluate the postfix expression.

**Note: Handle all possible exceptions.**