**STACK**

Stack is LIFO Last in First out, i.e., insertion and deletion occur at the same end.

Operations: All operations are O(1)(Amortized time as resizing involved)

* Push: Inserts an item. If stack is full, it will throw stack overflow error.
* Pop: Removes the top item. If stack is empty, it will throw stack underflow error.
* Top (peek in java): returns the current top
* Size: current size

Applications of Stack:

* Function calls
* Checking for Balanced parenthesis.
* Reversing Items.
* Infix to Prefix/Postfix (Compiler internally converts all expressions to prefix/postfix by moving operands and operators)
* Evaluation of Prefix/Postfix
* Stock Span problems
* Undo/Redo problems
* Forward/Backward problems.

Stack implementation in Java: Both are Array implementations:

* Collection ->List->Vector->Stack (Thread safe)
* Collection->Queue->Deque->ArrayDeque