STACK

A stack is a list of elements in which an element may be inserted or deleted only at one end, called the top of the stack.
Stacks are sometimes known as LIFO (last in, first out) lists.

The two basic operations associated with stacks are:

- Push: is the term used to insert an element into a stack.
- Pop: is the term used to delete an element from a stack.

The most accessible element is the top and the least accessible element is the bottom of the stack

Representation of Stack:

Let us consider a stack with 6 elements capacity. This is called as the size of the stack. The number of elements to be added should not exceed the maximum size of the stack.

If we attempt to add new element beyond the maximum size, we will encounter a stack overflow condition.
Similarly, you cannot remove elements beyond the base of the stack. If such is the case, we will reach a stack underflow condition.

Applications of the Stack

1. A Stack can be used for evaluating expressions consisting of operands and operators.
2. Stacks can be used for Backtracking, i.e., to check parenthesis matching in an expression.
3. It can also be used to convert one form of expression to another form (Infix, Postfix, Prefix).
4. It can be used for systematic Memory Management.