Stack is a linear data structure which follows a particular order in which the operations are performed. The order may be LIFO(Last In First Out) or FILO(First In Last Out).

Mainly the following three basic operations are performed in the stack:

* **Push:**Adds an item in the stack. If the stack is full, then it is said to be an Overflow condition.
* **Pop:** Removes an item from the stack. The items are popped in the reversed order in which they are pushed. If the stack is empty, then it is said to be an Underflow condition.
* Peek or Top: Returns top element of stack.
* **isEmpty:**Returns true if stack is empty, else fals.

**Time Complexities of operations on stack:**

push(), pop(), esEmpty() and peek() all take O(1) time. We do not run any loop in any of these operations.

**Applications of stack:**

* [Balancing of symbols](http://www.geeksforgeeks.org/check-for-balanced-parentheses-in-an-expression/)
* [Infix to Postfix](http://quiz.geeksforgeeks.org/stack-set-2-infix-to-postfix/) /Prefix conversion
* Redo-undo features at many places like editors, photoshop.
* Forward and backward feature in web browsers
* Used in many algorithms like [Tower of Hanoi,](http://www.geeksforgeeks.org/recursive-functions/) [tree traversals](http://www.geeksforgeeks.org/618/), [stock span problem](http://www.geeksforgeeks.org/the-stock-span-problem/), [histogram problem](http://www.geeksforgeeks.org/largest-rectangular-area-in-a-histogram-set-1/).
* Other applications can be Backtracking, [Knight tour problem](http://www.geeksforgeeks.org/backtracking-set-1-the-knights-tour-problem/), [rat in a maze](http://www.geeksforgeeks.org/backttracking-set-2-rat-in-a-maze/),[N queen problem](http://www.geeksforgeeks.org/backtracking-set-3-n-queen-problem/) and [sudoku solver](http://www.geeksforgeeks.org/backtracking-set-7-suduku/)

A queue or FIFO (first in, first out) is an abstract data type that serves as a collection of elements, with two principal operations: enqueue, the process of adding an element to the collection.(The element is added from the rear side) and dequeue, the process of removing the first element that was added. (The element is removed from the front side). It can be implemented by using both array and linked list.