The *Stack ADT*

Data Model: A collection of items, that come out in a LIFO (Last-In-First-Out) order

Operations:

- ***s = Stack()*** Creates an empty stack.
- ***len(s)*** returns the number of items in ***s***
- ***s.is_empty()*** returns ***True*** if ***s*** is empty, or ***False*** otherwise
- ***s.push(item)*** inserts ***item*** to ***s***.
- ***s.pop()*** removes and returns the item that was the last to enter ***s*** (out of all the items currently in ***s***), or raises an ***Exception***, if ***s*** is empty.
- ***s.top()*** returns the item that was the last to enter ***s*** (out of all the items currently in ***s***), or raises an ***Exception***, if ***s*** is empty.

The *Queue ADT*

Data Model: A collection of items, that come out in a FIFO (First-In-First-Out) order

Operations:

- ***q = Queue()*** Creates an empty queue.
- ***len(q)*** returns the number of items in ***q***
- ***q.is_empty()*** returns ***True*** if ***q*** is empty, or ***False*** otherwise
- ***q.enqueue(item)*** inserts ***item*** to ***q***.
- ***q.dequeue()*** removes and returns the item that entered ***q*** first (out of all the items currently in ***q***), or raises an ***Exception***, if ***q*** is empty.
- ***q.first()*** returns the item that entered ***q*** first (out of all the items currently in ***q***), or raises an ***Exception***, if ***q*** is empty.