

# Queues

Queues are declared as an ``abstract" class. They are currently implemented in any of three ways.

<b>VQueue</b>	implement fixed sized Queues via arrays.
<b>XPQueue</b>	implement dynamically-sized Queues via XPlexes.
<b>SLQueue</b>	implement dynamically-size Queues via linked lists.

All possess the same capabilities; they differ only in constructors. **VQueue** constructors require a fixed maximum capacity argument. **XPQueue** constructors optionally take a chunk size argument. **SLQueue** constructors take no argument.

Assume the declaration of a base element **x**.

<b>Queue q;</b> or <b>Queue q(int capacity);</b>	declares a queue.
<b>q.empty()</b>	returns true if queue q is empty.
<b>q.full()</b>	returns true if queue q is full. XPQueues and SLQueues are never full.
<b>q.length()</b>	returns the current number of elements in the queue.
<b>q.enq(x)</b>	enqueues x on queue q.
<b>x = q.deq()</b>	dequeues and returns the front of queue
<b>q.front()</b>	returns a reference to the front of queue.
<b>q.del_front()</b>	dequeues, but does not return the front of queue

**q.clear()**

removes all elements from the queue.