CSC 205 Lab 12 : Queues

Goals

After completing this lab, you should be able to:

- Understand and be able to use the methods of the Queue ADT.
- Know some of the general applications of queues.
- Be able to write simple class methods to count the number of elements in a queue and print out a queue.
- Understand how to implement a queue using a circular array.
- Be able to simulate queues using the `LinkedList` class from the Java Collections Framework.

Lab Startup

Change into your `Labs` directory, and let's create and change into a `Lab12` directory. Now, let's copy over some files by typing : `cp /pub/digh/CSC205/Lab12/* .`

Building and Tracing a Queue

Draw the stack that would be created following the code segment below. Use your Queue ADT handout as a guide.

```
char x, y;
Queue q = new Queue();

q.enqueue(new Character('W'));
x = ((Character) q.front()).charValue();
q.enqueue(new Character('V'));
q.enqueue(new Character(x));
q.dequeue();

y = ((Character) q.front()).charValue();
q.dequeue();
q.enqueue(new Character('T'));
q.dequeue();
q.enqueue(new Character(x));
q.enqueue(new Character(y));

x = ((Character) q.front()).charValue();
q.enqueue(new Character(x));
```

(x) W

(y) V

x now == 'T'

Sysout : T W V T

Now, compile and run the `MyQueue` program to check your results.