# COP 3530 Data Structure and Algorithm Analysis
# Homework 3

In this assignment, you are given several classes in the cpp file "DList.cpp". Your task is to complete the implementation of the classes specified as below. You need to submit a *single* cpp file that contains everything about your source code.

## 1 Your Task

You are given a class "Item" that contains one integer value, and two pointers. You are going to build a doubly linked list class DLinkedList.

**Task 1:** Implement the constructors (default and copy) of DLinkedList. You need to make sure that the copy constructor makes a separate copy of the list.

**Task 2:** Implement push back, push front, pop back, pop front, get front, get back, display, swap. The functions are pretty self explanatory from their names.

**Task 3:** Implement Inserts. You should handle "insert an item" and "insert a list".

**Task 4:** Implement extract min, extract max. They return the pointer to the min/max item in the list. If there is a tie, then choose arbitrarily among the mins/maxes.

**Task 5:** Implement classes myQueue and myStack *using* DLinkedList. Do not re-write codes. (This task is pretty easy. There should not be any loops).

**Task 6:** Design some tests to test your implementations.