CS206 Lab#3: Linked List

In this lab, we will learn about linked list and get ready for assignment 3.

Exercise 1: Design a class City that represents a city. It should have instance variables to store the following information. Include appropriate constructor and getters.

1. name of the city
2. population

Exercise 2: Implement a doubly linked list that stores a list of City. Remember, by convention, it should be called CityDLL. Code you saw in class can be found in ~dxu/handouts/code/lec06. Your DLL should support the following functions:

1. The usual methods first, last, addFirst, addLast, addBtw, removeFirst, removeLast, remove
2. Test the above methods to make sure they work properly
3. Override toString to print out a list of all stored city names
4. Add the following cities to the list: (Philadelphia, 1,567,442), (New York, 8,550,405), (Houston, 2,296,224), (Chicago, 2,720,546), (Los Angeles, 3, 971,883). Print and make sure they are all there
5. Implement insertBefore(City c, Node n) so that you can insert a City c just before some node n
6. Use insertBefore to implement insertSorted(City c) so that a City c is inserted into the list in alphabetically sorted order.
7. Insert all cities use insertSorted instead. Print and make sure they are inserted in the correct order.
8. Modify insertSorted to insert in sorted order based on population instead