Bronx Community College
Department of Mathematics and Computer Science
CSI33 Fall 2019
Programming Assignment 2: worth 20 points
Assigned on September 23, 2019
Due on October 7, 2019

Assignment 2:

Add a `last` instance variable to the `LList` class. This `self.last` variable will be a reference to the last node in the list.   Be sure that every method maintains the class invariant as described in the document Linked List Class Invariant, updated.   (Use the version of the class in the file LList2.py, the one that uses an `insertathead` function in the constructor.)

Then rewrite the `append` method to take advantage of the `last` variable.   This version of `append` will take $\Theta(1)$ time.

Modify the methods of the class, including the constructor, to ensure that the `last` variable always refers to the last node in the list.   Modify all the methods that insert or delete a node to take advantage of the `last` variable when changing the last node in the list when you can, and to ensure that the class invariant is always preserved.

Finally, write an implementation of the list method `count(x)` that returns the number of times the parameter `x` occurs as an element of the list.

Submit the new version of the LList class definition to me by email at
sharon.persinger@bcc.cuny.edu by the end of the day on 10/7/2019. The subject line of your email should be CSI33 Assignment 2. Please be sure to include your name in the program file as a comment.