COSC3331 - Data Structures & Algorithms I
Programming Assignment 4 **Due Date: Tuesday. Nov.16 @ 3:00 pm**

Target Topic: Recursion

For this assignment you are asked to write RECURSIVE methods to implement the following tasks. These methods MUST be placed as part of functioning programs, you can submit them in separate files/folders. But ALL classes that are needed to test your method possible MUST be submitted.

1. Write a recursive void method to display a single-ended singly linked list backwards.

2. Write a recursive `boolean` returning method to check and see whether a double-ended doubly linked list that stores a series of characters form a palindrome or not.

3. **BONUS:** Write a recursive `int` returning method that computes raising a base to a power **BASED ON ADDITION**. Define a recursive multiplication method based on addition, and then use that to define the power method. This is called indirect recursion. Where a method does not directly call itself, but it calls another method that does: so it is called in its definition indirectly via another method call.

Again: Submit each of these methods within a working program, include EVERY CLASS you need to test each of your methods. An incomplete submission will not be accepted.

You must use ONLY the textbook code and not any Java classes. The violation of this rule, makes your submission void.

No report is required for this assignment.

- *You must upload all the required files on blackboard by the due date.*
- *Programs that do not compile will be considered void.*
- *This is an individual assignment. If students submit fully or partially identical programs, ALL individuals involved will earn a grade of zero.*