Assignment SU5: Implement and Extend Stack and Queue Functionality

Objective:

This assignment is meant to help you understand StackAsMyLinkedList and QueueAsMyLinkedList implementations demonstrated through a real-life example. The aim of this assignment is to create the **TaskManagementSystem** to provide a practical demonstration of how custom data structures—specifically, a stack and a queue implemented using linked lists—can be used to manage real-world tasks and operations. The **queue** manages the tasks as they should be processed in the order they are received, and the **stack** makes it ideal for managing tasks by undo actions as you want to reverse the most recent action first.

Instructions:

1. Implement the relevant additional methods to both StackAsMyLinkedList and QueueAsMyLinkedList to complete your assignment. Ensure your methods are correctly implemented and tested. (10 marks)
2. Develop a class that demonstrates the use of your enhanced stack and queue. For example, create a TaskManagementSystem class where tasks are managed in a queue and undo operations are handled using a stack.   (20 marks)
3. Write a test program that thoroughly tests all new methods and functionality.   (10 marks)

Ensure your code is original. We will check for plagiarism, and code that matches another student's will receive a score of 0.

Only use the provided StackAsMyLinkedList and QueueAsMyLinkedList classes. **Do not use Java's built-in Stack or Queue classes.**

Submit all necessary .java files required for the program to compile and run.