

Lab 08: Linked List Stacks & Queues

Instructions: The purpose of this lab is to explore basic usage of the singly linked list data structure and how it apply to a stack ADT and a queue ADT.

Please note, all classes must be in the csu.csci325 package!

Part 1:

Complete the implementation of the LinkedListStack (see api.pdf)

Part 2:

Complete the implementation of the LinkedListQueue & CircularArrayQueue (see api.pdf)

Part 3:

Note: You must use a stack and/or queue for this part.

Create a class Palindrome, that has a function isPalindrome (String str) that returns if the passed in string is a Palindrome or not (see api.pdf) for details. You must use a stack and/or queue to receive full credit. If you do not use a stack and/or queue and the auto grader issues you 40 points, I will take 40 points off afterwards.

Part 4: Extra Credit

Note: You do not need to complete this part to receive a 100.

For this part, modify the canTraverseSLL(char[][] maze, int cxPos, int cyPos, int exPos, int eyPos) function such that it marks a valid path taken with the letter 'p' (see api.pdf.) Note, you must preserve the the order in with positions are visited.

How to test:

You are in charge of manually testing your own code.

How to turn in:

Turn in via GitHub. Ensure the file(s) are in your lab08 directory and push via IntelliJ (VCS ↑) OR use the command line:

- \$ git add <files>
- \$ git commit
- \$ git push

Due Date: March 31, 2016 2359

Teamwork: No teamwork, your work must be your own.