CSE 201 Data Structures – Homework 02

Due Date: 23:59 Sunday October 6th

Disclosure

You will submit your file to an assignment that is given through MS teams. Your filename should be *HW02_yourStudentNumber.java*. **You are not required to provide a main method, however you can write one to test your code.** Submissions made after the deadline will not be accepted, be sure to submit your work before the due date. Your code will be automatically graded and checked for plagiarism, so be sure to have the same class, method, variable names. Failure to do so may result in you receiving 0 from this exercise. All classes should be written to a single Java file.

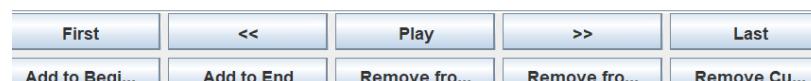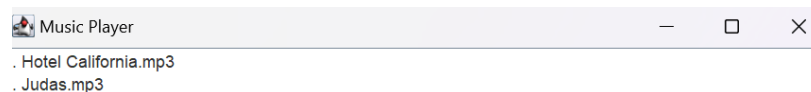Never under any circumstances request me to edit your file

Objective

In this assignment, you will implement a doubly circular linked list and its associated operations, such as adding, removing, and navigating elements within the list. The objective is to reinforce your understanding of linked data structures, pointer manipulation, and traversal techniques. Through this assignment, you will practice implementing and testing methods that interact with custom data structures, ensuring proper handling of edge cases such as empty lists and single-node lists.

Problem

In this assignment, you are tasked with designing a music playlist management system using a doubly circular linked list. The system will allow user to add, remove, and navigate through songs in the playlist. You will implement *Node* and *DoublyCircularLinkedList* classes according to the provided *INode* and *IDoublyCircularLinkedList* interface, which models a music player's underlying data structure.

Extract the contents of the zip file and enter the folder HW02, inside this folder open the editor, If you run the main method of HW02 you should see a UI like the following

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This is a simplified implementation of a playlist, you can improve upon it if you would like. These buttons should be functional once you implement DoublyCircularLinkedList and Node classes, you can use this to test your implementation. Inside the zip, there is a folder called Musics, if you would like to add your own music, you can drag and drop your mp3 files into this folder. If you try to insert musics not found in this folder, it wouldn't work. Press buttons, figure things out, only thing you need to implement is the doubly circular linked list class and node class. When adding a song to the playlist, you need to give the name of the mp3 file without ".mp3" extension

If for some reason you cant compile it try within the HW02 folder:

javac -cp .\lib* HW02.java MusicPlayer.java