COMP 203 Data Structures and Algorithms, Fall 2022
Instructor: Zafer Aydın
Homework 3

1. Problem C-3.27 from textbook.
   - Implement a swap method inside SinglyLinkedList class that receives nodes x and y as well as the head reference of the singly linked list as inputs.
   - Implement a main method that generates a singly linked list with 3 nodes each containing an Integer and swaps the first and the third nodes by calling the swap method. Repeat this time swapping the second and the third nodes.
   - Implement a swap method inside DoublyLinkedList class that receives nodes x and y as well as the header and trailer references of the doubly linked list as inputs.
   - Implement a main method that generates a doubly linked list with 3 nodes (without header and trailer nodes) each containing an Integer and swaps the first and the third nodes by calling the swap method. Repeat this time swapping the second and the third nodes.

2. Problem C-3.32 from textbook. Implement a main method that instantiates a circularly linked list using the class you implemented, prints its contents on the screen, rotates it using the rotate() method, prints its contents on the screen, calls rotateBackward(), prints its contents on the screen again.

Files to submit are

Question 1
SinglyLinkedList.java
DoublyLinkedList.java

Question 2
CircularlyLinkedList.java