ITU Computer Engineering Department
BLG 223E Data Structures, Fall 2021
Recitation #2
Due November 2, 2021 11:59pm

"The greatness of victory is measured by the difficulty of the struggle"

Problem Defintion

In this recitation, you will have an input file that holds different and replicated letters. You been expected to read the letters from the text file in to a circular linked list, reorder all the letters from A $\rightarrow$ Z then remove the dublicate ones. After reordering and removing dublicate letters you will reverse links in the circular linked list.

Workflow

1. Create a circular linked list
2. Read input text from file in to a circular linked list.
3. Reorder circular linked list from A $\rightarrow$ Z
4. Remove dublicate letters
5. Reverse links in the circular linked list

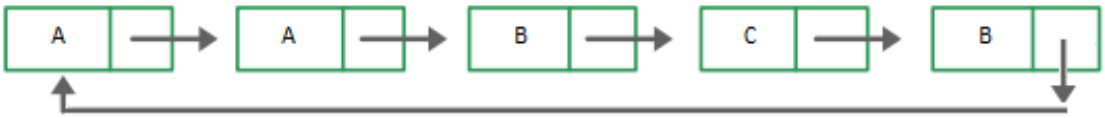

Figure 1: Circular List

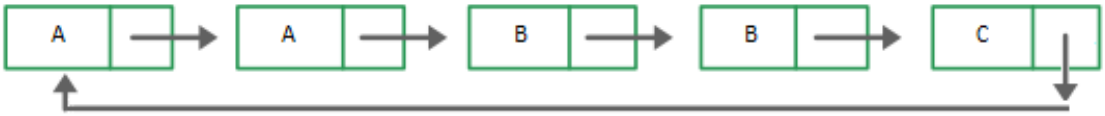

Figure 2: Reordered Circular List

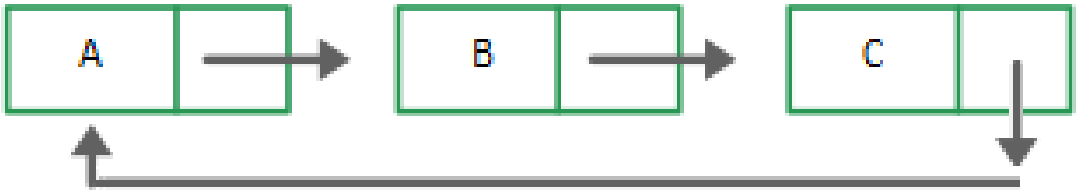

Figure 3: Remove Dublicates

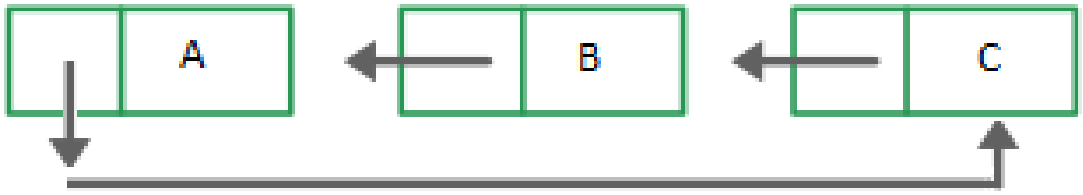

Figure 4: Reversed Circular List

Implementation

Implement the following methods with appropriate arguments and return types for your structure in linkedList.cpp and linkedList.h. **Do not create more then one circular linked list to solve the problem!**

1. reorderList(): Reorders circular linked list from A → Z (Workflow 3).
2. removeDublicates(): Removes dublicate letters in the circular linked list (Workflow 4).
3. reverseList(): Reverse links in the circular linked list (Workflow 5)

You may add extra functions when necessary.

Example Output

Input: DDDBFABCGEAH
Expected Output:
Readed letters in Circular Linked List: D D D B F A B C G E A H
After reordering: A A B B C D D D E F G H
After removing dublicates: A B C D E F G H
Reversed Circular list: H G F E D C B A

Submission Rules

- Do not share any code or text that can be submitted as a part of an assignment (discussing ideas is okay).
- Make sure you write your name and number in all of the files of your project, in the following format:
  /* @Author
  Student Name: <student_name>
  Student ID : <student_id>
  Date: <date> */
- Only electronic submissions through Ninova will be accepted no later than deadline.
- You may discuss the problems at an abstract level with your classmates, but you should not **share or copy code** from your classmates or from the Internet. You should submit your **own, individual** homework.
- Academic dishonesty, including cheating, plagiarism, and direct copying, is unacceptable.
- Use comments wherever necessary in your code to explain what you did.
- Note that **YOUR CODES WILL BE CHECKED WITH THE PLAGIARISM TOOLS!**


BY NC SA