ITU Computer Engineering Department
BLG 223E Data Structures, Fall 2021
Recitation #2
Due October 26, 2020 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 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 linked list.

## Workflow

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

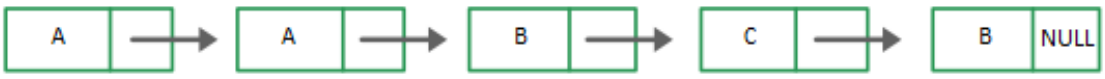


Figure 1: List

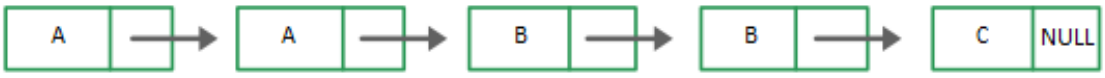


Figure 2: Reordered List

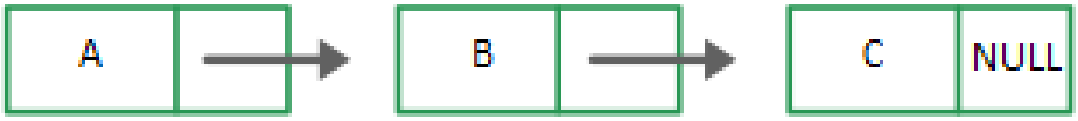


Figure 3: Remove Dublicates

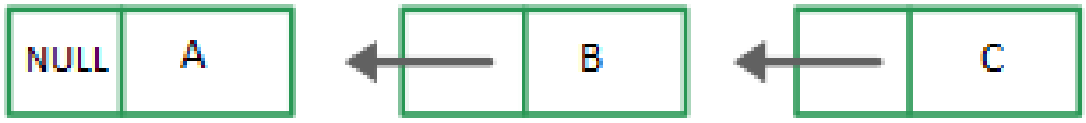


Figure 4: Reversed List

## 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 linked list to solve the problem!**

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

You may add extra functions when necessary.

## Example Output

**Input:** DDDBFABCGEAH
**Expected Output:**
Readed letters in 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 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!**


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