Department of Electrical and Software Engineering
Schulich School of Engineering

ENSF 694 - Principles of Software Development II
Summer 2023

Assignment#2

Due: July 23, Sunday, 11:59 PM

Submission: github link of the codes in the d2l dropbox 'Assignment#2' and push your code in the github classroom repository
Go to this link - https://classroom.github.com/a/aFkcWqHx
Refresh and accept the Assignment2 link
Clone the repository and then push your code.
Then submit the github link to the d2l dropbox 'Assignment#2'

The objective of this assignment is to apply your understanding of the array, linked list, stack, and queue.

Weighting: This assignment is out of 20 marks and is worth 10% of your overall grade.
05 marks for correct input-output format+
05 marks for anagram checking+
05 marks for stack and queue implementation+
05 marks for palindrome checking.

Grading:

- All codes must be complete and compile without any errors.
- The codes should work for not only the given sample inputs but also any inputs of the same data types.

Inputs:
Enter number of words: 10
Enter input words:
Kayak
Rotator
Post
Noon
Stop
Elbow
Level
Spot
Mom
Below

Outputs:
The input words are-
Kayak Rotator Post Noon Stop Elbow Level Spot Mom Below

The anagrams decisions are-
Kayak - No
Rotator - No
Post - Yes
Noon - No
Stop - Yes
Elbow - Yes
Level - No
Spot - Yes
Mom - No
Below - Yes

The palindrome decisions are-
Kayak - Yes
Rotator - Yes
Post - No
Noon - Yes
Stop - No
Elbow - No
Level - Yes
Spot - No
Mom - Yes
Below - No

Tasks:

1. Take number of words from the users as input.
2. Take the input words from the user as inputs.
3. Check if each word/string is an anagram of another input string or not (your test for anagram should be case insensitive).
4. Push and enqueue characters of each string in a stack and a queue and check if the string is a palindrome or not by using the pop and dequeue operations on the stack and queue respectively (your test for palindrome should be case insensitive).
5. You should have separate methods for stack and queue operations (i.e., push, pop, enqueue, dequeue).
6. You can write your stack and queue as separate classes and then import them into the final code. In that case, make sure to submit and push the whole folder with all classes used.
7. You can use array, or linked list, or combinations of both.
8. You are not allowed to use the existing java.util.LinkedList, java.util.stack, java.util.queue, or any of their built in methods for creating and accessing your linked lists, stacks, queues, finding anagrams etc.

Sample Input-Output:

```
Enter number of words:
10

Enter input words:
Kayak
Rotator
Post
Noon
Stop
Elbow
Level
Spot
Mom
Below

The input words are:
Kayak Rotator Post Noon Stop Elbow Level Spot Mom Below

The anagrams decisions are:
Kayak-No
Rotator-No
Post-Yes
Noon-No
Stop-Yes
Elbow-Yes
Level-No
Spot-Yes
Mom-No
Below-Yes


The palindrome decisions are:
Kayak-Yes
Rotator-Yes
Post-No
Noon-Yes
Stop-No
Elbow-No
Level-Yes
Spot-No
Mom-Yes
Below-No
```