Department of Electrical and Software Engineering
Schulich School of Engineering

ENSF 694 - Principles of Software Development II
Summer 2023

Lab 5 – July 17, 2023
Topic: Stack, Queue

- 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.
- **Submission: github link of the codes in the d2l dropbox 'Lab#05_Jul17' and push your code in the github classroom repository**
    - Go to this link - https://classroom.github.com/a/iBxMoI_7
    - Refresh and accept the Lab5 link
    - Clone the repository and then push your code
    - Then submit the github link to the d2l dropbox 'Lab#05_Jul17'

Lab Tasks

20 marks =
05 marks for input-output format +
10 marks for implementing queue with stack +
05 marks for clarifying your logic.

Q1.

1. You need to implement a queue from scratch without directly using queue implementation.
2. Take 10 Strings from the user (any 10 words).
3. Implement the Queue with one or multiple stacks.
4. Mention your logic as print statements or comments in the code.
5. Implement stack using push/pop methods.
6. You can use either array or linked list for your data structure.
7. You are not allowed to use the enqueue or dequeue methods.
8. You are not allowed to use 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, or queues.

Sample Run of the Code:

```
Enter 10 String elements:

Apple
Avocado
Apricot
Berry
Banana
Orange
Peach
Kiwi
Mango
Plum

Initial Stack after pushing all inputs:
Apple Avocado Apricot Berry Banana Orange Peach Kiwi Mango Plum

Final Stack output to mimic Queue operation:
Apple Avocado Apricot Berry Banana Orange Peach Kiwi Mango Plum

Logic:
```