Data Structures

Lab3 Assignment

Due date: Sunday, 30/6

1. In the first video about stacks, it explains that you can implement stacks with linked lists by either adding to the beginning or the end of the list (making sure to remove from the same place).
    - Look at the code for implementing stacks using linked lists, does the push function add to the beginning or the end of the stack?

2. In the class of the stack (linked list implementation) provided in the lab content, Create a new function that takes an integer as an argument and multiplies the data in each node of the stack by that integer (take the following steps as a guide):
    - Write the main function for this program, and push a number of elements to the stack (more than 4).
    - Define the Function: In the stack class, create a new function that accepts an integer as an argument.
    - Traverse the Stack: Start from the top of the stack and traverse through each node.
    - Multiply Data: For each node, multiply the node's data by the given number.
    - Move to the Next Node: Proceed to the next node in the stack and repeat the multiplication step until all nodes have been processed.
    - End of Function: Once all nodes have been traversed and their data multiplied, the function ends.
    - Call that function with your stack object (stack.multiply(x)) and print the stack before and after the multiplication.