Goals

- Linked list, Stack, Queue.

Class assignments

Write a program that generates two linked lists (the minimum number of elements is 5, maximum is 100, each element's value is in the range [-1000, 2000]). Fulfill the following requirements:

- Sort 2 linked lists in ascending order.
- Create a linked list that is a combination of 2 sorted linked lists so that the final linked list is also in ascending order.

Homework

Exercise 1

Write a program that generates a linked list (the number of elements is at least 10, maximum is 100, each element's value is in the range of [-50, 50]). Generate one **x** value in the range of [-10, 10] then split this linked list into two linked lists. The first linked list contains only elements with values less than **x**. The other linked list contains all the remaining elements.

Exercise 2

Based on the structure of the linked list, create a STACK structure with the corresponding functions: Init, Pop, Push, IsEmpty, Clear.

STACK is a data storage structure with the LIFO (Last In First Out) principle, which means that the last item is removed first such as a stake to Compact Disk, the last Compact Disk is put in the pile. top should be retrieved first.

Exercise 3

Based on the structure of the linked list, create a QUEUE structure with the corresponding functions: Init, Pop, Push, IsEmpty, Clear.

Contrary to STACK, QUEUE is a data container structure with FIFO (FIRST In First Out) principle, meaning that the first element that enters first is retrieved first like a badminton pipe, the ball goes first will be retrieved first.