COSC 2437 - Data Structures
Lab 13

- Sorting Algorithms

Part A

Array-based lists sorting:

- Add **selectionSort** functions to the class `arrayList.h`. *The helper functions should not be public.*
- In `lab13.cpp`, define a list using `arrayList.h` to hold 50 integers. Load the array with data from the file `lab13.dat`.
- Sort the array using the selection sort. Count the number of comparisons and the number of data moves. Print the sorted array, the number of comparisons, and the number of data moves.
- Do the same with the **quicksort** *(Start with the original unsorted array).*

Part B

Linked list-based lists sorting:

- Add the **mergesort** to the class defined in the *`linkedQueueType.h`* file. Insert the same data from `lab13.dat` to your list object.
- In the same driver file, `lab13.cpp`, now test your linked list **mergesort** function.
- Print the sorted list, the number of comparisons, and the number of data moves.
- Do the same with the **insertion sort** *(linked list version).*

Notes and Requirements:

- **Number of comparisons** and **number of data moves** should be private members in the classes.
- Make sure they are initialized to 0 in the constructor.
- You must start with the original unsorted array each time.