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Lab2 Report

CS2302 1:30PM – 2:50 PM

Description:

For this lab I had to create three different types of sorting and a variation of a sorting algorithm. Bubble, Merge, Quick, and 1 recursion call of Quick, giving a Linked list of unknown amount of elements they have to sort the list in ascending order, and record the number of comparisons we are making.

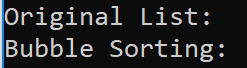
The way I was able to complete this lab was applying different techniques for sorting a singly List. For a sorting method I simply changed the information inside the nodes instead of changing the nodes itself, meanwhile in other methods I had to create new linked list that could store information as I resized the list itself. Then re-creating a new sorted linked list with the pieces of the smaller list. As that was happening, I sorted the nodes when reconstructing the list or with a pivot point.

**Bubble Sorting:**

For bubble sorting(O(n^2)) I gave it a singly linked list. As it received it, it would create a pointer to head that would be used to go through the list without losing our main head. As it went through the list using nested loops it is going to check the current node and the next node, making sure they are in the correct order, if they are not then we would copy the information inside one of the nodes and swap the insides of the node and then move to the next node and repeating the same process until the list does have any more nodes to check.

Input: Empty List

Output:



Input: 5 elements

Output:

Input: 15 elements

Output:

Input: 51 elements

Output: