CSC 33200 (L) - Operating Systems – Spring 2023

Lab 1: Link List Implementation
Date: 01/27/2023

Points: 20 **Submission Deadline: 02/09/2023**

1. Implement a Link list using C. The link list should have traverse, insert, delete, search and sort operations. Sort operations are both in ascending and descending order.

   Points: 8

2. Implement a Circular Link list using C. The link list should have traverse, insert, delete, search and sort operations.

   Points: 8

3. Write a report on the differences, pros and cons of Link List and Circular Link List. Point out some of the cases where Link List is used and some of the cases where Circular link list is used.

   Points: 4

General Instructions

To compile and run a C code:
gcc filename.c -o filename.exe
./filename.exe

The operations on Linked list:
Traverse: Traverse the link list to give the count of number of elements in the link list and Print link list.
Insert: Insert a new Item in the link list. There are three position that you can insert an item into a link list:

1. Insert at the start of the link list.
2. Insert at a given position in the link list.
3. Insert at the end of the link list.

Delete: Delete an item from the list.
Search: Search an item in the link list.
Sort: Sort in ascending or descending order.

At the beginning of your program, you should give a selectable list of actions to the user- and according to the action the user chooses, it should be able to perform that task.

Submission Instructions

- Make sure your programs compile and run without any errors.
- Only include c files or text files for submission. Do not include any executables.
- Save all your programs with meaningful names and zip into a single folder as: lab1_[your last name here].zip (e.g., lab1_Xyz.zip)
- Email your code with the subject line, "Lab1-CSC33200(L)–Class#G-*lastname*" (e.g., Lab1 - CSC33200(L)-Class#G-Xyz)
- Email: sdebnath@ccny.cuny.edu

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