

Justin Lawrence  
COP 3530  
Project 1 Commentary

The complexity of each of the functions being called are all  $O(n)$ . This is because the time it takes to run is proportional to the size of the linked list. This happens because in order to find where the user wants to insert, edit, delete, print, or search, the program first has to go through the linked list up to the point determined and make a change there. Because of this, a linked list is a pretty good implantation of a line editor. However, for some functions, especially `insertEnd`, a vector would be more efficient because you can append it to the end quicker. However, deleting from the middle would cause more problems since you can not just change what item the previous item is pointing to, as you can with a linked list. The main thing I learned from this assignment is that linked lists are easier to use than I expected. I was unsure how they really worked before starting this, but now I realized just how easy they are to insert or remove data from. If I were to start the project over again, I would improve the time complexity of the program by making the way I parse through the user's input more efficient. Currently, I loop through each character and add it to my input/edit string. If I reworked that, I would have a better overall complexity