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Programming Assignment 1 Commentary

The computational complexity of the methods in the linked list are what one would expect when utilizing linked lists as a data structure. The search method in this implementation operates at O(N) time, the insertion method at O(1) (constant) time, deletion at O(1) (constant) time, Edit at O(N) time, print at O(N) time (due to accessing), and quit at O(1) time.

Using a Linked List for a line editor poses benefits and drawbacks. The primary advantage of utilizing the Linked List data structure is that insertion and deletion (a common function in line editors) execute in constant time. The drawback, is that accessing lines and searching through them presents slowdowns operating at O(N) time complexity, which are all common functions within line editors. The alternative array-list isn't fool proof either, as it too has a worst case time complexity of O(N) for specific functions. I'd argue that the Linked List structure is most apt here, as inserting and deleting lines is the bulk of the functions that take place.

I learned a lot about the linked list data structure throughout the course of this assignment. At the beginning, I was having to constantly reference the textbook, lecture slides, and internet for information on the structure. By the end of it I felt *extremely* confident in its implementation and what each line of code achieved. I have been able to utilize linked lists outside of the assignment in practice since.