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Programming Assignment 1 Commentary

The time complexity of the insertEnd is O(1) since it uses a tail pointer and does not need to traverse the list, but search, print, edit, insertLine, and delete are O(n) since in the worst case scenario the whole list has to be traversed.

I thought using a linked list for implementing a line editor was a good idea. Most of the line editor methods, inserting and deleting, were simple with a linked list because only a couple pointers have to be switched whereas with an array, each node in the entire remaining array would have to be reallocated to accommodate for an insert or delete somewhere besides the end of the array. A disadvantage of the linked list is the search method which has to iterate through the list to find the target node.

There are many things I learned throughout this project, big and small. I noticed that most of the code for this project was already practiced with other Stepik assignments or was very similar to other exercises I worked on. This project taught me how to bring all those pieces of knowledge together to implement something useful. I learned how to deallocate memory with a destructor. I also learned the hard way the difference between passing in Node* head and Node* &head and to always end my cout statements with ‘endl’ because of the buffer or else I would get very strange results.

If I had to start over I would make sure that I know exactly what an acceptable user input looked like before I started programming anything. Originally, I assumed that the user input would be put in the correct format and did not consider if they had only one parenthesis in the front or back or if they had no parentheses at all. My program just took a substring even if there was only one parentheses and the string would be incorrect. I later had to rewrite my code to consider these cases.