Xinyu Chen
GTID: 903612905

A brief explanation of how I developed my program

Highlight some key points in my functions:

- Always use a helper node in functions to traverse the linked list.
- **Insert**: insert the value of node in increasing order.
- **Finalize**: free all new nodes. Last, free dummy listhead.
- **Minimum**: since the linked list is in increasing order, the minimum value in the list is always the first value of node.
- **Maximum**: the maximum value in the list is always the last one.
- **Search**: If there are duplicate values, return the first node of value.
- **menu interface file (main.c)**: use a char to store instructions, while loops to repeatedly scan for user's input.

Most import sample output

- I verified menu interface in main.c

Menu interface

```
(base) ✘ xinyuchen@XyGray ~/workspace/CSE6010-22Fall/Assignments/A2  master ± make
clang -o singleLinkedList main.c node.c -O0 -g -Wall -Werror -std=gnu99
(base) xinyuchen@XyGray ~/workspace/CSE6010-22Fall/Assignments/A2  master ± ./singleLinkedList
Please type command sequences to build your own single-linked list as follows:

p        Demonstration of linked list framework, initial is null
new      Create empty linked list
i        Insert a new node with value
del      Delete a node with value
f        Search a node with value
max      Get the maximum value in linked list
min      Get the minimum value in the linked list
pred     Get the predecessor of a specific node with value
suc      Get the successor of a specific node with value
l        Get the length of this linked list
clear    Clear current linked list and quit program
q        Quit program
please enter your command sequence:
new
initialize successfully.
please enter your command sequence:
i
enter the value you want to insert:
2
please enter your command sequence:
p
2
```

Most important tests

- I verified them with some test cases, which include common cases and edge cases. It stores in **test.c.** It runs without bugs.

Test result

```
The list is empty.
The list is empty.
The list is empty.
The list in empty.
0
The list is empty.
The list is empty.
The inserted data must be positive.
2 3 6 6 8 15
The data value is not found in the list.
3 6 6 8 15
The data value is not found in the list.
The specified data value is not found.
The specified data value is the first node in the list.
The predecessor of 8 in the list is 6
The specified data value is not found.
The specified data value is the last node in the list.
The successor of 8 in the list is 15.
The maximum value is: 15.
The minimum value is: 3.
The length of the list is 5.
```

What I found useful about the peer review process

- Add useful notes about compiling code. Modify the Makefile to run on common platforms.
- Resolve the memory leak in the ‘Length’ function.