

Main.cpp Linked List testing:

```
1  #include "SingleLinkedList.h"
2  #include "Stack.h"
3
4  int main() {
5
6      SingleLinkedList<int> list; //Create single linked list
7
8      list.push_front(20); //Pushes 20 to the front of the linked list
9      cout << "Front of the list: " << list.front() << endl; //Outputs the front of list
10
11      //Checks if the list is empty
12      if (list.empty()) {
13          cout << "The list is empty" << endl;
14      }
15      else {
16          cout << "The list is not empty" << endl;
17      }
18
19      //Adds items to the front of the list
20      list.push_front(30);
21      list.push_front(2003);
22      list.push_front(15);
23      list.push_front(87);
24      //Adds items to the back of the list
25      list.push_back(38);
26      list.push_back(95);
27      list.push_back(22);
28
29      cout << "The front of the list: " << list.front() << endl;
30      cout << "The back of the list: " << list.back() << endl;
31
32      list.pop_front(); //Removes item at the front of the list
33      list.pop_back(); //Removes item at the back of the list
34
35      cout << "The front of the list: " << list.front() << endl;
36      cout << "The back of the list: " << list.back() << endl;
37
38      //Inserts at and index of the list
39      list.insert(3, 13);
40      list.insert(4, 12);
41
42      list.insert(50, 1); //Will add to the end of the list
43
44      cout << "The back of the list is " << list.back() << endl;
45
46      //Will remove item at a given index
47      if (list.remove(3)) {
48          cout << "There was a succesful removal of an item at index 3." << endl;
49      }
50      else {
51          cout << "There is no item at this index" << endl;
52      }
53      if (list.remove(97)) {
54          cout << "There was a succesful removal of an item at index 97." << endl;
55      }
56      else {
57          cout << "There is no item at this index" << endl;
58      }
59
60      cout << "The index of 38 is " << list.find(38) << endl;
61      cout << "The size of the list is : " << list.find(900) << endl;
62
63      //Goes through and prints out the items in the linked list
64      cout << "The items in the list are ";
65      for (int i = 0; i < 8; i++) {
66          cout << list.front() << " ";
67          list.pop_front(); //Gets rid of item at the front of the list
68      }
69      cout << endl;
70
71      //Checks if the list is empty
72      if (list.empty()) {
73          cout << "The list is empty" << endl;
74      }
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```

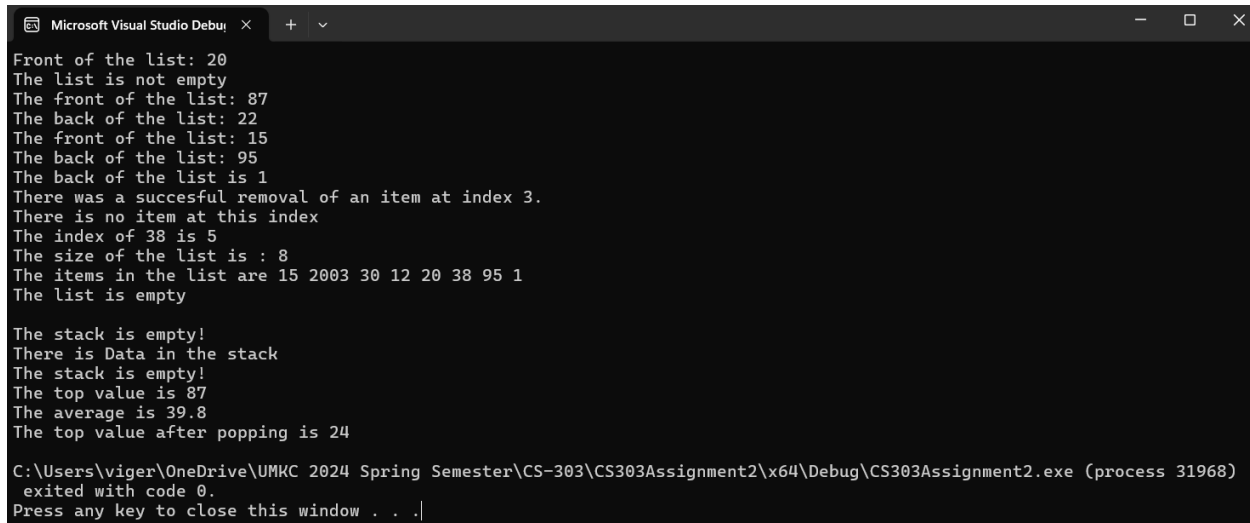
The output is:

```
Microsoft Visual Studio Debug Console
Front of the list: 20
The list is not empty
The front of the list: 87
The back of the list: 22
The front of the list: 15
The back of the list: 95
The back of the list is 1
There was a succesful removal of an item at index 3.
There is no item at this index
The index of 38 is 5
The size of the list is : 8
The items in the list are 15 2003 30 12 20 38 95 1
The list is empty
```

Main.cpp Stack testing:

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```

The terminal output all together is :



The screenshot shows a Visual Studio Debug Console window with a dark theme. The title bar reads 'Microsoft Visual Studio Debug' followed by a close button and a tab control with a '+' and a dropdown arrow. The output text is as follows:

```
Front of the list: 20
The list is not empty
The front of the list: 87
The back of the list: 22
The front of the list: 15
The back of the list: 95
The back of the list is 1
There was a succesful removal of an item at index 3.
There is no item at this index
The index of 38 is 5
The size of the list is : 8
The items in the list are 15 2003 30 12 20 38 95 1
The list is empty

The stack is empty!
There is Data in the stack
The stack is empty!
The top value is 87
The average is 39.8
The top value after popping is 24

C:\Users\viger\OneDrive\UMKC 2024 Spring Semester\CS-303\CS303Assignment2\x64\Debug\CS303Assignment2.exe (process 31968)
exited with code 0.
Press any key to close this window . . .|
```