California State University, Monterey Bay

Week 1 – Lab
Linked Lists

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CST370

Design and Analysis of Algorithms

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Exercise (a) Screen Shots


```
D:\8. Development\Visual Studio\CSUMB\CST 370\Projects\lab\Debug\lab.exe                    —    □    ×

Constructing intList
Lab 1a TEST 1:
MaxItem Err: list is Empty
Max Item is : -1

100
Lab 1a TEST 2:
Max Item is : 100

200 100
200 300 100
200 400 300 100
200 400 300 500 100
Lab 1a TEST 3:
Max Item is : 500


This is another list
0 100 200 300 400 500 600 700 800 900
Lab 1a TEST 4:
Max Item is : 900



Two items are erased from the first list
200 500 100
```

Explanation

The RED boxed area –

A call was made to *maxItem* for an empty Linked List. This resulted in an error message and -1 as the return value.
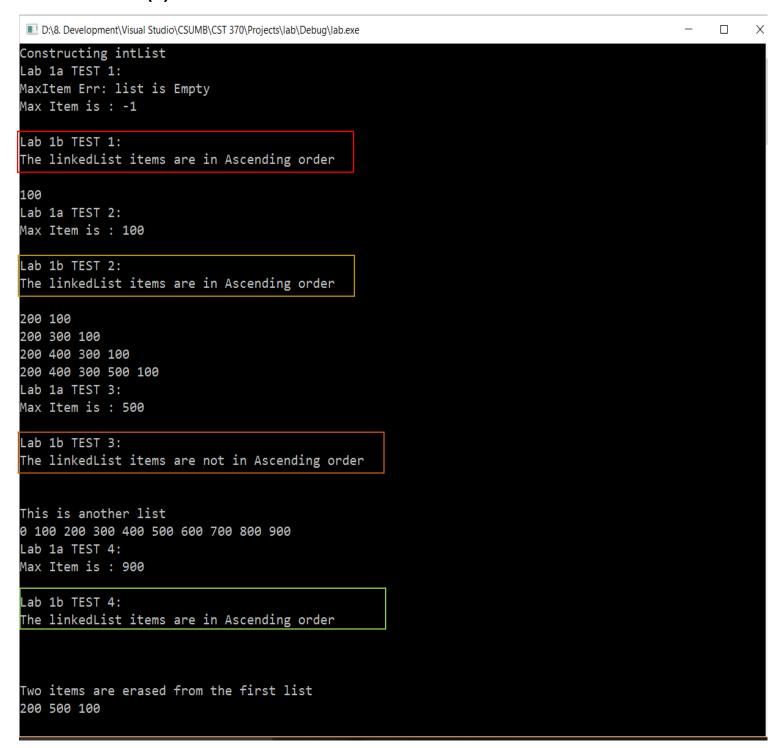
The YELLOW boxed area –

A call was made to *maxItem* for a Linked List that contained one (1) node. This resulted in a return value that was equal to the only data item in the list.

The GREEN boxed areas –

A call was made to *maxItem* for a Linked List that contained more than one node. This resulted in a return value that was equal to the maximum data item value (as seen in the list display just prior to the call).

Exercise (b) Screen Shots

```
D:\8. Development\Visual Studio\CSUMB\CST 370\Projects\lab\Debug\lab.exe                    —    □    X

Constructing intList
Lab 1a TEST 1:
MaxItem Err: list is Empty
Max Item is : -1

Lab 1b TEST 1:
The linkedList items are in Ascending order

100
Lab 1a TEST 2:
Max Item is : 100

Lab 1b TEST 2:
The linkedList items are in Ascending order

200 100
200 300 100
200 400 300 100
200 400 300 500 100
Lab 1a TEST 3:
Max Item is : 500

Lab 1b TEST 3:
The linkedList items are not in Ascending order


This is another list
0 100 200 300 400 500 600 700 800 900
Lab 1a TEST 4:
Max Item is : 900

Lab 1b TEST 4:
The linkedList items are in Ascending order



Two items are erased from the first list
200 500 100
```

Explanation

The RED boxed area –

A call was made to *isAscendingOrder* for a empty Linked List. This resulted in a **true** return value.

The YELLOW boxed area –

A call was made to *isAscendingOrder* for a Linked List that contained one (1) node. This resulted in a **true** return value.

The ORANGE boxed area –

A call was made to *isAscendingOrder* for a Linked List that contained more than one node and the data items were NOT in ascending order. This resulted in a **false** return value.

The GREEN boxed area –

A call was made to *isAscendingOrder* for a Linked List that contained more than one node and the data items were in ascending order. This resulted in a **true** return value.