GDAPS1 – Practice Exercise

Linked List Removal

# Objective

Practice implementing another part of a Linked List. You’ll be completing the Linked List in the next homework assignment.

# Details

Start with the Linked List in-class exercise from last time.

**Implementing Removal**

Create the following method in the CustomLinkedList class:

public T Remove(int index)

It should take an integer parameter, which is the index of the data to remove from the list. The method should return the actual data that was removed. There are several possible scenarios you need to handle:

* If the index is invalid (< 0 or >= count), throw an exception.
* Removing the head node (index 0)
* Removing the tail node (index equal to the count – 1).
* Removing the head or tail when there’s only 1 element.
* Removing a node somewhere in the middle.

**Testing**

In the main method, be sure you have at least 6 items in the list. Print the items in the list using the Get() method (or indexer property) you implemented last time.

Then call the delete method several times:

* Try to delete an invalid index (catch the exception and print an error)
* Delete the last node
* Delete the first node
* Delete a node somewhere in the middle

Lastly, print the data again to verify that the items were removed successfully.

# Sample Run

**>> Printing Linked List contents:**

Apple

Banana

Chocolate

Drumstick

Eggs

French Toast

**>> About to remove items at indices 99, 5, 0 and 1**

Error: Invalid index specified during removal

**>> Printing Linked List contents after successful removals:**  
Banana  
Drumstick  
Eggs

# Submission

All of your work must be commented and follow this course’s coding standards. **Read through the Coding Standards document (located in MyCourses) to check over your code before you complete your program. Make sure you follow the coding standards for all code you create.**

1) Submit: Submit your program to the appropriate Assignments dropbox in MyCourses.

2) Check-off: Show your working program to the instructor or TA. If you do not finish before class ends, complete the exercise for homework and show one of us in-class on the next class period. If your program works as expected, you will be “checked off” to earn credit for the exercise.