

Assignment 5

60-322

Objectives

- Learn to use iterator pattern.
- Learn to use a simple factory pattern

Work to be done

- 1) Define another class called, say SortedLinkedListOfInt. Each node in the linked list contains an int value and a pointer to a node containing the next element. The successive elements in the list must be in descending sequence. SortedLinkedListOfInt has the following methods and instance variables:
 - a. An instance variable called startList which points at the first element of a singly linked list.
 - b. A method insert(int x) which inserts the value x into the appropriate position in the sorted linked list.
- 2) Consider the classes AbstractList, ArrayOfIntWithIterator and the interface MyIterator that was discussed in class. I have made a slight modification of those classes, so that the array result to store the integer values now has a fixed size. The modified classes are available with this assignment as a zipped file. Modify SortedLinkedListOfInt so that it becomes a subclass of AbstractList.
- 3) Modify the class IteratorTester so that, if the number of integers in the array elements in 10 or less you will use class ArrayOfIntWithIterator. Otherwise you will use SortedLinkedListOfInt. Use a simple factory pattern to select whether an object of ArrayOfIntWithIterator class or an object of SortedLinkedListOfInt class will be used.