GIT Department of Computer Engineering
CSE 222/505
Spring 2013
Homework 03
Lists
Due date: April 1st 2013 23:59

Implement a generic list class (named GITList<E>) that implements the methods listed below.

Method Summary	
void	**add**(int index, E obj) Add an item at the specified index.
void	**addFirst**(E item) Insert an object at the beginning of the list.
void	**addLast**(E item) Insert an object at the end of the list.
E	**get**(int index) Get the element at position index.
E	**getFirst**() Get the first element in the list.
E	**getLast**() Get the last element in the list.
java.util.Iterator<E>	**iterator**() Return an Iterator to the list
java.util.ListIterator<E>	**listIterator**() Return a ListIterator to the list
java.util.ListIterator<E>	**listIterator**(int index) Return a ListIterator that begins at index

The iterator and the listIterator are standard Java Collection interfaces. See the textbook for the methods of them.

GITList<E> has the following internal structure: Each node in your linked list is an array of 10 elements of type E. When you add a new element to the list, you add it to the array, if the array is full, then add another array to the list and add the new element to the array. Arrays might be partially empty or full depending your insertion and deletion algorithms.

In your submission, include the following

1. Problem definition
2. Problem analysis and design
3. Class diagrams and algorithms for all methods
4. Algorithm analysis in terms of asymptotic notations
5. Implementation files
6. Junit tests and test results
7. A few regression tests

Do not forget to follow the homework submission rules.