Laboratory Seven: More on Linked Lists

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Objectives

1. Practice with manipulating singly-linked lists.

Methods To Be Written

Study the code provided in `LinkedLab07.java` carefully and make sure you understand how each method works; they are Java implementations of the algorithms we developed in class.

The code for the partially completed `LinkedLab07<E>` class and a client, `Lab07Tester`, that is to be used for testing your solution are provided on the course website. **You are not to change `Lab07Tester.java`**.

You are to accomplish these tasks by manipulating pointers. You may not change the contents of any nodes or create new nodes to replace existing nodes.

The methods of the `LinkedLab07<E>` class that you need to write are:

1. `moveFirstToEnd` — a method taking no parameters; it moves the first element to the rear of the list; throws `NoSuchElementException` if the list is empty
2. `moveEndToFirst` — a method taking no parameters; it moves the last element to the front of the list; throws `NoSuchElementException` if the list is empty
3. `swap` — a method taking a pair of indices as parameters; it swaps the items at the two indicated locations; throws `IndexOutOfBoundsException` if either of the indices is invalid
4. `reverse` — a method taking no parameters; it reverses the order of the elements in the list. This reversal is done *in place*. This means that all the next fields are changed to point to the previous element rather than the next element;

Output

Your output should look like this:

```
Testing empty lists.
[ ]
[ ]
List is empty.
List is empty.

Testing a list of length one.
[one]
[one]
[one]

Testing a list of length two.
[two, one]
[one, two]
[two, one]

Testing lists longer than length two.
[two, one, three, four, five]
[one, three, four, five, two]
[one, three, four, five, two, six]
[six, one, three, four, five, two]
[six, five, three, four, one, two]
[two, five, three, four, one, six]
[two, five, three, four, one, six]
[two, one, three, four, five, six]
Properly caught bad arguments.
[six, five, four, three, one, two]
```

Submission

Submit your lab via Moodle by 11:55pm, Monday, October 29, 2018.