

Class Exercise

ArrayList

Q1. Write a program that reads a file and displays the words of that file as a list.

- First display all words. !
- Then display them in reverse order. !
- Then display them with all plurals (ending in "s"). !
- Then display them with all plural words removed and the size of updated list.

LinkedList

Q2. Suppose the list letters contains elements "A", "B", "C", and "D". Draw the contents of the list and the iterator position for the following operations:

```
ListIterator<String> iter = letters.iterator();  
iter.next();  
iter.next();  
iter.remove();  
iter.next();  
iter.add("E");  
iter.next();  
iter.add("F");
```

Q3. Explain what the following code prints. Draw a picture of the linked list and the iterator position after each step.

```
LinkedList<String> staff = new LinkedList<String>();  
ListIterator<String> iterator = staff.listIterator();  
iterator.add("Tom");  
iterator.add("Diana");  
iterator.add("Harry");  
iterator = staff.listIterator();  
iterator.next();  
iterator.next();  
iterator.add("Romeo");  
iterator.next();  
iterator.add("Juliet");  
iterator = staff.listIterator();  
iterator.next();  
iterator.remove();  
while (iterator.hasNext()) {  
    System.out.println(iterator.next());  
}
```

Stack

1. Use a stack to reverse the words of a sentence. Keep reading words until you have a word that ends in a period, adding them onto a stack. When you have a word with a period, pop the words off and print them. Stop when there are no more words in the input. (20 mins)

Definition of Done

- i. You should convert the input as follows:

Mary had a little lamb. Its fleece was white as snow.
into

Lamb little a had mary. Snow as white was fleece its.

- ii. Display the desired resultant stack