**CPSC165**

**Assignment#4**

**30 Points**

**Code the Program**

**24.3 Page 926 e-book**

*Implement a doubly linked list*

The **MyLinkedList** class used in [**Listing 24.6**](https://jigsaw.vitalsource.com/books/9780133593525/epub/OPS/xhtml/fileP70004901930000000000000000330CC.xhtml#P7000490193000000000000000033269) is a one-way directional linked list that enables one-way traversal of the list. Modify the **Node** class to add the new data field name **previous** to refer to the previous node in the list, as follows:

public class Node<E> {

E element;

Node<E> next;

Node<E> previous;

public Node(E e) {

element = e;

}

}

Implement a new class named **TwoWayLinkedList** that uses a doubly linked list to store elements. The **MyLinkedList** class in the text extends**MyAbstractList** . Define **TwoWayLinkedList** to extend the **java.util.AbstractSequentialList** class. You need to implement all the methods defined in **MyLinkedList** as well as the methods **listIterator()** and **listIterator(int index)** . Both return an instance of **java.util.ListIterator<E>** . The former sets the cursor to the head of the list and the latter to the element at the specified index.

### Compile and Test

When done, compile and run your code.

Then, debug any errors until your code is error-free.

Check your output to ensure that you have the desired output, modify your code as necessary, and rebuild.

### Submit Deliverables

* Capture the Console output window and paste into a Word document. Zip the output file along with the source code files.
* Upload to canvas.