

Question 3 Test Exhibits

Overview showing what happens when the program is run.

```
BlueJ: Terminal Window - LinkedDeque
Collection is currently empty: true
Exception caught: Collection is empty.
Exception caught: Collection is empty.
Exception caught: Collection is empty.
Exception caught: Collection is empty.
-----

Adding elements to the front of the collection:

Contents:
First

Size: 1
Front element: First
Rear element: First

Contents:
Second
First

Size: 2
Front element: Second
Rear element: First

Contents:
Third
Second
First

Size: 3
Front element: Third
Rear element: First

Contents:
Fourth
Third
Second
First

Size: 4
Front element: Fourth
Rear element: First

Contents:
Fifth
Fourth
Third
Second
First

Size: 5
Front element: Fifth
Rear element: First

-----

Removing elements from the front of the collection:

Contents:
Fourth
Third
Second
First

Size: 4
Front element: Fourth
Rear element: First

Contents:
Third
Second
First

Size: 3
Front element: Third
Rear element: First

Can only enter input while your programming is running
```

```
BlueJ: Terminal Window - LinkedDeque
Front element: Third
Rear element: First

Contents:
Second
First

Size: 2
Front element: Second
Rear element: First

Contents:
First

Size: 1
Front element: First
Rear element: First

Contents:
Size: 0

-----

Adding elements to the rear of the collection:

Contents:
Sixth

Size: 1
Front element: Sixth
Rear element: Sixth

Contents:
Sixth
Seventh

Size: 2
Front element: Sixth
Rear element: Seventh

Contents:
Sixth
Seventh
Eighth

Size: 3
Front element: Sixth
Rear element: Eighth

Contents:
Sixth
Seventh
Eighth
Ninth

Size: 4
Front element: Sixth
Rear element: Ninth

Contents:
Sixth
Seventh
Eighth
Ninth
Tenth

Size: 5
Front element: Sixth
Rear element: Tenth

-----

Removing elements from the rear of the collection:

Contents:

Can only enter input while your programming is running
```

```
BlueJ: Terminal Window - LinkedDeque
Rear element: Seventh

Contents:
Sixth
Seventh
Eighth

Size: 3
Front element: Sixth
Rear element: Eighth

Contents:
Sixth
Seventh
Eighth
Ninth

Size: 4
Front element: Sixth
Rear element: Ninth

Contents:
Sixth
Seventh
Eighth
Ninth
Tenth

Size: 5
Front element: Sixth
Rear element: Tenth

-----

Removing elements from the rear of the collection:

Contents:
Sixth
Seventh
Eighth
Ninth

Size: 4
Front element: Sixth
Rear element: Ninth

Contents:
Sixth
Seventh
Eighth

Size: 3
Front element: Sixth
Rear element: Eighth

Contents:
Sixth
Seventh

Size: 2
Front element: Sixth
Rear element: Seventh

Contents:
Sixth

Size: 1
Front element: Sixth
Rear element: Sixth

Contents:

Size: 0

-----

Can only enter input while your programming is running
```

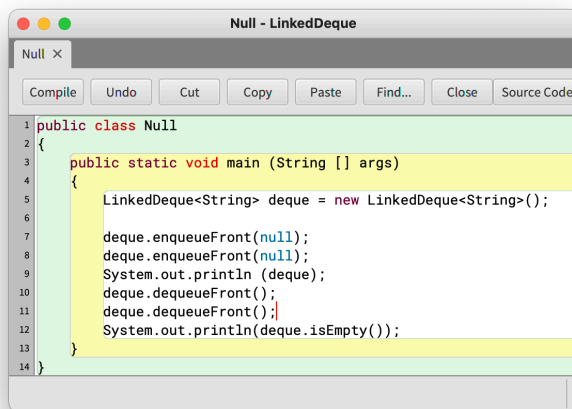
These three screen grabs show:

- Adding elements to the rear of an empty collection
- Removing all elements from the rear to create an empty collection
- Adding elements to the front of an empty collection
- Removing all elements from the front to create an empty collection

Showing thrown exceptions from methods `.first()` `.last()` `.enqueueRear()` and `.enqueueFront()` of which all are caught by the driver:

```
Exception caught: Collection is empty.  
Exception caught: Collection is empty.  
Exception caught: Collection is empty.  
Exception caught: Collection is empty.
```

Passing null objects as parameters:



```
1 public class Null  
2 {  
3     public static void main (String [] args)  
4     {  
5         LinkedDeque<String> deque = new LinkedDeque<String>();  
6  
7         deque.enqueueFront(null);  
8         deque.enqueueFront(null);  
9         System.out.println (deque);  
10        deque.dequeueFront();  
11        deque.dequeueFront();  
12        System.out.println(deque.isEmpty());  
13    }  
14 }
```



```
BlueJ: Terminal Window - Link...  
null  
null  
true  
Can only enter input while your pr
```