

Credit: CSE3110 - Iterative Algorithm 1  
Assignment: QueueList

Describe the errors you've encountered while working on this assignment. What caused the error and how do you overcome the error?

Error: Enqueue in QueueList didn't work when the queue was empty. This was because I used the addAtEnd method from the LinkedList class. In the LinkedList class the addAtEnd method has to go through the linked list until the node equals null. This doesn't work when there's no nodes to go through. Instead I simply had to use addAtFront since there's no going through the linked list, it just adds the node to the front.



The screenshot shows an IDE with a Java file named QueueListTesting.java. The code defines a QueueList class and a main method. The main method creates a QueueList object, prints a message, and then enqueues the strings "1", "red", and "bob123". It then prints the front of the queue. The console output shows the message "Adding '1', 'red', and 'bob123' to queue." and "Front of queue: ". The error message in the console is: "Exception in thread 'main' java.lang.NullPointerException: Cannot invoke 'LinkedListParts123\_SkillBuilders.Node.getNext()' because 'current' is null at Chapter13/LinkedListParts123\_SkillBuilders.LinkedList.addAtEnd(LinkedList.java:91) at Chapter13/Mastery.QueueList.enqueue(QueueList.java:53) at Chapter13/Mastery.QueueListTesting.main(QueueListTesting.java:14)".

```
2
3 import Queue2And3_SkillBuilders.Queue3;
4
5 public class QueueListTesting {
6
7     public static void main(String[] args)
8     {
9
10         QueueList q = new QueueList();
11
12         System.out.println("Adding '1', 'red', and 'bob123' to queue." + '\n');
13
14         q.enqueue("1");
15         q.enqueue("red");
16         q.enqueue("bob123");
17
18         System.out.println("Front of queue: " + q.front());
19     }
20 }
```

<terminated> QueueListTesting [Java Application] C:\Program Files\Eclipse\eclipse\plugins\org.eclipse.justj.openjdk.hotspot.jre.full.win32.x86\_64\_21.0.3.v20240426-1530\jre\bin\javaw.exe (Nov 25, 2024)  
Adding '1', 'red', and 'bob123' to queue.

Exception in thread "main" java.lang.NullPointerException: Cannot invoke "LinkedListParts123\_SkillBuilders.Node.getNext()" because "current" is null  
at Chapter13/LinkedListParts123\_SkillBuilders.LinkedList.addAtEnd(LinkedList.java:91)  
at Chapter13/Mastery.QueueList.enqueue(QueueList.java:53)  
at Chapter13/Mastery.QueueListTesting.main(QueueListTesting.java:14)

```
public void enqueue(Object item)
{
    String s = "" + item;

    if (isEmpty())
    {
        rear = 0;
        front = 0;
        list.addAtEnd(s);
    }
    else
    {
        rear += 1;
        list.addAtEnd(s);
    }
}
```

Solution: When the queue is empty I replaced the addAtEnd with addAtFront.

```
43
44 public void enqueue(Object item)
45 {
46     String s = "" + item;
47
48
49     if (isEmpty())
50     {
51         rear = 0;
52         front = 0;
53         list.addAtFront(s);
54     }
55     else
56     {
57         rear += 1;
58         list.addAtEnd(s);
59     }
60 }
```

Problems @ Javadoc Console × Git Staging

<terminated> QueueListTesting [Java Application] C:\Program Files\Eclipse\eclipse\plugins\org.eclipse.  
Adding '1', 'red', and 'bob123' to queue.

Front of queue: 1