

```
1 /**
2  * Implementation of a Singly-Linked List.
3  *
4  * @author __your_name__
5  */
6
7 import java.util.NoSuchElementException;
8
9 public class SLinkedList<E>
10 {
11     // Representation of the list nodes
12     private class Node
13     {
14         E data;           // the data value stored at the node
15         Node next;       // the successor of this node
16
17         // creates a node with the given data item and no successor
18         Node(E d)
19         {
20             data = d;
21             next = null;
22         }
23     }
24
25     /**
26     * The first node in the list.
27     */
28     private Node head;
29
30     // put comment in Javadoc style
31     public SLinkedList()
32     {
33         head = null;
34     }
35
36     // put comment in Javadoc style
37     public boolean isEmpty()
38     {
39         return head == null;
40     }
41
42     /**
43     * Adds the given element to the front of the list.
44     *
45     * @param data    the element to add
46     */
47     public void addFirst(E data)
48     {
```

```
49     Node node = new Node(data);
50     node.next = head;
51     head = node;
52 }
53
54 /**
55  * Returns the first element in the list.
56  *
57  * @return the first element in the list
58  * @throws NoSuchElementException when the list is empty
59  */
60 public E getFirst()
61 {
62     if (this.isEmpty()) {
63         throw new NoSuchElementException();
64     }
65
66     return head.data;
67 }
68
69 // put comment in Javadoc style
70 public void addLast(E data)
71 {
72     // special case
73     if (this.isEmpty()) {
74         head = new Node(data);
75     }
76     else {
77         // find last node
78         Node curr = head;
79         while (curr.next != null) {
80             curr = curr.next;
81         }
82
83         // attach the new node to the last node
84         Node node = new Node(data);
85         curr.next = node;
86     }
87 }
88
89 // put comment in Javadoc style
90 public String toStringNext()
91 {
92     String str = "";
93     Node curr = head;
94
95     // add each data item to the result string
96     while (curr != null) {
```

```
97     str = str + curr.data + " ";
98     curr = curr.next;
99     }
100
101     // remove trailing space and enclose in [ ]
102     str = "[" + str.trim() + "];
103
104     return str;
105     }
106 }
```