

```
1  /*
2   Question 4
3   Creator: Wahid Bawa
4   Purpose: To add the new sortedInsert method
5  */
6  public class LList {
7      private LNode head, tail;
8
9      public LList() {
10         head = null;
11         tail = null;
12     }
13
14     public void add(int val) {
15         LNode tmp = new LNode(val, tail, null);
16         if (tail != null) {
17             tail.setNext(tmp);
18         }
19         if (head == null) {
20             head = tmp;
21         }
22         tail = tmp;
23     }
24
25     public String toString() { // displays the parts of the Linked List
26         String ans = "";
27         LNode tmp = head;
28         while (tmp != null) {
29             ans += tmp.getVal() + (tmp.getNext() == null ? "" : "-");
30             tmp = tmp.getNext();
31         }
32         return ans;
33     }
34
35     public void sortedInsert(int val) { // this inserts val into List in ascending order
36         LNode tmp = head;
37         if (tmp == null) {
38             add(val);
39         }
40         while (tmp != null) {
41             if (tmp == head) {
42                 if (val <= head.getVal()) {
43                     LNode n = new LNode(val, null, head);
44                     head.setPrev(n);
45                     head = n;
46                     break;
47                 }
48             }
49             if (tmp == tail) { // this is for the special case for Last element
50                 if (val >= tmp.getVal()) {
51                     add(val);
52                     break;
53                 }
54             }
55             else if (tmp.getVal() <= val && val <= tmp.getNext().getVal()) { // this sees if the prev val is lower and next val is higher
56                 LNode n = new LNode(val, tmp, tmp.getNext()); // inserts the node inbetween
57                 tmp.getNext().setPrev(n);
58                 tmp.setNext(n);
59                 break;
60             }
61             tmp = tmp.getNext();
62         }
63     }
64 }
```