1. Program 10 Instructions, CS102, Prof. Loftin

Write a class `SortedLinkedList` which handles a sorted linked list of integers. In particular, there should be the following public methods:

```java
SortedLinkedList() // constructor for empty list
void add (int m) // add a node containing m into the list
String toString()
```

The `add` method should insert the new node in the correct place to keep the list sorted.

2. A Sample Driver Class and Output

Here is a sample driver class:

```java
public class Main{
    public static void main (String[] args){
        SortedLinkedList a = new SortedLinkedList();
        System.out.println(a);
        a.add(5);
        System.out.println(a);
        a.add(10);
        a.add(3);
        System.out.println(a);
        a.add(30);
        a.add(12);
        a.add(5);
        System.out.println(a);
    }
}
```

Here is the output of the driver class:

```
[ ]
[5 ]
[3 5 10 ]
[3 5 5 10 12 30 ]
```

3. How to Do It

Modify the code for `MyList.java` that we discussed in class. The thing to change is the `add` method. Note that your code should correctly `add` a node for a new integer in the following cases:

- to an empty list
- at the beginning of the list
- in the middle of the list
- at the end of the list
Be careful with your code. Make sure you avoid null pointer exceptions.

4. **Due date**: December 7, 2009

5. **How to turn it in**

   Send your program `SortedLinkedList.java` as an email attachment to loftin@rutgers.edu.