

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:

```
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:

```
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`.