

**Lab Goal :** This lab was designed to teach you more about a linked list and using a linked list in a class as an instance variable / data field.

**Lab Description :** Use `ListNode` to write some basic `LinkedList` methods.

PART 1 – Open the `ListFunHouseTwo.java` file and complete the methods in this class.

PART 2 – Use `lab15c.java` to test your `ListFunHouseTwo` class.

### ListNode – stores a value and a reference to the next node

```
public class ListNode implements Linkable
{
    private Comparable listNodeValue;
    private ListNode nextListNode;

    public ListNode(){
        listNodeValue = null;
        nextListNode = null;
    }

    public ListNode(Comparable value, ListNode next){
        listNodeValue=value;
        nextListNode=next;
    }

    public Comparable getValue(){
        return listNodeValue;
    }

    public ListNode getNext(){
        return nextListNode;
    }

    public void setValue(Comparable value){
        listNodeValue = value;
    }

    public void setNext(Linkable next){
        nextListNode = (ListNode)next;
    }
}
```

**EXTENSION :** Modify `ListNode` by adding in a `ListNode prevListNode` instance variable / data field. Rewrite the program as a double/circular linked list.

### Files Needed ::

`ListNode.java`  
`Linkable.java`  
`ListFunHouseTwo.java`  
`Lab15c.java`

### Sample Data :

See the main of `lab15c`.

### Sample Output :

```
Original list values: go on at 34 2.1 -a-2-1 up over
num nodes = 8

List values after calling nodeCount: go on at 34 2.1 -a-2-1 up over
List values after calling doubleFirst: go go on at 34 2.1 -a-2-1 up over
List values after calling doubleLast: go go on at 34 2.1 -a-2-1 up over over
List values after calling skipEveryOther: go on 34 -a-2-1 over
List values after calling removeXthNode(2): go 34 over
List values after calling setXthNode(2,one): go one over
```