

## Lab 3 Integer Singly Linked List (IntegerSSL)

### Objectives:

- How to implement an interface
- How to implement a singly linked list
- Submit one file: *IntegerSLL.java* at the end of the lab. Click the “Submit” button

### 1. INode.java

Note that INode.java is an integer singly linked node. It is the building block for a singly linked list.

### 2. Interface

An interface is like a class, but it contains only methods headers without bodies. A class can promise to implement an interface, meaning that the class promises to provide implementations of all the methods that are declared in the interface. For example, the *IntegerList.java* interface in the lab 3 can be implemented in three classes: as array based list, as doubly linked list, or as singly linked list. The list can be used the same way. In this lab, we are going to implement it using singly linked list.

The lab instructor is going to draw diagrams on the whiteboard to explain how a singly linked list works, how an INode object is manipulated.

**Use Connex to submit one file: *IntegerSLL.java* at the end of the lab. Make sure you click the “Submit” button.**

Extra notes:

An interface also enables you to specify some desired common behaviors that may be useful over many different types of objects. For example, the *java.lang.Comparable<T>* interface enables two objects to be compared. If we implement the interface in *Customer.java*, two Customer objects can be compared. If it is implemented in *BingoBall.java*, or *Patient.java* classes, two BingoBall or two Patient objects can be compared. Why is it important? It means that we can sort a collection of those objects. Though we are not going to implement the Comparable interface today, we can see the usefulness of interfaces.

Learn to use online the API for help. For example, find the Comparable interface.

<https://docs.oracle.com/javase/8/docs/api/>

The “javadoc” style comments are added to INode.java. Learn to more, go to:

<http://www.oracle.com/technetwork/java/javase/documentation/index-137868.html>