Lab 14 Study Questions

1. In Lab 14 we created a doubly linked list that is to be maintained in a manner that keeps the data stored in the list in ascending order. What does this mean in terms of the contents (data, prev, and next) of each node in the list?

2. Why did we move the InsertFirst, InsertLast, DeleteFirst, and DeleteLast methods to the private section of the description of our ordered linked list?

3. Does the IsIn function need to look at every node in the ordered linked list? Why or why not?

4. Under what conditions would the Insert method of the ordered linked list call InsertFirst?

5. Under what conditions would the Delete method of the ordered linked list call DeleteLast?

6. What is the purpose of the Exception class included in Lab 14?

7. The dereferencing operator implemented for the Iterator class in Lab 14 contains a throw but no try or catch. Where are the try and catch that interact with this throw?
   ```cpp
template <class ST>
const ST OrderedSet<ST>::Iterator::operator * () const
{
    if (current == NULL)
        throw (Exception("Cannot dereference a NULL pointer"));
    return current->data;
}
```

8. Write a main function that will test
   a. the default constructor for OrderedSet
   b. the Insert method for OrderedSet
   c. the copy constructor for OrderedSet
   d. the assignment (=) operator for OrderedSet
   e. the union (+) operator for OrderedSet
   f. the intersection (*) operator for OrderedSet
   g. the Delete method for OrderedSet
   h. the destructor for for OrderedSet