

Create a project called lab7 (if using Visual Studio). Copy the source file that (one of) your team members completed for Lab 6 into lab7.cpp as your starting point.

Your group will add the following member function to your BSTNode<T> class definition:

```
void listify(list<T>&) const;
```

Your listify function may be invoked as follows:

```
BSTNode<int> iroot;  
// ...insert data into iroot...  
list<int> irootList;  
iroot.listify(irootList);
```

The result of the listify member function invocation shown above is to perform an in-order traversal of the BST iroot, inserting the data of each BST node into the list irootList in the proper order.

Additionally, your team will modify the main() driver program by adding the following:

1. Create irootList from iroot as above;
2. List the elements of irootList using a forward iterator, a reverse iterator, and ranged for loop;
3. Repeat steps 1-2 for sroot;
4. Create BSTNode<int> iroot4 containing the items 1000, 2000, 3000, 4000, and 5000;
5. Create iroot4List from iroot4;
6. Create a map instance mi with string as the “first” element type and list<int> as the “second” element type, i.e., map<string, list<int>> mi;
7. Assign two elements of mi as in the sample output below;
8. Display the contents of mi using ranged for loops; and
9. Display the contents of mi using the map index operator.

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The output of your driver program should look like the following:

```
iroot == 10, 20, 100, 200, 300
sroot == Friday, Monday, Saturday, Sunday, Thursday, Tuesday,
Wednesday
```

Creating irootList via iroot.listify

```
irootList (forward iterator) == 10 20 100 200 300
irootList (reverse iterator) == 300 200 100 20 10
irootList (ranged for loop) == 10 20 100 200 300
```

Creating srootList via sroot.listify

```
srootList (forward iterator) == Friday Monday Saturday Sunday Thursday
Tuesday Wednesday
srootList (reverse iterator) == Wednesday Tuesday Thursday Sunday
Saturday Monday Friday
srootList (ranged for loop) == Friday Monday Saturday Sunday Thursday
Tuesday Wednesday
```

```
iroot4 == 1000, 2000, 3000, 4000, 5000
```

Creating iroot4List via iroot4.listify

```
Contents of map<string, list<int>> mi (using ranged for loops):
iroot4List: 1000 2000 3000 4000 5000
irootList: 10 20 100 200 300
```

Using map index operator:

```
mi["irootList"] == 10 20 100 200 300
mi["iroot4List"] == 1000 2000 3000 4000 5000
```

When finished, one member of your team should upload your completed lab7.cpp source file to Blackboard.