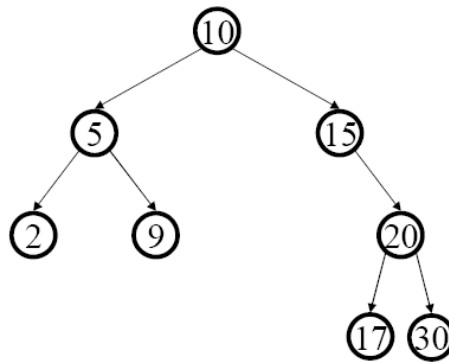


1. (20 points) Download the source programs of Binary Search Tree (**BST.cpp**, **BST.h**, and **treester.cpp**) from the **iLearn**.

(a) Add a function called **leafCount ()** to count the leaves in a binary tree. The following shows the function prototype.

```
int BST::leafCount ()
```

For the following sample tree, the result of the leafCount() should be **4** (= Leaf nodes are 2, 9, 17, 30)



(b) Add a function member called **levelByLevel ()** to traverse a tree level by level; that is, first visit the root, then all nodes on level 1 (children of the root), then all nodes on level2, and so on. Nodes on the same level should be visited in order from left to right. In the problem, you can assume that the maximum number of nodes in a tree is less than 30. Note that you have to display the value of the visiting nodes. The following shows the function prototype.

```
void BST::levelByLevel ()
```

For the above sample tree, the result of the level by level traversal should be **10 5 15 2 9 20 17 30**.

### **How to turn in?**

Submit your source programs on the iLearn.