We have 2 classes: node classes and tree classes. The tree class is primarily the user interface So, it contains mainly user interface functions.

So there’s a constructor for a new tree there’s an insert, find, remove functions.

Constructor just sets a root node to none and creates a root node.

Insert function takes an item and is is going to tes if the root node is none then it will create the new node. And if there is already a root then it’s going to create a node from that item or in other words add that item to a new node and insert it to the root and its going to do that recursively using the insert function I the node class.

Then while loop is going to reestablish the root to the top of the tree.Find function basically calls the find function in a node class and it passes in the item.

PrintTop2Tiers is just going to print the first tier and the second tier print the data for 2 tiers.

The preorder traversal traverses the tree. In the node class we have a constructor init and we pass into that a piece of data and we can also pass in a parent node if we want if we don’t parent node will be set none.

Next we have string function that returns a string representation of the node.

And we have a n isLeaf function it checks the length of the child nodes

So the most difficult part of my code is insert function which I spend maybe more time than other parts of the code. In the tree class I actually created a new node from a value that we want to add and so when we call the insert function from the tree class we’re actually passing in a node that has a value already in it. We test if they know that we’re trying to add that new node to isLeaf and if it is we can simply add it.

And the add function is going to do this work of merging these 2 nodes. If it is not a leaf then we’re going to descenddown the self node to left or middle or right subtree.

The elif and else statements are going to test which subtree to descend down. The find function takes an item if the item is in the current node then its going to return the item if it is not in current node and current node is a leaf then it is going to return false.

The preorder funcion prints out the current node and by that it prints out the string representation of that as I defined in functuin and then it calls preorder function on each of the current nodes children