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Project Due Date: 10/18/2020

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#### IV. Main (...)

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Step 0: inFile args[0]

deBugFile args[1]

treeFile args[2]

Step 1: initialTree (inFile, deBugFile)

Step 2: data read one data item from inFile

Step 3: Spot findSpot (Root, data)

If Spot == null write "data is in the database, no need to insert" to treeFile

Repeat step 2

Else printNode (Spot, deBugFile) // with caption saying it is Spot

Step 4: newNode get a treeNode (data, -1, null, null, null, null)

Step 5: treeInsert (Spot, newNode)

Step 6: preOrder (deBugFile) // if printing is too much, then, call preorder every 3 insertions.

Step 7: repeat step 2 to step 6 until inFile is empty

Step 8: preOrder (treeFile)

Step 9: close all files

#### **Source Code**

```
import java.util.NoSuchElementException;
import java.util.Scanner;
import java.io.*;
import java.io.PrintStream;
/**
 * Matthew Flammia, 23661371
 * Project 5, trees
 * to run, use 3 arguments: datafile debugfile treefile
 * this program has error checking to make sure these conditions are met
 */
public class FlammiaM_Project5_Java{
    public static void main(String args[]) throws Exception{
        //makes sure arguments are present
        if(args.length != 3){
```

```

        System.out.println("To run please include these arguments:
inputData debugFile treeFile");
        return;
    }
    //opens inputfile with error handling
    File inFile = new File(args[0]);
    if(!inFile.isFile() && !inFile.canRead()){
        System.out.println("Failed to open file (Was filename typed
correctly?)");
        return;
    }
    //creates scanner for inFile
    Scanner scan = new Scanner(inFile);
    //sets name of output files
    String debugFile = args[1];
    String treeFile = args[2];
    //initializes new tree
    twoThreeTree tree = new twoThreeTree();
    tree.initialTree(scan, debugFile);
    while(scan.hasNextInt()){
        //fetches data and finds spot to insert it
        int data = scan.nextInt();
        twoThreeTree.treeNode spot = tree.findSpot(tree.root, data);
        if(spot == null){
            //if data is already in database
            PrintStream fileOut = new PrintStream(new
FileOutputStream(debugFile,true));
            System.setOut(fileOut);
            System.out.println("\nData is in the database, not
inserting.\n");
            fileOut.close();
        }
        else{
            //inserting new data
            PrintStream fileOut = new PrintStream(new
FileOutputStream(debugFile,true));
            System.setOut(fileOut);
            System.out.println("\nData to insert:"+data);
            System.out.println("Printing spot node...");
            spot.printNode(debugFile);
            //creates node to insert and inserts it
            twoThreeTree.treeNode newNode = tree.new treeNode
(data,-1);
            tree.treeInsert(spot,newNode);
            //prints the preorder of current tree post-insertion
            System.setOut(fileOut);
            System.out.println("\nPrinting post insertion");
            tree.preOrder(tree.root, debugFile);

```

```

        }
    }
    //prints final tree to tree output file
    tree.preOrder(tree.root, treeFile);
}

class twoThreeTree{
    class treeNode{
        //variables
        int key1;
        int key2;
        treeNode child1;
        treeNode child2;
        treeNode child3;
        treeNode father;
        //constructor
        treeNode(){
            this.key1 = -1;
            this.key2 = -1;
            this.child1 = null;
            this.child2 = null;
            this.child3 = null;
            this.father = null;
        }
        treeNode(int key1, int key2){
            this.key1 = key1;
            this.key2 = key2;
            this.child1 = null;
            this.child2 = null;
            this.child3 = null;
            this.father = null;
        }
        //methods
        //checks if node is a leaf
        boolean isLeaf(){
            if(this.child1 == null && this.child2 == null && this.child3
== null)
                return true;
            else
                return false;
        }
        //checks if node is full
        boolean isFull(){
            if(this.child1 != null && this.child2 != null && this.child3
!= null)
                return true;
            else

```

```

        return false;
    }
    //prints nodes information, accounts for null values
    void printNode(String outFile) throws FileNotFoundException{
        //defines output file
        PrintStream fileOut = new PrintStream(new
FileOutputStream(outFile,true));
        System.setOut(fileOut);
        //if leaf, it will have no children
        if(this.isLeaf()){
            System.out.print(this.key1+" "+this.key2+" null null
null ");
            //checks if father is null, and decides if to print
            "null" or not
            if(this.father != null)
                System.out.println(this.father.key1);
            else
                System.out.println("null");
        }
        //if a 2 child situation, prints null for child 3
        else if(!this.isLeaf() && this.child3 == null){
            System.out.print(this.key1+" "+this.key2+"
"+this.child1.key1+" "+this.child2.key1+" null ");
            //checks for father, same as before
            if(this.father != null)
                System.out.println(this.father.key1);
            else
                System.out.println("null");
        }
        //if a 3 child situation, prints all data
        else if(!this.isLeaf() && this.child3 != null){
            System.out.print(this.key1+" "+this.key2+"
"+this.child1.key1+" "+this.child2.key1+" "+this.child3.key1+" ");
            //father check
            if(this.father != null)
                System.out.println(this.father.key1);
            else
                System.out.println("null");
        }
        //if cannot print one of these situations, outputs failure
        and closes program
        else{
            System.setOut(new PrintStream(new
FileOutputStream(FileDescriptor.out)));
            System.out.println("Critical Error in printNode: No
condition met for print statement, terminating");
            fileOut.close();
            System.exit(0);
        }
    }
}

```

```

        }
        fileOut.close();
    }
}
//two three tree variables
treeNode root;
treeNode dummy;
//constructor
twoThreeTree(){
    this.root = new treeNode(-1, -1);
    this.dummy = new treeNode(-9, -9);
    this.dummy.child1 = this.root;
    this.root.father = this.dummy;
}
//methods
//recursive preorder print
void preOrder(treeNode node, String outFile) throws
FileNotFoundException{
    //break statement
    if(node == null)
        return;
    //comment out if statement to print all nodes
    //if(node.isLeaf())
        node.printNode(outFile);
    preOrder(node.child1, outFile);
    preOrder(node.child2, outFile);
    preOrder(node.child3, outFile);
}
//inserts first 2 nodes into tree
void initialTree(Scanner scan, String debugFile) throws
NoSuchElementException,FileNotFoundException{
    //gathers data, and sorts it by size
    int data1 = scan.nextInt();
    int data2 = scan.nextInt();
    if(data2 < data1){
        int temp = data2;
        data2 = data1;
        data1 = temp;
    }
    //assigns to tree nodes and places them into root of tree
    treeNode node1 = new treeNode(data1, -1);
    node1.father = this.root;
    treeNode node2 = new treeNode(data2, -1);
    node2.father = root;
    this.root.child1 = node1;
    this.root.child2 = node2;
    this.root.key1 = data2;
    //prints root and preorder traversal

```

```

        System.setOut(new PrintStream(new FileOutputStream(debugFile)));
        System.out.println("Printing root and first preorder...");
        this.root.printNode(debugFile);
        this.preOrder(this.root, debugFile);
    }
    //recursive call to find insert location
    treeNode findSpot(treeNode spot, int data){
        //if data exists in database, return null
        if(data == spot.key1 || data == spot.key2)
            return null;
        //if data is a leaf, return key 1 and break
        if(spot.child1.isLeaf())
            return spot;
        else{
            //checks data in comparison to the keys to decide which
child to move to
            if(data < spot.key1)
                return findSpot(spot.child1, data);
            else if(spot.key2 == -1 || data < spot.key2)
                return findSpot(spot.child2, data);
            else if(spot.key2 != -1 && data >= spot.key2)
                return findSpot(spot.child3, data);
            //error catch if no child is moved to, outputs and closes
program
            else{
                System.setOut(new PrintStream(new
FileOutputStream(FileDescriptor.out)));
                System.out.println("Critical error in findspot:
reached end of conditions, exiting");
                System.exit(0);
            }
        }
        //blanket case return to satisfy compiler
        return null;
    }
    //recursive call to find smallest value, primarily called to update keys
    int findMinSubtree(treeNode node){
        //break statement if child does not exist
        if(node == null)
            return -1;
        //break statement if location has been reached
        if(node.isLeaf())
            return node.key1;
        //recursive call to go deeper into tree
        else
            return findMinSubtree(node.child1);
    }
    //recursive call to update father keys, moves up through tree

```

```

void updateFather(treeNode fatherNode){
    //if reached the root's father, break
    if(fatherNode == this.dummy)
        return;
    //call to find min of subtree to update keys
    fatherNode.key1 = findMinSubtree(fatherNode.child2);
    fatherNode.key2 = findMinSubtree(fatherNode.child3);
    //recursive call to update father of current node
    updateFather(fatherNode.father);
}
//call to create a new node in situation where root is full
void makeNewRoot(treeNode spot, treeNode sibling){
    //creates a new root
    treeNode newRoot = new treeNode();
    //assigns two subtrees to new roots children
    newRoot.child1 = spot;
    newRoot.child2 = sibling;
    //assigns father pointer for new children
    spot.father = newRoot;
    sibling.father = newRoot;
    //updates this trees root with new root
    this.root = newRoot;
    this.root.father = dummy;
    this.dummy.child1 = this.root;
    //updates roots keys with the min value
    root.key1 = findMinSubtree(root.child2);
    root.key2 = findMinSubtree(root.child3);
}
//the main insert function
void treeInsert(treeNode spot, treeNode newNode){
    //case 1, 2 children in spot
    if(spot.child1!=null && spot.child2!=null && spot.child3 == null){
        //assigns new nodes father as spot
        newNode.father = spot;
        //organizes nodes by key value
        treeNode min,mid,max;
        min = spot.child1;
        mid = spot.child2;
        max = newNode;
        if(min.key1 > max.key1){
            treeNode temp = max;
            max = mid;
            mid = min;
            min = temp;
        }
        else if(mid.key1 > max.key1){
            treeNode temp = max;
            max = mid;
        }
    }
}

```

```

        mid = temp;
    }
    //assigns spots children based on key value
    spot.child1 = min;
    spot.child2 = mid;
    spot.child3 = max;
    //updates spots keys with min
    spot.key1 = findMinSubtree(spot.child2);
    spot.key2 = findMinSubtree(spot.child3);
    //updates father node if the updated spot is child 1 or 2
    if(spot == spot.father.child2 || spot ==
spot.father.child3){
        this.updateFather(spot.father);
    }
}
//case 2, 3 children in spot
else if(spot.isFull()){
    //updates new nodes father to spot
    newNode.father = spot;
    //organizes all nodes, over being the overload
    treeNode min,mid,max,over;
    min = spot.child1;
    mid = spot.child2;
    max = spot.child3;
    over = newNode;
    //begins sorting downward
    if(min.key1 > over.key1){
        treeNode temp = over;
        over = max;
        max = mid;
        mid = min;
        min = temp;
    }
    else if(mid.key1 > over.key1){
        treeNode temp = over;
        over = max;
        max = mid;
        mid = temp;
    }
    else if(max.key1 > over.key1){
        treeNode temp = over;
        over = max;
        max = temp;
    }
    //creates new sibling node and assigns its father as spots
father
    treeNode sibling = new treeNode();
    sibling.father = spot.father;

```



```

        //sets spots children to the smaller values
        spot.child1 = min;
        spot.child2 = mid;
        spot.child3 = null;
        //sets siblings children as the larger values
        sibling.child1 = max;
        sibling.child2 = over;
        sibling.child3 = null;
        //updates spots keys to reflect new children
        spot.key1 = findMinSubtree(spot.child2);
        spot.key2 = -1;
        //updates siblings keys to reflect new children
        sibling.key1 = findMinSubtree(sibling.child2);
        sibling.key2 = -1;
        //updates siblings children's father pointer to sibling
        sibling.child1.father = sibling;
        sibling.child2.father = sibling;
        //if our spot was the root, we must create a new root to
store these two subtrees
        if(spot == this.root){
            this.makeNewRoot(spot, sibling);
        }
        //otherwise just insert sibling into the father nodes
children
        else
            treeInsert(spot.father, sibling);
        //updates spot and siblings fathers depending on their
position as children
        if(spot == spot.father.child2 || spot == spot.father.child3)
            this.updateFather(spot.father);
        /**
        * an observation about this specific code piece below.
        * in the specifications it says to do this code before the
insert of the sibling node
        * fundamentally, this means that this if condition would
never be run, since sibling wouldn't belong to any child node of its fathers.
        * i hope others realize this, since it does impact the
output.
        **/
        if(sibling == sibling.father.child2 || sibling ==
sibling.father.child3){
            this.updateFather(sibling.father);
        }
    }
    //error catch if insert cannot find insertion method
    else{
        System.setOut(new PrintStream(new
FileOutputStream(FileDescriptor.out)));
    }

```

```

        System.out.println("Critical Error: Did not insert node");
        System.exit(0);
    }
}

```

## **Output**

### **Tree File**

```

54 83 22 63 112 -9
22 33 11 27 36 54
11 -1 6 18 null 22
6 9 3 6 9 11
3 -1 null null null 6
6 -1 null null null 6
9 -1 null null null 6
18 21 11 18 21 11
11 -1 null null null 18
18 -1 null null null 18
21 -1 null null null 18
27 -1 26 31 null 22
26 -1 22 26 null 27
22 -1 null null null 26
26 -1 null null null 26
31 -1 27 31 null 27
27 -1 null null null 31
31 -1 null null null 31
36 49 35 44 52 22
35 -1 33 35 null 36
33 -1 null null null 35
35 -1 null null null 35
44 -1 36 44 null 36
36 -1 null null null 44
44 -1 null null null 44
52 -1 49 52 null 36
49 -1 null null null 52
52 -1 null null null 52
63 -1 58 74 null 54
58 -1 55 61 null 63
55 57 54 55 57 58
54 -1 null null null 55
55 -1 null null null 55
57 -1 null null null 55
61 -1 58 61 null 58
58 -1 null null null 61
61 -1 null null null 61
74 -1 65 76 null 63
65 72 63 65 72 74

```

63 -1 null null null 65  
65 -1 null null null 65  
72 -1 null null null 65  
76 -1 74 76 null 74  
74 -1 null null null 76  
76 -1 null null null 76  
112 -1 87 351 null 54  
87 90 85 88 98 112  
85 -1 83 85 null 87  
83 -1 null null null 85  
85 -1 null null null 85  
88 -1 87 88 null 87  
87 -1 null null null 88  
88 -1 null null null 88  
98 -1 90 98 null 87  
90 -1 null null null 98  
98 -1 null null null 98  
351 -1 234 613 null 112  
234 251 112 234 251 351  
112 -1 null null null 234  
234 -1 null null null 234  
251 -1 null null null 234  
613 786 351 613 786 351  
351 -1 null null null 613  
613 -1 null null null 613  
786 -1 null null null 613

#### DebugFile:

Printing root and first preorder...

234 -1 54 234 null -9  
234 -1 54 234 null -9  
54 -1 null null null 234  
234 -1 null null null 234

Data to insert:112

Printing spot node...

234 -1 54 234 null -9

Printing post insertion

112 234 54 112 234 -9  
54 -1 null null null 112  
112 -1 null null null 112  
234 -1 null null null 112

Data to insert:9

Printing spot node...

112 234 54 112 234 -9

Printing post insertion  
112 -1 54 234 null -9  
54 -1 9 54 null 112  
9 -1 null null null 54  
54 -1 null null null 54  
234 -1 112 234 null 112  
112 -1 null null null 234  
234 -1 null null null 234

Data to insert:74  
Printing spot node...  
54 -1 9 54 null 112

Printing post insertion  
112 -1 54 234 null -9  
54 74 9 54 74 112  
9 -1 null null null 54  
54 -1 null null null 54  
74 -1 null null null 54  
234 -1 112 234 null 112  
112 -1 null null null 234  
234 -1 null null null 234

Data to insert:35  
Printing spot node...  
54 74 9 54 74 112

Printing post insertion  
54 112 35 74 234 -9  
35 -1 9 35 null 54  
9 -1 null null null 35  
35 -1 null null null 35  
74 -1 54 74 null 54  
54 -1 null null null 74  
74 -1 null null null 74  
234 -1 112 234 null 54  
112 -1 null null null 234  
234 -1 null null null 234

Data is in the database, not inserting.

Data to insert:11  
Printing spot node...  
35 -1 9 35 null 54

Printing post insertion

54 112 11 74 234 -9  
11 35 9 11 35 54  
9 -1 null null null 11  
11 -1 null null null 11  
35 -1 null null null 11  
74 -1 54 74 null 54  
54 -1 null null null 74  
74 -1 null null null 74  
234 -1 112 234 null 54  
112 -1 null null null 234  
234 -1 null null null 234

Data to insert:22  
Printing spot node...  
11 35 9 11 35 54

Printing post insertion  
54 -1 22 112 null -9  
22 -1 11 35 null 54  
11 -1 9 11 null 22  
9 -1 null null null 11  
11 -1 null null null 11  
35 -1 22 35 null 22  
22 -1 null null null 35  
35 -1 null null null 35  
112 -1 74 234 null 54  
74 -1 54 74 null 112  
54 -1 null null null 74  
74 -1 null null null 74  
234 -1 112 234 null 112  
112 -1 null null null 234  
234 -1 null null null 234

Data to insert:33  
Printing spot node...  
35 -1 22 35 null 22

Printing post insertion  
54 -1 22 112 null -9  
22 -1 11 33 null 54  
11 -1 9 11 null 22  
9 -1 null null null 11  
11 -1 null null null 11  
33 35 22 33 35 22  
22 -1 null null null 33  
33 -1 null null null 33  
35 -1 null null null 33  
112 -1 74 234 null 54

74 -1 54 74 null 112  
54 -1 null null null 74  
74 -1 null null null 74  
234 -1 112 234 null 112  
112 -1 null null null 234  
234 -1 null null null 234

Data to insert:55  
Printing spot node...  
74 -1 54 74 null 112

Printing post insertion  
54 -1 22 112 null -9  
22 -1 11 33 null 54  
11 -1 9 11 null 22  
9 -1 null null null 11  
11 -1 null null null 11  
33 35 22 33 35 22  
22 -1 null null null 33  
33 -1 null null null 33  
35 -1 null null null 33  
112 -1 55 234 null 54  
55 74 54 55 74 112  
54 -1 null null null 55  
55 -1 null null null 55  
74 -1 null null null 55  
234 -1 112 234 null 112  
112 -1 null null null 234  
234 -1 null null null 234

Data to insert:98  
Printing spot node...  
55 74 54 55 74 112

Printing post insertion  
54 -1 22 74 null -9  
22 -1 11 33 null 54  
11 -1 9 11 null 22  
9 -1 null null null 11  
11 -1 null null null 11  
33 35 22 33 35 22  
22 -1 null null null 33  
33 -1 null null null 33  
35 -1 null null null 33  
74 112 55 98 234 54  
55 -1 54 55 null 74  
54 -1 null null null 55  
55 -1 null null null 55

98 -1 74 98 null 74  
74 -1 null null null 98  
98 -1 null null null 98  
234 -1 112 234 null 74  
112 -1 null null null 234  
234 -1 null null null 234

Data to insert:351  
Printing spot node...  
234 -1 112 234 null 74

Printing post insertion  
54 -1 22 74 null -9  
22 -1 11 33 null 54  
11 -1 9 11 null 22  
9 -1 null null null 11  
11 -1 null null null 11  
33 35 22 33 35 22  
22 -1 null null null 33  
33 -1 null null null 33  
35 -1 null null null 33  
74 112 55 98 234 54  
55 -1 54 55 null 74  
54 -1 null null null 55  
55 -1 null null null 55  
98 -1 74 98 null 74  
74 -1 null null null 98  
98 -1 null null null 98  
234 351 112 234 351 74  
112 -1 null null null 234  
234 -1 null null null 234  
351 -1 null null null 234

Data to insert:27  
Printing spot node...  
33 35 22 33 35 22

Printing post insertion  
54 -1 22 74 null -9  
22 33 11 27 35 54  
11 -1 9 11 null 22  
9 -1 null null null 11  
11 -1 null null null 11  
27 -1 22 27 null 22  
22 -1 null null null 27  
27 -1 null null null 27  
35 -1 33 35 null 22  
33 -1 null null null 35

35 -1 null null null 35  
74 112 55 98 234 54  
55 -1 54 55 null 74  
54 -1 null null null 55  
55 -1 null null null 55  
98 -1 74 98 null 74  
74 -1 null null null 98  
98 -1 null null null 98  
234 351 112 234 351 74  
112 -1 null null null 234  
234 -1 null null null 234  
351 -1 null null null 234

Data to insert:90  
Printing spot node...  
98 -1 74 98 null 74

Printing post insertion  
54 -1 22 74 null -9  
22 33 11 27 35 54  
11 -1 9 11 null 22  
9 -1 null null null 11  
11 -1 null null null 11  
27 -1 22 27 null 22  
22 -1 null null null 27  
27 -1 null null null 27  
35 -1 33 35 null 22  
33 -1 null null null 35  
35 -1 null null null 35  
74 112 55 90 234 54  
55 -1 54 55 null 74  
54 -1 null null null 55  
55 -1 null null null 55  
90 98 74 90 98 74  
74 -1 null null null 90  
90 -1 null null null 90  
98 -1 null null null 90  
234 351 112 234 351 74  
112 -1 null null null 234  
234 -1 null null null 234  
351 -1 null null null 234

Data to insert:18  
Printing spot node...  
11 -1 9 11 null 22

Printing post insertion  
54 -1 22 74 null -9



22 33 11 27 35 54  
11 18 9 11 18 22  
9 -1 null null null 11  
11 -1 null null null 11  
18 -1 null null null 11  
27 -1 22 27 null 22  
22 -1 null null null 27  
27 -1 null null null 27  
35 -1 33 35 null 22  
33 -1 null null null 35  
35 -1 null null null 35  
74 112 55 90 234 54  
55 -1 54 55 null 74  
54 -1 null null null 55  
55 -1 null null null 55  
90 98 74 90 98 74  
74 -1 null null null 90  
90 -1 null null null 90  
98 -1 null null null 90  
234 351 112 234 351 74  
112 -1 null null null 234  
234 -1 null null null 234  
351 -1 null null null 234

Data to insert:36  
Printing spot node...  
35 -1 33 35 null 22

Printing post insertion  
54 -1 22 74 null -9  
22 33 11 27 35 54  
11 18 9 11 18 22  
9 -1 null null null 11  
11 -1 null null null 11  
18 -1 null null null 11  
27 -1 22 27 null 22  
22 -1 null null null 27  
27 -1 null null null 27  
35 36 33 35 36 22  
33 -1 null null null 35  
35 -1 null null null 35  
36 -1 null null null 35  
74 112 55 90 234 54  
55 -1 54 55 null 74  
54 -1 null null null 55  
55 -1 null null null 55  
90 98 74 90 98 74  
74 -1 null null null 90

90 -1 null null null 90  
98 -1 null null null 90  
234 351 112 234 351 74  
112 -1 null null null 234  
234 -1 null null null 234  
351 -1 null null null 234

Data to insert:613  
Printing spot node...  
234 351 112 234 351 74

Printing post insertion  
54 112 22 74 351 -9  
22 33 11 27 35 54  
11 18 9 11 18 22  
9 -1 null null null 11  
11 -1 null null null 11  
18 -1 null null null 11  
27 -1 22 27 null 22  
22 -1 null null null 27  
27 -1 null null null 27  
35 36 33 35 36 22  
33 -1 null null null 35  
35 -1 null null null 35  
36 -1 null null null 35  
74 -1 55 90 null 54  
55 -1 54 55 null 74  
54 -1 null null null 55  
55 -1 null null null 55  
90 98 74 90 98 74  
74 -1 null null null 90  
90 -1 null null null 90  
98 -1 null null null 90  
351 -1 234 613 null 54  
234 -1 112 234 null 351  
112 -1 null null null 234  
234 -1 null null null 234  
613 -1 351 613 null 351  
351 -1 null null null 613  
613 -1 null null null 613

Data to insert:3  
Printing spot node...  
11 18 9 11 18 22

Printing post insertion  
54 -1 22 112 null -9  
22 -1 11 33 null 54

11 -1 9 18 null 22  
9 -1 3 9 null 11  
3 -1 null null null 9  
9 -1 null null null 9  
18 -1 11 18 null 11  
11 -1 null null null 18  
18 -1 null null null 18  
33 -1 27 35 null 22  
27 -1 22 27 null 33  
22 -1 null null null 27  
27 -1 null null null 27  
35 36 33 35 36 33  
33 -1 null null null 35  
35 -1 null null null 35  
36 -1 null null null 35  
112 -1 74 351 null 54  
74 -1 55 90 null 112  
55 -1 54 55 null 74  
54 -1 null null null 55  
55 -1 null null null 55  
90 98 74 90 98 74  
74 -1 null null null 90  
90 -1 null null null 90  
98 -1 null null null 90  
351 -1 234 613 null 112  
234 -1 112 234 null 351  
112 -1 null null null 234  
234 -1 null null null 234  
613 -1 351 613 null 351  
351 -1 null null null 613  
613 -1 null null null 613

Data to insert:6

Printing spot node...

9 -1 3 9 null 11

Printing post insertion

54 -1 22 112 null -9

22 -1 11 33 null 54

11 -1 6 18 null 22

6 9 3 6 9 11

3 -1 null null null 6

6 -1 null null null 6

9 -1 null null null 6

18 -1 11 18 null 11

11 -1 null null null 18

18 -1 null null null 18

33 -1 27 35 null 22

27 -1 22 27 null 33  
22 -1 null null null 27  
27 -1 null null null 27  
35 36 33 35 36 33  
33 -1 null null null 35  
35 -1 null null null 35  
36 -1 null null null 35  
112 -1 74 351 null 54  
74 -1 55 90 null 112  
55 -1 54 55 null 74  
54 -1 null null null 55  
55 -1 null null null 55  
90 98 74 90 98 74  
74 -1 null null null 90  
90 -1 null null null 90  
98 -1 null null null 90  
351 -1 234 613 null 112  
234 -1 112 234 null 351  
112 -1 null null null 234  
234 -1 null null null 234  
613 -1 351 613 null 351  
351 -1 null null null 613  
613 -1 null null null 613

Data to insert:21  
Printing spot node...  
18 -1 11 18 null 11

Printing post insertion  
54 -1 22 112 null -9  
22 -1 11 33 null 54  
11 -1 6 18 null 22  
6 9 3 6 9 11  
3 -1 null null null 6  
6 -1 null null null 6  
9 -1 null null null 6  
18 21 11 18 21 11  
11 -1 null null null 18  
18 -1 null null null 18  
21 -1 null null null 18  
33 -1 27 35 null 22  
27 -1 22 27 null 33  
22 -1 null null null 27  
27 -1 null null null 27  
35 36 33 35 36 33  
33 -1 null null null 35  
35 -1 null null null 35  
36 -1 null null null 35

112 -1 74 351 null 54  
74 -1 55 90 null 112  
55 -1 54 55 null 74  
54 -1 null null null 55  
55 -1 null null null 55  
90 98 74 90 98 74  
74 -1 null null null 90  
90 -1 null null null 90  
98 -1 null null null 90  
351 -1 234 613 null 112  
234 -1 112 234 null 351  
112 -1 null null null 234  
234 -1 null null null 234  
613 -1 351 613 null 351  
351 -1 null null null 613  
613 -1 null null null 613

Data to insert:786

Printing spot node...

613 -1 351 613 null 351

Printing post insertion

54 -1 22 112 null -9  
22 -1 11 33 null 54  
11 -1 6 18 null 22  
6 9 3 6 9 11  
3 -1 null null null 6  
6 -1 null null null 6  
9 -1 null null null 6  
18 21 11 18 21 11  
11 -1 null null null 18  
18 -1 null null null 18  
21 -1 null null null 18  
33 -1 27 35 null 22  
27 -1 22 27 null 33  
22 -1 null null null 27  
27 -1 null null null 27  
35 36 33 35 36 33  
33 -1 null null null 35  
35 -1 null null null 35  
36 -1 null null null 35  
112 -1 74 351 null 54  
74 -1 55 90 null 112  
55 -1 54 55 null 74  
54 -1 null null null 55  
55 -1 null null null 55  
90 98 74 90 98 74  
74 -1 null null null 90

90 -1 null null null 90  
98 -1 null null null 90  
351 -1 234 613 null 112  
234 -1 112 234 null 351  
112 -1 null null null 234  
234 -1 null null null 234  
613 786 351 613 786 351  
351 -1 null null null 613  
613 -1 null null null 613  
786 -1 null null null 613

Data to insert:251

Printing spot node...

234 -1 112 234 null 351

Printing post insertion

54 -1 22 112 null -9  
22 -1 11 33 null 54  
11 -1 6 18 null 22  
6 9 3 6 9 11  
3 -1 null null null 6  
6 -1 null null null 6  
9 -1 null null null 6  
18 21 11 18 21 11  
11 -1 null null null 18  
18 -1 null null null 18  
21 -1 null null null 18  
33 -1 27 35 null 22  
27 -1 22 27 null 33  
22 -1 null null null 27  
27 -1 null null null 27  
35 36 33 35 36 33  
33 -1 null null null 35  
35 -1 null null null 35  
36 -1 null null null 35  
112 -1 74 351 null 54  
74 -1 55 90 null 112  
55 -1 54 55 null 74  
54 -1 null null null 55  
55 -1 null null null 55  
90 98 74 90 98 74  
74 -1 null null null 90  
90 -1 null null null 90  
98 -1 null null null 90  
351 -1 234 613 null 112  
234 251 112 234 251 351  
112 -1 null null null 234  
234 -1 null null null 234

251 -1 null null null 234  
613 786 351 613 786 351  
351 -1 null null null 613  
613 -1 null null null 613  
786 -1 null null null 613

Data to insert:58  
Printing spot node...  
55 -1 54 55 null 74

Printing post insertion  
54 -1 22 112 null -9  
22 -1 11 33 null 54  
11 -1 6 18 null 22  
6 9 3 6 9 11  
3 -1 null null null 6  
6 -1 null null null 6  
9 -1 null null null 6  
18 21 11 18 21 11  
11 -1 null null null 18  
18 -1 null null null 18  
21 -1 null null null 18  
33 -1 27 35 null 22  
27 -1 22 27 null 33  
22 -1 null null null 27  
27 -1 null null null 27  
35 36 33 35 36 33  
33 -1 null null null 35  
35 -1 null null null 35  
36 -1 null null null 35  
112 -1 74 351 null 54  
74 -1 55 90 null 112  
55 58 54 55 58 74  
54 -1 null null null 55  
55 -1 null null null 55  
58 -1 null null null 55  
90 98 74 90 98 74  
74 -1 null null null 90  
90 -1 null null null 90  
98 -1 null null null 90  
351 -1 234 613 null 112  
234 251 112 234 251 351  
112 -1 null null null 234  
234 -1 null null null 234  
251 -1 null null null 234  
613 786 351 613 786 351  
351 -1 null null null 613  
613 -1 null null null 613

786 -1 null null null 613

Data to insert:61

Printing spot node...

55 58 54 55 58 74

Printing post insertion

54 -1 22 112 null -9

22 -1 11 33 null 54

11 -1 6 18 null 22

6 9 3 6 9 11

3 -1 null null null 6

6 -1 null null null 6

9 -1 null null null 6

18 21 11 18 21 11

11 -1 null null null 18

18 -1 null null null 18

21 -1 null null null 18

33 -1 27 35 null 22

27 -1 22 27 null 33

22 -1 null null null 27

27 -1 null null null 27

35 36 33 35 36 33

33 -1 null null null 35

35 -1 null null null 35

36 -1 null null null 35

112 -1 58 351 null 54

58 74 55 61 90 112

55 -1 54 55 null 58

54 -1 null null null 55

55 -1 null null null 55

61 -1 58 61 null 58

58 -1 null null null 61

61 -1 null null null 61

90 98 74 90 98 58

74 -1 null null null 90

90 -1 null null null 90

98 -1 null null null 90

351 -1 234 613 null 112

234 251 112 234 251 351

112 -1 null null null 234

234 -1 null null null 234

251 -1 null null null 234

613 786 351 613 786 351

351 -1 null null null 613

613 -1 null null null 613

786 -1 null null null 613



Data to insert:63  
Printing spot node...  
61 -1 58 61 null 58

Printing post insertion  
54 -1 22 112 null -9  
22 -1 11 33 null 54  
11 -1 6 18 null 22  
6 9 3 6 9 11  
3 -1 null null null 6  
6 -1 null null null 6  
9 -1 null null null 6  
18 21 11 18 21 11  
11 -1 null null null 18  
18 -1 null null null 18  
21 -1 null null null 18  
33 -1 27 35 null 22  
27 -1 22 27 null 33  
22 -1 null null null 27  
27 -1 null null null 27  
35 36 33 35 36 33  
33 -1 null null null 35  
35 -1 null null null 35  
36 -1 null null null 35  
112 -1 58 351 null 54  
58 74 55 61 90 112  
55 -1 54 55 null 58  
54 -1 null null null 55  
55 -1 null null null 55  
61 63 58 61 63 58  
58 -1 null null null 61  
61 -1 null null null 61  
63 -1 null null null 61  
90 98 74 90 98 58  
74 -1 null null null 90  
90 -1 null null null 90  
98 -1 null null null 90  
351 -1 234 613 null 112  
234 251 112 234 251 351  
112 -1 null null null 234  
234 -1 null null null 234  
251 -1 null null null 234  
613 786 351 613 786 351  
351 -1 null null null 613  
613 -1 null null null 613  
786 -1 null null null 613

Data to insert:65

Printing spot node...

61 63 58 61 63 58

Printing post insertion

54 -1 22 63 null -9

22 -1 11 33 null 54

11 -1 6 18 null 22

6 9 3 6 9 11

3 -1 null null null 6

6 -1 null null null 6

9 -1 null null null 6

18 21 11 18 21 11

11 -1 null null null 18

18 -1 null null null 18

21 -1 null null null 18

33 -1 27 35 null 22

27 -1 22 27 null 33

22 -1 null null null 27

27 -1 null null null 27

35 36 33 35 36 33

33 -1 null null null 35

35 -1 null null null 35

36 -1 null null null 35

63 112 58 74 351 54

58 -1 55 61 null 63

55 -1 54 55 null 58

54 -1 null null null 55

55 -1 null null null 55

61 -1 58 61 null 58

58 -1 null null null 61

61 -1 null null null 61

74 -1 65 90 null 63

65 -1 63 65 null 74

63 -1 null null null 65

65 -1 null null null 65

90 98 74 90 98 74

74 -1 null null null 90

90 -1 null null null 90

98 -1 null null null 90

351 -1 234 613 null 63

234 251 112 234 251 351

112 -1 null null null 234

234 -1 null null null 234

251 -1 null null null 234

613 786 351 613 786 351

351 -1 null null null 613

613 -1 null null null 613

786 -1 null null null 613

Data is in the database, not inserting.

Data is in the database, not inserting.

Data to insert:26

Printing spot node...

27 -1 22 27 null 33

Printing post insertion

54 -1 22 63 null -9

22 -1 11 33 null 54

11 -1 6 18 null 22

6 9 3 6 9 11

3 -1 null null null 6

6 -1 null null null 6

9 -1 null null null 6

18 21 11 18 21 11

11 -1 null null null 18

18 -1 null null null 18

21 -1 null null null 18

33 -1 26 35 null 22

26 27 22 26 27 33

22 -1 null null null 26

26 -1 null null null 26

27 -1 null null null 26

35 36 33 35 36 33

33 -1 null null null 35

35 -1 null null null 35

36 -1 null null null 35

63 112 58 74 351 54

58 -1 55 61 null 63

55 -1 54 55 null 58

54 -1 null null null 55

55 -1 null null null 55

61 -1 58 61 null 58

58 -1 null null null 61

61 -1 null null null 61

74 -1 65 90 null 63

65 -1 63 65 null 74

63 -1 null null null 65

65 -1 null null null 65

90 98 74 90 98 74

74 -1 null null null 90

90 -1 null null null 90

98 -1 null null null 90

351 -1 234 613 null 63  
234 251 112 234 251 351  
112 -1 null null null 234  
234 -1 null null null 234  
251 -1 null null null 234  
613 786 351 613 786 351  
351 -1 null null null 613  
613 -1 null null null 613  
786 -1 null null null 613

Data to insert:31  
Printing spot node...  
26 27 22 26 27 33

Printing post insertion  
54 -1 22 63 null -9  
22 -1 11 27 null 54  
11 -1 6 18 null 22  
6 9 3 6 9 11  
3 -1 null null null 6  
6 -1 null null null 6  
9 -1 null null null 6  
18 21 11 18 21 11  
11 -1 null null null 18  
18 -1 null null null 18  
21 -1 null null null 18  
27 33 26 31 35 22  
26 -1 22 26 null 27  
22 -1 null null null 26  
26 -1 null null null 26  
31 -1 27 31 null 27  
27 -1 null null null 31  
31 -1 null null null 31  
35 36 33 35 36 27  
33 -1 null null null 35  
35 -1 null null null 35  
36 -1 null null null 35  
63 112 58 74 351 54  
58 -1 55 61 null 63  
55 -1 54 55 null 58  
54 -1 null null null 55  
55 -1 null null null 55  
61 -1 58 61 null 58  
58 -1 null null null 61  
61 -1 null null null 61  
74 -1 65 90 null 63  
65 -1 63 65 null 74  
63 -1 null null null 65

65 -1 null null null 65  
90 98 74 90 98 74  
74 -1 null null null 90  
90 -1 null null null 90  
98 -1 null null null 90  
351 -1 234 613 null 63  
234 251 112 234 251 351  
112 -1 null null null 234  
234 -1 null null null 234  
251 -1 null null null 234  
613 786 351 613 786 351  
351 -1 null null null 613  
613 -1 null null null 613  
786 -1 null null null 613

Data to insert:44  
Printing spot node...  
35 36 33 35 36 27

Printing post insertion  
54 -1 22 63 null -9  
22 33 11 27 36 54  
11 -1 6 18 null 22  
6 9 3 6 9 11  
3 -1 null null null 6  
6 -1 null null null 6  
9 -1 null null null 6  
18 21 11 18 21 11  
11 -1 null null null 18  
18 -1 null null null 18  
21 -1 null null null 18  
27 -1 26 31 null 22  
26 -1 22 26 null 27  
22 -1 null null null 26  
26 -1 null null null 26  
31 -1 27 31 null 27  
27 -1 null null null 31  
31 -1 null null null 31  
36 -1 35 44 null 22  
35 -1 33 35 null 36  
33 -1 null null null 35  
35 -1 null null null 35  
44 -1 36 44 null 36  
36 -1 null null null 44  
44 -1 null null null 44  
63 112 58 74 351 54  
58 -1 55 61 null 63  
55 -1 54 55 null 58

54 -1 null null null 55  
55 -1 null null null 55  
61 -1 58 61 null 58  
58 -1 null null null 61  
61 -1 null null null 61  
74 -1 65 90 null 63  
65 -1 63 65 null 74  
63 -1 null null null 65  
65 -1 null null null 65  
90 98 74 90 98 74  
74 -1 null null null 90  
90 -1 null null null 90  
98 -1 null null null 90  
351 -1 234 613 null 63  
234 251 112 234 251 351  
112 -1 null null null 234  
234 -1 null null null 234  
251 -1 null null null 234  
613 786 351 613 786 351  
351 -1 null null null 613  
613 -1 null null null 613  
786 -1 null null null 613

Data to insert:49  
Printing spot node...  
44 -1 36 44 null 36

Printing post insertion  
54 -1 22 63 null -9  
22 33 11 27 36 54  
11 -1 6 18 null 22  
6 9 3 6 9 11  
3 -1 null null null 6  
6 -1 null null null 6  
9 -1 null null null 6  
18 21 11 18 21 11  
11 -1 null null null 18  
18 -1 null null null 18  
21 -1 null null null 18  
27 -1 26 31 null 22  
26 -1 22 26 null 27  
22 -1 null null null 26  
26 -1 null null null 26  
31 -1 27 31 null 27  
27 -1 null null null 31  
31 -1 null null null 31  
36 -1 35 44 null 22  
35 -1 33 35 null 36

33 -1 null null null 35  
35 -1 null null null 35  
44 49 36 44 49 36  
36 -1 null null null 44  
44 -1 null null null 44  
49 -1 null null null 44  
63 112 58 74 351 54  
58 -1 55 61 null 63  
55 -1 54 55 null 58  
54 -1 null null null 55  
55 -1 null null null 55  
61 -1 58 61 null 58  
58 -1 null null null 61  
61 -1 null null null 61  
74 -1 65 90 null 63  
65 -1 63 65 null 74  
63 -1 null null null 65  
65 -1 null null null 65  
90 98 74 90 98 74  
74 -1 null null null 90  
90 -1 null null null 90  
98 -1 null null null 90  
351 -1 234 613 null 63  
234 251 112 234 251 351  
112 -1 null null null 234  
234 -1 null null null 234  
251 -1 null null null 234  
613 786 351 613 786 351  
351 -1 null null null 613  
613 -1 null null null 613  
786 -1 null null null 613

Data to insert:52  
Printing spot node...  
44 49 36 44 49 36

Printing post insertion  
54 -1 22 63 null -9  
22 33 11 27 36 54  
11 -1 6 18 null 22  
6 9 3 6 9 11  
3 -1 null null null 6  
6 -1 null null null 6  
9 -1 null null null 6  
18 21 11 18 21 11  
11 -1 null null null 18  
18 -1 null null null 18  
21 -1 null null null 18

27 -1 26 31 null 22  
26 -1 22 26 null 27  
22 -1 null null null 26  
26 -1 null null null 26  
31 -1 27 31 null 27  
27 -1 null null null 31  
31 -1 null null null 31  
36 49 35 44 52 22  
35 -1 33 35 null 36  
33 -1 null null null 35  
35 -1 null null null 35  
44 -1 36 44 null 36  
36 -1 null null null 44  
44 -1 null null null 44  
52 -1 49 52 null 36  
49 -1 null null null 52  
52 -1 null null null 52  
63 112 58 74 351 54  
58 -1 55 61 null 63  
55 -1 54 55 null 58  
54 -1 null null null 55  
55 -1 null null null 55  
61 -1 58 61 null 58  
58 -1 null null null 61  
61 -1 null null null 61  
74 -1 65 90 null 63  
65 -1 63 65 null 74  
63 -1 null null null 65  
65 -1 null null null 65  
90 98 74 90 98 74  
74 -1 null null null 90  
90 -1 null null null 90  
98 -1 null null null 90  
351 -1 234 613 null 63  
234 251 112 234 251 351  
112 -1 null null null 234  
234 -1 null null null 234  
251 -1 null null null 234  
613 786 351 613 786 351  
351 -1 null null null 613  
613 -1 null null null 613  
786 -1 null null null 613

Data to insert:57  
Printing spot node...  
55 -1 54 55 null 58

Printing post insertion



54 -1 22 63 null -9  
22 33 11 27 36 54  
11 -1 6 18 null 22  
6 9 3 6 9 11  
3 -1 null null null 6  
6 -1 null null null 6  
9 -1 null null null 6  
18 21 11 18 21 11  
11 -1 null null null 18  
18 -1 null null null 18  
21 -1 null null null 18  
27 -1 26 31 null 22  
26 -1 22 26 null 27  
22 -1 null null null 26  
26 -1 null null null 26  
31 -1 27 31 null 27  
27 -1 null null null 31  
31 -1 null null null 31  
36 49 35 44 52 22  
35 -1 33 35 null 36  
33 -1 null null null 35  
35 -1 null null null 35  
44 -1 36 44 null 36  
36 -1 null null null 44  
44 -1 null null null 44  
52 -1 49 52 null 36  
49 -1 null null null 52  
52 -1 null null null 52  
63 112 58 74 351 54  
58 -1 55 61 null 63  
55 57 54 55 57 58  
54 -1 null null null 55  
55 -1 null null null 55  
57 -1 null null null 55  
61 -1 58 61 null 58  
58 -1 null null null 61  
61 -1 null null null 61  
74 -1 65 90 null 63  
65 -1 63 65 null 74  
63 -1 null null null 65  
65 -1 null null null 65  
90 98 74 90 98 74  
74 -1 null null null 90  
90 -1 null null null 90  
98 -1 null null null 90  
351 -1 234 613 null 63  
234 251 112 234 251 351  
112 -1 null null null 234

234 -1 null null null 234  
251 -1 null null null 234  
613 786 351 613 786 351  
351 -1 null null null 613  
613 -1 null null null 613  
786 -1 null null null 613

Data to insert:72  
Printing spot node...  
65 -1 63 65 null 74

Printing post insertion

54 -1 22 63 null -9  
22 33 11 27 36 54  
11 -1 6 18 null 22  
6 9 3 6 9 11  
3 -1 null null null 6  
6 -1 null null null 6  
9 -1 null null null 6  
18 21 11 18 21 11  
11 -1 null null null 18  
18 -1 null null null 18  
21 -1 null null null 18  
27 -1 26 31 null 22  
26 -1 22 26 null 27  
22 -1 null null null 26  
26 -1 null null null 26  
31 -1 27 31 null 27  
27 -1 null null null 31  
31 -1 null null null 31  
36 49 35 44 52 22  
35 -1 33 35 null 36  
33 -1 null null null 35  
35 -1 null null null 35  
44 -1 36 44 null 36  
36 -1 null null null 44  
44 -1 null null null 44  
52 -1 49 52 null 36  
49 -1 null null null 52  
52 -1 null null null 52  
63 112 58 74 351 54  
58 -1 55 61 null 63  
55 57 54 55 57 58  
54 -1 null null null 55  
55 -1 null null null 55  
57 -1 null null null 55  
61 -1 58 61 null 58  
58 -1 null null null 61

61 -1 null null null 61  
74 -1 65 90 null 63  
65 72 63 65 72 74  
63 -1 null null null 65  
65 -1 null null null 65  
72 -1 null null null 65  
90 98 74 90 98 74  
74 -1 null null null 90  
90 -1 null null null 90  
98 -1 null null null 90  
351 -1 234 613 null 63  
234 251 112 234 251 351  
112 -1 null null null 234  
234 -1 null null null 234  
251 -1 null null null 234  
613 786 351 613 786 351  
351 -1 null null null 613  
613 -1 null null null 613  
786 -1 null null null 613

Data to insert:76  
Printing spot node...  
90 98 74 90 98 74

Printing post insertion  
54 -1 22 63 null -9  
22 33 11 27 36 54  
11 -1 6 18 null 22  
6 9 3 6 9 11  
3 -1 null null null 6  
6 -1 null null null 6  
9 -1 null null null 6  
18 21 11 18 21 11  
11 -1 null null null 18  
18 -1 null null null 18  
21 -1 null null null 18  
27 -1 26 31 null 22  
26 -1 22 26 null 27  
22 -1 null null null 26  
26 -1 null null null 26  
31 -1 27 31 null 27  
27 -1 null null null 31  
31 -1 null null null 31  
36 49 35 44 52 22  
35 -1 33 35 null 36  
33 -1 null null null 35  
35 -1 null null null 35  
44 -1 36 44 null 36

36 -1 null null null 44  
44 -1 null null null 44  
52 -1 49 52 null 36  
49 -1 null null null 52  
52 -1 null null null 52  
63 112 58 74 351 54  
58 -1 55 61 null 63  
55 57 54 55 57 58  
54 -1 null null null 55  
55 -1 null null null 55  
57 -1 null null null 55  
61 -1 58 61 null 58  
58 -1 null null null 61  
61 -1 null null null 61  
74 90 65 76 98 63  
65 72 63 65 72 74  
63 -1 null null null 65  
65 -1 null null null 65  
72 -1 null null null 65  
76 -1 74 76 null 74  
74 -1 null null null 76  
76 -1 null null null 76  
98 -1 90 98 null 74  
90 -1 null null null 98  
98 -1 null null null 98  
351 -1 234 613 null 63  
234 251 112 234 251 351  
112 -1 null null null 234  
234 -1 null null null 234  
251 -1 null null null 234  
613 786 351 613 786 351  
351 -1 null null null 613  
613 -1 null null null 613  
786 -1 null null null 613

Data to insert:88

Printing spot node...

76 -1 74 76 null 74

Printing post insertion

54 -1 22 63 null -9  
22 33 11 27 36 54  
11 -1 6 18 null 22  
6 9 3 6 9 11  
3 -1 null null null 6  
6 -1 null null null 6  
9 -1 null null null 6  
18 21 11 18 21 11

11 -1 null null null 18  
18 -1 null null null 18  
21 -1 null null null 18  
27 -1 26 31 null 22  
26 -1 22 26 null 27  
22 -1 null null null 26  
26 -1 null null null 26  
31 -1 27 31 null 27  
27 -1 null null null 31  
31 -1 null null null 31  
36 49 35 44 52 22  
35 -1 33 35 null 36  
33 -1 null null null 35  
35 -1 null null null 35  
44 -1 36 44 null 36  
36 -1 null null null 44  
44 -1 null null null 44  
52 -1 49 52 null 36  
49 -1 null null null 52  
52 -1 null null null 52  
63 112 58 74 351 54  
58 -1 55 61 null 63  
55 57 54 55 57 58  
54 -1 null null null 55  
55 -1 null null null 55  
57 -1 null null null 55  
61 -1 58 61 null 58  
58 -1 null null null 61  
61 -1 null null null 61  
74 90 65 76 98 63  
65 72 63 65 72 74  
63 -1 null null null 65  
65 -1 null null null 65  
72 -1 null null null 65  
76 88 74 76 88 74  
74 -1 null null null 76  
76 -1 null null null 76  
88 -1 null null null 76  
98 -1 90 98 null 74  
90 -1 null null null 98  
98 -1 null null null 98  
351 -1 234 613 null 63  
234 251 112 234 251 351  
112 -1 null null null 234  
234 -1 null null null 234  
251 -1 null null null 234  
613 786 351 613 786 351  
351 -1 null null null 613

613 -1 null null null 613  
786 -1 null null null 613

Data to insert:83  
Printing spot node...  
76 88 74 76 88 74

Printing post insertion  
54 83 22 63 112 -9  
22 33 11 27 36 54  
11 -1 6 18 null 22  
6 9 3 6 9 11  
3 -1 null null null 6  
6 -1 null null null 6  
9 -1 null null null 6  
18 21 11 18 21 11  
11 -1 null null null 18  
18 -1 null null null 18  
21 -1 null null null 18  
27 -1 26 31 null 22  
26 -1 22 26 null 27  
22 -1 null null null 26  
26 -1 null null null 26  
31 -1 27 31 null 27  
27 -1 null null null 31  
31 -1 null null null 31  
36 49 35 44 52 22  
35 -1 33 35 null 36  
33 -1 null null null 35  
35 -1 null null null 35  
44 -1 36 44 null 36  
36 -1 null null null 44  
44 -1 null null null 44  
52 -1 49 52 null 36  
49 -1 null null null 52  
52 -1 null null null 52  
63 -1 58 74 null 54  
58 -1 55 61 null 63  
55 57 54 55 57 58  
54 -1 null null null 55  
55 -1 null null null 55  
57 -1 null null null 55  
61 -1 58 61 null 58  
58 -1 null null null 61  
61 -1 null null null 61  
74 -1 65 76 null 63  
65 72 63 65 72 74  
63 -1 null null null 65

65 -1 null null null 65  
72 -1 null null null 65  
76 -1 74 76 null 74  
74 -1 null null null 76  
76 -1 null null null 76  
112 -1 90 351 null 54  
90 -1 88 98 null 112  
88 -1 83 88 null 90  
83 -1 null null null 88  
88 -1 null null null 88  
98 -1 90 98 null 90  
90 -1 null null null 98  
98 -1 null null null 98  
351 -1 234 613 null 112  
234 251 112 234 251 351  
112 -1 null null null 234  
234 -1 null null null 234  
251 -1 null null null 234  
613 786 351 613 786 351  
351 -1 null null null 613  
613 -1 null null null 613  
786 -1 null null null 613

Data to insert:85  
Printing spot node...  
88 -1 83 88 null 90

Printing post insertion  
54 83 22 63 112 -9  
22 33 11 27 36 54  
11 -1 6 18 null 22  
6 9 3 6 9 11  
3 -1 null null null 6  
6 -1 null null null 6  
9 -1 null null null 6  
18 21 11 18 21 11  
11 -1 null null null 18  
18 -1 null null null 18  
21 -1 null null null 18  
27 -1 26 31 null 22  
26 -1 22 26 null 27  
22 -1 null null null 26  
26 -1 null null null 26  
31 -1 27 31 null 27  
27 -1 null null null 31  
31 -1 null null null 31  
36 49 35 44 52 22  
35 -1 33 35 null 36

33 -1 null null null 35  
35 -1 null null null 35  
44 -1 36 44 null 36  
36 -1 null null null 44  
44 -1 null null null 44  
52 -1 49 52 null 36  
49 -1 null null null 52  
52 -1 null null null 52  
63 -1 58 74 null 54  
58 -1 55 61 null 63  
55 57 54 55 57 58  
54 -1 null null null 55  
55 -1 null null null 55  
57 -1 null null null 55  
61 -1 58 61 null 58  
58 -1 null null null 61  
61 -1 null null null 61  
74 -1 65 76 null 63  
65 72 63 65 72 74  
63 -1 null null null 65  
65 -1 null null null 65  
72 -1 null null null 65  
76 -1 74 76 null 74  
74 -1 null null null 76  
76 -1 null null null 76  
112 -1 90 351 null 54  
90 -1 85 98 null 112  
85 88 83 85 88 90  
83 -1 null null null 85  
85 -1 null null null 85  
88 -1 null null null 85  
98 -1 90 98 null 90  
90 -1 null null null 98  
98 -1 null null null 98  
351 -1 234 613 null 112  
234 251 112 234 251 351  
112 -1 null null null 234  
234 -1 null null null 234  
251 -1 null null null 234  
613 786 351 613 786 351  
351 -1 null null null 613  
613 -1 null null null 613  
786 -1 null null null 613

Data to insert:87  
Printing spot node...  
85 88 83 85 88 90



Printing post insertion

54 83 22 63 112 -9  
22 33 11 27 36 54  
11 -1 6 18 null 22  
6 9 3 6 9 11  
3 -1 null null null 6  
6 -1 null null null 6  
9 -1 null null null 6  
18 21 11 18 21 11  
11 -1 null null null 18  
18 -1 null null null 18  
21 -1 null null null 18  
27 -1 26 31 null 22  
26 -1 22 26 null 27  
22 -1 null null null 26  
26 -1 null null null 26  
31 -1 27 31 null 27  
27 -1 null null null 31  
31 -1 null null null 31  
36 49 35 44 52 22  
35 -1 33 35 null 36  
33 -1 null null null 35  
35 -1 null null null 35  
44 -1 36 44 null 36  
36 -1 null null null 44  
44 -1 null null null 44  
52 -1 49 52 null 36  
49 -1 null null null 52  
52 -1 null null null 52  
63 -1 58 74 null 54  
58 -1 55 61 null 63  
55 57 54 55 57 58  
54 -1 null null null 55  
55 -1 null null null 55  
57 -1 null null null 55  
61 -1 58 61 null 58  
58 -1 null null null 61  
61 -1 null null null 61  
74 -1 65 76 null 63  
65 72 63 65 72 74  
63 -1 null null null 65  
65 -1 null null null 65  
72 -1 null null null 65  
76 -1 74 76 null 74  
74 -1 null null null 76  
76 -1 null null null 76  
112 -1 87 351 null 54  
87 90 85 88 98 112

85 -1 83 85 null 87  
83 -1 null null null 85  
85 -1 null null null 85  
88 -1 87 88 null 87  
87 -1 null null null 88  
88 -1 null null null 88  
98 -1 90 98 null 87  
90 -1 null null null 98  
98 -1 null null null 98  
351 -1 234 613 null 112  
234 251 112 234 251 351  
112 -1 null null null 234  
234 -1 null null null 234  
251 -1 null null null 234  
613 786 351 613 786 351  
351 -1 null null null 613  
613 -1 null null null 613  
786 -1 null null null 613

