**ISTE-222 Computational Problem Solving in the Information Domain III**

**Animal guessing game – Homework**

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Due: Monday December 9, 2019

Purpose: Using a binary tree store questions and animals so the Animal guessing game can be played. Should the computer not find the animal, it is to be added to the binary tree and written to a file, making this available for the next run.

Assignment: This program will have these entries:

public class BTNode

public void inorderPrint()  *Student complete BTNode #1*

public void inorderPrint( )  
140 ÏÏ§ÏÏ§{   
141 ÏÏ§ÏÏ§ if (left != null){  
142 ÏÏ§ÏÏ§ left.inorderPrint();  
143 ÏÏ§ÏÏ§ }  
144 ÏÏ§ÏÏ§ System.out.println(data);  
145 ÏÏ§ÏÏ§ if (right != null){  
146 ÏÏ§ÏÏ§ right.inorderPrint();  
147 ÏÏ§ÏÏ§ }  
148 ÏÏ§ÏÏ©}

class AnimalGuessingGame

public static void instruct()  *Student written instructions*

public static void instruct( )  
 93 ÏÏ§ÏÏ§{  
 94 ÏÏ§ÏÏ¨¹¹ÏSystem.out.println("1. Think of an animal.");  
 95 ÏÏ§ÏÏ¨¹¹ÏSystem.out.println("2. Answer the Questions truthfully");  
 96 ÏÏ§ÏÏ§ System.out.println("3. I will guess what your animal.");  
 97 ÏÏ§ÏÏ©} // end of instruct()

public static BTNode beginningTree()

public static BTNode beginningTree2() *Used in last question*

**public static void learn(BTNode) Student to complete**

// Put the new question in the 'current' node, and add two new children  
// QUESTION #1: Why are we changing the animal to a question?  
current.setData(newQuestion);

{{ Because it guessed the wrong animal and therefore we have to change it to a new better guess. So now we change it to the correct one.}}

// QUESTION #2 - Why do we need to test for 'y' or 'n' in the following?

{{ Because that will determine where do we insert the correct answer to our question. }}

// What is the following "if statement" code doing? Add comments here

{{ It is determining if the user chose yes or no. And then handles what to do with the code. }}

// QUESTION #3: Add the 'correctAnimal' and 'guessAnimal' to the

// ‘current’ node.

{{ Replace this code with if/else answer from program }}

if ( Character.toLowerCase( scan.nextLine().charAt(0) ) == 'y' )  
 {

321 ÏÏ§ÏÏ§Ï6§ current.setLeft(new BTNode(correctAnimal, null , null));

322 ÏÏ§ÏÏ§Ï6§ current.setRight(new BTNode(guessAnimal, null, null));  
 }  
 else  
 {

326 ÏÏ§ÏÏ§Ï¸§ current.setRight(new BTNode(correctAnimal, null , null));  
327 ÏÏ§ÏÏ§Ï6§ current.setLeft(new BTNode(guessAnimal, null, null));

}

**public static void depthPrint(BTNode, int) Student add code**

// COMPLETE #4: Recursively call this method with the left and right nodes.  
// 2nd parameter is for printing the left 'num\*2' and right 'num\*2+1' numbers  
// these numbers are used for reloading the tree.  
// Check the left and right nodes are not null before calling depthPrint

public static void depthPrint( BTNode node, int num)  
335 ÏÏ§ÏÏ§{  
336 ÏÏ§ÏÏ¨¹³´if (node.getLeft() != null){  
337 ÏÏ§ÏÏ§Ï6¾¹¹ÏdepthPrint(node.getLeft(), num \* 2);  
338 ÏÏ§ÏÏ§Ï¶Ï}  
339 ÏÏ§ÏÏ¨¹íÏString outPut = num + DELIMITER + node.getData();  
340 ÏÏ§ÏÏ¨¹¹ÏSystem.out.println ( outPut );  
341 ÏÏ§ÏÏ¨¹³´if (node.getRight() != null){  
342 ÏÏ§ÏÏ§Ï6¾¹¹ÏdepthPrint(node.getRight(), num \*2 + 1);  
343 ÏÏ§ÏÏ§Ï¶Ï}  
344 ÏÏ§ÏÏ¨¹¹´try  
345 ÏÏ§ÏÏ§Ï6§{  
346 ÏÏ§ÏÏ§Ï6¨¹¹ÏoutBw.write( outPut );  
347 ÏÏ§ÏÏ§Ï6¨¹¹ÏoutBw.newLine();  
348 ÏÏ§ÏÏ§Ï6©}  
349 ÏÏ§ÏÏ§Ï6Icatch (IOException e)  
350 ÏÏ§ÏÏ§Ï6§{  
351 ÏÏ§ÏÏ§Ï6¨¹¹ÏSystem.out.println("Error in writing file " + e.getMessage() );  
352 ÏÏ§ÏÏ§Ï¶©}  
364 ÏÏ§ÏÏ©}

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Questions to answer:

Complete the binary tree results of beginningTree2()method.

Click on the **[Text]** and type in the correct information. (Note: Cursor may not align with the text box you clicked, but type anyway, it should work.