

In-Class Activity #9

Name #1: _____ Section Leader: _____

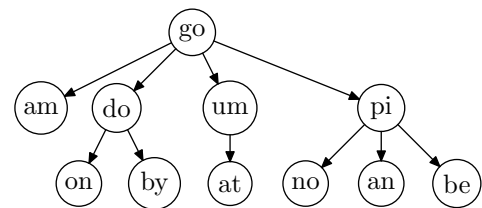
Name #2: _____ Section Leader: _____

Name #3: _____ Section Leader: _____

Directions: In groups of 2 or 3, without using electronics, answer the following questions to the best of your combined abilities. When appropriate, show your work, to help us understand your thought process. ICAs (In-Class Activities) count toward your grade; please take them seriously. Week 14 (2015/11/23)

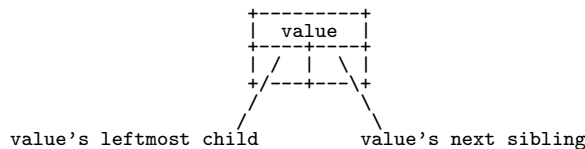
1. Terminology! We introduced several different tree terms last Wednesday. Answer these questions, based on the tree below.

- (a) What are the leaves of this tree? _____
- (b) Which nodes have multiple children? _____
- (c) Which nodes have multiple parents? _____
- (d) Which nodes are siblings of 'um'? _____
- (e) What is the degree of 'by'? _____
- (f) What is the level of 'at'? _____
- (g) What is the height of this tree? _____



2. Last Wednesday I said that general trees weren't used very often. One reason for that: Any general tree can be accurately reproduced as a binary tree. Here's how to construct a binary tree that represents a general tree.

Allow the left child and right child references of the binary nodes to serve different purposes, as shown by this diagram:



The value in the root node of the general tree is also the value in the root node of the binary tree. The rest of the values from the general tree are placed in the binary tree according to the instructions in the diagram.

That's it! Using this description, draw (on the back of this page) the binary tree representation of the general tree shown above.

When your group is satisfied with your answers, or time is up, hand this to one of the class staff. We'll review the correct answers after time is up.