

Homework #2 COSC 511

Distributed: 9/29/2011

Due: 9/27/2011

1. Regard the write-up at <http://emunix.emich.edu/~haynes/Papers/AVL/rotations.pdf> Identify any errors.

2. Create the binary search tree by inserting in order: 1, 5, 3, 2. Do the appropriate rotation around node value 5 to improve the balance .

3. Create the BST by inserting in order: 1, 5, 3, 4. Do the appropriate double rotation around node value 5 to improve the balance. (i.e., AVL double rotation)

4. Insert the following items into an initially empty splay tree. Splay the tree on each insertion: 1, 5, 4, 2, 6

5. Create a BST from an empty tree by inserting in order: 1, 3, 5, 7, 9, 11. (Do not splay while creating the initial BST)

Now, insert new node X=13 and splay the tree. What is the final tree?

6. Insert the following items into an initially empty 2D tree, where the x value is used at even depths (i.e. 0 (root), 2, 4, ...) and the y value is used at odd depths (depth 1, 3, 5,...) (7, 0), (7, 1), (7, 2), (8, 2), (9, 2)

Note: Left child indicates \leq ; Right child indicates $>$