CS 300 Data Structures
Problem Set #21: AVL Trees

1. Start with an empty AVL and insert the items 3,2,1, and then 4 through 7 in sequential order. If an insertion causes the tree to become unbalanced, then perform the necessary rotations to maintain the balance. State where the rotations were done. Please also give the height of each node after each rebalancing operation.

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2. Starting with an empty tree, construct an AVL tree by inserting the following keys in the order given: 2, 3, 5, 6, 9, 8, 10, 1, 0. If an insertion causes the tree to become unbalanced, then perform the necessary rotations to maintain the balance. State where the rotations were done. Please also give the height of each node after each rebalancing operation.

3. Starting with an empty tree, construct an AVL tree by inserting the following keys in the order given: 2, 3, 5, 6, 9, 8, 7, 4, 1. If an insertion causes the tree to become unbalanced, then perform the necessary rotations to maintain the balance. State where the rotations were done. Please also give the height of each node after each rebalancing operation.