

CSCE 221 Quiz 5.3

19 October 2022

You must show your work in order to get credit.

If you need to make an assumption in order to solve the problem, make your assumption explicit.

Put your UIN in the top left, section number in the top middle, and name in the top right of the page.

Everything you write should be at least half an inch from the edge, including your name, section number, UIN, and all your work.

Problem 1.

1) Draw the Binary Search Tree (BST) resulting from the following sequence of insertions.

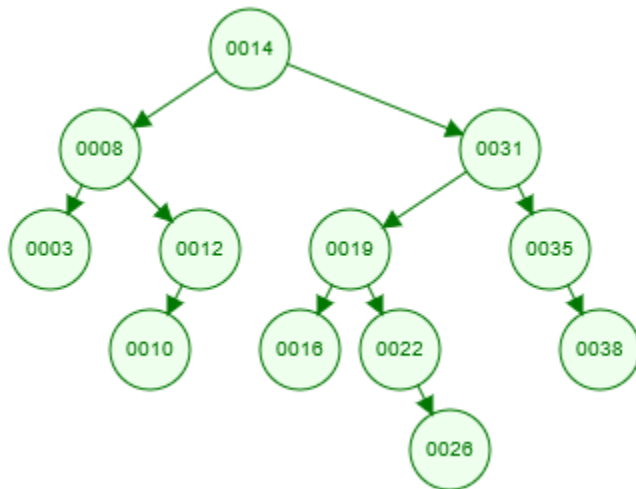
Insert 97, 51, 83, 62, 39, 70, 78, 73, 32, 45.

2) Using the BST from part 1, draw the resulting BST after removing the value 97.

Problem 2.

Starting from the AVL tree shown below, **remove** the value **3**.

You must depict the tree immediately after the remove operation and also after each rotation (a double rotation is 2 rotations) until the tree is balanced. Your initial and final tree depictions must include the AVL heights of all nodes.



Caption: A binary tree constructed by the insertion sequence 14, 8, 31, 3, 12, 19, 35, 10, 16, 22, 38, 26.