

Practice Lab Assignment 9

Practice Lab Assignment 9

For this Practice Lab Assignment, you will write programs in C implementing the concepts of **Trees** or **Do as Directed**.

Instructions

- There are 5 questions in this assignment.
- Complete all questions by yourself. Taking any kind of help from other students or from internet resource is strictly not allowed.

Due Date: Submit your codes/solutions on BB.

Grading Criteria

No Grading Criteria.

Questions

Ques.1 On paper draw a Binary Search Tree by inserting the following elements in the order shown:

40, 28, 72, 15, 55, 36, 20, 4

Thus the first node will be 40. Next node is 28 so it will be left child, Next is 72 which will be right child and so on. Once all the nodes are inserted, then start deleting few nodes in the sequence given as 20, then delete 15 and finally delete 28. Now, write the inorder of the resultant tree being formed after all these deletions.

Ques.2 Draw AVL tree by inserting the following elements in the order they are given. If at any point in time the tree gets unbalanced, redraw the tree after applying proper rotations:

- a. 46, 35, 72, 25, 43, 20
- b. 40, 60, 20, 52, 80, 15
- c. 40, 60, 20, 52, 80, 90

- d. 60, 75, 66
- e. 40, 80, 30, 10, 35, 32
- f. 52, 26, 78, 13, 65, 32, 90, 20, 28, 4, 30

Ques.3 Write a function to count number of nodes in a Binary Search Tree.

Ques.4 Modify the function in Q3 to count number of leaf nodes of this tree.

Ques.5 Write a function to print the height of the tree.