**Tutorial of BST and AVL Tree**

**1. BST**

1. Show the result of inserting 3, 1, 4, 2, 5, 6, 9, 7, 12, 8, 10, 13, 11 into an initially empty binary search tree.
2. Please write down the **Inorder** traversal of the BST
3. Please write down the **Preorder** traversal of the BST
4. Please write down the **Postorder** traversal of the BST
5. Show the result of deleting of node “2”
6. Show the result of deleting of node “5”
7. Show the result of deleting of node “9”
8. A full node is a node with two children. Prove that the number of full nodes plus one is equal to the number of leaves in a nonempty binary search tree.
9. What is the **maximum** and **minimum height** of a binary search tree with n node?
10. What is the **time complexity** of Search, findMax, findMin, Insertion and Deletion of a binary search tree?

**2. AVL Tree**

1. What is the **maximum** AVL Tree **height** of 90 nodes?
2. Show the result of inserting 2, 1, 4, 5, 9, 3, 6, 7 into an initially empty AVL Tree.
3. Show the result of deleting node **“1”** and **“3”** from the AVL Tree in **2.2**
4. Show the result of deleting **root** from the AVL Tree in **2.2**