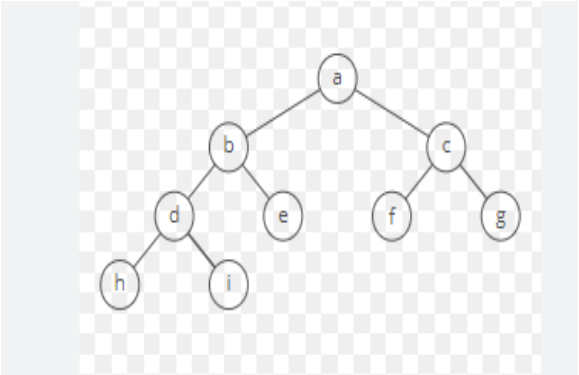
Department of Computer Science and Engineering,
Anna University, Chennai- 600025
CS6104 – Data Structures and Algorithms (R 2018)
Practical
August – December 2023
Year/Sem/Batch : II/III/ P

Exercise: 06	TREES	12 – Oct - 2023

Observation (5 Marks)

1.



a. What is the root and Which are the leaves? (1)
b. Give the result of preorder, postorder, and inorder traversal.(1)
c. Compute the height, depth, and size (number of nodes in the subtree). (1)

2. BST – Insertion and Deletion
   a. Show the result of inserting 6, 4, 8, 5, 1, 9, 7, 11, 2 into an initially empty binary search tree.
   b. Show the result of first deleting 1 (from the previously constructed tree), and then 6.

Execution (15 Marks)

3. (a) Construct a Binary Search Tree (BST) for the following sequence of numbers-

   50, 15, 62, 5, 20, 58, 91, 3, 8, 37, 60, 24

   (b) Write the number of nodes in left sub tree and right subtree

   (c) How many distinct binary search trees can be constructed out of 4 distinct keys?

   (d) Write all the traversal sequences of the given BST

4. Construct a Binary Search Tree with the following alphabets

   M,R,I,L,E,K,Q,U,P,R,T,G and do the basic operations insert , delete and search

   a. Insert the alphabets Q and V

b. Delete the alphabets G,O,M

c. Search an alphabet E

5. Implement preorder , inorder and post order traversal operations in BST