Data Structure Lab

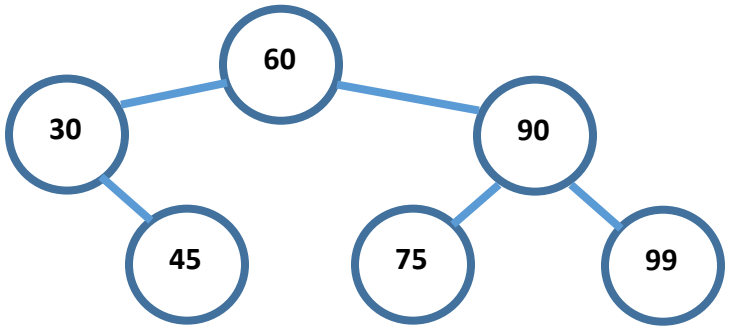
Assignment-5

Date of Assignment: 24- August -2017 **Date of Submission: 31-August-2017**

In this assignment, we will solve some problems on binary search tree. Consider the following binary search tree:

1. Write a C code for constructing a binary search tree for a given sequence of n distinct keys.

   Example: here n = 6, and the sequence of keys is 60, 30, 90, 45, 75, 99



2. Write a C code for Preorder, Inorder, Postorder, and Level-order Traversal of a binary search tree.

   Example:

   Preorder Traversal: 60, 30, 45, 90, 75, 99

   Inorder Traversal: 30, 45, 60, 75, 90, 99

   Postorder Traversal: 45, 30, 75, 99, 90, 60

   Level-order Traversal: 60, 30, 90, 45, 75, 99

3. Write a C code for printing all paths in a binary search tree from the root node.

   Example:

   60, 30, 45

   60, 90, 75

   60, 90, 99

4. Write a C code for finding lowest common ancestor of two nodes in a binary search tree. We consider a node is ancestor of itself.

   Example:

   Lowest Common ancestor of 45 and 75 is 60

   Lowest Common ancestor of 99 and 75 is 90

   Lowest Common ancestor of 60 and 75 is 60

5. Write a C code for finding the inorder successor of a node in a binary search tree.

   Example:

   Inorder successor of 30 is 45

   Inorder successor of 45 is 60

   Inorder successor of 99 is NULL

Submission Guideline

If (your roll number is between 16CS01001 and 16CS01022)

    Email to ARVIND (vp14)

else

    Email to RUPESH (se10)