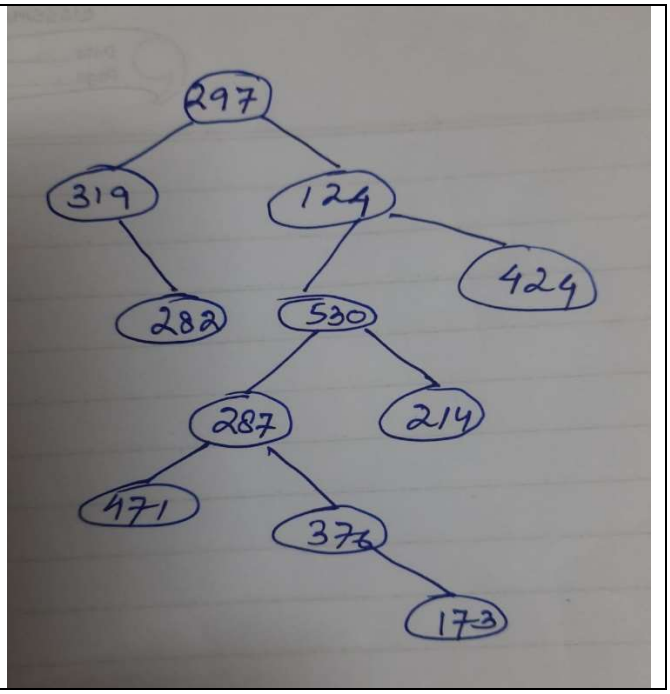
CS515 CS Lab 2

Assignment No: 7

1. Let a binary tree is denoted by Tbt with each node storing a distinct key and two child pointers (L and R). Let n denotes the number of nodes in Tbt, and ht(v) indicates the height of subtree with root node v.

i) Construct a binary tree from a input file

Write a code (without using specific library) to construct a binary tree Tbt is to be constructed with input file ip.txt. The user specifies each node by a triple (k; l; r), where k is an integer key to be stored in the node, and l and r are bits (1/0) indicating whether the node has a left child and a right child, or not. The triples are specified in a level-by-level and left-to-right (in each level) fashion. One sample input and its corresponding binary tree is shown as below.

| | |
|---|---|
| 297 1 1<br>319 0 1<br>124 1 1<br>282 0 0<br>530 1 1<br>424 0 0<br>287 1 1<br>214 0 0<br>471 0 0<br>376 0 1<br>173 0 0 |  |

ii) Printing the tree

Write a function printtree() to print a binary tree Tbt using preorder, inorder and post order traversal manner in an output file op.txt.