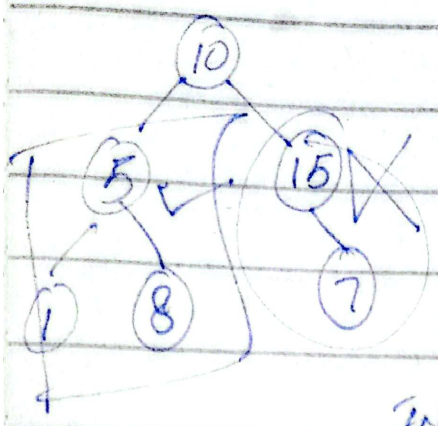
# Largest BST in Binary Tree




left max < root < right min

① left & right → IsBST
② Subtrees → (min, max)
③ Subtrees → size

Info: leaf → parent

Info(min, max, sz)
↳ max BST size of subtr

Pseudocode

Helper(root) {

Base case → return Info(+∞, -∞, 0)

Info left = Helper(root->left)
Info Right = Helper(root->right)
if(root->data > left.max &&
root->data < right.min)
return Info(CurrMin, CurrMax, CurrSize)
else
return(-∞, +∞, max(left.sz, right.sz))

[TC = O(n)]

CurrMin = min(root, leftmin)
CurrMax = max(root, rightmax)
CurrSize = left(sz + right.sz + 1)