

Data Structures

CSCI 2270

Binary trees, BST, BRT

Sprint 13

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Ready

.....

GO!

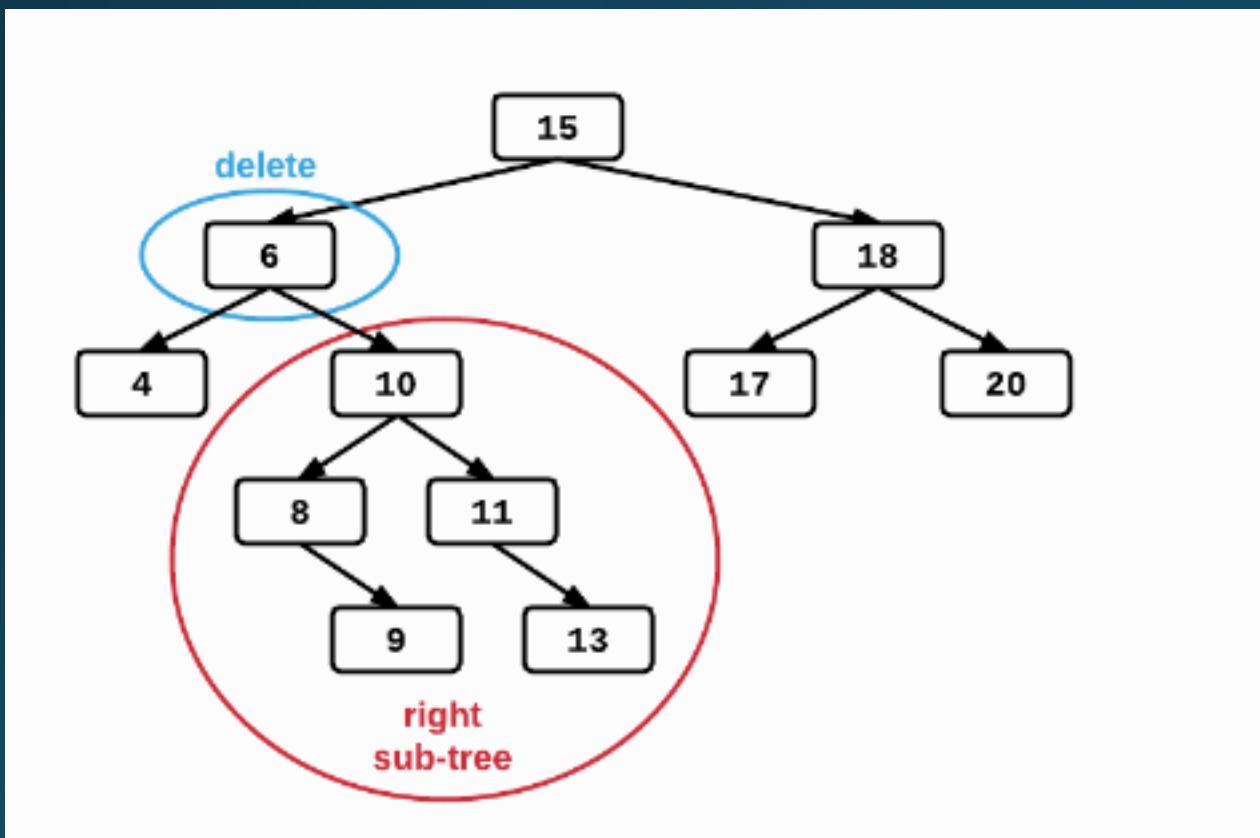
Binary Tree: Delete

- ❖ needs to remain a valid BST -> isBST()?
- ❖ need to traverse to find new substitute -> search()
- ❖ be careful -> memory leaks

Binary Tree: Delete

- ❖ Does node have children?
 - ❖ No
 - ❖ Only 1
 - ❖ Yes, left and
- ❖ Code accordingly

Binary Tree: Delete



min.parent.leftChild = min.rightChild
min.rightChild.parent = min.parent
min.parent = node.parent

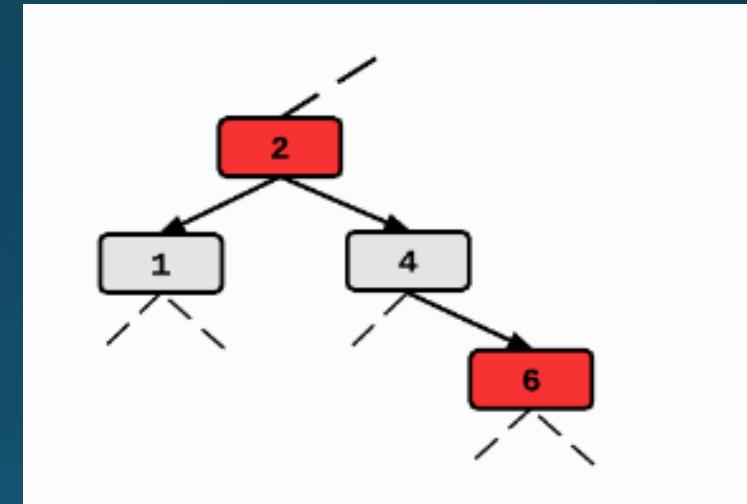
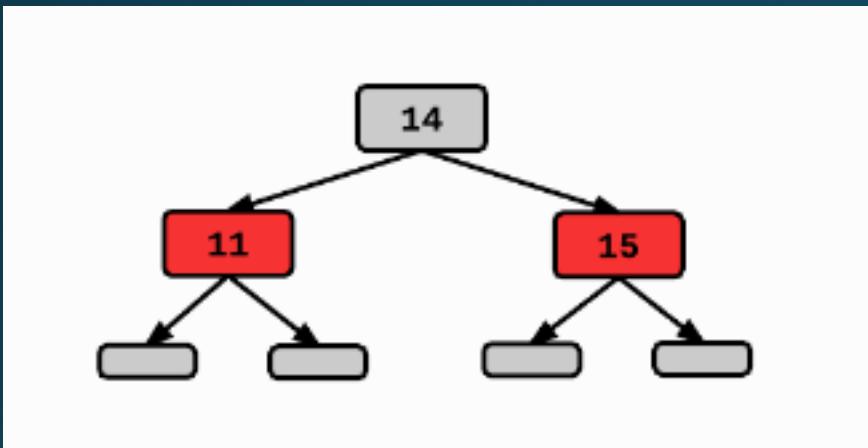
node.parent.leftChild = min
min.leftChild = node.leftChild
min.rightChild = node.rightChild

node.rightChild.parent = min
node.leftChild.parent = min

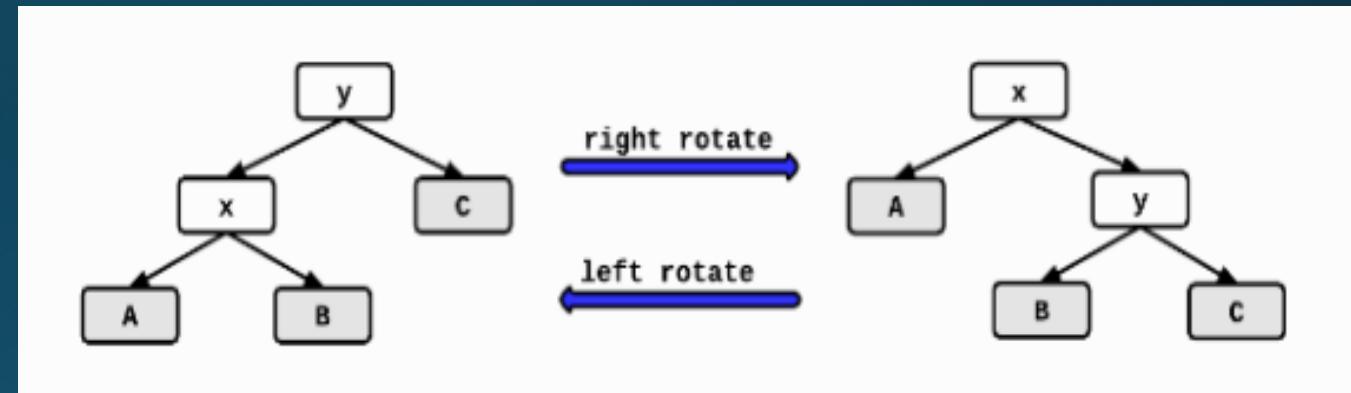
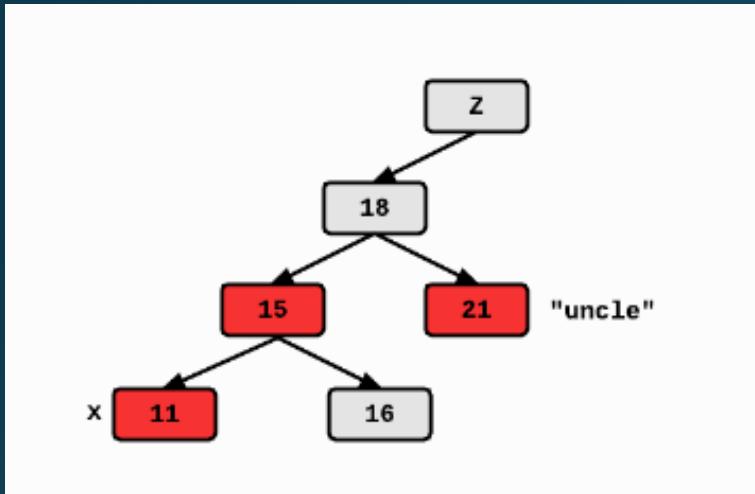
Binary Tree: Balancing

- Node struct + color
- Properties:
 - Root and leaves are black
 - If red then children are black
 - All the paths from n node to leaf == black nodes

Binary Tree: Balancing



Binary Tree: Balancing



Lecture Quiz

Key: july