CMPT 280

Topic 12: Deletion from Ordered Binary Trees

Mark G. Eramian

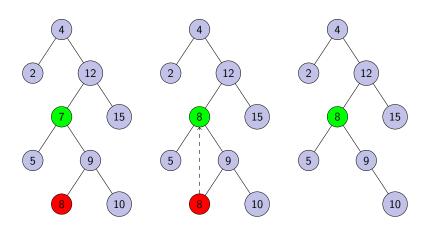
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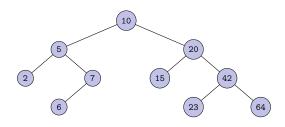
References

• Textbook, Chapter 12

Deleting an Item in an Ordered Tree

When Deleted Node has 2 Children





- Starting with the pictured tree each time, what would be the result of deleting
 - element 6?
 - element 7?
 - element 42? 5? 10?

Cursor Position After Deletion

- We want to implement the deletion algorithm for OrderedSimpleTree280<I>.
- Desired workflow:
 - Use search() to position cursor at element to be deleted.
 - Call deleteItem() to remove the element at the cursor.
- Where should the cursor be positioned after deletion?
 Options:
 - On replacement node
 - On inorder successor or predecessor

• Implement the deleteItem() method for the cases where the node being deleted has 0 or 1 child.

- Add to the deleteItem() method the code for the case where the node to be deleted has two children.
- What is the time complexity of our method?

• Write some tests to see if our deleteItem() method works.

Next Class

• Next class reading: Chapter 13: AVL Trees