Algorithms and Data Structures for Data Science
lab_avl

CS 277

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UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN
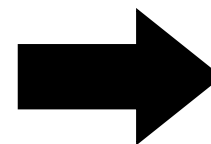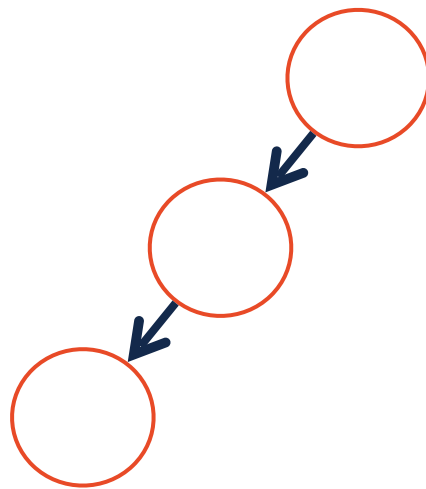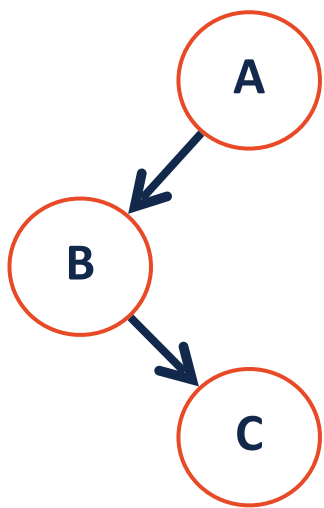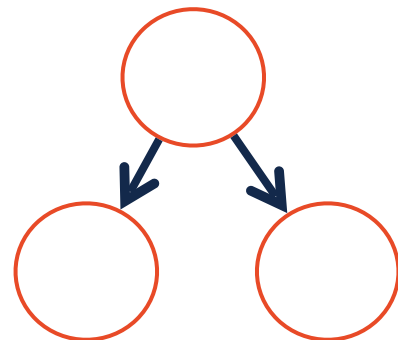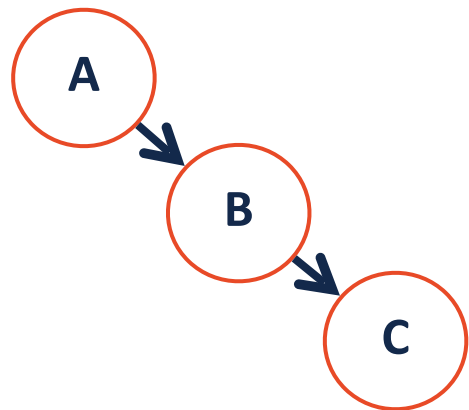
Department of Computer Science

Learning Objectives

Implement tree balancing functions (rotations)

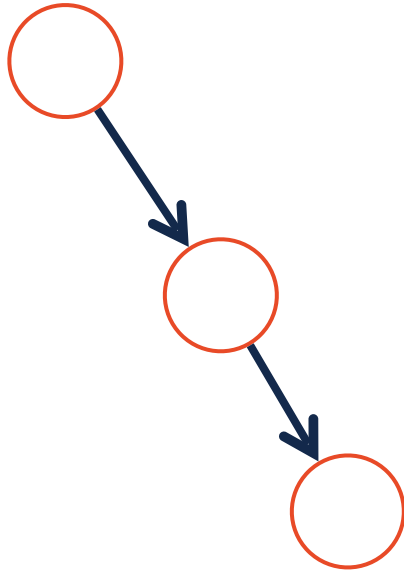Modify a BST function into an AVL function (rebalance)

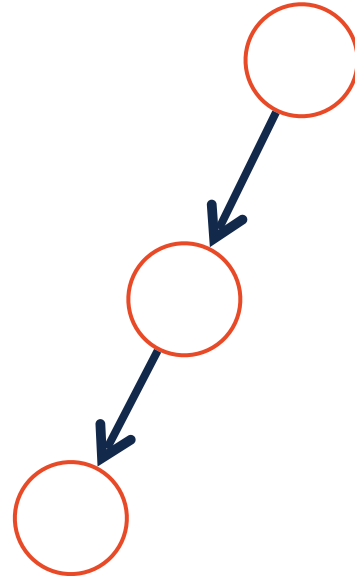# AVL Tree Rotations

All rotations are O(1)

All rotations reduce subtree height by one
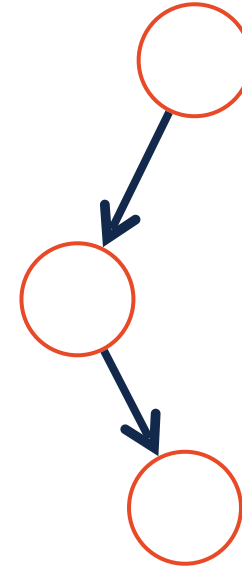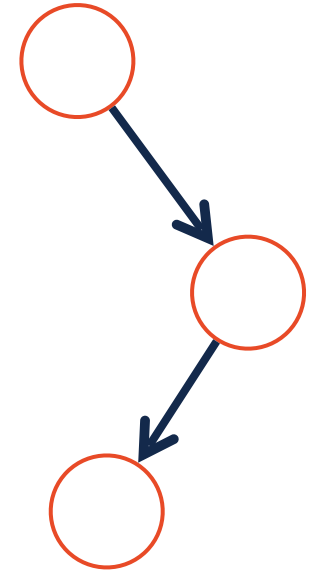
AVL Rotations

Left   **Right**   **LeftRight**   **RightLeft**

Root Balance:

Child Balance:

Lab Tips

Build and test your rotations first. Use small trees (or the autograder) to test

Make sure your **rebalance** checks if the node is balanced first

Make sure you understand when to call each rotation