

# **I** ILLINOIS

## **Identifying Rotations**

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# Learning Objectives

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1. Identify when to use simple rotations in an AVL Tree



# AVL Trees

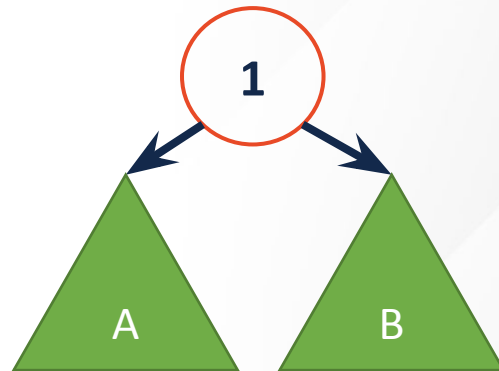
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Three issues for consideration:

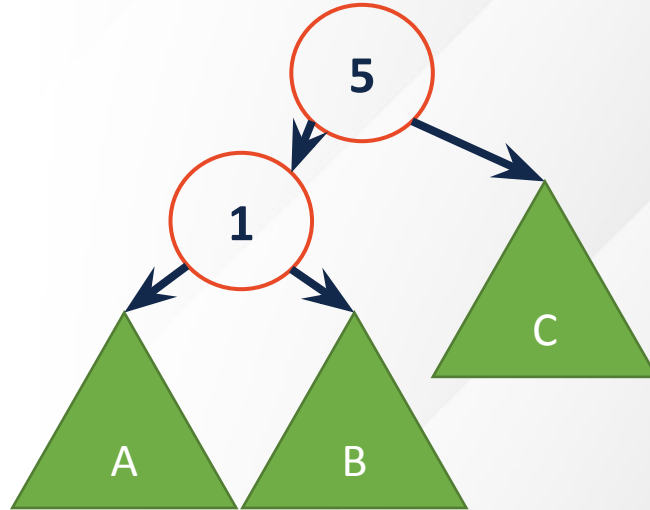
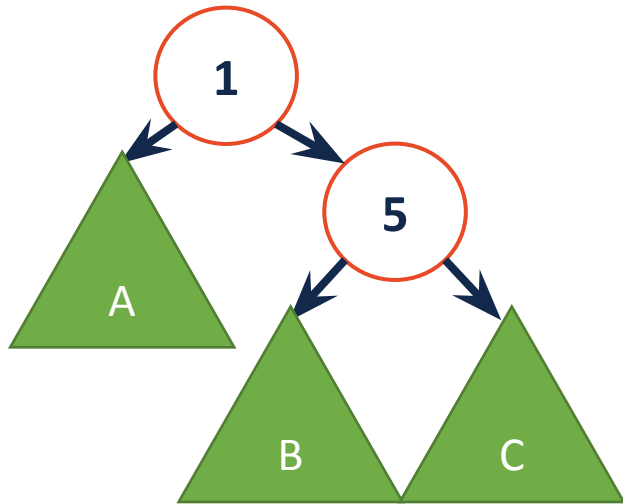
1. Rotations - How do I know when to do which?
2. Maintaining Height - How do I maintain the height?
3. Detecting Imbalance - How do I detect an imbalance?



# General Case

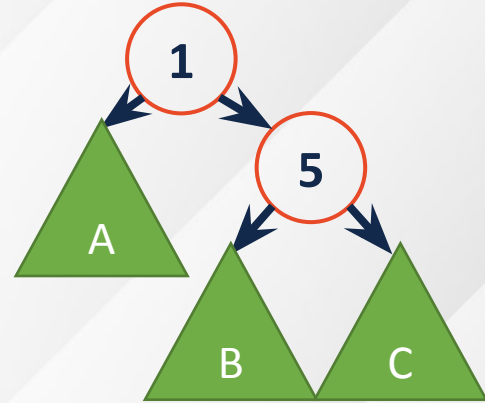
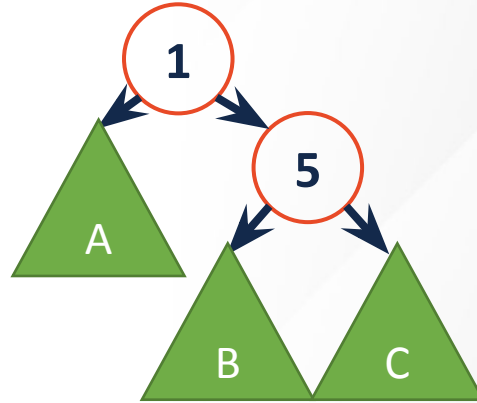
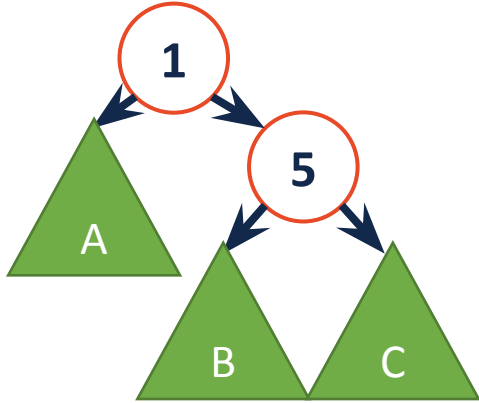


# General Case

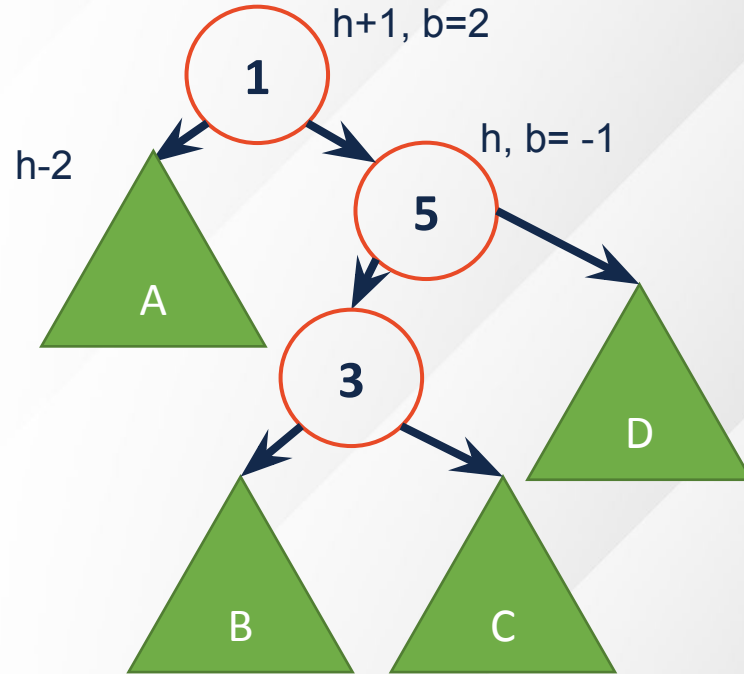
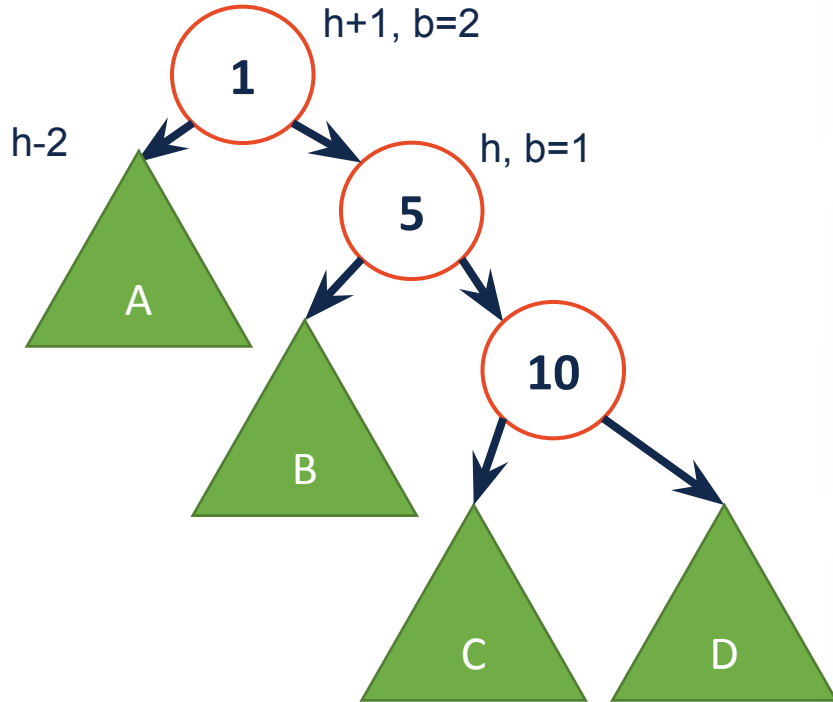


# Heavy Right Case

What is the balance of the right subtree?



# Heavy Right Subcase



# Heavy Right - Right Subcase

