# CSSE 230 Day 14 AVL Insert/Delete Review <br> Exam 

After today, you should be able to...
...determine where a tree is imbalanced after insertion.
... do single and double rotations on paper

Which kind of rotation to do after an insertion?
Depends on the first two links in the path from the lowest node that has the imbalance (A) down to the newly-inserted node.

| First link <br> (A) | Second link <br> (A's child in that <br> direction) | Rotation type <br> (rotate "around <br> A's position") |
| :---: | :---: | :---: |
| Left | Left | Single right |
| Left | Right | Double right |
| Right | Right | Single left |
| Right | Left | Double left |

## A sample AVL tree



Insert HA into the tree, then $\mathbf{D A}$, then $\mathbf{O}$.
Delete $\mathbf{G}$ from the original tree, then $\mathbf{I}, \mathbf{J}, \mathbf{V}$.

