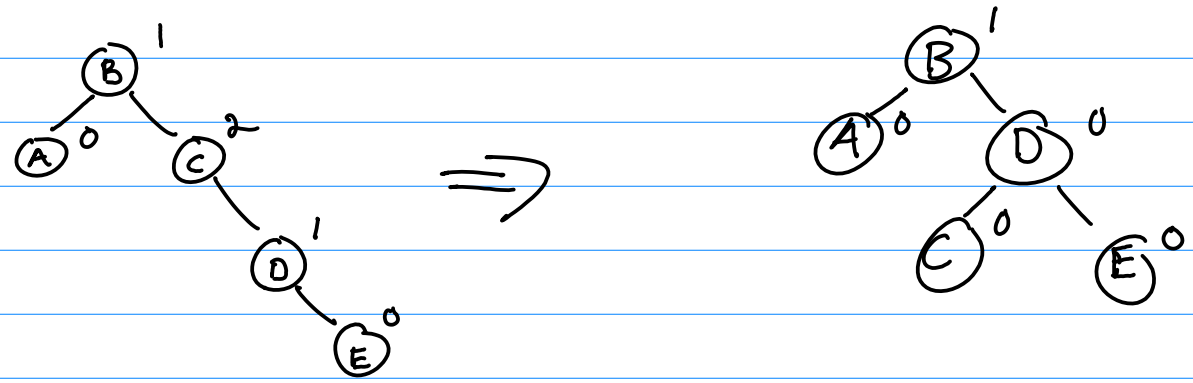
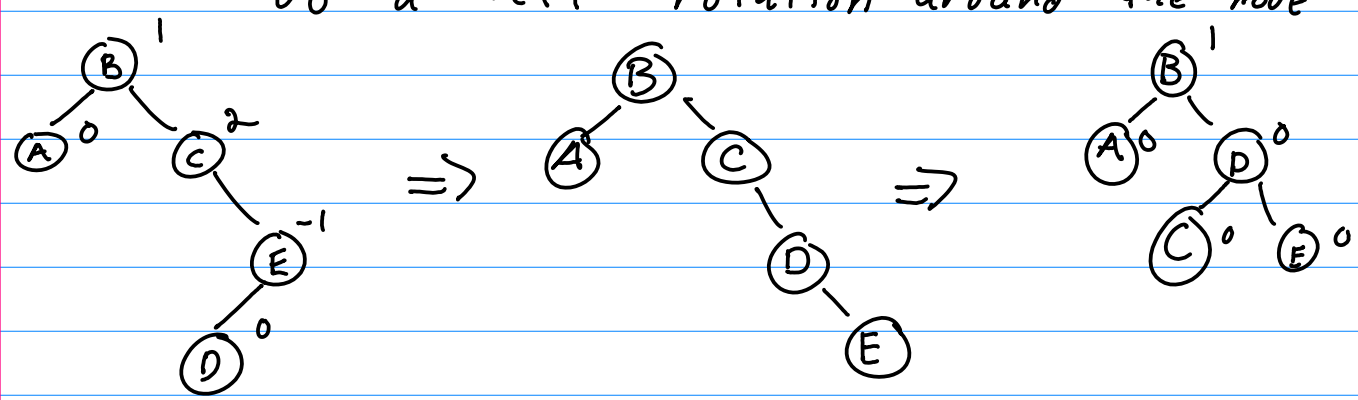
CPSC 220 9/30

AVL Tree: a binary search tree where no nodes have a balance factor greater than 1 or less than -1

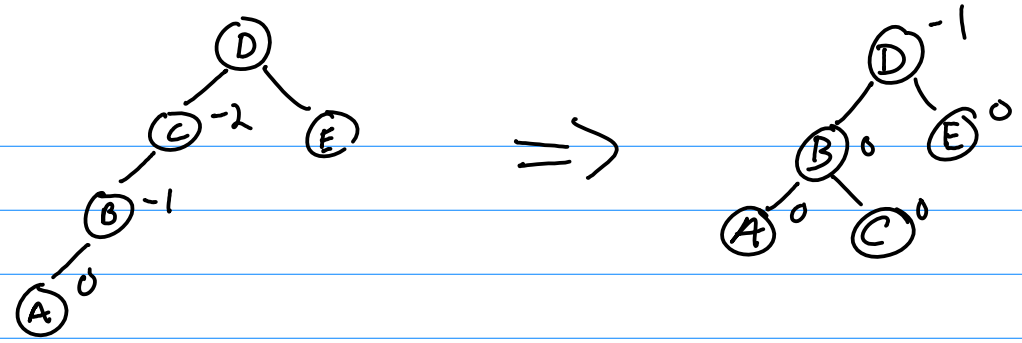
The only time the balance factor can change is when a node is added or removed. To re-balance a tree there are four cases:



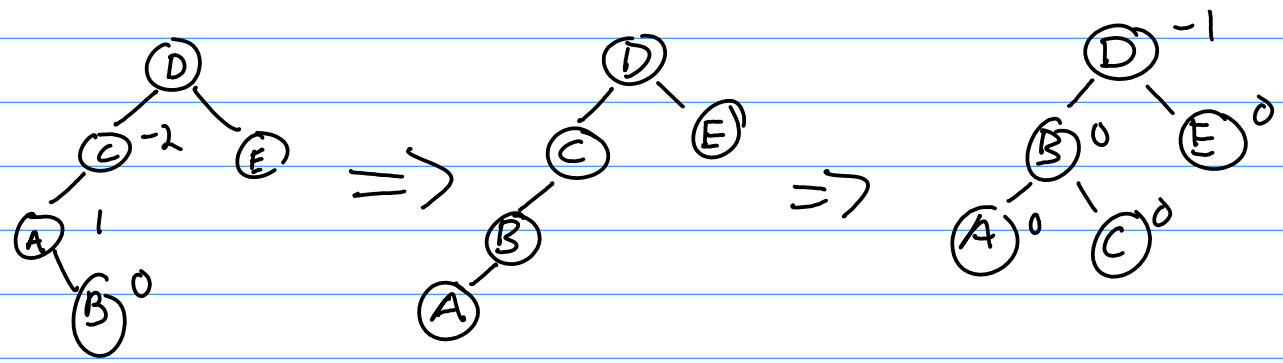
Case 1: node's balance factor is 2 and right child's balance factor is 1 or 0
- do a left rotation around the node



Case 2: node's balance factor is 2 and right child's balance factor is -1
- do a right rotation about the right child and then a left rotation about the node



Case 3 : node's balance factor is -2
and left child's balance factor is -1 or 0
- do a right rotation around node



Case 4 : node's balance factor is -2
and left child's balance factor is 1
- do a left rotation around
left child and a right
rotation around node

Note no nodes with duplicate keys are
allowed, can solve this by defining
nodes with equal keys are sorted
by location in memory