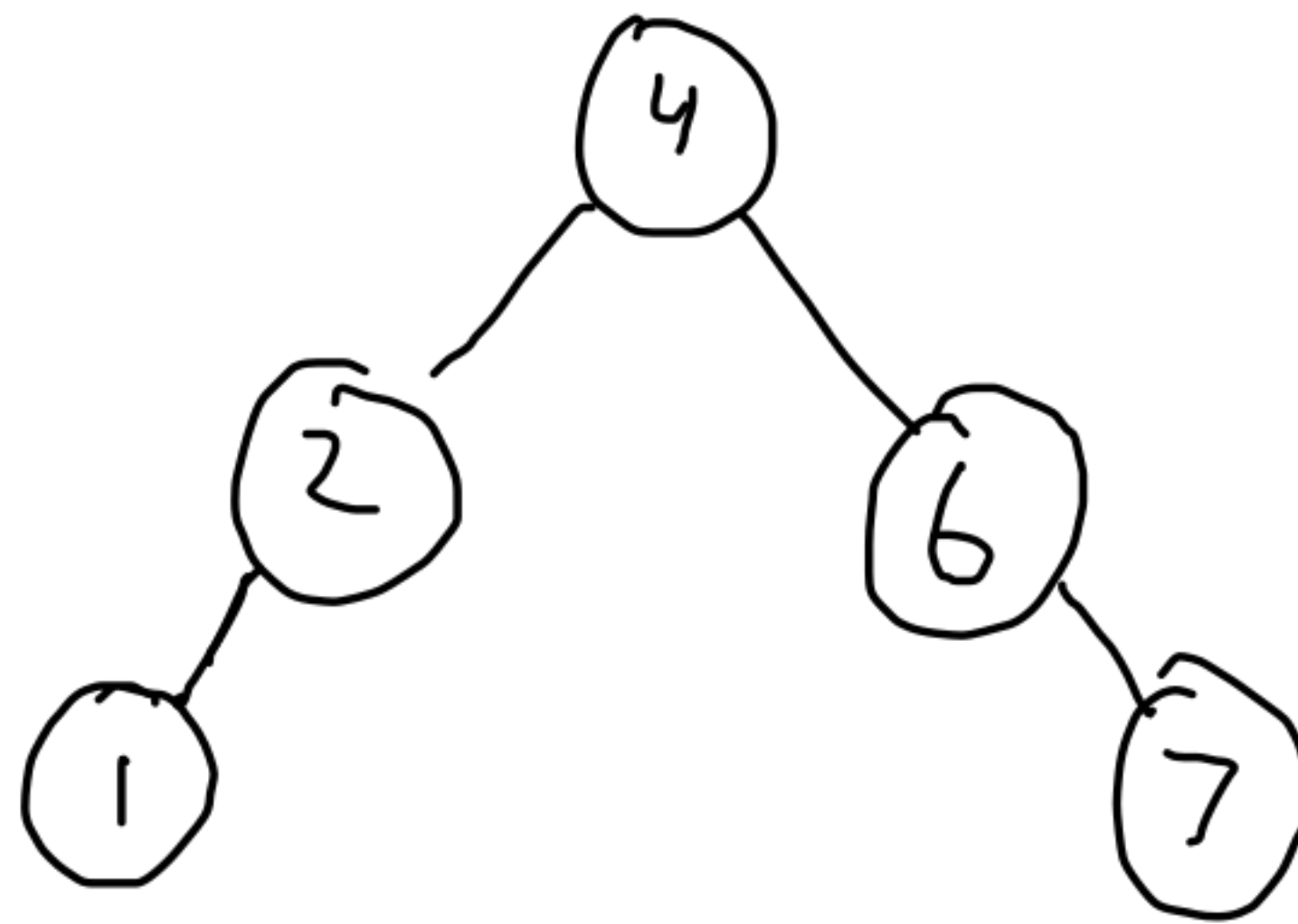


Assignment 5, Part 3 Ideas

- read in data
- done list (Boolean)
- started list (Boolean)
- for each agent
 - what it is doing
 - when it is done (int)
- for each second until all done
 - check each agent to see if it is not working or done
 - mark done
 - find a new task
 - compute end time
 - mark as started

AVL Trees

- BST



- same Inrd operation

- Adds balance factor

$bf = \text{height of left subtree} - \text{height of right subtree}$

must be $-1, 0$ or $+1$

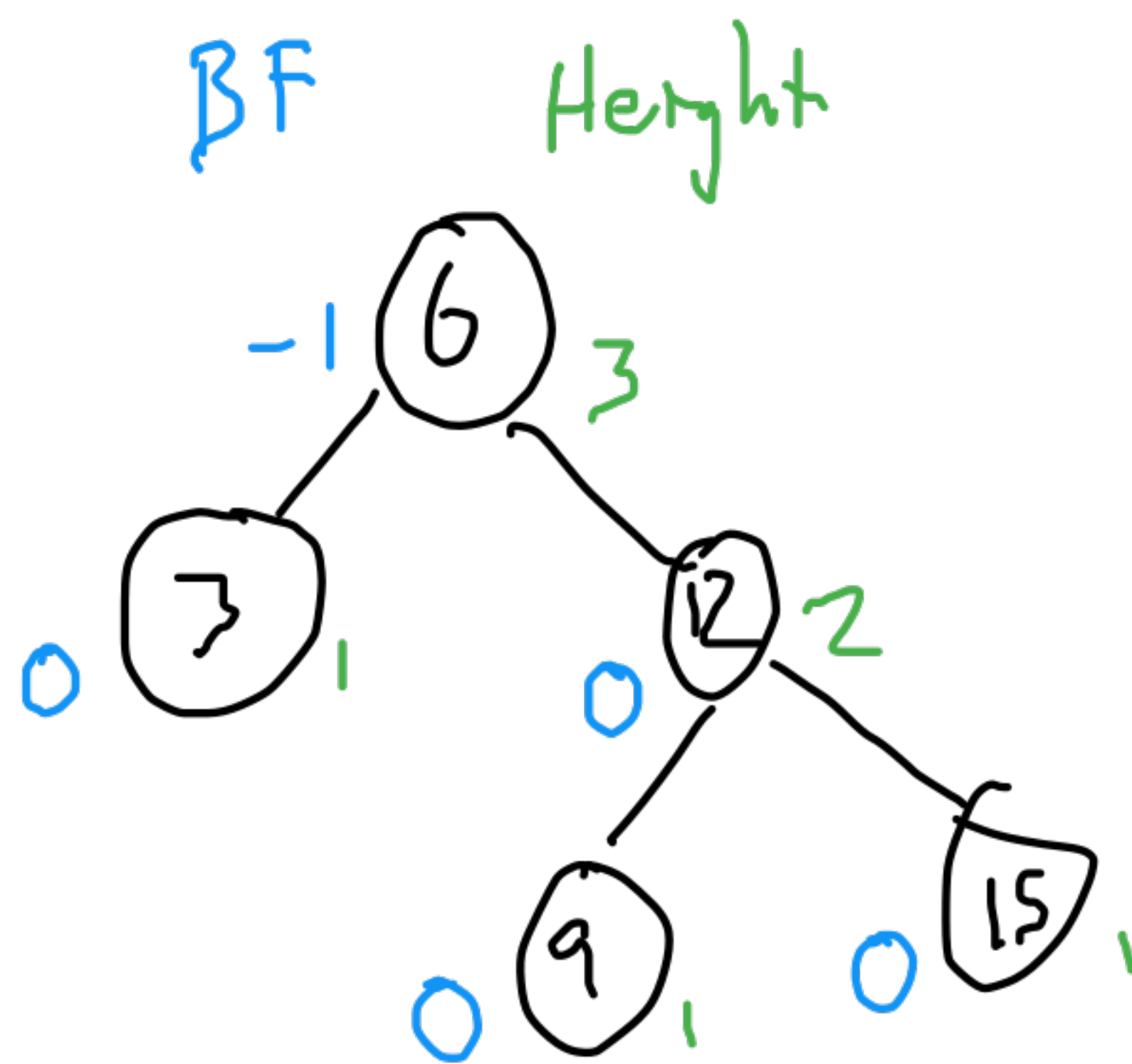
→ for all nodes

- modify add operation

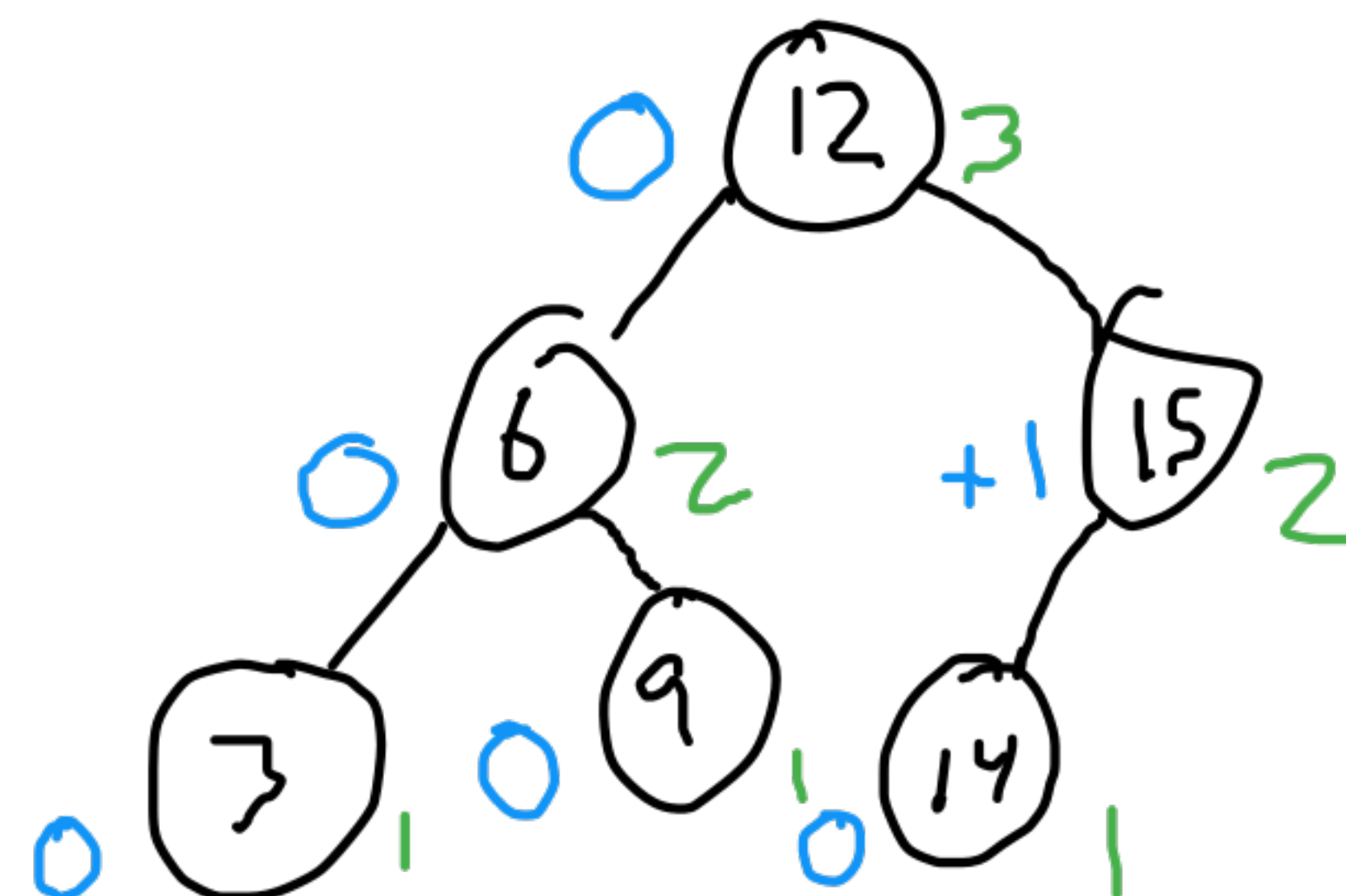
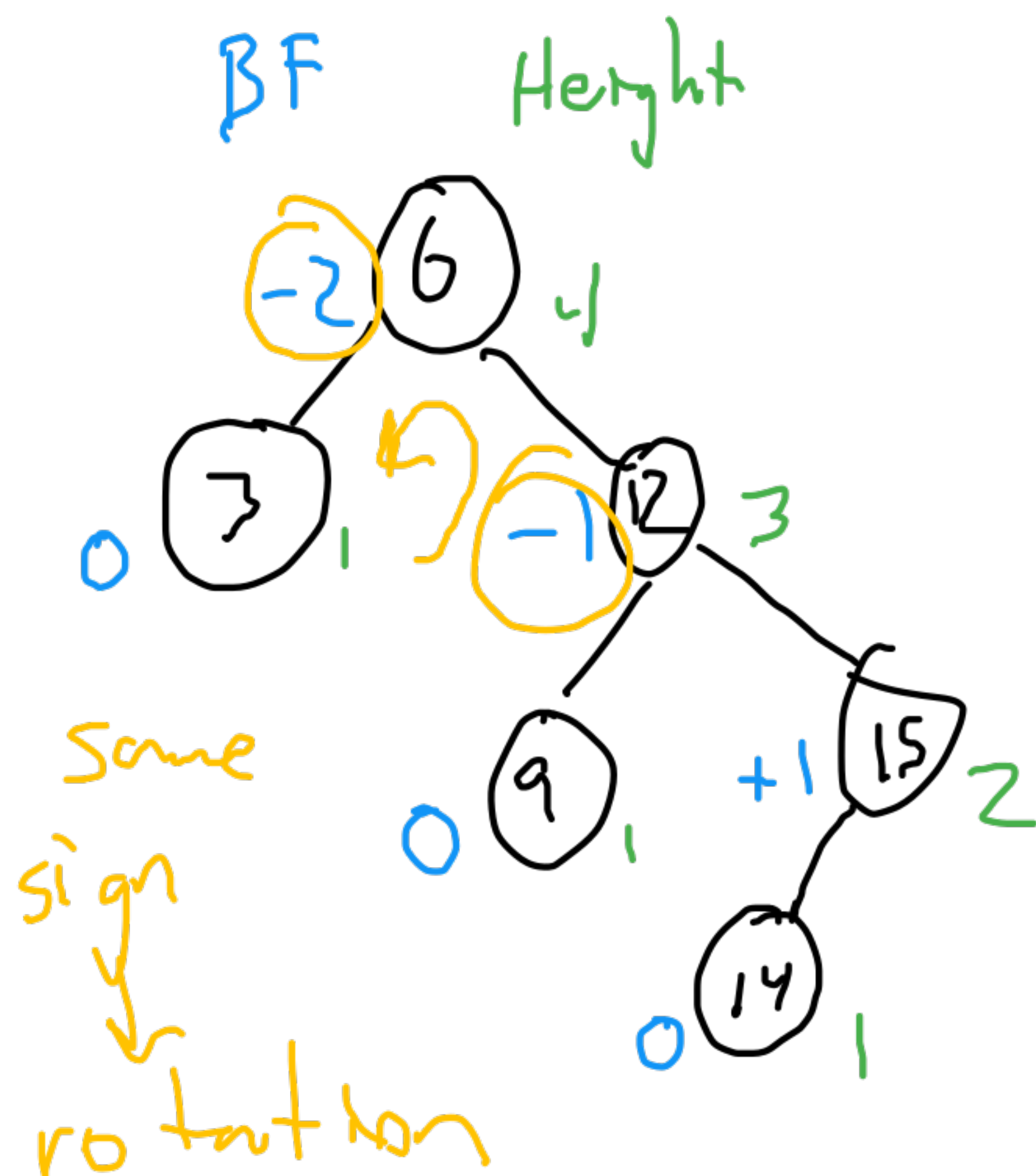
- regular BST add

- work up from new node, checking balance factor
- if $+2$ or -2 , we rotate or zig-zag

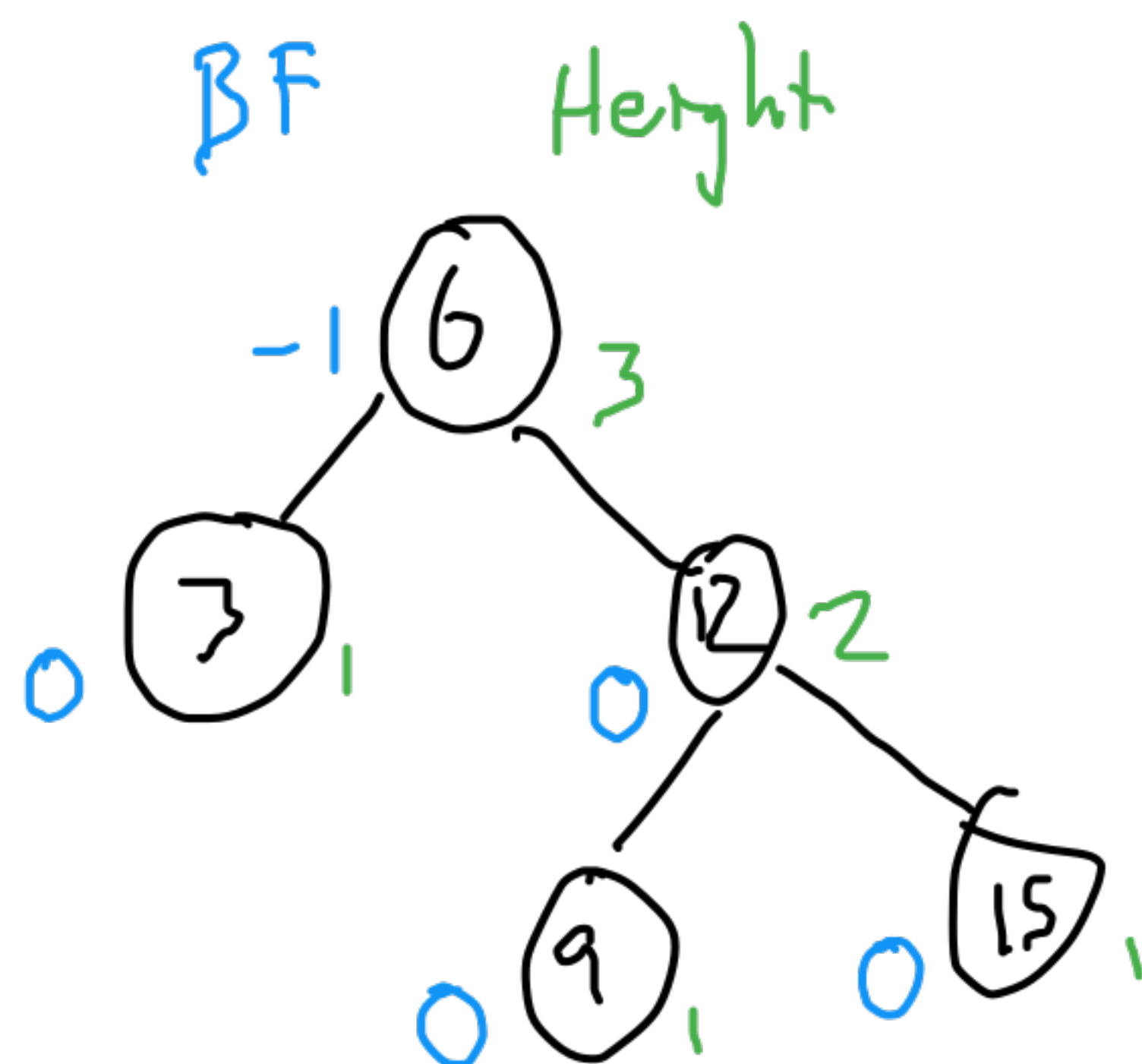
AVL Trees, cont.



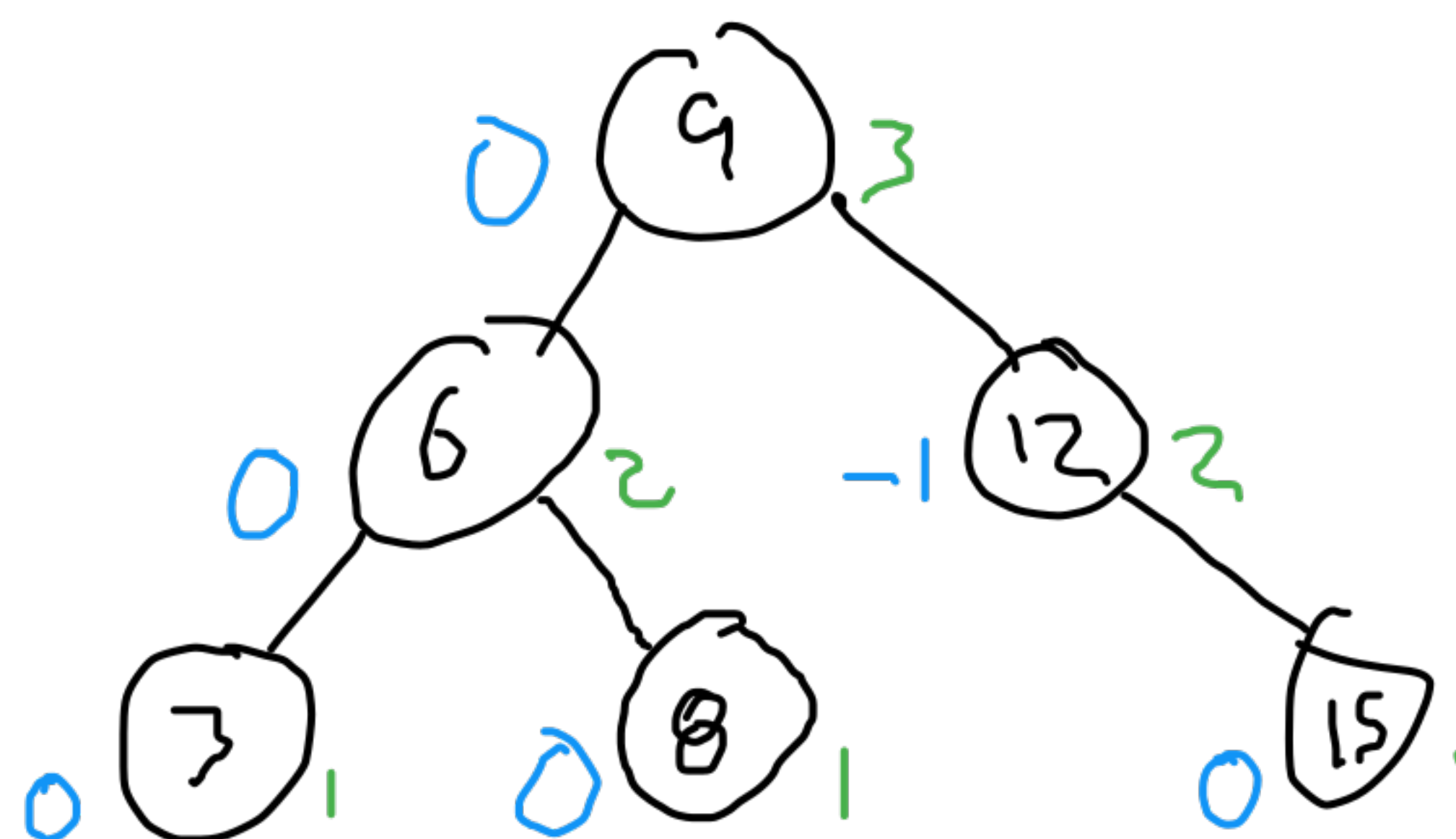
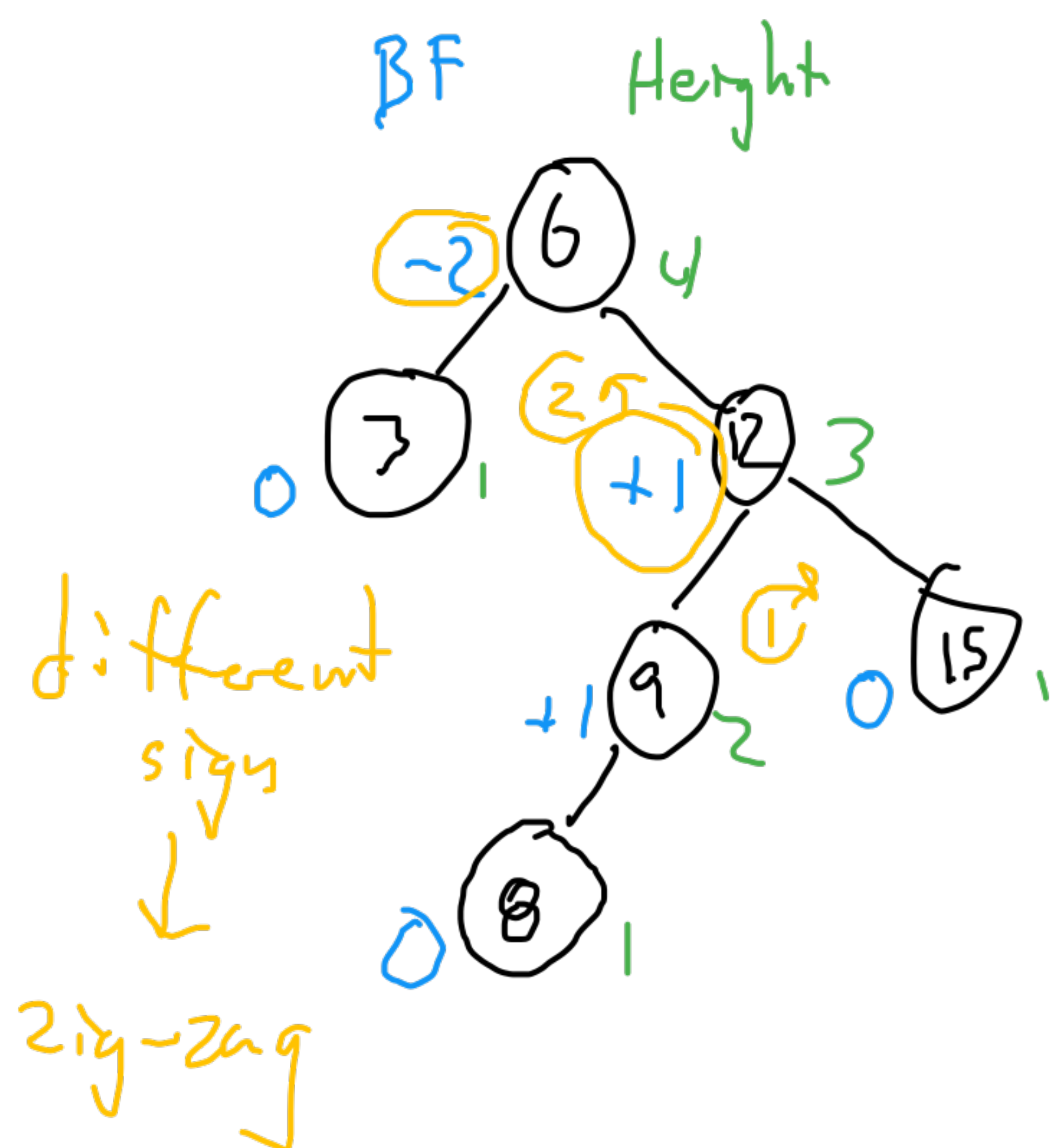
Add 14



AVL Trees, cont.



Add 8



Red-Black Trees

- each node is red or black
- root is black
- red nodes have black child nodes
- null values are treated like black nodes
- All paths from the root to a null value must have same # of black nodes