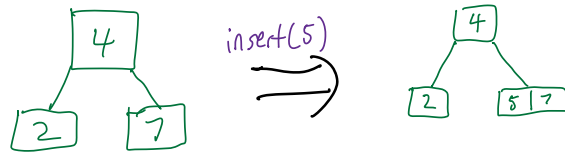


B-Tree / 2-3 Trees

B-Trees always guarantee balanced / "bushy" tree
How does it work?

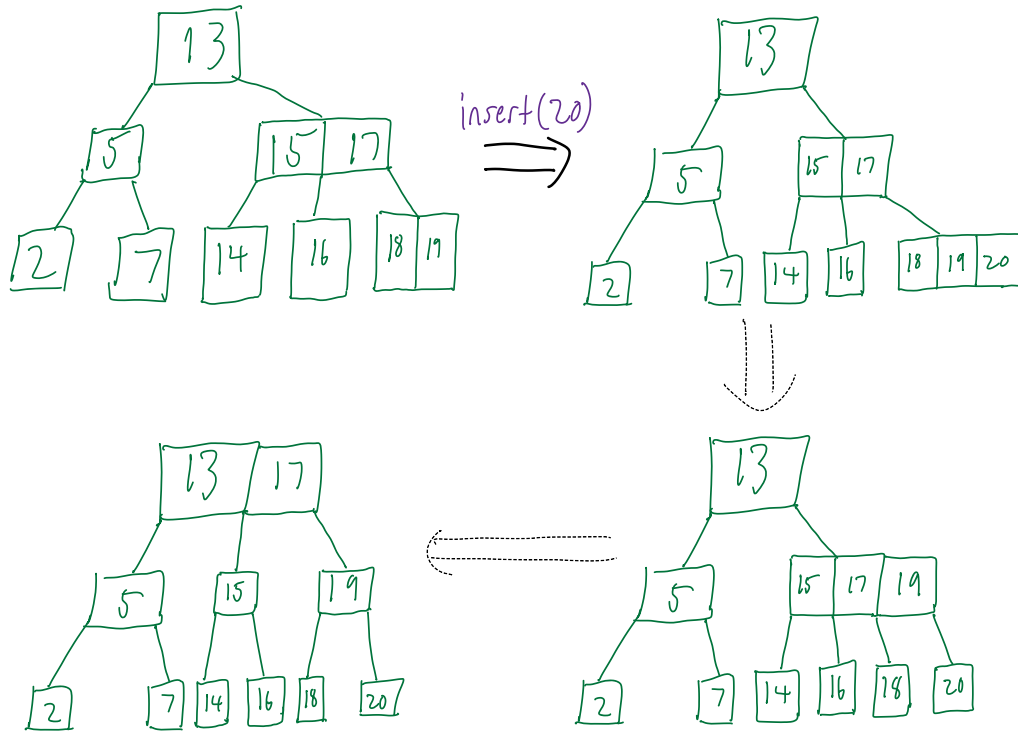
When we insert an item into a tree, we attach it to the proper leaf node if the leaf node has less than 3 values (same procedure as inserting node into binary search tree but instead of attaching as new node, attach onto existing node).

Example:



However, if the node gets to 3 values, then we move the center value up.

Example:



Invariants

- ① All leaves are same distance from root
- ② All non-leaf nodes with k items have $k+1$ child nodes