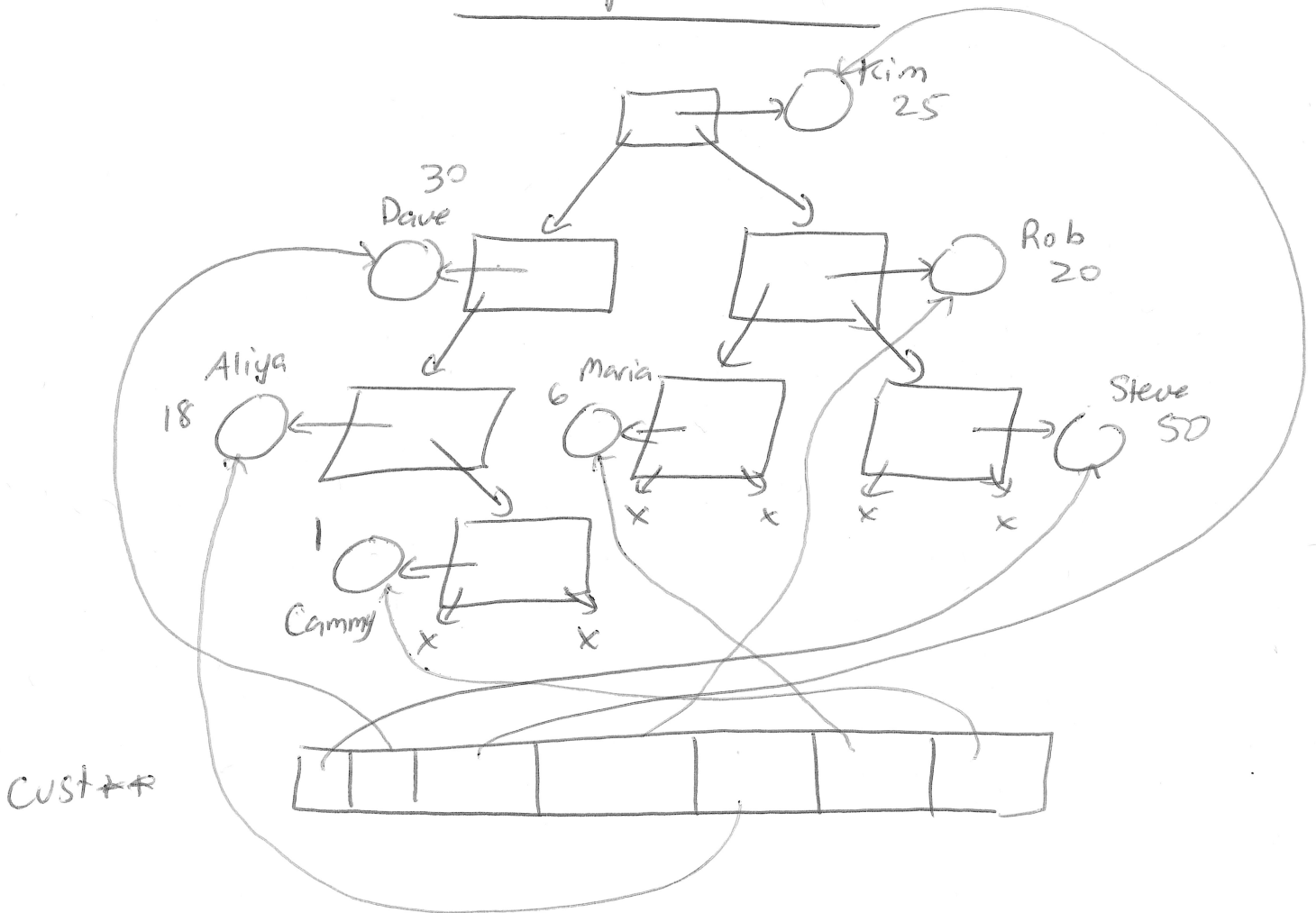


COP 3502 - 11/11/23

- ① PS posted - will probably be slightly edited
- ① AVL Tree Delete
- ② Ugly AVL Tree Code
- ? ③ Start Heaps

PS picture



General Strategy for Delete

1. Do a regular BST delete

2. Go up ancestral path if there is an imbalance, fix it!

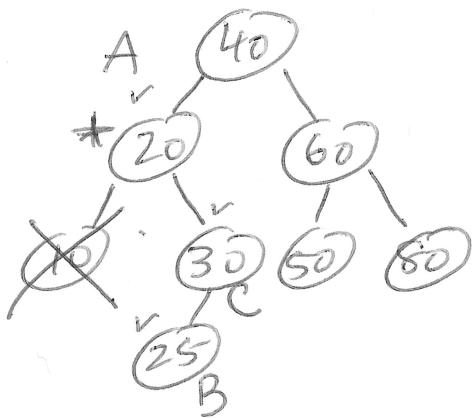
for delete this might get called multiple times

each rebalance is $O(1)$ time

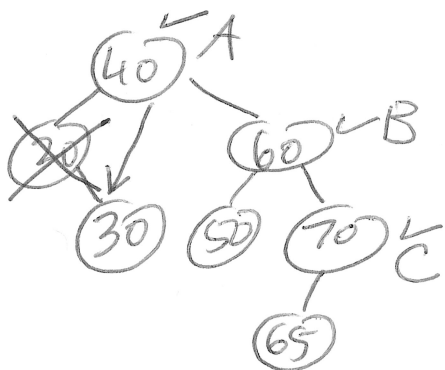
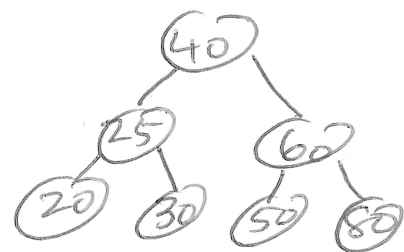
~~$O(1)$~~ $O(\lg n)$

$$\text{total} = O(\lg n) + O(1) + O(\lg n) = O(\lg n)$$

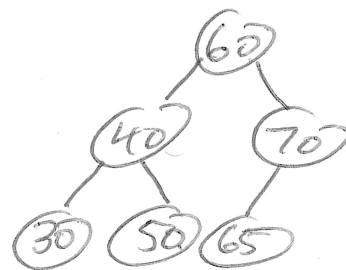
going up tree ↑ rebalance time ↑ # rebalances



Delete 10



Delete 20



Delete 2 child, replace min right

