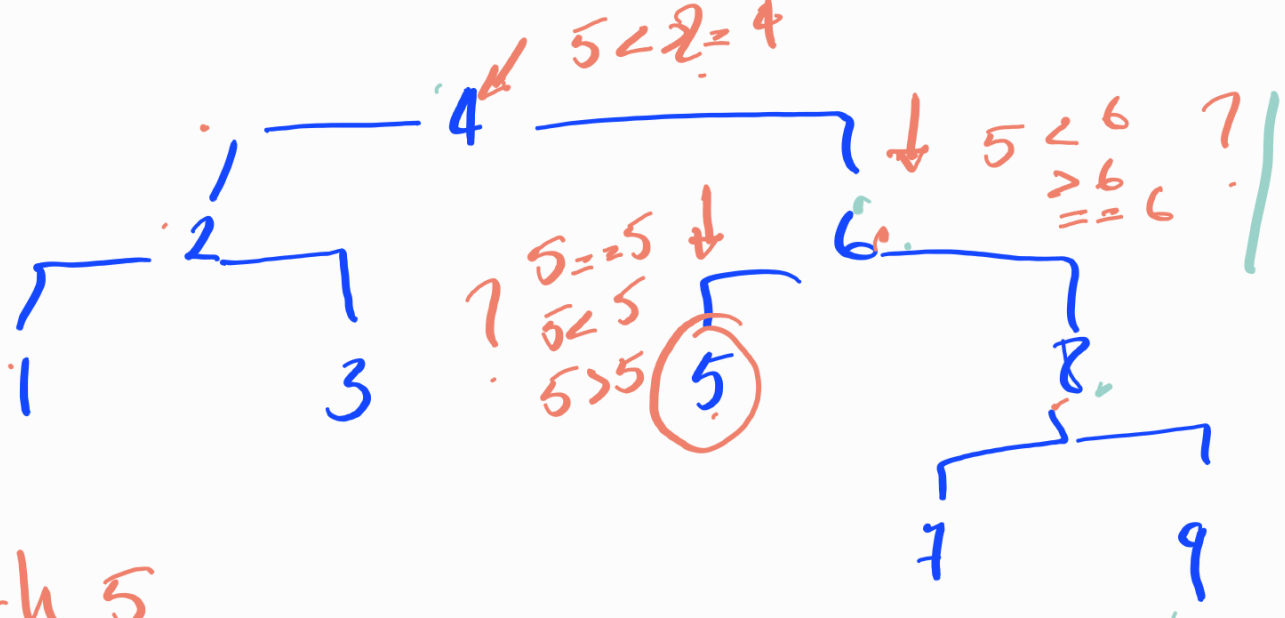


complexity: O(depth tree)

$O(\log n)$

$\log_2(n)$: # times that n is divided by 2 until we get 1

$\log(n) \times O(\text{rec.})$

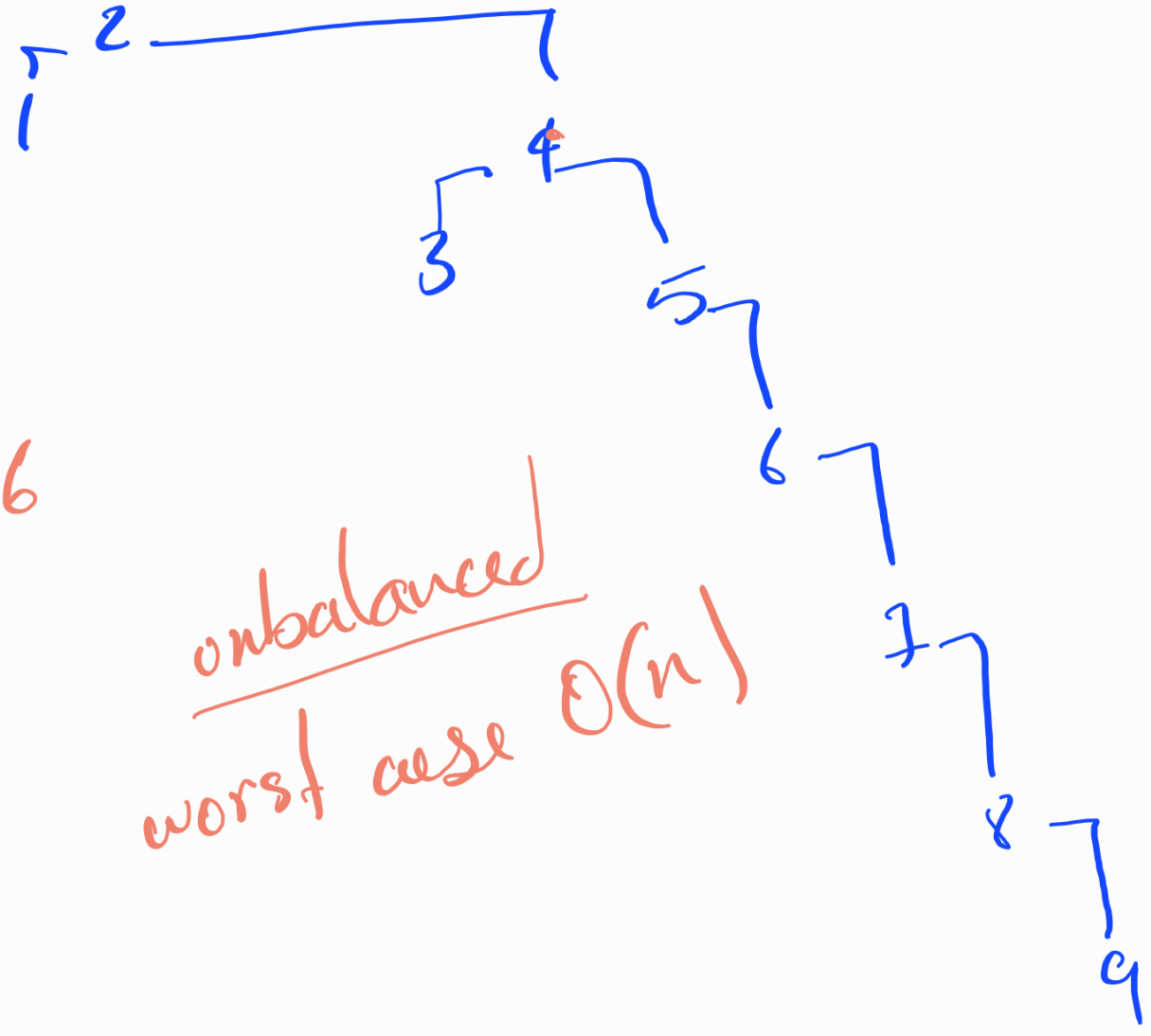
recursion(U)

rec(U/2)

rec(U/2)

rec(U/4)

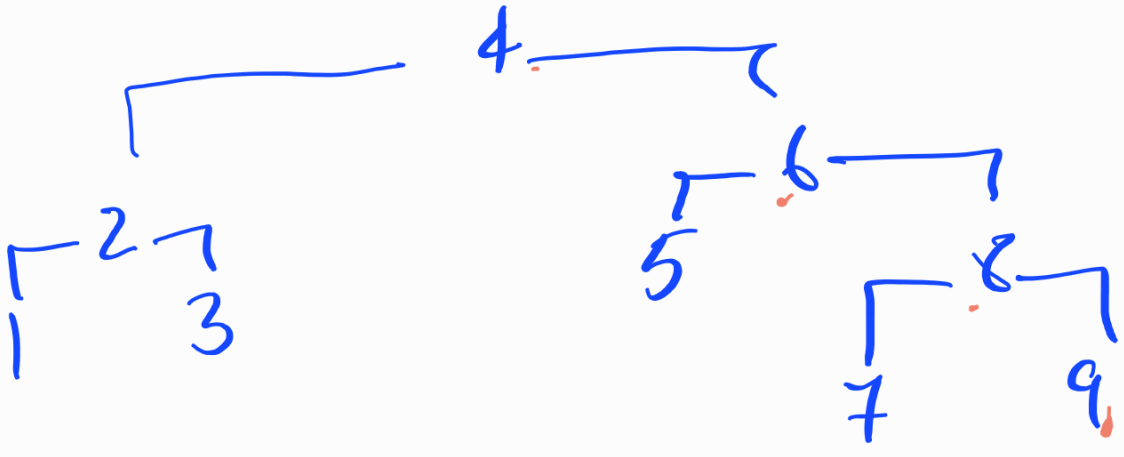
rec(U/4)



$d = 6$

unbalanced

worst case $O(n)$

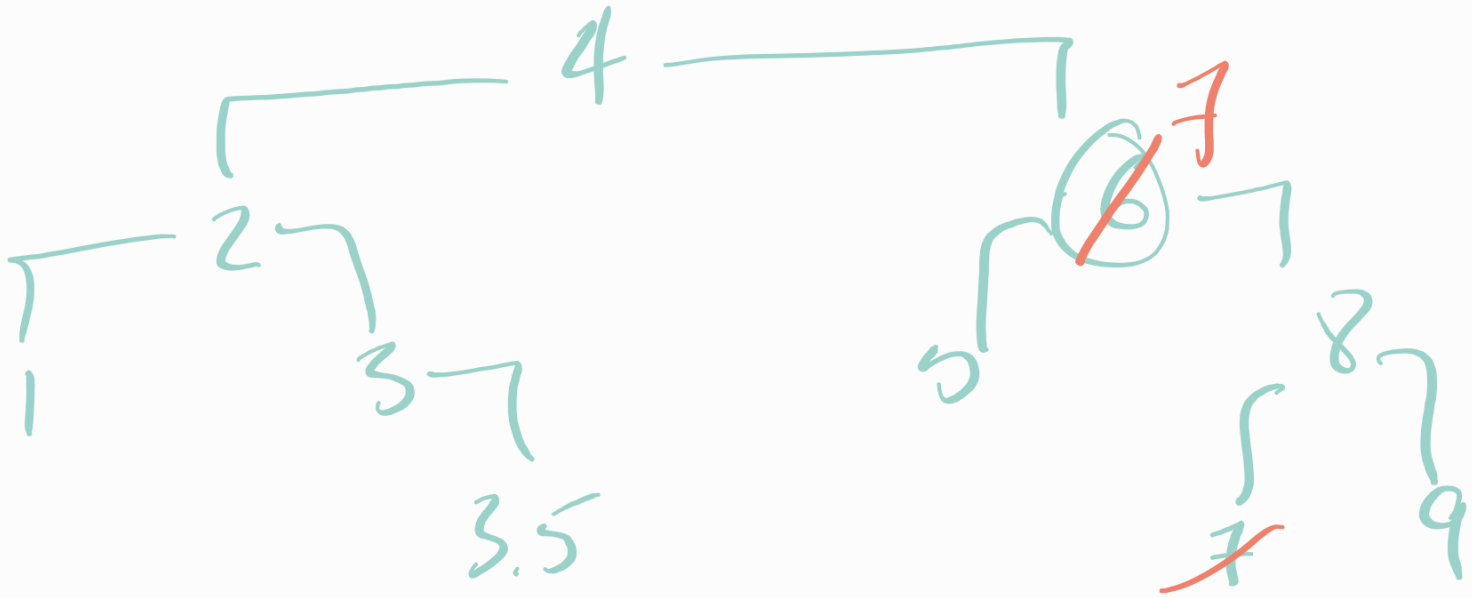


$d = 3$

balanced

$O(\log(n))$

1. Search for the node we want to insert
2. Stop the search at a external node X
3. Insert the node to the right or left of X



in-order traversal:

1 2 3 3.5 4 5 6 7 8 9

O(n)

predessor
↳ left once
↳ as many as possible to the right.

sucessor
↳ right once
↳ as many as possible to the left