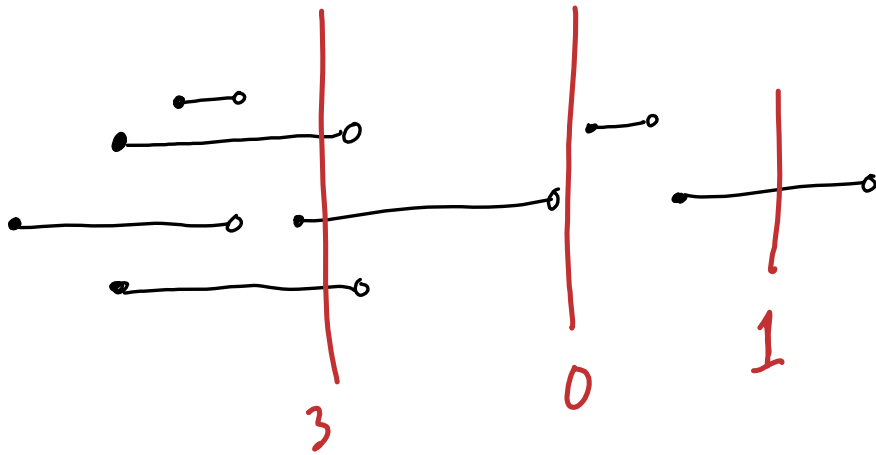
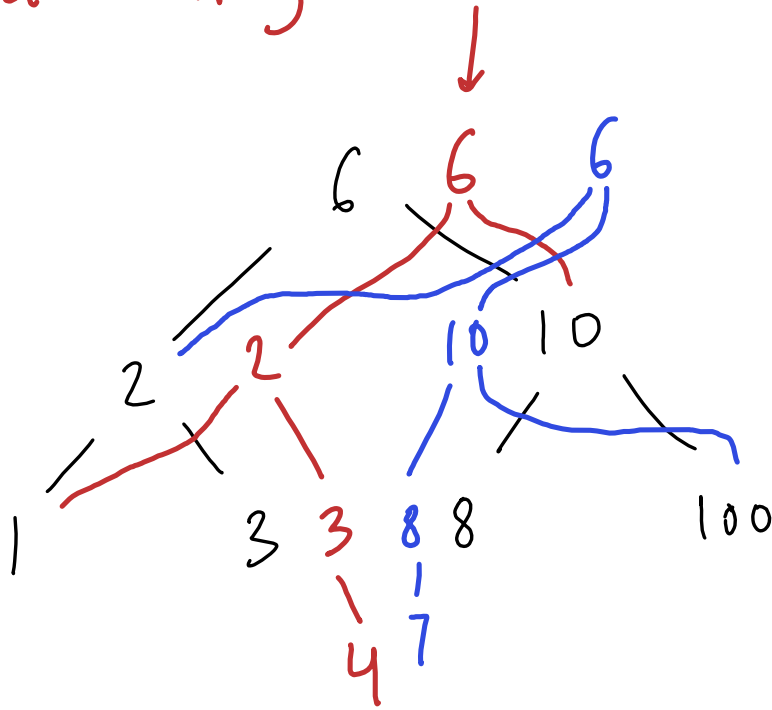


Interval Problem



Path Corring



Copy the path in $O(\log n)$

Rebalancing Schemes

- AVL
- RedBlack
- Weight Balanced (fragile parameter)
- Treap

Treap Rebalancing

two invariants

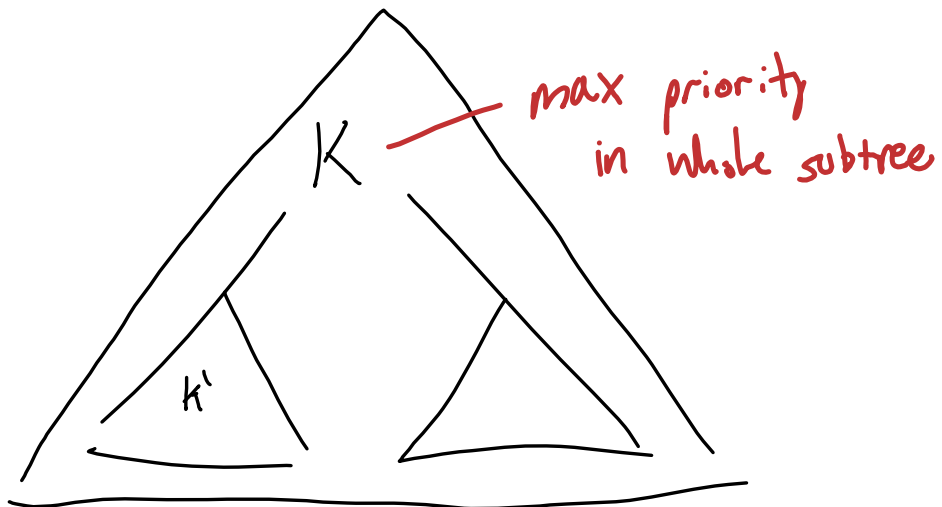
1. BST invariant (left-to-right)

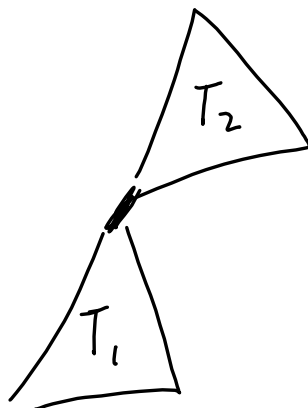
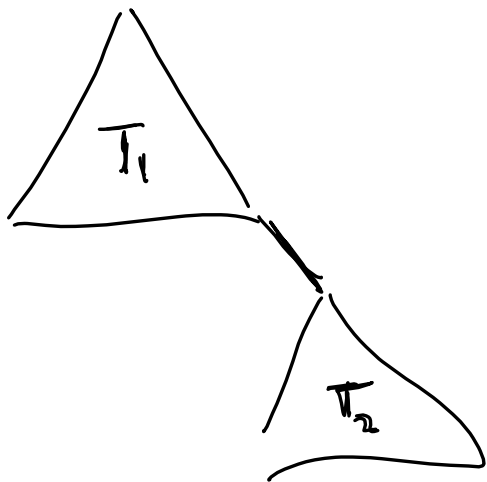
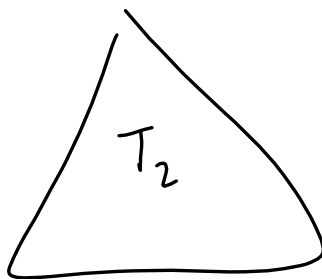
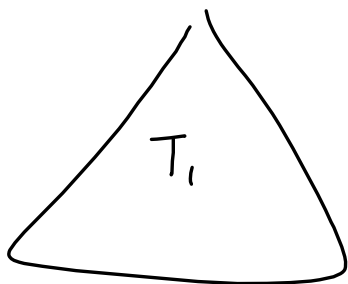
2. heap invariant on key priorities

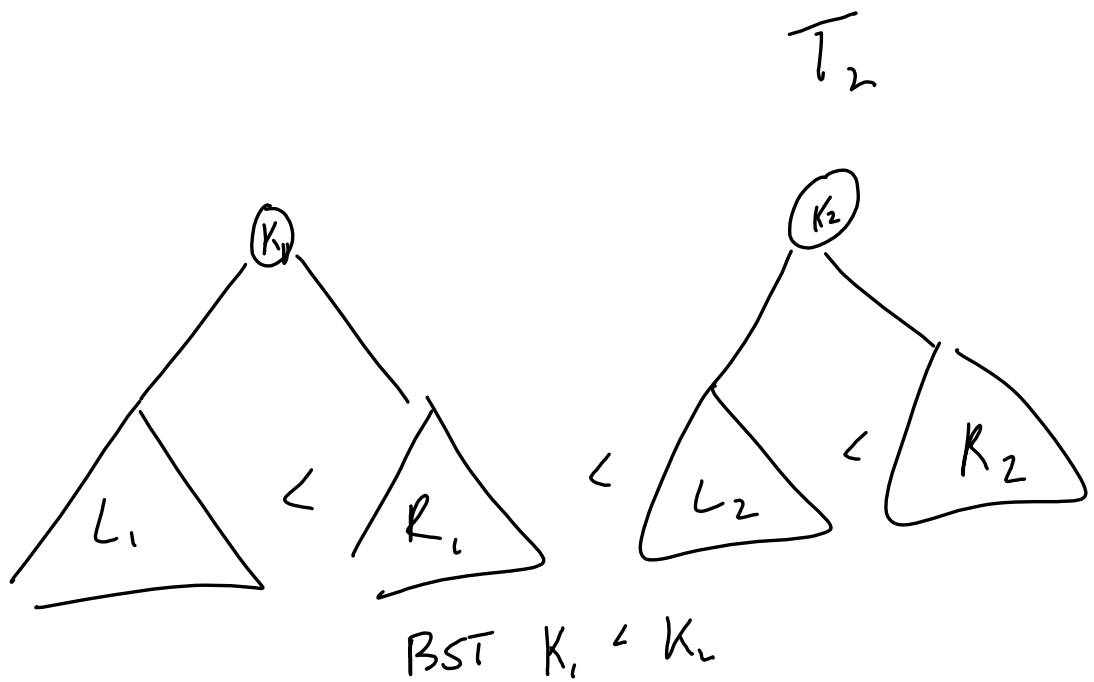
give every key a random priority $p(k)$

K above K'
iff

$$p(K) > p(K')$$







if $p(K_1) > p(K_2)$

