Priority queues

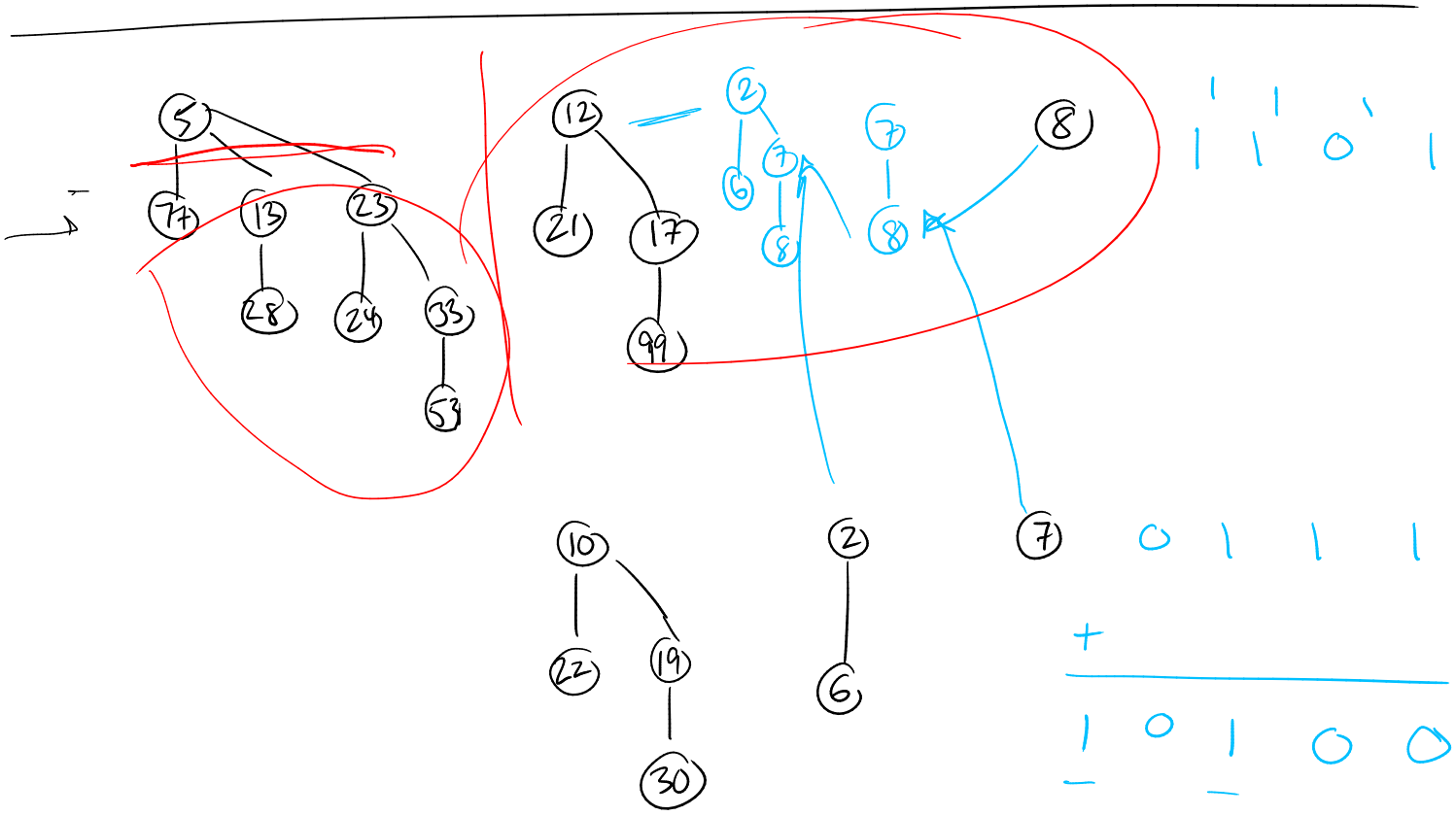
Binary heap

① Add/insert — $O(\lg n)$

② Remove min — $O(\lg n)$.

③ Merge — $O(n)$!!

2 queues → 1.



BH merge: $O(\lg n)$, just like binary addition

Add: just merge singleton BH. $O(\lg n)$ worst case,
$O(1)$ best case,
$O(1)$ amortized for n inserts
(just like binary counter).

Remove: take off min root, merge its children
w/ remaining. $O(\lg n)$.