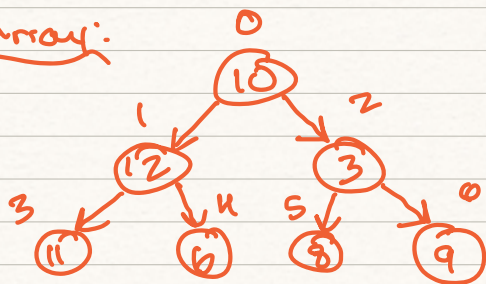


(a)

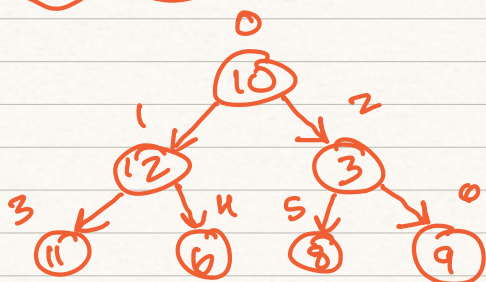
Start Array:

Saiharaj Gulati
10/11/22
HW3

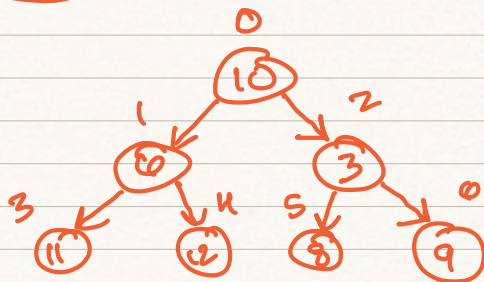


• skip leaf nodes

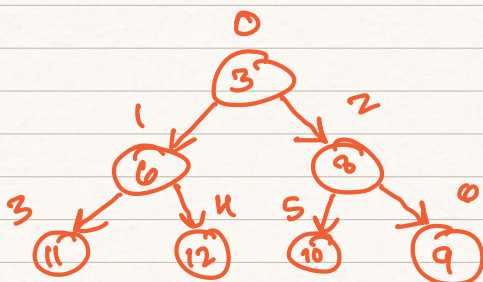
heapify(2) → nothing changes



heapify(1) → swap 12 8 6



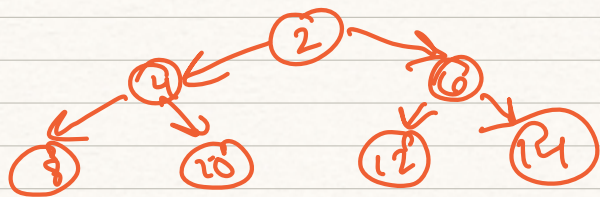
heapify(0) → swap 3 8 10
swap 10 8 9



→ min-heap ✓

(b)

Initial Configuration

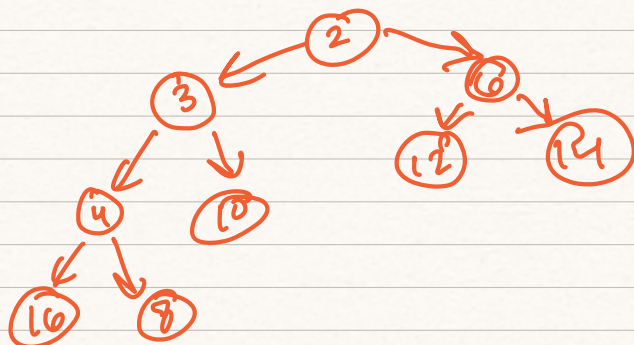


16 insert 3(1)

Insert means push to first free
bottom & bubble up

insert 3 below 8 & then switch as go up yields:

swap 3 & 8
swap 3 & 4



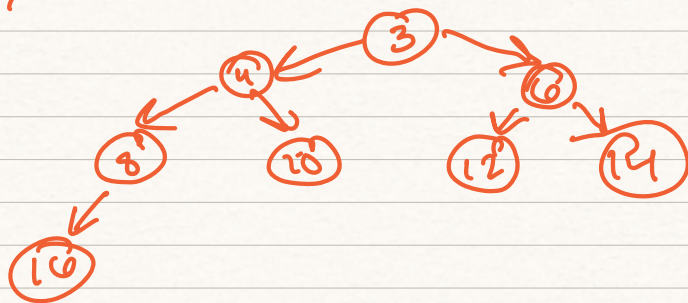
Pop

= remove top & then

put last to top & heapify (bubble down)

2 gone, & 8 at top, & swap for smallest
child

So, swap 8 & 3, 8 & 4



Pop

3 gone, put 16 @ top & then swap for
smallest child

swap 16 & 4, 16 & 8



Insert 5

• Add 5 to first free loc (child of 6) & then promote up
• swap 5 & 16, swap 5 & 8

