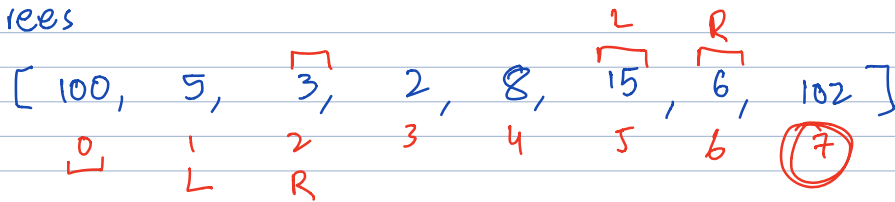
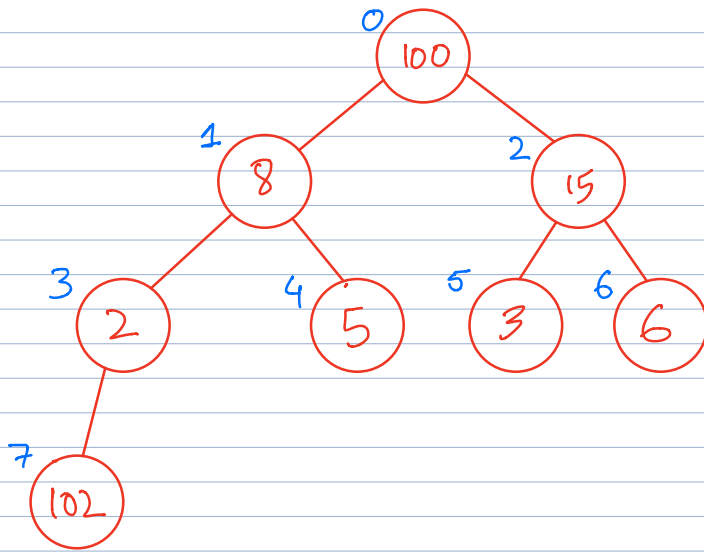


Trees



- root at position 0

- given node n: l:  $2n + 1$   
r:  $2n + 2$



heapify  
local

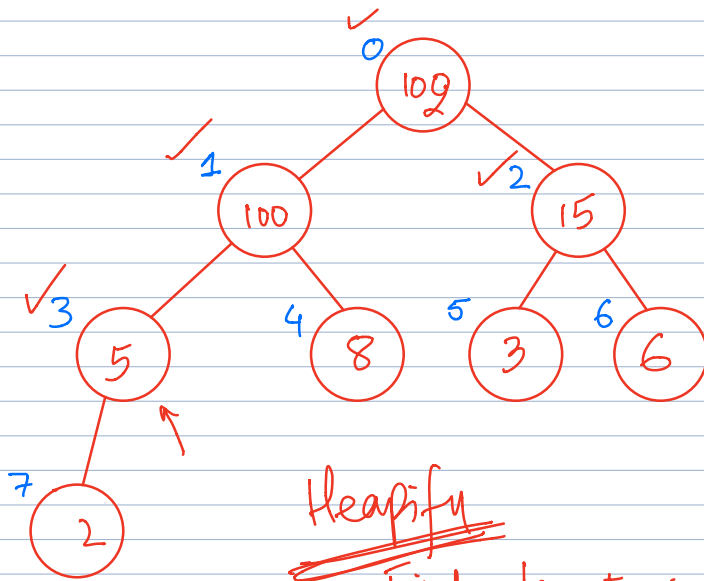
"Each node is greater than its children"  
"max heap"

vals: [ 100, 5, 3, 2, 8, 15, 6, 102 ]  
 idx: 0 1 2 3 4 5 6 7 X  
 ↑  
 root  
 ↑  
 6 7  
 ↑  
 7 8

For node n:

left child at:  $2n + 1$

right " " :  $2n + 2$



## Heapify

- Find largest in the "family"
- Swap (if not already root)
  - ↳ heapify swapped child

iterate from  $\overline{\frac{n}{2}}$  end to start  
 heapify(node)

