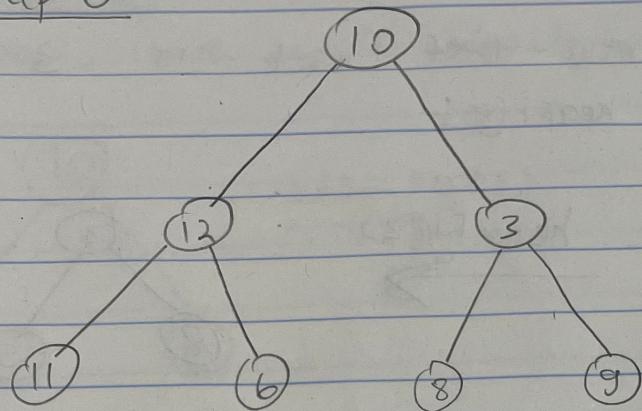


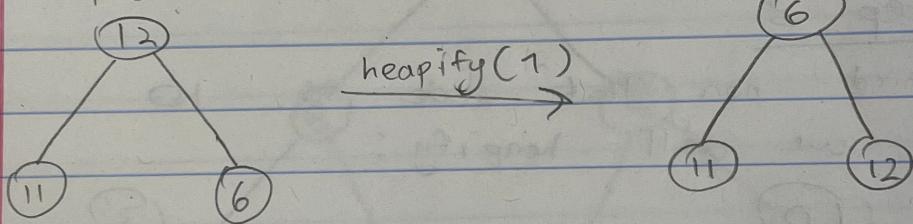
Part 4a

Step 0

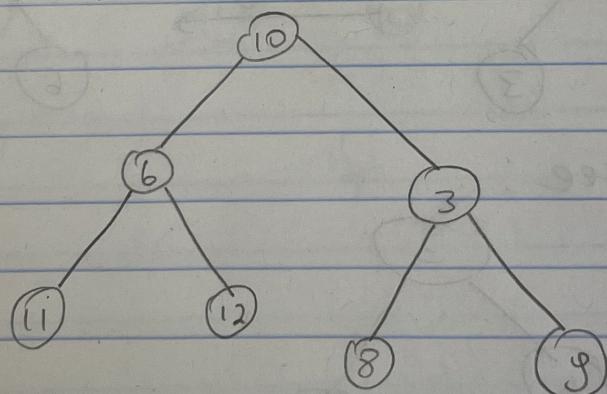


Step 1

First non leaf is 12. So, we will heapify:

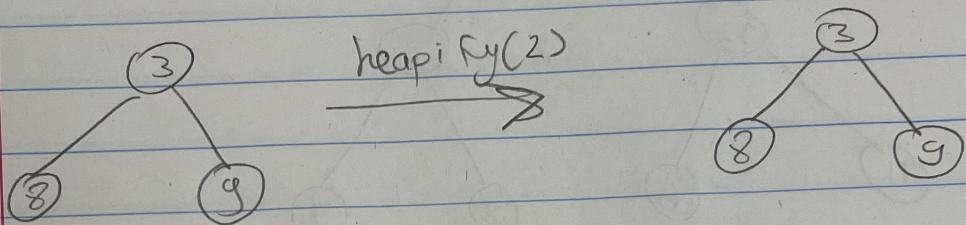


Foll Tree:



Step 2

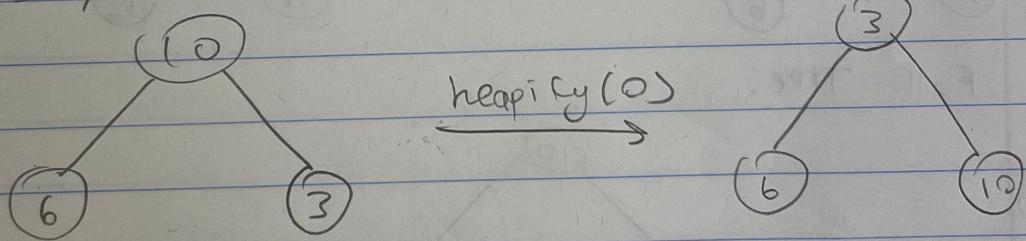
Second non-leaf node is 3. So,
we will heapify:



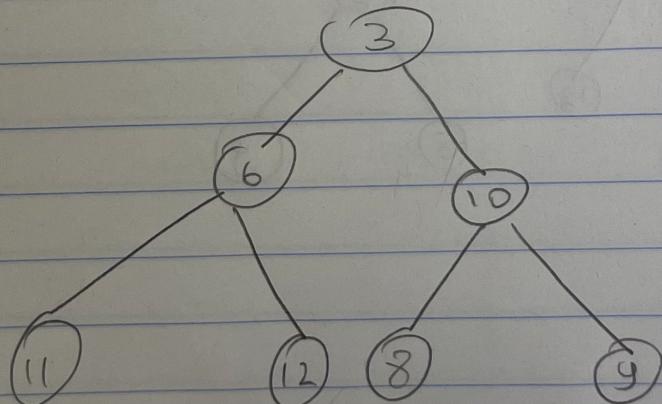
The full tree is not changed from
step 1.

Step 3

Third non-leaf node is 10
so, we will heapify:

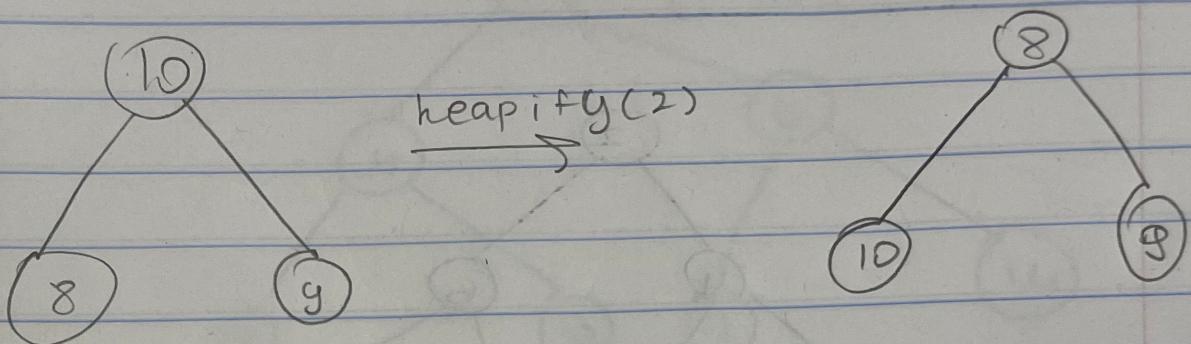


Full Tree:

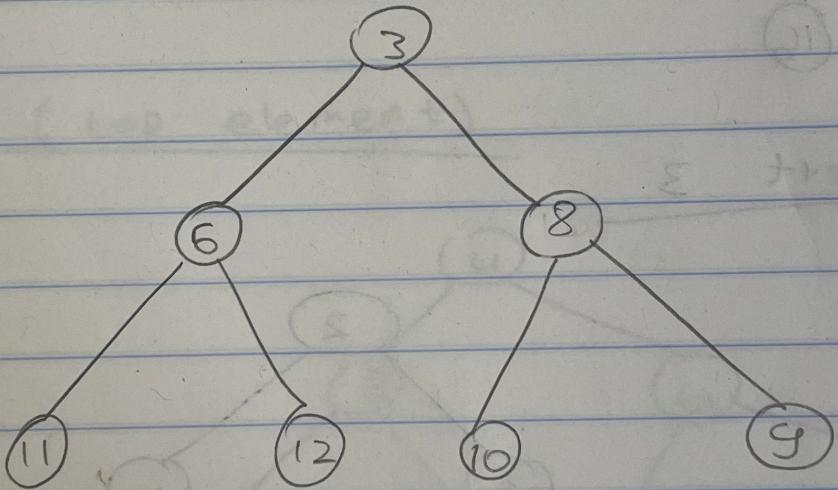


Step 4

Now, we will heapify(2)

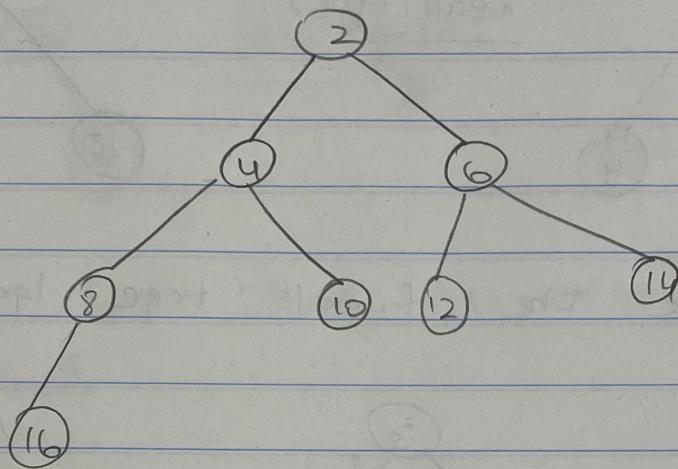


Therefore the final tree look like:

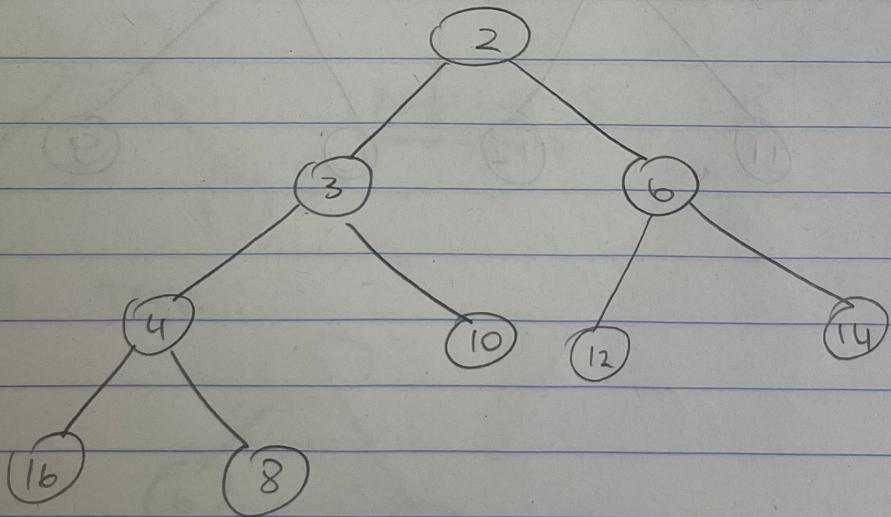


Part 4b

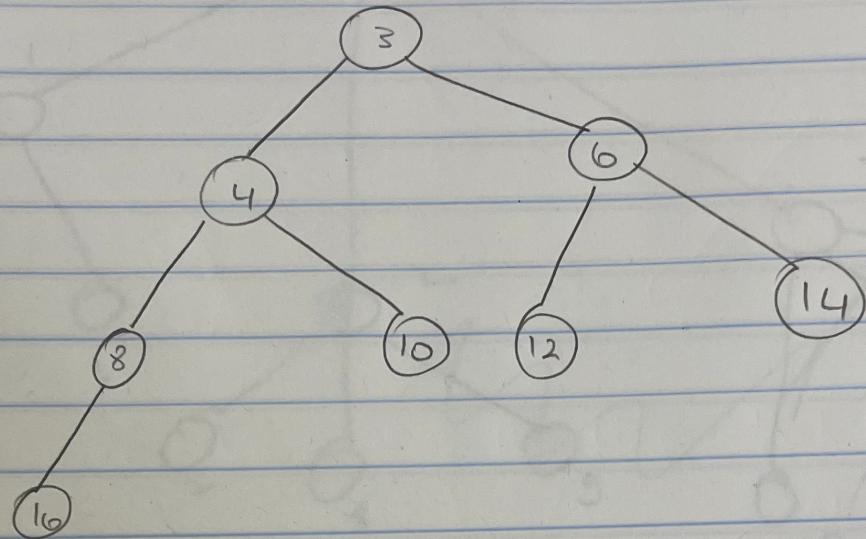
Initial Configuration



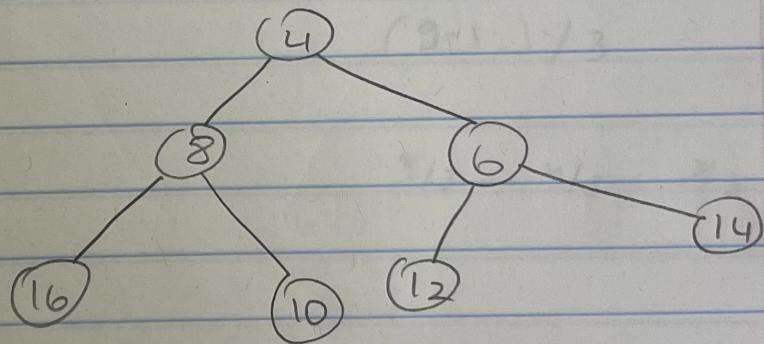
Insert 3



Pop (top element)



Pop (top element)



Insert 5

