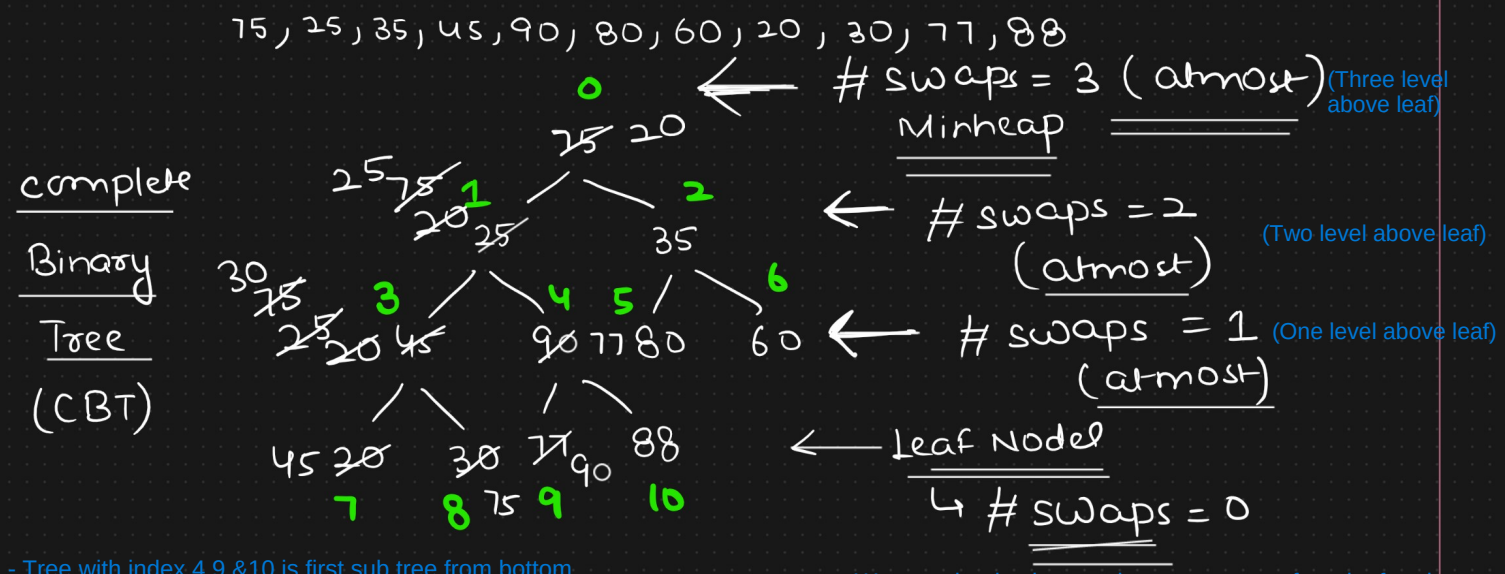
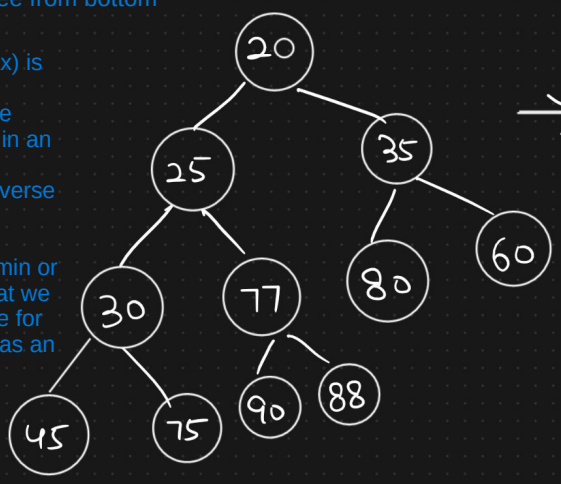
Build Heap → O(n)



We can clearly observe that as we move from leaf node to root node the atmost swaps increases with the increment of 1 in each level starting with 0 at the leaf level

- Tree with index 4,9 &10 is first sub tree from bottom
- Tree with index 3,7 & 8 is second sub tree from bottom
- Tree with index 2,5 & 6 is third sub tree from bottom
- Tree with index 1,3 & 4 is fourth sub tree from bottom
- Tree with index 0,1 & 2 is fifth sub tree from bottom

Approach of building the Heap(Min/Max) is as follows:
1. As a first build a complete binary tree using the same sequence as provided in an input
2. Start with sub tree at bottom and traverse upward
3. Perform comparison swapping continuously so that basic property of min or max heap is restored. The resultant that we get is the respective Min/Max heap tree for the Complete Binary tree that we took as an input



→ Valid Minheap