

# Report

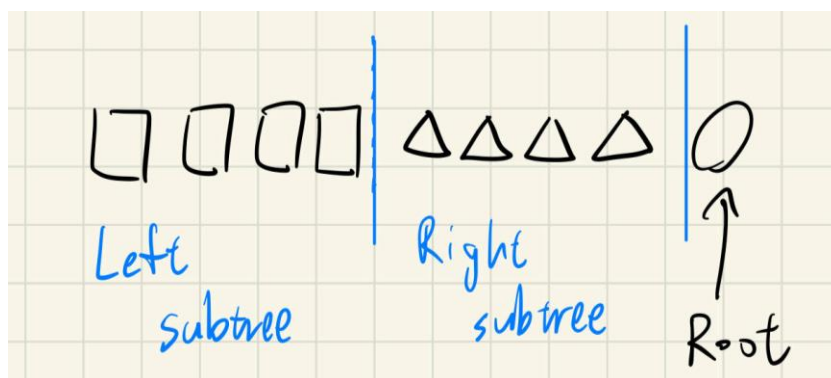
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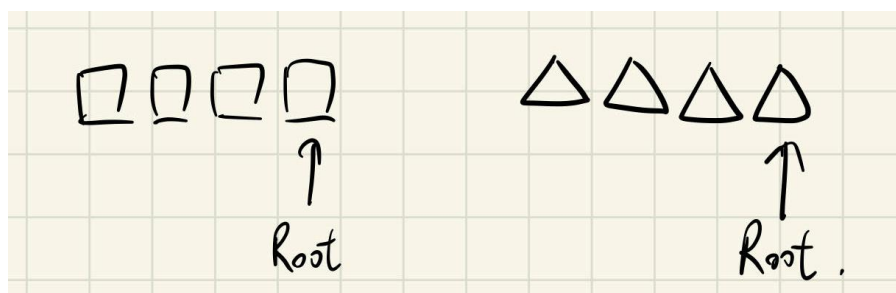
## Solution

### 1. Post-order to pre-order

- i. For post-order, the last number is the root of the tree. In order to make it pre-order, push the last number into a vector.



- ii. All the number smaller than root are in left subtree, and all the larger ones are in the right subtree. Using recursion, take every subtree as the same problem and repeat until there are no subtree.



### 2. Tree height

Passing current node height and recorded maximum height as parameters of the recursive function. Update it when the current height is larger than the recorded maximum height. (note that the tree height defined here is upside down to the definition in class)

3. Maximum value at each level

Passing the current height and a vector, which record the max value of each level, as parameters, compare the current node and the maximum value and modify when necessary.