

Binary Search Trees

- Insertion - A new key is always inserted at the leaf by maintaining the property of the binary search tree. We start searching for a key from the root until we hit a leaf node. Once a leaf node is found, the new node is added as a child of the leaf node. The below steps are followed while we try to insert a node into a binary search tree:
 - Initialize the current node (say, currNode or node) with root node
 - Compare the key with the current node.
 - Move left if the key is less than or equal to the current node value.
 - Move right if the key is greater than the current node value.
 - Repeat steps 2 and 3 until you reach a leaf node.
 - Attach the new key as a left or right child based on the comparison with the leaf node's value.
- Traversal
 - Preorder Traversal
 - The root node of the subtree is visited first.
 - Then the left subtree is traversed.
 - At last, the right subtree is traversed.
 - Postorder Traversal
 - The root node of the subtree is visited first.
 - Then the left subtree is traversed.
 - At last, the right subtree is traversed.
 - Inorder Traversal
 - The left subtree is traversed first
 - Then the root node for that subtree is traversed
 - Finally, the right subtree is traversed
 - Level Order Traversal
 - Given the root of a binary tree, return the level order traversal of its nodes' values. (i.e., from left to right, level by level).