

Appendix BT: Binary Tree Terms & Orderings

Terms:

- A **complete binary tree** is a structure in which each node, except for the nodes at the bottom layer, is directly connected to two other nodes under it, called its **children**.
- The **root** of the tree is the node at the top layer of the tree.
- The **left subtree** of a node is the tree containing the node's left child, and all of the child's children. The **right subtree** of a node is the tree containing the node's right child, and all of the child's children.
- An **ordering** of the tree visits each node in the tree exactly once in a certain order.

Orderings:

- **Preorder:** Starting at the root, first visit the root, then visit all nodes in its left subtree in preorder, then visit all nodes in its right subtree in preorder.
- **Inorder:** Starting at the root, first visit all nodes in its left subtree using inorder, then visit the root, then visit all nodes in its right subtree using inorder.
- **Postorder:** Starting at the root, first visit all nodes in its left subtree in postorder, then visit all nodes in its right subtree in postorder, then visit the root.
- **Level Order:** Like reading order. Start at the top row, then read all nodes from left to right on each row.
- For the **Right-to-Left** version of an ordering given above, read the corresponding description above, but swap all occurrences of the word "left" and "right".