Here's a breakdown of tree terminology and concepts:

### Tree Structure:

- Tree: A hierarchical data structure with nodes connected by edges. It has a unique node called the root from which all other nodes descend.

- Subtree: A portion of a tree that itself forms a tree. Any node and its descendants form a subtree, adhering to the same structure as the main tree.

### Node Degree and Leaf Node:

- Degree of a Node: The number of edges or branches emerging from a node. For example, if a node has two children, its degree is 2.

- Leaf Node (Terminal Node): A node with a degree of 0, meaning it has no children. Leaf nodes are the end points of a tree.

### Levels and Generations:

- Level of a Node: The distance from the root to that node, with the root being at level 0, its children at level 1, and so on.

- Generation: The generation of a node can be calculated as `level + 1`. Nodes on the same level are considered part of the same generation.

### Parent-Child Relationship:

- Parent: A node connected directly above another node.

- Child: A node connected directly below a parent node. Each node can have one parent and multiple children.

### Ancestors and Descendants:

- Ancestor: Any node on the path from the root to a given node, including the root itself. The root node is considered an ancestor to all other nodes.

- Descendant: Any node that exists in the subtree of a given node, extending downward to leaf nodes.

### Path and Branch:

- Path: A sequence of nodes and edges connecting two nodes in the tree.

- Branch: A specific path that starts from the root and ends at a leaf node.

### Height and Depth:

- Height (Depth): The height of a tree is the length of the longest path from the root to any leaf. Alternatively, depth can also refer to the number of levels in the tree.

### Siblings:

- Siblings: Nodes that share the same parent node.

### Binary Tree:

- Binary Tree: A special type of tree in which each node has at most two children, commonly referred to as the left child and right child.