

# Introduction to Non-Linear Data Structures :->

Trees :-> (Folders in PC)

It is a non-linear data structure containing nodes with pointer to its children nodes.

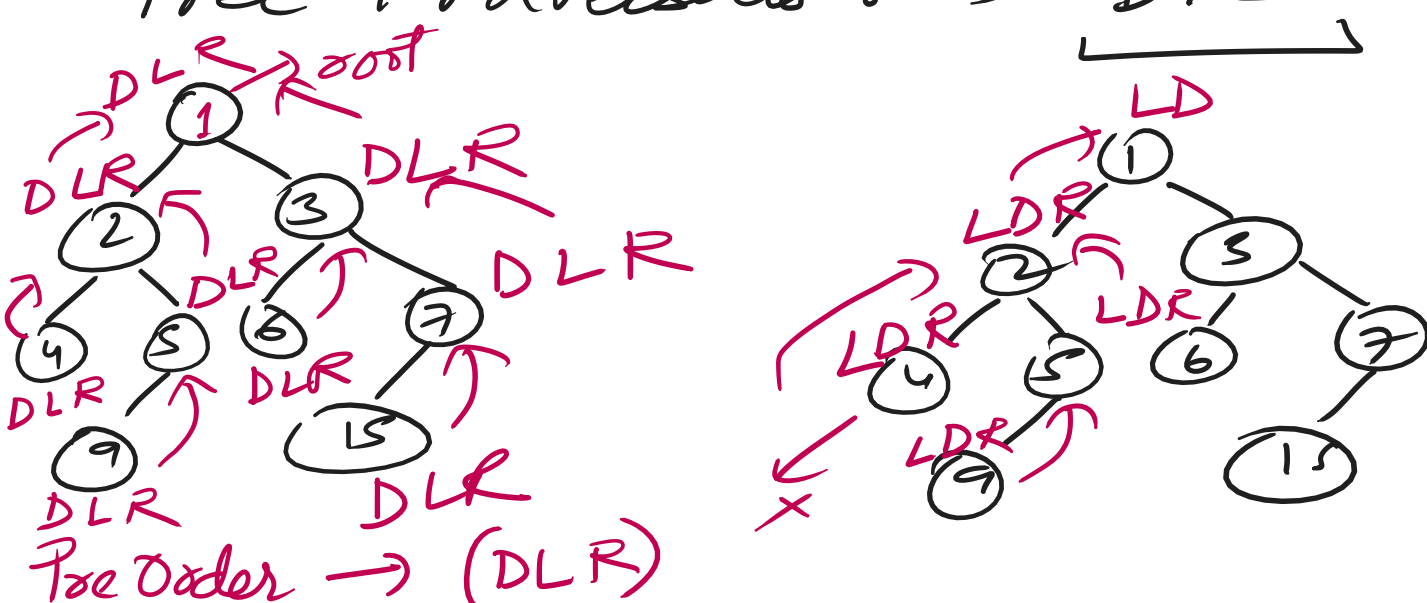
\* Normal Tree

\* Binary Trees :->

```

class TreeNode {
    int data;
    TreeNode left, right;
}
    
```

## Tree Traversals :-> DFS



Pre Order -> (DLR)

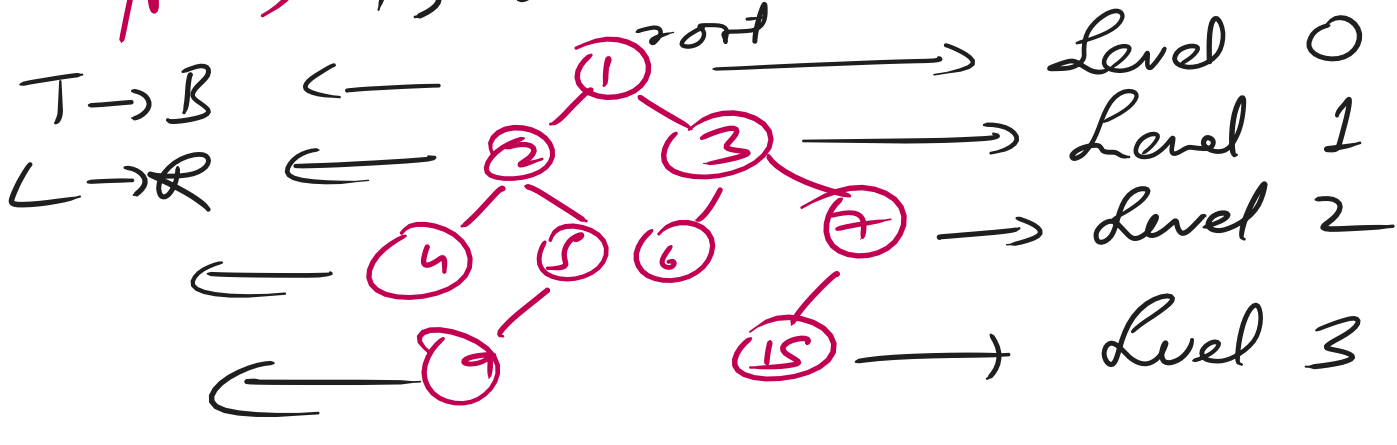
O/p -> 1, 2, 4, 5, 9, 3, 6, 7, 15

In Order -> (LDR) -> BST

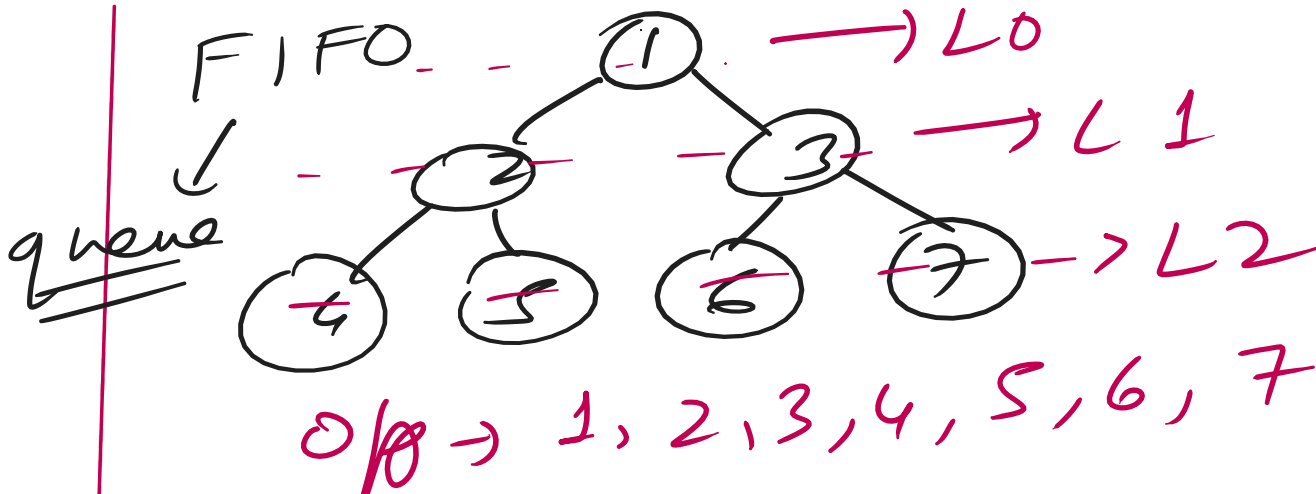
O/p -> 4, 2, 9, 5, 1, 6, 3, 15, 7

Post Order -> (LRD)

O/p -> 4, 9, 5, 2, 6, 15, 7, 3, 1



## Breadth First Search Traversal :->



Level Order Traversal  
Top to Bottom, Level By Level,  
Left to Right

Infosys, Capgemini, Accenture  
Java -> Oracle (Memory Leak)

Create a Binary Tree that can accept any datatype as the value of the Node & write methods for the DFS traversals.

C++ templates

Java \* Generic

Youtube Channel? Coders Arcade

Free Code Camp VTU Karnataka

DSA -> C++ Love Babbar -> Hindi

+uf (Striver) -> English

take you forward Kunal Kushwaha

Java -> Abdul Bari

② Question on Binary Trees

DSA in Java :->

\* Collections Framework package -> java.util

MxH -> ArrayList, LinkedList, List

↑ -> Queue, Priority Queue

Heap -> Map, HashMap, Linked HM

MxH -> Set, TreeSet, HashSet

Greedy Algos + Graphs