

# **CSCI-UA-102-011-Spring-2025**

Recitation - 5

## Note

- Midsem preparation will be discussed by the professor during class
- Please read the textbook before and after class, recitation for better understanding

## Agenda

- Recursion and Tree Traversals
- 8.4 (BFS is Self Study)
- Problem Statements
- Quiz (Last 20 mins)

```
class Node {  
    int data;  
    Node left, right;  
    public Node(int item) {  
        data = item;  
        left = right = null;  
    }  
}
```



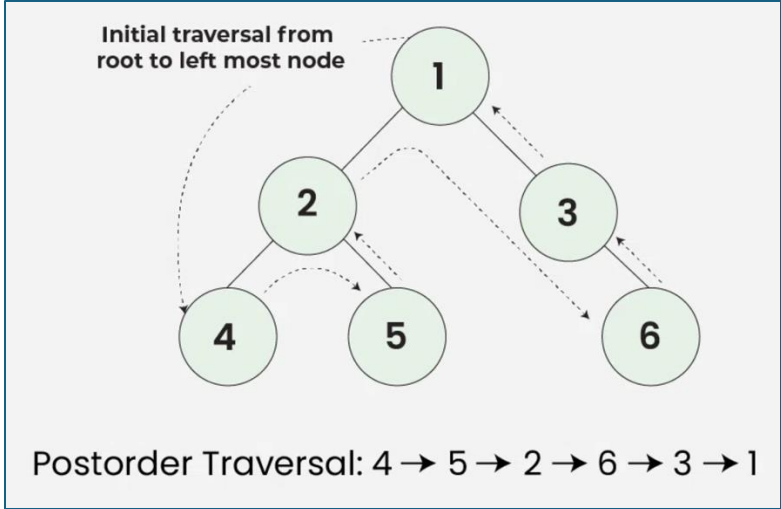
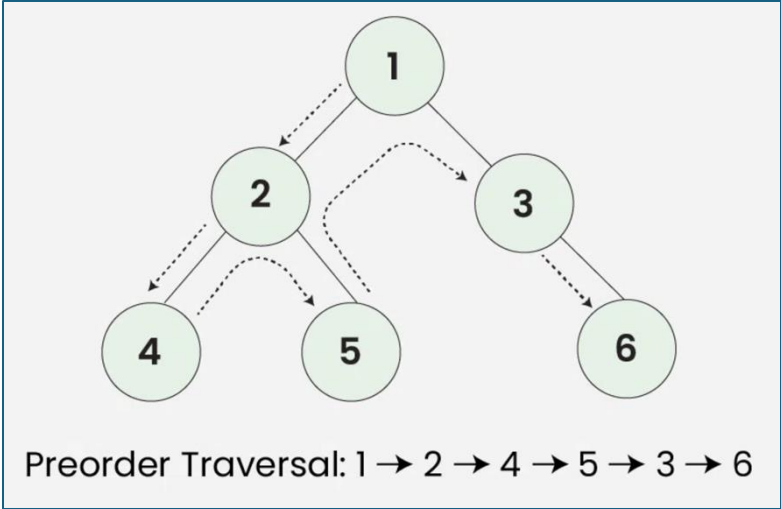
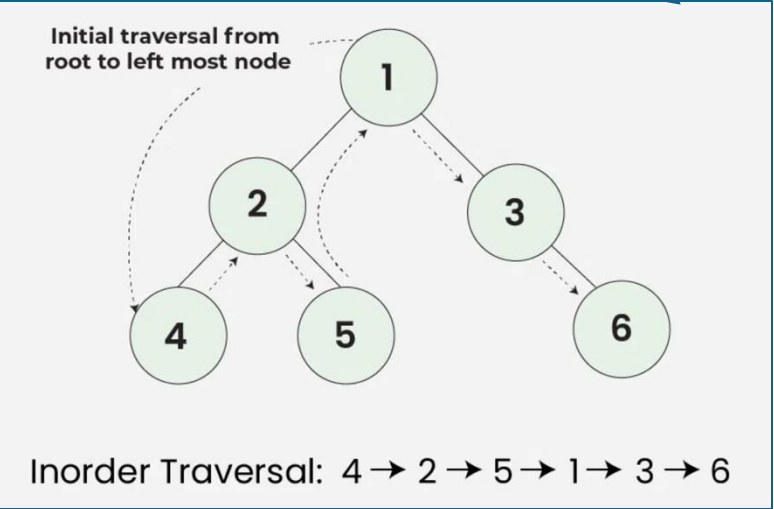
Tree Node Structure

Trees

DFS (Depth First Search)

1. Inorder (Left -> Root -> Right)
2. Preorder (Root -> Left -> Right)
3. Postorder (Left -> Right -> Root)

BFS (Breadth First Search)



```
static void inorderTraversal(Node node) {  
    if (node == null)  
        return;  
    inorderTraversal(node.left);  
    System.out.print(node.data + " ");  
    inorderTraversal(node.right);  
}
```

```
static void preorderTraversal(Node node) {  
    if (node == null)  
        return;  
    System.out.print(node.data + " ");  
    preorderTraversal(node.left);  
    preorderTraversal(node.right);  
}
```

```
static void postordTraversal(Node node) {  
    if (node == null)  
        return;  
    postorderTraversal(node.left);  
    postorderTraversal(node.right);  
    System.out.print(node.data + " ");  
}
```

## Problem Statements

- Q5.22
- Q5.24
- Q8.2
- Q8.24