

# Nucleus

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Java Foundation & Data Structures

Lecture 19 : Binary Trees



Saturday, 8 July 17

## Doubts from Last Class ?

*Any doubts on assignment ?*

A tree walk or traversal is a way of visiting all the nodes in a tree in a specified order

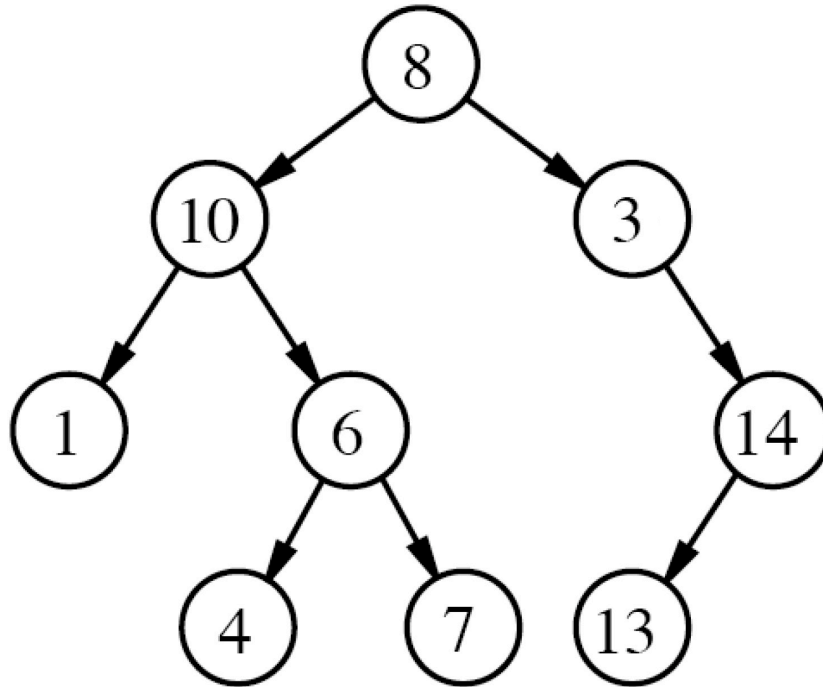
# Lets code these tree traversals

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- Preorder Traversal
- Postorder Traversal

# Binary Trees

# Binary Trees



# Binary Tree Node

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```
Public class node{  
    int data;  
    node left;  
    node right;  
}
```



# Lets see how to input and output Tree

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- Write a function to take tree as input from user
- Print out a tree

# Lets discuss a problem

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- Height of the tree
- Find diameter of a binary tree

# Your Turn

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- Find a node in Binary Tree
- Mirror a binary tree

# Another Traversal for Binary Trees

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- Inorder Traversal

# Building tree using Preorder and Inorder traversal

# Building tree using Postorder and Inorder traversal

# Building tree using Preorder and Postorder traversal

# BT - Daughters' Ages

Local Berkeley professors Dr. X and Dr. Y bump into each after a long time.

X        hey! how have you been?

Y        great! I got married and I have three daughters now

X        really? how old are they?

Y        well, the product of their ages is 72, and the sum of    their ages is  
         the same as the number on that building over there

X        right, ok ... oh wait ... hmm, I still don't know

Y        oh sorry, the oldest one just started to play the piano

X        wonderful! my oldest is the same age!

How old are the daughters?





Thank you

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