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# Crux

## Lecture -16

Data Structures -6

BST

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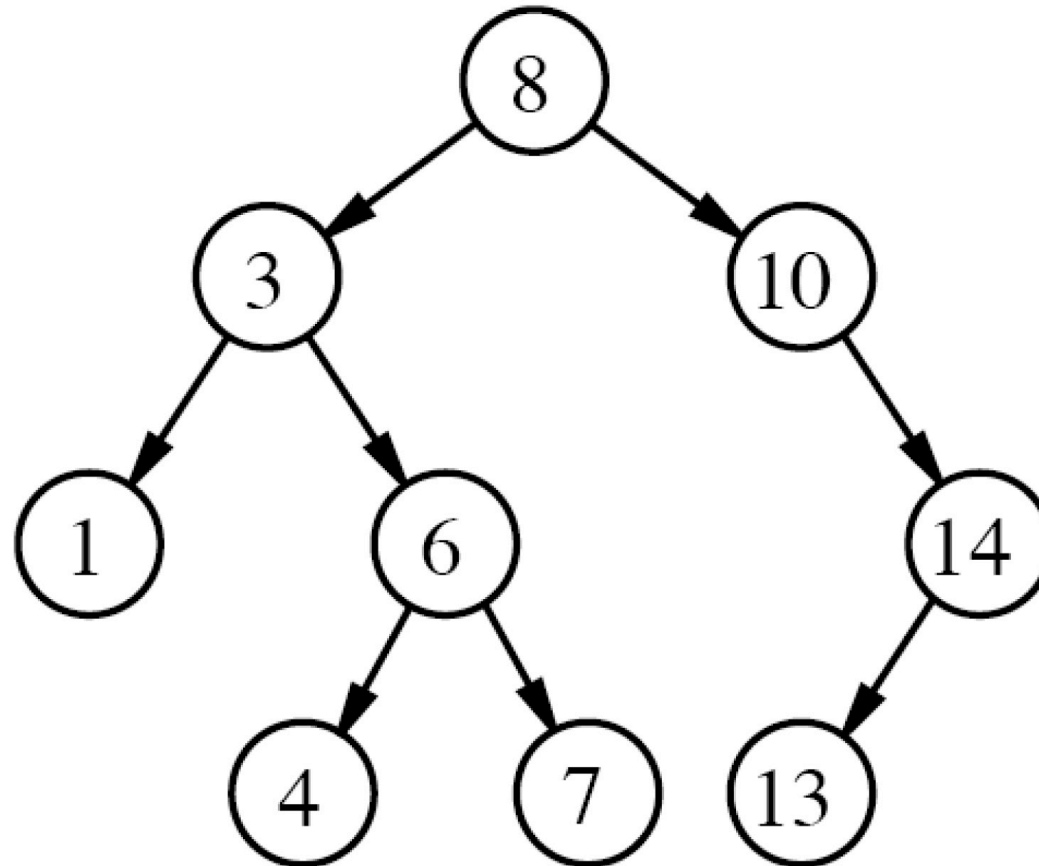
# Assignment ?

# Binary Search Trees

# BST Properties

1. Every Node in left subtree has value less than or equal to root
2. Every Node in right subtree has value greater than or equal to root

# Binary Search trees



# Binary Search Trees

```
class BinarySearchTree{  
    // accessor methods  
    int size();  
    boolean isEmpty();  
    Node findElement(Object element);  
    Object root() throws BSTEmptyException;  
    // update methods  
    void addElement(Object element);  
    void removeElement(Object element) throws  
        BSTEmptyException;  
}
```

# Lets discuss few problems

1. Find node in BST
2. Print BST elements in range K1 and K2

## Your Turn

1. Given a binary tree check if its BST
2. Convert a BST into sorted Linked List



# Build a BST using a sorted array

# Balanced/unbalanced Tree

# Balanced Trees

1. AVL Tree
2. Red Black Trees
3. 2-4 Trees



Thank You !! ☺

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