

# Trees – 3

## Deletion

- leaf node**
- node with one child**
- node with two children**

# Deleting a node from a Binary Search Tree

Deletion of a node is not so straightforward as is the case of insertion. It would depend on which particular node is being deleted.

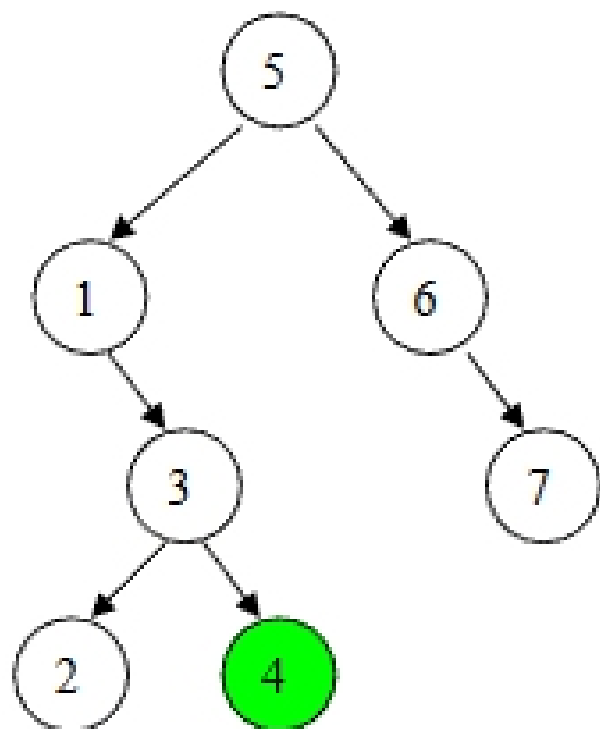
In fact, we note that there can be three separate cases and each case needs to be handled somewhat differently. The various cases are:

- (1) deletion of a leaf node,
- (2) deletion of an internal node with a single child (either a left or right subtree),
- (3) deletion of an internal node with two children (having both left subtree and right subtree. )

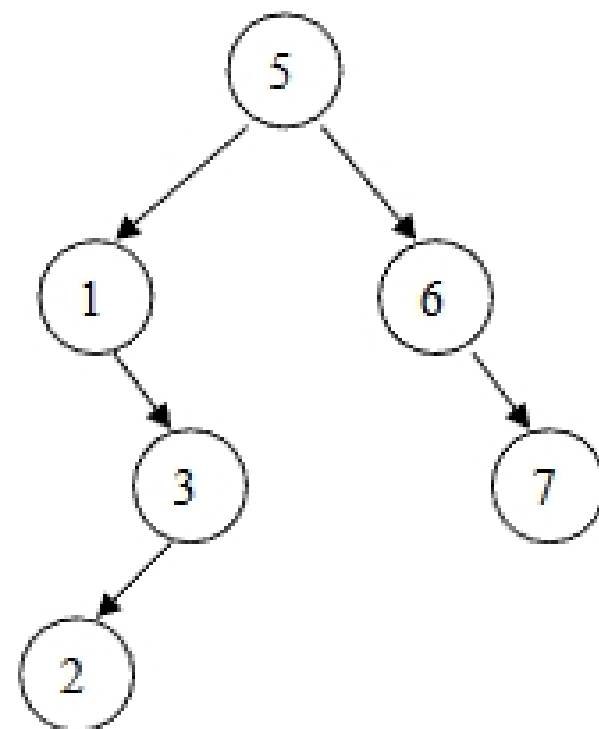
We'll examine each case separately:

## Deletion of a leaf Node

Since a leaf node has empty left and right subtrees, deleting a leaf node will render a tree with one less node but which remains a BST. This is illustrated below:



A BST with a leaf node  
Marked for deletion.



Still a BST