Lecture 8
Binary Search Tree and Trie
Exercises

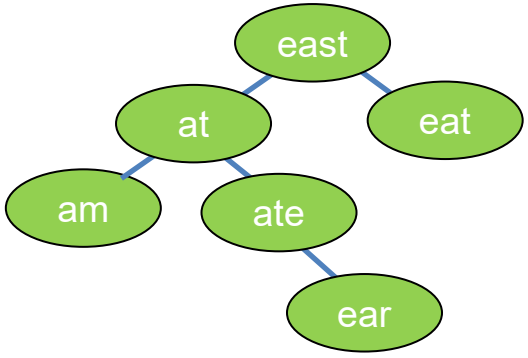
Department of Computer Science
Hofstra University

Binary Tree

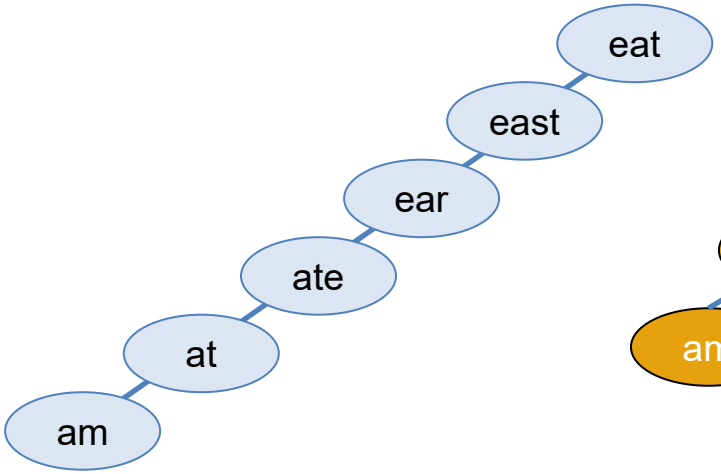
- For a binary tree of height h, what is its minimum and maximum number of leaves and total nodes?

AVL Tree

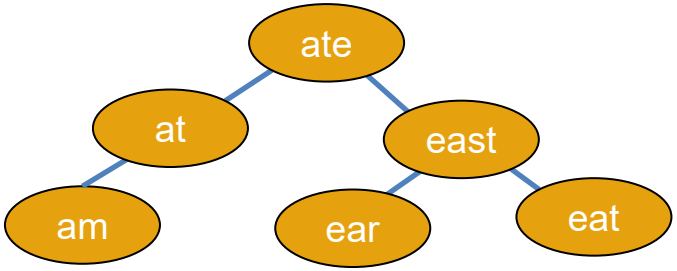
- Which is an AVL tree (Balanced BST)?



(a)



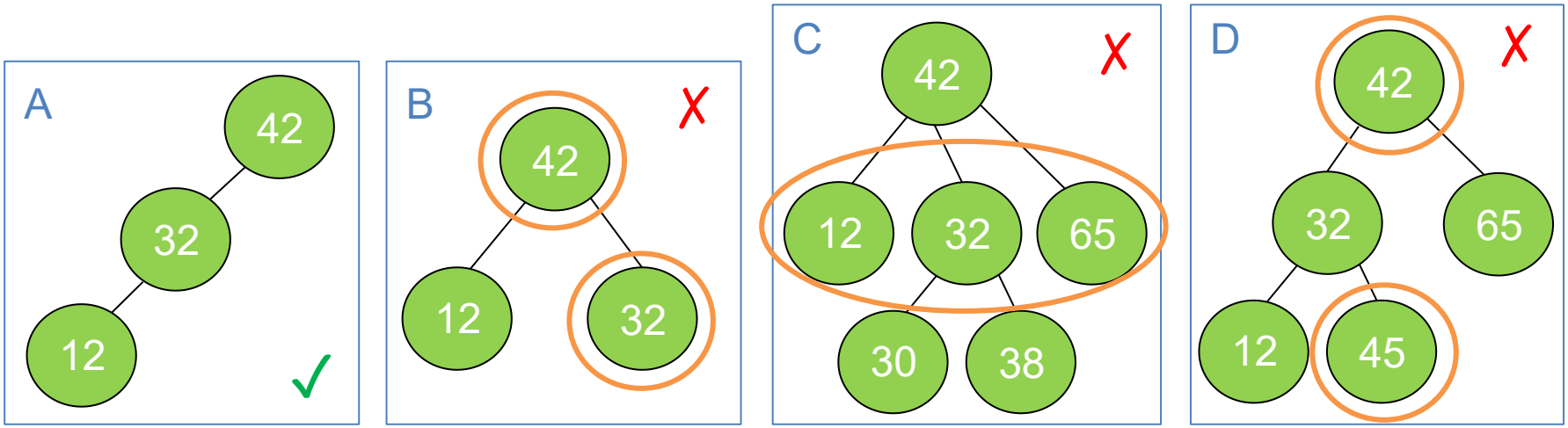
(b)



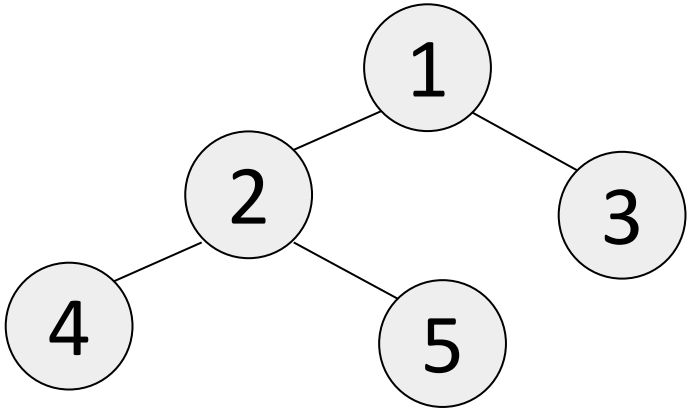
(c)

Binary Search Tree (BST)

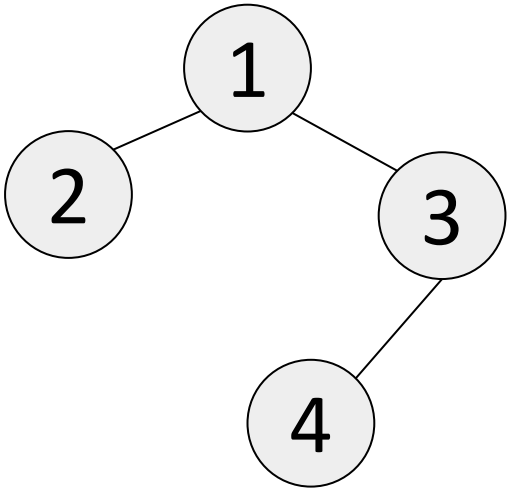
- Which of the following is a BST?



Pre, In and Post Order Traversal

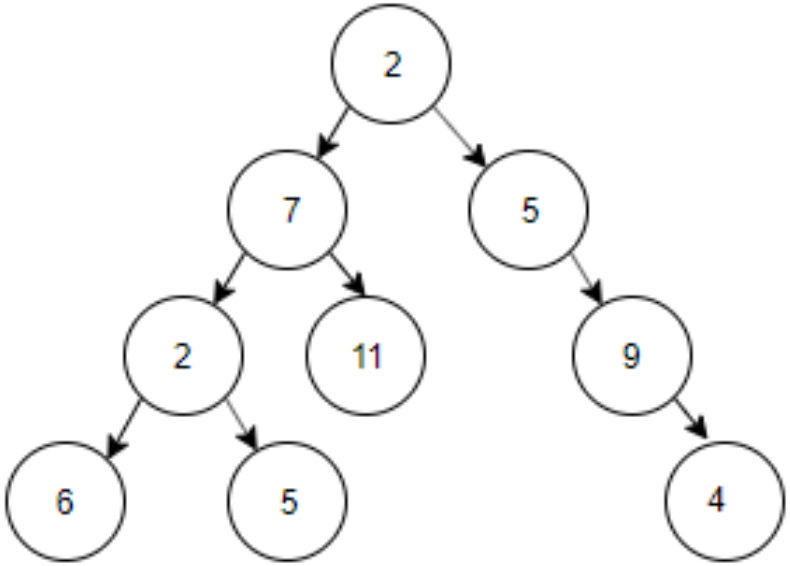


- Pre-Order:
- In-Order:
- Post-Order:



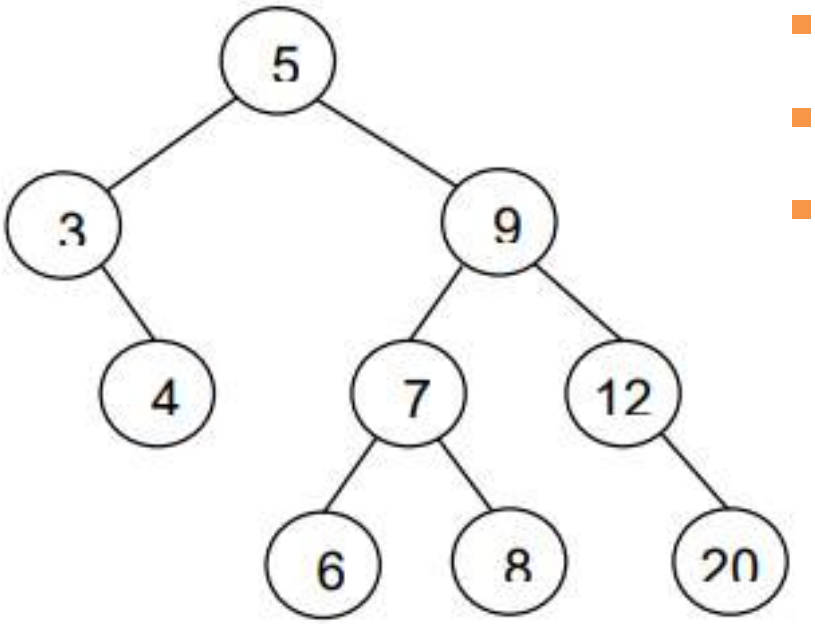
- Pre-Order:
- In-Order:
- Post-Order:

Pre, In and Post Order Traversal



- Pre-Order:
- In-Order:
- Post-Order:

Pre, In and Post Order Traversal



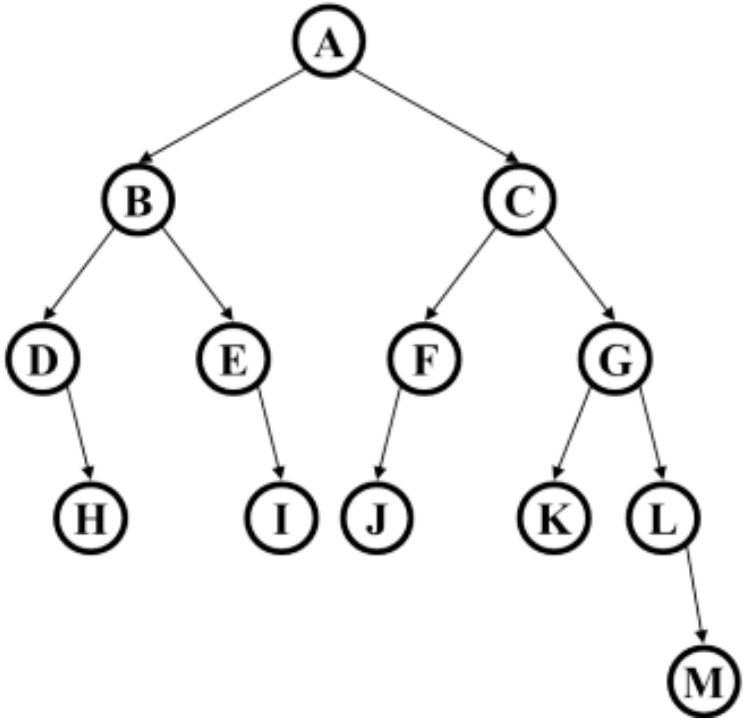
- Preorder:
- In-order:
- Post-order:

BST

- The following numbers are inserted into an empty binary search tree in the given order: 10, 1, 3, 5, 15, 12, 16. What is the height of the binary search tree (the height is the maximum distance of a leaf node from the root, i.e. a tree with a single root node has height 0.)?

BST

- Assume this tree is a binary search tree. What is the maximum number of nodes that could be added to the tree without increasing its height?



BST

- Suppose the numbers 7, 5, 1, 8, 3, 6, 0, 9, 4, 2 are inserted in that order into an initially empty binary search tree. What is the in-order traversal sequence of the resultant tree?

Quiz: Tree Derivation

- Given: Pre-order traversal of nodes is 1, 2, 4, 5, 3, 6; In-order traversal of nodes is 4, 2, 5, 1, 3, 6. What is the post-order traversal of nodes?

Quiz: Tree Derivation II

- For a binary tree, its pre-order traversal of nodes is ABCDEFG; its in-order traversal of nodes is CDBAEGF. Construct the tree. What is the post-order traversal of nodes?