جامـــــعة المـــــستقبل
AL MUSTAQBAL UNIVERSITY

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المحاضرة الخامسة

Binary Search Tree

المادة: Searching and Sorting Algorithms
المرحلة: الثانية
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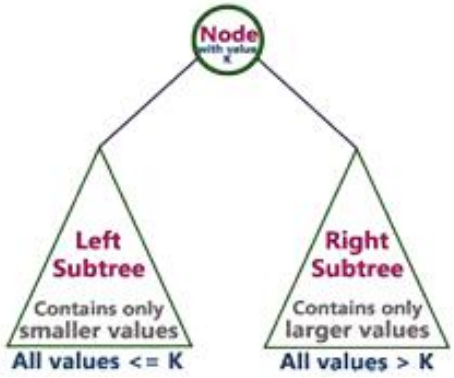
3.1 Binary Search Tree

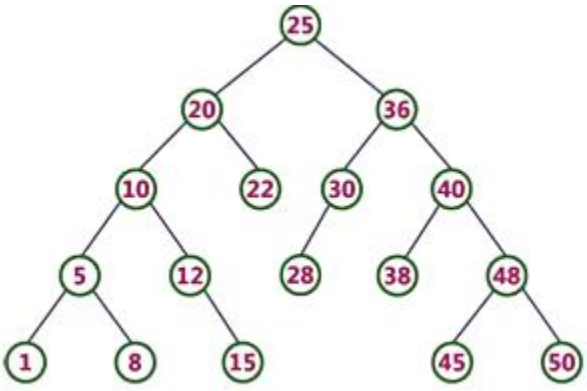
Binary Search Tree is a binary tree in which every node contains only smaller values in its left subtree and only larger values in its right subtree.



Note: Every Binary Search Tree is a binary tree but NOT all the Binary Trees are binary search trees.

Example:

The following tree is a Binary Search Tree. In this tree, left subtree of every node contains nodes with smaller values and right subtree of every node contains larger values.



3.2 Insertion to BST

Example: Draw the BST(**Binary Search Tree)**

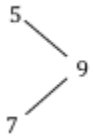
for the following elements;

5,9, 7, 3,8,12, 6, 20

1- Take (5) as a root.

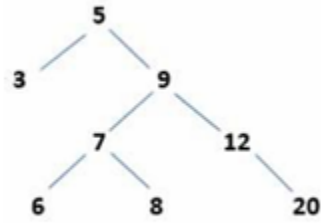
2- Take (9) as a right child because it is greater than the root.

3- The next element (7) is greater than the root so we choose the right branch since it less than 9 so it will be the left child of 9.



4- Take 3 which it less than 5 put it in the left side.

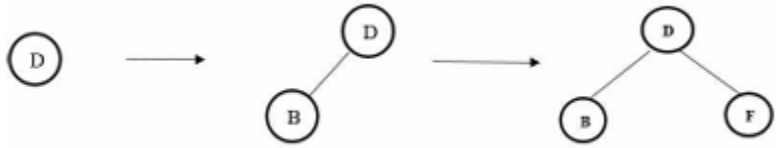
Continue in the same way take the new element and compare it with the tree started from the root , then we will get the final tree as below :

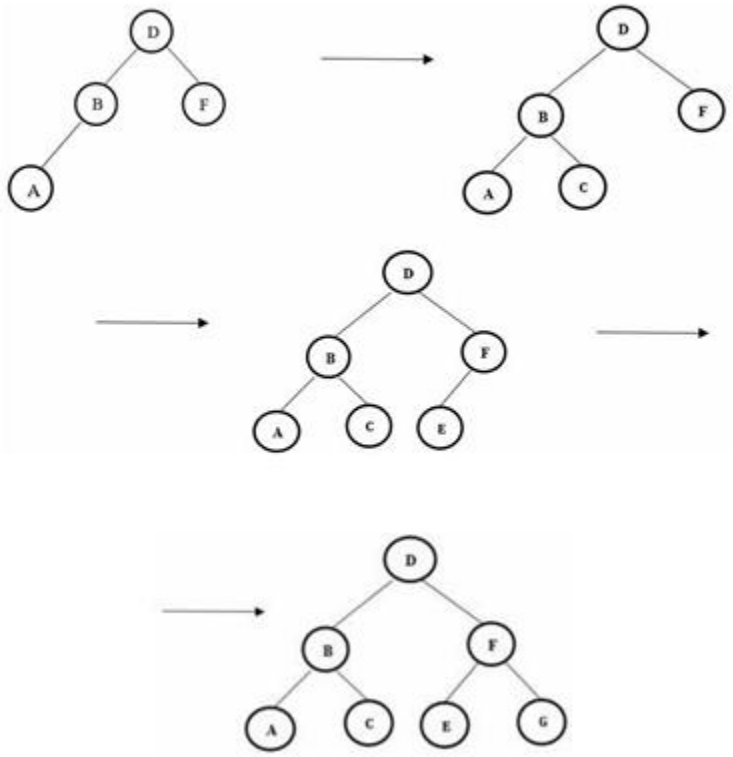


Example: draw the BST for those elements.

NOTE: the ascii code for A=65.

D, B, F, A, C, E, G





Home work:

Draw the BST for those elements. 1. 2. B, A, D, C, G, F, E A, B, C, D, E, F, G