5.9

Forests

Forests

- Definition: A forest is a set of $n \geq 0$ disjoint trees.

Three-tree forest

- Operations :
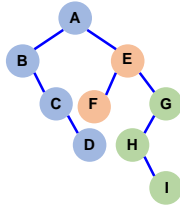 ◦ Transforming a forest to binary tree
  ◦ Forest traversals

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5.9.1 Transform a Forest to a Binary Tree

- Apply left child-right sibling approach
  ◦ Convert each tree into binary tree
  ◦ For each tree root, make a rightChild link to the tree root on its right.

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Transform a Forest to a Binary Tree

- Apply <u>left child-right sibling</u> approach
  ◦ Convert each tree into binary tree
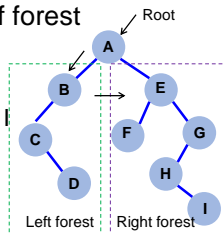 ◦ For each tree root, make a rightChild link to the tree root on its right.

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Forest Traversals

5.9.2

- Assume we have a forest **F** and the corresponding binary tree **T**, then
- The *Preorder (inorder)* traversal of **T** is equivalent to visiting the nodes of **F** in *forest preorder (inorder)*

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Forest Preorder Traversal

- Preorder traversal of binary tree
  ◦ A B C D E F G H I
- Preorder traversal of forest
  ◦ Root: A
  ◦ Left forest: B C D
  ◦ Right forest: E F G H I

Left forest   Right forest

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