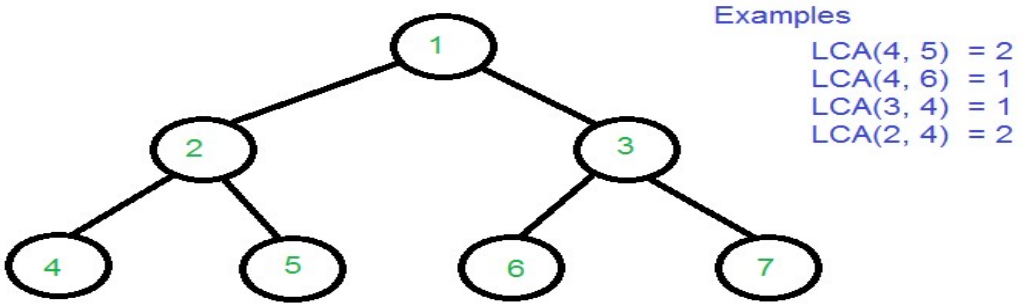
Lab Assignment 8

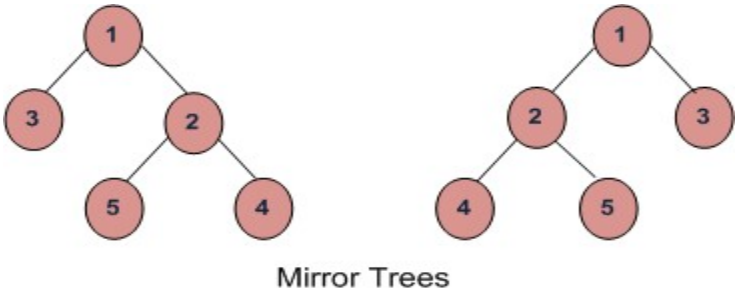
Week 9 (11th Mar – 16th Mar 2019)

1. Construct a binary tree using linked list for the following pre order and in order:
   In-Oder:
   4,10,12,15,18,22,24,25,31,35,44,50,66,70,90
   Pre-Order:
   25,15,10,4,12,22,18,24,50,35,31,44,70,66,90
   Also, compute the post-Order for the given sequence.

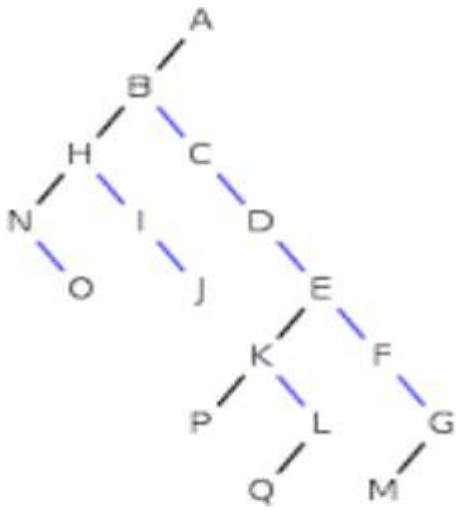
2. Write a program to find the Lowest Common Ancestor (LCA) of the nodes (input by the user) in the above constructed Binary Tree.
   The LCA for two nodes u and v is defined as the farthest node from root that is ancestor to both u and v.
   For Example:



3. Write a program to create the mirror tree for the tree constructed in Ques. 1.
   Example:



4. Write a program to find the all longest walk in the following Binary Tree and also print the nodes covered in the walk.
   Example:



Output: A—B—C—D—E—K—L—Q AND A—B—C—D—E—F—G—M

5. Given a binary tree and a node, WAP to print all cousins of given node. Note that siblings should not be printed.

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Input : tree
             1
           /   \
          2     3
        /   \  /  \
       4    5  6   7
       a node say 5.
Output : 6, 7
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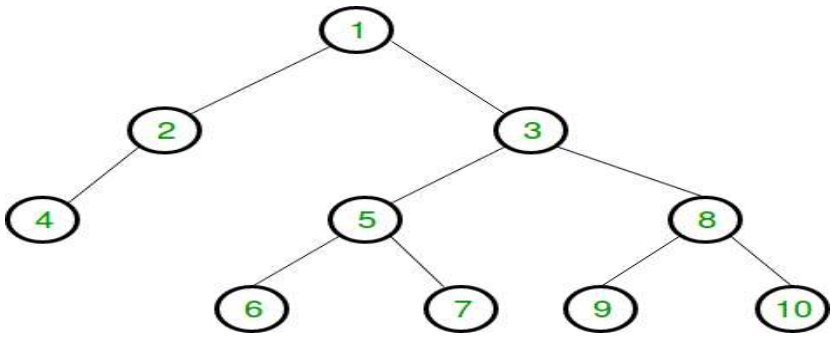
6. Given a binary tree, write a program to print all leaf nodes of the given binary tree from left to right. That is, the nodes should be printed in the order they appear from left to right in the given tree.
   Example:



Output: 4 6 7 9 10