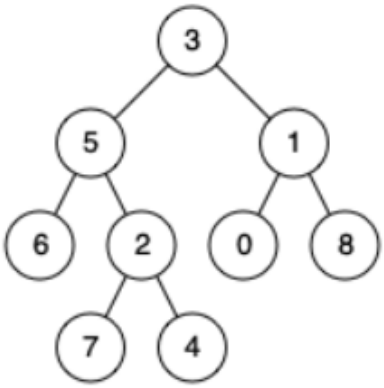
CS G526 – Advanced Algorithms and Complexity
Lab-2

Problem 1:

Given a binary tree, find the lowest common ancestor (LCA) of two given nodes in the tree. The lowest common ancestor is defined between two nodes p and q as the lowest node in T that has both p and q as descendants (where we allow **a node to be a descendant of itself**).

Example 1:

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Input: root = [3,5,1,6,2,0,8,null,null,7,4], p = 5, q = 1
Output: 3
Explanation: The LCA of nodes 5 and 1 is 3.
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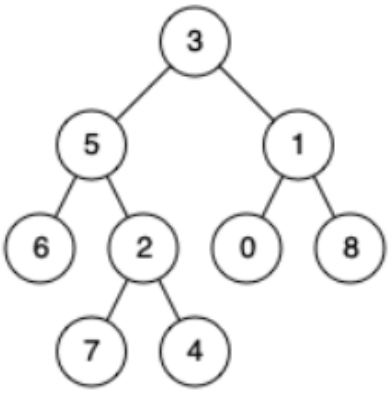
Example 2:

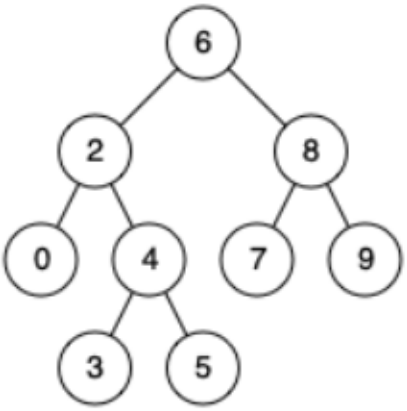


Input: root = [3,5,1,6,2,0,8,null,null,7,4], p = 5, q = 4
Output: 5

Problem 2:

Find lowest common ancestor of two given nodes in a **binary search tree.**

Example 1:



Input: root = [6,2,8,0,4,7,9,null,null,3,5], p = 2, q = 8
Output: 6