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COM 301

Homework 3

1. First tree
   1. Using the above figure, answer the following questions about the tree:
      1. The root is node A
      2. The leaves are G, H, I, L, M, and K
   2. Using the above figure, answer the following questions about NODE B in the tree
      1. Parent node: A
      2. List the children: D and E
      3. List the siblings: C
      4. Compute the depth: 4
      5. Compute the height: 4
2. Tree Traversals
   1. Show result of pre-order traversal
      1. Pre-order: 9, 4, 3, 1, 6, 5, 7, 17, 22, 23
   2. Show the result of in-order traversal
      1. In-order: 1, 3, 4, 5, 6, 7, 9, 17, 22, 23
3. Binary Search Tree
   1. Show the result after these operations Sequential order (insert 2 -> insert 21 -> delete 23 -> delete 6 -> delete 9)
      1. Insert 2Diagram

         Description automatically generated
      2. Insert 21 Diagram

         Description automatically generated
      3. Delete 23 Diagram

         Description automatically generated
      4. Delete 6 Diagram

         Description automatically generated
      5. Delete 9 Diagram

         Description automatically generated
4. Build an AVL Tree with the sequential order (insert 2 -> insert 21 -> insert 23 -> insert 6 - > insert 9 -> insert 7 ◊ insert 1 ◊ insert 5 ◊ insert 25 ◊ insert 3 )

Diagram

Description automatically generated