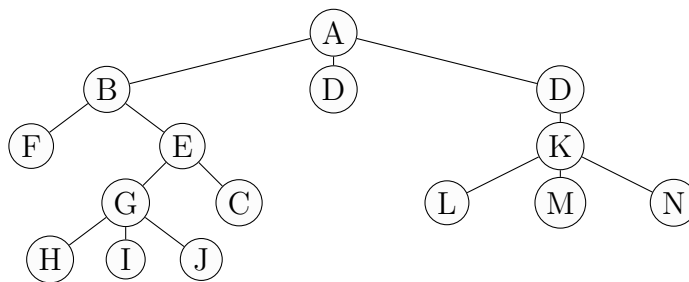


1. List the members of your group below. Underline your name.

2. Write the *depth* of each node in the following tree to the immediate left of the corresponding circle. Similarly, write the *height* of each node to its right.



3. List the nodes of the tree of Question 2 in

- (a) preorder:
- (b) postorder:
- (c) level-order:

4. Present the *linear representation* of the tree of Question 2 using the method described in class.

5. Using the usual graphical notation, depict the tree whose linear representation is

$$(A, ((B, ((H, ((J, ()))), (I, ()))), (C, ((E, ((G, ())), (F, ())), (D, ())))))$$

6. Draw *box-and-arrow* diagrams of

(a) the linked list (3, 1, 4, 1, 5, 9) and

(b) the leftmost child-right sibling encoding of the tree in Question 2.

7. Represent all nonisomorphic labeled binary trees over the n nodes $[n] = \{1, 2, 3, \dots, n\}$ for $n = 0, 1, 2, 3, \dots$ (as high as you can manage).

List the nodes of each tree by *inorder traversal*.

8. Provide an algorithm to systematically generate all the trees from Question 7. Explain why your algorithm is correct.

9. Quantify the running time of your algorithm analytically.

10. [informal homework] Implement your algorithm and analyze its performance experimentally.