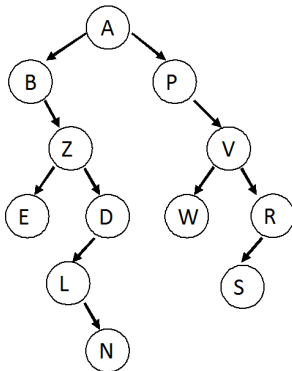


L13: PROBLEM 2 (4/4 points)

Below is a binary tree. Answer the following two questions about the tree, assuming alphabetical ordering.



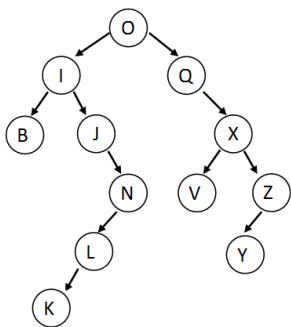
1. What is the sequence of nodes traversed when performing depth-first search to find the letter Q? Separate the node names by a comma.

Answer: A,B,Z,E,D,L,N,P,V,W,R,S

2. What is the sequence of nodes traversed when performing breadth-first search to find the letter Q? Separate the node names by a comma.

Answer: A,B,P,Z,V,E,D,W,R,L,S,N

Below is another binary tree. Answer the following two questions about the tree, assuming alphabetical ordering.



1. What is the sequence of nodes traversed when performing ordered depth-first search to find the letter U? Separate the node names by a comma.

Answer: O,Q,X,V

2. What letter can replace the letter O at the root such that the tree is still an ordered tree?

Answer: P**EXPLANATION:**

Look at the left branch of O and find that the largest letter there is N. Since the left branch of O has letters smaller than O and N is the largest, there are no letters between N and O. Now look at the right branch of O and find that the smallest letter there is Q. Since all letters in the right branch of O are letters larger than O and the smallest is Q, the only letter between O and Q is P.

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