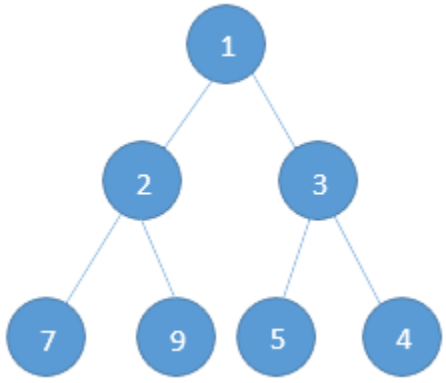
Give an algorithm for finding the size of a binary tree.



size(tree)

1. If tree is empty then return 0

2. Else

(a) Get the size of left subtree recursively i.e., call size(tree->left-subtree)

(b) Get the size of right subtree recursively i.e., call size(tree->right-subtree)

(c) Calculate size of the tree as following: tree_size = size(left-subtree) + size(right- subtree) + 1

(d) Return tree_size

a)How will you solve it without recursion?

If we are not using recursion then we need a data structure to store the tree traversal, we will use queue. Solution is exactly similar to tree traversal with recursion. Just that we will keep counting the number of nodes.