

Name:

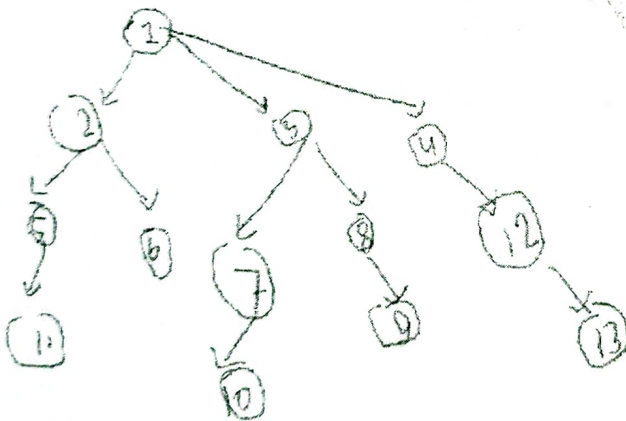
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SET A

Imagine that you are trying to find your missing pet dog. You are now on the ground floor and you can only go 1 floor at a time to check all the rooms on that floor and then move onto the next floor. You are given a directed graph structure as a map of the building with a particular value/node as the source. (A) You have to devise an algorithm in order to print all the areas/nodes you can visit keeping in mind that you can only traverse nodes from a particular level first and after traversing all the nodes, only then you can go to the next floor. Then after printing out the whole layout following the above rule (B) Then if I give you a certain node where your pet dog is kept. You have to determine how many floors you must go to find your pet.

1. Take the input from the txt file and process the input [2]
2. Create your own preferable adjacency graph/matrix/list-of-lists and PRINT IT [3]
3. Run the particular Algorithm to PRINT OUT all the nodes that can be traversed keeping in mind of the condition (Task A from the passage) [5]
4. Now, copy your function where you wrote your algo onto another cell and make changes to the function and feed the input graphs etc to complete Task B from the passage. **DO NOT CHANGE THE PREVIOUS FUNCTION BECAUSE YOU MIGHT CORRUPT YOUR ALREADY WORKING ALGO WHILE DOING IT, SO MAKE A COPY AND CHANGE THERE** [2]
5. Compile all of your output and write on a txt file and show us the file for all the outputs [3]



Sample input: .txt file < first line : number of Nodes, edges. Last line : source node and all the lines in between are edges >

Output: the path from source 1 each node levelwise :

1 2 3 4 5 6 7 8 12 11 10 9 13

in order to reach 13 user has to move 3 floors from the source node 1

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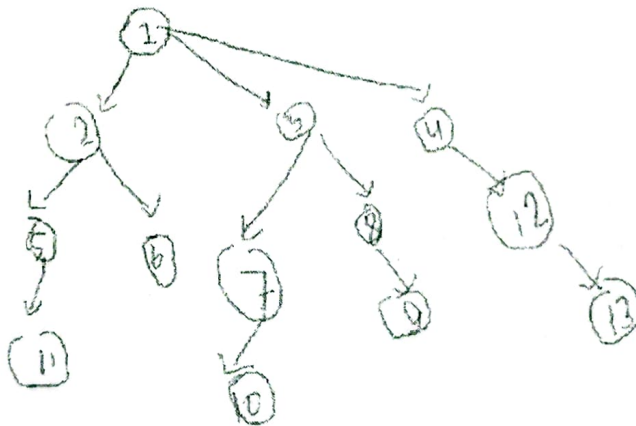
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SET B

Imagine you are put inside a maze with a source where you currently reside. You can see multiple paths going down multiple directions from where you stand but you don't know what danger lies ahead. So you decided to run an Algorithm you were taught in CSE221 to find out the end of each path (A) You have to demonstrate your algorithm to map out the routes in such a way that you are going from the beginning to the end of a path and returning to try another path until you have traveled all paths. (B) If you were given another node / destination path where lies the exit of the maze. You must go to that point and track back to your source so you can complete this puzzle and be free!

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Sample input: .txt file < first line :number of Nodes, edges. Last line : source node and all the lines in between are edges>

Output:traversing each node from the source 1 depthwise:

1 2 5 11 6 3 7 10 8 9 4 12 13

to go to the source 1 from the target node 13 we must return through this path:

13-->12-->4-->1