

function: Treat all children nodes first and collect the corresponding results. Using the collected results, compute the result of the current node and return it. When you start such a function with the root node, it 'walks' along the first path until it finds the first leaf node. It then computes the corresponding result and returns it to the direct parent. By moving on in this manner recursively, all nodes are visited exactly once. The recursive function only computes the result for the current node, when it has already computed results for all its descendants. This procedure is called post-order traversal of a tree. Using paper and pencil work out the following questions:

- Enumerate all nodes in the tree in figure 1, in the order the nodes will be visited in a post-order traversal.
- Using the example in figure 2, decide whether the procedure is also valid for a DAG (directed acyclic graphs). Enumerate the nodes in post-order traversal and report what you observe.
- Explain why the post-order traversal runs into trouble with the graph shown in figure 3.

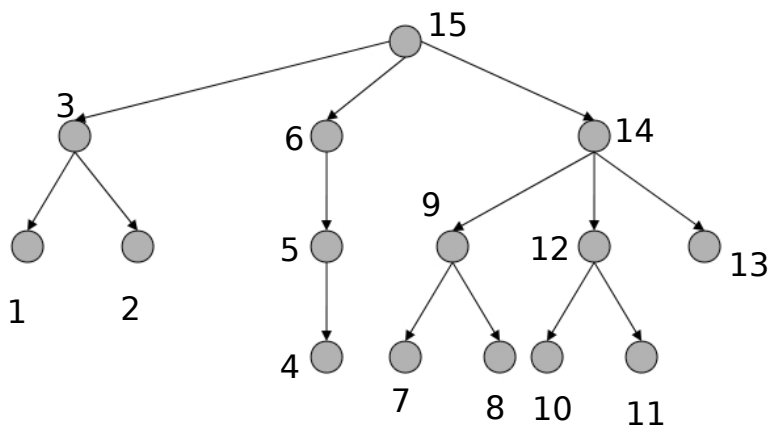
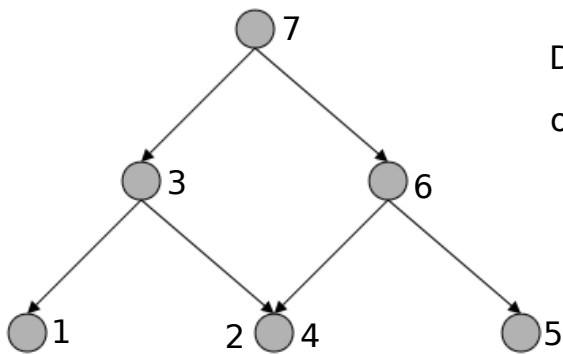
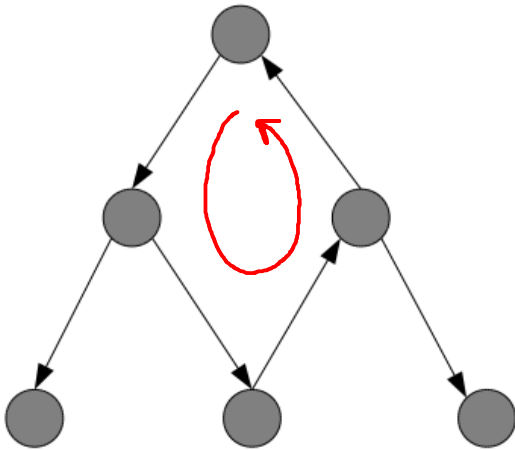


Figure 1: A tree.



DAG: traversal not valid, only valid for trees  
one node would be visited two times

Figure 2: A directed acyclic graph.



The graph has a directed cycle in it; traversal would result in infinite loop

Figure 3: Another graph.