

Algorithm Design
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Solution of Exercise C-2.10

The idea is to perform a preorder (or postorder) traversal of the tree, where the “visit” action is to report the depth of the node that is currently visited. This can be easily done by using a counter that keeps track of the current depth. Method $\text{PrintDepth}(v,d)$ prints the depth d of the current node v and recursively traverses the subtree defined by v . If T is the tree, then, initially, we call $\text{PrintDepth}(T.\text{root}(),0)$. Observe that we use only methods of the abstract tree ADT.

Algorithm $\text{PrintDepth}(v,d)$:
 $\text{print}(d)$
 for each $w \in T.\text{children}(v)$ **do**
 $\text{PrintDepth}(w,d + 1)$