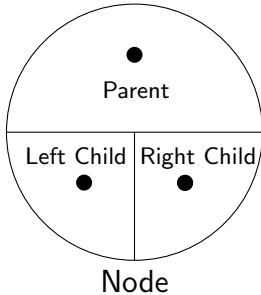
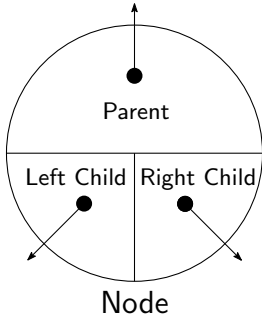
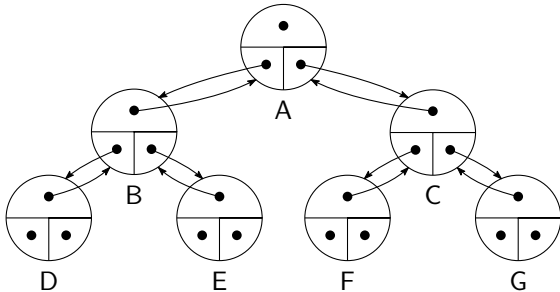
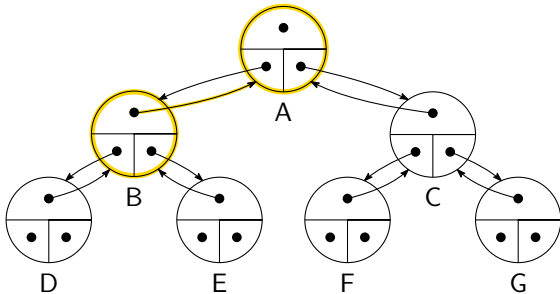


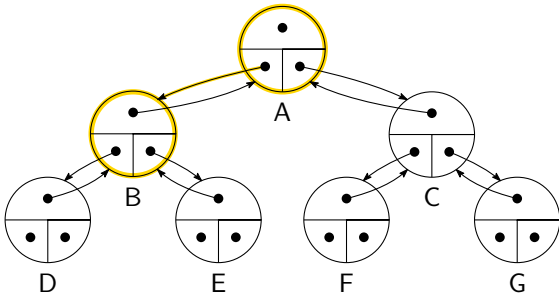
Node

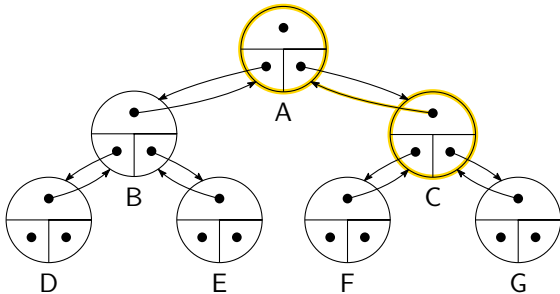


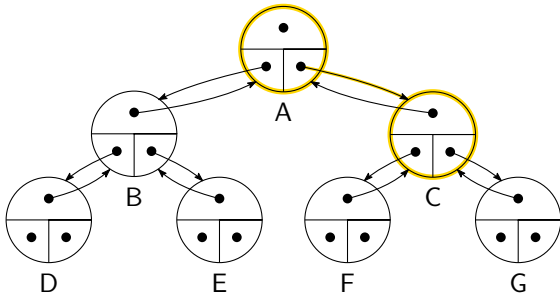




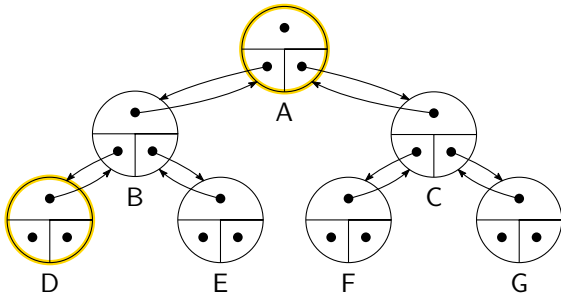




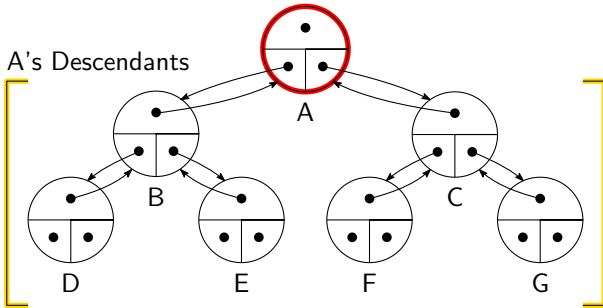


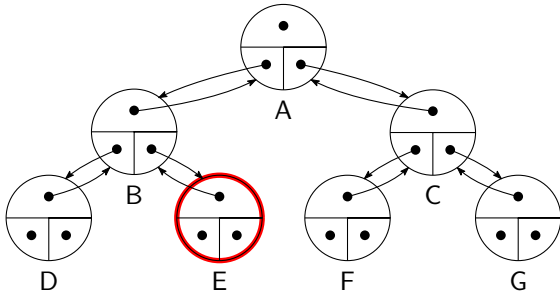


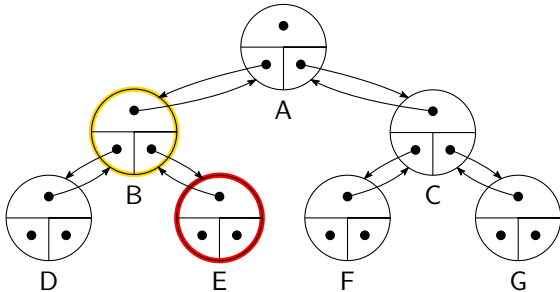




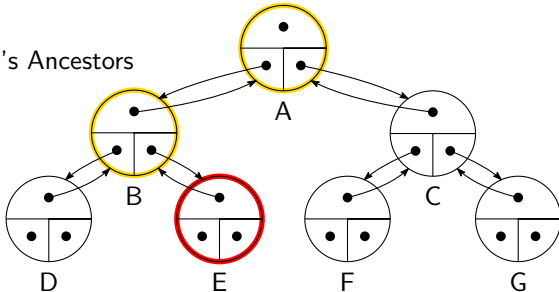
A's Descendants





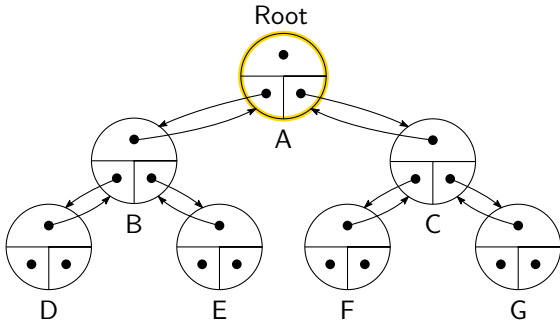


E's Ancestors

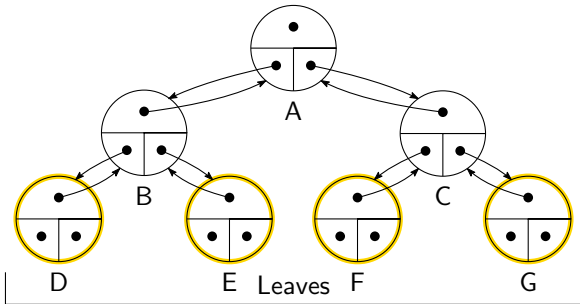


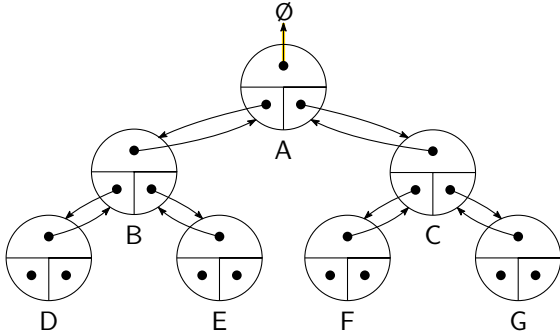


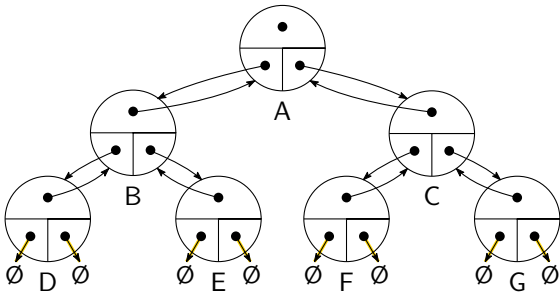




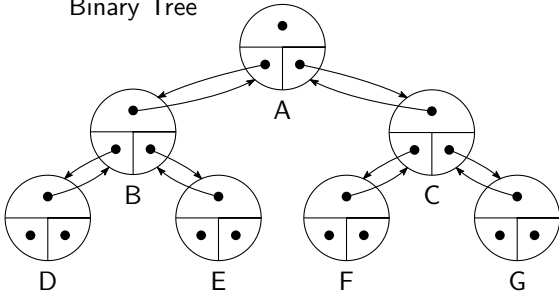




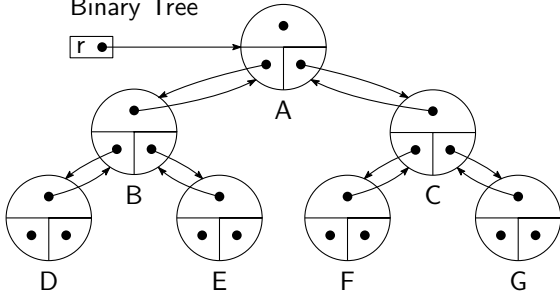




# Binary Tree



# Binary Tree

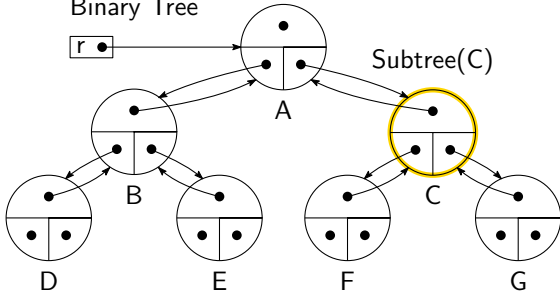


Binary Tree



A

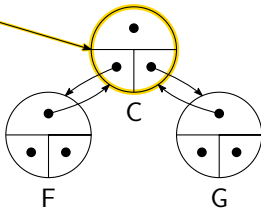
Binary Tree



Binary Tree

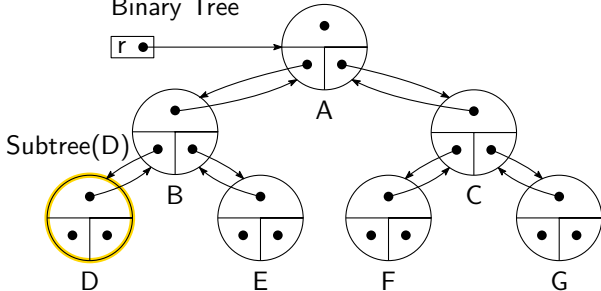


Subtree(C)





# Binary Tree



Binary Tree



Subtree(D)

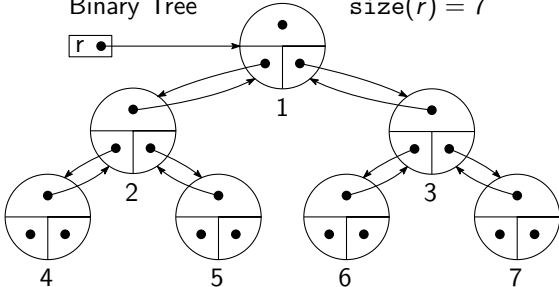


D

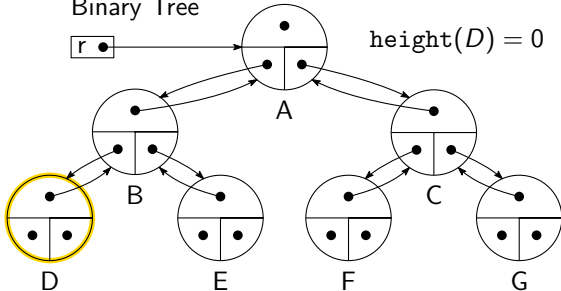
$$\text{size}(r) = \begin{cases} 0 & \text{if } r = \text{null} \\ \text{size}(r's \text{ left child}) + \text{size}(r's \text{ right child}) + 1 & \text{otherwise} \end{cases}$$

Binary Tree

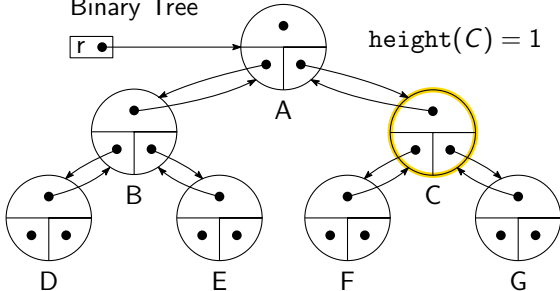
$\text{size}(r) = 7$



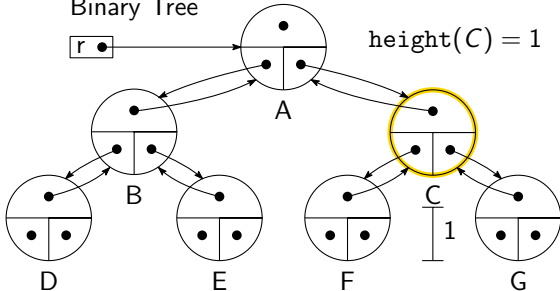
# Binary Tree



# Binary Tree



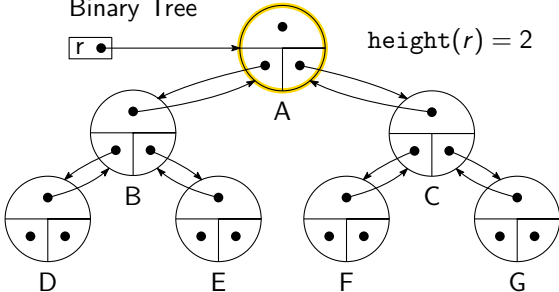
# Binary Tree



# Binary Tree

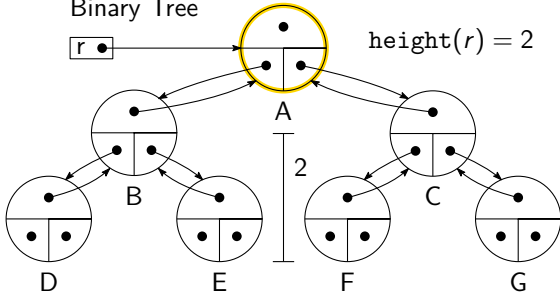
$r$  •

$\text{height}(r) = 2$





# Binary Tree



# Binary Tree

