CSCI 321 Computer Science III Summer 2019

Lecture 3 Activity 2

1. Draw the binary tree representation of the following arithmetic expression: “(((5+2) ∗ (2−1))/((2+9)+((7−2)−1)) ∗8)”. Hint: Review the print arithmetic expression example on Chapter Slide 26.

[chrome-extension://oemmndcbldboiebfnladdacbdfmadadm/http://ocw.uc3m.es/ingenieria-informatica/algorithms-and-data-structures/exercises-sheet-n2-solution](chrome-extension://oemmndcbldboiebfnladdacbdfmadadm/http:/ocw.uc3m.es/ingenieria-informatica/algorithms-and-data-structures/exercises-sheet-n2-solution)

<https://www.chegg.com/homework-help/questions-and-answers/draw-binary-tree-representation-following-arithmetic-expression-5-2-2-1-2-9-7-2-1-8--draw--q32482756>

<https://www.chegg.com/homework-help/questions-and-answers/r-812-draw-binary-tree-representation-following-arithmetic-expression-5-2-2-1-2-9-7-2-1-8-q9099365>

1. Give an O(n)-time algorithm for computing the depths of all nodes of a tree T, where n is the number of nodes of T. Write down the pseudocode. Hint: when you visit a node, you can perform some operation, for example, store some information in the node.

level = 0

do

{

i--

n = (n-1)/2

i = i%n

level++

}

while (i != 0)