

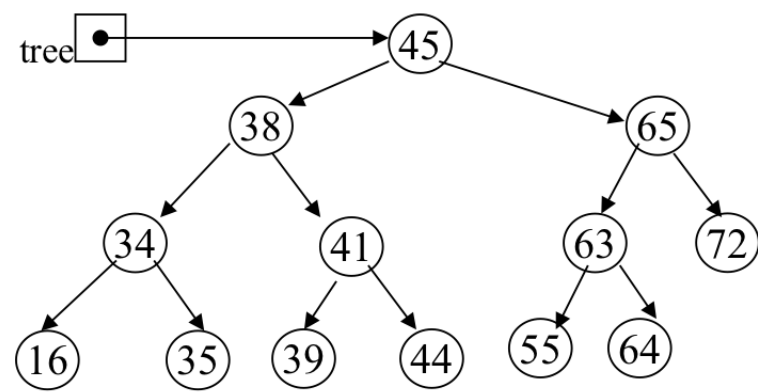
Tree lab - S2020

Saturday, March 9, 2024 8:46 PM



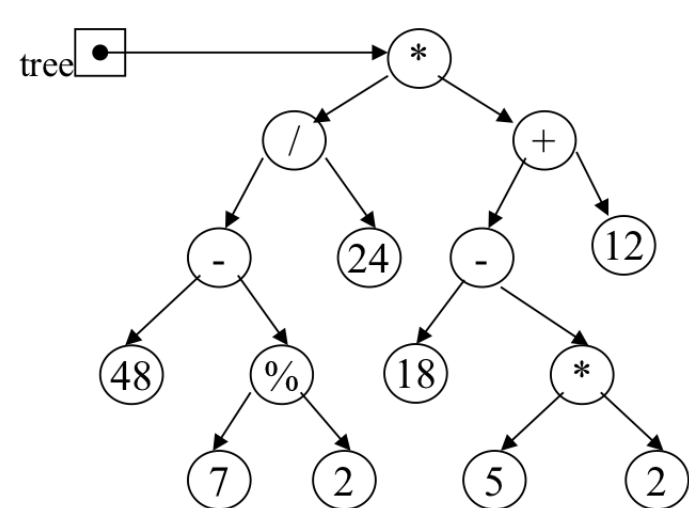
Tree lab - S2020

1. Given the following binary tree:



- (a) What is the inorder traversal of the tree?
- 16,34,35,38,39,41,44,45,55,63,64,65,72
- (b) What is the preorder traversal of the tree?
- 45,38,34,16,35,41,39,44,65,63,55,64,72
- (c) What is the postorder traversal of the tree?
- 16,35,34,39,44,41,38,55,64,63,72,65,45
- (d) What is the height of the tree? What nodes are on level 2?
- 34,41,63,72

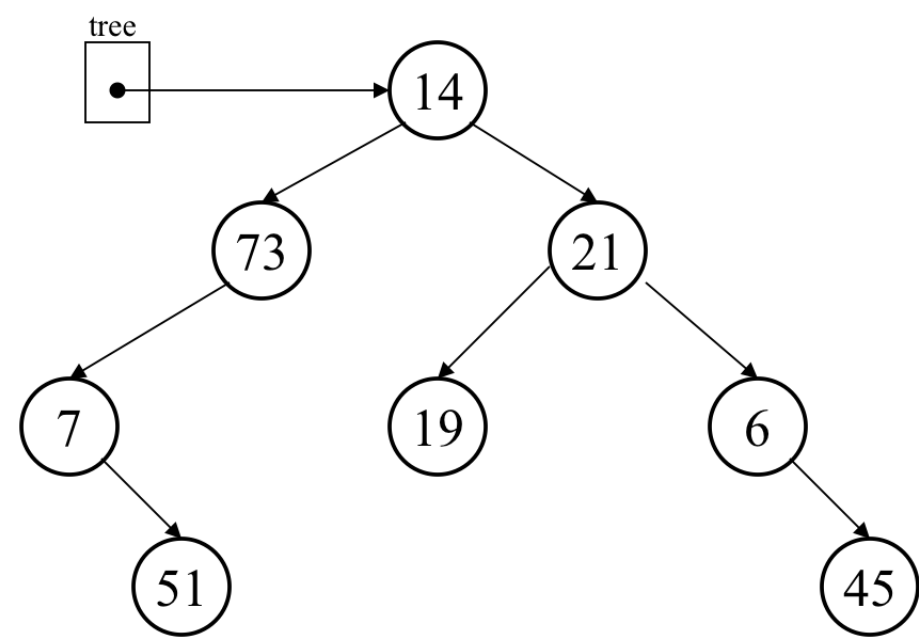
2. Given the following binary expression tree:



- (a) What is the inorder traversal of the tree?
- 48,-,7,%,2,/,24,*,18,-,5,*,2,+,12
- (b) What is the postorder traversal of the tree?
- 48,7,2,%, -,24,/,18,5,2,*, -,12,+, *
- (c) What does it evaluate to if using integer division?
- 20
- (d) What does it evaluate to if using float division?
- 39.16

3. The elements in a binary tree area to be stored in an array. Each element is a nonnegative int value.
- a. What value can you use as a dummy value, if the binary tree is not complete? null
- b. Show the contents of the array, given the tree illustrated below

[0]	14
[1]	73
[2]	21
[3]	7
[4]	null
[5]	19
[6]	6
[7]	null
[8]	51
[9]	null
[10]	null
[11]	null
[12]	null
[13]	null
[14]	45



4. Given the array pictured below, draw the binary tree that can be created from its elements.

[0]	35
[1]	20
[2]	71
[3]	40
[4]	52
[5]	63
[6]	null
[7]	17
[8]	25
[9]	null
[10]	7
[11]	null
[12]	45

