

Quiz – 2

Data Structures (CSD102)

Date: 24-10-2024

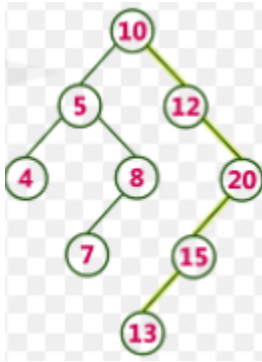
[Total Marks = 15]

Time: 4:15pm – 4:55pm

- Construct the Binary Search Tree (BST) of the following elements
10, 12, 5, 4, 20, 8, 7, 15, 13

[2 Marks]

Answer:



- The following postfix expression with single digit operands is evaluated using a stack

8 2 3 ^ / 2 3 * + 5 1 * -

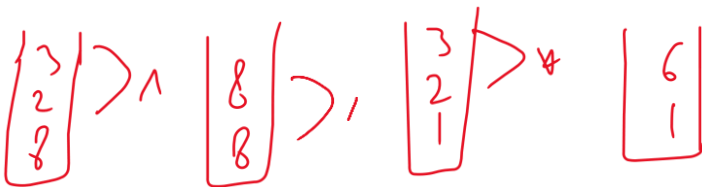
(Note that ^ is the exponential operator)

What are the top two elements of the stack after the first * operator is evaluated? Draw the stack to do the evaluation.

[3 Marks]

Answer: 6, 1

[2.5 marks]



[.5 mark]

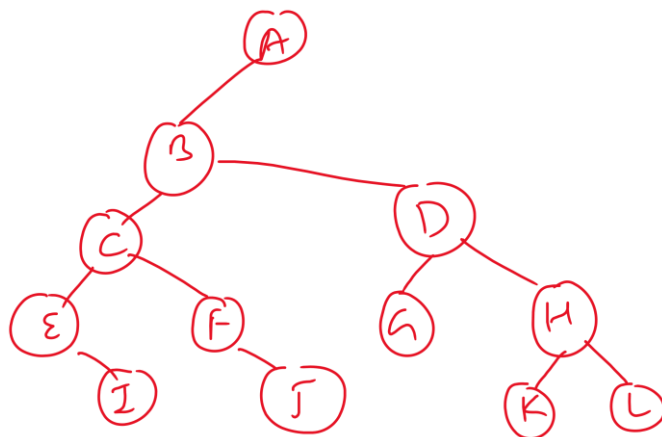
- Convert the following expression into postfix

$A + B * C / D - F + A ^ E$

Show each conversion steps while constructing the below table

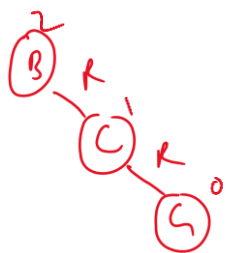
[3 Marks]

Current Symbol	Stack	Output (Postfix expression)
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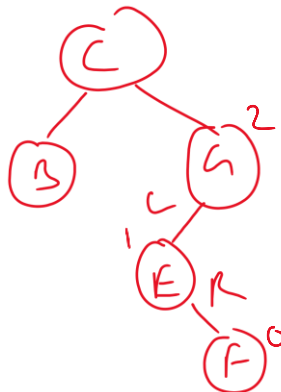


[1 Mark]

5. What will be the resulting AVL tree if we insert the following elements one at a time, B, C, G, E, F, D, A. If the tree becomes unbalanced, balance the tree, and redraw the final tree after each insertion. [4 Marks]



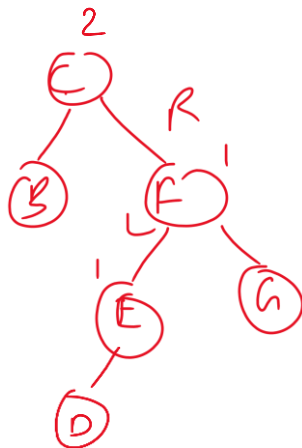
Left
Rotation
⇒



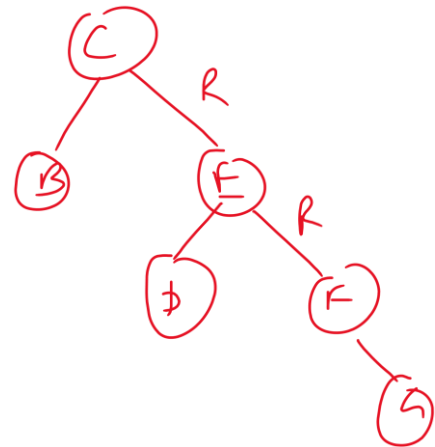
Left
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