Institut für Pervasive Computing

Assignment 01

Time log: Please remember the time you needed to solve this assignment and log it in the feedback form in Moodle! This information is fully anonymous.

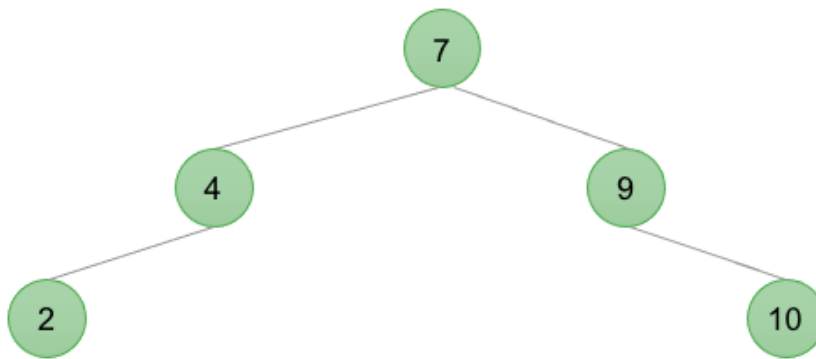**Submission:** Please submit your solution as PDF file(s) in a ZIP archive in Moodle.
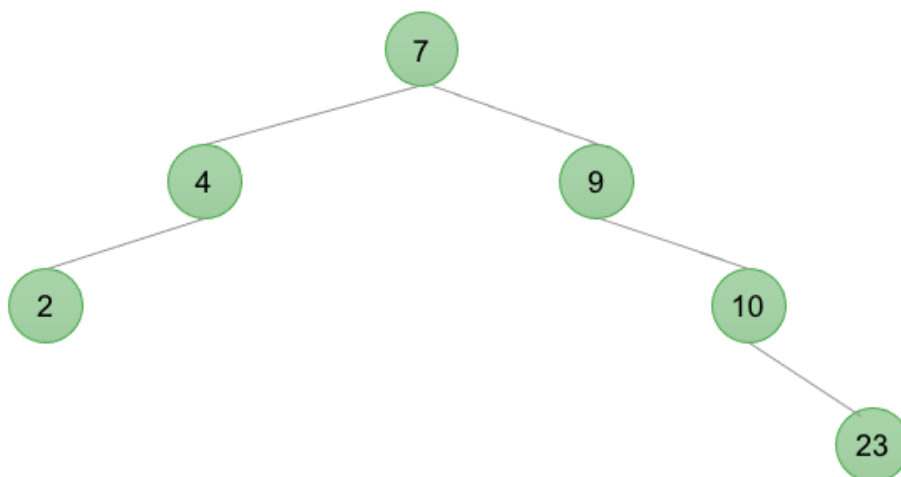
Trees

1. AVL Tree Classification   0.5+0.5+0.5+0.5+0.5+0.5 points

Determine if the following trees are valid AVL trees:
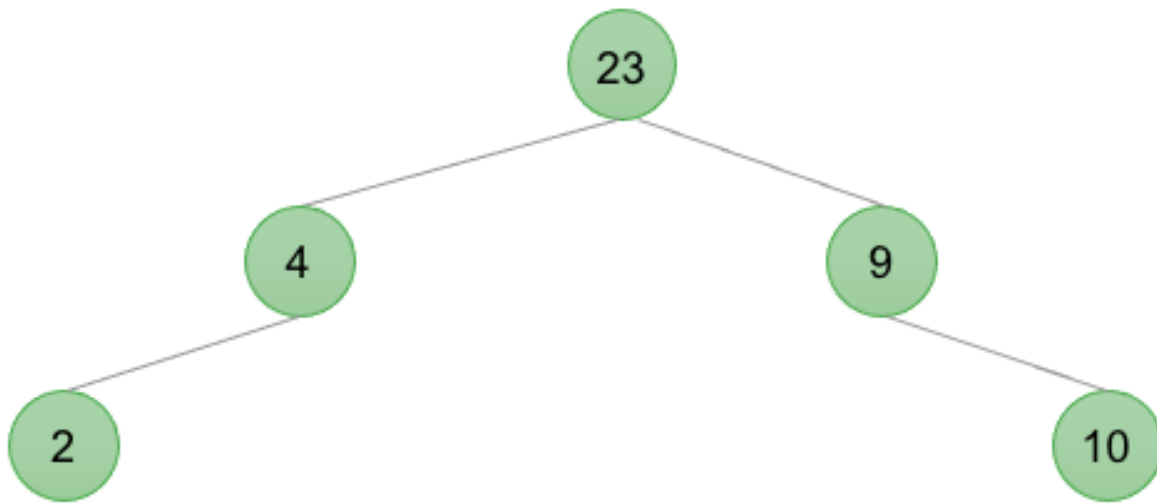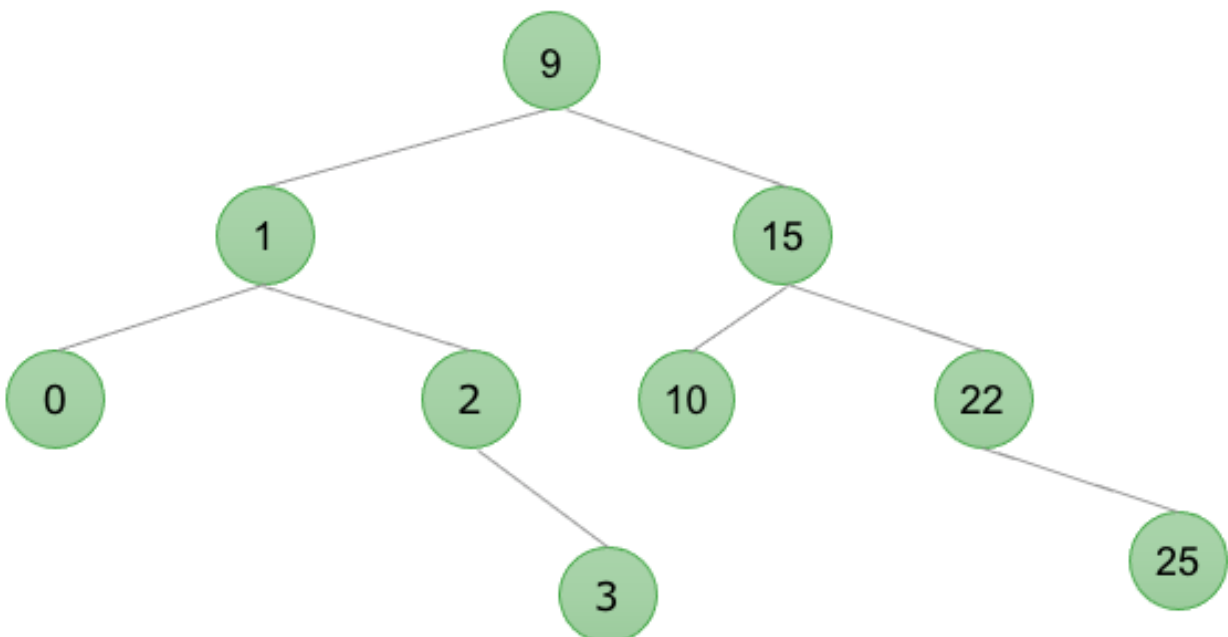Provide a justification for your answer
a.

b.

c.

d.

e.

f.
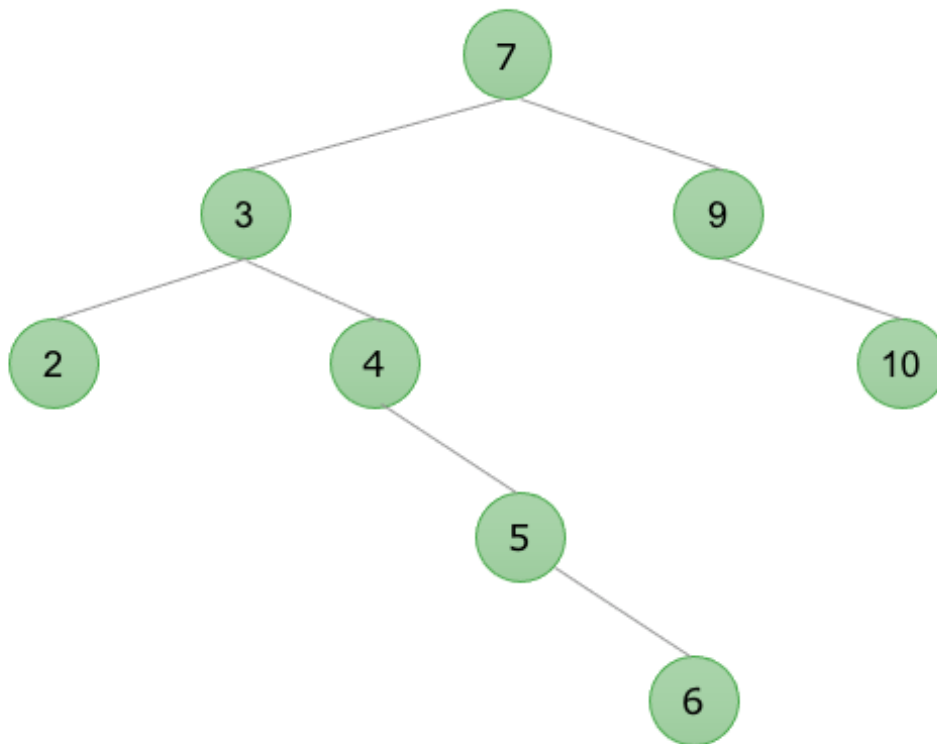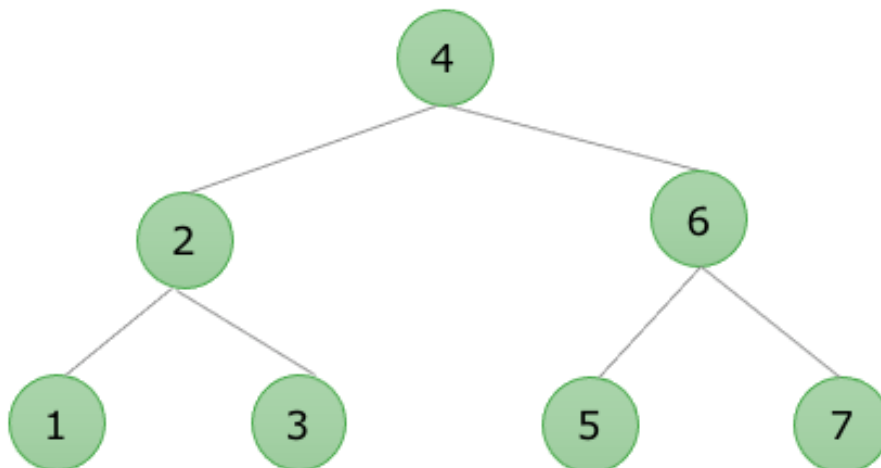
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2. AVL Tree Insert   6+3 points

a.
Starting with an empty tree, create an AVL where you insert the following sequence of numbers **(in this exact order):**
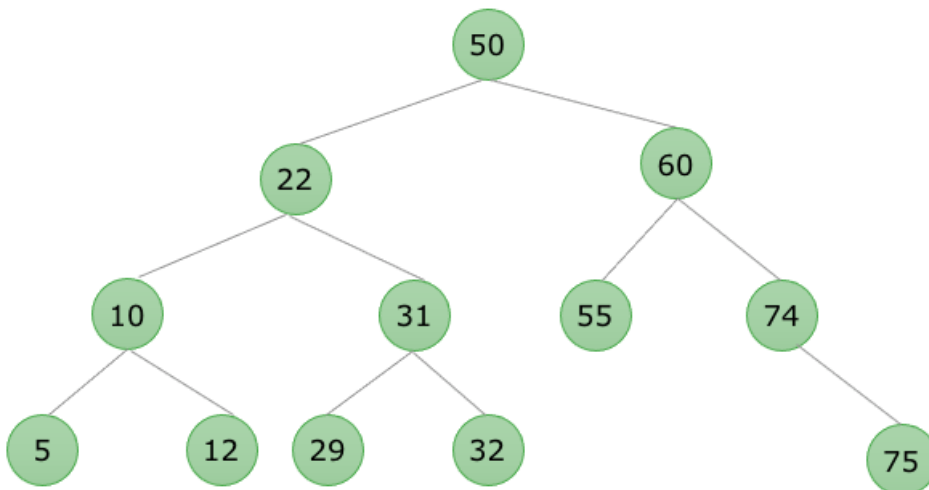
0, 5, 6, 10, 1, 2, 8

Provide all intermediate steps!
Each insert operation must terminate in a **valid** AVL tree!

b.
Into this given AVL tree insert a new node with key 33 and **afterwards** a new node with key 34:
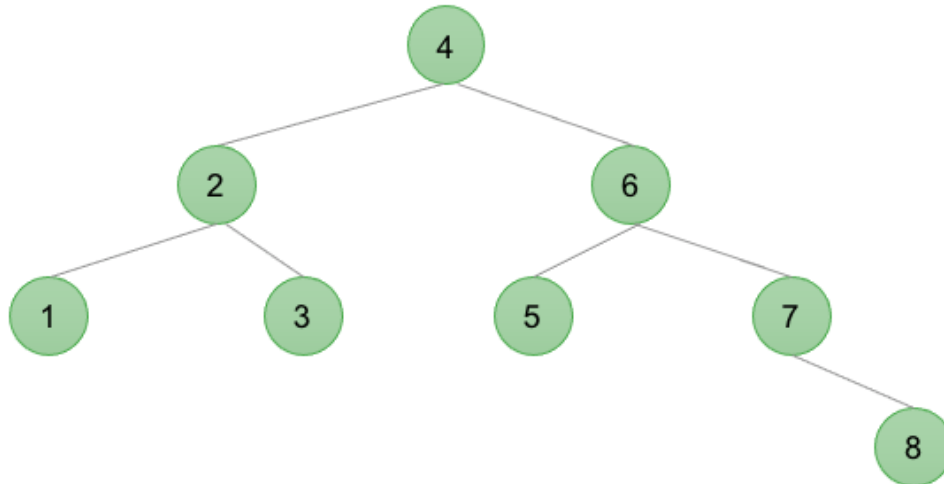

Provide all intermediate steps!

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3. AVL Tree Remove   4+4 points
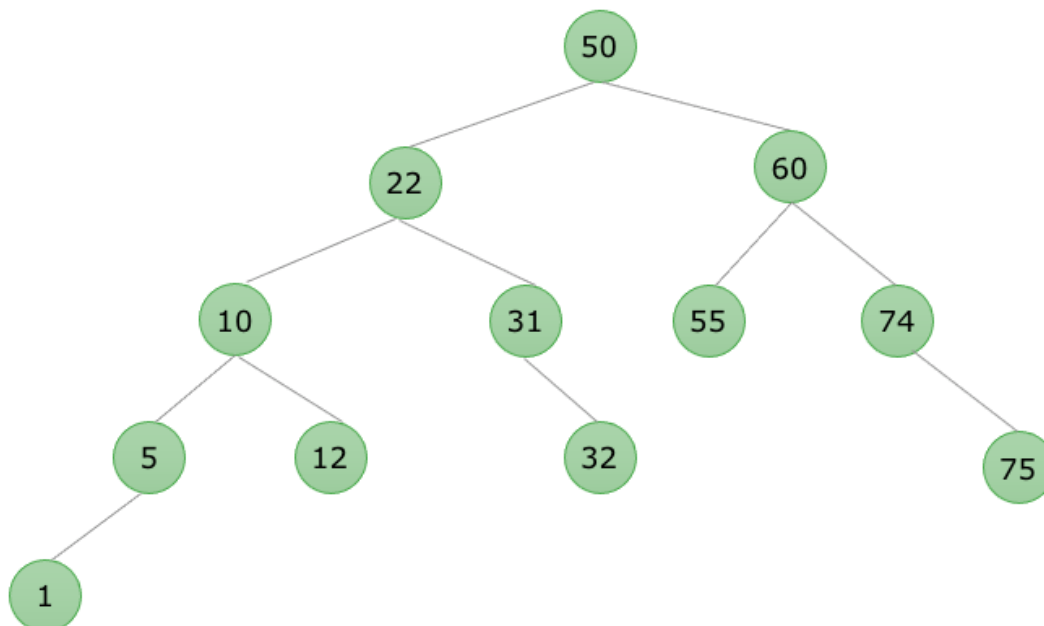
a.
From this given AVL tree remove the node with key 4 (use the inorder successor to replace it):

Provide all intermediate steps!

b.
From this given AVL tree remove the node with key 22

Provide all intermediate steps!