## Tutorial/Lab 12 - AVL Tree and Hashing

Aim

This tutorial/lab aims to further the understanding of the topics covered in Week 12's lecture. Meanwhile, it aims to get students familiar with the question types that might be appeared in their future test.

Exercise 12.1 AVL Rotation

For the AVL tree in Figure 26.1a, show the new AVL tree after adding element 80. What

rotation do you perform in order to rebalance the tree?
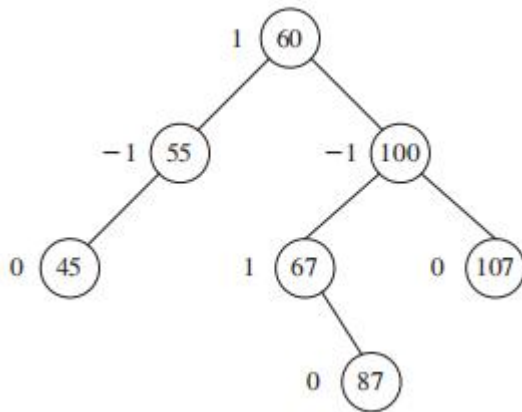
Exercise 12.2 AVL Rotation

What is the preorder traversal of the elements in a AVL tree after inserting 3, 4, 45, 21, 92, 12 in this order?

Exercise 12.3 Hashing

(*Implement MyMap using open addressing with quadratic probing*) Create a new concrete class that implements MyMap using open addressing with quadratic probing. For simplicity , use f(key) = key % size as the hash function, where size is the hash-table size. Initially, the hash-table size is 4. The table size is doubled whenever the load factor exceeds the threshold (0.5).