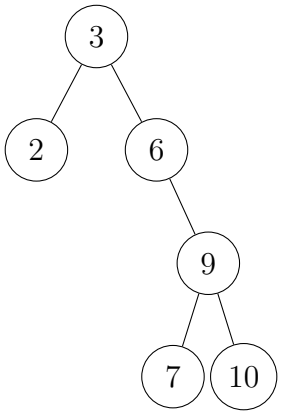
Tutorial 7

COMP 2611

1. Suppose you are given the *root* of a binary search tree. Every node, including this *root*, has following fields: parent, left, right, and data. Said fields are used in accord with their usual meanings. Moreover, data has two subfields - key and value - with their usual meanings. Write pseudocode for a function that prints the keys of the binary search tree in descending order.

2. Consider the following binary search tree:



   (a) Draw the state of the BST after the following operations:
      i. Insertion of a node with a key of 1
      ii. Deletion of the node with the key 9
      iii. Insertion of anode with a key of 4

   (b) Draw the array representation of the tree. Use the @ symbol to indicate that a slot in array contains NIL

3. Write pseudocode for a function that accepts the root of a BST and a key x to locate. If there is a node in the BST with the key x, your function should return that node. If such a node does not exist, it should return the node with the smallest key that is larger than x. If such a node does not exist, your function should return NIL.