CS2302 - Data Structures

Fall 2020

Exercise - Binary Search Trees

1. Write the function *height(t)* that receives a reference to a binary search tree and return's t's height.
2. Write the function *printSmaller(t,k)* that receives a reference to a binary search tree and an integer k and prints all the items in the tree that are less than k. Do not traverse a larger part of the tree than necessary.
3. Write the function *printLeaves(t)* that receives a reference to a binary search tree t and prints all the items in the tree that are stored in leaf nodes.
4. Write the function *atDepthD(t,d)* that receives a reference to a binary search tree t and an integer d and returns a list of the items in the tree that are stored at depth d in the tree (recall that the root has depth 0, its children have depth 1, and so on).
5. Write the function *depthOfK(t,k)* that receives a reference to a binary search tree t and an integer k and returns the depth of the node that contains k, or -1 if k is not in the tree.