CS2302 Data Structures
Spring 2020
Exercises B-trees

1. Write the function largestAtDepthD(T,d) that returns the largest item at depth d in B-tree T, or –math.inf if the tree has no nodes at depth d.

2. Write the method findDepth(T,k) that receives a reference to the root of a B-tree T and an item k and returns the depth of the node where k is found in the tree, or -1 if k is not in the tree.

3. Write the function printAtDepthD(T,d) that prints, in ascending order, all the items in B-tree T that have depth d.

4. Write the function numLeaves(T) that returns the number of leaf nodes in B-tree T.

5. Write the function fullNodesAtDepthD(T,d) that returns the number of nodes in B-tree T that are full and have depth d (a node is full if it has max_items items).

6. Write the function printDescending(T) that prints all the items in B-tree T in descending order.

7. Write the function printItemsInNode(T,k) that receives a reference to the root of a B-tree T and an item k and prints all the items that are in the same node as k.