

CMPT 225 Practice Lab Quiz 2 [5 “marks”]

Problem

Your base code contains a BST of integers. Note that each node has a third pointer for the `parent` defined as follows:

- The parent of the root node is `NULL`.
- For each node `x`, each of its children satisfy `x->child->parent == x`.

Your task is to implement a method that outputs the top 5 integers in the BST.

The Specification:

- The method is named `top5()`. The prototype is provided in the base code.
- The method will output the 5 largest integers in the BST, in a space separated list, from largest to smallest. Duplicate keys are possible.
- Should there be fewer than 5 integers in the BST, then output all of them.
- Your method may not modify the structure of the tree.
- You may not modify the other [provided] methods, but you may add some of your own.
- On your real quiz next week, you may be required to use recursion as part of your solution. You may also have a running time requirement. Neither is a requirement this week, however.

Testing:

There is a test script that plugs your base code into a driver to perform a simple test. Run `test.py` from your base code directory.

If you pass this test, you will receive at least 1 “mark” out of 5. It is strongly recommended that you submit your code to CourSys as soon as it passes this test.

A much more rigorous test will be performed on your final submission.