CSE100 Algorithm Design and Analysis
10/12/2015

Lab #5, Fall 2015
Last Update: 10/03/2015

Binary Search Trees

Description In this lab your goal is to implement standard operations of **binary search trees** including insert and delete. See section 12.3 in the textbook. A sample class structure, with empty functions, is given in the `Lab05.tar` file. You can either use the given class structure or create your own. In this assignment the keys are integers. Your code will be tested for examples consisting of distinct keys. We will use GradeMe05 to grade your code. Your execution file name must be 'main'. Refer to the previous lab assignments for instructions on how to use the grading tool.

In the input, each starts with 'e', 'i', 'd', 'oin','opre', or 'opost'. For each line, you will have to do the following.

- i(key): Insert (key) into the BST. For example, i2 implies "Insert key 2 into the BST."
- d(key): delete (key) from the BST. For example, d2 implies "delete key 2 from the BST." Do nothing if the BST doesn't have the key.
- opre: output all keys via preorder walk.
- opost: output all keys via postorder walk.
- oin: output all keys via inorder walk.
- e: finish your program.

You can find a pseudocode for inorder tree walk. If you don't recall preorder or postorder. search tree traversal in wikipedia.

Example of input and output

The following example shows an execution of the program in interactive mode. See the input files and output files under the testfiles folder for examples where input and output are separated.

```
i3
i1
i5
i7
oin
1
3
5
7
d7
oin
1
3
5
opre
3
```

```
1
5
opost
1
5
3
e
```

Your solution Before leaving the lab, submit a zipped tar archive of your program through the assignments page of CatCourse. Please use your UCMNetID as the filename for the zipped tar archive.