

CSCA48 Exercise 7

Due: March 9, 2014. 5:00pm

1 BST Traversal

Draw the Binary Search Tree (BST) we would get if we were to insert the letters C O M P U T E R S in the order listed (i.e., C is the first letter added to the tree).

Given that BST, what would be the order of the nodes visited in:

1. A pre-order traversal
2. A post-order traversal
3. An in-order traversal

2 Try again

Repeat Question 1, but with the letters S R E T U P M O C

3 And the other way

Draw a binary tree¹ that would produce the following results:

- order of nodes visited in a pre-order traversal is: M,C,O,E,U,P,T,S,R
- order of nodes visited in a post-order traversal is: O,C,P,T,U,R,S,E,M
- order of nodes visited in an in-order traversal is: C,O,M,P,U,T,E,R,S

What to hand in

You must submit a file called `ex7.txt` with the answers to questions 1 and 2 in the following format:

```
1.1 C,O,M,P,U,T,E,R,S
1.2 S,R,E,T,U,P,M,O,C
1.3 H,I,N,I,C,K,A,N,D,B,R,I,A,N
2.1 A,B,C,D,E,F,G
2.2 T,H,E,S,E,A,R,E,N,O,T,T,H,E,C,O,R,R,E,C,T,A,N,S,W,E,R,S
2.3 H,E,L,L,O,W,O,R,L,D
```

That is, questions 1.1 - 2.3 each on their own line, starting with the question number and ending with the traversal number.

You do not need to submit a solution for question 3 (though you should try it).

¹Question: is it *a* binary tree, or *the* binary tree? Is there more than one possibility?