Further binary search tree explorations

1. Depth of a tree   15xp

Implement an algorithm that will find the depth of the deepest node in a binary tree.

2. Putting wordlist.txt file in a binary search tree. 15xp

Alter the code so that you read in the words from wordlist.txt in order and insert them into a binary search tree.
Determine the depth of the resulting tree.

3. Randomly built binary search trees 15xp

Chances are the height of your tree in (2) is close to 100, or O(n). Theoretical work in computer science shows that the expected height of a randomly built binary search tree is O(log n). I would like you to test this idea by inserting the words in wordlist.txt file in a random order into the tree. You can do this by first inserting the words into a vector and then randomly shuffling the vector as shown at cplusplus's page on random shuffle.
Determine the height of the resulting tree.

4. Optimally built binary search tree. 15xp

Please insert the words from wordlist.txt to create an optimal tree.
Determine depth!

Demo in class