

**CS 2123**  
**Data Structures**  
**Assignment 5**  
**Due Friday April 8**

1. (100 pts) Write a program to construct a binary search tree and print the tree on its side. Read the input from the user as a sequence of integers and output the tree indented based on depth and with one value on each line.

Consider the following input from user

```
Enter the numbers
10 6 14 4 8 12 16
```

The binary search tree using above numbers is given below

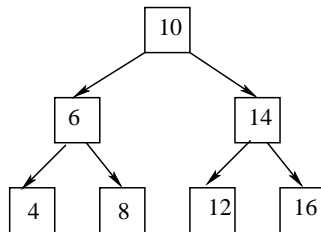


Figure 1: Binary Search Tree

Note that the order of the numbers entered changes the tree. First number is always the root of the tree and last number is a leaf of the tree.

The output for the above set of numbers is the tree printed on its side as shown below.

```

    16
  14
    12
10
    8
  6
    4
```

The text for a node should be indented 4 times the depth of the node. Root (depth 0) should not be indented and a node at depth 2 should be indented 8 spaces.

*Submit your program electronically using the blackboard system*

*The program you submit should be your own work. Cheating will be reported to office of academic integrity. Both the copier and copiece will be held responsible.*