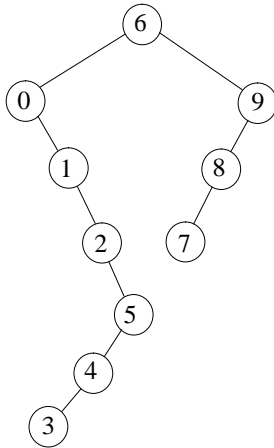# CSE 5311 Lab Assignment 1

## Due July 1

## Goals:

1. Understanding of rotations for binary search trees.

2. Understanding and evaluation of splay trees.

## Requirements:

1. Write (and test) a program to evaluate splay tree techniques. In particular, you must add code to:

    a. Textually display small trees. For example, the text output:

    ```
    .9
    ..8
    ...7
    6
    ....5
    .....4
    ......3
    ...2
    ..1
    .0
    ```

    corresponds to:



    b. Compute the potential of a splay tree.
    c. Compute the amortized and actual complexity of access operations after the tree has been loaded

2. Submit a printed listing of your entire program.

3. Submit printed listings of the execution traces from exercising your program. At least one of these should be a small case with about 30 keys to exercise the tree display code.

4. Write a 1-page report <u>summarizing</u> what you learned from your executions. You do not need to show the detail of every single operation. Instead, it will be useful to collect summaried information. In particular, you should examine the amortized costs obtained and compare to the theoretical bound that we covered in class.

## Getting Started:

1. http://reptar.uta.edu/NOTES5311/cse5311.html provides web access to Pascal and C code for splay trees.

2. You will probably want to use the generateRandom() function to obtain the keys to be accessed.