Computer Science 2300: Lab 5

Due: March 26, 2008

In this lab you are going to implement the *splay* function.

1 Splay Trees

You have been given a file `splay.c` that contains all the framework required for the splay trees. You have to complete the code for the function `splay()`.

The code in `splay.c` takes an integer n as input and makes a splay a tree of integers of $\{0, 1 \ldots, n-1\}$. It then accepts the value of node on which to splay the tree. At each step, it displays the tree also. Some details that you need to know about are as follows:

1. The important structure defined is `tree_node`. It contains a pointer to the parent, right child and left child which themselves are instance of `tree_node`. The structure also contains a `key` which is the value of the node. This structure has been typeset as `Tree`.

2. The `splay()` function takes the pointer to the root of the tree and value of node to be accessed as arguments and returns the pointer to the root of the new tree formed after splaying. You do not need to change anything other this function in the entire code.

2 Grading

You are required to implement the `splay()` function. For the purposes of grading, you will be required to perform splay operations on a tree containing 10 nodes. The code for splaying is non-trivial so you should be starting early.