Homework Project 2

Given 03/04/2015, Due 03/27/2015

Write `split` and `join` functions for the height-balanced tree code from my sample code page, as described in chapter 3.11 of my book.

The function

```
tree_node_t *join(tree_node_t *tree1, tree_node_t *tree2,
                  key_t separating_key)
```

has trees `tree1` and `tree2` and the `separating_key` as input. All keys in `tree1` are $<$ `separating_key`, all keys in `tree2` are $\geq$ `separating_key`. The function returns the joined tree.

The function

```
tree_node_t *split(tree_node_t *tree, key_t splitting_key)
```

has one `tree` and the `splitting_key` as input. It constructs two trees: the one containing all keys smaller than the `splitting_key` is returned by the function, the one that contains the remaining keys has the root in the node `tree` which was the root of the input tree.

The functions `create_tree`, `find`, `insert`, `delete` should be the same as in my sample implementation of height-balanced trees.

Do not share code. Your code will be tested with my testcode, compiled with `gcc` or `g++`, so your code has to compile, work, and survive visual inspection. Remove all test output. Do not send me binaries, screenshots etc; and if you have to send many files, pack them with `tar`. But it is easier for me if you don't have many files, and send me just the C/C++ file.