Lab 9: Red-Black Tree

Compile with GCC 5.2.1@Ubuntu Gnome – VM workstation

With C89 ‘Standard’

**9.**

Use structer Tree{ right, left, value, parent, color }

Set enum COLOR{RED, BLACK};

Functions

init(return new allocated Tree)

RBgrandparent(return grandparent of Tree)

RBuncle(return uncle, who have same parent, of Tree)

Insert(insert new Node to Tree, call insert\_1)

insert1,2,3,4,5

{

1: root node always BLACK else call 2.

2: check if parent == BLACK else call 3.

3: check uncle’s color, if RED, set parent to BLACK, uncle to BLACK, gradparent to RED, else call 4.

4: rotate left, (or right) if tree is parent’s right(elft) && parent == gradparent’s->left(right), else call 5

5: set parent to BLACK, gradparent to RED, if tree == parent->left(right), rotate gradparent to right(left)

}

print inorder after end of input