

ADS Lab 2

func insert (key):

node = new Node (key)

node.item = key

node.left = node.right = NULL

node.color = 1

y = None

x = root

while x != NULL:

 y = x

 if node.item < x.item:

 x = x.left

 else:

 x = x.right

node.parent = y

if y == NULL:

 root = node

else if node.item < y.item: y.left = node

else: y.right = node

if node.parent == NULL:

 node.color = 0

 return

fin-insert (key) node)

func fix-insert(k):

while k.parent.color == 1: .parent
if k.parent == k.parent.right:

u = k.parent.parent.left

if u.color == 1:

u.color = 0

k.parent.color = 0; k.parent.parent.color = 1

k = k.parent.parent

else:

if k == k.parent.left: k = k.parent

self.right-rotate(k)

k.parent.color = 0; k.parent.parent.color = 1

left-rotate(k.parent.parent)

else: u = k.parent.parent.right

if u.color == 1:

u.color = 0

k.parent.color = 0; k.parent.parent.color = 1

right-rotate(k.parent.parent)

if k == root:

break

func left-rotate(x):

y = x.right; y.parent = x

if y.left != NULL: y.left.parent = x

if not x.parent: root = y

if x == x.parent.left: x.parent = y

y.left = x; x.parent = y

} similar
to
right
rotate