

Red-black Trees

Amogh Karadkar
IBM18CS016

Insert (data) {

create new nodes with the data
and color as red.

normal BST insertion.

get the parent node of new node
get its grand parent node also

if parent node is left child of grand parent
and uncle node is a red colored node
then change color of grand parent to red
and parent's color to black. Change uncle
node color also to black.

~~if~~ if ^{new} node is right child of parent
then rotate left the parent node
newnode becomes the parent and
parent becomes newnodes parent.

else rotate right the grand parent node
exchange the colors of parent and
grand parent

else

if uncle is red colored

change grand parents color to red.

change parent's and uncle's color to black.

else

if newnode is left child

rotate right the parent and newnode is
new parent.

else

rotate left the grand parent
exchange colors of parent and grand parent.