

RB-INSERT(T, z)

$y = T.nil$

$x = T.root$

while $x \neq T.nil$

$y = x$

if $z.key < x.key$

$x = x.left$

else $x = x.right$

$z.p = y$

if $y == T.nil$

$T.root = z$

elseif $z.key < y.key$

$y.left = z$

else $y.right = z$

$z.left = T.nil$

$z.right = T.nil$

$z.color = \text{RED}$

RB-INSERT-FIXUP(T, z)