Red-black trees

```
def insert(K)
    While K.parent.color == 1:
        if K.parent == K.parent.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->p->p->right
            if u.color == 1:
                u.color = 0
                K.parent.color = 1
                K = K.parent.parent
```

```
else :
    if  K = K.parent.right
        K = K.parent
        left_rotate(K)

    K.parent.colour = 0
    K → p → p → c = 1
    right_rot(K → p → p)

if (K == root):
    break
root → colour = 0
```