

QUESTION #12

SPLAY TREE

How to insert a value in a splay tree.

TREES

Solution

1. If tree empty,
insert the new node n as root node.
2. If tree is not empty,
insert the new node n as leaf node Using BST insertion.
3. Now, SPLAY the new node.

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Solution

SPLAY(T=tree, n=node) :

while (node is not root)

if (node is child of root), //one rotation

if (n == left child)

RIGHT_ROTATE (T , n.parent)

else

LEFT_ROTATE (T , n.parent)

*else, //two rotations

p = n.parent

g = p.parent

Inside *else,

if (both are left children),

RIGHT_ROTATE (T , g)

RIGHT_ROTATE (T , p)

else if (both are right children),

LEFT_ROTATE (T , g)

LEFT_ROTATE (T , p)

else if (n = right child && p = left child)

LEFT_ROTATE(T, p)

RIGHT_ROTATE(T, g)

else

RIGHT_ROTATE(T, p)

LEFT_ROTATE(T, g)

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