

TAD Data structures TI #2

TAD BinarySearchTree
BinarySearchTree = Node root, weight, height
{inv: left<raíz & right>raíz}
<p>Operaciones principales:</p> <ul style="list-style-type: none"> • FindNode (Analyzer): Node x Value ---> Node • InsertNode (Modifier): Value ----> Tree • DeleteNode (Modifier): Value ----> Tree • CreateTree (Constructor): ----> Tree • ShowTree (Analyzer): ----> Text
<p>DeleteNode (Value)</p> <p>“Delete a node from de binary search tree”</p> <p>{pre: A value}</p> <p>{post: Modified tree}</p>
<p>FindNode (node, value)</p> <p>“Find a node in the tree that haves the value who we are looking for”</p> <p>{pre: A value}</p> <p>{post: Founded node}</p>
<p>CreateTree()</p> <p>“Create a new empty tree”</p> <p>{pre: TRUE}</p> <p>{post: Empty tree}</p>
<p>ShowTree()</p> <p>“Return all the nodes ”</p> <p>{pre: TRUE}</p> <p>{post: árbol mostrado}</p>

TAD AVL Tree
AVLTree = Node root, weight, height
{inv: left<raíz & right>raíz}
<p>Operaciones principales:</p> <ul style="list-style-type: none"> • FindNode (Analyzer): Node x Value ---> Node • InsertNode (Modifier): Value ----> Tree • DeleteNode (Modifier): Value ----> Tree • CreateTree (Constructor): ----> Tree • ShowTree (Analyzer): ----> Text
<p>DeleteNode (Value)</p> <p>“Delete a node from de AVLTree ”</p> <p>{pre: A value}</p> <p>{post: Modified tree}</p>
<p>FindNode (node, value)</p> <p>“Find a node in the tree that haves the value who we are looking for”</p> <p>{pre: A value}</p> <p>{post: Founded node}</p>
<p>CreateTree()</p> <p>“Create a new empty tree”</p> <p>{pre: TRUE}</p> <p>{post: Empty tree}</p>
<p>ShowTree()</p> <p>“Return all the nodes ”</p> <p>{pre: TRUE}</p> <p>{post: árbol mostrado}</p>
<p>RightRotate()</p> <p>“Rotate the node to the right”</p> <p>{pre: The tree with the node that we want to rotate}</p> <p>{post: The tree with the node rotated}</p>
<p>LeftRotate()</p> <p>“Rotate the node to the left”</p> <p>{pre: The tree with the node that we want to rotate}</p> <p>{post: The tree with the node rotated}</p>