9) Assume the prolog predicate gt(A, B) is true when A is greater than B. Use this predicate todefine the predicate addLeaf(Tree, X, NewTree) which is true if NewTree is the Treeproducedby adding the item X in a leaf node. Tree and NewTree are binary search trees. Theempty treeis represented by the atom nil.

```
% gt(A, B) is true if A > B

gt(A, B) :- A > B.


% addLeaf(Tree, X, NewTree) is true if NewTree is the tree produced by adding X as a leaf in Tree.

addLeaf(nil, X, t(X, nil, nil)).  % If the tree is empty, create a new tree with X as the root.

addLeaf(t(Root, Left, Right), X, t(Root, NewLeft, Right)) :-  % If X is smaller or equal to Root, add to the left.
    \+ gt(X, Root),  % X is not greater than Root, so it goes to the left
    addLeaf(Left, X, NewLeft).

addLeaf(t(Root, Left, Right), X, t(Root, Left, NewRight)) :-  % If X is greater than Root, add to the right.
    gt(X, Root),  % X is greater than Root, so it goes to the right
    addLeaf(Right, X, NewRight).
```