Ch8 #1

Binary search trees are relatively simple to implement. They are slower than hash tables. Insertion and lookup can be O(log­2 n) where n is the names in the tree. The average case is much slower than that at O(n) when a tree of n names has a depth of n.

Hash tables are more complicated to implement but faster than binary search trees. Insertion and lookup are O(1).

Ch9 2. Assume that we add a new kind of conditional statement to C or Java,

the signtest. Its structure is:

signtest ( exp ) {

neg: stmts

zero: stmts

pos: stmts

}

The integer expression exp is evaluated. If it is negative, the statements

following neg are executed. If it is zero, the statements following zero

are executed. If it is positive, the statements following pos are executed.

Show the AST you would use for this construct. Revise the semantic

analysis, reachability, and throws visitors for if statements (Section 9.1.2)

to handle the signtest.