

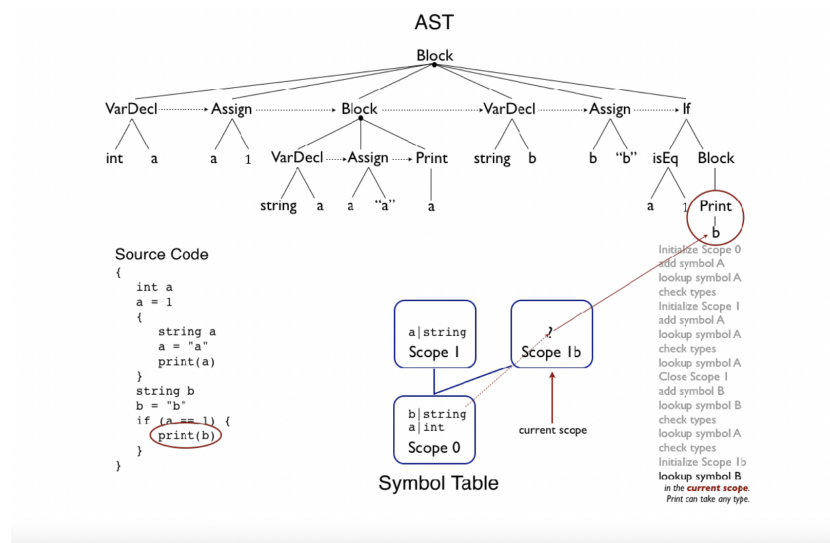
# Lab Seven

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## 1 DIAGRAM EXPLANATION



In this figure, a scope tree is being created to check the scope and type of the parsed tokens. This is being done by building a tree of hash tables, known as the symbol table. In each scope node, entries are added to the hash map to represent symbols in that scope. Information stored in each entry include the symbol, which is the key for the entry, the type, the scope, and the line number. The symbol table is then used to identify type mismatch errors, scope errors, and use before declaration errors. In the highlighted section of the figure, the variable **b** is being looked up in the current scope, which is scope **1b** created by the if statement. If it is not found in the current scope, a lookup should be performed on the parent scope. If it is not in the parent scope, then it is not defined before use. In this case, the string **b** is in the parent scope, so it passes.