Lab Seven

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1 Exercise 1

1.1 Lab 7 Diagram Description

This diagram is an Abstract Syntax Tree. The Block node at the top also signifies the intialization of Scope 0. When moving to the next level below where we see VarDecl on the far left, we can now see the first variable initialized in Scope 0. Integer 'a' is assigned the value 1. For the assignment statement to be valid in this case, a must have been initialized before in the current scope or higher order scope. Here it is, so it is correct. When another block is reached, the contents of the block are implemented in Scope 1. Here we see a VarDecl for 'a', an assignment for 'a' and a print statement which are all valid because the assign and print both are preceded by the VarDecl. After the block is passed we move back up to the previous scope and have a VarDecl for 'b'. Then we have a valid string assignment for 'b'. When we get to the Block node on the far right of the tree, we now change the scope to 1b because it is lower order than Scope 0, but it is still on the same level as Scope 1. 'b' was declared in Scope 0 so it is available for lookup in Scope 1b.