

CSC 345 Lab – Code Generation

Overview

Show the code that should be generated for a given abstract syntax tree.

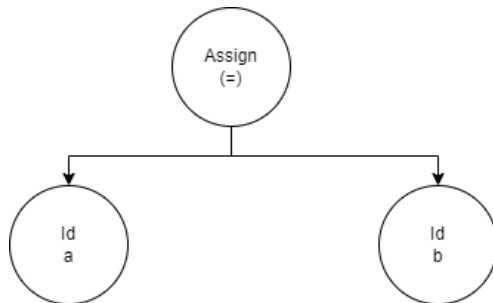
Use the following assembly language instructions:

```
load reg, id
store reg, id
print id
add reg, reg, reg
branch labelName
branchequal reg, reg, labelName
branchnotequal reg, reg, labelName
: labelName
```

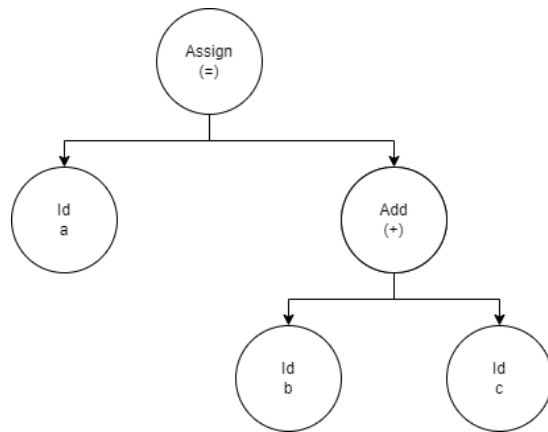
For each problem do the following:

- Show the order the nodes were visited.
- Show the code that is generated when visiting each node.

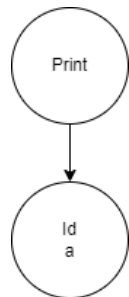
Problem 1



Problem 2

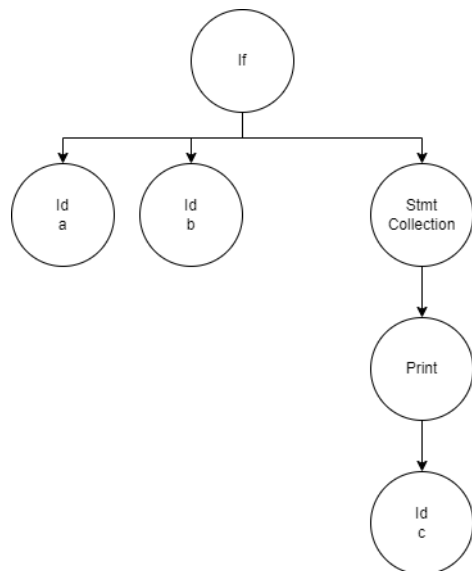


Problem 3



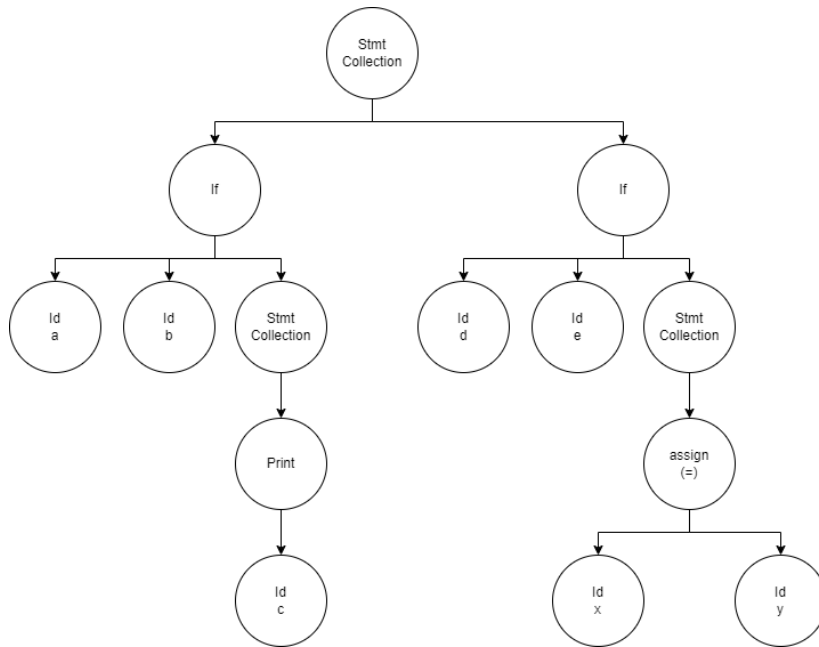
Problem 4

Use equals for the if test. The left side of the test is Id a and the right side of the test is Id b.

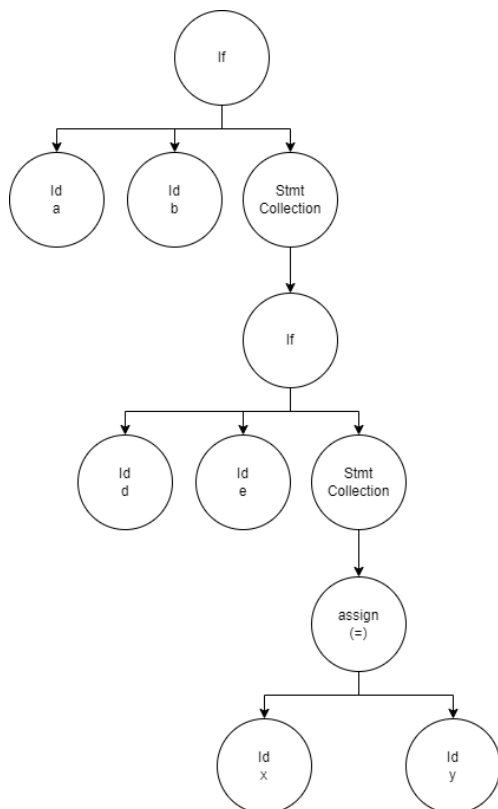


Problem 5

Use equals for the if test. The first two children of each if are the left and right side of the test.

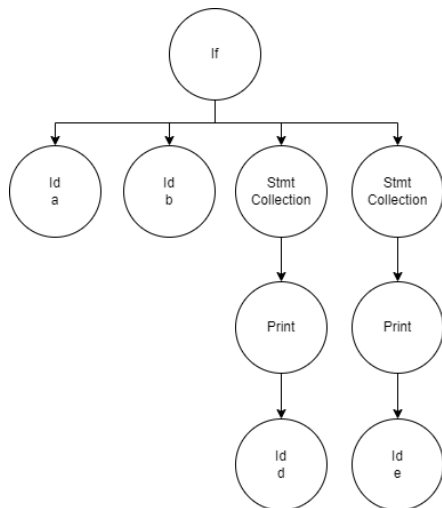


Problem 6



Problem 7

If else statement. The first stmt collection runs for a true result on the test and the second runs for a false result on the test.



Problem 8

While loop. It is similar to an if statement, but it needs more branching statements.

