



UNIVERSITY OF AMSTERDAM

ASSIGNMENT 3

Syntactic Analysis

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Students:

René Kok

13671146

Aram Mutlu

13574116

Lecturer:

Dhr. dr. C.U. Grelck

Course:

Compiler Construction

Course code:

5062COMP6Y

1 Introduction

2 Scoping and symbol tables

Consider the following CiviC nested function definition:

```
int d = 2;

int foo(int a) {
    int b = 1;
    int c;

    int f(int x) {
        int b = x + b;
        return b;
    }

    int g(int x) {
        c = f( x - b);
        return c + a;
    }

    c = c + g( d - b);
    return c;
}
```

a). What is the value of `foo(8)`, and, more importantly, why?

aaaaa

b). Mark every occurrence of a variable identifier in statement position by an arrow to the declaration

aaaaa

c). Annotate each scope (level) with its symbol table.

baaa

d). Annotate each variable identifier in statement position by a number indicating the relative scope distance to the corresponding declaration.

aaaa

3 Lambda lifting

4 Function overloading