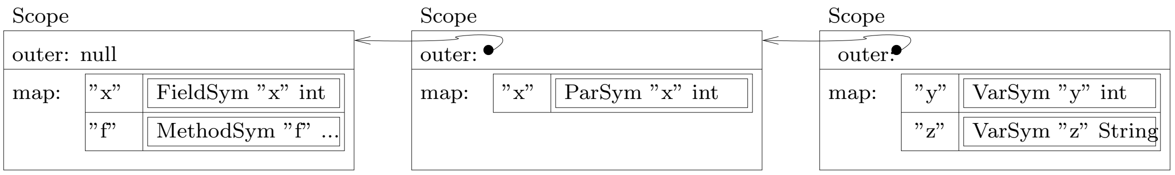
Programmation Avancée et Compilation 2001
(Solutions)

9 Name Analysis

Exercise 17

(a) The symbol-table has three scopes, one containing the field symbol x and the method symbol f, one containing the parameter x, and one describing the variable symbols y and z.

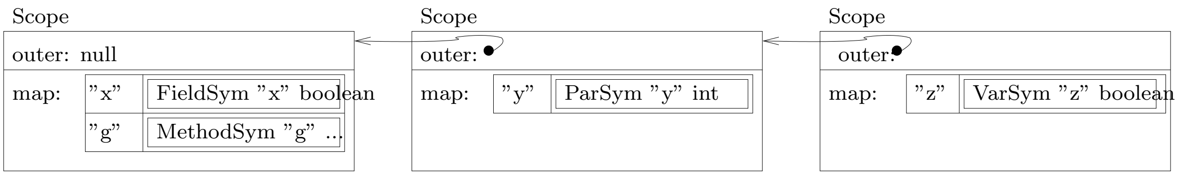


(b) The identifier x is looked up in the current scope, which is the rightmost one in the sketch of part (a) of this exercice. As it is not found there, it is being searched for in the next-outer scope, which is the one in the middle of the graphics. There x is found being declared as a parameter, which completes the process of looking it up.

(c) As y is already contained in the current scope, name-analysis will invoke an error-message.

Exercise 18

(a) At /∗∗∗/ there are entries for field symbol x, method symbol g, parameter symbol y, and variable symbol z. The symbol-table has three fields, one containing x and g, one with y, and one with z.



(b) For each constant, a symbol is added to the symbol-table. This is reflected by attributes added to the abstract syntax-tree. During name-analysis of the assignment x = x + y, the symbols for x and y are being looked up in the symbol-table. We denote this by drawing arrows from the identifiers to the corresponding entries.