Type Inference Example -- 1
source text: x:=1; z := y < x

Abstract Syntax Tree:

stmts = stmts ';' stmt;

;

:=

x   1

:=

z

<

y   x

assignment = vars ':=' exprs;

relation = sum '<' sum;

b logical
i integer
r real
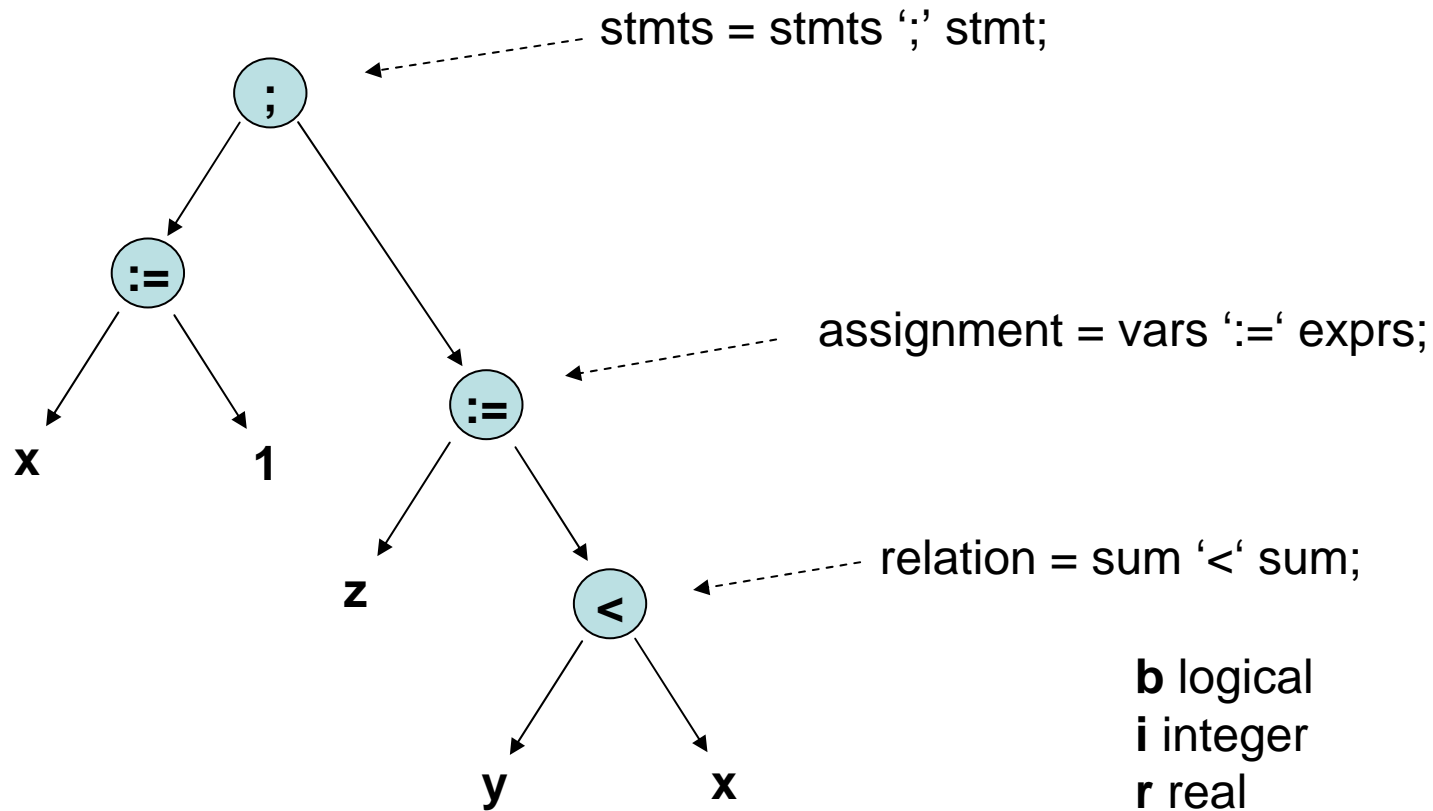
Type Inference Example -- 2

source text: x:=1; z := y < x

initial state:

symbol table

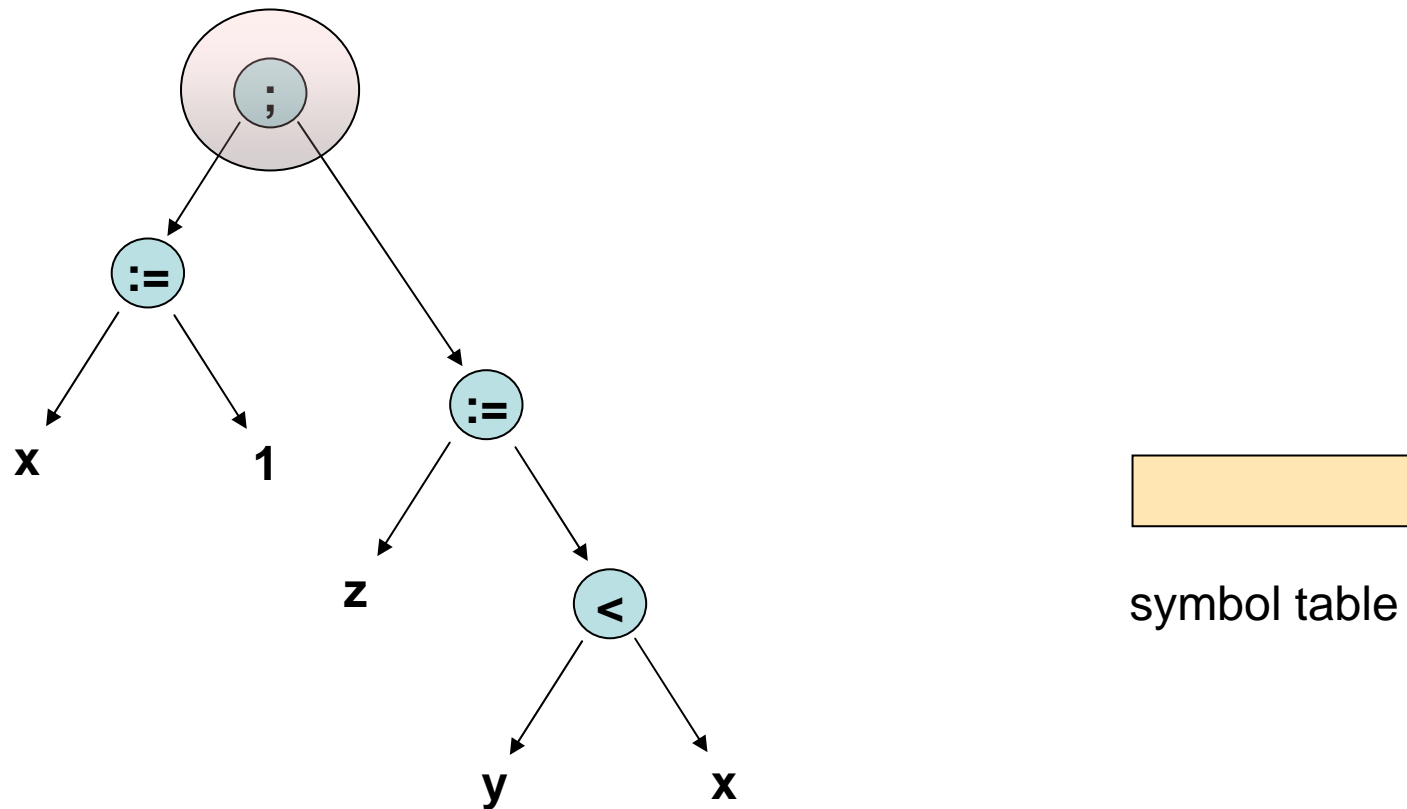# Type Inference Example -- 3

source text: x:=1; z := y < x

visit 1:

symbol table
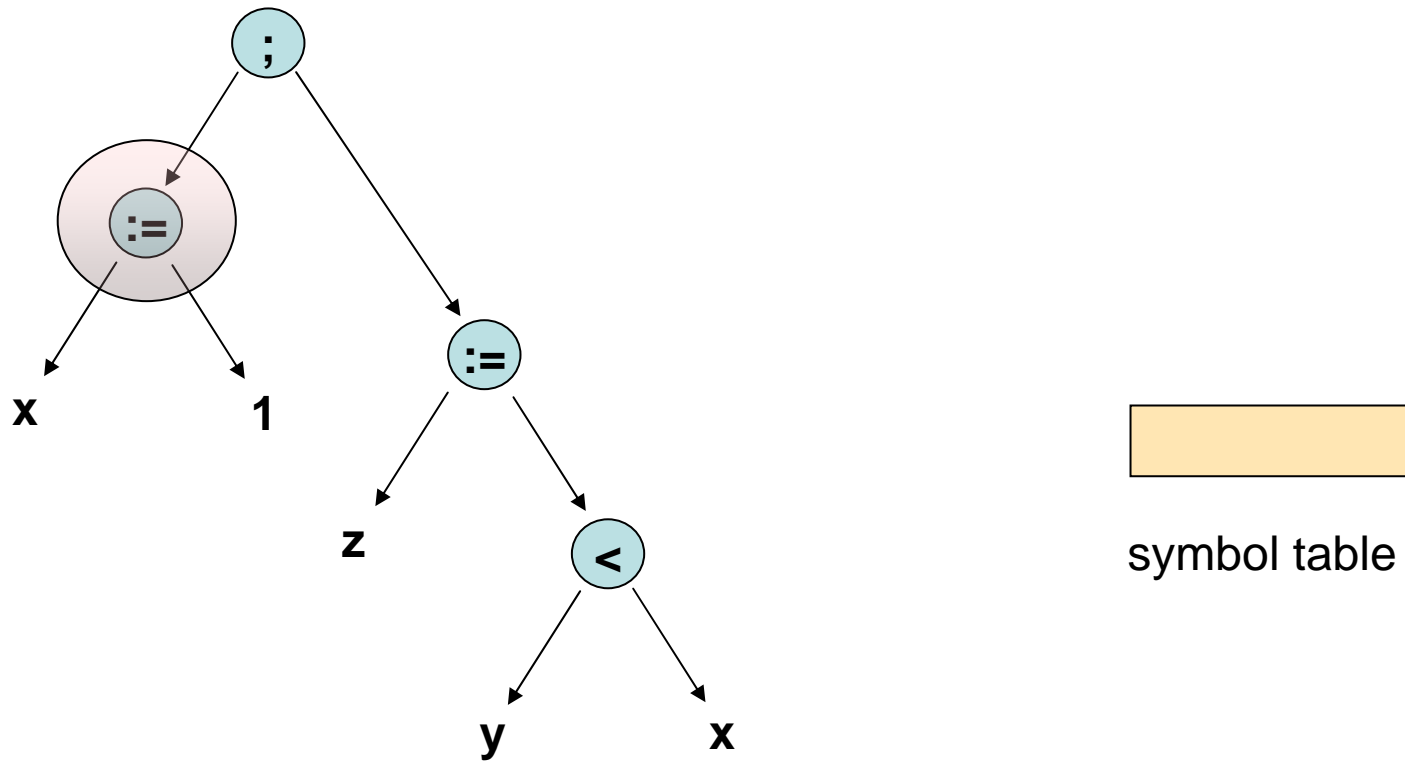
Type Inference Example -- 4

source text: x:=1; z := y < x

visit 1:

x/left/**bir**

symbol table
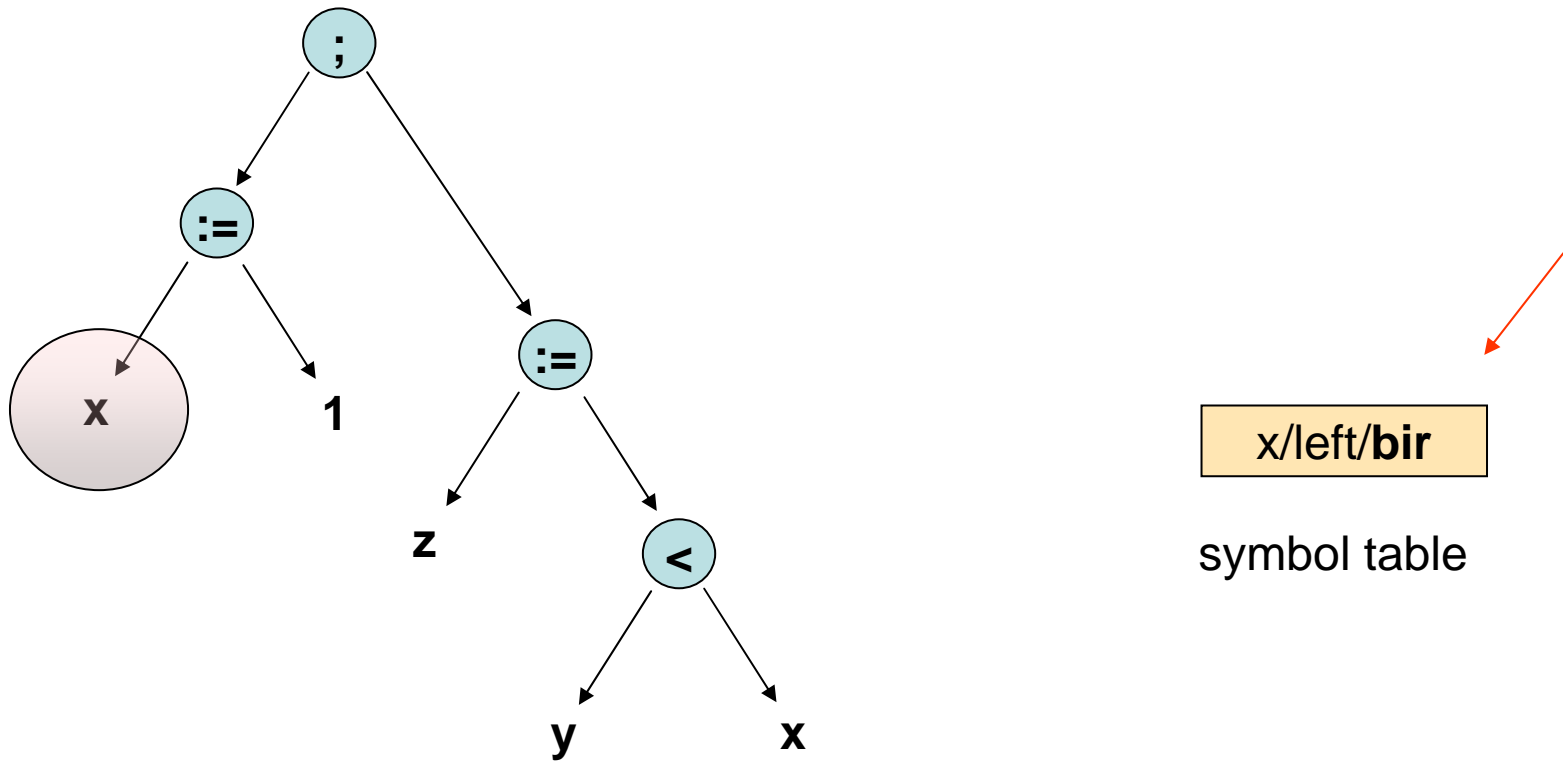
Type Inference Example -- 5

source text: x:=1; z := y < x

return:

bir

; := x 1 := z < y x

x/left/**bir**

symbol table
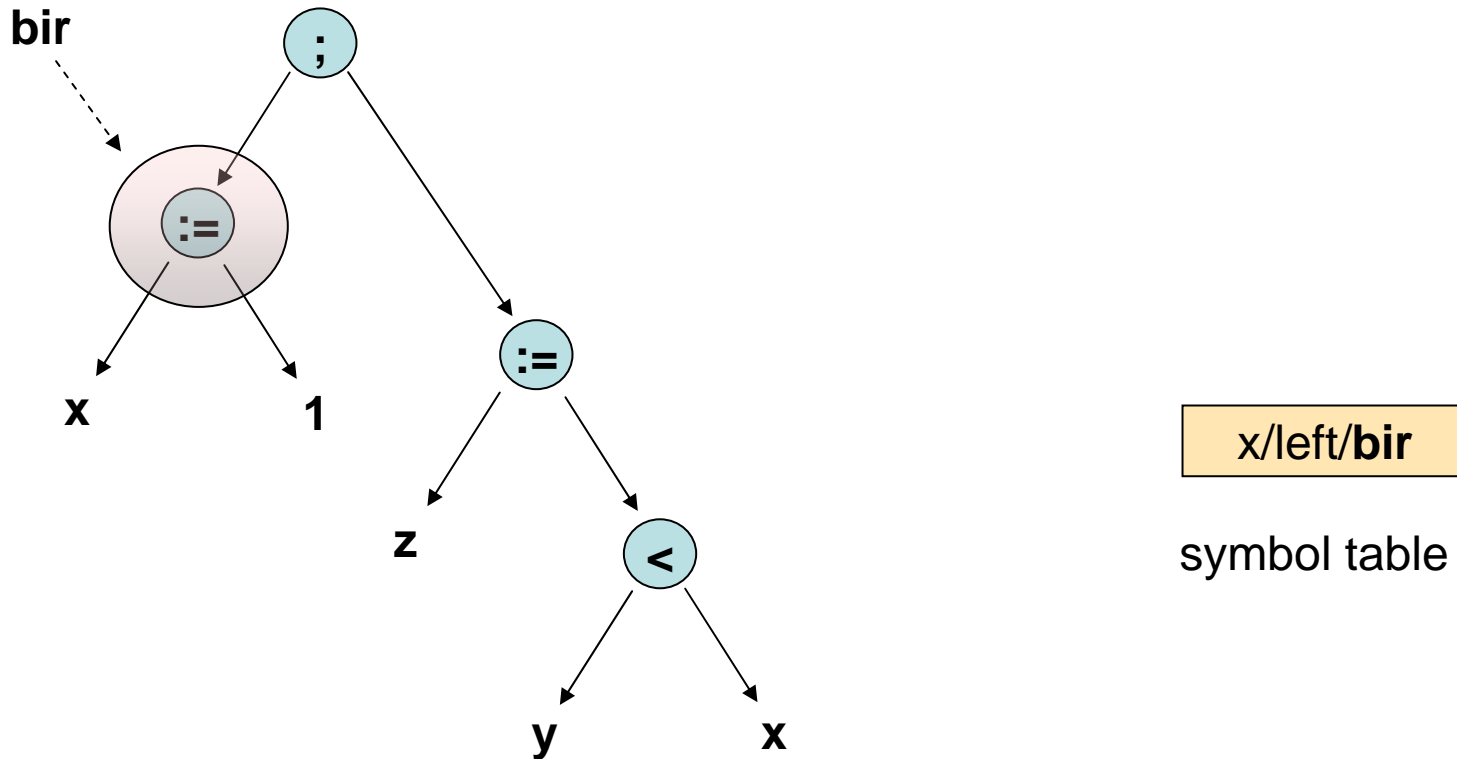
Type Inference Example -- 6

source text: x:=1; z := y < x

visit 2:

;

:=

x

1

i

:=

z

<

y   x

x/left/**bir**

symbol table
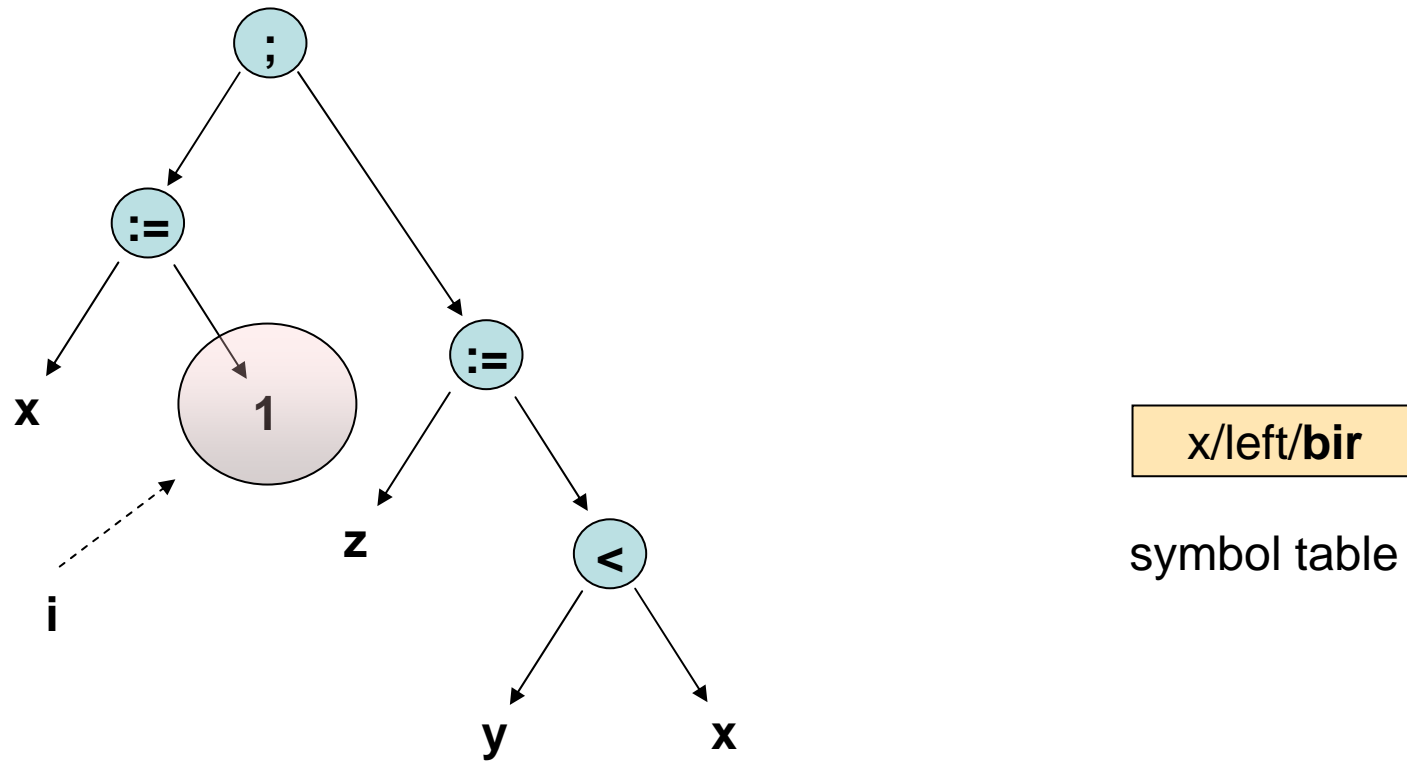
Type Inference Example -- 7

source text: x:=1; z := y < x

return:
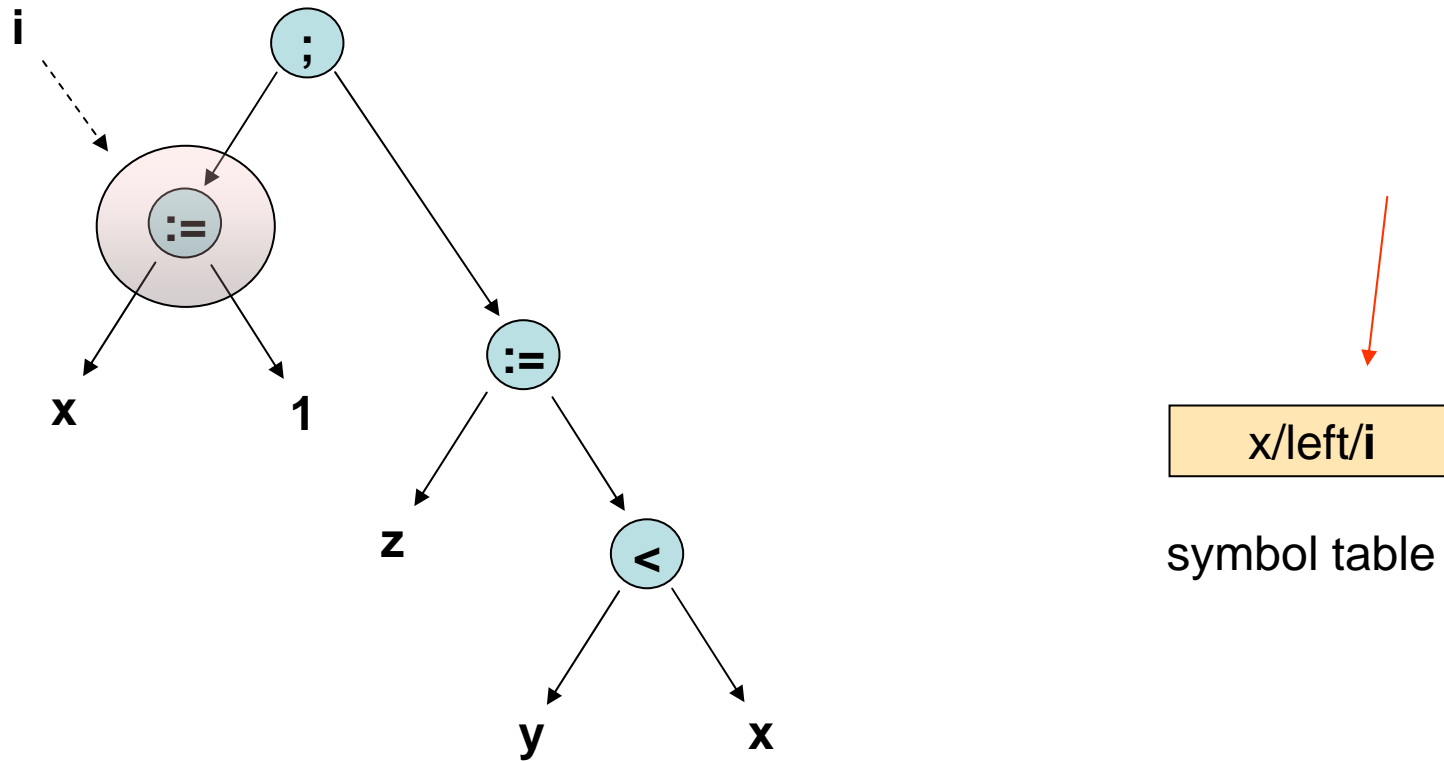
symbol table

Type Inference Example -- 8

source text: x:=1; z := y < x

return:

x/left/**i**
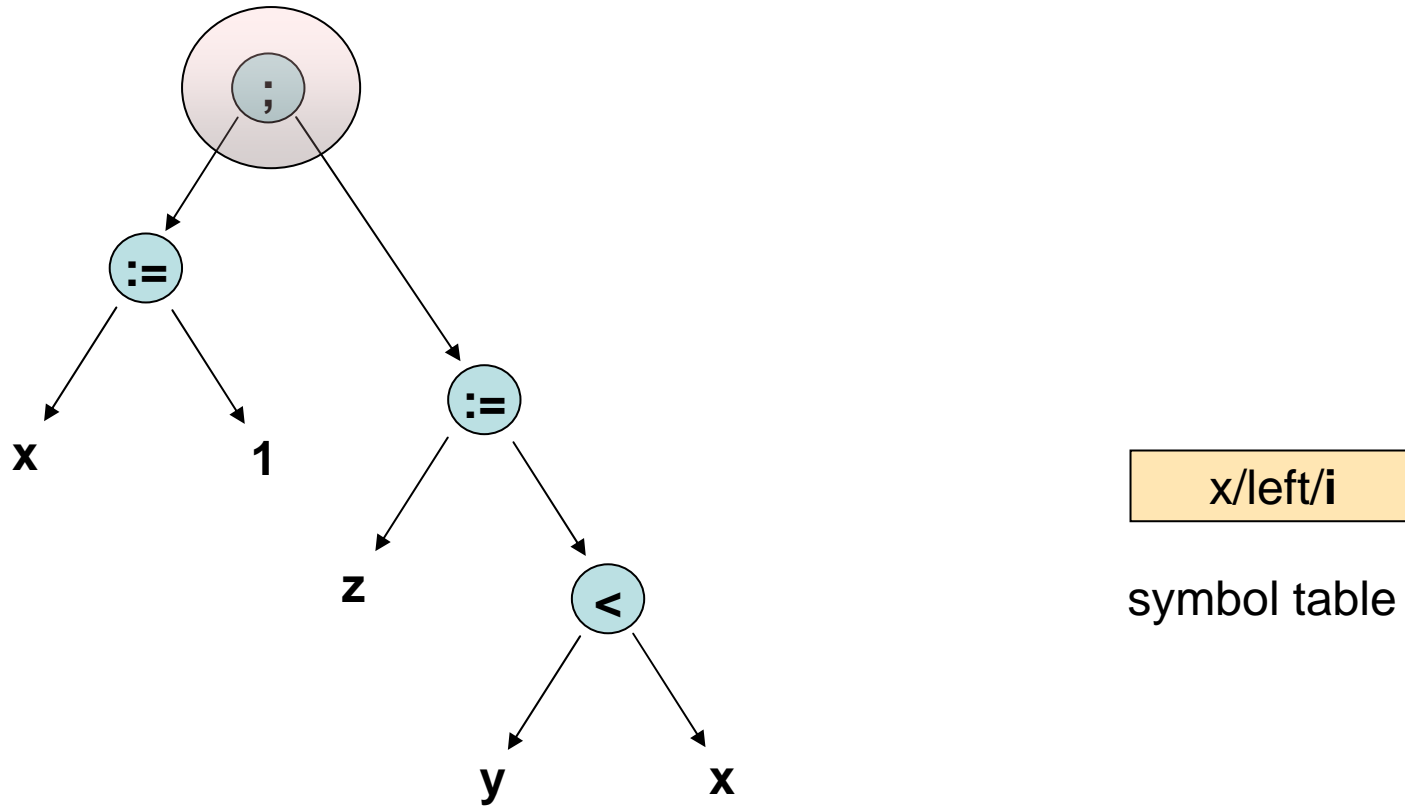
symbol table

Type Inference Example -- 9

source text: x:=1; z := y < x

visit 2:

x/left/**i**
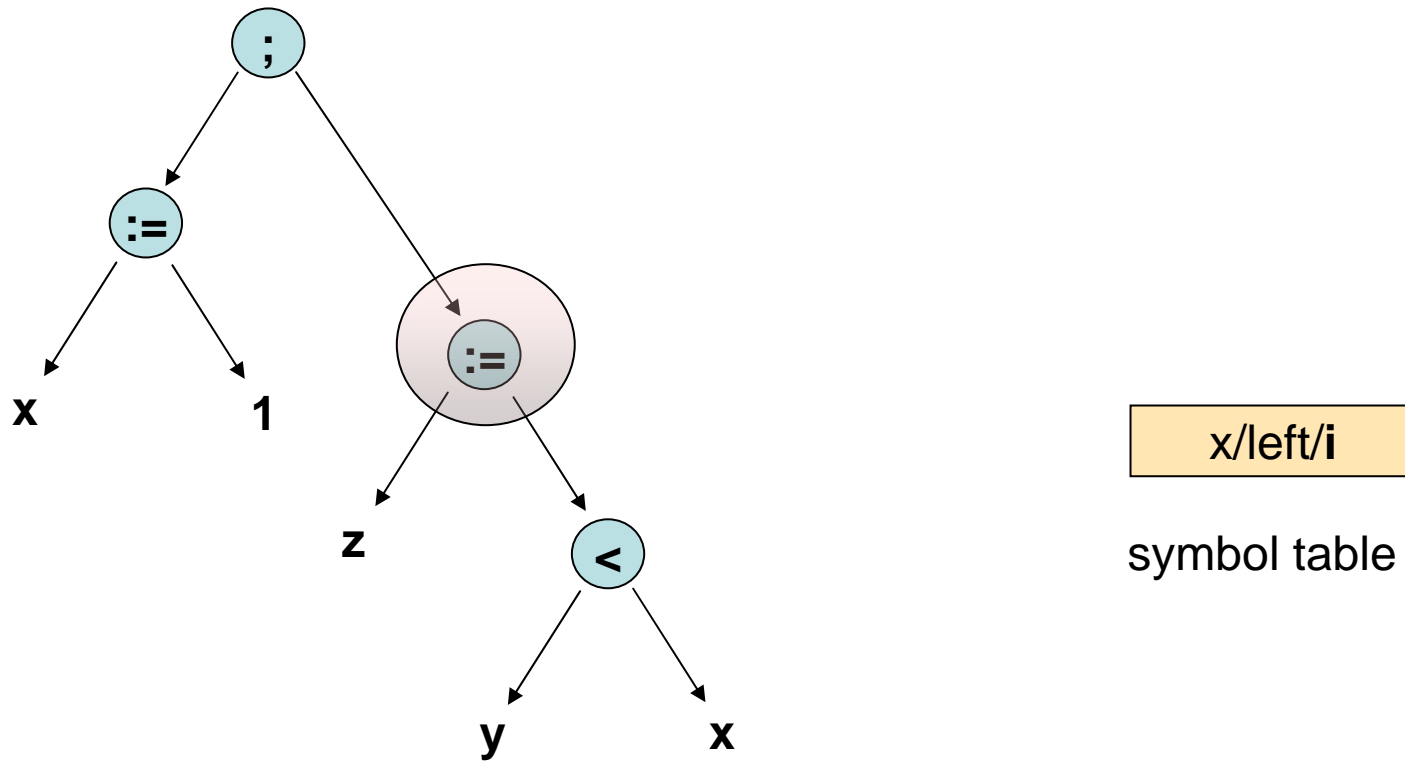
symbol table

Type Inference Example -- 10
source text: x:=1; z := y < x
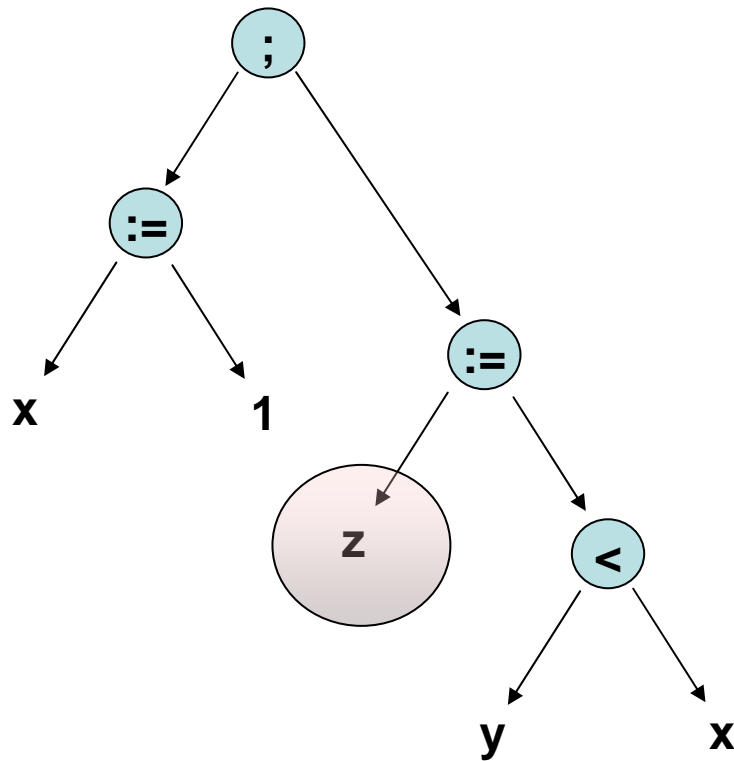
visit 1:

z/left/**bir**
x/left/**i**

symbol table

Type Inference Example -- 11

source text: x:=1; z := y < x

return:

bir

z/left/**bir**
x/left/**i**
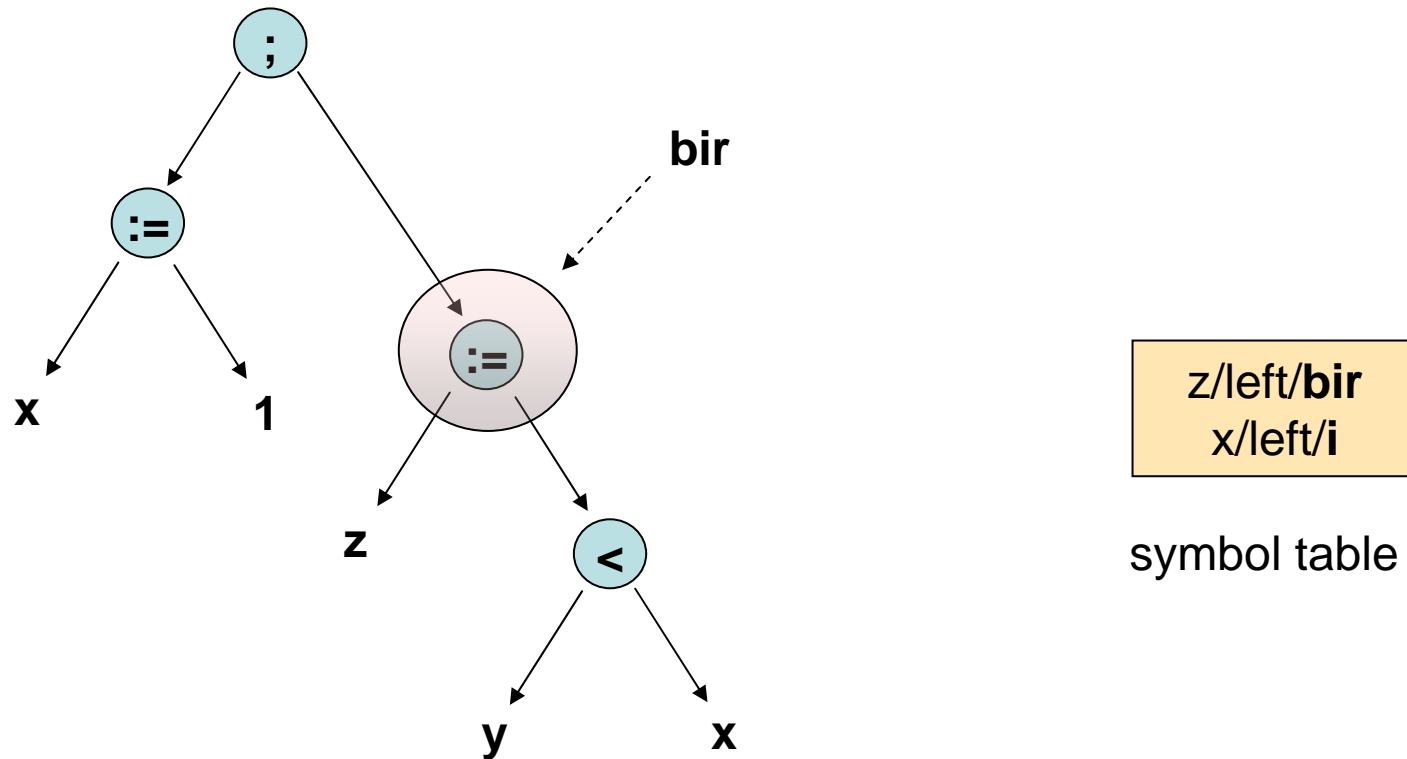
symbol table

Type Inference Example -- 12

source text: x:=1; z := y < x

visit 2:

z/left/**bir**
x/left/**i**

symbol table

source text: x:=1; z := y < x

visit 1:

y/right/**ir**
z/left/**bir**
x/left/**i**
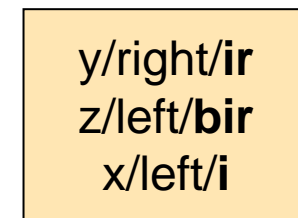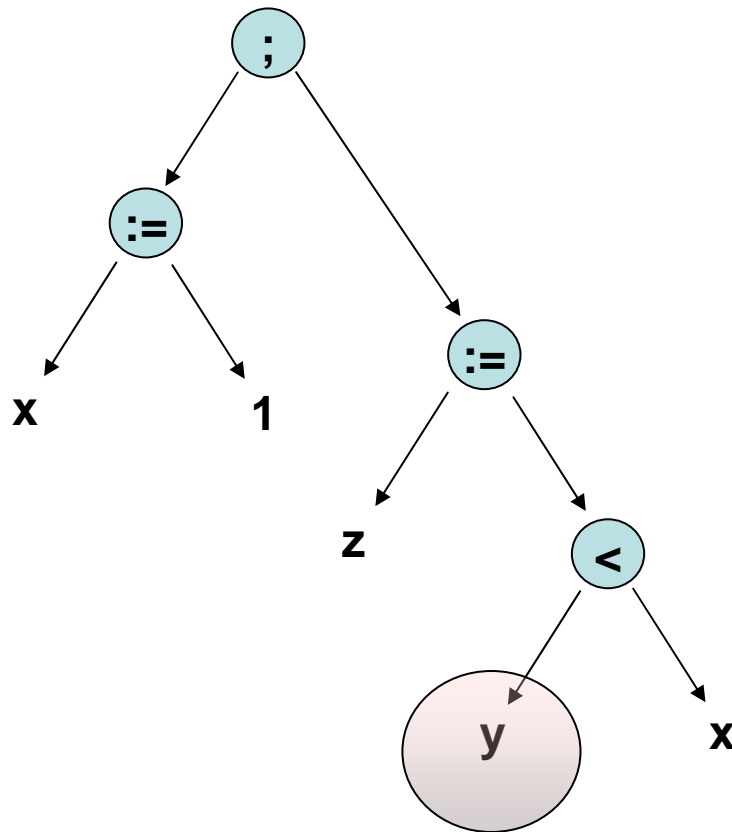
symbol table

Type Inference Example -- 14

source text: x:=1; z := y < x

return:

;

:=

x   1

:=

z

<

y   x

ir

y/right/**ir**
z/left/**bir**
x/left/**i**
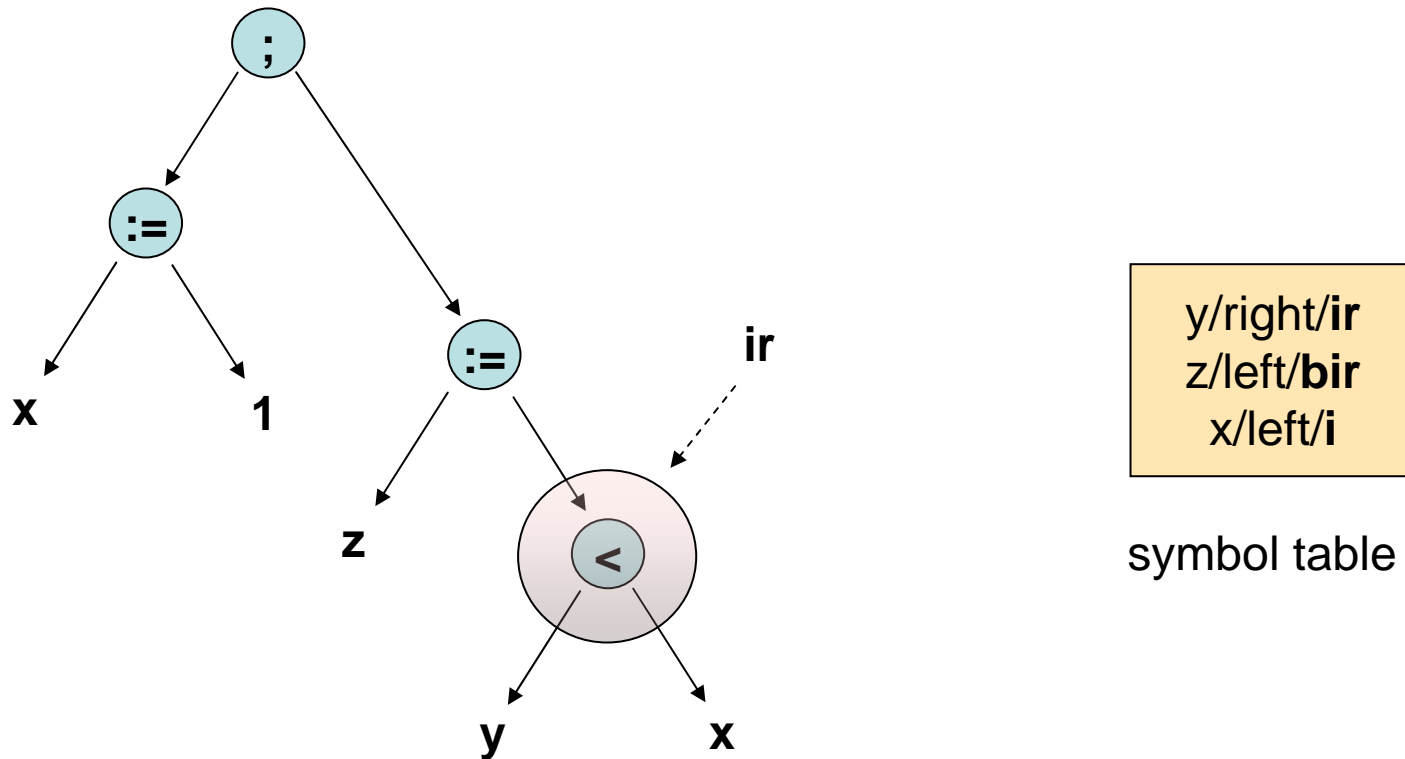
symbol table

Type Inference Example -- 15

source text: x:=1; z := y < x

visit 2:

symbol table

y/right/**ir**
z/left/**bir**
x/leftright/**i**
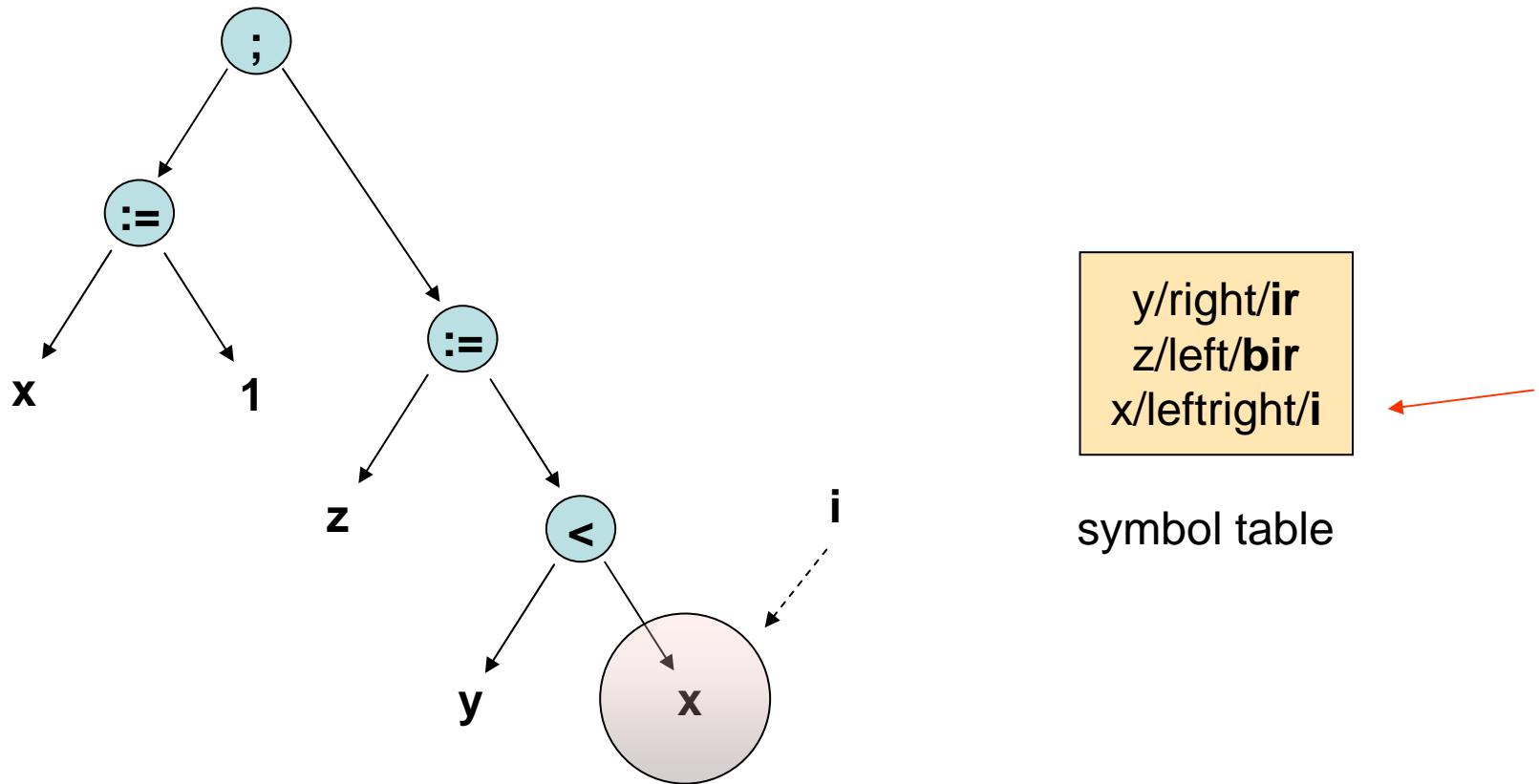
Type Inference Example -- 16

source text: x:=1; z := y < x

return:

y/right/**ir**
z/left/**bir**
x/leftright/**i**
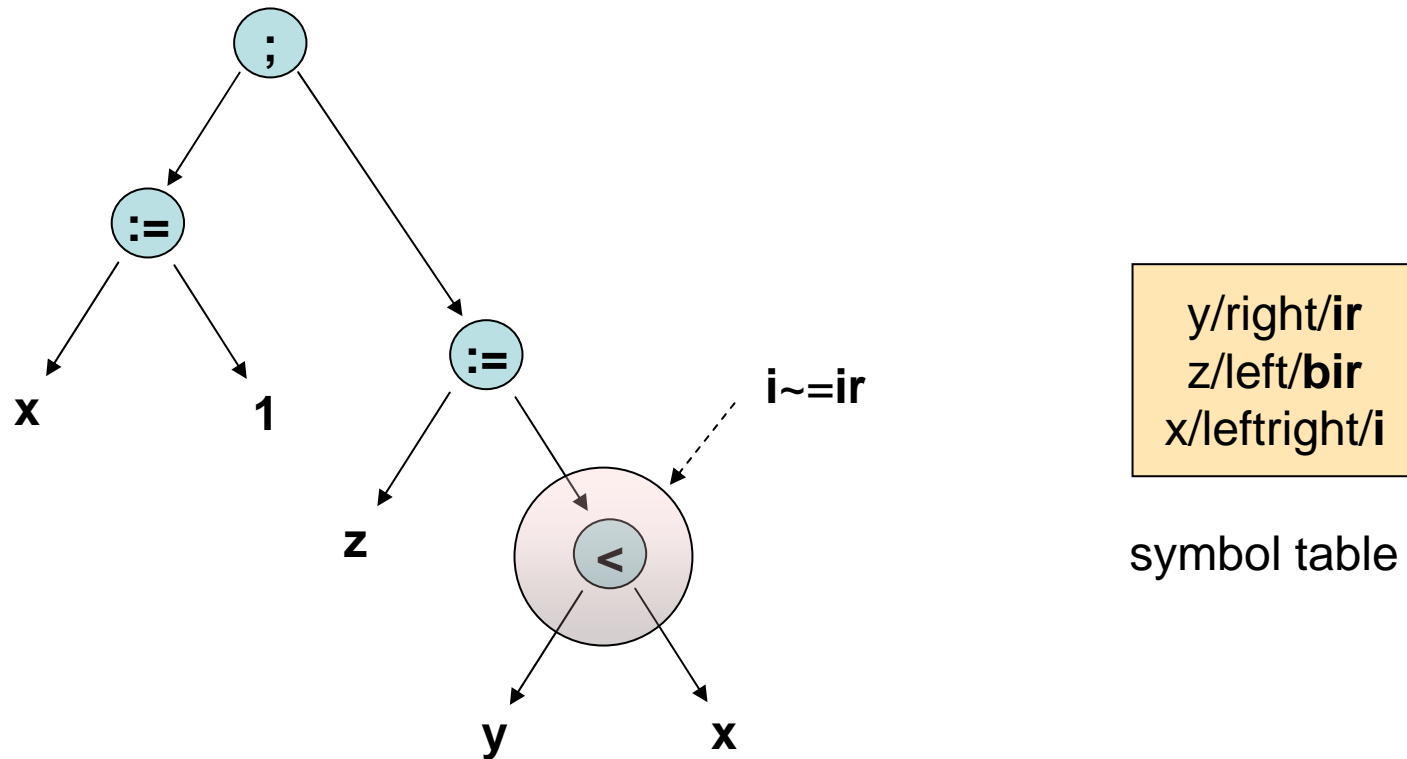
symbol table

Type Inference Example -- 17

source text: x:=1; z := y < x

visit 1 (again):

y/right/**i**
z/left/**bir**
x/leftright/**i**
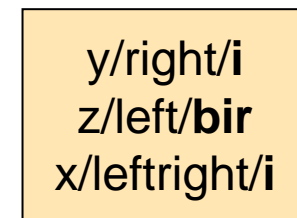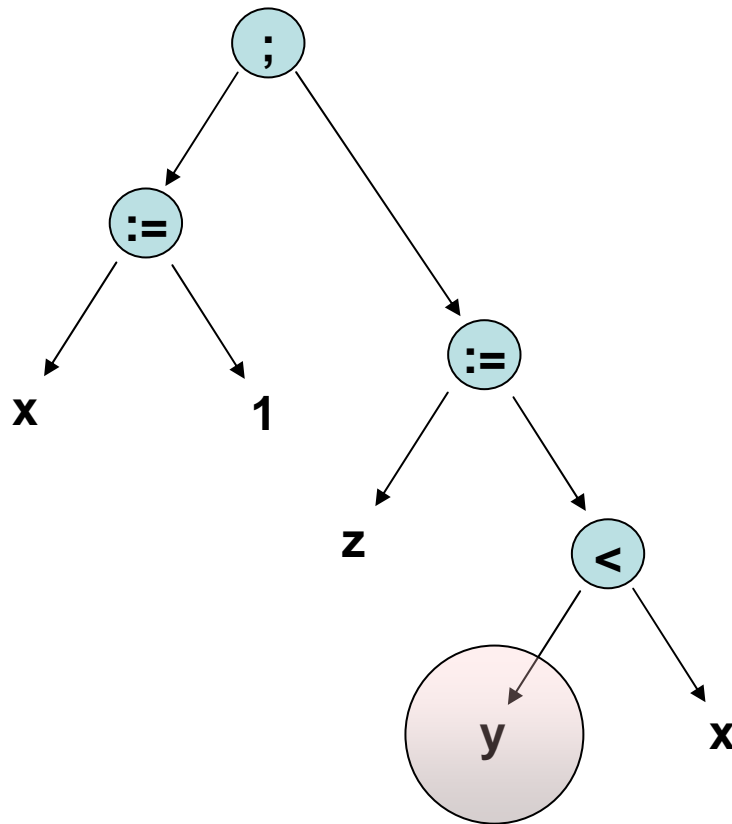
symbol table

Type Inference Example -- 18

source text: x:=1; z := y < x

return:

;

:=

x   1

:=

z

b

<

y   x

y/right/**i**
z/left/**bir**
x/leftright/**i**

symbol table
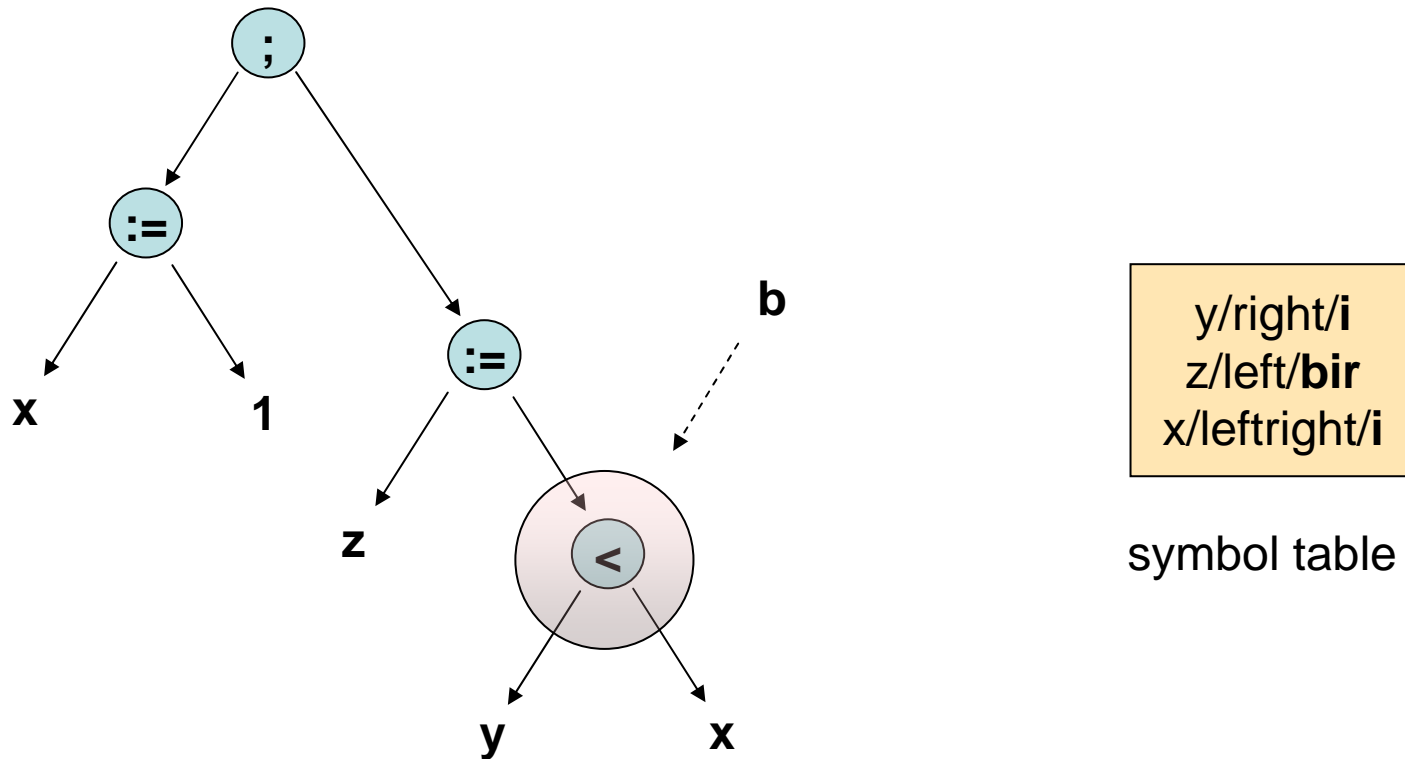
Type Inference Example -- 19

source text: x:=1; z := y < x

return:

symbol table

source text: x:=1; z := y < x

return:

y/right/**i**
z/left/**b**
x/leftright/**i**

symbol table