# 第五讲

3.

第7行时的符号表：

主过程作用域 a.b.p

p ~ s.r

p::r ~ v

第七行时符号表：

主过程. a.b.p.g

g. x y

A1

语句(x)时：2个开作用域，

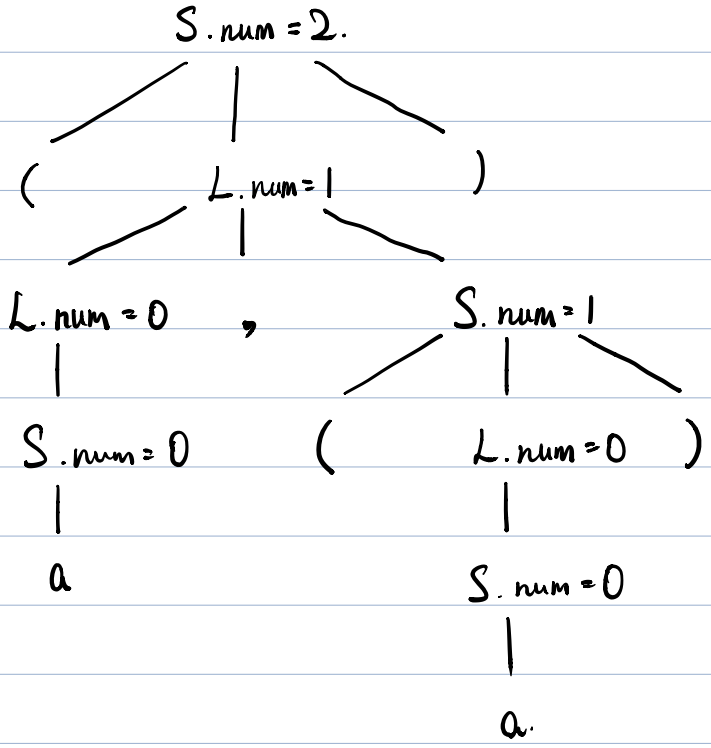
主过程：a0. b0. a2. fun1

fun1：a1、b1

语句(y)时：a2是在第(1)行声明的.

2.

第六讲



4.

| 步骤 | 状态栈 | 语义栈 | 符号栈 | 剩余串 |
| --- | --- | --- | --- | --- |
| 14) | 0246 | ——1— | #(L) | # |
| 15) | 01 | —2 | #S | # |

8.

$S \rightarrow MAbB$ { if (v[top].num == 0) then v[top-3].accepted := true
else v[top-3].accepted := false }

$A \rightarrow A_1 a$ { v[top-1].num := v[top-1]num - 1 }.

$A \rightarrow \varepsilon$ { v[top+1].num := v[top].num }

$B \rightarrow B_1 a$ { v[top-1].num := v[top-1].num - 1 }

$B \rightarrow B_1 b$ { v[top-1].num := v[top-1].num }

$B \rightarrow \varepsilon$ { v[top+1].num := v[top-1].num }

$M \rightarrow \varepsilon$ { v[top+1].num := 100 }

9.

$D \rightarrow D_1 \ ; \ T$ { L.type := T.type ; L.offset := $D_1$.width , L.width := T.width } L

{ D.width := $D_1$.width + L.num x T.width }

$D \rightarrow M \ T$ { L.type := T.type ; L.offset := M.s ; L.width := T.width } L,

{ D.width := L.num x T.width }

$M \rightarrow \varepsilon$

{ M.s := 0 }

$T \rightarrow$ integer

{ T.type := int ; T.width := 4 }

$T \rightarrow$ real

{ T.type := real ; T.width := 8 }

$L \rightarrow$ { $L_1$.type := L.type ; $L_1$.offset := L.offset ; $L_1$.width := L.width } $L_1$ , id

{ enter ( id.name , L.type , L.offset + $L_1$.num x L.width ); L.num := $L_1$.num + 1 }

$L \rightarrow$ id

{ enter ( id.name , L.type , L.offset ); L.num := 1 }

11.

(a) $S \rightarrow Ab \{M.i := A.num\} M \{B.in\_num := M.s\} B$

{ if (B.num == 0) then S.accepted = true else S.accepted = false }

$M \rightarrow \varepsilon$

{ M.s = M.i + 100 }

$S \rightarrow Abb \{N.i = A.num\} N \{B.in\_num = N.s\} B$

{ if (B.num == 0) then S.accepted = true else S.accepted = false }

$N \rightarrow \varepsilon$

{ N.s = N.i + 50 }

$A \rightarrow A_1 a$

{ A.num = $A_1$.num + 1 }

$A \rightarrow \varepsilon$

{ A.num = 0 }

$B \rightarrow \{B_1.in\_num = B.in\_num\} B_1 a$

{ B.num = $B_1$.num − 1 }

$B \rightarrow \varepsilon$

{ B.num = B.in_num }

11. (b)

$S \rightarrow AbMB$ { if ( v[top].num == 0) then v[top-3].accepted = true
else v[top-3].accepted = false },

$S \rightarrow Abb NB$ { if (v[top].num == 0) then v[top-4].accepted = true
else v[top-4].accepted = false }

$M \rightarrow \varepsilon$ { v[top+1].num = v[top-1].num + 100 }

$N \rightarrow \varepsilon$ { v[top+1].num = v[top-2].num + 50 }

$A \rightarrow A_1 a$ { v[top-1].num = v[top-1].num + 1 }

$A \rightarrow \varepsilon$ { v[top+1].num = 0 }

$B \rightarrow B_1 a$ { v[top-1].num = v[top-1].num - 1 }

$B \rightarrow \varepsilon$ { v[top+1].num = v[top].s }

A1

① i

② i

③ p2i := p1s

④ ps := p2s + 1

⑤ p1i := i

⑥ ps := i + p1s

# A2

(a) $S \to P$ { print( val[top].s ) }

$P \to P_1 P_2 \wedge$ { val[top-2].s = $f_1$( val[top-2].s , val[top-1].s ) }

$P \to P_1 P_2 \vee$ { val[top-2].s = $f_2$( val[top-2].s , val[top-1].s ) }

$P \to P_1 \neg$ { val[top-1].s = $f_3$( val[top-1].s ) }

$P \to id$ { val[top].s = $g$( val[top] ) }

(b) 结果是 1.