编译原理第三次作业

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4. G': $<bexpr> \to <bterm><bexpr>'$

  $<bexpr>' \to or <bterm><bexpr>' |\epsilon$

  $<bterm> \to <bfactor><bterm'>$

  $<bterm>' \to and <bfactor><bterm'> |\epsilon$

  $<bfactor> \to not <bfactor> |(<bexpr>)|true|false$

13. G_1 (1) $V \to NV'$

  $V' \to [E]|\epsilon$

  $E \to VE'$

  $E' \to +E|\epsilon$

  $N \to i$

(2) $FIRST(V) = \{i\}$

  $FIRST(V') = \{[, \epsilon\}$

  $FIRST(N) = \{i\}$

  $FIRST(E) = \{i\}$

  $FIRST(E') = \{+, \epsilon\}$

  $FOLLOW(V) = \{\#, +\}$

  $FOLLOW(V') = \{\#, +\}$

  $FOLLOW(N) = \{\#, +, [,]\}$

  $FOLLOW(E) = \{]\}$

  $FOLLOW(E') = \{]\}$

(3)

	i	$+$	$[$	$]$	$\#$
V	NV'				
V'		ϵ	$[E]$		ϵ
E	VE'				
E'		$+E$		ϵ	
N	i				

G_2 (1) $S \to aABe$

  $A \to bA'$

  $A' \to bcA'|\epsilon$

  $B \to d$

(2) $\text{FIRST}(S) = \{a\}$

$\text{FIRST}(A) = \{b\}$

$\text{FIRST}(A') = \{b, \epsilon\}$

$\text{FIRST}(B) = \{d\}$

$\text{FOLLOW}(S) = \{\#\}$

$\text{FOLLOW}(A) = \{d\}$

$\text{FOLLOW}(A') = \{d\}$

$\text{FOLLOW}(B) = \{d\}$

(3)

	a	b	c	d	e	$\#$
S	$aABe$					
A		bA'				
A'		bcA'		ϵ		
B				d		

G_3 (1) $S \to aAS'$

$S' \to bAS'|\epsilon$

$A \to Sdc|dc$

(2) $\text{FIRST}(S) = \{a\}$

$\text{FIRST}(S') = \{b, \epsilon\}$

$\text{FIRST}(A) = \{a, d\}$

$\text{FOLLOW}(S) = \{\#, d\}$

$\text{FOLLOW}(S') = \{\#, d\}$

$\text{FOLLOW}(A) = \{\#, d\}$

(3)

	a	b	c	d	$\#$
S	aAS'				
S'		bAS'		ϵ	ϵ
A	Sdc			dc	

Algorithm 1 递归下降分析器

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15 1: **procedure** LEXP
   2:    **if** lookahead = number **then**
   3:      MATCH(number)
   4:    **else**
   5:      **if** lookahead = '(' **then**
   6:        MATCH('(')
   7:        op()
   8:        lexp_seq()
   9:        MATCH(')')
  10:      **end if**
  11:    **end if**
  12: **end procedure**
  13: **procedure** OP
  14:    **if** lookahead $\in \{+, -, *\}$ **then**
  15:      call MATCH accordingly
  16:    **end if**
  17: **end procedure**
  18: **procedure** LEXP_SEQ
  19:    lexp()
  20:    **while** lookahead $\in \{+, (\}$ **do**
  21:      lexp()
  22:    **end while**
  23: **end procedure**