

Compiler 4-3

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4.5.2

1. $SS+$
2. $SS+$
3. a

4.6.2

- 增广文法:

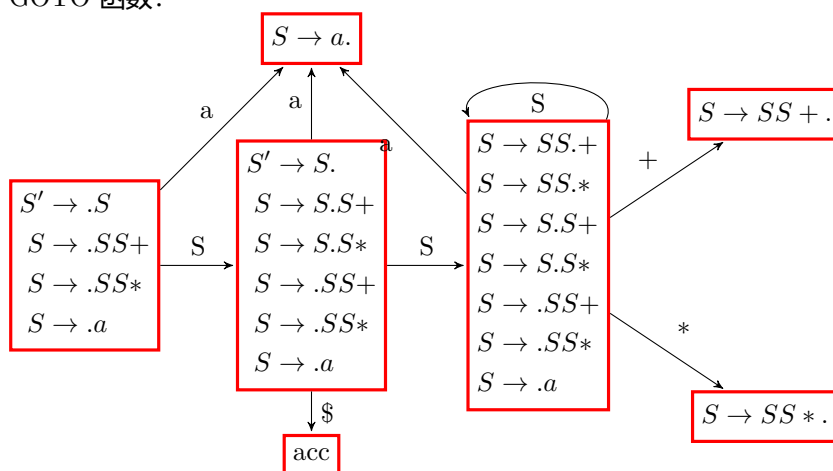
$S' \rightarrow S$

$S \rightarrow SS+$

$S \rightarrow SS*$

$S \rightarrow a$

- GOTO 函数:



- $FOLLOW(S) = \{a, \$, +, *\}$

- 语法分析表:

状态	ACTION				GOTO
	a	+	*	\$	S
0	S1				2
1	R4	R4	R4	R4	
2	S1			acc	3
3	S1	S4	S5		3
4	R2	R2	R2	R2	
5	R3	R3	R3	R3	

- 综上，没有冲突，所以是 SLR 文法。

4.7.1

1.

I_0
 $S' \rightarrow .S, \$$
 $S \rightarrow .SS+, \$/a$
 $S \rightarrow .SS*, \$/a$
 $S \rightarrow .a, \$/a$

I_1
 $S \rightarrow a., \$/a$

I_2
 $S' \rightarrow S., \$$
 $S \rightarrow S.S+, \$/a$
 $S \rightarrow S.S*, \$/a$
 $S \rightarrow .SS+, +/ * /a$
 $S \rightarrow .SS*, +/ * /a$
 $S \rightarrow .a, +/ * /a$

I_3
 $S \rightarrow a., +/ * /a$

I_4
 $S \rightarrow SS.+, \$/a$
 $S \rightarrow SS.*, \$/a$
 $S \rightarrow S.S+, +/ * /a$
 $S \rightarrow S.S*, +/ * /a$
 $S \rightarrow .SS+, +/ * /a$
 $S \rightarrow .SS*, +/ * /a$
 $S \rightarrow .a, +/ * /a$

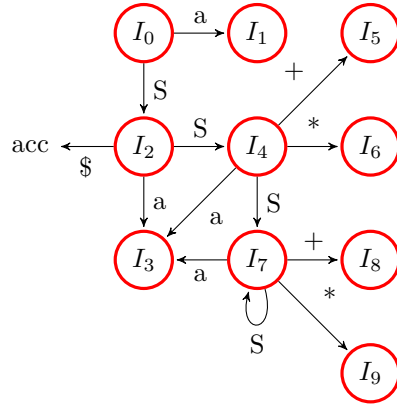
I_5
 $S \rightarrow SS + ., \$ / a$

I_6
 $S \rightarrow SS * ., \$ / a$

I_7
 $S \rightarrow SS + ., + / * / a$
 $S \rightarrow SS * ., + / * / a$
 $S \rightarrow S.S + ., + / * / a$
 $S \rightarrow S.S * ., + / * / a$
 $S \rightarrow .SS + ., + / * / a$
 $S \rightarrow .SS * ., + / * / a$
 $S \rightarrow .a, + / * / a$

I_8
 $S \rightarrow SS + ., + / * / a$

I_9
 $S \rightarrow SS * ., + / * / a$



状态	ACTION				GOTO
	a	+	*	\$	
0	S1				2
1	R4			R4	
2	S3			acc	4
3	R4	R4	R4		
4	S3	S5	S6		7
5			R2	R2	
6			R3	R3	
7	S3	S8	S9		7
8	R2	R2	R2		
9	R3	R3	R3		

2.

I_0

$$S' \rightarrow .S, \$$$

$$S \rightarrow .SS+, \$ / a$$

$$S \rightarrow .SS*, \$ / a$$

$$S \rightarrow .a, \$ / a$$

I_1

$$S' \rightarrow S., \$$$

$$S \rightarrow S.S+, \$ / a$$

$$S \rightarrow S.S*, \$ / a$$

$$S \rightarrow .SS+, + / * / a$$

$$S \rightarrow .SS*, + / * / a$$

$$S \rightarrow .a, + / * / a$$

I_2

$$S \rightarrow a., \$ / + / * / a$$

I_3

$$S \rightarrow SS.+, + / * / a \$$$

$$S \rightarrow SS.*, + / * / a \$$$

$$S \rightarrow S.S+, + / * / a$$

$$S \rightarrow S.S*, + / * / a$$

$$S \rightarrow .SS+, + / * / a$$

$$S \rightarrow .SS*, + / * / a$$

$$S \rightarrow .a, + / * / a$$

I_4

$$S \rightarrow SS + ., + / * / a / \$$$

I_5

$$S \rightarrow SS * ., + / * / a / \$$$