

Week 13

Thursday, May 23, 2019 7:57 AM

$$G: S \rightarrow AB|a \Rightarrow G_2: S \rightarrow a \\ B \rightarrow b \qquad \qquad \qquad B \rightarrow b \qquad \qquad \Rightarrow G_1: S \rightarrow a$$

有用: S, a

可达: S, a

$$G = G_1$$

生成: S, B, a, b

可达: S, A, B, a, b

消除顺序不可颠倒

$$G: S \rightarrow AB|a \Rightarrow S \rightarrow AB|a \Rightarrow S \rightarrow a \\ B \rightarrow b \qquad \qquad \qquad B \rightarrow b \qquad \qquad \qquad B \rightarrow b$$

<u>编号</u>	<u>生成符号</u>	<u>理由</u>
1	a	基础
2	b	基础
3	S	$S \rightarrow a \wedge 11$
4	B	$B \rightarrow b \wedge 12$

<u>编号</u>	<u>对应符号</u>	<u>理由</u>
1	S	基础
2	A	$S \rightarrow AB \wedge 11$
3	B	$S \rightarrow AB \wedge 11$
4	a	$S \rightarrow a \wedge 11$
5	b	$B \rightarrow b \wedge 12$

Step 1: 计算生成符号集

<u>编号</u>	<u>生成</u>	<u>理由</u>
(1)	0	基础
(2)	1	基础
(3)	$[q_0 \times q_1]$	$[q_0 \times q_1] \rightarrow 1 \wedge (2)$
(4)	$[q_0 \times q_1]$	$[q_0 \times q_1] \rightarrow 1 \wedge (2)$
(5)	$[q_0, z_0, q_2]$	$[q_0, z_0, q_2] \rightarrow \varepsilon$ 注意: $X \xrightarrow{*} w, [w \in T^*]$
(6)	$[q_0, z_0, q_2]$	$[q_0, z_0, q_2] \rightarrow 0 [q_0 \times q_1] [q_0, z_0, q_2] \wedge (1) \wedge (3) \wedge (5)$
(7)	S	$S \rightarrow [q_0, z_0, q_2] \wedge (6)$

Step 2: 删 3: Rename

Step 4: ... 可达 ...

(1)	S	基底句
(2)	A	$S \rightarrow A \wedge (1)$
(3)	B	$A \rightarrow_0 B D \wedge (2)$
(4)	C	$A \rightarrow_0 B D \wedge (2)$
(5)	D	$A \rightarrow_0 B D \wedge (2)$
(6)	E	$B \rightarrow_0 B C A \wedge (4)$
(7)	F	$B \rightarrow_0 F \wedge (4)$

$$A \rightarrow BC$$

$$B \rightarrow \epsilon$$

$$C \rightarrow \epsilon$$

$$A \rightarrow C$$

$$A \rightarrow B$$

$$A \rightarrow \epsilon$$

$$S \rightarrow AB$$

$$A \rightarrow aAA| \epsilon$$

$$A \rightarrow aAA|\epsilon$$
$$B \rightarrow bBB|\epsilon$$

編番	引致・空	理由
(1)	A	$A \rightarrow \epsilon$
(2)	B	$B \rightarrow \epsilon$
(3)	S	$S \rightarrow ABA \wedge (1) \wedge (2)$

$$S \rightarrow ABA | A | B | \epsilon$$
~~$$A \rightarrow aAA | aA | a \epsilon$$~~~~$$B \rightarrow bBB | bB | b \epsilon$$~~
$$A \rightarrow B$$
$$B \rightarrow b | cD \Rightarrow A \rightarrow b | cD$$
$$I \rightarrow a | b | I a | I b | I 0 | I 1$$

$F \rightarrow I \sqcup (E)$ $T \rightarrow F \mid T * F$ $E \rightarrow T \mid E + T$

<u>编号</u>	<u>Unit偶对</u>	<u>理由</u>	<u>步数</u>
(1)	(I, I)	基础	0
(2)	(F, F)	基础	0
(3)	(T, T)	基础	0
(4)	(E, E)	基础	0
(5)	(F, I)	$F \rightarrow I \sqcup (E)$	1
(6)	(T, F)	$T \rightarrow F \mid T * F$	1
(7)	(E, T)	$E \rightarrow T \mid E + T$	1
(8)	(E, F)	(7) $\wedge T \rightarrow F$	2
(9)	(T, I)	(6) $\wedge (F, I)$	2
(10)	(E, I)	(8) $\wedge (T, I)$	3

 $(1) (I, I) \sqcup \rightarrow a \mid b \mid I \sqcup a \mid I \sqcup b \mid I \sqcup I \mid I \sqcup I \quad ①$

(2) $(F, F) \quad F \rightarrow (E)$

②

(3) $(T, T) \quad T \rightarrow T \times F$

③

(4) $(E, E) \quad E \rightarrow E + T$

④

(5) $(F, I) \quad F \rightarrow \textcircled{1}$

(6) $(T, F) \quad T \rightarrow \textcircled{2}$

(7) $(E, T) \quad E \rightarrow \textcircled{3}$

...

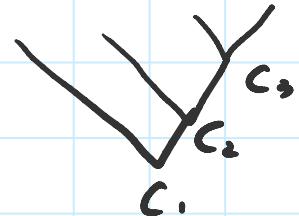
$I \rightarrow a | b |] a |] b |] o |]$

$F \rightarrow (E) | a | b |] a |] b |] o |]$,

$T \rightarrow T \times F | (E) | a | b |] a |] b |] o |]$,

$E \rightarrow E + T | T \times F | (E) | a | b |] a |] b |] o |]$,

$A \rightarrow B_1, B_2, B_3, B_4, B_5$

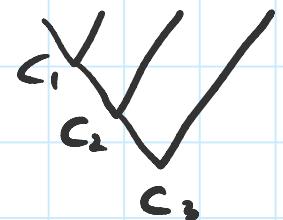


$A \rightarrow B, C,$

$C_1 \rightarrow B_2, C_2$

$C_2 \rightarrow B_3, C_3$

$C_3 \rightarrow B_4, B_5$

$$A \rightarrow B_1 B_2 B_3 B_4 B_5$$

$$A \rightarrow C_3 B_5$$
$$C_3 \rightarrow C_2 B_4$$
$$C_2 \rightarrow C_1 B_3$$
$$C_1 \rightarrow B_1 B_2$$
$$S \rightarrow A B C D E$$
$$T \rightarrow E B C D F$$
$$S \rightarrow A B | C A \quad \text{生成: } a, b, A, C, S \quad \text{非: } B$$
$$A \rightarrow a$$
$$B \rightarrow B C | A B$$
$$C \rightarrow a B | b$$

↓

$$S \rightarrow C A$$

可达:

$$A \rightarrow a$$
$$C \rightarrow b$$

可达串,

可达性！

$S \rightarrow ASB|\varepsilon$

① 算可致空符号集合

$A \rightarrow aAS|a$

② 去除空产生式

$B \rightarrow SbS|A|bb$

③ 计算 Unit 偶对

④ 去除 Unit 偶对

⑤ 算生成符号集

Ans: $S \rightarrow EBIAB$

⑥ 去除非生成符号

$B \rightarrow FSI$

⑦ 算可达符号集

⑧ 去除非 可达符号

⑨ 引入变量

⑩ 二义化