MANOLACHE ANDREI

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SET 4

G: 1 2

2) $S \to Ab \mid Ac$

$A \to AB \mid a$ (3, 4) ← Numerotăm prod.

$B \to a$ (5)

Extindem $S' \to S$

Construim mulțimile canonice LR(1):

$i_0 =$ ~~$S' \to .S;\# \to I_1$~~

~~$S \to .Ab;\# \to i_1$~~

~~$S \to .a;\# \to i_2$~~

~~$A \to .AB;b \to i_3$~~

~~$A \to$~~

$I_0 =$ $S' \to .S;\# \to i_1$

$S \to .Ab;\# \to i_2$

$A \to .AB;b$

$A \to .a;b$

$i_0 =$ ~~$S' \to .S;\# \to i_1$~~

$S \to .Ab;\# \to i_2$

$S \to .Ac;\# \to i_3$

$A \to .AB;b|c|a \to i_4$

~~$A \to .AB;c$~~

$A \to .a;b|c|a \to i_5$

1/

$i_1 =$ $S' \to S.\#$

$i_2 =$ $S \to A.a; \#$

$i_3 =$ $S \to A.c; \#$

$i_4 =$ $A \to A.B; a/c/a \to i_6$

$B \to .a; a/c/a \to i_7$

$i_5 =$ $A \to a.; a/c/a$

$i_6 =$ $A \to AB.; a/c/a$

$i_7 =$ $B \to a.; a/c/a$

Tabela LR(1):

	a	a	c	#	S	A	B
0					1	2	
1							
2							
3							
4							
5							
6							
7							

J_0 = $S' \to .S ; \#$ $\to J_1$

$S \to .Ab ; \#$ $\to J_2$

$S \to .Ac ; \#$ $\to J_2$

$A \to .AB ; a/b/c$ $\to J_2$

$A \to .a ; a/b/c$ $\to J_3$

J_1 = $S' \to S. ; \#$

J_2 = $S \to A.b ; \#$ $\to J_4$

$S \to A.c ; \#$ $\to J_5$

$A \to A.B ; a/b/c$ $\to J_6$

$B \to .a ; a/b/c$ $\to J_7$

J_3 = $A \to a. ; a/b/c$

J_4 = $S \to Ab. ; \#$

J_5 = $S \to Ac. ; \#$

J_6 = $A \to AB. ; a/b/c$

J_7 = $B \to a. ; a/b/c$

Tabela LR(1):

	a	b	c	#	S	A	B
0	SHIFT 3				1	2	
1				accept			
2	SHIFT 7	SHIFT 4	SHIFT 5				6
3	REDUCE 4	REDUCE 4	REDUCE 4				
4				REDUCE 1			
5				REDUCE 2			
6	REDUCE 3	REDUCE 3	REDUCE 3				
7	REDUCE 5	REDUCE 5	REDUCE 5				

În rest, avem eroare.

Tabela nu are intrări multiple $\Leftrightarrow$ G este LR(1)

$(0, aaac, \lambda) \rightarrow (0a3; aac; \lambda) \rightarrow$

$(0A2; aac; 4) \rightarrow (0A2a7; ac; 4) \rightarrow$

$(0A2B6; ac; 54) \rightarrow (0A2; ac; 354) \rightarrow$

$(0A2a7; c; 354) \rightarrow (0A2B6; c; 5354) \rightarrow$

$(0A2; c; 35354) \rightarrow (0A2c5; \#\ 35354) \rightarrow$

$(0S1; \#\ 235354) \rightarrow$ accept

3) ~~$M = \{(a^{m+n} b^n, x^{2m+2} y^{3n}) \mid m, n \geq 0\}$~~

b) Adăugăm $S' \to S$

$S' \to S$

$S \to AbB$

$A \to aA \mid \lambda$

$B \to b$

Neterminali anulabili: A

I_0: $S' \to .S, 0$

$S \to .AbB, 0$ predicție

$A \to .aA, 0$ predicție

$A \to ., 0$ completare

I_1: caracterul curent $w_1 = 'a'$

$A \to a.A, 0$

$A \to .aA, 1$

$A \to ., 1$ completare

$A \to aA., 0$ completare

$S \to A.bB, 0$

I_2: caracter citit a

$A \to a.A, 1$

$A \to .aA, 2$

$A \to ., 2$

$A \to aA., 1$

$A \to aA., 0$

$S \to A.bB, 0$

I_3: caracter citit b

$S \to Ab.B, 0$

$B \to .b, 3$

I_4: Caracter citit b

$B \to b., 3$ completare

$S \to AbB., 0$

$S' \to S., 0 \Rightarrow$ ACCEPTARE

3) $L = \{ a^{m+n} b^n x^{2m+2} y^{3n} \mid m,n \geq 0 \}$