

Data la seguente grammatica, costruire le tabelle azione e goto dell'automa SLR(1)

1. $S' \rightarrow S$
2. $S \rightarrow C$
3. $S \rightarrow I$
4. $C \rightarrow iCeC \mid$
5. $C \rightarrow a$
6. $I \rightarrow iS$
7. $I \rightarrow iCeI$

Soluzione

L'automa deterministico è

$I_0 = \{ S \rightarrow \cdot C, S \rightarrow \cdot I, C \rightarrow \cdot iCeC, C \rightarrow \cdot a, I \rightarrow \cdot iS, I \rightarrow \cdot iCeI \}$

$I_1 = \epsilon\text{-ch}(\text{tr}(I_0, i)) = \{ C \rightarrow i \cdot CeC, I \rightarrow i \cdot S, I \rightarrow i \cdot CeI, C \rightarrow \cdot iCeC, C \rightarrow \cdot a, I \rightarrow \cdot iS, I \rightarrow \cdot iCeI \}$

$I_2 = \epsilon\text{-ch}(\text{tr}(I_0, a)) = \{ C \rightarrow a \cdot \}$

$I_3 = \epsilon\text{-ch}(\text{tr}(I_0, C)) = \{ S \rightarrow C \cdot \}$

$I_4 = \epsilon\text{-ch}(\text{tr}(I_0, S)) = \{ S' \rightarrow S \cdot \}$

$I_5 = \epsilon\text{-ch}(\text{tr}(I_0, I)) = \{ S \rightarrow I \cdot \}$

$\epsilon\text{-ch}(\text{tr}(I_1, i)) = I_1$

$\epsilon\text{-ch}(\text{tr}(I_1, a)) = I_2$

$I_6 = \epsilon\text{-ch}(\text{tr}(I_1, S)) = \{ I \rightarrow iS \cdot \}$

$I_7 = \epsilon\text{-ch}(\text{tr}(I_1, C)) = \{ C \rightarrow iC \cdot eC, I \rightarrow iC \cdot eI, S \rightarrow C \cdot \}$

$\epsilon\text{-ch}(\text{tr}(I_1, I)) = I_5$

$\epsilon\text{-ch}(\text{tr}(I_7, i)) = I_1$

$I_8 = \epsilon\text{-ch}(\text{tr}(I_7, e)) = \{ C \rightarrow iCe \cdot C, I \rightarrow iCe \cdot I, C \rightarrow \cdot iCeC, C \rightarrow \cdot a, I \rightarrow \cdot iS, I \rightarrow \cdot iCeI \}$

$\epsilon\text{-ch}(\text{tr}(I_8, i)) = I_1$

$\epsilon\text{-ch}(\text{tr}(I_8, a)) = I_2$

$I_9 = \epsilon\text{-ch}(\text{tr}(I_8, C)) = \{ C \rightarrow iCeC \cdot \}$

$I_{10} = \epsilon\text{-ch}(\text{tr}(I_8, I)) = \{ I \rightarrow iCeI \cdot \}$

I follow: $\text{Follow}(S) = \{ \$ \}$, $\text{follow}(I) = \{ \$ \}$, $\text{follow}(C) = \{ \$, e \}$

La tabella AZIONE

	I	e	a	\$
0	S1		S2	
1	S1		S2	
2		R4		R4
3				R1
4				acc
5				R2
6				R5
7	S1	S8		R1
8	S1		S2	
9		R3		R3
10				R6

La tabella GOTO

	S	C	I
0	4	3	5
1	6	7	
2			
3			
4			
5			
6			
7			
8		9	10
9			
10			