

Compilers Assignment 5

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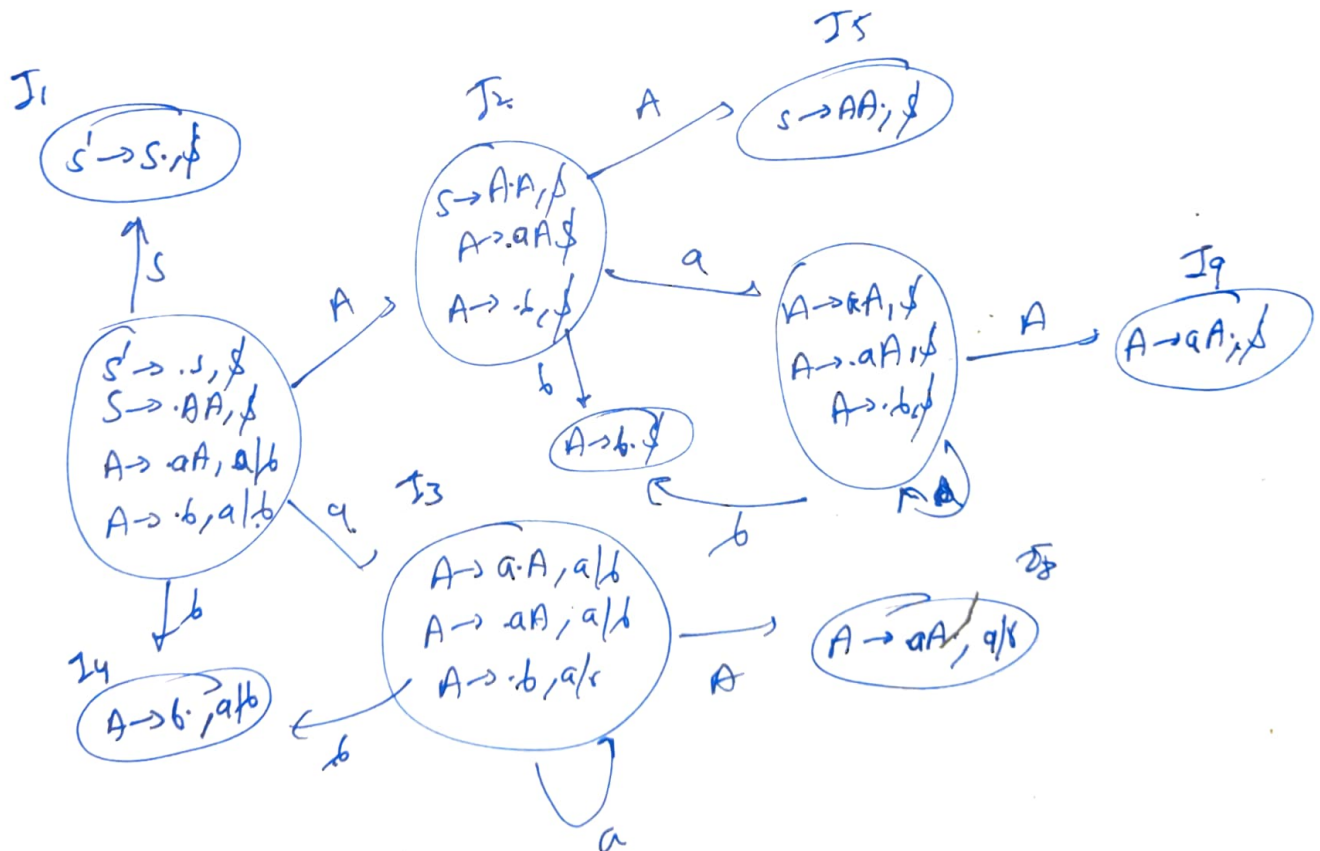
Compiler Assignment - 5

1) CLR Grammar (Canonical LR)

eg: $S \rightarrow AA$
 $A \rightarrow aA \mid b$

Augmented Grammar:-

$S' \rightarrow .S, \$$ (0th production)
 $S \rightarrow .AA, \$$ (1st production)
 $A \rightarrow .aA, a/b$ (2nd production)
 $A \rightarrow .b, a/b$ (3rd production)



		Action		goto	
	a	b	\$	A	S
	S3	S4		2	1
0			accept	5	
1		S7		8	
2	S6	S4			
3	S3	R3			
4	R3		R1		
5				9	
6	S6	S7			
7			R3		
8	R3	R2	R2		
9					

SLR Grammar

$S \rightarrow AA$

$A \rightarrow aA | b$

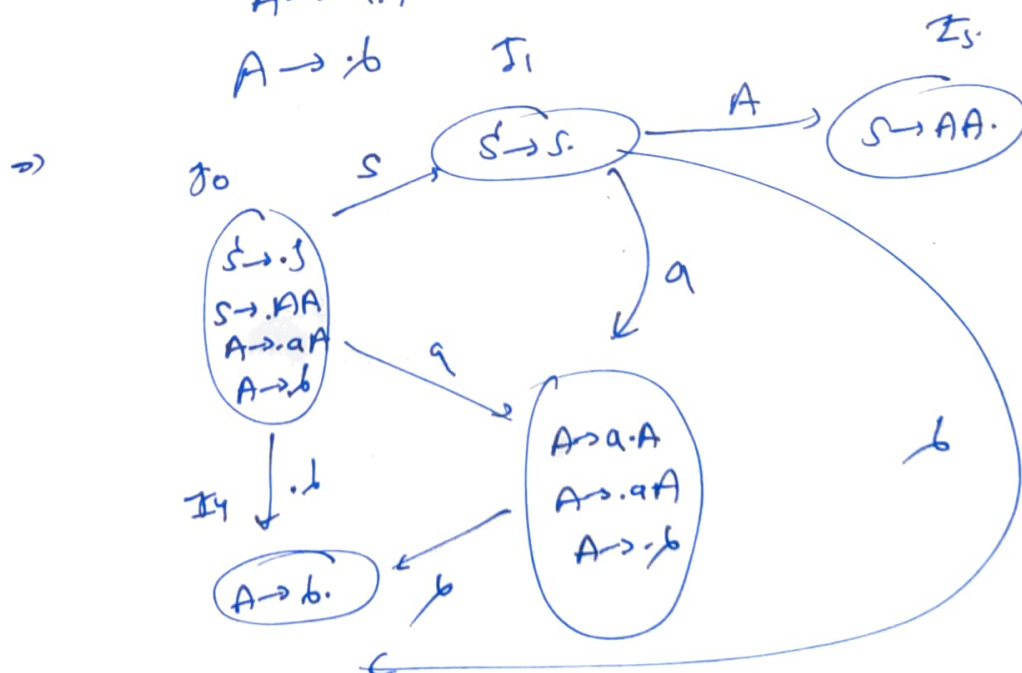
Augmented Grammar

$S' \rightarrow \cdot S$

$S \rightarrow \cdot AA$

$A \rightarrow \cdot aA$

$A \rightarrow \cdot b$



		ACTION		GOTO	
		a	b	A	\$
0	S3		S4	2	1
1				5	
2	S3		S4	6	
3	S3		S4		
4	R3		R3		R3
5					R1
6	R2		R2		R2

accept

③ LALR example :-

$S \rightarrow AA$

$A \rightarrow aA | b$

Augmented Grammar

$S' \rightarrow S$

$S \rightarrow \cdot AA$

$A \rightarrow \cdot aA$

$A \rightarrow \cdot b$

{ We combine the similar ~~the~~ values in Table }

Table - 1 \rightarrow Table - 2 \rightarrow

		ACTION		GOTO	
		a	b	A	\$
0	S36		S47	2	1
1				5	
2	S36		S47	89	
36	S36		S47		
47	R3		R3		R1
5					
63	S36		S47	89	
74					
89	R2		R2		R2
98					

final LALR Table :

ACTION				GOTO	
	a	b	\$	A	S
0	S36	S47	accept	2	1
1				5	
2	S36	S47		89	
36	S36	S47			
47	R3	R3	R3		
5			R1		
89	R2	R2	R2		