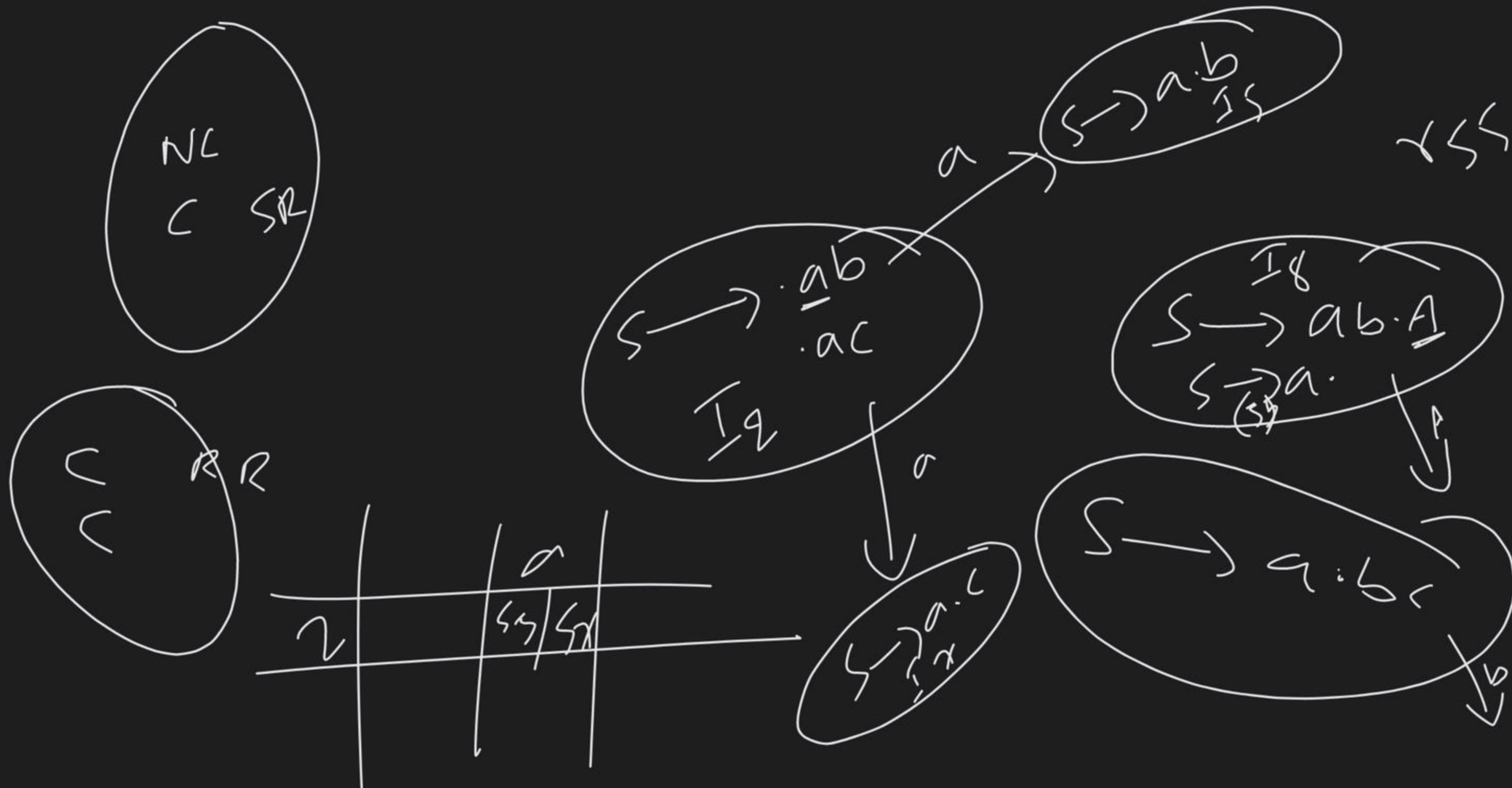


Parsing-IX

Complete Course on Compiler Design





IS

Conflict



①

LR(0)?

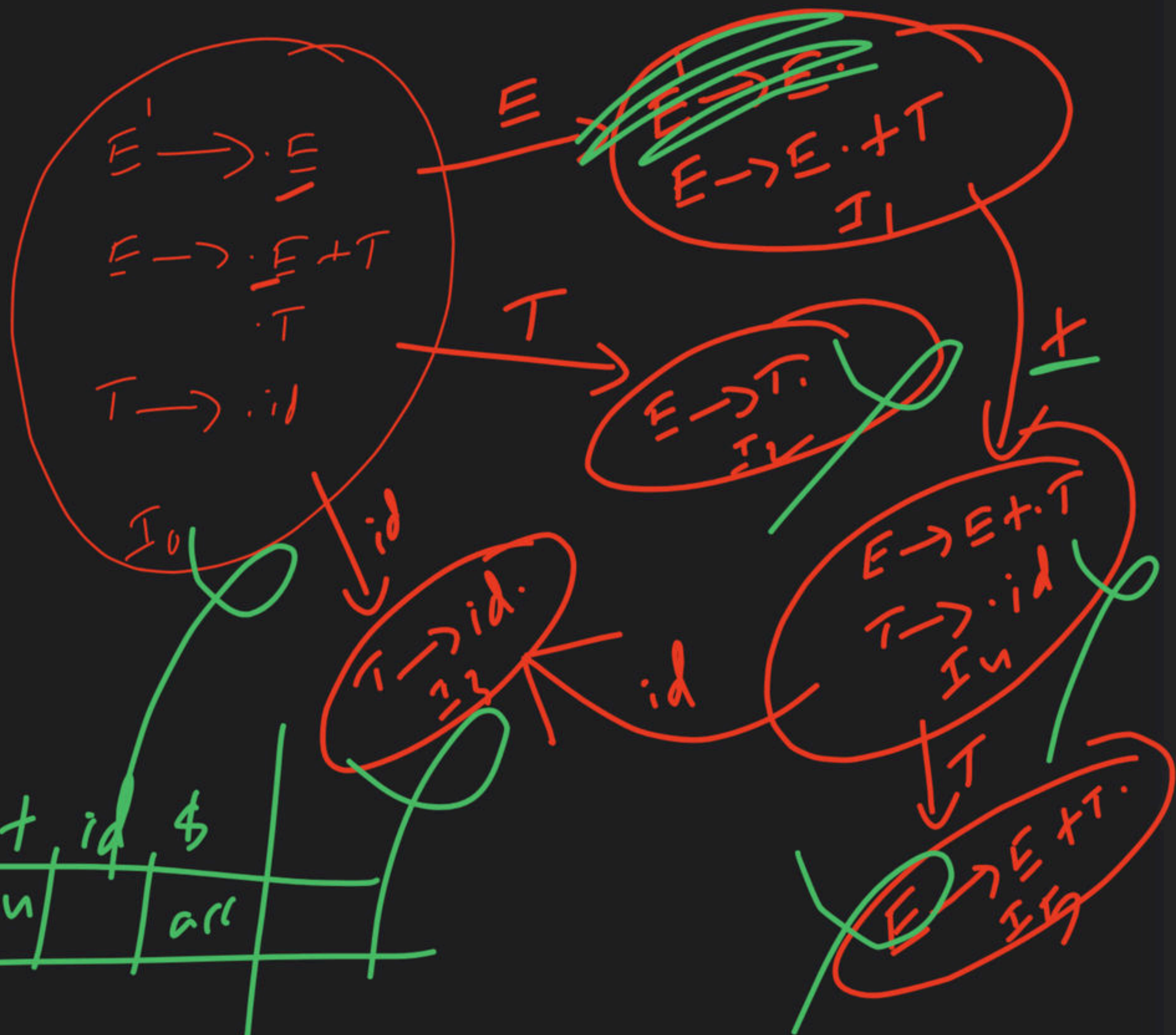
$E \rightarrow E + T \mid T$

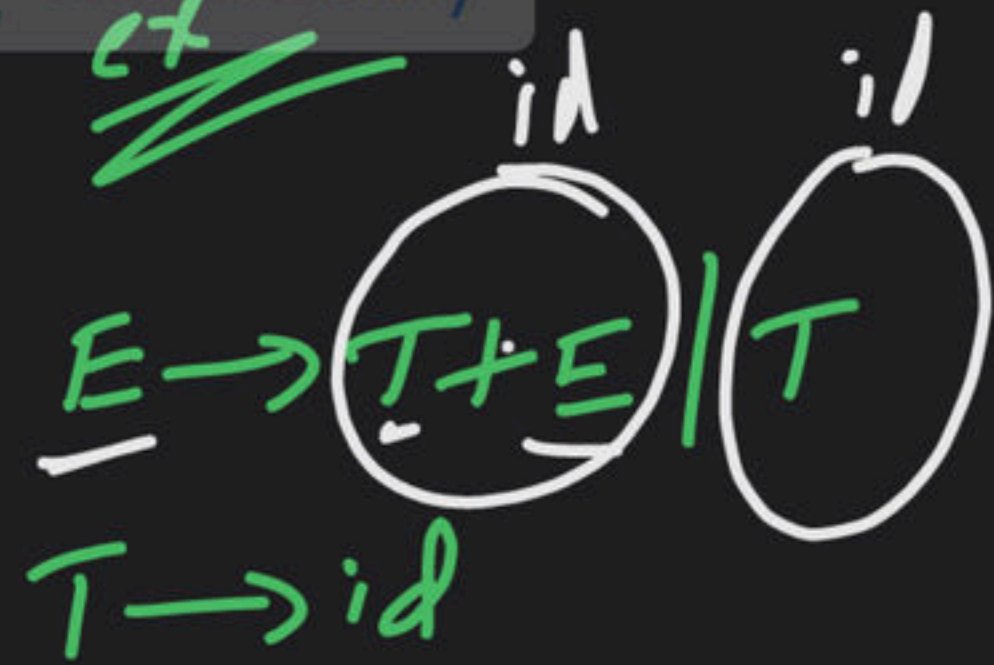
$T \rightarrow id$

~~LL(1)~~
been of LR(0)

~~LR(0)~~ ✓
~~SLR(1)~~ ✓
~~LALR(1)~~ ✓
~~CLR(1)(w)~~ ✓
~~LR(1)~~ ✓

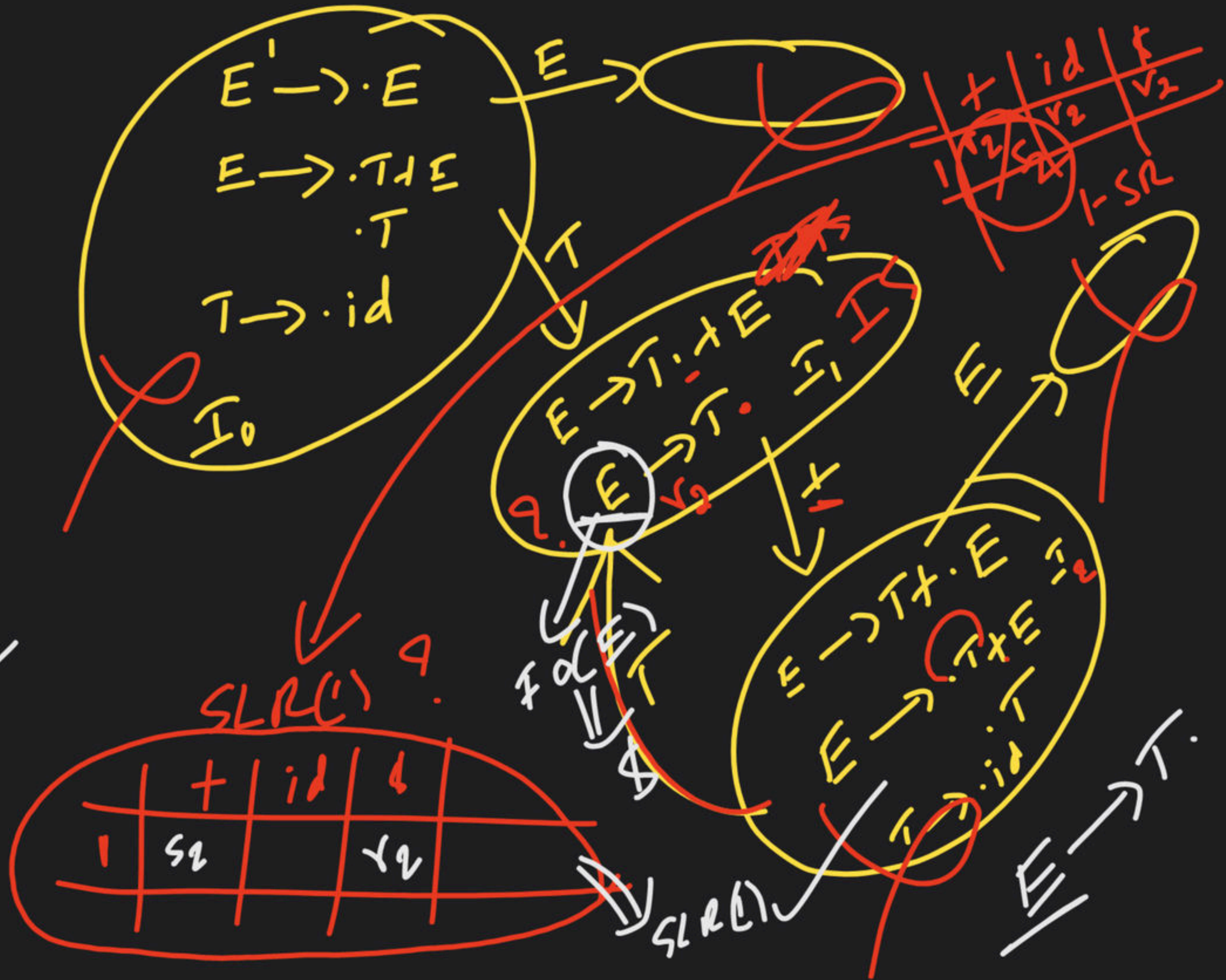
	+	id	\$
1	su		acc





LL(1) ϕ

- Comparison of parsing methods:
- (1) LR(0) ϕ ~~✗~~
 - (0) SLR(1) ϕ \checkmark
 - LALR(1) ϕ \checkmark
 - CLR(1) ϕ \checkmark



SLR(1)?

~~Left~~
Left

$E \rightarrow E + T \mid T$
 $T \rightarrow T \mid F \mid F$
 $F \rightarrow id$

I_0

$E \rightarrow \cdot E$
 $E \rightarrow \cdot E + T$
 $\cdot T$
 $T \rightarrow \cdot T \mid F$
 $\cdot F$
 $F \rightarrow \cdot id$

I_1

$E \rightarrow E \cdot$
 $E \rightarrow E \cdot + T$

I_2

$E \rightarrow T \cdot$
 $T \rightarrow T \cdot \mid F$

I_3

$E \rightarrow E + \cdot T$
 $T \rightarrow \cdot T \mid F$
 $\cdot F$
 $F \rightarrow \cdot id$

I_4

$E \rightarrow E + T \cdot$
 $T \rightarrow T \cdot \mid F$

	+	*	id	\$	
2	v_2	s_4	v_2	v_2	\Rightarrow 1-SR
5	v_1	s_4	v_1	v_1	\Rightarrow 1-SR

LR(0)

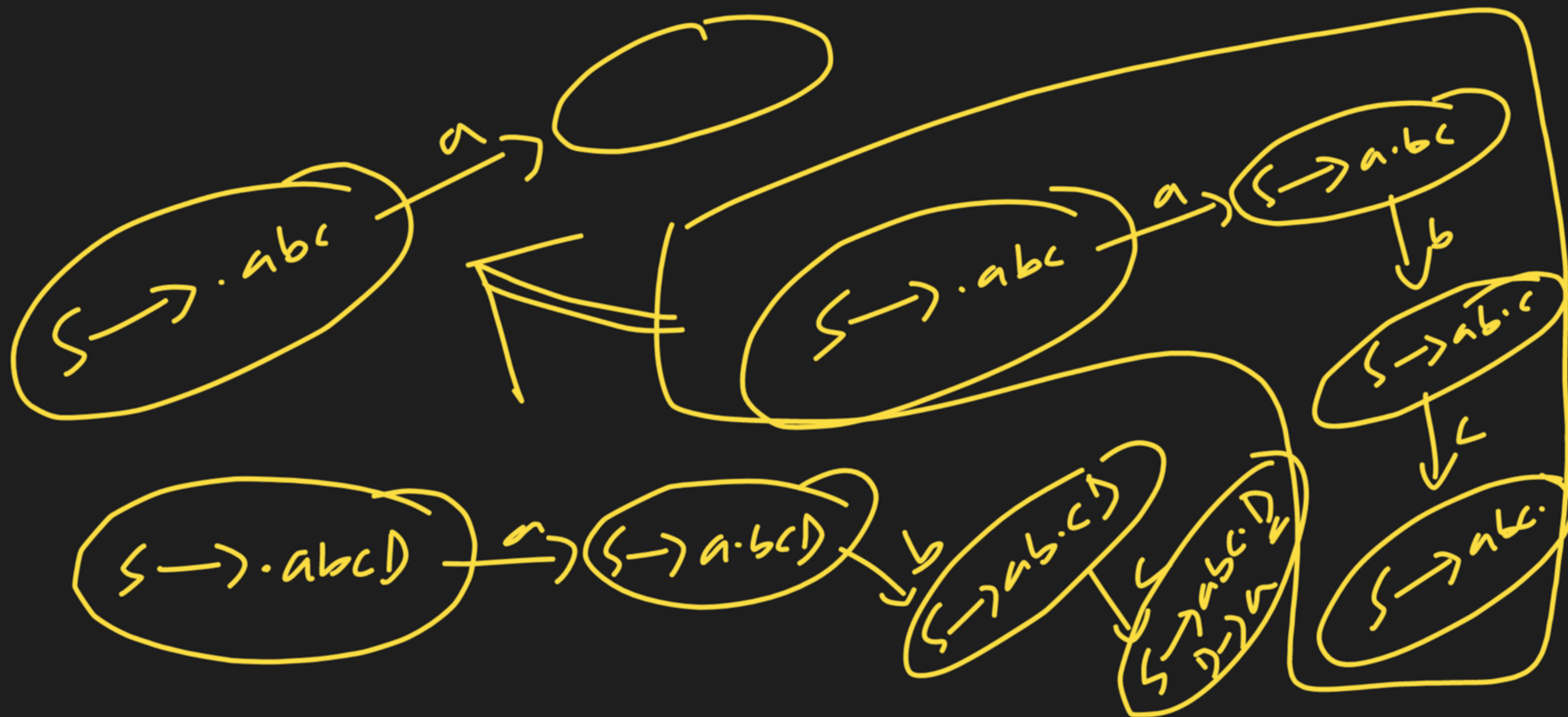
2- $I_5 \Rightarrow$ 0
2-SR

check for SLR(1)

	+	*	id	\$	
2	v_2	s_4	v_2	v_2	
5	v_1	s_4	v_1	v_1	

SLR(1) \Rightarrow 0- I_5 as SR

\Rightarrow 4



SLR(1)

$S \rightarrow AaAb \mid BbBa$

$A \rightarrow \epsilon$

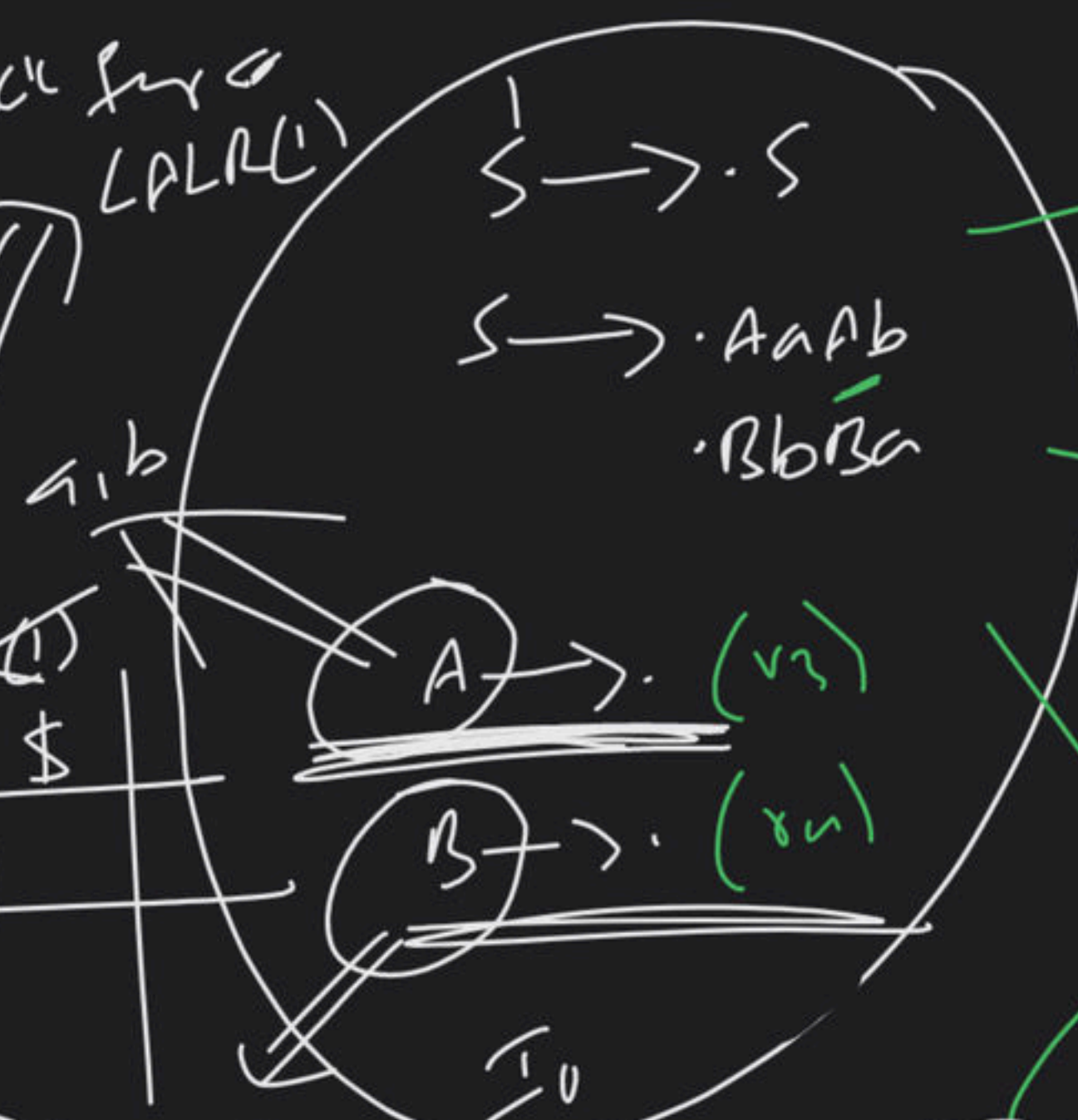
$B \rightarrow \epsilon$

	a	b	\$
1-IR			
2-RR			

LL(1)

LR(0)
SLR(1)
LALR(1)
CLR(1)

Check for LALR(1)



$S \rightarrow A \cdot aAb$
I1

$S \rightarrow Aa \cdot Ab$
I3

$S \rightarrow B \cdot bBa$
I2

$S \rightarrow Bb \cdot Ba$
I4

	a	b	\$
1-IR			
2-RR			

LR(0)

~~ct~~

G: $S \rightarrow AA$
 $A \rightarrow aA | b$

Def

$close(I) = (1) \text{ add } -I$

(2) If $A \rightarrow BC \cdot \underline{D}(EF, a/b)$ is in I and $D \rightarrow \epsilon$ is in grammar then add $D \rightarrow \cdot \epsilon$, $First(EF, a/b)$ to $close(I)$

(3) repeat 2nd step for every newly added LR(1)-item.