

$S' \rightarrow S$

$S \rightarrow L = R \mid R$

$L \rightarrow *R \mid id$

$R \rightarrow L$

$FIRST(S) = \{*, id\}$

$FIRST(L) = \{*, id\}$

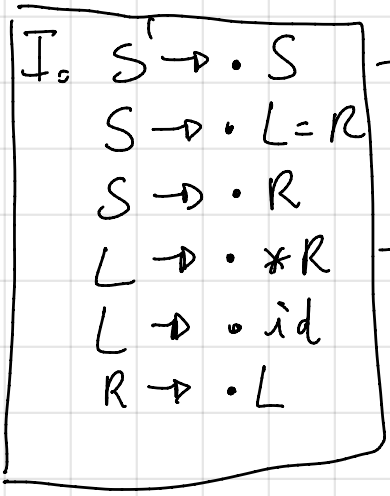
$FIRST(R) = \{*, id\}$

$FOLLOW(S') = \{\$ \}$

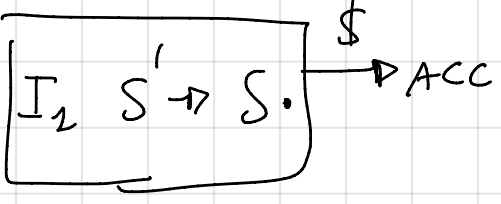
$FOLLOW(S) = \{\$, = \}$

$FOLLOW(L) = \{\$, = \}$

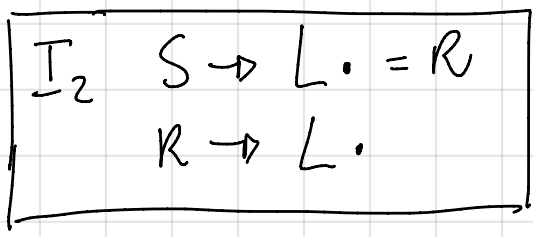
$FOLLOW(R) = \{\$, = \}$



$\xrightarrow{S}$

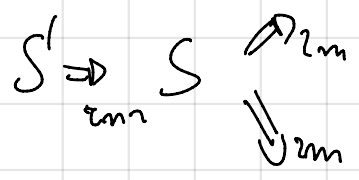


$\xrightarrow{L}$



$\rightarrow$  CONFLICT  
shift/reduce

shift = reduce  $R \rightarrow L$   
for  $\$$  and  $=$



$L = R \Rightarrow L = L$

$R \Rightarrow L$

The production  $R \rightarrow L$  never really happens when after  $L$  there is '=', in any right-sentential form.

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$L \rightarrow *R \mid id$

$R \rightarrow L$

$FIRST(S) = \{*, id\}$

$FOLLOW(S') = \{\$, \}$

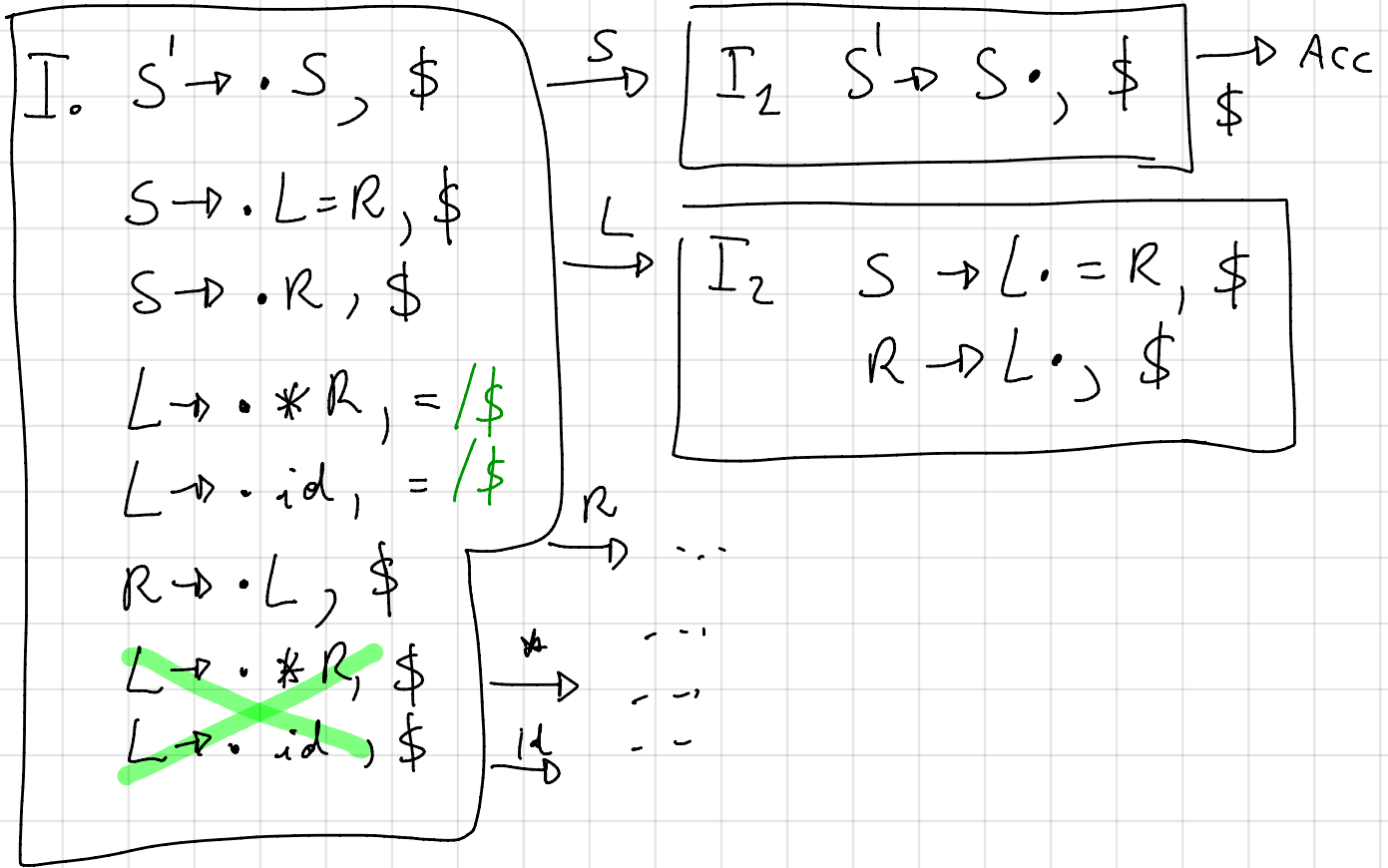
$FIRST(L) = \{*, id\}$

$FOLLOW(S) = \{\$, =\}$

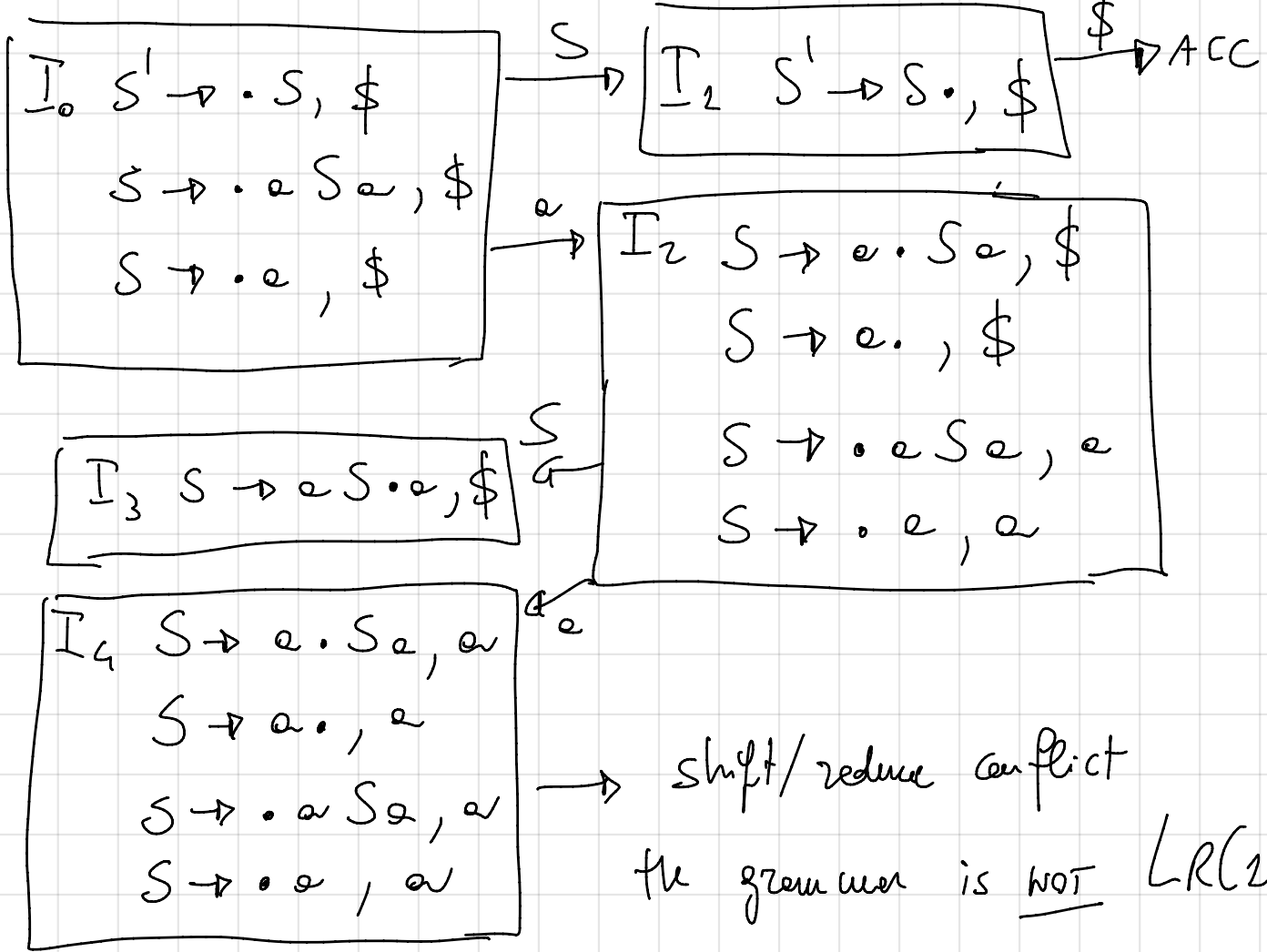
$FIRST(R) = \{*, id\}$

$FOLLOW(L) = \{\$, =\}$

$FOLLOW(R) = \{\$, =\}$



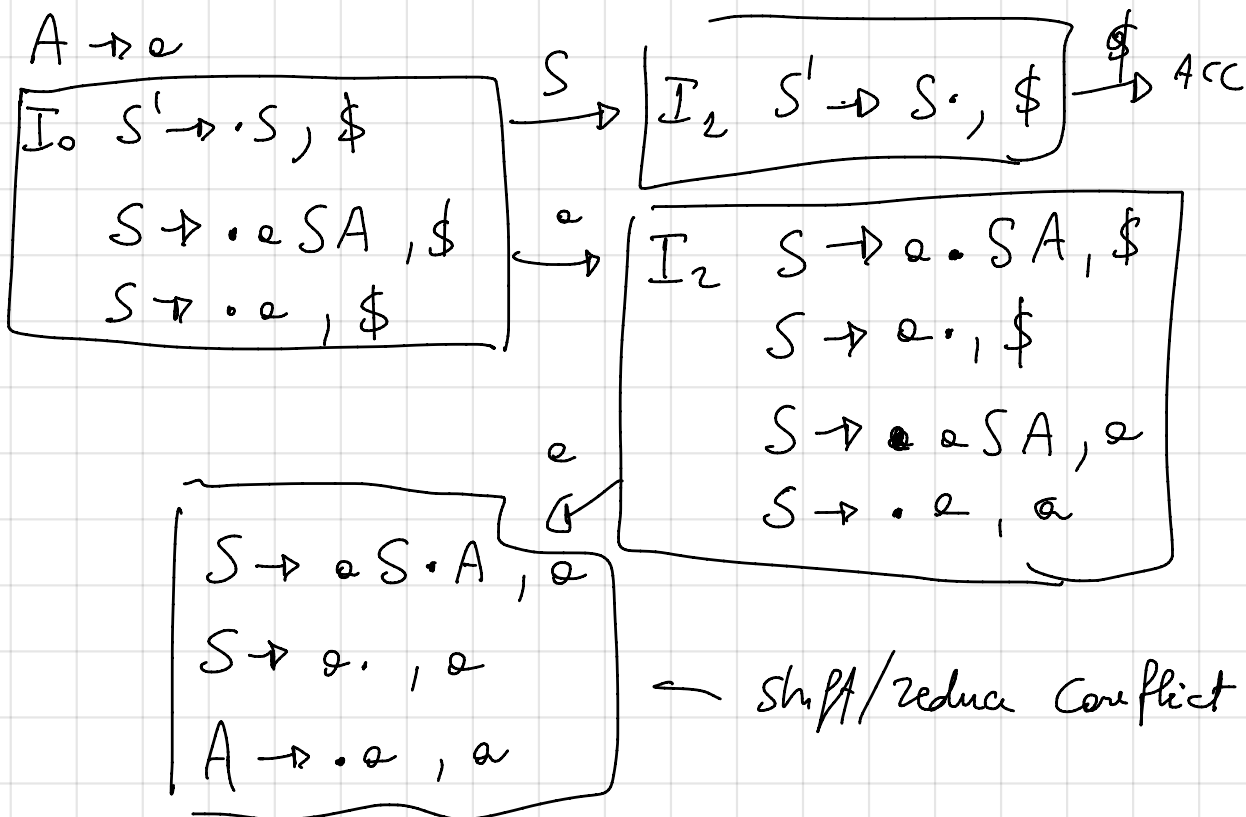
$S' \rightarrow S$   
 $S \rightarrow eSa \mid a$



Alternative grammar for the language

$S' \rightarrow S$   
 $S \rightarrow eSA \mid a$

$A \rightarrow e$



# Alternative Grammar 2

$S' \rightarrow S \quad z \quad z$   
 $S \rightarrow S a e \mid e$

$S \Rightarrow S a e \Rightarrow S a a e e$   
 $\Rightarrow z a a e e e$   
 $\Rightarrow z a a c c$

$I_1: S' \rightarrow \cdot S, \$$   
 $S \rightarrow \cdot S a e, \$/e$   
 $S \rightarrow \cdot e, \$/e$

S

$I_2: S' \rightarrow S \cdot, \$$   
 $S \rightarrow S \cdot a e, \$/e$

a

$I_3: S \rightarrow e \cdot, \$/e$

a

$I_4: S \rightarrow S a e \cdot, \$/e$

a

$I_4: S \rightarrow S a e \cdot, \$/e$

	a	\$	S
0	S2		1
1	S3	ACC	
2	z2	z2	
3	S4		
4	z1	z1	

STACK	INPUT	ACT
\$0	a a e \$	sh 2
\$0 a z	a a \$	z S → a
\$0 S1	a e \$	sh 3
\$0 S1 a 3	a \$	sh 4
\$0 S1 a 3 a 4	\$	z S → S a e
\$0 S1	\$	ACCEPT

$I_{3/4}$

$C \rightarrow c \cdot C, c/d/\$$

$C \rightarrow \cdot cC, c/d/\$$

$C \rightarrow \cdot d, c/d/\$$

$I_{9/5}$

$C \rightarrow cC \cdot, \$/c/d$

$I_{8/4}$

$C \rightarrow d \cdot, c/d/\$$