

First & Follow

Follow(A) = Follow(BCDE)

Grammar

First

Follow

 $S \rightarrow ABCDE$ 

{a, b, c}

{ \$ }

 $A \rightarrow a/\epsilon$ {a,  $\epsilon$ }

{b, c}

 $B \rightarrow b/\epsilon$ {b,  $\epsilon$ }

{c}

 $C \rightarrow c$ 

{c}

{d, e, \$}

 $D \rightarrow d/\epsilon$ {d,  $\epsilon$ }

{e, \$}

 $E \rightarrow e/\epsilon$ {e,  $\epsilon$ }

{ \$ }

(2)

First

Follow

 $S \rightarrow Bb/Cd$ 

{a, b, c, d}

{ \$ }

 $B \rightarrow aB/\epsilon$ {a,  $\epsilon$ }

{b}

 $C \rightarrow cC/\epsilon$ {c,  $\epsilon$ }

{d}

Grammar	First	Follow
$E \rightarrow TE'$	$\{id, (, \epsilon\}$	$\{\$, )\}$
$E' \rightarrow +TE' / \epsilon$	$\{+, \epsilon\}$	$\{\$, )\}$
$T \rightarrow FT'$	$\{id, (, \epsilon\}$	$\{+, \$, )\}$
$T' \rightarrow *FT' / \epsilon$	$\{*, \epsilon\}$	$\{+, \$, )\}$
$F \rightarrow id / (E)$	$\{id, (, \epsilon\}$	$\{*, +, \$, )\}$

④

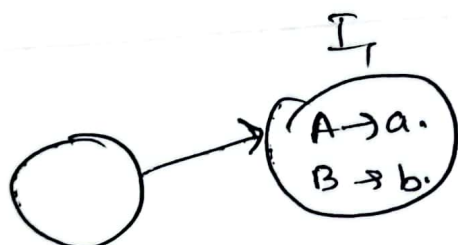
Grammar	First	Follow
$S \rightarrow ACB / CBAB$ Ba	$\{d, g, h, \epsilon, b, a\}$	$\{\$\}$
$A \rightarrow da / Bc$	$\{d, g, h, \epsilon\}$	$\{h, g, \$\}$
$B \rightarrow g / \epsilon$	$\{g, \epsilon\}$	$\{\$, a, h\}$
$C \rightarrow h / \epsilon$	$\{h, \epsilon\}$	$\{g, \$, b, h\}$

## Reduction - Reduction conflict

$A \rightarrow a$  — ①

$B \rightarrow b$  — ②

$C \rightarrow aB$  — ③

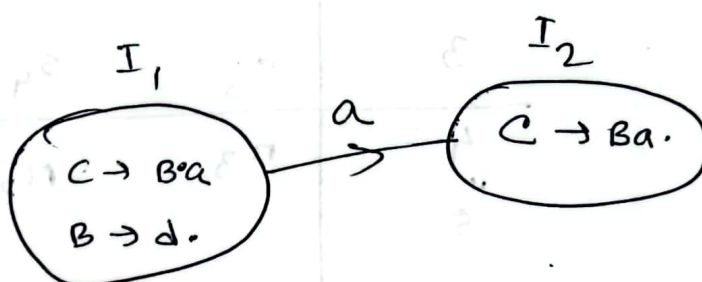


	Action			Goto
	a	b	\$	
$I_1$	$r_1 / r_2$	$r_1 / r_2$	$r_2 / r_2$	

## Shift - Reduction conflict

$C \rightarrow Ba$  — ①

$B \rightarrow d$  — ②



	Action			Goto
	a	b	\$	
$I_1$	$s_2 / r_2$	$r_2$	$r_2$	
$I_2$				

LR(0) → Put reduce in full row

SLR(1) → Put reduce in follow of p

CLR(1)

&

→ Put reduce only on lookahead

LALR(1)

TOPIC NAME : \_\_\_\_\_

DAY : \_\_\_\_\_

TIME : \_\_\_\_\_ DATE : / /

## SLR(1) Parsing

$$S \rightarrow S$$

$$S \rightarrow AA \quad (1) \quad I_5$$

$$A \rightarrow aA \mid b \quad I_4$$

(2)  $I_6$

(3)

State	Action			Goto	
	a	b	\$	A	S
0	s <sub>3</sub>	s <sub>4</sub>		1	2
1			Accept		
2	s <sub>3</sub>	s <sub>4</sub>		5	
3	s <sub>3</sub>	s <sub>4</sub>		6	
4	r <sub>3</sub>	r <sub>3</sub>	r <sub>3</sub>		
5			r <sub>1</sub>		
6	r <sub>2</sub>	r <sub>2</sub>	r <sub>2</sub>		

	First	Follow
$S \rightarrow AA$	{a, b}	{\$}
$A \rightarrow aA \mid b$	{a, b}	{a, b, \$}