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## Compiler Design

Given Date: 19-12-2020

Due Date: 23-12-2020

Q:- Derive SLR parsing for the grammar

$E \rightarrow BB,$

$B \rightarrow cB \mid d$

Check whether the string  $ccdd$  is accepted by the parser or not.

Ans:- SLR Parsing

$E \rightarrow BB$

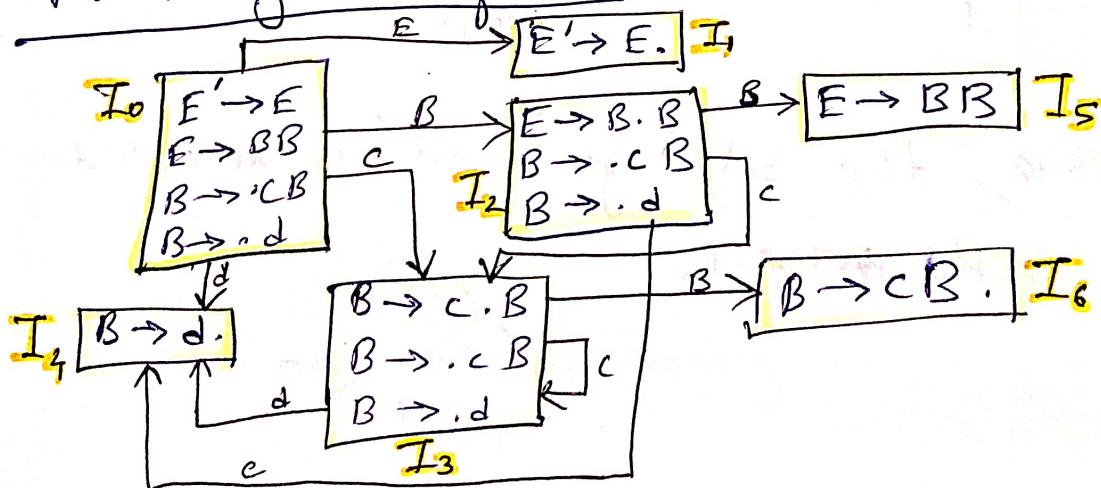
$B \rightarrow cB \mid d$

$\text{First}(E) = \text{First}(B) = \{c, d\}$

$\text{Follow}(E) = \{ \$ \}$

$\text{Follow}(B) = \{ c, d, \$ \}$ .

● Parsing diagram




## SLR Parsing Table

States	Action			Goto	
	c	d	\$	E	B
I <sub>0</sub>	S <sub>3</sub>	S <sub>4</sub>		1	2
I <sub>1</sub>			Accept		
I <sub>2</sub>	S <sub>3</sub>	S <sub>4</sub>			5
I <sub>3</sub>	S <sub>3</sub>	S <sub>4</sub>			6
I <sub>4</sub>	r <sub>3</sub>	r <sub>3</sub>	.l <sub>3</sub>		
I <sub>5</sub>	.		r <sub>1</sub>		
I <sub>6</sub>	r <sub>2</sub>	r <sub>2</sub>	.l <sub>2</sub>		

## Stack table for string "ccdd" acceptance:

Stack	Input Buffer	Action
\$0	ccdd \$	S <sub>3</sub>
\$0c3	cdd \$	S <sub>3</sub>
\$0c3c3	dd \$	S <sub>4</sub>
\$0c3c3d4	d \$	r <sub>3</sub> [B → d]
\$0c3c3Bn	d \$	l <sub>2</sub> [B → cB]
\$0c3Bn	d \$	l <sub>2</sub> [B → cB]
\$0B2	d \$	S <sub>4</sub>
\$0B2d4	\$	r <sub>3</sub> [B → d]
\$0B2B5	\$	r <sub>1</sub> [E → BB]
\$0E1	\$	Accept

∴ Therefore, the string "ccdd" is accepted by the SLR parser.

  
22-12-2020