

Plan for Today

Why LR parse table instead of push down automata

Building the LR Parsing Table for LR(0)

- items, closure, and goto, oh my!
- why does it need to know input token if LR(0)?

Building the LR Parsing Table for LR(1)

- First and Follow sets
- building the table will be covered Monday

CS453 Lecture

Building LR Parse Tables

1

Example LR Parse Table

- (1) $S \rightarrow S (S)$
 (2) $S \rightarrow \epsilon$

State	Action			Goto
	()	\$	S
0	r2	r2	r2	1
1	s2		accept	
2	r2	r2	r2	3
3	s2	s4		
4	r1	r1	r1	

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Building LR Parse Tables

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Building the LR Parse Table for LR(0)

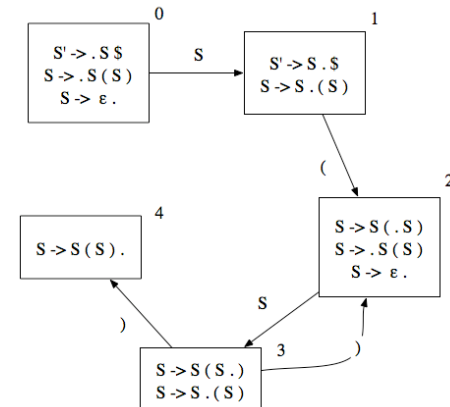
- (0) $S' \rightarrow S \$$
 (1) $S \rightarrow S (S)$
 (2) $S \rightarrow \epsilon$

CS453 Lecture

Building LR Parse Tables

3

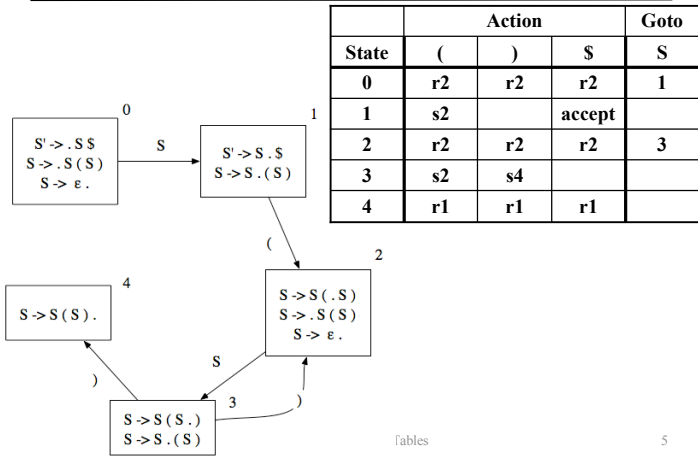
LR(0) states for nested parens example



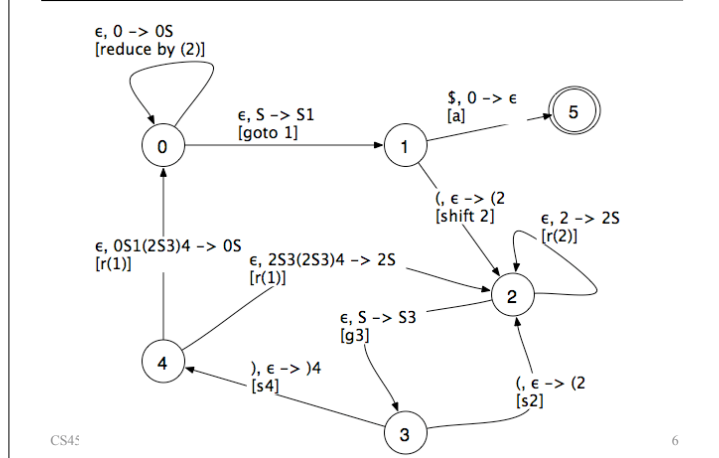
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Building the Table



Pushdown Automata for Grammar



Building the LR Parse Table for LR(0), another example

- (0) $S' \rightarrow E \$$
- (1) $E \rightarrow E ' | ' B$
- (2) $E \rightarrow B$
- (3) $B \rightarrow t$
- (4) $B \rightarrow f$