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Parsing-VII

Complete Course on Compiler Design

Subbarao Lingamgunta • Lesson 10 • Aug 28, 2023

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LR- Parsing Algo

assume x^0 - state no on TOS

$a^{\wedge}$ - look ahead symbol

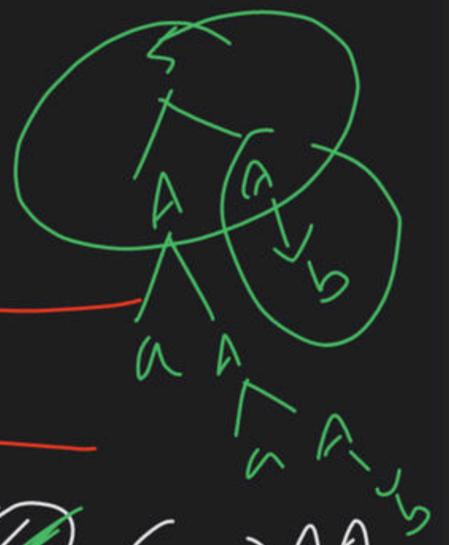
① If action[x, a] = S_i then Shift a & i and incr i/p pointer.

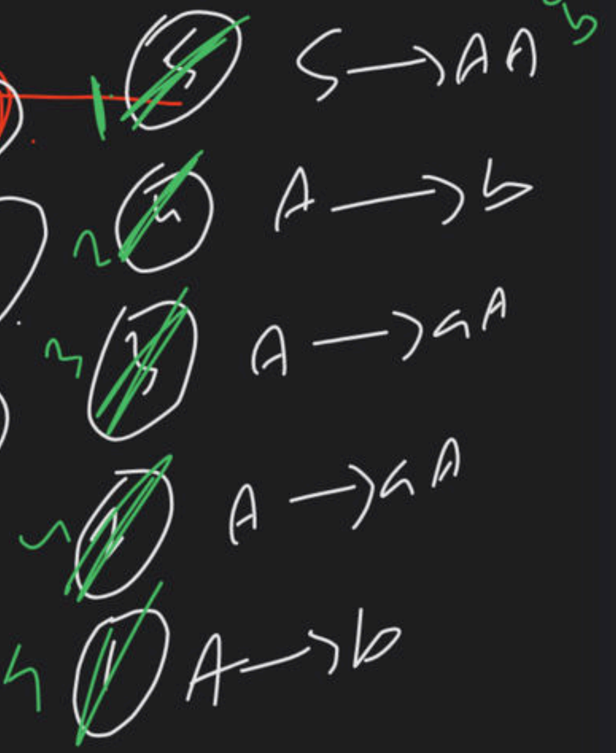
② If action[x, a] = r_j and j th production is $A \to \beta$ then pop 2*|β| symbols & replace by A & if Sm is its state below A then push goto[Sm, A].

③ If action[x, a] = blank then p.E.

④ If action[x, a] = acc S.C.P.

i/p string	# stack symbols	reductions
aabb$	0 ⇒ 0a3	
abb$	0a3 ⇒ 0a3a3	
bb$	0a3a3 ⇒ 0a3a3b4	
b$	0a3a3A6	A → b
	0a3A6 ⇒ 0A2	A → aA
	⇒ 0A2b4	A → aA
$	0A2A5	A → b
	⇒ 0A2A5 S1 ⇒ 0S1	S → AA
	⇒ acc	





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Ex

TOC

① $S \to AA$

② ③ $A \to aA \mid b$

& T to TOC

i/p: abab$

	action			goto	
	a	b	$	S	A
0	s_3	s_4		1	2
1			acc		
2	s_3	s_4			5
3	s_3	s_4			6
4	r_3	r_3	r_3		
5	r_1	r_1	r_1		
6	r_2	r_2	r_2		

LR(0) - PT

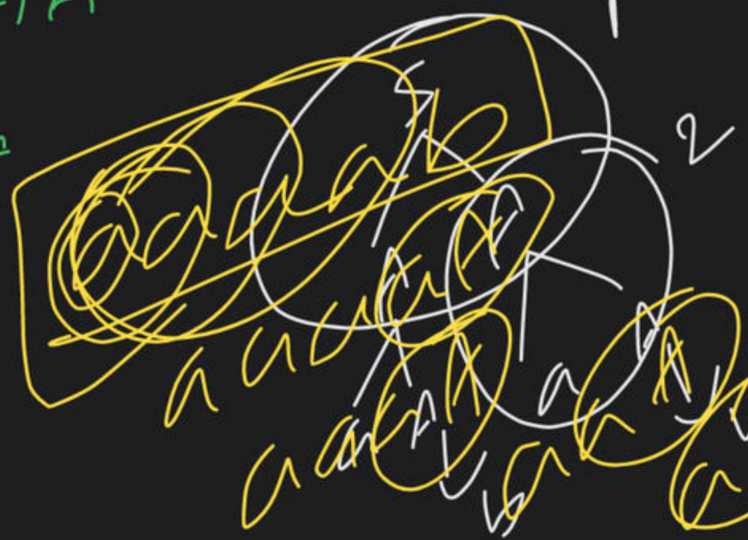
1 $S \to AA$

2 $A \to aA$

3 $A \to b$

4 $A \to aA$

5 $A \to b$



Reverse order RMD

Ex	stack	reduction
abab$	0 ⇒ 0a3	
bab$	0a3 ⇒ 0a3b4	
ab$	0a3A6	A → b
	⇒ 0a3AA2	A → aA
b$	⇒ 0A2a	
	⇒ 0A2a3ab	
$	0A2a3A6	A → b
	⇒ 0A2a3AA5	A → aA
	⇒ 0A2A1	S → AA
	⇒ acc	S.L.P