LR(0) parser

Ex. $G = (\{S', S, A\}, \{a, b, c\}, P, S')$
P: $S' \rightarrow S$
   (1)$S \rightarrow aA$
   (2) $A \rightarrow bA$
   (3) $A \rightarrow c$

$w = abbc$

1. Compute the canonical collection of states //B: ●●●●●●● ●●●

$s_0 = closure(\{[S' ->.S]\}) = \{[S' ->.S], [S \rightarrow.aA]\}$

$s_1 = goto(s_0, S) = closure(\{[S' -> S.]\}) = \{[S' -> S.]\}$

  $goto(s_0, A) = \{\}...$

$s_2 = goto(s_0, a) = closure(\{[S \rightarrow a.A]\}) = \{[S \rightarrow a.A], [A \rightarrow.bA], [A \rightarrow.c]\}$

$s_3 = goto(s_2, A) = closure(\{[S \rightarrow aA.]\}) = \{[S \rightarrow aA.]\}$

$s_4 = goto(s_2, b) = closure(\{[A \rightarrow b.A]\}) = \{[A \rightarrow b.A], [A \rightarrow.bA], [A \rightarrow.c]\}$

$s_5 = goto(s_2, c) = closure(\{[A \rightarrow c.]\}) = \{[A \rightarrow c.]\}$

$s_6 = goto(s_4, A) = closure(\{[A \rightarrow bA.]\}) = \{[A \rightarrow bA.]\}$

$goto(s_4, b) = closure(\{[A \rightarrow b.A]\}) = s_4$

$goto(s_4, c) = closure(\{[A \rightarrow c.]\}) = s_5$

2. Fill in LR(0) parsing table //B: ●●●●●●● ●●●

	ACTION	a	b	c	S	A
0	shift	2			1	
1	accept					

2	shift		4	5		3
3	r1					
4	shift		4	5		6
5	r3					
6	r2					

3. Parse the input sequence // B: ●●●●●●●●●

work stack	input stack	output band
$0	abbc$	ε
$0a2	bbc$	ε
$0a2b4	bc$	ε
$0a2b4b4	c$	ε
$0a2b4b4c5	$	ε
$0a2b4b4A6	$	3
$0a2b4A6	$	23
$0a2A3	$	223
$0S1	$	1223
accept	$	1223