## SLR parser

Ex. 
$$G = (\{S', E, T\}, \{+, id, const, (,)\}, P, S')$$
  
P:  $S' \to E$   
 $(1)E \to T$   
 $(2)E \to E + T$   
 $(3)T \to (E)$   
 $(4)T \to id$   
 $(5)T \to const$ 

w = id + const

1. Compute the canonical collection

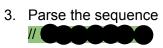
```
S0 = closure(\{[S' -> .E]\}) = \{[S' -> .E], [E->.T], [E-> .E + T], [T -> .(E)], [T -> .id], [T -> ...]\}
.const]}
S1 = goto(s0, E) = closure(\{[S' -> E.], [E -> E. + T]\}) = \{[S' -> E.], [E -> E. + T]\}
S2 = goto(s0, T) = closure(\{[E -> T.]\}) = \{[E -> T.]\}
S3 = goto(s0, () = closure({[T -> (.E)]}) = {[T -> (.E)], [E -> .T], [E -> .E + T], [T -> .(E)],
[T->.id], [T->.const]}
S4 = goto(s0, id) = closure(\{[T -> id.]\}) = \{[T -> id.]\}
S5 = goto(s0, const) = closure(\{[T -> const.]\}) = \{[T -> const.]\}
S6 = goto(s1, +) = closure(\{[E \rightarrow E+.T]\}) = \{[E \rightarrow E+.T], [T \rightarrow .(E)], [T \rightarrow .id], [T \rightarrow .const]\}
S7 = goto(s3, E) = closure(\{[T -> (E.)], [E -> E.+T]\}) = \{[T -> (E.)], [E -> E.+T]\}
      goto(s3, T) = closure(\{[E-> T.]\}) = S2
      goto(s3, id) = closure(\{[T -> id.]\}) = S4
      goto(s3, const) = closure(\{[T -> const.]\}) = S5
      goto(s3, () = closure(\{[T -> (.E)]\}) = S3
S8 = goto(s6, T) = closure(\{[E \rightarrow E+T.]\})
      goto(s6, () = closure(\{[T->(.E)]\}) = s3
      goto(s6, id) = closure(\{[T -> id.]\}) = s4
     goto(s6, const) = closure(\{[T -> const.]\}) = s5
S9 = goto(s7, )) = closure(\{[T -> (E).]\}) = \{[T -> (E).]\}
      goto(s7, +) = closure(\{[E -> E+.T]\}) = s6
```

FOLLOW(E) = 
$$\{\varepsilon, +, \}$$
  
FOLLOW(T) =  $\{\varepsilon, +, \}$ 

## 2. Fill the SLR table



	ACTION						GОТО	
	+	(	)	id	const	\$	E	Т
0		Shift 3		Shift 4	Shift 5		1	2
1	Shift 6					acc		
2	Reduce1		Reduce1			Reduce1		
3		Shift 3		Shift 4	Shift 5		7	2
4	Reduce4		Reduce4			Reduce4		
5	Reduce 5		Reduce 5			Reduce 5		
6		Shift3		Shift4	Shift5			8
7	Shift6		Shift9					
8	Reduce 2		Reduce 2			Reduce 2		
9	Reduce 3		Reduce 3			Reduce 3		



Work stack	Input stack	Output band
\$0 \$0id4 \$0T2 \$0E1 \$0E1+6 \$0E1+6const5 \$0E1+6T8 \$0E1 accept	id+const\$ +const\$ +const\$ +const\$ const\$ \$	ε ε 4 14 14 14 514 2514