

$S \rightarrow SS+ \mid SS* \mid \epsilon$ $aaa*aa \leftarrow \text{input}$

STACK	INPUT	ACTION	INITIAL STACK
	$aaa*aa \$$	shift	$\$$
a handle	$aa*aa \$$	reduce $S \rightarrow \epsilon$	$\$$
S	$aa*aa \$$	shift	$\$$
Sa handle	$a*aa \$$	reduce $S \rightarrow \epsilon$	$\$$
SS	$a*aa \$$	shift	$\$$
SSa handle	$*aa \$$	reduce $S \rightarrow \epsilon$	$\$$
SSS	$*aa \$$	shift	$\$$
$SSS*$ handle	$a \$$	reduce $S \rightarrow SS*$	$\$$
SS	$a \$$	shift	$\$$
SSa handle	$ \$$	reduce $S \rightarrow \epsilon$	$\$$
SSS	$ \$$	shift	$\$$
$SSS+$ handle	$ \$$	reduce $S \rightarrow SS+$	$\$$
SS	$ \$$	shift	$\$$
$SS+$ handle	$ \$$	reduce $S \rightarrow SS+$	$\$$
S	$ \$$	ACCEPT	$\$$

$S \xRightarrow{zm} SS+ \xRightarrow{zm} SSS+ \xRightarrow{zm} SSa+ \xRightarrow{zm} SSS*aa \xRightarrow{zm} SSa*aa$
 $\xRightarrow{zm} Saa*aa \xRightarrow{zm} aaa*aa$

$$E' \rightarrow E \quad \text{CLOSURE}(\{E' \rightarrow \cdot E\}) =$$

$$E \rightarrow E + T \quad | \quad T$$

$$T \rightarrow T * F \quad | \quad F$$

$$F \rightarrow \underline{id} \quad | \quad (E)$$

5
6

$$\{E' \rightarrow \cdot E, E \rightarrow \cdot E + T, E \rightarrow \cdot T,$$

$$T \rightarrow \cdot T * F, T \rightarrow \cdot F,$$

$$F \rightarrow \cdot \underline{id}, F \rightarrow \cdot (E)\} = I_0$$

$$GOTO(I_0, E) = \text{CLOSURE}(\{E' \rightarrow E \cdot, E \rightarrow E \cdot + T\})$$

$$= \{E' \rightarrow E \cdot, E \rightarrow E \cdot + T\} = I_1$$

$$GOTO(I_0, T) = \text{CLOSURE}(\{E \rightarrow T \cdot, T \rightarrow T \cdot * F\})$$

$$= \{E \rightarrow T \cdot, T \rightarrow T \cdot * F\} = I_2$$

$$GOTO(I_0, F) = \text{CLOSURE}(\{T \rightarrow F \cdot\}) = \{T \rightarrow F \cdot\} = I_3$$

$$GOTO(I_0, \underline{id}) = \text{CLOSURE}(\{F \rightarrow \underline{id} \cdot\}) = \{F \rightarrow \underline{id} \cdot\} = I_4$$

$$GOTO(I_0, (E)) = \text{CLOSURE}(\{F \rightarrow (\cdot E)\}) =$$

$$\{F \rightarrow (\cdot E), E \rightarrow \cdot E + T, E \rightarrow \cdot T,$$

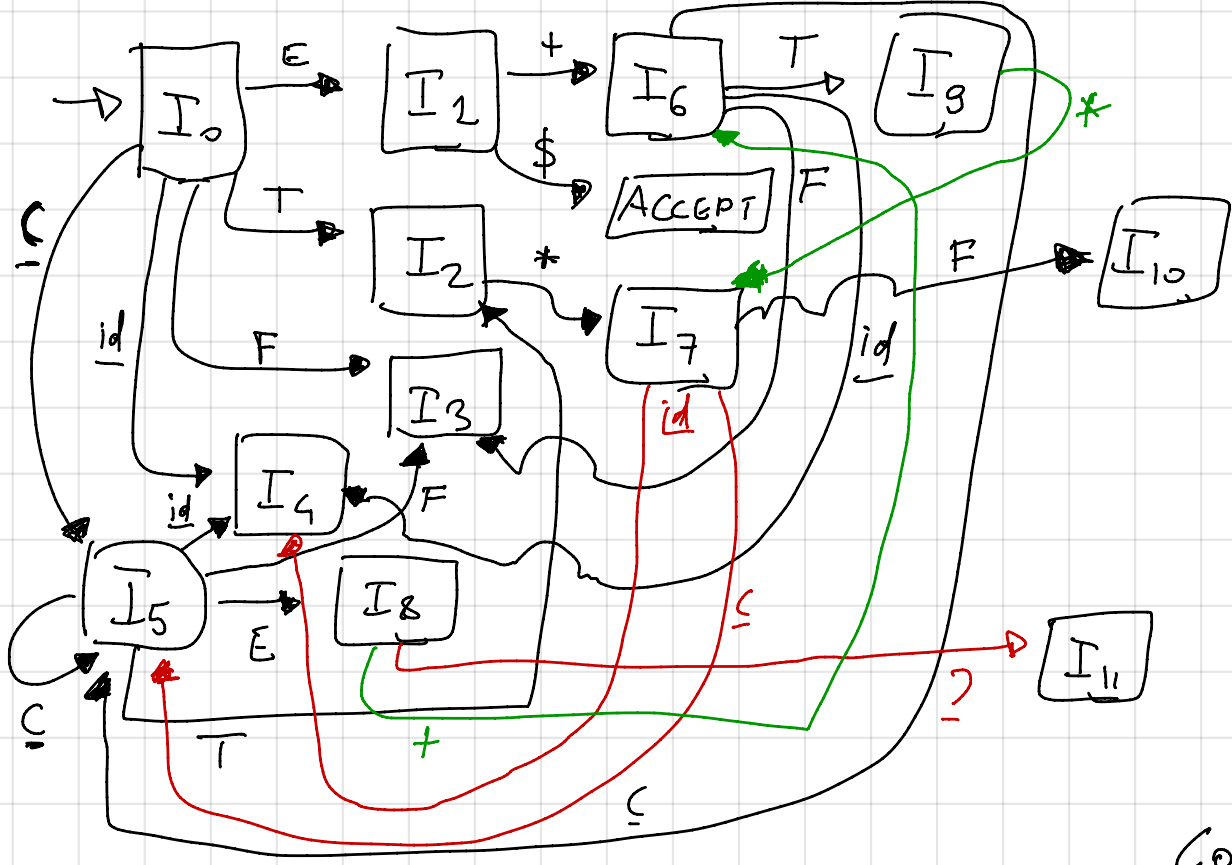
$$T \rightarrow \cdot T * F, T \rightarrow \cdot F, F \rightarrow \cdot \underline{id},$$

$$F \rightarrow \cdot (E)\} = I_5$$

$$GOTO(I_2, +) = \text{CLOSURE}(\{E \rightarrow E + \cdot T\}) = \{E \rightarrow E + \cdot T,$$

$$T \rightarrow \cdot T * F, T \rightarrow \cdot F, F \rightarrow \cdot \underline{id},$$

$$F \rightarrow \cdot (E)\} = I_6$$



GoTo

ACTION

	id	+	*	()	\$	E	T	F
0	S4			S5			1	2	3
1		S6				ACCEPT			
2		r2	S7	r2		r2			
3									
4									
5									
6									
7									
8									
9									
10									
11									

$FIRST(E) = \{ id, (\}$
 $FIRST(T) = \{ id, (\}$
 $FIRST(F) = \{ id, (\}$

$FOLLOW(E') = \{ \$ \}$
 $FOLLOW(E) = \{ \$, +,) \}$
 $FOLLOW(T) = \{ \$, +, *,) \}$
 $FOLLOW(F) = \{ \$, +, *,) \}$

$$\text{GOTO}(I_2, *) = \text{CLOSURE}(\{T \rightarrow T * \cdot F, \\ F \rightarrow \cdot \underline{\text{id}}, F \rightarrow \cdot (E)\}) = I_7$$

$$\text{GOTO}(I_5, E) = \text{CLOSURE}(\{F \rightarrow (E \cdot), E \rightarrow E \cdot + T\}) = \\ = \{F \rightarrow (E \cdot), E \rightarrow E \cdot + T\} = I_8$$

$$\text{GOTO}(I_5, T) = \text{CLOSURE}(\{E \rightarrow T \cdot, T \rightarrow T \cdot * F\}) = \\ \{E \rightarrow T \cdot, T \rightarrow T \cdot * F\} = I_2$$

$$\text{GOTO}(I_5, F) = \text{CLOSURE}(\{T \rightarrow F \cdot\}) = \{T \rightarrow F \cdot\} = I_3$$

$$\text{GOTO}(I_5, \underline{\text{id}}) = I_4$$

$$\text{GOTO}(I_5, \underline{()}) = I_5$$

$$\text{GOTO}(I_6, T) = \text{CLOSURE}(\{E \rightarrow E + T \cdot, T \rightarrow T \cdot * F\}) = \\ \{E \rightarrow E + T \cdot, T \rightarrow T \cdot * F\} = I_9$$

$$\text{GOTO}(I_6, F) = I_3$$

$$\text{GOTO}(I_6, \underline{\text{id}}) = I_4$$

$$\text{GOTO}(I_6, \underline{()}) = I_5$$

$$\text{GOTO}(I_7, F) = \text{CLOSURE}(\{T \rightarrow T * F \cdot\}) = \{T \rightarrow T * F \cdot\} = I_{10}$$

$$\text{GOTO}(I_7, \underline{\text{id}}) = I_4$$

$$\text{GOTO}(I_7, \underline{()}) = I_5$$

$$\text{GOTO}(I_8, \underline{()}) = \{F \rightarrow (E) \cdot\} = I_{11}$$

$$\text{Гото} (I_8, +) = \underline{I_6}$$

$$\text{Гото} (I_9, *) = \underline{I_7}$$