PORTADA

INTEGRANTES =

Liz Oriana Rodrigues Cruz
201910027010
Simón Marín Giraldo
201910050010

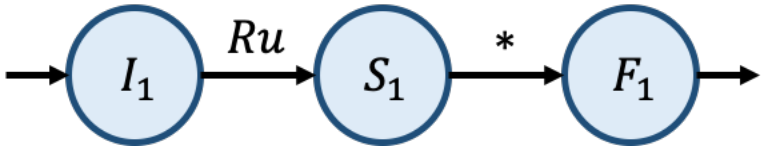
ESPECIFICACIONES =

< CFGLR-ϵ > →C
< Rules > → Ru
< Productions > → P
< RHS > → RH
< Terminal > → T
< No Terminal > → NT
EOF → *
, → ◇
Caracter Minúscula → Mi
Caracter Mayúscula →Ma

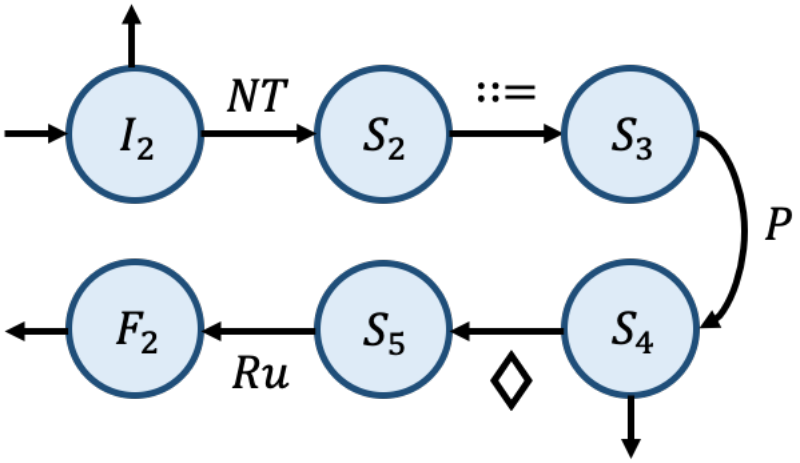
INDICE =

RED DE AUTOMATAS

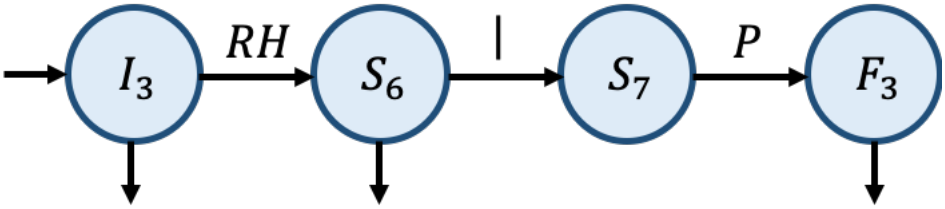
M_C :



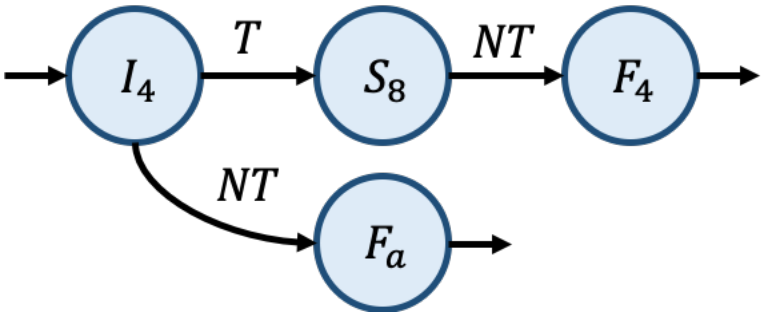
M_{Ru} :



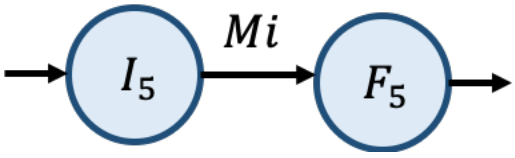
M_P :



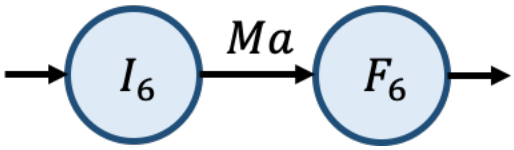
M_{RH} :



M_T :



M_{NT} :



CLAUSURAS

$$Clau(I_1) = \{I_1 - I_2 - I_6\}$$
$$Clau(S_1) = \{S_1\}$$
$$Clau(F_1) = \{F_1\}$$
$$Clau(I_2) = \{I_2 - I_6\}$$
$$Clau(S_2) = \{S_2\}$$
$$Clau(S_3) = \{S_3 - I_3 - I_4 - I_5 - I_6\}$$
$$Clau(S_4) = \{S_4\}$$
$$Clau(S_5) = \{S_5 - I_2 - I_6\}$$
$$Clau(F_2) = \{F_2\}$$
$$Clau(I_3) = \{I_3 - I_4 - I_5 - I_6\}$$
$$Clau(S_6) = \{S_6\}$$
$$Clau(S_7) = \{S_7 - I_3 - I_4 - I_5 - I_6\}$$
$$Clau(F_3) = \{F_3\}$$
$$Clau(I_4) = \{I_4 - I_5 - I_6\}$$
$$Clau(S_8) = \{S_8 - I_6\}$$
$$Clau(F_4) = \{F_4\}$$
$$Clau(F_a) = \{F_a\}$$
$$Clau(I_5) = \{I_5\}$$
$$Clau(F_5) = \{F_5\}$$
$$Clau(I_6) = \{I_6\}$$
$$Clau(F_6) = \{F_6\}$$

FUNCION SIN_NOMBRE
MAQUINA PILOTO LR(0)

$$\vartheta(Q_0, Ru) = Clau[(I_1 - Ru), (I_2 - Ru), (I_6 - Ru)]$$
$$= Clau[(I_1 - Ru)] \quad = Clau[S_1]$$
$$= S_1 \rightarrow Q_1$$

$$\vartheta(Q_0, NT) = Clau[(I_1 - NT), (I_2 - NT), (I_6 - NT)]$$
$$= Clau[(I_2 - NT)] \quad = Clau[S_2]$$
$$= S_2 \rightarrow Q_2$$

$$\vartheta(Q_0, Ma) = Clau[(I_1 - Ma), (I_2 - Ma), (I_6 - Ma)]$$
$$= Clau[(I_6 - Ma)] \quad = Clau[F_6]$$
$$= F_6 \rightarrow Q_3$$

$$\vartheta(Q_1, *) = Clau[F_1] \quad = F_1 \rightarrow Q_4$$

$$\vartheta(Q_2, ::=) = Clau[S_3]$$
$$= \{S_3 - I_3 - I_4 - I_5 - I_6\}$$

“No podemos continuar con este método ya que al llegar a la clausura de S_3 nos damos cuenta que tiene mas de un estado lo que incumple con la condición de $LR(0)$”

MAQUINA PILOTO $LR(1)$ o $LALR(1)$

$$Q_0 = \{ < I_1 - * > , < I_2 - * > , < I_6 - ::= > \}$$

$$\vartheta(Q_0, Ru) = Clau[< \delta(I_1, Ru) - \dashv > , < \delta(I_2, Ru) - * > , < \delta(I_6, Ru) - ::= >]$$
$$= Clau[< S_1 - \dashv >]$$
$$= < S_1 - * > \rightarrow Q_1$$

$$\vartheta(Q_0, NT) = Clau[< \delta(I_1, NT) - \dashv > , < \delta(I_2, NT) - * > , < \delta(I_6, NT) - ::= >]$$
$$= Clau[< S_2 - * >]$$
$$= < S_2 - * > \rightarrow Q_2$$

$$\vartheta(Q_0, Ma) = Clau[< \delta(I_1, Ma) - \dashv > , < \delta(I_2, Ma) - * > , < \delta(I_6, Ma) - ::= >]$$
$$= Clau[< F_6 - ::= >]$$
$$= < F_6 - ::= > \rightarrow Q_3$$

$$Q_1 = \{ < S_1 - * > \}$$

$$\vartheta(Q_1, *) = Clau[< \delta(S_1, *) - * >]$$
$$= Clau[< F_1 - * >]$$
$$= < F_1 - * > \rightarrow Q_4$$

$$Q_2 = \{ < S_2 - * > \}$$

$$\vartheta(Q_2, ::=) = Clau[< \delta(S_2, ::=) - *]$$
$$= Clau[< S_3 - * >]$$
$$= < S_3 - * > \rightarrow Q_5$$

MAQUINA PILOTO $LR(1)$ o $LALR(1)$

$$Q_5 = \left\{ < S_3 - * > , < I_3 - \{ \diamond , * \} > , < I_4 - \{ | , \diamond , * \} > , < I_5 - Ma > , < I_6 - \{ | , \diamond , * \} > \right\}$$

$$\vartheta(Q_5, P) = Clau \left[\begin{array}{l} < \delta(S_3, P) - * > , < \delta(I_3, P) - \{ \diamond , * \} > , \\ < \delta(I_4, P) - \{ | , \diamond , * \} > , < \delta(I_5, P) - Ma > , \\ < \delta(I_6, P) - \{ | , \diamond , * \} > \end{array} \right]$$

$$= Clau[< S_4 - * >]$$

$$= < S_4 - * > \rightarrow Q_6$$

$$\vartheta(Q_5, RH) = Clau \left[\begin{array}{l} < \delta(S_3, RH) - * > , < \delta(I_3, RH) - \{ \diamond , * \} > , \\ < \delta(I_4, RH) - \{ | , \diamond , * \} > , < \delta(I_5, RH) - Ma > , \\ < \delta(I_6, RH) - \{ | , \diamond , * \} > \end{array} \right]$$

$$= Clau[< S_6 - \{ \diamond , * \} >]$$

$$= < S_6 - \{ \diamond , * \} > \rightarrow Q_7$$

$$\vartheta(Q_5, T) = Clau \left[\begin{array}{l} < \delta(S_3, T) - * > , < \delta(I_3, T) - \{ \diamond , * \} > , \\ < \delta(I_4, T) - \{ | , \diamond , * \} > , < \delta(I_5, T) - Ma > , \\ < \delta(I_6, T) - \{ | , \diamond , * \} > \end{array} \right]$$

$$= Clau[< S_8 - \{ | , \diamond , * \} >]$$

$$= < S_8 - \{ | , \diamond , * \} > \rightarrow Q_8$$

$$\vartheta(Q_5, NT) = Clau \left[\begin{array}{l} < \delta(S_3, NT) - * > , < \delta(I_3, NT) - \{ \diamond , * \} > , \\ < \delta(I_4, NT) - \{ | , \diamond , * \} > , < \delta(I_5, NT) - Ma > , \\ < \delta(I_6, NT) - \{ | , \diamond , * \} > \end{array} \right]$$

$$= Clau[< F_a - \{ | , \diamond , * \} >]$$

$$= < F_a - \{ | , \diamond , * \} > \rightarrow Q_9$$

MAQUINA PILOTO $LR(1) \circ LALR(1)$

$$\vartheta(Q_5, Ma) = Clau \left[\begin{array}{l} < \delta(S_3, Ma) - * > , < \delta(I_3, Ma) - \{ \diamond , * \} > , \\ < \delta(I_4, Ma) - \{ \mid , \diamond , * \} > , < \delta(I_5, Ma) - Ma > , \\ < \delta(I_6, Ma) - \{ \mid , \diamond , * \} > \end{array} \right]$$

$$= Clau[< F_6 - \{ \mid , \diamond , * \} >]$$

$$= < F_6 - \{ \mid , \diamond , * \} > \rightarrow Q_{10}$$

$$\vartheta(Q_5, Mi) = Clau \left[\begin{array}{l} < \delta(S_3, Mi) - * > , < \delta(I_3, Mi) - \{ \diamond , * \} > , \\ < \delta(I_4, Mi) - \{ \mid , \diamond , * \} > , < \delta(I_5, Mi) - Ma > , \\ < \delta(I_6, Mi) - \{ \mid , \diamond , * \} > \end{array} \right]$$

$$= Clau[< F_5 - Ma >]$$

$$= < F_5 - Ma > \rightarrow Q_{11}$$

$$Q_6 = \{ < S_4 - * > \}$$

$$\vartheta(Q_6, \diamond) = Clau[< \delta(S_4, \diamond) - * >]$$

$$= Clau[< S_5 - * >]$$

$$= < S_5 - * > \rightarrow Q_{12}$$

$$Q_7 = \{ < S_6 - \{ \diamond , * \} > \}$$

$$\vartheta(Q_7, \mid) = Clau[< \delta(S_6, \mid) - \{ \diamond , * \} >]$$

$$= Clau[< S_7 - \{ \diamond , * \} >]$$

$$= < S_7 - \{ \diamond , * \} > \rightarrow Q_{13}$$

MAQUINA PILOTO $LR(1)$ o $LALR(1)$

$$Q_8 = \left\{ < S_8 - \{ \mid, \diamond, * \} > , < I_6 - \{ \mid, \diamond, * \} > \right\}$$

$$\vartheta(Q_8, NT) = Clau[< \delta(S_8, NT) - \{ \mid, \diamond, * \} > , < \delta(I_6, NT) - \{ \mid, \diamond, * \} >]$$
$$= Clau[< F_4 - \{ \mid, \diamond, * \} >]$$
$$= < F_4 - \{ \mid, \diamond, * \} > \rightarrow Q_{14}$$

$$\vartheta(Q_8, Ma) = Clau[< \delta(S_8, Ma) - \{ \mid, \diamond, * \} > , < \delta(I_6, Ma) - \{ \mid, \diamond, * \} >]$$
$$= Clau[< F_6 - \{ \mid, \diamond, * \} >]$$
$$= < F_6 - \{ \mid, \diamond, * \} > \rightarrow Q_{10}$$

$$Q_{12} = \left\{ < S_5 - * > , < I_2 - * > , < I_6 - ::= > \right\}$$

$$\vartheta(Q_{12}, Ru) = Clau[< \delta(S_5, Ru) - * > , < \delta(I_2, Ru) - * > , < \delta(I_6, Ru) - ::= >]$$
$$= Clau[< F_2 - * >]$$
$$= < F_2 - * > \rightarrow Q_{15}$$

$$\vartheta(Q_{12}, NT) = Clau[< \delta(S_5, NT) - * > , < \delta(I_2, NT) - * > , < \delta(I_6, NT) - ::= >]$$
$$= Clau[< S_2 - * >]$$
$$= < S_2 - * > \rightarrow Q_2$$

$$\vartheta(Q_{12}, Ma) = Clau[< \delta(S_5, Ma) - * > , < \delta(I_2, Ma) - * > , < \delta(I_6, Ma) - ::= >]$$
$$= Clau[< F_6 - ::= >]$$
$$= < F_6 - ::= > \rightarrow Q_3$$

MAQUINA PILOTO $LR(1)$ o $LALR(1)$

$$Q_{13} = \left\{ \begin{array}{l} < S_7 - \{ \diamond , * \} > , < I_3 - \{ \diamond , * \} > , \\ < I_4 - \{ \mid , \diamond , * \} > , < I_5 - Ma > , < I_6 - \{ \mid , \diamond , * \} > \end{array} \right\}$$

$$\vartheta(Q_{13}, P) = Clau \left[\begin{array}{l} < \delta(S_7, P) - \{ \diamond , * \} > , < \delta(I_3, P) - \{ \diamond , * \} > , \\ < \delta(I_4, P) - \{ \mid , \diamond , * \} > , < \delta(I_5, P) - Ma > , \\ < \delta(I_6, P) - \{ \mid , \diamond , * \} > \end{array} \right]$$

$$= Clau[< F_3 - \{ \diamond , * \} >]$$

$$= < F_3 - \{ \diamond , * \} > \rightarrow Q_{16}$$

$$\vartheta(Q_{13}, RH) = Clau \left[\begin{array}{l} < \delta(S_7, RH) - \{ \diamond , * \} > , < \delta(I_3, RH) - \{ \diamond , * \} > , \\ < \delta(I_4, P) - \{ \mid , \diamond , * \} > , < \delta(I_5, P) - Ma > , \\ < \delta(I_6, P) - \{ \mid , \diamond , * \} > \end{array} \right]$$

$$= Clau[< S_6 - \{ \diamond , * \} >]$$

$$= < S_6 - \{ \diamond , * \} > \rightarrow Q_7$$

$$\vartheta(Q_{13}, T) = Clau[< S_8 - \{ \mid , \diamond , * \} >]$$

$$= < S_8 - \{ \mid , \diamond , * \} > \rightarrow Q_8$$

$$\vartheta(Q_{13}, NT) = Clau[< F_a - \mid \{ \mid , \diamond , * \} >]$$

$$= < F_a - \{ \mid , \diamond , * \} > \rightarrow Q_9$$

$$\vartheta(Q_{13}, Ma) = Clau[F_6 - \{ \mid , \diamond , * \} >]$$

$$= < F_6 - \{ \mid , \diamond , * \} > \rightarrow Q_{10}$$

$$\vartheta(Q_{13}, Mi) = Clau[< F_5 - Ma >]$$

$$= < F_5 - Ma > \rightarrow Q_{11}$$

TABLAS DE M. PILOTO

PARA HACER MAS SIMPLE EL AUTOMATA PRIMERO HAREMOS LAS TABLAS Y LUEGO DIBUJAMOS EL AUTOMATA COMO TAL.

Q_0	Regla	L.A.
I_1	C → • Ru*	*
I_2	Ru → • NT ::= P, R | • NT ::= P | • ϵ	*
I_6	NT → • Ma	::=

Q_1	Regla	L.A.
S_1	C → Ru • *	*

Q_2	Regla	L.A.
S_2	Ru → NT • ::= P, R | NT • ::= P | ϵ •	*

Q_3	Regla	L.A.
F_6	NT → Ma •	::=

TABLAS DE M. PILOTO

Q_4	Regla	L.A.
F_1	C → Ru* •	*

Q_5	Regla	L.A.
S_3	Ru → NT ::= • P, R | NT ::= • P | ϵ •	*
I_3	P → • RH | P | • RH | • ϵ	◇ *
I_4	RH → • T NT | • NT	| ◇ *
I_5	T → • Mi	Ma
I_6	NT → • Ma	| ◇ *

Q_6	Regla	L.A.
S_4	Ru → NT ::= P • , R | NT ::= P • | ϵ •	*

TABLAS DE M. PILOTO

Q_7	Regla	L.A.
S_6	P → RH • | P | RH • | ϵ •	◇ *

Q_8	Regla	L.A.
S_8	RH → T • NT | NT	| ◇ *
I_6	NT → • Ma	| ◇ *

Q_9	Regla	L.A.
F_a	RH → T NT | NT •	| ◇ *

Q_{10}	Regla	L.A.
F_6	NT → Ma •	| ◇ *

Q_{11}	Regla	L.A.
F_5	T → Mi •	Ma

TABLAS DE M. PILOTO

Q_{12}	Regla	L.A.
S_5	Ru → NT ::= P, • R | NT ::= P • | ϵ •	*
I_2	Ru → • NT ::= P, R | • NT ::= P | • ϵ	*
I_6	NT → • Ma	::=

Q_{13}	Regla	L.A.
S_7	P → RH | • P | RH • | ϵ •	◇ *
I_3	P → • RH | P |• RH | • ϵ	◇ *
I_4	RH → • T NT |• NT	| ◇ *
I_5	T → • Mi	Ma
I_6	NT → • Ma	| ◇ *

TABLAS DE M. PILOTO

Q_{14}	Regla	L.A.
F_4	RH → T NT • | NT	| ◇ *

Q_{15}	Regla	L.A.
F_2	Ru → NT ::= P, R • | NT ::= P • | ϵ •	*

Q_{16}	Regla	L.A.
F_3	P → RH | P • | RH • | ϵ •	◇ *

$Q_0 = \{Q_1 - Ru\}, \{Q_2 - NT\}, \{Q_3 - Ma\}$
$Q_1 = \{Q_4 - *\}$
$Q_2 = \{Q_5 - ::=\}$
$Q_3 = \epsilon$
$Q_4 = \epsilon$
$Q_5 = \{Q_6 - P\}, \{Q_7 - RH\}, \{Q_8 - T\}, \{Q_9 - NT\}, \{Q_{10} - Ma\}, \{Q_{11} - Mi\}$
$Q_6 = \{Q_{12} - \diamond\}$
$Q_7 = \{Q_{13} - |\}$
$Q_8 = \{Q_{14} - NT\}, \{Q_{10} - Ma\}$
$Q_9 = \epsilon$
$Q_{10} = \epsilon$
$Q_{11} = \epsilon$
$Q_{12} = \{Q_{15} - Ru\}, \{Q_2 - NT\}, \{Q_3 - Ma\}$
$Q_{13} = \{Q_{16} - P\}, \{Q_7 - RH\}, \{Q_8 - T\}, \{Q_9 - NT\}, \{Q_{10} - Ma\}, \{Q_{11} - Mi\}$
$Q_{14} = \epsilon$
$Q_{15} = \epsilon$
$Q_{16} = \epsilon$

AUTOMATA PILOTO

ES UN AUTOMATA DE CONDICION $LR(1)$