

Memoria de la Práctica de Procesadores de Lenguajes: Analizador Sintáctico

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1 Diseño del Analizador Sintáctico

1.1 Gramática

Terminales = { ; { } id ent cadena () + < ! = |= var int
boolean string print input , return function if else }

NoTerminales = { *P D T F T1 A K C S L M Q S1 G X E U R V S2* }

Axioma = *P*

Producciones = {

P → *D P*

P → *F P*

P → *S P*

D → *var T id ;*

T → *int*

T → *string*

T → *boolean*

F → *function T1 id (A) { C }*

T1 → λ

T1 → *T*

A → *T id K*

A → λ

K → λ

K → *, T id K*

C → *D C*

C → *S C*

C → λ

S → *id L E ;*

S → *id (M) ;*

S → *print (E) ;*

S → *input (id) ;*

S → *if (E) S1*

S → *return X ;*

L → *|=*

L → *=*

M → *E Q*

M → λ

Q → λ

Q → *, E Q*

S1 → { *S2* } *G*

S1 → *S*

G → *else { S2 }*

G → λ

X → *E*

X → λ

E → *E < U*

E → *U*

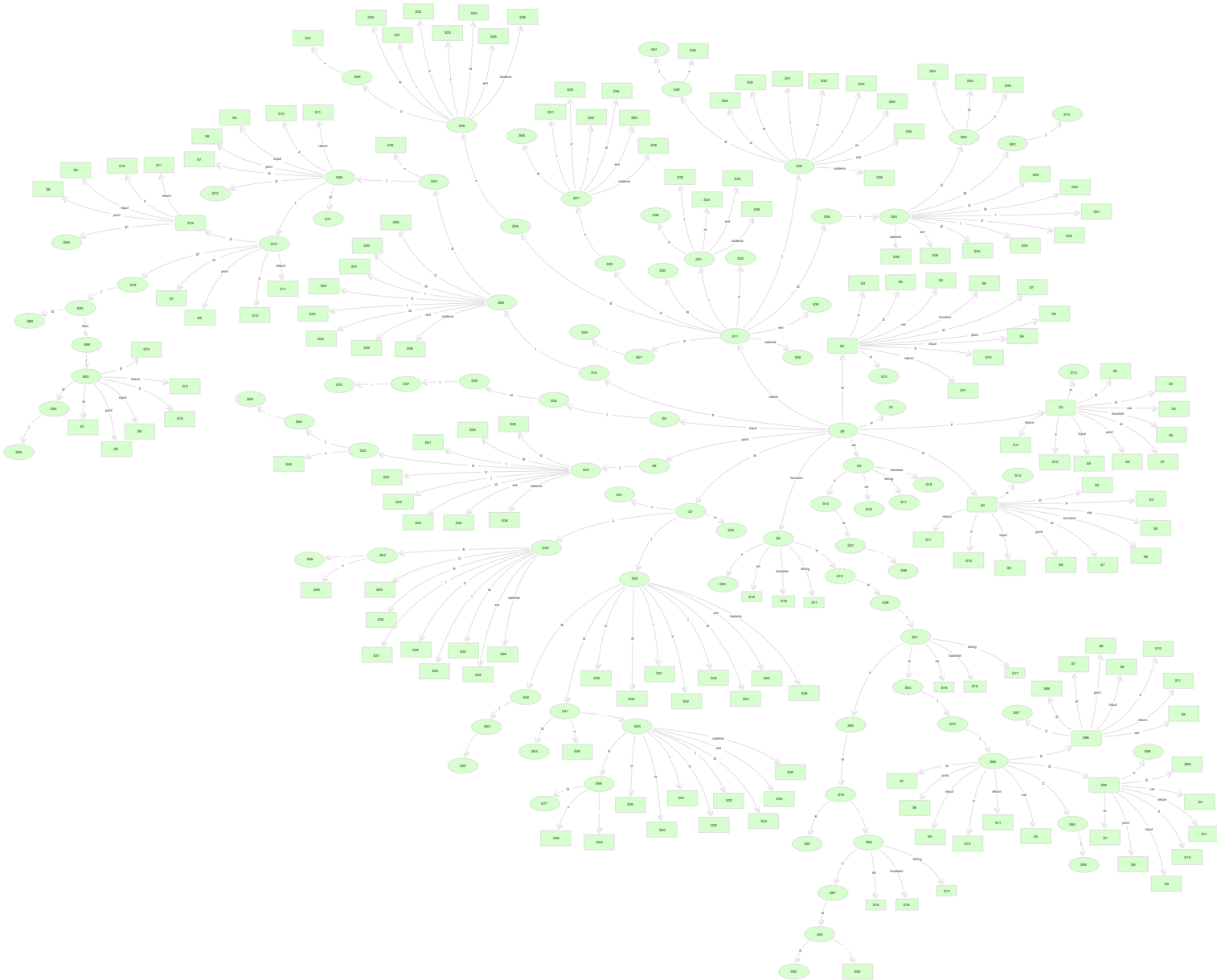
U → *U + R*

U → *R*

$$\begin{aligned}
R &\rightarrow ! V \\
R &\rightarrow V \\
V &\rightarrow (E) \\
V &\rightarrow id \\
V &\rightarrow id (M) \\
V &\rightarrow ent \\
V &\rightarrow cadena \\
S2 &\rightarrow S S2 \\
S2 &\rightarrow S \\
P &\rightarrow \lambda
\end{aligned}$$

}

1.2 Autómata Reconocedor de Prefijos Viables



1.2.1 Estados del autómata

$S_0 = \{P1 \rightarrow \bullet P, P \rightarrow \bullet DP, P \rightarrow \bullet SP, P \rightarrow \bullet , D \rightarrow \bullet \text{ var } T \text{ id};, \\ F \rightarrow \bullet \text{ function } T1 \text{ id}(A)\{C\}, S \rightarrow \bullet \text{ id } L \text{ E};, S \rightarrow \bullet \text{ id}(M); \\ S \rightarrow \bullet \text{ print}(E);, S \rightarrow \bullet \text{ input}(\text{id});, S \rightarrow \bullet \text{ if}(E) \text{ S1}, \\ S \rightarrow \bullet \text{ return } X;\}$
 $S_1 = \{P1 \rightarrow P \bullet\}$
 $S_2 = \{P \rightarrow D \bullet P, P \rightarrow \bullet DP, P \rightarrow \bullet SP, P \rightarrow \bullet , D \rightarrow \bullet \text{ var } T \text{ id};, \\ F \rightarrow \bullet \text{ function } T1 \text{ id}(A)\{C\}, S \rightarrow \bullet \text{ id } L \text{ E};, S \rightarrow \bullet \text{ id}(M); \\ S \rightarrow \bullet \text{ print}(E);, S \rightarrow \bullet \text{ input}(\text{id});, S \rightarrow \bullet \text{ if}(E) \text{ S1}, \\ S \rightarrow \bullet \text{ return } X;\}$
 $S_3 = \{P \rightarrow F \bullet P, P \rightarrow \bullet DP, P \rightarrow \bullet FP, P \rightarrow \bullet SP, P \rightarrow \bullet , \\ D \rightarrow \bullet \text{ var } T \text{ id};, F \rightarrow \bullet \text{ function } T1 \text{ id}(A)\{C\}, \\ S \rightarrow \bullet \text{ id } L \text{ E};, S \rightarrow \bullet \text{ id}(M);, S \rightarrow \bullet \text{ print}(E);, \\ S \rightarrow \bullet \text{ input}(\text{id});, S \rightarrow \bullet \text{ if}(E) \text{ S1}, S \rightarrow \bullet \text{ return } X;\}$
 $S_4 = \{P \rightarrow S \bullet P, P \rightarrow \bullet DP, P \rightarrow \bullet FP, P \rightarrow \bullet SP, P \rightarrow \bullet , \\ D \rightarrow \bullet \text{ var } T \text{ id};, F \rightarrow \bullet \text{ function } T1 \text{ id}(A)\{C\}, \\ S \rightarrow \bullet \text{ id } L \text{ E};, S \rightarrow \bullet \text{ id}(M);, S \rightarrow \bullet \text{ print}(E);, \\ S \rightarrow \bullet \text{ input}(\text{id});, S \rightarrow \bullet \text{ if}(E) \text{ S1}, S \rightarrow \bullet \text{ return } X;\}$
 $S_5 = \{D \rightarrow \text{ var } \bullet T \text{ id};, T \rightarrow \bullet \text{ int}, T \rightarrow \bullet \text{ string}, T \rightarrow \bullet \text{ boolean}\}$
 $S_6 = \{F \rightarrow \text{ function } \bullet T1 \text{ id}(A)\{C\}, T1 \rightarrow \bullet, T1 \rightarrow \bullet T, \\ T \rightarrow \bullet \text{ int}, T \rightarrow \bullet \text{ string}, T \rightarrow \bullet \text{ boolean}\}$
 $S_7 = \{S \rightarrow \text{ id } \bullet L \text{ E};, S \rightarrow \text{ id } \bullet (M);, L \rightarrow \mid =, L \rightarrow \bullet =\}$
 $S_8 = \{S \rightarrow \text{ print } \bullet (E);\}$
 $S_9 = \{S \rightarrow \text{ input } \bullet (\text{id});\}$
 $S_{10} = \{S \rightarrow \text{ if } \bullet (E) \text{ S1}\}$
 $S_{11} = \{S \rightarrow \text{ return } \bullet X;, X \rightarrow \bullet, X \rightarrow \bullet E, E \rightarrow \bullet E < U, E \rightarrow \bullet U, \\ U \rightarrow \bullet U + R, U \rightarrow \bullet R, R \rightarrow \bullet ! V, R \rightarrow \bullet V, V \rightarrow \bullet (E), \\ V \rightarrow \bullet \text{ id}, V \rightarrow \bullet \text{ id}(M), V \rightarrow \bullet \text{ ent}, V \rightarrow \bullet \text{ cadena}\}$
 $S_{12} = \{P \rightarrow DP \bullet\}$
 $S_{13} = \{P \rightarrow FP \bullet\}$
 $S_{14} = \{P \rightarrow SP \bullet\}$
 $S_{15} = \{D \rightarrow \text{ var } T \bullet \text{ id};\}$
 $S_{16} = \{T \rightarrow \text{ int } \bullet\}$
 $S_{17} = \{T \rightarrow \text{ string } \bullet\}$
 $S_{18} = \{T \rightarrow \text{ boolean } \bullet\}$
 $S_{19} = \{F \rightarrow \text{ function } T1 \bullet \text{ id}(A)\{C\}\}$
 $S_{20} = \{T1 \rightarrow T \bullet\}$
 $S_{21} = \{L \rightarrow = \bullet\}$
 $S_{22} = \{S \rightarrow \text{ id } (\bullet M);, M \rightarrow \bullet E \text{ Q}, M \rightarrow \bullet, E \rightarrow \bullet E < U, E \rightarrow \bullet U, \\ U \rightarrow \bullet U + R, U \rightarrow \bullet R, R \rightarrow \bullet ! V, R \rightarrow \bullet V, V \rightarrow \bullet (E), \\ V \rightarrow \bullet \text{ id}, V \rightarrow \bullet \text{ id}(M), V \rightarrow \bullet \text{ ent}, V \rightarrow \bullet \text{ cadena}\}$
 $S_{23} = \{L \rightarrow \mid = \bullet\}$
 $S_{24} = \{S \rightarrow \text{ print } (\bullet E);, E \rightarrow \bullet E < U, E \rightarrow \bullet U, U \rightarrow \bullet U + R, \\ U \rightarrow \bullet R, R \rightarrow \bullet ! V, R \rightarrow \bullet V, V \rightarrow \bullet (E), V \rightarrow \bullet \text{ id}, \\ V \rightarrow \bullet \text{ id}(M), V \rightarrow \bullet \text{ ent}, V \rightarrow \bullet \text{ cadena}\}$
 $S_{25} = \{S \rightarrow \text{ input } (\bullet \text{id})\}$
 $S_{26} = \{S \rightarrow \text{ if } (\bullet E) \text{ S1}, E \rightarrow \bullet E < U, E \rightarrow \bullet U, U \rightarrow \bullet U + R, \\ U \rightarrow \bullet R, R \rightarrow \bullet ! V, R \rightarrow \bullet V, V \rightarrow \bullet (E), V \rightarrow \bullet \text{ id}, \\ V \rightarrow \bullet \text{ id}(M), V \rightarrow \bullet \text{ ent}, V \rightarrow \bullet \text{ cadena}\}$
 $S_{27} = \{S \rightarrow \text{ return } X \bullet ;\}$
 $S_{28} = \{X \rightarrow E \bullet, E \rightarrow E \bullet < U\}$
 $S_{29} = \{E \rightarrow U \bullet, U \rightarrow U \bullet + R\}$
 $S_{30} = \{U \rightarrow R \bullet\}$
 $S_{31} = \{R \rightarrow ! \bullet V, V \rightarrow \bullet (E), V \rightarrow \bullet \text{ id}, V \rightarrow \bullet \text{ id}(M), \\ V \rightarrow \bullet \text{ ent}, V \rightarrow \bullet \text{ cadena}\}$
 $S_{32} = \{R \rightarrow V \bullet\}$
 $S_{33} = \{V \rightarrow (\bullet E), E \rightarrow \bullet E < U, E \rightarrow \bullet U, U \rightarrow \bullet U + R,$

$U \rightarrow \bullet R, R \rightarrow \bullet ! V, R \rightarrow \bullet V, V \rightarrow \bullet (E), V \rightarrow \bullet id,$
 $V \rightarrow \bullet id(M), V \rightarrow \bullet ent, V \rightarrow \bullet cadena\}$
 $S_{34}=\{V \rightarrow id \bullet, V \rightarrow id \bullet (M)\}$
 $S_{35}=\{V \rightarrow ent \bullet\}$
 $S_{36}=\{V \rightarrow cadena \bullet\}$
 $S_{37}=\{D \rightarrow var T id \bullet;\}$
 $S_{38}=\{F \rightarrow function T1 id \bullet (A)\{C\}\}$
 $S_{39}=\{S \rightarrow id L \bullet E, E \rightarrow \bullet E < U, E \rightarrow \bullet U, U \rightarrow \bullet U + R,$
 $U \rightarrow \bullet R, R \rightarrow \bullet ! V, R \rightarrow \bullet V, V \rightarrow \bullet (E), V \rightarrow \bullet id,$
 $V \rightarrow \bullet id(M), V \rightarrow \bullet ent, V \rightarrow \bullet cadena\}$
 $S_{40}=\{S \rightarrow id (M \bullet);\}$
 $S_{41}=\{M \rightarrow E \bullet Q, E \rightarrow E \bullet < U, Q \rightarrow \bullet, Q \rightarrow \bullet ,EQ\}$
 $S_{42}=\{S \rightarrow print(E \bullet);, E \rightarrow E \bullet < U\}$
 $S_{43}=\{S \rightarrow input(id \bullet);\}$
 $S_{44}=\{S \rightarrow if(E \bullet) S1, E \rightarrow E \bullet < U\}$
 $S_{45}=\{S \rightarrow return X; \bullet\}$
 $S_{46}=\{E \rightarrow E < \bullet U, U \rightarrow \bullet R, U \rightarrow \bullet U + R, R \rightarrow \bullet ! V, R \rightarrow \bullet V$
 $V \rightarrow \bullet (E), V \rightarrow \bullet id, V \rightarrow \bullet id(M), V \rightarrow \bullet ent, V \rightarrow \bullet cadena\}$
 $S_{47}=\{U \rightarrow U + \bullet R, R \rightarrow \bullet ! V, V \rightarrow \bullet (E), V \rightarrow \bullet id(M),$
 $V \rightarrow \bullet ent, V \rightarrow \bullet cadena\}$
 $S_{48}=\{R \rightarrow ! V \bullet\}$
 $S_{49}=\{V \rightarrow (E \bullet), E \rightarrow E \bullet < U\}$
 $S_{50}=\{V \rightarrow id(\bullet M), M \rightarrow \bullet E Q, M \rightarrow \bullet, E \rightarrow \bullet E < U, E \rightarrow \bullet U,$
 $U \rightarrow \bullet U + R, U \rightarrow \bullet R, R \rightarrow \bullet ! V, R \rightarrow \bullet V, V \rightarrow \bullet (E),$
 $V \rightarrow \bullet id, V \rightarrow \bullet id(M), V \rightarrow \bullet ent, V \rightarrow \bullet cadena\}$
 $S_{51}=\{F \rightarrow function T1 id(\bullet A)\{C\}, A \rightarrow \bullet T id K, A \rightarrow \bullet, T \rightarrow \bullet int,$
 $T \rightarrow \bullet string, T \rightarrow \bullet boolean\}$
 $S_{52}=\{S \rightarrow id L E \bullet; , E \rightarrow E \bullet < U\}$
 $S_{53}=\{S \rightarrow id(M) \bullet; \}$
 $S_{54}=\{M \rightarrow E Q \bullet\}$
 $S_{55}=\{Q \rightarrow , \bullet E Q, E \rightarrow \bullet E < U, E \rightarrow \bullet U,$
 $U \rightarrow \bullet U + R, U \rightarrow \bullet R, R \rightarrow \bullet ! V, R \rightarrow \bullet V, V \rightarrow \bullet (E),$
 $V \rightarrow \bullet id, V \rightarrow \bullet id(M), V \rightarrow \bullet ent, V \rightarrow \bullet cadena\}$
 $S_{56}=\{S \rightarrow print(E) \bullet; \}$
 $S_{57}=\{S \rightarrow input(id) \bullet; \}$
 $S_{58}=\{S \rightarrow if(E) \bullet S1, S1 \rightarrow \bullet \{S2\}G, S1 \rightarrow \bullet S, S \rightarrow \bullet id L E; ,$
 $S \rightarrow \bullet id(M); , S \rightarrow \bullet print(E); , S \rightarrow \bullet input(id); ,$
 $S \rightarrow \bullet if(E)S1, S \rightarrow \bullet return X ;\}$
 $S_{59}=\{E \rightarrow E < U \bullet, U \rightarrow U \bullet + R\}$
 $S_{60}=\{U \rightarrow U + R \bullet\}$
 $S_{61}=\{V \rightarrow (E) \bullet\}$
 $S_{62}=\{V \rightarrow id(M \bullet)\}$
 $S_{63}=\{M \rightarrow E \bullet Q, E \rightarrow E \bullet < U, Q \rightarrow \bullet, Q \rightarrow \bullet ,EQ\}$
 $S_{64}=\{F \rightarrow function T1 id(A \bullet)\{C\}\}$
 $S_{65}=\{A \rightarrow T \bullet id K\}$
 $S_{66}=\{S \rightarrow id L E ; \bullet\}$
 $S_{67}=\{S \rightarrow id (M); \bullet\}$
 $S_{68}=\{Q \rightarrow ,E \bullet Q, E \rightarrow E \bullet < U, Q \rightarrow \bullet, Q \rightarrow \bullet ,EQ\}$
 $S_{69}=\{S \rightarrow print(E); \bullet\}$
 $S_{70}=\{S \rightarrow input(id); \bullet\}$
 $S_{71}=\{S \rightarrow if(E) S1 \bullet\}$
 $S_{72}=\{S1 \rightarrow \{\bullet S2\}G, S2 \rightarrow \bullet S S2, S2 \rightarrow \bullet S, S \rightarrow \bullet id L E; ,$
 $S \rightarrow \bullet id(M); , S \rightarrow \bullet print(E); , S \rightarrow \bullet input(id); ,$
 $S \rightarrow \bullet if(E)S1, S \rightarrow \bullet return X ;\}$
 $S_{73}=\{S1 \rightarrow S \bullet\}$
 $S_{74}=\{S2 \rightarrow S \bullet S2 , S2 \rightarrow S \bullet , S2 \rightarrow \bullet S S2, S2 \rightarrow \bullet S,$
 $S \rightarrow \bullet id L E ; , S \rightarrow \bullet id (M) ; , S \rightarrow \bullet print (E) ; ,$
 $S \rightarrow \bullet input (id) ; , S \rightarrow \bullet if (E) S1, S \rightarrow \bullet return X ;\}$

$S_{75} = \{F \rightarrow \text{function } T1 \text{ id } (K) \bullet \{C\}\}$
 $S_{76} = \{A \rightarrow T \text{ id } \bullet K, K \rightarrow \bullet, K \rightarrow \bullet, T \text{ id } K\}$
 $S_{77} = \{Q \rightarrow, E Q \bullet\}$
 $S_{78} = \{S1 \rightarrow \{S2 \bullet\} G\}$
 $S_{79} = \{S2 \rightarrow S \bullet S2, S2 \rightarrow S \bullet, S2 \rightarrow \bullet S S2, S \rightarrow \bullet \text{id } L E;, S \rightarrow \bullet \text{id}(M);, S \rightarrow \bullet \text{print}(E); S \rightarrow \bullet \text{if}(E)S1;, S \rightarrow \bullet \text{input}(\text{id});, S \rightarrow \text{return } X;\}$
 $S_{80} = \{F \rightarrow \text{function } T1 \text{ id } (K) \{ \bullet C \}, C \rightarrow \bullet D C, C \rightarrow \bullet, D \rightarrow \bullet \text{var } T \text{ id };, S \rightarrow \bullet \text{id } L E, S \rightarrow \bullet \text{id } (M);, S \rightarrow \bullet \text{print } (E);, S \rightarrow \bullet \text{input } (\text{id});, S \rightarrow \bullet \text{if } (E) S1, S \rightarrow \bullet \text{return } X ;\}$
 $S_{81} = \{A \rightarrow T \text{ id } K \bullet\}$
 $S_{82} = \{K \rightarrow, \bullet T \text{ id } K, T \rightarrow \bullet \text{int}, T \rightarrow \bullet \text{string}, T \rightarrow \bullet \text{boolean}\}$
 $S_{83} = \{S1 \rightarrow \{S2\} \bullet G, G \rightarrow \bullet \text{else } \{S2\}, G \rightarrow \bullet\}$
 $S_{84} = \{F \rightarrow \text{function } T1 \text{ id } (K) \{C \bullet\}\}$
 $S_{85} = \{C \rightarrow D \bullet C, C \rightarrow \bullet D C, C \rightarrow \bullet S C, C \rightarrow \bullet, D \rightarrow \bullet \text{var } T \text{ id };, S \rightarrow \bullet \text{id } L E ;, S \rightarrow \bullet \text{id } (M) ;, S \rightarrow \bullet \text{print } (E) ;, S \rightarrow \bullet \text{input } (\text{id }) ;, S \rightarrow \bullet \text{if } (E) S1, S \rightarrow \bullet \text{return } X ;\}$
 $S_{86} = \{C \rightarrow S \bullet C, C \rightarrow \bullet D C, C \rightarrow \bullet S C, C \rightarrow \bullet, D \rightarrow \bullet \text{var } T \text{ id };, S \rightarrow \bullet \text{id } L E ;, S \rightarrow \bullet \text{id } (M) ;, S \rightarrow \bullet \text{print } (E) ;, S \rightarrow \bullet \text{input } (\text{id }) ;, S \rightarrow \bullet \text{if } (E) S1, S \rightarrow \bullet \text{return } X ;\}$
 $S_{87} = \{K \rightarrow, T \bullet \text{id } K\}$
 $S_{88} = \{S1 \rightarrow \{S2\} G \bullet\}$
 $S_{89} = \{G \rightarrow \text{else } \bullet \{S2\}\}$
 $S_{90} = \{F \rightarrow \text{function } T1 \text{ id } (K) \{C\} \bullet\}$
 $S_{91} = \{K \rightarrow, T \text{ id } \bullet K, K \rightarrow \bullet, K \rightarrow \bullet, T \text{ id } K\}$
 $S_{92} = \{G \rightarrow \text{else } \{ \bullet S2 \}, S2 \rightarrow \bullet S S2, S2 \rightarrow \bullet S, S \rightarrow \bullet \text{id } L E ;, S \rightarrow \bullet \text{id } (M) ;, S \rightarrow \bullet \text{print } (E) ;, S \rightarrow \bullet \text{input}(\text{id});, S \rightarrow \bullet \text{if } (E) S1, S \rightarrow \bullet \text{return } X ;\}$
 $S_{93} = \{K \rightarrow, T \text{ id } K \bullet\}$
 $S_{94} = \{G \rightarrow \text{else } \{ S2 \bullet \}\}$
 $S_{95} = \{G \rightarrow \text{else } \{ S2 \} \bullet\}$
 $S_{96} = \{C \rightarrow D C \bullet\}$
 $S_{97} = \{C \rightarrow S C \bullet\}$
 $S_{98} = \{D \rightarrow \text{var } T \text{ id }; \bullet\}$
 $S_{99} = \{S2 \rightarrow S S2 \bullet\}$

1.3 Conflictos

Como podemos observar en la tabla de decisión no hay ningún conflicto.

Los posibles conflictos son:

Reducción-Reducción

Podríamos ver como en los posibles estados con este conflicto, en nuestro caso ninguno, se verifica que

$\forall \{A \rightarrow \alpha \bullet, B \rightarrow \beta \bullet\} \subset S_x \Rightarrow \text{Follow}(A) \cap \text{Follow}(B) = \emptyset$ (Esto lo podemos observar al no tener dos entradas de reducción en la misma celda de cada fila de S_x)

Reducción-Desplazamiento

Podemos ver como en los posibles estados con este conflicto, $S_0, S_2, S_3, S_4, S_6, S_{11}, S_{22}, S_{28}, S_{29}, S_{34}, S_{41}, S_{50}, S_{51}, S_{59}, S_{63}, S_{68}, S_{76}, S_{79}, S_{80}, S_{83}, S_{85}, S_{86}, S_{91}$, se verifica

$\forall \{A \rightarrow \alpha \bullet b \gamma, C \rightarrow \beta \bullet\} \subset S_x \Rightarrow b \notin \text{Follow}(C)$ (Esto lo podemos observar al no tener una entrada de desplazamiento y otra de reducción en la misma celda de cada fila de S_x)

		:	{	}	id	entero	cadena	()	+	<	!	=		=	var	int	boolean	string	print	input	,	return	function	if	else	\$	P	D	T	F	T	A	K	C	S	L	M	Q	S'	G	X	E	U	R	V	S''										
S0					d7											d5				d8	d9			d11	d6	d10	r49	1	2	3						4																					
S1																											a																														
S2					d7											d5				d8	d9			d11	d6	d10	r49	12	2	3						4																					
S3					d7											d5				d8	d9			d11	d6	d10	r49	13	2	3						4																					
S4					d7											d5				d8	d9			d11	d6	d10	r49	14	2	3						4																					
S5																	d16	d18	d17										15																												
S6					r9												d16	d18	d17										20	19																											
S7																d21	d23																				39																				
S8																																																									
S9																																																									
S10																																																									
S11	r35				d34	d35	d36	d33																																																	
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S22					d34	d35	d36	d33	r27																																																
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S25					d43																																																				
S26					d34	d35	d36	d33																																																	
S27	d45																																																								
S28	r34																																																								
S29	r37																																																								
S30	r39																																																								
S31					d34	d35	d36	d33																																																	
S32	r41																																																								
S33					d34	d35	d36	d33																																																	
S34	r43																																																								
S35	r45																																																								
S36	r46																																																								
S37	d98																																																								
S38																																																									
S39					d34	d35	d36	d33																																																	
S40																																																									
S41																																																									
S42																																																									
S43																																																									
S44																																																									
S45					r23	r23																																																			
S46					d34	d35	d36	d33																																																	
S47					d34	d35	d36	d33																																																	
S48	r40																																																								
S49																																																									

2 Anexo de Pruebas

Error 1:

```
1 var int a;  
2 var b;  
3 a = 3;  
4 b = a;  
5 if (a < b) b = 1;  
6 if (b < a) b = 8;  
7 a = a + b;  
8 print (a);  
9 print (b);
```

```
> Error Sintactico: Declaracion incorrecta de variable. Linea: 2
```

Error 2:

```
1 var string texto;  
2 function pideTexto ()  
3 {  
4     print ('Introduce un texto');  
5     input (texto);  
6 }  
7 function imprime (string msg,)  
8 {  
9     print (msg);  
10 }  
11 pideTexto();  
12 var string textoAux;  
13 textoAux = texto;  
14 imprime (textoAux);
```

```
> Error Sintactico: Declaracion incorrecta de funcion. Linea: 7
```

Error 3:

```
1 var int a;  
2 var int b;  
3 a = 3;  
4 b = a;  
5 var boolean c;  
6 c = a < b;  
7 if (c) {  
8     b = 1;  
9 } else {  
10 c = b < a;  
11 if (c) b = 4;  
12 a = a + b;  
13 print (a);  
14 print (b);
```

```
> Error Sintactico: Sentencia condicional compuesta incorrecta. Linea: 14
```

Prueba 1 Correcta:

```

1 var int a;
2 var int b;
3 var int c;
4 print ('Introduce el primer operando');
5 input (a);
6 print ('Introduce el segundo operando');
7 input (b);
8 function int suma (int num1, int num2)
9 {
10     var int res;
11     res = num1+num2;
12     return res;
13 }
14 c = suma (a, b);
15 print (c);

```

Parse a Derechas:

A 5 4 5 4 5 4 46 41 39 37 20 21 46 41 39 37 20 21 5 10 5 5 13 14 11 5 4 25 43 41 39 43
 41 38 37 18 43 41 39 37 34 23 17 16 16 15 8 25 43 41 39 37 43 41 39 37 28 29 26 44 41
 39 37 18 43 41 39 37 20 49 3 3 2 3 3 3 3 1 1 1

Árbol sintáctico:

Prueba 2 Correcta:

```

1 var string texto;
2 function imprime (string msg)
3 {
4     print ('Mensaje introducido:');
5     print (msg);
6 }
7 function pideTexto ()
8 {
9     print ('Introduce un texto');
10    input (texto);
11 }
12 pideTexto();
13 imprime (texto);

```

Parse a Derechas:

A 6 4 9 6 13 11 46 41 39 37 20 43 41 39 37 20 17 16 16 8 9 12 46 41 39 37 20 21 17 16
 16 8 27 19 43 41 39 37 28 26 19 49 3 3 2 2 1

Árbol sintáctico:

Prueba 3 Correcta:

```

1 var string s;
2 var int uno;
3 var int UNO;
4 function int Factorial (int n)
5 {
6     if (n < 0) return 1;
7     return n + Factorial (n + 1);
8 }

```

```

9  var int For;
10 var int functional;
11 var int While;
12
13 function imprime (string s, string msg, int f)
14 {
15     print (s); print (msg); print (f);
16     return;
17 }
18 function string cadena (boolean log)
19 {
20     if (!log)
21     {
22         imprime (s, 'hola', 33);
23         if (uno < UNO) return s;
24     }
25     else
26     {
27         return 'Fin';
28     }
29 }
30 s = 'El factorial ';
31
32 print (s);
33 print ('Introduce un numero. ');
34 input (num);
35 var
36 boolean
37 booleano;
38 if (num < 0)    print ('No existe el factorial de un negativo. ');
39 imprime (cadena (booleano), 'recursivo es: ', Factorial (num));

```

Parse a Derechas:

A 6 4 5 4 5 4 5 10 5 13 11 43 41 39 37 45 41 39 36 45 41 39 37 34 23 31 22 43 41 39
43 41 39 45 41 38 37 28 26 44 41 38 37 34 23 17 16 16 8 5 4 5 4 5 4 9 6 6 5 13 14 14
11 43 41 39 37 20 43 41 39 37 20 43 41 39 37 20 35 23 17 16 16 16 16 8 6 10 7 13 11
43 40 39 37 43 41 39 37 46 41 39 37 45 41 39 37 28 29 29 26 19 43 41 39 37 43 41 39
36 43 41 39 37 34 23 31 22 48 47 46 41 39 37 34 23 48 32 30 22 17 16 8 25 46 41 39 37
18 43 41 39 37 20 46 41 39 37 20 21 7 4 43 41 39 37 45 41 39 36 46 41 39 37 20 31 22
43 41 39 37 28 26 44 41 39 37 46 41 39 37 43 41 39 37 28 26 44 41 39 37 28 29 29 26
19 49 3 3 1 3 3 3 3 2 2 1 1 1 2 1 1 1

Árbol sintáctico: