PDL: Práctica Procesador

Segunda Entrega:
Analizador Sintactíco

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Grupo 14
Procesadores de Lenguajes
Universidad Politécnica de Madrid
Curso 2020-2021

Gramática Analizador Sintáctico

```
NoTerminales = { E R U V S L Q X B T F H A K C P V1 S1 E1 R1 U1 }
Terminales = { && == != + - ID ( ) ENT CAD TRUE FALSE ! ++ ALERT INPUT
               RETURN DO WHILE , ; = NUMBER BOOLEAN STRING FUNCTION LET { } IF }
Axioma = P
Producciones = {
E -> R E1
E1 -> && R E1
E1 -> lambda
R -> U R1
R1 -> == U R1
R1 -> != U R1
R1 -> lambda
U -> V U1
U1 -> + V U1
U1 -> - V U1
U1 -> lambda
V -> ID V1
V -> ( E )
V -> ENT
V -> CAD
V -> TRUE
V -> FALSE
V -> ! ID
V1 -> ( L )
V1 -> ++
V1 -> lambda
S -> ID S1
S -> ALERT ( E ) ;
S -> INPUT ( ID ) ;
S -> RETURN X ;
S1 -> = E ;
S1 -> ( L ) ;
L -> E Q
L -> lambda
Q -> , E Q
Q -> lambda
X -> E
X -> lambda
B -> IF ( E ) S
B -> LET T ID ;
B -> S
B -> DO { C } WHILE ( E ) ;
T -> NUMBER
T -> BOOLEAN
T -> STRING
F -> FUNCTION H ID ( A ) { C }
H -> T
H -> lambda
```

```
A -> T ID K
A -> lambda
K -> , T ID K
K -> lambda
C -> B C
C -> lambda
P -> B P
P -> F P
P -> lambda
}
```

Tabla First Follow

	First	Follow
A	BOOLEAN NUMBER STRING lambda	)
T	BOOLEAN NUMBER STRING	
B	ALERT DO ID IF INPUT LET RETURN	
S	ALERT ID INPUT RETURN	
S1	(=	
C	ALERT DO ID IF INPUT LET RETURN lambda	}
E	! (CAD ENT FALSE ID TRUE	) , ;
E1	&& lambda	) , ;
V	! (CAD ENT FALSE ID TRUE	!= &&) + , - ; ==
V1	(++ lambda	!= &&) + , - ; ==
U	! (CAD ENT FALSE ID TRUE	!= &&) , ; ==
U1	+ - lambda	!= &&) , ; ==
R	! (CAD ENT FALSE ID TRUE	&&) , ;
R1	!= == lambda	&&) , ;
Q	, lambda	)
L	! (CAD ENT FALSE ID TRUE lambda	)
X	! (CAD ENT FALSE ID TRUE lambda	;
F	FUNCTION	
H	BOOLEAN NUMBER STRING lambda	ID
K	, lambda	)
P	ALERT DO FUNCTION ID IF INPUT LET RETURN lambda	$ (final de cadena)

Análisis de las intersecciones (@ es el símbolo de intersección)

```
Para P:
    -B: {ALERT DO ID IF INPUT LET RETURN}
    -F: {FUNCTION}
    -lambda: lambda
    Interseccion:
        -First(BP) @ First(FP) @ First(lambda) = Vacio
        -First(BP) @ Follow(P) @ First(FP) = Vacio

Para C:
    -B:{ALERT DO ID IF INPUT LET RETURN}
    -lambda: lambda
        -First(BC) @ First(lambda) = Vacio
        -First(BC) @ Follow(C) = Vacio

Para K:

        -First(,T ID K) @ First(lambda) = Vacio
        -First(,T ID K) @ Follow(A) = Vacio

Para H:
    -T: {BOOLEAN NUMBER STRING}
    -lambda: lambda
        -First(T) @ First(lambda) = Vacio
        -First(T) @ Follow(H) = Vacio

Para F:

Para T:

        -First(NUMBER) @ First(BOOLEAN) @ First(STRING) = Vacio

Para B:
    -S: {ID ALERT INPUT RETURN}
        -First(IF ( E ) S) @ First(LET T ID) @ First(S) @ First(DO { C } WHILE ( E );) = Vacio

Para X:
    -E: {! ( CAD ENT FALSE ID TRUE}
    -lambda: lambda
        -First(E) @ First(lambda) = Vacio
        -First(E) @ Follow(X) = Vacio

Para Q:
    -lambda: lambda
        -First(, E Q) @ First(lambda) = Vacio
        -First(, E Q) @ Follow(Q) = Vacio
```

```
Para L:
    -E:{! ( CAD ENT FALSE ID TRUE}
    -lambda: lambda
        -First(E Q) @ First(lambda) = Vacio
        -First(E Q) @ Follow(L) = Vacio

Para S1:
        -First(= E ;) @ First(( L ) ;) = Vacio

Para S:
        -First(RETURN X ;) @ First(INPUT ( ID ) ;) @ First(ALERT ( E ) ;) @ First(ID S1) = Vacio

Para V1:
    -lambda: lambda
        -First(( L )) @ First(++) @ First(lambda) = Vacio
        -First(( L )) @ First(++) @ Follow(V1) = Vacio

Para V:
        -First(ID V1) @ First(( E )) @ First(ENT) @ First(CAD) @ First(TRUE) @ First(FALSE) @ First(! I

Para U1:
    - lambda: lambda
        -First(+ V U1) @ First(- V U1) @ First(lambda) = Vacio
        -First(+ V U1) @ First(- V U1) @ Follow(U1) = Vacio

Para U:

Para E:

Para E1:
    -lambda: lambda
        -First(&& R E1) @ First(lambda) = Vacio
        -First(&& R E1) @ Follow(E1) = Vacio
Para R:

Para R1:
    -lambda: lambda
        -First(== U R1)@ First(!= U R1)@ First(!= U R1) = Vacio
        -First(== U R1)@ First(!= U R1)@ Follow(R1) = Vacio
```

Tabla LL(1)

	!	!=	&&	(	)	+	++	,	-	;	=	==	ALERT	BOOLEAN	CAD	DO	ENT	FALSE	FUNCTION	ID	IF	INPUT	LET	NUMBER	RETURN	STRING	TRUE	WHILE	{	}	$ (final de cadena)
A	--	--	--	--	A → lambda	--	--	--	--	--	--	--	--	A → T ID K	--	--	--	--	--	--	--	--	--	A → T ID K	--	A → T ID K	--	--	--	--	--
B	--	--	--	--	--	--	--	--	--	--	--	--	B → S	--	--	B → DO { C } WHILE (E) ;	--	--	--	B → S	B → IF (E) S	B → S	B → LET T ID	--	B → S	--	--	--	--	--	--
C	--	--	--	--	--	--	--	--	--	--	--	--	C → B C	--	--	C → B C	--	--	--	C → B C	C → B C	C → B C	C → B C	--	C → B C	--	--	--	--	C → lambda	--
E	E → R E1	--	--	E → R E1	--	--	--	--	--	--	--	--	--	--	E → R E1	--	E → R E1	E → R E1	--	E → R E1	--	--	--	--	--	--	E → R E1	--	--	--	--
E1	--	--	E1 → && R E1	--	E1 → lambda	--	--	E1 → lambda	--	E1 → lambda	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	F → FUNCTION H ID (A) { C }	--	--	--	--	--	--	--	--	--	--	--	--
H	--	--	--	--	--	--	--	--	--	--	--	--	--	H → T	--	--	--	--	--	H → lambda	--	--	--	H → T	--	H → T	--	--	--	--	--
K	--	--	--	--	K → lambda	--	--	K → , T ID K	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
L	L → E Q	--	--	L → E Q	L → lambda	--	--	--	--	--	--	--	--	--	L → E Q	--	L → E Q	L → E Q	--	L → E Q	--	--	--	--	--	--	L → E Q	--	--	--	--
P	--	--	--	--	--	--	--	--	--	--	--	--	P → B P	--	--	P → B P	--	--	P → F P	P → B P	P → B P	P → B P	P → B P	--	P → B P	--	--	--	--	--	P → lambda
Q	--	--	--	--	Q → lambda	--	--	Q → , E Q	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R	R → U R1	--	--	R → U R1	--	--	--	--	--	--	--	--	--	--	R → U R1	--	R → U R1	R → U R1	--	R → U R1	--	--	--	--	--	--	R → U R1	--	--	--	--
R1	--	R1 → != U R1	R1 → lambda	--	R1 → lambda	--	--	R1 → lambda	--	R1 → lambda	--	R1 → == U R1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
S	--	--	--	--	--	--	--	--	--	--	--	--	S → ALERT (E) ;	--	--	--	--	--	--	S → ID S1	--	S → INPUT (ID) ;	--	--	S → RETURN X ;	--	--	--	--	--	--
S1	--	--	--	S1 → (L) ;	--	--	--	--	--	--	S1 → = E ;	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
T	--	--	--	--	--	--	--	--	--	--	--	--	--	T → BOOLEAN	--	--	--	--	--	--	--	--	--	T → NUMBER	--	T → STRING	--	--	--	--	--
U	U → V U1	--	--	U → V U1	--	--	--	--	--	--	--	--	--	--	U → V U1	--	U → V U1	U → V U1	--	U → V U1	--	--	--	--	--	--	--	U → V U1	--	--	--
U1	--	U1 → lambda	U1 → lambda	--	U1 → lambda	U1 → + V U1	--	U1 → lambda	U1 → - V U1	U1 → lambda	--	U1 → lambda	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
V	V → ! ID	--	--	V → (E)	--	--	--	--	--	--	--	--	--	--	V → CAD	--	V → ENT	V → FALSE	--	V → ID V1	--	--	--	--	--	--	V → TRUE	--	--	--	--
V1	--	V1 → lambda	V1 → lambda	V1 → (L)	V1 → lambda	V1 → lambda	V1 → ++	V1 → lambda	V1 → lambda	V1 → lambda	--	V1 → lambda	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
X	X → E	--	--	X → E	--	--	--	--	--	X → lambda	--	--	--	--	X → E	--	X → E	X → E	--	X → E	--	--	--	--	--	--	X → E	--	--	--	--

Por tanto podemos concluir que la gramática al no tener recursividad por la izquierda, estar factorizada y ser LL(1), es una gramática correcta para un analizador sintáctico, del tipo descendente recursivo.

Prueba 1 correcta

```
---------------------------------
---------- código ---------------
---------------------------------
let number a;
let number b;
let number int;
alert ('Introduce el primer operando');
input (a);
alert ('Introduce el segundo operando');
input (b);
function number operacion (number num1, number num2)
{
let number res;
res = num1-num2;
return res;
}
int = operacion (a, b);
alert (int);
---------------------------------
---------- tokens ---------------
---------------------------------
<reservedWord,let>
<reservedWord,number>
<ID,1>
<separator,semicolon>
<reservedWord,let>
<reservedWord,number>
<ID,2>
<separator,semicolon>
<reservedWord,let>
<reservedWord,number>
<ID,3>
<separator,semicolon>
<reservedWord,alert>
<separator,openPar>
<chain,"Introduce el primer operando">
<separator,closePar>
<separator,semicolon>
<reservedWord,input>
```

```
<separator,openPar>
<ID,3>
<separator,closePar>
<separator,semicolon>
<reservedWord,alert>
<separator,openPar>
<chain,"Introduce el segundo operando">
<separator,closePar>
<separator,semicolon>
<reservedWord,input>
<separator,openPar>
<ID,3>
<separator,closePar>
<separator,semicolon>
<reservedWord,function>
<reservedWord,number>
<ID,4>
<separator,openPar>
<reservedWord,number>
<ID,5>
<separator,colon>
<reservedWord,number>
<ID,6>
<separator,closePar>
<separator,openBraq>
<reservedWord,let>
<reservedWord,number>
<ID,7>
<separator,semicolon>
<ID,7>
<asigOp,equal>
<ID,7>
<aritOp,minus>
<ID,7>
<separator,semicolon>
<reservedWord,return>
<ID,7>
<separator,semicolon>
<separator,closeBraq>
<ID,7>
<asigOp,equal>
<ID,7>
<separator,openPar>
<ID,7>
<separator,colon>
<ID,7>
<separator,closePar>
<separator,semicolon>
<reservedWord,alert>
```

```
<separator,openPar>
<ID,7>
<separator,closePar>
<separator,semicolon>
---------------------------------
------------ ts -----------------
---------------------------------
Contenido Tabla Simbolos # 0 :
* LEXEMA : 'a'
  ATRIBUTOS :
* LEXEMA : 'b'
  ATRIBUTOS :
* LEXEMA : 'int'
  ATRIBUTOS :
* LEXEMA : 'operacion'
  ATRIBUTOS :
* LEXEMA : 'num1'
  ATRIBUTOS :
* LEXEMA : 'num2'
  ATRIBUTOS :
* LEXEMA : 'res'
  ATRIBUTOS :
---------------------------------
----------- parse ---------------
---------------------------------
Descendente 50 35 38 50 35 38 50 35 38 50 36 23 1 4 8 15 11 7 3 50 36 24 50 36 23 1 4 8 15 11 7 3
50 36 24 51 41 42 38 44 38 46 38 47 48 35 38 48 36 22 26 1 4 8 12 21 10 12 21 11 7 3 48 36 25 32 1
4 8 12 21 11 7 3 49 50 36 22 26 1 4 8 12 19 28 1 4 8 12 21 11 7 3 30 1 4 8 12 21 11 7 3 31 11 7 3 50
36 23 1 4 8 12 21 11 7 3 52
---------------------------------
---------- errors ---------------
---------------------------------
```

Árbol resultado de:

Gramática: D:\Universidad\3\Procesador de Lenguaje\Practica\VisorArbSt\trys\gramtica.txt

Parse: D:\Universidad\3\Procesador de Lenguaje\Practica\VisorArbSt\trys\parse1.txt

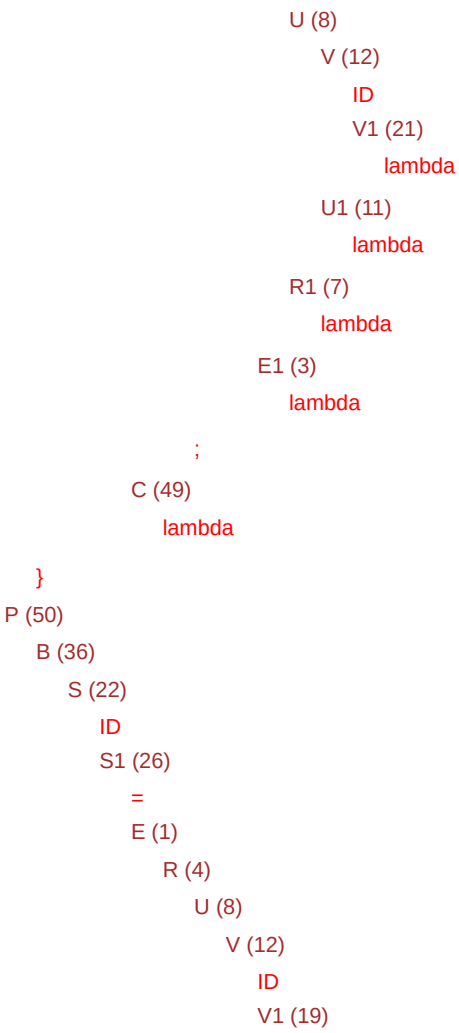
```
P (50)
    B (35)
        LET
        T (38)
            NUMBER
        ID
        ;
    P (50)
        B (35)
            LET
            T (38)
                NUMBER
            ID
            ;
        P (50)
            B (35)
                LET
                T (38)
                    NUMBER
                ID
                ;
            P (50)
                B (36)
```

S (23)
ALERT
(
E (1)
R (4)
U (8)
V (15)
CAD
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda
)
;
P (50)
B (36)
S (24)
INPUT
(
ID
)
;
P (50)
B (36)
S (23)
ALERT

(
E (1)
R (4)
U (8)
V (15)
CAD
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda
)
;
P (50)
B (36)
S (24)
INPUT
(
ID
)
;
P (51)
F (41)
FUNCTION
H (42)
T (38)
NUMBER

ID
(
A (44)
    T (38)
        NUMBER
    ID
    K (46)
        ,
        T (38)
            NUMBER
        ID
        K (47)
            lambda
)
{
C (48)
    B (35)
        LET
        T (38)
            NUMBER
        ID
        ;
    C (48)
        B (36)
            S (22)
                ID
                S1 (26)
                    =

E (1)
R (4)
U (8)
V (12)
ID
V1 (21)
lambda
U1 (10)
-
V (12)
ID
V1 (21)
lambda
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda
;
C (48)
B (36)
S (25)
RETURN
X (32)
E (1)
R (4)


U (8)
V (12)
ID
V1 (21)
lambda
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda
;
C (49)
lambda
}
P (50)
B (36)
S (22)
ID
S1 (26)
=
E (1)
R (4)
U (8)
V (12)
ID
V1 (19)

(
L (28)
E (1)
R (4)
U (8)
V (12)
ID
V1 (21)
lambda
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda
Q (30)
,
E (1)
R (4)
U (8)
V (12)
ID
V1 (21)
lambda
U1 (11)
lambda
R1 (7)

lambda
E1 (3)
lambda
Q (31)
lambda
)
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda
;
P (50)
B (36)
S (23)
ALERT
(
E (1)
R (4)
U (8)
V (12)
ID
V1 (21)
lambda
U1 (11)
lambda

```
            R1 (7)
                lambda
        E1 (3)
            lambda
    )
    ;
P (52)
    lambda
```

Prueba 2 correcta

```
--------------------------------
---------- código ---------------
--------------------------------
let number a;
let number b;
let boolean bbb;
a = 3;
b = a;
let boolean c;
c = a == b;
if (c) b = 3333;
a = a + b;
alert (a);
alert(b);
--------------------------------
---------- tokens ---------------
--------------------------------
<reservedWord,let>
<reservedWord,number>
<ID,1>
<separator,semicolon>
<reservedWord,let>
<reservedWord,number>
<ID,2>
<separator,semicolon>
<reservedWord,let>
<reservedWord,boolean>
<ID,3>
<separator,semicolon>
<ID,3>
<asigOp,equal>
<wholeConst,3>
<separator,semicolon>
<ID,3>
<asigOp,equal>
<ID,3>
<separator,semicolon>
<reservedWord,let>
<reservedWord,boolean>
<ID,4>
<separator,semicolon>
<ID,4>
<asigOp,equal>
<ID,4>
<relOp,equals>
<ID,4>
<separator,semicolon>
<reservedWord,if>
```

```
<separator,openPar>
<ID,4>
<separator,closePar>
<ID,4>
<asigOp,equal>
<wholeConst,3333>
<separator,semicolon>
<ID,4>
<asigOp,equal>
<ID,4>
<aritOp,plus>
<ID,4>
<separator,semicolon>
<reservedWord,alert>
<separator,openPar>
<ID,4>
<separator,closePar>
<separator,semicolon>
<reservedWord,alert>
<separator,openPar>
<ID,4>
<separator,closePar>
<separator,semicolon>
---------------------------------
------------ ts -----------------
---------------------------------
Contenido Tabla Simbolos # 0 :
* LEXEMA : 'a'
  ATRIBUTOS :
* LEXEMA : 'b'
  ATRIBUTOS :
* LEXEMA : 'bbb'
  ATRIBUTOS :
* LEXEMA : 'c'
  ATRIBUTOS :
---------------------------------
----------- parse ---------------
---------------------------------
Descendente 50 35 38 50 35 38 50 35 39 50 36 22 26 1 4 8 14 11 7 3 50 36 22 26 1 4 8 12 21 11 7 3 50
35 39 50 36 22 26 1 4 8 12 21 11 5 8 12 21 11 7 3 50 34 1 4 8 12 21 11 7 3 22 26 1 4 8 14 11 7 3 50
36 22 26 1 4 8 12 21 9 12 21 11 7 3 50 36 23 1 4 8 12 21 11 7 3 50 36 23 1 4 8 12 21 11 7 3 52
---------------------------------
---------- errors ---------------
---------------------------------
```

Árbol resultado de:

Gramática: D:\Universidad\3\Procesador de Lenguaje\Practica\VisorArbSt\trys\gramtica.txt

Parse: D:\Universidad\3\Procesador de Lenguaje\Practica\VisorArbSt\trys\parse1.txt

```
P (50)
    B (35)
        LET
        T (38)
            NUMBER
        ID
        ;
    P (50)
        B (35)
            LET
            T (38)
                NUMBER
            ID
            ;
        P (50)
            B (35)
                LET
                T (39)
                    BOOLEAN
                ID
                ;
            P (50)
                B (36)
                    S (22)
                        ID
                        S1 (26)
                            =
                            E (1)
                                R (4)
                                    U (8)
                                        V (14)
                                            ENT
                                        U1 (11)
                                            lambda
                                    R1 (7)
                                        lambda
```

```
                E1 (3)
                    lambda
            ;
P (50)
    B (36)
        S (22)
            ID
            S1 (26)
                =
                E (1)
                    R (4)
                        U (8)
                            V (12)
                                ID
                                V1 (21)
                                    lambda
                            U1 (11)
                                lambda
                        R1 (7)
                            lambda
                    E1 (3)
                        lambda
                ;
    P (50)
        B (35)
            LET
            T (39)
                BOOLEAN
            ID
            ;
        P (50)
            B (36)
                S (22)
                    ID
                    S1 (26)
                        =
                        E (1)
                            R (4)
                                U (8)
                                    V (12)
```

ID
V1 (21)
lambda
U1 (11)
lambda
R1 (5)
==
U (8)
V (12)
ID
V1 (21)
lambda
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda
;
P (50)
B (34)
IF
(
E (1)
R (4)
U (8)
V (12)
ID
V1 (21)
lambda
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda
)
S (22)
ID
S1 (26)

=
E (1)
R (4)
U (8)
V (14)
ENT
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda
;
P (50)
B (36)
S (22)
ID
S1 (26)
=
E (1)
R (4)
U (8)
V (12)
ID
V1 (21)
lambda
U1 (9)
+
V (12)
ID
V1 (21)
lambda
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda
;

P (50)
B (36)
S (23)
ALERT
(
E (1)
R (4)
U (8)
V (12)
ID
V1 (21)
lambda
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda
)
;
P (50)
B (36)
S (23)
ALERT
(
E (1)
R (4)
U (8)
V (12)
ID
V1 (21)
lambda
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda
)
;

P (52)

lambda

Prueba 3 correcta

```
--------------------------------
---------- código ---------------
--------------------------------
let number x;
let number z;
let boolean b;

alert ('PdL');
input (esto_es_un_nombre_de_variable_global_de_tipo_entero);
input (z);
alert (z);
x=z;
alert (z-1);
b=b&&b;if (b)
x =
  x + 6
    - z
    + 1
    - (2
    - y
    + 6);
--------------------------------
---------- tokens ---------------
--------------------------------
<reservedWord,let>
<reservedWord,number>
<ID,1>
<separator,semicolon>
<reservedWord,let>
<reservedWord,number>
<ID,2>
<separator,semicolon>
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<reservedWord,boolean>
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<separator,openPar>
<ID,4>
<separator,closePar>
<separator,semicolon>
<reservedWord,input>
<separator,openPar>
```

```
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<separator,closePar>
<separator,semicolon>
<reservedWord,alert>
<separator,openPar>
<ID,4>
<separator,closePar>
<separator,semicolon>
<ID,4>
<asigOp,equal>
<ID,4>
<separator,semicolon>
<reservedWord,alert>
<separator,openPar>
<ID,4>
<aritOp,minus>
<wholeConst,1>
<separator,closePar>
<separator,semicolon>
<ID,4>
<asigOp,equal>
<ID,4>
<logOp,and>
<ID,4>
<separator,semicolon>
<reservedWord,if>
<separator,openPar>
<ID,4>
<separator,closePar>
<ID,4>
<asigOp,equal>
<ID,4>
<aritOp,plus>
<wholeConst,6>
<aritOp,minus>
<ID,4>
<aritOp,plus>
<wholeConst,1>
<aritOp,minus>
<separator,openPar>
<wholeConst,2>
<aritOp,minus>
<ID,5>
<aritOp,plus>
<wholeConst,6>
<separator,closePar>
<separator,semicolon>
---------------------------------
------------ ts -----------------
```

```
---------------------------------
Contenido Tabla Simbolos # 0 :
* LEXEMA : 'x'
  ATRIBUTOS :
* LEXEMA : 'z'
  ATRIBUTOS :
* LEXEMA : 'b'
  ATRIBUTOS :
* LEXEMA : 'esto_es_un_nombre_de_variable_global_de_tipo_entero'
  ATRIBUTOS :
* LEXEMA : 'y'
  ATRIBUTOS :
---------------------------------
----------- parse ---------------
---------------------------------
Descendente 50 35 38 50 35 38 50 35 39 50 36 23 1 4 8 15 11 7 3 50 36 24 50 36 24 50 36
23 1 4 8 12 21 11 7 3 50 36 22 26 1 4 8 12 21 11 7 3 50 36 23 1 4 8 12 21 10 14 11 7 3
50 36 22 26 1 4 8 12 21 11 7 2 4 8 12 21 11 7 3 50 34 1 4 8 12 21 11 7 3 22 26 1 4 8 12
21 9 14 10 12 21 9 14 10 13 1 4 8 14 10 12 21 9 14 11 7 3 11 7 3 52
---------------------------------
---------- errors ---------------
---------------------------------
```

Árbol resultado de:

Gramática: D:\Universidad\3\Procesador de Lenguaje\Practica\VisorArbSt\trys\gramtica.txt

Parse: D:\Universidad\3\Procesador de Lenguaje\Practica\VisorArbSt\trys\parse1.txt

```
P (50)
    B (35)
        LET
        T (38)
            NUMBER
        ID
        ;
    P (50)
        B (35)
            LET
            T (38)
                NUMBER
            ID
            ;
        P (50)
            B (35)
                LET
                T (39)
                    BOOLEAN
                ID
                ;
            P (50)
                B (36)
                    S (23)
                        ALERT
                        (
                        E (1)
                            R (4)
                                U (8)
                                    V (15)
                                        CAD
                                    U1 (11)
                                        lambda
                                R1 (7)
                                    lambda
                            E1 (3)
```

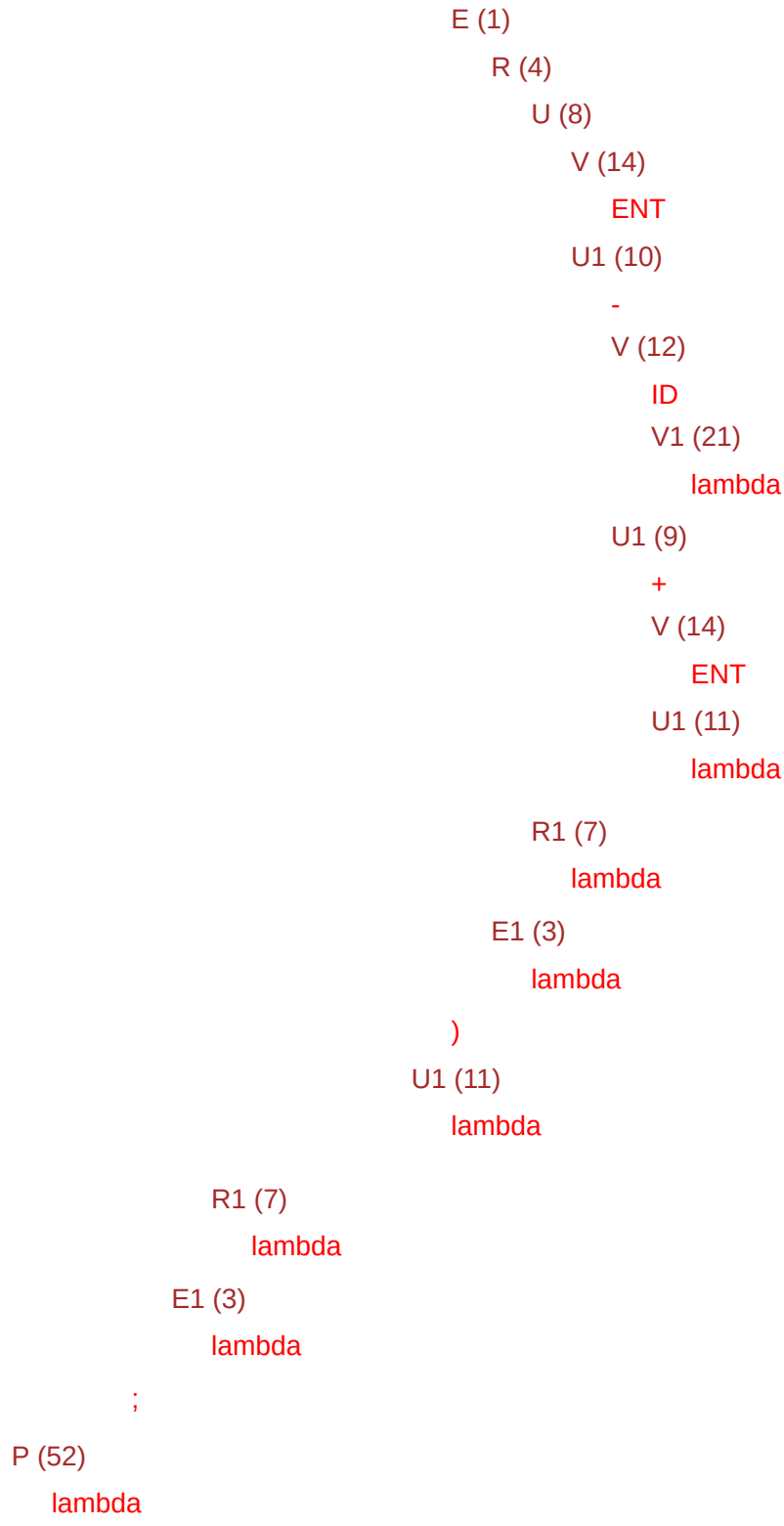
```
                lambda
            )
            ;
P (50)
    B (36)
        S (24)
            INPUT
            (
            ID
            )
            ;
        P (50)
            B (36)
                S (24)
                    INPUT
                    (
                    ID
                    )
                    ;
                P (50)
                    B (36)
                        S (23)
                            ALERT
                            (
                            E (1)
                                R (4)
                                    U (8)
                                        V (12)
                                            ID
                                            V1 (21)
                                                lambda
                                        U1 (11)
                                            lambda
                                    R1 (7)
                                        lambda
                                E1 (3)
                                    lambda
                            )
                            ;
                    P (50)
                        B (36)
```

S (22)
ID
S1 (26)
=
E (1)
R (4)
U (8)
V (12)
ID
V1 (21)
lambda
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda
;
P (50)
B (36)
S (23)
ALERT
(
E (1)
R (4)
U (8)
V (12)
ID
V1 (21)
lambda
U1 (10)
-
V (14)
ENT
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda

)
;
P (50)
B (36)
S (22)
ID
S1 (26)
=
E (1)
R (4)
U (8)
V (12)
ID
V1 (21)
lambda
U1 (11)
lambda
R1 (7)
lambda
E1 (2)
&&
R (4)
U (8)
V (12)
ID
V1 (21)
lambda
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda
;
P (50)
B (34)
IF
(
E (1)
R (4)

U (8)
V (12)
ID
V1 (21)
lambda
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda
)
S (22)
ID
S1 (26)
=
E (1)
R (4)
U (8)
V (12)
ID
V1 (21)
lambda
U1 (9)
+
V (14)
ENT
U1 (10)
-
V (12)
ID
V1 (21)
lambda
U1 (9)
+
V (14)
ENT
U1 (10)
-
V (13)
(

. . .


E (1)
R (4)
U (8)
V (14)
ENT
U1 (10)
-
V (12)
ID
V1 (21)
lambda
U1 (9)
+
V (14)
ENT
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda
)
U1 (11)
lambda
R1 (7)
lambda
E1 (3)
lambda
;
P (52)
lambda

Prueba 4 incorrecta

```
--------------------------------
---------- codigo ---------------
--------------------------------
let number x;
let number z;
let boolean b;

alert ('PdL');
input (esto_es_un_nombre_de_variable_global_de_tipo_entero);
input (z);
aler;
x=z;
alert (z-1);
b=b&&b;if (b)
x =
  x + 6
    - z
    + 1
    - (2
    - y
    + 6);
--------------------------------
---------- tokens ---------------
--------------------------------
<reservedWord,let>
<reservedWord,number>
<ID,1>
<separator,semicolon>
<reservedWord,let>
<reservedWord,number>
<ID,2>
<separator,semicolon>
<reservedWord,let>
<reservedWord,boolean>
<ID,3>
<separator,semicolon>
<reservedWord,alert>
<separator,openPar>
<chain,"PdL">
<separator,closePar>
<separator,semicolon>
<reservedWord,input>
<separator,openPar>
<ID,4>
<separator,closePar>
<separator,semicolon>
<reservedWord,input>
<separator,openPar>
```

```
<ID,4>
<separator,closePar>
<separator,semicolon>
<ID,5>
<separator,semicolon>
<ID,5>
<asigOp,equal>
<ID,5>
<separator,semicolon>
<reservedWord,alert>
<separator,openPar>
<ID,5>
<aritOp,minus>
<wholeConst,1>
<separator,closePar>
<separator,semicolon>
<ID,5>
<asigOp,equal>
<ID,5>
<logOp,and>
<ID,5>
<separator,semicolon>
<reservedWord,if>
<separator,openPar>
<ID,5>
<separator,closePar>
<ID,5>
<asigOp,equal>
<ID,5>
<aritOp,plus>
<wholeConst,6>
<aritOp,minus>
<ID,5>
<aritOp,plus>
<wholeConst,1>
<aritOp,minus>
<separator,openPar>
<wholeConst,2>
<aritOp,minus>
<ID,6>
<aritOp,plus>
<wholeConst,6>
<separator,closePar>
<separator,semicolon>
---------------------------------
------------ ts -----------------
---------------------------------
Contenido Tabla Simbolos # 0 :
* LEXEMA : 'x'
```

```
  ATRIBUTOS :
* LEXEMA : 'z'
  ATRIBUTOS :
* LEXEMA : 'b'
  ATRIBUTOS :
* LEXEMA : 'esto_es_un_nombre_de_variable_global_de_tipo_entero'
  ATRIBUTOS :
* LEXEMA : 'aler'
  ATRIBUTOS :
* LEXEMA : 'y'
  ATRIBUTOS :
---------------------------------
---------- parse ---------------
---------------------------------

---------------------------------
---------- errors ---------------
---------------------------------
ErrorSintactico: Error en regla S1
```

Prueba 5 incorrecta

```
---------------------------------
---------- codigo ---------------
---------------------------------
let number a;
let number b;
let number int;
alert ('Introduce el primer operando');
input (a);
('Introduce el segundo operando');
input (b);
function number operacion (number num1, number num2)
{
let number res;
res = num1-num2;
return res;
}
int = operacion (a, b);
alert (int);
---------------------------------
---------- tokens ---------------
---------------------------------
<reservedWord,let>
<reservedWord,number>
<ID,1>
<separator,semicolon>
<reservedWord,let>
<reservedWord,number>
<ID,2>
<separator,semicolon>
```

```
<reservedWord,let>
<reservedWord,number>
<ID,3>
<separator,semicolon>
<reservedWord,alert>
<separator,openPar>
<chain,"Introduce el primer operando">
<separator,closePar>
<separator,semicolon>
<reservedWord,input>
<separator,openPar>
<ID,3>
<separator,closePar>
<separator,semicolon>
<separator,openPar>
<chain,"Introduce el segundo operando">
<separator,closePar>
<separator,semicolon>
<reservedWord,input>
<separator,openPar>
<ID,3>
<separator,closePar>
<separator,semicolon>
<reservedWord,function>
<reservedWord,number>
<ID,4>
<separator,openPar>
<reservedWord,number>
<ID,5>
<separator,colon>
<reservedWord,number>
<ID,6>
<separator,closePar>
<separator,openBraq>
<reservedWord,let>
<reservedWord,number>
<ID,7>
<separator,semicolon>
<ID,7>
<asigOp,equal>
<ID,7>
<aritOp,minus>
<ID,7>
<separator,semicolon>
<reservedWord,return>
<ID,7>
<separator,semicolon>
<separator,closeBraq>
<ID,7>
```

```
<asigOp,equal>
<ID,7>
<separator,openPar>
<ID,7>
<separator,colon>
<ID,7>
<separator,closePar>
<separator,semicolon>
<reservedWord,alert>
<separator,openPar>
<ID,7>
<separator,closePar>
<separator,semicolon>
---------------------------------
------------ ts -----------------
---------------------------------
Contenido Tabla Simbolos # 0 :
* LEXEMA : 'a'
  ATRIBUTOS :
* LEXEMA : 'b'
  ATRIBUTOS :
* LEXEMA : 'int'
  ATRIBUTOS :
* LEXEMA : 'operacion'
  ATRIBUTOS :
* LEXEMA : 'num1'
  ATRIBUTOS :
* LEXEMA : 'num2'
  ATRIBUTOS :
* LEXEMA : 'res'
  ATRIBUTOS :
---------------------------------
----------- parse ---------------
---------------------------------

---------------------------------
---------- errors ---------------
---------------------------------
ErrorSintactico: Error en regla P
```

Prueba 6 incorrecta

```
---------------------------------
---------- codigo ---------------
---------------------------------
let number a;
let number b;
let boolean bbb;
a = 3;
b = a;
let boolean c;
```

```
c = a == b;
if (c) b = 3333
a = a + b;
alert (a);
alert(b);
---------------------------------
---------- tokens ---------------
---------------------------------
<reservedWord,let>
<reservedWord,number>
<ID,1>
<separator,semicolon>
<reservedWord,let>
<reservedWord,number>
<ID,2>
<separator,semicolon>
<reservedWord,let>
<reservedWord,boolean>
<ID,3>
<separator,semicolon>
<ID,3>
<asigOp,equal>
<wholeConst,3>
<separator,semicolon>
<ID,3>
<asigOp,equal>
<ID,3>
<separator,semicolon>
<reservedWord,let>
<reservedWord,boolean>
<ID,4>
<separator,semicolon>
<ID,4>
<asigOp,equal>
<ID,4>
<relOp,equals>
<ID,4>
<separator,semicolon>
<reservedWord,if>
<separator,openPar>
<ID,4>
<separator,closePar>
<ID,4>
<asigOp,equal>
<wholeConst,3333>
<ID,4>
<asigOp,equal>
<ID,4>
<aritOp,plus>
```

```
<ID,4>
<separator,semicolon>
<reservedWord,alert>
<separator,openPar>
<ID,4>
<separator,closePar>
<separator,semicolon>
<reservedWord,alert>
<separator,openPar>
<ID,4>
<separator,closePar>
<separator,semicolon>
---------------------------------
------------ ts -----------------
---------------------------------
Contenido Tabla Simbolos # 0 :
* LEXEMA : 'a'
  ATRIBUTOS :
* LEXEMA : 'b'
  ATRIBUTOS :
* LEXEMA : 'bbb'
  ATRIBUTOS :
* LEXEMA : 'c'
  ATRIBUTOS :
---------------------------------
----------- parse ---------------
---------------------------------

---------------------------------
---------- errors ---------------
---------------------------------
ErrorSintactico: Error en regla R2
```