Universidade Federal de Alagoas - UFAL
Instituto de Computação - IC
Curso de Ciência da Computação

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Especificação da Linguagem
Gramática LLC(1)

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1 Gramática LLC(1)

S	$\longrightarrow$	'Begin' '{' MainInstru '}'
S	$\longrightarrow$	ε
MainInstru	=	FunDecla MainInstru
MainInstru	=	IdDecla MainInstru
MainInstru	=	Instru
MainInstru	=	ε
FunDecla	=	'Function' FunType FunId '(' FunParam ')' FunInstru
FunType	=	'Int'
FunType	=	'Float'
FunType	=	'Bool'
FunType	=	'Char'
FunType	=	'String'
FunType	=	'Array' TypeArray
FunType	=	'Empty'
FunId	=	Id
TypeArray	=	'Int'
TypeArray	=	'Float'
TypeArray	=	'Bool'
TypeArray	=	'Char'
TypeArray	=	'String'
FunParam	$\longrightarrow$	VarType Id FunParam
FunParam	$\longrightarrow$	',' VarType Id FunParam
FunParam	$\longrightarrow$	ε
VarType	=	'Int'
VarType	=	'Float'
VarType	=	'Bool'
VarType	=	'Char'
VarType	=	'String'
VarType	=	'Array' TypeArray
Id	$\longrightarrow$	'idx'
Idx	$\longrightarrow$	'id'
Idx	$\longrightarrow$	'[' 'CteInt' ']' Idx
Idx	$\longrightarrow$	ε
FunInstru	=	'{' Instru '}'
Instru	$\longrightarrow$	Command Instru
Instru	$\longrightarrow$	IdDecla Instru
Instru	$\longrightarrow$	Id '(' FunParam ')' ';' Instru
Instru	$\longrightarrow$	'Return' IdReturn ';'
Instru	$\longrightarrow$	ε
Command	=	'If' '(' Eb ')' DelimDecla
Command	=	'If' '(' Eb ')' DelimDecla 'Else' DelimDecla
Command	=	'While' '(' Eb ')' DelimDecla
Command	=	'From' LoopControl 'To' LoopControl 'Increase' LoopControl DelimDecla
Command	=	'Get' '(' Id ')' ';'
Command	=	'Show' '(' Id ')' ';'
Command	=	FunCall

DelimDecla	=	'{' Instru '}'
IdDecla	=	VarType Id ';'
IdDecla	=	VarType Id '=' 'id' ';'
IdDecla	=	VarType Id '=' FunCall
FunCall	=	FunId '(' FunCallParam ')' ';'
FunCallParam	=	Id FunCallParam
FunCallParam	=	',' Id FunCallParam
FunCallParam	=	ε
LoopControl	=	Id
LoopControl	=	'CteInt'
Eb	⟶	Tb Eb'
Eb'	⟶	'Or' Tb Eb'
Eb'	⟶	ε
Eb	⟶	Tb
Tb	⟶	Fb Tb'
Tb'	⟶	'And' Fb Tb'
Tb'	⟶	ε
Tb	⟶	Fb
Fb	⟶	Rb Fb'
Fb'	⟶	OpeRel Rb Fb'
Fb'	⟶	ε
Fb	⟶	'!' Fb
Fb	⟶	Rb
Rb	⟶	Ea Rb'
Rb'	⟶	OpeRel Ea Rb'
Rb'	⟶	ε
Rb	=	Ea
Ea	⟶	Ta Ea'
Ea'	⟶	'+' Ta Ea'
Ea'	⟶	ε
Ea'	⟶	'-' Ta Ea'
Ea'	⟶	ε
Ta	⟶	Fa Ta'
Ta'	⟶	'*' Fa Ta'
Ta'	⟶	ε
Tax	⟶	Fa Tax'
Tax'	⟶	'/' Fa Tax'
Tax'	⟶	ε
Fa	=	'(' Eb ')'
Fa	=	'-' Fa
Fa	=	FunCall
Fa	=	IdCall
Fa	=	'CteInt'
Fa	=	'CteFloat'
Fa	=	'CteBool'
Fa	=	'CteChar'
Fa	=	'CteString'
Fa	=	'CteArray'

$$
\begin{array}{lcl}
\text{IdCall} & = & \text{Id} \\
\text{OpeRel} & = & '==' \\
\text{OpeRel} & = & '!=' \\
\text{OpeRel} & = & '<' \\
\text{OpeRel} & = & '>' \\
\text{OpeRel} & = & '<=' \\
\text{OpeRel} & = & '>=' \\
\end{array}
$$