

# Attribute Grammar

Nodo	Predicados	Reglas Semánticas
<b>program</b> → <i>definitions</i> :definition*		
<b>varDefinition</b> :definition → <i>name</i> :String <i>type</i> :type	variables.getFromTop(name) == null	variables[name] = varDefinition
<b>structDefinition</b> :definition → <i>name</i> :varType <i>definitions</i> :structField*	variables.getFromAny(name) == null	variables[name] = structDefinition structs[name] = structDefinition
<b>funDefinition</b> :definition → <i>name</i> :String <i>params</i> :definition* <i>return_t</i> :type <i>definitions</i> :varDefinition* <i>sentences</i> :sentence*	funciones[name] == null	funciones[name] = funDefinition
<b>structField</b> :definition → <i>name</i> :String <i>type</i> :type	variables.getFromTop(name) == null	variables[name] = structField
<b>intType</b> :type → λ		
<b>realType</b> :type → λ		
<b>charType</b> :type → λ		
<b>varType</b> :type → <i>type</i> :String		
<b>voidType</b> :type → λ		
<b>arrayType</b> :type → <i>size</i> :intConstant <i>type</i> :type		
<b>structType</b> :type → <i>fields</i> :structField*		
<b>errorType</b> :type → λ		
<b>print</b> :sentence → <i>expression</i> :expression		
<b>printsp</b> :sentence → <i>expression</i> :expression		
<b>println</b> :sentence → <i>expression</i> :expression		
<b>read</b> :sentence → <i>expression</i> :expression		
<b>assignment</b> :sentence → <i>left</i> :expression <i>right</i> :expression		
<b>return</b> :sentence → <i>expression</i> :expression		
<b>ifElse</b> :sentence → <i>expression</i> :expression <i>if_s</i> :sentence* <i>else_s</i> :sentence*		
<b>while</b> :sentence → <i>expression</i> :expression <i>sentence</i> :sentence*		
<b>funcInvocation</b> :sentence → <i>name</i> :String <i>params</i> :expression*	funciones[name] != null	funcInvocation.definition = funciones[name]
<b>variable</b> :expression → <i>name</i> :String	variables.getFromAny(name) != null	variable.definition = variables[name]
<b>intConstant</b> :expression → <i>value</i> :String		

<b>realConstant:</b> expression → value:String		
<b>charConstant:</b> expression → value:String		
<b>voidConstant:</b> expression → λ		
<b>funcInvocationExpression:</b> expression → name:String params:expression*	funciones[name] != null	funcInvocationExpression.definition = funciones[name]
<b>arithmeticExpression:</b> expression → left:expression operator:String right:expression		
<b>logicalExpression:</b> expression → left:expression operator:String right:expression		
<b>unaryExpression:</b> expression → operator:String expr:expression		
<b>comparableExpression:</b> expression → left:expression operator:String right:expression		
<b>castExpression:</b> expression → type:type expr:expression		
<b>fieldAccessExpression:</b> expression → expr:expression name:String		
<b>indexExpression:</b> expression → expr:expression index:expression		

Recordatorio de los operadores (para cortar y pegar):  $\Rightarrow \Leftrightarrow \neq \emptyset \in \notin \cup \cap \subset \not\subset \sum \exists \forall$

## Atributos

Nodo/Categoría Sintáctica	Nombre del Atributo	Tipo Java	Heredado/Sintetizado	Descripción
funcInvocation	definición	FuncDefinitio n	Sintetizado	
funcInvocationExpressi on	definición	FuncDefinitio n	Sintetizado	
variable	definición	VarDefinition	Sintetizado	