**Attribute Grammar**

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| **Nodo** | **Predicados** | **Reglas Semánticas** |  |
| **program** →*definitions*:definition\* |  |  |  |
|  |  |  |  |
| **varDefinition**:definition→*name*:String | variables.getFromTop(name) | variables[name] = varDefinition |  |
| *type*:type | == null |  |
|  |  |
| **structDefinition**:definition→ | variables.getFromAny(name) | variables[name] = structDefinition |  |
| *name*:varType *definitions*:structField\* | == null | structs[name] = structDefinition |  |
| **funDefinition**:definition→*name*:String |  |  |  |
| *params*:definition\* *return\_t*:type | funciones[name] == null | funciones[name] = funDefinition |  |
| *definitions*:varDefinition\* |  |
|  |  |  |
| *sentences*:sentence\* |  |  |  |
| **structField**:definition→*name*:String | variables.getFromTop(name) | variables[name] = structField |  |
| *type*:type | == null |  |
|  |  |
|  |  |  |  |
| **intType**:type→ λ |  |  |  |
| **realType**:type→ λ |  |  |  |
| **charType**:type→ λ |  |  |  |
| **varType**:type→*type*:String |  |  |  |
| **voidType**:type→ λ |  |  |  |
| **arrayType**:type→*size*:intConstant |  |  |  |
| *type*:type |  |  |  |
| **structType**:type→*fields*:structField\* |  |  |  |
| **errorType**:type→ λ |  |  |  |
|  |  |  |  |
| **print**:sentence→*expression*:expression |  |  |  |
| **printsp**:sentence→ |  |  |  |
| *expression*:expression |  |  |  |
| **println**:sentence→*expression*:expression |  |  |  |
| **read**:sentence→*expression*:expression |  |  |  |
| **assignment**:sentence→*left*:expression |  |  |  |
| *right*:expression |  |  |  |
| **return**:sentence→*expression*:expression |  |  |  |
| **ifElse**:sentence→*expression*:expression |  |  |  |
| *if\_s*:sentence\* *else\_s*:sentence\* |  |  |  |
| **while**:sentence→*expression*:expression |  |  |  |
| *sentence*:sentence\* |  |  |  |
| **funcInvocation**:sentence→*name*:String | funciones[name] ¡= null | funcInvocation.definition = |  |
| *params*:expression\* |  | funciones[name] |  |
|  |  |  |  |
| **variable**:expression→*name*:String | variables.getFromAny(name) | variable.definition = variables[name] |  |
|  | ¡= null |  |  |
| **intConstant**:expression→*value*:String |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **realConstant**:expression→*value*:String | | |  |  |  |  |  |  |
| **charConstant**:expression→*value*:String | | |  |  |  |  |  |  |
| **voidConstant**:expression→ λ | |  |  |  |  |  |  |  |
| **funcInvocationExpression**:expression→ | | | funciones[name] ¡= null | | | funcInvocationExpression.definition = | | |
| *name*:String *params*:expression\* | |  |  |  |  | funciones[name] | | |
| **arithmeticExpression**:expression→ | | |  |  |  |  |  |  |
| *left*:expression *operator*:String | |  |  |  |  |  |  |  |
| *right*:expression | |  |  |  |  |  |  |  |
| **logicalExpression**:expression→ | |  |  |  |  |  |  |  |
| *left*:expression *operator*:String | |  |  |  |  |  |  |  |
| *right*:expression | |  |  |  |  |  |  |  |
| **unaryExpression**:expression→ | |  |  |  |  |  |  |  |
| *operator*:String *expr*:expression | |  |  |  |  |  |  |  |
| **comparableExpression**:expression→ | | |  |  |  |  |  |  |
| *left*:expression *operator*:String | |  |  |  |  |  |  |  |
| *right*:expression | |  |  |  |  |  |  |  |
| **castExpression**:expression→*type*:type | | |  |  |  |  |  |  |
| *expr*:expression | |  |  |  |  |  |  |  |
| **fieldAccessExpression**:expression→ | | |  |  |  |  |  |  |
| *expr*:expression *name*:String | |  |  |  |  |  |  |  |
| **indexExpression**:expression→ | |  |  |  |  |  |  |  |
| *expr*:expression *index*:expression | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| Recordatorio de los operadores (para cortar y pegar): ⇒ ⇔ ≠ ∅ ∈ ∉ ∪ ∩ ⊂ ⊄ ∑ ∃ ∀ | | | | | | | | |
| **Atributos** | |  |  |  |  |  |  |  |
|  |  |  | |  |  |  |  |  |
|  |  | **Nombr** | |  |  |  |  |  |
|  | **Nodo/Categoría** | **e del** | | **Tipo Java** | **Heredado/Sintetizad** | | **Descripció** |  |
|  | **Sintáctica** | **Atribut** | |  | **o** |  | **n** |  |
|  |  | **o** | |  |  |  |  |  |
|  | funcInvocation | definitio | | FuncDefinitio | Sintetizado |  |  |  |
|  |  | n | | n |  |  |  |  |
|  | funcInvocationExpressi | definitio | | FuncDefinitio | Sintetizado |  |  |  |
|  | on | n | | n |  |  |  |  |
|  | variable | definitio | | VarDefinition | Sintetizado |  |  |  |
|  |  | n | |  |  |  |  |  |