## Attribute Grammar

### Attributes

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Symbol | Attribute Name | Java Type | Inherited/Synthesized | Description |
| Variable | varDefinition | VarDefinition | Synthesized | Enlace a la definición de esta variable |
|  |  |  |  |  |
|  |  |  |  |  |

### Rules

|  |  |  |
| --- | --- | --- |
| Node | Predicates | Semantic Functions |
| program → classDeclaration runStatement |  |  |
| classDeclaration → name:string globalSection? createSection featureSection\* |  |  |
| globalSection → typesSection? varSection? |  |  |
| typesSection → structDeclaration\* |  |  |
| varSection → variableDeclaration\* |  |  |
| variableDeclaration → identifiers:string\* type | La variable no ha sido previamente declarada | Introducir la variable en el map |
| structDeclaration → name:string structField\* | El struct no ha sido previamente declarada | Introducir el struct en el map |
| structField → name:string type |  |  |
| createSection → string\* | Los nombres deben de ser distintos | Introducir cada nombre de feature en una lista |
| featureSection → name:string args? type? localSection? statement\* | Que la función no ha sido declarada previamente | Introducirla en el map |
| localSection → variableDeclaration\* |  |  |
| args → arg\* |  |  |
| arg → name:string type |  |  |
| assignment:statement → left:expression right:expression |  |  |
| print:statement → expression\* |  |  |
| println:statement → expression\* |  |  |
| read:statement → expression\* |  |  |
| bloqueif:statement → expression st2:statement\* st3:statement\* |  |  |
| loopFrom:statement → st1:statement\* expression body:statement\* |  |  |
| return:statement → expression? |  |  |
| functionCallStatement:statement → name:string expression\* | Que la función se ha definido previamente | Poner una referencia a featureSection |
| runStatement → name:string expression\* |  |  |
| intLiteral:expression → name:string |  |  |
| realConstant:expression → name:string |  |  |
| charConstant:expression → name:string |  |  |
| functionCallExp:expression → name:string expresiones:expression\* | Que la función ha sido definida previamente | Poner una referencia a featureSection |
| arrayAcces:expression → exp2:expression exp3:expression |  |  |
| variableAcces:expression → name:string | Que la variable se ha definido previamente | Poner varDefinition apuntando a la definición de la variable |
| restaUnaria:expression → exp2:expression |  |  |
| parentesis:expression → exp2:expression |  |  |
| negacion:expression → exp2:expression |  |  |
| cast:expression → type exp2:expression |  |  |
| arithmetic:expression → exp2:expression name:string exp3:expression |  |  |
| booleanExp:expression → exp2:expression name:string exp3:expression |  |  |
| struct:expression → exp2:expression name:string |  |  |
| intType:type → name:string |  |  |
| doubleType:type → name:string |  |  |
| characterType:type → name:string |  |  |
| identType:type → name:string |  |  |
| arraytype:type → intValue:int type2:type |  |  |

Operators samples (cut & paste if needed):  
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Auxiliary Elements

|  |  |  |
| --- | --- | --- |
| Name | Java Type | Description |
| variables | Map<String,VarDefinition> | Registro de las definiciones de variables que se han ido encontrado en el arbol |
| declaredFeatures | ArrayList<String> | Registro de todas las features declaradas en la cláusula create |