# Code Specification

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| **Nodo** | **Predicados** | **Reglas Semánticas** |
| **program** → *ast*:AST\* |  |  |
|  |  |  |
| **func**:def → *name*:String *parameter*:parameter\*  *retorno*:type *defvar*:defVar\* *sentence*:sentence\* | Context.set()  Context.reset() | Funcs.put(name,this)  Sentence.forEach(se -> se.func = func) |
| **defVar**:def → *name*:String *type*:type | Context.get(name) == null | Context.put(name,this) |
| **parameter**:def → *name*:String *type*:type |  | Context.put(name,this) |
| **defStruct**:def → *name*:String *parameter*:parameter\* | Context.set()  Context.reset() | Struct.put(name,this) |
|  |  |  |
| **intType**:type → λ |  |  |
| **realType**:type → λ |  |  |
| **charType**:type → λ |  |  |
| **arrayType**:type → *index*:int *type*:type |  |  |
| **structType**:type → *name*:String |  | Struct = struct.get(name) |
| **voidType**:type → λ |  |  |
|  |  |  |
| **print**:sentence → *string*:String *expr*:expr |  |  |
| **read**:sentence → *expr*:expr |  |  |
| **assignment**:sentence → *left*:expr *right*:expr |  |  |
| **ifSentence**:sentence → *condition*:expr *iftrue*:sentence\* |  |  |
| **ifElseSentence**:sentence → *condition*:expr *iftrue*:sentence\* *else1*:sentence\* |  |  |
| **whileSentence**:sentence → *condition*:expr *sentence*:sentence\* |  |  |
| **returnNode**:sentence → *expr*:expr |  |  |
| **funcCall**:sentence → *name*:String *args*:expr |  | funcCall.definition = funcs.get(name) |
|  |  |  |
| **exprAritmetica**:expr → *left*:expr *op*:String *right*:expr |  |  |
| **exprLogica**:expr → *left*:expr *op*:String *right*:expr |  |  |
| **exprLogicaNe**:expr → *expr*:expr |  |  |
| **acces**:expr → *left*:expr *right*:String |  | Left.setdefinition |
| **arrayAcces**:expr → *left*:expr *right*:expr |  |  |
| **cast**:expr → *typeToConvert*:type *expr*:expr |  |  |
| **litEnt**:expr → *string*:String |  |  |
| **litReal**:expr → *string*:String |  |  |
| **litChar**:expr → *string*:String |  |  |
| **variable**:expr → *string*:String |  |  |
| **methodCallExpr**:expr → *name*:String *args*:expr\* |  | funcCall.definition = funcs.get(name) |
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## Atributos

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| **Nodo/Categoría**  **Sintáctica** | **Nombre del**  **atributo** | **Tipo Java** | **Heredado/Sintetizado** | **Descripción** |
| Variable | Definicion | DefVar | Sintetizado |  |
| Parameter | Definicion | DefVar | Sintetizado |  |
| FuncCall | Definicion | Func | Sintetizado |  |
| MethodCallExpr | Definicion | Func | Sintetizado |  |
| StructType | struct | Struct | Sintetizado |  |
| Sentence | func | Func | Heredado |  |

## Estructuras de Datos Auxiliares

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| **Nombre** | **Tipo Java** | **Descripción** |
| Context | ContextMap<String,DefVar> |  |
| estruct | Map<String,defStruct> |  |
| funcs | *Map*<String,Func> |  |