Universidad La Salle

Compiladores

Informe de la Práctica 08

Diseño de Gramática BNF

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Ejercicio 1

Enunciado

Diseñe la gramática del lenguaje de programación propuesto. Puede basarse de ejemplos que hay internet.

Solución

```
1 <Program>                    ::= <MainFunction> | <MainFunction> <
     FunctionDeclaration>
2                                | <FunctionDeclaration> <MainFunction
     >
3                                | <FunctionDeclaration> <MainFunction
     > <FunctionDeclaration>
4                                | <EOF>
5 <MainFunction>               ::= func main ( ) { <Statements> }
6 <FunctionDeclaration>        ::= func <FunctionName> ( <Parameters>|<
     EOF> ) { <Statements> }
7                                | func <FunctionName> ( <Parameters
     >|<EOF> ) { <Statements> } <FunctionDeclaration>
8 <FunctionName>               ::= <Identifier>
9 <Parameters>                 ::= <Identifier> | <Identifier> , <
     Parameters>
10 <Statements>                ::= <Statement> | <Statement> <Statements
     >
11 <Statement>                 ::= <VariableDeclaration> | <Assignment>
     | <Conditional> | <Loop> | <FunctionCall> | <ReturnStatement> |
      <Comment> | <EOF>
12 <VariableDeclaration>       ::= var <Identifier> = <Expressions>
13 <Assignment>                ::= <Identifier> = <Expressions>
14 <Expressions>               ::= ( <Expression> ) | <Expression>
15 <Expression>                ::= <Value> | <Identifier> | <
     ArithExpression> | <ComparisonExpression> | <FunctionCall>
16 <ArithExpression>           ::= <Expressions> <ArithOperator> <
     Expressions>
17 <ComparisonExpression>      ::= <Expressions> <ComparisonOperator> <
     Expressions>
18 <FunctionCall>              ::= <FunctionName> ( <SentParameters>|<
     EOF> )
19 <SentParameters>            ::= <Expressions> | <Expressions> , <
     SentParameters>
20 <Conditional>               ::= if <Condition> { <Statements> } <
     ElseIf>|<EOF>
21 <ElseIf>                    ::= <Else> | <Elif> <Else>
22 <Elif>                      ::= elif <Condition> { <Statements> }
23                                | elif <Condition> { <Statements> } <
     Elif>
24 <Else>                      ::= else { <Statements> }
25 <Loop>                      ::= <While> | <For>
26 <While>                     ::= while <Condition> { <Statements> }
27 <For>                       ::= for <Expressions> , <Expressions> { <
     Statements> }
28                                | for <Expressions>, <Expressions>, <
     Expressions> { <Statements> }
```

```
29 <Condition>                ::= <Expressions> | <Expressions> <
     LogicalOperator> <Expressions>
30 <ReturnStatement>          ::= return <Expressions>
31 <Comment>                  ::= // <Text> | /* <MultipleText> */
32 <MultipleText>             ::= <Text> | <Text> \n <MultipleText>
33 <Text>                     ::= <Value> | <Value> <Text>
34 <ArithOperator>            ::= + | - | * | /
35 <ComparisonOperator>       ::= < | > | == | <= | >= | !=
36 <LogicalOperator>          ::= & | "|"
37 <Value>                    ::= <Strings> | <Number> | <Boolean> |
     null
38 <Strings>                   ::= " <String> " | ' <String> '
39 <String>                   ::= <Char> | <Char> <String>
40 <Number>                   ::= <Int> | <Int>.<Int>
41 <Boolean>                  ::= true | false
42 <Identifier>               ::= <Letter> | <Letter> <ID> <Identifier>
43 <ID>                       ::= <Letter> | <Int> | _ | <EOF>
44 <EOF>                      ::= <None> | <End>
```

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