Compiler Theory

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Terminals	description
number	
identifier	
string	
Reserved_Keywords	int | float | string | read | write | repeat | until | if | elseif | else | then | return | endl | end
Arithmatic_Operator	+ | - | * | /
Condition_Operator	less than "<" | greater than ">" | is equal "=" | not equal "<>"
Boolean_Operator	AND operator "&&" | OR operator "||"
assignment operator	Equal operator ":="

1. **Function-call** → identifier (**Idnum Id**)
   Idnum → identifier| number
   Id → , **Idnum Id |** ε

2. **Term** → number | identifier | **Function-Call**

3. **Equation** → **Term Equ** | (**Term Equ**) **Equ**
   Equ → arithmatic_Operator **Equation** | ε

4. **Expression** → string | **Term** | **Equation**

5. **Assignment-statement** → identifier := **Expression** ;

6. **Datatype** → int | float | string

7. **Declaration-statement** → **Datatype** identifier **Assign** ;
   AssignId → **Assignment-statement** | identifier
   AssignExp →, **AssignId |**:= **Expression**
   Assign → **AssignExp Assign |**ε

8. **Write-Statement** → write **WriteS** ;
   WriteS → **Expression** | endl

9. **Read-Statement** → read identifier   ;

10. **Return-Statement** → return **Expression**   ;

11. **Condition** → identifier   condition-Operator   **Term**

12. **Condition_statement** → **Condition Cond**

    Cond → boolean_Operator **Condition Cond |** ε

13. **If_statement** → if **condition_statement** then
                                   Statementss   Elstat

    Elstat → **Elseif_statement | Else_statement |** end

    Statementss → **Write-Statement Statementss |**
                      Read-Statement Statementss|
                      Return-Statement   Statementss |
                      If_statement Statementss |
                      Repeat_statement Statementss |
                      Function_Statement Statementss |
                      Assignment-statement Statementss |
                      Declaration-statement Statementss | ε

14. **Elseif_statement** → elseif **condition_statement** then

                           Statements Elstat

15. **Else_statement** → else **Statementss** end

16. **Repeat_statement** → repeat **Statementss** until

                           condition_statement

17. **Function-Name** → Identifier

18. **Parameter** → **Datatype** identifier

19. **Function_Declaration**→ **Datatype**   **Function-Name** (

                         Parameter   Functions)

   Functions → , **Parameter Functions |** ε

20. **Function_Body** → { **Func_Statementss**

                       Return-Statement }

Func_Statementss → **Write-Statement Statementss |**
Read-Statement Statementss|
If_statement Statementss |
Repeat_statement Statementss |
Function_Statement Statementss |
Assignment-statement Statementss |
Declaration-statement Statementss | Ɛ

21. **Function_Statement →Function_Declaration**
Function_Body

22. **Main_Function → Datatype main ( ) Function_Body**

23. **Program → Prog   Main_Function**
Prog → Function_Statement   Prog | Ɛ