The Tiny Language (CFG)

Terminals: constant, string, float, int, stringText, if, return, repeat, read, write, until, elseif, else, end, endl, then, main, dot, semicolon, comma, lParanthesis, rParanthesis, lBraces, rBraces, equalOp, lessThanOp, greaterThanOp, notEqualOp, plusOp, minusOp, multiplyOp, divideOp, andOp, orOp, idenifier, assignment, comment

1. **Program** → FunctionStatements MainFunction

2. **FunctionStatements** → FunctionStatement FunctionStatements | ε

3. **FunctionStatement** → FunctionDeclaration FunctionBody

4. **MainFunction** → Datatype main lParanthesis rParanthesis FunctionBody

5. **FunctionDeclaration** → Datatype FunctionName lParanthesis (Parameter MultipleParameters | ε) rParanthesis

6. **Parameter** → Datatype identifier

7. **MultipleParameters** → (comma Parameter) MultipleParameters | ε

8. **FunctionBody** → lBraces Statements ReturnStatment rBraces

9. **Statements** → Statement Statements | ε

10. **Statement** → comment **|** AssignmentStatement semicolon **|** DeclarationStatement **|** ReadStatement | WriteStatement | FunctionCall semicolon | IfStatement | RepeatStatement

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

12. **FunctionName** → identifier

13. **AssignmentStatement** → identifier assignment Expression

14. **DeclarationStatement** → Datatype (identifier|AssignmentStatement) MultipleDeclarations semicolon

15. **MultipleDeclarations** → **(** comma (identifier| AssignmentStatement)

    MultipleDeclarations **)** | ε

16. **ReadStatement** → read identifier semicolon

17. **WriteStatement** → write (Expression | endl) semicolon

18. **FunctionCall** → identifier lParanthesis (identifier | constant)

    MultipleIdentifiers **|** ε rParanthesis

19. **MultipleIdentifiers** →(comma (identifier|constant))MultipleIdentifiers | ε

20. **IfStatement** → if ConditionStatement then MultipleStatements

    (ElseIfStatement | ElseStatement | end)

21. **ElseIfStatement** → elseif ConditionStatement then MultipleStatements

    (ElseIfStatement | ElseStatement | end)

22. **ElseStatement** → else MultipleStatements end

23. **MultipleStatements** → Statement MultipleStatement

24. **MultipleStatement** → Statement MultipleStatement | ε

25. **RepeatStatement** → repeat MultipleStatements until ConditionStatement

26. **ReturnStatement** → return Expression semicolon

27. **Expression** → stringText | Term | Equation

28. **Term** → constant | identifier | FunctionCall

29. **Equation** → (Term MultipleTerms) | Br_Op (Operation Br_Op |Operation

    Expression)

30. **MultipleTerms** → **(**Operation Expression) MultipleTerm

31. **MultipleTerm** → **(**Operation Expression) MultipleTerm | ε

32. **Br_Op** → lParanthesis Term MultipleTerms rParanthesis

33. **Operation** → plusOp | minusOp | multiplyOp | divideOp

34. **ConditionStatement** → Condition MultipleConditions

35. **MultipleConditions** → (BooleanOperator Condition) MultipleConditions | ε

36. **Condition** → identifier ConditionOperator Expression

37. **BooleanOperator** → andOp | orOp

38. **ConditionOperator** → lessThanOp | greaterThanOp | equalOp | notEqualOp