Tiny Language CFG Rules

- Non-Terminals

  - *Function_Call , Term , Arithmatic_Op , Equation , Expression , Assignment_Statement , Datatype , Declaration_Statement , Write_Statement , Read_Statement , Return_Statement , Condition_Op , Condition , Boolean_Op , Condition_Statement , If_Statement , Else_If_Statement , Else_Statement , Repeat_Statement , Parameter , Function_Declaration , Function_Body , Function_Statement , Main_Function , Program*

- Terminals

  - **main** , **(,)** , **{ , }** , **identifier** , **repeat** , **until** , **if** , **then** , **elseif**, **else** , **end** , **return** , **read** , **write** , **endl** , **int** , **float** , **string** , **&& , ||** , **+ , -** , ***** , **/** , **<** , **>** , **<>** , **=** , **number**

1. *Program → Program' Main_Function*
2. *Program' → Function_Statement Program'* | e
3. *Main_Function → Datatype* **main ( )** *Function_Body*
4. *Function_Statement → Function_Declaration Function_Body*
5. *Function_Body →* **{** *Statements Return_Statement* **}**
6. *Statements → Statement Statements'* | e
7. *Statements' → Statement Statements'* | e
8. *Statement → Assignment_Statement* **;** | *Declaration_Statement* | *Write_Statement* |
   Read_Statement | *Condition_Statement* | *If_Statement* | *Repeat_Statement* | *Function_Call* **;**
9. *Function_Declaration → Datatype* Function_Name **(** *Parameters* **)**
10. *Parameters → Parameter Parameters'* | e
11. *Parameters' →* **,** *Parameter Parameters'* | e
12. *Parameter → Datatype* **identifier**
13. Function_Name → **identifier**
14. *Repeat_Statement →* **repeat** *Statements* **until** *Condition_Statement*
15. *Condition_Statement → Condition Conditions*
16. *Conditions → Boolean_Op Condition Conditions* | e
17. *If_Statement →* **if** *Condition_Statement* **then** *StatementsOrReturn Rest_if*
18. *Rest_if → Else_If_Statement* | *Else_Statement* | **end**
19. *StatementsOrReturn → Statements StatementsOrReturn* | *Return_Statement* | e
20. *Else_If_Statement →* **elseif** *Condition_Statement* **then** *StatementsOrReturn Rest_if*
21. *Else_Statement →* **else** *StatementsOrReturn* **end**
22. *Return_Statement →* **return** *Expression* **;**
23. *Read_Statement →* **read identifier ;**
24. *Write_Statement →* **write** *Write'* **;**
25. *Write' → Expression* | **endl**
26. *Declaration_Statement → Datatype Identifiers* **;**
27. *Identifiers →* **identifier** *Identifiers'* | *Assignment_Statement Identifiers'*
28. *Identifiers' →* **,** *Identifiers* | e
29. *Datatype →* **int** | **float** | **string**
30. *Assignment_Statement →* **identifier := ** *Expression*
31. *Expression →* **string** | *Equation*
32. *Arithmatic_Op → Add_Op* | *Mult_Op*
33. *Boolean_Op →* **&&** | **"||"**
34. *Condition_Op →* **< | > | = | <>**
35. *Function_Call → Function_Name* **(** *Arguments* **)**
36. *Arguments →* **identifier** *Argument'* | e

37. *Argument'* → **, identifier** *Argument'* | e
38. *Condition* → **identifier** *Condition_Op Term*
39. *Add_Op* → **+ | -**
40. *Mult_Op* → *** | /**
41. *Equation* → *Factor Equation'*
42. *Equation'* → *Add_Op Factor Equation'* | e
43. *Factor* → **(** *Equation* **)** *Factor'* | *Term Factor'*
44. *Factor'* → *Mult_Op Equation Factor'* | e
45. *Term* → **number** | **identifier** | *Function_Call*