COMPLIER'S DESIGN

Milestone 2

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Milestone -2

Note: ***Terminal_tokens*** **are written in bold and italic. non_Terminal_tokens are written in Bold.**

1. **Program → UserFunc MainFunc.**
2. **UserFunc → Function |** ***ε***
3. **MainFunc → Datetype** ***main ()*** **Body**
4. **Function → Fun_dec Body UserFunc**
5. **Fun_dec → Datatype** ***identifier*** **ArgList**
6. **Datatype →** ***int*** **|** ***float*** **|*****string***
7. **ArgList →** ***(*****Arguments*****)*** **|** ***()***
8. **Arguments → Arguments*****, identifier*** **|** ***identifier*** *(left recursive)*
    - **Arguments → Datatype** ***identifier*** **Arg**
    - **Arg →, Datatype** ***identifier*** **Arg |** ***ε***
9. **Body →** ***{*****Stat_seq return-stmt** ***}***
10. **Stat_Seq → Stat_Seq** ***;*** **Statement | Statement** *(left recursive)*
    - **Stat_Seq → Statement State**
    - **State →*****;*** **Statement State |** ***ε***
11. **Statement → if-stmt | repeat-stmt | assign-or-funcallstmt**
    | read-stmt | write-stmt| Decl-stmt| return-stmt
12. **if-stmt →** ***if*** **Condition** ***then*** **Stat_Seq ElseClosure**
13. **elseif-stmt →** ***elseif*** **Condition** ***then*** **Stat_Seq ElseClosure**
14. **ElseClosure →** ***else*** **Stat_Seq** ***end*** **| elseif-stmt**
15. **Condition → Expression RelOp Expression ConditionClosure**

16. ConditionClosure → ConditionOps Condition | ε

17. assign-or-funcallstmt → assign-stmt| fun-call *(left factoring)*
    - assign-or-funcallstmt → *identifier* A
    - A → fun-call|assign-stmt

18. Equation → Equation AddOp Term | Term *(left recursive)*
    - Equation → Term Equ
    - Equ → AddOp Term Equ | ε

19. Term → Term MultOp Factor | Factor *(left recursive)*
    - Term → Factor Ter
    - Ter → MultOp Factor Ter | ε

20. Factor → *constant* |*identifier* |FunCall *(left factoring)*
    - Factor → *constant* |*identifier* A| *(*Expression*)*
    - A → fun-call | ε

21. RelOp → <|>|=|<>

22. CondationOps → *“||”* | *&&*

23. AddOp → *+* | *-*

24. MultOp → * | */*

25. Expression → *String* | Term | Equation *(left factoring)*
    - Expression → *String* |exp
    - exp → Term E
    - E → Equ|ε

26. repeat-stmt → *repeat* Stat_Seq *until* Expression

27. assign-stmt → *identifier:=* Expression

28. read-stmt → *read identifier*

29. write-stmt → *write* Expression

30. Decl-stmt → DataType Id

31. Id → *identifier* | assign-stmt IdClosure *(left factoring)*

- Id → *identifier* B IdClause
- B → assign-stmt | ε

32. IdClause → , Id | ε

33. fun-call → callArgList

34. CallArgList → *(*ArgumentsCall*)* | *()*

35. ArgumentsCall → ArgumentsCall, *identifier* | *identifier* *(left recursive)*

- ArgumentsCall → *identifier* ArgCall
- ArgCall →, *identifier* ArgCall | ε

36. return-stmt → *return* Expression