

Tiny CFG Rule

Team:

G3_34

TA:

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Token_Class

INT, STRING, FLOAT, READ, WRITE, REPEAT, UNTIL, IF, ELSEIF, ELSE, THEN, END, CONSTANT, MAIN_FN, RETURN, ENDL, IDENTIFIER, DO, WHILE_STATEMENT, COMMA, DOT, STRING_VAL, PLUS_OP, MINUS_OP, DIVIDE_OP, MULTIPLY_OP, ASSIGNMENT_OP, INCREMENT, DECREMENT, SEMICOLON, LESS_THAN, GREATER_THAN, EQUALS, NOT_EQUALS, AND, OR, LEFT_BRACKET, RIGHT_BRACKET, LEFT_CBRACKET, RIGHT_CBRACKET, LEFT_SBRACKET, RIGHT_SBRACKET

- Program -> Func_States Main_Func
- Func_States -> Func_State Func_States | ϵ
- Func_State -> Func_Declr Func_Body
- Main_Func -> Datatype MAIN_FN LEFT_BRACKET RIGHT_BRACKET Func_Body
- Func_Declr -> Datatype FN_Name LEFT_BRACKET (Param Other_Param | ϵ) RIGHT_BRACKET
- Param -> Datatype IDENTIFIER
- Other_Param -> (comma Param) Other_Param | ϵ
- Func_Body -> LEFT_CBRACKET Statements Return_State RIGHT_CBRACKET
- Statements -> Statement Statements | ϵ
- Statement -> Assign_State SEMICOLON | Declr_State | Read_State | Write_State | FN_Call SEMICOLON | IF_State | Repeat_State | return
- Datatype -> INT | FLOAT | STRING
- FN_Name -> IDENTIFIER
- Assign_State -> IDENTIFIER ASSIGNMENT_OP EXP
- Declr_State -> Datatype (IDENTIFIER | Assign_State) Declr_States SEMICOLON
- Declr_States -> (comma (IDENTIFIER | Assign_State) Declr_States) | ϵ
- Read_State -> READ IDENTIFIER SEMICOLON

- **Write_State** -> write (EXP | ENDL) SEMICOLON
- **FN_Call** -> IDENTIFIER LEFT_BRACKET (IDENTIFIER | CONSTANT) Other_IDs | ϵ RIGHT_BRACKET
- **Other_IDs** -> (comma (IDENTIFIER | CONSTANT)) Other_IDs | ϵ
- **IF_State** -> IF Cond_State THEN Other_IF_States (ElseIf_State | Else_State | END)
- **ElseIf_State** -> ELSEIF Cond_State THEN Other_IF_States (ElseIf_State | Else_State | end)
- **Else_State** -> else Other_IF_States END
- **Other_IF_States** -> Statement Other_IF_State
- **Other_IF_State** -> Statement Other_IF_State | ϵ
- **Repeat_State** -> repeat Other_IF_States until Cond_State
- **Return_State** -> return EXP SEMICOLON
- **EXP** -> STRING_VAL | Term | Equation
- **Term** -> CONSTANT | IDENTIFIER | FN_Call
- **Equation** -> (Term MultiTerms) | BRACKET_Op (OPs BRACKET_Op | OPs EXP)
- **MultiTerms** -> (OPs EXP) MultipleTerm
- **MultipleTerm** -> (OPs EXP) MultipleTerm | ϵ
- **BRACKET_Op** -> LEFT_BRACKET Term MultiTerms RIGHT_BRACKET
- **OPs** -> PLUS_OP | MINUS_OP | MULTIPLY_OP | DIVIDE_OP
- **Cond_State** -> Condition MultiConditions
- **MultiConditions** -> (Bool_OpsCondition) MultiConditions | ϵ
- **Condition** -> IDENTIFIER Cond_Op EXP
- **Bool_Ops** -> AND | OR
- **Cond_Op** -> LESS_THAN | GREATER_THAN | EQUALS | NOT_EQUALS