<PROGRAM> ::= **<DEF_VARS> <GLOB_VARS> <DEF_FUNCS> <FUNCS> <MAIN_FUNC>**

<DEF_VARS> ::= **<DEF_VAR>** "." **<DEF_VARS>** | λ

<DEF_VAR> ::= "def" var_name **<EXP>**

<GLOB_VARS> ::= **<VARS>**

<VARS> ::= **<VAR>** "." **<VARS>** | λ

<VAR> ::= **<DECLARE>** | **<REASSIGN>**

<DECLARE> ::= **<TYPE>** var_name **<ASSIGN>**

<ASSIGN> ::= **<EXP>** | λ

<REASSIGN> ::= var_name **<EXP>**

<EXP> ::= string_var | int_var | var_name | "(" **<EXP>** ")" | **<EQ_FUNC>** | **<OP>**

<EQ_FUNC> ::= var_name "(" **<ALL_ARGS>** ")"

<OP> ::= **<EXP>** " + " **<EXP>** | **<EXP>** "-" **<EXP>** | **<EXP>** "*" **<EXP>** | **<EXP>** "/" **<EXP>**

<TYPE> ::= "s" | "i"

<EVALUATE> ::= **<EXP> <COMP> <EXP>** | **<EVALUATE>** "a" **<EVALUATE>** | **<EVALUATE>** "o" **<EVALUATE>**

<COMP> ::=   "=" | "!" | ">" | "<" | ">=" | "<="

<DEF_FUNCS> ::= **<DEF_FUNC>** "." **<DEF_FUNCS>** | λ

<DEF_FUNC> ::= "fun" var_name **<TYPE>** "(" **<ALL_ARGS>** ")"

<ALL_ARGS> ::= **<ARGS>** | λ

<ARGS> ::= **<ARG>** "," **<ARGS>** | **<ARG>**

<ARG> ::= **<TYPE>** var_name

<FUNCS> ::= **<FUNC>** **<FUNCS>** | λ

<FUNC> ::= var_name "fun" **<TYPE>** "(" **<ALL_ARGS>** ")" "{" **<BODY>** "}"

<BODY> ::= **<LINE>** **<BODY>** | **<BLOCK>** **<BODY>** | λ

<LINE> ::= **<CMD>** "."

<CMD> ::= **<REASSIGN>** | **< DECLARE>** | **<INC>** |
<DEC> | **<PRINT>** | **<SCAN>** | **< RET>**

<INC> ::= var_name "++"

<DEC> ::= var_name "--"

<PRINT> ::= "w" "(" **<EXP>** ")"

<SCAN> ::= "r" "(" var_name ")"
<RET> ::= "ret" **<EXP>** | "ret"

<BLOCK> ::= **<IFBLOCK>** | **<WHILEBLOCK>**

<IFBLOCK> ::= "c" **<EVALUATE>** "." **<BODY>** "cc"

<WHILEBLOCK> ::= "l" **<EVALUATE>** "." **<BODY>** "cl"

<MAIN_FUNC> : "main" **<TYPE>** "(" **<ALL_ARGS>** ")" "{" **<BODY>** "}"