%{

#include <stdio.h>

#include <stdlib.h>

#define YYDEBUG 1

%}

%token ID

%token CONSTANT

%token IF

%token WHILE

%token LET

%token WRITE

%token READ

%token COLON

%token SEMICOLON

%token DOT

%token MULTIPLY

%token DIVISION

%token PLUS

%token MINUS

%token COMMA

%token EQUAL

%token LESS\_THAN

%token GREATER\_THAN

%token ASSIGNMENT

%token LEFT\_ROUND\_PARANTHESIS

%token RIGHT\_ROUND\_PARANTHESIS

%token LEFT\_SQUARE\_PARANTHESIS

%token RIGHT\_SQUARE\_PARANTHESIS

%token LEFT\_CURLY\_BRACKET

%token RIGHT\_CURLY\_BRACKET

%token INTEGER

%token STRING

%start program

%%

program : declaration\_list

declaration\_list : declaration decl\_opt | stmt\_list

declaration : decl1 const\_opt ;

decl1 : LET ID COLON type

type : INTEGER | STRING

const\_opt : LEFT\_SQUARE\_PARANTHESIS CONSTANT RIGHT\_SQUARE\_PARANTHESIS

decl\_opt : declaration\_list

stmt\_list : stmt stmt\_opt

stmt : assign\_stmt | IO\_stmt | struct\_stmt

stmt\_opt : stmt\_list

assign\_stmt : ID EQUAL expression ;

expression : B A

A : + B A

B : D C

C : \* D C

D : F E

E : / F E

F : H G

G : - H G

H : LEFT\_ROUND\_PARANTHESIS expression RIGHT\_ROUND\_PARANTHESIS | term

term : CONSTANT | ID

struct\_stmt : cmpd\_stmt | if\_stmt | while\_stmt

cmpd\_stmt : LEFT\_CURLY\_BRACKET stmt\_list RIGHT\_CURLY\_BRACKET

if\_stmt : IF condition cmpd\_stmt

condition : expression relation expression

relation : LESS\_THAN | EQUAL | GREATER\_THAN

%%