start: controlExpr '\n' start

| statement ';' '\n' start

| error start

| '\n' start

|

;

statement: arithmeticAssign

| shapeAssign

| shapeDraw

| StringAssign

| colourAssign

| locationAssign

| sizeAssign

;

colourAssign: IDENTIFIER '=' COLOUR '(' INTEGER ',' INTEGER ',' INTEGER ')'

sizeAssign: IDENTIFIER '=' SIZE '(' INTEGER ',' INTEGER ')'

locationAssign: IDENTIFIER '=' LOCATION '(' INTEGER ',' INTEGER ')'

StringAssign: IDENTIFIER '=' STRING

arithmeticAssign:

IDENTIFIER '=' arithmeticExpr

;

arithmeticExpr:

arithmeticExpr ADD\_OP arithmeticTerm

| arithmeticTerm

;

arithmeticTerm:

arithmeticTerm MUL\_OP numeric

| numeric

;

numeric:

IDENTIFIER

| FLOAT

| INTEGER

;

shapeAssign:

IDENTIFIER '=' Shape\_Init

;

Shape\_Init:

ShapeType '(' parameters ')'

;

ShapeType: LINE\_TYPE

| OVAL\_TYPE

| RECTANGLE\_TYPE

| STRING\_SHAPE\_TYPE

| COMPOSITE\_TYPE

;

shapeDraw:

IDENTIFIER '.' DRAW\_FUNCTION '(' parameters ')'

;

parameters:

namedParams extendedNamedParams

| namedParams

| normalParam

|normalParam extendedParams

|

;

extendedNamedParams:

',' namedParams

| ',' namedParams extendedParams

;

extendedParams:

',' namedParams

| ',' namedParams extendedNamedParams

| ',' normalParam extendedParams

| ',' normalParam

;

normalParam:

| STRING

| BOOLEAN

| INTEGER

| IDENTIFIER

;

namedParams:

IDENTIFIER ':' value

;

value: STRING

| BOOLEAN

| INTEGER

| IDENTIFIER

;

controlExpr: IF '(' condition ')' '{' start '}'

| WHILE '(' condition ')' '{' start '}'

| DO '{' start '}' WHILE '(' condition ')'

| FOR '(' arithmeticAssign ';' condition ';' arithmeticAssign ')'

;

condition:

| numeric check numeric

| IDENTIFIER '=' '=' BOOLEAN

| BOOLEAN '=' '=' IDENTIFIER

;

check: '<'

|'>'

;