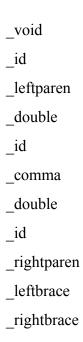void f (double x, double y) { }

C:\Users\Working\Documents\EclipseWorkspace\Fall2018\Compilers Project 2\bin>java compilers_project_2.MyNewGrammar ../test/test1.txt

file specified! Reading from file...

_void

_id

_leftparen

_double

_id

_comma

_double

_id

_rightparen

_leftbrace

_rightbrace

Printing parse tree...

Start

->Program

->->Decl

->->->FunctionDecl

->->->->Formals

->->->->->VariableList

->->->->->->Variable

->->->->->->->Type

->->->->->->VariableList

->->->->->->->Variable

->->->->->->->Type

->->->->StmtBlock

->->->->StmtBlockPrime

int i = 1;

C:\Users\Working\Documents\EclipseWorkspace\Fall2018\Compilers Project 2\bin>java

compilers_project_2.MyNewGrammar ../test/test2.txt

file specified! Reading from file...

_int
_id
_assignop
_intconstant
_semicolon

NOK.

Encountered " "=" "= "" at line 1, column 7.

Was expecting:

        "(" ...

void function() {

    // in function

    result = 5.times(4);

}

C:\Users\Working\Documents\EclipseWorkspace\Fall2018\Compilers Project 2\bin>java

compilers_project_2.MyNewGrammar ../test/test3.txt

file specified! Reading from file...

_void

_id

_leftparen

_rightparen

_leftbrace

_id

_assignop

_doubleconstant

_id

_leftparen

_intconstant

_rightparen

_semicolon

_rightbrace

NOK.

Encountered " <_id> "times "" at line 3, column 20.

Was expecting one of:

      "+" ...

      "-" ...

      "*" ...

      "/" ...

      "%" ...

      "." ...

      "<" ...

      "<=" ...

      ">" ...

      ">=" ...

      "==" ...

        "!=" ...

        "&&" ...

        "||" ...

```
void function() {
    // in function
    front = in.nextLine();
}
```

C:\Users\Working\Documents\EclipseWorkspace\Fall2018\Compilers Project 2\bin>java

compilers_project_2.MyNewGrammar ../test/test4.txt

file specified! Reading from file...

_void

_id

_leftparen

_rightparen

_leftbrace

_id

_assignop

_id

_period

_id

_leftparen

_rightparen

_semicolon

_rightbrace

Printing parse tree...

Start

->Program

->->Decl

->->->FunctionDecl

->->->->Formals

->->->->StmtBlock

->->->->->StmtBlockPrime

->->->->->->StmtList

->->->->->->->Stmt

->->->->->->->->Expr

->->->->->->->->->LValue

->->->->->->->->->Expr

->->->->->->->->->->Call

->->->->->->->->->->->Actuals

->->->->->->->->->->->ExprPrime

->->->->->->->->->->->ExprPrime

<mark>void function() {</mark>

<mark>   // in function</mark>

<mark>   front = in.nextLine;</mark>

<mark>}</mark>

C:\Users\Working\Documents\EclipseWorkspace\Fall2018\Compilers Project 2\bin>java

compilers_project_2.MyNewGrammar ../test/test5.txt

file specified! Reading from file...

_void

_id

_leftparen

_rightparen

_leftbrace

_id

_assignop

_id

_period

_id

_semicolon

_rightbrace

Printing parse tree...
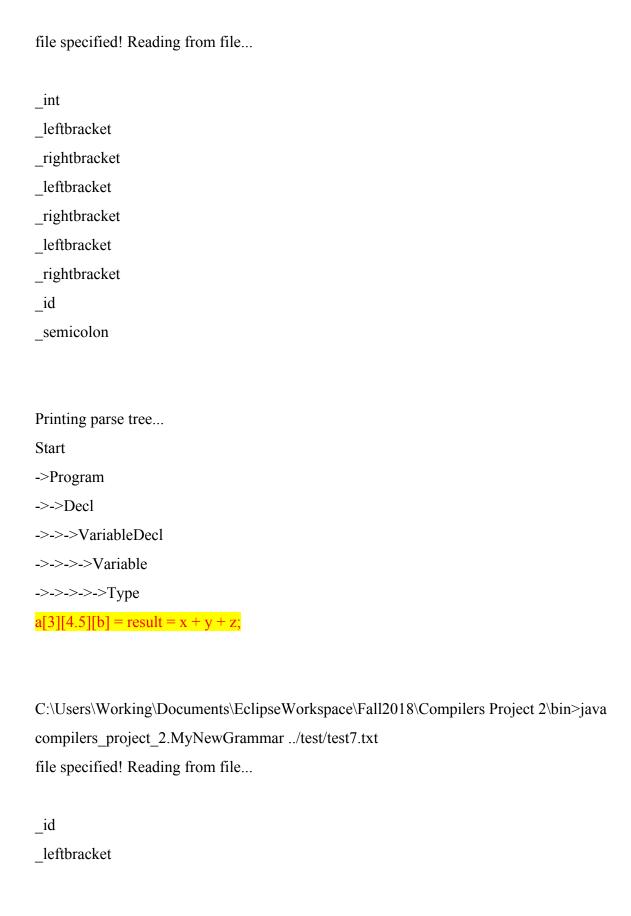
Start

->Program

->->Decl

->->->FunctionDecl

->->->->Formals

->->->->StmtBlock

->->->->->StmtBlockPrime

->->->->->->StmtList

->->->->->->->Stmt

->->->->->->->->Expr

->->->->->->->->->LValue

->->->->->->->->->Expr

->->->->->->->->->->LValue

->->->->->->->->->->ExprPrime

->->->->->->->->->->ExprPrime

<mark>int</mark>

<mark>[][][] super;</mark>

C:\Users\Working\Documents\EclipseWorkspace\Fall2018\Compilers Project 2\bin>java

compilers_project_2.MyNewGrammar ../test/test6.txt

file specified! Reading from file...

_int

_leftbracket

_rightbracket

_leftbracket

_rightbracket

_leftbracket

_rightbracket

_id

_semicolon

Printing parse tree...

Start

->Program

->->Decl

->->->VariableDecl

->->->->Variable

->->->->->Type

<mark>a[3][4.5][b] = result = x + y + z;</mark>

C:\Users\Working\Documents\EclipseWorkspace\Fall2018\Compilers Project 2\bin>java compilers_project_2.MyNewGrammar ../test/test7.txt

file specified! Reading from file...

_id

_leftbracket

_intconstant

_rightbracket

_leftbracket

_doubleconstant

_rightbracket

_leftbracket

_id

_rightbracket

_assignop

_id

_assignop

_id

_plus

_id

_plus

_id

_semicolon

NOK.

Encountered " <_intconstant> "3 "" at line 1, column 3.

Was expecting one of:

      "]" ...

      "]" ...

      "]" ...

void function() {

  // in function

  for (; ;) x = 1;

}

C:\Users\Working\Documents\EclipseWorkspace\Fall2018\Compilers Project 2\bin>java
compilers_project_2.MyNewGrammar ../test/test8.txt
file specified! Reading from file...

_void

_id

_leftparen

_rightparen

_leftbrace

_for

_leftparen

_semicolon

_semicolon

_rightparen

_id

_assignop

_intconstant

_semicolon

_rightbrace

NOK.
Encountered " ";" "; "" at line 3, column 17.
Was expecting one of:
        "-" ...
        "(" ...
        "!" ...
        "new" ...

"newarray" ...

"null" ...

"readln" ...

<_booleanconstant> ...

<_id> ...

<_intconstant> ...

<_doubleconstant> ...

<_stringconstant> ...

<_id> ...

void function() {

   // in function

   if (h>w) g=h;

   else h=g;

   double a;

}

C:\Users\Working\Documents\EclipseWorkspace\Fall2018\Compilers Project 2\bin>java

compilers_project_2.MyNewGrammar ../test/test9.txt

file specified! Reading from file...

_void

_id

_leftparen

_rightparen

_leftbrace

_if

_leftparen

_id

_greater

_id

_rightparen

_id

_assignop

_id

_semicolon

_else

_id

_assignop

_id

_semicolon

_double

_id

_semicolon

_rightbrace

NOK.

Encountered " "double" "double "" at line 5, column 9.

Was expecting one of:

      "-" ...

      ";" ...

      "(" ...

      "{" ...

      "}" ...

      "!" ...

      "break" ...

      "for" ...

      "if" ...

"new" ...

"newarray" ...

"null" ...

"println" ...

"readln" ...

"return" ...

"while" ...

<_booleanconstant> ...

<_id> ...

<_intconstant> ...

<_doubleconstant> ...

<_stringconstant> ...

```
class testClass {
    // in class
    boolean b;
    userDefinedClassType f(){}
    double d;
    string g(){}
}
```

C:\Users\Working\Documents\EclipseWorkspace\Fall2018\Compilers Project 2\bin>java
compilers_project_2.MyNewGrammar ../test/test10.txt

file specified! Reading from file...

_class
_id
_leftbrace
_boolean
_id

_semicolon

_id

_id

_leftparen

_rightparen

_leftbrace

_rightbrace

_double

_id

_semicolon

_string

_id

_leftparen

_rightparen

_leftbrace

_rightbrace

_rightbrace

Printing parse tree...

Start

->Program

->->Decl

->->->ClassDecl

->->->->FieldList

->->->->->Field

->->->->->->VariableDecl

->->->->->->->Variable

->->->->->->->->Type

->->->->->FieldList

->->->->->->Field

->->->->->->->FunctionDecl

->->->->->->->->Type

->->->->->->->->Formals

->->->->->->->->StmtBlock

->->->->->->->->->StmtBlockPrime

->->->->->->FieldList

->->->->->->->Field

->->->->->->->->VariableDecl

->->->->->->->->->Variable

->->->->->->->->->->Type

->->->->->->->FieldList

->->->->->->->->Field

->->->->->->->->->FunctionDecl

->->->->->->->->->->Type

->->->->->->->->->->Formals

->->->->->->->->->->->StmtBlock

->->->->->->->->->->->->StmtBlockPrime

int fact (int x) {

// recursive factorial function

if (x>1) return x * fact(x-1);

else return 1;

}

void main () {

/* Fall Semester 2018

CS 4110 project #1

A lexical analyzer */

int x;

int total;

println ("factorial of 10 is ", fact (10), "from the recursive function");

total = 1; x = 1;

for (; x<=10;) { total = total * x; x = x + 1; }

println ("iterative result of 10! is ", total);

}

class cs4110 {

int Funny;

double funny;

boolean flag;

string s;

int [] a;

flag = true;

Funny = 0X89aB; funny = 123456E+7;

s = "hello world";

while (x = (Funny/10) <0) println (s, " have fun !");

a = newarray (20, int);

}

C:\Users\Working\Documents\EclipseWorkspace\Fall2018\Compilers Project 2\bin>java
compilers_project_2.MyNewGrammar ../test/test11.txt
file specified! Reading from file...

_int
_id
_leftparen
_int
_id
_rightparen
_leftbrace

_if

_leftparen

_id

_greater

_intconstant

_rightparen

_return

_id

_multiplication

_id

_leftparen

_id

_minus

_intconstant

_rightparen

_semicolon

_else

_return

_intconstant

_semicolon

_rightbrace

_void

_id

_leftparen

_rightparen

_leftbrace

_int

_id

_semicolon

_int

_id

_semicolon

_println

_leftparen

_stringconstant

_comma

_id

_leftparen

_intconstant

_rightparen

_comma

_stringconstant

_rightparen

_semicolon

_id

_assignop

_intconstant

_semicolon

_id

_assignop

_intconstant

_semicolon

_for

_leftparen

_semicolon

_id

_lessequal

_intconstant

_semicolon

_rightparen

_leftbrace

_id

_assignop

_id

_multiplication

_id

_semicolon

_id

_assignop

_id

_plus

_intconstant

_semicolon

_rightbrace

_println

_leftparen

_stringconstant

_comma

_id

_rightparen

_semicolon

_rightbrace

_class

_id

_leftbrace

_int

_id

_semicolon

_double

_id

_semicolon

_boolean

_id

_semicolon

_string

_id

_semicolon

_int

_leftbracket

_rightbracket

_id

_semicolon

_id

_assignop

_booleanconstant

_semicolon

_id

_assignop

_intconstant

_semicolon

_id

_assignop

_intconstant

_semicolon

_id

_assignop

_stringconstant

_semicolon

_while

_leftparen

_id

_assignop

_leftparen

_id

_division

_intconstant

_rightparen

_less

_intconstant

_rightparen

_println

_leftparen

_id

_comma

_stringconstant

_rightparen

_semicolon

_id

_assignop

_newarray

_leftparen

_intconstant

_comma

_int

_rightparen

_semicolon

_rightbrace

NOK.

Encountered " "=" "= "" at line 23, column 6.

Was expecting one of:

     "[" ...

     <_id> ...

     "[" ...

     <_id> ...


```
class newClass extends nothing
{
   double doubel ( int x, boolean y )
    {
        if ( doubel > 0.5E+2 || y == true )
        {
            for ( i = 0; i < 10; i = i + 1 )
            {
                int test;
                x = x * 2 - 5;
                println( "This is a string that I am printing. x = " + x );

                if ( x > 100 )
                {
                    break;
                }
                else
```

```
                    {
                        x = x + 10;
                    }
                }
                y = !y;
        }


        // This is a comment
        while ( 1 )
        {
                // This does nothing
                String s;
                s = readln();
                if ( s == null )
                        return;
        }
    }
}


// Comments
// are
// fun

int integer()
{
    double q;
    double r;
    double s;
    String str;
```

```
    int i;

    q = 2.5E+2;
    r = 1.2;
    s = q * r / 2;

    while ( i < s )
    {
        str = str + "s";
        i = i + 1;
    }
}

/* This is a multi-line comment*/

boolean bool;

/* This is a multi-line comment
*  that uses
*  multiple
*  lines!!!!*/

class face implements something
{
    int insane;
    double voidddvoid;

    void theVoid( string [] args )
    {
```

if (args[0] == "arg" && args[1] >= 205)

            println("This is the void");

        return;

    }

    int insanity (int in, int sane) { insane = 0x3453AFE; }

}

interface classClassclassLassclass

{

    void v();

    type t();

}

// This is the end of the file

C:\Users\Working\Documents\EclipseWorkspace\Fall2018\Compilers Project 2\bin>java

compilers_project_2.MyNewGrammar ../test/test12.txt

file specified! Reading from file...

_class
_id
_extends
_id
_leftbrace
_double
_id
_leftparen
_int
_id

_comma

_boolean

_id

_rightparen

_leftbrace

_if

_leftparen

_id

_greater

_doubleconstant

_or

_id

_equal

_booleanconstant

_rightparen

_leftbrace

_for

_leftparen

_id

_assignop

_intconstant

_semicolon

_id

_less

_intconstant

_semicolon

_id

_assignop

_id

_plus

_intconstant

_rightparen

_leftbrace

_int

_id

_semicolon

_id

_assignop

_id

_multiplication

_intconstant

_minus

_intconstant

_semicolon

_println

_leftparen

_stringconstant

_plus

_id

_rightparen

_semicolon

_if

_leftparen

_id

_greater

_intconstant

_rightparen

_leftbrace

_break

_semicolon

_rightbrace

_else

_leftbrace

_id

_assignop

_id

_plus

_intconstant

_semicolon

_rightbrace

_rightbrace

_id

_assignop

_not

_id

_semicolon

_rightbrace

_while

_leftparen

_intconstant

_rightparen

_leftbrace

_id

_id

_semicolon

_id

_assignop

_readln

_leftparen

_rightparen

_semicolon

_if

_leftparen

_id

_equal

_null

_rightparen

_return

_semicolon

_rightbrace

_rightbrace

_rightbrace

_int

_id

_leftparen

_rightparen

_leftbrace

_double

_id

_semicolon

_double

_id

_semicolon

_double

_id

_semicolon

_id

_id

_semicolon

_int

_id

_semicolon

_id

_assignop

_doubleconstant

_semicolon

_id

_assignop

_doubleconstant

_semicolon

_id

_assignop

_id

_multiplication

_id

_division

_intconstant

_semicolon

_while

_leftparen

_id

_less

_id

_rightparen

_leftbrace

_id

_assignop

_id

_plus

_stringconstant

_semicolon

_id

_assignop

_id

_plus

_intconstant

_semicolon

_rightbrace

_rightbrace

_boolean

_id

_semicolon

_class

_id

_implements

_id

_leftbrace

_int

_id

_semicolon

_double

_id

_semicolon

_void

_id

_leftparen

_string

_leftbracket

_rightbracket

_id

_rightparen

_leftbrace

_if

_leftparen

_id

_leftbracket

_intconstant

_rightbracket

_equal

_stringconstant

_and

_id

_leftbracket

_intconstant

_rightbracket

_greaterequal

_intconstant

_rightparen

_println

_leftparen

_stringconstant

_rightparen

_semicolon

_return

_semicolon

_rightbrace

_int

_id

_leftparen

_int

_id

_comma

_int

_id

_rightparen

_leftbrace

_id

_assignop

_intconstant

_semicolon

_rightbrace

_rightbrace

_interface

_id

_leftbrace

_void

_id

_leftparen

_rightparen

_semicolon

_id

_id

_leftparen

_rightparen

_semicolon

_rightbrace

Printing parse tree...

Start

->Program

->->Decl

->->->ClassDecl

->->->->FieldList

->->->->->Field

->->->->->->FunctionDecl

->->->->->->->Type

->->->->->->->Formals

->->->->->->->->VariableList

->->->->->->->->->Variable

->->->->->->->->->->Type

->->->->->->->->->->VariableList

->->->->->->->->->->->Variable

->->->->->->->->->->->->Type

->->->->->->->StmtBlock

->->->->->->->->StmtBlockPrime

->->->->->->->->->StmtList

->->->->->->->->->->Stmt

->->->->->->->->->->->IfStmt

->->->->->->->->->->->->Expr

->->->->->->->->->->->->->LValue

->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->Constant

->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->->Constant

->->->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->Stmt

->->->->->->->->->->->->StmtBlock

->->->->->->->->->->->->StmtBlockPrime

->->->->->->->->->->->->StmtList

->->->->->->->->->->->->->Stmt

->->->->->->->->->->->->->ForStmt

->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->Constant

->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->->Constant

->->->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->->->Constant

->ExprPrime

->->->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->->->Stmt

->->->->->->->->->->->->->->->->StmtBlock

->->->->->->->->->->->->->->->->StmtBlockPrime

->->->->->->->->->->->->->->->->->VariableDeclList

->->->->->->->->->->->->->->->->->VariableDecl

->->->->->->->->->->->->->->->->->->Variable

->->->->->->->->->->->->->->->->->->Type

->->->->->->->->->->->->->->->->->->VariableDeclListPrime

->->->->->->->->->->->->->->->->->StmtList

->->->->->->->->->->->->->->->->->Stmt

->->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->->->->->ExprPrime

->Expr

->Constant

->ExprPrime

->Expr

->Constant

->ExprPrime

->ExprPrime

->StmtList

->Stmt

->PrintStmt

->ExprList

->Expr

->Constant

->ExprPrime

->Expr

->LValue

->ExprPrime

->StmtList

->Stmt

->IfStmt

->Expr

->LValue

->ExprPrime

->Expr

->Constant

->ExprPrime

->Stmt

->StmtBlock

->StmtBlockPrime

->StmtList

->Stmt

->BreakStmt

->Stmt

->StmtBlock

->StmtBlockPrime

->StmtList

->Stmt

->Expr

->LValue

->Expr

->LValue

->ExprPrime

->Expr

->Constant

->ExprPrime

->ExprPrime

->->->->->->->->->->->->->->->->StmtList

->->->->->->->->->->->->->->->->Stmt

->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->->->->->Expr

->Expr

->LValue

->ExprPrime

->ExprPrime

->->->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->StmtList

->->->->->->->->->->->Stmt

->->->->->->->->->->->WhileStmt

->->->->->->->->->->->->Expr

->->->->->->->->->->->->->Constant

->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->Stmt

->->->->->->->->->->->->StmtBlock

->->->->->->->->->->->->->->->StmtBlockPrime

->->->->->->->->->->->->->->->->VariableDeclList

->->->->->->->->->->->->->->->->VariableDecl

->->->->->->->->->->->->->->->->->Variable

->->->->->->->->->->->->->->->->->Type

->->->->->->->->->->->->->->->->VariableDeclListPrime

->->->->->->->->->->->->->->->StmtList

->->->->->->->->->->->->->->->Stmt

->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->StmtList

->->->->->->->->->->->->->->->Stmt

->->->->->->->->->->->->->->->IfStmt

->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->->->Constant

->->->->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->->Stmt

->->->->->->->->->->->->->->->->ReturnStmt

->->Program

->->->Decl

->->->->FunctionDecl

->->->->->Type

->->->->->Formals

->->->->->StmtBlock

->->->->->->StmtBlockPrime

->->->->->->->VariableDeclList

->->->->->->->->VariableDecl

->->->->->->->->->Variable

->->->->->->->->->->Type

->->->->->->->->->VariableDeclListPrime

->->->->->->->->->->VariableDeclList

->->->->->->->->->->->VariableDecl

->->->->->->->->->->->->Variable

->->->->->->->->->->->->->Type

->->->->->->->->->->->->VariableDeclListPrime

->->->->->->->->->->->->->VariableDeclList

->->->->->->->->->->->->->->VariableDecl

->->->->->->->->->->->->->->->Variable

->->->->->->->->->->->->->->->->Type

->->->->->->->->->->->->->->->VariableDeclListPrime

->->->->->->->->->->->->->->->->VariableDeclList

->->->->->->->->->->->->->->->->->VariableDecl

->->->->->->->->->->->->->->->->->->Variable

->->->->->->->->->->->->->->->->->->->Type

->->->->->->->->->->->->->->->->->->VariableDeclListPrime

->->->->->->StmtList

->->->->->->->Stmt

->->->->->->->->->Expr

->->->->->->->->->->LValue

->->->->->->->->->->Expr

->->->->->->->->->->->Constant

->->->->->->->->->->->ExprPrime

->->->->->->->->->->->ExprPrime

->->->->->->->->StmtList

->->->->->->->->Stmt

->->->->->->->->->Expr

->->->->->->->->->->LValue

->->->->->->->->->->->Expr

->->->->->->->->->->->->Constant

->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->ExprPrime

->->->->->->->->->StmtList

->->->->->->->->->Stmt

->->->->->->->->->->Expr

->->->->->->->->->->->LValue

->->->->->->->->->->->->Expr

->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->Constant

->->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->StmtList

->->->->->->->->->->Stmt

->->->->->->->->->->->WhileStmt

->->->->->->->->->->->->Expr

->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->Stmt

->->->->->->->->->->->->->StmtBlock

->->->->->->->->->->->->->->StmtBlockPrime

->->->->->->->->->->->->->->->StmtList

->->->->->->->->->->->->->->->->Stmt

->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->->->->->Expr

->LValue

->ExprPrime

->Expr

->Constant

->ExprPrime

->ExprPrime

->->->->->->->->->->->->->->->->->->StmtList

->->->->->->->->->->->->->->->->->->->Stmt

->Expr

->LValue

->Expr

->LValue

->ExprPrime

->Expr

->Constant

->ExprPrime

->ExprPrime

->->->Program

->->->->Decl

->->->->->VariableDecl

->->->->->->Variable

->->->->->->->Type

->->->->Program

->->->->->Decl

->->->->->->ClassDecl

->->->->->->->ImplementsList

->->->->->->->FieldList

->->->->->->->->Field

->->->->->->->->->VariableDecl

->->->->->->->->->->Variable

->->->->->->->->->->->Type

->->->->->->->->->FieldList

->->->->->->->->->->Field

->->->->->->->->->->->VariableDecl

->->->->->->->->->->->->Variable

->->->->->->->->->->->->->Type

->->->->->->->->->->->->FieldList

->->->->->->->->->->->->->Field

->->->->->->->->->->->->->->FunctionDecl

->->->->->->->->->->->->->->->Formals

->->->->->->->->->->->->->->->->VariableList

->->->->->->->->->->->->->->->->->Variable

->->->->->->->->->->->->->Type

->->->->->->->->->->->->StmtBlock

->->->->->->->->->->->->StmtBlockPrime

->->->->->->->->->->->->StmtList

->->->->->->->->->->->->->Stmt

->->->->->->->->->->->->->IfStmt

->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->Constant

->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->Constant

->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->Constant

->->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->Constant

->->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->Stmt

->->->->->->->->->->->->->->PrintStmt

->->->->->->->->->->->->->->ExprList

->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->Constant

->ExprPrime

->->->->->->->->->->->->->->->->->->->StmtList

->->->->->->->->->->->->->->->->->->->Stmt

->ReturnStmt

->->->->->->->->->->FieldList

->->->->->->->->->->->Field

->->->->->->->->->->->->FunctionDecl

->->->->->->->->->->->->->Type

->->->->->->->->->->->->->Formals

->->->->->->->->->->->->->VariableList

->->->->->->->->->->->->->->Variable

->->->->->->->->->->->->->->Type

->->->->->->->->->->->->->->VariableList

->->->->->->->->->->->->->->->Variable

->->->->->->->->->->->->->->->->Type

->->->->->->->->->->->->->->StmtBlock

->->->->->->->->->->->->->->StmtBlockPrime

->->->->->->->->->->->->->->->StmtList

->->->->->->->->->->->->->->->->Stmt

->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->->Constant

->->->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->->->->->ExprPrime

->->->->->Program

->->->->->Decl

->->->->->->InterfaceDecl

->->->->->->->PrototypeList

->->->->->->->->Prototype

->->->->->->->->->Formals

->->->->->->->->->PrototypeList

->->->->->->->->->->Prototype

->->->->->->->->->->->Type

->->->->->->->->->->->Formals

function f()

{

   while (true)

  {

     if (x == 2)

        break;

     x = x + 1;

  }

}

C:\Users\Working\Documents\EclipseWorkspace\Fall2018\Compilers Project 2\bin>java compilers_project_2.MyNewGrammar ../test/test13.txt

file specified! Reading from file...

_id
_id
_leftparen
_rightparen
_leftbrace
_while
_leftparen
_booleanconstant
_rightparen
_leftbrace

_if

_leftparen

_id

_equal

_intconstant

_rightparen

_break

_semicolon

_id

_assignop

_id

_plus

_intconstant

_semicolon

_rightbrace

_rightbrace

Printing parse tree...

Start

->Program

->->Decl

->->->FunctionDecl

->->->->Type

->->->->Formals

->->->->StmtBlock

->->->->->StmtBlockPrime

->->->->->->StmtList

->->->->->->->Stmt

->->->->->->->->WhileStmt

->->->->->->->->->Expr

->->->->->->->->->->Constant

->->->->->->->->->->ExprPrime

->->->->->->->->->->Stmt

->->->->->->->->->->StmtBlock

->->->->->->->->->->->StmtBlockPrime

->->->->->->->->->->->->StmtList

->->->->->->->->->->->->->Stmt

->->->->->->->->->->->->->->IfStmt

->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->->Constant

->->->->->->->->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->->->->Stmt

->->->->->->->->->->->->->->->->BreakStmt

->->->->->->->->->->->->->->->StmtList

->->->->->->->->->->->->->->->->Stmt

->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->->->->Expr

->->->->->->->->->->->->->->->->->->->LValue

->->->->->->->->->->->->->->->->->->->ExprPrime

->Expr

->Constant

->ExprPrime

->ExprPrime

```
function f()
{
    String s;
    s = readln();
        println( s + "this is a string" );
}
```

C:\Users\Working\Documents\EclipseWorkspace\Fall2018\Compilers Project 2\bin>java

compilers_project_2.MyNewGrammar ../test/test14.txt

file specified! Reading from file...

_id

_id

_leftparen

_rightparen

_leftbrace

_id

_id

_semicolon

_id

_assignop

_readln

_leftparen

_rightparen

_semicolon

_println

_leftparen

_id

_plus

_stringconstant

_rightparen

_semicolon

_rightbrace

Printing parse tree...

Start

->Program

->->Decl

->->->FunctionDecl

->->->->Type

->->->->Formals

->->->->StmtBlock

->->->->->StmtBlockPrime

->->->->->->VariableDeclList

->->->->->->->VariableDecl

->->->->->->->->Variable

->->->->->->->->->Type

->->->->->->->VariableDeclListPrime

->->->->->->StmtList

->->->->->->->Stmt

->->->->->->->Expr

->->->->->->->->LValue

->->->->->->->->Expr

->->->->->->->->->ExprPrime

->->->->->->->->->ExprPrime

->->->->->->StmtList

->->->->->->->Stmt

->->->->->->->->PrintStmt

->->->->->->->->->ExprList

->->->->->->->->->->Expr

->->->->->->->->->->->LValue

->->->->->->->->->->->ExprPrime

->->->->->->->->->->->->Expr

->->->->->->->->->->->->->Constant

->->->->->->->->->->->->->ExprPrime

class f

{

   type t;

   t = 2;

}

C:\Users\Working\Documents\EclipseWorkspace\Fall2018\Compilers Project 2\bin>java

compilers_project_2.MyNewGrammar ../test/test15.txt

file specified! Reading from file...

_class

_id

_leftbrace

_id

_id

_semicolon

_id

_assignop

_intconstant

_semicolon

_rightbrace

NOK.

Encountered " "=" "= "" at line 4, column 11.

Was expecting one of:

      "[" ...

      <_id> ...

      "[" ...

      <_id> ...

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