EBNF vir ToyJ

EBNF

```
Program          =     "class"  id  "{" { VarDecl }  { Command } "}" .
VarDecl          =     Type  id  { ","  id } ";" .
Type             =     "int" |  "boolean" .
Block            =     "{" { Command } "}" .
Command          =     SimpleCommand  |  CompoundCommand | Block .
SimpleCommand    =     Out ";" | Assignment ";" | ";" .
CompoundCommand  =     If  |  While  |  For .
Assignment       =     id  "="  Expr | id "[" Expr "]" "=" Expr .
If               =     "if" "("  Expr ")"  Command
                       [ "else"  Command ] .
While            =     "while"  "(" Expr ")"  Command .
For              =     "for"  "(" id  "="  Expr  ";" Expr  ")"  Command .
Out              =     "print"  "("  Expr  ")" .
Expr             =     Simple  [ Relation  Simple ] .
Relation         =     "==" |  "!=" |  "<" |  ">" |  "<=" |  ">=".
Simple           =     [ "+" |  "-" ]  Term  { AddOp  Term } .
AddOp            =     "+" |  "-" |  "||" .
Term             =     Factor  { MulOp  Factor } .
MulOp            =     "*" |  "/" |  "&&" .
Factor           =     number |  id [  "[" Expr "]"  ] |  "(" Expr  ")" |
                       "!" Factor  | "true" | "false" .
id               =     letter { letter |  digit } .
number           =     digit { digit } .
letter           =     "a" ..."z" |  "A" ..."Z" .
digit            =     "0" ..."9" .
```

Notas

- Kommentaar moet deur die leksikale ontleder herken en verwyder word. Twee tipes kommentaarstellings kom voor. Die eerste tipe begin met "//" en eindig aan die einde van die lyn waarop dit voorkom. Die tweede tipe begin met "/*" en eindig met "*/". Laasgenoemde tipe kommentaar kan ook genes word.

Voorbeelde van ToyJ programme

- ```
  class c1 { }
  ```

- ```
  class c2
  { }
  ```

- ```
  class c3 {
       print ( 222 );
  }
  ```

- ```
  class c4 {
       id1 = 222;
  }
  ```

- ```
  class c5 {
       while ( 222 ) { } ;
  }
  ```

- ```
  // Program wat 1 2 3 4 5 vertoon m.b.v. for
  class count1 {
       int number;
       for ( number = 1 ; 5 )
           print ( number );
  }
  ```

- ```
  // Program wat 1 2 3 4 5 vertoon m.b.v. while
  class count2 {
       int number;
       number = 1;
       while ( number < 6 ) {
           print ( number );
           number = number + 1;
       }
  }
  ```