

```

<command> ::= <rep> | <pen> <integer> | <move> <integer> |
              <turn> <integer> | <color> <hexadec> |
<pen>      ::= "DOWN" "." | "UP" "."
<move>     ::= "FORW" <integer> "." | "BACK" <integer> "."
<turn>     ::= "LEFT" <integer> "." | "RIGHT" <integer> "."
<color>    ::= "COLOR" <hexadec> "."
<rep>      ::= "REP" <integer> "" <commands> "" | "REP" <integer>
              <command>
<commands> ::= <command> | <commands> <command>
<program>  ::= <commands> | ε
<integer>  ::= <digit> | <integer> <digit>
<hexdigit> ::= <digit> | <hexletter>
<hexadec>  ::= "#" <hexdigit> <hexdigit> <hexdigit> <hexdigit> <hexdigit>
              <hexdigit>
<digit>    ::= "0" | "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9"
<hexletter> ::= "A" | "B" | "C" | "D" | "E" | "F"

<input>    ::= <commands> | ε
<commands> ::= <down> | <up> | <forw> | <back> | <left> |
              <right> | <rep>
<command>  ::= "DOWN" "." | "UP" "." | "FORW" <integer> "." |
              "BACK" <integer> "." | "LEFT" <integer> "." |
              "RIGHT" <integer> "." | "COLOR" <hexadec> "." | <rep>
<down>     ::= "DOWN" "." | "DOWN" "." <commands>
<up>       ::= "UP" "." | "UP" "." <commands>
<forw>     ::= "FORW" <integer> "." | "FORW" <integer> "." <commands>
<back>     ::= "BACK" <integer> "." | "BACK" <integer> "." <commands>
<left>     ::= "LEFT" <integer> "." | "LEFT" <integer> "." <commands>
<right>    ::= "RIGHT" <integer> "." | "RIGHT" <integer> "." <commands>
<color>    ::= "COLOR" <hexadec> "." | "COLOR" <hexadec> "." <commands>
<rep>      ::= "REP" <integer> "" <commands> "" |
              "REP" <integer> <command>
<integer>  ::= <digit> | <integer> <digit>
<hexdigit> ::= <digit> | <hexletter>
<hexadec>  ::= "#" <hexdigit> <hexdigit> <hexdigit> <hexdigit> <hexdigit>
              <hexdigit>
<digit>    ::= "0" | "1" | "2" | "3" | "4" | "5" | "6" | "7" | "8" | "9"
<hexletter> ::= "A" | "B" | "C" | "D" | "E" | "F"

```