

$P \rightarrow \text{program } \{ OI Op \}$

$OI \rightarrow \{ O; \}$

$O \rightarrow T \vee \{ , v \}$

$T \rightarrow \text{int} | \text{string} | \text{bool}$

$V \rightarrow I | I = C$

$C \rightarrow N | L | B_4$

$N \rightarrow [M] D \{ D \}$

$M \rightarrow + | -$

$L \rightarrow \{ A \}$

$Op \rightarrow \{ Op \}$

$Op \rightarrow \text{if } (B) Op \text{ else } Op | I = B$

$| \text{for } ([B]; [B]; [B];) Op$

$| \text{while } (B) Op$

$| \text{break};$

$| \text{goto } I;$

$| \text{read } (I);$

$| \text{write } (B \{ , B \});$

$| SOp$

$| POp$

$| BOp$

$POp \rightarrow I : Op$

$SOp \rightarrow \{ Op \}$

$BOp \rightarrow B$

$D \rightarrow 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9$

$A \rightarrow \{ a | \dots | z \}$

$B_4 \rightarrow \text{true} | \text{false}$

$I \rightarrow a | b | \dots | z | I_a | I_b | \dots | I_z | I_0 | I_1 | \dots | I_9$

$B \rightarrow B_1 \{ \text{or } B_2 \}$

$B_1 \rightarrow B_2 \{ \text{and } B_2 \}$

$B_2 \rightarrow B_3 [< | > | < = | > = | = | ' = |] B_3 | B_3$

$B_3 \rightarrow B_4 \{ [+ | -] B_4 \}$

$B_4 \rightarrow B_5 \{ [* | /] B_5 \}$

$B_5 \rightarrow I | N | L | B_4 | \text{not } B_5 | - B_5 | (B)$

(B-?)