BNF GRAMMAR

letter\_declaration : main\_declaration letter\_tail

letter\_tail: post-declaration <END\_OF\_PRGM>

| <END\_OF\_PRGM>

main\_declaration: <MAIN> block\_statement <END\_OF\_MAIN>

post\_declaration: ps post\_tail

| pps post\_tail

post\_tail: ps

| pps

| ε

statement: functional\_statement statement\_tail

| if\_statement statement\_tail

| loop\_statement statement\_tail

| assignment statement\_tail

statement\_tail: statement

| ε

ps: <FUNCTION> <FUNCTION\_NAME> <ID> expression <END\_OF\_DEF>

ps\_statement

ps\_statement: statement

| block\_statement

pps: <USR\_DEF\_SHAPE> <USR\_SHAPE\_NAME> <ID> expression pps\_tail

pps\_tail: <INHERITANCE> <ID> <END\_OF\_DEF> pps\_statement

| <END\_OF\_DEF> pps\_statement

pps\_statement: user\_def\_variable pps\_statement

| statement

| block\_statement

user\_def\_variable: ID <USR\_DEF\_VAR> ID expression

| ε

functional\_statement: <ID> expression

| <DRAW> functional\_tail

functional\_tail: <ID> expression

| <SHAPE> expression

expression: parameter expression\_tail

expression\_tail: expression <END\_OF\_INPUT>

| <END\_OF\_INPUT>

parameter: <POSITION> <POS\_X\_POS\_Y>

| <WIDTH> term

| <HEIGHT> term

| <STROKE> term

| <COLOR> color

| <RND\_CRNRS>

| <NAME> <ID>

| <START> <POS\_X\_POS\_Y>

| <END> <POS\_X\_POS\_Y>

| <ARROW\_STRT> <POS\_X\_POS\_Y>

| <ARROW\_END> <POS\_X\_POS\_Y>

| <DIR> <DIR\_VAL>

| ε

term: <NUM>

| <ID>

color: <RED>

| <BLUE>

| <GREEN>

| <YELLOW>

| <BLACK>

| <WHITE>

if\_statement: <IF> <PARAMETER> conditional <PARAMETER> if\_tail

conditional: condition conditional\_tail

conditional\_tail: <AND> conditional

| <OR> conditional

| ε

condition: <ID> condition\_tail

condition\_tail: <GRTR> condition

| <LESS> condition

| <LOG\_EQ> condition

| <GRTR\_EQ> condition

| <LESS\_EQ> condition

| ε

if\_tail: statement else\_tail

| block\_statement else\_tail

else\_tail: <ELSE> statement

| <ELSE> block\_statement

| ε

assignment: <ID> <ASSIGNMENT> assignment\_tail

| <ID> <ACCESS> <ASSIGNMENT> assignment\_tail

assignment\_tail: <NUM>

| <ID>

| <TRUE>

| <FALSE>

| color

| <OP> operand

operand: <NUM>

| <ID>

block\_statement: <BEGIN\_OF\_BLOCK> statement <END\_OF\_BLOCK>

loop\_statement: <WHILE> <PARAMETER> conditional <PARAMETER> loop\_tail

| <NUM> <FOR> <PARAMETER> loop\_tail

loop\_tail: statement

| block\_statement

return\_statement: <RETURN> <ID>

| <RETURN> <NUM>