$< Program > \rightarrow < MainClass >< ClassDecl >^*$

$< MainClass > \rightarrow$ class $< cname >$ { Void main ( $< FmlList >$) < MdBody >}

$< ClassDecl > \rightarrow$ class $< cname >$ { $< VarDecl >^* < MdDecl >^*$}

$< VarDecl > \rightarrow < Type >< id >$ ;

$< MdDecl > \rightarrow < Type > < id >$ ( $< FmlList >$) $< MdBody >$

$< FmlList > \rightarrow < Type > < id > < FmlRest >^*$

$| \, \epsilon$

$< FmlRest > \rightarrow , < Type > < id >$

$< Type > \rightarrow$ Int

| Bool

| String

| Void

| $< cname >$

$< MdBody > \rightarrow$ { $< VarDecl >^* < Stmt >^+$}

$< Stmt > \rightarrow$ if ( $< Exp >$){$< Stmt >^+$} else {$< Stmt >^+$}

| while ($< Exp >$){$< Stmt >^*$}

| readln ($< id >$) ;

| println ($< Exp >$) ;

| $< id > = < Exp >$ ;

| $< Atom >< Stmtalpha >$

| return $< Stmtbeta >$

$< Stmtalpha > \rightarrow$ ($< ExpList >$) ;

| . $< id > =< Exp >$;

$< Stmtbeta > \rightarrow$ < Exp > ;

| ;

$< Exp > \rightarrow < BExp >$

$| < AExp >$

$| < SExp >$

$< BExp > \rightarrow < Conj >< BExp' >$

$< BExp' > \rightarrow || < Conj > < Bexp' >$

$| \, \epsilon$

$< Conj > \rightarrow < Rexp >< Conj' >$

$< Conj' > \rightarrow \&\& < RExp >< Conj' >$

$| \ \epsilon$

$< RExp > \rightarrow < AExp > < BOp >< Aexp >$

$| < BGrd >$

$< BOp > \rightarrow <$

$| >$

$| <=$

$| >=$

$| ==$

$| ! =$

$< BGrd > \rightarrow ! < Bgrd >$

$| \text{true}$

$| \text{false}$

$| < Atom >$

$< AExp > \rightarrow < Term >< AExp' >$

$< AExp' > \rightarrow \ + < Term >< AExp' >$

$| - < Term >< AExp' >$

$| \epsilon$

$< Term > \rightarrow < Ftr >< Term' >$

$< Term' > \rightarrow * < Ftr >< Term' >$

$| / < Ftr >< Term' >$

$| \epsilon$

$< Ftr > \rightarrow \text{INTEGER\_LITERAL} \mid - < Ftr > \mid < Atom >$

$< SExp > \rightarrow \text{STRING\_LITERAL} < SExp' >$

$| < Atom >< SExp' >$

$< SExp' > \rightarrow \ + < SExp >< SExp' >$

$| \epsilon$

$< Atom > \rightarrow \text{this} < Atom' >$

$| < id >< Atom' >$

$| \text{new} < cname > ( ) < Atom' >$

$| ( < Exp > ) < Atom' >$

$| \text{null} < Atom' >$

$< Atom' > \rightarrow . < id > < Atom' >$

$| \, ( < ExpList > ) < Atom' >$

$| \, \epsilon$

$< ExpList > \rightarrow < Exp >< ExpRest >^*$

$| \, \epsilon$

$< ExpRest > \rightarrow , < Exp >$