CS152 Phase 2 Grammar

underlined = terminal
ALLCAPS = nonterminal

FUNCTION ->
      function identifier ; beginparams DECLARATIONS endparams beginlocals
DECLARATIONS endlocals beginbody STATEMENTS endbody

PROGRAM ->
      FUNCTION PROGRAM |
      epsilon

DECLARATION ->
      identifier : array [number] of integer |
      identifier : integer

STATEMENT ->
      VAR := EXPRESSION |
      if BOOL-EXP then STATEMENTS ELSESTATEMENTS endif |
      while BOOL-EXP beginloop STATEMENTS endloop |
      do beginloop STATEMENTS endloop while BOOL-EXP |
      read VAR |
      write VAR |
      continue |
      break |
      return EXPRESSION

ELSESTATEMENT ->
      else STATEMENTS |
      epsilon

STATEMENTS->
      STATEMENT ; STATEMENTS |
      STATEMENT ;

BOOL-EXP ->
      not BOOL-EXP |
      COMP-EXP

COMP-EXP ->
      EXPRESSION COMP EXPRESSION

COMP ->
      == |
      <> |
      < |
      > |
      <= |
      >=

EXPRESSION ->
      MULTIPLICATIVE-EXPR |
      MULTIPLICATIVE-EXPR + EXPRESSION |
      MULTIPLICATIVE-EXPR - EXPRESSION

MULTIPLICATIVE-EXPR ->
      TERM |
      TERM * MULTIPLICATIVE-EXPR |
      TERM / MULTIPLICATIVE-EXPR |
      TERM % MULTIPLICATIVE-EXPR

TERM ->
      VAR |
      number |
      (EXPRESSION) |
      identifier (EXPRESSIONS)

EXPRESSIONS ->
      EXPRESSION , EXPRESSIONS |
      EXPRESSION |
      epsilon

VAR ->
      identifier |
      identifier [EXPRESSION]