Good test file output (verbose)

```
Running Syntax Analyzer on Part3BGOOD-1.txt
------------------------------------------------------------------------
Lexeme                          Token Code   Mnemonic     ST Index
------------------------------------------------------------------------
Line 1:

Line 2: UNIT GOOD3B;
UNIT                            15           UNIT           -
Entering Program
GOOD3B                          50           IDEN           0
Entering prog-identifier
Entering identifier
;                               36           SEMI           -
Exiting identifier
Exiting prog-identifier

Line 3:

Line 4: (* This Part 3B test file should have NO errors! *)

Line 5: LABEL LOOP_START, JUMP;
LABEL                           16           LABL           -
Entering Block
Entering label declaration
LOOP_START                      50           IDEN           1
,                               44           COMA           -
JUMP                            50           IDEN           2
;                               36           SEMI           -

Line 6: VAR COUNT, TOTAL : INTEGER;
VAR                             13           VAR            -
Exiting label declaration
Entering variable-dec-sec
COUNT                           50           IDEN           3
Entering variable-declaration
,                               44           COMA           -
TOTAL                           50           IDEN           4
Entering identifier
:                               47           COLN           -
Exiting identifier
INTEGER                          1           INTR           -
Entering type
Entering simple type
;                               36           SEMI           -
Exiting simple type
Exiting type

Line 7: VAR ST : STRING;
VAR                             13           VAR            -
Exiting variable-declaration
Exiting variable-dec-sec
Entering variable-dec-sec
ST                              50           IDEN           5
Entering variable-declaration
:                               47           COLN           -
STRING                          24           STRG           -
Entering type
Entering simple type
;                               36           SEMI           -
Exiting simple type
```

Good test file output (verbose)

```
Exiting type

Line 8: VAR SUM, SUBTOTAL, MAX : REAL;
VAR                             13          VAR           -
Exiting variable-declaration
Exiting variable-dec-sec
Entering variable-dec-sec
SUM                             50          IDEN          6
Entering variable-declaration
,                               44          COMA          -
SUBTOTAL                        50          IDEN          7
Entering identifier
,                               44          COMA          -
Exiting identifier
MAX                             50          IDEN          8
Entering identifier
:                               47          COLN          -
Exiting identifier
REAL                            23          REAL          -
Entering type
Entering simple type
;                               36          SEMI          -
Exiting simple type
Exiting type

Line 9:

Line 10: BEGIN
BEGIN                           11          BGIN          -
Exiting variable-declaration
Exiting variable-dec-sec
Entering Block Body

Line 11: FOR I := 1 TO 10 DO
FOR                              7          FOR           -
Entering statement
I                               50          IDEN          9
Entering variable
Entering identifier
:=                              37          ASGN          -
Exiting identifier
Exiting variable
1                               51          INT           10
Entering simple expression
Entering term
Entering Factor
Entering Unsigned Constant
Entering Unsigned Number
TO                               2          TO            -
Exiting Unsigned Number
Exiting Unsigned Constant
Exiting Factor
Exiting term
Exiting simple expression
10                              51          INT           11
Entering simple expression
Entering term
Entering Factor
Entering Unsigned Constant
Entering Unsigned Number
DO                               3          DO            -
```

Good test file output (verbose)

```
Exiting Unsigned Number
Exiting Unsigned Constant
Exiting Factor
Exiting term
Exiting simple expression

Line 12:   BEGIN
BEGIN                          11          BGIN          -
Entering statement
Entering Block Body

Line 13:   TOTAL := TOTAL + I
TOTAL                          50          IDEN          4
Entering statement
Entering variable
Entering identifier
:=                             37          ASGN          -
Exiting identifier
Exiting variable
TOTAL                          50          IDEN          4
Entering simple expression
Entering term
Entering Factor
Entering variable
Entering identifier
+                              32          PLUS          -
Exiting identifier
Exiting variable
Exiting Factor
Exiting term
Entering addop
I                              50          IDEN          9
Exiting addop
Entering term
Entering Factor
Entering variable
Entering identifier

Line 14:   END;
END                            12          END           -
Exiting identifier
Exiting variable
Exiting Factor
Exiting term
Exiting simple expression
Exiting statement
;                              36          SEMI          -
Exiting Block Body
Exiting statement
Exiting statement

Line 15:

Line 16: REPEAT
REPEAT                         17          REPT          -
Entering statement

Line 17:   TOTAL := TOTAL - 1
TOTAL                          50          IDEN          4
Entering statement
Entering variable
```

Good test file output (verbose)

```
Entering identifier
:=                              37          ASGN          -
Exiting identifier
Exiting variable
TOTAL                           50          IDEN          4
Entering simple expression
Entering term
Entering Factor
Entering variable
Entering identifier
-                               33          MINU          -
Exiting identifier
Exiting variable
Exiting Factor
Exiting term
Entering addop
1                               51          INT           10
Exiting addop
Entering term
Entering Factor
Entering Unsigned Constant
Entering Unsigned Number

Line 18: UNTIL TOTAL <= 20;
UNTIL                           18          UNTL          -
Exiting Unsigned Number
Exiting Unsigned Constant
Exiting Factor
Exiting term
Exiting simple expression
Exiting statement
TOTAL                           50          IDEN          4
Entering rel expression
Entering simple expression
Entering term
Entering Factor
Entering variable
Entering identifier
<=                              41          LESE          -
Exiting identifier
Exiting variable
Exiting Factor
Exiting term
Exiting simple expression
Entering relop
20                              51          INT           12
Exiting relop
Entering simple expression
Entering term
Entering Factor
Entering Unsigned Constant
Entering Unsigned Number
;                               36          SEMI          -
Exiting Unsigned Number
Exiting Unsigned Constant
Exiting Factor
Exiting term
Exiting simple expression
Exiting rel expression
Exiting statement
```

Good test file output (verbose)

```
Line 19:

Line 20: IF TOTAL > 15 THEN
IF                             4           IF             -
Entering statement
TOTAL                         50           IDEN           4
Entering rel expression
Entering simple expression
Entering term
Entering Factor
Entering variable
Entering identifier
>                             38           GTR            -
Exiting identifier
Exiting variable
Exiting Factor
Exiting term
Exiting simple expression
Entering relop
15                            51           INT           13
Exiting relop
Entering simple expression
Entering term
Entering Factor
Entering Unsigned Constant
Entering Unsigned Number
THEN                           5           THEN           -
Exiting Unsigned Number
Exiting Unsigned Constant
Exiting Factor
Exiting term
Exiting simple expression
Exiting rel expression

Line 21:   BEGIN
BEGIN                         11           BGIN           -
Entering statement
Entering Block Body

Line 22:   WHILE TOTAL > 10 DO
WHILE                         14           WHIL           -
Entering statement
TOTAL                         50           IDEN           4
Entering rel expression
Entering simple expression
Entering term
Entering Factor
Entering variable
Entering identifier
>                             38           GTR            -
Exiting identifier
Exiting variable
Exiting Factor
Exiting term
Exiting simple expression
Entering relop
10                            51           INT           11
Exiting relop
Entering simple expression
Entering term
Entering Factor
```

Good test file output (verbose)

```
Entering Unsigned Constant
Entering Unsigned Number
DO                              3           DO              -
Exiting Unsigned Number
Exiting Unsigned Constant
Exiting Factor
Exiting term
Exiting simple expression
Exiting rel expression

Line 23:     TOTAL := TOTAL - (2 * 1)
TOTAL                           50          IDEN            4
Entering statement
Entering variable
Entering identifier
:=                              37          ASGN            -
Exiting identifier
Exiting variable
TOTAL                           50          IDEN            4
Entering simple expression
Entering term
Entering Factor
Entering variable
Entering identifier
-                               33          MINU            -
Exiting identifier
Exiting variable
Exiting Factor
Exiting term
Entering addop
(                               34          LPRN            -
Exiting addop
Entering term
Entering Factor
2                               51          INT             14
Entering simple expression
Entering term
Entering Factor
Entering Unsigned Constant
Entering Unsigned Number
*                               31          MUL             -
Exiting Unsigned Number
Exiting Unsigned Constant
Exiting Factor
Entering mulop
1                               51          INT             10
Exiting mulop
Entering Factor
Entering Unsigned Constant
Entering Unsigned Number
)                               35          RPRN            -
Exiting Unsigned Number
Exiting Unsigned Constant
Exiting Factor
Exiting term
Exiting simple expression

Line 24:   END
END                             12          END             -
Exiting Factor
Exiting term
```

Good test file output (verbose)

```
Exiting simple expression
Exiting statement
Exiting statement

Line 25: ELSE
ELSE                            6           ELSE           -
Exiting Block Body
Exiting statement

Line 26:   IF TOTAL < 12 THEN
IF                              4           IF             -
Entering statement
TOTAL                          50           IDEN           4
Entering rel expression
Entering simple expression
Entering term
Entering Factor
Entering variable
Entering identifier
<                              39           LESS           -
Exiting identifier
Exiting variable
Exiting Factor
Exiting term
Exiting simple expression
Entering relop
12                             51           INT           15
Exiting relop
Entering simple expression
Entering term
Entering Factor
Entering Unsigned Constant
Entering Unsigned Number
THEN                            5           THEN           -
Exiting Unsigned Number
Exiting Unsigned Constant
Exiting Factor
Exiting term
Exiting simple expression
Exiting rel expression

Line 27:     WRITELN(TOTAL);
WRITELN                         9           WTLN           -
Entering statement
(                              34           LPRN           -
TOTAL                          50           IDEN           4
)                              35           RPRN           -
;                              36           SEMI           -
Exiting statement
Exiting statement
Exiting statement

Line 28: JUMP: SUM := 275.55 / 200.77;
JUMP                           50           IDEN           2
Entering statement
:                              47           COLN           -
SUM                            50           IDEN           6
Entering variable
Entering identifier
:=                             37           ASGN           -
Exiting identifier
```

Good test file output (verbose)

```
Exiting variable
275.55                          52          FLOT          16
Entering simple expression
Entering term
Entering Factor
Entering Unsigned Constant
Entering Unsigned Number
/                               30          DIV            -
Exiting Unsigned Number
Exiting Unsigned Constant
Exiting Factor
Entering mulop
200.77                          52          FLOT          17
Exiting mulop
Entering Factor
Entering Unsigned Constant
Entering Unsigned Number
;                               36          SEMI           -
Exiting Unsigned Number
Exiting Unsigned Constant
Exiting Factor
Exiting term
Exiting simple expression
Exiting statement

Line 29: IF SUM > 5.0 THEN
IF                               4          IF             -
Entering statement
SUM                             50          IDEN           6
Entering rel expression
Entering simple expression
Entering term
Entering Factor
Entering variable
Entering identifier
>                               38          GTR            -
Exiting identifier
Exiting variable
Exiting Factor
Exiting term
Exiting simple expression
Entering relop
5.0                             52          FLOT          18
Exiting relop
Entering simple expression
Entering term
Entering Factor
Entering Unsigned Constant
Entering Unsigned Number
THEN                             5          THEN           -
Exiting Unsigned Number
Exiting Unsigned Constant
Exiting Factor
Exiting term
Exiting simple expression
Exiting rel expression

Line 30:   GOTO JUMP
GOTO                             0          GOTO           -
Entering statement
JUMP                            50          IDEN           2
```

Good test file output (verbose)

```
Entering label
Entering identifier

Line 31: END.
END                            12          END           -
Exiting identifier
Exiting label
Exiting statement
Exiting statement
.                              48          PERD          -
Exiting Block Body
Exiting Block
Exiting Program

~~ Congratulations, Part3BGOOD-1.txt compiled without errors! ~~

~~~ Warning! LOOP_START is an unused label! ~~~


 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
|                                 Symbol Table                                          |
 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Lexeme                         Kind         Type        Value                           |
-------------------------------------------------------------------------------------
GOOD3B                          Var        STRING       0                               |
LOOP_START                    Label        STRING       0                               |
JUMP                          Lused        STRING       0                               |
COUNT                           Var        STRING       0                               |
TOTAL                           Var        STRING       0                               |
ST                              Var        STRING       0                               |
SUM                             Var        STRING       0                               |
SUBTOTAL                        Var        STRING       0                               |
MAX                             Var        STRING       0                               |
I                               Var        STRING       0                               |
1                             Const        INT          1                               |
10                            Const        INT          10                              |
20                            Const        INT          20                              |
15                            Const        INT          15                              |
2                             Const        INT          2                               |
12                            Const        INT          12                              |
275.55                        Const        FLOAT        275.54998779296875              |
200.77                        Const        FLOAT        200.77000427246094              |
5.0                           Const        FLOAT        5.0                             |
-------------------------------------------------------------------------------------
```