GnuCOBOL Sample Programs

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This manual documents GnuCOBOL 3.1.2, 25 Jan 2021 at 16:00 GMT build.

Table of Contents

1. FileStat-Msgs

The FileStat-Msgs.cpy copybook contains an EVALUATE statement to translate the two-digit file status codes that may be generated by file I/O statements.

The copybook assumes that the file status data item name is "STATUS" and the error message data item is named "MSG". By using the COPY statement's REPLACING clause, however, you may use the data names you wish, as follows:

```
COPY FileStat-Msgs
    REPLACING STATUS BY file-status-data-item-name
              MSG   BY error-message-data-item-name
```

Here's the FileStat-Msgs.cpy copybook:

```
EVALUATE STATUS
    WHEN 00 MOVE 'SUCCESS                ' TO MSG
    WHEN 02 MOVE 'SUCCESS DUPLICATE      ' TO MSG
    WHEN 04 MOVE 'SUCCESS INCOMPLETE     ' TO MSG
    WHEN 05 MOVE 'SUCCESS OPTIONAL       ' TO MSG
    WHEN 07 MOVE 'SUCCESS NO UNIT        ' TO MSG
    WHEN 10 MOVE 'END OF FILE            ' TO MSG
    WHEN 14 MOVE 'OUT OF KEY RANGE       ' TO MSG
    WHEN 21 MOVE 'KEY INVALID            ' TO MSG
    WHEN 22 MOVE 'KEY EXISTS             ' TO MSG
    WHEN 23 MOVE 'KEY NOT EXISTS         ' TO MSG
    WHEN 30 MOVE 'PERMANENT ERROR        ' TO MSG
    WHEN 31 MOVE 'INCONSISTENT FILENAME  ' TO MSG
    WHEN 34 MOVE 'BOUNDARY VIOLATION     ' TO MSG
    WHEN 35 MOVE 'FILE NOT FOUND         ' TO MSG
    WHEN 37 MOVE 'PERMISSION DENIED      ' TO MSG
    WHEN 38 MOVE 'CLOSED WITH LOCK       ' TO MSG
    WHEN 39 MOVE 'CONFLICT ATTRIBUTE     ' TO MSG
    WHEN 41 MOVE 'ALREADY OPEN           ' TO MSG
    WHEN 42 MOVE 'NOT OPEN               ' TO MSG
    WHEN 43 MOVE 'READ NOT DONE          ' TO MSG
    WHEN 44 MOVE 'RECORD OVERFLOW        ' TO MSG
    WHEN 46 MOVE 'READ ERROR             ' TO MSG
    WHEN 47 MOVE 'INPUT DENIED           ' TO MSG
    WHEN 48 MOVE 'OUTPUT DENIED          ' TO MSG
    WHEN 49 MOVE 'I/O DENIED             ' TO MSG
    WHEN 51 MOVE 'RECORD LOCKED          ' TO MSG
    WHEN 52 MOVE 'END-OF-PAGE            ' TO MSG
    WHEN 57 MOVE 'I/O LINAGE             ' TO MSG
    WHEN 61 MOVE 'FILE SHARING FAILURE   ' TO MSG
    WHEN 91 MOVE 'FILE NOT AVAILABLE     ' TO MSG
END-EVALUATE.
```

2. COBDUMP

COBDUMP is a useful little utility subroutine to produce a formatted hexadecimal and character dump of the data area passed to it.

If you follow the GnuCOBOL forums, you've undoubtedly heard about the CBL_OC_DUMP subroutine that was the winning entry in a GnuCOBOL programming contest. It's a great tool for producing data dumps, and it's now included in the official GnuCOBOL distributions.

For now though, I'll keep using my good ol' "COBDUMP" routine. It's been my travelling companion from COBOL job to COBOL job since 1971. Here it is, all tuned up for GnuCOBOL, with new tires and a fresh coat of paint.

In addition to general GnuCOBOL concepts, this program provides a useful demonstration of the following:

- Coding a GnuCOBOL subroutine
- Using `USAGE POINTER` data items
- Using the `ANY LENGTH` data item attribute
- Coding for an `OPTIONAL` subprogram argument
- Using the `NUMBER-OF-CALL-PARAMETERS` special register
- Using the `C$PRINTABLE` built-in system subroutine

The program source and cross-reference listing, produced using the GnuCOBOL Interactive Compiler front-end (GCic.cbl, one of the sample programs included here), begins on the next page.

Line   Statement   Page: 1
====== ===
     1   >>SOURCE FORMAT IS FIXED
     2   IDENTIFICATION DIVISION.
     3   PROGRAM-ID.   COBDUMP.
     4   *>**
     5   *> This is an OpenCOBOL subroutine that will generate a   **
     6   *> formatted Hex/Char dump of a storage area. To use this   **
     7   *> subroutine, simply CALL it as follows: **
     8   *>   **
     9   *> CALL "COBDUMP" USING <data-item>   **
    10   *>   [<length>]   **
    11   *>   **
    12   *> If specified, the <length> argument specifies how many   **
    13   *> bytes of <data-item> are to be dumped. If absent, all of **
    14   *> <data-item> will be dumped (i.e. LENGTH(<data-item>) will **
    15   *> be assumed for <length>).   **
    16   *>   **
    17   *> >>> Note that the subroutine name MUST be specified in <<< **
    18   *> >>> UPPERCASE   <<< **
    19   *>   **
    20   *> The dump is generated to STDERR, so you may pipe it to a   **
    21   *> file when you execute your program using "2> file".   **
    22   *>   **
    23   *> AUTHOR: GARY L. CUTLER   **
    24   *>   **
    25   *> NOTE: The author has a sentimental attachment to   **
    26   *>   this subroutine - it's been around since 1971 **
    27   *>   and it's been converted to and run on 10 dif- **
    28   *>   ferent operating system/compiler environments **
    29   *>   **
    30   *> DATE-WRITTEN: October 14, 1971   **
    31   *>   **
    32   *>**
    33   *> DATE CHANGE DESCRIPTION   **
    34   *> ====== == **
    35   *> GC1071 Initial coding - Univac Dept. of Defense COBOL '68 **
    36   *> GC0577 Converted to Univac ASCII COBOL (ACOB) - COBOL '74 **
    37   *> GC1182 Converted to Univac UTS4000 COBOL - COBOL '74 w/   **
    38   *>   SCREEN SECTION enhancements   **
    39   *> GC0883 Converted to Honeywell/Bull COBOL - COBOL '74   **
    40   *> GC0983 Converted to IBM VS COBOL - COBOL '74   **
    41   *> GC0887 Converted to IBM VS COBOL II - COBOL '85   **
    42   *> GC1294 Converted to Micro Focus COBOL V3.0 - COBOL '85 w/ **
    43   *>   extensions   **
    44   *> GC0703 Converted to Unisys Universal Compiling System (UCS) **
    45   *>   COBOL (UCOB) - COBOL '85   **
    46   *> GC1204 Converted to Unisys Object COBOL (OCOB) - COBOL 2002 **
    47   *> GC0609 Converted to OpenCOBOL 1.1 - COBOL '85 w/ some COBOL **
    48   *>   2002 features   **
    49   *> GC0410 Enhanced to make 2nd argument (buffer length)   **

====== ===

Line   Statement   Page: 2
====== ===
    50   *>   optional   **
    51   *> GC0211 Ported to IBM Enterprise COBOL   **
    52   *> GC0612 Updated for OpenCOBOL 2.0   **
    53   *>***
    54   ENVIRONMENT DIVISION.
    55   CONFIGURATION SECTION.
    56   REPOSITORY.
    57   FUNCTION ALL INTRINSIC.
    58   DATA DIVISION.
    59   WORKING-STORAGE SECTION.
    60   01 WS-Addr-PTR   USAGE POINTER.
    61   01 WS-Addr-NUM REDEFINES WS-Addr-PTR
    62   USAGE BINARY-LONG.
    63
    64   01 WS-Addr-SUB   USAGE BINARY-CHAR.
    65
    66   01 WS-Addr-Value-NUM   USAGE BINARY-LONG.
    67
    68   01 WS-Buffer-Byte-CHR.
    69   05 WS-Buffer-Byte-NUM   USAGE BINARY-CHAR.
    70
    71   01 WS-Buffer-Length-NUM   USAGE BINARY-LONG.
    72
    73   01 WS-Buffer-SUB   PIC 9(4) COMP-5.
    74
    75   01 WS-Hex-Digit-TXT VALUE '0123456789ABCDEF'.
    76   05 WS-Hex-Digit-CHR   OCCURS 16 TIMES
    77   PIC X(1).
    78
    79   01 WS-Nibble-SUB   PIC 9(1) COMP-5.
    80
    81   01 WS-Nibble-Left-SUB   PIC 9(1) COMP-5.
    82
    83   01 WS-Nibble-Right-SUB   PIC 9(1) COMP-5.
    84
    85   01 WS-Output-Detail-TXT.
    86   05 WS-OD-Addr-TXT.
    87   10 WS-OD-Addr-Hex-CHR   OCCURS 8 TIMES PIC X.
    88   05 FILLER   PIC X(1).
    89   05 WS-OD-Relative-Byte-NUM   PIC Z(3)9.
    90   05 FILLER   PIC X(1).
    91   05 WS-OD-Hex-TXT   OCCURS 16 TIMES.
    92   10 WS-OD-Hex-1-CHR   PIC X.
    93   10 WS-OD-Hex-2-CHR   PIC X.
    94   10 FILLER   PIC X.
    95   05 WS-OD-ASCII-Data-TXT.
    96   10 WS-OD-ASCII-CHR   OCCURS 16 TIMES
    97   PIC X.
    98

==

```
GNU COBOL 2.1 23NOV2013 Source Listing                                    2014/03/27
                           C:/Users/tda010/Documents/Programs/Samples/COBDUMP.cbl
Line    Statement                                                            Page: 3
======  ===========================================================================
   99        01  WS-Output-SUB                        PIC 9(2) COMP-5.
  100
  101        >>SOURCE FORMAT IS FREE
  102        01  WS-Output-Header-1-TXT.
  103            05 VALUE '<-Addr-> Byte <--------------- Hexadecimal ''----------------> <---
      - Char ---->' PIC X(80).
  104
  105        01  WS-Output-Header-2-TXT.
  106            05 VALUE '======== ==== ============================================ ======
      ==========' PIC X(80).
  107        >>SOURCE FORMAT IS FIXED
  108
  109        LINKAGE SECTION.
  110        01  L-Buffer-TXT                          PIC X ANY LENGTH.
  111
  112        01  L-Buffer-Length-NUM                   USAGE BINARY-LONG.
  113
  114        PROCEDURE DIVISION USING L-Buffer-TXT,
  115                              OPTIONAL L-Buffer-Length-NUM.
  116        000-Main SECTION.
  117            IF NUMBER-OF-CALL-PARAMETERS = 1
  118                MOVE LENGTH(L-Buffer-TXT) TO WS-Buffer-Length-NUM
  119            ELSE
  120                MOVE L-Buffer-Length-NUM  TO WS-Buffer-Length-NUM
  121            END-IF
  122            MOVE SPACES TO WS-Output-Detail-TXT
  123            SET WS-Addr-PTR TO ADDRESS OF L-Buffer-TXT
  124            PERFORM 100-Generate-Address
  125            MOVE 0 TO WS-Output-SUB
  126            DISPLAY WS-Output-Header-1-TXT UPON SYSERR
  127            DISPLAY WS-Output-Header-2-TXT UPON SYSERR
  128            PERFORM VARYING WS-Buffer-SUB FROM 1 BY 1
  129                    UNTIL WS-Buffer-SUB > WS-Buffer-Length-NUM
  130                ADD 1 TO WS-Output-SUB
  131                IF WS-Output-SUB = 1
  132                    MOVE WS-Buffer-SUB TO WS-OD-Relative-Byte-NUM
  133                END-IF
  134                MOVE L-Buffer-TXT (WS-Buffer-SUB : 1)
  135                  TO WS-OD-ASCII-CHR (WS-Output-SUB)
  136                     WS-Buffer-Byte-CHR
  137                DIVIDE WS-Buffer-Byte-NUM BY 16
  138                    GIVING WS-Nibble-Left-SUB
  139                    REMAINDER WS-Nibble-Right-SUB
  140                ADD 1 TO WS-Nibble-Left-SUB
  141                       WS-Nibble-Right-SUB
  142                MOVE WS-Hex-Digit-CHR (WS-Nibble-Left-SUB)
  143                  TO WS-OD-Hex-1-CHR  (WS-Output-SUB)
  144                MOVE WS-Hex-Digit-CHR (WS-Nibble-Right-SUB)
  145                  TO WS-OD-Hex-2-CHR  (WS-Output-SUB)


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```

Line   Statement   Page: 4
====== ==
   146   IF WS-Output-SUB = 16
   147   CALL "C$PRINTABLE" USING WS-OD-ASCII-Data-TXT
   148   DISPLAY WS-Output-Detail-TXT UPON SYSERR
   149   MOVE SPACES TO WS-Output-Detail-TXT
   150   MOVE 0 TO WS-Output-SUB
   151   SET WS-Addr-PTR UP BY 16
   152   PERFORM 100-Generate-Address
   153   END-IF
   154   END-PERFORM
   155   IF WS-Output-SUB > 0
   156   CALL "C$PRINTABLE" USING WS-OD-ASCII-Data-TXT
   157   DISPLAY WS-Output-Detail-TXT UPON SYSERR
   158   END-IF
   159   EXIT PROGRAM
   160   .
   161   100-Generate-Address SECTION.
   162   MOVE 8 TO WS-Addr-SUB
   163   MOVE WS-Addr-NUM TO WS-Addr-Value-NUM
   164   MOVE ALL '0' TO WS-OD-Addr-TXT
   165   PERFORM WITH TEST BEFORE UNTIL WS-Addr-Value-NUM = 0
   166   DIVIDE WS-Addr-Value-NUM BY 16
   167   GIVING WS-Addr-Value-NUM
   168   REMAINDER WS-Nibble-SUB
   169   ADD 1 TO WS-Nibble-SUB
   170   MOVE WS-Hex-Digit-CHR (WS-Nibble-SUB)
   171   TO WS-OD-Addr-Hex-CHR (WS-Addr-SUB)
   172   SUBTRACT 1 FROM WS-Addr-SUB
   173   END-PERFORM
   174   .

==

```
GNU COBOL 2.1 23NOV2013 Cross-Reference Listing                        2014/03/27
                             C:/Users/tda010/Documents/Programs/Samples/COBDUMP.cbl
PROGRAM-ID       Identifier/Register/Function    Defn   Where Defined   References        Page: 5
===============  ==============================  ======  ==============  ========================
COBDUMP          000-Main                         116   PROCEDURE
COBDUMP          100-Generate-Address             161   PROCEDURE        124    152
COBDUMP          L-Buffer-Length-NUM              112   LINKAGE          115    120
COBDUMP          L-Buffer-TXT                     110   LINKAGE          114    118    123
                                                                         134
COBDUMP          NUMBER-OF-CALL-PARAMETERS              PROCEDURE        117
COBDUMP          WS-Addr-NUM                       61   WORKING-STORAGE  163
COBDUMP          WS-Addr-PTR                       60   WORKING-STORAGE   61    123*   151*
COBDUMP          WS-Addr-SUB                       64   WORKING-STORAGE  162*   171    172
COBDUMP          WS-Addr-Value-NUM                 66   WORKING-STORAGE  163*   165    166
                                                                         167*
COBDUMP          WS-Buffer-Byte-CHR                68   WORKING-STORAGE  136
COBDUMP          WS-Buffer-Byte-NUM                69   WORKING-STORAGE  137
COBDUMP          WS-Buffer-Length-NUM              71   WORKING-STORAGE  118*   120*   129
COBDUMP          WS-Buffer-SUB                     73   WORKING-STORAGE  128*   129    132
                                                                         134
COBDUMP          WS-Hex-Digit-CHR                  76   WORKING-STORAGE  142    144    170
COBDUMP          WS-Hex-Digit-TXT                  75   WORKING-STORAGE
COBDUMP          WS-Nibble-Left-SUB                81   WORKING-STORAGE  138*   140*   142
COBDUMP          WS-Nibble-Right-SUB               83   WORKING-STORAGE  139*   141*   144
COBDUMP          WS-Nibble-SUB                     79   WORKING-STORAGE  168*   169*   170
COBDUMP          WS-OD-Addr-Hex-CHR                87   WORKING-STORAGE  171*
COBDUMP          WS-OD-Addr-TXT                    86   WORKING-STORAGE  164*
COBDUMP          WS-OD-ASCII-CHR                   96   WORKING-STORAGE  135*
COBDUMP          WS-OD-ASCII-Data-TXT              95   WORKING-STORAGE  147C   156C
COBDUMP          WS-OD-Hex-1-CHR                   92   WORKING-STORAGE  143*
COBDUMP          WS-OD-Hex-2-CHR                   93   WORKING-STORAGE  145*
COBDUMP          WS-OD-Hex-TXT                     91   WORKING-STORAGE
COBDUMP          WS-OD-Relative-Byte-NUM           89   WORKING-STORAGE  132*
COBDUMP          WS-Output-Detail-TXT              85   WORKING-STORAGE  122*   148    149*
                                                                         157
COBDUMP          WS-Output-Header-1-TXT           102   WORKING-STORAGE  126
COBDUMP          WS-Output-Header-2-TXT           105   WORKING-STORAGE  127
COBDUMP          WS-Output-SUB                     99   WORKING-STORAGE  125*   130*   131
                                                                         135    143    145
                                                                         146    150*   155
```

```
===================================================================================================
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```

3. Colors

Colors is a handy little GnuCOBOL utility program that will produce a screen showing all possible combinations of:

- FOREGROUND-COLOR
- BACKGROUND-COLOR
- BLINKING (or absence of BLINKING)
- HIGHLIGHT, LOWLIGHT or absence of either (i.e. "Normal")
- REVERSE-VIDEO

Here is a sample of the screen generated by this program:

The program source and cross-reference listing, produced using the cobxref, begins on the next page.

```
ACS Cobol Xref v2.02.02        Dictionary File for COLORS     07/12/2019  16:57:00:16

    1            >>SOURCE FREE
    2    IDENTIFICATION DIVISION.
    3    PROGRAM-ID. colors.
    4    DATA DIVISION.
    5    WORKING-STORAGE SECTION.
    6    SCREEN SECTION.
    7    01 S-COLORTST-SCR BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 BLANK SCREEN.
    8    05 LINE 01.
    9    10 COL 1 VALUE ' LOWLIGHT  -------- HIGHLIGHT  LOWLIGHT  -------- HIGHLIGHT'.
   10    05 LINE + 1.
   11    10 COL 1 VALUE ' --------  --------  --------  --------  --------  --------'.
   12    05 LINE + 1.
   13    10 COL 1 VALUE ' --------  --------  --------   REVERSE   REVERSE   REVERSE'.
   14    05 LINE + 1.
   15    10 COL 1 VALUE ' 01234567  01234567  01234567  01234567  01234567  01234567'.
   16    05 LINE + 1.
   17    10 COL 1 VALUE '0         0         0         0         0         0        '.
   18    05 LINE + 1.
   19    10 COL 1 VALUE '1         1         1         1         1         1        '.
   20    05 LINE + 1.
   21    10 COL 1 VALUE '2         2         2         2         2         2        '.
   22    05 LINE + 1.
   23    10 COL 1 VALUE '3    1    3    2    3    3    3    4    3    5    3    6    '.
   24    05 LINE + 1.
   25    10 COL 1 VALUE '4         4         4         4         4         4        '.
   26    05 LINE + 1.
   27    10 COL 1 VALUE '5         5         5         5         5         5        '.
   28    05 LINE + 1.
   29    10 COL 1 VALUE '6         6         6         6         6         6        '.
   30    05 LINE + 1.
   31    10 COL 1 VALUE '7         7         7         7         7         7        '.
   32    05 LINE + 1.
   33    10 COL 1 VALUE ' LOWLIGHT  -------- HIGHLIGHT  LOWLIGHT  -------- HIGHLIGHT'.
   34    05 LINE + 1.
   35    10 COL 1 VALUE '    BLINK     BLINK     BLINK     BLINK     BLINK     BLINK'.
   36    05 LINE + 1.
   37    10 COL 1 VALUE ' --------  --------  --------   REVERSE   REVERSE   REVERSE'.
   38    05 LINE + 1.
   39    10 COL 1 VALUE ' 01234567  01234567  01234567  01234567  01234567  01234567'.
   40    05 LINE + 1.
   41    10 COL 1 VALUE '0         0         0         0         0         0        '.
   42    05 LINE + 1.
   43    10 COL 1 VALUE '1         1         1         1         1         1        '.
   44    05 LINE + 1.
   45    10 COL 1 VALUE '2         2         2         2         2         2        '.
   46    05 LINE + 1.
   47    10 COL 1 VALUE '3    7    3    8    3    9    3   10    3   11    3   12    '.
   48    05 LINE + 1.
   49    10 COL 1 VALUE '4         4         4         4         4         4        '.
   50    05 LINE + 1.
   51    10 COL 1 VALUE '5         5         5         5         5         5        '.
   52    05 LINE + 1.
   53    10 COL 1 VALUE '6         6         6         6         6         6        '.
   54    05 LINE + 1.
```

```
ACS Cobol Xref v2.02.02          Dictionary File for COLORS     07/12/2019  16:57:00:16
 55    10 COL 1 VALUE '7         7          7          7          7          7          '.
 56    *> #1
 57    05 LINE 05.
 58    10 COL 2   BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 LOWLIGHT VALUE 'X'.
 59    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 LOWLIGHT VALUE 'X'.
 60    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 LOWLIGHT VALUE 'X'.
 61    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 LOWLIGHT VALUE 'X'.
 62    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 LOWLIGHT VALUE 'X'.
 63    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 LOWLIGHT VALUE 'X'.
 64    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 LOWLIGHT VALUE 'X'.
 65    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 LOWLIGHT VALUE 'X'.
 66    05 LINE + 1.
 67    10 COL 2   BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 LOWLIGHT VALUE 'X'.
 68    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 LOWLIGHT VALUE 'X'.
 69    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 LOWLIGHT VALUE 'X'.
 70    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 LOWLIGHT VALUE 'X'.
 71    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 LOWLIGHT VALUE 'X'.
 72    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 LOWLIGHT VALUE 'X'.
 73    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 LOWLIGHT VALUE 'X'.
 74    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 LOWLIGHT VALUE 'X'.
 75    05 LINE + 1.
 76    10 COL 2   BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 LOWLIGHT VALUE 'X'.
 77    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 LOWLIGHT VALUE 'X'.
 78    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 LOWLIGHT VALUE 'X'.
 79    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 LOWLIGHT VALUE 'X'.
 80    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 LOWLIGHT VALUE 'X'.
 81    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 LOWLIGHT VALUE 'X'.
 82    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 LOWLIGHT VALUE 'X'.
 83    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 LOWLIGHT VALUE 'X'.
 84    05 LINE + 1.
 85    10 COL 2   BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 LOWLIGHT VALUE 'X'.
 86    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 LOWLIGHT VALUE 'X'.
 87    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 LOWLIGHT VALUE 'X'.
 88    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 LOWLIGHT VALUE 'X'.
 89    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 LOWLIGHT VALUE 'X'.
 90    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 LOWLIGHT VALUE 'X'.
 91    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 LOWLIGHT VALUE 'X'.
 92    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 LOWLIGHT VALUE 'X'.
 93    05 LINE + 1.
 94    10 COL 2   BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 LOWLIGHT VALUE 'X'.
 95    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 LOWLIGHT VALUE 'X'.
 96    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 LOWLIGHT VALUE 'X'.
 97    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 LOWLIGHT VALUE 'X'.
 98    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 LOWLIGHT VALUE 'X'.
 99    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 LOWLIGHT VALUE 'X'.
100    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 LOWLIGHT VALUE 'X'.
101    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 LOWLIGHT VALUE 'X'.
102    05 LINE + 1.
103    10 COL 2   BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 LOWLIGHT VALUE 'X'.
104    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 LOWLIGHT VALUE 'X'.
105    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 LOWLIGHT VALUE 'X'.
106    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 LOWLIGHT VALUE 'X'.
107    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 LOWLIGHT VALUE 'X'.
108    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 LOWLIGHT VALUE 'X'.
```

```
ACS Cobol Xref v2.02.02        Dictionary File for COLORS    07/12/2019  16:57:00:17

    109     10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 LOWLIGHT VALUE 'X'.
    110     10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 LOWLIGHT VALUE 'X'.
    111     05 LINE + 1.
    112     10 COL 2  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 LOWLIGHT VALUE 'X'.
    113     10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 LOWLIGHT VALUE 'X'.
    114     10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 LOWLIGHT VALUE 'X'.
    115     10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 LOWLIGHT VALUE 'X'.
    116     10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 LOWLIGHT VALUE 'X'.
    117     10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 LOWLIGHT VALUE 'X'.
    118     10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 LOWLIGHT VALUE 'X'.
    119     10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 LOWLIGHT VALUE 'X'.
    120     05 LINE + 1.
    121     10 COL 2  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 LOWLIGHT VALUE 'X'.
    122     10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 LOWLIGHT VALUE 'X'.
    123     10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 LOWLIGHT VALUE 'X'.
    124     10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 LOWLIGHT VALUE 'X'.
    125     10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 LOWLIGHT VALUE 'X'.
    126     10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 LOWLIGHT VALUE 'X'.
    127     10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 LOWLIGHT VALUE 'X'.
    128     10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 LOWLIGHT VALUE 'X'.
    129     *> #2
    130     05 LINE 05.
    131     10 COL 12  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 VALUE 'X'.
    132     10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 VALUE 'X'.
    133     10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 VALUE 'X'.
    134     10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 VALUE 'X'.
    135     10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 VALUE 'X'.
    136     10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 VALUE 'X'.
    137     10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 VALUE 'X'.
    138     10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 VALUE 'X'.
    139     05 LINE + 1.
    140     10 COL 12  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 VALUE 'X'.
    141     10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 VALUE 'X'.
    142     10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 VALUE 'X'.
    143     10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 VALUE 'X'.
    144     10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 VALUE 'X'.
    145     10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 VALUE 'X'.
    146     10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 VALUE 'X'.
    147     10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 VALUE 'X'.
    148     05 LINE + 1.
    149     10 COL 12  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 VALUE 'X'.
    150     10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 VALUE 'X'.
    151     10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 VALUE 'X'.
    152     10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 VALUE 'X'.
    153     10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 VALUE 'X'.
    154     10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 VALUE 'X'.
    155     10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 VALUE 'X'.
    156     10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 VALUE 'X'.
    157     05 LINE + 1.
    158     10 COL 12  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 VALUE 'X'.
    159     10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 VALUE 'X'.
    160     10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 VALUE 'X'.
    161     10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 VALUE 'X'.
    162     10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 VALUE 'X'.
```

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  163   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 VALUE 'X'.
  164   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 VALUE 'X'.
  165   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 VALUE 'X'.
  166   05 LINE + 1.
  167   10 COL 12  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 VALUE 'X'.
  168   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 VALUE 'X'.
  169   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 VALUE 'X'.
  170   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 VALUE 'X'.
  171   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 VALUE 'X'.
  172   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 VALUE 'X'.
  173   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 VALUE 'X'.
  174   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 VALUE 'X'.
  175   05 LINE + 1.
  176   10 COL 12  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 VALUE 'X'.
  177   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 VALUE 'X'.
  178   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 VALUE 'X'.
  179   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 VALUE 'X'.
  180   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 VALUE 'X'.
  181   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 VALUE 'X'.
  182   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 VALUE 'X'.
  183   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 VALUE 'X'.
  184   05 LINE + 1.
  185   10 COL 12  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 VALUE 'X'.
  186   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 VALUE 'X'.
  187   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 VALUE 'X'.
  188   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 VALUE 'X'.
  189   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 VALUE 'X'.
  190   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 VALUE 'X'.
  191   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 VALUE 'X'.
  192   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 VALUE 'X'.
  193   05 LINE + 1.
  194   10 COL 12  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 VALUE 'X'.
  195   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 VALUE 'X'.
  196   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 VALUE 'X'.
  197   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 VALUE 'X'.
  198   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 VALUE 'X'.
  199   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 VALUE 'X'.
  200   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 VALUE 'X'.
  201   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 VALUE 'X'.
  202   *> #3
  203   05 LINE 05.
  204   10 COL 22  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
  205   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
  206   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
  207   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
  208   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
  209   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
  210   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
  211   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
  212   05 LINE + 1.
  213   10 COL 22  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
  214   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
  215   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
  216   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
```

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    217    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    218    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    219    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    220    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    221    05 LINE + 1.
    222    10 COL 22  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    223    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    224    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    225    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
    226    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    227    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    228    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    229    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    230    05 LINE + 1.
    231    10 COL 22  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    232    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    233    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    234    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
    235    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    236    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    237    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    238    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    239    05 LINE + 1.
    240    10 COL 22  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    241    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    242    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    243    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
    244    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    245    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    246    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    247    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    248    05 LINE + 1.
    249    10 COL 22  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    250    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    251    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    252    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
    253    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    254    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    255    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    256    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    257    05 LINE + 1.
    258    10 COL 22  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    259    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    260    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    261    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
    262    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    263    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    264    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    265    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    266    05 LINE + 1.
    267    10 COL 22  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    268    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    269    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    270    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
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    271    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    272    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    273    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    274    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    275    *> #4
    276    05 LINE 05.
    277    10 COL 32  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    278    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    279    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    280    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    281    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    282    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    283    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    284    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    285    05 LINE + 1.
    286    10 COL 32  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    287    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    288    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    289    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    290    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    291    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    292    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    293    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    294    05 LINE + 1.
    295    10 COL 32  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    296    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    297    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    298    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    299    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    300    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    301    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    302    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    303    05 LINE + 1.
    304    10 COL 32  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    305    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    306    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    307    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    308    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    309    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    310    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    311    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    312    05 LINE + 1.
    313    10 COL 32  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    314    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    315    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    316    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    317    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    318    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    319    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    320    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    321    05 LINE + 1.
    322    10 COL 32 BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    323    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    324    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
```

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   325   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   326   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   327   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   328   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   329   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   330   05 LINE + 1.
   331   10 COL 32  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   332   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   333   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   334   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   335   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   336   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   337   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   338   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   339   05 LINE + 1.
   340   10 COL 32  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   341   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   342   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   343   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   344   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   345   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   346   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   347   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   348   *> #5
   349   05 LINE 05.
   350   10 COL 42  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
   351   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
   352   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
   353   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
   354   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
   355   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
   356   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
   357   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
   358   05 LINE + 1.
   359   10 COL 42  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
   360   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
   361   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
   362   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
   363   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
   364   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
   365   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
   366   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
   367   05 LINE + 1.
   368   10 COL 42  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
   369   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
   370   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
   371   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
   372   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
   373   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
   374   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
   375   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
   376   05 LINE + 1.
   377   10 COL 42  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
   378   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
```

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  379   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
  380   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
  381   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
  382   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
  383   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
  384   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
  385   05 LINE + 1.
  386   10 COL 42  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
  387   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
  388   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
  389   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
  390   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
  391   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
  392   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
  393   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
  394   05 LINE + 1.
  395   10 COL 42  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
  396   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
  397   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
  398   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
  399   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
  400   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
  401   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
  402   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
  403   05 LINE + 1.
  404   10 COL 42  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
  405   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
  406   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
  407   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
  408   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
  409   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
  410   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
  411   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
  412   05 LINE + 1.
  413   10 COL 42  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
  414   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
  415   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
  416   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
  417   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
  418   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
  419   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
  420   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
  421   *> #6
  422   05 LINE 05.
  423   10 COL 52  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  424   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  425   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  426   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  427   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  428   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  429   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  430   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  431   05 LINE + 1.
  432   10 COL 52  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
```

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ACS Cobol Xref v2.02.02        Dictionary File for COLORS    07/12/2019  16:57:00:19

  433    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  434    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  435    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  436    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  437    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  438    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  439    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  440    05 LINE + 1.
  441    10 COL 52  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  442    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  443    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  444    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  445    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  446    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  447    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  448    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  449    05 LINE + 1.
  450    10 COL 52  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  451    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  452    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  453    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  454    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  455    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  456    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  457    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  458    05 LINE + 1.
  459    10 COL 52  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  460    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  461    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  462    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  463    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  464    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  465    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  466    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  467    05 LINE + 1.
  468    10 COL 52  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  469    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  470    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  471    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  472    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  473    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  474    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  475    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  476    05 LINE + 1.
  477    10 COL 52  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  478    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  479    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  480    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  481    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  482    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  483    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  484    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
  485    05 LINE + 1.
  486    10 COL 52  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
```

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ACS Cobol Xref v2.02.02        Dictionary File for COLORS    07/12/2019  16:57:00:19

487   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
488   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
489   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
490   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
491   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
492   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
493   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
494   *> #7
495   05 LINE 17.
496   10 COL 02  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
497   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
498   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
499   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
500   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
501   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
502   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
503   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
504   05 LINE + 1.
505   10 COL 02  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
506   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
507   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
508   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
509   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
510   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
511   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
512   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
513   05 LINE + 1.
514   10 COL 02  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
515   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
516   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
517   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
518   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
519   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
520   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
521   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
522   05 LINE + 1.
523   10 COL 02  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
524   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
525   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
526   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
527   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
528   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
529   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
530   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
531   05 LINE + 1.
532   10 COL 02  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
533   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
534   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
535   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
536   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
537   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
538   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
539   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
540   05 LINE + 1.
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ACS Cobol Xref v2.02.02        Dictionary File for COLORS     07/12/2019  16:57:00:19

541   10 COL 02  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
542   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
543   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
544   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
545   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
546   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
547   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
548   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
549   05 LINE + 1.
550   10 COL 02  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
551   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
552   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
553   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
554   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
555   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
556   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
557   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
558   05 LINE + 1.
559   10 COL 02  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
560   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
561   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
562   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
563   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
564   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
565   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
566   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
567   *> #8
568   05 LINE 17.
569   10 COL 12  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
570   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
571   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
572   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
573   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
574   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
575   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
576   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
577   05 LINE + 1.
578   10 COL 12  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
579   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
580   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
581   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
582   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
583   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
584   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
585   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
586   05 LINE + 1.
587   10 COL 12  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
588   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
589   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
590   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
591   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
592   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
593   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
594   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
```

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ACS Cobol Xref v2.02.02        Dictionary File for COLORS     07/12/2019  16:57:00:19
595    05 LINE + 1.
596    10 COL 12  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
597    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
598    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
599    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
600    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
601    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
602    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
603    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
604    05 LINE + 1.
605    10 COL 12  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
606    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
607    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
608    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
609    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
610    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
611    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
612    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
613    05 LINE + 1.
614    10 COL 12  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
615    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
616    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
617    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
618    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
619    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
620    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
621    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
622    05 LINE + 1.
623    10 COL 12  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
624    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
625    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
626    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
627    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
628    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
629    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
630    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
631    05 LINE + 1.
632    10 COL 12  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
633    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
634    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
635    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
636    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
637    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
638    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
639    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
640    *> #9
641    05 LINE 17.
642    10 COL 22  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 HIGHLIGHT BLINK VALUE 'X'.
643    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 HIGHLIGHT BLINK VALUE 'X'.
644    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 HIGHLIGHT BLINK VALUE 'X'.
645    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 HIGHLIGHT BLINK VALUE 'X'.
646    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 HIGHLIGHT BLINK VALUE 'X'.
647    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 HIGHLIGHT BLINK VALUE 'X'.
648    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 HIGHLIGHT BLINK VALUE 'X'.
```

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ACS Cobol Xref v2.02.02         Dictionary File for COLORS     07/12/2019  16:57:00:20
    649    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE 'X'.
    650    05 LINE + 1.
    651    10 COL 22  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 HIGHLIGHT BLINK VALUE 'X'.
    652    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 HIGHLIGHT BLINK VALUE 'X'.
    653    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 HIGHLIGHT BLINK VALUE 'X'.
    654    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 HIGHLIGHT BLINK VALUE 'X'.
    655    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 HIGHLIGHT BLINK VALUE 'X'.
    656    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 HIGHLIGHT BLINK VALUE 'X'.
    657    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 HIGHLIGHT BLINK VALUE 'X'.
    658    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE 'X'.
    659    05 LINE + 1.
    660    10 COL 22  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 HIGHLIGHT BLINK VALUE 'X'.
    661    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 HIGHLIGHT BLINK VALUE 'X'.
    662    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 HIGHLIGHT BLINK VALUE 'X'.
    663    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 HIGHLIGHT BLINK VALUE 'X'.
    664    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 HIGHLIGHT BLINK VALUE 'X'.
    665    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 HIGHLIGHT BLINK VALUE 'X'.
    666    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 HIGHLIGHT BLINK VALUE 'X'.
    667    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE 'X'.
    668    05 LINE + 1.
    669    10 COL 22  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 HIGHLIGHT BLINK VALUE 'X'.
    670    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 HIGHLIGHT BLINK VALUE 'X'.
    671    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 HIGHLIGHT BLINK VALUE 'X'.
    672    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 HIGHLIGHT BLINK VALUE 'X'.
    673    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 HIGHLIGHT BLINK VALUE 'X'.
    674    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 HIGHLIGHT BLINK VALUE 'X'.
    675    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 HIGHLIGHT BLINK VALUE 'X'.
    676    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE 'X'.
    677    05 LINE + 1.
    678    10 COL 22  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 HIGHLIGHT BLINK VALUE 'X'.
    679    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 HIGHLIGHT BLINK VALUE 'X'.
    680    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 HIGHLIGHT BLINK VALUE 'X'.
    681    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 HIGHLIGHT BLINK VALUE 'X'.
    682    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 HIGHLIGHT BLINK VALUE 'X'.
    683    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 HIGHLIGHT BLINK VALUE 'X'.
    684    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 HIGHLIGHT BLINK VALUE 'X'.
    685    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE 'X'.
    686    05 LINE + 1.
    687    10 COL 22  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 HIGHLIGHT BLINK VALUE 'X'.
    688    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 HIGHLIGHT BLINK VALUE 'X'.
    689    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 HIGHLIGHT BLINK VALUE 'X'.
    690    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 HIGHLIGHT BLINK VALUE 'X'.
    691    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 HIGHLIGHT BLINK VALUE 'X'.
    692    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 HIGHLIGHT BLINK VALUE 'X'.
    693    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 HIGHLIGHT BLINK VALUE 'X'.
    694    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE 'X'.
    695    05 LINE + 1.
    696    10 COL 22  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 HIGHLIGHT BLINK VALUE 'X'.
    697    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 HIGHLIGHT BLINK VALUE 'X'.
    698    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 HIGHLIGHT BLINK VALUE 'X'.
    699    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 HIGHLIGHT BLINK VALUE 'X'.
    700    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 HIGHLIGHT BLINK VALUE 'X'.
    701    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 HIGHLIGHT BLINK VALUE 'X'.
    702    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 HIGHLIGHT BLINK VALUE 'X'.
```

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```
703    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE 'X'.
704    05 LINE + 1.
705    10 COL 22  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 HIGHLIGHT BLINK VALUE 'X'.
706    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 HIGHLIGHT BLINK VALUE 'X'.
707    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 HIGHLIGHT BLINK VALUE 'X'.
708    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 HIGHLIGHT BLINK VALUE 'X'.
709    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 HIGHLIGHT BLINK VALUE 'X'.
710    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 HIGHLIGHT BLINK VALUE 'X'.
711    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 HIGHLIGHT BLINK VALUE 'X'.
712    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE 'X'.
713    *> #10
714    05 LINE 17.
715    10 COL 32  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
716    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
717    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
718    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
719    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
720    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
721    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
722    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
723    05 LINE + 1.
724    10 COL 32  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
725    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
726    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
727    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
728    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
729    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
730    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
731    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
732    05 LINE + 1.
733    10 COL 32  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
734    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
735    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
736    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
737    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
738    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
739    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
740    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
741    05 LINE + 1.
742    10 COL 32  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
743    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
744    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
745    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
746    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
747    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
748    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
749    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
750    05 LINE + 1.
751    10 COL 32  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
752    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
753    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
754    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
755    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
756    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
```

```
ACS Cobol Xref v2.02.02        Dictionary File for COLORS     07/12/2019  16:57:00:20

   757   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   758   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   759   05 LINE + 1.
   760   10 COL 32  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   761   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   762   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   763   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   764   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   765   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   766   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   767   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   768   05 LINE + 1.
   769   10 COL 32  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   770   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   771   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   772   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   773   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   774   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   775   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   776   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   777   05 LINE + 1.
   778   10 COL 32  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   779   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   780   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   781   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   782   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   783   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   784   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   785   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   786   *> #11
   787   05 LINE 17.
   788   10 COL 42  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE 'X'.
   789   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE 'X'.
   790   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE 'X'.
   791   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE 'X'.
   792   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE 'X'.
   793   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE 'X'.
   794   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE 'X'.
   795   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE 'X'.
   796   05 LINE + 1.
   797   10 COL 42  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE 'X'.
   798   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE 'X'.
   799   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE 'X'.
   800   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE 'X'.
   801   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE 'X'.
   802   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE 'X'.
   803   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE 'X'.
   804   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE 'X'.
   805   05 LINE + 1.
   806   10 COL 42  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE 'X'.
   807   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE 'X'.
   808   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE 'X'.
   809   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE 'X'.
   810   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE 'X'.
```

```
ACS Cobol Xref v2.02.02        Dictionary File for COLORS    07/12/2019  16:57:00:21

  811   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE 'X'.
  812   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE 'X'.
  813   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE 'X'.
  814   05 LINE + 1.
  815   10 COL 42  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE 'X'.
  816   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE 'X'.
  817   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE 'X'.
  818   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE 'X'.
  819   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE 'X'.
  820   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE 'X'.
  821   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE 'X'.
  822   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE 'X'.
  823   05 LINE + 1.
  824   10 COL 42  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE 'X'.
  825   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE 'X'.
  826   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE 'X'.
  827   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE 'X'.
  828   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE 'X'.
  829   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE 'X'.
  830   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE 'X'.
  831   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE 'X'.
  832   05 LINE + 1.
  833   10 COL 42  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE 'X'.
  834   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE 'X'.
  835   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE 'X'.
  836   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE 'X'.
  837   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE 'X'.
  838   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE 'X'.
  839   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE 'X'.
  840   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE 'X'.
  841   05 LINE + 1.
  842   10 COL 42  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE 'X'.
  843   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE 'X'.
  844   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE 'X'.
  845   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE 'X'.
  846   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE 'X'.
  847   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE 'X'.
  848   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE 'X'.
  849   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE 'X'.
  850   05 LINE + 1.
  851   10 COL 42  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE 'X'.
  852   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE 'X'.
  853   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE 'X'.
  854   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE 'X'.
  855   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE 'X'.
  856   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE 'X'.
  857   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE 'X'.
  858   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE 'X'.
  859   *> #12
  860   05 LINE 17.
  861   10 COL 52  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
  862   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
  863   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
  864   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
```

```
ACS Cobol Xref v2.02.02        Dictionary File for COLORS    07/12/2019  16:57:00:21

    865    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    866    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    867    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    868    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    869    05 LINE + 1.
    870    10 COL 52  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    871    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    872    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    873    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    874    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    875    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    876    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    877    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    878    05 LINE + 1.
    879    10 COL 52  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    880    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    881    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    882    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    883    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    884    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    885    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    886    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    887    05 LINE + 1.
    888    10 COL 52  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    889    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    890    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    891    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    892    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    893    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    894    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    895    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    896    05 LINE + 1.
    897    10 COL 52  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    898    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    899    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    900    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    901    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    902    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    903    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    904    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    905    05 LINE + 1.
    906    10 COL 52  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    907    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    908    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    909    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    910    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    911    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    912    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    913    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    914    05 LINE + 1.
    915    10 COL 52  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    916    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    917    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    918    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
```

```
ACS Cobol Xref v2.02.02        Dictionary File for COLORS    07/12/2019  16:57:00:21
    919    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    920    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    921    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    922    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    923    05 LINE + 1.
    924    10 COL 52  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    925    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    926    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    927    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    928    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    929    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    930    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    931    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
    932    PROCEDURE DIVISION.
    933    000-Main SECTION.
    934     DISPLAY S-COLORTST-SCR.
    935     STOP RUN.
    936        *>>>Info: Total Copy Depth Used = 01
```

```
ACS Cobol Xref v2.02.02        Dictionary File for COLORS    07/12/2019  16:57:00:22
Symbols of Module: COLORS (COLORS)
---------------------------------

Data Section (SCREEN)          Defn    Locations
-----------------------------+-------------------------------------------------------------

S-COLORTST-SCR                 000007S  000934
```

```
ACS Cobol Xref v2.02.02        Dictionary File for COLORS    07/12/2019  16:57:00:22
Symbols of Module: COLORS (COLORS)
--------------------------------
Procedure                       Defn    Locations
-----------------------------+-----------------------------------------------------------

None
```

```
ACS Cobol Xref v2.02.02         Dictionary File for COLORS    07/12/2019  16:57:00:22
Symbols of Module: COLORS (COLORS)
--------------------------------
Unreferenced Working Storage Symbols

None
```

```
ACS Cobol Xref v2.02.02        Dictionary File for COLORS    07/12/2019  16:57:00:22
Symbols of Module: COLORS (COLORS)
--------------------------------
Unreferenced Procedures

None
```

4. DAY-FROM-DATE

DAY-FROM-DATE is a user-defined function that accepts a single numeric `USAGE DISPLAY` argument –æ either a 7-digit Julian date in the form *yyyyddd* or an 8-digit Gregorian date in the form *yyyymmdd*. This argument may be supplied either as a PIC 9(n) USAGE DISPLAY data item (n=7 or 8) or as a 7- or 8-digit numeric literal.

The subroutine will determine if the supplied date is a valid date in the year range 0000 through 9999 and what day of the week that date fell on.

The value returned will be zero if the date argument was invalid or an integer in the range 1-7, representing Sunday through Saturday.

In addition to general GnuCOBOL concepts, this program provides a useful demonstration of the following:

- Coding a GnuCOBOL user-defined function
- Using the `ANY LENGTH` data item attribute
- Using the `RETURNING` option in a subprogram
- Using the `DATE-OF-INTEGER` intrinsic function
- Using the `C$PARAMSIZE` built-in system subroutine

The program source and cross-reference listing, produced using the GnuCOBOL Interactive Compiler front-end (GCic.cbl, one of the sample programs included here), begins on the next page.

```
GNU COBOL 2.1 23NOV2013 Source Listing                                    2014/03/27
                              C:/Users/tda010/Documents/Programs/Samples/DAY-FROM-DATE.cbl
Line    Statement                                                            Page: 1
======  ==============================================================================
     1         >>SOURCE FORMAT IS FIXED
     2          IDENTIFICATION DIVISION.
     3          FUNCTION-ID. DAY-FROM-DATE.
     4         *>****************************************************************
     5         *> This GNU COBOL user-defined function converts a Gregorian or **
     6         *> Julian date into a numeric day of the week.                 **
     7         *>****************************************************************
     8         *> Arguments:                                                  **
     9         *>                                                             **
    10         *> Calendar-Date    A PIC 9 data item or numeric literal which **
    11         *>                  will be treated as a calendar date as fol- **
    12         *>                  lows:                                       **
    13         *>                                                             **
    14         *>                  7-digit value: Interpreted as a Julian date **
    15         *>                                 in the form yyyyddd         **
    16         *>                  8-digit value: Interpreted as a Gregorian   **
    17         *>                                 date in the form yyyymmdd    **
    18         *>                                                             **
    19         *> The result returned will be one of the following:           **
    20         *>                                                             **
    21         *> 0:  The supplied date is invalid                            **
    22         *> 1:  The supplied date is a Sunday                           **
    23         *> 2:  The supplied date is a Monday                           **
    24         *> .                                                           **
    25         *> .                                                           **
    26         *> .                                                           **
    27         *> 7:  The supplied date is a Saturday                         **
    28         *>****************************************************************
    29          ENVIRONMENT DIVISION.
    30          CONFIGURATION SECTION.
    31          REPOSITORY.
    32              FUNCTION ALL INTRINSIC.
    33          DATA DIVISION.
    34          WORKING-STORAGE SECTION.
    35          01  WS-Input-Date-DT.
    36              05 WS-ID-YYYY-NUM                   PIC 9(4).
    37              05 WS-ID-MM-NUM                     PIC 9(2).
    38              05 WS-ID-DD-NUM                     PIC 9(2).
    39          01  WS-Y-NUM                            BINARY-LONG.
    40          01  WS-M-NUM                            BINARY-LONG.
    41          01  WS-Temp-NUM                         BINARY-LONG.
    42          LINKAGE SECTION.
    43          01  L-Input-Date-DT                     PIC 9 ANY LENGTH.
    44          01  L-Output-Day-NUM                    USAGE BINARY-LONG
    45                                                  SIGNED.
    46          PROCEDURE DIVISION USING L-Input-Date-DT
    47                      RETURNING L-Output-Day-NUM.
    48          000-Main SECTION.
    49              CALL "C$PARAMSIZE" USING 1


==================================================================================================
GCic for OSX Copyright (C) 2009-2014, Gary L. Cutler, GPL                          Page: 1
```

```
GNU COBOL 2.1 23NOV2013 Source Listing                                      2014/03/27
                              C:/Users/tda010/Documents/Programs/Samples/DAY-FROM-DATE.cbl
Line    Statement                                                                    Page: 2
====== =========================================================================================
    50          EVALUATE RETURN-CODE
    51          WHEN 7
    52             IF TEST-DAY-YYYYDDD(L-Input-Date-DT) > 0
    53                 MOVE 0 TO L-Output-Day-NUM
    54                 GOBACK
    55             END-IF
    56             MOVE DATE-OF-INTEGER(INTEGER-OF-DAY(L-Input-Date-DT))
    57               TO WS-Input-Date-DT
    58          WHEN 8
    59             IF TEST-DATE-YYYYMMDD(L-Input-Date-DT) > 0
    60                 MOVE 0 TO L-Output-Day-NUM
    61                 GOBACK
    62             END-IF
    63             MOVE L-Input-Date-DT TO WS-Input-Date-DT
    64          WHEN OTHER
    65             MOVE 0 TO L-Output-Day-NUM
    66             GOBACK
    67          END-EVALUATE
    68      *> IF january OR february
    69      *>     y = year - 1
    70      *>     m = month + 10
    71      *> ELSE
    72      *>     y = year
    73      *>     m = month - 2
    74      *> END-IF
    75      *> For Gregorian calendar:
    76      *>     result = (day + y + y/4 - y/100 + y/400 + (31*m)/12) mod 7
    77      *> (All divisions are integer divisions, discarding any remainder)
    78          IF WS-ID-MM-NUM = 1 OR 2
    79             SUBTRACT 1 FROM WS-ID-YYYY-NUM GIVING WS-Y-NUM
    80             ADD WS-ID-MM-NUM, 10 GIVING WS-M-NUM
    81          ELSE
    82             MOVE WS-ID-YYYY-NUM TO WS-Y-NUM
    83             SUBTRACT 2 FROM WS-ID-MM-NUM GIVING WS-M-NUM
    84          END-IF
    85          COMPUTE L-Output-Day-NUM =
    86              WS-ID-DD-NUM
    87            + WS-Y-NUM
    88            + INTEGER(WS-Y-NUM/4)
    89            - INTEGER(WS-Y-NUM/100)
    90            + INTEGER(WS-Y-NUM/400)
    91            + INTEGER((31*WS-M-NUM)/12)
    92          DIVIDE L-Output-Day-NUM BY 7
    93              GIVING WS-Temp-NUM
    94              REMAINDER L-Output-Day-NUM
    95          ADD 1 TO L-Output-Day-NUM
    96          GOBACK
    97          .
    98
```

==

```
GNU COBOL 2.1 23NOV2013 Cross-Reference Listing                        2014/03/27
                         C:/Users/tda010/Documents/Programs/Samples/DAY-FROM-DATE.cbl
PROGRAM-ID       Identifier/Register/Function    Defn   Where Defined   References        Page: 3
===============  ==============================   ======  ===============  ========================
DAY-FROM-DATE    000-Main                          48   PROCEDURE
DAY-FROM-DATE    L-Input-Date-DT                   43   LINKAGE            46      52      56
                                                                          59      63
DAY-FROM-DATE    L-Output-Day-NUM                  44   LINKAGE            47      53*     60*
                                                                          65*     85*     92
                                                                          94*     95*
DAY-FROM-DATE    RETURN-CODE                            PROCEDURE          50
DAY-FROM-DATE    WS-ID-DD-NUM                      38   WORKING-STORAGE    86
DAY-FROM-DATE    WS-ID-MM-NUM                      37   WORKING-STORAGE    78      80      83
DAY-FROM-DATE    WS-ID-YYYY-NUM                    36   WORKING-STORAGE    79      82
DAY-FROM-DATE    WS-Input-Date-DT                  35   WORKING-STORAGE    57*     63*
DAY-FROM-DATE    WS-M-NUM                          40   WORKING-STORAGE    80*     83*     91
DAY-FROM-DATE    WS-Temp-NUM                       41   WORKING-STORAGE    93*
DAY-FROM-DATE    WS-Y-NUM                          39   WORKING-STORAGE    79*     82*     87
                                                                          88      89      90
```

5. GCic

This is MUCH more than a mere demonstration program – it's also a very practical utility! The "GCic" (GnuCOBOL Interactive Compiler) is a TUI (Textual User Interface) program that may be used as a full-screen interface to the "cobc" compiler. In addition, GCic can produce neat, concise and useful cross-reference listings of GnuCOBOL programs, showing not only where user-defined names and built-in registers and intrinsic functions are referenced, but also where user-defined data items ARE MODIFIED by program code!

The program is well documented (IMHO) and you should find it fairly easy to follow. The GCic.cbl program was written to work with a native Windows or Windows/MinGW build of GnuCOBOL as well as a Windows/Cygwin, UNIX or OS X build.

Source listings generated by GCic will show the original source code of your programs, with all indentation and comments preserved. Additionally, any COPYed code will be included in the listing immediately (in compressed form) following the COPY statement that triggered its inclusion into your program.

Cross-reference listings will show all user-defined data items and procedures as well as intrinsic function and special register references. In addition to showing the line numbers at which items were defined and referenced, those references that MODIFY the contents of the data item will have an asterisk appended to them.

In addition to general GnuCOBOL concepts, this program provides a useful demonstration of the following:

- Creating a GnuCOBOL compilation unit that consists of multiple programs
- Using CDF conditional compilation facilities
- Using the `SCREEN SECTION` and associated `ACCEPT` and `DISPLAY` statements
- Using `DECLARATIVES` to trap file I/O errors
- Using `FILE-STATUS`
- Using the `REPLACING` clause on a CDF `COPY` statement
- Using the following statements:
    - o `ACCEPT FROM COMMAND-LINE` statement
    - o `ACCEPT FROM DATE/TIME` statement
    - o `ACCEPT FROM ENVIRONMENT` statement
    - o `EXIT PERFORM` statement
    - o `EXIT SECTION` statement
    - o `INSPECT` statement
    - o `PERFORM FOREVER` statement
    - o `SEARCH ALL` statement
    - o `SET ENVIRONMENT` statement
    - o `SORT` statement
    - o `STRING` statement
    - o `UNSTRING` statement
- Using the following built-in subroutines:
    - o `C$JUSTIFY` built-in system subroutine
    - o `C$SLEEP` built-in system subroutine
    - o `CBL_CHANGE_DIR` built-in system subroutine
    - o `CBL_CHECK_FILE_EXIST` built-in system subroutine

- o `CBL_DELETE_FILE` built-in system subroutine
- o `SYSTEM` built-in system subroutine
- Using the following intrinsic functions:
    - o `CONCATENATE` intrinsic function
    - o `LENGTH` intrinsic function
    - o `LOWER-CASE` intrinsic function
    - o `NUMVAL` intrinsic function
    - o `TRIM` intrinsic function
    - o `UPPER-CASE` intrinsic function
- Using the `COB-CRT-STATUS,Special Registers` special register
- Programmatically producing a report destined for either portrait or landscape printing

Here is a sample of the screen generated by this program:

The program source and cross-reference listing, produced using this program, begins on the next page.

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                            /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                              Page: 1
======  =============================================================================
    1        >>SOURCE FORMAT IS FIXED
    2        *> CONFIGURATION SETTINGS: Set these switches before compiling:
    3        *>
    4        *> LINEDRAW Set to:
    5        *>    0   To use spaces (no lines)
    6        *>    1   To use the line-drawing characterset (PC codepage 437)
    7        *>    2   To use conventional ASCII characters (+, -, |)
    8        *>
    9        *>          OSX USERS - To use the linedrawing characterset,
   10        *>                       set your 'terminal' font to 'Lucida Console'
   11        *>
   12        *> OS      Set to one of the following:
   13        *>          'CYGWIN'   For a Windows/Cygwin version
   14        *>          'MINGW'    For a Windows/MinGW version
   15        *>          'OSX'      For a Macintosh OSX version
   16        *>          'UNIX'     For a Unix/Linux version
   17        *>          'WINDOWS'  For a Native Windows version
   18        *>
   19        *> SELCHAR  Set to the desired single character to be used as the red
   20        *>          'feature selected' character on the screen.
   21        *>          SUGGESTIONS: '>', '*', '=', '+'
   22        *>
   23        *> LPP     Set to maximum printable lines per page when the listing
   24        *>          should be generated for LANDSCAPE orientation (can be over-
   25        *>          ridden at execution time using the GCXREF_LINES environment
   26        *>          variable.
   27        *>
   28        *> LPPP    Set to maximum printable lines per page when the listing
   29        *>          should be generated for PORTRAIT orientation (can be over-
   30        *>          ridden at execution time using the GCXREF_LINES_PORT
   31        *>          environment variable.
   32        *>
   33        *>******************************************************************
   34        *>**  Change the settings in the copy book const-set-1.cpy to reflect
   35        *>    your system set up. This notes are also present there.
   36        *>    This is to reduce the need to amend these every time a update
   37        *>    for GCic occurs.
   38        *>******************************************************************
   39        *>
   40         copy "const-set-1.cpy".
   41        *>
   42        *> -------------------------------------------------------------
   43        *> END CONFIGURATION SETTINGS
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                      2017/12/24
                                          /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                            Page: 2
====== ================================================================================
    45       IDENTIFICATION DIVISION.
    46       PROGRAM-ID. GCic.
    47       *>****************************************************************
    48       *>     >NOTE<   >NOTE<   >NOTE<   >NOTE<   >NOTE<   >NOTE<    **
    49       *>                                                            **
    50       *> If this program is compiled with '-fdebugging-line', you   **
    51       *> will need to pipe SYSERR to a text file when executing GCic **
    52       *> (by adding the text '2> filename' to the end of the GCic    **
    53       *> command).  You may also need to press the ENTER key when    **
    54       *> GCic is finished.                                           **
    55       *>****************************************************************
    56       *> This program provides a Textual User Interface (TUI) to the **
    57       *> process of compiling and (optionally) executing a GNU COBOL **
    58       *> program.                                                     **
    59       *>                                                            **
    60       *> This programs execution syntax is as follows:               **
    61       *>                                                            **
    62       *> GCic <program-path-and-filename> [ <switch>... ]            **
    63       *>                                                            **
    64       *> Once executed, a display screen will be presented showing   **
    65       *> the compilation options that will be used.  The user will   **
    66       *> have the opportunity to change options, specify new ones    **
    67       *> and specify any program execution arguments to be used if    **
    68       *> you select the 'Execute' option.  When you press the Enter  **
    69       *> key the program will be compiled.                           **
    70       *>                                                            **
    71       *> The SCREEN SECTION contains an image of the screen.         **
    72       *>                                                            **
    73       *> The '010-Parse-Args' section in the PROCEDURE DIVISION has  **
    74       *> documentation on switches and their function.               **
    75       *>****************************************************************
    76       *>                                                            **
    77       *> AUTHOR:     GARY L. CUTLER                                  **
    78       *>              Copyright (C) 2009-2017, Gary L. Cutler, GPL   **
    79       *>                                                            **
    80       *> DATE-WRITTEN: June 14, 2009                                 **
    81       *>                                                            **
    82       *>****************************************************************
    83       *>  DATE  CHANGE DESCRIPTION                                   **
    84       *> ====== =================================================== **
    85       *> GC0609 Don't display compiler messages file if compilation  **
    86       *>  GLC   Is successful.  Also don't display messages if the   **
    87       *>        output file is busy (just put a message on the       **
    88       *>        screen, leave the OC screen up & let the user fix    **
    89       *>        the problem & resubmit.                              **
    90       *> GC0709 When 'EXECUTE' is selected, a 'FILE BUSY' error will **
    91       *>  CLC   still cause the (old) executable to be launched.     **
    92       *>        Also, the 'EXTRA SWITCHES' field is being ignored.   **
    93       *>        Changed the title bar to lowlighted reverse video &  **
    94       *>        the message area to highlighted reverse-video.       **
    95       *> GC0809 Add a SPACE in front of command-line args when       **
    96       *>  GLC   executing users program.  Add a SPACE after the      **
```

==
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```
GNUCOBOL 3.0 24DEC2017  Source Listing                                2017/12/24
                                       /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                         Page: 3
====== =========================================================================
    97        *>       -ftraceall switch when building cobc command.      **
    98        *> GC0909 Convert to work on Cygwin/Linux as well as MinGW   **
    99        *> GC0310 Virtualized the key codes for S-F1 thru S-F7 as they **
   100        *>  GLC   differ depending upon whether PDCurses or NCurses is **
   101        *>       being used.                                        **
   102        *> GC0410 Introduced the cross-reference and source listing  **
   103        *>  GLC   features.  Also fixed a bug in EXTRA switch proces- **
   104        *>       sing where garbage will result if more than the     **
   105        *>       EXTRA switch is specified.                          **
   106        *> GC1010 Corrected several problems reported by Vince Coen:  **
   107        *>  GLC   1) Listing/Xref wouldn't work if '-I' additional    **
   108        *>          cobc switch specified.                           **
   109        *>       2) Programs coded with lowercase reserved words did  **
   110        *>          not get parsed properly when generating listing   **
   111        *>          and/or xref reports.                             **
   112        *>       3) Reliance on a TEMP environment variable caused    **
   113        *>          non-recoverable errors when generating listing    **
   114        *>          and/or xref reports in a session that lacks a     **
   115        *>          TEMP variable.                                   **
   116        *>       As a result of this change, GCic no longer runs a    **
   117        *>       second 'cobc' when generating listing and/or xref    **
   118        *>       reports.  A '-save-temps' (without '=dir') specified **
   119        *>       in the EXTRA options field will be ignored.  A       **
   120        *>       '-save-temps=dir' specified in the EXTRA options     **
   121        *>       field will negate both the XREF and SOURCE opts,     **
   122        *>       if specified.                                       **
   123        *> GC0711 Tailored for 29APR2011 version of GNU COBOL 2.0     **
   124        *> GC0712 Replaced all switches with configuration settings;  **
   125        *>  GLC   Tailored for 11FEB2012 version of GNU COBOL 2.0;    **
   126        *>       Reformatted screen layout to fit a 24x80 screen      **
   127        *>       rather than a 25x81 screen and to accommodate shell  **
   128        *>       environments having only F1-F12 (like 'terminal' in  **
   129        *>       OSX); Fully tested under OSX (required a few altera- **
   130        *>       tions); Expanded both extra-options and runtime-     **
   131        *>       arguments areas to TWO lines (152 chars total) each; **
   132        *>       Added support for MF/IBM/BS2000 listing-control      **
   133        *>       directives EJECT,SKIP1,SKIP2,SKIP3 (any of these in  **
   134        *>       copybooks will be ignored)                          **
   135        *> GC0313 Expand the source code record from 80 chars to 256  **
   136        *>  GLC   to facilitate looking for "LINKAGE SECTION" in a    **
   137        *>       free-format file.                                    **
   138        *> GC1113 Edited to support the change of "OpenCOBOL" to "GNU  **
   139        *>  GLC   COBOL"                                             **
   140        *> GC1213 Updated for 23NOV2013 version of GNU COBOL 2.1      **
   141        *> GC0114 Introduce a "Press ENTER to Close" action after run- **
   142        *>  GLC   ning the compiled program in the compiler window (F4)**
   143        *> VC0617 Remove the Blinking in meny screen as uncomfortable **
   144        *>  VBC   Update version printed to 2.2 30JUN2017.           **
   145        *>       Move the system constant settings to a copy file     **
   146        *>       const-set-1.cpy  in case GCic is updated.           **
   147        *>       Added  SET ENVIRONMENT "COB_EXIT_WAIT" TO "0" to     **
   148        *>       100-Initialization section.                         **
   149        *> VC0717 Replaced compile param instrinsic=all with         **

================================================================================
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```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                  2017/12/24
                                         /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line   Statement                                                           Page: 4
====== ==========================================================================
   150        *>  VBC   intrinstics=ALL. Changed mod detail inits for Gary    **
   151        *>        from GCL to GLC.                                       **
   152        *>        Update version printed to 2.2 20JUL2017.              **
   153        *>        Should really get this from the compiler if avail?    **
   154        *> VC1217 Update compiler version to v3.0 24DEC2017.            **
   155        *>        and copyright to 2018 (in 3 places).                  **
   156        *>**********************************************************
   157        *>
   158         ENVIRONMENT DIVISION.
   159         CONFIGURATION SECTION.
   160         REPOSITORY.
   161             FUNCTION ALL INTRINSIC.
   162         INPUT-OUTPUT SECTION.
   163         FILE-CONTROL.
   164 GC1010     SELECT F-Cobc-Output-FILE   ASSIGN TO WS-Listing-Filename-TXT
   165                                         ORGANIZATION IS LINE SEQUENTIAL.
   166
   167            SELECT F-Source-Code-FILE   ASSIGN TO WS-File-Name-TXT
   168                                         ORGANIZATION IS LINE SEQUENTIAL
   169                                         FILE STATUS IS WS-FSM-Status-CD.
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                              2017/12/24
                                        /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                        Page: 5
====== =====================================================================================

    171         DATA DIVISION.
    172         FILE SECTION.
    173         FD  F-Cobc-Output-FILE.
    174         01  F-Cobc-Output-REC              PIC X(256).
    175
    176         FD  F-Source-Code-FILE.
    177 GC0313 01  F-Source-Code-REC              PIC X(256).
    178
    179         WORKING-STORAGE SECTION.
    180         >>source free
    181         COPY screenio.
         78 COB-COLOR-BLACK VALUE 0.
         78 COB-COLOR-BLUE VALUE 1.
         78 COB-COLOR-GREEN VALUE 2.
         78 COB-COLOR-CYAN VALUE 3.
         78 COB-COLOR-RED VALUE 4.
         78 COB-COLOR-MAGENTA VALUE 5.
         78 COB-COLOR-YELLOW VALUE 6.
         78 COB-COLOR-WHITE VALUE 7.
         78 COB-SCR-OK VALUE 0.
         78 COB-SCR-F1 VALUE 1001.
         78 COB-SCR-F2 VALUE 1002.
         78 COB-SCR-F3 VALUE 1003.
         78 COB-SCR-F4 VALUE 1004.
         78 COB-SCR-F5 VALUE 1005.
         78 COB-SCR-F6 VALUE 1006.
         78 COB-SCR-F7 VALUE 1007.
         78 COB-SCR-F8 VALUE 1008.
         78 COB-SCR-F9 VALUE 1009.
         78 COB-SCR-F10 VALUE 1010.
         78 COB-SCR-F11 VALUE 1011.
         78 COB-SCR-F12 VALUE 1012.
         78 COB-SCR-F13 VALUE 1013.
         78 COB-SCR-F14 VALUE 1014.
         78 COB-SCR-F15 VALUE 1015.
         78 COB-SCR-F16 VALUE 1016.
         78 COB-SCR-F17 VALUE 1017.
         78 COB-SCR-F18 VALUE 1018.
         78 COB-SCR-F19 VALUE 1019.
         78 COB-SCR-F20 VALUE 1020.
         78 COB-SCR-F21 VALUE 1021.
         78 COB-SCR-F22 VALUE 1022.
         78 COB-SCR-F23 VALUE 1023.
         78 COB-SCR-F24 VALUE 1024.
         78 COB-SCR-F25 VALUE 1025.
         78 COB-SCR-F26 VALUE 1026.
         78 COB-SCR-F27 VALUE 1027.
         78 COB-SCR-F28 VALUE 1028.
         78 COB-SCR-F29 VALUE 1029.
         78 COB-SCR-F30 VALUE 1030.
         78 COB-SCR-F31 VALUE 1031.
         78 COB-SCR-F32 VALUE 1032.

=====================================================================================
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```

====== ===
          78 COB-SCR-F33 VALUE 1033.
          78 COB-SCR-F34 VALUE 1034.
          78 COB-SCR-F35 VALUE 1035.
          78 COB-SCR-F36 VALUE 1036.
          78 COB-SCR-F37 VALUE 1037.
          78 COB-SCR-F38 VALUE 1038.
          78 COB-SCR-F39 VALUE 1039.
          78 COB-SCR-F40 VALUE 1040.
          78 COB-SCR-F41 VALUE 1041.
          78 COB-SCR-F42 VALUE 1042.
          78 COB-SCR-F43 VALUE 1043.
          78 COB-SCR-F44 VALUE 1044.
          78 COB-SCR-F45 VALUE 1045.
          78 COB-SCR-F46 VALUE 1046.
          78 COB-SCR-F47 VALUE 1047.
          78 COB-SCR-F48 VALUE 1048.
          78 COB-SCR-F49 VALUE 1049.
          78 COB-SCR-F50 VALUE 1050.
          78 COB-SCR-F51 VALUE 1051.
          78 COB-SCR-F52 VALUE 1052.
          78 COB-SCR-F53 VALUE 1053.
          78 COB-SCR-F54 VALUE 1054.
          78 COB-SCR-F55 VALUE 1055.
          78 COB-SCR-F56 VALUE 1056.
          78 COB-SCR-F57 VALUE 1057.
          78 COB-SCR-F58 VALUE 1058.
          78 COB-SCR-F59 VALUE 1059.
          78 COB-SCR-F60 VALUE 1060.
          78 COB-SCR-F61 VALUE 1061.
          78 COB-SCR-F62 VALUE 1062.
          78 COB-SCR-F63 VALUE 1063.
          78 COB-SCR-F64 VALUE 1064.
          78 COB-SCR-PAGE-UP VALUE 2001.
          78 Cob-Scr-Page_Up value 2001.
          78 COB-SCR-PAGE-DOWN VALUE 2002.
          78 Cob-Scr-Page_Down value 2002.
          78 COB-SCR-KEY-UP VALUE 2003.
          78 COB-SCR-KEY_UP VALUE 2003.
          78 COB-SCR-KEY-DOWN VALUE 2004.
          78 COB-SCR-KEY_DOWN VALUE 2004.
          78 COB-SCR-ESC VALUE 2005.
          78 COB-SCR-PRINT VALUE 2006.
          78 COB-SCR-TAB VALUE 2007.
          78 COB-SCR-BACK-TAB VALUE 2008.
          78 COB-SCR-KEY-LEFT VALUE 2009.
          78 COB-SCR-KEY-RIGHT VALUE 2010.
          78 COB-SCR-INSERT VALUE 2011.
          78 COB-SCR-DELETE VALUE 2012.
          78 COB-SCR-BACKSPACE VALUE 2013.
          78 COB-SCR-KEY-HOME VALUE 2014.
          78 COB-SCR-KEY-END VALUE 2015.
          78 COB-SCR-NO-FIELD VALUE 8000.
          78 COB-SCR-TIME-OUT VALUE 8001.

===

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                            /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                              Page: 7
======  ==========================================================================================
        78 COB-SCR-FATAL VALUE 9000.
        78 COB-SCR-MAX-FIELD VALUE 9001.
    182        >>source fixed
    183 GC0712 01  WS-Compilation-Switches-TXT.
    184 GC0712     05 WS-CS-Args-TXT VALUE SPACES.
    185 GC0712         10 WS-CS-Arg-H1-TXT              PIC X(76).
    186 GC0712         10 WS-CS-Arg-H2-TXT              PIC X(76).
    187 GC0712     05 WS-CS-Filenames-TXT.
    188 GC0712         10 VALUE 'BS2000'               PIC X(9).
    189 GC0712         10 VALUE 'COBOL85'              PIC X(9).
    190 GC0712         10 VALUE 'COBOL2002'            PIC X(9).
    191 GC0712         10 VALUE 'DEFAULT'              PIC X(9).
    192 GC0712         10 VALUE 'IBM'                  PIC X(9).
    193 GC0712         10 VALUE 'MF'                   PIC X(9).
    194 GC0712         10 VALUE 'MVS'                  PIC X(9).
    195 GC0712     05 WS-CS-Filenames-Table-TXT REDEFINES WS-CS-Filenames-TXT.
    196 GC0712         10 WS-CS-Filename-TXT           OCCURS 7 TIMES
    197 GC0712                                         PIC X(9).
    198 GC0712 >>IF F12 < 1
    199 GC0712     05 WS-CS-Config-NUM     VALUE 4     PIC 9(1).
    200 GC0712 >>ELIF F12 > 7
    201 GC0712     05 WS-CS-Config-NUM     VALUE 4     PIC 9(1).
    202 GC0712 >>ELSE
    203 GC0712     05 WS-CS-Config-NUM     VALUE F12   PIC 9(1).
    204 GC0712 >>END-IF
    205 GC0712     05 WS-CS-Extra-TXT VALUE SPACES.
    206 GC0712         10 WS-CS-Extra-H1-TXT           PIC X(76).
    207 GC0712         10 WS-CS-Extra-H2-TXT           PIC X(76).
    208 GC0712     05 WS-CS-Switch-Defaults-TXT.
    209 GC0712         10 VALUE F1                     PIC 9(1). *> WS-CS-DEBUG-CHR
    210 GC0712         10 VALUE F4                     PIC 9(1). *> WS-CS-EXECUTE-CHR
    211 GC0712         10 VALUE F8                     PIC 9(1). *> WS-CS-FREE-CHR
    212 GC0712         10 VALUE F3                     PIC 9(1). *> WS-CS-LIBRARY-CHR
    213 GC0712         10 VALUE F5                     PIC 9(1). *> WS-CS-LISTING-CHR
    214 GC0712         10 VALUE F6                     PIC 9(1). *> WS-CS-NOFUNC-CHR
    215 GC0712         10 VALUE F9                     PIC 9(1). *> WS-CS-NOTRUNC-CHR
    216 GC0712         10 VALUE F2                     PIC 9(1). *> WS-CS-TRACEALL-CHR
    217 GC0712         10 VALUE F7                     PIC 9(1). *> WS-CS-WARNALL-CHR
    218 GC0712     05 WS-CS-All-Switches-TXT REDEFINES
    219 GC0712                           WS-CS-Switch-Defaults-TXT.
    220 GC0712         10 WS-CS-DEBUG-CHR              PIC X(1).
    221 GC0712         10 WS-CS-EXECUTE-CHR            PIC X(1).
    222 GC0712         10 WS-CS-FREE-CHR               PIC X(1).
    223 GC0712         10 WS-CS-LIBRARY-CHR            PIC X(1).
    224 GC0712         10 WS-CS-LISTING-CHR            PIC X(1).
    225 GC0712         10 WS-CS-NOFUNC-CHR             PIC X(1).
    226 GC0712         10 WS-CS-NOTRUNC-CHR            PIC X(1).
    227 GC0712         10 WS-CS-TRACEALL-CHR           PIC X(1).
    228 GC0712         10 WS-CS-WARNALL-CHR            PIC X(1).
    229
    230 GC0909 01  WS-Cmd-TXT                          PIC X(512).
    231
    232 GC0712 01  WS-Cmd-Args-TXT                     PIC X(256).


==========================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL                  Page: 7
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                       /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                          Page: 8
====== ================================================================================
   233
   234 GC0712 01  WS-Cmd-End-Quote-CHR               PIC X(1).
   235
   236 GC0712 01  WS-Cmd-SUB                         USAGE BINARY-LONG.
   237
   238        01  WS-Cobc-Cmd-TXT                    PIC X(256).
   239
   240        01  WS-Config-Fn-TXT                   PIC X(12).
   241
   242 GC1113 01  WS-Delete-Fn-TXT                   PIC X(256).
   243
   244        01  WS-File-Name-TXT.
   245            05 WS-FN-CHR                        OCCURS 256 TIMES
   246                                                PIC X(1).
   247
   248        01  WS-File-Status-Message-TXT.
   249            05 VALUE 'Status Code: '            PIC X(13).
   250            05 WS-FSM-Status-CD                 PIC 9(2).
   251            05 VALUE ', Meaning: '              PIC X(11).
   252            05 WS-FSM-Msg-TXT                   PIC X(25).
   253
   254 GC0909 01  WS-Horizontal-Line-TXT             PIC X(80).
   255 GC0909
   256        01  WS-I-SUB                           USAGE BINARY-LONG.
   257
   258        01  WS-J-SUB                           USAGE BINARY-LONG.
   259
   260 GC1213 01  WS-Listing-CD VALUE F5             PIC 9(1).
   261
   262 GC0712 01  WS-Listing-Filename-TXT            PIC X(256).
   263
   264 GC1213 01  WS-Listing-TXT VALUE SPACES        PIC X(27).
   265
   266        01  WS-OC-Compile-DT                   PIC XXXX/XX/XXBXX/XX.
   267
   268 GC0712 >>IF OS = 'CYGWIN'
   269 GC0712 01  WS-OS-Dir-CHR        VALUE '/'      PIC X(1).
   270 GC0712 78  WS-OS-Exe-Ext-CONST  VALUE '.exe'.
   271 GC0712 78  WS-OS-Lib-Ext-CONST  VALUE '.dll'.
   272 GC0712 78  WS-OS-Lib-Type-CONST VALUE 'DLL)'.
   273 GC0712 01  WS-OS-Type-CD        VALUE 2        PIC 9(1).
   274 GC0712 >>ELIF OS = 'MINGW'
   275 GC0712 01  WS-OS-Dir-CHR        VALUE '\'      PIC X(1).
   276 GC0712 78  WS-OS-Exe-Ext-CONST  VALUE '.exe'.
   277 GC0712 78  WS-OS-Lib-Ext-CONST  VALUE '.dll'.
   278 GC0712 78  WS-OS-Lib-Type-CONST VALUE 'DLL)'.
   279 GC0712 01  WS-OS-Type-CD        VALUE 5        PIC 9(1).
   280 GC0712 >>ELIF OS = 'OSX'
   281 GC0712 01  WS-OS-Dir-CHR        VALUE '/'      PIC X(1).
   282 GC0712 78  WS-OS-Exe-Ext-CONST  VALUE ' '.
   283 GC0712 78  WS-OS-Lib-Ext-CONST  VALUE '.dylib'.
   284 GC0712 78  WS-OS-Lib-Type-CONST VALUE 'DYLIB)'.
   285 GC0712 01  WS-OS-Type-CD        VALUE 4        PIC 9(1).


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```
GNUCOBOL 3.0 24DEC2017  Source Listing                              2017/12/24
                                    /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                     Page: 9
====== ===========================================================================
   286 GC0712 >>ELIF OS = 'UNIX'
   287 GC0712 01  WS-OS-Dir-CHR         VALUE '/'      PIC X(1).
   288 GC0712 78  WS-OS-Exe-Ext-CONST   VALUE ' '.
   289 GC0712 78  WS-OS-Lib-Ext-CONST   VALUE '.so'.
   290 GC0712 78  WS-OS-Lib-Type-CONST  VALUE 'SO)'.
   291 GC0712 01  WS-OS-Type-CD         VALUE 3        PIC 9(1).
   292 GC0712 >>ELIF OS = 'WINDOWS'
   293 GC0712 01  WS-OS-Dir-CHR         VALUE '\'      PIC X(1).
   294 GC0712 78  WS-OS-Exe-Ext-CONST   VALUE '.exe'.
   295 GC0712 78  WS-OS-Lib-Ext-CONST   VALUE '.dll'.
   296 GC0712 78  WS-OS-Lib-Type-CONST  VALUE 'DLL)'.
   297 GC0712 01  WS-OS-Type-CD         VALUE 1        PIC 9(1).
   298 GC0712 >>END-IF
   299 GC0909     88 WS-OS-Windows-BOOL VALUE 1, 5.
   300 GC0909     88 WS-OS-Cygwin-BOOL  VALUE 2.
   301 GC0712     88 WS-OS-UNIX-BOOL    VALUE 3, 4.
   302 GC0712     88 WS-OS-OSX-BOOL     VALUE 4.
   303
   304        01  WS-OS-Type-FILLER-TXT.
   305            05 VALUE 'Windows'            PIC X(14).
   306            05 VALUE 'Windows/Cygwin'     PIC X(14).
   307            05 VALUE 'UNIX/Linux'         PIC X(14).
   308            05 VALUE 'OSX'                PIC X(14).
   309            05 VALUE 'Windows/MinGW'      PIC X(14).
   310        01  WS-OS-Types-TXT REDEFINES WS-OS-Type-FILLER-TXT.
   311            05 WS-OS-Type-TXT             OCCURS 5 TIMES
   312                                         PIC X(14).
   313
   314        01  WS-Output-Msg-TXT            PIC X(80).
   315
   316        01  WS-Path-Delimiter-CHR        PIC X(1).
   317
   318        01  WS-Prog-Extension-TXT        PIC X(256).
   319
   320        01  WS-Prog-Folder-TXT           PIC X(256).
   321
   322 GC0712 01  WS-Prog-File-Name-TXT.
   323 GC0712     05 WS-PFN-CHR                OCCURS 256 TIMES
   324 GC0712                                  PIC X(1).
   325
   326 GC0712 01  WS-Pgm-Nm-TXT                PIC X(31).
   327
   328        01  WS-Runtime-Switches-TXT.
   329            05 WS-RS-Compile-OK-CHR      PIC X(1).
   330               88 WS-RS-Compile-OK-BOOL      VALUE 'Y'.
   331 GC0909        88 WS-RS-Compile-OK-Warn-BOOL VALUE 'W'.
   332               88 WS-RS-Compile-Failed-BOOL  VALUE 'N'.
   333 GC0609     05 WS-RS-Complete-CHR        PIC X(1).
   334 GC0609        88 WS-RS-Complete-BOOL         VALUE 'Y'.
   335 GC0609        88 WS-RS-Not-Complete-BOOL     VALUE 'N'.
   336 GC0712     05 WS-RS-Quote-CHR           PIC X(1).
   337 GC0712        88 WS-RS-Double-Quote-Used-BOOL  VALUE 'Y' FALSE 'N'.
   338 GC0809     05 WS-RS-IDENT-DIV-CHR       PIC X(1).


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```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                      2017/12/24
                                          /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                                 Page: 10
======= =================================================================================
    339 GC0809          88 WS-RS-1st-Prog-Complete-BOOL    VALUE 'Y'.
    340 GC0809          88 WS-RS-More-To-1st-Prog-BOOL     VALUE 'N'.
    341             05 WS-RS-No-Switch-Chgs-CHR            PIC X(1).
    342                 88 WS-RS-No-Switch-Changes-BOOL    VALUE 'Y'.
    343                 88 WS-RS-Switch-Changes-BOOL       VALUE 'N'.
    344 GC0709      05 WS-RS-Output-File-Busy-CHR          PIC X(1).
    345 GC0709          88 WS-RS-Output-File-Busy-BOOL     VALUE 'Y'.
    346 GC0709          88 WS-RS-Output-File-Avail-BOOL    VALUE 'N'.
    347 GC0809      05 WS-RS-Source-Record-Type-CHR        PIC X(1).
    348 GC0809          88 WS-RS-Source-Rec-Linkage-BOOL   VALUE 'L'.
    349 GC0809          88 WS-RS-Source-Rec-Ident-BOOL     VALUE 'I'.
    350 GC0712          88 WS-RS-Source-Rec-Ignored-BOOL   VALUE ' '.
    351             05 WS-RS-Switch-Error-CHR              PIC X(1).
    352                 88 WS-RS-Switch-Is-Bad-BOOL        VALUE 'Y'.
    353                 88 WS-RS-Switch-Is-Good-BOOL       VALUE 'N'.
    354
    355     01  WS-Tally-QTY                               USAGE BINARY-LONG.
```

```
=====================================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL                        Page: 10
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                            /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                          Page: 11
======  =========================================================================================
   357         SCREEN SECTION.
   358       *>
   359       *> Here is the layout of the GCic screen.
   360       *>
   361       *> The sample screen below shows how the screen would look if the LINEDRAW
   362       *> configuration setting is set to a value of 2
   363       *>
   364       *> The following sample screen layout shows how the screen looks with line-drawing
   365       *> characters disabled.
   366       *>
   367       *>          1         2         3         4         5         6         7         8
   368       *>12345678901234567890123456789012345678901234567890123456789012345678901234567890
   369       *>================================================================================
   370    01 *> GCic (2017/12/24 08:52) - GNU COBOL V3.0 24DEC2017 Interactive Compilation
   371    02 *>+--------------------------------------------------------------------------------+
   372    03 *>| Folder:   E:\GNU COBOL\Samples                                                 |
   373    04 *>| Filename: GCic.cbl                                                             |
   374    05 *>+--------------------------------------------------------------------------------+
   375    06 *> Set/Clr Switches Via F1-F9; Set Config Via F12; ENTER Key Compiles; ESC Quits
   376    07 *>+-----------------------------------------------------------+------------+
   377    08 *>| F1  Assume WITH DEBUGGING MODE  F6  "FUNCTION" Is Optional | Current    |
   378    09 *>| F2  Procedure+Statement Trace   F7  Enable All Warnings    | Config:    |
   379    10 *>| F3  Make A Library (DLL)        F8  Source Is Free-Format  | XXXXXXXXXX |
   380    11 *>| F4  Execute If Compilation OK   F9  No COMP/BINARY Truncation |          |
   381    12 *>| F5 >Produce Listing (Landscape)                           |            |
   382    13 *>+-----------------------------------------------------------+------------+
   383    14 *> Extra "cobc" Switches, If Any ("-save-temps=xxx" Prevents Listings):
   384    15 *>+--------------------------------------------------------------------------------+
   385    16 *>| _____ |
   386    17 *>| _____ |
   387    18 *>+--------------------------------------------------------------------------------+
   388    19 *> Program Execution Arguments, If Any:
   389    20 *>+--------------------------------------------------------------------------------+
   390    21 *>| _____ |
   391    22 *>| _____ |
   392    23 *>+--------------------------------------------------------------------------------+
   393    24 *> GCic Copyright (C) 2009-2018, Gary L. Cutler, GPL
   394       *>================================================================================
   395       *>12345678901234567890123456789012345678901234567890123456789012345678901234567890
   396       *>          1         2         3         4         5         6         7         8
   397       *>
   398       *> If this program is run on Windows, it must run with codepage 437 activated to
   399       *> display the line-drawing characters.  With a native Windows build or a
   400       *> Windows/MinGW build, one could use the command 'chcp 437' to set that codepage
   401       *> for display within a Windows console window (that should be the default though).
   402       *> With a Windows/Cygwin build, set the environment variable CYGWIN to a value of
   403       *> 'codepage:oem' (this cannot be done from within the program though - you will
   404       *> have to use the 'Computer/Advanced System Settings/Environment Variables' (Vista
   405       *> or Windows 7) function to define the variable.  XP Users: use 'My Computer/
   406       *> Properties/Advanced/Environment Variables'.
   407       *>
   408       *> OSX users may use line drawing characters in this and any GNU COBOL program
```

==
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====== ===
    409   *> simply by setting their 'terminal' application's font to "Lucida Console".
    410   *>
    411   >>IF LINEDRAW IS EQUAL TO 0
    412   78 LD-UL-Corner   VALUE ' '.
    413   78 LD-LL-Corner   VALUE ' '.
    414   78 LD-UR-Corner   VALUE ' '.
    415   78 LD-LR-Corner   VALUE ' '.
    416   78 LD-Upper-T   VALUE ' '.
    417   78 LD-Lower-T   VALUE ' '.
    418   78 LD-Horiz-Line   VALUE ' '.
    419   78 LD-Vert-Line   VALUE ' '.
    420   >>ELIF LINEDRAW IS EQUAL TO 1
    421   78 LD-UL-Corner   VALUE X'DA'.
    422   78 LD-LL-Corner   VALUE X'C0'.
    423   78 LD-UR-Corner   VALUE X'BF'.
    424   78 LD-LR-Corner   VALUE X'D9'.
    425   78 LD-Upper-T   VALUE X'C2'.
    426   78 LD-Lower-T   VALUE X'C1'.
    427   78 LD-Horiz-Line   VALUE X'C4'.
    428   78 LD-Vert-Line   VALUE X'B3'.
    429   >>ELSE
    430   78 LD-UL-Corner   VALUE '+'.
    431   78 LD-LL-Corner   VALUE '+'.
    432   78 LD-UR-Corner   VALUE '+'.
    433   78 LD-LR-Corner   VALUE '+'.
    434   78 LD-Upper-T   VALUE '+'.
    435   78 LD-Lower-T   VALUE '+'.
    436   78 LD-Horiz-Line   VALUE '-'.
    437   78 LD-Vert-Line   VALUE '|'.
    438   >>END-IF
    439
    440   01 S-Blank-SCR LINE 1 COLUMN 1 BLANK SCREEN.
    441
    442   01 S-Switches-SCR BACKGROUND-COLOR COB-COLOR-BLACK
    443   FOREGROUND-COLOR COB-COLOR-WHITE AUTO.
    444   *>
    445   *> GENERAL SCREEN FRAMEWORK
    446   *>
    447   03 BACKGROUND-COLOR COB-COLOR-BLACK
    448   FOREGROUND-COLOR COB-COLOR-GREEN HIGHLIGHT.
    449 GC0712   05 LINE 02 COL 01   VALUE LD-UL-Corner.
    450 GC0712   05   COL 02 PIC X(78) FROM WS-Horizontal-Line-TXT.
    451   05   COL 80   VALUE LD-UR-Corner.
    452
    453 GC0712   05 LINE 03 COL 01   VALUE LD-Vert-Line.
    454   05   COL 80   VALUE LD-Vert-Line.
    455
    456 GC0712   05 LINE 04 COL 01   VALUE LD-Vert-Line.
    457   05   COL 80   VALUE LD-Vert-Line.
    458
    459 GC0712   05 LINE 05 COL 01   VALUE LD-LL-Corner.
    460 GC0712   05   COL 02 PIC X(78) FROM WS-Horizontal-Line-TXT.
    461   05   COL 80   VALUE LD-LR-Corner.

==

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                         /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                         Page: 13
====== ===============================================================================
    462
    463 GC0712      05 LINE 07 COL 01           VALUE LD-UL-Corner.
    464 GC0712      05         COL 02 PIC X(65) FROM  WS-Horizontal-Line-TXT.
    465 GC0712      05         COL 67           VALUE LD-Upper-T.
    466 GC0712      05         COL 68 PIC X(12) FROM  WS-Horizontal-Line-TXT.
    467         05         COL 80           VALUE LD-UR-Corner.
    468
    469 GC0712      05 LINE 08 COL 01           VALUE LD-Vert-Line.
    470 GC0712      05         COL 67           VALUE LD-Vert-Line.
    471         05         COL 80           VALUE LD-Vert-Line.
    472
    473 GC0712      05 LINE 09 COL 01           VALUE LD-Vert-Line.
    474 GC0712      05         COL 67           VALUE LD-Vert-Line.
    475         05         COL 80           VALUE LD-Vert-Line.
    476
    477 GC0712      05 LINE 10 COL 01           VALUE LD-Vert-Line.
    478 GC0712      05         COL 67           VALUE LD-Vert-Line.
    479         05         COL 80           VALUE LD-Vert-Line.
    480
    481 GC0712      05 LINE 11 COL 01           VALUE LD-Vert-Line.
    482 GC0712      05         COL 67           VALUE LD-Vert-Line.
    483         05         COL 80           VALUE LD-Vert-Line.
    484
    485 GC0712      05 LINE 12 COL 01           VALUE LD-Vert-Line.
    486 GC0712      05         COL 67           VALUE LD-Vert-Line.
    487         05         COL 80           VALUE LD-Vert-Line.
    488
    489 GC0712      05 LINE 13 COL 01           VALUE LD-LL-Corner.
    490 GC0712      05         COL 02 PIC X(65) FROM  WS-Horizontal-Line-TXT.
    491 GC0712      05         COL 67           VALUE LD-Lower-T.
    492 GC0712      05         COL 68 PIC X(12) FROM  WS-Horizontal-Line-TXT.
    493         05         COL 80           VALUE LD-LR-Corner.
    494
    495 GC0712      05 LINE 15 COL 01           VALUE LD-UL-Corner.
    496 GC0712      05         COL 02 PIC X(78) FROM  WS-Horizontal-Line-TXT.
    497         05         COL 80           VALUE LD-UR-Corner.
    498
    499 GC0712      05 LINE 16 COL 01           VALUE LD-Vert-Line.
    500         05         COL 80           VALUE LD-Vert-Line.
    501
    502 GC0712      05 LINE 17 COL 01           VALUE LD-Vert-Line.
    503         05         COL 80           VALUE LD-Vert-Line.
    504
    505 GC0712      05 LINE 18 COL 01           VALUE LD-LL-Corner.
    506 GC0712      05         COL 02 PIC X(78) FROM  WS-Horizontal-Line-TXT.
    507         05         COL 80           VALUE LD-LR-Corner.
    508
    509 GC0712      05 LINE 20 COL 01           VALUE LD-UL-Corner.
    510 GC0712      05         COL 02 PIC X(78) FROM  WS-Horizontal-Line-TXT.
    511         05         COL 80           VALUE LD-UR-Corner.
    512
    513 GC0712      05 LINE 21 COL 01           VALUE LD-Vert-Line.
    514         05         COL 80           VALUE LD-Vert-Line.

====================================================================================
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@end smallformat
@page
@smallformat
```

```
@verbatim
GNUCOBOL 3.0 24DEC2017  Source Listing                                      2017/12/24
                                    /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                          Page: 14
====== ================================================================================
   515
   516 GC0712       05 LINE 22 COL 01            VALUE LD-Vert-Line.
   517              05         COL 80            VALUE LD-Vert-Line.
   518
   519 GC0712       05 LINE 23 COL 01            VALUE LD-LL-Corner.
   520 GC0712       05         COL 02 PIC X(78) FROM  WS-Horizontal-Line-TXT.
   521              05         COL 80            VALUE LD-LR-Corner.
   522      *>
   523      *> TOP AND BOTTOM LINES
   524      *>
   525 GC0712    03 BACKGROUND-COLOR COB-COLOR-BLUE
   526              FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
   527 GC0410       05 LINE 01 COL 01 VALUE ' GCic ('.
   528 GC0410       05         COL 08 PIC X(16) FROM WS-OC-Compile-DT.
   529 GC1213       05         COL 24 VALUE ') GNUCOBOL 3.0 24DEC2017 ' &
   530 GC0410                          'Interactive Compilation        '.
   531 VC0617    03 BACKGROUND-COLOR COB-COLOR-RED
   532 GC0712       FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
   533 GC0712       05 LINE 24 COL 01 PIC X(80) FROM WS-Output-Msg-TXT.
   534      *>
   535      *> LABELS
   536      *>
   537          03 BACKGROUND-COLOR COB-COLOR-BLACK
   538              FOREGROUND-COLOR COB-COLOR-CYAN  HIGHLIGHT.
   539 GC0712       05 LINE 06 COL 02 VALUE 'Set/Clr Switches Via F1-F9; ' &
   540 GC0712                          'Set Config Via F12; Enter Key ' &
   541 GC0712                          'Compiles; Esc Quits'.
   542 GC0712       05 LINE 14 COL 02 VALUE 'Extra "cobc" Switches, If Any ' &
   543 GC0712                          '("-save-temps=xxx" Prevents ' &
   544 GC0712                          'Listings):'.
   545 GC0712       05 LINE 19 COL 02 VALUE 'Program Execution Arguments, ' &
   546 GC0712                          'If Any:'.
   547 GC0712    03 BACKGROUND-COLOR COB-COLOR-BLACK
   548 GC0712       FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
   549 GC0712       05 LINE 06 COL 23 VALUE 'F1'.
   550 GC0712       05         COL 26 VALUE 'F9'.
   551 GC0712       05         COL 45 VALUE 'F12'.
   552 GC0712       05         COL 50 VALUE 'ENTER'.
   553 GC0712       05         COL 70 VALUE 'ESC'.
   554      *>
   555      *> TOP SECTION BACKGROUND
   556      *>
   557          03 BACKGROUND-COLOR COB-COLOR-BLACK
   558              FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
   559 GC0712       05 LINE 03 COL 62 VALUE 'Enter'.
   560 GC0712       05 LINE 04 COL 62 VALUE 'Esc'.
   561
   562          03 BACKGROUND-COLOR COB-COLOR-BLACK
   563              FOREGROUND-COLOR COB-COLOR-GREEN HIGHLIGHT.
   564 GC0712       05 LINE 04 COL 03 VALUE 'Folder:  '.
   565 GC0712       05 LINE 03 COL 03 VALUE 'Filename: '.
   566
   567 GC0712       05 LINE 03 COL 67 VALUE ': Compile  '.

====================================================================================
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```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                        2017/12/24
                                                /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                                     Page: 15
====== ========================================================================================
   568 GC0712        05 LINE 04 COL 65 VALUE ':    Quit      '.
   569        *>
   570        *> TOP SECTION PROGRAM INFO
   571        *>
   572            03 BACKGROUND-COLOR COB-COLOR-BLACK
   573               FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
   574 GC0712        05 LINE 03 COL 13 PIC X(66) FROM WS-Prog-File-Name-TXT.
   575 GC0712        05 LINE 04 COL 13 PIC X(66) FROM WS-Prog-Folder-TXT.
   576        *>
   577        *> MIDDLE LEFT SECTION F-KEYS
   578        *>
   579            03 BACKGROUND-COLOR COB-COLOR-BLACK
   580               FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
   581 GC0712        05 LINE 08 COL 03 VALUE 'F1'.
   582 GC0712        05 LINE 09 COL 03 VALUE 'F2'.
   583 GC0712        05 LINE 10 COL 03 VALUE 'F3'.
   584 GC0712        05 LINE 11 COL 03 VALUE 'F4'.
   585 GC0712        05 LINE 12 COL 03 VALUE 'F5'.
   586
   587 GC0712        05 LINE 08 COL 35 VALUE 'F6'.
   588 GC0712        05 LINE 09 COL 35 VALUE 'F7'.
   589 GC0712        05 LINE 10 COL 35 VALUE 'F8'.
   590 GC0712        05 LINE 11 COL 35 VALUE 'F9'.
   591        *>
   592        *> MIDDLE LEFT SECTION SWITCHES
   593        *>
   594            03 BACKGROUND-COLOR COB-COLOR-BLACK
   595               FOREGROUND-COLOR COB-COLOR-RED   HIGHLIGHT.
   596 GC0712        05 LINE 08 COL 06 PIC X(1) FROM WS-CS-DEBUG-CHR.
   597 GC0712        05 LINE 09 COL 06 PIC X(1) FROM WS-CS-TRACEALL-CHR.
   598 GC0712        05 LINE 10 COL 06 PIC X(1) FROM WS-CS-LIBRARY-CHR.
   599 GC0712        05 LINE 11 COL 06 PIC X(1) FROM WS-CS-EXECUTE-CHR.
   600 GC0712        05 LINE 12 COL 06 PIC X(1) FROM WS-CS-LISTING-CHR.
   601
   602 GC0712        05 LINE 08 COL 38 PIC X(1) FROM WS-CS-NOFUNC-CHR.
   603 GC0712        05 LINE 09 COL 38 PIC X(1) FROM WS-CS-WARNALL-CHR.
   604 GC0712        05 LINE 10 COL 38 PIC X(1) FROM WS-CS-FREE-CHR.
   605 GC0712        05 LINE 11 COL 38 PIC X(1) FROM WS-CS-NOTRUNC-CHR.
   606        *>
   607        *> MIDDLE LEFT SECTION BACKGROUND
   608        *>
   609            03 BACKGROUND-COLOR COB-COLOR-BLACK
   610               FOREGROUND-COLOR COB-COLOR-GREEN HIGHLIGHT.
   611 GC0712        05 LINE 08 COL 07 VALUE 'Assume WITH DEBUGGING MODE'.
   612 GC0712        05 LINE 09 COL 07 VALUE 'Procedure+Statement Trace '.
   613 GC0712        05 LINE 10 COL 07 VALUE 'Make a Library ('.
   614 GC0712        05        COL 23 VALUE WS-OS-Lib-Type-CONST.
   615 GC0712        05 LINE 11 COL 07 VALUE 'Execute If Compilation OK '.
   616 GC1213        05 LINE 12 COL 07 FROM  WS-Listing-TXT.
   617
   618 GC0712        05 LINE 08 COL 39 VALUE '"FUNCTION" Is Optional    '.
   619 GC0712        05 LINE 09 COL 39 VALUE 'Enable All Warnings       '.
   620 GC0712        05 LINE 10 COL 39 VALUE 'Source Is Free-Format     '.

============================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL                    Page: 15
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                     2017/12/24
                                                 /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                                   Page: 16
======  ========================================================================================
   621 GC0712      05 LINE 11 COL 39 VALUE 'No COMP/BINARY Truncation '.
   622      *>
   623      *> MIDDLE RIGHT SECTION Text
   624      *>
   625          03 BACKGROUND-COLOR COB-COLOR-BLACK
   626              FOREGROUND-COLOR COB-COLOR-GREEN HIGHLIGHT.
   627 GC0712      05 LINE 08 COL 69 VALUE 'Current'.
   628 GC0712      05 LINE 09 COL 69 VALUE 'Config:'.
   629      *>
   630      *> MIDDLE RIGHT SECTION CONFIG FILE
   631      *>
   632          03 BACKGROUND-COLOR COB-COLOR-BLACK
   633              FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
   634 GC0712      05 LINE 10 COL 69 PIC X(10)
   635 GC0712         FROM WS-CS-Filename-TXT (WS-CS-Config-NUM).
   636      *>
   637      *> FREE-FORM OPTIONS FIELDS
   638      *>
   639          03 BACKGROUND-COLOR COB-COLOR-BLACK
   640              FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
   641 GC0712      05 LINE 16 COL 03 PIC X(76) USING WS-CS-Extra-H1-TXT.
   642 GC0712      05 LINE 17 COL 03 PIC X(76) USING WS-CS-Extra-H2-TXT.
   643 GC0712      05 LINE 21 COL 03 PIC X(76) USING WS-CS-Arg-H1-TXT.
   644 GC0712      05 LINE 22 COL 03 PIC X(76) USING WS-CS-Arg-H2-TXT.
```

```
==========================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL                  Page: 16
```

```
   646        PROCEDURE DIVISION.
   647        *>*************************************************************
   648        *> Legend to procedure names:                          **
   649        *>                                                      **
   650        *> 00x-xxx   All MAIN driver procedures                 **
   651        *> 0xx-xxx   All GLOBAL UTILITY procedures              **
   652        *> 1xx-xxx   All INITIALIZATION procedures              **
   653        *> 2xx-xxx   All CORE PROCESSING procedures             **
   654        *> 9xx-xxx   All TERMINATION procedures                 **
   655        *>*************************************************************
   656        DECLARATIVES.
   657        000-File-Error SECTION.
   658            USE AFTER STANDARD ERROR PROCEDURE ON F-Source-Code-FILE.
   659            COPY FileStat-Msgs
   660                REPLACING STATUS BY WS-FSM-Status-CD
   661                          MSG    BY WS-FSM-Msg-TXT.
         EVALUATE WS-FSM-Status-CD
         WHEN 00 MOVE 'SUCCESS                ' TO WS-FSM-Msg-TXT
         WHEN 02 MOVE 'SUCCESS DUPLICATE      ' TO WS-FSM-Msg-TXT
         WHEN 04 MOVE 'SUCCESS INCOMPLETE     ' TO WS-FSM-Msg-TXT
         WHEN 05 MOVE 'SUCCESS OPTIONAL       ' TO WS-FSM-Msg-TXT
         WHEN 07 MOVE 'SUCCESS NO UNIT        ' TO WS-FSM-Msg-TXT
         WHEN 10 MOVE 'END OF FILE            ' TO WS-FSM-Msg-TXT
         WHEN 14 MOVE 'OUT OF KEY RANGE       ' TO WS-FSM-Msg-TXT
         WHEN 21 MOVE 'KEY INVALID            ' TO WS-FSM-Msg-TXT
         WHEN 22 MOVE 'KEY EXISTS             ' TO WS-FSM-Msg-TXT
         WHEN 23 MOVE 'KEY NOT EXISTS         ' TO WS-FSM-Msg-TXT
         WHEN 30 MOVE 'PERMANENT ERROR        ' TO WS-FSM-Msg-TXT
         WHEN 31 MOVE 'INCONSISTENT FILENAME  ' TO WS-FSM-Msg-TXT
         WHEN 34 MOVE 'BOUNDARY VIOLATION     ' TO WS-FSM-Msg-TXT
         WHEN 35 MOVE 'FILE NOT FOUND         ' TO WS-FSM-Msg-TXT
         WHEN 37 MOVE 'PERMISSION DENIED      ' TO WS-FSM-Msg-TXT
         WHEN 38 MOVE 'CLOSED WITH LOCK       ' TO WS-FSM-Msg-TXT
         WHEN 39 MOVE 'CONFLICT ATTRIBUTE     ' TO WS-FSM-Msg-TXT
         WHEN 41 MOVE 'ALREADY OPEN           ' TO WS-FSM-Msg-TXT
         WHEN 42 MOVE 'NOT OPEN               ' TO WS-FSM-Msg-TXT
         WHEN 43 MOVE 'READ NOT DONE          ' TO WS-FSM-Msg-TXT
         WHEN 44 MOVE 'RECORD OVERFLOW        ' TO WS-FSM-Msg-TXT
         WHEN 46 MOVE 'READ ERROR             ' TO WS-FSM-Msg-TXT
         WHEN 47 MOVE 'INPUT DENIED           ' TO WS-FSM-Msg-TXT
         WHEN 48 MOVE 'OUTPUT DENIED          ' TO WS-FSM-Msg-TXT
         WHEN 49 MOVE 'I/O DENIED             ' TO WS-FSM-Msg-TXT
         WHEN 51 MOVE 'RECORD LOCKED          ' TO WS-FSM-Msg-TXT
         WHEN 52 MOVE 'END-OF-PAGE            ' TO WS-FSM-Msg-TXT
         WHEN 57 MOVE 'I/O LINAGE             ' TO WS-FSM-Msg-TXT
         WHEN 61 MOVE 'FILE SHARING FAILURE   ' TO WS-FSM-Msg-TXT
         WHEN 91 MOVE 'FILE NOT AVAILABLE     ' TO WS-FSM-Msg-TXT
         END-EVALUATE.
   662            MOVE SPACES TO WS-Output-Msg-TXT
   663            IF WS-FSM-Status-CD = 35
   664                DISPLAY
   665                    'File not found: "'
```

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```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                         /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line   Statement                                                              Page: 18
====== ===============================================================================
   666                     TRIM(WS-File-Name-TXT,TRAILING)
   667                     '"'
   668             ELSE
   669                 DISPLAY
   670                     'Error accessing file: "'
   671                     TRIM(WS-File-Name-TXT,TRAILING)
   672                     '"'
   673             END-IF
   674             GOBACK
   675             .
   676         END DECLARATIVES.
   677
   678         000-Main SECTION.
   679             PERFORM 100-Initialization
   680 GC0609     SET WS-RS-Not-Complete-BOOL TO TRUE
   681 GC0609     PERFORM UNTIL WS-RS-Complete-BOOL
   682 GC0609         PERFORM 200-Let-User-Set-Switches
   683 GC0609         PERFORM 210-Run-Compiler
   684 GC0410         IF (WS-RS-Compile-OK-BOOL OR WS-RS-Compile-OK-Warn-BOOL)
   685 GC0712         AND (WS-CS-LISTING-CHR > SPACE)
   686 GC0712             DISPLAY S-Blank-SCR
   687 GC0410             PERFORM 220-Make-Listing
   688 GC0410         END-IF
   689 GC0709         IF  (WS-CS-EXECUTE-CHR NOT = SPACES)
   690 GC0709         AND (WS-RS-Output-File-Avail-BOOL)
   691 GC0609             PERFORM 230-Run-Program
   692 GC0609         END-IF
   693 GC0712         PERFORM 250-Autoload-Listing
   694 GC0609     END-PERFORM
   695             PERFORM 900-Terminate
   696       * -- Control will NOT return
   697             .
```

====== ==

```
   699         *>***************************************************************
   700         *> Perform all program-wide initialization operations         **
   701         *>***************************************************************
   702          100-Initialization SECTION.
   703         *>***************************************************************
   704         *> Make sure full screen-handling is in effect                **
   705         *>***************************************************************
   706             SET ENVIRONMENT 'COB_SCREEN_EXCEPTIONS' TO 'Y'
   707             SET ENVIRONMENT 'COB_SCREEN_ESC'        TO 'Y'
   708 VC0617     SET ENVIRONMENT "COB_EXIT_WAIT"          TO "0".
   709         *>***************************************************************
   710         *> Get GCic Compilation Date/Time                             **
   711         *>***************************************************************
   712             MOVE WHEN-COMPILED (1:12) TO WS-OC-Compile-DT
   713             INSPECT WS-OC-Compile-DT
   714                 REPLACING ALL '/' BY ':'
   715                 AFTER INITIAL SPACE
   716         *>***************************************************************
   717         *> Convert WS-CS-All-Switches-TXT to Needed Alphanumeric Values**
   718         *>***************************************************************
   719             INSPECT WS-CS-All-Switches-TXT
   720                 REPLACING ALL '0' BY SPACE
   721                           ALL '1' BY SELCHAR
   722 GC1213                   ALL '2' BY SELCHAR
   723         *>***************************************************************
   724         *> Process filename (the only command-line argument)          **
   725         *>***************************************************************
   726 GC0712     ACCEPT WS-Cmd-Args-TXT FROM COMMAND-LINE
   727 GC0712     MOVE 1 TO WS-Cmd-SUB
   728 GC0712     IF WS-Cmd-Args-TXT(WS-Cmd-SUB:1) = '"' OR "'"
   729 GC0712        MOVE WS-Cmd-Args-TXT(WS-Cmd-SUB:1)
   730 GC0712          TO WS-Cmd-End-Quote-CHR
   731 GC0712        ADD 1 TO WS-Cmd-SUB
   732 GC0712        UNSTRING WS-Cmd-Args-TXT
   733 GC0712           DELIMITED BY WS-Cmd-End-Quote-CHR
   734 GC0712           INTO WS-File-Name-TXT
   735 GC0712           WITH POINTER WS-Cmd-SUB
   736 GC0712     ELSE
   737 GC0712        UNSTRING WS-Cmd-Args-TXT
   738 GC0712           DELIMITED BY ALL SPACES
   739 GC0712           INTO WS-File-Name-TXT
   740 GC0712           WITH POINTER WS-Cmd-SUB
   741 GC0712     END-IF
   742             IF WS-File-Name-TXT = SPACES
   743 GC0712        DISPLAY 'No program filename was specified'
   744             PERFORM 900-Terminate
   745         * ------ Control will NOT return
   746             END-IF
   747         *>***************************************************************
   748         *> Determine if 'Make A Library' feature should be forced 'ON' **
   749         *>***************************************************************
   750             PERFORM 240-Find-LINKAGE-SECTION
```

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```
GNUCOBOL 3.0 24DEC2017  Source Listing                                        2017/12/24
                                             /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                                 Page: 20
====== ===================================================================================
   751          *>************************************************************
   752          *> Split 'WS-File-Name-TXT' into 'WS-Prog-Folder-TXT' and      **
   753          *> 'WS-Prog-File-Name-TXT'                                      **
   754          *>************************************************************
   755 GC0909      IF WS-OS-Cygwin-BOOL AND WS-File-Name-TXT (2:1) = ':'
   756 GC0712          MOVE '\' TO WS-OS-Dir-CHR
   757 GC0909      END-IF
   758 GC0712      MOVE LENGTH(WS-File-Name-TXT) TO WS-I-SUB
   759 GC0712      PERFORM UNTIL WS-I-SUB = 0
   760 GC0712      OR WS-FN-CHR (WS-I-SUB) = WS-OS-Dir-CHR
   761              SUBTRACT 1 FROM WS-I-SUB
   762          END-PERFORM
   763          IF WS-I-SUB = 0
   764              MOVE SPACES    TO WS-Prog-Folder-TXT
   765              MOVE WS-File-Name-TXT TO WS-Prog-File-Name-TXT
   766          ELSE
   767              MOVE '*' TO WS-FN-CHR (WS-I-SUB)
   768              UNSTRING WS-File-Name-TXT DELIMITED BY '*'
   769                  INTO WS-Prog-Folder-TXT
   770                       WS-Prog-File-Name-TXT
   771 GC0712          MOVE WS-OS-Dir-CHR TO WS-FN-CHR (WS-I-SUB)
   772          END-IF
   773          IF WS-Prog-Folder-TXT = SPACES
   774              ACCEPT WS-Prog-Folder-TXT FROM ENVIRONMENT 'CD'
   775 GC0909      ELSE
   776 GC0909          CALL 'CBL_CHANGE_DIR'
   777 GC0909              USING TRIM(WS-Prog-Folder-TXT,TRAILING)
   778          END-IF
   779 GC0909      IF WS-OS-Cygwin-BOOL AND WS-File-Name-TXT (2:1) = ':'
   780 GC0712          MOVE '/' TO WS-OS-Dir-CHR
   781 GC0909      END-IF
   782          *>************************************************************
   783          *> Split 'WS-Prog-File-Name-TXT' into 'WS-Pgm-Nm-TXT' &        **
   784          *> 'WS-Prog-Extension-TXT'                                     **
   785          *>************************************************************
   786 GC0712      MOVE LENGTH(WS-Prog-File-Name-TXT) TO WS-I-SUB
   787 GC0712      PERFORM UNTIL WS-I-SUB = 0
   788 GC0712      OR WS-PFN-CHR (WS-I-SUB) = '.'
   789 GC0712          SUBTRACT 1 FROM WS-I-SUB
   790 GC0712      END-PERFORM
   791 GC0712      IF WS-I-SUB = 0
   792 GC0712          MOVE WS-Prog-File-Name-TXT TO WS-Pgm-Nm-TXT
   793 GC0712          MOVE SPACES         TO WS-Prog-Extension-TXT
   794 GC0712      ELSE
   795 GC0712          MOVE '*' TO WS-PFN-CHR (WS-I-SUB)
   796 GC0712          UNSTRING WS-Prog-File-Name-TXT DELIMITED BY '*'
   797 GC0712              INTO WS-Pgm-Nm-TXT
   798 GC0712                   WS-Prog-Extension-TXT
   799 GC0712          MOVE '.' TO WS-PFN-CHR (WS-I-SUB)
   800 GC0712      END-IF
   801          *>************************************************************
   802          *> Build initial Line 24 Message                              **
   803          *>************************************************************
====================================================================================================
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```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                         /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                            Page: 21
====== =================================================================================
   804 GC0909     MOVE ALL LD-Horiz-Line TO WS-Horizontal-Line-TXT.
   805 GC0410     MOVE CONCATENATE(' GCic for '
   806 GC0410                      TRIM(WS-OS-Type-TXT(WS-OS-Type-CD),Trailing)
   807 GC1213                      ' Copyright (C) 2009-2018, Gary L. '
   808 GC0410                      'Cutler, GPL')
   809 GC0410        TO WS-Output-Msg-TXT.
   810 GC0909
```

```
====================================================================================
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```

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```
   812         *>************************************************************
   813         *> Show the user the current switch settings and allow them to **
   814         *> be changed.                                               **
   815         *>************************************************************
   816          200-Let-User-Set-Switches SECTION.
   817             SET WS-RS-Switch-Changes-BOOL TO TRUE
   818             PERFORM UNTIL WS-RS-No-Switch-Changes-BOOL
   819 GC1213          EVALUATE WS-Listing-CD
   820 GC1213          WHEN 0
   821 GC1213              MOVE 'Listing Off'         TO WS-Listing-TXT
   822 GC1213              MOVE SPACE                 TO WS-CS-LISTING-CHR
   823 GC1213          WHEN 1
   824 GC1213              MOVE 'Listing On (Landscape)' TO WS-Listing-TXT
   825 GC1213              MOVE SELCHAR               TO WS-CS-LISTING-CHR
   826 GC1213          WHEN 2
   827 GC1213              MOVE 'Listing On (Portrait)' TO WS-Listing-TXT
   828 GC1213              MOVE SELCHAR               TO WS-CS-LISTING-CHR
   829 GC1213          END-EVALUATE
   830             ACCEPT S-Switches-SCR
   831             IF COB-CRT-STATUS > 0
   832                 EVALUATE COB-CRT-STATUS
   833                     WHEN COB-SCR-F1
   834                         IF WS-CS-DEBUG-CHR = SPACE
   835 GC0712                      MOVE SELCHAR TO WS-CS-DEBUG-CHR
   836                         ELSE
   837                             MOVE ' ' TO WS-CS-DEBUG-CHR
   838                         END-IF
   839 GC0712              WHEN COB-SCR-F2
   840 GC0712                  IF  WS-CS-TRACEALL-CHR = SPACE
   841 GC0712                      MOVE SELCHAR TO WS-CS-TRACEALL-CHR
   842 GC0712                  ELSE
   843 GC0712                      MOVE ' ' TO WS-CS-TRACEALL-CHR
   844 GC0712                  END-IF
   845                     WHEN COB-SCR-F3
   846 GC0712                  IF WS-CS-LIBRARY-CHR = SPACE
   847 GC0712                      MOVE SELCHAR TO WS-CS-LIBRARY-CHR
   848                         ELSE
   849 GC0712                      MOVE ' ' TO WS-CS-LIBRARY-CHR
   850                         END-IF
   851                     WHEN COB-SCR-F4
   852                         IF  WS-CS-EXECUTE-CHR = SPACE
   853 GC0712                      MOVE SELCHAR TO WS-CS-EXECUTE-CHR
   854                         ELSE
   855                             MOVE ' ' TO WS-CS-EXECUTE-CHR
   856                         END-IF
   857 GC0712              WHEN COB-SCR-F5
   858 GC1213                  ADD 1 TO WS-Listing-CD
   859 GC1213                  IF WS-Listing-CD > 2
   860 GC1213                      MOVE 0 TO WS-Listing-CD
   861 GC1213                  END-IF
   862 GC0712              WHEN COB-SCR-F6
   863 GC0712                  IF WS-CS-NOFUNC-CHR = SPACE
```

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```
GNUCOBOL 3.0 24DEC2017  Source Listing                                          2017/12/24
                                             /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                                  Page: 23
====== ====================================================================================
   864 GC0712                             MOVE SELCHAR TO WS-CS-NOFUNC-CHR
   865 GC0712                           ELSE
   866 GC0712                             MOVE ' ' TO WS-CS-NOFUNC-CHR
   867 GC0712                           END-IF
   868 GC0712                         WHEN COB-SCR-F7
   869 GC0712                           IF WS-CS-WARNALL-CHR = SPACE
   870 GC0712                             MOVE SELCHAR TO WS-CS-WARNALL-CHR
   871 GC0712                           ELSE
   872 GC0712                             MOVE ' ' TO WS-CS-WARNALL-CHR
   873 GC0712                           END-IF
   874 GC0712                         WHEN COB-SCR-F8
   875 GC0712                           IF WS-CS-FREE-CHR = SPACE
   876 GC0712                             MOVE SELCHAR TO WS-CS-FREE-CHR
   877 GC0712                           ELSE
   878 GC0712                             MOVE ' ' TO WS-CS-FREE-CHR
   879 GC0712                           END-IF
   880 GC0712                         WHEN COB-SCR-F9
   881 GC0712                           IF  WS-CS-NOTRUNC-CHR = SPACE
   882 GC0712                             MOVE SELCHAR TO WS-CS-NOTRUNC-CHR
   883 GC0712                           ELSE
   884 GC0712                             MOVE ' ' TO WS-CS-NOTRUNC-CHR
   885 GC0712                           END-IF
   886                                 WHEN COB-SCR-ESC
   887                                   PERFORM 900-Terminate
   888      * ------------------ Control will NOT return
   889 GC0712                         WHEN COB-SCR-F12
   890 GC0712                           ADD 1 TO WS-CS-Config-NUM
   891 GC0712                           IF WS-CS-Config-NUM > 7
   892 GC0712                             MOVE 1 TO WS-CS-Config-NUM
   893 GC0712                           END-IF
   894                                 WHEN OTHER
   895                                   MOVE 'An unsupported key was pressed'
   896                                     TO WS-Output-Msg-TXT
   897                               END-EVALUATE
   898                             ELSE
   899                               SET WS-RS-No-Switch-Changes-BOOL TO TRUE
   900                             END-IF
   901               END-PERFORM
   902                   .
```

```
  904          *>*************************************************************
  905          *> Run the compiler using the switch settings we've prepared.  **
  906          *>*************************************************************
  907           210-Run-Compiler SECTION.
  908              MOVE SPACES TO WS-Cmd-TXT
  909                            WS-Cobc-Cmd-TXT
  910                            WS-Output-Msg-TXT
  911              DISPLAY S-Switches-SCR
  912              MOVE 1 TO WS-I-SUB
  913 GC0712      MOVE LOWER-CASE(WS-CS-Filename-TXT (WS-CS-Config-NUM))
  914 GC0712         TO WS-Config-Fn-TXT
  915          *>*************************************************************
  916          *> Build the 'cobc' command                               **
  917          *>*************************************************************
  918 GC0909      MOVE SPACES TO WS-Cobc-Cmd-TXT
  919 GC0909      STRING 'cobc -v -std='
  920 GC0909          TRIM(WS-Config-Fn-TXT,TRAILING)
  921 GC0909          ' '
  922 GC0909          INTO WS-Cobc-Cmd-TXT
  923 GC0909          WITH POINTER WS-I-SUB
  924              IF WS-CS-LIBRARY-CHR NOT = ' '
  925                  STRING '-m '
  926                      DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
  927                      WITH POINTER WS-I-SUB
  928              ELSE
  929                  STRING '-x '
  930                      DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
  931                      WITH POINTER WS-I-SUB
  932              END-IF
  933              IF WS-CS-DEBUG-CHR NOT = ' '
  934                  STRING '-fdebugging-line '
  935                      DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
  936                      WITH POINTER WS-I-SUB
  937              END-IF
  938              IF WS-CS-NOTRUNC-CHR NOT = ' '
  939                  STRING '-fnotrunc '
  940                      DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
  941                      WITH POINTER WS-I-SUB
  942              END-IF
  943              IF WS-CS-TRACEALL-CHR NOT = ' '
  944 GC0809          STRING '-ftraceall '
  945                      DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
  946                      WITH POINTER WS-I-SUB
  947              END-IF
  948 GC0712      IF WS-CS-NOFUNC-CHR NOT = ' '
  949 VC0717          STRING '-fintrinsics=ALL '
  950 GC0712              DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
  951 GC0712              WITH POINTER WS-I-SUB
  952 GC0712      END-IF
  953 GC0712      IF WS-CS-WARNALL-CHR NOT = ' '
  954 GC0712          STRING '-Wall '
  955 GC0712              DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                       2017/12/24
                                               /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                               Page: 25
====== ================================================================================
   956 GC0712            WITH POINTER WS-I-SUB
   957 GC0712      END-IF
   958 GC0712      IF WS-CS-FREE-CHR NOT = ' '
   959 GC0712         STRING '-free '
   960 GC0712            DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
   961 GC0712            WITH POINTER WS-I-SUB
   962 GC0712      ELSE
   963 GC0712         STRING '-fixed '
   964 GC0712            DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
   965 GC0712            WITH POINTER WS-I-SUB
   966 GC0712      END-IF
   967
   968 GC0712      MOVE 0 TO WS-Tally-QTY
   969 GC0712      INSPECT WS-CS-Extra-TXT
   970 GC0712         TALLYING WS-Tally-QTY FOR ALL '-save-temps'
   971 GC0712      IF WS-CS-LISTING-CHR > SPACE
   972 GC0712      AND WS-Tally-QTY > 0
   973 GC0712         MOVE SPACE TO WS-CS-LISTING-CHR *> Can't generate listing if -save-temps u
       sed
   974 GC0712      END-IF
   975 GC0712      IF WS-CS-LISTING-CHR > SPACE
   976 GC1010         STRING '-save-temps '
   977 GC1010            DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
   978 GC1010            WITH POINTER WS-I-SUB
   979 GC1010      END-IF
   980
   981 GC0709      IF WS-CS-Extra-TXT > SPACES
   982 GC0709         STRING ' '
   983 GC0709                TRIM(WS-CS-Extra-TXT,TRAILING)
   984 GC0709                ' '
   985 GC0709                DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
   986 GC0709                WITH POINTER WS-I-SUB
   987 GC0709      END-IF
   988 GC0909      STRING TRIM(WS-Prog-File-Name-TXT,TRAILING)
   989 GC0909         DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
   990 GC0909         WITH POINTER WS-I-SUB
   991         *>**************************************************************
   992         *> Prepare the compilation listing file                     **
   993         *>**************************************************************
   994 GC1113      MOVE CONCATENATE(TRIM(WS-Pgm-Nm-TXT,Trailing),'.gclst')
   995 GC0712        TO WS-Listing-Filename-TXT
   996 GC0712      CALL 'CBL_DELETE_FILE' USING WS-Listing-Filename-TXT
   997         *>**************************************************************
   998         *> Now execute the 'cobc' command                           **
   999         *>**************************************************************
  1000 GC0410      MOVE ' Compiling...' TO WS-Output-Msg-TXT
  1001 GC0410      DISPLAY S-Switches-SCR
  1002 GC0609      SET WS-RS-Output-File-Avail-BOOL TO TRUE
  1003             MOVE SPACES TO WS-Cmd-TXT
  1004             STRING TRIM(WS-Cobc-Cmd-TXT,TRAILING)
  1005 GC0712            ' >' WS-Listing-Filename-TXT
  1006 GC0712            ' 2>&1'
  1007                DELIMITED SIZE


================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL              Page: 25
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                  2017/12/24
                                        /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                          Page: 26
====== ============================================================================
  1008                   INTO WS-Cmd-TXT
  1009 DEBUG D   DISPLAY WS-Cmd-TXT UPON SYSERR
  1010           CALL 'SYSTEM' USING TRIM(WS-Cmd-TXT,TRAILING)
  1011 GC0712    OPEN EXTEND F-Cobc-Output-FILE
  1012 GC0712    WRITE F-Cobc-Output-REC FROM SPACES
  1013 GC0712    IF RETURN-CODE = 0
  1014 GC0712        SET WS-RS-Compile-OK-BOOL TO TRUE
  1015 GC0712        MOVE ' Compilation Was Successful' TO WS-Output-Msg-TXT
  1016 GC0712        MOVE CONCATENATE('GNU COBOL',WS-Output-Msg-TXT)
  1017 GC0712          TO F-Cobc-Output-REC
  1018 GC0712        WRITE F-Cobc-Output-REC
  1019 GC0712        SET WS-RS-Complete-BOOL TO TRUE
  1020 GC0712      ELSE
  1021 GC0712        SET WS-RS-Compile-Failed-BOOL TO TRUE
  1022 GC0712        MOVE CONCATENATE(' Compilation Failed - See ',
  1023 GC0712                    TRIM(WS-Listing-Filename-TXT,Trailing))
  1024 GC0712          TO WS-Output-Msg-TXT
  1025 GC0712        MOVE 'GNU COBOL Compilation HAS FAILED - See Above'
  1026 GC0712          TO F-Cobc-Output-REC
  1027 GC0712        WRITE F-Cobc-Output-REC
  1028 GC0712      END-IF
  1029 GC0712      CLOSE F-Cobc-Output-FILE
  1030 GC0712      DISPLAY S-Switches-SCR
  1031 GC0712      CALL 'C$SLEEP' USING 2
  1032 GC0712      MOVE SPACES TO WS-Output-Msg-TXT
  1033           IF WS-RS-Compile-Failed-BOOL
  1034 GC0712        PERFORM 250-Autoload-Listing
  1035           PERFORM 900-Terminate
  1036      *> ----- Control will not return
  1037           END-IF
  1038           .
====================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL             Page: 26
```

```
  1040        *>****************************************************************
  1041        *> Generate a source + xref listing using 'LISTING' subroutine **
  1042        *>****************************************************************
  1043 GC0410 220-Make-Listing SECTION.
  1044 GC0410     MOVE ' Generating listing...' TO WS-Output-Msg-TXT
  1045 GC0410     DISPLAY S-Switches-SCR
  1046 GC0410     MOVE 0 TO RETURN-CODE
  1047        *>****************************************************************
  1048        *> Create the listing                                        **
  1049        *>****************************************************************
  1050 GC0410     MOVE SPACES TO WS-Output-Msg-TXT
  1051 GC0410     CALL 'LISTING' USING WS-Listing-Filename-TXT
  1052 GC0712                          WS-File-Name-TXT
  1053 GC0712                          WS-OS-Type-CD
  1054 GC1213                          LPP
  1055 GC1213                          LPPP
  1056 GC1213                          WS-Listing-CD
  1057 GC0410     ON EXCEPTION
  1058 GC0410        MOVE ' LISTING module is not available'
  1059 GC0410          TO WS-Output-Msg-TXT
  1060 GC0410        MOVE 1 TO RETURN-CODE
  1061 GC0410     END-CALL
  1062 GC0410     IF RETURN-CODE = 0
  1063 GC0712        MOVE ' Source+Xref listing generated '
  1064 GC0712          TO WS-Output-Msg-TXT
  1065 GC0410     END-IF
  1066 GC0712     DISPLAY S-Switches-SCR
  1067 GC0712     CALL 'C$SLEEP' USING 2
  1068 GC0712     PERFORM 250-Autoload-Listing
  1069 GC0410     .
```

```
  1071         *>****************************************************************
  1072         *> Run the compiled program                                   **
  1073         *>****************************************************************
  1074          230-Run-Program SECTION.
  1075 GC0114     MOVE ' Preparing to run program ... press ENTER to close '
  1076 GC0114       TO WS-Output-Msg-TXT
  1077 GC0114     DISPLAY S-Switches-SCR
  1078 GC0114     CALL 'C$SLEEP' USING 3
  1079 GC0909     MOVE SPACES TO WS-Cmd-TXT
  1080 GC0909     MOVE 1 TO WS-I-SUB
  1081         *>****************************************************************
  1082         *> If necessary, start with 'cobcrun' command                 **
  1083         *>****************************************************************
  1084 GC0712     IF WS-CS-LIBRARY-CHR NOT = ' '
  1085                STRING 'cobcrun ' DELIMITED SIZE
  1086                     INTO WS-Cmd-TXT
  1087                     WITH POINTER WS-I-SUB
  1088            END-IF
  1089         *>****************************************************************
  1090         *> Add any necessary path prefix                              **
  1091         *>****************************************************************
  1092 GC0712     SET WS-RS-Double-Quote-Used-BOOL TO FALSE
  1093            IF WS-Prog-Folder-TXT NOT = SPACES
  1094 GC0909       IF WS-OS-Cygwin-BOOL AND WS-Prog-Folder-TXT (2:1) = ':'
  1095 GC0909           STRING '/cygdrive/'
  1096 GC0909               INTO WS-Cmd-TXT
  1097 GC0909               WITH POINTER WS-I-SUB
  1098 GC0909           STRING LOWER-CASE(WS-Prog-Folder-TXT (1:1))
  1099 GC0909               INTO WS-Cmd-TXT
  1100 GC0909               WITH POINTER WS-I-SUB
  1101 GC0909           PERFORM
  1102 GC0909               VARYING WS-J-SUB FROM 3 BY 1
  1103 GC0909               UNTIL WS-J-SUB > LENGTH(TRIM(WS-Prog-Folder-TXT))
  1104 GC0909               IF WS-Prog-Folder-TXT (WS-J-SUB:1) = '\'
  1105 GC0909                   STRING '/'
  1106 GC0909                       INTO WS-Cmd-TXT
  1107 GC0909                       WITH POINTER WS-I-SUB
  1108 GC0909               ELSE
  1109 GC0909                   STRING WS-Prog-Folder-TXT (WS-J-SUB:1)
  1110 GC0909                       INTO WS-Cmd-TXT
  1111 GC0909                       WITH POINTER WS-I-SUB
  1112 GC0909               END-IF
  1113 GC0909           END-PERFORM
  1114 GC0909         ELSE
  1115 GC0410           STRING '"' TRIM(WS-Prog-Folder-TXT,TRAILING)
  1116 GC0909               INTO WS-Cmd-TXT
  1117 GC0909               WITH POINTER WS-I-SUB
  1118 GC0712           SET WS-RS-Double-Quote-Used-BOOL TO TRUE
  1119 GC0909         END-IF
  1120 GC0712         STRING WS-OS-Dir-CHR
  1121 GC0909             INTO WS-Cmd-TXT
  1122 GC0909             WITH POINTER WS-I-SUB
```

====== ===
```
 1123 GC0909      ELSE
 1124 GC0909          IF WS-OS-Cygwin-BOOL OR WS-OS-UNIX-BOOL
 1125 GC0909              STRING './'
 1126 GC0909                  INTO WS-Cmd-TXT
 1127 GC0909                  WITH POINTER WS-I-SUB
 1128 GC0909          END-IF
 1129              END-IF
 1130         *>**************************************************************
 1131         *> Insert program filename                               **
 1132         *>**************************************************************
 1133 GC0909      STRING TRIM(WS-Pgm-Nm-TXT,TRAILING)
 1134 GC0909          INTO WS-Cmd-TXT
 1135 GC0909          WITH POINTER WS-I-SUB
 1136         *>**************************************************************
 1137         *> Insert proper extension                               **
 1138         *>**************************************************************
 1139 GC0712      IF WS-CS-LIBRARY-CHR = ' '
 1140 GC0712          IF WS-OS-Exe-Ext-CONST > ' '
 1141 GC0712              STRING WS-OS-Exe-Ext-CONST DELIMITED SPACE
 1142 GC0712                  INTO WS-Cmd-TXT
 1143 GC0712                  WITH POINTER WS-I-SUB
 1144 GC0712          END-IF
 1145 GC0712      ELSE
 1146 GC0712          IF WS-OS-Lib-Ext-CONST > ' '
 1147 GC0712              STRING WS-OS-Lib-Ext-CONST DELIMITED SPACE
 1148 GC0712                  INTO WS-Cmd-TXT
 1149 GC0712                  WITH POINTER WS-I-SUB
 1150 GC0712          END-IF
 1151 GC0712      END-IF
 1152 GC0712      IF WS-RS-Double-Quote-Used-BOOL
 1153 GC0712          STRING '"' DELIMITED SIZE
 1154 GC0712              INTO WS-Cmd-TXT
 1155 GC0712              WITH POINTER WS-I-SUB
 1156 GC0712      END-IF
 1157          IF WS-CS-Args-TXT NOT = SPACES
 1158 GC0809          STRING ' ' TRIM(WS-CS-Args-TXT,TRAILING)
 1159                  INTO WS-Cmd-TXT
 1160                  WITH POINTER WS-I-SUB
 1161          END-IF
 1162         *>**************************************************************
 1163         *> Run the program                                       **
 1164         *>**************************************************************
 1165 GC0114      CALL X'E4'
 1166              CALL 'SYSTEM' USING TRIM(WS-Cmd-TXT,TRAILING)
 1167 GC0712      MOVE SPACES TO WS-Output-Msg-TXT
 1168 GC0114      ACCEPT WS-Output-Msg-TXT(1:1) AT 0101
 1169              PERFORM 900-Terminate
 1170         * -- Control will NOT return
 1171                  .
```

==

```
   1173          *>***************************************************************
   1174          *> Determine if the program being compiled is a MAIN program   **
   1175          *>***************************************************************
   1176           240-Find-LINKAGE-SECTION SECTION.
   1177                 OPEN INPUT F-Source-Code-FILE
   1178 GC0712     MOVE ' ' TO WS-CS-LIBRARY-CHR
   1179                 SET WS-RS-More-To-1st-Prog-BOOL    TO TRUE
   1180                 PERFORM UNTIL WS-RS-1st-Prog-Complete-BOOL
   1181                     READ F-Source-Code-FILE AT END
   1182                         CLOSE F-Source-Code-FILE
   1183                         EXIT SECTION
   1184                     END-READ
   1185 GC0712         CALL 'CHECKSRC'
   1186 GC0712             USING BY CONTENT   F-Source-Code-REC
   1187 GC0712                   BY REFERENCE WS-RS-Source-Record-Type-CHR
   1188                     IF WS-RS-Source-Rec-Ident-BOOL
   1189                         SET WS-RS-1st-Prog-Complete-BOOL TO TRUE
   1190                     END-IF
   1191                 END-PERFORM
   1192 GC0712     SET WS-RS-Source-Rec-Ignored-BOOL TO TRUE
   1193                 PERFORM UNTIL WS-RS-Source-Rec-Linkage-BOOL
   1194                        OR WS-RS-Source-Rec-Ident-BOOL
   1195                     READ F-Source-Code-FILE AT END
   1196                         CLOSE F-Source-Code-FILE
   1197                         EXIT SECTION
   1198                     END-READ
   1199 GC0712         CALL 'CHECKSRC'
   1200 GC0712             USING BY CONTENT   F-Source-Code-REC
   1201 GC0712                   BY REFERENCE WS-RS-Source-Record-Type-CHR
   1202                 END-PERFORM
   1203                 CLOSE F-Source-Code-FILE
   1204                 IF WS-RS-Source-Rec-Linkage-BOOL
   1205 GC0712             MOVE SELCHAR TO WS-CS-LIBRARY-CHR
   1206                 END-IF
   1207                 .
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                        2017/12/24
                                             /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                               Page: 31
====== =====================================================================================

 1209 GC0712*>****************************************************************
 1210 GC0712*> Attempt to open the listing file as a command.  This will - **
 1211 GC1113*> if the user has associated filetype/extension 'gclst' with  **
 1212 GC0712*> an application - invoke the appropriate application to      **
 1213 GC0712*> allow the user to view the listing.                         **
 1214 GC0712*>****************************************************************'
 1215 GC0712 250-Autoload-Listing SECTION.
 1216 GC0712     EVALUATE TRUE
 1217 GC0712         WHEN WS-OS-Windows-BOOL OR WS-OS-Cygwin-BOOL
 1218 GC0712             MOVE SPACES TO WS-Cmd-TXT
 1219 GC0712             STRING
 1220 GC0712                 'cmd /c '
 1221 GC0712                 TRIM(WS-Listing-Filename-TXT,TRAILING)
 1222 GC0712                 DELIMITED SIZE INTO WS-Cmd-TXT
 1223 GC0712             CALL 'SYSTEM' USING TRIM(WS-Cmd-TXT,TRAILING)
 1224 GC0712         WHEN WS-OS-OSX-BOOL
 1225 GC0712             MOVE SPACES TO WS-Cmd-TXT
 1226 GC0712             STRING
 1227 GC0712                 'open -t '
 1228 GC0712                 TRIM(WS-Listing-Filename-TXT,TRAILING)
 1229 GC0712                 DELIMITED SIZE INTO WS-Cmd-TXT
 1230 GC0712             CALL 'SYSTEM' USING TRIM(WS-Cmd-TXT,TRAILING)
 1231 GC0712     END-EVALUATE
 1232 GC0712*>    ************************************************************
 1233 GC0712*>    ** Since we had to do our own '-save-temps' when we       **
 1234 GC0712*>    ** compiled (in order to generate the cross-reference     **
 1235 GC0712*>    ** listing) we now need to clean up after ourselves.      **
 1236 GC0712*>    ************************************************************
 1237 GC1112     DISPLAY S-Blank-SCR
 1238 GC0712     IF WS-OS-Windows-BOOL
 1239 GC0712         MOVE CONCATENATE('del ',TRIM(WS-Pgm-Nm-TXT,TRAILING))
 1240 GC0712           TO WS-Cmd-TXT
 1241 GC0712     ELSE
 1242 GC0712         MOVE CONCATENATE('rm ',TRIM(WS-Pgm-Nm-TXT,TRAILING))
 1243 GC0712           TO WS-Cmd-TXT
 1244 GC0712     END-IF
 1245 GC0712     CALL 'SYSTEM'
 1246 GC0712         USING CONCATENATE(TRIM(WS-Cmd-TXT,TRAILING),'.c')
 1247 GC0712     CALL 'SYSTEM'
 1248 GC0712         USING CONCATENATE(TRIM(WS-Cmd-TXT,TRAILING),'.c.h')
 1249 GC0712     CALL 'SYSTEM'
 1250 GC0712         USING CONCATENATE(TRIM(WS-Cmd-TXT,TRAILING),'.c.l*.h')
 1251 GC0712     CALL 'SYSTEM'
 1252 GC0712         USING CONCATENATE(TRIM(WS-Cmd-TXT,TRAILING),'.i')
 1253 GC0712     CALL 'SYSTEM'
 1254 GC0712         USING CONCATENATE(TRIM(WS-Cmd-TXT,TRAILING),'.o')
 1255
 1256 GC0712     .



====================================================================================================
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```

```
  1258         *>***********************************************************
  1259         *> Display a message and halt the program                **
  1260         *>***********************************************************
  1261          900-Terminate SECTION.
  1262 GC0909     IF WS-Output-Msg-TXT > SPACES
  1263 GC0909         DISPLAY S-Switches-SCR
  1264 GC0909         CALL 'C$SLEEP' USING 2
  1265 GC0909     END-IF
  1266            DISPLAY S-Blank-SCR
  1267            STOP RUN
  1268            .
  1269
  1270         END PROGRAM GCic.
```

```
 1272       IDENTIFICATION DIVISION.
 1273       PROGRAM-ID.  CHECKSRC.
 1274       *>*************************************************************
 1275       *> This subprogram will scan a line of source code it is given **
 1276       *> looking for 'LINKAGE SECTION' or 'IDENTIFICATION DIVISION'. **
 1277       *>                                                            **
 1278       *>  ****NOTE****   ****NOTE****    ****NOTE****   ****NOTE*** **
 1279       *>                                                            **
 1280       *> These two strings must be found IN THEIR ENTIRETY within   **
 1281       *> the 1st 80 columns of program source records, and cannot   **
 1282       *> follow either a '*>' sequence OR a '*' in col 7.           **
 1283       *>*************************************************************
 1284       *>  DATE   CHANGE DESCRIPTION                                 **
 1285       *> ====== ================================================== **
 1286       *> GC0809 Initial coding.                                     **
 1287       *>*************************************************************
 1288       ENVIRONMENT DIVISION.
 1289       CONFIGURATION SECTION.
 1290       REPOSITORY.
 1291          FUNCTION ALL INTRINSIC.
 1292       DATA DIVISION.
 1293       WORKING-STORAGE SECTION.
 1294       01  WS-Compressed-Src-TXT.
 1295           05 WS-CS-CHR                    OCCURS 80 TIMES
 1296                                           PIC X(1).
 1297
 1298       01  WS-Runtime-Switches-TXT.
 1299           05 WS-RS-Found-SPACE-CHR        PIC X(1).
 1300              88 WS-RS-Skipping-SPACE-BOOL    VALUE 'Y'.
 1301              88 WS-RS-Not-Skipping-SPACE-BOOL VALUE 'N'.
 1302
 1303       01  WS-I-SUB                        USAGE BINARY-CHAR.
 1304
 1305       01  WS-J-SUB                        USAGE BINARY-CHAR.
 1306       LINKAGE SECTION.
 1307       01  L-Argument-1-TXT.
 1308           02 L-A1-CHR                     OCCURS 80 TIMES
 1309                                           PIC X(1).
 1310
 1311       01  L-Argument-2-CHR                PIC X(1).
 1312           88 L-A2-LINKAGE-SECTION-BOOL VALUE 'L'.
 1313           88 L-A2-IDENT-DIVISION-BOOL  VALUE 'I'.
 1314           88 L-A2-Nothing-Special-BOOL VALUE ' '.
```

```
 1316 GC0712 PROCEDURE DIVISION USING BY VALUE     L-Argument-1-TXT
 1317 GC0712                            BY REFERENCE L-Argument-2-CHR.
 1318        000-Main SECTION.
 1319            SET L-A2-Nothing-Special-BOOL TO TRUE
 1320            IF L-A1-CHR (7) = '*'
 1321                GOBACK
 1322            END-IF
 1323            .
 1324        *>
 1325        *> Compress multiple consecutive spaces
 1326        *>
 1327            SET WS-RS-Not-Skipping-SPACE-BOOL TO TRUE
 1328            MOVE 0 TO WS-J-SUB
 1329            MOVE SPACES TO WS-Compressed-Src-TXT
 1330            PERFORM VARYING WS-I-SUB FROM 1 BY 1
 1331                    UNTIL WS-I-SUB > 80
 1332                IF L-A1-CHR (WS-I-SUB) = SPACE
 1333                    IF WS-RS-Not-Skipping-SPACE-BOOL
 1334                        ADD 1 TO WS-J-SUB
 1335                        MOVE UPPER-CASE(L-A1-CHR (WS-I-SUB))
 1336                          TO WS-CS-CHR (WS-J-SUB)
 1337                        SET WS-RS-Skipping-SPACE-BOOL TO TRUE
 1338                    END-IF
 1339                ELSE
 1340                    SET WS-RS-Not-Skipping-SPACE-BOOL TO TRUE
 1341                    ADD 1 TO WS-J-SUB
 1342                    MOVE L-A1-CHR (WS-I-SUB) TO WS-CS-CHR (WS-J-SUB)
 1343                END-IF
 1344            END-PERFORM
 1345        *>
 1346        *> Scan the compressed source line
 1347        *>
 1348            PERFORM VARYING WS-I-SUB FROM 1 BY 1
 1349                    UNTIL WS-I-SUB > 66
 1350                EVALUATE TRUE
 1351                    WHEN WS-CS-CHR (WS-I-SUB) = '*'
 1352                        IF WS-Compressed-Src-TXT (WS-I-SUB : 2) = '*>'
 1353                            GOBACK
 1354                        END-IF
 1355                    WHEN (WS-CS-CHR (WS-I-SUB) = 'L') AND (WS-I-SUB < 66)
 1356                        IF WS-Compressed-Src-TXT (WS-I-SUB : 15)
 1357                           = 'LINKAGE SECTION'
 1358                            SET L-A2-LINKAGE-SECTION-BOOL TO TRUE
 1359                            GOBACK
 1360                        END-IF
 1361                    WHEN (WS-CS-CHR (WS-I-SUB) = 'I') AND (WS-I-SUB < 58)
 1362                        IF WS-Compressed-Src-TXT (WS-I-SUB : 23)
 1363                           = 'IDENTIFICATION DIVISION'
 1364                            SET L-A2-IDENT-DIVISION-BOOL TO TRUE
 1365                            GOBACK
 1366                        END-IF
 1367                END-EVALUATE
```

==

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                          /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                          Page: 35
======  =========================================================================================
  1368          END-PERFORM
  1369        *>
  1370        *> If we get to here, we never found anything!
  1371        *>
  1372 +          GOBACK
  1373              .
  1374        END PROGRAM CHECKSRC.
  1375
  1376        IDENTIFICATION DIVISION.
  1377        PROGRAM-ID.  LISTING.
  1378        *>****************************************************************
  1379        *> This subprogram generates a cross-reference listing of an   **
  1380        *> GNU COBOL program.                                          **
  1381        *>****************************************************************
  1382        *>                                                            **
  1383        *> AUTHOR:       GARY L. CUTLER                              **
  1384        *>               Copyright (C) 2010, Gary L. Cutler, GPL      **
  1385        *>                                                            **
  1386        *> DATE-WRITTEN: April 1, 2010                                **
  1387        *>                                                            **
  1388        *>****************************************************************
  1389        *>  DATE   CHANGE DESCRIPTION                                 **
  1390        *> ====== =================================================== **
  1391        *> GCO410 Initial coding                                      **
  1392        *> GCO711 Updates to accommodate the 12MAR2010 version of OC  **
  1393        *> GCO710 Handle duplicate data names (i.e. 'CORRESPONDING' or **
  1394        *>        qualified items) better; ignore 'END PROGRAM' recs   **
  1395        *>        so program name doesn't appear in listing.          **
  1396        *> GCO313 Fix problem where the first procedure name defined   **
  1397        *>        in the PROCEDURE DIVISION lacks a "Defined" line     **
  1398        *>        number.                                             **
  1399        *> GC1213 Updated for 23NOV2013 version of GNU COBOL 2.1; Stop **
  1400        *>        showing functions as if they were identifiers in the **
  1401        *>        xref listing; Flag all CALL argument references with **
  1402        *>        a "C" rather than "*" because they aren't necessari- **
  1403        *>        ly altered; Fixed assorted formatting bugs; DOWN-   **
  1404        *>        WARD COMPATIBLE WITH GNU COBOL 2.0 SYNTAX            **
  1405        *> GCO314 Fix problem where 1st char of 1st token on a line is **
  1406        *>        lost if >>SOURCE MODE IS FREE is in effect and the   **
  1407        *>        1st character is non-blank.                         **
  1408        *> VC1217 Updated compiler version & date to v3.0 & 24DEC2017. **
  1409        *>****************************************************************
  1410        ENVIRONMENT DIVISION.
  1411        CONFIGURATION SECTION.
  1412        REPOSITORY.
  1413            FUNCTION ALL INTRINSIC.
  1414        INPUT-OUTPUT SECTION.
  1415        FILE-CONTROL.
  1416            SELECT F-Expanded-Src-FILE  ASSIGN TO WS-Expanded-Src-Fn-TXT
  1417                                        ORGANIZATION IS LINE SEQUENTIAL.
  1418 GCO712     SELECT F-Listing-FILE      ASSIGN TO L-Listing-Fn-TXT
  1419                                        ORGANIZATION IS LINE SEQUENTIAL.
  1420            SELECT F-Original-Src-FILE  ASSIGN TO L-Src-Fn-TXT
```

```
=========================================================================================
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```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                          2017/12/24
                                            /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                                 Page: 36
====== =====================================================================================
 1421                                         ORGANIZATION IS LINE SEQUENTIAL.
 1422              SELECT F-Sort-Work-FILE    ASSIGN TO DISK.
 1423         DATA DIVISION.
 1424         FILE SECTION.
 1425         FD  F-Expanded-Src-FILE.
 1426         01  F-Expanded-Src-REC.
 1427             05 F-ES-1-CHR                     PIC X.
 1428             05 F-ES-2-256-TXT-256             PIC X(256).
 1429 GC0712 01  F-Expanded-Src2-REC.
 1430 GC0712     05 F-ES-1-7-TXT                    PIC X(7).
 1431 GC0712     05 F-ES-8-256-TXT                  PIC X(249).
 1432
 1433 GC0712 FD  F-Listing-FILE.
 1434 GC1213 01  F-Listing-96-REC                   PIC X(96).
 1435 GC1213 01  F-Listing-135-REC                  PIC X(135).
 1436        01  F-Listing-REC                      PIC X(135).
 1437
 1438         FD  F-Original-Src-FILE.
 1439         01  F-Original-Src-REC.
 1440 GC0410     05 F-OS-1-128-TXT.
 1441 GC0410        10 FILLER                        PIC X(6).
 1442 GC0410        10 F-OS-7-CHR                    PIC X(1).
 1443 GC0712        10 F-OS-8-72-TXT                 PIC X(65).
 1444 GC0712        10 FILLER                        PIC X(56).
 1445           05 F-OS-129-256-TXT                 PIC X(128).
 1446
 1447         SD  F-Sort-Work-FILE.
 1448         01  F-Sort-Work-REC.
 1449             05 F-SW-Prog-ID-TXT                PIC X(15).
 1450             05 F-SW-Token-Uc-TXT              PIC X(32).
 1451             05 F-SW-Token-TXT                  PIC X(32).
 1452             05 F-SW-Section-TXT                PIC X(15).
 1453             05 F-SW-Def-Line-NUM               PIC 9(6).
 1454             05 F-SW-Reference-TXT.
 1455                10 F-SW-Ref-Line-NUM            PIC 9(6).
 1456                10 F-SW-Ref-Flag-CHR            PIC X(1).
 1457
 1458         WORKING-STORAGE SECTION.
 1459 GC1213 01  WS-Copyright-TXT                    PIC X(86).
 1460
 1461        01  WS-Curr-CHR                         PIC X(1).
 1462            88 WS-Curr-Char-Is-Punct-BOOL       VALUE '=', '(', ')',
 1463                                                      '*', '/', '&',
 1464                                                      ';', ',', '<',
 1465                                                      '>', ':'.
 1466            88 WS-Curr-Char-Is-Quote-BOOL       VALUE "'", '"'.
 1467            88 WS-Curr-Char-Is-X-BOOL           VALUE 'x', 'X'.
 1468            88 WS-Curr-Char-Is-Z-BOOL           VALUE 'z', 'Z'.
 1469
 1470        01  WS-Curr-Division-TXT                PIC X(1).
 1471 GC1010     88 WS-CD-In-IDENT-DIV-BOOL          VALUE 'i', 'I', '?'.
 1472 GC1010     88 WS-CD-In-ENV-DIV-BOOL            VALUE 'e', 'E'.
 1473 GC1010     88 WS-CD-In-DATA-DIV-BOOL           VALUE 'd', 'D'.

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Line    Statement                                                               Page: 37
======= =========================================================================================
  1474 GC1010     88 WS-CD-In-PROC-DIV-BOOL            VALUE 'p', 'P'.
  1475
  1476          01  WS-Curr-Line-NUM                   PIC 9(6).
  1477
  1478          01  WS-Curr-Prog-ID-TXT.
  1479              05 FILLER                           PIC X(12).
  1480              05 WS-CPI-13-15-TXT                 PIC X(3).
  1481 GC0712       05 WS-CPI-16-CHR                    PIC X(1).
  1482
  1483          01  WS-Curr-Section-TXT.
  1484              05 WS-CS-1-CHR                       PIC X(1).
  1485              05 WS-CS-2-14-TXT.
  1486                 10 FILLER                         PIC X(10).
  1487                 10 WS-CS-11-14-TXT                PIC X(3).
  1488              05 WS-CS-15-CHR                      PIC X(1).
  1489
  1490          01  WS-Curr-Verb-TXT                    PIC X(12).
  1491
  1492          01  WS-Delim-TXT                        PIC X(2).
  1493
  1494          01  WS-Dummy-TXT                        PIC X(1).
  1495
  1496          01  WS-Expanded-Src-Fn-TXT              PIC X(256).
  1497
  1498          01  WS-Filename-TXT                     PIC X(256).
  1499
  1500 GC1213 01  WS-Flags-TXT.
  1501 GC1213       05 WS-Suppress-FF-CHR               PIC X(1).
  1502
  1503 GC1213 01  WS-Formatted-DT                       PIC 9999/99/99.
  1504
  1505          01  WS-Group-Indicators-TXT.
  1506              05 WS-GI-Prog-ID-TXT                 PIC X(15).
  1507              05 WS-GI-Token-TXT                   PIC X(32).
  1508
  1509          01  WS-Held-Reference-TXT               PIC X(100).
  1510
  1511          01  WS-I-SUB                            USAGE BINARY-LONG.
  1512
  1513          01  WS-J-SUB                            USAGE BINARY-LONG.
  1514
  1515          01  WS-Lines-Left-NUM                   USAGE BINARY-LONG.
  1516
  1517          01  WS-Lines-Per-Page-NUM               USAGE BINARY-LONG.
  1518
  1519          01  WS-Lines-Per-Page-Env-TXT           PIC X(256).
  1520
  1521 GC1010 01  WS-Main-Module-Name-TXT               PIC X(256).
  1522
  1523          01  WS-Next-CHR                          PIC X(1).
  1524              88 WS-Next-Char-Is-Quote-BOOL        VALUE '"', '''.
  1525
  1526          01  WS-OS-Type-FILLER-TXT.
```

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Line    Statement                                                         Page: 38
====== ==========================================================================================
 1527              05 VALUE 'Windows'               PIC X(14).
 1528              05 VALUE 'Windows/Cygwin'        PIC X(14).
 1529              05 VALUE 'UNIX/Linux'            PIC X(14).
 1530              05 VALUE 'OSX'                   PIC X(14).
 1531              05 VALUE 'Windows/MinGW'         PIC X(14).
 1532         01  WS-OS-Types-TXT REDEFINES WS-OS-Type-FILLER-TXT.
 1533              05 WS-OS-Type-TXT                PIC X(14)
 1534                                       OCCURS 5 TIMES .
 1535
 1536 GC0712 01  WS-Page-NUM                        USAGE BINARY-LONG.
 1537
 1538 GC0712 01  WS-Page-No-TXT.
 1539 GC0712     05 WS-PN-Literal-TXT               PIC X(6).
 1540 GC0712     05 WS-PN-Page-NUM                  PIC Z(3)9.
 1541
 1542 GC1213 01  WS-Program-Path-TXT                PIC X(135).
 1543
 1544         01  WS-Reserved-Words-TXT.
 1545              05 VALUE '                        ' PIC X(33).
 1546 GC1213     05 VALUE 'FABS                     ' PIC X(33).
 1547              05 VALUE 'VACCEPT                 ' PIC X(33).
 1548              05 VALUE ' ACCESS                 ' PIC X(33).
 1549 GC1213     05 VALUE 'FACOS                    ' PIC X(33).
 1550              05 VALUE ' ACTIVE-CLASS           ' PIC X(33).      UNIMPLEMENTED
 1551              05 VALUE 'VADD                    ' PIC X(33).
 1552              05 VALUE ' ADDRESS                ' PIC X(33).
 1553              05 VALUE ' ADVANCING              ' PIC X(33).
 1554              05 VALUE 'KAFTER                  ' PIC X(33).
 1555              05 VALUE ' ALIGNED                ' PIC X(33).      UNIMPLEMENTED
 1556              05 VALUE ' ALL                    ' PIC X(33).
 1557              05 VALUE 'VALLOCATE               ' PIC X(33).
 1558              05 VALUE ' ALPHABET               ' PIC X(33).
 1559              05 VALUE ' ALPHABETIC             ' PIC X(33).
 1560              05 VALUE ' ALPHABETIC-LOWER       ' PIC X(33).
 1561              05 VALUE ' ALPHABETIC-UPPER       ' PIC X(33).
 1562              05 VALUE ' ALPHANUMERIC           ' PIC X(33).
 1563              05 VALUE ' ALPHANUMERIC-EDITED    ' PIC X(33).
 1564              05 VALUE ' ALSO                   ' PIC X(33).
 1565              05 VALUE 'VALTER                  ' PIC X(33).
 1566              05 VALUE ' ALTERNATE              ' PIC X(33).
 1567              05 VALUE ' AND                    ' PIC X(33).
 1568 GC1213     05 VALUE 'FANNUITY                 ' PIC X(33).
 1569              05 VALUE ' ANY                    ' PIC X(33).
 1570              05 VALUE ' ANYCASE                ' PIC X(33).      UNIMPLEMENTED
 1571              05 VALUE ' ARE                    ' PIC X(33).
 1572              05 VALUE ' AREA                   ' PIC X(33).
 1573              05 VALUE ' AREAS                  ' PIC X(33).
 1574              05 VALUE ' ARGUMENT-NUMBER        ' PIC X(33).
 1575              05 VALUE ' ARGUMENT-VALUE         ' PIC X(33).
 1576              05 VALUE ' ARITHMETIC             ' PIC X(33).      UNIMPLEMENTED
 1577              05 VALUE ' AS                     ' PIC X(33).
 1578              05 VALUE ' ASCENDING              ' PIC X(33).
 1579              05 VALUE ' ASCII                  ' PIC X(33).

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Line    Statement                                                            Page: 39
======  =========================================================================
  1580 GC1213     05 VALUE 'FASIN                          ' PIC X(33).
  1581            05 VALUE ' ASSIGN                         ' PIC X(33).
  1582            05 VALUE ' AT                             ' PIC X(33).
  1583 GC1213     05 VALUE 'FATAN                          ' PIC X(33).
  1584 GC0711     05 VALUE ' ATTRIBUTE                      ' PIC X(33).
  1585            05 VALUE ' AUTHOR                         ' PIC X(33).       OBSOLETE
  1586            05 VALUE ' AUTO                           ' PIC X(33).
  1587            05 VALUE ' AUTO-SKIP                      ' PIC X(33).
  1588            05 VALUE ' AUTOMATIC                      ' PIC X(33).
  1589            05 VALUE ' AUTOTERMINATE                  ' PIC X(33).
  1590            05 VALUE ' AWAY-FROM-ZERO                 ' PIC X(33).
  1591            05 VALUE ' B-AND                          ' PIC X(33).       UNIMPLEMENTED
  1592            05 VALUE ' B-NOT                          ' PIC X(33).       UNIMPLEMENTED
  1593            05 VALUE ' B-OR                           ' PIC X(33).       UNIMPLEMENTED
  1594            05 VALUE ' B-XOR                          ' PIC X(33).       UNIMPLEMENTED
  1595            05 VALUE ' BACKGROUND-COLOR               ' PIC X(33).
  1596            05 VALUE ' BACKGROUND-COLOUR              ' PIC X(33).
  1597            05 VALUE ' BASED                          ' PIC X(33).
  1598            05 VALUE ' BEEP                           ' PIC X(33).
  1599            05 VALUE ' BEFORE                         ' PIC X(33).
  1600            05 VALUE ' BELL                           ' PIC X(33).
  1601            05 VALUE ' BINARY                         ' PIC X(33).
  1602            05 VALUE ' BINARY-C-LONG                  ' PIC X(33).
  1603            05 VALUE ' BINARY-CHAR                    ' PIC X(33).
  1604            05 VALUE ' BINARY-DOUBLE                  ' PIC X(33).
  1605            05 VALUE ' BINARY-INT                     ' PIC X(33).
  1606            05 VALUE ' BINARY-LONG                    ' PIC X(33).
  1607            05 VALUE ' BINARY-LONG-LONG               ' PIC X(33).
  1608            05 VALUE ' BINARY-SHORT                   ' PIC X(33).
  1609            05 VALUE ' BIT                            ' PIC X(33).       UNIMPLEMENTED
  1610            05 VALUE ' BLANK                          ' PIC X(33).
  1611            05 VALUE ' BLINK                          ' PIC X(33).
  1612            05 VALUE ' BLOCK                          ' PIC X(33).
  1613            05 VALUE ' BOOLEAN                        ' PIC X(33).       UNIMPLEMENTED
  1614 GC1213     05 VALUE 'FBOOLEAN-OF-INTEGER             ' PIC X(33).       UNIMPLEMENTED
  1615            05 VALUE ' BOTTOM                         ' PIC X(33).
  1616            05 VALUE 'YBY                             ' PIC X(33).
  1617 GC1213     05 VALUE 'FBYTE-LENGTH                    ' PIC X(33).
  1618            05 VALUE 'MC01                            ' PIC X(33).
  1619            05 VALUE 'MC02                            ' PIC X(33).
  1620            05 VALUE 'MC03                            ' PIC X(33).
  1621            05 VALUE 'MC04                            ' PIC X(33).
  1622            05 VALUE 'MC05                            ' PIC X(33).
  1623            05 VALUE 'MC06                            ' PIC X(33).
  1624            05 VALUE 'MC07                            ' PIC X(33).
  1625            05 VALUE 'MC08                            ' PIC X(33).
  1626            05 VALUE 'MC09                            ' PIC X(33).
  1627            05 VALUE 'MC10                            ' PIC X(33).
  1628            05 VALUE 'MC11                            ' PIC X(33).
  1629            05 VALUE 'MC12                            ' PIC X(33).
  1630            05 VALUE 'VCALL                           ' PIC X(33).
  1631            05 VALUE 'MCALL-CONVENTION                ' PIC X(33).
  1632            05 VALUE 'VCANCEL                         ' PIC X(33).

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                                     /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                       Page: 40
====== ==============================================================================
  1633           05 VALUE ' CAPACITY                   ' PIC X(33).    UNIMPLEMENTED
  1634           05 VALUE ' CD                         ' PIC X(33).    OBSOLETE
  1635           05 VALUE ' CENTER                     ' PIC X(33).    UNIMPLEMENTED
  1636           05 VALUE ' CF                         ' PIC X(33).
  1637           05 VALUE ' CH                         ' PIC X(33).
  1638           05 VALUE ' CHAIN                      ' PIC X(33).    UNIMPLEMENTED
  1639           05 VALUE ' CHAINING                   ' PIC X(33).
  1640 GC1213    05 VALUE 'FCHAR                       ' PIC X(33).
  1641 GC1213    05 VALUE 'FCHAR-NATIONAL              ' PIC X(33).    UNIMPLEMENTED
  1642           05 VALUE ' CHARACTER                  ' PIC X(33).
  1643           05 VALUE ' CHARACTERS                 ' PIC X(33).
  1644           05 VALUE ' CLASS                      ' PIC X(33).
  1645           05 VALUE ' CLASS-ID                   ' PIC X(33).    UNIMPLEMENTED
  1646 GC0711    05 VALUE ' CLASSIFICATION             ' PIC X(33).
  1647           05 VALUE 'VCLOSE                      ' PIC X(33).
  1648 GC1213    05 VALUE 'FCOB-CRT-STATUS             ' PIC X(33).
  1649           05 VALUE ' CODE                       ' PIC X(33).
  1650           05 VALUE ' CODE-SET                   ' PIC X(33).
  1651           05 VALUE ' COL                        ' PIC X(33).
  1652           05 VALUE ' COLLATING                  ' PIC X(33).
  1653           05 VALUE ' COLS                       ' PIC X(33).
  1654           05 VALUE ' COLUMN                     ' PIC X(33).
  1655           05 VALUE ' COLUMNS                    ' PIC X(33).
  1656 GC1213    05 VALUE 'FCOMBINED-DATETIME          ' PIC X(33).
  1657           05 VALUE ' COMMA                      ' PIC X(33).
  1658           05 VALUE ' COMMAND-LINE               ' PIC X(33).
  1659           05 VALUE 'VCOMMIT                     ' PIC X(33).
  1660           05 VALUE ' COMMON                     ' PIC X(33).
  1661           05 VALUE ' COMMUNICATION              ' PIC X(33).    OBSOLETE
  1662           05 VALUE ' COMP                       ' PIC X(33).
  1663           05 VALUE ' COMP-1                     ' PIC X(33).
  1664           05 VALUE ' COMP-2                     ' PIC X(33).
  1665           05 VALUE ' COMP-3                     ' PIC X(33).
  1666           05 VALUE ' COMP-4                     ' PIC X(33).
  1667           05 VALUE ' COMP-5                     ' PIC X(33).
  1668           05 VALUE ' COMP-6                     ' PIC X(33).
  1669           05 VALUE ' COMP-X                     ' PIC X(33).
  1670           05 VALUE ' COMPUTATIONAL              ' PIC X(33).
  1671           05 VALUE ' COMPUTATIONAL-1            ' PIC X(33).
  1672           05 VALUE ' COMPUTATIONAL-2            ' PIC X(33).
  1673           05 VALUE ' COMPUTATIONAL-3            ' PIC X(33).
  1674           05 VALUE ' COMPUTATIONAL-4            ' PIC X(33).
  1675           05 VALUE ' COMPUTATIONAL-5            ' PIC X(33).
  1676           05 VALUE ' COMPUTATIONAL-X            ' PIC X(33).
  1677           05 VALUE 'VCOMPUTE                    ' PIC X(33).
  1678 GC1213    05 VALUE 'FCONCATENATE                ' PIC X(33).
  1679 GC0712    05 VALUE ' CONDITION                  ' PIC X(33).
  1680           05 VALUE 'KCONFIGURATION              ' PIC X(33).
  1681           05 VALUE 'MCONSOLE                    ' PIC X(33).
  1682           05 VALUE ' CONSTANT                   ' PIC X(33).
  1683           05 VALUE ' CONTAINS                   ' PIC X(33).
  1684 GC0712    05 VALUE 'ACONTENT                    ' PIC X(33).
  1685           05 VALUE 'VCONTINUE                   ' PIC X(33).

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                                        /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                          Page: 41
====== ============================================================================
 1686           05 VALUE ' CONTROL                      ' PIC X(33).
 1687           05 VALUE ' CONTROLS                     ' PIC X(33).
 1688 GC0711    05 VALUE ' CONVERSION                   ' PIC X(33).
 1689           05 VALUE 'KCONVERTING                   ' PIC X(33).
 1690           05 VALUE ' COPY                         ' PIC X(33).
 1691           05 VALUE ' CORR                         ' PIC X(33).
 1692           05 VALUE ' CORRESPONDING                ' PIC X(33).
 1693 GC1213    05 VALUE 'FCOS                          ' PIC X(33).
 1694           05 VALUE 'KCOUNT                        ' PIC X(33).
 1695           05 VALUE ' CRT                          ' PIC X(33).
 1696           05 VALUE ' CRT-UNDER                    ' PIC X(33).
 1697           05 VALUE 'MCSP                          ' PIC X(33).
 1698           05 VALUE ' CURRENCY                     ' PIC X(33).
 1699 GC1213    05 VALUE 'FCURRENCY-SYMBOL              ' PIC X(33).
 1700 GC1213    05 VALUE 'FCURRENT-DATE                 ' PIC X(33).
 1701           05 VALUE ' CURSOR                       ' PIC X(33).
 1702           05 VALUE ' CYCLE                        ' PIC X(33).
 1703           05 VALUE 'KDATA                         ' PIC X(33).
 1704           05 VALUE ' DATA-POINTER                 ' PIC X(33).      UNIMPLEMENTED
 1705           05 VALUE ' DATE                         ' PIC X(33).
 1706           05 VALUE ' DATE-COMPILED                ' PIC X(33).      OBSOLETE
 1707           05 VALUE ' DATE-MODIFIED                ' PIC X(33).      OBSOLETE
 1708 GC1213    05 VALUE 'FDATE-OF-INTEGER              ' PIC X(33).
 1709 GC1213    05 VALUE 'FDATE-TO-YYYYMMDD             ' PIC X(33).
 1710           05 VALUE ' DATE-WRITTEN                 ' PIC X(33).      OBSOLETE
 1711           05 VALUE ' DAY                          ' PIC X(33).
 1712 GC1213    05 VALUE 'FDAY-OF-INTEGER               ' PIC X(33).
 1713           05 VALUE ' DAY-OF-WEEK                  ' PIC X(33).
 1714 GC1213    05 VALUE 'IDAY-TO-YYYYDDD               ' PIC X(33).
 1715           05 VALUE ' DE                           ' PIC X(33).
 1716 GC0712    05 VALUE 'IDEBUG-CONTENTS               ' PIC X(33).
 1717 GC0712    05 VALUE 'IDEBUG-ITEM                   ' PIC X(33).
 1718 GC0712    05 VALUE 'IDEBUG-LINE                   ' PIC X(33).
 1719 GC0712    05 VALUE 'IDEBUG-NAME                   ' PIC X(33).
 1720 GC0712    05 VALUE 'IDEBUG-SUB-1                  ' PIC X(33).
 1721 GC0712    05 VALUE 'IDEBUG-SUB-2                  ' PIC X(33).
 1722 GC0712    05 VALUE 'IDEBUG-SUB-3                  ' PIC X(33).
 1723           05 VALUE ' DEBUGGING                    ' PIC X(33).
 1724           05 VALUE ' DECIMAL-POINT                ' PIC X(33).
 1725           05 VALUE ' DECLARATIVES                 ' PIC X(33).
 1726           05 VALUE ' DEFAULT                      ' PIC X(33).
 1727           05 VALUE 'VDELETE                       ' PIC X(33).
 1728           05 VALUE ' DELIMITED                    ' PIC X(33).
 1729           05 VALUE 'KDELIMITER                    ' PIC X(33).
 1730           05 VALUE ' DEPENDING                    ' PIC X(33).
 1731           05 VALUE ' DESCENDING                   ' PIC X(33).
 1732           05 VALUE ' DESTINATION                  ' PIC X(33).      UNIMPLEMENTED
 1733           05 VALUE ' DETAIL                       ' PIC X(33).
 1734 GC0711    05 VALUE ' DISC                         ' PIC X(33).
 1735           05 VALUE ' DISK                         ' PIC X(33).
 1736           05 VALUE 'VDISPLAY                      ' PIC X(33).
 1737 GC1213    05 VALUE 'FDISPLAY-OF                   ' PIC X(33).      UNIMPLEMENTED
 1738           05 VALUE 'VDIVIDE                       ' PIC X(33).

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                                         /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                              Page: 42
====== ==================================================================================
 1739           05 VALUE 'KDIVISION                      ' PIC X(33).
 1740           05 VALUE 'KDOWN                          ' PIC X(33).
 1741           05 VALUE ' DUPLICATES                    ' PIC X(33).
 1742           05 VALUE ' DYNAMIC                       ' PIC X(33).
 1743 GC1213    05 VALUE 'FE                             ' PIC X(33).
 1744           05 VALUE ' EBCDIC                        ' PIC X(33).
 1745 GC0712    05 VALUE ' EC                            ' PIC X(33).
 1746           05 VALUE ' EGI                           ' PIC X(33).    OBSOLETE
 1747           05 VALUE 'VELSE                          ' PIC X(33).
 1748           05 VALUE ' EMI                           ' PIC X(33).    OBSOLETE
 1749           05 VALUE ' EMPTY-CHECK                   ' PIC X(33).
 1750           05 VALUE 'VENABLE                        ' PIC X(33).    OBSOLETE
 1751 GC0710    05 VALUE 'KEND                           ' PIC X(33).
 1752           05 VALUE ' END-ACCEPT                    ' PIC X(33).
 1753           05 VALUE ' END-ADD                       ' PIC X(33).
 1754           05 VALUE ' END-CALL                      ' PIC X(33).
 1755           05 VALUE ' END-CHAIN                     ' PIC X(33).    UNIMPLEMENTED
 1756           05 VALUE ' END-COMPUTE                   ' PIC X(33).
 1757           05 VALUE ' END-DELETE                    ' PIC X(33).
 1758           05 VALUE ' END-DISPLAY                   ' PIC X(33).
 1759           05 VALUE ' END-DIVIDE                    ' PIC X(33).
 1760           05 VALUE ' END-EVALUATE                  ' PIC X(33).
 1761           05 VALUE ' END-IF                        ' PIC X(33).
 1762           05 VALUE ' END-MULTIPLY                  ' PIC X(33).
 1763           05 VALUE ' END-OF-PAGE                   ' PIC X(33).
 1764           05 VALUE ' END-PERFORM                   ' PIC X(33).
 1765           05 VALUE ' END-READ                      ' PIC X(33).
 1766           05 VALUE ' END-RECEIVE                   ' PIC X(33).    OBSOLETE
 1767           05 VALUE ' END-RETURN                    ' PIC X(33).
 1768           05 VALUE ' END-REWRITE                   ' PIC X(33).
 1769           05 VALUE ' END-SEARCH                    ' PIC X(33).
 1770           05 VALUE ' END-START                     ' PIC X(33).
 1771           05 VALUE ' END-STRING                    ' PIC X(33).
 1772           05 VALUE ' END-SUBTRACT                  ' PIC X(33).
 1773           05 VALUE ' END-UNSTRING                  ' PIC X(33).
 1774           05 VALUE ' END-WRITE                     ' PIC X(33).
 1775           05 VALUE 'VENTRY                         ' PIC X(33).
 1776           05 VALUE ' ENTRY-CONVENTION              ' PIC X(33).    UNIMPLEMENTED
 1777           05 VALUE 'KENVIRONMENT                   ' PIC X(33).
 1778           05 VALUE ' ENVIRONMENT-NAME              ' PIC X(33).
 1779           05 VALUE ' ENVIRONMENT-VALUE             ' PIC X(33).
 1780           05 VALUE ' EO                            ' PIC X(33).    UNIMPLEMENTED
 1781           05 VALUE ' EOL                           ' PIC X(33).
 1782           05 VALUE ' EOP                           ' PIC X(33).
 1783           05 VALUE ' EOS                           ' PIC X(33).
 1784           05 VALUE ' EQUAL                         ' PIC X(33).
 1785           05 VALUE 'KEQUALS                        ' PIC X(33).
 1786           05 VALUE ' ERASE                         ' PIC X(33).
 1787           05 VALUE ' ERROR                         ' PIC X(33).
 1788           05 VALUE ' ESCAPE                        ' PIC X(33).
 1789           05 VALUE ' ESI                           ' PIC X(33).    OBSOLETE
 1790           05 VALUE 'VEVALUATE                      ' PIC X(33).
 1791           05 VALUE ' EXCEPTION                     ' PIC X(33).
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GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                             /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                              Page: 43
====== ==============================================================================
  1792 GC1213     05 VALUE 'FEXCEPTION-FILE              ' PIC X(33).
  1793 GC1213     05 VALUE 'FEXCEPTION-FILE-N            ' PIC X(33).    UNIMPLEMENTED
  1794 GC1213     05 VALUE 'FEXCEPTION-LOCATION          ' PIC X(33).
  1795 GC1213     05 VALUE 'FEXCEPTION-LOCATION-N        ' PIC X(33).    UNIMPLEMENTED
  1796           05 VALUE ' EXCEPTION-OBJECT            ' PIC X(33).    UNIMPLEMENTED
  1797 GC1213     05 VALUE 'FEXCEPTION-STATEMENT         ' PIC X(33).
  1798 GC1213     05 VALUE 'FEXCEPTION-STATUS            ' PIC X(33).
  1799           05 VALUE ' EXCLUSIVE                   ' PIC X(33).
  1800           05 VALUE 'VEXIT                        ' PIC X(33).
  1801 GC1213     05 VALUE 'FEXP                         ' PIC X(33).
  1802 GC1213     05 VALUE 'FEXP10                       ' PIC X(33).
  1803           05 VALUE ' EXPANDS                     ' PIC X(33).    UNIMPLEMENTED
  1804           05 VALUE ' EXTEND                      ' PIC X(33).
  1805           05 VALUE ' EXTERNAL                    ' PIC X(33).
  1806 GC1213     05 VALUE 'FFACTORIAL                   ' PIC X(33).
  1807           05 VALUE ' FACTORY                     ' PIC X(33).    UNIMPLEMENTED
  1808           05 VALUE ' FALSE                       ' PIC X(33).
  1809           05 VALUE 'KFD                          ' PIC X(33).
  1810           05 VALUE 'KFILE                        ' PIC X(33).
  1811           05 VALUE ' FILE-CONTROL                ' PIC X(33).
  1812           05 VALUE ' FILE-ID                     ' PIC X(33).
  1813 GC1113     05 VALUE ' FILLER                      ' PIC X(33).
  1814           05 VALUE ' FINAL                       ' PIC X(33).
  1815           05 VALUE ' FIRST                       ' PIC X(33).
  1816 GC0712     05 VALUE ' FLOAT-BINARY-128            ' PIC X(33).    UNIMPLEMENTED
  1817 GC0712     05 VALUE ' FLOAT-BINARY-32             ' PIC X(33).    UNIMPLEMENTED
  1818 GC0712     05 VALUE ' FLOAT-BINARY-64             ' PIC X(33).    UNIMPLEMENTED
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  1820           05 VALUE ' FLOAT-DECIMAL-34            ' PIC X(33).
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  1822 GC0712     05 VALUE ' FLOAT-INFINITY              ' PIC X(33).    UNIMPLEMENTED
  1823           05 VALUE ' FLOAT-LONG                  ' PIC X(33).
  1824 GC0712     05 VALUE ' FLOAT-NOT-A-NUMBER          ' PIC X(33).    UNIMPLEMENTED
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  1833 GC1213     05 VALUE 'FFORMATTED-DATE              ' PIC X(33).    UNIMPLEMENTED
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  2154           05 VALUE ' STATEMENT                ' PIC X(33).    UNIMPLEMENTED
  2155           05 VALUE ' STATIC                   ' PIC X(33).
  2156           05 VALUE ' STATUS                   ' PIC X(33).
  2157           05 VALUE ' STDCALL                  ' PIC X(33).
  2158           05 VALUE 'MSTDERR                   ' PIC X(33).
  2159           05 VALUE 'MSTDIN                    ' PIC X(33).
  2160           05 VALUE 'MSTDOUT                   ' PIC X(33).
  2161           05 VALUE ' STEP                     ' PIC X(33).
  2162           05 VALUE 'VSTOP                     ' PIC X(33).
========================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL            Page: 49
```

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GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                            /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                           Page: 50
====== ==============================================================================
 2163 GC1213      05 VALUE 'FSTORED-CHAR-LENGTH              ' PIC X(33).
 2164             05 VALUE 'VSTRING                          ' PIC X(33).
 2165             05 VALUE ' STRONG                          ' PIC X(33).    UNIMPLEMENTED
 2166             05 VALUE ' SUB-QUEUE-1                     ' PIC X(33).    OBSOLETE
 2167             05 VALUE ' SUB-QUEUE-2                     ' PIC X(33).    OBSOLETE
 2168             05 VALUE ' SUB-QUEUE-3                     ' PIC X(33).    OBSOLETE
 2169 GC1213      05 VALUE 'FSUBSTITUTE                      ' PIC X(33).
 2170 GC1213      05 VALUE 'FSUBSTITUTE-CASE                 ' PIC X(33).
 2171             05 VALUE 'VSUBTRACT                        ' PIC X(33).
 2172 GC1213      05 VALUE 'FSUM                             ' PIC X(33).
 2173             05 VALUE ' SUPER                           ' PIC X(33).    UNIMPLEMENTED
 2174             05 VALUE 'VSUPPRESS                        ' PIC X(33).
 2175             05 VALUE 'MSW0                             ' PIC X(33).
 2176             05 VALUE 'MSW1                             ' PIC X(33).
 2177             05 VALUE 'MSW10                            ' PIC X(33).
 2178             05 VALUE 'MSW11                            ' PIC X(33).
 2179             05 VALUE 'MSW12                            ' PIC X(33).
 2180             05 VALUE 'MSW13                            ' PIC X(33).
 2181             05 VALUE 'MSW14                            ' PIC X(33).
 2182             05 VALUE 'MSW15                            ' PIC X(33).
 2183             05 VALUE 'MSW2                             ' PIC X(33).
 2184             05 VALUE 'MSW3                             ' PIC X(33).
 2185             05 VALUE 'MSW4                             ' PIC X(33).
 2186             05 VALUE 'MSW5                             ' PIC X(33).
 2187             05 VALUE 'MSW6                             ' PIC X(33).
 2188             05 VALUE 'MSW7                             ' PIC X(33).
 2189             05 VALUE 'MSW8                             ' PIC X(33).
 2190             05 VALUE 'MSW9                             ' PIC X(33).
 2191             05 VALUE 'MSWITCH-0                        ' PIC X(33).
 2192             05 VALUE 'MSWITCH-1                        ' PIC X(33).
 2193             05 VALUE 'MSWITCH-10                       ' PIC X(33).
 2194             05 VALUE 'MSWITCH-11                       ' PIC X(33).
 2195             05 VALUE 'MSWITCH-12                       ' PIC X(33).
 2196             05 VALUE 'MSWITCH-13                       ' PIC X(33).
 2197             05 VALUE 'MSWITCH-14                       ' PIC X(33).
 2198             05 VALUE 'MSWITCH-15                       ' PIC X(33).
 2199             05 VALUE 'MSWITCH-2                        ' PIC X(33).
 2200             05 VALUE 'MSWITCH-3                        ' PIC X(33).
 2201             05 VALUE 'MSWITCH-4                        ' PIC X(33).
 2202             05 VALUE 'MSWITCH-5                        ' PIC X(33).
 2203             05 VALUE 'MSWITCH-6                        ' PIC X(33).
 2204             05 VALUE 'MSWITCH-7                        ' PIC X(33).
 2205             05 VALUE 'MSWITCH-8                        ' PIC X(33).
 2206             05 VALUE 'MSWITCH-9                        ' PIC X(33).
 2207             05 VALUE ' SYMBOL                          ' PIC X(33).    UNIMPLEMENTED
 2208             05 VALUE ' SYMBOLIC                        ' PIC X(33).
 2209             05 VALUE ' SYNC                            ' PIC X(33).
 2210             05 VALUE ' SYNCHRONISED                    ' PIC X(33).
 2211             05 VALUE ' SYNCHRONIZED                    ' PIC X(33).
 2212             05 VALUE 'MSYSERR                          ' PIC X(33).
 2213             05 VALUE 'MSYSIN                           ' PIC X(33).
 2214             05 VALUE 'MSYSIPT                          ' PIC X(33).
 2215             05 VALUE 'MSYSLIST                         ' PIC X(33).

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GNUCOBOL 3.0 24DEC2017  Source Listing                                  2017/12/24
                                            /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                          Page: 51
======  ========================================================================================
  2216           05 VALUE 'MSYSLST                    ' PIC X(33).
  2217           05 VALUE 'MSYSOUT                     ' PIC X(33).
  2218           05 VALUE ' SYSTEM-DEFAULT             ' PIC X(33).
  2219           05 VALUE ' TABLE                      ' PIC X(33).         UNIMPLEMENTED
  2220           05 VALUE 'KTALLYING                   ' PIC X(33).
  2221 GC1213    05 VALUE 'FTAN                        ' PIC X(33).
  2222           05 VALUE ' TAPE                       ' PIC X(33).
  2223           05 VALUE ' TERMINAL                   ' PIC X(33).         OBSOLETE
  2224           05 VALUE 'VTERMINATE                  ' PIC X(33).
  2225           05 VALUE ' TEST                       ' PIC X(33).
  2226 GC1213    05 VALUE 'FTEST-DATE-YYYYMMDD          ' PIC X(33).
  2227 GC1213    05 VALUE 'FTEST-DAY-YYYYDDD            ' PIC X(33).
  2228 GC1213    05 VALUE 'FTEST-FORMATTED-DATETIME     ' PIC X(33).         UNIMPLEMENTED
  2229 GC1213    05 VALUE 'FTEST-NUMVAL                 ' PIC X(33).
  2230 GC1213    05 VALUE 'FTEST-NUMVAL-C               ' PIC X(33).
  2231 GC1213    05 VALUE 'FTEST-NUMVAL-F               ' PIC X(33).
  2232           05 VALUE ' TEXT                       ' PIC X(33).         OBSOLETE
  2233           05 VALUE ' THAN                       ' PIC X(33).
  2234           05 VALUE ' THEN                       ' PIC X(33).
  2235           05 VALUE ' THROUGH                    ' PIC X(33).
  2236           05 VALUE ' THRU                       ' PIC X(33).
  2237           05 VALUE ' TIME                       ' PIC X(33).
  2238 GC0711    05 VALUE ' TIME-OUT                   ' PIC X(33).
  2239 GC0711    05 VALUE ' TIMEOUT                    ' PIC X(33).
  2240           05 VALUE ' TIMES                      ' PIC X(33).
  2241           05 VALUE 'KTO                         ' PIC X(33).
  2242           05 VALUE ' TOP                        ' PIC X(33).
  2243           05 VALUE ' TOWARD-GREATER             ' PIC X(33).
  2244           05 VALUE ' TOWARD-LESSER              ' PIC X(33).
  2245           05 VALUE ' TRAILING                   ' PIC X(33).
  2246           05 VALUE ' TRAILING-SIGN              ' PIC X(33).         UNIMPLEMENTED
  2247           05 VALUE 'VTRANSFORM                  ' PIC X(33).
  2248 GC1213    05 VALUE 'FTRIM                       ' PIC X(33).
  2249           05 VALUE ' TRUE                       ' PIC X(33).
  2250           05 VALUE ' TRUNCATION                 ' PIC X(33).
  2251           05 VALUE ' TYPE                       ' PIC X(33).
  2252           05 VALUE ' TYPEDEF                    ' PIC X(33).         UNIMPLEMENTED
  2253           05 VALUE ' UCS-4                      ' PIC X(33).         UNIMPLEMENTED
  2254           05 VALUE ' UNDERLINE                  ' PIC X(33).
  2255           05 VALUE ' UNIT                       ' PIC X(33).
  2256           05 VALUE ' UNIVERSAL                  ' PIC X(33).         UNIMPLEMENTED
  2257           05 VALUE 'VUNLOCK                     ' PIC X(33).
  2258           05 VALUE ' UNSIGNED                   ' PIC X(33).
  2259           05 VALUE ' UNSIGNED-INT               ' PIC X(33).
  2260           05 VALUE ' UNSIGNED-LONG              ' PIC X(33).
  2261           05 VALUE ' UNSIGNED-SHORT             ' PIC X(33).
  2262           05 VALUE 'VUNSTRING                   ' PIC X(33).
  2263           05 VALUE ' UNTIL                      ' PIC X(33).
  2264           05 VALUE 'KUP                         ' PIC X(33).
  2265           05 VALUE ' UPDATE                     ' PIC X(33).
  2266           05 VALUE ' UPON                       ' PIC X(33).
  2267           05 VALUE ' UPPER                      ' PIC X(33).
  2268 GC1213    05 VALUE 'FUPPER-CASE                 ' PIC X(33).
======  ========================================================================================
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GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                          /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                          Page: 52
====== ====================================================================================
 2269           05 VALUE ' USAGE                        ' PIC X(33).
 2270           05 VALUE 'VUSE                          ' PIC X(33).
 2271 GC0711    05 VALUE ' USER                         ' PIC X(33).
 2272           05 VALUE ' USER-DEFAULT                 ' PIC X(33).
 2273           05 VALUE 'KUSING                        ' PIC X(33).
 2274           05 VALUE ' UTF-16                       ' PIC X(33).    UNIMPLEMENTED
 2275           05 VALUE ' UTF-8                        ' PIC X(33).    UNIMPLEMENTED
 2276           05 VALUE ' VAL-STATUS                   ' PIC X(33).    UNIMPLEMENTED
 2277           05 VALUE ' VALID                        ' PIC X(33).    UNIMPLEMENTED
 2278           05 VALUE ' VALIDATE                     ' PIC X(33).    UNIMPLEMENTED
 2279           05 VALUE ' VALIDATE-STATUS              ' PIC X(33).    UNIMPLEMENTED
 2280 GC0712    05 VALUE 'AVALUE                        ' PIC X(33).
 2281           05 VALUE ' VALUES                       ' PIC X(33).
 2282 GC1213    05 VALUE 'FVARIANCE                     ' PIC X(33).
 2283           05 VALUE 'KVARYING                      ' PIC X(33).
 2284           05 VALUE ' VDISABLE                     ' PIC X(33).    UNIMPLEMENTED
 2285           05 VALUE ' WAIT                         ' PIC X(33).
 2286           05 VALUE 'VWHEN                         ' PIC X(33).
 2287 GC1213    05 VALUE 'FWHEN-COMPILED                ' PIC X(33).
 2288           05 VALUE ' WITH                         ' PIC X(33).
 2289           05 VALUE ' WORDS                        ' PIC X(33).
 2290           05 VALUE 'KWORKING-STORAGE              ' PIC X(33).
 2291           05 VALUE 'VWRITE                        ' PIC X(33).
 2292 GC1213    05 VALUE 'FYEAR-TO-YYYY                 ' PIC X(33).
 2293           05 VALUE ' YYYYDDD                      ' PIC X(33).
 2294           05 VALUE ' YYYYMMDD                     ' PIC X(33).
 2295           05 VALUE ' ZERO                         ' PIC X(33).
 2296           05 VALUE ' ZERO-FILL                    ' PIC X(33).    UNIMPLEMENTED
 2297           05 VALUE ' ZEROES                       ' PIC X(33).
 2298           05 VALUE ' ZEROS                        ' PIC X(33).
 2299        01 WS-Reserved-Word-Table-TXT REDEFINES WS-Reserved-Words-TXT.
 2300 GC1113    05 WS-Reserved-Word-TXT        OCCURS 754 TIMES
 2301                                          ASCENDING KEY
 2302                                            WS-RW-Word-TXT
 2303                                          INDEXED WS-RW-IDX.
 2304              10 WS-RW-Type-CD            PIC X(1).
 2305              10 WS-RW-Word-TXT           PIC X(32).
 2306
 2307        01 WS-Runtime-Switches.
 2308 GC0710    05 WS-RS-Duplicate-CHR         PIC X(1).
 2309           05 WS-RS-In-Which-Pgm-CHR      PIC X(1).
 2310              88 WS-RS-In-Main-Module-BOOL    VALUE 'M'.
 2311              88 WS-RS-In-Copybook-BOOL       VALUE 'C'.
 2312           05 WS-RS-Last-Token-Ended-Sent-CHR  PIC X(1).
 2313           05 WS-RS-Processing-PICTURE-CHR PIC X(1).
 2314           05 WS-RS-Token-Ended-Sentence-CHR PIC X(1).
 2315 GC0710    05 WS-RS-Verb-Has-Been-Found-CHR  PIC X(1).
 2316
 2317        01 WS-Saved-Section-TXT          PIC X(15).
 2318
 2319 GC1213 01 WS-Src-Dashes-TXT.
 2320 GC0712    05 VALUE '======'              PIC X(7).
 2321 GC0712    05 VALUE ALL '='               PIC X(128).


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  2322
  2323   01 WS-Src-Detail-Line-TXT.
  2324   05 WS-SDL-Line-NUM   PIC ZZZZZ9.
  2325   05 FILLER   PIC X(1).
  2326   05 WS-SDL-Statement-TXT   PIC X(256).
  2327
  2328 GC1213 01 WS-Src-Hold-TXT   PIC X(256).
  2329
  2330   01 WS-Src-Line-NUM   PIC 9(6).
  2331
  2332 GC1213 01 WS-Src-Lines-NUM   USAGE BINARY-LONG.
  2333
  2334   01 WS-Src-SUB   USAGE BINARY-LONG.
  2335
  2336   01 WS-Tally-QTY   USAGE BINARY-LONG.
  2337
  2338   01 WS-Temp-10-Chars-TXT   PIC X(10).
  2339
  2340   01 WS-Temp-32-Chars-1-TXT   PIC X(32).
  2341
  2342 GC0711 01 WS-Temp-32-Chars-2-TXT   PIC X(32).
  2343
  2344 GC0711 01 WS-Temp-32-Chars-3-TXT   PIC X(32).
  2345
  2346 GC0712 01 WS-Temp-65-Chars-TXT   PIC X(65).
  2347
  2348   01 WS-Temp-256-Chars-TXT   PIC X(256).
  2349
  2350   01 WS-Today-DT   PIC 9(8).
  2351
  2352   01 WS-Token-Curr-TXT   PIC X(32).
  2353
  2354   01 WS-Token-Curr-Uc-TXT   PIC X(32).
  2355
  2356   01 WS-Token-Prev-TXT   PIC X(32).
  2357
  2358   01 WS-Token-Search-TXT   PIC X(32).
  2359
  2360   01 WS-Token-Type-CD   PIC X(1).
  2361 GC0712   88 WS-TT-Token-Is-Argtype-BOOL   VALUE 'A'.
  2362   88 WS-TT-Token-Is-EOF-BOOL   VALUE HIGH-VALUES.
  2363 GC1213   88 WS-TT-Token-Is-Function-BOOL   VALUE 'F'.
  2364   88 WS-TT-Token-Is-Identifier-BOOL VALUE 'I'.
  2365 GC0712   88 WS-TT-Token-Is-Keyword-BOOL   VALUE 'K', 'V', 'A'.
  2366   88 WS-TT-Token-Is-Lit-Alpha-BOOL   VALUE 'L'.
  2367   88 WS-TT-Token-Is-Lit-Number-BOOL VALUE 'N'.
  2368   88 WS-TT-Token-Is-Verb-BOOL   VALUE 'V'.
  2369 GC1213   88 WS-TT-Token-Is-Reserved-Wd-BOOL VALUE ' ', 'F'.
  2370
  2371   01 WS-Usernames-QTY   USAGE BINARY-LONG.
  2372
  2373   01 WS-Version-TXT   PIC X(23).
  2374

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GNUCOBOL 3.0 24DEC2017  Source Listing                                         2017/12/24
                                                   /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                                     Page: 54
======  =========================================================================================
  2375        01  WS-Xref-Detail-Line-TXT.
  2376            05 WS-XDL-Prog-ID-TXT                     PIC X(15).
  2377            05 FILLER                                 PIC X(1).
  2378            05 WS-XDL-Token-TXT                       PIC X(32).
  2379            05 FILLER                                 PIC X(1).
  2380            05 WS-XDL-Def-Line-NUM                    PIC ZZZZZ9.
  2381            05 FILLER                                 PIC X(1).
  2382            05 WS-XDL-Section-TXT                     PIC X(15).
  2383            05 FILLER                                 PIC X(1).
  2384            05 WS-XDL-Reference-TXT                   OCCURS 8 TIMES.
  2385               10 WS-XDL-Ref-Line-NUM                 PIC ZZZZZ9.
  2386               10 WS-XDL-Ref-Flag-CHR                 PIC X(1).
  2387               10 FILLER                              PIC X(1).
  2388
  2389 GC1213 01  WS-Xref-Lines-Per-Rec-NUM                 PIC 9(1).
  2390
  2391        LINKAGE SECTION.
  2392 GC0712 01  L-Listing-Fn-TXT                          PIC X(256).
  2393
  2394        01  L-Src-Fn-TXT                              PIC X(256).
  2395
  2396 GC0712 01  L-OS-Type-CD                              PIC 9(1).
  2397
  2398 GC1213 01  L-LPP-NUM                                 USAGE BINARY-LONG.
  2399
  2400 GC1213 01  L-LPP-Port-NUM                            USAGE BINARY-LONG.
  2401
  2402 GC1213 01  L-Listing-CD                              PIC 9(1).
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                          2017/12/24
                                                    /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                               Page: 55
======  =========================================================================================

  2404 GC0712 PROCEDURE DIVISION USING L-Listing-Fn-TXT
  2405 GC0712                          L-Src-Fn-TXT
  2406 GC0712                          L-OS-Type-CD
  2407 GC1213                          L-LPP-NUM
  2408 GC1213                          L-LPP-Port-NUM
  2409 GC1213                          L-Listing-CD.
  2410        000-Main SECTION.
  2411            PERFORM 100-Initialization
  2412 GC0712    OPEN OUTPUT F-Listing-FILE
  2413 GC0712    PERFORM 500-Produce-Source-Listing
  2414 GC0712    SORT F-Sort-Work-FILE
  2415 GC0712        ASCENDING KEY    F-SW-Prog-ID-TXT
  2416 GC0712                         F-SW-Token-Uc-TXT
  2417 GC0712                         F-SW-Ref-Line-NUM
  2418 GC0712        INPUT PROCEDURE  300-Tokenize-Source
  2419 GC0712        OUTPUT PROCEDURE 400-Produce-Xref-Listing
  2420 GC0712    CLOSE F-Listing-FILE
  2421            GOBACK
  2422            .
```

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GNUCOBOL 3.0 24DEC2017  Source Listing                                     2017/12/24
                                      /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line   Statement                                                             Page: 56
====== =============================================================================

 2424         *>***************************************************************
 2425         *> Perform all program-wide initialization operations         **
 2426         *>***************************************************************
 2427           100-Initialization SECTION.
 2428 GC1213     MOVE 0 TO WS-Page-NUM
 2429 GC1213     MOVE 'N' TO WS-Suppress-FF-CHR
 2430 GC1213     MOVE SPACES TO WS-Copyright-TXT
 2431 GC1213     STRING 'GCic for '                  DELIMITED SIZE
 2432 GC1213            WS-OS-Type-TXT(L-OS-Type-CD) DELIMITED SPACE
 2433 GC1213            ' Copyright (C) 2009-2018, Gary L. Cutler, GPL'
 2434 GC1213                                         DELIMITED SIZE
 2435 GC1213            INTO WS-Copyright-TXT
 2436 GC1213     MOVE 'GNUCOBOL 3.0 24DEC2017' TO WS-Version-TXT
 2437            MOVE TRIM(L-Src-Fn-TXT,Leading) TO L-Src-Fn-TXT
 2438 GC1010     PERFORM VARYING WS-I-SUB FROM LENGTH(L-Src-Fn-TXT) BY -1 *> Locate last direct
      ory delimiter character so that the filename can be extracted
 2439 GC1010             UNTIL L-Src-Fn-TXT(WS-I-SUB:1) = '/' OR '\'
 2440 GC1010                OR WS-I-SUB = 0
 2441 GC1010     END-PERFORM
 2442 GC1010     IF WS-I-SUB = 0
 2443 GC1010        MOVE UPPER-CASE(L-Src-Fn-TXT) TO WS-Main-Module-Name-TXT *> No directory d
      elimiter, whole thing is filename
 2444 GC1010     ELSE
 2445 GC1010        ADD 1 TO WS-I-SUB
 2446 GC1010        MOVE UPPER-CASE(L-Src-Fn-TXT(WS-I-SUB:))
 2447 GC1010          TO WS-Main-Module-Name-TXT *> Extract filename
 2448 GC1010     END-IF
 2449 GC1213     IF L-Listing-CD = 1 *> LANDSCAPE
 2450 GC1213        MOVE 8 TO WS-Xref-Lines-Per-Rec-NUM
 2451 GC1213        ACCEPT WS-Lines-Per-Page-Env-TXT
 2452 GC1213           FROM ENVIRONMENT 'GCXREF_LINES'
 2453 GC1213     ELSE *> PORTRAIT
 2454 GC1213        MOVE 3 TO WS-Xref-Lines-Per-Rec-NUM
 2455 GC1213        ACCEPT WS-Lines-Per-Page-Env-TXT
 2456 GC1213           FROM ENVIRONMENT 'GCXREF_LINES_PORT'
 2457 GC1213     END-IF
 2458            INSPECT L-Src-Fn-TXT REPLACING ALL '\' BY '/'
 2459            MOVE L-Src-Fn-TXT TO WS-Program-Path-TXT
 2460            CALL 'C$JUSTIFY' USING WS-Program-Path-TXT, 'Right'
 2461            MOVE LENGTH(TRIM(L-Src-Fn-TXT,Trailing)) TO WS-I-SUB
 2462            MOVE 0 TO WS-J-SUB
 2463            PERFORM UNTIL L-Src-Fn-TXT(WS-I-SUB:1) = '/'
 2464                      OR WS-I-SUB = 0
 2465               SUBTRACT 1 FROM WS-I-SUB
 2466               ADD      1 TO   WS-J-SUB
 2467            END-PERFORM
 2468            UNSTRING L-Src-Fn-TXT((WS-I-SUB + 1):WS-J-SUB)
 2469               DELIMITED BY '.'
 2470               INTO WS-Filename-TXT
 2471                    WS-Dummy-TXT
 2472 GC1010     STRING
 2473 GC1010            TRIM(WS-Filename-TXT,Trailing)

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GNUCOBOL 3.0 24DEC2017  Source Listing                                        2017/12/24
                                              /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                               Page: 57
====== ==================================================================================
  2474 GC1010             '.i'
  2475 GC1010                DELIMITED SIZE
  2476 GC1010                INTO WS-Expanded-Src-Fn-TXT
  2477 GC1010       CALL 'CBL_CHECK_FILE_EXIST' USING WS-Expanded-Src-Fn-TXT
  2478 GC1010                                         WS-Temp-256-Chars-TXT
  2479 GC1010       IF RETURN-CODE NOT = 0
  2480 GC1010          GOBACK
  2481 GC1010       END-IF
  2482          IF WS-Lines-Per-Page-Env-TXT NOT = SPACES
  2483              MOVE NUMVAL(WS-Lines-Per-Page-Env-TXT)
  2484                 TO WS-Lines-Per-Page-NUM
  2485          ELSE
  2486 GC1213       IF L-LISTING-CD = 1 *> LANDSCAPE
  2487 GC1213          MOVE L-LPP-NUM TO WS-Lines-Per-Page-NUM
  2488 GC1213       ELSE                *> PORTRAIT
  2489 GC1213          MOVE L-LPP-Port-NUM TO WS-Lines-Per-Page-NUM
  2490 GC1213       END-IF
  2491          END-IF
  2492 GC1213   SUBTRACT 3 FROM WS-Lines-Per-Page-NUM *> FOR PAGE FOOTER
  2493          ACCEPT WS-Today-DT FROM DATE YYYYMMDD
  2494 GC1213   MOVE WS-Today-DT TO WS-Formatted-DT
  2495          MOVE '????????????...' TO WS-Curr-Prog-ID-TXT
  2496          MOVE SPACES            TO WS-Curr-Verb-TXT
  2497                                    WS-Held-Reference-TXT
  2498              .
```

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====================================================================================================
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```
  2500        300-Tokenize-Source SECTION.
  2501            OPEN INPUT F-Expanded-Src-FILE
  2502            MOVE SPACES TO F-Expanded-Src-REC
  2503            MOVE 256 TO WS-Src-SUB
  2504            MOVE 0 TO WS-Usernames-QTY
  2505                    WS-Curr-Line-NUM
  2506            MOVE '?' TO WS-Curr-Division-TXT
  2507 GC0710     MOVE 'N' TO WS-RS-Verb-Has-Been-Found-CHR
  2508            PERFORM FOREVER
  2509                PERFORM 310-Get-Token
  2510                IF WS-TT-Token-Is-EOF-BOOL
  2511                    EXIT PERFORM
  2512                END-IF
  2513                MOVE UPPER-CASE(WS-Token-Curr-TXT)
  2514                  TO WS-Token-Curr-Uc-TXT
  2515 GC1010         IF WS-TT-Token-Is-Keyword-BOOL
  2516 GC1010         OR WS-TT-Token-Is-Reserved-Wd-BOOL
  2517 GC1010             MOVE WS-Token-Curr-Uc-TXT TO WS-Token-Curr-TXT
  2518 GC1010         END-IF
  2519                IF WS-TT-Token-Is-Verb-BOOL
  2520                    MOVE WS-Token-Curr-Uc-TXT TO WS-Curr-Verb-TXT
  2521                                              WS-Token-Prev-TXT
  2522                    IF WS-Held-Reference-TXT NOT = SPACES
  2523                        MOVE WS-Held-Reference-TXT TO F-Sort-Work-REC
  2524                        MOVE SPACES          TO WS-Held-Reference-TXT
  2525                        RELEASE F-Sort-Work-REC
  2526                    END-IF
  2527                END-IF
  2528                EVALUATE TRUE
  2529                WHEN WS-CD-In-IDENT-DIV-BOOL
  2530                    PERFORM 320-IDENTIFICATION-DIVISION
  2531                WHEN WS-CD-In-ENV-DIV-BOOL
  2532                    PERFORM 330-ENVIRONMENT-DIVISION
  2533                WHEN WS-CD-In-DATA-DIV-BOOL
  2534                    PERFORM 340-DATA-DIVISION
  2535                WHEN WS-CD-In-PROC-DIV-BOOL
  2536                    PERFORM 350-PROCEDURE-DIVISION
  2537                END-EVALUATE
  2538                IF WS-TT-Token-Is-Keyword-BOOL
  2539                    MOVE WS-Token-Curr-Uc-TXT TO WS-Token-Prev-TXT
  2540                END-IF
  2541                IF WS-RS-Token-Ended-Sentence-CHR = 'Y'
  2542                AND WS-Curr-Division-TXT NOT = 'I'
  2543                    MOVE SPACES TO WS-Token-Prev-TXT
  2544                                   WS-Curr-Verb-TXT
  2545                END-IF
  2546
  2547            END-PERFORM
  2548            CLOSE F-Expanded-Src-FILE
  2549            .
```

===

```
2551        310-Get-Token SECTION.
2552     *>-- Position to 1st non-blank character
2553          MOVE WS-RS-Token-Ended-Sentence-CHR
2554            TO WS-RS-Last-Token-Ended-Sent-CHR
2555          MOVE 'N' TO WS-RS-Token-Ended-Sentence-CHR
2556          PERFORM UNTIL F-Expanded-Src-REC(WS-Src-SUB : 1) NOT = SPACE
2557              IF WS-Src-SUB > 255
2558                  READ F-Expanded-Src-FILE AT END
2559                      IF WS-Held-Reference-TXT NOT = SPACES
2560                          MOVE WS-Held-Reference-TXT TO F-Sort-Work-REC
2561                          MOVE SPACES        TO WS-Held-Reference-TXT
2562                          RELEASE F-Sort-Work-REC
2563                      END-IF
2564                      SET WS-TT-Token-Is-EOF-BOOL TO TRUE
2565                      MOVE 0 TO WS-Curr-Line-NUM
2566                      EXIT SECTION
2567                  END-READ
2568 GC0712           IF F-ES-1-7-TXT NOT = '#DEFLIT'
2569 GC0712               IF F-ES-1-CHR = '#'
2570 GC0712                   PERFORM 311-Control-Record
2571 GC0712               ELSE
2572 GC0712                   PERFORM 312-Expanded-Src-Record
2573 GC0712               END-IF
2574 GC0712           END-IF
2575              ELSE
2576                  ADD 1 TO WS-Src-SUB
2577              END-IF
2578          END-PERFORM
2579     *>-- Extract token string
2580          MOVE F-Expanded-Src-REC(WS-Src-SUB : 1)
2581            TO WS-Curr-CHR
2582          MOVE F-Expanded-Src-REC(WS-Src-SUB + 1: 1)
2583            TO WS-Next-CHR
2584          IF WS-Curr-CHR = '.'
2585              ADD 1 TO WS-Src-SUB
2586              MOVE WS-Curr-CHR TO WS-Token-Curr-TXT
2587              MOVE SPACE TO WS-Token-Type-CD
2588              MOVE 'Y' TO WS-RS-Token-Ended-Sentence-CHR
2589              EXIT SECTION
2590          END-IF
2591          IF WS-Curr-Char-Is-Punct-BOOL
2592          AND WS-Curr-CHR = '='
2593          AND WS-Curr-Division-TXT = 'P'
2594              ADD 1 TO WS-Src-SUB
2595              MOVE 'EQUALS' TO WS-Token-Curr-TXT
2596              MOVE 'K'     TO WS-Token-Type-CD
2597              EXIT SECTION
2598          END-IF
2599          IF WS-Curr-Char-Is-Punct-BOOL *> So subscripts don't get flagged w/ '*'
2600          AND WS-Curr-CHR = '('
2601          AND WS-Curr-Division-TXT = 'P'
2602              MOVE SPACES TO WS-Token-Prev-TXT
```

```
====== ========================================================================================
  2603          END-IF
  2604          IF WS-Curr-Char-Is-Punct-BOOL
  2605              ADD 1 TO WS-Src-SUB
  2606              MOVE WS-Curr-CHR TO WS-Token-Curr-TXT
  2607              MOVE SPACE TO WS-Token-Type-CD
  2608              EXIT SECTION
  2609          END-IF
  2610          IF WS-Curr-Char-Is-Quote-BOOL
  2611              ADD 1 TO WS-Src-SUB
  2612              UNSTRING F-Expanded-Src-REC
  2613                  DELIMITED BY WS-Curr-CHR
  2614                  INTO WS-Token-Curr-TXT
  2615                  WITH POINTER WS-Src-SUB
  2616              IF F-Expanded-Src-REC(WS-Src-SUB : 1) = '.'
  2617                  MOVE 'Y' TO WS-RS-Token-Ended-Sentence-CHR
  2618                  ADD 1 TO WS-Src-SUB
  2619              END-IF
  2620              SET WS-TT-Token-Is-Lit-Alpha-BOOL TO TRUE
  2621              EXIT SECTION
  2622          END-IF
  2623          IF WS-Curr-Char-Is-X-BOOL AND WS-Next-Char-Is-Quote-BOOL
  2624              ADD 2 TO WS-Src-SUB
  2625              UNSTRING F-Expanded-Src-REC
  2626                  DELIMITED BY WS-Next-CHR
  2627                  INTO WS-Token-Curr-TXT
  2628                  WITH POINTER WS-Src-SUB
  2629              IF F-Expanded-Src-REC(WS-Src-SUB : 1) = '.'
  2630                  MOVE 'Y' TO WS-RS-Token-Ended-Sentence-CHR
  2631                  ADD 1 TO WS-Src-SUB
  2632              END-IF
  2633              SET WS-TT-Token-Is-Lit-Number-BOOL TO TRUE
  2634              EXIT SECTION
  2635          END-IF
  2636          IF WS-Curr-Char-Is-Z-BOOL AND WS-Next-Char-Is-Quote-BOOL
  2637              ADD 2 TO WS-Src-SUB
  2638              UNSTRING F-Expanded-Src-REC
  2639                  DELIMITED BY WS-Next-CHR
  2640                  INTO WS-Token-Curr-TXT
  2641                  WITH POINTER WS-Src-SUB
  2642              IF F-Expanded-Src-REC(WS-Src-SUB : 1) = '.'
  2643                  MOVE 'Y' TO WS-RS-Token-Ended-Sentence-CHR
  2644                  ADD 1 TO WS-Src-SUB
  2645              END-IF
  2646              SET WS-TT-Token-Is-Lit-Alpha-BOOL TO TRUE
  2647              EXIT SECTION
  2648          END-IF
  2649          IF WS-RS-Processing-PICTURE-CHR = 'Y'
  2650              UNSTRING F-Expanded-Src-REC
  2651                  DELIMITED BY '. ' OR ' '
  2652                  INTO WS-Token-Curr-TXT
  2653                  DELIMITER IN WS-Delim-TXT
  2654                  WITH POINTER WS-Src-SUB
  2655              IF WS-Delim-TXT = '. '
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                        /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                            Page: 61
====== =================================================================================
  2656                     MOVE 'Y' TO WS-RS-Token-Ended-Sentence-CHR
  2657                     ADD 1 TO WS-Src-SUB
  2658                 END-IF
  2659                 IF UPPER-CASE(WS-Token-Curr-TXT) = 'IS'
  2660                     MOVE SPACE TO WS-Token-Type-CD
  2661                     EXIT SECTION
  2662                 ELSE
  2663                     MOVE 'N' TO WS-RS-Processing-PICTURE-CHR
  2664                     MOVE SPACE TO WS-Token-Type-CD
  2665                     EXIT SECTION
  2666                 END-IF
  2667             END-IF
  2668             UNSTRING F-Expanded-Src-REC
  2669                 DELIMITED BY '. ' OR ' ' OR '=' OR '(' OR ')' OR '*'
  2670                                 OR '/' OR '&' OR ';' OR ',' OR '<'
  2671                                 OR '>' OR ':'
  2672                 INTO WS-Token-Curr-TXT
  2673                 DELIMITER IN WS-Delim-TXT
  2674                 WITH POINTER WS-Src-SUB
  2675             IF WS-Delim-TXT = '. '
  2676                 MOVE 'Y' TO WS-RS-Token-Ended-Sentence-CHR
  2677             END-IF
  2678             IF WS-Delim-TXT NOT = '. ' AND ' '
  2679                 SUBTRACT 1 FROM WS-Src-SUB
  2680             END-IF
  2681         *>-- Classify Token
  2682             MOVE UPPER-CASE(WS-Token-Curr-TXT) TO WS-Token-Search-TXT
  2683             IF WS-Token-Search-TXT = 'EQUAL' OR 'EQUALS'
  2684                 MOVE 'EQUALS' TO WS-Token-Curr-TXT
  2685                 MOVE 'K'      TO WS-Token-Type-CD
  2686                 EXIT SECTION
  2687             END-IF
  2688             SEARCH ALL WS-Reserved-Word-TXT
  2689                 WHEN WS-RW-Word-TXT (WS-RW-IDX) = WS-Token-Search-TXT
  2690                     MOVE WS-RW-Type-CD (WS-RW-IDX) TO WS-Token-Type-CD
  2691 GC0710             IF WS-TT-Token-Is-Verb-BOOL
  2692 GC0710                 MOVE 'Y' TO WS-RS-Verb-Has-Been-Found-CHR
  2693 GC0710             END-IF
  2694                     EXIT SECTION
  2695             END-SEARCH
  2696         *>-- Not a reserved word, must be a user name
  2697             SET WS-TT-Token-Is-Identifier-BOOL TO TRUE
  2698             PERFORM 313-Check-For-Numeric-Token
  2699             IF WS-TT-Token-Is-Lit-Number-BOOL
  2700                 IF  (WS-RS-Last-Token-Ended-Sent-CHR = 'Y')
  2701                 AND (WS-Curr-Division-TXT = 'D')
  2702                     MOVE 'LEVEL #' TO WS-Token-Curr-TXT
  2703                     MOVE 'K'       TO WS-Token-Type-CD
  2704                     EXIT SECTION
  2705                 ELSE
  2706                     EXIT SECTION
  2707                 END-IF
  2708             END-IF
```

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```
GNUCOBOL 3.0 24DEC2017  Source Listing                                     2017/12/24
                                            /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                            Page: 62
====== ====================================================================================
  2709              .
```

====== ==

```
  2711        311-Control-Record SECTION.
  2712            UNSTRING F-ES-2-256-TXT-256
  2713                DELIMITED BY '"'
  2714                INTO WS-Temp-10-Chars-TXT
  2715                    WS-Temp-256-Chars-TXT
  2716                    WS-Dummy-TXT
  2717            INSPECT WS-Temp-10-Chars-TXT REPLACING ALL '"' BY SPACE
  2718 GC0712     IF WS-Temp-10-Chars-TXT(1:4) = 'line'
  2719 GC0712        MOVE SPACES TO WS-Temp-10-Chars-TXT(1:4)
  2720 GC0712     END-IF
  2721            COMPUTE WS-I-SUB = NUMVAL(WS-Temp-10-Chars-TXT) - 1
  2722 GC1010     IF UPPER-CASE(TRIM(WS-Temp-256-Chars-TXT,Trailing)) =
  2723 GC1010        TRIM(WS-Main-Module-Name-TXT)
  2724              MOVE WS-I-SUB TO WS-Curr-Line-NUM
  2725              SET WS-RS-In-Main-Module-BOOL TO TRUE
  2726              IF WS-Saved-Section-TXT NOT = SPACES
  2727                 MOVE WS-Saved-Section-TXT TO WS-Curr-Section-TXT
  2728              END-IF
  2729            ELSE
  2730              SET WS-RS-In-Copybook-BOOL TO TRUE
  2731              IF WS-Saved-Section-TXT = SPACES
  2732                 MOVE WS-Curr-Section-TXT TO WS-Saved-Section-TXT
  2733              END-IF
  2734              MOVE LENGTH(TRIM(WS-Temp-256-Chars-TXT,Trailing))
  2735                TO WS-I-SUB
  2736              MOVE 0 TO WS-J-SUB
  2737              PERFORM UNTIL WS-Temp-256-Chars-TXT(WS-I-SUB:1) = '/'
  2738                    OR WS-I-SUB = 0
  2739                 SUBTRACT 1 FROM WS-I-SUB
  2740                 ADD     1 TO   WS-J-SUB
  2741              END-PERFORM
  2742              UNSTRING WS-Temp-256-Chars-TXT((WS-I-SUB + 1):WS-J-SUB)
  2743                 DELIMITED BY '.'
  2744                 INTO WS-Filename-TXT
  2745                     WS-Dummy-TXT
  2746              MOVE '['      TO WS-CS-1-CHR
  2747              MOVE WS-Filename-TXT TO WS-CS-2-14-TXT
  2748              IF WS-CS-11-14-TXT NOT = SPACES
  2749                 MOVE '...' TO WS-CS-11-14-TXT
  2750              END-IF
  2751              MOVE ']'      TO WS-CS-15-CHR
  2752            END-IF
  2753            MOVE SPACES TO F-Expanded-Src-REC *> Force another READ
  2754            MOVE 256    TO WS-Src-SUB
  2755            .
```

==

====== ==

```
  2757        312-Expanded-Src-Record SECTION.
  2758 GC0314    IF F-Expanded-Src-REC(1:1) = SPACE
  2759 GC0314        MOVE 2 TO WS-Src-SUB
  2760 GC0314    ELSE
  2761 GC0314        MOVE 1 TO WS-Src-SUB
  2762 GC0314    END-IF
  2763             IF WS-RS-In-Main-Module-BOOL
  2764                 ADD 1 To WS-Curr-Line-NUM
  2765             END-IF
  2766             .
```

==

```
 2768         313-Check-For-Numeric-Token SECTION.
 2769             MOVE WS-Token-Curr-TXT TO WS-Temp-32-Chars-1-TXT
 2770             INSPECT WS-Temp-32-Chars-1-TXT
 2771 GC0711         CONVERTING '0123456789' TO SPACES
 2772 GC0711     IF WS-Temp-32-Chars-1-TXT = SPACES                    *> Simple Unsigned Int
      eger
 2773             SET WS-TT-Token-Is-Lit-Number-BOOL TO TRUE
 2774             EXIT SECTION
 2775             END-IF
 2776 GC0711     MOVE SPACES TO WS-Temp-32-Chars-2-TXT
 2777 GC0711                     WS-Temp-32-Chars-3-TXT
 2778 GC0711                   WS-Dummy-TXT
 2779 GC0711     UNSTRING WS-Temp-32-Chars-1-TXT
 2780 GC0711         DELIMITED BY 'e' OR 'E'
 2781 GC0711         INTO WS-Temp-32-Chars-2-TXT
 2782 GC0711             WS-Temp-32-Chars-3-TXT
 2783 GC0711             WS-Dummy-TXT
 2784 GC0711     IF WS-Dummy-TXT NOT = SPACES                    *> More than one 'E' - Not Num
      eric
 2785 GC0711         EXIT SECTION
 2786 GC0711     END-IF
 2787 GC0711     IF WS-Temp-32-Chars-2-TXT(1:1) = '+' OR '-'
 2788 GC0711         MOVE SPACE TO WS-Temp-32-Chars-2-TXT(1:1)
 2789 GC0711     END-IF
 2790 GC0711     IF WS-Temp-32-Chars-3-TXT(1:1) = '+' OR '-'
 2791 GC0711         MOVE SPACE TO WS-Temp-32-Chars-3-TXT(1:1)
 2792 GC0711     END-IF
 2793             MOVE 0 TO WS-Tally-QTY
 2794 GC0711     INSPECT WS-Temp-32-Chars-2-TXT
 2795             TALLYING WS-Tally-QTY FOR ALL '.'
 2796             IF WS-Tally-QTY = 1
 2797 GC0711         INSPECT WS-Temp-32-Chars-2-TXT REPLACING ALL '.' BY SPACE
 2798             END-IF
 2799 GC0711     INSPECT WS-Temp-32-Chars-3-TXT
 2800 GC0711         TALLYING WS-Tally-QTY FOR ALL '.'
 2801 GC0711     IF WS-Tally-QTY = 1
 2802 GC0711         INSPECT WS-Temp-32-Chars-3-TXT REPLACING ALL '.' BY SPACE
 2803 GC0711     END-IF
 2804 GC0711     IF WS-Temp-32-Chars-2-TXT = SPACES AND WS-Temp-32-Chars-3-TXT = SPACES
 2805             SET WS-TT-Token-Is-Lit-Number-BOOL TO TRUE
 2806             EXIT SECTION
 2807             END-IF
 2808             .
```

```
 2810        320-IDENTIFICATION-DIVISION SECTION.
 2811 GC0712    IF WS-TT-Token-Is-Argtype-BOOL
 2812 GC0712       SET WS-TT-Token-Is-Reserved-Wd-BOOL TO TRUE
 2813 GC0712    END-IF
 2814 GC0710    MOVE 'N' TO WS-RS-Verb-Has-Been-Found-CHR
 2815           IF WS-TT-Token-Is-Keyword-BOOL
 2816           AND WS-Token-Curr-TXT = 'DIVISION'
 2817              MOVE WS-Token-Prev-TXT TO WS-Curr-Division-TXT
 2818              EXIT SECTION
 2819           END-IF
 2820 GC0712    IF WS-Token-Prev-TXT = 'PROGRAM-ID' OR 'FUNCTION-ID'
 2821              MOVE SPACES TO WS-Token-Prev-TXT
 2822              MOVE WS-Token-Curr-TXT TO WS-Curr-Prog-ID-TXT
 2823 GC0712       IF WS-CPI-16-CHR NOT = SPACES
 2824                 MOVE '...' TO WS-CPI-13-15-TXT
 2825              END-IF
 2826              EXIT SECTION
 2827           END-IF
 2828           .
```

```
  2830          330-ENVIRONMENT-DIVISION SECTION.
  2831 GC0712    IF WS-TT-Token-Is-Argtype-BOOL
  2832 GC0712        SET WS-TT-Token-Is-Reserved-Wd-BOOL TO TRUE
  2833 GC0712    END-IF
  2834           IF WS-TT-Token-Is-Keyword-BOOL
  2835           AND WS-Token-Curr-TXT = 'DIVISION'
  2836               MOVE WS-Token-Prev-TXT TO WS-Curr-Division-TXT
  2837               EXIT SECTION
  2838           END-IF
  2839           IF WS-TT-Token-Is-Keyword-BOOL
  2840           AND WS-Token-Curr-TXT = 'SECTION'
  2841               MOVE WS-Token-Prev-TXT TO WS-Curr-Section-TXT
  2842               EXIT SECTION
  2843           END-IF
  2844           IF WS-TT-Token-Is-Identifier-BOOL
  2845 GC0712        IF WS-Token-Prev-TXT = 'FUNCTION'
  2846 GC0712            PERFORM 360-Release-Def
  2847 GC0712        ELSE
  2848 GC0712            PERFORM 361-Release-Ref
  2849 GC0712        END-IF
  2850           END-IF
  2851 GC1213    IF WS-TT-Token-Is-Function-BOOL
  2852 GC1213        PERFORM 361-Release-Ref
  2853 GC1213    END-IF
  2854           .
```

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```
  2856        340-DATA-DIVISION SECTION.
  2857 GC0712     IF WS-TT-Token-Is-Argtype-BOOL
  2858 GC0712         SET WS-TT-Token-Is-Reserved-Wd-BOOL TO TRUE
  2859 GC0712     END-IF
  2860            IF WS-TT-Token-Is-Keyword-BOOL
  2861            AND WS-Token-Curr-TXT = 'DIVISION'
  2862                MOVE WS-Token-Prev-TXT TO WS-Curr-Division-TXT
  2863                EXIT SECTION
  2864            END-IF
  2865            IF WS-TT-Token-Is-Keyword-BOOL
  2866            AND WS-Token-Curr-TXT = 'SECTION'
  2867                MOVE WS-Token-Prev-TXT TO WS-Curr-Section-TXT
  2868                EXIT SECTION
  2869            END-IF
  2870            IF  (WS-Token-Curr-TXT = 'PIC' OR 'PICTURE')
  2871            AND (WS-TT-Token-Is-Keyword-BOOL)
  2872                MOVE 'Y' TO WS-RS-Processing-PICTURE-CHR
  2873                EXIT SECTION
  2874            END-IF
  2875 GC0710     IF WS-TT-Token-Is-Reserved-Wd-BOOL
  2876 GC0710     AND WS-Token-Prev-TXT = 'LEVEL #'
  2877 GC0710         MOVE SPACES TO WS-Token-Prev-TXT
  2878 GC0710         EXIT SECTION
  2879 GC0710     END-IF
  2880            IF WS-TT-Token-Is-Identifier-BOOL
  2881                EVALUATE WS-Token-Prev-TXT
  2882                WHEN 'FD'
  2883                    PERFORM 360-Release-Def
  2884                    MOVE SPACES TO WS-Token-Prev-TXT
  2885 GC1213         WHEN 'RD'
  2886 GC1213             PERFORM 360-Release-Def
  2887 GC1213             MOVE SPACES TO WS-Token-Prev-TXT
  2888                WHEN 'SD'
  2889                    PERFORM 360-Release-Def
  2890                    MOVE SPACES TO WS-Token-Prev-TXT
  2891                WHEN 'LEVEL #'
  2892                    PERFORM 360-Release-Def
  2893                    MOVE SPACES TO WS-Token-Prev-TXT
  2894                WHEN 'INDEXED'
  2895                    PERFORM 360-Release-Def
  2896                    MOVE SPACES TO WS-Token-Prev-TXT
  2897                WHEN 'USING'
  2898                    PERFORM 362-Release-Upd
  2899                    MOVE SPACES TO WS-Token-Prev-TXT
  2900                WHEN 'INTO'
  2901                    PERFORM 362-Release-Upd
  2902                    MOVE SPACES TO WS-Token-Prev-TXT
  2903                WHEN OTHER
  2904 GC1213             IF WS-Token-Curr-TXT NOT = 'SUM'
  2905 GC1213                 PERFORM 361-Release-Ref
  2906 GC1213             END-IF
  2907                END-EVALUATE
```

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====== ==
```
  2908               EXIT SECTION
  2909          END-IF
  2910              .
```

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```
  2912          350-PROCEDURE-DIVISION SECTION.
  2913              IF WS-Curr-Section-TXT NOT = 'PROCEDURE'
  2914                  MOVE 'PROCEDURE' TO WS-Curr-Section-TXT
  2915              END-IF
  2916 GC0710       IF WS-Token-Curr-Uc-TXT = 'PROGRAM'
  2917 GC0710       AND WS-Token-Prev-TXT = 'END'
  2918 GC0710           MOVE '?' TO WS-Curr-Division-TXT
  2919 GC0710           EXIT SECTION
  2920 GC0710       END-IF
  2921              IF WS-TT-Token-Is-Keyword-BOOL
  2922              AND WS-Token-Curr-TXT = 'DIVISION'
  2923                  MOVE WS-Token-Prev-TXT TO WS-Curr-Division-TXT
  2924                  EXIT SECTION
  2925              END-IF
  2926 GC0313       IF WS-TT-Token-Is-Identifier-BOOL
  2927 GC0313       AND WS-Token-Prev-TXT = SPACES
  2928 GC0313       AND WS-Curr-Verb-TXT = SPACES
  2929 GC0313*> ----- Definition of a Paragraph or Section
  2930 GC0313           PERFORM 360-Release-Def
  2931 GC0313           MOVE SPACES TO WS-Token-Prev-TXT
  2932 GC0313           EXIT SECTION
  2933 GC0313       END-IF
  2934              IF NOT WS-TT-Token-Is-Identifier-BOOL
  2935                  EXIT SECTION
  2936              END-IF
  2937              EVALUATE WS-Curr-Verb-TXT
  2938              WHEN 'ACCEPT'
  2939                  PERFORM 351-ACCEPT
  2940              WHEN 'ADD'
  2941                  PERFORM 351-ADD
  2942              WHEN 'ALLOCATE'
  2943                  PERFORM 351-ALLOCATE
  2944              WHEN 'CALL'
  2945                  PERFORM 351-CALL
  2946              WHEN 'COMPUTE'
  2947                  PERFORM 351-COMPUTE
  2948              WHEN 'DIVIDE'
  2949                  PERFORM 351-DIVIDE
  2950              WHEN 'FREE'
  2951                  PERFORM 351-FREE
  2952 GC1213       WHEN 'GENERATE'
  2953 GC1213           PERFORM 351-GENERATE
  2954              WHEN 'INITIALIZE'
  2955                  PERFORM 351-INITIALIZE
  2956 GC1213       WHEN 'INITIATE'
  2957 GC1213           PERFORM 351-GENERATE
  2958              WHEN 'INSPECT'
  2959                  PERFORM 351-INSPECT
  2960              WHEN 'MOVE'
  2961                  PERFORM 351-MOVE
  2962              WHEN 'MULTIPLY'
  2963                  PERFORM 351-MULTIPLY
```

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```
GNUCOBOL 3.0 24DEC2017  Source Listing                                        2017/12/24
                                               /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                                  Page: 71
======  ======================================================================================
  2964          WHEN 'PERFORM'
  2965              PERFORM 351-PERFORM
  2966          WHEN 'SET'
  2967              PERFORM 351-SET
  2968          WHEN 'STRING'
  2969              PERFORM 351-STRING
  2970          WHEN 'SUBTRACT'
  2971              PERFORM 351-SUBTRACT
  2972 GC1213   WHEN 'TERMINATE'
  2973 GC1213       PERFORM 351-GENERATE
  2974          WHEN 'TRANSFORM'
  2975              PERFORM 351-TRANSFORM
  2976          WHEN 'UNSTRING'
  2977              PERFORM 351-UNSTRING
  2978          WHEN OTHER
  2979              PERFORM 361-Release-Ref
  2980          END-EVALUATE
  2981          .
```

```
==========================================================================================
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```

```
 2983        351-ACCEPT SECTION.
 2984            EVALUATE WS-Token-Prev-TXT
 2985            WHEN 'ACCEPT'
 2986                PERFORM 362-Release-Upd
 2987                MOVE SPACES TO WS-Token-Prev-TXT
 2988            WHEN OTHER
 2989                PERFORM 361-Release-Ref
 2990            END-EVALUATE
 2991            .
 2992
 2993        351-ADD SECTION.
 2994            EVALUATE WS-Token-Prev-TXT
 2995            WHEN 'GIVING'
 2996                PERFORM 362-Release-Upd
 2997            WHEN 'TO'
 2998                PERFORM 362-Release-Upd
 2999            WHEN OTHER
 3000                PERFORM 361-Release-Ref
 3001            END-EVALUATE
 3002            .
 3003
 3004        351-ALLOCATE SECTION.
 3005            EVALUATE WS-Token-Prev-TXT
 3006            WHEN 'ALLOCATE'
 3007                PERFORM 362-Release-Upd
 3008                MOVE SPACES TO WS-Token-Prev-TXT
 3009            WHEN 'RETURNING'
 3010                PERFORM 362-Release-Upd
 3011            WHEN OTHER
 3012                PERFORM 361-Release-Ref
 3013            END-EVALUATE
 3014            .
 3015
 3016        351-CALL SECTION.
 3017            EVALUATE WS-Token-Prev-TXT
 3018            WHEN 'RETURNING'
 3019                PERFORM 362-Release-Upd
 3020            WHEN 'GIVING'
 3021                PERFORM 362-Release-Upd
 3022            WHEN OTHER
 3023 GC1213        PERFORM 365-Release-Arg
 3024            END-EVALUATE
 3025            .
 3026
 3027        351-COMPUTE SECTION.
 3028            EVALUATE WS-Token-Prev-TXT
 3029            WHEN 'COMPUTE'
 3030                PERFORM 362-Release-Upd
 3031            WHEN OTHER
 3032                PERFORM 361-Release-Ref
 3033            END-EVALUATE
 3034            .
```

```
   3035
   3036        351-DIVIDE SECTION.
   3037            EVALUATE WS-Token-Prev-TXT
   3038            WHEN 'INTO'
   3039                PERFORM 363-Set-Upd
   3040                MOVE F-Sort-Work-REC TO WS-Held-Reference-TXT
   3041            WHEN 'GIVING'
   3042                IF WS-Held-Reference-TXT NOT = SPACES
   3043                    MOVE WS-Held-Reference-TXT To F-Sort-Work-REC
   3044                    MOVE SPACES         To WS-Held-Reference-TXT
   3045                                           F-SW-Ref-Flag-CHR
   3046                    RELEASE F-Sort-Work-REC
   3047                END-IF
   3048                PERFORM 362-Release-Upd
   3049            WHEN 'REMAINDER'
   3050                PERFORM 362-Release-Upd
   3051            WHEN OTHER
   3052                PERFORM 361-Release-Ref
   3053            END-EVALUATE
   3054            .
   3055
   3056        351-FREE SECTION.
   3057            PERFORM 362-Release-Upd
   3058            .
   3059
   3060 GC1213 351-GENERATE SECTION.
   3061 GC1213     PERFORM 362-Release-Upd
   3062 GC1213     .
   3063
   3064        351-INITIALIZE SECTION.
   3065            EVALUATE WS-Token-Prev-TXT
   3066            WHEN 'INITIALIZE'
   3067                PERFORM 362-Release-Upd
   3068            WHEN 'REPLACING'
   3069                PERFORM 361-Release-Ref
   3070            END-EVALUATE
   3071            .
   3072
   3073 GC1213 351-INITIATE SECTION.
   3074 GC1213     PERFORM 362-Release-Upd
   3075 GC1213     .
   3076
   3077        351-INSPECT SECTION.
   3078            EVALUATE WS-Token-Prev-TXT
   3079            WHEN 'INSPECT'
   3080                PERFORM 364-Set-Ref
   3081                MOVE SPACES TO WS-Held-Reference-TXT
   3082                MOVE SPACES TO WS-Token-Prev-TXT
   3083            WHEN 'TALLYING'
   3084                PERFORM 362-Release-Upd
   3085                MOVE SPACES TO WS-Token-Prev-TXT
   3086            WHEN 'REPLACING'
   3087                IF WS-Held-Reference-TXT NOT = SPACES
```

==

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GNUCOBOL 3.0 24DEC2017  Source Listing                                           2017/12/24
                                                      /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                                   Page: 74
=====  =========================================================================================
 3088                        MOVE WS-Held-Reference-TXT TO F-Sort-Work-REC
 3089                        MOVE SPACES          TO WS-Held-Reference-TXT
 3090                        MOVE '*'             TO F-SW-Ref-Flag-CHR
 3091                        RELEASE F-Sort-Work-REC
 3092                     END-IF
 3093                  MOVE SPACES TO WS-Token-Prev-TXT
 3094               WHEN 'CONVERTING'
 3095                  IF WS-Held-Reference-TXT NOT = SPACES
 3096                        MOVE WS-Held-Reference-TXT TO F-Sort-Work-REC
 3097                        MOVE SPACES          TO WS-Held-Reference-TXT
 3098                        MOVE '*'             TO F-SW-Ref-Flag-CHR
 3099                        RELEASE F-Sort-Work-REC
 3100                     END-IF
 3101                  MOVE SPACES TO WS-Token-Prev-TXT
 3102               WHEN OTHER
 3103                  PERFORM 361-Release-Ref
 3104               END-EVALUATE
 3105               .
 3106
 3107        351-MOVE SECTION.
 3108           EVALUATE WS-Token-Prev-TXT
 3109           WHEN 'TO'
 3110               PERFORM 362-Release-Upd
 3111           WHEN OTHER
 3112               PERFORM 361-Release-Ref
 3113           END-EVALUATE
 3114           .
 3115
 3116        351-MULTIPLY SECTION.
 3117           EVALUATE WS-Token-Prev-TXT
 3118           WHEN 'BY'
 3119               PERFORM 363-Set-Upd
 3120               MOVE F-Sort-Work-REC TO WS-Held-Reference-TXT
 3121           WHEN 'GIVING'
 3122               MOVE WS-Held-Reference-TXT TO F-Sort-Work-REC
 3123               MOVE SPACES          TO WS-Held-Reference-TXT
 3124                                       F-SW-Ref-Flag-CHR
 3125               RELEASE F-Sort-Work-REC
 3126               PERFORM 362-Release-Upd
 3127           WHEN OTHER
 3128               PERFORM 361-Release-Ref
 3129           END-EVALUATE
 3130           .
 3131
 3132        351-PERFORM SECTION.
 3133           EVALUATE WS-Token-Prev-TXT
 3134           WHEN 'VARYING'
 3135               PERFORM 362-Release-Upd
 3136               MOVE SPACES TO WS-Token-Prev-TXT
 3137           WHEN 'AFTER'
 3138               PERFORM 362-Release-Upd
 3139               MOVE SPACES TO WS-Token-Prev-TXT
 3140           WHEN OTHER
=====================================================================================================
```

====== ===
  3141   PERFORM 361-Release-Ref
  3142   END-EVALUATE
  3143   .
  3144
  3145   351-SET SECTION.
  3146   EVALUATE WS-Token-Prev-TXT
  3147   WHEN 'SET'
  3148   PERFORM 362-Release-Upd
  3149   WHEN OTHER
  3150   PERFORM 361-Release-Ref
  3151   END-EVALUATE
  3152   .
  3153
  3154   351-STRING SECTION.
  3155   EVALUATE WS-Token-Prev-TXT
  3156   WHEN 'INTO'
  3157   PERFORM 362-Release-Upd
  3158   WHEN 'POINTER'
  3159   PERFORM 362-Release-Upd
  3160   WHEN OTHER
  3161   PERFORM 361-Release-Ref
  3162   END-EVALUATE
  3163   .
  3164
  3165   351-SUBTRACT SECTION.
  3166   EVALUATE WS-Token-Prev-TXT
  3167   WHEN 'GIVING'
  3168   PERFORM 362-Release-Upd
  3169   WHEN 'FROM'
  3170   PERFORM 362-Release-Upd
  3171   WHEN OTHER
  3172   PERFORM 361-Release-Ref
  3173   END-EVALUATE
  3174   .
  3175
  3176 GC1213 351-TERMINATE SECTION.
  3177 GC1213   PERFORM 362-Release-Upd
  3178 GC1213   .
  3179
  3180   351-TRANSFORM SECTION.
  3181   EVALUATE WS-Token-Prev-TXT
  3182   WHEN 'TRANSFORM'
  3183   PERFORM 362-Release-Upd
  3184   MOVE SPACES TO WS-Token-Prev-TXT
  3185   WHEN OTHER
  3186   PERFORM 361-Release-Ref
  3187   END-EVALUATE
  3188   .
  3189
  3190   351-UNSTRING SECTION.
  3191   EVALUATE WS-Token-Prev-TXT
  3192   WHEN 'INTO'
  3193   PERFORM 362-Release-Upd

===

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GNUCOBOL 3.0 24DEC2017  Source Listing                                            2017/12/24
                                                     /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                                    Page: 76
======  =============================================================================================
  3194          WHEN 'DELIMITER'
  3195              PERFORM 362-Release-Upd
  3196          WHEN 'COUNT'
  3197              PERFORM 362-Release-Upd
  3198          WHEN 'POINTER'
  3199              PERFORM 362-Release-Upd
  3200          WHEN 'TALLYING'
  3201              PERFORM 362-Release-Upd
  3202          WHEN OTHER
  3203              PERFORM 361-Release-Ref
  3204          END-EVALUATE
  3205          .
  3206
  3207      360-Release-Def SECTION.
  3208          MOVE SPACES               TO F-Sort-Work-REC
  3209          MOVE WS-Curr-Prog-ID-TXT  TO F-SW-Prog-ID-TXT
  3210          MOVE WS-Token-Curr-Uc-TXT TO F-SW-Token-Uc-TXT
  3211          MOVE WS-Token-Curr-TXT    TO F-SW-Token-TXT
  3212          MOVE WS-Curr-Section-TXT  TO F-SW-Section-TXT
  3213          MOVE WS-Curr-Line-NUM     TO F-SW-Def-Line-NUM
  3214          MOVE 0                    TO F-SW-Ref-Line-NUM
  3215          RELEASE F-Sort-Work-REC
  3216          .
  3217
  3218      361-Release-Ref SECTION.
  3219          PERFORM 364-Set-Ref
  3220          RELEASE F-Sort-Work-REC
  3221          .
  3222
  3223      362-Release-Upd SECTION.
  3224          PERFORM 363-Set-Upd
  3225          RELEASE F-Sort-Work-REC
  3226          .
  3227
  3228      363-Set-Upd SECTION.
  3229          MOVE SPACES               TO F-Sort-Work-REC
  3230          MOVE WS-Curr-Prog-ID-TXT  TO F-SW-Prog-ID-TXT
  3231          MOVE WS-Token-Curr-Uc-TXT TO F-SW-Token-Uc-TXT
  3232          MOVE WS-Token-Curr-TXT    TO F-SW-Token-TXT
  3233          MOVE WS-Curr-Section-TXT  TO F-SW-Section-TXT
  3234          MOVE WS-Curr-Line-NUM     TO F-SW-Ref-Line-NUM
  3235          MOVE '*'                  TO F-SW-Ref-Flag-CHR
  3236          .
  3237
  3238      364-Set-Ref SECTION.
  3239          MOVE SPACES               TO F-Sort-Work-REC
  3240          MOVE WS-Curr-Prog-ID-TXT  TO F-SW-Prog-ID-TXT
  3241          MOVE WS-Token-Curr-Uc-TXT TO F-SW-Token-Uc-TXT
  3242          MOVE WS-Token-Curr-TXT    TO F-SW-Token-TXT
  3243          MOVE WS-Curr-Section-TXT  TO F-SW-Section-TXT
  3244          MOVE WS-Curr-Line-NUM     TO F-SW-Ref-Line-NUM
  3245          .
  3246
======================================================================================================
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```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                        2017/12/24
                                                      /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                                Page: 77
======  =====================================================================================
  3247 GC1213 365-Release-Arg SECTION.
  3248 GC1213     PERFORM 366-Set-Arg
  3249 GC1213     RELEASE F-Sort-Work-REC
  3250 GC1213     .
  3251
  3252 GC1213 366-Set-Arg SECTION.
  3253 GC1213     MOVE SPACES               TO F-Sort-Work-REC
  3254 GC1213     MOVE WS-Curr-Prog-ID-TXT  TO F-SW-Prog-ID-TXT
  3255 GC1213     MOVE WS-Token-Curr-Uc-TXT TO F-SW-Token-Uc-TXT
  3256 GC1213     MOVE WS-Token-Curr-TXT    TO F-SW-Token-TXT
  3257 GC1213     MOVE WS-Curr-Section-TXT  TO F-SW-Section-TXT
  3258 GC1213     MOVE WS-Curr-Line-NUM     TO F-SW-Ref-Line-NUM
  3259 GC1213     MOVE 'C'                  TO F-SW-Ref-Flag-CHR
  3260 GC1213     .
  3261
```

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====================================================================================================
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```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                              2017/12/24
                                       /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                      Page: 78
====== ========================================================================

  3263          400-Produce-Xref-Listing SECTION.
  3264              MOVE SPACES       TO WS-Xref-Detail-Line-TXT
  3265                                   WS-Group-Indicators-TXT
  3266              MOVE 0            TO WS-I-SUB
  3267                                   WS-Lines-Left-NUM
  3268 GC0710      MOVE 'N'          TO WS-RS-Duplicate-CHR
  3269              PERFORM FOREVER
  3270                  RETURN F-Sort-Work-FILE AT END
  3271 GC1213              IF WS-Xref-Detail-Line-TXT NOT = SPACES
  3272 GC1213                  PERFORM 410-Generate-Report-Line
  3273 GC1213              END-IF
  3274 GC1213              MOVE SPACES TO WS-Xref-Detail-Line-TXT
  3275 GC1213              PERFORM 410-Generate-Report-Line
  3276 GC1213                  UNTIL WS-Lines-Left-NUM = 0
  3277 GC1213              MOVE 'Y' TO WS-Suppress-FF-CHR
  3278 GC1213              PERFORM 420-Generate-Xref-Footer
  3279                  EXIT PERFORM
  3280              END-RETURN
  3281                  IF F-SW-Prog-ID-TXT  NOT = WS-GI-Prog-ID-TXT
  3282                  OR F-SW-Token-Uc-TXT NOT = WS-GI-Token-TXT
  3283 GC0710          MOVE 'N' TO WS-RS-Duplicate-CHR
  3284                      IF WS-Xref-Detail-Line-TXT NOT = SPACES
  3285                          PERFORM 410-Generate-Report-Line
  3286                      END-IF
  3287                      IF F-SW-Prog-ID-TXT NOT = WS-GI-Prog-ID-TXT
  3288 GC1213                  MOVE SPACES TO WS-Xref-Detail-Line-TXT
  3289 GC1213                  PERFORM 410-Generate-Report-Line
  3290 GC1213                      UNTIL WS-Lines-Left-NUM = 0
  3291                      END-IF
  3292                      MOVE F-SW-Prog-ID-TXT  TO WS-GI-Prog-ID-TXT
  3293                      MOVE F-SW-Token-Uc-TXT TO WS-GI-Token-TXT
  3294                  END-IF
  3295 GC0710          IF F-SW-Token-Uc-TXT = WS-GI-Token-TXT
  3296 GC0710          AND F-SW-Def-Line-NUM NOT = SPACES
  3297 GC0710          AND WS-Xref-Detail-Line-TXT NOT = SPACES
  3298 GC0710              MOVE 'Y' TO WS-RS-Duplicate-CHR
  3299 GC0710              PERFORM 410-Generate-Report-Line
  3300 GC0710              MOVE 0 TO WS-I-SUB
  3301 GC0710              MOVE F-SW-Prog-ID-TXT TO WS-XDL-Prog-ID-TXT
  3302 GC0710              MOVE '  (Duplicate Definition)' TO WS-XDL-Token-TXT
  3303 GC0710              MOVE F-SW-Section-TXT TO WS-XDL-Section-TXT
  3304 GC0710              MOVE F-SW-Def-Line-NUM TO WS-XDL-Def-Line-NUM
  3305 GC0710              EXIT PERFORM CYCLE
  3306 GC0710          END-IF
  3307 GC0710          IF F-SW-Token-Uc-TXT = WS-GI-Token-TXT
  3308 GC0710          AND F-SW-Def-Line-NUM = SPACES
  3309 GC0710          AND WS-RS-Duplicate-CHR = 'Y'
  3310 GC0710              MOVE 'N' TO WS-RS-Duplicate-CHR
  3311 GC0710              PERFORM 410-Generate-Report-Line
  3312 GC0710              MOVE 0 TO WS-I-SUB
  3313 GC0710              MOVE F-SW-Prog-ID-TXT TO WS-XDL-Prog-ID-TXT
  3314 GC0710              MOVE '  (Duplicate References)' TO WS-XDL-Token-TXT

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```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                              2017/12/24
                                      /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                     Page: 79
====== =======================================================================
  3315 GC0710        END-IF
  3316               IF WS-Xref-Detail-Line-TXT = SPACES
  3317                   MOVE F-SW-Prog-ID-TXT TO WS-XDL-Prog-ID-TXT
  3318                   MOVE F-SW-Token-TXT TO WS-XDL-Token-TXT
  3319                   MOVE F-SW-Section-TXT TO WS-XDL-Section-TXT
  3320                   IF F-SW-Def-Line-NUM NOT = SPACES
  3321                       MOVE F-SW-Def-Line-NUM TO WS-XDL-Def-Line-NUM
  3322                   END-IF
  3323               END-IF
  3324               IF F-SW-Reference-TXT > '000000'
  3325                   ADD 1 TO WS-I-SUB
  3326                   IF WS-I-SUB > WS-Xref-Lines-Per-Rec-NUM
  3327                       PERFORM 410-Generate-Report-Line
  3328                       MOVE 1 TO WS-I-SUB
  3329                   END-IF
  3330                   MOVE F-SW-Ref-Line-NUM
  3331                     TO WS-XDL-Ref-Line-NUM (WS-I-SUB)
  3332                   MOVE F-SW-Ref-Flag-CHR
  3333                     TO WS-XDL-Ref-Flag-CHR (WS-I-SUB)
  3334               END-IF
  3335           END-PERFORM
  3336           IF WS-Xref-Detail-Line-TXT NOT = SPACES
  3337               PERFORM 410-Generate-Report-Line
  3338           END-IF
  3339               .
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                           /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                         Page: 80
====== =============================================================================

  3341         410-Generate-Report-Line SECTION.
  3342             IF WS-Lines-Left-NUM < 1
  3343 GC1213        PERFORM 420-Generate-Xref-Footer
  3344 GC1213        ADD  1        TO WS-Page-NUM
  3345 GC1213        MOVE 'Page:'    TO WS-PN-Literal-TXT
  3346 GC1213        MOVE WS-Page-NUM TO WS-PN-Page-NUM
  3347 GC1213        CALL 'C$JUSTIFY' USING WS-PN-Page-NUM, 'Left'
  3348 GC1213        CALL 'C$JUSTIFY' USING WS-Page-No-TXT, 'Right'
  3349 GC1213        IF L-Listing-CD = 1 *> LANDSCAPE
  3350 GC1213          MOVE WS-Version-TXT
  3351 GC1213            TO F-Listing-135-REC
  3352 GC1213          MOVE 'Cross-Reference Listing'
  3353 GC1213            TO F-Listing-135-REC(25:23)
  3354 GC1213          MOVE WS-Formatted-DT
  3355 GC1213            TO F-Listing-135-REC(126:10)
  3356 GC1213          WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #1
  3357 GC1213          MOVE WS-Program-Path-TXT
  3358 GC1213            TO F-Listing-135-REC
  3359 GC1213          WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #2
  3360 GC1213          MOVE 'PROGRAM-ID      Identifier/Register/Function' &
  3361 GC1213               '    Defn   Where Defined   References'
  3362 GC1213            TO F-Listing-135-REC
  3363 GC1213          MOVE WS-Page-No-TXT
  3364 GC1213            TO F-Listing-135-REC(126:10)
  3365 GC1213          WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #3
  3366 GC1213          MOVE ALL '=' TO F-Listing-135-REC
  3367 GC1213          MOVE SPACE TO F-Listing-135-REC(16:1)
  3368 GC1213                       F-Listing-135-REC(49:1)
  3369 GC1213                       F-Listing-135-REC(56:1)
  3370 GC1213                       F-Listing-135-REC(72:1)
  3371 GC1213          WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #4
  3372 GC1213        ELSE              *> PORTRAIT
  3373 GC1213          MOVE WS-Version-TXT
  3374 GC1213            TO F-Listing-96-REC
  3375 GC1213          MOVE 'Cross-Reference Listing'
  3376 GC1213            TO F-Listing-96-REC(25:23)
  3377 GC1213          MOVE WS-Formatted-DT
  3378 GC1213            TO F-Listing-96-REC(87:10)
  3379 GC1213          WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #1
  3380 GC1213          MOVE WS-Program-Path-TXT(40:96)
  3381 GC1213            TO F-Listing-96-REC
  3382 GC1213          WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #2
  3383 GC1213          MOVE 'PROGRAM-ID      Identifier/Register/Function' &
  3384 GC1213               '    Defn   Where Defined   References'
  3385 GC1213            TO F-Listing-96-REC
  3386 GC1213          MOVE WS-Page-No-TXT
  3387 GC1213            TO F-Listing-96-REC(87:10)
  3388 GC1213          WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #3
  3389 GC1213          MOVE ALL '=' TO F-Listing-96-REC
  3390 GC1213          MOVE SPACE TO F-Listing-96-REC(16:1)
  3391 GC1213                       F-Listing-96-REC(49:1)
  3392 GC1213                       F-Listing-96-REC(56:1)

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```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                        2017/12/24
                                                  /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                             Page: 81
====== ================================================================================
  3393 GC1213                          F-Listing-96-REC(72:1)
  3394 GC1213            WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #4
  3395 GC1213          END-IF
  3396 GC1213          COMPUTE WS-Lines-Left-NUM = WS-Lines-Per-Page-NUM - 4
  3397          END-IF
  3398 GC1213    IF L-Listing-CD = 1 *> LANDSCAPE
  3399 GC1213        WRITE F-Listing-135-REC FROM WS-Xref-Detail-Line-TXT
  3400 GC1213            BEFORE 1
  3401 GC1213    ELSE                *> PORTRAIT
  3402 GC1213        WRITE F-Listing-96-REC FROM WS-Xref-Detail-Line-TXT
  3403 GC1213            BEFORE 1
  3404 GC1213    END-IF
  3405          MOVE SPACES TO WS-Xref-Detail-Line-TXT
  3406          MOVE 0 TO WS-I-SUB
  3407          SUBTRACT 1 FROM WS-Lines-Left-NUM
  3408              .
  3409 GC1213 420-Generate-Xref-Footer SECTION.
  3410 GC1213    IF L-Listing-CD = 1 *> LANDSCAPE
  3411 GC1213        WRITE F-Listing-135-REC FROM SPACES BEFORE 1 *> Footer Line #1
  3412 GC1213        MOVE ALL '='
  3413 GC1213          TO F-Listing-135-REC
  3414 GC1213        WRITE F-Listing-135-REC BEFORE 1 *> Footer Line #2
  3415 GC1213        MOVE WS-Copyright-TXT
  3416 GC1213          TO F-Listing-135-REC
  3417 GC1213        MOVE WS-Page-No-TXT
  3418 GC1213          TO F-Listing-135-REC(126:10)
  3419 GC1213        IF WS-Suppress-FF-CHR = 'Y'
  3420 GC1213            WRITE F-Listing-135-REC BEFORE 1 *> Footer Line #3
  3421 GC1213        ELSE
  3422 GC1213            WRITE F-Listing-135-REC BEFORE PAGE *> Footer Line #3
  3423 GC1213            WRITE F-Listing-135-REC FROM SPACES BEFORE 1 *> Spaces After FF Charac
       ter
  3424 GC1213        END-IF
  3425 GC1213    ELSE                *> PORTRAIT
  3426 GC1213        WRITE F-Listing-96-REC FROM SPACES BEFORE 1 *> Footer Line #1
  3427 GC1213        MOVE ALL '='
  3428 GC1213          TO F-Listing-96-REC
  3429 GC1213        WRITE F-Listing-96-REC BEFORE 1 *> Footer Line #2
  3430 GC1213        MOVE WS-Copyright-TXT
  3431 GC1213          TO F-Listing-96-REC
  3432 GC1213        MOVE WS-Page-No-TXT
  3433 GC1213          TO F-Listing-96-REC(87:10)
  3434 GC1213        IF WS-Suppress-FF-CHR = 'Y'
  3435 GC1213            WRITE F-Listing-96-REC BEFORE 1 *> Footer Line #3
  3436 GC1213        ELSE
  3437 GC1213            WRITE F-Listing-96-REC BEFORE PAGE *> Footer Line #3
  3438 GC1213            WRITE F-Listing-96-REC FROM SPACES BEFORE 1 *> Spaces After FF Charact
       er
  3439 GC1213        END-IF
  3440 GC1213    END-IF
  3441 GC1213        .
```

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=========================================================================================
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```
GNUCOBOL 3.0 24DEC2017  Source Listing                                  2017/12/24
                                   /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line   Statement                                                         Page: 82
====== =========================================================================

  3443        500-Produce-Source-Listing SECTION.
  3444            OPEN INPUT F-Original-Src-FILE
  3445                       F-Expanded-Src-FILE
  3446            MOVE 0 TO WS-Src-Line-NUM
  3447            PERFORM FOREVER
  3448                READ F-Expanded-Src-FILE AT END
  3449 GC1213            MOVE SPACES TO WS-Src-Detail-Line-TXT
  3450 GC1213            PERFORM 530-Generate-Source-Line
  3451 GC1213                UNTIL WS-Lines-Left-NUM = 0
  3452                    EXIT PERFORM
  3453                END-READ
  3454 GC0712        IF F-ES-1-7-TXT NOT = '#DEFLIT'
  3455 GC0712            IF F-ES-1-CHR = '#'
  3456 GC0712                PERFORM 510-Control-Record
  3457 GC0712            ELSE
  3458 GC0712                PERFORM 520-Expanded-Src-Record
  3459 GC0712            END-IF
  3460 GC0712        END-IF
  3461            END-PERFORM
  3462            CLOSE F-Original-Src-FILE
  3463                  F-Expanded-Src-FILE
  3464            .
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                          /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                           Page: 83
======  =====================================================================================

  3466         510-Control-Record SECTION.
  3467             UNSTRING F-ES-2-256-TXT-256
  3468                 DELIMITED BY '"'
  3469                 INTO WS-Temp-10-Chars-TXT
  3470                      WS-Temp-256-Chars-TXT
  3471                      WS-Dummy-TXT
  3472 GC1010     IF UPPER-CASE(TRIM(WS-Temp-256-Chars-TXT,Trailing)) =
  3473 GC1010       TRIM(WS-Main-Module-Name-TXT) *> Main Pgm
  3474                 SET WS-RS-In-Main-Module-BOOL TO TRUE
  3475                 IF WS-Src-Line-NUM > 0
  3476                     READ F-Expanded-Src-FILE END-READ
  3477                 END-IF
  3478             ELSE *> COPY
  3479                 SET WS-RS-In-Copybook-BOOL TO TRUE
  3480             END-IF
  3481                 .
```

```
  3483        520-Expanded-Src-Record SECTION.
  3484            IF WS-RS-In-Main-Module-BOOL
  3485                ADD 1 To WS-Curr-Line-NUM
  3486 GC0712        READ F-Original-Src-FILE AT END CONTINUE END-READ
  3487                ADD 1 TO WS-Src-Line-NUM
  3488                MOVE SPACES TO WS-Src-Detail-Line-TXT
  3489                MOVE WS-Src-Line-NUM TO WS-SDL-Line-NUM
  3490 GC1213        MOVE F-Original-Src-REC TO WS-SDL-Statement-TXT
  3491 GC0712        MOVE LOWER-CASE(TRIM(F-OS-8-72-TXT,LEADING))
  3492 GC0712           TO WS-Temp-65-Chars-TXT
  3493 GC0712        INSPECT WS-Temp-65-Chars-TXT REPLACING ALL '.' BY SPACE
  3494 GC0712        EVALUATE TRUE
  3495 GC0712            WHEN F-OS-7-CHR = '/'
  3496 GC1213                MOVE SPACES TO WS-Src-Detail-Line-TXT
  3497 GC1213                PERFORM 530-Generate-Source-Line
  3498 GC1213                    UNTIL WS-Lines-Left-NUM = 0
  3499 GC0712            WHEN WS-Temp-65-Chars-TXT = "eject"
  3500 GC1213                MOVE SPACES TO WS-Src-Detail-Line-TXT
  3501 GC1213                PERFORM 530-Generate-Source-Line
  3502 GC1213                    UNTIL WS-Lines-Left-NUM = 0
  3503 GC0712                EXIT SECTION
  3504 GC0712            WHEN WS-Temp-65-Chars-TXT = "skip1"
  3505 GC0712                MOVE SPACES TO WS-Src-Detail-Line-TXT
  3506 GC0712                PERFORM 530-Generate-Source-Line
  3507 GC0712                EXIT SECTION
  3508 GC0712            WHEN WS-Temp-65-Chars-TXT = "skip2"
  3509 GC0712                MOVE SPACES TO WS-Src-Detail-Line-TXT
  3510 GC0712                PERFORM 530-Generate-Source-Line 2 TIMES
  3511 GC0712                EXIT SECTION
  3512 GC0712            WHEN WS-Temp-65-Chars-TXT = "skip3"
  3513 GC0712                MOVE SPACES TO WS-Src-Detail-Line-TXT
  3514 GC0712                PERFORM 530-Generate-Source-Line 3 TIMES
  3515 GC0712                EXIT SECTION
  3516 GC0712        END-EVALUATE
  3517                PERFORM 530-Generate-Source-Line
  3518            ELSE
  3519                IF F-Expanded-Src-REC NOT = SPACES
  3520                    MOVE SPACES TO WS-Src-Detail-Line-TXT
  3521 GC1213            MOVE F-Expanded-Src-REC
  3522                       TO WS-SDL-Statement-TXT
  3523 GC0712            MOVE LOWER-CASE(TRIM(F-OS-8-72-TXT,LEADING))
  3524 GC0712               TO WS-Temp-65-Chars-TXT
  3525 GC0712            INSPECT WS-Temp-65-Chars-TXT
  3526 GC0712                REPLACING ALL '.' BY SPACE
  3527 GC0712            EVALUATE TRUE
  3528 GC0712                WHEN WS-Temp-65-Chars-TXT = "eject"
  3529 GC0712                    MOVE 0 TO WS-Lines-Left-NUM
  3530 GC0712                    EXIT SECTION
  3531 GC0712                WHEN WS-Temp-65-Chars-TXT = "skip1"
  3532 GC0712                    MOVE SPACES TO WS-Src-Detail-Line-TXT
  3533 GC0712                    PERFORM 530-Generate-Source-Line
  3534 GC0712                    EXIT SECTION
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                              2017/12/24
                                                    /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                                      Page: 85
====== =============================================================================================
  3535 GC0712                  WHEN WS-Temp-65-Chars-TXT = "skip2"
  3536 GC0712                      MOVE SPACES TO WS-Src-Detail-Line-TXT
  3537 GC0712                      PERFORM 530-Generate-Source-Line 2 TIMES
  3538 GC0712                      EXIT SECTION
  3539 GC0712                  WHEN WS-Temp-65-Chars-TXT = "skip3"
  3540 GC0712                      MOVE SPACES TO WS-Src-Detail-Line-TXT
  3541 GC0712                      PERFORM 530-Generate-Source-Line 3 TIMES
  3542 GC0712                      EXIT SECTION
  3543 GC0712              END-EVALUATE
  3544                      PERFORM 530-Generate-Source-Line
  3545              END-IF
  3546          END-IF
  3547              .
```

```
====================================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL                     Page: 85
```

======= ==

```
 3549         530-Generate-Source-Line SECTION.
 3550 GC1213     MOVE 1 TO WS-Src-Lines-NUM
 3551 GC1213     IF L-Listing-CD = 1 *> LANDSCAPE
 3552 GC1213         IF WS-SDL-Statement-TXT(129:128) > SPACES
 3553 GC1213             ADD 1 TO WS-Src-Lines-NUM
 3554 GC1213         END-IF
 3555 GC1213     ELSE                *> PORTRAIT
 3556 GC1213         IF WS-SDL-Statement-TXT(90:167) > SPACES
 3557 GC1213             ADD 1 TO WS-Src-Lines-NUM
 3558 GC1213             IF WS-SDL-Statement-TXT(179:78) > SPACES
 3559 GC1213                 ADD 1 TO WS-Src-Lines-NUM
 3560 GC1213             END-IF
 3561 GC1213         END-IF
 3562 GC1213     END-IF
 3563 GC1213     IF WS-Lines-Left-NUM < WS-Src-Lines-NUM
 3564 GC1213         IF WS-Page-Num > 0 *> Don't print footer before page 1
 3565 GC1213             IF L-Listing-CD = 1 *> LANDSCAPE
 3566 GC1213                 IF WS-Src-Lines-NUM = 2
 3567 GC1213                     WRITE F-Listing-135-REC FROM SPACES BEFORE 1 *> Blank Line
 3568 GC1213                 END-IF
 3569 GC1213                 WRITE F-Listing-135-REC FROM SPACES BEFORE 1 *> Footer Line #1
 3570 GC1213                 MOVE ALL '='
 3571 GC1213                   TO F-Listing-135-REC
 3572 GC1213                 WRITE F-Listing-135-REC BEFORE 1 *> Footer Line #2
 3573 GC1213                 MOVE WS-Copyright-TXT
 3574 GC1213                   TO F-Listing-135-REC
 3575 GC1213                 MOVE WS-Page-No-TXT
 3576 GC1213                   TO F-Listing-135-REC(126:10)
 3577 GC1213                 WRITE F-Listing-135-REC BEFORE PAGE *> Footer Line #3
 3578 GC1213                 WRITE F-Listing-135-REC FROM SPACES BEFORE 1 *> Spaces After FF Ch
      aracter
 3579 GC1213             ELSE                  *> PORTRAIT
 3580 GC1213                 EVALUATE WS-Src-Lines-NUM
 3581 GC1213                 WHEN 1 *> Need no extra blank lines
 3582 GC1213                     CONTINUE
 3583 GC1213                 WHEN 2 *> Need 1 extra blank line
 3584 GC1213                     WRITE F-Listing-96-REC FROM SPACES BEFORE 1
 3585 GC1213                 WHEN 3 *> Need 2 extra blank lines
 3586 GC1213                     WRITE F-Listing-96-REC FROM SPACES BEFORE 1
 3587 GC1213                     WRITE F-Listing-96-REC FROM SPACES BEFORE 1
 3588 GC1213                 END-EVALUATE
 3589 GC1213                 WRITE F-Listing-96-REC FROM SPACES BEFORE 1 *> Footer Line #1
 3590 GC1213                 MOVE ALL '='
 3591 GC1213                   TO F-Listing-96-REC
 3592 GC1213                 WRITE F-Listing-96-REC BEFORE 1 *> Footer Line #2
 3593 GC1213                 MOVE WS-Copyright-TXT
 3594 GC1213                   TO F-Listing-96-REC
 3595 GC1213                 MOVE WS-Page-No-TXT
 3596 GC1213                   TO F-Listing-96-REC(87:10)
 3597 GC1213                 WRITE F-Listing-96-REC BEFORE PAGE *> Footer Line #3
 3598 GC1213                 WRITE F-Listing-96-REC FROM SPACES BEFORE 1 *> Spaces After FF Cha
      racter
```

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```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                          /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                          Page: 87
======  ================================================================================
  3599 GC1213           END-IF
  3600 GC1213         END-IF
  3601 GC1213         ADD  1          TO WS-Page-NUM
  3602 GC1213         MOVE 'Page:'    TO WS-PN-Literal-TXT
  3603 GC1213         MOVE WS-Page-NUM TO WS-PN-Page-NUM
  3604 GC1213         CALL 'C$JUSTIFY' USING WS-PN-Page-NUM, 'Left'
  3605 GC1213         CALL 'C$JUSTIFY' USING WS-Page-No-TXT, 'Right'
  3606 GC1213         IF L-Listing-CD = 1 *> LANDSCAPE
  3607 GC1213             MOVE WS-Version-TXT
  3608 GC1213                TO F-Listing-135-REC
  3609 GC1213             MOVE 'Source Listing'
  3610 GC1213                TO F-Listing-135-REC(25:14)
  3611 GC1213             MOVE WS-Formatted-DT
  3612 GC1213                TO F-Listing-135-REC(126:10)
  3613 GC1213             WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #1
  3614 GC1213             MOVE WS-Program-Path-TXT
  3615 GC1213                TO F-Listing-135-REC
  3616 GC1213             WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #2
  3617 GC1213             MOVE 'Line   Statement'
  3618 GC1213                TO F-Listing-135-REC
  3619 GC1213             MOVE WS-Page-No-TXT
  3620 GC1213                TO F-Listing-135-REC(126:10)
  3621 GC1213             WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #3
  3622 GC1213             MOVE WS-Src-Dashes-TXT
  3623 GC1213                TO F-Listing-135-REC
  3624 GC1213             WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #4
  3625 GC1213         ELSE                 *> PORTRAIT
  3626 GC1213             MOVE WS-Version-TXT
  3627 GC1213                TO F-Listing-96-REC
  3628 GC1213             MOVE 'Source Listing'
  3629 GC1213                TO F-Listing-96-REC(25:14)
  3630 GC1213             MOVE WS-Formatted-DT
  3631 GC1213                TO F-Listing-96-REC(87:10)
  3632 GC1213             WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #1
  3633 GC1213             MOVE WS-Program-Path-TXT(40:96)
  3634 GC1213                TO F-Listing-96-REC
  3635 GC1213             WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #2
  3636 GC1213             MOVE 'Line   Statement'
  3637 GC1213                TO F-Listing-96-REC
  3638 GC1213             MOVE WS-Page-No-TXT
  3639 GC1213                TO F-Listing-96-REC(87:10)
  3640 GC1213             WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #3
  3641 GC1213             MOVE WS-Src-Dashes-TXT
  3642 GC1213                TO F-Listing-96-REC
  3643 GC1213             WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #4
  3644 GC1213         END-IF
  3645 GC1213         COMPUTE WS-Lines-Left-NUM = WS-Lines-Per-Page-NUM - 4
  3646 GC1213       END-IF
  3647 GC1213       IF L-Listing-CD = 1 *> LANDSCAPE
  3648 GC1213           EVALUATE WS-Src-Lines-NUM
  3649 GC1213           WHEN 1
  3650 GC1213               MOVE WS-Src-Detail-Line-TXT TO F-Listing-135-REC
  3651 GC1213               WRITE F-Listing-96-REC BEFORE 1

======================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL            Page: 87
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                             /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                              Page: 88
======  ==========================================================================================
  3652 GC1213           SUBTRACT 1 FROM WS-Lines-Left-NUM
  3653 GC1213        WHEN 2
  3654 GC1213           MOVE WS-SDL-Statement-TXT TO WS-Src-Hold-TXT
  3655 GC1213           MOVE WS-Src-Detail-Line-TXT TO F-Listing-135-REC
  3656 GC1213           WRITE F-Listing-135-REC BEFORE 1 *> Prints chars 1-128 of stmnt
  3657 GC1213           MOVE SPACES TO WS-Src-Detail-Line-TXT
  3658 GC1213           MOVE WS-Src-Hold-TXT(129:128) TO WS-SDL-Statement-TXT
  3659 GC1213           MOVE WS-Src-Detail-Line-TXT TO F-Listing-135-REC
  3660 GC1213           WRITE F-Listing-135-REC BEFORE 1 *> Prints chars 129-256 of stmnt
  3661 GC1213           SUBTRACT 2 FROM WS-Lines-Left-NUM
  3662 GC1213        END-EVALUATE
  3663 GC1213     ELSE                *> PORTRAIT
  3664 GC1213        EVALUATE WS-Src-Lines-NUM
  3665 GC1213        WHEN 1 *> Print only chars 1-89 of stmnt
  3666 GC1213           WRITE F-Listing-96-REC FROM WS-Src-Detail-Line-TXT
  3667 GC1213              BEFORE 1
  3668 GC1213           SUBTRACT 1 FROM WS-Lines-Left-NUM
  3669 GC1213        WHEN 2 *> Print only chars 1-89 and 90-178 of text
  3670 GC1213           MOVE WS-SDL-Statement-TXT TO WS-Src-Hold-TXT
  3671 GC1213           WRITE F-Listing-96-REC FROM WS-Src-Detail-Line-TXT
  3672 GC1213              BEFORE 1
  3673 GC1213           MOVE SPACES TO WS-Src-Detail-Line-TXT
  3674 GC1213           MOVE WS-Src-Hold-TXT(90:89) TO WS-SDL-Statement-TXT
  3675 GC1213           WRITE F-Listing-96-REC FROM WS-Src-Detail-Line-TXT
  3676 GC1213              BEFORE 1
  3677 GC1213           SUBTRACT 2 FROM WS-Lines-Left-NUM
  3678 GC1213        WHEN 3 *> Print chars 1-89, 90-178 and 179-256 of stmnt
  3679 GC1213           MOVE WS-SDL-Statement-TXT TO WS-Src-Hold-TXT
  3680 GC1213           WRITE F-Listing-96-REC FROM WS-Src-Detail-Line-TXT
  3681 GC1213              BEFORE 1
  3682 GC1213           MOVE SPACES TO WS-Src-Detail-Line-TXT
  3683 GC1213           MOVE WS-Src-Hold-TXT(90:89) TO WS-SDL-Statement-TXT
  3684 GC1213           WRITE F-Listing-96-REC FROM WS-Src-Detail-Line-TXT
  3685 GC1213              BEFORE 1
  3686 GC1213           MOVE SPACES TO WS-Src-Detail-Line-TXT
  3687 GC1213           MOVE WS-Src-Hold-TXT(179:78) TO WS-SDL-Statement-TXT
  3688 GC1213           WRITE F-Listing-96-REC FROM WS-Src-Detail-Line-TXT
  3689 GC1213              BEFORE 1
  3690 GC1213           SUBTRACT 3 FROM WS-Lines-Left-NUM
  3691 GC1213        END-EVALUATE
  3692 GC1213     END-IF
  3693           MOVE SPACES TO WS-Src-Detail-Line-TXT
  3694           .
  3695
  3696     END PROGRAM LISTING.
```

```
GNUCOBOL 3.0 24DEC2017  Cross-Reference Listing                          2017/12/24
                                             /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
PROGRAM-ID      Identifier/Register/Function   Defn   Where Defined   References      Page: 89
==============  ==============================  ======  ==============  ========================
CHECKSRC        000-Main                        1318 PROCEDURE
CHECKSRC        L-A1-CHR                        1308 LINKAGE          1320    1332    1335
                                                                     1342
CHECKSRC        L-A2-IDENT-DIVISION-BOOL        1313 LINKAGE          1364*
CHECKSRC        L-A2-LINKAGE-SECTION-BOOL       1312 LINKAGE          1358*
CHECKSRC        L-A2-Nothing-Special-BOOL       1314 LINKAGE          1319*
CHECKSRC        L-Argument-1-TXT                1307 LINKAGE          1316
CHECKSRC        L-Argument-2-CHR                1311 LINKAGE          1317
CHECKSRC        WS-Compressed-Src-TXT           1294 WORKING-STORAGE  1329*   1352    1356
                                                                     1362
CHECKSRC        WS-CS-CHR                       1295 WORKING-STORAGE  1336*   1342*   1351
                                                                     1355    1361
CHECKSRC        WS-I-SUB                        1303 WORKING-STORAGE  1330*   1331    1332
                                                                     1335    1342    1348*
                                                                     1349    1351    1352
                                                                     1355    1355    1356
                                                                     1361    1361    1362
CHECKSRC        WS-J-SUB                        1305 WORKING-STORAGE  1328*   1334*   1336
                                                                     1341*   1342
CHECKSRC        WS-RS-Found-SPACE-CHR           1299 WORKING-STORAGE
CHECKSRC        WS-RS-Not-Skipping-SPACE-BOOL   1301 WORKING-STORAGE  1327*   1333    1340*
CHECKSRC        WS-RS-Skipping-SPACE-BOOL       1300 WORKING-STORAGE  1337*
CHECKSRC        WS-Runtime-Switches-TXT         1298 WORKING-STORAGE
```

```
GNUCOBOL 3.0 24DEC2017  Cross-Reference Listing                            2017/12/24
                                       /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
PROGRAM-ID      Identifier/Register/Function   Defn   Where Defined    References      Page: 90
==============  ==============================  ======  ===============  ========================
GCic            000-File-Error                   657 PROCEDURE
GCic            000-Main                         678 PROCEDURE
GCic            100-Initialization               702 PROCEDURE             679
GCic            200-Let-User-Set-Switches        816 PROCEDURE             682
GCic            210-Run-Compiler                 907 PROCEDURE             683
GCic            220-Make-Listing                1043 PROCEDURE             687
GCic            230-Run-Program                 1074 PROCEDURE             691
GCic            240-Find-LINKAGE-SECTION        1176 PROCEDURE             750
GCic            250-Autoload-Listing            1215 PROCEDURE             693    1034    1068
GCic            900-Terminate                   1261 PROCEDURE             695     744     887
                                                                         1035    1169
GCic            COB-COLOR-BLACK                  181 [screenio    ]       442     447     537
                                                                          547     557     562
                                                                          572     579     594
                                                                          609     625     632
                                                                          639
GCic            COB-COLOR-BLUE                   181 [screenio    ]       525
GCic            COB-COLOR-CYAN                   181 [screenio    ]       538
GCic            COB-COLOR-GREEN                  181 [screenio    ]       448     563     610
                                                                          626
GCic            COB-COLOR-MAGENTA                181 [screenio    ]
GCic            COB-COLOR-RED                    181 [screenio    ]       531     595
GCic            COB-COLOR-WHITE                  181 [screenio    ]       443     526     532
                                                                          548     558     573
                                                                          580     633     640
GCic            COB-COLOR-YELLOW                 181 [screenio    ]
GCic            COB-SCR-BACK-TAB                 181 [screenio    ]
GCic            COB-SCR-BACKSPACE                181 [screenio    ]
GCic            COB-SCR-DELETE                   181 [screenio    ]
GCic            COB-SCR-ESC                      181 [screenio    ]       886
GCic            COB-SCR-F1                       181 [screenio    ]       833
GCic            COB-SCR-F10                      181 [screenio    ]
GCic            COB-SCR-F11                      181 [screenio    ]
GCic            COB-SCR-F12                      181 [screenio    ]       889
GCic            COB-SCR-F13                      181 [screenio    ]
GCic            COB-SCR-F14                      181 [screenio    ]
GCic            COB-SCR-F15                      181 [screenio    ]
GCic            COB-SCR-F16                      181 [screenio    ]
GCic            COB-SCR-F17                      181 [screenio    ]
GCic            COB-SCR-F18                      181 [screenio    ]
GCic            COB-SCR-F19                      181 [screenio    ]
GCic            COB-SCR-F2                       181 [screenio    ]       839
GCic            COB-SCR-F20                      181 [screenio    ]
GCic            COB-SCR-F21                      181 [screenio    ]
GCic            COB-SCR-F22                      181 [screenio    ]
GCic            COB-SCR-F23                      181 [screenio    ]
GCic            COB-SCR-F24                      181 [screenio    ]
GCic            COB-SCR-F25                      181 [screenio    ]
GCic            COB-SCR-F26                      181 [screenio    ]
GCic            COB-SCR-F27                      181 [screenio    ]
GCic            COB-SCR-F28                      181 [screenio    ]
GCic            COB-SCR-F29                      181 [screenio    ]
GCic            COB-SCR-F3                       181 [screenio    ]       845

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```

```
GNUCOBOL 3.0 24DEC2017  Cross-Reference Listing                                  2017/12/24
                                                     /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
PROGRAM-ID      Identifier/Register/Function     Defn   Where Defined    References      Page: 91
==============  =============================== ====== =============== ========================
GCic            COB-SCR-F30                        181 [screenio      ]
GCic            COB-SCR-F31                        181 [screenio      ]
GCic            COB-SCR-F32                        181 [screenio      ]
GCic            COB-SCR-F33                        181 [screenio      ]
GCic            COB-SCR-F34                        181 [screenio      ]
GCic            COB-SCR-F35                        181 [screenio      ]
GCic            COB-SCR-F36                        181 [screenio      ]
GCic            COB-SCR-F37                        181 [screenio      ]
GCic            COB-SCR-F38                        181 [screenio      ]
GCic            COB-SCR-F39                        181 [screenio      ]
GCic            COB-SCR-F4                         181 [screenio      ]    851
GCic            COB-SCR-F40                        181 [screenio      ]
GCic            COB-SCR-F41                        181 [screenio      ]
GCic            COB-SCR-F42                        181 [screenio      ]
GCic            COB-SCR-F43                        181 [screenio      ]
GCic            COB-SCR-F44                        181 [screenio      ]
GCic            COB-SCR-F45                        181 [screenio      ]
GCic            COB-SCR-F46                        181 [screenio      ]
GCic            COB-SCR-F47                        181 [screenio      ]
GCic            COB-SCR-F48                        181 [screenio      ]
GCic            COB-SCR-F49                        181 [screenio      ]
GCic            COB-SCR-F5                         181 [screenio      ]    857
GCic            COB-SCR-F50                        181 [screenio      ]
GCic            COB-SCR-F51                        181 [screenio      ]
GCic            COB-SCR-F52                        181 [screenio      ]
GCic            COB-SCR-F53                        181 [screenio      ]
GCic            COB-SCR-F54                        181 [screenio      ]
GCic            COB-SCR-F55                        181 [screenio      ]
GCic            COB-SCR-F56                        181 [screenio      ]
GCic            COB-SCR-F57                        181 [screenio      ]
GCic            COB-SCR-F58                        181 [screenio      ]
GCic            COB-SCR-F59                        181 [screenio      ]
GCic            COB-SCR-F6                         181 [screenio      ]    862
GCic            COB-SCR-F60                        181 [screenio      ]
GCic            COB-SCR-F61                        181 [screenio      ]
GCic            COB-SCR-F62                        181 [screenio      ]
GCic            COB-SCR-F63                        181 [screenio      ]
GCic            COB-SCR-F64                        181 [screenio      ]
GCic            COB-SCR-F7                         181 [screenio      ]    868
GCic            COB-SCR-F8                         181 [screenio      ]    874
GCic            COB-SCR-F9                         181 [screenio      ]    880
GCic            COB-SCR-FATAL                      181 [screenio      ]
GCic            COB-SCR-INSERT                     181 [screenio      ]
GCic            COB-SCR-KEY-DOWN                   181 [screenio      ]
GCic            COB-SCR-KEY-END                    181 [screenio      ]
GCic            COB-SCR-KEY-HOME                   181 [screenio      ]
GCic            COB-SCR-KEY-LEFT                   181 [screenio      ]
GCic            COB-SCR-KEY-RIGHT                  181 [screenio      ]
GCic            COB-SCR-KEY-UP                     181 [screenio      ]
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GNUCOBOL 3.0 24DEC2017  Cross-Reference Listing                           2017/12/24
                                        /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
PROGRAM-ID      Identifier/Register/Function   Defn  Where Defined   References    Page: 100
==============  ==============================  ====  ==============  ========================
LISTING         L-LPP-Port-NUM                  2400  LINKAGE         2408    2489
LISTING         L-OS-Type-CD                    2396  LINKAGE         2406    2432
LISTING         L-Src-Fn-TXT                    2394  LINKAGE         1420    2405    2437
                                                                      2437*   2438    2439
                                                                      2443    2446    2459
                                                                      2461    2463    2468
LISTING         RETURN-CODE                           PROCEDURE       2479
LISTING         WS-CD-In-DATA-DIV-BOOL          1473  WORKING-STORAGE 2533
LISTING         WS-CD-In-ENV-DIV-BOOL           1472  WORKING-STORAGE 2531
LISTING         WS-CD-In-IDENT-DIV-BOOL         1471  WORKING-STORAGE 2529
LISTING         WS-CD-In-PROC-DIV-BOOL          1474  WORKING-STORAGE 2535
LISTING         WS-Copyright-TXT                1459  WORKING-STORAGE 2430*   2435*   3415
                                                                      3430    3573    3593
LISTING         WS-CPI-13-15-TXT                1480  WORKING-STORAGE 2824*
LISTING         WS-CPI-16-CHR                   1481  WORKING-STORAGE 2823
LISTING         WS-CS-1-CHR                     1484  WORKING-STORAGE 2746*
LISTING         WS-CS-11-14-TXT                 1487  WORKING-STORAGE 2748    2749*
LISTING         WS-CS-15-CHR                    1488  WORKING-STORAGE 2751*
LISTING         WS-CS-2-14-TXT                  1485  WORKING-STORAGE 2747*
LISTING         WS-Curr-Char-Is-Punct-BOOL      1462  WORKING-STORAGE 2591    2599    2604
LISTING         WS-Curr-Char-Is-Quote-BOOL      1466  WORKING-STORAGE 2610
LISTING         WS-Curr-Char-Is-X-BOOL          1467  WORKING-STORAGE 2623
LISTING         WS-Curr-Char-Is-Z-BOOL          1468  WORKING-STORAGE 2636
LISTING         WS-Curr-CHR                     1461  WORKING-STORAGE 2581*   2584    2586
                                                                      2592    2600    2606
                                                                      2613
LISTING         WS-Curr-Division-TXT            1470  WORKING-STORAGE 2506*   2542    2593
                                                                      2601    2701    2817*
                                                                      2836*   2862*   2918*
                                                                      2923*
LISTING         WS-Curr-Line-NUM                1476  WORKING-STORAGE 2505*   2565*   2724*
                                                                      2764*   3213    3234
                                                                      3244    3258    3485*
LISTING         WS-Curr-Prog-ID-TXT             1478  WORKING-STORAGE 2495*   2822*   3209
                                                                      3230    3240    3254
LISTING         WS-Curr-Section-TXT             1483  WORKING-STORAGE 2727*   2732    2841*
                                                                      2867*   2913    2914*
                                                                      3212    3233    3243
                                                                      3257
LISTING         WS-Curr-Verb-TXT                1490  WORKING-STORAGE 2496*   2520*   2544*
                                                                      2928    2937
LISTING         WS-Delim-TXT                    1492  WORKING-STORAGE 2653*   2655    2673*
                                                                      2675    2678
LISTING         WS-Dummy-TXT                    1494  WORKING-STORAGE 2471*   2716*   2745*
                                                                      2778*   2783*   2784
                                                                      3471*
LISTING         WS-Expanded-Src-Fn-TXT          1496  WORKING-STORAGE 1416    2476*   2477C
LISTING         WS-Filename-TXT                 1498  WORKING-STORAGE 2470*   2473    2744*
                                                                      2747
LISTING         WS-Flags-TXT                    1500  WORKING-STORAGE
LISTING         WS-Formatted-DT                 1503  WORKING-STORAGE 2494*   3354    3377
                                                                      3611    3630
LISTING         WS-GI-Prog-ID-TXT               1506  WORKING-STORAGE 3281    3287    3292*

=======================================================================================
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```

```
GNUCOBOL 3.0 24DEC2017  Cross-Reference Listing                          2017/12/24
                                           /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
PROGRAM-ID       Identifier/Register/Function    Defn   Where Defined   References      Page: 101
===============  ==============================  ======  ==============  ========================
LISTING          WS-GI-Token-TXT                  1507  WORKING-STORAGE  3282    3293*   3295
                                                                         3307
LISTING          WS-Group-Indicators-TXT          1505  WORKING-STORAGE  3265*
LISTING          WS-Held-Reference-TXT            1509  WORKING-STORAGE  2497*   2522    2523
                                                                         2524*   2559    2560
                                                                         2561*   3040*   3042
                                                                         3043    3044*   3081*
                                                                         3087    3088    3089*
                                                                         3095    3096    3097*
                                                                         3120*   3122    3123*
LISTING          WS-I-SUB                         1511  WORKING-STORAGE  2438*   2439    2440
                                                                         2442    2445*   2446
                                                                         2461*   2463    2464
                                                                         2465    2468    2721*
                                                                         2724    2735*   2737
                                                                         2738    2739    2742
                                                                         3266*   3300*   3312*
                                                                         3325*   3326    3328*
                                                                         3331    3333    3406*
LISTING          WS-J-SUB                         1513  WORKING-STORAGE  2462*   2466*   2468
                                                                         2736*   2740*   2742
LISTING          WS-Lines-Left-NUM                1515  WORKING-STORAGE  3267*   3276    3290
                                                                         3342    3396*   3407
                                                                         3451    3498    3502
                                                                         3529*   3563    3645*
                                                                         3652    3661    3668
                                                                         3677    3690
LISTING          WS-Lines-Per-Page-Env-TXT        1519  WORKING-STORAGE  2451*   2455*   2482
                                                                         2483
LISTING          WS-Lines-Per-Page-NUM            1517  WORKING-STORAGE  2484*   2487*   2489*
                                                                         2492    3396    3645
LISTING          WS-Main-Module-Name-TXT          1521  WORKING-STORAGE  2443*   2447*   2723
                                                                         3473
LISTING          WS-Next-Char-Is-Quote-BOOL       1524  WORKING-STORAGE  2623    2636
LISTING          WS-Next-CHR                      1523  WORKING-STORAGE  2583*   2626    2639
LISTING          WS-OS-Type-FILLER-TXT            1526  WORKING-STORAGE  1532
LISTING          WS-OS-Type-TXT                   1533  WORKING-STORAGE  2432
LISTING          WS-OS-Types-TXT                  1532  WORKING-STORAGE
LISTING          WS-Page-No-TXT                   1538  WORKING-STORAGE  3348C   3363    3386
                                                                         3417    3432    3575
                                                                         3595    3605C   3619
                                                                         3638
LISTING          WS-Page-NUM                      1536  WORKING-STORAGE  2428*   3344*   3346
                                                                         3564    3601*   3603
LISTING          WS-PN-Literal-TXT                1539  WORKING-STORAGE  3345*   3602*
LISTING          WS-PN-Page-NUM                   1540  WORKING-STORAGE  3346*   3347C   3603*
                                                                         3604C
LISTING          WS-Program-Path-TXT              1542  WORKING-STORAGE  2459*   2460C   3357
                                                                         3380    3614    3633
LISTING          WS-Reserved-Word-Table-TXT       2299  WORKING-STORAGE
LISTING          WS-Reserved-Word-TXT             2300  WORKING-STORAGE  2688
LISTING          WS-Reserved-Words-TXT            1544  WORKING-STORAGE  2299
LISTING          WS-RS-Duplicate-CHR              2308  WORKING-STORAGE  3268*   3283*   3298*

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```

```
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                                   /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
PROGRAM-ID      Identifier/Register/Function   Defn  Where Defined   References     Page: 102
==============  ==============================  ====  ==============  ========================
                                                     3309    3310*
LISTING         WS-RS-In-Copybook-BOOL          2311  WORKING-STORAGE 2730*   3479*
LISTING         WS-RS-In-Main-Module-BOOL       2310  WORKING-STORAGE 2725*   2763    3474*
                                                     3484
LISTING         WS-RS-In-Which-Pgm-CHR          2309  WORKING-STORAGE
LISTING         WS-RS-Last-Token-Ended-Sent-CHR 2312  WORKING-STORAGE 2554*   2700
LISTING         WS-RS-Processing-PICTURE-CHR    2313  WORKING-STORAGE 2649    2663*   2872*
LISTING         WS-RS-Token-Ended-Sentence-CHR  2314  WORKING-STORAGE 2541    2553    2555*
                                                     2588*   2617    2630*
                                                     2643*   2656    2676*
LISTING         WS-RS-Verb-Has-Been-Found-CHR   2315  WORKING-STORAGE 2507*   2692*   2814*
LISTING         WS-Runtime-Switches             2307  WORKING-STORAGE
LISTING         WS-RW-IDX                       2303  WORKING-STORAGE 2689    2690
LISTING         WS-RW-Type-CD                   2304  WORKING-STORAGE 2690
LISTING         WS-RW-Word-TXT                  2305  WORKING-STORAGE 2302    2689
LISTING         WS-Saved-Section-TXT            2317  WORKING-STORAGE 2726    2727    2731
                                                     2732*
LISTING         WS-SDL-Line-NUM                 2324  WORKING-STORAGE 3489*
LISTING         WS-SDL-Statement-TXT            2326  WORKING-STORAGE 3490*   3522*   3552
                                                     3556    3558    3654
                                                     3658*   3670    3674*
                                                     3679    3683*   3687*
LISTING         WS-Src-Dashes-TXT               2319  WORKING-STORAGE 3622    3641
LISTING         WS-Src-Detail-Line-TXT          2323  WORKING-STORAGE 3449*   3488*   3496*
                                                     3500*   3505*   3509*
                                                     3513*   3520*   3532*
                                                     3536*   3540*   3650
                                                     3655    3657*   3659
                                                     3666    3671    3673*
                                                     3675    3680    3682*
                                                     3684    3686*   3688
                                                     3693*
LISTING         WS-Src-Hold-TXT                 2328  WORKING-STORAGE 3654*   3658    3670*
                                                     3674    3679*   3683
                                                     3687
LISTING         WS-Src-Line-NUM                 2330  WORKING-STORAGE 3446*   3475    3487*
                                                     3489
LISTING         WS-Src-Lines-NUM                2332  WORKING-STORAGE 3550*   3553*   3557*
                                                     3559*   3563    3566
                                                     3580    3648    3664
LISTING         WS-Src-SUB                      2334  WORKING-STORAGE 2503*   2556    2557
                                                     2576*   2580    2582
                                                     2585*   2594*   2605*
                                                     2611*   2615    2616
                                                     2618*   2624*   2628*
                                                     2629    2631*   2637*
                                                     2641*   2642    2644*
                                                     2654*   2657*   2674*
                                                     2679    2754*   2759*
                                                     2761*
LISTING         WS-Suppress-FF-CHR              1501  WORKING-STORAGE 2429*   3277*   3419
                                                     3434
LISTING         WS-Tally-QTY                    2336  WORKING-STORAGE 2793*   2795*   2796

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```

```
GNUCOBOL 3.0 24DEC2017  Cross-Reference Listing                         2017/12/24
                                          /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
PROGRAM-ID       Identifier/Register/Function   Defn   Where Defined   References      Page: 103
===============  ==============================  ======  ===============  ========================
                                                        2800*    2801
LISTING          WS-Temp-10-Chars-TXT            2338 WORKING-STORAGE   2714*    2718    2719*
                                                        2721    3469*
LISTING          WS-Temp-256-Chars-TXT          2348 WORKING-STORAGE   2478C    2715*    2722
                                                        2734    2737    2742
                                                        3470*    3472
LISTING          WS-Temp-32-Chars-1-TXT         2340 WORKING-STORAGE   2769*    2772    2779
LISTING          WS-Temp-32-Chars-2-TXT         2342 WORKING-STORAGE   2776*    2781*    2787
                                                        2788*    2804
LISTING          WS-Temp-32-Chars-3-TXT         2344 WORKING-STORAGE   2777*    2782*    2790
                                                        2791*    2804
LISTING          WS-Temp-65-Chars-TXT           2346 WORKING-STORAGE   3492*    3499    3504
                                                        3508    3512    3524*
                                                        3528    3531    3535
                                                        3539
LISTING          WS-Today-DT                    2350 WORKING-STORAGE   2493*    2494
LISTING          WS-Token-Curr-TXT              2352 WORKING-STORAGE   2513    2517*    2586*
                                                        2595*    2606*    2614*
                                                        2627*    2640*    2652*
                                                        2659    2672*    2682
                                                        2684*    2702*    2769
                                                        2816    2822    2835
                                                        2840    2861    2866
                                                        2870    2904    2922
                                                        3211    3232    3242
                                                        3256
LISTING          WS-Token-Curr-Uc-TXT           2354 WORKING-STORAGE   2514*    2517    2520
                                                        2539    2916    3210
                                                        3231    3241    3255
LISTING          WS-Token-Prev-TXT              2356 WORKING-STORAGE   2521*    2539*    2543*
                                                        2602*    2817    2820
                                                        2821*    2836    2841
                                                        2845    2862    2867
                                                        2876    2877*    2881
                                                        2884*    2887*    2890*
                                                        2893*    2896*    2899*
                                                        2902*    2917    2923
                                                        2927    2931*    2984
                                                        2987*    2994    3005
                                                        3008*    3017    3028
                                                        3037    3065    3078
                                                        3082*    3085*    3093*
                                                        3101*    3108    3117
                                                        3133    3136*    3139*
                                                        3146    3155    3166
                                                        3181    3184*    3191
LISTING          WS-Token-Search-TXT            2358 WORKING-STORAGE   2682*    2683    2689
LISTING          WS-Token-Type-CD               2360 WORKING-STORAGE   2587*    2596*    2607*
                                                        2660*    2664*    2685*
                                                        2690*    2703*
LISTING          WS-TT-Token-Is-Argtype-BOOL    2361 WORKING-STORAGE   2811    2831    2857
LISTING          WS-TT-Token-Is-EOF-BOOL        2362 WORKING-STORAGE   2510    2564*
LISTING          WS-TT-Token-Is-Function-BOOL   2363 WORKING-STORAGE   2851

=================================================================================================
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```

```
GNUCOBOL 3.0 24DEC2017  Cross-Reference Listing                          2017/12/24
                                          /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
PROGRAM-ID       Identifier/Register/Function   Defn  Where Defined   References      Page: 104
===============  ==============================  ====  ==============  ========================
LISTING          WS-TT-Token-Is-Identifier-BOOL  2364 WORKING-STORAGE  2697*  2844   2880
                                                                       2926   2934
LISTING          WS-TT-Token-Is-Keyword-BOOL     2365 WORKING-STORAGE  2515   2538   2815
                                                                       2834   2839   2860
                                                                       2865   2871   2921
LISTING          WS-TT-Token-Is-Lit-Alpha-BOOL   2366 WORKING-STORAGE  2620*  2646*
LISTING          WS-TT-Token-Is-Lit-Number-BOOL  2367 WORKING-STORAGE  2633*  2699   2773*
                                                                       2805*
LISTING          WS-TT-Token-Is-Reserved-Wd-BOOL 2369 WORKING-STORAGE  2516   2812*  2832*
                                                                       2858*  2875
LISTING          WS-TT-Token-Is-Verb-BOOL        2368 WORKING-STORAGE  2519   2691
LISTING          WS-Usernames-QTY                2371 WORKING-STORAGE  2504*
LISTING          WS-Version-TXT                  2373 WORKING-STORAGE  2436*  3350   3373
                                                                       3607   3626
LISTING          WS-XDL-Def-Line-NUM             2380 WORKING-STORAGE  3304*  3321*
LISTING          WS-XDL-Prog-ID-TXT              2376 WORKING-STORAGE  3301*  3313*  3317*
LISTING          WS-XDL-Ref-Flag-CHR             2386 WORKING-STORAGE  3333*
LISTING          WS-XDL-Ref-Line-NUM             2385 WORKING-STORAGE  3331*
LISTING          WS-XDL-Reference-TXT            2384 WORKING-STORAGE
LISTING          WS-XDL-Section-TXT              2382 WORKING-STORAGE  3303*  3319*
LISTING          WS-XDL-Token-TXT                2378 WORKING-STORAGE  3302*  3314*  3318*
LISTING          WS-Xref-Detail-Line-TXT         2375 WORKING-STORAGE  3264*  3271   3274*
                                                                       3284   3288*  3297
                                                                       3316   3336   3399
                                                                       3402   3405*
LISTING          WS-Xref-Lines-Per-Rec-NUM       2389 WORKING-STORAGE  2450*  2454*  3326
```

6. STREAMIO

STREAMIO is a utility I created to assist with handling stream I/O functions. I've used it to construct a number of useful little command-line utilities.

Usage of this subroutine is completely documented in the program comments. The program COPY's a copybook named STREAMIOcb, the format of which is described in the program comments.

Both STREAMIO.cbl and STREAMIOcb.cpy are included in the "samples" directory of any pre-built distributions of GnuCOBOL that I have created.

In addition to general GnuCOBOL concepts, this program provides a useful demonstration of the following:

- Coding a GnuCOBOL subroutine
- Using the `REPLACING` clause on a CDF `COPY` statement
- Using hexadecimal alphanumeric literals
- Using the following statements:
    - o `ACCEPT FROM ENVIRONMENT` statement
    - o `INSPECT` statement
    - o `STRING` statement
- Using the following built-in subroutines:
    - o `C$PARAMSIZE` built-in system subroutine
    - o `CBL_CLOSE_FILE` built-in system subroutine
    - o `CBL_DELETE_FILE` built-in system subroutine
    - o `CBL_EXIT_PROC` built-in system subroutine
    - o `CBL_OPEN_FILE` built-in system subroutine
    - o `CBL_READ_FILE` built-in system subroutine
    - o `CBL_WRITE_FILE` built-in system subroutine
- Using the following intrinsic functions:
    - o `RANDOM` intrinsic function
    - o `TRIM` intrinsic function

First, here is the STREAMIOcb.cpy copybook:

```
      05 SCB-Handle-NUM                   PIC X(4) COMP-X.
      05 SCB-Mode-CD                      PIC X(1).
         88 SCB-MODE-Input-BOOL           VALUE 'I', 'i'.
         88 SCB-MODE-Output-BOOL          VALUE 'O', 'o'.
         88 SCB-MODE-Both-BOOL            VALUE 'B', 'b'.
      05 SCB-Function-CD                  PIC X(2).
         88 SCB-Func-CLOSE-BOOL           VALUE 'C ', 'c '.
         88 SCB-Func-DELETE-BOOL          VALUE 'D ', 'd '.
         88 SCB-Func-OPEN-BOOL            VALUE 'O ', 'o '.
         88 SCB-Func-READ-BOOL            VALUE 'R ', 'r '.
         88 SCB-Func-READ-Delim-BOOL      VALUE 'RD', 'rd',
                                                'rD', 'Rd'.
         88 SCB-Func-WRITE-BOOL           VALUE 'W ', 'w '.
         88 SCB-Func-WRITE-Delim-BOOL     VALUE 'WD', 'wd',
                                                'wD', 'Wd'.
      05 SCB-Delimiter-Mode-CD            PIC X(1).
         88 SCB-DELIM-Unix-BOOL           VALUE 'U', 'u'.
         88 SCB-DELIM-Windows-BOOL        VALUE 'W', 'w'.
      05 SCB-Offset-NUM                   PIC X(8) COMP-X.
      05 SCB-Error-Routine-PTR            USAGE PROGRAM-POINTER.
      05 SCB-Error-Routine-NUM REDEFINES SCB-Error-Routine-PTR
                                          USAGE BINARY-LONG.
      05 SCB-Return-CD                    USAGE BINARY-LONG.
      05 SCB-Filename-TXT                 PIC X(256).
```

The program source and cross-reference listing, produced using the GnuCOBOL Interactive Compiler front-end (GCic.cbl, one of the sample programs included here), begins on the next page.

```
GNU COBOL 2.1 23NOV2013 Source Listing                                            2014/03/27
                                      C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
Line    Statement                                                                     Page: 1
====== ======================================================================================
     1          >>SOURCE FORMAT IS FIXED
     2           IDENTIFICATION DIVISION.
     3           PROGRAM-ID. STREAMIO.
     4          *>****************************************************************
     5          *> Author: Gary L. Cutler                                    **
     6          *>                                                           **
     7          *> This routine centralizes all bytestream file I/O  functions **
     8          *> into one routine.  The manner in which this routine is    **
     9          *> CALLed is as follows:                                     **
    10          *>                                                           **
    11          *>          CALL "STREAMIO" USING control-block [ , arg2 ]    **
    12          *>                                                           **
    13          *> where 'control-block' is defined by the "STREAMIOcb.cpy"  **
    14          *> copybook and 'arg2' will vary, depending upon the function **
    15          *> specified in the control block.                           **
    16          *>                                                           **
    17          *> The STREAMIO routine has an advantage over the various    **
    18          *> "CBL_xxxxxx_FILE" routines in that:                       **
    19          *>                                                           **
    20          *> 1. It automates the establishment and on-going adjustment of **
    21          *>    the file-offset value in such a way as to simplify the **
    22          *>    sequential processing of a bytestream file (you may still **
    23          *>    specify a file-offset manually on each read or write, if **
    24          *>    you wish)                                              **
    25          *>                                                           **
    26          *> 2. It auto-detects the size of the I/O buffer you supply to **
    27          *>    STREAMIO, using that as the byte-count of all read and  **
    28          *>    write operations.                                      **
    29          *>                                                           **
    30          *> 3. Not only does it support the raw input and output of data **
    31          *>    that the CBL_READ_FILE and CBL_WRITE_FILE routines do,  **
    32          *>    but on input it is also capable of delivering just a    **
    33          *>    single newline-delimited or carriage-return/newline de- **
    34          *>    limited record to the caller.                          **
    35          *>                                                           **
    36          *> 4. On output, STREAMIO can optionally append either a new- **
    37          *>    line or carriage-return/newline sequence (your choice) to **
    38          *>    the end of every record it writes.                     **
    39          *>                                                           **
    40          *> 5. STREAMIO can automatically generate filenames for output **
    41          *>    files if you wish, simplifying the process of creating  **
    42          *>    scratch or work files.                                 **
    43          *>                                                           **
    44          *> 6. The STREAMIO routine also allows you to (optionally) re- **
    45          *>    gister a general error-handling routine to be given con- **
    46          *>    trol should a fatal error be detected with STREAMIO.    **
    47          *>                                                           **
    48          *>    This routine can be "turned on" and "turned off" at will. **
    49          *>                                                           **

====================================================================================================
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```

```
GNU COBOL 2.1 23NOV2013 Source Listing                                    2014/03/27
                                 C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
Line    Statement                                                               Page: 2
======  ================================================================================
    50        *> The control block format is as follows.  This structure must **
    51        *> be defined under an 01-level data item of your creation and   **
    52        *> should be INITIALIZEd before any items within it are used.     **
    53        *>                                                                **
    54        *> 05 SCB-Handle-NUM              PIC X(4) COMP-X.                 **
    55        *> 05 SCB-Mode-CD                 PIC X(1).                        **
    56        *>    88 SCB-Mode-Input-BOOL      VALUE 'I', 'i'.                  **
    57        *>    88 SCB-Mode-Output-BOOL     VALUE 'O', 'o'.                  **
    58        *>    88 SCB-Mode-Both-BOOL       VALUE 'B', 'b'.                  **
    59        *> 05 SCB-Function-CD             PIC X(2).                        **
    60        *>    88 SCB-Func-CLOSE-BOOL      VALUE 'C ', 'c '.                **
    61        *>    88 SCB-Func-DELETE-BOOL     VALUE 'D ', 'd '.                **
    62        *>    88 SCB-Func-OPEN-BOOL       VALUE 'O ', 'o '.                **
    63        *>    88 SCB-Func-READ-BOOL       VALUE 'R ', 'r '.                **
    64        *>    88 SCB-Func-READ-Delim-BOOL VALUE 'RD', 'rd',               **
    65        *>                                      'rD', 'Rd'.                **
    66        *>    88 SCB-Func-WRITE-BOOL      VALUE 'W ', 'w '.                **
    67        *>    88 SCB-Func-WRITE-Delim-BOOL VALUE 'WD', 'wd',              **
    68        *>                                      'wD', 'Wd'.                **
    69        *> 05 SCB-Delimiter-Mode-CD       PIC X(1).                        **
    70        *>    88 SCB-Delim-Unix-BOOL      VALUE 'U', 'u'.                  **
    71        *>    88 SCB-Delim-Windows-BOOL   VALUE 'W', 'w'.                  **
    72        *> 05 SCB-Offset-NUM              PIC X(8) COMP-X.                 **
    73        *> 05 SCB-Error-Routine-PTR       USAGE PROGRAM-POINTER.           **
    74        *> 05 SCB-Error-Routine-NUM REDEFINES SCB-Error-Routine-PTR       **
    75        *>                                USAGE BINARY-LONG.               **
    76        *> 05 SCB-Return-CD               USAGE BINARY-LONG.               **
    77        *> 05 SCB-Filename-TXT            PIC X(256).                      **
    78        *>                                                                **
    79        *> Such a structure is defined for your use using the copybook    **
    80        *> "STREAMIOcb.cpy" (you may also define your own, provided it    **
    81        *> conforms to the above layout).                                 **
    82        *>----------------------------------------------------------------**
    83        *> SCB-Handle-NUM                                                  **
    84        *>----------------------------------------------------------------**
    85        *>                                                                **
    86        *> Serves as a file handle to the file once it has been opened    **
    87        *> (via the "SCB-Func-OPEN-BOOL" function).                       **
    88        *>                                                                **
    89        *>----------------------------------------------------------------**
    90        *> SCB-Mode-CD                                                     **
    91        *>----------------------------------------------------------------**
    92        *>                                                                **
    93        *> Prior to calling "STREAMIO" for the first time for a file,     **
    94        *> the appropriate subordinate level-88 must be set to TRUE to    **
    95        *> select an I/O mode.  You may also simply move one of the       **
    96        *> string values listed on the level-88 items to "SCB-Mode-CD".   **
    97        *>                                                                **
    98        *>----------------------------------------------------------------**
```

===
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Line   Statement   Page: 3
====== ==
    99   *> SCB-Function-CD   **
   100   *>--**
   101   *>   **
   102   *> The appropriate subordinate level-88 must be set to TRUE to **
   103   *> select a function you'd like to execute against a file. You **
   104   *> may also simply move one of the string values listed on the **
   105   *> level-88 items to "SCB-Function-CD".   **
   106   *>   **
   107   *> Available functions are as follows: **
   108   *>   **
   109   *> SCB-Func-OPEN-BOOL   **
   110   *>   **
   111   *>   This must be the function specified the first time you   **
   112   *>   call STREAMIO for any given file. It opens the file &   **
   113   *>   makes it available for use according to the   **
   114   *>   "SCB-Mode-CD" specification.   **
   115   *>   **
   116   *>   The filename being opened must be specified in the   **
   117   *>   "SCB-Filename-TXT" field.   **
   118   *>   **
   119   *>   The SCB-Offset-NUM field will be initialized to ZERO. **
   120   *>   **
   121   *>   If "arg2" is specified in conjunction with this funct- **
   122   *>   ion, it will be ignored.   **
   123   *>   **
   124   *> SCB-Func-CLOSE-BOOL   **
   125   *>   **
   126   *>   This function should be the one specified the LAST time **
   127   *>   you call STREAMIO against a specific file. After this **
   128   *>   function has been executed, you'll have to re-open the **
   129   *>   file if you wish to use it with STREAMIO again.   **
   130   *>   **
   131   *>   The SCB-Handle-NUM item will be reset to ZERO. **
   132   *>   **
   133   *>   If "arg2" is specified in conjunction with this funct- **
   134   *>   ion, it will be ignored.   **
   135   *>   **
   136   *> SCB-Func-DELETE-BOOL   **
   137   *>   **
   138   *>   This function will delete the file specified in the   **
   139   *>   control block (see SCB-Filename-TXT).   **
   140   *>   **
   141   *>   This function should not be performed against a file   **
   142   *>   that is open.   **
   143   *>   **
   144   *>   If "arg2" is specified in conjunction with this funct- **
   145   *>   ion, it will be ignored.   **
   146   *>   **
   147   *> SCB-Func-READ-BOOL   **

==
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```
GNU COBOL 2.1 23NOV2013 Source Listing                                  2014/03/27
                              C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
Line    Statement                                                          Page: 4
======  ==========================================================================
   148      *>                                                       **
   149      *>       This function invokes a standard CBL_READ_FILE against  **
   150      *>       the file specified in the control block (see        **
   151      *>       SCB-Filename-TXT).                                  **
   152      *>                                                       **
   153      *>       The buffer into which you wish to read data must be    **
   154      *>       supplied as "arg2".  The size of that buffer, in bytes, **
   155      *>       will define the "byte-count" value supplied to the   **
   156      *>       CBL_READ_FILE subroutine.  The buffer data item will be **
   157      *>       set to SPACES before the read takes place.          **
   158      *>                                                       **
   159      *>       If the file-offset value (SCB-Offset-NUM) is greater **
   160      *>       than the size of the file, a "no more data" return code **
   161      *>       (01) will be passed back in SCB-Return-CD and the    **
   162      *>       buffer will have been set to SPACES.               **
   163      *>                                                       **
   164      *>       At the conclusion of a successful SCB-Func-READ-BOOL,  **
   165      *>       the value of SCB-Offset-NUM will have been automati-  **
   166      *>       cally incremented by the byte-count size of "arg2".  **
   167      *>                                                       **
   168      *> SCB-Func-WRITE-BOOL                                     **
   169      *>                                                       **
   170      *>       This function invokes a standard CBL_WRITE_FILE against **
   171      *>       the file specified in the control block (see        **
   172      *>       SCB-Filename-TXT).                                  **
   173      *>                                                       **
   174      *>       The buffer from which data will be written to the file **
   175      *>       must be supplied as "arg2".  The size of that buffer,  **
   176      *>       in bytes, will define the "byte-count" value supplied **
   177      *>       CBL_WRITE_FILE subroutine.  The buffer data will be   **
   178      *>       written to the file-offset position defined by the   **
   179      *>       SCB-Offset-NUM value.  You may specify "arg2" either  **
   180      *>       as an actual alphanumeric data item or as an alpha-   **
   181      *>       numeric literal.                                    **
   182      *>                                                       **
   183      *>       If the file-offset value (SCB-Offset-NUM) is greater **
   184      *>       than the size of the file, a "no more data" return code **
   185      *>       will be passed back in SCB-Return-CD and the buffer  **
   186      *>       will have been set to SPACES.                      **
   187      *>                                                       **
   188      *>       At the conclusion of a successful SCB-Func-WRITE-BOOL **
   189      *>       operation, the value of SCB-Offset-NUM will have been **
   190      *>       automatically incremented by the byte-count size of  **
   191      *>       "arg2".                                           **
   192      *>                                                       **
   193      *> SCB-Func-READ-Delim-BOOL                                **
   194      *>                                                       **
   195      *>       SCB-Func-READ-Delim-BOOL bahaves like the SCB-FUNC-  **
   196      *>       READ function, with the following behavioral dif-    **

================================================================================
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```

====== ===
    197   *>   ferences: **
    198   *>   **
    199   *>   1. When data is read from the file, only that data read **
    200   *>   up to BUT NOT INCLUDING an end-of-line delimiter **
    201   *>   sequence (either a LF or CRLF) will be retained in **
    202   *>   the buffer - the remainder of the buffer from the **
    203   *>   end-of-line sequence onward will be reset to SPACES. **
    204   *>   The file-offset value (SCB-Offset-NUM) will be in- **
    205   *>   cremented ONLY by the amount of data transferred up **
    206   *>   to AND INCLUDING the end-of-line sequence.   **
    207   *>   **
    208   *>   2. When data is read from the file and an end-of-line **
    209   *>   delimiter sequence (either a LF or a CRLF) cannot be **
    210   *>   found within the buffer, the assumption is made that **
    211   *>   the record is too long to fit within the buffer. In **
    212   *>   these instances, an SCB-Return-CD value of 02 will **
    213   *>   be returned and the SCB-Offset-NUM value will be   **
    214   *>   incremented past the next end-of-line sequence in **
    215   *>   the file (this will involve at least one additional **
    216   *>   call to CBL_READ_FILE to locate that eol sequence, **
    217   *>   but any additional such reads will be done internal- **
    218   *>   ly to STREAMIO and will be entirely transparent to **
    219   *>   the caller of STREAMIO.   **
    220   *>   **
    221   *>   DO NOT USE the Streamio-READ-Delim function if the   **
    222   *>   possibility exists that linefeed (X"0A") or carriage- **
    223   *>   return (X"0D") characters could exist as actual data **
    224   *>   characters in the file.   **
    225   *>   **
    226   *> SCB-Func-WRITE-Delim-BOOL   **
    227   *>   **
    228   *>   SCB-Func-WRITE-Delim-BOOL acts like the Streamio-   **
    229   *>   FUNC-WRITE function, with the following difference: **
    230   *>   **
    231   *>   After the specified data is written to the file, an **
    232   *>   end-of-line sequence will also be written to the file. **
    233   *>   The file-offset value (SCB-Value) will be incremented **
    234   *>   by the byte-count size of the data PLUS the size of the **
    235   *>   end-of-line sequence. One of two possible end-of-line **
    236   *>   sequences must be specified using the value of SCB- **
    237   *>   Delimter-Mode.   **
    238   *>   **
    239   *>--**
    240   *> SCB-Delimiter-Mode-CD   **
    241   *>--**
    242   *>   **
    243   *> This data item is needed only when issuing the Streamio- **
    244   *> FUNC-WRITE-Delim function. In those circumstances, this **
    245   *> item defines what end-of-line delimiter sequence is to be **

==

Line   Statement   Page: 6
====== ===
    246   *> written: **
    247   *>   **
    248   *> If SCB-Delim-Unix-BOOL is true, a linefeed character will   **
    249   *> be written.   **
    250   *>   **
    251   *> If SCB-Delim-Windows-BOOL is true, a carriage-return and   **
    252   *> linefeed sequence will be written.   **
    253   *>   **
    254   *>--**
    255   *> SCB-Offset-NUM   **
    256   *>--**
    257   *>   **
    258   *> This data item specifies the next relative byte number with- **
    259   *> in the file where the next read or write will start.   **
    260   *>   **
    261   *> SCB-Offset-NUM is automatically set to 0 (the first byte)   **
    262   *> when the file is opened, and is automatically incremented as **
    263   *> the file is read or written via STREAMIO.   **
    264   *>   **
    265   *> You may also manually set this value as desired before any   **
    266   *> call to STREAMIO.   **
    267   *>   **
    268   *>--**
    269   *> SCB-Error-Routine-PTR   **
    270   *>--**
    271   *>   **
    272   *> To specify a general error-handling routine for handling   **
    273   *> STREAMIO failures, Create the routine and define an entry-   **
    274   *> name for it via the ENTRY statement. Then use the following **
    275   *> to set that routine up as the error handler: **
    276   *>   **
    277   *>   SET SCB-Error-Routine-PTR TO ENTRY "entry-name"   **
    278   *>   **
    279   *> To "turn off" the error-routine: **
    280   *>   **
    281   *>   SET SCB-Error-Routine-PTR TO NULL   **
    282   *>   **
    283   *> If a fatal error occurs (any error not marked with a ">" in **
    284   *> the SCB-Return-CD discussion), the error routine you spe-   **
    285   *> cified (if any) will be set up as an exit routine via the   **
    286   *> CBL_EXIT_PROC subroutine; the STREAMIO routine will then is- **
    287   *> sue a STOP RUN to intentionally trigger your error routine. **
    288   *> You will not be able to recover your program once your error **
    289   *> routine triggers. If you wish to be able to recover from   **
    290   *> fatal STREAMIO errors, you should NOT use the SCB-Error-   **
    291   *> Routine feature but instead you should explicitly test the   **
    292   *> SCB-Return-CD value after every call to STREAMIO.   **
    293   *>   **
    294   *> A default error routine is defined by the "STREAMIOError.cpy"**

==

Line   Statement   Page: 7
====== ===
    295   *> copybook.   **
    296   *>   **
    297   *>--**
    298   *> SCB-Return-CD   **
    299   *>--**
    300   *>   **
    301   *> The following are the possible SCB-Return-CD values. The   **
    302   *> ones marked with a ">" will NOT trigger an error-routine, if **
    303   *> one is currently registered via SCB-Error-Routine-PTR.   **
    304   *>   **
    305   *>   12 I/O error writing to file   **
    306   *>   11 File does not exist   **
    307   *>   10 File already OPEN or already CLOSEd   **
    308   *> > 02 READ-Delim was truncated   **
    309   *> > 01 No more data is available from the current   **
    310   *>   SCB-Offset-NUM   **
    311   *> > 00 OK - the operation was successful   **
    312   *>   -1 Invalid SCB-Function-CD   **
    313   *>   -2 Invalid SCB-Mode-CD   **
    314   *>   -3 CBL_xxxxx_FILE routine rejected operation   **
    315   *>   -4 Invalid delimiter mode specified (Not U/W)   **
    316   *>   **
    317   *>--**
    318   *> SCB-Filename-TXT   **
    319   *>--**
    320   *>   **
    321   *> This is the name of the file you wish to access.   **
    322   *>   **
    323   *> If you are planning on reading the file, the file MUST exist **
    324   *> at the time the SCB-Func-OPEN-BOOL is executed.   **
    325   *>   **
    326   *> If you are planning on writing to the file, the file need   **
    327   *> exist when the SCB-Func-OPEN-BOOL is issued.   **
    328   *>   **
    329   *> In general, the contents of SCB-Filename-TXT should re-   **
    330   *> flect the complete path to the file as well as the name of   **
    331   *> the file itself, unless the file is contained in whatever   **
    332   *> directory is current at the time the SCB-Func-OPEN-BOOL is   **
    333   *> executed.   **
    334   *>   **
    335   *> The following special values may be used for   **
    336   *> SCB-Filename-TXT: **
    337   *>   **
    338   *> SPACES If the filename is SPACES, a filename will be created **
    339   *>   automatically for you in whatever directory is de-   **
    340   *>   fined by the TEMP environment variable. If there IS   **
    341   *>   no TEMP variable defined, the "/tmp" folder will be   **
    342   *>   assumed. The filename will be STREAMIO-nnnnnnnn.dat **
    343   *>   where "nnnnnnnn" is a random number.   **

==

====== ===
    344   *>   **
    345   *> .   If you specify only a dot (period) as the filename,   **
    346   *>   the behavior will be the same as with a value of   **
    347   *>   SPACES except there will be no ".dat" at the end of   **
    348   *>   the generated filename.   **
    349   *>   **
    350   *> .ext   If you specify a filename extension prefixed with a   **
    351   *>   dot (period), the behavior will be the same as if a   **
    352   *>   value of SPACES were specified, except that the given **
    353   *>   extension will be used instead of ".dat". Note that   **
    354   *>   if you are using a Unix/Cygwin implementation of   **
    355   *>   OpenCOBOL and you'd like to specify a hidden file in   **
    356   *>   the current directory as the SCB-Filename-TXT, you   **
    357   *>   MUST code the filename as "./.xxxxx" to avoid having   **
    358   *>   it treated as this special name.   **
    359   *>   **
    360   *>**
    361   ENVIRONMENT DIVISION.
    362   CONFIGURATION SECTION.
    363   REPOSITORY.
    364   FUNCTION ALL INTRINSIC.
    365   DATA DIVISION.
    366   WORKING-STORAGE SECTION.
    367   01 WS-Access-Mode-CD   PIC X(1) COMP-X.
    368   01 WS-Arg-Length-NUM   PIC X(4) COMP-X.
    369   01 WS-Buffer-TXT   PIC X(256).
    370   01 WS-Delim-Buffer-TXT   PIC X(2).
    371   01 WS-Env-Temp-TXT   PIC X(256).
    372   01 WS-Slash-CHR   PIC X(1).
    373   01 WS-Tally-NUM   USAGE BINARY-LONG.
    374   01 WS-8-Digit-NUM   PIC 9(8).
    375   01 WS-256-Byte-TXT   PIC X(256).
    376   LINKAGE SECTION.
    377   01 L-StreamIO-Control-Block-TXT.
    378   COPY STREAMIOcb
    379   REPLACING LEADING ==SCB-== BY ==L-SCB-==.
        05 L-SCB-Handle-NUM PIC X(4) COMP-X.
        05 L-SCB-Mode-CD PIC X(1).
        88 L-SCB-MODE-Input-BOOL VALUE 'I' 'i'.
        88 L-SCB-MODE-Output-BOOL VALUE 'O' 'o'.
        88 L-SCB-MODE-Both-BOOL VALUE 'B' 'b'.
        05 L-SCB-Function-CD PIC X(2).
        88 L-SCB-Func-CLOSE-BOOL VALUE 'C ' 'c '.
        88 L-SCB-Func-DELETE-BOOL VALUE 'D ' 'd '.
        88 L-SCB-Func-OPEN-BOOL VALUE 'O ' 'o '.
        88 L-SCB-Func-READ-BOOL VALUE 'R ' 'r '.
        88 L-SCB-Func-READ-Delim-BOOL VALUE 'RD' 'rd'
        'rD' 'Rd'.
        88 L-SCB-Func-WRITE-BOOL VALUE 'W ' 'w '.

===

====== ==
        88 L-SCB-Func-WRITE-Delim-BOOL VALUE 'WD' 'wd'
        'wD' 'Wd'.
        05 L-SCB-Delimiter-Mode-CD PIC X(1).
        88 L-SCB-DELIM-Unix-BOOL VALUE 'U' 'u'.
        88 L-SCB-DELIM-Windows-BOOL VALUE 'W' 'w'.
        05 L-SCB-Offset-NUM PIC X(8) COMP-X.
        05 L-SCB-Error-Routine-PTR USAGE PROGRAM-POINTER.
        05 L-SCB-Error-Routine-NUM REDEFINES L-SCB-Error-Routine-PTR
        USAGE BINARY-LONG.
        05 L-SCB-Return-CD USAGE BINARY-LONG.
        05 L-SCB-Filename-TXT PIC X(256).
  380   01 L-Arg2-TXT   PIC X ANY LENGTH.
  381   PROCEDURE DIVISION USING L-StreamIO-Control-Block-TXT,
  382   L-Arg2-TXT.
  383   000-Main SECTION.
  384   MOVE 00 TO L-SCB-Return-CD
  385   EVALUATE TRUE
  386   WHEN L-SCB-Func-CLOSE-BOOL
  387   PERFORM 030-Validate-Handle-NonZero
  388   PERFORM 200-CLOSE
  389   WHEN L-SCB-Func-DELETE-BOOL
  390   CALL "CBL_DELETE_FILE" USING L-SCB-Filename-TXT
  391   WHEN L-SCB-Func-OPEN-BOOL
  392   PERFORM 020-Validate-Handle-Zero
  393   PERFORM 100-OPEN
  394   WHEN L-SCB-Func-READ-BOOL
  395   PERFORM 030-Validate-Handle-NonZero
  396   PERFORM 400-READ
  397   WHEN L-SCB-Func-READ-Delim-BOOL
  398   PERFORM 030-Validate-Handle-NonZero
  399   PERFORM 500-READ-Delim
  400   WHEN L-SCB-Func-WRITE-BOOL
  401   PERFORM 030-Validate-Handle-NonZero
  402   PERFORM 300-WRITE
  403   WHEN L-SCB-Func-WRITE-Delim-BOOL
  404   EVALUATE TRUE
  405   WHEN L-SCB-Delim-Unix-BOOL
  406   PERFORM 030-Validate-Handle-NonZero
  407   PERFORM 300-WRITE
  408   MOVE 1 TO WS-Arg-Length-NUM
  409   MOVE X"0A" TO WS-Delim-Buffer-TXT
  410   WHEN L-SCB-Delim-Windows-BOOL
  411   PERFORM 030-Validate-Handle-NonZero
  412   PERFORM 300-WRITE
  413   MOVE 2 TO WS-Arg-Length-NUM
  414   MOVE X"0D0A" TO WS-Delim-Buffer-TXT
  415   WHEN OTHER
  416   MOVE -4 TO L-SCB-Return-CD
  417   PERFORM 099-ERROR-Return

==

====== ===
    418   END-EVALUATE
    419   CALL "CBL_WRITE_FILE" USING L-SCB-Handle-NUM
    420   L-SCB-Offset-NUM
    421   WS-Arg-Length-NUM
    422   0
    423   WS-Delim-Buffer-TXT
    424   PERFORM 040-Check-WRITE-SCB-Return-CD
    425   ADD WS-Arg-Length-NUM TO L-SCB-Offset-NUM
    426   WHEN OTHER
    427   MOVE -1 TO L-SCB-Return-CD
    428   PERFORM 099-ERROR-Return
    429   END-EVALUATE
    430   GOBACK
    431   .
    432   020-Validate-Handle-Zero SECTION.
    433   IF L-SCB-Handle-NUM NOT = ZERO
    434   MOVE 10 TO L-SCB-Return-CD
    435   PERFORM 099-ERROR-Return
    436   END-IF
    437   .
    438   030-Validate-Handle-NonZero SECTION.
    439   IF L-SCB-Handle-NUM = ZERO
    440   MOVE 10 TO L-SCB-Return-CD
    441   PERFORM 099-ERROR-Return
    442   END-IF
    443   .
    444   040-Check-WRITE-SCB-Return-CD SECTION.
    445   IF RETURN-CODE < 0
    446   MOVE -3 TO L-SCB-Return-CD
    447   PERFORM 099-ERROR-Return
    448   END-IF
    449   IF RETURN-CODE = 30
    450   MOVE 12 TO L-SCB-Return-CD
    451   PERFORM 099-ERROR-Return
    452   END-IF
    453   MOVE 00 TO L-SCB-Return-CD
    454   .
    455   050-Check-READ-SCB-Return-CD SECTION.
    456   IF RETURN-CODE < 0
    457   MOVE -3 TO L-SCB-Return-CD
    458   PERFORM 099-ERROR-Return
    459   END-IF
    460   IF RETURN-CODE = 10
    461   MOVE 01 TO L-SCB-Return-CD
    462   GOBACK
    463   END-IF
    464   MOVE 00 TO L-SCB-Return-CD
    465   .
    466   060-Identify-TEMP SECTION.

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Line   Statement   Page: 11
====== ==
    467   ACCEPT WS-Env-Temp-TXT FROM ENVIRONMENT "TEMP"
    468   EVALUATE TRUE
    469   WHEN WS-Env-Temp-TXT (1:1) = "/"
    470   MOVE "/"   TO WS-Slash-CHR
    471   WHEN WS-Env-Temp-TXT (2:1) = ":"
    472   MOVE "\"   TO WS-Slash-CHR
    473   WHEN OTHER
    474   MOVE "/tmp" TO WS-Env-Temp-TXT
    475   MOVE "/"   TO WS-Slash-CHR
    476   END-EVALUATE
    477   .
    478   099-ERROR-Return SECTION.
    479   IF L-SCB-Error-Routine-NUM NOT = 0
    480   CALL "CBL_EXIT_PROC" USING 0, L-SCB-Error-Routine-PTR
    481   STOP RUN
    482   END-IF
    483   GOBACK
    484   .
    485   100-OPEN SECTION.
    486   IF (L-SCB-Mode-Input-BOOL OR L-SCB-Mode-Both-BOOL)
    487   AND (L-SCB-Filename-TXT = SPACES OR LOW-VALUES)
    488   MOVE 11 TO L-SCB-Return-CD
    489   PERFORM 099-ERROR-Return
    490   END-IF
    491   EVALUATE TRUE
    492   WHEN L-SCB-Filename-TXT = SPACES OR LOW-VALUES
    493   PERFORM 060-Identify-TEMP
    494   MOVE SPACES TO L-SCB-Filename-TXT
    495   COMPUTE
    496   WS-8-Digit-NUM =
    497   RANDOM(SECONDS-PAST-MIDNIGHT) * 100000000
    498   END-COMPUTE
    499   STRING
    500   TRIM(WS-Env-Temp-TXT,TRAILING)
    501   WS-Slash-CHR
    502   "STREAMIO-"
    503   WS-8-Digit-NUM
    504   ".dat"
    505   DELIMITED BY SIZE
    506   INTO L-SCB-Filename-TXT
    507   WHEN L-SCB-Filename-TXT(1:1) = "."
    508   PERFORM 060-Identify-TEMP
    509   IF L-SCB-Filename-TXT(2:1) = SPACE
    510   MOVE SPACES TO WS-256-Byte-TXT
    511   ELSE
    512   MOVE L-SCB-Filename-TXT TO WS-256-Byte-TXT
    513   END-IF
    514   MOVE SPACES TO L-SCB-Filename-TXT
    515   COMPUTE WS-8-Digit-NUM =

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```
====== ====================================================================================
    516                    RANDOM(SECONDS-PAST-MIDNIGHT) * 100000000
    517                STRING
    518                    TRIM(WS-Env-Temp-TXT,TRAILING)
    519                    WS-Slash-CHR
    520                    "STREAMIO-"
    521                    WS-8-Digit-NUM
    522                    TRIM(WS-256-Byte-TXT,TRAILING)
    523                    DELIMITED BY SIZE
    524                    INTO L-SCB-Filename-TXT
    525            END-EVALUATE
    526            EVALUATE TRUE
    527                WHEN L-SCB-Mode-Input-BOOL
    528                    MOVE 1 TO WS-Access-Mode-CD
    529                WHEN L-SCB-Mode-Output-BOOL
    530                    MOVE 2 TO WS-Access-Mode-CD
    531                WHEN L-SCB-Mode-Both-BOOL
    532                    MOVE 3 TO WS-Access-Mode-CD
    533                WHEN OTHER
    534                    MOVE -2 TO L-SCB-Return-CD
    535                    PERFORM 099-ERROR-Return
    536            END-EVALUATE
    537            CALL "CBL_OPEN_FILE" USING TRIM(L-SCB-Filename-TXT,TRAILING)
    538                                    WS-Access-Mode-CD
    539                                    0
    540                                    0
    541                                    L-SCB-Handle-NUM
    542            IF RETURN-CODE = 35
    543                MOVE 11 TO L-SCB-Return-CD
    544                PERFORM 099-ERROR-Return
    545            END-IF
    546            IF RETURN-CODE < 0
    547                MOVE -2 TO L-SCB-Return-CD
    548                PERFORM 099-ERROR-Return
    549            END-IF
    550            MOVE 00 TO L-SCB-Return-CD
    551            MOVE 0 TO L-SCB-Offset-NUM
    552            .
    553        200-CLOSE SECTION.
    554            CALL "CBL_CLOSE_FILE" USING L-SCB-Handle-NUM
    555            IF RETURN-CODE < 0
    556                MOVE -2 TO L-SCB-Return-CD
    557                PERFORM 099-ERROR-Return
    558            END-IF
    559            MOVE 00 TO L-SCB-Return-CD
    560            MOVE 0 TO L-SCB-Handle-NUM
    561            .
    562        300-WRITE SECTION.
    563            CALL "C$PARAMSIZE" USING 2
    564            MOVE RETURN-CODE TO WS-Arg-Length-NUM


====================================================================================
```

Line   Statement   Page: 13
====== ===
```
   565          CALL "CBL_WRITE_FILE" USING L-SCB-Handle-NUM
   566                                      L-SCB-Offset-NUM
   567                                      WS-Arg-Length-NUM
   568                                      0
   569                                      L-Arg2-TXT
   570          PERFORM 040-Check-WRITE-SCB-Return-CD
   571          ADD WS-Arg-Length-NUM TO L-SCB-Offset-NUM
   572          .
   573      400-READ SECTION.
   574          CALL "C$PARAMSIZE" USING 2
   575          MOVE RETURN-CODE TO WS-Arg-Length-NUM
   576          MOVE SPACES TO L-Arg2-TXT(1:WS-Arg-Length-NUM)
   577          CALL "CBL_READ_FILE" USING L-SCB-Handle-NUM
   578                                     L-SCB-Offset-NUM
   579                                     WS-Arg-Length-NUM
   580                                     0
   581                                     L-Arg2-TXT
   582          PERFORM 050-Check-READ-SCB-Return-CD
   583          ADD WS-Arg-Length-NUM TO L-SCB-Offset-NUM
   584          .
   585      500-READ-Delim SECTION.
   586          CALL "C$PARAMSIZE" USING 2
   587          MOVE RETURN-CODE TO WS-Arg-Length-NUM
   588          MOVE SPACES TO L-Arg2-TXT(1:WS-Arg-Length-NUM)
   589          CALL "CBL_READ_FILE" USING L-SCB-Handle-NUM
   590                                     L-SCB-Offset-NUM
   591                                     WS-Arg-Length-NUM
   592                                     0
   593                                     L-Arg2-TXT
   594          PERFORM 050-Check-READ-SCB-Return-CD
   595          MOVE 0 TO WS-Tally-NUM
   596          INSPECT L-Arg2-TXT(1:WS-Arg-Length-NUM)
   597              TALLYING WS-Tally-NUM FOR ALL X"0A"
   598          IF WS-Tally-NUM = 0 *> No LF found - return truncated data and position past n
    ext LF (if any)
   599              IF L-Arg2-TXT(WS-Arg-Length-NUM:1) = X"0D"
   600                  MOVE SPACE TO L-Arg2-TXT(WS-Arg-Length-NUM:1)
   601              END-IF
   602              ADD WS-Arg-Length-NUM TO L-SCB-Offset-NUM
   603              MOVE 02 TO L-SCB-Return-CD
   604              MOVE 256 TO WS-Arg-Length-NUM
   605              PERFORM UNTIL 0 = 1
   606                  MOVE SPACES TO WS-Buffer-TXT
   607                  CALL "CBL_READ_FILE" USING L-SCB-Handle-NUM
   608                                             L-SCB-Offset-NUM
   609                                             WS-Arg-Length-NUM
   610                                             0
   611                                             WS-Buffer-TXT
   612                  IF RETURN-CODE < 0
```
==

====== ==
```
    613                         MOVE -3 TO L-SCB-Return-CD
    614                         PERFORM 099-ERROR-Return
    615                     END-IF
    616                     IF RETURN-CODE = 10
    617                         GOBACK
    618                     END-IF
    619                     MOVE 0 TO WS-Tally-NUM
    620                     INSPECT WS-Buffer-TXT
    621                         TALLYING WS-Tally-NUM FOR ALL X"0A"
    622                     IF WS-Tally-NUM = 0
    623                         ADD 256 TO L-SCB-Offset-NUM
    624                     ELSE
    625                         MOVE 0 TO WS-Tally-NUM
    626                         INSPECT WS-Buffer-TXT
    627                             TALLYING WS-Tally-NUM
    628                             FOR CHARACTERS BEFORE INITIAL X"0A"
    629                         ADD WS-Tally-NUM, 1 TO L-SCB-Offset-NUM
    630                         GOBACK
    631                     END-IF
    632                 END-PERFORM
    633             ELSE          *> There is (at least) one LF in the buffer
    634                 MOVE 0 TO WS-Tally-NUM
    635                 INSPECT L-Arg2-TXT(1:WS-Arg-Length-NUM)
    636                     TALLYING WS-Tally-NUM
    637                     FOR CHARACTERS BEFORE INITIAL X"0A"
    638                 ADD WS-Tally-NUM, 1 TO L-SCB-Offset-NUM
    639                 IF WS-Tally-NUM > 1
    640                     IF L-Arg2-TXT(WS-Tally-NUM:1) = X"0D"
    641                         COMPUTE WS-Arg-Length-NUM =
    642                                     WS-Arg-Length-NUM
    643                                   - WS-Tally-NUM
    644                                   + 1
    645                     ELSE
    646                         COMPUTE WS-Arg-Length-NUM =
    647                                     WS-Arg-Length-NUM
    648                                   - WS-Tally-NUM
    649                         ADD 1 TO WS-Tally-NUM
    650                     END-IF
    651                     MOVE SPACES
    652                       TO L-Arg2-TXT(WS-Tally-NUM:WS-Arg-Length-NUM)
    653                 ELSE
    654                     MOVE SPACES
    655                       TO L-Arg2-TXT(1:WS-Arg-Length-NUM)
    656                 END-IF
    657             END-IF
    658             .
```
===

```
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                            C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
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