GnuCOBOL Sample Programs

For Version 3.1 Dev-0 [Dec2019]

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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)   **

===

====== ===
```
    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'.
```

```
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'.
```

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

  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
```

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

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

```
================================================================================================
GCic for OSX Copyright (C) 2009-2014, Gary L. Cutler, GPL                        Page: 3
```

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
```

```
================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL      Page: 1
```

```
    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     **
```

```
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.
```

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

```
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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```

```
GNUCOBOL 3.0 24DEC2017   Source Listing                              2017/12/24
                                        /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                       Page: 6
======  ========================================================================
          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.


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

```
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
```

```
================================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL              Page: 11
```

====== ===
```
   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.
```

GNUCOBOL 3.0 24DEC2017 Source Listing   2017/12/24
/home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line   Statement   Page: 17
====== ===

```
   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: "'
```

```
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
```

```
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
```

```
====================================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL                        Page: 21
```

====== ===

```
   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              .
```

```
================================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL              Page: 23
```

```
 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
```

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

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```
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            .
```

```
  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     .


===================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL          Page: 31
```

====== ===

```
  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.
```

==

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                          /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                          Page: 33
====== =====================================================================================
   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 ' '.
```

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

```
 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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                                              /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
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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                                        /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
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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                                           /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
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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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
  1819             05 VALUE ' FLOAT-DECIMAL-16            ' PIC X(33).
  1820             05 VALUE ' FLOAT-DECIMAL-34            ' PIC X(33).
  1821             05 VALUE ' FLOAT-EXTENDED              ' PIC X(33).     UNIMPLEMENTED
  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
  1825             05 VALUE ' FLOAT-SHORT                 ' PIC X(33).
  1826             05 VALUE ' FOOTING                     ' PIC X(33).
  1827             05 VALUE ' FOR                         ' PIC X(33).
  1828             05 VALUE ' FOREGROUND-COLOR            ' PIC X(33).
  1829             05 VALUE ' FOREGROUND-COLOUR           ' PIC X(33).
  1830 GC0711      05 VALUE ' FOREVER                     ' PIC X(33).
  1831             05 VALUE ' FORMAT                      ' PIC X(33).     UNIMPLEMENTED
  1832 GC1213      05 VALUE 'FFORMATTED-CURRENT-DATE      ' PIC X(33).     UNIMPLEMENTED
  1833 GC1213      05 VALUE 'FFORMATTED-DATE              ' PIC X(33).     UNIMPLEMENTED
  1834 GC1213      05 VALUE 'FFORMATTED-DATETIME          ' PIC X(33).     UNIMPLEMENTED
  1835 GC1213      05 VALUE 'FFORMATTED-TIME              ' PIC X(33).     UNIMPLEMENTED
  1836             05 VALUE 'MFORMFEED                    ' PIC X(33).
  1837 GC1213      05 VALUE 'FFRACTION-PART               ' PIC X(33).
  1838             05 VALUE 'VFREE                        ' PIC X(33).
  1839             05 VALUE ' FROM                        ' PIC X(33).
  1840             05 VALUE ' FULL                        ' PIC X(33).
  1841             05 VALUE ' FUNCTION                    ' PIC X(33).
  1842 GC0712      05 VALUE 'KFUNCTION-ID                 ' PIC X(33).
  1843             05 VALUE ' FUNCTION-POINTER            ' PIC X(33).     UNIMPLEMENTED
  1844             05 VALUE 'VGENERATE                    ' PIC X(33).
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  1845           05 VALUE ' GET                    ' PIC X(33).      UNIMPLEMENTED
  1846           05 VALUE 'KGIVING                  ' PIC X(33).
  1847           05 VALUE ' GLOBAL                  ' PIC X(33).
  1848           05 VALUE 'VGO                      ' PIC X(33).
  1849           05 VALUE 'VGOBACK                  ' PIC X(33).
  1850           05 VALUE ' GREATER                 ' PIC X(33).
  1851           05 VALUE ' GROUP                   ' PIC X(33).
  1852           05 VALUE ' GROUP-USAGE             ' PIC X(33).      UNIMPLEMENTED
  1853           05 VALUE ' HEADING                 ' PIC X(33).
  1854           05 VALUE ' HIGH-VALUE              ' PIC X(33).
  1855           05 VALUE ' HIGH-VALUES             ' PIC X(33).
  1856 GC1213    05 VALUE 'FHIGHEST-ALGEBRAIC       ' PIC X(33).
  1857           05 VALUE ' HIGHLIGHT               ' PIC X(33).
  1858           05 VALUE ' I-O                     ' PIC X(33).
  1859           05 VALUE ' I-O-CONTROL             ' PIC X(33).
  1860           05 VALUE 'KID                      ' PIC X(33).
  1861           05 VALUE 'KIDENTIFICATION          ' PIC X(33).
  1862           05 VALUE 'VIF                      ' PIC X(33).
  1863           05 VALUE ' IGNORE                  ' PIC X(33).
  1864           05 VALUE ' IGNORING                ' PIC X(33).
  1865           05 VALUE ' IMPLEMENTS              ' PIC X(33).      UNIMPLEMENTED
  1866           05 VALUE ' IN                      ' PIC X(33).
  1867           05 VALUE ' INDEX                   ' PIC X(33).
  1868           05 VALUE 'KINDEXED                 ' PIC X(33).
  1869           05 VALUE ' INDICATE                ' PIC X(33).
  1870           05 VALUE ' INDIRECT                ' PIC X(33).      UNIMPLEMENTED
  1871           05 VALUE ' INHERITS                ' PIC X(33).      UNIMPLEMENTED
  1872           05 VALUE ' INITIAL                 ' PIC X(33).
  1873           05 VALUE 'VINITIALISE              ' PIC X(33).
  1874           05 VALUE ' INITIALISED             ' PIC X(33).
  1875           05 VALUE 'VINITIALIZE              ' PIC X(33).
  1876           05 VALUE ' INITIALIZED             ' PIC X(33).
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  1878           05 VALUE ' INPUT                   ' PIC X(33).
  1879           05 VALUE 'KINPUT-OUTPUT            ' PIC X(33).
  1880           05 VALUE 'VINSPECT                 ' PIC X(33).
  1881           05 VALUE ' INSTALLATION            ' PIC X(33).      OBSOLETE
  1882 GC1213    05 VALUE 'FINTEGER                 ' PIC X(33).
  1883 GC1213    05 VALUE 'FINTEGER-OF-BOOLEAN      ' PIC X(33).      UNIMPLEMENTED
  1884 GC1213    05 VALUE 'FINTEGER-OF-DATE         ' PIC X(33).
  1885 GC1213    05 VALUE 'FINTEGER-OF-DAY          ' PIC X(33).
  1886 GC1213    05 VALUE 'FINTEGER-OF-FORMATTED-DATE ' PIC X(33).    UNIMPLEMENTED
  1887 GC1213    05 VALUE 'FINTEGER-PART            ' PIC X(33).
  1888           05 VALUE ' INTERFACE               ' PIC X(33).      UNIMPLEMENTED
  1889           05 VALUE ' INTERFACE-ID            ' PIC X(33).      UNIMPLEMENTED
  1890           05 VALUE ' INTERMEDIATE            ' PIC X(33).      UNIMPLEMENTED
  1891           05 VALUE 'KINTO                    ' PIC X(33).
  1892           05 VALUE ' INTRINSIC               ' PIC X(33).
  1893           05 VALUE ' INVALID                 ' PIC X(33).
  1894           05 VALUE ' INVOKE                  ' PIC X(33).      UNIMPLEMENTED
  1895           05 VALUE ' IS                      ' PIC X(33).
  1896           05 VALUE ' JUST                    ' PIC X(33).
  1897           05 VALUE ' JUSTIFIED               ' PIC X(33).

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 1898           05 VALUE ' KEPT                       ' PIC X(33).
 1899           05 VALUE ' KEY                        ' PIC X(33).
 1900           05 VALUE ' KEYBOARD                   ' PIC X(33).
 1901           05 VALUE ' LABEL                      ' PIC X(33).
 1902           05 VALUE ' LAST                       ' PIC X(33).
 1903           05 VALUE ' LC_ALL                     ' PIC X(33).    UNIMPLEMENTED
 1904           05 VALUE ' LC_COLLATE                 ' PIC X(33).    UNIMPLEMENTED
 1905           05 VALUE ' LC_CTYPE                   ' PIC X(33).    UNIMPLEMENTED
 1906           05 VALUE ' LC_MESSAGES                ' PIC X(33).    UNIMPLEMENTED
 1907           05 VALUE ' LC_MONETARY                ' PIC X(33).    UNIMPLEMENTED
 1908           05 VALUE ' LC_NUMERIC                 ' PIC X(33).    UNIMPLEMENTED
 1909           05 VALUE ' LC_TIME                    ' PIC X(33).    UNIMPLEMENTED
 1910           05 VALUE ' LEADING                    ' PIC X(33).
 1911           05 VALUE ' LEFT                       ' PIC X(33).
 1912           05 VALUE ' LEFT-JUSTIFY               ' PIC X(33).    UNIMPLEMENTED
 1913           05 VALUE ' LEFTLINE                   ' PIC X(33).
 1914 GC1213    05 VALUE 'FLENGTH                     ' PIC X(33).
 1915 GC1213    05 VALUE 'FLENGTH-AN                  ' PIC X(33).
 1916           05 VALUE ' LENGTH-CHECK               ' PIC X(33).
 1917           05 VALUE ' LESS                       ' PIC X(33).
 1918           05 VALUE ' LIMIT                      ' PIC X(33).
 1919           05 VALUE ' LIMITS                     ' PIC X(33).
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 1921           05 VALUE 'ILINAGE-COUNTER             ' PIC X(33).
 1922           05 VALUE ' LINE                       ' PIC X(33).
 1923 GC1213    05 VALUE 'ILINE-COUNTER               ' PIC X(33).
 1924           05 VALUE ' LINES                      ' PIC X(33).
 1925           05 VALUE 'KLINKAGE                    ' PIC X(33).
 1926           05 VALUE 'KLOCAL-STORAGE              ' PIC X(33).
 1927           05 VALUE ' LOCALE                     ' PIC X(33).
 1928 GC1213    05 VALUE 'FLOCALE-COMPARE             ' PIC X(33).
 1929 GC1213    05 VALUE 'FLOCALE-DATE                ' PIC X(33).
 1930 GC1213    05 VALUE 'FLOCALE-TIME                ' PIC X(33).
 1931 GC1213    05 VALUE 'FLOCALE-TIME-FROM-SECONDS   ' PIC X(33).
 1932           05 VALUE ' LOCK                       ' PIC X(33).
 1933 GC1213    05 VALUE 'FLOG                        ' PIC X(33).
 1934 GC1213    05 VALUE 'FLOG10                      ' PIC X(33).
 1935           05 VALUE ' LOW-VALUE                  ' PIC X(33).
 1936           05 VALUE ' LOW-VALUES                 ' PIC X(33).
 1937           05 VALUE ' LOWER                      ' PIC X(33).
 1938 GC1213    05 VALUE 'FLOWER-CASE                 ' PIC X(33).
 1939 GC1213    05 VALUE 'FLOWEST-ALGEBRAIC           ' PIC X(33).
 1940           05 VALUE ' LOWLIGHT                   ' PIC X(33).
 1941           05 VALUE ' MANUAL                     ' PIC X(33).
 1942 GC1213    05 VALUE 'FMAX                        ' PIC X(33).
 1943 GC1213    05 VALUE 'FMEAN                       ' PIC X(33).
 1944 GC1213    05 VALUE 'FMEDIAN                     ' PIC X(33).
 1945           05 VALUE ' MEMORY                     ' PIC X(33).
 1946           05 VALUE 'VMERGE                      ' PIC X(33).
 1947           05 VALUE ' MESSAGE                    ' PIC X(33).    OBSOLETE
 1948           05 VALUE ' METHOD                     ' PIC X(33).    UNIMPLEMENTED
 1949           05 VALUE ' METHOD-ID                  ' PIC X(33).    UNIMPLEMENTED
 1950 GC1213    05 VALUE 'FMIDRANGE                   ' PIC X(33).
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 1951 GC1213      05 VALUE 'FMIN                              ' PIC X(33).
 1952             05 VALUE ' MINUS                            ' PIC X(33).
 1953 GC1213      05 VALUE 'FMOD                              ' PIC X(33).
 1954             05 VALUE ' MODE                             ' PIC X(33).
 1955 GC1213      05 VALUE 'FMODULE-CALLER-ID                 ' PIC X(33).
 1956 GC1213      05 VALUE 'FMODULE-DATE                      ' PIC X(33).
 1957 GC1213      05 VALUE 'FMODULE-FORMATTED-DATE            ' PIC X(33).
 1958 GC1213      05 VALUE 'FMODULE-ID                        ' PIC X(33).
 1959 GC1213      05 VALUE 'FMODULE-PATH                      ' PIC X(33).
 1960 GC1213      05 VALUE 'FMODULE-SOURCE                    ' PIC X(33).
 1961 GC1213      05 VALUE 'FMODULE-TIME                      ' PIC X(33).
 1962 GC1213      05 VALUE 'FMONETARY-DECIMAL-POINT           ' PIC X(33).
 1963 GC1213      05 VALUE 'FMONETARY-THOUSANDS-SEPARATOR     ' PIC X(33).
 1964             05 VALUE 'VMOVE                             ' PIC X(33).
 1965             05 VALUE ' MULTIPLE                         ' PIC X(33).
 1966             05 VALUE 'VMULTIPLY                         ' PIC X(33).
 1967 GC0711      05 VALUE ' NAME                             ' PIC X(33).
 1968             05 VALUE ' NATIONAL                         ' PIC X(33).
 1969             05 VALUE ' NATIONAL-EDITED                  ' PIC X(33).
 1970 GC1213      05 VALUE 'FNATIONAL-OF                      ' PIC X(33).       UNIMPLEMENTED
 1971             05 VALUE ' NATIVE                           ' PIC X(33).
 1972             05 VALUE ' NEAREST-AWAY-FROM-ZERO           ' PIC X(33).
 1973             05 VALUE ' NEAREST-EVEN                     ' PIC X(33).
 1974             05 VALUE ' NEAREST-TOWARD-ZERO              ' PIC X(33).
 1975             05 VALUE ' NEGATIVE                         ' PIC X(33).
 1976             05 VALUE ' NESTED                           ' PIC X(33).       UNIMPLEMENTED
 1977             05 VALUE 'VNEXT                             ' PIC X(33).
 1978             05 VALUE ' NO                               ' PIC X(33).
 1979             05 VALUE ' NO-ECHO                          ' PIC X(33).
 1980             05 VALUE ' NONE                             ' PIC X(33).       UNIMPLEMENTED
 1981             05 VALUE ' NORMAL                           ' PIC X(33).
 1982             05 VALUE ' NOT                              ' PIC X(33).
 1983             05 VALUE ' NULL                             ' PIC X(33).
 1984             05 VALUE ' NULLS                            ' PIC X(33).
 1985             05 VALUE ' NUMBER                           ' PIC X(33).
 1986             05 VALUE 'INUMBER-OF-CALL-PARAMETERS        ' PIC X(33).
 1987             05 VALUE ' NUMBERS                          ' PIC X(33).
 1988             05 VALUE ' NUMERIC                          ' PIC X(33).
 1989 GC1213      05 VALUE 'FNUMERIC-DECIMAL-POINT            ' PIC X(33).
 1990             05 VALUE ' NUMERIC-EDITED                   ' PIC X(33).
 1991 GC1213      05 VALUE 'FNUMERIC-THOUSANDS-SEPARATOR      ' PIC X(33).
 1992 GC1213      05 VALUE 'FNUMVAL                           ' PIC X(33).
 1993 GC1213      05 VALUE 'FNUMVAL-C                         ' PIC X(33).
 1994 GC1213      05 VALUE 'FNUMVAL-F                         ' PIC X(33).
 1995             05 VALUE ' OBJECT                           ' PIC X(33).       UNIMPLEMENTED
 1996             05 VALUE ' OBJECT-COMPUTER                  ' PIC X(33).
 1997             05 VALUE ' OBJECT-REFERENCE                 ' PIC X(33).       UNIMPLEMENTED
 1998             05 VALUE ' OCCURS                           ' PIC X(33).
 1999             05 VALUE ' OF                               ' PIC X(33).
 2000             05 VALUE ' OFF                              ' PIC X(33).
 2001             05 VALUE ' OMITTED                          ' PIC X(33).
 2002             05 VALUE ' ON                               ' PIC X(33).
 2003             05 VALUE ' ONLY                             ' PIC X(33).

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 2005           05 VALUE ' OPTIONAL                    ' PIC X(33).
 2006           05 VALUE ' OPTIONS                     ' PIC X(33).     UNIMPLEMENTED
 2007           05 VALUE ' OR                          ' PIC X(33).
 2008 GC1213    05 VALUE 'FORD                         ' PIC X(33).
 2009 GC1213    05 VALUE 'FORD-MAX                     ' PIC X(33).
 2010 GC1213    05 VALUE 'FORD-MIN                     ' PIC X(33).
 2011           05 VALUE ' ORDER                       ' PIC X(33).
 2012           05 VALUE ' ORGANISATION                ' PIC X(33).
 2013           05 VALUE ' ORGANIZATION                ' PIC X(33).
 2014           05 VALUE ' OTHER                       ' PIC X(33).
 2015           05 VALUE ' OUTPUT                      ' PIC X(33).
 2016           05 VALUE ' OVERFLOW                    ' PIC X(33).
 2017           05 VALUE ' OVERLINE                    ' PIC X(33).
 2018           05 VALUE ' OVERRIDE                    ' PIC X(33).
 2019           05 VALUE ' PACKED-DECIMAL              ' PIC X(33).
 2020           05 VALUE ' PADDING                     ' PIC X(33).
 2021           05 VALUE ' PAGE                        ' PIC X(33).
 2022 GC1213    05 VALUE 'IPAGE-COUNTER                ' PIC X(33).
 2023           05 VALUE ' PARAGRAPH                   ' PIC X(33).
 2024           05 VALUE 'VPERFORM                     ' PIC X(33).
 2025           05 VALUE ' PF                          ' PIC X(33).
 2026           05 VALUE ' PH                          ' PIC X(33).
 2027 GC1213    05 VALUE 'FPI                          ' PIC X(33).
 2028           05 VALUE 'KPIC                         ' PIC X(33).
 2029           05 VALUE 'KPICTURE                     ' PIC X(33).
 2030           05 VALUE ' PLUS                        ' PIC X(33).
 2031           05 VALUE 'KPOINTER                     ' PIC X(33).
 2032           05 VALUE ' POSITION                    ' PIC X(33).
 2033           05 VALUE ' POSITIVE                    ' PIC X(33).
 2034           05 VALUE ' PREFIXED                    ' PIC X(33).     UNIMPLEMENTED
 2035           05 VALUE ' PRESENT                     ' PIC X(33).
 2036 GC1213    05 VALUE 'FPRESENT-VALUE               ' PIC X(33).
 2037           05 VALUE ' PREVIOUS                    ' PIC X(33).
 2038           05 VALUE 'MPRINTER                     ' PIC X(33).
 2039           05 VALUE ' PRINTING                    ' PIC X(33).
 2040           05 VALUE 'KPROCEDURE                   ' PIC X(33).
 2041           05 VALUE ' PROCEDURE-POINTER           ' PIC X(33).
 2042           05 VALUE ' PROCEDURES                  ' PIC X(33).
 2043           05 VALUE ' PROCEED                     ' PIC X(33).
 2044           05 VALUE ' PROGRAM                     ' PIC X(33).
 2045           05 VALUE 'KPROGRAM-ID                  ' PIC X(33).
 2046           05 VALUE ' PROGRAM-POINTER             ' PIC X(33).
 2047           05 VALUE ' PROHIBITED                  ' PIC X(33).
 2048           05 VALUE ' PROMPT                      ' PIC X(33).
 2049           05 VALUE ' PROPERTY                    ' PIC X(33).     UNIMPLEMENTED
 2050           05 VALUE ' PROTOTYPE                   ' PIC X(33).     UNIMPLEMENTED
 2051           05 VALUE ' PURGE                       ' PIC X(33).     OBSOLETE
 2052           05 VALUE ' QUEUE                       ' PIC X(33).     OBSOLETE
 2053           05 VALUE ' QUOTE                       ' PIC X(33).
 2054           05 VALUE ' QUOTES                      ' PIC X(33).
 2055           05 VALUE ' RAISE                       ' PIC X(33).     UNIMPLEMENTED
 2056           05 VALUE ' RAISING                     ' PIC X(33).     UNIMPLEMENTED

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 2057 GC1213     05 VALUE 'FRANDOM                         ' PIC X(33).
 2058 GC1213     05 VALUE 'FRANGE                          ' PIC X(33).
 2059 GC1213     05 VALUE 'KRD                             ' PIC X(33).
 2060            05 VALUE 'VREAD                           ' PIC X(33).
 2061            05 VALUE 'VREADY                          ' PIC X(33).
 2062            05 VALUE 'VRECEIVE                        ' PIC X(33).    OBSOLETE
 2063            05 VALUE ' RECORD                         ' PIC X(33).
 2064            05 VALUE ' RECORDING                      ' PIC X(33).
 2065            05 VALUE ' RECORDS                        ' PIC X(33).
 2066            05 VALUE ' RECURSIVE                      ' PIC X(33).
 2067            05 VALUE 'KREDEFINES                      ' PIC X(33).
 2068            05 VALUE ' REEL                           ' PIC X(33).
 2069 GC0712     05 VALUE 'AREFERENCE                      ' PIC X(33).
 2070            05 VALUE ' REFERENCES                     ' PIC X(33).
 2071            05 VALUE ' RELATION                       ' PIC X(33).    UNIMPLEMENTED
 2072            05 VALUE ' RELATIVE                       ' PIC X(33).
 2073            05 VALUE 'VRELEASE                        ' PIC X(33).
 2074 GC1213     05 VALUE 'FREM                            ' PIC X(33).
 2075            05 VALUE ' REMAINDER                      ' PIC X(33).
 2076            05 VALUE ' REMARKS                        ' PIC X(33).    OBSOLETE
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 2078            05 VALUE 'KRENAMES                        ' PIC X(33).
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 2082            05 VALUE ' REPORTING                      ' PIC X(33).
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 2090            05 VALUE 'VRETURN                         ' PIC X(33).
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 2094            05 VALUE ' REVERSE-VIDEO                  ' PIC X(33).
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 2101            05 VALUE ' RIGHT-JUSTIFY                  ' PIC X(33).    UNIMPLEMENTED
 2102            05 VALUE 'VROLLBACK                       ' PIC X(33).
 2103            05 VALUE ' ROUNDED                        ' PIC X(33).
 2104            05 VALUE ' ROUNDING                       ' PIC X(33).    UNIMPLEMENTED
 2105            05 VALUE ' RUN                            ' PIC X(33).
 2106            05 VALUE ' SAME                           ' PIC X(33).
 2107            05 VALUE 'KSCREEN                         ' PIC X(33).
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 2111           05 VALUE ' SECONDS                   ' PIC X(33).     UNIMPLEMENTED
 2112 GC1213    05 VALUE 'FSECONDS-FROM-FORMATTED-TIME ' PIC X(33).
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 2115           05 VALUE ' SECURE                    ' PIC X(33).
 2116           05 VALUE ' SECURITY                  ' PIC X(33).     OBSOLETE
 2117           05 VALUE ' SEGMENT                   ' PIC X(33).     OBSOLETE
 2118           05 VALUE ' SEGMENT-LIMIT             ' PIC X(33).
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 2120           05 VALUE ' SELF                      ' PIC X(33).     UNIMPLEMENTED
 2121           05 VALUE 'VSEND                      ' PIC X(33).     OBSOLETE
 2122           05 VALUE ' SENTENCE                  ' PIC X(33).
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 2131           05 VALUE ' SIGNED-LONG               ' PIC X(33).
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 2143           05 VALUE ' SPACES                    ' PIC X(33).
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 2146           05 VALUE ' STANDARD                  ' PIC X(33).
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 2150 GC1213    05 VALUE 'FSTANDARD-COMPARE          ' PIC X(33).     UNIMPLEMENTED
 2151           05 VALUE ' STANDARD-DECIMAL          ' PIC X(33).     UNIMPLEMENTED
 2152 GC1213    05 VALUE 'FSTANDARD-DEVIATION        ' PIC X(33).
 2153           05 VALUE 'VSTART                     ' PIC X(33).
 2154           05 VALUE ' STATEMENT                 ' PIC X(33).     UNIMPLEMENTED
 2155           05 VALUE ' STATIC                    ' PIC X(33).
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 2162           05 VALUE 'VSTOP                      ' 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: 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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==================================================================================
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====== ========================================================================================
 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).
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                     2017/12/24
                                          /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                             Page: 53
======  =================================================================================
  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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```

```
  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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```
 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
```

===

Line   Statement   Page: 60
====== ==
```
  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 = '. '
```

==

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

```
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            .
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                 2017/12/24
                                        /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                        Page: 64
====== =========================================================================

  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            .
```

```
  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
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                          /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                            Page: 69
====== =================================================================================
  2908              EXIT SECTION
  2909          END-IF
  2910          .
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                          2017/12/24
                                               /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                                 Page: 70
======  ==========================================================================================

  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
```

```
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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```

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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            .
```

==

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                           /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                              Page: 73
====== ================================================================================
  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
```
==

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

===

```
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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```
  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             .
```

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```
 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               .
```

```
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```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                          /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                           Page: 86
======  ==============================================================================

 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

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```

```
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
```

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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: 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    ]
GCic            COB-SCR-KEY_DOWN               181 [screenio    ]
GCic            COB-SCR-KEY_UP                 181 [screenio    ]
GCic            COB-SCR-MAX-FIELD              181 [screenio    ]
GCic            COB-SCR-NO-FIELD               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: 92
===============  =============================== ====== =============== ========================
GCic             COB-SCR-OK                      181 [screenio     ]
GCic             COB-SCR-PAGE-DOWN               181 [screenio     ]
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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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```

```
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: 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
```

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

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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```

```
======  =========================================================================================
   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         *>-------------------------------------------------------------**
======  =========================================================================================
```

```
GNU COBOL 2.1 23NOV2013 Source Listing                                2014/03/27
                             C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
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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```

Line   Statement   Page: 5
====== ==
   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 **

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

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```

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.   **

==

```
GNU COBOL 2.1 23NOV2013 Source Listing                                    2014/03/27
                                 C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
Line    Statement                                                              Page: 8
====== ===============================================================================
   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 '.


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```

Line   Statement   Page: 9
====== ==
        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

==

Line   Statement   Page: 10
====== ==
     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 =
```
==

```
====== =========================================================================================
    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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STREAMIO        L-SCB-Error-Routine-NUM          379 [STREAMIOcb    ]   479
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STREAMIO        L-SCB-Filename-TXT               379 [STREAMIOcb    ]   390C   487    492
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STREAMIO        L-SCB-Func-CLOSE-BOOL            379 [STREAMIOcb    ]   386
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