GnuCOBOL Sample Programs

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Table of Contents

1. FileStat-Msgs

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

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

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

Here's the FileStat-Msgs.cpy copybook:

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

2. COBDUMP

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

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

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

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

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

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

```
GNU COBOL 2.1 23NOV2013 Source Listing                                      2014/03/27
                                    C:/Users/tda010/Documents/Programs/Samples/COBDUMP.cbl
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         *> GCO577 Converted to Univac ASCII COBOL (ACOB) - COBOL '74   **
    37         *> GC1182 Converted to Univac UTS4000 COBOL - COBOL '74 w/     **
    38         *>        SCREEN SECTION enhancements                          **
    39         *> GCO883 Converted to Honeywell/Bull COBOL - COBOL '74        **
    40         *> GCO983 Converted to IBM VS COBOL - COBOL '74                **
    41         *> GCO887 Converted to IBM VS COBOL II - COBOL '85             **
    42         *> GC1294 Converted to Micro Focus COBOL V3.0 - COBOL '85 w/   **
    43         *>        extensions                                          **
    44         *> GCO703 Converted to Unisys Universal Compiling System (UCS) **
    45         *>        COBOL (UCOB) - COBOL '85                             **
    46         *> GC1204 Converted to Unisys Object COBOL (OCOB) - COBOL 2002 **
    47         *> GCO609 Converted to OpenCOBOL 1.1 - COBOL '85 w/ some COBOL **
    48         *>        2002 features                                       **
    49         *> GCO410 Enhanced to make 2nd argument (buffer length)        **

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```

```
GNU COBOL 2.1 23NOV2013 Source Listing                                    2014/03/27
                              C:/Users/tda010/Documents/Programs/Samples/COBDUMP.cbl
Line   Statement                                                             Page: 2
====== ==============================================================================
   50      *>      optional                                   **
   51      *> GC0211 Ported to IBM Enterprise COBOL            **
   52      *> GC0612 Updated for OpenCOBOL 2.0                 **
   53      *>*************************************************************
   54       ENVIRONMENT DIVISION.
   55       CONFIGURATION SECTION.
   56       REPOSITORY.
   57           FUNCTION ALL INTRINSIC.
   58       DATA DIVISION.
   59       WORKING-STORAGE SECTION.
   60       01  WS-Addr-PTR                     USAGE POINTER.
   61       01  WS-Addr-NUM REDEFINES WS-Addr-PTR
   62                                           USAGE BINARY-LONG.
   63
   64       01  WS-Addr-SUB                     USAGE BINARY-CHAR.
   65
   66       01  WS-Addr-Value-NUM               USAGE BINARY-LONG.
   67
   68       01  WS-Buffer-Byte-CHR.
   69           05 WS-Buffer-Byte-NUM           USAGE BINARY-CHAR.
   70
   71       01  WS-Buffer-Length-NUM            USAGE BINARY-LONG.
   72
   73       01  WS-Buffer-SUB                   PIC 9(4) COMP-5.
   74
   75       01  WS-Hex-Digit-TXT VALUE '0123456789ABCDEF'.
   76           05 WS-Hex-Digit-CHR             OCCURS 16 TIMES
   77                                           PIC X(1).
   78
   79       01  WS-Nibble-SUB                   PIC 9(1) COMP-5.
   80
   81       01  WS-Nibble-Left-SUB              PIC 9(1) COMP-5.
   82
   83       01  WS-Nibble-Right-SUB             PIC 9(1) COMP-5.
   84
   85       01  WS-Output-Detail-TXT.
   86           05 WS-OD-Addr-TXT.
   87              10 WS-OD-Addr-Hex-CHR        OCCURS 8 TIMES PIC X.
   88           05 FILLER                       PIC X(1).
   89           05 WS-OD-Relative-Byte-NUM      PIC Z(3)9.
   90           05 FILLER                       PIC X(1).
   91           05 WS-OD-Hex-TXT                OCCURS 16 TIMES.
   92              10 WS-OD-Hex-1-CHR           PIC X.
   93              10 WS-OD-Hex-2-CHR           PIC X.
   94              10 FILLER                    PIC X.
   95           05 WS-OD-ASCII-Data-TXT.
   96              10 WS-OD-ASCII-CHR           OCCURS 16 TIMES
   97                                           PIC X.
   98

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```

```
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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```

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

```
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```

```
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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ACS Cobol Xref v2.02.02        Dictionary File for COLORS    07/12/2019  16:57:00:17
   163    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 VALUE 'X'.
   164    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 VALUE 'X'.
   165    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 VALUE 'X'.
   166    05 LINE + 1.
   167    10 COL 12  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 VALUE 'X'.
   168    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 VALUE 'X'.
   169    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 VALUE 'X'.
   170    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 VALUE 'X'.
   171    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 VALUE 'X'.
   172    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 VALUE 'X'.
   173    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 VALUE 'X'.
   174    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 VALUE 'X'.
   175    05 LINE + 1.
   176    10 COL 12  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 VALUE 'X'.
   177    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 VALUE 'X'.
   178    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 VALUE 'X'.
   179    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 VALUE 'X'.
   180    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 VALUE 'X'.
   181    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 VALUE 'X'.
   182    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 VALUE 'X'.
   183    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 VALUE 'X'.
   184    05 LINE + 1.
   185    10 COL 12  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 VALUE 'X'.
   186    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 VALUE 'X'.
   187    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 VALUE 'X'.
   188    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 VALUE 'X'.
   189    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 VALUE 'X'.
   190    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 VALUE 'X'.
   191    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 VALUE 'X'.
   192    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 VALUE 'X'.
   193    05 LINE + 1.
   194    10 COL 12  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 VALUE 'X'.
   195    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 VALUE 'X'.
   196    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 VALUE 'X'.
   197    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 VALUE 'X'.
   198    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 VALUE 'X'.
   199    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 VALUE 'X'.
   200    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 VALUE 'X'.
   201    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 VALUE 'X'.
   202    *> #3
   203    05 LINE 05.
   204    10 COL 22  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
   205    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
   206    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
   207    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
   208    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
   209    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
   210    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
   211    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
   212    05 LINE + 1.
   213    10 COL 22  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
   214    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
   215    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
   216    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
```

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ACS Cobol Xref v2.02.02       Dictionary File for COLORS    07/12/2019  16:57:00:17
   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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ACS Cobol Xref v2.02.02        Dictionary File for COLORS    07/12/2019  16:57:00:18
   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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ACS Cobol Xref v2.02.02        Dictionary File for COLORS    07/12/2019  16:57:00:18
   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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ACS Cobol Xref v2.02.02         Dictionary File for COLORS     07/12/2019  16:57:00:18

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

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

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

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

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

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ACS Cobol Xref v2.02.02         Dictionary File for COLORS     07/12/2019  16:57:00:19
  541    10 COL 02  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
  542    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
  543    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
  544    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
  545    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
  546    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
  547    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
  548    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
  549    05 LINE + 1.
  550    10 COL 02  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
  551    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
  552    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
  553    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
  554    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
  555    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
  556    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
  557    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
  558    05 LINE + 1.
  559    10 COL 02  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
  560    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
  561    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
  562    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
  563    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
  564    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
  565    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
  566    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
  567    *> #8
  568    05 LINE 17.
  569    10 COL 12  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
  570    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
  571    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
  572    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
  573    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
  574    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
  575    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
  576    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
  577    05 LINE + 1.
  578    10 COL 12  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
  579    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
  580    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
  581    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
  582    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
  583    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
  584    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
  585    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
  586    05 LINE + 1.
  587    10 COL 12  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
  588    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
  589    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
  590    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
  591    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
  592    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
  593    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
  594    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
```

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

```
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’.
```

```
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'.
```

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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’.
```

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

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

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

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

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

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

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

S-COLORTST-SCR                 000007S  000934
```

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

None
```

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

None
```

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

None
```

4. DAY-FROM-DATE

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

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

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

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

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

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

GNU COBOL 2.1 23NOV2013 Source Listing   2014/03/27
                            C:/Users/tda010/Documents/Programs/Samples/DAY-FROM-DATE.cbl
Line   Statement   Page: 1
====== ===
```
    1         >>SOURCE FORMAT IS FIXED
    2          IDENTIFICATION DIVISION.
    3          FUNCTION-ID. DAY-FROM-DATE.
    4         *>****************************************************************
    5         *> This GNU COBOL user-defined function converts a Gregorian or **
    6         *> Julian date into a numeric day of the week.                 **
    7         *>****************************************************************
    8         *> Arguments:                                                  **
    9         *>                                                             **
   10         *> Calendar-Date    A PIC 9 data item or numeric literal which **
   11         *>                  will be treated as a calendar date as fol- **
   12         *>                  lows:                                      **
   13         *>                                                             **
   14         *>                  7-digit value: Interpreted as a Julian date **
   15         *>                                 in the form yyyyddd         **
   16         *>                  8-digit value: Interpreted as a Gregorian  **
   17         *>                                 date in the form yyyymmdd   **
   18         *>                                                             **
   19         *> The result returned will be one of the following:          **
   20         *>                                                             **
   21         *> 0:  The supplied date is invalid                           **
   22         *> 1:  The supplied date is a Sunday                          **
   23         *> 2:  The supplied date is a Monday                          **
   24         *> .                                                          **
   25         *> .                                                          **
   26         *> .                                                          **
   27         *> 7:  The supplied date is a Saturday                        **
   28         *>****************************************************************
   29          ENVIRONMENT DIVISION.
   30          CONFIGURATION SECTION.
   31          REPOSITORY.
   32              FUNCTION ALL INTRINSIC.
   33          DATA DIVISION.
   34          WORKING-STORAGE SECTION.
   35          01  WS-Input-Date-DT.
   36              05 WS-ID-YYYY-NUM                 PIC 9(4).
   37              05 WS-ID-MM-NUM                   PIC 9(2).
   38              05 WS-ID-DD-NUM                   PIC 9(2).
   39          01  WS-Y-NUM                          BINARY-LONG.
   40          01  WS-M-NUM                          BINARY-LONG.
   41          01  WS-Temp-NUM                       BINARY-LONG.
   42          LINKAGE SECTION.
   43          01  L-Input-Date-DT                   PIC 9 ANY LENGTH.
   44          01  L-Output-Day-NUM                  USAGE BINARY-LONG
   45                                                SIGNED.
   46          PROCEDURE DIVISION USING L-Input-Date-DT
   47                      RETURNING L-Output-Day-NUM.
   48          000-Main SECTION.
   49              CALL "C$PARAMSIZE" USING 1
```
==
GCic for OSX Copyright (C) 2009-2014, Gary L. Cutler, GPL   Page: 1

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

```
====================================================================================
GCic for OSX Copyright (C) 2009-2014, Gary L. Cutler, GPL                    Page: 2
```

```
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
```

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

```
====================================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL                        Page: 2
```

```
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          **
```

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

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

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

==
Page: 5

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

===================================================================================================

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

```
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).
```

```
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).
```

===

```
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.
```

===

```
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

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

```
=================================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL                    Page: 13
@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   '.
```

```
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     '.
```

```
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              .
```

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

```
GNUCOBOL 3.0 24DEC2017  Source Listing                               2017/12/24
                                    /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line   Statement                                                       Page: 19
====== ==========================================================================

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

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

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

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

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

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

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                 2017/12/24
                                      /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                        Page: 22
======  ========================================================================

   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
```

```
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              .
```

==
```
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```

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

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

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

```
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           .
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                2017/12/24
                                        /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                       Page: 27
====== =========================================================================

  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     .
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                         /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                          Page: 28
====== ================================================================================

  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
```

```
================================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL                     Page: 28
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                               2017/12/24
                                      /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line   Statement                                                        Page: 29
====== =========================================================================
 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            .
```

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```
GNUCOBOL 3.0 24DEC2017  Source Listing                                   2017/12/24
                                      /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line   Statement                                                           Page: 30
====== ==============================================================================

  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            .
```

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

```
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      .
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                        /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line   Statement                                                            Page: 32
====== ===============================================================================

  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 ' '.
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                              2017/12/24
                                      /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                       Page: 34
====== =========================================================================

 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
```

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

```
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       *> GC0410 Initial coding                                      **
 1392       *> GC0711 Updates to accommodate the 12MAR2010 version of OC  **
 1393       *> GC0710 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       *> GC0313 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       *> GC0314 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 GC0712     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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```

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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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GNUCOBOL 3.0 24DEC2017  Source Listing                                  2017/12/24
                                          /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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GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                         /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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GNUCOBOL 3.0 24DEC2017  Source Listing                                2017/12/24
                                     /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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GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                        /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                            Page: 40
====== =============================================================================
 1633              05 VALUE ' CAPACITY                 ' PIC X(33).    UNIMPLEMENTED
 1634              05 VALUE ' CD                        ' PIC X(33).    OBSOLETE
 1635              05 VALUE ' CENTER                    ' PIC X(33).    UNIMPLEMENTED
 1636              05 VALUE ' CF                        ' PIC X(33).
 1637              05 VALUE ' CH                        ' PIC X(33).
 1638              05 VALUE ' CHAIN                     ' PIC X(33).    UNIMPLEMENTED
 1639              05 VALUE ' CHAINING                  ' PIC X(33).
 1640 GC1213       05 VALUE 'FCHAR                      ' PIC X(33).
 1641 GC1213       05 VALUE 'FCHAR-NATIONAL             ' PIC X(33).    UNIMPLEMENTED
 1642              05 VALUE ' CHARACTER                 ' PIC X(33).
 1643              05 VALUE ' CHARACTERS                ' PIC X(33).
 1644              05 VALUE ' CLASS                     ' PIC X(33).
 1645              05 VALUE ' CLASS-ID                  ' PIC X(33).    UNIMPLEMENTED
 1646 GC0711       05 VALUE ' CLASSIFICATION            ' PIC X(33).
 1647              05 VALUE 'VCLOSE                     ' PIC X(33).
 1648 GC1213       05 VALUE 'FCOB-CRT-STATUS            ' PIC X(33).
 1649              05 VALUE ' CODE                      ' PIC X(33).
 1650              05 VALUE ' CODE-SET                  ' PIC X(33).
 1651              05 VALUE ' COL                       ' PIC X(33).
 1652              05 VALUE ' COLLATING                 ' PIC X(33).
 1653              05 VALUE ' COLS                      ' PIC X(33).
 1654              05 VALUE ' COLUMN                    ' PIC X(33).
 1655              05 VALUE ' COLUMNS                   ' PIC X(33).
 1656 GC1213       05 VALUE 'FCOMBINED-DATETIME         ' PIC X(33).
 1657              05 VALUE ' COMMA                     ' PIC X(33).
 1658              05 VALUE ' COMMAND-LINE              ' PIC X(33).
 1659              05 VALUE 'VCOMMIT                    ' PIC X(33).
 1660              05 VALUE ' COMMON                    ' PIC X(33).
 1661              05 VALUE ' COMMUNICATION             ' PIC X(33).    OBSOLETE
 1662              05 VALUE ' COMP                      ' PIC X(33).
 1663              05 VALUE ' COMP-1                    ' PIC X(33).
 1664              05 VALUE ' COMP-2                    ' PIC X(33).
 1665              05 VALUE ' COMP-3                    ' PIC X(33).
 1666              05 VALUE ' COMP-4                    ' PIC X(33).
 1667              05 VALUE ' COMP-5                    ' PIC X(33).
 1668              05 VALUE ' COMP-6                    ' PIC X(33).
 1669              05 VALUE ' COMP-X                    ' PIC X(33).
 1670              05 VALUE ' COMPUTATIONAL             ' PIC X(33).
 1671              05 VALUE ' COMPUTATIONAL-1           ' PIC X(33).
 1672              05 VALUE ' COMPUTATIONAL-2           ' PIC X(33).
 1673              05 VALUE ' COMPUTATIONAL-3           ' PIC X(33).
 1674              05 VALUE ' COMPUTATIONAL-4           ' PIC X(33).
 1675              05 VALUE ' COMPUTATIONAL-5           ' PIC X(33).
 1676              05 VALUE ' COMPUTATIONAL-X           ' PIC X(33).
 1677              05 VALUE 'VCOMPUTE                   ' PIC X(33).
 1678 GC1213       05 VALUE 'FCONCATENATE               ' PIC X(33).
 1679 GC0712       05 VALUE ' CONDITION                 ' PIC X(33).
 1680              05 VALUE 'KCONFIGURATION             ' PIC X(33).
 1681              05 VALUE 'MCONSOLE                   ' PIC X(33).
 1682              05 VALUE ' CONSTANT                  ' PIC X(33).
 1683              05 VALUE ' CONTAINS                  ' PIC X(33).
 1684 GC0712       05 VALUE 'ACONTENT                   ' PIC X(33).
 1685              05 VALUE 'VCONTINUE                  ' PIC X(33).
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GNUCOBOL 3.0 24DEC2017   Source Listing                                    2017/12/24
                                              /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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GNUCOBOL 3.0 24DEC2017  Source Listing                              2017/12/24
                                     /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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 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).
 1877            05 VALUE 'VINITIATE               ' PIC X(33).
 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).
 1920           05 VALUE ' LINAGE                      ' PIC X(33).
 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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 2004            05 VALUE 'VOPEN                      ' PIC X(33).
 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
 2077           05 VALUE ' REMOVAL                        ' PIC X(33).
 2078           05 VALUE 'KRENAMES                        ' PIC X(33).
 2079           05 VALUE ' REPLACE                        ' PIC X(33).
 2080           05 VALUE 'KREPLACING                      ' PIC X(33).
 2081           05 VALUE 'KREPORT                         ' PIC X(33).
 2082           05 VALUE ' REPORTING                      ' PIC X(33).
 2083           05 VALUE ' REPORTS                        ' PIC X(33).
 2084           05 VALUE ' REPOSITORY                     ' PIC X(33).
 2085           05 VALUE ' REQUIRED                       ' PIC X(33).
 2086           05 VALUE ' RESERVE                        ' PIC X(33).
 2087           05 VALUE 'VRESET                          ' PIC X(33).
 2088           05 VALUE ' RESUME                         ' PIC X(33).    UNIMPLEMENTED
 2089           05 VALUE ' RETRY                          ' PIC X(33).    UNIMPLEMENTED
 2090           05 VALUE 'VRETURN                         ' PIC X(33).
 2091           05 VALUE 'IRETURN-CODE                    ' PIC X(33).
 2092           05 VALUE 'KRETURNING                      ' PIC X(33).
 2093 GC1213     05 VALUE 'FREVERSE                       ' PIC X(33).
 2094           05 VALUE ' REVERSE-VIDEO                  ' PIC X(33).
 2095           05 VALUE ' REVERSED                       ' PIC X(33).
 2096           05 VALUE ' REWIND                         ' PIC X(33).
 2097           05 VALUE 'VREWRITE                        ' PIC X(33).
 2098           05 VALUE ' RF                             ' PIC X(33).
 2099           05 VALUE ' RH                             ' PIC X(33).
 2100           05 VALUE ' RIGHT                          ' PIC X(33).
 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).
 2108           05 VALUE ' SCROLL                         ' PIC X(33).
 2109           05 VALUE 'KSD                             ' PIC X(33).
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 2110           05 VALUE 'VSEARCH               ' PIC X(33).
 2111           05 VALUE ' SECONDS              ' PIC X(33).      UNIMPLEMENTED
 2112 GC1213    05 VALUE 'FSECONDS-FROM-FORMATTED-TIME ' PIC X(33).
 2113 GC1213    05 VALUE 'FSECONDS-PAST-MIDNIGHT ' PIC X(33).
 2114           05 VALUE 'KSECTION              ' PIC X(33).
 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).
 2119           05 VALUE ' SELECT               ' PIC X(33).
 2120           05 VALUE ' SELF                 ' PIC X(33).      UNIMPLEMENTED
 2121           05 VALUE 'VSEND                 ' PIC X(33).      OBSOLETE
 2122           05 VALUE ' SENTENCE             ' PIC X(33).
 2123           05 VALUE ' SEPARATE             ' PIC X(33).
 2124           05 VALUE ' SEQUENCE             ' PIC X(33).
 2125           05 VALUE ' SEQUENTIAL           ' PIC X(33).
 2126           05 VALUE 'VSET                  ' PIC X(33).
 2127           05 VALUE ' SHARING              ' PIC X(33).
 2128 GC1213    05 VALUE 'FSIGN                 ' PIC X(33).
 2129           05 VALUE ' SIGNED               ' PIC X(33).
 2130           05 VALUE ' SIGNED-INT           ' PIC X(33).
 2131           05 VALUE ' SIGNED-LONG          ' PIC X(33).
 2132           05 VALUE ' SIGNED-SHORT         ' PIC X(33).
 2133 GC1213    05 VALUE 'FSIN                  ' PIC X(33).
 2134           05 VALUE ' SIZE                 ' PIC X(33).
 2135           05 VALUE 'VSORT                 ' PIC X(33).
 2136           05 VALUE ' SORT-MERGE           ' PIC X(33).
 2137           05 VALUE 'ISORT-RETURN          ' PIC X(33).
 2138           05 VALUE ' SOURCE               ' PIC X(33).
 2139           05 VALUE ' SOURCE-COMPUTER      ' PIC X(33).
 2140           05 VALUE ' SOURCES              ' PIC X(33).      UNIMPLEMENTED
 2141           05 VALUE ' SPACE                ' PIC X(33).
 2142           05 VALUE ' SPACE-FILL           ' PIC X(33).      UNIMPLEMENTED
 2143           05 VALUE ' SPACES               ' PIC X(33).
 2144           05 VALUE ' SPECIAL-NAMES        ' PIC X(33).
 2145 GC1213    05 VALUE 'FSQRT                 ' PIC X(33).
 2146           05 VALUE ' STANDARD             ' PIC X(33).
 2147           05 VALUE ' STANDARD-1           ' PIC X(33).
 2148           05 VALUE ' STANDARD-2           ' PIC X(33).
 2149           05 VALUE ' STANDARD-BINARY      ' PIC X(33).      UNIMPLEMENTED
 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).
 2156           05 VALUE ' STATUS               ' PIC X(33).
 2157           05 VALUE ' STDCALL              ' PIC X(33).
 2158           05 VALUE 'MSTDERR               ' PIC X(33).
 2159           05 VALUE 'MSTDIN                ' PIC X(33).
 2160           05 VALUE 'MSTDOUT               ' PIC X(33).
 2161           05 VALUE ' STEP                 ' PIC X(33).
 2162           05 VALUE 'VSTOP                 ' PIC X(33).
```

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===============================================================================================
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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: 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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GNUCOBOL 3.0 24DEC2017  Source Listing                                        2017/12/24
                                            /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                               Page: 52
====== =====================================================================================
 2269           05 VALUE ' USAGE                        ' PIC X(33).
 2270           05 VALUE 'VUSE                          ' PIC X(33).
 2271 GC0711    05 VALUE ' USER                         ' PIC X(33).
 2272           05 VALUE ' USER-DEFAULT                 ' PIC X(33).
 2273           05 VALUE 'KUSING                        ' PIC X(33).
 2274           05 VALUE ' UTF-16                       ' PIC X(33).     UNIMPLEMENTED
 2275           05 VALUE ' UTF-8                        ' PIC X(33).     UNIMPLEMENTED
 2276           05 VALUE ' VAL-STATUS                   ' PIC X(33).     UNIMPLEMENTED
 2277           05 VALUE ' VALID                        ' PIC X(33).     UNIMPLEMENTED
 2278           05 VALUE ' VALIDATE                     ' PIC X(33).     UNIMPLEMENTED
 2279           05 VALUE ' VALIDATE-STATUS              ' PIC X(33).     UNIMPLEMENTED
 2280 GC0712    05 VALUE 'AVALUE                        ' PIC X(33).
 2281           05 VALUE ' VALUES                       ' PIC X(33).
 2282 GC1213    05 VALUE 'FVARIANCE                     ' PIC X(33).
 2283           05 VALUE 'KVARYING                      ' PIC X(33).
 2284           05 VALUE ' VDISABLE                     ' PIC X(33).     UNIMPLEMENTED
 2285           05 VALUE ' WAIT                         ' PIC X(33).
 2286           05 VALUE 'VWHEN                         ' PIC X(33).
 2287 GC1213    05 VALUE 'FWHEN-COMPILED                ' PIC X(33).
 2288           05 VALUE ' WITH                         ' PIC X(33).
 2289           05 VALUE ' WORDS                        ' PIC X(33).
 2290           05 VALUE 'KWORKING-STORAGE              ' PIC X(33).
 2291           05 VALUE 'VWRITE                        ' PIC X(33).
 2292 GC1213    05 VALUE 'FYEAR-TO-YYYY                 ' PIC X(33).
 2293           05 VALUE ' YYYYDDD                      ' PIC X(33).
 2294           05 VALUE ' YYYYMMDD                     ' PIC X(33).
 2295           05 VALUE ' ZERO                         ' PIC X(33).
 2296           05 VALUE ' ZERO-FILL                    ' PIC X(33).     UNIMPLEMENTED
 2297           05 VALUE ' ZEROES                       ' PIC X(33).
 2298           05 VALUE ' ZEROS                        ' PIC X(33).
 2299      01 WS-Reserved-Word-Table-TXT REDEFINES WS-Reserved-Words-TXT.
 2300 GC1113    05 WS-Reserved-Word-TXT      OCCURS 754 TIMES
 2301                                        ASCENDING KEY
 2302                                             WS-RW-Word-TXT
 2303                                        INDEXED WS-RW-IDX.
 2304              10 WS-RW-Type-CD          PIC X(1).
 2305              10 WS-RW-Word-TXT         PIC X(32).
 2306
 2307      01 WS-Runtime-Switches.
 2308 GC0710    05 WS-RS-Duplicate-CHR          PIC X(1).
 2309           05 WS-RS-In-Which-Pgm-CHR       PIC X(1).
 2310              88 WS-RS-In-Main-Module-BOOL  VALUE 'M'.
 2311              88 WS-RS-In-Copybook-BOOL     VALUE 'C'.
 2312           05 WS-RS-Last-Token-Ended-Sent-CHR PIC X(1).
 2313           05 WS-RS-Processing-PICTURE-CHR PIC X(1).
 2314           05 WS-RS-Token-Ended-Sentence-CHR PIC X(1).
 2315 GC0710    05 WS-RS-Verb-Has-Been-Found-CHR  PIC X(1).
 2316
 2317      01 WS-Saved-Section-TXT            PIC X(15).
 2318
 2319 GC1213 01 WS-Src-Dashes-TXT.
 2320 GC0712    05 VALUE '======'             PIC X(7).
 2321 GC0712    05 VALUE ALL '='              PIC X(128).
```

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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).
```

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

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

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

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

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

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                           /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                            Page: 58
======  ================================================================================

 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             .
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                  2017/12/24
                                       /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                          Page: 59
======  ========================================================================

  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
```

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

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

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

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```

```
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                                          /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line   Statement                                                      Page: 62
====== ========================================================================
  2709           .
```

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```
GNUCOBOL 3.0 24DEC2017  Source Listing                                       2017/12/24
                                               /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                                Page: 63
======  ========================================================================================

 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              .
```

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```

```
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            .
```

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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: 65
====== ========================================================================================

 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            .
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                              2017/12/24
                                       /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line   Statement                                                     Page: 66
====== =======================================================================================

  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            .
```

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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: 67
====== =====================================================================================

  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            .
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                              2017/12/24
                                      /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line   Statement                                                      Page: 68
======  ========================================================================

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

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                                         /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                            Page: 69
====== =================================================================================
 2908               EXIT SECTION
 2909          END-IF
 2910               .
```

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```

```
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
```

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```

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

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```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                      2017/12/24
                                            /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line   Statement                                                              Page: 72
====== ======================================================================================

  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                .
```

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```
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
```

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

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GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                        /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line   Statement                                                             Page: 75
====== =====================================================================================
 3141             PERFORM 361-Release-Ref
 3142         END-EVALUATE
 3143             .
 3144
 3145      351-SET SECTION.
 3146         EVALUATE WS-Token-Prev-TXT
 3147         WHEN 'SET'
 3148             PERFORM 362-Release-Upd
 3149         WHEN OTHER
 3150             PERFORM 361-Release-Ref
 3151         END-EVALUATE
 3152             .
 3153
 3154      351-STRING SECTION.
 3155         EVALUATE WS-Token-Prev-TXT
 3156         WHEN 'INTO'
 3157             PERFORM 362-Release-Upd
 3158         WHEN 'POINTER'
 3159             PERFORM 362-Release-Upd
 3160         WHEN OTHER
 3161             PERFORM 361-Release-Ref
 3162         END-EVALUATE
 3163             .
 3164
 3165      351-SUBTRACT SECTION.
 3166         EVALUATE WS-Token-Prev-TXT
 3167         WHEN 'GIVING'
 3168             PERFORM 362-Release-Upd
 3169         WHEN 'FROM'
 3170             PERFORM 362-Release-Upd
 3171         WHEN OTHER
 3172             PERFORM 361-Release-Ref
 3173         END-EVALUATE
 3174             .
 3175
 3176 GC1213 351-TERMINATE SECTION.
 3177 GC1213     PERFORM 362-Release-Upd
 3178 GC1213     .
 3179
 3180      351-TRANSFORM SECTION.
 3181         EVALUATE WS-Token-Prev-TXT
 3182         WHEN 'TRANSFORM'
 3183             PERFORM 362-Release-Upd
 3184             MOVE SPACES TO WS-Token-Prev-TXT
 3185         WHEN OTHER
 3186             PERFORM 361-Release-Ref
 3187         END-EVALUATE
 3188             .
 3189
 3190      351-UNSTRING SECTION.
 3191         EVALUATE WS-Token-Prev-TXT
 3192         WHEN 'INTO'
 3193             PERFORM 362-Release-Upd
```

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

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

```
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              .
```

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```

```
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)
```

```
================================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL                      Page: 80
```

```
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        .
```

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

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

===
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL   Page: 82

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

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

```
================================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL                      Page: 83
```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                 2017/12/24
                                     /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                        Page: 84
======  ========================================================================

 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
```

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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: 85
====== ================================================================================
  3535 GC0712                  WHEN WS-Temp-65-Chars-TXT = "skip2"
  3536 GC0712                      MOVE SPACES TO WS-Src-Detail-Line-TXT
  3537 GC0712                      PERFORM 530-Generate-Source-Line 2 TIMES
  3538 GC0712                      EXIT SECTION
  3539 GC0712                  WHEN WS-Temp-65-Chars-TXT = "skip3"
  3540 GC0712                      MOVE SPACES TO WS-Src-Detail-Line-TXT
  3541 GC0712                      PERFORM 530-Generate-Source-Line 3 TIMES
  3542 GC0712                      EXIT SECTION
  3543 GC0712              END-EVALUATE
  3544                     PERFORM 530-Generate-Source-Line
  3545              END-IF
  3546          END-IF
  3547              .
```

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

```
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
```

```
================================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL                      Page: 86
```

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

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

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

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

```
GNUCOBOL 3.0 24DEC2017  Cross-Reference Listing                          2017/12/24
                                            /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
PROGRAM-ID       Identifier/Register/Function   Defn   Where Defined    References       Page: 90
===============  ===============================  ======  ===============  =========================
GCic             000-File-Error                   657 PROCEDURE
GCic             000-Main                         678 PROCEDURE
GCic             100-Initialization               702 PROCEDURE              679
GCic             200-Let-User-Set-Switches        816 PROCEDURE              682
GCic             210-Run-Compiler                 907 PROCEDURE              683
GCic             220-Make-Listing                1043 PROCEDURE              687
GCic             230-Run-Program                 1074 PROCEDURE              691
GCic             240-Find-LINKAGE-SECTION        1176 PROCEDURE              750
GCic             250-Autoload-Listing            1215 PROCEDURE              693     1034     1068
GCic             900-Terminate                   1261 PROCEDURE              695      744      887
                                                                           1035     1169
GCic             COB-COLOR-BLACK                  181 [screenio       ]     442      447      537
                                                                            547      557      562
                                                                            572      579      594
                                                                            609      625      632
                                                                            639
GCic             COB-COLOR-BLUE                   181 [screenio       ]     525
GCic             COB-COLOR-CYAN                   181 [screenio       ]     538
GCic             COB-COLOR-GREEN                  181 [screenio       ]     448      563      610
                                                                            626
GCic             COB-COLOR-MAGENTA                181 [screenio       ]
GCic             COB-COLOR-RED                    181 [screenio       ]     531      595
GCic             COB-COLOR-WHITE                  181 [screenio       ]     443      526      532
                                                                            548      558      573
                                                                            580      633      640
GCic             COB-COLOR-YELLOW                 181 [screenio       ]
GCic             COB-SCR-BACK-TAB                 181 [screenio       ]
GCic             COB-SCR-BACKSPACE                181 [screenio       ]
GCic             COB-SCR-DELETE                   181 [screenio       ]
GCic             COB-SCR-ESC                      181 [screenio       ]     886
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                                                                     3463    3476
LISTING         F-Expanded-Src-REC              1426 FILE            2502*   2556    2580
                                                                     2582    2612    2616
                                                                     2625    2629    2638
                                                                     2642    2650    2668
                                                                     2753*   2758    3519
                                                                     3521
LISTING         F-Expanded-Src2-REC             1429 FILE
LISTING         F-Listing-135-REC               1435 FILE            3351*   3353*   3355*
                                                                     3356    3358*   3359
                                                                     3362*   3364*   3365
                                                                     3366*   3367*   3368
                                                                     3369    3370    3371
                                                                     3399    3411    3413*
                                                                     3414    3416*   3418*
                                                                     3420    3422    3423
                                                                     3567    3569    3571*
                                                                     3572    3574*   3576*
                                                                     3577    3578    3608*
                                                                     3610*   3612*   3613
                                                                     3615*   3616    3618*
                                                                     3620*   3621    3623*
                                                                     3624    3650*   3655*
                                                                     3656    3659*   3660
LISTING         F-Listing-96-REC                1434 FILE            3374*   3376*   3378*
                                                                     3379    3381*   3382
                                                                     3385*   3387*   3388
                                                                     3389*   3390*   3391
                                                                     3392    3393    3394
                                                                     3402    3426    3428*
                                                                     3429    3431*   3433*
                                                                     3435    3437    3438
```

```
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```

```
GNUCOBOL 3.0 24DEC2017   Cross-Reference Listing                        2017/12/24
                                             /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
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===============  ==============================  ======  ===============  ========================
                                                                         3584    3586    3587
                                                                         3589    3591*   3592
                                                                         3594*   3596*   3597
                                                                         3598    3627*   3629*
                                                                         3631*   3632    3634*
                                                                         3635    3637*   3639*
                                                                         3640    3642*   3643
                                                                         3651    3666    3671
                                                                         3675    3680    3684
                                                                         3688
LISTING          F-Listing-FILE                  1433 FILE              1418    2412    2420
LISTING          F-Listing-REC                   1436 FILE
LISTING          F-Original-Src-FILE             1438 FILE              1420    3444    3462
                                                                         3486
LISTING          F-Original-Src-REC              1439 FILE              3490
LISTING          F-OS-1-128-TXT                  1440 FILE
LISTING          F-OS-129-256-TXT                1445 FILE
LISTING          F-OS-7-CHR                      1442 FILE              3495
LISTING          F-OS-8-72-TXT                   1443 FILE              3491    3523
LISTING          F-Sort-Work-FILE                1447 FILE              1422    2414    3270
LISTING          F-Sort-Work-REC                 1448 FILE              2523*   2525    2560*
                                                                         2562    3040    3043*
                                                                         3046    3088*   3091
                                                                         3096*   3099    3120
                                                                         3122*   3125    3208*
                                                                         3215    3220    3225
                                                                         3229*   3239*   3249
                                                                         3253*
LISTING          F-SW-Def-Line-NUM               1453 FILE              3213*   3296    3304
                                                                         3308    3320    3321
LISTING          F-SW-Prog-ID-TXT                1449 FILE              2415    3209*   3230*
                                                                         3240*   3254*   3281
                                                                         3287    3292    3301
                                                                         3313    3317
LISTING          F-SW-Ref-Flag-CHR               1456 FILE              3045*   3090*   3098*
                                                                         3124*   3235*   3259*
                                                                         3332
LISTING          F-SW-Ref-Line-NUM               1455 FILE              2417    3214*   3234*
                                                                         3244*   3258*   3330
LISTING          F-SW-Reference-TXT              1454 FILE              3324
LISTING          F-SW-Section-TXT                1452 FILE              3212*   3233*   3243*
                                                                         3257*   3303    3319
LISTING          F-SW-Token-TXT                  1451 FILE              3211*   3232*   3242*
                                                                         3256*   3318
LISTING          F-SW-Token-Uc-TXT               1450 FILE              2416    3210*   3231*
                                                                         3241*   3255*   3282
                                                                         3293    3295    3307
LISTING          L-Listing-CD                    2402 LINKAGE           2409    2449    2486
                                                                         3349    3398    3410
                                                                         3551    3565    3606
                                                                         3647
LISTING          L-Listing-Fn-TXT                2392 LINKAGE           1418    2404
LISTING          L-LPP-NUM                       2398 LINKAGE           2407    2487
```

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```

```
GNUCOBOL 3.0 24DEC2017  Cross-Reference Listing                           2017/12/24
                                            /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
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LISTING         L-LPP-Port-NUM                  2400 LINKAGE           2408    2489
LISTING         L-OS-Type-CD                    2396 LINKAGE           2406    2432
LISTING         L-Src-Fn-TXT                    2394 LINKAGE           1420    2405    2437
                                                                       2437*   2438    2439
                                                                       2443    2446    2459
                                                                       2461    2463    2468
LISTING         RETURN-CODE                          PROCEDURE         2479
LISTING         WS-CD-In-DATA-DIV-BOOL          1473 WORKING-STORAGE   2533
LISTING         WS-CD-In-ENV-DIV-BOOL           1472 WORKING-STORAGE   2531
LISTING         WS-CD-In-IDENT-DIV-BOOL         1471 WORKING-STORAGE   2529
LISTING         WS-CD-In-PROC-DIV-BOOL          1474 WORKING-STORAGE   2535
LISTING         WS-Copyright-TXT                1459 WORKING-STORAGE   2430*   2435*   3415
                                                                       3430    3573    3593
LISTING         WS-CPI-13-15-TXT                1480 WORKING-STORAGE   2824*
LISTING         WS-CPI-16-CHR                   1481 WORKING-STORAGE   2823
LISTING         WS-CS-1-CHR                     1484 WORKING-STORAGE   2746*
LISTING         WS-CS-11-14-TXT                 1487 WORKING-STORAGE   2748    2749*
LISTING         WS-CS-15-CHR                    1488 WORKING-STORAGE   2751*
LISTING         WS-CS-2-14-TXT                  1485 WORKING-STORAGE   2747*
LISTING         WS-Curr-Char-Is-Punct-BOOL      1462 WORKING-STORAGE   2591    2599    2604
LISTING         WS-Curr-Char-Is-Quote-BOOL      1466 WORKING-STORAGE   2610
LISTING         WS-Curr-Char-Is-X-BOOL          1467 WORKING-STORAGE   2623
LISTING         WS-Curr-Char-Is-Z-BOOL          1468 WORKING-STORAGE   2636
LISTING         WS-Curr-CHR                     1461 WORKING-STORAGE   2581*   2584    2586
                                                                       2592    2600    2606
                                                                       2613
LISTING         WS-Curr-Division-TXT            1470 WORKING-STORAGE   2506*   2542    2593
                                                                       2601    2701    2817*
                                                                       2836*   2862*   2918*
                                                                       2923*
LISTING         WS-Curr-Line-NUM                1476 WORKING-STORAGE   2505*   2565*   2724*
                                                                       2764*   3213    3234
                                                                       3244    3258    3485*
LISTING         WS-Curr-Prog-ID-TXT             1478 WORKING-STORAGE   2495*   2822*   3209
                                                                       3230    3240    3254
LISTING         WS-Curr-Section-TXT             1483 WORKING-STORAGE   2727*   2732    2841*
                                                                       2867*   2913    2914*
                                                                       3212    3233    3243
                                                                       3257
LISTING         WS-Curr-Verb-TXT                1490 WORKING-STORAGE   2496*   2520*   2544*
                                                                       2928    2937
LISTING         WS-Delim-TXT                    1492 WORKING-STORAGE   2653*   2655    2673*
                                                                       2675    2678
LISTING         WS-Dummy-TXT                    1494 WORKING-STORAGE   2471*   2716*   2745*
                                                                       2778*   2783*   2784
                                                                       3471*
LISTING         WS-Expanded-Src-Fn-TXT          1496 WORKING-STORAGE   1416    2476*   2477C
LISTING         WS-Filename-TXT                 1498 WORKING-STORAGE   2470*   2473    2744*
                                                                       2747
LISTING         WS-Flags-TXT                    1500 WORKING-STORAGE
LISTING         WS-Formatted-DT                 1503 WORKING-STORAGE   2494*   3354    3377
                                                                       3611    3630
LISTING         WS-GI-Prog-ID-TXT               1506 WORKING-STORAGE   3281    3287    3292*
```

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

6. STREAMIO

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

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

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

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

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

First, here is the STREAMIOcb.cpy copybook:

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

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

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

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

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

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```

```
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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```

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

```
GNU COBOL 2.1 23NOV2013 Source Listing                                      2014/03/27
                                 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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```

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

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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: 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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```

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


====== ================================================================================
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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: 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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```
GNU COBOL 2.1 23NOV2013 Source Listing                                    2014/03/27
                                C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
Line    Statement                                                           Page: 11
======  ===================================================================================
   467            ACCEPT WS-Env-Temp-TXT FROM ENVIRONMENT "TEMP"
   468            EVALUATE TRUE
   469                WHEN WS-Env-Temp-TXT (1:1) = "/"
   470                    MOVE "/"    TO WS-Slash-CHR
   471                WHEN WS-Env-Temp-TXT (2:1) = ":"
   472                    MOVE "\"    TO WS-Slash-CHR
   473                WHEN OTHER
   474                    MOVE "/tmp" TO WS-Env-Temp-TXT
   475                    MOVE "/"    TO WS-Slash-CHR
   476            END-EVALUATE
   477            .
   478        099-ERROR-Return SECTION.
   479            IF L-SCB-Error-Routine-NUM NOT = 0
   480                CALL "CBL_EXIT_PROC" USING 0, L-SCB-Error-Routine-PTR
   481                STOP RUN
   482            END-IF
   483            GOBACK
   484            .
   485        100-OPEN SECTION.
   486            IF  (L-SCB-Mode-Input-BOOL OR L-SCB-Mode-Both-BOOL)
   487            AND (L-SCB-Filename-TXT = SPACES OR LOW-VALUES)
   488                MOVE 11 TO L-SCB-Return-CD
   489                PERFORM 099-ERROR-Return
   490            END-IF
   491            EVALUATE TRUE
   492                WHEN L-SCB-Filename-TXT = SPACES OR LOW-VALUES
   493                    PERFORM 060-Identify-TEMP
   494                    MOVE SPACES TO L-SCB-Filename-TXT
   495                    COMPUTE
   496                        WS-8-Digit-NUM =
   497                        RANDOM(SECONDS-PAST-MIDNIGHT) * 100000000
   498                    END-COMPUTE
   499                    STRING
   500                        TRIM(WS-Env-Temp-TXT,TRAILING)
   501                        WS-Slash-CHR
   502                        "STREAMIO-"
   503                        WS-8-Digit-NUM
   504                        ".dat"
   505                        DELIMITED BY SIZE
   506                        INTO L-SCB-Filename-TXT
   507                WHEN L-SCB-Filename-TXT(1:1) = "."
   508                    PERFORM 060-Identify-TEMP
   509                    IF L-SCB-Filename-TXT(2:1) = SPACE
   510                        MOVE SPACES TO WS-256-Byte-TXT
   511                    ELSE
   512                        MOVE L-SCB-Filename-TXT TO WS-256-Byte-TXT
   513                    END-IF
   514                    MOVE SPACES TO L-SCB-Filename-TXT
   515                    COMPUTE WS-8-Digit-NUM =

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```
GNU COBOL 2.1 23NOV2013 Source Listing                                     2014/03/27
                           C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
Line    Statement                                                            Page: 12
====== ===============================================================================
   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

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```
GNU COBOL 2.1 23NOV2013 Source Listing                                    2014/03/27
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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

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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: 14
====== ===================================================================================
   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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```
GNU COBOL 2.1 23NOV2013 Cross-Reference Listing                      2014/03/27
                              C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
PROGRAM-ID      Identifier/Register/Function   Defn   Where Defined   References     Page: 15
==============  ==============================  =====  ==============  ========================
STREAMIO        000-Main                        383 PROCEDURE
STREAMIO        020-Validate-Handle-Zero        432 PROCEDURE           392
STREAMIO        030-Validate-Handle-NonZero     438 PROCEDURE           387    395    398
                                                                        401    406    411
STREAMIO        040-Check-WRITE-SCB-Return-CD    444 PROCEDURE           424    570
STREAMIO        050-Check-READ-SCB-Return-CD     455 PROCEDURE           582    594
STREAMIO        060-Identify-TEMP                466 PROCEDURE           493    508
STREAMIO        099-ERROR-Return                 478 PROCEDURE           417    428    435
                                                                        441    447    451
                                                                        458    489    535
                                                                        544    548    557
                                                                        614
STREAMIO        100-OPEN                         485 PROCEDURE           393
STREAMIO        200-CLOSE                        553 PROCEDURE           388
STREAMIO        300-WRITE                        562 PROCEDURE           402    407    412
STREAMIO        400-READ                         573 PROCEDURE           396
STREAMIO        500-READ-Delim                   585 PROCEDURE           399
STREAMIO        L-Arg2-TXT                       380 LINKAGE             382    569C   576*
                                                                        581C   588*   593C
                                                                        599    600*   640
                                                                        652*   655*
STREAMIO        L-SCB-DELIM-Unix-BOOL            379 [STREAMIOcb    ]    405
STREAMIO        L-SCB-DELIM-Windows-BOOL         379 [STREAMIOcb    ]    410
STREAMIO        L-SCB-Delimiter-Mode-CD          379 [STREAMIOcb    ]
STREAMIO        L-SCB-Error-Routine-NUM          379 [STREAMIOcb    ]    479
STREAMIO        L-SCB-Error-Routine-PTR          379 [STREAMIOcb    ]    379    480C
STREAMIO        L-SCB-Filename-TXT               379 [STREAMIOcb    ]    390C   487    492
                                                                        494*   506*   507
                                                                        509    512    514*
                                                                        524*   537C
STREAMIO        L-SCB-Func-CLOSE-BOOL            379 [STREAMIOcb    ]    386
STREAMIO        L-SCB-Func-DELETE-BOOL           379 [STREAMIOcb    ]    389
STREAMIO        L-SCB-Func-OPEN-BOOL             379 [STREAMIOcb    ]    391
STREAMIO        L-SCB-Func-READ-BOOL             379 [STREAMIOcb    ]    394
STREAMIO        L-SCB-Func-READ-Delim-BOOL       379 [STREAMIOcb    ]    397
STREAMIO        L-SCB-Func-WRITE-BOOL            379 [STREAMIOcb    ]    400
STREAMIO        L-SCB-Func-WRITE-Delim-BOOL      379 [STREAMIOcb    ]    403
STREAMIO        L-SCB-Function-CD                379 [STREAMIOcb    ]
STREAMIO        L-SCB-Handle-NUM                 379 [STREAMIOcb    ]    419C   433    439
                                                                        541C   554C   560*
                                                                        565C   577C   589C
                                                                        607C
STREAMIO        L-SCB-MODE-Both-BOOL             379 [STREAMIOcb    ]    486    531
STREAMIO        L-SCB-Mode-CD                    379 [STREAMIOcb    ]
STREAMIO        L-SCB-MODE-Input-BOOL            379 [STREAMIOcb    ]    486    527
STREAMIO        L-SCB-MODE-Output-BOOL           379 [STREAMIOcb    ]    529
STREAMIO        L-SCB-Offset-NUM                 379 [STREAMIOcb    ]    420C   425*   551*
                                                                        566C   571*   578C
                                                                        583*   590C   602*

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PROGRAM-ID       Identifier/Register/Function   Defn   Where Defined   References       Page: 16
===============  ==============================  ======  ===============  ========================
                                                                         608C    623*    629*
                                                                         638*
STREAMIO         L-SCB-Return-CD                 379 [STREAMIOcb     ]    384*    416*    427*
                                                                         434*    440*    446*
                                                                         450*    453*    457*
                                                                         461*    464*    488*
                                                                         534*    543*    547*
                                                                         550*    556*    559*
                                                                         603*    613*
STREAMIO         L-StreamIO-Control-Block-TXT    377 LINKAGE           381
STREAMIO         RETURN-CODE                         PROCEDURE         445     449     456
                                                                         460     542     546
                                                                         555     564     575
                                                                         587     612     616
STREAMIO         WS-256-Byte-TXT                 375 WORKING-STORAGE   510*    512*    522
STREAMIO         WS-8-Digit-NUM                  374 WORKING-STORAGE   496*    503     515*
                                                                         521
STREAMIO         WS-Access-Mode-CD               367 WORKING-STORAGE   528*    530*    532*
                                                                         538C
STREAMIO         WS-Arg-Length-NUM               368 WORKING-STORAGE   408*    413*    421C
                                                                         425     564*    567C
                                                                         571     575*    576
                                                                         579C    583     587*
                                                                         588     591C    596
                                                                         599     600     602
                                                                         604*    609C    635
                                                                         641*    642     646*
                                                                         647     652     655
STREAMIO         WS-Buffer-TXT                   369 WORKING-STORAGE   606*    611C
STREAMIO         WS-Delim-Buffer-TXT             370 WORKING-STORAGE   409*    414*    423C
STREAMIO         WS-Env-Temp-TXT                 371 WORKING-STORAGE   467*    469     471
                                                                         474*    500     518
STREAMIO         WS-Slash-CHR                    372 WORKING-STORAGE   470*    472*    475*
                                                                         501     519
STREAMIO         WS-Tally-NUM                    373 WORKING-STORAGE   595*    597*    598
                                                                         619*    621*    622
                                                                         625*    627*    629
                                                                         634*    636*    638
                                                                         639     640     643
                                                                         648     649*    652



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