GnuCOBOL Sample Programs

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This manual documents GnuCOBOL 3.1 Dev-0, Dec2019 build.

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1. FileStat-Msgs

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

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

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

Here's the FileStat-Msgs.cpy copybook:

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

2. COBDUMP

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

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

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

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

- Coding a GnuCOBOL subroutine

- Using "USAGE POINTER" data items

- Using the "ANY LENGTH" data item attribute

- Coding for an "OPTIONAL" subprogram argument

- Using the "NUMBER-OF-CALL-PARAMETERS" special register

- Using the "C$PRINTABLE" built-in system subroutine

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

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

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

==

====== ==
```
    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)
```
====== ==

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

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

```
================================================================================================
GCic for OSX Copyright (C) 2009-2014, Gary L. Cutler, GPL                        Page: 5
```

3. Colors

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

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

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

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

```
ACS Cobol Xref v2.02.02        Dictionary File for COLORS    07/12/2019  16:57:00:16
    1            >>SOURCE FREE
    2    IDENTIFICATION DIVISION.
    3    PROGRAM-ID. colors.
    4    DATA DIVISION.
    5    WORKING-STORAGE SECTION.
    6    SCREEN SECTION.
    7    01 S-COLORTST-SCR BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 BLANK SCREEN.
    8    05 LINE 01.
    9    10 COL 1 VALUE ' LOWLIGHT  -------- HIGHLIGHT  LOWLIGHT  -------- HIGHLIGHT'.
   10    05 LINE + 1.
   11    10 COL 1 VALUE ' -------- --------  --------  --------  --------  --------'.
   12    05 LINE + 1.
   13    10 COL 1 VALUE ' -------- --------  --------   REVERSE   REVERSE   REVERSE'.
   14    05 LINE + 1.
   15    10 COL 1 VALUE ' 01234567  01234567  01234567  01234567  01234567  01234567'.
   16    05 LINE + 1.
   17    10 COL 1 VALUE '0         0         0         0         0         0       '.
   18    05 LINE + 1.
   19    10 COL 1 VALUE '1         1         1         1         1         1       '.
   20    05 LINE + 1.
   21    10 COL 1 VALUE '2         2         2         2         2         2       '.
   22    05 LINE + 1.
   23    10 COL 1 VALUE '3    1    3    2    3    3    3    4    3    5    3    6   '.
   24    05 LINE + 1.
   25    10 COL 1 VALUE '4         4         4         4         4         4       '.
   26    05 LINE + 1.
   27    10 COL 1 VALUE '5         5         5         5         5         5       '.
   28    05 LINE + 1.
   29    10 COL 1 VALUE '6         6         6         6         6         6       '.
   30    05 LINE + 1.
   31    10 COL 1 VALUE '7         7         7         7         7         7       '.
   32    05 LINE + 1.
   33    10 COL 1 VALUE ' LOWLIGHT  -------- HIGHLIGHT  LOWLIGHT  -------- HIGHLIGHT'.
   34    05 LINE + 1.
   35    10 COL 1 VALUE '    BLINK     BLINK     BLINK     BLINK     BLINK     BLINK'.
   36    05 LINE + 1.
   37    10 COL 1 VALUE ' -------- --------  --------   REVERSE   REVERSE   REVERSE'.
   38    05 LINE + 1.
   39    10 COL 1 VALUE ' 01234567  01234567  01234567  01234567  01234567  01234567'.
   40    05 LINE + 1.
   41    10 COL 1 VALUE '0         0         0         0         0         0       '.
   42    05 LINE + 1.
   43    10 COL 1 VALUE '1         1         1         1         1         1       '.
   44    05 LINE + 1.
   45    10 COL 1 VALUE '2         2         2         2         2         2       '.
   46    05 LINE + 1.
   47    10 COL 1 VALUE '3    7    3    8    3    9    3   10    3   11    3   12   '.
   48    05 LINE + 1.
   49    10 COL 1 VALUE '4         4         4         4         4         4       '.
   50    05 LINE + 1.
   51    10 COL 1 VALUE '5         5         5         5         5         5       '.
   52    05 LINE + 1.
   53    10 COL 1 VALUE '6         6         6         6         6         6       '.
   54    05 LINE + 1.
```

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

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

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

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

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    217    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    218    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    219    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    220    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    221    05 LINE + 1.
    222    10 COL 22  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    223    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    224    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    225    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
    226    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    227    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    228    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    229    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    230    05 LINE + 1.
    231    10 COL 22  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    232    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    233    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    234    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
    235    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    236    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    237    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    238    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    239    05 LINE + 1.
    240    10 COL 22  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    241    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    242    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    243    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
    244    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    245    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    246    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    247    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    248    05 LINE + 1.
    249    10 COL 22  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    250    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    251    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    252    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
    253    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    254    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    255    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    256    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    257    05 LINE + 1.
    258    10 COL 22  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    259    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    260    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    261    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
    262    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    263    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    264    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    265    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    266    05 LINE + 1.
    267    10 COL 22  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    268    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    269    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    270    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
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  271   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
  272   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
  273   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
  274   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
  275   *> #4
  276   05 LINE 05.
  277   10 COL 32  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  278   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  279   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  280   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  281   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  282   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  283   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  284   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  285   05 LINE + 1.
  286   10 COL 32  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  287   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  288   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  289   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  290   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  291   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  292   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  293   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  294   05 LINE + 1.
  295   10 COL 32  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  296   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  297   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  298   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  299   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  300   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  301   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  302   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  303   05 LINE + 1.
  304   10 COL 32  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  305   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  306   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  307   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  308   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  309   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  310   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  311   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  312   05 LINE + 1.
  313   10 COL 32  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  314   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  315   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  316   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  317   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  318   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  319   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  320   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  321   05 LINE + 1.
  322   10 COL 32 BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  323   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  324   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
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  325    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  326    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  327    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  328    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  329    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  330    05 LINE + 1.
  331    10 COL 32  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  332    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  333    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  334    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  335    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  336    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  337    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  338    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  339    05 LINE + 1.
  340    10 COL 32  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  341    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  342    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  343    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  344    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  345    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  346    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  347    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
  348    *> #5
  349    05 LINE 05.
  350    10 COL 42  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
  351    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
  352    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
  353    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
  354    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
  355    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
  356    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
  357    10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
  358    05 LINE + 1.
  359    10 COL 42  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
  360    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
  361    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
  362    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
  363    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
  364    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
  365    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
  366    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
  367    05 LINE + 1.
  368    10 COL 42  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
  369    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
  370    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
  371    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
  372    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
  373    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
  374    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
  375    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
  376    05 LINE + 1.
  377    10 COL 42  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
  378    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
```

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

S-COLORTST-SCR                 000007S  000934
```

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

None
```

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

None
```

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

None
```

4. DAY-FROM-DATE

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

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

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

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

- Coding a GnuCOBOL user-defined function

- Using the `"ANY LENGTH"` data item attribute

- Using the `"RETURNING"` option in a subprogram

- Using the `"DATE-OF-INTEGER"` intrinsic function

- Using the `"C$PARAMSIZE"` built-in system subroutine

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

====== ===
       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

===

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

==

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

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

5. GCic

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

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

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

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

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

- Creating a GnuCOBOL compilation unit that consists of multiple programs
- Using CDF conditional compilation facilities
- Using the `"SCREEN SECTION"` and associated `"ACCEPT"` and `"DISPLAY"` statements
- Using `"DECLARATIVES"` to trap file I/O errors
- Using `"FILE-STATUS"`
- Using the `"REPLACING"` clause on a CDF `"COPY"` statement
- Using the following statements:

    o `"ACCEPT FROM COMMAND-LINE"` statement

    o `"ACCEPT FROM DATE/TIME"` statement

    o `"ACCEPT FROM ENVIRONMENT"` statement

    o `"EXIT PERFORM"` statement

    o `"EXIT SECTION"` statement

    o `"INSPECT"` statement

    o `"PERFORM FOREVER"` statement

    o `"SEARCH ALL"` statement

    o `"SET ENVIRONMENT"` statement

    o `"SORT"` statement

    o `"STRING"` statement

  o `"UNSTRING"` statement

- Using the following built-in subroutines:

    o `"C$JUSTIFY"` built-in system subroutine

    o `"C$SLEEP"` built-in system subroutine

    o `"CBL_CHANGE_DIR"` built-in system subroutine

    o `"CBL_CHECK_FILE_EXIST"` built-in system subroutine

    o `"CBL_DELETE_FILE"` built-in system subroutine

    o `"SYSTEM"` built-in system subroutine

- Using the following intrinsic functions:

    o `"CONCATENATE"` intrinsic function

    o `"LENGTH"` intrinsic function

    o `"LOWER-CASE"` intrinsic function

    o `"NUMVAL"` intrinsic function

    o `"TRIM"` intrinsic function

    o `"UPPER-CASE"` intrinsic function

- Using the `"COB-CRT-STATUS,Special Registers"` special register

- Programmatically producing a report destined for either portrait or landscape printing

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

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

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

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

Chapter 5 - GCic   7 December 2019

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

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

===============================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL       Page: 3
```

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

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

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

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

Line   Statement   Page: 6
====== ===
          78 COB-SCR-F33 VALUE 1033.
          78 COB-SCR-F34 VALUE 1034.
          78 COB-SCR-F35 VALUE 1035.
          78 COB-SCR-F36 VALUE 1036.
          78 COB-SCR-F37 VALUE 1037.
          78 COB-SCR-F38 VALUE 1038.
          78 COB-SCR-F39 VALUE 1039.
          78 COB-SCR-F40 VALUE 1040.
          78 COB-SCR-F41 VALUE 1041.
          78 COB-SCR-F42 VALUE 1042.
          78 COB-SCR-F43 VALUE 1043.
          78 COB-SCR-F44 VALUE 1044.
          78 COB-SCR-F45 VALUE 1045.
          78 COB-SCR-F46 VALUE 1046.
          78 COB-SCR-F47 VALUE 1047.
          78 COB-SCR-F48 VALUE 1048.
          78 COB-SCR-F49 VALUE 1049.
          78 COB-SCR-F50 VALUE 1050.
          78 COB-SCR-F51 VALUE 1051.
          78 COB-SCR-F52 VALUE 1052.
          78 COB-SCR-F53 VALUE 1053.
          78 COB-SCR-F54 VALUE 1054.
          78 COB-SCR-F55 VALUE 1055.
          78 COB-SCR-F56 VALUE 1056.
          78 COB-SCR-F57 VALUE 1057.
          78 COB-SCR-F58 VALUE 1058.
          78 COB-SCR-F59 VALUE 1059.
          78 COB-SCR-F60 VALUE 1060.
          78 COB-SCR-F61 VALUE 1061.
          78 COB-SCR-F62 VALUE 1062.
          78 COB-SCR-F63 VALUE 1063.
          78 COB-SCR-F64 VALUE 1064.
          78 COB-SCR-PAGE-UP VALUE 2001.
          78 Cob-Scr-Page_Up value 2001.
          78 COB-SCR-PAGE-DOWN VALUE 2002.
          78 Cob-Scr-Page_Down value 2002.
          78 COB-SCR-KEY-UP VALUE 2003.
          78 COB-SCR-KEY_UP VALUE 2003.
          78 COB-SCR-KEY-DOWN VALUE 2004.
          78 COB-SCR-KEY_DOWN VALUE 2004.
          78 COB-SCR-ESC VALUE 2005.
          78 COB-SCR-PRINT VALUE 2006.
          78 COB-SCR-TAB VALUE 2007.
          78 COB-SCR-BACK-TAB VALUE 2008.
          78 COB-SCR-KEY-LEFT VALUE 2009.
          78 COB-SCR-KEY-RIGHT VALUE 2010.
          78 COB-SCR-INSERT VALUE 2011.
          78 COB-SCR-DELETE VALUE 2012.
          78 COB-SCR-BACKSPACE VALUE 2013.
          78 COB-SCR-KEY-HOME VALUE 2014.
          78 COB-SCR-KEY-END VALUE 2015.
          78 COB-SCR-NO-FIELD VALUE 8000.
          78 COB-SCR-TIME-OUT VALUE 8001.

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


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

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


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

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

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

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                        /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                          Page: 11
====== =====================================================================================

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

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

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.

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

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

```
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     '.

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

```
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.
```

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

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

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

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GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL              Page: 18
```

```
   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
```

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

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

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

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

====== ===
    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   .

```
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

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

```
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


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

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

==
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====== ===

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

===

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

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

```
 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     .
```

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

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

```
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        *> GCO410 Initial coding                                      **
  1392        *> GCO711 Updates to accommodate the 12MAR2010 version of OC   **
  1393        *> GCO710 Handle duplicate data names (i.e. 'CORRESPONDING' or **
  1394        *>        qualified items) better; ignore 'END PROGRAM' recs   **
  1395        *>        so program name doesn't appear in listing.           **
  1396        *> GCO313 Fix problem where the first procedure name defined   **
  1397        *>        in the PROCEDURE DIVISION lacks a "Defined" line     **
  1398        *>        number.                                             **
  1399        *> GC1213 Updated for 23NOV2013 version of GNU COBOL 2.1; Stop **
  1400        *>        showing functions as if they were identifiers in the **
  1401        *>        xref listing; Flag all CALL argument references with **
  1402        *>        a "C" rather than "*" because they aren't necessari- **
  1403        *>        ly altered; Fixed assorted formatting bugs; DOWN-    **
  1404        *>        WARD COMPATIBLE WITH GNU COBOL 2.0 SYNTAX            **
  1405        *> 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 GCO712    SELECT F-Listing-FILE       ASSIGN TO L-Listing-Fn-TXT
  1419                                        ORGANIZATION IS LINE SEQUENTIAL.
  1420            SELECT F-Original-Src-FILE  ASSIGN TO L-Src-Fn-TXT
```

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

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```

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

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

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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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                                          /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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 1686           05 VALUE ' CONTROL                   ' PIC X(33).
 1687           05 VALUE ' CONTROLS                  ' PIC X(33).
 1688 GC0711    05 VALUE ' CONVERSION                ' PIC X(33).
 1689           05 VALUE 'KCONVERTING                ' PIC X(33).
 1690           05 VALUE ' COPY                      ' PIC X(33).
 1691           05 VALUE ' CORR                      ' PIC X(33).
 1692           05 VALUE ' CORRESPONDING             ' PIC X(33).
 1693 GC1213    05 VALUE 'FCOS                       ' PIC X(33).
 1694           05 VALUE 'KCOUNT                     ' PIC X(33).
 1695           05 VALUE ' CRT                       ' PIC X(33).
 1696           05 VALUE ' CRT-UNDER                 ' PIC X(33).
 1697           05 VALUE 'MCSP                       ' PIC X(33).
 1698           05 VALUE ' CURRENCY                  ' PIC X(33).
 1699 GC1213    05 VALUE 'FCURRENCY-SYMBOL           ' PIC X(33).
 1700 GC1213    05 VALUE 'FCURRENT-DATE              ' PIC X(33).
 1701           05 VALUE ' CURSOR                    ' PIC X(33).
 1702           05 VALUE ' CYCLE                     ' PIC X(33).
 1703           05 VALUE 'KDATA                      ' PIC X(33).
 1704           05 VALUE ' DATA-POINTER              ' PIC X(33).    UNIMPLEMENTED
 1705           05 VALUE ' DATE                      ' PIC X(33).
 1706           05 VALUE ' DATE-COMPILED             ' PIC X(33).    OBSOLETE
 1707           05 VALUE ' DATE-MODIFIED             ' PIC X(33).    OBSOLETE
 1708 GC1213    05 VALUE 'FDATE-OF-INTEGER           ' PIC X(33).
 1709 GC1213    05 VALUE 'FDATE-TO-YYYYMMDD          ' PIC X(33).
 1710           05 VALUE ' DATE-WRITTEN              ' PIC X(33).    OBSOLETE
 1711           05 VALUE ' DAY                       ' PIC X(33).
 1712 GC1213    05 VALUE 'FDAY-OF-INTEGER            ' PIC X(33).
 1713           05 VALUE ' DAY-OF-WEEK               ' PIC X(33).
 1714 GC1213    05 VALUE 'IDAY-TO-YYYYDDD            ' PIC X(33).
 1715           05 VALUE ' DE                        ' PIC X(33).
 1716 GC0712    05 VALUE 'IDEBUG-CONTENTS            ' PIC X(33).
 1717 GC0712    05 VALUE 'IDEBUG-ITEM                ' PIC X(33).
 1718 GC0712    05 VALUE 'IDEBUG-LINE                ' PIC X(33).
 1719 GC0712    05 VALUE 'IDEBUG-NAME                ' PIC X(33).
 1720 GC0712    05 VALUE 'IDEBUG-SUB-1               ' PIC X(33).
 1721 GC0712    05 VALUE 'IDEBUG-SUB-2               ' PIC X(33).
 1722 GC0712    05 VALUE 'IDEBUG-SUB-3               ' PIC X(33).
 1723           05 VALUE ' DEBUGGING                 ' PIC X(33).
 1724           05 VALUE ' DECIMAL-POINT             ' PIC X(33).
 1725           05 VALUE ' DECLARATIVES              ' PIC X(33).
 1726           05 VALUE ' DEFAULT                   ' PIC X(33).
 1727           05 VALUE 'VDELETE                    ' PIC X(33).
 1728           05 VALUE ' DELIMITED                 ' PIC X(33).
 1729           05 VALUE 'KDELIMITER                 ' PIC X(33).
 1730           05 VALUE ' DEPENDING                 ' PIC X(33).
 1731           05 VALUE ' DESCENDING                ' PIC X(33).
 1732           05 VALUE ' DESTINATION               ' PIC X(33).    UNIMPLEMENTED
 1733           05 VALUE ' DETAIL                    ' PIC X(33).
 1734 GC0711    05 VALUE ' DISC                      ' PIC X(33).
 1735           05 VALUE ' DISK                      ' PIC X(33).
 1736           05 VALUE 'VDISPLAY                   ' PIC X(33).
 1737 GC1213    05 VALUE 'FDISPLAY-OF                ' PIC X(33).    UNIMPLEMENTED
 1738           05 VALUE 'VDIVIDE                    ' PIC X(33).
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                                                  /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
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======  ========================================================================================
 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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                                          /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                          Page: 43
====== ==================================================================================
  1792 GC1213      05 VALUE 'FEXCEPTION-FILE              ' PIC X(33).
  1793 GC1213      05 VALUE 'FEXCEPTION-FILE-N            ' PIC X(33).    UNIMPLEMENTED
  1794 GC1213      05 VALUE 'FEXCEPTION-LOCATION          ' PIC X(33).
  1795 GC1213      05 VALUE 'FEXCEPTION-LOCATION-N        ' PIC X(33).    UNIMPLEMENTED
  1796             05 VALUE ' EXCEPTION-OBJECT            ' PIC X(33).    UNIMPLEMENTED
  1797 GC1213      05 VALUE 'FEXCEPTION-STATEMENT         ' PIC X(33).
  1798 GC1213      05 VALUE 'FEXCEPTION-STATUS            ' PIC X(33).
  1799             05 VALUE ' EXCLUSIVE                   ' PIC X(33).
  1800             05 VALUE 'VEXIT                        ' PIC X(33).
  1801 GC1213      05 VALUE 'FEXP                         ' PIC X(33).
  1802 GC1213      05 VALUE 'FEXP10                       ' PIC X(33).
  1803             05 VALUE ' EXPANDS                     ' PIC X(33).    UNIMPLEMENTED
  1804             05 VALUE ' EXTEND                      ' PIC X(33).
  1805             05 VALUE ' EXTERNAL                    ' PIC X(33).
  1806 GC1213      05 VALUE 'FFACTORIAL                   ' PIC X(33).
  1807             05 VALUE ' FACTORY                     ' PIC X(33).    UNIMPLEMENTED
  1808             05 VALUE ' FALSE                       ' PIC X(33).
  1809             05 VALUE 'KFD                          ' PIC X(33).
  1810             05 VALUE 'KFILE                        ' PIC X(33).
  1811             05 VALUE ' FILE-CONTROL                ' PIC X(33).
  1812             05 VALUE ' FILE-ID                     ' PIC X(33).
  1813 GC1113      05 VALUE ' FILLER                      ' PIC X(33).
  1814             05 VALUE ' FINAL                       ' PIC X(33).
  1815             05 VALUE ' FIRST                       ' PIC X(33).
  1816 GC0712      05 VALUE ' FLOAT-BINARY-128            ' PIC X(33).    UNIMPLEMENTED
  1817 GC0712      05 VALUE ' FLOAT-BINARY-32             ' PIC X(33).    UNIMPLEMENTED
  1818 GC0712      05 VALUE ' FLOAT-BINARY-64             ' PIC X(33).    UNIMPLEMENTED
  1819             05 VALUE ' FLOAT-DECIMAL-16            ' PIC X(33).
  1820             05 VALUE ' FLOAT-DECIMAL-34            ' PIC X(33).
  1821             05 VALUE ' FLOAT-EXTENDED              ' PIC X(33).    UNIMPLEMENTED
  1822 GC0712      05 VALUE ' FLOAT-INFINITY              ' PIC X(33).    UNIMPLEMENTED
  1823             05 VALUE ' FLOAT-LONG                  ' PIC X(33).
  1824 GC0712      05 VALUE ' FLOAT-NOT-A-NUMBER          ' PIC X(33).    UNIMPLEMENTED
  1825             05 VALUE ' FLOAT-SHORT                 ' PIC X(33).
  1826             05 VALUE ' FOOTING                     ' PIC X(33).
  1827             05 VALUE ' FOR                         ' PIC X(33).
  1828             05 VALUE ' FOREGROUND-COLOR            ' PIC X(33).
  1829             05 VALUE ' FOREGROUND-COLOUR           ' PIC X(33).
  1830 GC0711      05 VALUE ' FOREVER                     ' PIC X(33).
  1831             05 VALUE ' FORMAT                      ' PIC X(33).    UNIMPLEMENTED
  1832 GC1213      05 VALUE 'FFORMATTED-CURRENT-DATE       ' PIC X(33).    UNIMPLEMENTED
  1833 GC1213      05 VALUE 'FFORMATTED-DATE              ' PIC X(33).    UNIMPLEMENTED
  1834 GC1213      05 VALUE 'FFORMATTED-DATETIME          ' PIC X(33).    UNIMPLEMENTED
  1835 GC1213      05 VALUE 'FFORMATTED-TIME              ' PIC X(33).    UNIMPLEMENTED
  1836             05 VALUE 'MFORMFEED                    ' PIC X(33).
  1837 GC1213      05 VALUE 'FFRACTION-PART               ' PIC X(33).
  1838             05 VALUE 'VFREE                        ' PIC X(33).
  1839             05 VALUE ' FROM                        ' PIC X(33).
  1840             05 VALUE ' FULL                        ' PIC X(33).
  1841             05 VALUE ' FUNCTION                    ' PIC X(33).
  1842 GC0712      05 VALUE 'KFUNCTION-ID                 ' PIC X(33).
  1843             05 VALUE ' FUNCTION-POINTER            ' PIC X(33).    UNIMPLEMENTED
  1844             05 VALUE 'VGENERATE                    ' PIC X(33).
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 1845            05 VALUE ' GET              ' PIC X(33).     UNIMPLEMENTED
 1846            05 VALUE 'KGIVING           ' PIC X(33).
 1847            05 VALUE ' GLOBAL           ' PIC X(33).
 1848            05 VALUE 'VGO               ' PIC X(33).
 1849            05 VALUE 'VGOBACK           ' PIC X(33).
 1850            05 VALUE ' GREATER          ' PIC X(33).
 1851            05 VALUE ' GROUP            ' PIC X(33).
 1852            05 VALUE ' GROUP-USAGE      ' PIC X(33).     UNIMPLEMENTED
 1853            05 VALUE ' HEADING          ' PIC X(33).
 1854            05 VALUE ' HIGH-VALUE       ' PIC X(33).
 1855            05 VALUE ' HIGH-VALUES      ' PIC X(33).
 1856 GC1213     05 VALUE 'FHIGHEST-ALGEBRAIC ' PIC X(33).
 1857            05 VALUE ' HIGHLIGHT        ' PIC X(33).
 1858            05 VALUE ' I-O              ' PIC X(33).
 1859            05 VALUE ' I-O-CONTROL      ' PIC X(33).
 1860            05 VALUE 'KID               ' PIC X(33).
 1861            05 VALUE 'KIDENTIFICATION   ' PIC X(33).
 1862            05 VALUE 'VIF               ' PIC X(33).
 1863            05 VALUE ' IGNORE           ' PIC X(33).
 1864            05 VALUE ' IGNORING         ' PIC X(33).
 1865            05 VALUE ' IMPLEMENTS       ' PIC X(33).     UNIMPLEMENTED
 1866            05 VALUE ' IN               ' PIC X(33).
 1867            05 VALUE ' INDEX            ' PIC X(33).
 1868            05 VALUE 'KINDEXED          ' PIC X(33).
 1869            05 VALUE ' INDICATE         ' PIC X(33).
 1870            05 VALUE ' INDIRECT         ' PIC X(33).     UNIMPLEMENTED
 1871            05 VALUE ' INHERITS         ' PIC X(33).     UNIMPLEMENTED
 1872            05 VALUE ' INITIAL          ' PIC X(33).
 1873            05 VALUE 'VINITIALISE       ' PIC X(33).
 1874            05 VALUE ' INITIALISED      ' PIC X(33).
 1875            05 VALUE 'VINITIALIZE       ' PIC X(33).
 1876            05 VALUE ' INITIALIZED      ' PIC X(33).
 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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 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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 2164            05 VALUE 'VSTRING                        ' PIC X(33).
 2165            05 VALUE ' STRONG                        ' PIC X(33).    UNIMPLEMENTED
 2166            05 VALUE ' SUB-QUEUE-1                   ' PIC X(33).    OBSOLETE
 2167            05 VALUE ' SUB-QUEUE-2                   ' PIC X(33).    OBSOLETE
 2168            05 VALUE ' SUB-QUEUE-3                   ' PIC X(33).    OBSOLETE
 2169 GC1213     05 VALUE 'FSUBSTITUTE                    ' PIC X(33).
 2170 GC1213     05 VALUE 'FSUBSTITUTE-CASE               ' PIC X(33).
 2171            05 VALUE 'VSUBTRACT                      ' PIC X(33).
 2172 GC1213     05 VALUE 'FSUM                           ' PIC X(33).
 2173            05 VALUE ' SUPER                         ' PIC X(33).    UNIMPLEMENTED
 2174            05 VALUE 'VSUPPRESS                      ' PIC X(33).
 2175            05 VALUE 'MSW0                           ' PIC X(33).
 2176            05 VALUE 'MSW1                           ' PIC X(33).
 2177            05 VALUE 'MSW10                          ' PIC X(33).
 2178            05 VALUE 'MSW11                          ' PIC X(33).
 2179            05 VALUE 'MSW12                          ' PIC X(33).
 2180            05 VALUE 'MSW13                          ' PIC X(33).
 2181            05 VALUE 'MSW14                          ' PIC X(33).
 2182            05 VALUE 'MSW15                          ' PIC X(33).
 2183            05 VALUE 'MSW2                           ' PIC X(33).
 2184            05 VALUE 'MSW3                           ' PIC X(33).
 2185            05 VALUE 'MSW4                           ' PIC X(33).
 2186            05 VALUE 'MSW5                           ' PIC X(33).
 2187            05 VALUE 'MSW6                           ' PIC X(33).
 2188            05 VALUE 'MSW7                           ' PIC X(33).
 2189            05 VALUE 'MSW8                           ' PIC X(33).
 2190            05 VALUE 'MSW9                           ' PIC X(33).
 2191            05 VALUE 'MSWITCH-0                      ' PIC X(33).
 2192            05 VALUE 'MSWITCH-1                      ' PIC X(33).
 2193            05 VALUE 'MSWITCH-10                     ' PIC X(33).
 2194            05 VALUE 'MSWITCH-11                     ' PIC X(33).
 2195            05 VALUE 'MSWITCH-12                     ' PIC X(33).
 2196            05 VALUE 'MSWITCH-13                     ' PIC X(33).
 2197            05 VALUE 'MSWITCH-14                     ' PIC X(33).
 2198            05 VALUE 'MSWITCH-15                     ' PIC X(33).
 2199            05 VALUE 'MSWITCH-2                      ' PIC X(33).
 2200            05 VALUE 'MSWITCH-3                      ' PIC X(33).
 2201            05 VALUE 'MSWITCH-4                      ' PIC X(33).
 2202            05 VALUE 'MSWITCH-5                      ' PIC X(33).
 2203            05 VALUE 'MSWITCH-6                      ' PIC X(33).
 2204            05 VALUE 'MSWITCH-7                      ' PIC X(33).
 2205            05 VALUE 'MSWITCH-8                      ' PIC X(33).
 2206            05 VALUE 'MSWITCH-9                      ' PIC X(33).
 2207            05 VALUE ' SYMBOL                        ' PIC X(33).    UNIMPLEMENTED
 2208            05 VALUE ' SYMBOLIC                      ' PIC X(33).
 2209            05 VALUE ' SYNC                          ' PIC X(33).
 2210            05 VALUE ' SYNCHRONISED                  ' PIC X(33).
 2211            05 VALUE ' SYNCHRONIZED                  ' PIC X(33).
 2212            05 VALUE 'MSYSERR                        ' PIC X(33).
 2213            05 VALUE 'MSYSIN                         ' PIC X(33).
 2214            05 VALUE 'MSYSIPT                        ' PIC X(33).
 2215            05 VALUE 'MSYSLIST                       ' PIC X(33).

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

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                  2017/12/24
                                       /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                        Page: 51
======= ========================================================================
 2216           05 VALUE 'MSYSLST                         ' PIC X(33).
 2217           05 VALUE 'MSYSOUT                         ' PIC X(33).
 2218           05 VALUE ' SYSTEM-DEFAULT                 ' PIC X(33).
 2219           05 VALUE ' TABLE                          ' PIC X(33).        UNIMPLEMENTED
 2220           05 VALUE 'KTALLYING                       ' PIC X(33).
 2221 GC1213    05 VALUE 'FTAN                            ' PIC X(33).
 2222           05 VALUE ' TAPE                           ' PIC X(33).
 2223           05 VALUE ' TERMINAL                       ' PIC X(33).        OBSOLETE
 2224           05 VALUE 'VTERMINATE                      ' PIC X(33).
 2225           05 VALUE ' TEST                           ' PIC X(33).
 2226 GC1213    05 VALUE 'FTEST-DATE-YYYYMMDD             ' PIC X(33).
 2227 GC1213    05 VALUE 'FTEST-DAY-YYYYDDD               ' PIC X(33).
 2228 GC1213    05 VALUE 'FTEST-FORMATTED-DATETIME        ' PIC X(33).        UNIMPLEMENTED
 2229 GC1213    05 VALUE 'FTEST-NUMVAL                    ' PIC X(33).
 2230 GC1213    05 VALUE 'FTEST-NUMVAL-C                  ' PIC X(33).
 2231 GC1213    05 VALUE 'FTEST-NUMVAL-F                  ' PIC X(33).
 2232           05 VALUE ' TEXT                           ' PIC X(33).        OBSOLETE
 2233           05 VALUE ' THAN                           ' PIC X(33).
 2234           05 VALUE ' THEN                           ' PIC X(33).
 2235           05 VALUE ' THROUGH                        ' PIC X(33).
 2236           05 VALUE ' THRU                           ' PIC X(33).
 2237           05 VALUE ' TIME                           ' PIC X(33).
 2238 GC0711    05 VALUE ' TIME-OUT                       ' PIC X(33).
 2239 GC0711    05 VALUE ' TIMEOUT                        ' PIC X(33).
 2240           05 VALUE ' TIMES                          ' PIC X(33).
 2241           05 VALUE 'KTO                             ' PIC X(33).
 2242           05 VALUE ' TOP                            ' PIC X(33).
 2243           05 VALUE ' TOWARD-GREATER                 ' PIC X(33).
 2244           05 VALUE ' TOWARD-LESSER                  ' PIC X(33).
 2245           05 VALUE ' TRAILING                       ' PIC X(33).
 2246           05 VALUE ' TRAILING-SIGN                  ' PIC X(33).        UNIMPLEMENTED
 2247           05 VALUE 'VTRANSFORM                      ' PIC X(33).
 2248 GC1213    05 VALUE 'FTRIM                           ' PIC X(33).
 2249           05 VALUE ' TRUE                           ' PIC X(33).
 2250           05 VALUE ' TRUNCATION                     ' PIC X(33).
 2251           05 VALUE ' TYPE                           ' PIC X(33).
 2252           05 VALUE ' TYPEDEF                        ' PIC X(33).        UNIMPLEMENTED
 2253           05 VALUE ' UCS-4                          ' PIC X(33).        UNIMPLEMENTED
 2254           05 VALUE ' UNDERLINE                      ' PIC X(33).
 2255           05 VALUE ' UNIT                           ' PIC X(33).
 2256           05 VALUE ' UNIVERSAL                      ' PIC X(33).        UNIMPLEMENTED
 2257           05 VALUE 'VUNLOCK                         ' PIC X(33).
 2258           05 VALUE ' UNSIGNED                       ' PIC X(33).
 2259           05 VALUE ' UNSIGNED-INT                   ' PIC X(33).
 2260           05 VALUE ' UNSIGNED-LONG                  ' PIC X(33).
 2261           05 VALUE ' UNSIGNED-SHORT                 ' PIC X(33).
 2262           05 VALUE 'VUNSTRING                       ' PIC X(33).
 2263           05 VALUE ' UNTIL                          ' PIC X(33).
 2264           05 VALUE 'KUP                             ' PIC X(33).
 2265           05 VALUE ' UPDATE                         ' PIC X(33).
 2266           05 VALUE ' UPON                           ' PIC X(33).
 2267           05 VALUE ' UPPER                          ' PIC X(33).
 2268 GC1213    05 VALUE 'FUPPER-CASE                     ' PIC X(33).

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


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

```
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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```

```
   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)
```

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

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GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL                    Page: 57
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```
 2500          300-Tokenize-Source SECTION.
 2501              OPEN INPUT F-Expanded-Src-FILE
 2502              MOVE SPACES TO F-Expanded-Src-REC
 2503              MOVE 256 TO WS-Src-SUB
 2504              MOVE 0 TO WS-Usernames-QTY
 2505                         WS-Curr-Line-NUM
 2506              MOVE '?' TO WS-Curr-Division-TXT
 2507 GC0710       MOVE 'N' TO WS-RS-Verb-Has-Been-Found-CHR
 2508              PERFORM FOREVER
 2509                  PERFORM 310-Get-Token
 2510                  IF WS-TT-Token-Is-EOF-BOOL
 2511                      EXIT PERFORM
 2512                  END-IF
 2513                  MOVE UPPER-CASE(WS-Token-Curr-TXT)
 2514                    TO WS-Token-Curr-Uc-TXT
 2515 GC1010          IF WS-TT-Token-Is-Keyword-BOOL
 2516 GC1010          OR WS-TT-Token-Is-Reserved-Wd-BOOL
 2517 GC1010              MOVE WS-Token-Curr-Uc-TXT TO WS-Token-Curr-TXT
 2518 GC1010          END-IF
 2519                  IF WS-TT-Token-Is-Verb-BOOL
 2520                      MOVE WS-Token-Curr-Uc-TXT TO WS-Curr-Verb-TXT
 2521                                               WS-Token-Prev-TXT
 2522                      IF WS-Held-Reference-TXT NOT = SPACES
 2523                          MOVE WS-Held-Reference-TXT TO F-Sort-Work-REC
 2524                          MOVE SPACES         TO WS-Held-Reference-TXT
 2525                          RELEASE F-Sort-Work-REC
 2526                      END-IF
 2527                  END-IF
 2528                  EVALUATE TRUE
 2529                  WHEN WS-CD-In-IDENT-DIV-BOOL
 2530                      PERFORM 320-IDENTIFICATION-DIVISION
 2531                  WHEN WS-CD-In-ENV-DIV-BOOL
 2532                      PERFORM 330-ENVIRONMENT-DIVISION
 2533                  WHEN WS-CD-In-DATA-DIV-BOOL
 2534                      PERFORM 340-DATA-DIVISION
 2535                  WHEN WS-CD-In-PROC-DIV-BOOL
 2536                      PERFORM 350-PROCEDURE-DIVISION
 2537                  END-EVALUATE
 2538                  IF WS-TT-Token-Is-Keyword-BOOL
 2539                      MOVE WS-Token-Curr-Uc-TXT TO WS-Token-Prev-TXT
 2540                  END-IF
 2541                  IF WS-RS-Token-Ended-Sentence-CHR = 'Y'
 2542                  AND WS-Curr-Division-TXT NOT = 'I'
 2543                      MOVE SPACES TO WS-Token-Prev-TXT
 2544                                     WS-Curr-Verb-TXT
 2545                  END-IF
 2546
 2547              END-PERFORM
 2548              CLOSE F-Expanded-Src-FILE
 2549              .
```

==

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

```
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 = '. '
```

===

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

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

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

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

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

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

====== ===

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

==

```
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            .
```

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

```
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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```

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

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

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

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

====== ===

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

==

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                        2017/12/24
                                            /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                               Page: 73
======  ==================================================================================
  3035
  3036        351-DIVIDE SECTION.
  3037            EVALUATE WS-Token-Prev-TXT
  3038            WHEN 'INTO'
  3039                PERFORM 363-Set-Upd
  3040                MOVE F-Sort-Work-REC TO WS-Held-Reference-TXT
  3041            WHEN 'GIVING'
  3042                IF WS-Held-Reference-TXT NOT = SPACES
  3043                    MOVE WS-Held-Reference-TXT To F-Sort-Work-REC
  3044                    MOVE SPACES         To WS-Held-Reference-TXT
  3045                                           F-SW-Ref-Flag-CHR
  3046                    RELEASE F-Sort-Work-REC
  3047                END-IF
  3048                PERFORM 362-Release-Upd
  3049            WHEN 'REMAINDER'
  3050                PERFORM 362-Release-Upd
  3051            WHEN OTHER
  3052                PERFORM 361-Release-Ref
  3053            END-EVALUATE
  3054            .
  3055
  3056        351-FREE SECTION.
  3057            PERFORM 362-Release-Upd
  3058            .
  3059
  3060 GC1213 351-GENERATE SECTION.
  3061 GC1213     PERFORM 362-Release-Upd
  3062 GC1213     .
  3063
  3064        351-INITIALIZE SECTION.
  3065            EVALUATE WS-Token-Prev-TXT
  3066            WHEN 'INITIALIZE'
  3067                PERFORM 362-Release-Upd
  3068            WHEN 'REPLACING'
  3069                PERFORM 361-Release-Ref
  3070            END-EVALUATE
  3071            .
  3072
  3073 GC1213 351-INITIATE SECTION.
  3074 GC1213     PERFORM 362-Release-Upd
  3075 GC1213     .
  3076
  3077        351-INSPECT SECTION.
  3078            EVALUATE WS-Token-Prev-TXT
  3079            WHEN 'INSPECT'
  3080                PERFORM 364-Set-Ref
  3081                MOVE SPACES TO WS-Held-Reference-TXT
  3082                MOVE SPACES TO WS-Token-Prev-TXT
  3083            WHEN 'TALLYING'
  3084                PERFORM 362-Release-Upd
  3085                MOVE SPACES TO WS-Token-Prev-TXT
  3086            WHEN 'REPLACING'
  3087                IF WS-Held-Reference-TXT NOT = SPACES
```

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

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
```
==

```
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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```

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

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

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

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

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

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```

====== ===
```
  3315 GC0710      END-IF
  3316              IF WS-Xref-Detail-Line-TXT = SPACES
  3317                  MOVE F-SW-Prog-ID-TXT TO WS-XDL-Prog-ID-TXT
  3318                  MOVE F-SW-Token-TXT TO WS-XDL-Token-TXT
  3319                  MOVE F-SW-Section-TXT TO WS-XDL-Section-TXT
  3320                  IF F-SW-Def-Line-NUM NOT = SPACES
  3321                      MOVE F-SW-Def-Line-NUM TO WS-XDL-Def-Line-NUM
  3322                  END-IF
  3323              END-IF
  3324              IF F-SW-Reference-TXT > '000000'
  3325                  ADD 1 TO WS-I-SUB
  3326                  IF WS-I-SUB > WS-Xref-Lines-Per-Rec-NUM
  3327                      PERFORM 410-Generate-Report-Line
  3328                      MOVE 1 TO WS-I-SUB
  3329                  END-IF
  3330                  MOVE F-SW-Ref-Line-NUM
  3331                    TO WS-XDL-Ref-Line-NUM (WS-I-SUB)
  3332                  MOVE F-SW-Ref-Flag-CHR
  3333                    TO WS-XDL-Ref-Flag-CHR (WS-I-SUB)
  3334              END-IF
  3335          END-PERFORM
  3336          IF WS-Xref-Detail-Line-TXT NOT = SPACES
  3337              PERFORM 410-Generate-Report-Line
  3338          END-IF
  3339              .
```

==

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

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

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```

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


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```

====== ==

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

==

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

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

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

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

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

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

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```

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

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

==

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

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

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GNUCOBOL 3.0 24DEC2017  Cross-Reference Listing                           2017/12/24
                                              /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
PROGRAM-ID      Identifier/Register/Function  Defn   Where Defined    References     Page: 91
==============  ============================= ======  ==============   ========================
GCic            COB-SCR-F30                     181 [screenio    ]
GCic            COB-SCR-F31                     181 [screenio    ]
GCic            COB-SCR-F32                     181 [screenio    ]
GCic            COB-SCR-F33                     181 [screenio    ]
GCic            COB-SCR-F34                     181 [screenio    ]
GCic            COB-SCR-F35                     181 [screenio    ]
GCic            COB-SCR-F36                     181 [screenio    ]
GCic            COB-SCR-F37                     181 [screenio    ]
GCic            COB-SCR-F38                     181 [screenio    ]
GCic            COB-SCR-F39                     181 [screenio    ]
GCic            COB-SCR-F4                      181 [screenio    ]     851
GCic            COB-SCR-F40                     181 [screenio    ]
GCic            COB-SCR-F41                     181 [screenio    ]
GCic            COB-SCR-F42                     181 [screenio    ]
GCic            COB-SCR-F43                     181 [screenio    ]
GCic            COB-SCR-F44                     181 [screenio    ]
GCic            COB-SCR-F45                     181 [screenio    ]
GCic            COB-SCR-F46                     181 [screenio    ]
GCic            COB-SCR-F47                     181 [screenio    ]
GCic            COB-SCR-F48                     181 [screenio    ]
GCic            COB-SCR-F49                     181 [screenio    ]
GCic            COB-SCR-F5                      181 [screenio    ]     857
GCic            COB-SCR-F50                     181 [screenio    ]
GCic            COB-SCR-F51                     181 [screenio    ]
GCic            COB-SCR-F52                     181 [screenio    ]
GCic            COB-SCR-F53                     181 [screenio    ]
GCic            COB-SCR-F54                     181 [screenio    ]
GCic            COB-SCR-F55                     181 [screenio    ]
GCic            COB-SCR-F56                     181 [screenio    ]
GCic            COB-SCR-F57                     181 [screenio    ]
GCic            COB-SCR-F58                     181 [screenio    ]
GCic            COB-SCR-F59                     181 [screenio    ]
GCic            COB-SCR-F6                      181 [screenio    ]     862
GCic            COB-SCR-F60                     181 [screenio    ]
GCic            COB-SCR-F61                     181 [screenio    ]
GCic            COB-SCR-F62                     181 [screenio    ]
GCic            COB-SCR-F63                     181 [screenio    ]
GCic            COB-SCR-F64                     181 [screenio    ]
GCic            COB-SCR-F7                      181 [screenio    ]     868
GCic            COB-SCR-F8                      181 [screenio    ]     874
GCic            COB-SCR-F9                      181 [screenio    ]     880
GCic            COB-SCR-FATAL                   181 [screenio    ]
GCic            COB-SCR-INSERT                  181 [screenio    ]
GCic            COB-SCR-KEY-DOWN                181 [screenio    ]
GCic            COB-SCR-KEY-END                 181 [screenio    ]
GCic            COB-SCR-KEY-HOME                181 [screenio    ]
GCic            COB-SCR-KEY-LEFT                181 [screenio    ]
GCic            COB-SCR-KEY-RIGHT               181 [screenio    ]
GCic            COB-SCR-KEY-UP                  181 [screenio    ]
GCic            COB-SCR-KEY_DOWN                181 [screenio    ]
GCic            COB-SCR-KEY_UP                  181 [screenio    ]
GCic            COB-SCR-MAX-FIELD               181 [screenio    ]
GCic            COB-SCR-NO-FIELD                181 [screenio    ]

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GNUCOBOL 3.0 24DEC2017  Cross-Reference Listing                          2017/12/24
                                          /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
PROGRAM-ID      Identifier/Register/Function   Defn   Where Defined   References      Page: 92
==============  =============================  ======  ==============  ========================
GCic            COB-SCR-OK                       181 [screenio     ]
GCic            COB-SCR-PAGE-DOWN                181 [screenio     ]
GCic            COB-SCR-PAGE-UP                  181 [screenio     ]
GCic            Cob-Scr-Page_Down                181 [screenio     ]
GCic            Cob-Scr-Page_Up                  181 [screenio     ]
GCic            COB-SCR-PRINT                    181 [screenio     ]
GCic            COB-SCR-TAB                      181 [screenio     ]
GCic            COB-SCR-TIME-OUT                 181 [screenio     ]
GCic            F-Cobc-Output-FILE               173 FILE                164    1011    1029
GCic            F-Cobc-Output-REC                174 FILE               1012   1017*    1018
                                                                        1026*   1027
GCic            F-Source-Code-FILE               176 FILE                167     658    1177
                                                                        1181    1182    1195
                                                                        1196    1203
GCic            F-Source-Code-REC                177 FILE               1186C  1200C
GCic            F1                                   WORKING-STORAGE     209
GCic            F12                                  WORKING-STORAGE     203
GCic            F2                                   WORKING-STORAGE     216
GCic            F3                                   WORKING-STORAGE     212
GCic            F4                                   WORKING-STORAGE     210
GCic            F5                                   WORKING-STORAGE     213     260
GCic            F6                                   WORKING-STORAGE     214
GCic            F7                                   WORKING-STORAGE     217
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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*

=================================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL                    Page: 100
```

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

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```

```
GNUCOBOL 3.0 24DEC2017  Cross-Reference Listing                          2017/12/24
                                           /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
PROGRAM-ID      Identifier/Register/Function   Defn   Where Defined   References     Page: 102
==============  ==============================  ======  ===============  ========================
                                                       3309     3310*
LISTING         WS-RS-In-Copybook-BOOL          2311 WORKING-STORAGE  2730*    3479*
LISTING         WS-RS-In-Main-Module-BOOL       2310 WORKING-STORAGE  2725*    2763     3474*
                                                       3484
LISTING         WS-RS-In-Which-Pgm-CHR          2309 WORKING-STORAGE
LISTING         WS-RS-Last-Token-Ended-Sent-CHR 2312 WORKING-STORAGE  2554*    2700
LISTING         WS-RS-Processing-PICTURE-CHR    2313 WORKING-STORAGE  2649     2663*    2872*
LISTING         WS-RS-Token-Ended-Sentence-CHR  2314 WORKING-STORAGE  2541     2553     2555*
                                                       2588*    2617*    2630*
                                                       2643*    2656*    2676*
LISTING         WS-RS-Verb-Has-Been-Found-CHR   2315 WORKING-STORAGE  2507*    2692*    2814*
LISTING         WS-Runtime-Switches             2307 WORKING-STORAGE
LISTING         WS-RW-IDX                       2303 WORKING-STORAGE  2689     2690
LISTING         WS-RW-Type-CD                   2304 WORKING-STORAGE  2690
LISTING         WS-RW-Word-TXT                  2305 WORKING-STORAGE  2302     2689
LISTING         WS-Saved-Section-TXT            2317 WORKING-STORAGE  2726     2727     2731
                                                       2732*
LISTING         WS-SDL-Line-NUM                 2324 WORKING-STORAGE  3489*
LISTING         WS-SDL-Statement-TXT            2326 WORKING-STORAGE  3490*    3522*    3552
                                                       3556     3558     3654
                                                       3658*    3670     3674*
                                                       3679     3683*    3687*
LISTING         WS-Src-Dashes-TXT               2319 WORKING-STORAGE  3622     3641
LISTING         WS-Src-Detail-Line-TXT          2323 WORKING-STORAGE  3449*    3488*    3496*
                                                       3500*    3505*    3509*
                                                       3513*    3520*    3532*
                                                       3536*    3540*    3650
                                                       3655     3657*    3659
                                                       3666     3671     3673*
                                                       3675     3680     3682*
                                                       3684     3686*    3688
                                                       3693*
LISTING         WS-Src-Hold-TXT                 2328 WORKING-STORAGE  3654*    3658     3670*
                                                       3674     3679*    3683
                                                       3687
LISTING         WS-Src-Line-NUM                 2330 WORKING-STORAGE  3446*    3475     3487*
                                                       3489
LISTING         WS-Src-Lines-NUM                2332 WORKING-STORAGE  3550*    3553*    3557*
                                                       3559*    3563     3566
                                                       3580     3648     3664
LISTING         WS-Src-SUB                      2334 WORKING-STORAGE  2503*    2556     2557
                                                       2576*    2580     2582
                                                       2585*    2594*    2605*
                                                       2611*    2615     2616
                                                       2618*    2624*    2628*
                                                       2629     2631*    2637*
                                                       2641*    2642     2644*
                                                       2654*    2657*    2674*
                                                       2679     2754*    2759*
                                                       2761*
LISTING         WS-Suppress-FF-CHR              1501 WORKING-STORAGE  2429*    3277*    3419
                                                       3434
LISTING         WS-Tally-QTY                    2336 WORKING-STORAGE  2793*    2795*    2796

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```

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

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

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

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.

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

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

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-       **
====== ================================================================================
GCic for OSX Copyright (C) 2009-2014, Gary L. Cutler, GPL                    Page: 4
```

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   **

===

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

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

==

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                               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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```

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

==

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

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

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

==

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

==

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

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```
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