GnuCOBOL Sample Programs

For Version 3.2 - Final [05 September 2023 at 23:00 GMT.]

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This manual documents GnuCOBOL 3.2 - Final, 05 September 2023 at 23:00 GMT. build.

Table of Contents

1. FileStat-Msgs

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

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

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

Here's the FileStat-Msgs.cpy copybook:

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

2. COBDUMP

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

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

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

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

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

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

```
GNUCOBOL 3.1.2 06MAR202 Source Listing                                  2022/03/06
                                                                        COBDUMP.cbl
Line    Statement                                                       Page: 1
====== =========================================================================
    1        >>SOURCE FORMAT IS FIXED
    2         IDENTIFICATION DIVISION.
    3         PROGRAM-ID.    COBDUMP.
    4        *>***************************************************************
    5        *> This is an OpenCOBOL subroutine that will generate a        **
    6        *> formatted Hex/Char dump of a storage area.  To use this     **
    7        *> subroutine, simply CALL it as follows:                      **
    8        *>                                                             **
    9        *> CALL "COBDUMP" USING <data-item>                            **
   10        *>                     [ <length> ]                            **
   11        *>                                                             **
   12        *> If specified, the <length> argument specifies how many      **
   13        *> bytes of <data-item> are to be dumped.  If absent, all of   **
   14        *> <data-item> will be dumped (i.e. LENGTH(<data-item>) will   **
   15        *> be assumed for <length>).                                   **
   16        *>                                                             **
   17        *> >>> Note that the subroutine name MUST be specified in  <<< **
   18        *> >>> UPPERCASE                                           <<< **
   19        *>                                                             **
   20        *> The dump is generated to STDERR, so you may pipe it to a    **
   21        *> file when you execute your program using "2> file".         **
   22        *>                                                             **
   23        *> AUTHOR:       GARY L. CUTLER                                **
   24        *>                                                             **
   25        *> NOTE:         The author has a sentimental attachment to    **
   26        *>               this subroutine - it's been around since 1971 **
   27        *>               and it's been converted to and run on 10 dif- **
   28        *>               ferent operating system/compiler environments **
   29        *>                                                             **
   30        *> DATE-WRITTEN: October 14, 1971                              **
   31        *>                                                             **
   32        *>***************************************************************
   33        *>  DATE   CHANGE DESCRIPTION                                  **
   34        *> ====== ================================================== **
   35        *> GC1071 Initial coding - Univac Dept. of Defense COBOL '68   **
   36        *> 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        *> VC0322 Moved lines only with . to end of previous statement **
```

```
GNUCOBOL 3.1.2 06MAR202 Source Listing                                     2022/03/06
                                                                           COBDUMP.cbl
Line    Statement                                                          Page: 2
====== ==================================================================================
    54        *>         Fix for bug #816 by making WS-Buffer-Byte-NUM          **
    55        *>         UNSIGNED                                               **
    56        *>**************************************************************
    57         ENVIRONMENT DIVISION.
    58         CONFIGURATION SECTION.
    59         REPOSITORY.
    60             FUNCTION ALL INTRINSIC.
    61         DATA DIVISION.
    62         WORKING-STORAGE SECTION.
    63         01  WS-Addr-PTR                          USAGE POINTER.
    64         01  WS-Addr-NUM REDEFINES WS-Addr-PTR
    65                                                  USAGE BINARY-LONG.
    66
    67         01  WS-Addr-SUB                          USAGE BINARY-CHAR.
    68
    69         01  WS-Addr-Value-NUM                    USAGE BINARY-LONG.
    70
    71         01  WS-Buffer-Byte-CHR.
    72             05 WS-Buffer-Byte-NUM                USAGE BINARY-CHAR
    73                                                      UNSIGNED.
    74
    75         01  WS-Buffer-Length-NUM                 USAGE BINARY-LONG.
    76
    77         01  WS-Buffer-SUB                        PIC 9(4) COMP-5.
    78
    79         01  WS-Hex-Digit-TXT VALUE '0123456789ABCDEF'.
    80             05 WS-Hex-Digit-CHR                  OCCURS 16 TIMES
    81                                                  PIC X(1).
    82
    83         01  WS-Nibble-SUB                        PIC 9(1) COMP-5.
    84
    85         01  WS-Nibble-Left-SUB                   PIC 9(1) COMP-5.
    86
    87         01  WS-Nibble-Right-SUB                  PIC 9(1) COMP-5.
    88
    89         01  WS-Output-Detail-TXT.
    90             05 WS-OD-Addr-TXT.
    91                 10 WS-OD-Addr-Hex-CHR            OCCURS 8 TIMES PIC X.
    92             05 FILLER                            PIC X(1).
    93             05 WS-OD-Relative-Byte-NUM           PIC Z(3)9.
    94             05 FILLER                            PIC X(1).
    95             05 WS-OD-Hex-TXT                     OCCURS 16 TIMES.
    96                 10 WS-OD-Hex-1-CHR               PIC X.
    97                 10 WS-OD-Hex-2-CHR               PIC X.
    98                 10 FILLER                        PIC X.
    99             05 WS-OD-ASCII-Data-TXT.
   100                 10 WS-OD-ASCII-CHR               OCCURS 16 TIMES
   101                                                  PIC X.
   102         01  WS-Output-SUB                        PIC 9(2) COMP-5.
   103
   104         >>SOURCE FORMAT IS FREE
   105         01  WS-Output-Header-1-TXT.
   106             05 VALUE '<-Addr-> Byte <--------------- Hexadecimal ''---------------> <---
```

```
====== =====================================================================================
  107 - Char ---->' PIC X(80).
  108
  109         01  WS-Output-Header-2-TXT.
  110             05 VALUE '======== ==== ============================================= ======
  111 ==========' PIC X(80).
  112         >>SOURCE FORMAT IS FIXED
  113
  114         LINKAGE SECTION.
  115         01  L-Buffer-TXT                             PIC X ANY LENGTH.
  116
  117         01  L-Buffer-Length-NUM                      USAGE BINARY-LONG.
  118
  119         PROCEDURE DIVISION USING L-Buffer-TXT,
  120                               OPTIONAL L-Buffer-Length-NUM.
  121         000-Main SECTION.
  122             IF NUMBER-OF-CALL-PARAMETERS = 1
  123                 MOVE LENGTH(L-Buffer-TXT) TO WS-Buffer-Length-NUM
  124             ELSE
  125                 MOVE L-Buffer-Length-NUM  TO WS-Buffer-Length-NUM
  126             END-IF
  127             MOVE SPACES TO WS-Output-Detail-TXT
  128             SET WS-Addr-PTR TO ADDRESS OF L-Buffer-TXT
  129             PERFORM 100-Generate-Address
  130             MOVE 0 TO WS-Output-SUB
  131             DISPLAY WS-Output-Header-1-TXT UPON SYSERR
  132             DISPLAY WS-Output-Header-2-TXT UPON SYSERR
  133             PERFORM VARYING WS-Buffer-SUB FROM 1 BY 1
  134                     UNTIL WS-Buffer-SUB > WS-Buffer-Length-NUM
  135                 ADD 1 TO WS-Output-SUB
  136                 IF WS-Output-SUB = 1
  137                     MOVE WS-Buffer-SUB TO WS-OD-Relative-Byte-NUM
  138                 END-IF
  139                 MOVE L-Buffer-TXT (WS-Buffer-SUB : 1)
  140                   TO WS-OD-ASCII-CHR (WS-Output-SUB)
  141                     WS-Buffer-Byte-CHR
  142                 DIVIDE WS-Buffer-Byte-NUM BY 16
  143                     GIVING WS-Nibble-Left-SUB
  144                     REMAINDER WS-Nibble-Right-SUB
  145                 ADD 1 TO WS-Nibble-Left-SUB
  146                         WS-Nibble-Right-SUB
  147                 MOVE WS-Hex-Digit-CHR (WS-Nibble-Left-SUB)
  148                   TO WS-OD-Hex-1-CHR  (WS-Output-SUB)
  149                 MOVE WS-Hex-Digit-CHR (WS-Nibble-Right-SUB)
  150                   TO WS-OD-Hex-2-CHR  (WS-Output-SUB)
  151                 IF WS-Output-SUB = 16
  152                     CALL "C$PRINTABLE" USING WS-OD-ASCII-Data-TXT
  153                     DISPLAY WS-Output-Detail-TXT UPON SYSERR
  154                     MOVE SPACES TO WS-Output-Detail-TXT
  155                     MOVE 0 TO WS-Output-SUB
  156                     SET WS-Addr-PTR UP BY 16
  157                     PERFORM 100-Generate-Address
  158                 END-IF
  159             END-PERFORM
```

```
GNUCOBOL 3.1.2 06MAR202 Source Listing                              2022/03/06
                                                                   COBDUMP.cbl
Line    Statement                                                    Page: 4
====== ===========================================================================
   160          IF WS-Output-SUB > 0
   161              CALL "C$PRINTABLE" USING WS-OD-ASCII-Data-TXT
   162              DISPLAY WS-Output-Detail-TXT UPON SYSERR
   163          END-IF
   164          EXIT PROGRAM.
   165
   166       100-Generate-Address SECTION.
   167          MOVE 8 TO WS-Addr-SUB
   168          MOVE WS-Addr-NUM TO WS-Addr-Value-NUM
   169          MOVE ALL '0' TO WS-OD-Addr-TXT
   170          PERFORM WITH TEST BEFORE UNTIL WS-Addr-Value-NUM = 0
   171              DIVIDE WS-Addr-Value-NUM BY 16
   172                  GIVING WS-Addr-Value-NUM
   173                  REMAINDER WS-Nibble-SUB
   174              ADD 1 TO WS-Nibble-SUB
   175              MOVE WS-Hex-Digit-CHR (WS-Nibble-SUB)
   176                TO WS-OD-Addr-Hex-CHR (WS-Addr-SUB)
   177              SUBTRACT 1 FROM WS-Addr-SUB
   178          END-PERFORM
   179              .
```

```
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
```

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

217    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
218    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
219    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
220    10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
221    05 LINE + 1.
222    10 COL 22  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
223    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
224    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
225    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
226    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
227    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
228    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
229    10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
230    05 LINE + 1.
231    10 COL 22  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
232    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
233    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
234    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
235    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
236    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
237    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
238    10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
239    05 LINE + 1.
240    10 COL 22  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
241    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
242    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
243    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
244    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
245    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
246    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
247    10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
248    05 LINE + 1.
249    10 COL 22  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
250    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
251    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
252    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
253    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
254    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
255    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
256    10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
257    05 LINE + 1.
258    10 COL 22  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
259    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
260    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
261    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
262    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
263    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
264    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
265    10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
266    05 LINE + 1.
267    10 COL 22  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
268    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
269    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
270    10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
```

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ACS Cobol Xref v2.02.02          Dictionary File for COLORS    07/12/2019  16:57:00:18
    271   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    272   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    273   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    274   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    275   *> #4
    276   05 LINE 05.
    277   10 COL 32  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    278   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    279   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    280   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    281   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    282   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    283   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    284   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    285   05 LINE + 1.
    286   10 COL 32  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    287   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    288   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    289   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    290   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    291   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    292   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    293   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    294   05 LINE + 1.
    295   10 COL 32  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    296   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    297   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    298   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    299   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    300   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    301   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    302   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    303   05 LINE + 1.
    304   10 COL 32  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    305   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    306   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    307   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    308   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    309   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    310   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    311   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    312   05 LINE + 1.
    313   10 COL 32  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    314   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    315   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    316   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    317   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    318   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    319   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    320   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    321   05 LINE + 1.
    322   10 COL 32 BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    323   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
    324   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
```

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

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

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

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

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

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

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

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

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

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

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ACS Cobol Xref v2.02.02        Dictionary File for COLORS    07/12/2019  16:57:00:20
703   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE 'X'.
704   05 LINE + 1.
705   10 COL 22  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 HIGHLIGHT BLINK VALUE 'X'.
706   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 HIGHLIGHT BLINK VALUE 'X'.
707   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 HIGHLIGHT BLINK VALUE 'X'.
708   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 HIGHLIGHT BLINK VALUE 'X'.
709   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 HIGHLIGHT BLINK VALUE 'X'.
710   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 HIGHLIGHT BLINK VALUE 'X'.
711   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 HIGHLIGHT BLINK VALUE 'X'.
712   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE 'X'.
713   *> #10
714   05 LINE 17.
715   10 COL 32  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
716   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
717   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
718   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
719   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
720   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
721   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
722   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
723   05 LINE + 1.
724   10 COL 32  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
725   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
726   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
727   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
728   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
729   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
730   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
731   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
732   05 LINE + 1.
733   10 COL 32  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
734   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
735   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
736   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
737   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
738   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
739   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
740   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
741   05 LINE + 1.
742   10 COL 32  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
743   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
744   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
745   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
746   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
747   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
748   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
749   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
750   05 LINE + 1.
751   10 COL 32  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
752   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
753   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
754   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
755   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
756   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
```

```
ACS Cobol Xref v2.02.02        Dictionary File for COLORS    07/12/2019  16:57:00:20
   757   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   758   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   759   05 LINE + 1.
   760   10 COL 32  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   761   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   762   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   763   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   764   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   765   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   766   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   767   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   768   05 LINE + 1.
   769   10 COL 32  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   770   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   771   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   772   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   773   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   774   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   775   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   776   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   777   05 LINE + 1.
   778   10 COL 32  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   779   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   780   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   781   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   782   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   783   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   784   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   785   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   786   *> #11
   787   05 LINE 17.
   788   10 COL 42  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE 'X'.
   789   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE 'X'.
   790   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE 'X'.
   791   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE 'X'.
   792   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE 'X'.
   793   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE 'X'.
   794   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE 'X'.
   795   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE 'X'.
   796   05 LINE + 1.
   797   10 COL 42  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE 'X'.
   798   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE 'X'.
   799   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE 'X'.
   800   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE 'X'.
   801   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE 'X'.
   802   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE 'X'.
   803   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE 'X'.
   804   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE 'X'.
   805   05 LINE + 1.
   806   10 COL 42  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE 'X'.
   807   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE 'X'.
   808   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE 'X'.
   809   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE 'X'.
   810   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE 'X'.
```

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

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

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

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

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

  919   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
  920   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
  921   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
  922   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
  923   05 LINE + 1.
  924   10 COL 52  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
  925   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
  926   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
  927   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
  928   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
  929   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
  930   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
  931   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
  932   PROCEDURE DIVISION.
  933   000-Main SECTION.
  934    DISPLAY S-COLORTST-SCR.
  935    STOP RUN.
  936        *>>>Info: Total Copy Depth Used = 01
```

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

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

S-COLORTST-SCR                000007S  000934
```

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

None
```

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

None
```

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

None
```

4. DAY-FROM-DATE

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

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

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

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

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

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

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

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

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

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

5. GCic

This is MUCH more than a mere demonstration program – it's also a very practical util-
ity! 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:
    - `ACCEPT FROM COMMAND-LINE` statement
    - `ACCEPT FROM DATE/TIME` statement
    - `ACCEPT FROM ENVIRONMENT` statement
    - `EXIT PERFORM` statement
    - `EXIT SECTION` statement
    - `INSPECT` statement
    - `PERFORM FOREVER` statement
    - `SEARCH ALL` statement
    - `SET ENVIRONMENT` statement
    - `SORT` statement
    - `STRING` statement
    - `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:
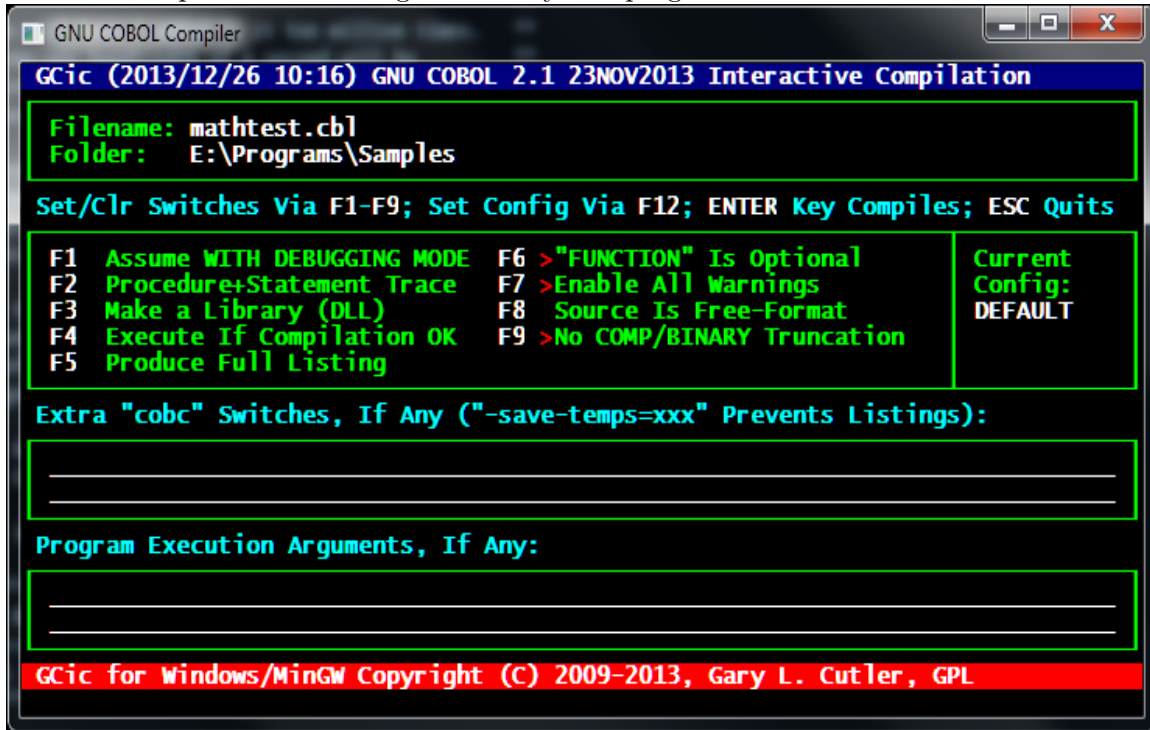
The program source and cross-reference listing, generated by cobxref, begins on the next page.

```
ACS Cobol Xref v2.02.04       Dictionary File for GCIC    06/03/2022  23:09:10:96   Page    1

    1          >>SOURCE FORMAT IS FIXED
    2          *> CONFIGURATION SETTINGS: adjust const-set-1.cpy before
    3          *> compiling GCic to adjust the way it works.
    4          *copy "const-set-1.cpy".
    5          *> CONFIGURATION SETTINGS: Set these switches before compiling:
    6          *>
    7          *> Set these 2 for the compiler version.
    8          *>
    9           >>DEFINE CONSTANT COMP-VERS  AS 'GNUCOBOL 3.1.2 06MAR2022'
   10           >>DEFINE CONSTANT COMP-YEAR  AS '2022'
   11          *>
   12          *> LINEDRAW Set to:
   13          *>    0    To use spaces (no lines)
   14          *>    1    To use the line-drawing characterset (PC codepage 437)
   15          *>    2    To use conventional ASCII characters (+, -, |)
   16          *>
   17          *>          OSX USERS - To use the linedrawing characterset,
   18          *>                      set your 'terminal' font to 'Lucida Console'
   19          *>
   20          *> OS      Set to one of the following:
   21          *>          'CYGWIN'   For a Windows/Cygwin version
   22          *>          'MINGW'    For a Windows/MinGW version
   23          *>          'OSX'      For a Macintosh OSX version
   24          *>          'UNIX'     For a Unix/Linux version
   25          *>          'WINDOWS'  For a Native Windows version
   26          *>
   27          *> SELCHAR  Set to the desired single character to be used as the red
   28          *>          'feature selected' character on the screen.
   29          *>          SUGGESTIONS: '>', '*', '=', '+'
   30          *>
   31          *> LPP     Set to maximum printable lines per page when the listing
   32          *>          should be generated for LANDSCAPE orientation (can be over-
   33          *>          ridden at execution time using the GCXREF_LINES environment
   34          *>          variable.
   35          *>
   36          *> LPPP    Set to maximum printable lines per page when the listing
   37          *>          should be generated for PORTRAIT orientation (can be over-
   38          *>          ridden at execution time using the GCXREF_LINES_PORT
   39          *>          environment variable.
   40          *>
   41 GC0712 >>DEFINE CONSTANT LINEDRAW    AS 2
   42 GC0712 >>DEFINE CONSTANT OS          AS 'UNIX'
   43 GC0712 >>DEFINE CONSTANT SELCHAR     AS '>'
   44 GC1213 >>DEFINE CONSTANT LPP         AS 50   *> LANDSCAPE (GCXREF_LINES)
   45 GC1213 >>DEFINE CONSTANT LPPP        AS 60   *> PORTRAIT  (GCXREF_LINES_PORT)
   46          *> -----------------------------------------------------------
   47          *> Now set these switches to establish initial (default) settings
   48          *> for the various on-screen options.  Set them to a value of
   49          *> 0 if they are to be 'OFF' and 1 if they are to be 'ON'
   50 GC1213*> (for F5, 1=ON (Landscape), 2=ON (Portrait))
   51          *>
   52 GC0712 >>DEFINE CONSTANT F1  AS 0 *> Assume WITH DEBUGGING MODE
   53 GC0712 >>DEFINE CONSTANT F2  AS 0 *> Procedure+Statement Trace
   54 GC0712 >>DEFINE CONSTANT F3  AS 0 *> Make A Library (DLL)
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC    06/03/2022  23:09:10:96   Page    2

   55  GC0712 >>DEFINE CONSTANT F4  AS 0 *> Execute If Compilation OK
   56  GC1213 >>DEFINE CONSTANT F5  AS 0 *> Listings
   57  GC0712 >>DEFINE CONSTANT F6  AS 1 *> "FUNCTION" Is Optional
   58  GC0712 >>DEFINE CONSTANT F7  AS 1 *> Enable All Warnings
   59  GC0712 >>DEFINE CONSTANT F8  AS 1 *> Source Is Free-Format
   60  GC0712 >>DEFINE CONSTANT F9  AS 1 *> No COMP/BINARY Truncation
   61  GC0712 >>DEFINE CONSTANT F12 AS 4 *> Default config file (1-7):
   62         *>                          1 = BS2000
   63         *>                          2 = COBOL85
   64         *>                          3 = COBOL2002
   65         *>                          4 = DEFAULT
   66         *>                          5 = IBM
   67         *>                          6 = MF (i.e. Microfocus)
   68         *>                          7 = MVS
   69         /
   70          IDENTIFICATION DIVISION.
   71          PROGRAM-ID. GCic.
   72         *>*************************************************************
   73         *>     >NOTE<   >NOTE<   >NOTE<   >NOTE<   >NOTE<   >NOTE<    **
   74         *>                                                           **
   75         *> If this program is compiled with '-fdebugging-line', you  **
   76         *> will need to pipe SYSERR to a text file when executing GCic **
   77         *> (by adding the text '2> filename' to the end of the GCic   **
   78         *> command).  You may also need to press the ENTER key when   **
   79         *> GCic is finished.                                          **
   80         *>*************************************************************
   81         *> This program provides a Textual User Interface (TUI) to the **
   82         *> process of compiling and (optionally) executing a GNU COBOL **
   83         *> program.                                                   **
   84         *>                                                           **
   85         *> This programs execution syntax is as follows:             **
   86         *>                                                           **
   87         *> GCic <program-path-and-filename> [ <switch>... ]          **
   88         *>                                                           **
   89         *> Once executed, a display screen will be presented showing  **
   90         *> the compilation options that will be used.  The user will  **
   91         *> have the opportunity to change options, specify new ones   **
   92         *> and specify any program execution arguments to be used if  **
   93         *> you select the 'Execute' option.  When you press the Enter **
   94         *> key the program will be compiled.                          **
   95         *>                                                           **
   96         *> The SCREEN SECTION contains an image of the screen.        **
   97         *>                                                           **
   98         *> The '010-Parse-Args' section in the PROCEDURE DIVISION has **
   99         *> documentation on switches and their function.             **
  100         *>*************************************************************
  101         *>                                                           **
  102         *> AUTHOR:      GARY L. CUTLER                                **
  103         *>             Copyright (C) 2009-2018, Gary L. Cutler, GPL   **
  104         *>  Updated by  Vincent B Coen, 2018-2020+.                   **
  105         *>                                                           **
  106         *> DATE-WRITTEN: June 14, 2009                                **
  107         *>                                                           **
  108         *>*************************************************************
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC     06/03/2022  23:09:10:96   Page    3

    109        *>  DATE  CHANGE DESCRIPTION                           **
    110        *> ====== ===================================================== **
    111        *> GC0609 Don't display compiler messages file if compilation **
    112        *>  GLC   Is successful.  Also don't display messages if the  **
    113        *>        output file is busy (just put a message on the      **
    114        *>        screen, leave the OC screen up & let the user fix    **
    115        *>        the problem & resubmit.                              **
    116        *> GC0709 When 'EXECUTE' is selected, a 'FILE BUSY' error will **
    117        *>  CLC   still cause the (old) executable to be launched.     **
    118        *>        Also, the 'EXTRA SWITCHES' field is being ignored.   **
    119        *>        Changed the title bar to lowlighted reverse video &  **
    120        *>        the message area to highlighted reverse-video.       **
    121        *> GC0809 Add a SPACE in front of command-line args when       **
    122        *>  GLC   executing users program.  Add a SPACE after the      **
    123        *>        -ftraceall switch when building cobc command.        **
    124        *> GC0909 Convert to work on Cygwin/Linux as well as MinGW     **
    125        *> GC0310 Virtualized the key codes for S-F1 thru S-F7 as they **
    126        *>  GLC   differ depending upon whether PDCurses or NCurses is **
    127        *>        being used.                                          **
    128        *> GC0410 Introduced the cross-reference and source listing    **
    129        *>  GLC   features.  Also fixed a bug in EXTRA switch proces-  **
    130        *>        sing where garbage will result if more than the      **
    131        *>        EXTRA switch is specified.                           **
    132        *> GC1010 Corrected several problems reported by Vince Coen:   **
    133        *>  GLC   1) Listing/Xref wouldn't work if '-I' additional     **
    134        *>           cobc switch specified.                            **
    135        *>        2) Programs coded with lowercase reserved words did   **
    136        *>           not get parsed properly when generating listing   **
    137        *>           and/or xref reports.                              **
    138        *>        3) Reliance on a TEMP environment variable caused    **
    139        *>           non-recoverable errors when generating listing    **
    140        *>           and/or xref reports in a session that lacks a     **
    141        *>           TEMP variable.                                    **
    142        *>        As a result of this change, GCic no longer runs a    **
    143        *>        second 'cobc' when generating listing and/or xref    **
    144        *>        reports.  A '-save-temps' (without '=dir') specified **
    145        *>        in the EXTRA options field will be ignored.  A       **
    146        *>        '-save-temps=dir' specified in the EXTRA options      **
    147        *>        field will negate both the XREF and SOURCE opts,     **
    148        *>        if specified.                                        **
    149        *> GC0711 Tailored for 29APR2011 version of GNU COBOL 2.0      **
    150        *> GC0712 Replaced all switches with configuration settings;   **
    151        *>  GLC   Tailored for 11FEB2012 version of GNU COBOL 2.0;     **
    152        *>        Reformatted screen layout to fit a 24x80 screen      **
    153        *>        rather than a 25x81 screen and to accommodate shell  **
    154        *>        environments having only F1-F12 (like 'terminal' in  **
    155        *>        OSX); Fully tested under OSX (required a few altera-  **
    156        *>        tions); Expanded both extra-options and runtime-     **
    157        *>        arguments areas to TWO lines (152 chars total) each; **
    158        *>        Added support for MF/IBM/BS2000 listing-control      **
    159        *>        directives EJECT,SKIP1,SKIP2,SKIP3 (any of these in  **
    160        *>        copybooks will be ignored)                           **
    161        *> GC0313 Expand the source code record from 80 chars to 256   **
    162        *>  GLC   to facilitate looking for "LINKAGE SECTION" in a     **
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC     06/03/2022  23:09:10:96    Page    4
    163          *>        free-format file.                              **
    164          *> GC1113 Edited to support the change of "OpenCOBOL" to "GNU  **
    165          *>   GLC    COBOL"                                        **
    166          *> GC1213 Updated for 23NOV2013 version of GNU COBOL 2.1      **
    167          *> GC0114 Introduce a "Press ENTER to Close" action after run- **
    168          *>   GLC    ning the compiled program in the compiler window (F4)**
    169          *> VC0617 Remove the Blinking in meny screen as uncomfortable  **
    170          *>   VBC    Update version printed to 2.2 30JUN2017.           **
    171          *>         Move the system constant settings to a copy file    **
    172          *>         const-set-1.cpy  in case GCic is updated.           **
    173          *>         Added  SET ENVIRONMENT "COB_EXIT_WAIT" TO "0" to     **
    174          *>         100-Initialization section.                         **
    175          *> VC0717 Replaced compile param instrinsic=all with           **
    176          *>   VBC    intrinstics=ALL. Changed mod detail inits for Gary  **
    177          *>         from GCL to GLC.                                     **
    178          *>         Update version printed to 2.2 20JUL2017.            **
    179          *>         Should really get this from the compiler if avail?   **
    180          *> VC1217 Update compiler version to v3.0 24DEC2017.           **
    181          *>         and copyright to 2018 (in 3 places).               **
    182          *> VC0811 Updated compiler to 3.1 July2020 and the copyright.  **
    183          *> VC0322 Update compiler version to v3.1.2 06MAR2022.         **
    184          *>*************************************************************
    185          *>
    186           ENVIRONMENT DIVISION.
    187           CONFIGURATION SECTION.
    188           REPOSITORY.
    189               FUNCTION ALL INTRINSIC.
    190           INPUT-OUTPUT SECTION.
    191           FILE-CONTROL.
    192 GC1010      SELECT F-Cobc-Output-FILE   ASSIGN TO WS-Listing-Filename-TXT
    193                                          ORGANIZATION IS LINE SEQUENTIAL.
    194
    195              SELECT F-Source-Code-FILE   ASSIGN TO WS-File-Name-TXT
    196                                          ORGANIZATION IS LINE SEQUENTIAL
    197                                          FILE STATUS IS WS-FSM-Status-CD.
    198       /
    199           DATA DIVISION.
    200           FILE SECTION.
    201           FD  F-Cobc-Output-FILE.
    202           01  F-Cobc-Output-REC                  PIC X(256).
    203
    204           FD  F-Source-Code-FILE.
    205 GC0313 01  F-Source-Code-REC                  PIC X(256).
    206
    207           WORKING-STORAGE SECTION.
    208           >>source free
    209 *>C        COPY screenio.
    210 *>  Copyright (C) 2008-2012, 2015-2016  Free Software Foundation, Inc.
    211 *>  Written by Roger While
    212 *>
    213 *>  This file is part of GnuCOBOL.
    214 *>
    215 *>  The GnuCOBOL compiler is free software: you can redistribute
    216 *>  it and/or modify it under the terms of the GNU General Public
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC    06/03/2022  23:09:10:96   Page    5
   217  *>  License as published by the Free Software Foundation, either
   218  *>  version 3 of the License, or (at your option) any later
   219  *>  version.
   220  *>
   221  *>  GnuCOBOL is distributed in the hope that it will be useful,
   222  *>  but WITHOUT ANY WARRANTY; without even the implied warranty of
   223  *>  MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
   224  *>  GNU General Public License for more details.
   225  *>
   226  *>  You should have received a copy of the GNU General Public
   227  *>  License along with GnuCOBOL.
   228  *>  If not, see <http://www.gnu.org/licenses/>.
   229  *>
   230  *>   Colors
   231  *>
   232   78  cob-color-black     value 0.
   233   78  COB-COLOR-BLUE      VALUE 1.
   234   78  COB-COLOR-GREEN     VALUE 2.
   235   78  COB-COLOR-CYAN      VALUE 3.
   236   78  COB-COLOR-RED       VALUE 4.
   237   78  COB-COLOR-MAGENTA   VALUE 5.
   238   78  COB-COLOR-YELLOW    VALUE 6.
   239   78  COB-COLOR-WHITE     VALUE 7.
   240  *>
   241  *> Values that may be returned in CRT STATUS (or COB-CRT-STATUS)
   242  *> Normal return - Value 0000
   243   78  COB-SCR-OK          VALUE 0.
   244  *>  Function keys - Values 1xxx
   245   78  COB-SCR-F1          VALUE 1001.
   246   78  COB-SCR-F2          VALUE 1002.
   247   78  COB-SCR-F3          VALUE 1003.
   248   78  COB-SCR-F4          VALUE 1004.
   249   78  COB-SCR-F5          VALUE 1005.
   250   78  COB-SCR-F6          VALUE 1006.
   251   78  COB-SCR-F7          VALUE 1007.
   252   78  COB-SCR-F8          VALUE 1008.
   253   78  COB-SCR-F9          VALUE 1009.
   254   78  COB-SCR-F10         VALUE 1010.
   255   78  COB-SCR-F11         VALUE 1011.
   256   78  COB-SCR-F12         VALUE 1012.
   257   78  COB-SCR-F13         VALUE 1013.
   258   78  COB-SCR-F14         VALUE 1014.
   259   78  COB-SCR-F15         VALUE 1015.
   260   78  COB-SCR-F16         VALUE 1016.
   261   78  COB-SCR-F17         VALUE 1017.
   262   78  COB-SCR-F18         VALUE 1018.
   263   78  COB-SCR-F19         VALUE 1019.
   264   78  COB-SCR-F20         VALUE 1020.
   265   78  COB-SCR-F21         VALUE 1021.
   266   78  COB-SCR-F22         VALUE 1022.
   267   78  COB-SCR-F23         VALUE 1023.
   268   78  COB-SCR-F24         VALUE 1024.
   269   78  COB-SCR-F25         VALUE 1025.
   270   78  COB-SCR-F26         VALUE 1026.
```

```
ACS Cobol Xref v2.02.04         Dictionary File for GCIC    06/03/2022  23:09:10:97   Page    6

    271   78  COB-SCR-F27        VALUE 1027.
    272   78  COB-SCR-F28        VALUE 1028.
    273   78  COB-SCR-F29        VALUE 1029.
    274   78  COB-SCR-F30        VALUE 1030.
    275   78  COB-SCR-F31        VALUE 1031.
    276   78  COB-SCR-F32        VALUE 1032.
    277   78  COB-SCR-F33        VALUE 1033.
    278   78  COB-SCR-F34        VALUE 1034.
    279   78  COB-SCR-F35        VALUE 1035.
    280   78  COB-SCR-F36        VALUE 1036.
    281   78  COB-SCR-F37        VALUE 1037.
    282   78  COB-SCR-F38        VALUE 1038.
    283   78  COB-SCR-F39        VALUE 1039.
    284   78  COB-SCR-F40        VALUE 1040.
    285   78  COB-SCR-F41        VALUE 1041.
    286   78  COB-SCR-F42        VALUE 1042.
    287   78  COB-SCR-F43        VALUE 1043.
    288   78  COB-SCR-F44        VALUE 1044.
    289   78  COB-SCR-F45        VALUE 1045.
    290   78  COB-SCR-F46        VALUE 1046.
    291   78  COB-SCR-F47        VALUE 1047.
    292   78  COB-SCR-F48        VALUE 1048.
    293   78  COB-SCR-F49        VALUE 1049.
    294   78  COB-SCR-F50        VALUE 1050.
    295   78  COB-SCR-F51        VALUE 1051.
    296   78  COB-SCR-F52        VALUE 1052.
    297   78  COB-SCR-F53        VALUE 1053.
    298   78  COB-SCR-F54        VALUE 1054.
    299   78  COB-SCR-F55        VALUE 1055.
    300   78  COB-SCR-F56        VALUE 1056.
    301   78  COB-SCR-F57        VALUE 1057.
    302   78  COB-SCR-F58        VALUE 1058.
    303   78  COB-SCR-F59        VALUE 1059.
    304   78  COB-SCR-F60        VALUE 1060.
    305   78  COB-SCR-F61        VALUE 1061.
    306   78  COB-SCR-F62        VALUE 1062.
    307   78  COB-SCR-F63        VALUE 1063.
    308   78  COB-SCR-F64        VALUE 1064.
    309   *>  Exception keys - Values 2xxx
    310   78  COB-SCR-PAGE-UP    VALUE 2001.
    311   78  Cob-Scr-Page_Up    value 2001.
    312   78  COB-SCR-PAGE-DOWN  VALUE 2002.
    313   78  Cob-Scr-Page_Down  value 2002.
    314   78  COB-SCR-KEY-UP     VALUE 2003.
    315   78  COB-SCR-KEY_UP     VALUE 2003.
    316   78  COB-SCR-KEY-DOWN   VALUE 2004.
    317   78  COB-SCR-KEY_DOWN   VALUE 2004.
    318   78  COB-SCR-ESC        VALUE 2005.
    319   78  COB-SCR-PRINT      VALUE 2006.
    320   78  COB-SCR-TAB        VALUE 2007.
    321   78  COB-SCR-BACK-TAB   VALUE 2008.
    322   78  COB-SCR-KEY-LEFT   VALUE 2009.
    323   78  COB-SCR-KEY-RIGHT  VALUE 2010.
    324   *>  The following exception keys are currently *only* returned
```

```
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  325  *>  on ACCEPT OMITTED
  326  78  COB-SCR-INSERT      VALUE 2011.
  327  78  COB-SCR-DELETE      VALUE 2012.
  328  78  COB-SCR-BACKSPACE   VALUE 2013.
  329  78  COB-SCR-KEY-HOME    VALUE 2014.
  330  78  COB-SCR-KEY-END     VALUE 2015.
  331  *>  Input validation - Values 8xxx
  332  78  COB-SCR-NO-FIELD    VALUE 8000.
  333  78  COB-SCR-TIME-OUT    VALUE 8001.
  334  *>  Other errors - Values 9xxx
  335  78  COB-SCR-FATAL       VALUE 9000.
  336  78  COB-SCR-MAX-FIELD   VALUE 9001.
  337         >>source fixed
  338  GC0712 01  WS-Compilation-Switches-TXT.
  339  GC0712     05 WS-CS-Args-TXT VALUE SPACES.
  340  GC0712        10 WS-CS-Arg-H1-TXT             PIC X(76).
  341  GC0712        10 WS-CS-Arg-H2-TXT             PIC X(76).
  342  GC0712     05 WS-CS-Filenames-TXT.
  343  GC0712        10 VALUE 'BS2000'              PIC X(9).
  344  GC0712        10 VALUE 'COBOL85'             PIC X(9).
  345  GC0712        10 VALUE 'COBOL2002'           PIC X(9).
  346  GC0712        10 VALUE 'DEFAULT'             PIC X(9).
  347  GC0712        10 VALUE 'IBM'                 PIC X(9).
  348  GC0712        10 VALUE 'MF'                  PIC X(9).
  349  GC0712        10 VALUE 'MVS'                 PIC X(9).
  350  GC0712     05 WS-CS-Filenames-Table-TXT REDEFINES WS-CS-Filenames-TXT.
  351  GC0712        10 WS-CS-Filename-TXT          OCCURS 7 TIMES
  352  GC0712                                       PIC X(9).
  353  GC0712 >>IF F12 < 1
  354  GC0712     05 WS-CS-Config-NUM     VALUE 4    PIC 9(1).
  355  GC0712 >>ELIF F12 > 7
  356  GC0712     05 WS-CS-Config-NUM     VALUE 4    PIC 9(1).
  357  GC0712 >>ELSE
  358  GC0712     05 WS-CS-Config-NUM     VALUE F12  PIC 9(1).
  359  GC0712 >>END-IF
  360  GC0712     05 WS-CS-Extra-TXT VALUE SPACES.
  361  GC0712        10 WS-CS-Extra-H1-TXT           PIC X(76).
  362  GC0712        10 WS-CS-Extra-H2-TXT           PIC X(76).
  363  GC0712     05 WS-CS-Switch-Defaults-TXT.
  364  GC0712        10 VALUE F1                     PIC 9(1). *> WS-CS-DEBUG-CHR
  365  GC0712        10 VALUE F4                     PIC 9(1). *> WS-CS-EXECUTE-CHR
  366  GC0712        10 VALUE F8                     PIC 9(1). *> WS-CS-FREE-CHR
  367  GC0712        10 VALUE F3                     PIC 9(1). *> WS-CS-LIBRARY-CHR
  368  GC0712        10 VALUE F5                     PIC 9(1). *> WS-CS-LISTING-CHR
  369  GC0712        10 VALUE F6                     PIC 9(1). *> WS-CS-NOFUNC-CHR
  370  GC0712        10 VALUE F9                     PIC 9(1). *> WS-CS-NOTRUNC-CHR
  371  GC0712        10 VALUE F2                     PIC 9(1). *> WS-CS-TRACEALL-CHR
  372  GC0712        10 VALUE F7                     PIC 9(1). *> WS-CS-WARNALL-CHR
  373  GC0712     05 WS-CS-All-Switches-TXT REDEFINES
  374  GC0712                                 WS-CS-Switch-Defaults-TXT.
  375  GC0712        10 WS-CS-DEBUG-CHR             PIC X(1).
  376  GC0712        10 WS-CS-EXECUTE-CHR           PIC X(1).
  377  GC0712        10 WS-CS-FREE-CHR              PIC X(1).
  378  GC0712        10 WS-CS-LIBRARY-CHR           PIC X(1).
```

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 379  GC0712       10 WS-CS-LISTING-CHR             PIC X(1).
 380  GC0712       10 WS-CS-NOFUNC-CHR              PIC X(1).
 381  GC0712       10 WS-CS-NOTRUNC-CHR             PIC X(1).
 382  GC0712       10 WS-CS-TRACEALL-CHR            PIC X(1).
 383  GC0712       10 WS-CS-WARNALL-CHR             PIC X(1).
 384
 385  GC0909 01  WS-Cmd-TXT                         PIC X(512).
 386
 387  GC0712 01  WS-Cmd-Args-TXT                    PIC X(256).
 388
 389  GC0712 01  WS-Cmd-End-Quote-CHR               PIC X(1).
 390
 391  GC0712 01  WS-Cmd-SUB                         USAGE BINARY-LONG.
 392
 393         01  WS-Cobc-Cmd-TXT                    PIC X(256).
 394
 395         01  WS-Config-Fn-TXT                   PIC X(12).
 396
 397  GC1113 01  WS-Delete-Fn-TXT                   PIC X(256).
 398
 399         01  WS-File-Name-TXT.
 400             05 WS-FN-CHR                        OCCURS 256 TIMES
 401                                                 PIC X(1).
 402
 403         01  WS-File-Status-Message-TXT.
 404             05 VALUE 'Status Code: '           PIC X(13).
 405             05 WS-FSM-Status-CD                PIC 9(2).
 406             05 VALUE ', Meaning: '             PIC X(11).
 407             05 WS-FSM-Msg-TXT                  PIC X(25).
 408
 409  GC0909 01  WS-Horizontal-Line-TXT            PIC X(80).
 410  GC0909
 411         01  WS-I-SUB                           USAGE BINARY-LONG.
 412
 413         01  WS-J-SUB                           USAGE BINARY-LONG.
 414
 415  GC1213 01  WS-Listing-CD VALUE F5             PIC 9(1).
 416
 417  GC0712 01  WS-Listing-Filename-TXT            PIC X(256).
 418
 419  GC1213 01  WS-Listing-TXT VALUE SPACES        PIC X(27).
 420
 421         01  WS-OC-Compile-DT                   PIC XXXX/XX/XXBXX/XX.
 422
 423  GC0712 >>IF OS = 'CYGWIN'
 424  GC0712 01  WS-OS-Dir-CHR        VALUE '/'      PIC X(1).
 425  GC0712 78  WS-OS-Exe-Ext-CONST  VALUE '.exe'.
 426  GC0712 78  WS-OS-Lib-Ext-CONST  VALUE '.dll'.
 427  GC0712 78  WS-OS-Lib-Type-CONST VALUE 'DLL)'.
 428  GC0712 01  WS-OS-Type-CD        VALUE 2        PIC 9(1).
 429  GC0712 >>ELIF OS = 'MINGW'
 430  GC0712 01  WS-OS-Dir-CHR        VALUE '\'      PIC X(1).
 431  GC0712 78  WS-OS-Exe-Ext-CONST  VALUE '.exe'.
 432  GC0712 78  WS-OS-Lib-Ext-CONST  VALUE '.dll'.
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ACS Cobol Xref v2.02.04        Dictionary File for GCIC    06/03/2022  23:09:10:97   Page    9

433  GC0712 78  WS-OS-Lib-Type-CONST  VALUE 'DLL)'.
434  GC0712 01  WS-OS-Type-CD         VALUE 5        PIC 9(1).
435  GC0712 >>ELIF OS = 'OSX'
436  GC0712 01  WS-OS-Dir-CHR         VALUE '/'      PIC X(1).
437  GC0712 78  WS-OS-Exe-Ext-CONST   VALUE ' '.
438  GC0712 78  WS-OS-Lib-Ext-CONST   VALUE '.dylib'.
439  GC0712 78  WS-OS-Lib-Type-CONST  VALUE 'DYLIB)'.
440  GC0712 01  WS-OS-Type-CD         VALUE 4        PIC 9(1).
441  GC0712 >>ELIF OS = 'UNIX'
442  GC0712 01  WS-OS-Dir-CHR         VALUE '/'      PIC X(1).
443  GC0712 78  WS-OS-Exe-Ext-CONST   VALUE ' '.
444  GC0712 78  WS-OS-Lib-Ext-CONST   VALUE '.so'.
445  GC0712 78  WS-OS-Lib-Type-CONST  VALUE 'SO)'.
446  GC0712 01  WS-OS-Type-CD         VALUE 3        PIC 9(1).
447  GC0712 >>ELIF OS = 'WINDOWS'
448  GC0712 01  WS-OS-Dir-CHR         VALUE '\'      PIC X(1).
449  GC0712 78  WS-OS-Exe-Ext-CONST   VALUE '.exe'.
450  GC0712 78  WS-OS-Lib-Ext-CONST   VALUE '.dll'.
451  GC0712 78  WS-OS-Lib-Type-CONST  VALUE 'DLL)'.
452  GC0712 01  WS-OS-Type-CD         VALUE 1        PIC 9(1).
453  GC0712 >>END-IF
454  GC0909    88 WS-OS-Windows-BOOL VALUE 1, 5.
455  GC0909    88 WS-OS-Cygwin-BOOL  VALUE 2.
456  GC0712    88 WS-OS-UNIX-BOOL    VALUE 3, 4.
457  GC0712    88 WS-OS-OSX-BOOL     VALUE 4.
458
459        01  WS-OS-Type-FILLER-TXT.
460            05 VALUE 'Windows'              PIC X(14).
461            05 VALUE 'Windows/Cygwin'       PIC X(14).
462            05 VALUE 'UNIX/Linux'           PIC X(14).
463            05 VALUE 'OSX'                  PIC X(14).
464            05 VALUE 'Windows/MinGW'        PIC X(14).
465        01  WS-OS-Types-TXT REDEFINES WS-OS-Type-FILLER-TXT.
466            05 WS-OS-Type-TXT               OCCURS 5 TIMES
467                                            PIC X(14).
468
469        01  WS-Output-Msg-TXT              PIC X(80).
470
471        01  WS-Path-Delimiter-CHR          PIC X(1).
472
473        01  WS-Prog-Extension-TXT          PIC X(256).
474
475        01  WS-Prog-Folder-TXT             PIC X(256).
476
477  GC0712 01  WS-Prog-File-Name-TXT.
478  GC0712     05 WS-PFN-CHR                 OCCURS 256 TIMES
479  GC0712                                   PIC X(1).
480
481  GC0712 01  WS-Pgm-Nm-TXT                 PIC X(31).
482
483        01  WS-Runtime-Switches-TXT.
484            05 WS-RS-Compile-OK-CHR        PIC X(1).
485               88 WS-RS-Compile-OK-BOOL        VALUE 'Y'.
486  GC0909       88 WS-RS-Compile-OK-Warn-BOOL   VALUE 'W'.
```

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ACS Cobol Xref v2.02.04        Dictionary File for GCIC    06/03/2022  23:09:10:97   Page   10

487                  88 WS-RS-Compile-Failed-BOOL      VALUE 'N'.
488  GC0609    05 WS-RS-Complete-CHR               PIC X(1).
489  GC0609        88 WS-RS-Complete-BOOL           VALUE 'Y'.
490  GC0609        88 WS-RS-Not-Complete-BOOL       VALUE 'N'.
491  GC0712    05 WS-RS-Quote-CHR                  PIC X(1).
492  GC0712        88 WS-RS-Double-Quote-Used-BOOL  VALUE 'Y' FALSE 'N'.
493  GC0809    05 WS-RS-IDENT-DIV-CHR              PIC X(1).
494  GC0809        88 WS-RS-1st-Prog-Complete-BOOL  VALUE 'Y'.
495  GC0809        88 WS-RS-More-To-1st-Prog-BOOL   VALUE 'N'.
496            05 WS-RS-No-Switch-Chgs-CHR         PIC X(1).
497                88 WS-RS-No-Switch-Changes-BOOL  VALUE 'Y'.
498                88 WS-RS-Switch-Changes-BOOL     VALUE 'N'.
499  GC0709    05 WS-RS-Output-File-Busy-CHR       PIC X(1).
500  GC0709        88 WS-RS-Output-File-Busy-BOOL   VALUE 'Y'.
501  GC0709        88 WS-RS-Output-File-Avail-BOOL  VALUE 'N'.
502  GC0809    05 WS-RS-Source-Record-Type-CHR     PIC X(1).
503  GC0809        88 WS-RS-Source-Rec-Linkage-BOOL VALUE 'L'.
504  GC0809        88 WS-RS-Source-Rec-Ident-BOOL   VALUE 'I'.
505  GC0712        88 WS-RS-Source-Rec-Ignored-BOOL VALUE ' '.
506            05 WS-RS-Switch-Error-CHR           PIC X(1).
507                88 WS-RS-Switch-Is-Bad-BOOL      VALUE 'Y'.
508                88 WS-RS-Switch-Is-Good-BOOL     VALUE 'N'.
509
510     01  WS-Tally-QTY                        USAGE BINARY-LONG.
511     /
512      SCREEN SECTION.
513     *>
514     *> Here is the layout of the GCic screen.
515     *>
516     *> The sample screen below shows how the screen would look if the LINEDRAW
517     *> configuration setting is set to a value of 2
518     *>
519     *> The following sample screen layout shows how the screen looks with line-drawing
520     *> characters disabled.
521     *>
522     *>          1         2         3         4         5         6         7         8
523     *>12345678901234567890123456789012345678901234567890123456789012345678901234567890
524     *>================================================================================
525  VC 01 *> GCic (2020/08/11 23:00) - GNU COBOL V3.1 01July2020 Interactive Compilation
526     02 *>+------------------------------------------------------------------------------+
527     03 *>| Folder:   E:\GNU COBOL\Samples                                               |
528     04 *>| Filename: GCic.cbl                                                           |
529     05 *>+------------------------------------------------------------------------------+
530     06 *> Set/Clr Switches Via F1-F9; Set Config Via F12; ENTER Key Compiles; ESC Quits
531     07 *>+----------------------------------------------------------------+------------+
532     08 *>| F1  Assume WITH DEBUGGING MODE  F6  "FUNCTION" Is Optional      | Current    |
533     09 *>| F2  Procedure+Statement Trace   F7  Enable All Warnings         | Config:    |
534     10 *>| F3  Make A Library (DLL)        F8  Source Is Free-Format        | XXXXXXXXXX |
535     11 *>| F4  Execute If Compilation OK   F9  No COMP/BINARY Truncation    |            |
536     12 *>| F5 >Produce Listing (Landscape)                                 |            |
537     13 *>+----------------------------------------------------------------+------------+
538     14 *> Extra "cobc" Switches, If Any ("-save-temps=xxx" Prevents Listings):
539     15 *>+------------------------------------------------------------------------------+
540     16 *>| _____ |
```

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ACS Cobol Xref v2.02.04        Dictionary File for GCIC    06/03/2022  23:09:10:97   Page   11
   541      17 *>| _____ |
   542      18 *>+--------------------------------------------------------------------+
   543      19 *> Program Execution Arguments, If Any:
   544      20 *>+--------------------------------------------------------------------+
   545      21 *>| _____ |
   546      22 *>| _____ |
   547      23 *>+--------------------------------------------------------------------+
   548   VC 24 *> GCic Copyright (C) 2009-2022, Gary L. Cutler, GPL
   549         *>================================================================================
   550         *>12345678901234567890123456789012345678901234567890123456789012345678901234567890
   551         *>          1         2         3         4         5         6         7         8
   552         *>
   553         *> If this program is run on Windows, it must run with codepage 437 activated to
   554         *> display the line-drawing characters.  With a native Windows build or a
   555         *> Windows/MinGW build, one could use the command 'chcp 437' to set that codepage
   556         *> for display within a Windows console window (that should be the default though).
   557         *> With a Windows/Cygwin build, set the environment variable CYGWIN to a value of
   558         *> 'codepage:oem' (this cannot be done from within the program though - you will
   559         *> have to use the 'Computer/Advanced System Settings/Environment Variables' (Vista
   560         *> or Windows 7) function to define the variable.  XP Users: use 'My Computer/
   561         *> Properties/Advanced/Environment Variables'.
   562         *>
   563         *> OSX users may use line drawing characters in this and any GNU COBOL program
   564         *> simply by setting their 'terminal' application's font to "Lucida Console".
   565         *>
   566          >>IF LINEDRAW IS EQUAL TO 0
   567          78 LD-UL-Corner              VALUE ' '.
   568          78 LD-LL-Corner              VALUE ' '.
   569          78 LD-UR-Corner              VALUE ' '.
   570          78 LD-LR-Corner              VALUE ' '.
   571          78 LD-Upper-T                VALUE ' '.
   572          78 LD-Lower-T                VALUE ' '.
   573          78 LD-Horiz-Line             VALUE ' '.
   574          78 LD-Vert-Line              VALUE ' '.
   575          >>ELIF LINEDRAW IS EQUAL TO 1
   576          78 LD-UL-Corner              VALUE X'DA'.
   577          78 LD-LL-Corner              VALUE X'C0'.
   578          78 LD-UR-Corner              VALUE X'BF'.
   579          78 LD-LR-Corner              VALUE X'D9'.
   580          78 LD-Upper-T                VALUE X'C2'.
   581          78 LD-Lower-T                VALUE X'C1'.
   582          78 LD-Horiz-Line             VALUE X'C4'.
   583          78 LD-Vert-Line              VALUE X'B3'.
   584          >>ELSE
   585          78 LD-UL-Corner              VALUE '+'.
   586          78 LD-LL-Corner              VALUE '+'.
   587          78 LD-UR-Corner              VALUE '+'.
   588          78 LD-LR-Corner              VALUE '+'.
   589          78 LD-Upper-T                VALUE '+'.
   590          78 LD-Lower-T                VALUE '+'.
   591          78 LD-Horiz-Line             VALUE '-'.
   592          78 LD-Vert-Line              VALUE '|'.
   593          >>END-IF
   594
```

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ACS Cobol Xref v2.02.04        Dictionary File for GCIC    06/03/2022  23:09:10:97   Page   12
    595          01 S-Blank-SCR LINE 1 COLUMN 1 BLANK SCREEN.
    596
    597          01 S-Switches-SCR BACKGROUND-COLOR COB-COLOR-BLACK
    598                           FOREGROUND-COLOR COB-COLOR-WHITE AUTO.
    599        *>
    600        *> GENERAL SCREEN FRAMEWORK
    601        *>
    602            03 BACKGROUND-COLOR COB-COLOR-BLACK
    603               FOREGROUND-COLOR COB-COLOR-GREEN HIGHLIGHT.
    604  GC0712     05 LINE 02 COL 01         VALUE LD-UL-Corner.
    605  GC0712     05         COL 02 PIC X(78) FROM  WS-Horizontal-Line-TXT.
    606            05         COL 80          VALUE LD-UR-Corner.
    607
    608  GC0712     05 LINE 03 COL 01         VALUE LD-Vert-Line.
    609            05         COL 80          VALUE LD-Vert-Line.
    610
    611  GC0712     05 LINE 04 COL 01         VALUE LD-Vert-Line.
    612            05         COL 80          VALUE LD-Vert-Line.
    613
    614  GC0712     05 LINE 05 COL 01         VALUE LD-LL-Corner.
    615  GC0712     05         COL 02 PIC X(78) FROM  WS-Horizontal-Line-TXT.
    616            05         COL 80          VALUE LD-LR-Corner.
    617
    618  GC0712     05 LINE 07 COL 01         VALUE LD-UL-Corner.
    619  GC0712     05         COL 02 PIC X(65) FROM  WS-Horizontal-Line-TXT.
    620  GC0712     05         COL 67          VALUE LD-Upper-T.
    621  GC0712     05         COL 68 PIC X(12) FROM  WS-Horizontal-Line-TXT.
    622            05         COL 80          VALUE LD-UR-Corner.
    623
    624  GC0712     05 LINE 08 COL 01         VALUE LD-Vert-Line.
    625  GC0712     05         COL 67          VALUE LD-Vert-Line.
    626            05         COL 80          VALUE LD-Vert-Line.
    627
    628  GC0712     05 LINE 09 COL 01         VALUE LD-Vert-Line.
    629  GC0712     05         COL 67          VALUE LD-Vert-Line.
    630            05         COL 80          VALUE LD-Vert-Line.
    631
    632  GC0712     05 LINE 10 COL 01         VALUE LD-Vert-Line.
    633  GC0712     05         COL 67          VALUE LD-Vert-Line.
    634            05         COL 80          VALUE LD-Vert-Line.
    635
    636  GC0712     05 LINE 11 COL 01         VALUE LD-Vert-Line.
    637  GC0712     05         COL 67          VALUE LD-Vert-Line.
    638            05         COL 80          VALUE LD-Vert-Line.
    639
    640  GC0712     05 LINE 12 COL 01         VALUE LD-Vert-Line.
    641  GC0712     05         COL 67          VALUE LD-Vert-Line.
    642            05         COL 80          VALUE LD-Vert-Line.
    643
    644  GC0712     05 LINE 13 COL 01         VALUE LD-LL-Corner.
    645  GC0712     05         COL 02 PIC X(65) FROM  WS-Horizontal-Line-TXT.
    646  GC0712     05         COL 67          VALUE LD-Lower-T.
    647  GC0712     05         COL 68 PIC X(12) FROM  WS-Horizontal-Line-TXT.
    648            05         COL 80          VALUE LD-LR-Corner.
```

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ACS Cobol Xref v2.02.04         Dictionary File for GCIC    06/03/2022  23:09:10:97   Page   13
   649
   650  GC0712        05 LINE 15 COL 01            VALUE LD-UL-Corner.
   651  GC0712        05         COL 02 PIC X(78) FROM  WS-Horizontal-Line-TXT.
   652                05         COL 80            VALUE LD-UR-Corner.
   653
   654  GC0712        05 LINE 16 COL 01            VALUE LD-Vert-Line.
   655                05         COL 80            VALUE LD-Vert-Line.
   656
   657  GC0712        05 LINE 17 COL 01            VALUE LD-Vert-Line.
   658                05         COL 80            VALUE LD-Vert-Line.
   659
   660  GC0712        05 LINE 18 COL 01            VALUE LD-LL-Corner.
   661  GC0712        05         COL 02 PIC X(78) FROM  WS-Horizontal-Line-TXT.
   662                05         COL 80            VALUE LD-LR-Corner.
   663
   664  GC0712        05 LINE 20 COL 01            VALUE LD-UL-Corner.
   665  GC0712        05         COL 02 PIC X(78) FROM  WS-Horizontal-Line-TXT.
   666                05         COL 80            VALUE LD-UR-Corner.
   667
   668  GC0712        05 LINE 21 COL 01            VALUE LD-Vert-Line.
   669                05         COL 80            VALUE LD-Vert-Line.
   670
   671  GC0712        05 LINE 22 COL 01            VALUE LD-Vert-Line.
   672                05         COL 80            VALUE LD-Vert-Line.
   673
   674  GC0712        05 LINE 23 COL 01            VALUE LD-LL-Corner.
   675  GC0712        05         COL 02 PIC X(78) FROM  WS-Horizontal-Line-TXT.
   676                05         COL 80            VALUE LD-LR-Corner.
   677       *>
   678       *> TOP AND BOTTOM LINES
   679       *>
   680  GC0712    03 BACKGROUND-COLOR COB-COLOR-BLUE
   681            FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
   682  GC0410    05 LINE 01 COL 01 VALUE ' GCic ('.
   683  GC0410    05         COL 08 PIC X(16) FROM WS-OC-Compile-DT.
   684  GC1213    05         COL 24 VALUE ') GNUCOBOL 3.1.2 06MAR2022 ' &
   685  GC0410                      'Interactive Compilation        '.
   686  VC0617    03 BACKGROUND-COLOR COB-COLOR-RED
   687  GC0712    FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
   688  GC0712    05 LINE 24 COL 01 PIC X(80) FROM WS-Output-Msg-TXT.
   689       *>
   690       *> LABELS
   691       *>
   692            03 BACKGROUND-COLOR COB-COLOR-BLACK
   693            FOREGROUND-COLOR COB-COLOR-CYAN  HIGHLIGHT.
   694  GC0712    05 LINE 06 COL 02 VALUE 'Set/Clr Switches Via F1-F9; ' &
   695  GC0712                      'Set Config Via F12; Enter Key ' &
   696  GC0712                      'Compiles; Esc Quits'.
   697  GC0712    05 LINE 14 COL 02 VALUE 'Extra "cobc" Switches, If Any ' &
   698  GC0712                      '("-save-temps=xxx" Prevents ' &
   699  GC0712                      'Listings):'.
   700  GC0712    05 LINE 19 COL 02 VALUE 'Program Execution Arguments, ' &
   701  GC0712                      'If Any:'.
   702  GC0712    03 BACKGROUND-COLOR COB-COLOR-BLACK
```

```
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  703  GC0712        FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
  704  GC0712        05 LINE 06 COL 23 VALUE 'F1'.
  705  GC0712        05         COL 26 VALUE 'F9'.
  706  GC0712        05         COL 45 VALUE 'F12'.
  707  GC0712        05         COL 50 VALUE 'ENTER'.
  708  GC0712        05         COL 70 VALUE 'ESC'.
  709       *>
  710       *> TOP SECTION BACKGROUND
  711       *>
  712           03 BACKGROUND-COLOR COB-COLOR-BLACK
  713              FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
  714  GC0712        05 LINE 03 COL 62 VALUE 'Enter'.
  715  GC0712        05 LINE 04 COL 62 VALUE 'Esc'.
  716
  717           03 BACKGROUND-COLOR COB-COLOR-BLACK
  718              FOREGROUND-COLOR COB-COLOR-GREEN HIGHLIGHT.
  719  GC0712        05 LINE 04 COL 03 VALUE 'Folder:   '.
  720  GC0712        05 LINE 03 COL 03 VALUE 'Filename: '.
  721
  722  GC0712        05 LINE 03 COL 67 VALUE ': Compile  '.
  723  GC0712        05 LINE 04 COL 65 VALUE ':   Quit      '.
  724       *>
  725       *> TOP SECTION PROGRAM INFO
  726       *>
  727           03 BACKGROUND-COLOR COB-COLOR-BLACK
  728              FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
  729  GC0712        05 LINE 03 COL 13 PIC X(66) FROM WS-Prog-File-Name-TXT.
  730  GC0712        05 LINE 04 COL 13 PIC X(66) FROM WS-Prog-Folder-TXT.
  731       *>
  732       *> MIDDLE LEFT SECTION F-KEYS
  733       *>
  734           03 BACKGROUND-COLOR COB-COLOR-BLACK
  735              FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
  736  GC0712        05 LINE 08 COL 03 VALUE 'F1'.
  737  GC0712        05 LINE 09 COL 03 VALUE 'F2'.
  738  GC0712        05 LINE 10 COL 03 VALUE 'F3'.
  739  GC0712        05 LINE 11 COL 03 VALUE 'F4'.
  740  GC0712        05 LINE 12 COL 03 VALUE 'F5'.
  741
  742  GC0712        05 LINE 08 COL 35 VALUE 'F6'.
  743  GC0712        05 LINE 09 COL 35 VALUE 'F7'.
  744  GC0712        05 LINE 10 COL 35 VALUE 'F8'.
  745  GC0712        05 LINE 11 COL 35 VALUE 'F9'.
  746       *>
  747       *> MIDDLE LEFT SECTION SWITCHES
  748       *>
  749           03 BACKGROUND-COLOR COB-COLOR-BLACK
  750              FOREGROUND-COLOR COB-COLOR-RED    HIGHLIGHT.
  751  GC0712        05 LINE 08 COL 06 PIC X(1) FROM WS-CS-DEBUG-CHR.
  752  GC0712        05 LINE 09 COL 06 PIC X(1) FROM WS-CS-TRACEALL-CHR.
  753  GC0712        05 LINE 10 COL 06 PIC X(1) FROM WS-CS-LIBRARY-CHR.
  754  GC0712        05 LINE 11 COL 06 PIC X(1) FROM WS-CS-EXECUTE-CHR.
  755  GC0712        05 LINE 12 COL 06 PIC X(1) FROM WS-CS-LISTING-CHR.
  756
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  757 GC0712        05 LINE 08 COL 38 PIC X(1) FROM WS-CS-NOFUNC-CHR.
  758 GC0712        05 LINE 09 COL 38 PIC X(1) FROM WS-CS-WARNALL-CHR.
  759 GC0712        05 LINE 10 COL 38 PIC X(1) FROM WS-CS-FREE-CHR.
  760 GC0712        05 LINE 11 COL 38 PIC X(1) FROM WS-CS-NOTRUNC-CHR.
  761     *>
  762     *> MIDDLE LEFT SECTION BACKGROUND
  763     *>
  764         03 BACKGROUND-COLOR COB-COLOR-BLACK
  765            FOREGROUND-COLOR COB-COLOR-GREEN HIGHLIGHT.
  766 GC0712        05 LINE 08 COL 07 VALUE 'Assume WITH DEBUGGING MODE'.
  767 GC0712        05 LINE 09 COL 07 VALUE 'Procedure+Statement Trace '.
  768 GC0712        05 LINE 10 COL 07 VALUE 'Make a Library ('.
  769 GC0712        05        COL 23 VALUE WS-OS-Lib-Type-CONST.
  770 GC0712        05 LINE 11 COL 07 VALUE 'Execute If Compilation OK '.
  771 GC1213        05 LINE 12 COL 07 FROM  WS-Listing-TXT.
  772
  773 GC0712        05 LINE 08 COL 39 VALUE '"FUNCTION" Is Optional    '.
  774 GC0712        05 LINE 09 COL 39 VALUE 'Enable All Warnings       '.
  775 GC0712        05 LINE 10 COL 39 VALUE 'Source Is Free-Format     '.
  776 GC0712        05 LINE 11 COL 39 VALUE 'No COMP/BINARY Truncation '.
  777     *>
  778     *> MIDDLE RIGHT SECTION Text
  779     *>
  780         03 BACKGROUND-COLOR COB-COLOR-BLACK
  781            FOREGROUND-COLOR COB-COLOR-GREEN HIGHLIGHT.
  782 GC0712        05 LINE 08 COL 69 VALUE 'Current'.
  783 GC0712        05 LINE 09 COL 69 VALUE 'Config:'.
  784     *>
  785     *> MIDDLE RIGHT SECTION CONFIG FILE
  786     *>
  787         03 BACKGROUND-COLOR COB-COLOR-BLACK
  788            FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
  789 GC0712        05 LINE 10 COL 69 PIC X(10)
  790 GC0712           FROM WS-CS-Filename-TXT (WS-CS-Config-NUM).
  791     *>
  792     *> FREE-FORM OPTIONS FIELDS
  793     *>
  794         03 BACKGROUND-COLOR COB-COLOR-BLACK
  795            FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
  796 GC0712        05 LINE 16 COL 03 PIC X(76) USING WS-CS-Extra-H1-TXT.
  797 GC0712        05 LINE 17 COL 03 PIC X(76) USING WS-CS-Extra-H2-TXT.
  798 GC0712        05 LINE 21 COL 03 PIC X(76) USING WS-CS-Arg-H1-TXT.
  799 GC0712        05 LINE 22 COL 03 PIC X(76) USING WS-CS-Arg-H2-TXT.
  800     /
  801      PROCEDURE DIVISION.
  802     *>****************************************************************
  803     *> Legend to procedure names:                              **
  804     *>                                                          **
  805     *> 00x-xxx   All MAIN driver procedures                    **
  806     *> 0xx-xxx   All GLOBAL UTILITY procedures                 **
  807     *> 1xx-xxx   All INITIALIZATION procedures                 **
  808     *> 2xx-xxx   All CORE PROCESSING procedures                **
  809     *> 9xx-xxx   All TERMINATION procedures                    **
  810     *>****************************************************************
```

```
811          DECLARATIVES.
812          000-File-Error SECTION.
813              USE AFTER STANDARD ERROR PROCEDURE ON F-Source-Code-FILE.
814      *    COPY FileStat-Msgs
815      *        REPLACING STATUS BY WS-FSM-Status-CD
816      *                  MSG    BY WS-FSM-Msg-TXT.
817      *> ****************************************************************
818      *> ** Author: Gary L. Cutler                              **
819      *> **         CutlerGL@gmail.com                          **
820      *> **                                                     **
821      *> ** This copybook defines an EVALUATE statement capable of  **
822      *> ** translating two-digit FILE-STATUS codes to a message.   **
823      *> **                                                     **
824      *> ** Use the REPLACING option to COPY to change the names of  **
825      *> ** the MSG and STATUS identifiers to the names your program **
826      *> ** needs.                                              **
827      *> ****************************************************************
828          EVALUATE WS-FSM-Status-CD
829          WHEN 00 MOVE 'SUCCESS                ' TO WS-FSM-Msg-TXT
830          WHEN 02 MOVE 'SUCCESS DUPLICATE      ' TO WS-FSM-Msg-TXT
831          WHEN 04 MOVE 'SUCCESS INCOMPLETE     ' TO WS-FSM-Msg-TXT
832          WHEN 05 MOVE 'SUCCESS OPTIONAL       ' TO WS-FSM-Msg-TXT
833          WHEN 07 MOVE 'SUCCESS NO UNIT        ' TO WS-FSM-Msg-TXT
834          WHEN 10 MOVE 'END OF FILE            ' TO WS-FSM-Msg-TXT
835          WHEN 14 MOVE 'OUT OF KEY RANGE       ' TO WS-FSM-Msg-TXT
836          WHEN 21 MOVE 'KEY INVALID            ' TO WS-FSM-Msg-TXT
837          WHEN 22 MOVE 'KEY EXISTS             ' TO WS-FSM-Msg-TXT
838          WHEN 23 MOVE 'KEY NOT EXISTS         ' TO WS-FSM-Msg-TXT
839          WHEN 30 MOVE 'PERMANENT ERROR        ' TO WS-FSM-Msg-TXT
840          WHEN 31 MOVE 'INCONSISTENT FILENAME  ' TO WS-FSM-Msg-TXT
841          WHEN 34 MOVE 'BOUNDARY VIOLATION     ' TO WS-FSM-Msg-TXT
842          WHEN 35 MOVE 'FILE NOT FOUND         ' TO WS-FSM-Msg-TXT
843          WHEN 37 MOVE 'PERMISSION DENIED      ' TO WS-FSM-Msg-TXT
844          WHEN 38 MOVE 'CLOSED WITH LOCK       ' TO WS-FSM-Msg-TXT
845          WHEN 39 MOVE 'CONFLICT ATTRIBUTE     ' TO WS-FSM-Msg-TXT
846          WHEN 41 MOVE 'ALREADY OPEN           ' TO WS-FSM-Msg-TXT
847          WHEN 42 MOVE 'NOT OPEN               ' TO WS-FSM-Msg-TXT
848          WHEN 43 MOVE 'READ NOT DONE          ' TO WS-FSM-Msg-TXT
849          WHEN 44 MOVE 'RECORD OVERFLOW        ' TO WS-FSM-Msg-TXT
850          WHEN 46 MOVE 'READ ERROR             ' TO WS-FSM-Msg-TXT
851          WHEN 47 MOVE 'INPUT DENIED           ' TO WS-FSM-Msg-TXT
852          WHEN 48 MOVE 'OUTPUT DENIED          ' TO WS-FSM-Msg-TXT
853          WHEN 49 MOVE 'I/O DENIED             ' TO WS-FSM-Msg-TXT
854          WHEN 51 MOVE 'RECORD LOCKED          ' TO WS-FSM-Msg-TXT
855          WHEN 52 MOVE 'END-OF-PAGE            ' TO WS-FSM-Msg-TXT
856          WHEN 57 MOVE 'I/O LINAGE             ' TO WS-FSM-Msg-TXT
857          WHEN 61 MOVE 'FILE SHARING FAILURE   ' TO WS-FSM-Msg-TXT
858          WHEN 91 MOVE 'FILE NOT AVAILABLE     ' TO WS-FSM-Msg-TXT
859          END-EVALUATE.
860  *>>W Msg29 Caution: One or more replacing sources not found
861          MOVE SPACES TO WS-Output-Msg-TXT
862          IF WS-FSM-Status-CD = 35
863              DISPLAY
864                  'File not found: "'
```

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    865                    TRIM(WS-File-Name-TXT,TRAILING)
    866                    ’”’
    867            ELSE
    868                DISPLAY
    869                    ’Error accessing file: ”’
    870                    TRIM(WS-File-Name-TXT,TRAILING)
    871                    ’”’
    872            END-IF
    873            GOBACK
    874              .
    875        END DECLARATIVES.
    876
    877        000-Main SECTION.
    878            PERFORM 100-Initialization
    879 GC0609    SET WS-RS-Not-Complete-BOOL TO TRUE
    880 GC0609    PERFORM UNTIL WS-RS-Complete-BOOL
    881 GC0609        PERFORM 200-Let-User-Set-Switches
    882 GC0609        PERFORM 210-Run-Compiler
    883 GC0410        IF (WS-RS-Compile-OK-BOOL OR WS-RS-Compile-OK-Warn-BOOL)
    884 GC0712        AND (WS-CS-LISTING-CHR > SPACE)
    885 GC0712            DISPLAY S-Blank-SCR
    886 GC0410            PERFORM 220-Make-Listing
    887 GC0410        END-IF
    888 GC0709        IF  (WS-CS-EXECUTE-CHR NOT = SPACES)
    889 GC0709        AND (WS-RS-Output-File-Avail-BOOL)
    890 GC0609            PERFORM 230-Run-Program
    891 GC0609        END-IF
    892 GC0712        PERFORM 250-Autoload-Listing
    893 GC0609    END-PERFORM
    894            PERFORM 900-Terminate
    895      * -- Control will NOT return
    896              .
    897      /
    898      *>****************************************************************
    899      *> Perform all program-wide initialization operations       **
    900      *>****************************************************************
    901       100-Initialization SECTION.
    902      *>****************************************************************
    903      *> Make sure full screen-handling is in effect              **
    904      *>****************************************************************
    905            SET ENVIRONMENT ’COB_SCREEN_EXCEPTIONS’ TO ’Y’
    906            SET ENVIRONMENT ’COB_SCREEN_ESC’        TO ’Y’
    907 VC0617    SET ENVIRONMENT "COB_EXIT_WAIT"         TO "0".
    908      *>****************************************************************
    909      *> Get GCic Compilation Date/Time                           **
    910      *>****************************************************************
    911            MOVE WHEN-COMPILED (1:12) TO WS-OC-Compile-DT
    912            INSPECT WS-OC-Compile-DT
    913                REPLACING ALL ’/’ BY ’:’
    914                AFTER INITIAL SPACE
    915      *>****************************************************************
    916      *> Convert WS-CS-All-Switches-TXT to Needed Alphanumeric Values**
    917      *>****************************************************************
    918            INSPECT WS-CS-All-Switches-TXT
```

```
919                   REPLACING ALL '0' BY SPACE
920                             ALL '1' BY SELCHAR
921  GC1213                     ALL '2' BY SELCHAR
922       *>***************************************************************
923       *> Process filename (the only command-line argument)         **
924       *>***************************************************************
925  GC0712    ACCEPT WS-Cmd-Args-TXT FROM COMMAND-LINE
926  GC0712    MOVE 1 TO WS-Cmd-SUB
927  GC0712    IF WS-Cmd-Args-TXT(WS-Cmd-SUB:1) = '"' OR "'"
928  GC0712        MOVE WS-Cmd-Args-TXT(WS-Cmd-SUB:1)
929  GC0712          TO WS-Cmd-End-Quote-CHR
930  GC0712        ADD 1 TO WS-Cmd-SUB
931  GC0712        UNSTRING WS-Cmd-Args-TXT
932  GC0712            DELIMITED BY WS-Cmd-End-Quote-CHR
933  GC0712            INTO WS-File-Name-TXT
934  GC0712            WITH POINTER WS-Cmd-SUB
935  GC0712    ELSE
936  GC0712        UNSTRING WS-Cmd-Args-TXT
937  GC0712            DELIMITED BY ALL SPACES
938  GC0712            INTO WS-File-Name-TXT
939  GC0712            WITH POINTER WS-Cmd-SUB
940  GC0712    END-IF
941            IF WS-File-Name-TXT = SPACES
942  GC0712        DISPLAY 'No program filename was specified'
943                PERFORM 900-Terminate
944       * ------ Control will NOT return
945            END-IF
946       *>***************************************************************
947       *> Determine if 'Make A Library' feature should be forced 'ON' **
948       *>***************************************************************
949            PERFORM 240-Find-LINKAGE-SECTION
950       *>***************************************************************
951       *> Split 'WS-File-Name-TXT' into 'WS-Prog-Folder-TXT' and    **
952       *> 'WS-Prog-File-Name-TXT'                                   **
953       *>***************************************************************
954  GC0909    IF WS-OS-Cygwin-BOOL AND WS-File-Name-TXT (2:1) = ':'
955  GC0712        MOVE '\' TO WS-OS-Dir-CHR
956  GC0909    END-IF
957  GC0712    MOVE LENGTH(WS-File-Name-TXT) TO WS-I-SUB
958  GC0712    PERFORM UNTIL WS-I-SUB = 0
959  GC0712    OR WS-FN-CHR (WS-I-SUB) = WS-OS-Dir-CHR
960                SUBTRACT 1 FROM WS-I-SUB
961            END-PERFORM
962            IF WS-I-SUB = 0
963                MOVE SPACES    TO WS-Prog-Folder-TXT
964                MOVE WS-File-Name-TXT TO WS-Prog-File-Name-TXT
965            ELSE
966                MOVE '*' TO WS-FN-CHR (WS-I-SUB)
967                UNSTRING WS-File-Name-TXT DELIMITED BY '*'
968                    INTO WS-Prog-Folder-TXT
969                         WS-Prog-File-Name-TXT
970  GC0712        MOVE WS-OS-Dir-CHR TO WS-FN-CHR (WS-I-SUB)
971            END-IF
972            IF WS-Prog-Folder-TXT = SPACES
```

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 973                    ACCEPT WS-Prog-Folder-TXT FROM ENVIRONMENT 'CD'
 974  GC0909       ELSE
 975  GC0909           CALL 'CBL_CHANGE_DIR'
 976  GC0909               USING TRIM(WS-Prog-Folder-TXT,TRAILING)
 977                   END-IF
 978  GC0909       IF WS-OS-Cygwin-BOOL AND WS-File-Name-TXT (2:1) = ':'
 979  GC0712           MOVE '/' TO WS-OS-Dir-CHR
 980  GC0909       END-IF
 981          *>****************************************************************
 982          *> Split 'WS-Prog-File-Name-TXT' into 'WS-Pgm-Nm-TXT' &       **
 983          *> 'WS-Prog-Extension-TXT'                                    **
 984          *>****************************************************************
 985  GC0712     MOVE LENGTH(WS-Prog-File-Name-TXT) TO WS-I-SUB
 986  GC0712     PERFORM UNTIL WS-I-SUB = 0
 987  GC0712     OR WS-PFN-CHR (WS-I-SUB) = '.'
 988  GC0712         SUBTRACT 1 FROM WS-I-SUB
 989  GC0712     END-PERFORM
 990  GC0712     IF WS-I-SUB = 0
 991  GC0712         MOVE WS-Prog-File-Name-TXT TO WS-Pgm-Nm-TXT
 992  GC0712         MOVE SPACES         TO WS-Prog-Extension-TXT
 993  GC0712     ELSE
 994  GC0712         MOVE '*' TO WS-PFN-CHR (WS-I-SUB)
 995  GC0712         UNSTRING WS-Prog-File-Name-TXT DELIMITED BY '*'
 996  GC0712             INTO WS-Pgm-Nm-TXT
 997  GC0712                  WS-Prog-Extension-TXT
 998  GC0712         MOVE '.' TO WS-PFN-CHR (WS-I-SUB)
 999  GC0712     END-IF
1000          *>****************************************************************
1001          *> Build initial Line 24 Message                             **
1002          *>****************************************************************
1003  GC0909     MOVE ALL LD-Horiz-Line TO WS-Horizontal-Line-TXT.
1004  GC0410     MOVE CONCATENATE(' GCic for '
1005  GC0410                      TRIM(WS-OS-Type-TXT(WS-OS-Type-CD),Trailing)
1006  VC0811                      ' Copyright (C) 2009-2022, Gary L. '
1007  GC0410                      'Cutler, GPL')
1008  GC0410       TO WS-Output-Msg-TXT.
1009  GC0909
1010        /
1011          *>****************************************************************
1012          *> Show the user the current switch settings and allow them to **
1013          *> be changed.                                               **
1014          *>****************************************************************
1015         200-Let-User-Set-Switches SECTION.
1016             SET WS-RS-Switch-Changes-BOOL TO TRUE
1017             PERFORM UNTIL WS-RS-No-Switch-Changes-BOOL
1018  GC1213       EVALUATE WS-Listing-CD
1019  GC1213       WHEN 0
1020  GC1213           MOVE 'Listing Off'        TO WS-Listing-TXT
1021  GC1213           MOVE SPACE               TO WS-CS-LISTING-CHR
1022  GC1213       WHEN 1
1023  GC1213           MOVE 'Listing On (Landscape)' TO WS-Listing-TXT
1024  GC1213           MOVE SELCHAR             TO WS-CS-LISTING-CHR
1025  GC1213       WHEN 2
1026  GC1213           MOVE 'Listing On (Portrait)' TO WS-Listing-TXT
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 1027  GC1213            MOVE SELCHAR                TO WS-CS-LISTING-CHR
 1028  GC1213         END-EVALUATE
 1029                 ACCEPT S-Switches-SCR
 1030                 IF COB-CRT-STATUS > 0
 1031                     EVALUATE COB-CRT-STATUS
 1032                         WHEN COB-SCR-F1
 1033                             IF WS-CS-DEBUG-CHR = SPACE
 1034  GC0712                         MOVE SELCHAR TO WS-CS-DEBUG-CHR
 1035                             ELSE
 1036                                 MOVE ' ' TO WS-CS-DEBUG-CHR
 1037                             END-IF
 1038  GC0712                 WHEN COB-SCR-F2
 1039  GC0712                     IF  WS-CS-TRACEALL-CHR = SPACE
 1040  GC0712                         MOVE SELCHAR TO WS-CS-TRACEALL-CHR
 1041  GC0712                     ELSE
 1042  GC0712                         MOVE ' ' TO WS-CS-TRACEALL-CHR
 1043  GC0712                     END-IF
 1044                         WHEN COB-SCR-F3
 1045  GC0712                     IF WS-CS-LIBRARY-CHR = SPACE
 1046  GC0712                         MOVE SELCHAR TO WS-CS-LIBRARY-CHR
 1047                             ELSE
 1048  GC0712                         MOVE ' ' TO WS-CS-LIBRARY-CHR
 1049                             END-IF
 1050                         WHEN COB-SCR-F4
 1051                             IF  WS-CS-EXECUTE-CHR = SPACE
 1052  GC0712                         MOVE SELCHAR TO WS-CS-EXECUTE-CHR
 1053                             ELSE
 1054                                 MOVE ' ' TO WS-CS-EXECUTE-CHR
 1055                             END-IF
 1056  GC0712                 WHEN COB-SCR-F5
 1057  GC1213                     ADD 1 TO WS-Listing-CD
 1058  GC1213                     IF WS-Listing-CD > 2
 1059  GC1213                         MOVE 0 TO WS-Listing-CD
 1060  GC1213                     END-IF
 1061  GC0712                 WHEN COB-SCR-F6
 1062  GC0712                     IF WS-CS-NOFUNC-CHR = SPACE
 1063  GC0712                         MOVE SELCHAR TO WS-CS-NOFUNC-CHR
 1064  GC0712                     ELSE
 1065  GC0712                         MOVE ' ' TO WS-CS-NOFUNC-CHR
 1066  GC0712                     END-IF
 1067  GC0712                 WHEN COB-SCR-F7
 1068  GC0712                     IF WS-CS-WARNALL-CHR = SPACE
 1069  GC0712                         MOVE SELCHAR TO WS-CS-WARNALL-CHR
 1070  GC0712                     ELSE
 1071  GC0712                         MOVE ' ' TO WS-CS-WARNALL-CHR
 1072  GC0712                     END-IF
 1073  GC0712                 WHEN COB-SCR-F8
 1074  GC0712                     IF WS-CS-FREE-CHR = SPACE
 1075  GC0712                         MOVE SELCHAR TO WS-CS-FREE-CHR
 1076  GC0712                     ELSE
 1077  GC0712                         MOVE ' ' TO WS-CS-FREE-CHR
 1078  GC0712                     END-IF
 1079  GC0712                 WHEN COB-SCR-F9
 1080  GC0712                     IF  WS-CS-NOTRUNC-CHR = SPACE
```

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  1081  GC0712                             MOVE SELCHAR TO WS-CS-NOTRUNC-CHR
  1082  GC0712                          ELSE
  1083  GC0712                             MOVE ' ' TO WS-CS-NOTRUNC-CHR
  1084  GC0712                          END-IF
  1085                              WHEN COB-SCR-ESC
  1086                                 PERFORM 900-Terminate
  1087       * ----------------- Control will NOT return
  1088  GC0712                     WHEN COB-SCR-F12
  1089  GC0712                        ADD 1 TO WS-CS-Config-NUM
  1090  GC0712                        IF WS-CS-Config-NUM > 7
  1091  GC0712                           MOVE 1 TO WS-CS-Config-NUM
  1092  GC0712                        END-IF
  1093                              WHEN OTHER
  1094                                 MOVE 'An unsupported key was pressed'
  1095                                   TO WS-Output-Msg-TXT
  1096                           END-EVALUATE
  1097                    ELSE
  1098                       SET WS-RS-No-Switch-Changes-BOOL TO TRUE
  1099                    END-IF
  1100             END-PERFORM
  1101             .
  1102       /
  1103       *>************************************************************
  1104       *> Run the compiler using the switch settings we've prepared.  **
  1105       *>************************************************************
  1106        210-Run-Compiler SECTION.
  1107          MOVE SPACES TO WS-Cmd-TXT
  1108                          WS-Cobc-Cmd-TXT
  1109                          WS-Output-Msg-TXT
  1110          DISPLAY S-Switches-SCR
  1111          MOVE 1 TO WS-I-SUB
  1112  GC0712   MOVE LOWER-CASE(WS-CS-Filename-TXT (WS-CS-Config-NUM))
  1113  GC0712      TO WS-Config-Fn-TXT
  1114       *>************************************************************
  1115       *> Build the 'cobc' command                                 **
  1116       *>************************************************************
  1117  GC0909   MOVE SPACES TO WS-Cobc-Cmd-TXT
  1118  GC0909   STRING 'cobc -v -std='
  1119  GC0909      TRIM(WS-Config-Fn-TXT,TRAILING)
  1120  GC0909      ' '
  1121  GC0909      INTO WS-Cobc-Cmd-TXT
  1122  GC0909      WITH POINTER WS-I-SUB
  1123          IF WS-CS-LIBRARY-CHR NOT = ' '
  1124             STRING '-m '
  1125                DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
  1126                WITH POINTER WS-I-SUB
  1127          ELSE
  1128             STRING '-x '
  1129                DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
  1130                WITH POINTER WS-I-SUB
  1131          END-IF
  1132          IF WS-CS-DEBUG-CHR NOT = ' '
  1133             STRING '-fdebugging-line '
  1134                DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
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  1135                     WITH POINTER WS-I-SUB
  1136             END-IF
  1137             IF WS-CS-NOTRUNC-CHR NOT = ' '
  1138                STRING '-fnotrunc '
  1139                     DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
  1140                     WITH POINTER WS-I-SUB
  1141             END-IF
  1142             IF WS-CS-TRACEALL-CHR NOT = ' '
  1143  GC0809        STRING '-ftraceall '
  1144                     DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
  1145                     WITH POINTER WS-I-SUB
  1146             END-IF
  1147  GC0712     IF WS-CS-NOFUNC-CHR NOT = ' '
  1148  VC0717        STRING '-fintrinsics=ALL '
  1149  GC0712             DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
  1150  GC0712             WITH POINTER WS-I-SUB
  1151  GC0712     END-IF
  1152  GC0712     IF WS-CS-WARNALL-CHR NOT = ' '
  1153  GC0712        STRING '-Wall '
  1154  GC0712             DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
  1155  GC0712             WITH POINTER WS-I-SUB
  1156  GC0712     END-IF
  1157  GC0712     IF WS-CS-FREE-CHR NOT = ' '
  1158  GC0712        STRING '-free '
  1159  GC0712             DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
  1160  GC0712             WITH POINTER WS-I-SUB
  1161  GC0712     ELSE
  1162  GC0712        STRING '-fixed '
  1163  GC0712             DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
  1164  GC0712             WITH POINTER WS-I-SUB
  1165  GC0712     END-IF
  1166
  1167  GC0712     MOVE 0 TO WS-Tally-QTY
  1168  GC0712     INSPECT WS-CS-Extra-TXT
  1169  GC0712        TALLYING WS-Tally-QTY FOR ALL '-save-temps'
  1170  GC0712     IF WS-CS-LISTING-CHR > SPACE
  1171  GC0712     AND WS-Tally-QTY > 0
  1172  GC0712        MOVE SPACE TO WS-CS-LISTING-CHR *> Can't generate listing if -save-temps used
  1173  GC0712     END-IF
  1174  GC0712     IF WS-CS-LISTING-CHR > SPACE
  1175  GC1010        STRING '-save-temps '
  1176  GC1010             DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
  1177  GC1010             WITH POINTER WS-I-SUB
  1178  GC1010     END-IF
  1179
  1180  GC0709     IF WS-CS-Extra-TXT > SPACES
  1181  GC0709        STRING ' '
  1182  GC0709               TRIM(WS-CS-Extra-TXT,TRAILING)
  1183  GC0709               ' '
  1184  GC0709             DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
  1185  GC0709             WITH POINTER WS-I-SUB
  1186  GC0709     END-IF
  1187  GC0909     STRING TRIM(WS-Prog-File-Name-TXT,TRAILING)
  1188  GC0909        DELIMITED SIZE INTO WS-Cobc-Cmd-TXT
```

```
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 1189  GC0909        WITH POINTER WS-I-SUB
 1190       *>****************************************************************
 1191       *> Prepare the compilation listing file                       **
 1192       *>****************************************************************
 1193  GC1113    MOVE CONCATENATE(TRIM(WS-Pgm-Nm-TXT,Trailing),'.gclst')
 1194  GC0712       TO WS-Listing-Filename-TXT
 1195  GC0712    CALL 'CBL_DELETE_FILE' USING WS-Listing-Filename-TXT
 1196       *>****************************************************************
 1197       *> Now execute the 'cobc' command                             **
 1198       *>****************************************************************
 1199  GC0410    MOVE ' Compiling...' TO WS-Output-Msg-TXT
 1200  GC0410    DISPLAY S-Switches-SCR
 1201  GC0609    SET WS-RS-Output-File-Avail-BOOL TO TRUE
 1202            MOVE SPACES TO WS-Cmd-TXT
 1203            STRING TRIM(WS-Cobc-Cmd-TXT,TRAILING)
 1204  GC0712           ' >' WS-Listing-Filename-TXT
 1205  GC0712           ' 2>&1'
 1206                    DELIMITED SIZE
 1207                    INTO WS-Cmd-TXT
 1208  DEBUG D   DISPLAY WS-Cmd-TXT UPON SYSERR
 1209            CALL 'SYSTEM' USING TRIM(WS-Cmd-TXT,TRAILING)
 1210  GC0712    OPEN EXTEND F-Cobc-Output-FILE
 1211  GC0712    WRITE F-Cobc-Output-REC FROM SPACES
 1212  GC0712    IF RETURN-CODE = 0
 1213  GC0712        SET WS-RS-Compile-OK-BOOL TO TRUE
 1214  GC0712        MOVE ' Compilation Was Successful' TO WS-Output-Msg-TXT
 1215  GC0712        MOVE CONCATENATE('GNU COBOL',WS-Output-Msg-TXT)
 1216  GC0712          TO F-Cobc-Output-REC
 1217  GC0712        WRITE F-Cobc-Output-REC
 1218  GC0712        SET WS-RS-Complete-BOOL TO TRUE
 1219  GC0712    ELSE
 1220  GC0712        SET WS-RS-Compile-Failed-BOOL TO TRUE
 1221  GC0712        MOVE CONCATENATE(' Compilation Failed - See ',
 1222  GC0712                   TRIM(WS-Listing-Filename-TXT,Trailing))
 1223  GC0712          TO WS-Output-Msg-TXT
 1224  GC0712        MOVE 'GNU COBOL Compilation HAS FAILED - See Above'
 1225  GC0712          TO F-Cobc-Output-REC
 1226  GC0712        WRITE F-Cobc-Output-REC
 1227  GC0712    END-IF
 1228  GC0712    CLOSE F-Cobc-Output-FILE
 1229  GC0712    DISPLAY S-Switches-SCR
 1230  GC0712    CALL 'C$SLEEP' USING 2
 1231  GC0712    MOVE SPACES TO WS-Output-Msg-TXT
 1232            IF WS-RS-Compile-Failed-BOOL
 1233  GC0712        PERFORM 250-Autoload-Listing
 1234            PERFORM 900-Terminate
 1235       *> ----- Control will not return
 1236            END-IF
 1237            .
 1238       /
 1239       *>****************************************************************
 1240       *> Generate a source + xref listing using 'LISTING' subroutine **
 1241       *>****************************************************************
 1242  GC0410 220-Make-Listing SECTION.
```

```
1243  GC0410     MOVE ' Generating listing...' TO WS-Output-Msg-TXT
1244  GC0410     DISPLAY S-Switches-SCR
1245  GC0410     MOVE 0 TO RETURN-CODE
1246         *>****************************************************************
1247         *> Create the listing                                         **
1248         *>****************************************************************
1249  GC0410     MOVE SPACES TO WS-Output-Msg-TXT
1250  GC0410     CALL 'LISTING' USING WS-Listing-Filename-TXT
1251  GC0712                          WS-File-Name-TXT
1252  GC0712                          WS-OS-Type-CD
1253  GC1213                          LPP
1254  GC1213                          LPPP
1255  GC1213                          WS-Listing-CD
1256  GC0410     ON EXCEPTION
1257  GC0410        MOVE ' LISTING module is not available'
1258  GC0410          TO WS-Output-Msg-TXT
1259  GC0410        MOVE 1 TO RETURN-CODE
1260  GC0410     END-CALL
1261  GC0410     IF RETURN-CODE = 0
1262  GC0712        MOVE ' Source+Xref listing generated '
1263  GC0712          TO WS-Output-Msg-TXT
1264  GC0410     END-IF
1265  GC0712     DISPLAY S-Switches-SCR
1266  GC0712     CALL 'C$SLEEP' USING 2
1267  GC0712     PERFORM 250-Autoload-Listing
1268  GC0410     .
1269         /
1270         *>****************************************************************
1271         *> Run the compiled program                                   **
1272         *>****************************************************************
1273          230-Run-Program SECTION.
1274  GC0114     MOVE ' Preparing to run program ... press ENTER to close '
1275  GC0114       TO WS-Output-Msg-TXT
1276  GC0114     DISPLAY S-Switches-SCR
1277  GC0114     CALL 'C$SLEEP' USING 3
1278  GC0909     MOVE SPACES TO WS-Cmd-TXT
1279  GC0909     MOVE 1 TO WS-I-SUB
1280         *>****************************************************************
1281         *> If necessary, start with 'cobcrun' command                 **
1282         *>****************************************************************
1283  GC0712     IF WS-CS-LIBRARY-CHR NOT = ' '
1284                 STRING 'cobcrun ' DELIMITED SIZE
1285                        INTO WS-Cmd-TXT
1286                        WITH POINTER WS-I-SUB
1287             END-IF
1288         *>****************************************************************
1289         *> Add any necessary path prefix                              **
1290         *>****************************************************************
1291  GC0712     SET WS-RS-Double-Quote-Used-BOOL TO FALSE
1292             IF WS-Prog-Folder-TXT NOT = SPACES
1293  GC0909        IF WS-OS-Cygwin-BOOL AND WS-Prog-Folder-TXT (2:1) = ':'
1294  GC0909            STRING '/cygdrive/'
1295  GC0909                INTO WS-Cmd-TXT
1296  GC0909                WITH POINTER WS-I-SUB
```

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ACS Cobol Xref v2.02.04         Dictionary File for GCIC    06/03/2022  23:09:10:99   Page   25

1297  GC0909              STRING LOWER-CASE(WS-Prog-Folder-TXT (1:1))
1298  GC0909                  INTO WS-Cmd-TXT
1299  GC0909                  WITH POINTER WS-I-SUB
1300  GC0909              PERFORM
1301  GC0909                  VARYING WS-J-SUB FROM 3 BY 1
1302  GC0909                  UNTIL WS-J-SUB > LENGTH(TRIM(WS-Prog-Folder-TXT))
1303  GC0909                  IF WS-Prog-Folder-TXT (WS-J-SUB:1) = '\'
1304  GC0909                      STRING '/'
1305  GC0909                          INTO WS-Cmd-TXT
1306  GC0909                          WITH POINTER WS-I-SUB
1307  GC0909                      ELSE
1308  GC0909                          STRING WS-Prog-Folder-TXT (WS-J-SUB:1)
1309  GC0909                              INTO WS-Cmd-TXT
1310  GC0909                              WITH POINTER WS-I-SUB
1311  GC0909                      END-IF
1312  GC0909                  END-PERFORM
1313  GC0909              ELSE
1314  GC0410                  STRING '"' TRIM(WS-Prog-Folder-TXT,TRAILING)
1315  GC0909                      INTO WS-Cmd-TXT
1316  GC0909                      WITH POINTER WS-I-SUB
1317  GC0712                  SET WS-RS-Double-Quote-Used-BOOL TO TRUE
1318  GC0909              END-IF
1319  GC0712              STRING WS-OS-Dir-CHR
1320  GC0909                  INTO WS-Cmd-TXT
1321  GC0909                  WITH POINTER WS-I-SUB
1322  GC0909          ELSE
1323  GC0909              IF WS-OS-Cygwin-BOOL OR WS-OS-UNIX-BOOL
1324  GC0909                  STRING './'
1325  GC0909                      INTO WS-Cmd-TXT
1326  GC0909                      WITH POINTER WS-I-SUB
1327  GC0909              END-IF
1328              END-IF
1329      *>************************************************************
1330      *> Insert program filename                                **
1331      *>************************************************************
1332  GC0909      STRING TRIM(WS-Pgm-Nm-TXT,TRAILING)
1333  GC0909          INTO WS-Cmd-TXT
1334  GC0909          WITH POINTER WS-I-SUB
1335      *>************************************************************
1336      *> Insert proper extension                                **
1337      *>************************************************************
1338  GC0712      IF WS-CS-LIBRARY-CHR = ' '
1339  GC0712          IF WS-OS-Exe-Ext-CONST > ' '
1340  GC0712              STRING WS-OS-Exe-Ext-CONST DELIMITED SPACE
1341  GC0712                  INTO WS-Cmd-TXT
1342  GC0712                  WITH POINTER WS-I-SUB
1343  GC0712          END-IF
1344  GC0712      ELSE
1345  GC0712          IF WS-OS-Lib-Ext-CONST > ' '
1346  GC0712              STRING WS-OS-Lib-Ext-CONST DELIMITED SPACE
1347  GC0712                  INTO WS-Cmd-TXT
1348  GC0712                  WITH POINTER WS-I-SUB
1349  GC0712          END-IF
1350  GC0712      END-IF
```

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ACS Cobol Xref v2.02.04       Dictionary File for GCIC     06/03/2022  23:09:10:99   Page   26
 1351  GC0712     IF WS-RS-Double-Quote-Used-BOOL
 1352  GC0712         STRING '"' DELIMITED SIZE
 1353  GC0712             INTO WS-Cmd-TXT
 1354  GC0712             WITH POINTER WS-I-SUB
 1355  GC0712     END-IF
 1356             IF WS-CS-Args-TXT NOT = SPACES
 1357  GC0809         STRING ' ' TRIM(WS-CS-Args-TXT,TRAILING)
 1358                     INTO WS-Cmd-TXT
 1359                     WITH POINTER WS-I-SUB
 1360             END-IF
 1361         *>**************************************************************
 1362         *> Run the program                                          **
 1363         *>**************************************************************
 1364  GC0114     CALL X'E4'
 1365             CALL 'SYSTEM' USING TRIM(WS-Cmd-TXT,TRAILING)
 1366  GC0712     MOVE SPACES TO WS-Output-Msg-TXT
 1367  GC0114     ACCEPT WS-Output-Msg-TXT(1:1) AT 0101
 1368             PERFORM 900-Terminate
 1369         * -- Control will NOT return
 1370             .
 1371         /
 1372         *>**************************************************************
 1373         *> Determine if the program being compiled is a MAIN program   **
 1374         *>**************************************************************
 1375          240-Find-LINKAGE-SECTION SECTION.
 1376             OPEN INPUT F-Source-Code-FILE
 1377  GC0712     MOVE ' ' TO WS-CS-LIBRARY-CHR
 1378             SET WS-RS-More-To-1st-Prog-BOOL   TO TRUE
 1379             PERFORM UNTIL WS-RS-1st-Prog-Complete-BOOL
 1380                 READ F-Source-Code-FILE AT END
 1381                     CLOSE F-Source-Code-FILE
 1382                     EXIT SECTION
 1383                 END-READ
 1384  GC0712         CALL 'CHECKSRC'
 1385  GC0712             USING BY CONTENT   F-Source-Code-REC
 1386  GC0712                   BY REFERENCE WS-RS-Source-Record-Type-CHR
 1387                 IF WS-RS-Source-Rec-Ident-BOOL
 1388                     SET WS-RS-1st-Prog-Complete-BOOL TO TRUE
 1389                 END-IF
 1390             END-PERFORM
 1391  GC0712     SET WS-RS-Source-Rec-Ignored-BOOL TO TRUE
 1392             PERFORM UNTIL WS-RS-Source-Rec-Linkage-BOOL
 1393                     OR WS-RS-Source-Rec-Ident-BOOL
 1394                 READ F-Source-Code-FILE AT END
 1395                     CLOSE F-Source-Code-FILE
 1396                     EXIT SECTION
 1397                 END-READ
 1398  GC0712         CALL 'CHECKSRC'
 1399  GC0712             USING BY CONTENT   F-Source-Code-REC
 1400  GC0712                   BY REFERENCE WS-RS-Source-Record-Type-CHR
 1401             END-PERFORM
 1402             CLOSE F-Source-Code-FILE
 1403             IF WS-RS-Source-Rec-Linkage-BOOL
 1404  GC0712         MOVE SELCHAR TO WS-CS-LIBRARY-CHR
```

```
ACS Cobol Xref v2.02.04       Dictionary File for GCIC    06/03/2022  23:09:10:99   Page   27
1405          END-IF
1406             .
1407       /
1408 GC0712*>***********************************************************
1409 GC0712*> Attempt to open the listing file as a command.  This will - **
1410 GC1113*> if the user has associated filetype/extension 'gclst' with  **
1411 GC0712*> an application - invoke the appropriate application to       **
1412 GC0712*> allow the user to view the listing.                          **
1413 GC0712*>***********************************************************'
1414 GC0712 250-Autoload-Listing SECTION.
1415 GC0712     EVALUATE TRUE
1416 GC0712         WHEN WS-OS-Windows-BOOL OR WS-OS-Cygwin-BOOL
1417 GC0712             MOVE SPACES TO WS-Cmd-TXT
1418 GC0712             STRING
1419 GC0712                 'cmd /c '
1420 GC0712                 TRIM(WS-Listing-Filename-TXT,TRAILING)
1421 GC0712                 DELIMITED SIZE INTO WS-Cmd-TXT
1422 GC0712             CALL 'SYSTEM' USING TRIM(WS-Cmd-TXT,TRAILING)
1423 GC0712         WHEN WS-OS-OSX-BOOL
1424 GC0712             MOVE SPACES TO WS-Cmd-TXT
1425 GC0712             STRING
1426 GC0712                 'open -t '
1427 GC0712                 TRIM(WS-Listing-Filename-TXT,TRAILING)
1428 GC0712                 DELIMITED SIZE INTO WS-Cmd-TXT
1429 GC0712             CALL 'SYSTEM' USING TRIM(WS-Cmd-TXT,TRAILING)
1430 GC0712     END-EVALUATE
1431 GC0712*>    ***********************************************************
1432 GC0712*>    ** Since we had to do our own '-save-temps' when we       **
1433 GC0712*>    ** compiled (in order to generate the cross-reference     **
1434 GC0712*>    ** listing) we now need to clean up after ourselves.      **
1435 GC0712*>    ***********************************************************
1436 GC1112     DISPLAY S-Blank-SCR
1437 GC0712     IF WS-OS-Windows-BOOL
1438 GC0712         MOVE CONCATENATE('del ',TRIM(WS-Pgm-Nm-TXT,TRAILING))
1439 GC0712           TO WS-Cmd-TXT
1440 GC0712     ELSE
1441 GC0712         MOVE CONCATENATE('rm ',TRIM(WS-Pgm-Nm-TXT,TRAILING))
1442 GC0712           TO WS-Cmd-TXT
1443 GC0712     END-IF
1444 GC0712     CALL 'SYSTEM'
1445 GC0712         USING CONCATENATE(TRIM(WS-Cmd-TXT,TRAILING),'.c')
1446 GC0712     CALL 'SYSTEM'
1447 GC0712         USING CONCATENATE(TRIM(WS-Cmd-TXT,TRAILING),'.c.h')
1448 GC0712     CALL 'SYSTEM'
1449 GC0712         USING CONCATENATE(TRIM(WS-Cmd-TXT,TRAILING),'.c.l*.h')
1450 GC0712     CALL 'SYSTEM'
1451 GC0712         USING CONCATENATE(TRIM(WS-Cmd-TXT,TRAILING),'.i')
1452 GC0712     CALL 'SYSTEM'
1453 GC0712         USING CONCATENATE(TRIM(WS-Cmd-TXT,TRAILING),'.o')
1454
1455 GC0712     .
1456       /
1457       *>***********************************************************
1458       *> Display a message and halt the program                   **
```

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ACS Cobol Xref v2.02.04        Dictionary File for GCIC     06/03/2022  23:09:10:99   Page   28
   1459          *>************************************************************
   1460           900-Terminate SECTION.
   1461  GC0909     IF WS-Output-Msg-TXT > SPACES
   1462  GC0909        DISPLAY S-Switches-SCR
   1463  GC0909        CALL 'C$SLEEP' USING 2
   1464  GC0909     END-IF
   1465           DISPLAY S-Blank-SCR
   1466           STOP RUN
   1467           .
   1468
   1469           END PROGRAM GCic.
   1470       /
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC    06/03/2022  23:09:10:99   Page   29
Symbols of Module: GCIC (GCIC)
-----------------------------

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

F-COBC-OUTPUT-FILE            000192F  000201 001210 001228
F-COBC-OUTPUT-REC             000202F  001211 001216 001217 001225 001226
F-SOURCE-CODE-FILE            000195F  000204 000813 001376 001380 001381 001394 001395 001402
F-SOURCE-CODE-REC             000205F  001385 001399
WS-FILE-NAME-TXT              000195F  000399 000865 000870 000933 000938 000941 000954 000957
                                       000964 000967 000978 001251
WS-FSM-STATUS-CD              000197F  000405 000828 000862
WS-LISTING-FILENAME-TXT       000192F  000417 001194 001195 001204 001222 001250 001420 001427
```

```
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Symbols of Module: GCIC (GCIC)
------------------------------

Data Section (WORKING-STORAGE)   Defn    Locations
------------------------------+-----------------------------------------------------------------

COB-COLOR-BLACK                 000232W  000597 000602 000692 000702 000712 000717 000727 000734
                                         000749 000764 000780 000787 000794
COB-COLOR-BLUE                  000233W  000680
COB-COLOR-CYAN                  000235W  000693
COB-COLOR-GREEN                 000234W  000603 000718 000765 000781
COB-COLOR-MAGENTA               000237W
COB-COLOR-RED                   000236W  000686 000750
COB-COLOR-WHITE                 000239W  000598 000681 000687 000703 000713 000728 000735 000788
                                         000795
COB-COLOR-YELLOW                000238W
COB-SCR-BACK-TAB                000321W
COB-SCR-BACKSPACE               000328W
COB-SCR-DELETE                  000327W
COB-SCR-ESC                     000318W  001085
COB-SCR-F1                      000245W  001032
COB-SCR-F10                     000254W
COB-SCR-F11                     000255W
COB-SCR-F12                     000256W  001088
COB-SCR-F13                     000257W
COB-SCR-F14                     000258W
COB-SCR-F15                     000259W
COB-SCR-F16                     000260W
COB-SCR-F17                     000261W
COB-SCR-F18                     000262W
COB-SCR-F19                     000263W
COB-SCR-F2                      000246W  001038
COB-SCR-F20                     000264W
COB-SCR-F21                     000265W
COB-SCR-F22                     000266W
COB-SCR-F23                     000267W
COB-SCR-F24                     000268W
COB-SCR-F25                     000269W
COB-SCR-F26                     000270W
COB-SCR-F27                     000271W
COB-SCR-F28                     000272W
COB-SCR-F29                     000273W
COB-SCR-F3                      000247W  001044
COB-SCR-F30                     000274W
COB-SCR-F31                     000275W
COB-SCR-F32                     000276W
COB-SCR-F33                     000277W
COB-SCR-F34                     000278W
COB-SCR-F35                     000279W
COB-SCR-F36                     000280W
COB-SCR-F37                     000281W
COB-SCR-F38                     000282W
COB-SCR-F39                     000283W
COB-SCR-F4                      000248W  001050
COB-SCR-F40                     000284W
```

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ACS Cobol Xref v2.02.04        Dictionary File for GCIC     06/03/2022  23:09:11:00   Page   31
Symbols of Module: GCIC (GCIC)
------------------------------

Data Section (WORKING-STORAGE)  Defn     Locations
------------------------------+-------------------------------------------------------------

COB-SCR-F41                     000285W
COB-SCR-F42                     000286W
COB-SCR-F43                     000287W
COB-SCR-F44                     000288W
COB-SCR-F45                     000289W
COB-SCR-F46                     000290W
COB-SCR-F47                     000291W
COB-SCR-F48                     000292W
COB-SCR-F49                     000293W
COB-SCR-F5                      000249W  001056
COB-SCR-F50                     000294W
COB-SCR-F51                     000295W
COB-SCR-F52                     000296W
COB-SCR-F53                     000297W
COB-SCR-F54                     000298W
COB-SCR-F55                     000299W
COB-SCR-F56                     000300W
COB-SCR-F57                     000301W
COB-SCR-F58                     000302W
COB-SCR-F59                     000303W
COB-SCR-F6                      000250W  001061
COB-SCR-F60                     000304W
COB-SCR-F61                     000305W
COB-SCR-F62                     000306W
COB-SCR-F63                     000307W
COB-SCR-F64                     000308W
COB-SCR-F7                      000251W  001067
COB-SCR-F8                      000252W  001073
COB-SCR-F9                      000253W  001079
COB-SCR-FATAL                   000335W
COB-SCR-INSERT                  000326W
COB-SCR-KEY-DOWN                000316W
COB-SCR-KEY-END                 000330W
COB-SCR-KEY-HOME                000329W
COB-SCR-KEY-LEFT                000322W
COB-SCR-KEY-RIGHT               000323W
COB-SCR-KEY-UP                  000314W
COB-SCR-KEY_DOWN                000317W
COB-SCR-KEY_UP                  000315W
COB-SCR-MAX-FIELD               000336W
COB-SCR-NO-FIELD                000332W
COB-SCR-OK                      000243W
COB-SCR-PAGE-DOWN               000312W
COB-SCR-PAGE-UP                 000310W
COB-SCR-PAGE_DOWN               000313W
COB-SCR-PAGE_UP                 000311W
COB-SCR-PRINT                   000319W
COB-SCR-TAB                     000320W
COB-SCR-TIME-OUT                000333W
```

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ACS Cobol Xref v2.02.04        Dictionary File for GCIC    06/03/2022  23:09:11:00   Page   32
Symbols of Module: GCIC (GCIC)
-----------------------------


Data Section (WORKING-STORAGE)  Defn    Locations
-----------------------------+-----------------------------------------------------------------

F1                          000364W
F12                         000358W
F2                          000371W
F3                          000367W
F4                          000365W
F5                          000368W  000415
F6                          000369W
F7                          000372W
F8                          000366W
F9                          000370W
WS-CMD-ARGS-TXT             000387W  000925 000927 000928 000931 000936
WS-CMD-END-QUOTE-CHR        000389W  000929 000932
WS-CMD-SUB                  000391W  000926 000930 000934 000939
WS-CMD-TXT                  000385W  001107 001202 001207 001208 001209 001278 001285 001295
                                     001298 001305 001309 001315 001320 001325 001333 001341
                                     001347 001353 001358 001365 001417 001421 001422 001424
                                     001428 001429 001439 001442 001445 001447 001449 001451
                                     001453
WS-COBC-CMD-TXT             000393W  001108 001117 001121 001125 001129 001134 001139 001144
                                     001149 001154 001159 001163 001176 001184 001188 001203
WS-COMPILATION-SWITCHES-TXT 000338W
WS-CONFIG-FN-TXT            000395W  001113 001119
WS-CS-ALL-SWITCHES-TXT      000373W  000918
WS-CS-ARG-H1-TXT            000340W  000798
WS-CS-ARG-H2-TXT            000341W  000799
WS-CS-ARGS-TXT              000339W  001356 001357
WS-CS-CONFIG-NUM            000354W  000356 000358 001089 001090 001091 001112
WS-CS-DEBUG-CHR             000375W  000751 001033 001034 001036 001132
WS-CS-EXECUTE-CHR           000376W  000754 000888 001051 001052 001054
WS-CS-EXTRA-H1-TXT          000361W  000796
WS-CS-EXTRA-H2-TXT          000362W  000797
WS-CS-EXTRA-TXT             000360W  001168 001180 001182
WS-CS-FILENAME-TXT          000351W  000790 001112
WS-CS-FILENAMES-TABLE-TXT   000350W
WS-CS-FILENAMES-TXT         000342W  000350
WS-CS-FREE-CHR              000377W  000759 001074 001075 001077 001157
WS-CS-LIBRARY-CHR           000378W  000753 001045 001046 001048 001123 001283 001338 001377
                                     001404
WS-CS-LISTING-CHR           000379W  000755 000884 001021 001024 001027 001170 001172 001174
WS-CS-NOFUNC-CHR            000380W  000757 001062 001063 001065 001147
WS-CS-NOTRUNC-CHR           000381W  000760 001080 001081 001083 001137
WS-CS-SWITCH-DEFAULTS-TXT   000363W  000374
WS-CS-TRACEALL-CHR          000382W  000752 001039 001040 001042 001142
WS-CS-WARNALL-CHR           000383W  000758 001068 001069 001071 001152
WS-DELETE-FN-TXT            000397W
WS-FILE-NAME-TXT            000399W  000865 000870 000933 000938 000941 000954 000957 000964
                                     000967 000978 001251
WS-FILE-STATUS-MESSAGE-TXT  000403W
WS-FN-CHR                   000400W  000959 000966 000970
```

```
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Symbols of Module: GCIC (GCIC)
-----------------------------


Data Section (WORKING-STORAGE)  Defn    Locations
-----------------------------+--------------------------------------------------------------

WS-FSM-MSG-TXT                 000407W  000829 000830 000831 000832 000833 000834 000835 000836
                                        000837 000838 000839 000840 000841 000842 000843 000844
                                        000845 000846 000847 000848 000849 000850 000851 000852
                                        000853 000854 000855 000856 000857 000858
WS-FSM-STATUS-CD               000405W  000828 000862
WS-HORIZONTAL-LINE-TXT         000409W  000605 000615 000619 000621 000645 000647 000651 000661
                                        000665 000675 001003
WS-I-SUB                       000411W  000957 000958 000959 000960 000962 000966 000970 000985
                                        000986 000987 000988 000990 000994 000998 001111 001122
                                        001126 001130 001135 001140 001145 001150 001155 001160
                                        001164 001177 001185 001189 001279 001286 001296 001299
                                        001306 001310 001316 001321 001326 001334 001342 001348
                                        001354 001359
WS-J-SUB                       000413W  001301 001302
WS-LISTING-CD                  000415W  001018 001057 001058 001059 001255
WS-LISTING-FILENAME-TXT        000417W  001194 001195 001204 001222 001250 001420 001427
WS-LISTING-TXT                 000419W  000771 001020 001023 001026
WS-OC-COMPILE-DT               000421W  000683 000911 000912
WS-OS-CYGWIN-BOOL              000455W  000954 000978 001293 001323 001416
WS-OS-DIR-CHR                  000424W  000430 000436 000442 000448 000955 000959 000970 000979
                                        001319
WS-OS-EXE-EXT-CONST            000425W  000431 000437 000443 000449 001339 001340
WS-OS-LIB-EXT-CONST            000426W  000432 000438 000444 000450 001345 001346
WS-OS-LIB-TYPE-CONST           000427W  000433 000439 000445 000451 000769
WS-OS-OSX-BOOL                 000457W  001423
WS-OS-TYPE-CD                  000428W  000434 000440 000446 000452 001005 001252
WS-OS-TYPE-FILLER-TXT          000459W  000465
WS-OS-TYPE-TXT                 000466W  001005
WS-OS-TYPES-TXT                000465W
WS-OS-UNIX-BOOL                000456W  001323
WS-OS-WINDOWS-BOOL             000454W  001416 001437
WS-OUTPUT-MSG-TXT              000469W  000688 000861 001008 001095 001109 001199 001214 001215
                                        001223 001231 001243 001249 001258 001263 001275 001366
                                        001367 001461
WS-PATH-DELIMITER-CHR          000471W
WS-PFN-CHR                     000478W  000987 000994 000998
WS-PGM-NM-TXT                  000481W  000991 000996 001193 001332 001438 001441
WS-PROG-EXTENSION-TXT          000473W  000992 000997
WS-PROG-FILE-NAME-TXT          000477W  000729 000964 000969 000985 000991 000995 001187
WS-PROG-FOLDER-TXT             000475W  000730 000963 000968 000972 000973 000976 001292 001293
                                        001297 001302 001303 001308 001314
WS-RS-1ST-PROG-COMPLETE-BOOL   000494W  001379 001388
WS-RS-COMPILE-FAILED-BOOL      000487W  001220 001232
WS-RS-COMPILE-OK-BOOL          000485W  000883 001213
WS-RS-COMPILE-OK-CHR           000484W
WS-RS-COMPILE-OK-WARN-BOOL     000486W  000883
WS-RS-COMPLETE-BOOL            000489W  000880 001218
WS-RS-COMPLETE-CHR             000488W
WS-RS-DOUBLE-QUOTE-USED-BOOL   000492W  001291 001317 001351
```

```
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Symbols of Module: GCIC (GCIC)
-----------------------------

Data Section (WORKING-STORAGE)  Defn     Locations
----------------------------+-----------------------------------------------------------------

WS-RS-IDENT-DIV-CHR             000493W
WS-RS-MORE-TO-1ST-PROG-BOOL     000495W  001378
WS-RS-NO-SWITCH-CHANGES-BOOL    000497W  001017 001098
WS-RS-NO-SWITCH-CHGS-CHR        000496W
WS-RS-NOT-COMPLETE-BOOL         000490W  000879
WS-RS-OUTPUT-FILE-AVAIL-BOOL    000501W  000889 001201
WS-RS-OUTPUT-FILE-BUSY-BOOL     000500W
WS-RS-OUTPUT-FILE-BUSY-CHR      000499W
WS-RS-QUOTE-CHR                 000491W
WS-RS-SOURCE-REC-IDENT-BOOL     000504W  001387 001393
WS-RS-SOURCE-REC-IGNORED-BOOL   000505W  001391
WS-RS-SOURCE-REC-LINKAGE-BOOL   000503W  001392 001403
WS-RS-SOURCE-RECORD-TYPE-CHR    000502W  001386 001400
WS-RS-SWITCH-CHANGES-BOOL       000498W  001016
WS-RS-SWITCH-ERROR-CHR          000506W
WS-RS-SWITCH-IS-BAD-BOOL        000507W
WS-RS-SWITCH-IS-GOOD-BOOL       000508W
WS-RUNTIME-SWITCHES-TXT         000483W
WS-TALLY-QTY                    000510W  001167 001169 001171
```

```
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Symbols of Module: GCIC (GCIC)
----------------------------

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

COB-COLOR-BLACK                000597S  000602 000692 000702 000712 000717 000727 000734 000749
                                        000764 000780 000787 000794
COB-COLOR-BLUE                 000680S
COB-COLOR-CYAN                 000693S
COB-COLOR-GREEN               000603S  000718 000765 000781
COB-COLOR-RED                 000686S  000750
COB-COLOR-WHITE               000598S  000681 000687 000703 000713 000728 000735 000788 000795
LD-HORIZ-LINE                 000573S  000582 000591 001003
LD-LL-CORNER                  000568S  000577 000586 000614 000644 000660 000674
LD-LOWER-T                    000572S  000581 000590 000646
LD-LR-CORNER                  000570S  000579 000588 000616 000648 000662 000676
LD-UL-CORNER                  000567S  000576 000585 000604 000618 000650 000664
LD-UPPER-T                    000571S  000580 000589 000620
LD-UR-CORNER                  000569S  000578 000587 000606 000622 000652 000666
LD-VERT-LINE                  000574S  000583 000592 000608 000609 000611 000612 000624 000625
                                        000626 000628 000629 000630 000632 000633 000634 000636
                                        000637 000638 000640 000641 000642 000654 000655 000657
                                        000658 000668 000669 000671 000672
S-BLANK-SCR                    000595S  000885 001436 001465
S-SWITCHES-SCR                 000597S  001029 001110 001200 001229 001244 001265 001276 001462
WS-CS-ARG-H1-TXT               000798S
WS-CS-ARG-H2-TXT               000799S
WS-CS-DEBUG-CHR                000751S  001033 001034 001036 001132
WS-CS-EXECUTE-CHR              000754S  000888 001051 001052 001054
WS-CS-EXTRA-H1-TXT             000796S
WS-CS-EXTRA-H2-TXT             000797S
WS-CS-FILENAME-TXT             000790S  001112
WS-CS-FREE-CHR                 000759S  001074 001075 001077 001157
WS-CS-LIBRARY-CHR              000753S  001045 001046 001048 001123 001283 001338 001377 001404
WS-CS-LISTING-CHR              000755S  000884 001021 001024 001027 001170 001172 001174
WS-CS-NOFUNC-CHR               000757S  001062 001063 001065 001147
WS-CS-NOTRUNC-CHR              000760S  001080 001081 001083 001137
WS-CS-TRACEALL-CHR             000752S  001039 001040 001042 001142
WS-CS-WARNALL-CHR              000758S  001068 001069 001071 001152
WS-HORIZONTAL-LINE-TXT         000605S  000615 000619 000621 000645 000647 000651 000661 000665
                                        000675 001003
WS-LISTING-TXT                 000771S  001020 001023 001026
WS-OC-COMPILE-DT               000683S  000911 000912
WS-OS-LIB-TYPE-CONST           000769S
WS-OUTPUT-MSG-TXT              000688S  000861 001008 001095 001109 001199 001214 001215 001223
                                        001231 001243 001249 001258 001263 001275 001366 001367
                                        001461
WS-PROG-FILE-NAME-TXT          000729S  000964 000969 000985 000991 000995 001187
WS-PROG-FOLDER-TXT             000730S  000963 000968 000972 000973 000976 001292 001293 001297
                                        001302 001303 001308 001314
```

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ACS Cobol Xref v2.02.04        Dictionary File for GCIC    06/03/2022  23:09:11:00   Page   36
Symbols of Module: GCIC (GCIC)
-----------------------------
Variable Tested [S]          Symbol (88-Conditions)
-------------------------------------------------------------

WS-OS-TYPE-CD                 WS-OS-WINDOWS-BOOL
WS-OS-TYPE-CD                 WS-OS-CYGWIN-BOOL
WS-OS-TYPE-CD                 WS-OS-UNIX-BOOL
WS-OS-TYPE-CD                 WS-OS-OSX-BOOL
WS-RS-COMPILE-OK-CHR         WS-RS-COMPILE-OK-BOOL
WS-RS-COMPILE-OK-CHR         WS-RS-COMPILE-OK-WARN-BOOL
WS-RS-COMPILE-OK-CHR         WS-RS-COMPILE-FAILED-BOOL
WS-RS-COMPLETE-CHR           WS-RS-COMPLETE-BOOL
WS-RS-COMPLETE-CHR           WS-RS-NOT-COMPLETE-BOOL
WS-RS-IDENT-DIV-CHR          WS-RS-1ST-PROG-COMPLETE-BOOL
WS-RS-IDENT-DIV-CHR          WS-RS-MORE-TO-1ST-PROG-BOOL
WS-RS-NO-SWITCH-CHGS-CHR     WS-RS-NO-SWITCH-CHANGES-BOOL
WS-RS-NO-SWITCH-CHGS-CHR     WS-RS-SWITCH-CHANGES-BOOL
WS-RS-OUTPUT-FILE-BUSY-CHR   WS-RS-OUTPUT-FILE-BUSY-BOOL
WS-RS-OUTPUT-FILE-BUSY-CHR   WS-RS-OUTPUT-FILE-AVAIL-BOOL
WS-RS-QUOTE-CHR              WS-RS-DOUBLE-QUOTE-USED-BOOL
WS-RS-SOURCE-RECORD-TYPE-CHR WS-RS-SOURCE-REC-LINKAGE-BOOL
WS-RS-SOURCE-RECORD-TYPE-CHR WS-RS-SOURCE-REC-IDENT-BOOL
WS-RS-SOURCE-RECORD-TYPE-CHR WS-RS-SOURCE-REC-IGNORED-BOOL
WS-RS-SWITCH-ERROR-CHR       WS-RS-SWITCH-IS-BAD-BOOL
WS-RS-SWITCH-ERROR-CHR       WS-RS-SWITCH-IS-GOOD-BOOL
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC    06/03/2022  23:09:11:00   Page   37
Symbols of Module: GCIC (GCIC)
-----------------------------
Variable Tested            Symbol (88-Conditions) [S]
------------------------------------------------------------

WS-OS-TYPE-CD              WS-OS-CYGWIN-BOOL
WS-OS-TYPE-CD              WS-OS-OSX-BOOL
WS-OS-TYPE-CD              WS-OS-UNIX-BOOL
WS-OS-TYPE-CD              WS-OS-WINDOWS-BOOL
WS-RS-IDENT-DIV-CHR        WS-RS-1ST-PROG-COMPLETE-BOOL
WS-RS-COMPILE-OK-CHR       WS-RS-COMPILE-FAILED-BOOL
WS-RS-COMPILE-OK-CHR       WS-RS-COMPILE-OK-BOOL
WS-RS-COMPILE-OK-CHR       WS-RS-COMPILE-OK-WARN-BOOL
WS-RS-COMPLETE-CHR         WS-RS-COMPLETE-BOOL
WS-RS-QUOTE-CHR            WS-RS-DOUBLE-QUOTE-USED-BOOL
WS-RS-IDENT-DIV-CHR        WS-RS-MORE-TO-1ST-PROG-BOOL
WS-RS-NO-SWITCH-CHGS-CHR   WS-RS-NO-SWITCH-CHANGES-BOOL
WS-RS-COMPLETE-CHR         WS-RS-NOT-COMPLETE-BOOL
WS-RS-OUTPUT-FILE-BUSY-CHR WS-RS-OUTPUT-FILE-AVAIL-BOOL
WS-RS-OUTPUT-FILE-BUSY-CHR WS-RS-OUTPUT-FILE-BUSY-BOOL
WS-RS-SOURCE-RECORD-TYPE-CHR WS-RS-SOURCE-REC-IDENT-BOOL
WS-RS-SOURCE-RECORD-TYPE-CHR WS-RS-SOURCE-REC-IGNORED-BOOL
WS-RS-SOURCE-RECORD-TYPE-CHR WS-RS-SOURCE-REC-LINKAGE-BOOL
WS-RS-NO-SWITCH-CHGS-CHR   WS-RS-SWITCH-CHANGES-BOOL
WS-RS-SWITCH-ERROR-CHR     WS-RS-SWITCH-IS-BAD-BOOL
WS-RS-SWITCH-ERROR-CHR     WS-RS-SWITCH-IS-GOOD-BOOL
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC     06/03/2022  23:09:11:00   Page   38
Symbols of Module: GCIC (GCIC)
-----------------------------
Functions                      Defn    Locations
-----------------------------+-------------------------------------------------------------

CONCATENATE                    001004I  001193 001215 001221 001438 001441 001445 001447 001449
                                        001451 001453
LOWER-CASE                     001112I  001297
TRIM                           000865I  000870 000976 001005 001119 001182 001187 001193 001203
                                        001209 001222 001302 001314 001332 001357 001365 001420
                                        001422 001427 001429 001438 001441 001445 001447 001449
                                        001451 001453
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC    06/03/2022  23:09:11:00   Page   39
Symbols of Module: GCIC (GCIC)
------------------------------
Called Procedures            Type   Locations
-----------------------------+-------------------------------------------------------
C$SLEEP                      SYSTEM 001230 001266 001277 001463
CBL_CHANGE_DIR               SYSTEM 000975
CBL_DELETE_FILE              SYSTEM 001195
CHECKSRC                     USER   001384 001398
E4                           SYSTEM 001364
LISTING                      USER   001250
SYSTEM                       SYSTEM 001209 001365 001422 001429 001444 001446 001448 001450
                                    001452
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC    06/03/2022  23:09:11:00   Page   40
Symbols of Module: GCIC (GCIC)
-----------------------------
Procedure                      Defn    Locations
-----------------------------+-------------------------------------------------------------
 
CAUTION:                       000860P
FOUND                          000860P
G29                            000860P
LPP                            001253P
LPPP                           001254P
MORE                           000860P
ONE                            000860P
SELCHAR                        000920P  000921 001024 001027 001034 001040 001046 001052 001063
                                        001069 001075 001081 001404
SYSERR                         001208P
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC    06/03/2022  23:09:11:00   Page   41
Symbols of Module: GCIC (GCIC)
------------------------------
Unreferenced Working Storage Symbols

CBL_CHANGE_DIR                 000975C
CBL_DELETE_FILE                001195C
COB-COLOR-MAGENTA              000237W
COB-COLOR-YELLOW               000238W
COB-SCR-BACK-TAB               000321W
COB-SCR-BACKSPACE              000328W
COB-SCR-DELETE                 000327W
COB-SCR-F10                    000254W
COB-SCR-F11                    000255W
COB-SCR-F13                    000257W
COB-SCR-F14                    000258W
COB-SCR-F15                    000259W
COB-SCR-F16                    000260W
COB-SCR-F17                    000261W
COB-SCR-F18                    000262W
COB-SCR-F19                    000263W
COB-SCR-F20                    000264W
COB-SCR-F21                    000265W
COB-SCR-F22                    000266W
COB-SCR-F23                    000267W
COB-SCR-F24                    000268W
COB-SCR-F25                    000269W
COB-SCR-F26                    000270W
COB-SCR-F27                    000271W
COB-SCR-F28                    000272W
COB-SCR-F29                    000273W
COB-SCR-F30                    000274W
COB-SCR-F31                    000275W
COB-SCR-F32                    000276W
COB-SCR-F33                    000277W
COB-SCR-F34                    000278W
COB-SCR-F35                    000279W
COB-SCR-F36                    000280W
COB-SCR-F37                    000281W
COB-SCR-F38                    000282W
COB-SCR-F39                    000283W
COB-SCR-F40                    000284W
COB-SCR-F41                    000285W
COB-SCR-F42                    000286W
COB-SCR-F43                    000287W
COB-SCR-F44                    000288W
COB-SCR-F45                    000289W
COB-SCR-F46                    000290W
COB-SCR-F47                    000291W
COB-SCR-F48                    000292W
COB-SCR-F49                    000293W
COB-SCR-F50                    000294W
COB-SCR-F51                    000295W
COB-SCR-F52                    000296W
COB-SCR-F53                    000297W
COB-SCR-F54                    000298W
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC     06/03/2022  23:09:11:00   Page   42
Symbols of Module: GCIC (GCIC)
------------------------------
Unreferenced Working Storage Symbols


COB-SCR-F55                    000299W
COB-SCR-F56                    000300W
COB-SCR-F57                    000301W
COB-SCR-F58                    000302W
COB-SCR-F59                    000303W
COB-SCR-F60                    000304W
COB-SCR-F61                    000305W
COB-SCR-F62                    000306W
COB-SCR-F63                    000307W
COB-SCR-F64                    000308W
COB-SCR-FATAL                  000335W
COB-SCR-INSERT                 000326W
COB-SCR-KEY-DOWN               000316W
COB-SCR-KEY-END                000330W
COB-SCR-KEY-HOME               000329W
COB-SCR-KEY-LEFT               000322W
COB-SCR-KEY-RIGHT              000323W
COB-SCR-KEY-UP                 000314W
COB-SCR-KEY_DOWN               000317W
COB-SCR-KEY_UP                 000315W
COB-SCR-MAX-FIELD              000336W
COB-SCR-NO-FIELD               000332W
COB-SCR-OK                     000243W
COB-SCR-PAGE-DOWN              000312W
COB-SCR-PAGE-UP                000310W
COB-SCR-PAGE_DOWN              000313W
COB-SCR-PAGE_UP                000311W
COB-SCR-PRINT                  000319W
COB-SCR-TAB                    000320W
COB-SCR-TIME-OUT               000333W
E4                             001364C
F1                             000364W
F12                            000358W
F2                             000371W
F3                             000367W
F4                             000365W
F6                             000369W
F7                             000372W
F8                             000366W
F9                             000370W
LISTING                        001250C
WS-COMPILATION-SWITCHES-TXT    000338W
WS-CS-FILENAMES-TABLE-TXT      000350W
WS-DELETE-FN-TXT               000397W
WS-FILE-STATUS-MESSAGE-TXT     000403W
WS-OS-TYPES-TXT                000465W
WS-PATH-DELIMITER-CHR          000471W
WS-RS-COMPILE-OK-CHR           000484W
WS-RS-COMPLETE-CHR             000488W
WS-RS-IDENT-DIV-CHR            000493W
WS-RS-NO-SWITCH-CHGS-CHR       000496W
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC     06/03/2022  23:09:11:00    Page    43
Symbols of Module: GCIC (GCIC)
------------------------------
Unreferenced Working Storage Symbols

WS-RS-OUTPUT-FILE-BUSY-BOOL      000500W
WS-RS-OUTPUT-FILE-BUSY-CHR       000499W
WS-RS-QUOTE-CHR                  000491W
WS-RS-SWITCH-ERROR-CHR           000506W
WS-RS-SWITCH-IS-BAD-BOOL         000507W
WS-RS-SWITCH-IS-GOOD-BOOL        000508W
WS-RUNTIME-SWITCHES-TXT          000483W
```

```
ACS Cobol Xref v2.02.04          Dictionary File for GCIC     06/03/2022  23:09:11:00   Page   44
Symbols of Module: GCIC (GCIC)
------------------------------
Unreferenced Procedures

CAUTION:                    000860P
FOUND                       000860P
G29                         000860P
LPP                         001253P
LPPP                        001254P
MORE                        000860P
ONE                         000860P
SYSERR                      001208P
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC    06/03/2022  23:09:11:00   Page   45
  1471         IDENTIFICATION DIVISION.
  1472         PROGRAM-ID.  CHECKSRC.
  1473         *>****************************************************************
  1474         *> This subprogram will scan a line of source code it is given **
  1475         *> looking for 'LINKAGE SECTION' or 'IDENTIFICATION DIVISION'. **
  1476         *>                                                             **
  1477         *>   ****NOTE****   ****NOTE****    ****NOTE****   ****NOTE*** **
  1478         *>                                                             **
  1479         *> These two strings must be found IN THEIR ENTIRETY within    **
  1480         *> the 1st 80 columns of program source records, and cannot    **
  1481         *> follow either a '*>' sequence OR a '*' in col 7.            **
  1482         *>****************************************************************
  1483         *>  DATE   CHANGE DESCRIPTION                                   **
  1484         *> ====== ===================================================== **
  1485         *> GC0809 Initial coding.                                       **
  1486         *>****************************************************************
  1487         ENVIRONMENT DIVISION.
  1488         CONFIGURATION SECTION.
  1489         REPOSITORY.
  1490             FUNCTION ALL INTRINSIC.
  1491         DATA DIVISION.
  1492         WORKING-STORAGE SECTION.
  1493         01  WS-Compressed-Src-TXT.
  1494             05 WS-CS-CHR                         OCCURS 80 TIMES
  1495                                                 PIC X(1).
  1496
  1497         01  WS-Runtime-Switches-TXT.
  1498             05 WS-RS-Found-SPACE-CHR             PIC X(1).
  1499                88 WS-RS-Skipping-SPACE-BOOL      VALUE 'Y'.
  1500                88 WS-RS-Not-Skipping-SPACE-BOOL VALUE 'N'.
  1501
  1502         01  WS-I-SUB                             USAGE BINARY-CHAR.
  1503
  1504         01  WS-J-SUB                             USAGE BINARY-CHAR.
  1505         LINKAGE SECTION.
  1506         01  L-Argument-1-TXT.
  1507             02 L-A1-CHR                          OCCURS 80 TIMES
  1508                                                 PIC X(1).
  1509
  1510         01  L-Argument-2-CHR                     PIC X(1).
  1511             88 L-A2-LINKAGE-SECTION-BOOL VALUE 'L'.
  1512             88 L-A2-IDENT-DIVISION-BOOL  VALUE 'I'.
  1513             88 L-A2-Nothing-Special-BOOL VALUE ' '.
  1514      /
  1515 GC0712 PROCEDURE DIVISION USING BY VALUE     L-Argument-1-TXT
  1516 GC0712                        BY REFERENCE L-Argument-2-CHR.
  1517      000-Main SECTION.
  1518          SET L-A2-Nothing-Special-BOOL TO TRUE
  1519          IF L-A1-CHR (7) = '*'
  1520              GOBACK
  1521          END-IF
  1522              .
  1523      *>
  1524      *> Compress multiple consecutive spaces
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC (CHECKSRC) 06/03/2022  23:09:11:00    Page   46
     1525        *>
     1526              SET WS-RS-Not-Skipping-SPACE-BOOL TO TRUE
     1527              MOVE 0 TO WS-J-SUB
     1528              MOVE SPACES TO WS-Compressed-Src-TXT
     1529              PERFORM VARYING WS-I-SUB FROM 1 BY 1
     1530                    UNTIL WS-I-SUB > 80
     1531                 IF L-A1-CHR (WS-I-SUB) = SPACE
     1532                    IF WS-RS-Not-Skipping-SPACE-BOOL
     1533                       ADD 1 TO WS-J-SUB
     1534                       MOVE UPPER-CASE(L-A1-CHR (WS-I-SUB))
     1535                         TO WS-CS-CHR (WS-J-SUB)
     1536                       SET WS-RS-Skipping-SPACE-BOOL TO TRUE
     1537                    END-IF
     1538                 ELSE
     1539                    SET WS-RS-Not-Skipping-SPACE-BOOL TO TRUE
     1540                    ADD 1 TO WS-J-SUB
     1541                    MOVE L-A1-CHR (WS-I-SUB) TO WS-CS-CHR (WS-J-SUB)
     1542                 END-IF
     1543              END-PERFORM
     1544        *>
     1545        *> Scan the compressed source line
     1546        *>
     1547              PERFORM VARYING WS-I-SUB FROM 1 BY 1
     1548                    UNTIL WS-I-SUB > 66
     1549                 EVALUATE TRUE
     1550                    WHEN WS-CS-CHR (WS-I-SUB) = '*'
     1551                       IF WS-Compressed-Src-TXT (WS-I-SUB : 2) = '*>'
     1552                          GOBACK
     1553                       END-IF
     1554                    WHEN (WS-CS-CHR (WS-I-SUB) = 'L') AND (WS-I-SUB < 66)
     1555                       IF WS-Compressed-Src-TXT (WS-I-SUB : 15)
     1556                          = 'LINKAGE SECTION'
     1557                          SET L-A2-LINKAGE-SECTION-BOOL TO TRUE
     1558                          GOBACK
     1559                       END-IF
     1560                    WHEN (WS-CS-CHR (WS-I-SUB) = 'I') AND (WS-I-SUB < 58)
     1561                       IF WS-Compressed-Src-TXT (WS-I-SUB : 23)
     1562                          = 'IDENTIFICATION DIVISION'
     1563                          SET L-A2-IDENT-DIVISION-BOOL TO TRUE
     1564                          GOBACK
     1565                       END-IF
     1566                 END-EVALUATE
     1567              END-PERFORM
     1568        *>
     1569        *> If we get to here, we never found anything!
     1570        *>
     1571  +          GOBACK
     1572              .
     1573         END PROGRAM CHECKSRC.
     1574
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC (CHECKSRC) 06/03/2022  23:09:11:00    Page   47
Symbols of Module: GCIC (CHECKSRC)
--------------------------------

Data Section (WORKING-STORAGE)  Defn    Locations
-----------------------------+---------------------------------------------------------------

WS-COMPRESSED-SRC-TXT         001493W  001528 001551 001555 001561
WS-CS-CHR                     001494W  001535 001541 001550 001554 001560
WS-I-SUB                      001502W  001529 001530 001531 001534 001541 001547 001548 001550
                                       001551 001554 001555 001560 001561
WS-J-SUB                      001504W  001527 001533 001535 001540 001541
WS-RS-FOUND-SPACE-CHR         001498W
WS-RS-NOT-SKIPPING-SPACE-BOOL 001500W  001526 001532 001539
WS-RS-SKIPPING-SPACE-BOOL     001499W  001536
WS-RUNTIME-SWITCHES-TXT       001497W
```

```
ACS Cobol Xref v2.02.04          Dictionary File for GCIC (CHECKSRC) 06/03/2022  23:09:11:00    Page   48
Symbols of Module: GCIC (CHECKSRC)
---------------------------------

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

L-A1-CHR                        001507K  001519 001531 001534 001541
L-A2-IDENT-DIVISION-BOOL        001512K  001563
L-A2-LINKAGE-SECTION-BOOL       001511K  001557
L-A2-NOTHING-SPECIAL-BOOL       001513K  001518
L-ARGUMENT-1-TXT                001506K  001515
L-ARGUMENT-2-CHR                001510K  001516
```

```
ACS Cobol Xref v2.02.04         Dictionary File for GCIC (CHECKSRC) 06/03/2022  23:09:11:00    Page    49
Symbols of Module: GCIC (CHECKSRC)
---------------------------------
Variable Tested [S]           Symbol (88-Conditions)
-------------------------------------------------------------

L-ARGUMENT-2-CHR              L-A2-LINKAGE-SECTION-BOOL
L-ARGUMENT-2-CHR              L-A2-IDENT-DIVISION-BOOL
L-ARGUMENT-2-CHR              L-A2-NOTHING-SPECIAL-BOOL
WS-RS-FOUND-SPACE-CHR         WS-RS-SKIPPING-SPACE-BOOL
WS-RS-FOUND-SPACE-CHR         WS-RS-NOT-SKIPPING-SPACE-BOOL
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC (CHECKSRC) 06/03/2022  23:09:11:00    Page   50
Symbols of Module: GCIC (CHECKSRC)
--------------------------------
Variable Tested             Symbol (88-Conditions) [S]
-------------------------------------------------------------

L-ARGUMENT-2-CHR            L-A2-IDENT-DIVISION-BOOL
L-ARGUMENT-2-CHR            L-A2-LINKAGE-SECTION-BOOL
L-ARGUMENT-2-CHR            L-A2-NOTHING-SPECIAL-BOOL
WS-RS-FOUND-SPACE-CHR       WS-RS-NOT-SKIPPING-SPACE-BOOL
WS-RS-FOUND-SPACE-CHR       WS-RS-SKIPPING-SPACE-BOOL
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC (CHECKSRC) 06/03/2022  23:09:11:00   Page   51
Symbols of Module: GCIC (CHECKSRC)
---------------------------------
Functions                       Defn    Locations
-----------------------------+------------------------------------------------------------------

UPPER-CASE                     001534I
```

```
ACS Cobol Xref v2.02.04          Dictionary File for GCIC (CHECKSRC) 06/03/2022  23:09:11:00    Page   52
Symbols of Module: GCIC (CHECKSRC)
----------------------------------
Procedure                      Defn    Locations
------------------------------+-------------------------------------------------------------

None
```

```
ACS Cobol Xref v2.02.04          Dictionary File for GCIC (CHECKSRC) 06/03/2022  23:09:11:00    Page   53
Symbols of Module: GCIC (CHECKSRC)
--------------------------------
Unreferenced Working Storage Symbols

WS-RS-FOUND-SPACE-CHR           001498W
WS-RUNTIME-SWITCHES-TXT         001497W


ACS Cobol Xref v2.02.04          Dictionary File for GCIC (CHECKSRC) 06/03/2022  23:09:11:00    Page   54
Symbols of Module: GCIC (CHECKSRC)
--------------------------------
Unreferenced Procedures

None
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC (CHECKSRC) 06/03/2022  23:09:11:00    Page   55
  1575         IDENTIFICATION DIVISION.
  1576         PROGRAM-ID.  LISTING.
  1577         *>****************************************************************
  1578         *> This subprogram generates a cross-reference listing of an   **
  1579         *> GNU COBOL program.                                          **
  1580         *>****************************************************************
  1581         *>                                                             **
  1582         *> AUTHOR:      GARY L. CUTLER                                 **
  1583         *>              Copyright (C) 2010, Gary L. Cutler, GPL         **
  1584         *>                                                             **
  1585         *> DATE-WRITTEN: April 1, 2010                                 **
  1586         *>                                                             **
  1587         *>****************************************************************
  1588         *>  DATE   CHANGE DESCRIPTION                                  **
  1589         *> ====== ===================================================== **
  1590         *> GC0410 Initial coding                                       **
  1591         *> GC0711 Updates to accommodate the 12MAR2010 version of OC   **
  1592         *> GC0710 Handle duplicate data names (i.e. 'CORRESPONDING' or **
  1593         *>        qualified items) better; ignore 'END PROGRAM' recs   **
  1594         *>        so program name doesn't appear in listing.           **
  1595         *> GC0313 Fix problem where the first procedure name defined   **
  1596         *>        in the PROCEDURE DIVISION lacks a "Defined" line      **
  1597         *>        number.                                              **
  1598         *> GC1213 Updated for 23NOV2013 version of GNU COBOL 2.1; Stop **
  1599         *>        showing functions as if they were identifiers in the **
  1600         *>        xref listing; Flag all CALL argument references with **
  1601         *>        a "C" rather than "*" because they aren't necessari- **
  1602         *>        ly altered; Fixed assorted formatting bugs; DOWN-    **
  1603         *>        WARD COMPATIBLE WITH GNU COBOL 2.0 SYNTAX            **
  1604         *> GC0314 Fix problem where 1st char of 1st token on a line is **
  1605         *>        lost if >>SOURCE MODE IS FREE is in effect and the   **
  1606         *>        1st character is non-blank.                          **
  1607         *> VC1217 Updated compiler version & date to v3.0 & 24DEC2017. **
  1608         *> VC0720 Updated compiler to 3.1 July2020 and the copyright.  **
  1609         *> VC0322 Updated compiler to 3.1.2 March2022 & the copyright. **
  1610         *>****************************************************************
  1611          ENVIRONMENT DIVISION.
  1612          CONFIGURATION SECTION.
  1613          REPOSITORY.
  1614              FUNCTION ALL INTRINSIC.
  1615          INPUT-OUTPUT SECTION.
  1616          FILE-CONTROL.
  1617              SELECT F-Expanded-Src-FILE  ASSIGN TO WS-Expanded-Src-Fn-TXT
  1618                                          ORGANIZATION IS LINE SEQUENTIAL.
  1619  GC0712     SELECT F-Listing-FILE       ASSIGN TO L-Listing-Fn-TXT
  1620                                          ORGANIZATION IS LINE SEQUENTIAL.
  1621              SELECT F-Original-Src-FILE  ASSIGN TO L-Src-Fn-TXT
  1622                                          ORGANIZATION IS LINE SEQUENTIAL.
  1623              SELECT F-Sort-Work-FILE     ASSIGN TO DISK.
  1624          DATA DIVISION.
  1625          FILE SECTION.
  1626          FD  F-Expanded-Src-FILE.
  1627          01  F-Expanded-Src-REC.
  1628              05 F-ES-1-CHR                      PIC X.
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC (LISTING) 06/03/2022  23:09:11:00    Page   56

1629              05 F-ES-2-256-TXT-256               PIC X(256).
1630  GC0712 01  F-Expanded-Src2-REC.
1631  GC0712     05 F-ES-1-7-TXT                      PIC X(7).
1632  GC0712     05 F-ES-8-256-TXT                    PIC X(249).
1633
1634  GC0712 FD  F-Listing-FILE.
1635  GC1213 01  F-Listing-96-REC                     PIC X(96).
1636  GC1213 01  F-Listing-135-REC                    PIC X(135).
1637         01  F-Listing-REC                        PIC X(135).
1638
1639         FD  F-Original-Src-FILE.
1640         01  F-Original-Src-REC.
1641  GC0410     05 F-OS-1-128-TXT.
1642  GC0410        10 FILLER                         PIC X(6).
1643  GC0410        10 F-OS-7-CHR                      PIC X(1).
1644  GC0712        10 F-OS-8-72-TXT                   PIC X(65).
1645  GC0712        10 FILLER                          PIC X(56).
1646            05 F-OS-129-256-TXT                    PIC X(128).
1647
1648         SD  F-Sort-Work-FILE.
1649         01  F-Sort-Work-REC.
1650            05 F-SW-Prog-ID-TXT                    PIC X(15).
1651            05 F-SW-Token-Uc-TXT                   PIC X(32).
1652            05 F-SW-Token-TXT                      PIC X(32).
1653            05 F-SW-Section-TXT                    PIC X(15).
1654            05 F-SW-Def-Line-NUM                   PIC 9(6).
1655            05 F-SW-Reference-TXT.
1656               10 F-SW-Ref-Line-NUM                PIC 9(6).
1657               10 F-SW-Ref-Flag-CHR                PIC X(1).
1658
1659         WORKING-STORAGE SECTION.
1660  GC1213 01  WS-Copyright-TXT                      PIC X(86).
1661
1662         01  WS-Curr-CHR                           PIC X(1).
1663            88 WS-Curr-Char-Is-Punct-BOOL          VALUE '=', '(', ')',
1664                                                         '*', '/', '&',
1665                                                         ';', ',', '<',
1666                                                         '>', ':'.
1667            88 WS-Curr-Char-Is-Quote-BOOL          VALUE "'", '"'.
1668            88 WS-Curr-Char-Is-X-BOOL              VALUE 'x', 'X'.
1669            88 WS-Curr-Char-Is-Z-BOOL              VALUE 'z', 'Z'.
1670
1671         01  WS-Curr-Division-TXT                  PIC X(1).
1672  GC1010     88 WS-CD-In-IDENT-DIV-BOOL            VALUE 'i', 'I', '?'.
1673  GC1010     88 WS-CD-In-ENV-DIV-BOOL              VALUE 'e', 'E'.
1674  GC1010     88 WS-CD-In-DATA-DIV-BOOL             VALUE 'd', 'D'.
1675  GC1010     88 WS-CD-In-PROC-DIV-BOOL             VALUE 'p', 'P'.
1676
1677         01  WS-Curr-Line-NUM                      PIC 9(6).
1678
1679         01  WS-Curr-Prog-ID-TXT.
1680            05 FILLER                              PIC X(12).
1681            05 WS-CPI-13-15-TXT                    PIC X(3).
1682  GC0712     05 WS-CPI-16-CHR                      PIC X(1).
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC (LISTING) 06/03/2022  23:09:11:00    Page   57

 1683
 1684        01  WS-Curr-Section-TXT.
 1685            05 WS-CS-1-CHR                   PIC X(1).
 1686            05 WS-CS-2-14-TXT.
 1687                10 FILLER                    PIC X(10).
 1688                10 WS-CS-11-14-TXT           PIC X(3).
 1689            05 WS-CS-15-CHR                  PIC X(1).
 1690
 1691        01  WS-Curr-Verb-TXT                 PIC X(12).
 1692
 1693        01  WS-Delim-TXT                     PIC X(2).
 1694
 1695        01  WS-Dummy-TXT                     PIC X(1).
 1696
 1697        01  WS-Expanded-Src-Fn-TXT           PIC X(256).
 1698
 1699        01  WS-Filename-TXT                  PIC X(256).
 1700
 1701 GC1213 01  WS-Flags-TXT.
 1702 GC1213     05 WS-Suppress-FF-CHR            PIC X(1).
 1703
 1704 GC1213 01  WS-Formatted-DT                  PIC 9999/99/99.
 1705
 1706        01  WS-Group-Indicators-TXT.
 1707            05 WS-GI-Prog-ID-TXT             PIC X(15).
 1708            05 WS-GI-Token-TXT               PIC X(32).
 1709
 1710        01  WS-Held-Reference-TXT            PIC X(100).
 1711
 1712        01  WS-I-SUB                         USAGE BINARY-LONG.
 1713
 1714        01  WS-J-SUB                         USAGE BINARY-LONG.
 1715
 1716        01  WS-Lines-Left-NUM                USAGE BINARY-LONG.
 1717
 1718        01  WS-Lines-Per-Page-NUM            USAGE BINARY-LONG.
 1719
 1720        01  WS-Lines-Per-Page-Env-TXT        PIC X(256).
 1721
 1722 GC1010 01  WS-Main-Module-Name-TXT          PIC X(256).
 1723
 1724        01  WS-Next-CHR                      PIC X(1).
 1725            88 WS-Next-Char-Is-Quote-BOOL    VALUE '"', "'".
 1726
 1727        01  WS-OS-Type-FILLER-TXT.
 1728            05 VALUE 'Windows'               PIC X(14).
 1729            05 VALUE 'Windows/Cygwin'        PIC X(14).
 1730            05 VALUE 'UNIX/Linux'            PIC X(14).
 1731            05 VALUE 'OSX'                   PIC X(14).
 1732            05 VALUE 'Windows/MinGW'         PIC X(14).
 1733        01  WS-OS-Types-TXT REDEFINES WS-OS-Type-FILLER-TXT.
 1734            05 WS-OS-Type-TXT                PIC X(14)
 1735                                   OCCURS 5 TIMES .
 1736
```

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ACS Cobol Xref v2.02.04        Dictionary File for GCIC (LISTING) 06/03/2022  23:09:11:00    Page   58

 1737  GC0712 01  WS-Page-NUM                      USAGE BINARY-LONG.
 1738
 1739  GC0712 01  WS-Page-No-TXT.
 1740  GC0712     05 WS-PN-Literal-TXT             PIC X(6).
 1741  GC0712     05 WS-PN-Page-NUM                PIC Z(3)9.
 1742
 1743  GC1213 01  WS-Program-Path-TXT             PIC X(135).
 1744
 1745         01  WS-Reserved-Words-TXT.
 1746            05 VALUE '                          ' PIC X(33).
 1747  GC1213    05 VALUE 'FABS                      ' PIC X(33).
 1748            05 VALUE 'VACCEPT                   ' PIC X(33).
 1749            05 VALUE ' ACCESS                   ' PIC X(33).
 1750  GC1213    05 VALUE 'FACOS                     ' PIC X(33).
 1751            05 VALUE ' ACTIVE-CLASS             ' PIC X(33).    UNIMPLEMENTED
 1752            05 VALUE 'VADD                      ' PIC X(33).
 1753            05 VALUE ' ADDRESS                  ' PIC X(33).
 1754            05 VALUE ' ADVANCING                ' PIC X(33).
 1755            05 VALUE 'KAFTER                    ' PIC X(33).
 1756            05 VALUE ' ALIGNED                  ' PIC X(33).    UNIMPLEMENTED
 1757            05 VALUE ' ALL                      ' PIC X(33).
 1758            05 VALUE 'VALLOCATE                 ' PIC X(33).
 1759            05 VALUE ' ALPHABET                 ' PIC X(33).
 1760            05 VALUE ' ALPHABETIC               ' PIC X(33).
 1761            05 VALUE ' ALPHABETIC-LOWER         ' PIC X(33).
 1762            05 VALUE ' ALPHABETIC-UPPER         ' PIC X(33).
 1763            05 VALUE ' ALPHANUMERIC             ' PIC X(33).
 1764            05 VALUE ' ALPHANUMERIC-EDITED      ' PIC X(33).
 1765            05 VALUE ' ALSO                     ' PIC X(33).
 1766            05 VALUE 'VALTER                    ' PIC X(33).
 1767            05 VALUE ' ALTERNATE                ' PIC X(33).
 1768            05 VALUE ' AND                      ' PIC X(33).
 1769  GC1213    05 VALUE 'FANNUITY                  ' PIC X(33).
 1770            05 VALUE ' ANY                      ' PIC X(33).
 1771            05 VALUE ' ANYCASE                  ' PIC X(33).    UNIMPLEMENTED
 1772            05 VALUE ' ARE                      ' PIC X(33).
 1773            05 VALUE ' AREA                     ' PIC X(33).
 1774            05 VALUE ' AREAS                    ' PIC X(33).
 1775            05 VALUE ' ARGUMENT-NUMBER          ' PIC X(33).
 1776            05 VALUE ' ARGUMENT-VALUE           ' PIC X(33).
 1777            05 VALUE ' ARITHMETIC               ' PIC X(33).    UNIMPLEMENTED
 1778            05 VALUE ' AS                       ' PIC X(33).
 1779            05 VALUE ' ASCENDING                ' PIC X(33).
 1780            05 VALUE ' ASCII                    ' PIC X(33).
 1781  GC1213    05 VALUE 'FASIN                     ' PIC X(33).
 1782            05 VALUE ' ASSIGN                   ' PIC X(33).
 1783            05 VALUE ' AT                       ' PIC X(33).
 1784  GC1213    05 VALUE 'FATAN                     ' PIC X(33).
 1785  GC0711    05 VALUE ' ATTRIBUTE                ' PIC X(33).
 1786            05 VALUE ' AUTHOR                   ' PIC X(33).    OBSOLETE
 1787            05 VALUE ' AUTO                     ' PIC X(33).
 1788            05 VALUE ' AUTO-SKIP                ' PIC X(33).
 1789            05 VALUE ' AUTOMATIC                ' PIC X(33).
 1790            05 VALUE ' AUTOTERMINATE            ' PIC X(33).
```

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ACS Cobol Xref v2.02.04        Dictionary File for GCIC (LISTING) 06/03/2022  23:09:11:01    Page   59
     1791              05 VALUE ' AWAY-FROM-ZERO          ' PIC X(33).
     1792              05 VALUE ' B-AND                   ' PIC X(33).    UNIMPLEMENTED
     1793              05 VALUE ' B-NOT                   ' PIC X(33).    UNIMPLEMENTED
     1794              05 VALUE ' B-OR                    ' PIC X(33).    UNIMPLEMENTED
     1795              05 VALUE ' B-XOR                   ' PIC X(33).    UNIMPLEMENTED
     1796              05 VALUE ' BACKGROUND-COLOR        ' PIC X(33).
     1797              05 VALUE ' BACKGROUND-COLOUR       ' PIC X(33).
     1798              05 VALUE ' BASED                   ' PIC X(33).
     1799              05 VALUE ' BEEP                    ' PIC X(33).
     1800              05 VALUE ' BEFORE                  ' PIC X(33).
     1801              05 VALUE ' BELL                    ' PIC X(33).
     1802              05 VALUE ' BINARY                  ' PIC X(33).
     1803              05 VALUE ' BINARY-C-LONG           ' PIC X(33).
     1804              05 VALUE ' BINARY-CHAR             ' PIC X(33).
     1805              05 VALUE ' BINARY-DOUBLE           ' PIC X(33).
     1806              05 VALUE ' BINARY-INT              ' PIC X(33).
     1807              05 VALUE ' BINARY-LONG             ' PIC X(33).
     1808              05 VALUE ' BINARY-LONG-LONG        ' PIC X(33).
     1809              05 VALUE ' BINARY-SHORT            ' PIC X(33).
     1810              05 VALUE ' BIT                     ' PIC X(33).    UNIMPLEMENTED
     1811              05 VALUE ' BLANK                   ' PIC X(33).
     1812              05 VALUE ' BLINK                   ' PIC X(33).
     1813              05 VALUE ' BLOCK                   ' PIC X(33).
     1814              05 VALUE ' BOOLEAN                 ' PIC X(33).    UNIMPLEMENTED
     1815  GC1213      05 VALUE 'FBOOLEAN-OF-INTEGER      ' PIC X(33).    UNIMPLEMENTED
     1816              05 VALUE ' BOTTOM                  ' PIC X(33).
     1817              05 VALUE 'YBY                      ' PIC X(33).
     1818  GC1213      05 VALUE 'FBYTE-LENGTH             ' PIC X(33).
     1819              05 VALUE 'MC01                     ' PIC X(33).
     1820              05 VALUE 'MC02                     ' PIC X(33).
     1821              05 VALUE 'MC03                     ' PIC X(33).
     1822              05 VALUE 'MC04                     ' PIC X(33).
     1823              05 VALUE 'MC05                     ' PIC X(33).
     1824              05 VALUE 'MC06                     ' PIC X(33).
     1825              05 VALUE 'MC07                     ' PIC X(33).
     1826              05 VALUE 'MC08                     ' PIC X(33).
     1827              05 VALUE 'MC09                     ' PIC X(33).
     1828              05 VALUE 'MC10                     ' PIC X(33).
     1829              05 VALUE 'MC11                     ' PIC X(33).
     1830              05 VALUE 'MC12                     ' PIC X(33).
     1831              05 VALUE 'VCALL                    ' PIC X(33).
     1832              05 VALUE 'MCALL-CONVENTION         ' PIC X(33).
     1833              05 VALUE 'VCANCEL                  ' PIC X(33).
     1834              05 VALUE ' CAPACITY                ' PIC X(33).    UNIMPLEMENTED
     1835              05 VALUE ' CD                      ' PIC X(33).    OBSOLETE
     1836              05 VALUE ' CENTER                  ' PIC X(33).    UNIMPLEMENTED
     1837              05 VALUE ' CF                      ' PIC X(33).
     1838              05 VALUE ' CH                      ' PIC X(33).
     1839              05 VALUE ' CHAIN                   ' PIC X(33).    UNIMPLEMENTED
     1840              05 VALUE ' CHAINING                ' PIC X(33).
     1841  GC1213      05 VALUE 'FCHAR                    ' PIC X(33).
     1842  GC1213      05 VALUE 'FCHAR-NATIONAL           ' PIC X(33).    UNIMPLEMENTED
     1843              05 VALUE ' CHARACTER               ' PIC X(33).
     1844              05 VALUE ' CHARACTERS              ' PIC X(33).
```

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ACS Cobol Xref v2.02.04        Dictionary File for GCIC (LISTING) 06/03/2022  23:09:11:01    Page   60
  1845              05 VALUE ' CLASS                  ' PIC X(33).
  1846              05 VALUE ' CLASS-ID               ' PIC X(33).        UNIMPLEMENTED
  1847  GC0711      05 VALUE ' CLASSIFICATION         ' PIC X(33).
  1848              05 VALUE 'VCLOSE                   ' PIC X(33).
  1849  GC1213      05 VALUE 'FCOB-CRT-STATUS          ' PIC X(33).
  1850              05 VALUE ' CODE                   ' PIC X(33).
  1851              05 VALUE ' CODE-SET               ' PIC X(33).
  1852              05 VALUE ' COL                    ' PIC X(33).
  1853              05 VALUE ' COLLATING              ' PIC X(33).
  1854              05 VALUE ' COLS                   ' PIC X(33).
  1855              05 VALUE ' COLUMN                 ' PIC X(33).
  1856              05 VALUE ' COLUMNS                ' PIC X(33).
  1857  GC1213      05 VALUE 'FCOMBINED-DATETIME       ' PIC X(33).
  1858              05 VALUE ' COMMA                  ' PIC X(33).
  1859              05 VALUE ' COMMAND-LINE           ' PIC X(33).
  1860              05 VALUE 'VCOMMIT                  ' PIC X(33).
  1861              05 VALUE ' COMMON                 ' PIC X(33).
  1862              05 VALUE ' COMMUNICATION          ' PIC X(33).        OBSOLETE
  1863              05 VALUE ' COMP                   ' PIC X(33).
  1864              05 VALUE ' COMP-1                 ' PIC X(33).
  1865              05 VALUE ' COMP-2                 ' PIC X(33).
  1866              05 VALUE ' COMP-3                 ' PIC X(33).
  1867              05 VALUE ' COMP-4                 ' PIC X(33).
  1868              05 VALUE ' COMP-5                 ' PIC X(33).
  1869              05 VALUE ' COMP-6                 ' PIC X(33).
  1870              05 VALUE ' COMP-X                 ' PIC X(33).
  1871              05 VALUE ' COMPUTATIONAL          ' PIC X(33).
  1872              05 VALUE ' COMPUTATIONAL-1        ' PIC X(33).
  1873              05 VALUE ' COMPUTATIONAL-2        ' PIC X(33).
  1874              05 VALUE ' COMPUTATIONAL-3        ' PIC X(33).
  1875              05 VALUE ' COMPUTATIONAL-4        ' PIC X(33).
  1876              05 VALUE ' COMPUTATIONAL-5        ' PIC X(33).
  1877              05 VALUE ' COMPUTATIONAL-X        ' PIC X(33).
  1878              05 VALUE 'VCOMPUTE                 ' PIC X(33).
  1879  GC1213      05 VALUE 'FCONCATENATE             ' PIC X(33).
  1880  GC0712      05 VALUE ' CONDITION              ' PIC X(33).
  1881              05 VALUE 'KCONFIGURATION           ' PIC X(33).
  1882              05 VALUE 'MCONSOLE                 ' PIC X(33).
  1883              05 VALUE ' CONSTANT               ' PIC X(33).
  1884              05 VALUE ' CONTAINS               ' PIC X(33).
  1885  GC0712      05 VALUE 'ACONTENT                 ' PIC X(33).
  1886              05 VALUE 'VCONTINUE                ' PIC X(33).
  1887              05 VALUE ' CONTROL                ' PIC X(33).
  1888              05 VALUE ' CONTROLS               ' PIC X(33).
  1889  GC0711      05 VALUE ' CONVERSION             ' PIC X(33).
  1890              05 VALUE 'KCONVERTING              ' PIC X(33).
  1891      *       05 VALUE ' COPY                   ' PIC X(33).
  1892              05 VALUE ' CORR                   ' PIC X(33).
  1893              05 VALUE ' CORRESPONDING          ' PIC X(33).
  1894  GC1213      05 VALUE 'FCOS                     ' PIC X(33).
  1895              05 VALUE 'KCOUNT                   ' PIC X(33).
  1896              05 VALUE ' CRT                    ' PIC X(33).
  1897              05 VALUE ' CRT-UNDER              ' PIC X(33).
  1898              05 VALUE 'MCSP                     ' PIC X(33).
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1899           05 VALUE ' CURRENCY                   ' PIC X(33).
1900  GC1213   05 VALUE 'FCURRENCY-SYMBOL            ' PIC X(33).
1901  GC1213   05 VALUE 'FCURRENT-DATE               ' PIC X(33).
1902           05 VALUE ' CURSOR                     ' PIC X(33).
1903           05 VALUE ' CYCLE                      ' PIC X(33).
1904           05 VALUE 'KDATA                       ' PIC X(33).
1905           05 VALUE ' DATA-POINTER               ' PIC X(33).    UNIMPLEMENTED
1906           05 VALUE ' DATE                       ' PIC X(33).
1907           05 VALUE ' DATE-COMPILED              ' PIC X(33).    OBSOLETE
1908           05 VALUE ' DATE-MODIFIED              ' PIC X(33).    OBSOLETE
1909  GC1213   05 VALUE 'FDATE-OF-INTEGER            ' PIC X(33).
1910  GC1213   05 VALUE 'FDATE-TO-YYYYMMDD           ' PIC X(33).
1911           05 VALUE ' DATE-WRITTEN               ' PIC X(33).    OBSOLETE
1912           05 VALUE ' DAY                        ' PIC X(33).
1913  GC1213   05 VALUE 'FDAY-OF-INTEGER             ' PIC X(33).
1914           05 VALUE ' DAY-OF-WEEK                ' PIC X(33).
1915  GC1213   05 VALUE 'IDAY-TO-YYYYDDD             ' PIC X(33).
1916           05 VALUE ' DE                         ' PIC X(33).
1917  GC0712   05 VALUE 'IDEBUG-CONTENTS             ' PIC X(33).
1918  GC0712   05 VALUE 'IDEBUG-ITEM                 ' PIC X(33).
1919  GC0712   05 VALUE 'IDEBUG-LINE                 ' PIC X(33).
1920  GC0712   05 VALUE 'IDEBUG-NAME                 ' PIC X(33).
1921  GC0712   05 VALUE 'IDEBUG-SUB-1                ' PIC X(33).
1922  GC0712   05 VALUE 'IDEBUG-SUB-2                ' PIC X(33).
1923  GC0712   05 VALUE 'IDEBUG-SUB-3                ' PIC X(33).
1924           05 VALUE ' DEBUGGING                  ' PIC X(33).
1925           05 VALUE ' DECIMAL-POINT              ' PIC X(33).
1926           05 VALUE ' DECLARATIVES               ' PIC X(33).
1927           05 VALUE ' DEFAULT                    ' PIC X(33).
1928           05 VALUE 'VDELETE                     ' PIC X(33).
1929           05 VALUE ' DELIMITED                  ' PIC X(33).
1930           05 VALUE 'KDELIMITER                  ' PIC X(33).
1931           05 VALUE ' DEPENDING                  ' PIC X(33).
1932           05 VALUE ' DESCENDING                 ' PIC X(33).
1933           05 VALUE ' DESTINATION                ' PIC X(33).    UNIMPLEMENTED
1934           05 VALUE ' DETAIL                     ' PIC X(33).
1935  GC0711   05 VALUE ' DISC                       ' PIC X(33).
1936           05 VALUE ' DISK                       ' PIC X(33).
1937           05 VALUE 'VDISPLAY                    ' PIC X(33).
1938  GC1213   05 VALUE 'FDISPLAY-OF                 ' PIC X(33).    UNIMPLEMENTED
1939           05 VALUE 'VDIVIDE                     ' PIC X(33).
1940           05 VALUE 'KDIVISION                   ' PIC X(33).
1941           05 VALUE 'KDOWN                       ' PIC X(33).
1942           05 VALUE ' DUPLICATES                 ' PIC X(33).
1943           05 VALUE ' DYNAMIC                    ' PIC X(33).
1944  GC1213   05 VALUE 'FE                          ' PIC X(33).
1945           05 VALUE ' EBCDIC                     ' PIC X(33).
1946  GC0712   05 VALUE ' EC                         ' PIC X(33).
1947           05 VALUE ' EGI                        ' PIC X(33).    OBSOLETE
1948           05 VALUE 'VELSE                       ' PIC X(33).
1949           05 VALUE ' EMI                        ' PIC X(33).    OBSOLETE
1950           05 VALUE ' EMPTY-CHECK                ' PIC X(33).
1951           05 VALUE 'VENABLE                     ' PIC X(33).    OBSOLETE
1952  GC0710   05 VALUE 'KEND                        ' PIC X(33).
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1953              05 VALUE ' END-ACCEPT                  ' PIC X(33).
1954              05 VALUE ' END-ADD                     ' PIC X(33).
1955              05 VALUE ' END-CALL                    ' PIC X(33).
1956              05 VALUE ' END-CHAIN                   ' PIC X(33).    UNIMPLEMENTED
1957              05 VALUE ' END-COMPUTE                 ' PIC X(33).
1958              05 VALUE ' END-DELETE                  ' PIC X(33).
1959              05 VALUE ' END-DISPLAY                 ' PIC X(33).
1960              05 VALUE ' END-DIVIDE                  ' PIC X(33).
1961              05 VALUE ' END-EVALUATE                ' PIC X(33).
1962              05 VALUE ' END-IF                      ' PIC X(33).
1963              05 VALUE ' END-MULTIPLY                ' PIC X(33).
1964              05 VALUE ' END-OF-PAGE                 ' PIC X(33).
1965              05 VALUE ' END-PERFORM                 ' PIC X(33).
1966              05 VALUE ' END-READ                    ' PIC X(33).
1967              05 VALUE ' END-RECEIVE                 ' PIC X(33).    OBSOLETE
1968              05 VALUE ' END-RETURN                  ' PIC X(33).
1969              05 VALUE ' END-REWRITE                 ' PIC X(33).
1970              05 VALUE ' END-SEARCH                  ' PIC X(33).
1971              05 VALUE ' END-START                   ' PIC X(33).
1972              05 VALUE ' END-STRING                  ' PIC X(33).
1973              05 VALUE ' END-SUBTRACT                ' PIC X(33).
1974              05 VALUE ' END-UNSTRING                ' PIC X(33).
1975              05 VALUE ' END-WRITE                   ' PIC X(33).
1976              05 VALUE 'VENTRY                       ' PIC X(33).
1977              05 VALUE ' ENTRY-CONVENTION            ' PIC X(33).    UNIMPLEMENTED
1978              05 VALUE 'KENVIRONMENT                 ' PIC X(33).
1979              05 VALUE ' ENVIRONMENT-NAME            ' PIC X(33).
1980              05 VALUE ' ENVIRONMENT-VALUE           ' PIC X(33).
1981              05 VALUE ' EO                          ' PIC X(33).    UNIMPLEMENTED
1982              05 VALUE ' EOL                         ' PIC X(33).
1983              05 VALUE ' EOP                         ' PIC X(33).
1984              05 VALUE ' EOS                         ' PIC X(33).
1985              05 VALUE ' EQUAL                       ' PIC X(33).
1986              05 VALUE 'KEQUALS                      ' PIC X(33).
1987              05 VALUE ' ERASE                       ' PIC X(33).
1988              05 VALUE ' ERROR                       ' PIC X(33).
1989              05 VALUE ' ESCAPE                      ' PIC X(33).
1990              05 VALUE ' ESI                         ' PIC X(33).    OBSOLETE
1991              05 VALUE 'VEVALUATE                    ' PIC X(33).
1992              05 VALUE ' EXCEPTION                   ' PIC X(33).
1993 GC1213       05 VALUE 'FEXCEPTION-FILE              ' PIC X(33).
1994 GC1213       05 VALUE 'FEXCEPTION-FILE-N            ' PIC X(33).    UNIMPLEMENTED
1995 GC1213       05 VALUE 'FEXCEPTION-LOCATION          ' PIC X(33).
1996 GC1213       05 VALUE 'FEXCEPTION-LOCATION-N        ' PIC X(33).    UNIMPLEMENTED
1997              05 VALUE ' EXCEPTION-OBJECT            ' PIC X(33).    UNIMPLEMENTED
1998 GC1213       05 VALUE 'FEXCEPTION-STATEMENT         ' PIC X(33).
1999 GC1213       05 VALUE 'FEXCEPTION-STATUS            ' PIC X(33).
2000              05 VALUE ' EXCLUSIVE                   ' PIC X(33).
2001              05 VALUE 'VEXIT                        ' PIC X(33).
2002 GC1213       05 VALUE 'FEXP                         ' PIC X(33).
2003 GC1213       05 VALUE 'FEXP10                       ' PIC X(33).
2004              05 VALUE ' EXPANDS                     ' PIC X(33).    UNIMPLEMENTED
2005              05 VALUE ' EXTEND                      ' PIC X(33).
2006              05 VALUE ' EXTERNAL                    ' PIC X(33).
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   2007  GC1213    05 VALUE 'FFACTORIAL                    ' PIC X(33).
   2008            05 VALUE ' FACTORY                      ' PIC X(33).      UNIMPLEMENTED
   2009            05 VALUE ' FALSE                        ' PIC X(33).
   2010            05 VALUE 'KFD                           ' PIC X(33).
   2011            05 VALUE 'KFILE                         ' PIC X(33).
   2012            05 VALUE ' FILE-CONTROL                 ' PIC X(33).
   2013            05 VALUE ' FILE-ID                      ' PIC X(33).
   2014  GC1113    05 VALUE ' FILLER                       ' PIC X(33).
   2015            05 VALUE ' FINAL                        ' PIC X(33).
   2016            05 VALUE ' FIRST                        ' PIC X(33).
   2017  GC0712    05 VALUE ' FLOAT-BINARY-128             ' PIC X(33).      UNIMPLEMENTED
   2018  GC0712    05 VALUE ' FLOAT-BINARY-32              ' PIC X(33).      UNIMPLEMENTED
   2019  GC0712    05 VALUE ' FLOAT-BINARY-64              ' PIC X(33).      UNIMPLEMENTED
   2020            05 VALUE ' FLOAT-DECIMAL-16             ' PIC X(33).
   2021            05 VALUE ' FLOAT-DECIMAL-34             ' PIC X(33).
   2022            05 VALUE ' FLOAT-EXTENDED               ' PIC X(33).      UNIMPLEMENTED
   2023  GC0712    05 VALUE ' FLOAT-INFINITY               ' PIC X(33).      UNIMPLEMENTED
   2024            05 VALUE ' FLOAT-LONG                   ' PIC X(33).
   2025  GC0712    05 VALUE ' FLOAT-NOT-A-NUMBER           ' PIC X(33).      UNIMPLEMENTED
   2026            05 VALUE ' FLOAT-SHORT                  ' PIC X(33).
   2027            05 VALUE ' FOOTING                      ' PIC X(33).
   2028            05 VALUE ' FOR                          ' PIC X(33).
   2029            05 VALUE ' FOREGROUND-COLOR             ' PIC X(33).
   2030            05 VALUE ' FOREGROUND-COLOUR            ' PIC X(33).
   2031  GC0711    05 VALUE ' FOREVER                      ' PIC X(33).
   2032            05 VALUE ' FORMAT                       ' PIC X(33).      UNIMPLEMENTED
   2033  GC1213    05 VALUE 'FFORMATTED-CURRENT-DATE        ' PIC X(33).      UNIMPLEMENTED
   2034  GC1213    05 VALUE 'FFORMATTED-DATE               ' PIC X(33).      UNIMPLEMENTED
   2035  GC1213    05 VALUE 'FFORMATTED-DATETIME           ' PIC X(33).      UNIMPLEMENTED
   2036  GC1213    05 VALUE 'FFORMATTED-TIME               ' PIC X(33).      UNIMPLEMENTED
   2037            05 VALUE 'MFORMFEED                     ' PIC X(33).
   2038  GC1213    05 VALUE 'FFRACTION-PART                ' PIC X(33).
   2039            05 VALUE 'VFREE                         ' PIC X(33).
   2040            05 VALUE ' FROM                         ' PIC X(33).
   2041            05 VALUE ' FULL                         ' PIC X(33).
   2042            05 VALUE ' FUNCTION                     ' PIC X(33).
   2043  GC0712    05 VALUE 'KFUNCTION-ID                  ' PIC X(33).
   2044            05 VALUE ' FUNCTION-POINTER             ' PIC X(33).      UNIMPLEMENTED
   2045            05 VALUE 'VGENERATE                     ' PIC X(33).
   2046            05 VALUE ' GET                          ' PIC X(33).      UNIMPLEMENTED
   2047            05 VALUE 'KGIVING                       ' PIC X(33).
   2048            05 VALUE ' GLOBAL                       ' PIC X(33).
   2049            05 VALUE 'VGO                           ' PIC X(33).
   2050            05 VALUE 'VGOBACK                       ' PIC X(33).
   2051            05 VALUE ' GREATER                      ' PIC X(33).
   2052            05 VALUE ' GROUP                        ' PIC X(33).
   2053            05 VALUE ' GROUP-USAGE                  ' PIC X(33).      UNIMPLEMENTED
   2054            05 VALUE ' HEADING                      ' PIC X(33).
   2055            05 VALUE ' HIGH-VALUE                   ' PIC X(33).
   2056            05 VALUE ' HIGH-VALUES                  ' PIC X(33).
   2057  GC1213    05 VALUE 'FHIGHEST-ALGEBRAIC            ' PIC X(33).
   2058            05 VALUE ' HIGHLIGHT                    ' PIC X(33).
   2059            05 VALUE ' I-O                          ' PIC X(33).
   2060            05 VALUE ' I-O-CONTROL                  ' PIC X(33).
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2061              05 VALUE 'KID                     ' PIC X(33).
2062              05 VALUE 'KIDENTIFICATION          ' PIC X(33).
2063              05 VALUE 'VIF                     ' PIC X(33).
2064              05 VALUE ' IGNORE                 ' PIC X(33).
2065              05 VALUE ' IGNORING               ' PIC X(33).
2066              05 VALUE ' IMPLEMENTS             ' PIC X(33).     UNIMPLEMENTED
2067              05 VALUE ' IN                     ' PIC X(33).
2068              05 VALUE ' INDEX                  ' PIC X(33).
2069              05 VALUE 'KINDEXED                ' PIC X(33).
2070              05 VALUE ' INDICATE               ' PIC X(33).
2071              05 VALUE ' INDIRECT               ' PIC X(33).     UNIMPLEMENTED
2072              05 VALUE ' INHERITS               ' PIC X(33).     UNIMPLEMENTED
2073              05 VALUE ' INITIAL                ' PIC X(33).
2074              05 VALUE 'VINITIALISE             ' PIC X(33).
2075              05 VALUE ' INITIALISED            ' PIC X(33).
2076              05 VALUE 'VINITIALIZE             ' PIC X(33).
2077              05 VALUE ' INITIALIZED            ' PIC X(33).
2078              05 VALUE 'VINITIATE               ' PIC X(33).
2079              05 VALUE ' INPUT                  ' PIC X(33).
2080              05 VALUE 'KINPUT-OUTPUT           ' PIC X(33).
2081              05 VALUE 'VINSPECT                ' PIC X(33).
2082              05 VALUE ' INSTALLATION           ' PIC X(33).     OBSOLETE
2083   GC1213     05 VALUE 'FINTEGER                ' PIC X(33).
2084   GC1213     05 VALUE 'FINTEGER-OF-BOOLEAN     ' PIC X(33).     UNIMPLEMENTED
2085   GC1213     05 VALUE 'FINTEGER-OF-DATE        ' PIC X(33).
2086   GC1213     05 VALUE 'FINTEGER-OF-DAY         ' PIC X(33).
2087   GC1213     05 VALUE 'FINTEGER-OF-FORMATTED-DATE ' PIC X(33).  UNIMPLEMENTED
2088   GC1213     05 VALUE 'FINTEGER-PART           ' PIC X(33).
2089              05 VALUE ' INTERFACE              ' PIC X(33).     UNIMPLEMENTED
2090              05 VALUE ' INTERFACE-ID           ' PIC X(33).     UNIMPLEMENTED
2091              05 VALUE ' INTERMEDIATE           ' PIC X(33).     UNIMPLEMENTED
2092              05 VALUE 'KINTO                   ' PIC X(33).
2093              05 VALUE ' INTRINSIC              ' PIC X(33).
2094              05 VALUE ' INVALID                ' PIC X(33).
2095              05 VALUE ' INVOKE                 ' PIC X(33).     UNIMPLEMENTED
2096              05 VALUE ' IS                     ' PIC X(33).
2097              05 VALUE ' JUST                   ' PIC X(33).
2098              05 VALUE ' JUSTIFIED              ' PIC X(33).
2099              05 VALUE ' KEPT                   ' PIC X(33).
2100              05 VALUE ' KEY                    ' PIC X(33).
2101              05 VALUE ' KEYBOARD               ' PIC X(33).
2102              05 VALUE ' LABEL                  ' PIC X(33).
2103              05 VALUE ' LAST                   ' PIC X(33).
2104              05 VALUE ' LC_ALL                 ' PIC X(33).     UNIMPLEMENTED
2105              05 VALUE ' LC_COLLATE             ' PIC X(33).     UNIMPLEMENTED
2106              05 VALUE ' LC_CTYPE               ' PIC X(33).     UNIMPLEMENTED
2107              05 VALUE ' LC_MESSAGES            ' PIC X(33).     UNIMPLEMENTED
2108              05 VALUE ' LC_MONETARY            ' PIC X(33).     UNIMPLEMENTED
2109              05 VALUE ' LC_NUMERIC             ' PIC X(33).     UNIMPLEMENTED
2110              05 VALUE ' LC_TIME                ' PIC X(33).     UNIMPLEMENTED
2111              05 VALUE ' LEADING                ' PIC X(33).
2112              05 VALUE ' LEFT                   ' PIC X(33).
2113              05 VALUE ' LEFT-JUSTIFY           ' PIC X(33).     UNIMPLEMENTED
2114              05 VALUE ' LEFTLINE               ' PIC X(33).
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2115  GC1213    05 VALUE 'FLENGTH                        ' PIC X(33).
2116  GC1213    05 VALUE 'FLENGTH-AN                     ' PIC X(33).
2117            05 VALUE ' LENGTH-CHECK                  ' PIC X(33).
2118            05 VALUE ' LESS                          ' PIC X(33).
2119            05 VALUE ' LIMIT                         ' PIC X(33).
2120            05 VALUE ' LIMITS                        ' PIC X(33).
2121            05 VALUE ' LINAGE                        ' PIC X(33).
2122            05 VALUE 'ILINAGE-COUNTER                ' PIC X(33).
2123            05 VALUE ' LINE                          ' PIC X(33).
2124  GC1213    05 VALUE 'ILINE-COUNTER                  ' PIC X(33).
2125            05 VALUE ' LINES                         ' PIC X(33).
2126            05 VALUE 'KLINKAGE                       ' PIC X(33).
2127            05 VALUE 'KLOCAL-STORAGE                 ' PIC X(33).
2128            05 VALUE ' LOCALE                        ' PIC X(33).
2129  GC1213    05 VALUE 'FLOCALE-COMPARE                ' PIC X(33).
2130  GC1213    05 VALUE 'FLOCALE-DATE                   ' PIC X(33).
2131  GC1213    05 VALUE 'FLOCALE-TIME                   ' PIC X(33).
2132  GC1213    05 VALUE 'FLOCALE-TIME-FROM-SECONDS      ' PIC X(33).
2133            05 VALUE ' LOCK                          ' PIC X(33).
2134  GC1213    05 VALUE 'FLOG                           ' PIC X(33).
2135  GC1213    05 VALUE 'FLOG10                         ' PIC X(33).
2136            05 VALUE ' LOW-VALUE                     ' PIC X(33).
2137            05 VALUE ' LOW-VALUES                    ' PIC X(33).
2138            05 VALUE ' LOWER                         ' PIC X(33).
2139  GC1213    05 VALUE 'FLOWER-CASE                    ' PIC X(33).
2140  GC1213    05 VALUE 'FLOWEST-ALGEBRAIC              ' PIC X(33).
2141            05 VALUE ' LOWLIGHT                      ' PIC X(33).
2142            05 VALUE ' MANUAL                        ' PIC X(33).
2143  GC1213    05 VALUE 'FMAX                           ' PIC X(33).
2144  GC1213    05 VALUE 'FMEAN                          ' PIC X(33).
2145  GC1213    05 VALUE 'FMEDIAN                        ' PIC X(33).
2146            05 VALUE ' MEMORY                        ' PIC X(33).
2147            05 VALUE 'VMERGE                         ' PIC X(33).
2148            05 VALUE ' MESSAGE                       ' PIC X(33).     OBSOLETE
2149            05 VALUE ' METHOD                        ' PIC X(33).     UNIMPLEMENTED
2150            05 VALUE ' METHOD-ID                     ' PIC X(33).     UNIMPLEMENTED
2151  GC1213    05 VALUE 'FMIDRANGE                      ' PIC X(33).
2152  GC1213    05 VALUE 'FMIN                           ' PIC X(33).
2153            05 VALUE ' MINUS                         ' PIC X(33).
2154  GC1213    05 VALUE 'FMOD                           ' PIC X(33).
2155            05 VALUE ' MODE                          ' PIC X(33).
2156  GC1213    05 VALUE 'FMODULE-CALLER-ID              ' PIC X(33).
2157  GC1213    05 VALUE 'FMODULE-DATE                   ' PIC X(33).
2158  GC1213    05 VALUE 'FMODULE-FORMATTED-DATE         ' PIC X(33).
2159  GC1213    05 VALUE 'FMODULE-ID                     ' PIC X(33).
2160  GC1213    05 VALUE 'FMODULE-PATH                   ' PIC X(33).
2161  GC1213    05 VALUE 'FMODULE-SOURCE                 ' PIC X(33).
2162  GC1213    05 VALUE 'FMODULE-TIME                   ' PIC X(33).
2163  GC1213    05 VALUE 'FMONETARY-DECIMAL-POINT        ' PIC X(33).
2164  GC1213    05 VALUE 'FMONETARY-THOUSANDS-SEPARATOR  ' PIC X(33).
2165            05 VALUE 'VMOVE                          ' PIC X(33).
2166            05 VALUE ' MULTIPLE                      ' PIC X(33).
2167            05 VALUE 'VMULTIPLY                      ' PIC X(33).
2168  GC0711    05 VALUE ' NAME                          ' PIC X(33).
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2169              05 VALUE ' NATIONAL                     ' PIC X(33).
2170              05 VALUE ' NATIONAL-EDITED              ' PIC X(33).
2171  GC1213      05 VALUE 'FNATIONAL-OF                  ' PIC X(33).      UNIMPLEMENTED
2172              05 VALUE ' NATIVE                       ' PIC X(33).
2173              05 VALUE ' NEAREST-AWAY-FROM-ZERO       ' PIC X(33).
2174              05 VALUE ' NEAREST-EVEN                 ' PIC X(33).
2175              05 VALUE ' NEAREST-TOWARD-ZERO          ' PIC X(33).
2176              05 VALUE ' NEGATIVE                     ' PIC X(33).
2177              05 VALUE ' NESTED                       ' PIC X(33).      UNIMPLEMENTED
2178              05 VALUE 'VNEXT                         ' PIC X(33).
2179              05 VALUE ' NO                           ' PIC X(33).
2180              05 VALUE ' NO-ECHO                      ' PIC X(33).
2181              05 VALUE ' NONE                         ' PIC X(33).      UNIMPLEMENTED
2182              05 VALUE ' NORMAL                       ' PIC X(33).
2183              05 VALUE ' NOT                          ' PIC X(33).
2184              05 VALUE ' NULL                         ' PIC X(33).
2185              05 VALUE ' NULLS                        ' PIC X(33).
2186              05 VALUE ' NUMBER                       ' PIC X(33).
2187              05 VALUE 'INUMBER-OF-CALL-PARAMETERS    ' PIC X(33).
2188              05 VALUE ' NUMBERS                      ' PIC X(33).
2189              05 VALUE ' NUMERIC                      ' PIC X(33).
2190  GC1213      05 VALUE 'FNUMERIC-DECIMAL-POINT        ' PIC X(33).
2191              05 VALUE ' NUMERIC-EDITED               ' PIC X(33).
2192  GC1213      05 VALUE 'FNUMERIC-THOUSANDS-SEPARATOR  ' PIC X(33).
2193  GC1213      05 VALUE 'FNUMVAL                       ' PIC X(33).
2194  GC1213      05 VALUE 'FNUMVAL-C                     ' PIC X(33).
2195  GC1213      05 VALUE 'FNUMVAL-F                     ' PIC X(33).
2196              05 VALUE ' OBJECT                       ' PIC X(33).      UNIMPLEMENTED
2197              05 VALUE ' OBJECT-COMPUTER              ' PIC X(33).
2198              05 VALUE ' OBJECT-REFERENCE             ' PIC X(33).      UNIMPLEMENTED
2199              05 VALUE ' OCCURS                       ' PIC X(33).
2200              05 VALUE ' OF                           ' PIC X(33).
2201              05 VALUE ' OFF                          ' PIC X(33).
2202              05 VALUE ' OMITTED                      ' PIC X(33).
2203              05 VALUE ' ON                           ' PIC X(33).
2204              05 VALUE ' ONLY                         ' PIC X(33).
2205              05 VALUE 'VOPEN                         ' PIC X(33).
2206              05 VALUE ' OPTIONAL                     ' PIC X(33).
2207              05 VALUE ' OPTIONS                      ' PIC X(33).      UNIMPLEMENTED
2208              05 VALUE ' OR                           ' PIC X(33).
2209  GC1213      05 VALUE 'FORD                          ' PIC X(33).
2210  GC1213      05 VALUE 'FORD-MAX                      ' PIC X(33).
2211  GC1213      05 VALUE 'FORD-MIN                      ' PIC X(33).
2212              05 VALUE ' ORDER                        ' PIC X(33).
2213              05 VALUE ' ORGANISATION                 ' PIC X(33).
2214              05 VALUE ' ORGANIZATION                 ' PIC X(33).
2215              05 VALUE ' OTHER                        ' PIC X(33).
2216              05 VALUE ' OUTPUT                       ' PIC X(33).
2217              05 VALUE ' OVERFLOW                     ' PIC X(33).
2218              05 VALUE ' OVERLINE                     ' PIC X(33).
2219              05 VALUE ' OVERRIDE                     ' PIC X(33).
2220              05 VALUE ' PACKED-DECIMAL               ' PIC X(33).
2221              05 VALUE ' PADDING                      ' PIC X(33).
2222              05 VALUE ' PAGE                         ' PIC X(33).
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2223  GC1213    05 VALUE 'IPAGE-COUNTER           ' PIC X(33).
2224            05 VALUE ' PARAGRAPH              ' PIC X(33).
2225            05 VALUE 'VPERFORM                ' PIC X(33).
2226            05 VALUE ' PF                     ' PIC X(33).
2227            05 VALUE ' PH                     ' PIC X(33).
2228  GC1213    05 VALUE 'FPI                     ' PIC X(33).
2229            05 VALUE 'KPIC                    ' PIC X(33).
2230            05 VALUE 'KPICTURE                ' PIC X(33).
2231            05 VALUE ' PLUS                   ' PIC X(33).
2232            05 VALUE 'KPOINTER                ' PIC X(33).
2233            05 VALUE ' POSITION               ' PIC X(33).
2234            05 VALUE ' POSITIVE               ' PIC X(33).
2235            05 VALUE ' PREFIXED               ' PIC X(33).    UNIMPLEMENTED
2236            05 VALUE ' PRESENT                ' PIC X(33).
2237  GC1213    05 VALUE 'FPRESENT-VALUE          ' PIC X(33).
2238            05 VALUE ' PREVIOUS               ' PIC X(33).
2239            05 VALUE 'MPRINTER                ' PIC X(33).
2240            05 VALUE ' PRINTING               ' PIC X(33).
2241            05 VALUE 'KPROCEDURE              ' PIC X(33).
2242            05 VALUE ' PROCEDURE-POINTER      ' PIC X(33).
2243            05 VALUE ' PROCEDURES             ' PIC X(33).
2244            05 VALUE ' PROCEED                ' PIC X(33).
2245            05 VALUE ' PROGRAM                ' PIC X(33).
2246            05 VALUE 'KPROGRAM-ID             ' PIC X(33).
2247            05 VALUE ' PROGRAM-POINTER        ' PIC X(33).
2248            05 VALUE ' PROHIBITED             ' PIC X(33).
2249            05 VALUE ' PROMPT                 ' PIC X(33).
2250            05 VALUE ' PROPERTY               ' PIC X(33).    UNIMPLEMENTED
2251            05 VALUE ' PROTOTYPE              ' PIC X(33).    UNIMPLEMENTED
2252            05 VALUE ' PURGE                  ' PIC X(33).    OBSOLETE
2253            05 VALUE ' QUEUE                  ' PIC X(33).    OBSOLETE
2254            05 VALUE ' QUOTE                  ' PIC X(33).
2255            05 VALUE ' QUOTES                 ' PIC X(33).
2256            05 VALUE ' RAISE                  ' PIC X(33).    UNIMPLEMENTED
2257            05 VALUE ' RAISING                ' PIC X(33).    UNIMPLEMENTED
2258  GC1213    05 VALUE 'FRANDOM                 ' PIC X(33).
2259  GC1213    05 VALUE 'FRANGE                  ' PIC X(33).
2260  GC1213    05 VALUE 'KRD                     ' PIC X(33).
2261            05 VALUE 'VREAD                   ' PIC X(33).
2262            05 VALUE 'VREADY                  ' PIC X(33).
2263            05 VALUE 'VRECEIVE                ' PIC X(33).    OBSOLETE
2264            05 VALUE ' RECORD                 ' PIC X(33).
2265            05 VALUE ' RECORDING              ' PIC X(33).
2266            05 VALUE ' RECORDS                ' PIC X(33).
2267            05 VALUE ' RECURSIVE              ' PIC X(33).
2268            05 VALUE 'KREDEFINES              ' PIC X(33).
2269            05 VALUE ' REEL                   ' PIC X(33).
2270  GC0712    05 VALUE 'AREFERENCE              ' PIC X(33).
2271            05 VALUE ' REFERENCES             ' PIC X(33).
2272            05 VALUE ' RELATION               ' PIC X(33).    UNIMPLEMENTED
2273            05 VALUE ' RELATIVE               ' PIC X(33).
2274            05 VALUE 'VRELEASE                ' PIC X(33).
2275  GC1213    05 VALUE 'FREM                    ' PIC X(33).
2276            05 VALUE ' REMAINDER              ' PIC X(33).
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2277              05 VALUE ' REMARKS                      ' PIC X(33).      OBSOLETE
2278              05 VALUE ' REMOVAL                      ' PIC X(33).
2279              05 VALUE 'KRENAMES                      ' PIC X(33).
2280              05 VALUE ' REPLACE                      ' PIC X(33).
2281              05 VALUE 'KREPLACING                    ' PIC X(33).
2282              05 VALUE 'KREPORT                       ' PIC X(33).
2283              05 VALUE ' REPORTING                    ' PIC X(33).
2284              05 VALUE ' REPORTS                      ' PIC X(33).
2285              05 VALUE ' REPOSITORY                   ' PIC X(33).
2286              05 VALUE ' REQUIRED                     ' PIC X(33).
2287              05 VALUE ' RESERVE                      ' PIC X(33).
2288              05 VALUE 'VRESET                        ' PIC X(33).
2289              05 VALUE ' RESUME                       ' PIC X(33).      UNIMPLEMENTED
2290              05 VALUE ' RETRY                        ' PIC X(33).      UNIMPLEMENTED
2291              05 VALUE 'VRETURN                       ' PIC X(33).
2292              05 VALUE 'IRETURN-CODE                  ' PIC X(33).
2293              05 VALUE 'KRETURNING                    ' PIC X(33).
2294  GC1213      05 VALUE 'FREVERSE                      ' PIC X(33).
2295              05 VALUE ' REVERSE-VIDEO                ' PIC X(33).
2296              05 VALUE ' REVERSED                     ' PIC X(33).
2297              05 VALUE ' REWIND                       ' PIC X(33).
2298              05 VALUE 'VREWRITE                      ' PIC X(33).
2299              05 VALUE ' RF                           ' PIC X(33).
2300              05 VALUE ' RH                           ' PIC X(33).
2301              05 VALUE ' RIGHT                        ' PIC X(33).
2302              05 VALUE ' RIGHT-JUSTIFY                ' PIC X(33).      UNIMPLEMENTED
2303              05 VALUE 'VROLLBACK                     ' PIC X(33).
2304              05 VALUE ' ROUNDED                      ' PIC X(33).
2305              05 VALUE ' ROUNDING                     ' PIC X(33).      UNIMPLEMENTED
2306              05 VALUE ' RUN                          ' PIC X(33).
2307              05 VALUE ' SAME                         ' PIC X(33).
2308              05 VALUE 'KSCREEN                       ' PIC X(33).
2309              05 VALUE ' SCROLL                       ' PIC X(33).
2310              05 VALUE 'KSD                           ' PIC X(33).
2311              05 VALUE 'VSEARCH                       ' PIC X(33).
2312              05 VALUE ' SECONDS                      ' PIC X(33).      UNIMPLEMENTED
2313  GC1213      05 VALUE 'FSECONDS-FROM-FORMATTED-TIME  ' PIC X(33).
2314  GC1213      05 VALUE 'FSECONDS-PAST-MIDNIGHT        ' PIC X(33).
2315              05 VALUE 'KSECTION                      ' PIC X(33).
2316              05 VALUE ' SECURE                       ' PIC X(33).
2317              05 VALUE ' SECURITY                     ' PIC X(33).      OBSOLETE
2318              05 VALUE ' SEGMENT                      ' PIC X(33).      OBSOLETE
2319              05 VALUE ' SEGMENT-LIMIT                ' PIC X(33).
2320              05 VALUE ' SELECT                       ' PIC X(33).
2321              05 VALUE ' SELF                         ' PIC X(33).      UNIMPLEMENTED
2322              05 VALUE 'VSEND                         ' PIC X(33).      OBSOLETE
2323              05 VALUE ' SENTENCE                     ' PIC X(33).
2324              05 VALUE ' SEPARATE                     ' PIC X(33).
2325              05 VALUE ' SEQUENCE                     ' PIC X(33).
2326              05 VALUE ' SEQUENTIAL                   ' PIC X(33).
2327              05 VALUE 'VSET                          ' PIC X(33).
2328              05 VALUE ' SHARING                      ' PIC X(33).
2329  GC1213      05 VALUE 'FSIGN                         ' PIC X(33).
2330              05 VALUE ' SIGNED                       ' PIC X(33).
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2331           05 VALUE ' SIGNED-INT                  ' PIC X(33).
2332           05 VALUE ' SIGNED-LONG                 ' PIC X(33).
2333           05 VALUE ' SIGNED-SHORT                ' PIC X(33).
2334  GC1213   05 VALUE 'FSIN                         ' PIC X(33).
2335           05 VALUE ' SIZE                        ' PIC X(33).
2336           05 VALUE 'VSORT                        ' PIC X(33).
2337           05 VALUE ' SORT-MERGE                  ' PIC X(33).
2338           05 VALUE 'ISORT-RETURN                 ' PIC X(33).
2339           05 VALUE ' SOURCE                      ' PIC X(33).
2340           05 VALUE ' SOURCE-COMPUTER             ' PIC X(33).
2341           05 VALUE ' SOURCES                     ' PIC X(33).     UNIMPLEMENTED
2342           05 VALUE ' SPACE                       ' PIC X(33).
2343           05 VALUE ' SPACE-FILL                  ' PIC X(33).     UNIMPLEMENTED
2344           05 VALUE ' SPACES                      ' PIC X(33).
2345           05 VALUE ' SPECIAL-NAMES               ' PIC X(33).
2346  GC1213   05 VALUE 'FSQRT                        ' PIC X(33).
2347           05 VALUE ' STANDARD                    ' PIC X(33).
2348           05 VALUE ' STANDARD-1                  ' PIC X(33).
2349           05 VALUE ' STANDARD-2                  ' PIC X(33).
2350           05 VALUE ' STANDARD-BINARY             ' PIC X(33).     UNIMPLEMENTED
2351  GC1213   05 VALUE 'FSTANDARD-COMPARE            ' PIC X(33).     UNIMPLEMENTED
2352           05 VALUE ' STANDARD-DECIMAL            ' PIC X(33).     UNIMPLEMENTED
2353  GC1213   05 VALUE 'FSTANDARD-DEVIATION          ' PIC X(33).
2354           05 VALUE 'VSTART                       ' PIC X(33).
2355           05 VALUE ' STATEMENT                   ' PIC X(33).     UNIMPLEMENTED
2356           05 VALUE ' STATIC                      ' PIC X(33).
2357           05 VALUE ' STATUS                      ' PIC X(33).
2358           05 VALUE ' STDCALL                     ' PIC X(33).
2359           05 VALUE 'MSTDERR                      ' PIC X(33).
2360           05 VALUE 'MSTDIN                       ' PIC X(33).
2361           05 VALUE 'MSTDOUT                      ' PIC X(33).
2362           05 VALUE ' STEP                        ' PIC X(33).
2363           05 VALUE 'VSTOP                        ' PIC X(33).
2364  GC1213   05 VALUE 'FSTORED-CHAR-LENGTH          ' PIC X(33).
2365           05 VALUE 'VSTRING                      ' PIC X(33).
2366           05 VALUE ' STRONG                      ' PIC X(33).     UNIMPLEMENTED
2367           05 VALUE ' SUB-QUEUE-1                 ' PIC X(33).     OBSOLETE
2368           05 VALUE ' SUB-QUEUE-2                 ' PIC X(33).     OBSOLETE
2369           05 VALUE ' SUB-QUEUE-3                 ' PIC X(33).     OBSOLETE
2370  GC1213   05 VALUE 'FSUBSTITUTE                  ' PIC X(33).
2371  GC1213   05 VALUE 'FSUBSTITUTE-CASE             ' PIC X(33).
2372           05 VALUE 'VSUBTRACT                    ' PIC X(33).
2373  GC1213   05 VALUE 'FSUM                         ' PIC X(33).
2374           05 VALUE ' SUPER                       ' PIC X(33).     UNIMPLEMENTED
2375           05 VALUE 'VSUPPRESS                    ' PIC X(33).
2376           05 VALUE 'MSW0                         ' PIC X(33).
2377           05 VALUE 'MSW1                         ' PIC X(33).
2378           05 VALUE 'MSW10                        ' PIC X(33).
2379           05 VALUE 'MSW11                        ' PIC X(33).
2380           05 VALUE 'MSW12                        ' PIC X(33).
2381           05 VALUE 'MSW13                        ' PIC X(33).
2382           05 VALUE 'MSW14                        ' PIC X(33).
2383           05 VALUE 'MSW15                        ' PIC X(33).
2384           05 VALUE 'MSW2                         ' PIC X(33).
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2385              05 VALUE 'MSW3                          ' PIC X(33).
2386              05 VALUE 'MSW4                          ' PIC X(33).
2387              05 VALUE 'MSW5                          ' PIC X(33).
2388              05 VALUE 'MSW6                          ' PIC X(33).
2389              05 VALUE 'MSW7                          ' PIC X(33).
2390              05 VALUE 'MSW8                          ' PIC X(33).
2391              05 VALUE 'MSW9                          ' PIC X(33).
2392              05 VALUE 'MSWITCH-0                     ' PIC X(33).
2393              05 VALUE 'MSWITCH-1                     ' PIC X(33).
2394              05 VALUE 'MSWITCH-10                    ' PIC X(33).
2395              05 VALUE 'MSWITCH-11                    ' PIC X(33).
2396              05 VALUE 'MSWITCH-12                    ' PIC X(33).
2397              05 VALUE 'MSWITCH-13                    ' PIC X(33).
2398              05 VALUE 'MSWITCH-14                    ' PIC X(33).
2399              05 VALUE 'MSWITCH-15                    ' PIC X(33).
2400              05 VALUE 'MSWITCH-2                     ' PIC X(33).
2401              05 VALUE 'MSWITCH-3                     ' PIC X(33).
2402              05 VALUE 'MSWITCH-4                     ' PIC X(33).
2403              05 VALUE 'MSWITCH-5                     ' PIC X(33).
2404              05 VALUE 'MSWITCH-6                     ' PIC X(33).
2405              05 VALUE 'MSWITCH-7                     ' PIC X(33).
2406              05 VALUE 'MSWITCH-8                     ' PIC X(33).
2407              05 VALUE 'MSWITCH-9                     ' PIC X(33).
2408              05 VALUE ' SYMBOL                       ' PIC X(33).     UNIMPLEMENTED
2409              05 VALUE ' SYMBOLIC                     ' PIC X(33).
2410              05 VALUE ' SYNC                         ' PIC X(33).
2411              05 VALUE ' SYNCHRONISED                 ' PIC X(33).
2412              05 VALUE ' SYNCHRONIZED                 ' PIC X(33).
2413              05 VALUE 'MSYSERR                       ' PIC X(33).
2414              05 VALUE 'MSYSIN                        ' PIC X(33).
2415              05 VALUE 'MSYSIPT                       ' PIC X(33).
2416              05 VALUE 'MSYSLIST                      ' PIC X(33).
2417              05 VALUE 'MSYSLST                       ' PIC X(33).
2418              05 VALUE 'MSYSOUT                       ' PIC X(33).
2419              05 VALUE ' SYSTEM-DEFAULT               ' PIC X(33).
2420              05 VALUE ' TABLE                        ' PIC X(33).     UNIMPLEMENTED
2421              05 VALUE 'KTALLYING                     ' PIC X(33).
2422  GC1213      05 VALUE 'FTAN                          ' PIC X(33).
2423              05 VALUE ' TAPE                         ' PIC X(33).
2424              05 VALUE ' TERMINAL                     ' PIC X(33).     OBSOLETE
2425              05 VALUE 'VTERMINATE                    ' PIC X(33).
2426              05 VALUE ' TEST                         ' PIC X(33).
2427  GC1213      05 VALUE 'FTEST-DATE-YYYYMMDD           ' PIC X(33).
2428  GC1213      05 VALUE 'FTEST-DAY-YYYYDDD             ' PIC X(33).
2429  GC1213      05 VALUE 'FTEST-FORMATTED-DATETIME      ' PIC X(33).     UNIMPLEMENTED
2430  GC1213      05 VALUE 'FTEST-NUMVAL                  ' PIC X(33).
2431  GC1213      05 VALUE 'FTEST-NUMVAL-C                ' PIC X(33).
2432  GC1213      05 VALUE 'FTEST-NUMVAL-F                ' PIC X(33).
2433              05 VALUE ' TEXT                         ' PIC X(33).     OBSOLETE
2434              05 VALUE ' THAN                         ' PIC X(33).
2435              05 VALUE ' THEN                         ' PIC X(33).
2436              05 VALUE ' THROUGH                      ' PIC X(33).
2437              05 VALUE ' THRU                         ' PIC X(33).
2438              05 VALUE ' TIME                         ' PIC X(33).
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  2439  GC0711     05 VALUE ' TIME-OUT                    ' PIC X(33).
  2440  GC0711     05 VALUE ' TIMEOUT                     ' PIC X(33).
  2441             05 VALUE ' TIMES                       ' PIC X(33).
  2442             05 VALUE 'KTO                          ' PIC X(33).
  2443             05 VALUE ' TOP                         ' PIC X(33).
  2444             05 VALUE ' TOWARD-GREATER              ' PIC X(33).
  2445             05 VALUE ' TOWARD-LESSER               ' PIC X(33).
  2446             05 VALUE ' TRAILING                    ' PIC X(33).
  2447             05 VALUE ' TRAILING-SIGN               ' PIC X(33).    UNIMPLEMENTED
  2448             05 VALUE 'VTRANSFORM                   ' PIC X(33).
  2449  GC1213     05 VALUE 'FTRIM                        ' PIC X(33).
  2450             05 VALUE ' TRUE                        ' PIC X(33).
  2451             05 VALUE ' TRUNCATION                  ' PIC X(33).
  2452             05 VALUE ' TYPE                        ' PIC X(33).
  2453             05 VALUE ' TYPEDEF                     ' PIC X(33).    UNIMPLEMENTED
  2454             05 VALUE ' UCS-4                       ' PIC X(33).    UNIMPLEMENTED
  2455             05 VALUE ' UNDERLINE                   ' PIC X(33).
  2456             05 VALUE ' UNIT                        ' PIC X(33).
  2457             05 VALUE ' UNIVERSAL                   ' PIC X(33).    UNIMPLEMENTED
  2458             05 VALUE 'VUNLOCK                      ' PIC X(33).
  2459             05 VALUE ' UNSIGNED                    ' PIC X(33).
  2460             05 VALUE ' UNSIGNED-INT                ' PIC X(33).
  2461             05 VALUE ' UNSIGNED-LONG               ' PIC X(33).
  2462             05 VALUE ' UNSIGNED-SHORT              ' PIC X(33).
  2463             05 VALUE 'VUNSTRING                    ' PIC X(33).
  2464             05 VALUE ' UNTIL                       ' PIC X(33).
  2465             05 VALUE 'KUP                          ' PIC X(33).
  2466             05 VALUE ' UPDATE                      ' PIC X(33).
  2467             05 VALUE ' UPON                        ' PIC X(33).
  2468             05 VALUE ' UPPER                       ' PIC X(33).
  2469  GC1213     05 VALUE 'FUPPER-CASE                  ' PIC X(33).
  2470             05 VALUE ' USAGE                       ' PIC X(33).
  2471             05 VALUE 'VUSE                         ' PIC X(33).
  2472  GC0711     05 VALUE ' USER                        ' PIC X(33).
  2473             05 VALUE ' USER-DEFAULT                ' PIC X(33).
  2474             05 VALUE 'KUSING                       ' PIC X(33).
  2475             05 VALUE ' UTF-16                      ' PIC X(33).    UNIMPLEMENTED
  2476             05 VALUE ' UTF-8                       ' PIC X(33).    UNIMPLEMENTED
  2477             05 VALUE ' VAL-STATUS                  ' PIC X(33).    UNIMPLEMENTED
  2478             05 VALUE ' VALID                       ' PIC X(33).    UNIMPLEMENTED
  2479             05 VALUE ' VALIDATE                    ' PIC X(33).    UNIMPLEMENTED
  2480             05 VALUE ' VALIDATE-STATUS             ' PIC X(33).    UNIMPLEMENTED
  2481  GC0712     05 VALUE 'AVALUE                       ' PIC X(33).
  2482             05 VALUE ' VALUES                      ' PIC X(33).
  2483  GC1213     05 VALUE 'FVARIANCE                    ' PIC X(33).
  2484             05 VALUE 'KVARYING                     ' PIC X(33).
  2485             05 VALUE ' VDISABLE                    ' PIC X(33).    UNIMPLEMENTED
  2486             05 VALUE ' WAIT                        ' PIC X(33).
  2487             05 VALUE 'VWHEN                        ' PIC X(33).
  2488  GC1213     05 VALUE 'FWHEN-COMPILED               ' PIC X(33).
  2489             05 VALUE ' WITH                        ' PIC X(33).
  2490             05 VALUE ' WORDS                       ' PIC X(33).
  2491             05 VALUE 'KWORKING-STORAGE             ' PIC X(33).
  2492             05 VALUE 'VWRITE                       ' PIC X(33).
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 2493  GC1213     05 VALUE 'FYEAR-TO-YYYY                    ' PIC X(33).
 2494             05 VALUE ' YYYYDDD                         ' PIC X(33).
 2495             05 VALUE ' YYYYMMDD                        ' PIC X(33).
 2496             05 VALUE ' ZERO                            ' PIC X(33).
 2497             05 VALUE ' ZERO-FILL                       ' PIC X(33).    UNIMPLEMENTED
 2498             05 VALUE ' ZEROES                          ' PIC X(33).
 2499             05 VALUE ' ZEROS                           ' PIC X(33).
 2500         01  WS-Reserved-Word-Table-TXT REDEFINES WS-Reserved-Words-TXT.
 2501  GC1113     05 WS-Reserved-Word-TXT       OCCURS 754 TIMES
 2502                                                    ASCENDING KEY
 2503                                                       WS-RW-Word-TXT
 2504                                                    INDEXED WS-RW-IDX.
 2505                10 WS-RW-Type-CD            PIC X(1).
 2506                10 WS-RW-Word-TXT           PIC X(32).
 2507
 2508         01  WS-Runtime-Switches.
 2509  GC0710     05 WS-RS-Duplicate-CHR             PIC X(1).
 2510             05 WS-RS-In-Which-Pgm-CHR          PIC X(1).
 2511                88 WS-RS-In-Main-Module-BOOL    VALUE 'M'.
 2512                88 WS-RS-In-Copybook-BOOL       VALUE 'C'.
 2513             05 WS-RS-Last-Token-Ended-Sent-CHR PIC X(1).
 2514             05 WS-RS-Processing-PICTURE-CHR    PIC X(1).
 2515             05 WS-RS-Token-Ended-Sentence-CHR  PIC X(1).
 2516  GC0710     05 WS-RS-Verb-Has-Been-Found-CHR   PIC X(1).
 2517
 2518         01  WS-Saved-Section-TXT             PIC X(15).
 2519
 2520  GC1213 01  WS-Src-Dashes-TXT.
 2521  GC0712     05 VALUE '======'                 PIC X(7).
 2522  GC0712     05 VALUE ALL '='                  PIC X(128).
 2523
 2524         01  WS-Src-Detail-Line-TXT.
 2525             05 WS-SDL-Line-NUM                 PIC ZZZZZ9.
 2526             05 FILLER                          PIC X(1).
 2527             05 WS-SDL-Statement-TXT            PIC X(256).
 2528
 2529  GC1213 01  WS-Src-Hold-TXT                  PIC X(256).
 2530
 2531         01  WS-Src-Line-NUM                  PIC 9(6).
 2532
 2533  GC1213 01  WS-Src-Lines-NUM                 USAGE BINARY-LONG.
 2534
 2535         01  WS-Src-SUB                       USAGE BINARY-LONG.
 2536
 2537         01  WS-Tally-QTY                     USAGE BINARY-LONG.
 2538
 2539         01  WS-Temp-10-Chars-TXT             PIC X(10).
 2540
 2541         01  WS-Temp-32-Chars-1-TXT           PIC X(32).
 2542
 2543  GC0711 01  WS-Temp-32-Chars-2-TXT           PIC X(32).
 2544
 2545  GC0711 01  WS-Temp-32-Chars-3-TXT           PIC X(32).
 2546
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   2547  GC0712 01  WS-Temp-65-Chars-TXT                PIC X(65).
   2548
   2549         01  WS-Temp-256-Chars-TXT               PIC X(256).
   2550
   2551         01  WS-Today-DT                         PIC 9(8).
   2552
   2553         01  WS-Token-Curr-TXT                   PIC X(32).
   2554
   2555         01  WS-Token-Curr-Uc-TXT                PIC X(32).
   2556
   2557         01  WS-Token-Prev-TXT                   PIC X(32).
   2558
   2559         01  WS-Token-Search-TXT                 PIC X(32).
   2560
   2561         01  WS-Token-Type-CD                    PIC X(1).
   2562  GC0712     88 WS-TT-Token-Is-Argtype-BOOL      VALUE 'A'.
   2563             88 WS-TT-Token-Is-EOF-BOOL          VALUE HIGH-VALUES.
   2564  GC1213     88 WS-TT-Token-Is-Function-BOOL     VALUE 'F'.
   2565             88 WS-TT-Token-Is-Identifier-BOOL   VALUE 'I'.
   2566  GC0712     88 WS-TT-Token-Is-Keyword-BOOL      VALUE 'K', 'V', 'A'.
   2567             88 WS-TT-Token-Is-Lit-Alpha-BOOL    VALUE 'L'.
   2568             88 WS-TT-Token-Is-Lit-Number-BOOL   VALUE 'N'.
   2569             88 WS-TT-Token-Is-Verb-BOOL         VALUE 'V'.
   2570  GC1213     88 WS-TT-Token-Is-Reserved-Wd-BOOL  VALUE ' ', 'F'.
   2571
   2572         01  WS-Usernames-QTY                    USAGE BINARY-LONG.
   2573
   2574         01  WS-Version-TXT                      PIC X(23).
   2575
   2576         01  WS-Xref-Detail-Line-TXT.
   2577             05 WS-XDL-Prog-ID-TXT               PIC X(15).
   2578             05 FILLER                           PIC X(1).
   2579             05 WS-XDL-Token-TXT                 PIC X(32).
   2580             05 FILLER                           PIC X(1).
   2581             05 WS-XDL-Def-Line-NUM              PIC ZZZZZ9.
   2582             05 FILLER                           PIC X(1).
   2583             05 WS-XDL-Section-TXT               PIC X(15).
   2584             05 FILLER                           PIC X(1).
   2585             05 WS-XDL-Reference-TXT             OCCURS 8 TIMES.
   2586                10 WS-XDL-Ref-Line-NUM           PIC ZZZZZ9.
   2587                10 WS-XDL-Ref-Flag-CHR           PIC X(1).
   2588                10 FILLER                        PIC X(1).
   2589
   2590  GC1213 01  WS-Xref-Lines-Per-Rec-NUM           PIC 9(1).
   2591
   2592         LINKAGE SECTION.
   2593  GC0712 01  L-Listing-Fn-TXT                    PIC X(256).
   2594
   2595         01  L-Src-Fn-TXT                        PIC X(256).
   2596
   2597  GC0712 01  L-OS-Type-CD                        PIC 9(1).
   2598
   2599  GC1213 01  L-LPP-NUM                           USAGE BINARY-LONG.
   2600
```

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2601  GC1213 01  L-LPP-Port-NUM                         USAGE BINARY-LONG.
2602
2603  GC1213 01  L-Listing-CD                           PIC 9(1).
2604        /
2605  GC0712 PROCEDURE DIVISION USING L-Listing-Fn-TXT
2606  GC0712                         L-Src-Fn-TXT
2607  GC0712                         L-OS-Type-CD
2608  GC1213                         L-LPP-NUM
2609  GC1213                         L-LPP-Port-NUM
2610  GC1213                         L-Listing-CD.
2611         000-Main SECTION.
2612             PERFORM 100-Initialization
2613  GC0712     OPEN OUTPUT F-Listing-FILE
2614  GC0712     PERFORM 500-Produce-Source-Listing
2615  GC0712     SORT F-Sort-Work-FILE
2616  GC0712         ASCENDING KEY    F-SW-Prog-ID-TXT
2617  GC0712                          F-SW-Token-Uc-TXT
2618  GC0712                          F-SW-Ref-Line-NUM
2619  GC0712         INPUT PROCEDURE  300-Tokenize-Source
2620  GC0712         OUTPUT PROCEDURE 400-Produce-Xref-Listing
2621  GC0712     CLOSE F-Listing-FILE
2622             GOBACK
2623             .
2624        /
2625         *>*************************************************************
2626         *> Perform all program-wide initialization operations        **
2627         *>*************************************************************
2628          100-Initialization SECTION.
2629  GC1213     MOVE 0 TO WS-Page-NUM
2630  GC1213     MOVE 'N' TO WS-Suppress-FF-CHR
2631  GC1213     MOVE SPACES TO WS-Copyright-TXT
2632  GC1213     STRING 'GCic for '                  DELIMITED SIZE
2633  GC1213            WS-OS-Type-TXT(L-OS-Type-CD) DELIMITED SPACE
2634  VC0820            ' Copyright (C) 2009-'       DELIMITED SIZE
2635  VC0322            COMP-YEAR                     DELIMITED SIZE
2636  VC0322            ', Gary L. Cutler, GPL'      DELIMITED SIZE
2637  GC1213            INTO WS-Copyright-TXT
2638  VC0811*>  See const-set-1.cpy for constants used
2639  VC0811*>    MOVE 'GNUCOBOL 3.1.2 06MAR2022' TO WS-Version-TXT
2640        *>
2641  VC0811     move    Comp-Vers to   WS-Version-TXT.
2642             MOVE TRIM(L-Src-Fn-TXT,Leading) TO L-Src-Fn-TXT
2643  GC1010     PERFORM VARYING WS-I-SUB FROM LENGTH(L-Src-Fn-TXT) BY -1
2644        *> Locate last directory delimiter character so that the filename can be extracted
2645  GC1010             UNTIL L-Src-Fn-TXT(WS-I-SUB:1) = '/' OR '\'
2646  GC1010                 OR WS-I-SUB = 0
2647  VC0322             continue
2648  GC1010     END-PERFORM
2649  GC1010     IF WS-I-SUB = 0
2650  GC1010         MOVE UPPER-CASE(L-Src-Fn-TXT) TO WS-Main-Module-Name-TXT
2651        *> No directory delimiter, whole thing is filename
2652  GC1010     ELSE
2653  GC1010         ADD 1 TO WS-I-SUB
2654  GC1010         MOVE UPPER-CASE(L-Src-Fn-TXT(WS-I-SUB:))
```

```
2655  GC1010           TO WS-Main-Module-Name-TXT *> Extract filename
2656  GC1010       END-IF
2657  GC1213       IF L-Listing-CD = 1 *> LANDSCAPE
2658  GC1213           MOVE 8 TO WS-Xref-Lines-Per-Rec-NUM
2659  GC1213           ACCEPT WS-Lines-Per-Page-Env-TXT
2660  GC1213               FROM ENVIRONMENT 'GCXREF_LINES'
2661  GC1213       ELSE *> PORTRAIT
2662  GC1213           MOVE 3 TO WS-Xref-Lines-Per-Rec-NUM
2663  GC1213           ACCEPT WS-Lines-Per-Page-Env-TXT
2664  GC1213               FROM ENVIRONMENT 'GCXREF_LINES_PORT'
2665  GC1213       END-IF
2666              INSPECT L-Src-Fn-TXT REPLACING ALL '\' BY '/'
2667              MOVE L-Src-Fn-TXT TO WS-Program-Path-TXT
2668              CALL 'C$JUSTIFY' USING WS-Program-Path-TXT, 'Right'
2669              MOVE LENGTH(TRIM(L-Src-Fn-TXT,Trailing)) TO WS-I-SUB
2670              MOVE 0 TO WS-J-SUB
2671              PERFORM UNTIL L-Src-Fn-TXT(WS-I-SUB:1) = '/'
2672                      OR WS-I-SUB = 0
2673                  SUBTRACT 1 FROM WS-I-SUB
2674                  ADD     1 TO   WS-J-SUB
2675              END-PERFORM
2676              UNSTRING L-Src-Fn-TXT((WS-I-SUB + 1):WS-J-SUB)
2677                  DELIMITED BY '.'
2678                  INTO WS-Filename-TXT
2679                      WS-Dummy-TXT
2680  GC1010     STRING
2681  GC1010         TRIM(WS-Filename-TXT,Trailing)
2682  GC1010         '.i'
2683  GC1010         DELIMITED SIZE
2684  GC1010         INTO WS-Expanded-Src-Fn-TXT
2685  GC1010     CALL 'CBL_CHECK_FILE_EXIST' USING WS-Expanded-Src-Fn-TXT
2686  GC1010                                       WS-Temp-256-Chars-TXT
2687  GC1010     IF RETURN-CODE NOT = 0
2688  GC1010         GOBACK
2689  GC1010     END-IF
2690              IF WS-Lines-Per-Page-Env-TXT NOT = SPACES
2691                  MOVE NUMVAL(WS-Lines-Per-Page-Env-TXT)
2692                    TO WS-Lines-Per-Page-NUM
2693              ELSE
2694  GC1213         IF L-LISTING-CD = 1 *> LANDSCAPE
2695  GC1213             MOVE L-LPP-NUM TO WS-Lines-Per-Page-NUM
2696  GC1213         ELSE               *> PORTRAIT
2697  GC1213             MOVE L-LPP-Port-NUM TO WS-Lines-Per-Page-NUM
2698  GC1213         END-IF
2699              END-IF
2700  GC1213     SUBTRACT 3 FROM WS-Lines-Per-Page-NUM *> FOR PAGE FOOTER
2701              ACCEPT WS-Today-DT FROM DATE YYYYMMDD
2702  GC1213     MOVE WS-Today-DT TO WS-Formatted-DT
2703              MOVE '????????????...' TO WS-Curr-Prog-ID-TXT
2704              MOVE SPACES           TO WS-Curr-Verb-TXT
2705                                       WS-Held-Reference-TXT
2706              .
2707          /
2708          300-Tokenize-Source SECTION.
```

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 2709               OPEN INPUT F-Expanded-Src-FILE
 2710               MOVE SPACES TO F-Expanded-Src-REC
 2711               MOVE 256 TO WS-Src-SUB
 2712               MOVE 0 TO WS-Usernames-QTY
 2713                       WS-Curr-Line-NUM
 2714               MOVE '?' TO WS-Curr-Division-TXT
 2715   GC0710      MOVE 'N' TO WS-RS-Verb-Has-Been-Found-CHR
 2716               PERFORM FOREVER
 2717                   PERFORM 310-Get-Token
 2718                   IF WS-TT-Token-Is-EOF-BOOL
 2719                       EXIT PERFORM
 2720                   END-IF
 2721                   MOVE UPPER-CASE(WS-Token-Curr-TXT)
 2722                     TO WS-Token-Curr-Uc-TXT
 2723   GC1010        IF WS-TT-Token-Is-Keyword-BOOL
 2724   GC1010        OR WS-TT-Token-Is-Reserved-Wd-BOOL
 2725   GC1010            MOVE WS-Token-Curr-Uc-TXT TO WS-Token-Curr-TXT
 2726   GC1010        END-IF
 2727                   IF WS-TT-Token-Is-Verb-BOOL
 2728                       MOVE WS-Token-Curr-Uc-TXT TO WS-Curr-Verb-TXT
 2729                                                   WS-Token-Prev-TXT
 2730                       IF WS-Held-Reference-TXT NOT = SPACES
 2731                           MOVE WS-Held-Reference-TXT TO F-Sort-Work-REC
 2732                           MOVE SPACES         TO WS-Held-Reference-TXT
 2733                           RELEASE F-Sort-Work-REC
 2734                       END-IF
 2735                   END-IF
 2736                   EVALUATE TRUE
 2737                   WHEN WS-CD-In-IDENT-DIV-BOOL
 2738                       PERFORM 320-IDENTIFICATION-DIVISION
 2739                   WHEN WS-CD-In-ENV-DIV-BOOL
 2740                       PERFORM 330-ENVIRONMENT-DIVISION
 2741                   WHEN WS-CD-In-DATA-DIV-BOOL
 2742                       PERFORM 340-DATA-DIVISION
 2743                   WHEN WS-CD-In-PROC-DIV-BOOL
 2744                       PERFORM 350-PROCEDURE-DIVISION
 2745                   END-EVALUATE
 2746                   IF WS-TT-Token-Is-Keyword-BOOL
 2747                       MOVE WS-Token-Curr-Uc-TXT TO WS-Token-Prev-TXT
 2748                   END-IF
 2749                   IF WS-RS-Token-Ended-Sentence-CHR = 'Y'
 2750                   AND WS-Curr-Division-TXT NOT = 'I'
 2751                       MOVE SPACES TO WS-Token-Prev-TXT
 2752                                       WS-Curr-Verb-TXT
 2753                   END-IF
 2754
 2755               END-PERFORM
 2756               CLOSE F-Expanded-Src-FILE
 2757               .
 2758        /
 2759         310-Get-Token SECTION.
 2760        *>-- Position to 1st non-blank character
 2761               MOVE WS-RS-Token-Ended-Sentence-CHR
 2762                 TO WS-RS-Last-Token-Ended-Sent-CHR
```

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2763               MOVE 'N' TO WS-RS-Token-Ended-Sentence-CHR
2764               PERFORM UNTIL F-Expanded-Src-REC(WS-Src-SUB : 1) NOT = SPACE
2765                   IF WS-Src-SUB > 255
2766                       READ F-Expanded-Src-FILE AT END
2767                           IF WS-Held-Reference-TXT NOT = SPACES
2768                               MOVE WS-Held-Reference-TXT TO F-Sort-Work-REC
2769                               MOVE SPACES         TO WS-Held-Reference-TXT
2770                               RELEASE F-Sort-Work-REC
2771                           END-IF
2772                           SET WS-TT-Token-Is-EOF-BOOL TO TRUE
2773                           MOVE 0 TO WS-Curr-Line-NUM
2774                           EXIT SECTION
2775                       END-READ
2776  GC0712               IF F-ES-1-7-TXT NOT = '#DEFLIT'
2777  GC0712                   IF F-ES-1-CHR = '#'
2778  GC0712                       PERFORM 311-Control-Record
2779  GC0712                   ELSE
2780  GC0712                       PERFORM 312-Expanded-Src-Record
2781  GC0712                   END-IF
2782  GC0712               END-IF
2783                   ELSE
2784                       ADD 1 TO WS-Src-SUB
2785                   END-IF
2786               END-PERFORM
2787         *>-- Extract token string
2788               MOVE F-Expanded-Src-REC(WS-Src-SUB : 1)
2789                 TO WS-Curr-CHR
2790               MOVE F-Expanded-Src-REC(WS-Src-SUB + 1: 1)
2791                 TO WS-Next-CHR
2792               IF WS-Curr-CHR = '.'
2793                   ADD 1 TO WS-Src-SUB
2794                   MOVE WS-Curr-CHR TO WS-Token-Curr-TXT
2795                   MOVE SPACE TO WS-Token-Type-CD
2796                   MOVE 'Y' TO WS-RS-Token-Ended-Sentence-CHR
2797                   EXIT SECTION
2798               END-IF
2799               IF WS-Curr-Char-Is-Punct-BOOL
2800               AND WS-Curr-CHR = '='
2801               AND WS-Curr-Division-TXT = 'P'
2802                   ADD 1 TO WS-Src-SUB
2803                   MOVE 'EQUALS' TO WS-Token-Curr-TXT
2804                   MOVE 'K'      TO WS-Token-Type-CD
2805                   EXIT SECTION
2806               END-IF
2807               IF WS-Curr-Char-Is-Punct-BOOL *> So subscripts don't get flagged w/ '*'
2808               AND WS-Curr-CHR = '('
2809               AND WS-Curr-Division-TXT = 'P'
2810                   MOVE SPACES TO WS-Token-Prev-TXT
2811               END-IF
2812               IF WS-Curr-Char-Is-Punct-BOOL
2813                   ADD 1 TO WS-Src-SUB
2814                   MOVE WS-Curr-CHR TO WS-Token-Curr-TXT
2815                   MOVE SPACE TO WS-Token-Type-CD
2816                   EXIT SECTION
```

```
2817              END-IF
2818              IF WS-Curr-Char-Is-Quote-BOOL
2819                  ADD 1 TO WS-Src-SUB
2820                  UNSTRING F-Expanded-Src-REC
2821                      DELIMITED BY WS-Curr-CHR
2822                      INTO WS-Token-Curr-TXT
2823                      WITH POINTER WS-Src-SUB
2824                  IF F-Expanded-Src-REC(WS-Src-SUB : 1) = '.'
2825                      MOVE 'Y' TO WS-RS-Token-Ended-Sentence-CHR
2826                      ADD 1 TO WS-Src-SUB
2827                  END-IF
2828                  SET WS-TT-Token-Is-Lit-Alpha-BOOL TO TRUE
2829                  EXIT SECTION
2830              END-IF
2831              IF WS-Curr-Char-Is-X-BOOL AND WS-Next-Char-Is-Quote-BOOL
2832                  ADD 2 TO WS-Src-SUB
2833                  UNSTRING F-Expanded-Src-REC
2834                      DELIMITED BY WS-Next-CHR
2835                      INTO WS-Token-Curr-TXT
2836                      WITH POINTER WS-Src-SUB
2837                  IF F-Expanded-Src-REC(WS-Src-SUB : 1) = '.'
2838                      MOVE 'Y' TO WS-RS-Token-Ended-Sentence-CHR
2839                      ADD 1 TO WS-Src-SUB
2840                  END-IF
2841                  SET WS-TT-Token-Is-Lit-Number-BOOL TO TRUE
2842                  EXIT SECTION
2843              END-IF
2844              IF WS-Curr-Char-Is-Z-BOOL AND WS-Next-Char-Is-Quote-BOOL
2845                  ADD 2 TO WS-Src-SUB
2846                  UNSTRING F-Expanded-Src-REC
2847                      DELIMITED BY WS-Next-CHR
2848                      INTO WS-Token-Curr-TXT
2849                      WITH POINTER WS-Src-SUB
2850                  IF F-Expanded-Src-REC(WS-Src-SUB : 1) = '.'
2851                      MOVE 'Y' TO WS-RS-Token-Ended-Sentence-CHR
2852                      ADD 1 TO WS-Src-SUB
2853                  END-IF
2854                  SET WS-TT-Token-Is-Lit-Alpha-BOOL TO TRUE
2855                  EXIT SECTION
2856              END-IF
2857              IF WS-RS-Processing-PICTURE-CHR = 'Y'
2858                  UNSTRING F-Expanded-Src-REC
2859                      DELIMITED BY '. ' OR ' '
2860                      INTO WS-Token-Curr-TXT
2861                      DELIMITER IN WS-Delim-TXT
2862                      WITH POINTER WS-Src-SUB
2863                  IF WS-Delim-TXT = '. '
2864                      MOVE 'Y' TO WS-RS-Token-Ended-Sentence-CHR
2865                      ADD 1 TO WS-Src-SUB
2866                  END-IF
2867                  IF UPPER-CASE(WS-Token-Curr-TXT) = 'IS'
2868                      MOVE SPACE TO WS-Token-Type-CD
2869                      EXIT SECTION
2870                  ELSE
```

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2871                     MOVE 'N' TO WS-RS-Processing-PICTURE-CHR
2872                     MOVE SPACE TO WS-Token-Type-CD
2873                     EXIT SECTION
2874                 END-IF
2875             END-IF
2876             UNSTRING F-Expanded-Src-REC
2877                 DELIMITED BY '. ' OR ' ' OR '=' OR '(' OR ')' OR '*'
2878                                  OR '/' OR '&' OR ';' OR ',' OR '<'
2879                                  OR '>' OR ':'
2880                 INTO WS-Token-Curr-TXT
2881                 DELIMITER IN WS-Delim-TXT
2882                 WITH POINTER WS-Src-SUB
2883             IF WS-Delim-TXT = '. '
2884                 MOVE 'Y' TO WS-RS-Token-Ended-Sentence-CHR
2885             END-IF
2886             IF WS-Delim-TXT NOT = '. ' AND ' '
2887                 SUBTRACT 1 FROM WS-Src-SUB
2888             END-IF
2889       *>-- Classify Token
2890             MOVE UPPER-CASE(WS-Token-Curr-TXT) TO WS-Token-Search-TXT
2891             IF WS-Token-Search-TXT = 'EQUAL' OR 'EQUALS'
2892                 MOVE 'EQUALS' TO WS-Token-Curr-TXT
2893                 MOVE 'K'      TO WS-Token-Type-CD
2894                 EXIT SECTION
2895             END-IF
2896             SEARCH ALL WS-Reserved-Word-TXT
2897                 WHEN WS-RW-Word-TXT (WS-RW-IDX) = WS-Token-Search-TXT
2898                     MOVE WS-RW-Type-CD (WS-RW-IDX) TO WS-Token-Type-CD
2899 GC0710              IF WS-TT-Token-Is-Verb-BOOL
2900 GC0710                  MOVE 'Y' TO WS-RS-Verb-Has-Been-Found-CHR
2901 GC0710              END-IF
2902                     EXIT SECTION
2903             END-SEARCH
2904       *>-- Not a reserved word, must be a user name
2905             SET WS-TT-Token-Is-Identifier-BOOL TO TRUE
2906             PERFORM 313-Check-For-Numeric-Token
2907             IF WS-TT-Token-Is-Lit-Number-BOOL
2908                 IF  (WS-RS-Last-Token-Ended-Sent-CHR = 'Y')
2909                 AND (WS-Curr-Division-TXT = 'D')
2910                     MOVE 'LEVEL #' TO WS-Token-Curr-TXT
2911                     MOVE 'K'       TO WS-Token-Type-CD
2912                     EXIT SECTION
2913                 ELSE
2914                     EXIT SECTION
2915                 END-IF
2916             END-IF
2917             .
2918         /
2919          311-Control-Record SECTION.
2920             UNSTRING F-ES-2-256-TXT-256
2921                 DELIMITED BY '"'
2922                 INTO WS-Temp-10-Chars-TXT
2923                     WS-Temp-256-Chars-TXT
2924                     WS-Dummy-TXT
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2925             INSPECT WS-Temp-10-Chars-TXT REPLACING ALL '"' BY SPACE
2926  GC0712     IF WS-Temp-10-Chars-TXT(1:4) = 'line'
2927  GC0712         MOVE SPACES TO WS-Temp-10-Chars-TXT(1:4)
2928  GC0712     END-IF
2929             COMPUTE WS-I-SUB = NUMVAL(WS-Temp-10-Chars-TXT) - 1
2930  GC1010     IF UPPER-CASE(TRIM(WS-Temp-256-Chars-TXT,Trailing)) =
2931  GC1010        TRIM(WS-Main-Module-Name-TXT)
2932                MOVE WS-I-SUB TO WS-Curr-Line-NUM
2933                SET WS-RS-In-Main-Module-BOOL TO TRUE
2934                IF WS-Saved-Section-TXT NOT = SPACES
2935                    MOVE WS-Saved-Section-TXT TO WS-Curr-Section-TXT
2936                END-IF
2937            ELSE
2938                SET WS-RS-In-Copybook-BOOL TO TRUE
2939                IF WS-Saved-Section-TXT = SPACES
2940                    MOVE WS-Curr-Section-TXT TO WS-Saved-Section-TXT
2941                END-IF
2942                MOVE LENGTH(TRIM(WS-Temp-256-Chars-TXT,Trailing))
2943                  TO WS-I-SUB
2944                MOVE 0 TO WS-J-SUB
2945                PERFORM UNTIL WS-Temp-256-Chars-TXT(WS-I-SUB:1) = '/'
2946                        OR WS-I-SUB = 0
2947                    SUBTRACT 1 FROM WS-I-SUB
2948                    ADD      1 TO   WS-J-SUB
2949                END-PERFORM
2950                UNSTRING WS-Temp-256-Chars-TXT((WS-I-SUB + 1):WS-J-SUB)
2951                    DELIMITED BY '.'
2952                    INTO WS-Filename-TXT
2953                         WS-Dummy-TXT
2954                MOVE '['     TO WS-CS-1-CHR
2955                MOVE WS-Filename-TXT TO WS-CS-2-14-TXT
2956                IF WS-CS-11-14-TXT NOT = SPACES
2957                    MOVE '...' TO WS-CS-11-14-TXT
2958                END-IF
2959                MOVE ']'     TO WS-CS-15-CHR
2960            END-IF
2961            MOVE SPACES TO F-Expanded-Src-REC *> Force another READ
2962            MOVE 256    TO WS-Src-SUB
2963            .
2964        /
2965         312-Expanded-Src-Record SECTION.
2966  GC0314    IF F-Expanded-Src-REC(1:1) = SPACE
2967  GC0314        MOVE 2 TO WS-Src-SUB
2968  GC0314    ELSE
2969  GC0314        MOVE 1 TO WS-Src-SUB
2970  GC0314    END-IF
2971            IF WS-RS-In-Main-Module-BOOL
2972                ADD 1 To WS-Curr-Line-NUM
2973            END-IF
2974            .
2975        /
2976         313-Check-For-Numeric-Token SECTION.
2977            MOVE WS-Token-Curr-TXT TO WS-Temp-32-Chars-1-TXT
2978            INSPECT WS-Temp-32-Chars-1-TXT
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 2979  GC0711        CONVERTING '0123456789' TO SPACES
 2980  GC0711     IF WS-Temp-32-Chars-1-TXT = SPACES                        *> Simple Unsigned Integer
 2981              SET WS-TT-Token-Is-Lit-Number-BOOL TO TRUE
 2982              EXIT SECTION
 2983          END-IF
 2984  GC0711     MOVE SPACES TO WS-Temp-32-Chars-2-TXT
 2985  GC0711                  WS-Temp-32-Chars-3-TXT
 2986  GC0711                  WS-Dummy-TXT
 2987  GC0711     UNSTRING WS-Temp-32-Chars-1-TXT
 2988  GC0711        DELIMITED BY 'e' OR 'E'
 2989  GC0711        INTO WS-Temp-32-Chars-2-TXT
 2990  GC0711             WS-Temp-32-Chars-3-TXT
 2991  GC0711             WS-Dummy-TXT
 2992  GC0711     IF WS-Dummy-TXT NOT = SPACES                    *> More than one 'E' - Not Numeric
 2993  GC0711        EXIT SECTION
 2994  GC0711     END-IF
 2995  GC0711     IF WS-Temp-32-Chars-2-TXT(1:1) = '+' OR '-'
 2996  GC0711        MOVE SPACE TO WS-Temp-32-Chars-2-TXT(1:1)
 2997  GC0711     END-IF
 2998  GC0711     IF WS-Temp-32-Chars-3-TXT(1:1) = '+' OR '-'
 2999  GC0711        MOVE SPACE TO WS-Temp-32-Chars-3-TXT(1:1)
 3000  GC0711     END-IF
 3001          MOVE 0 TO WS-Tally-QTY
 3002  GC0711     INSPECT WS-Temp-32-Chars-2-TXT
 3003              TALLYING WS-Tally-QTY FOR ALL '.'
 3004          IF WS-Tally-QTY = 1
 3005  GC0711        INSPECT WS-Temp-32-Chars-2-TXT REPLACING ALL '.' BY SPACE
 3006          END-IF
 3007  GC0711     INSPECT WS-Temp-32-Chars-3-TXT
 3008  GC0711        TALLYING WS-Tally-QTY FOR ALL '.'
 3009  GC0711     IF WS-Tally-QTY = 1
 3010  GC0711        INSPECT WS-Temp-32-Chars-3-TXT REPLACING ALL '.' BY SPACE
 3011  GC0711     END-IF
 3012  GC0711     IF WS-Temp-32-Chars-2-TXT = SPACES AND WS-Temp-32-Chars-3-TXT = SPACES
 3013              SET WS-TT-Token-Is-Lit-Number-BOOL TO TRUE
 3014              EXIT SECTION
 3015          END-IF
 3016              .
 3017        /
 3018         320-IDENTIFICATION-DIVISION SECTION.
 3019  GC0712     IF WS-TT-Token-Is-Argtype-BOOL
 3020  GC0712        SET WS-TT-Token-Is-Reserved-Wd-BOOL TO TRUE
 3021  GC0712     END-IF
 3022  GC0710     MOVE 'N' TO WS-RS-Verb-Has-Been-Found-CHR
 3023          IF WS-TT-Token-Is-Keyword-BOOL
 3024          AND WS-Token-Curr-TXT = 'DIVISION'
 3025              MOVE WS-Token-Prev-TXT TO WS-Curr-Division-TXT
 3026              EXIT SECTION
 3027          END-IF
 3028  GC0712     IF WS-Token-Prev-TXT = 'PROGRAM-ID' OR 'FUNCTION-ID'
 3029              MOVE SPACES TO WS-Token-Prev-TXT
 3030              MOVE WS-Token-Curr-TXT TO WS-Curr-Prog-ID-TXT
 3031  GC0712        IF WS-CPI-16-CHR NOT = SPACES
 3032                 MOVE '...' TO WS-CPI-13-15-TXT
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3033                   END-IF
3034                   EXIT SECTION
3035              END-IF
3036              .
3037       /
3038          330-ENVIRONMENT-DIVISION SECTION.
3039  GC0712     IF WS-TT-Token-Is-Argtype-BOOL
3040  GC0712         SET WS-TT-Token-Is-Reserved-Wd-BOOL TO TRUE
3041  GC0712     END-IF
3042              IF WS-TT-Token-Is-Keyword-BOOL
3043              AND WS-Token-Curr-TXT = 'DIVISION'
3044                  MOVE WS-Token-Prev-TXT TO WS-Curr-Division-TXT
3045                  EXIT SECTION
3046              END-IF
3047              IF WS-TT-Token-Is-Keyword-BOOL
3048              AND WS-Token-Curr-TXT = 'SECTION'
3049                  MOVE WS-Token-Prev-TXT TO WS-Curr-Section-TXT
3050                  EXIT SECTION
3051              END-IF
3052              IF WS-TT-Token-Is-Identifier-BOOL
3053  GC0712         IF WS-Token-Prev-TXT = 'FUNCTION'
3054  GC0712             PERFORM 360-Release-Def
3055  GC0712         ELSE
3056  GC0712             PERFORM 361-Release-Ref
3057  GC0712         END-IF
3058              END-IF
3059  GC1213     IF WS-TT-Token-Is-Function-BOOL
3060  GC1213         PERFORM 361-Release-Ref
3061  GC1213     END-IF
3062              .
3063       /
3064          340-DATA-DIVISION SECTION.
3065  GC0712     IF WS-TT-Token-Is-Argtype-BOOL
3066  GC0712         SET WS-TT-Token-Is-Reserved-Wd-BOOL TO TRUE
3067  GC0712     END-IF
3068              IF WS-TT-Token-Is-Keyword-BOOL
3069              AND WS-Token-Curr-TXT = 'DIVISION'
3070                  MOVE WS-Token-Prev-TXT TO WS-Curr-Division-TXT
3071                  EXIT SECTION
3072              END-IF
3073              IF WS-TT-Token-Is-Keyword-BOOL
3074              AND WS-Token-Curr-TXT = 'SECTION'
3075                  MOVE WS-Token-Prev-TXT TO WS-Curr-Section-TXT
3076                  EXIT SECTION
3077              END-IF
3078              IF  (WS-Token-Curr-TXT = 'PIC' OR 'PICTURE')
3079              AND (WS-TT-Token-Is-Keyword-BOOL)
3080                  MOVE 'Y' TO WS-RS-Processing-PICTURE-CHR
3081                  EXIT SECTION
3082              END-IF
3083  GC0710     IF WS-TT-Token-Is-Reserved-Wd-BOOL
3084  GC0710     AND WS-Token-Prev-TXT = 'LEVEL #'
3085  GC0710         MOVE SPACES TO WS-Token-Prev-TXT
3086  GC0710         EXIT SECTION
```

```
3087  GC0710      END-IF
3088              IF WS-TT-Token-Is-Identifier-BOOL
3089                  EVALUATE WS-Token-Prev-TXT
3090                  WHEN 'FD'
3091                      PERFORM 360-Release-Def
3092                      MOVE SPACES TO WS-Token-Prev-TXT
3093  GC1213          WHEN 'RD'
3094  GC1213              PERFORM 360-Release-Def
3095  GC1213              MOVE SPACES TO WS-Token-Prev-TXT
3096                  WHEN 'SD'
3097                      PERFORM 360-Release-Def
3098                      MOVE SPACES TO WS-Token-Prev-TXT
3099                  WHEN 'LEVEL #'
3100                      PERFORM 360-Release-Def
3101                      MOVE SPACES TO WS-Token-Prev-TXT
3102                  WHEN 'INDEXED'
3103                      PERFORM 360-Release-Def
3104                      MOVE SPACES TO WS-Token-Prev-TXT
3105                  WHEN 'USING'
3106                      PERFORM 362-Release-Upd
3107                      MOVE SPACES TO WS-Token-Prev-TXT
3108                  WHEN 'INTO'
3109                      PERFORM 362-Release-Upd
3110                      MOVE SPACES TO WS-Token-Prev-TXT
3111                  WHEN OTHER
3112  GC1213              IF WS-Token-Curr-TXT NOT = 'SUM'
3113  GC1213                  PERFORM 361-Release-Ref
3114  GC1213              END-IF
3115                  END-EVALUATE
3116                  EXIT SECTION
3117              END-IF
3118              .
3119          /
3120          350-PROCEDURE-DIVISION SECTION.
3121              IF WS-Curr-Section-TXT NOT = 'PROCEDURE'
3122                  MOVE 'PROCEDURE' TO WS-Curr-Section-TXT
3123              END-IF
3124  GC0710      IF WS-Token-Curr-Uc-TXT = 'PROGRAM'
3125  GC0710      AND WS-Token-Prev-TXT = 'END'
3126  GC0710          MOVE '?' TO WS-Curr-Division-TXT
3127  GC0710          EXIT SECTION
3128  GC0710      END-IF
3129              IF WS-TT-Token-Is-Keyword-BOOL
3130              AND WS-Token-Curr-TXT = 'DIVISION'
3131                  MOVE WS-Token-Prev-TXT TO WS-Curr-Division-TXT
3132                  EXIT SECTION
3133              END-IF
3134  GC0313      IF WS-TT-Token-Is-Identifier-BOOL
3135  GC0313      AND WS-Token-Prev-TXT = SPACES
3136  GC0313      AND WS-Curr-Verb-TXT = SPACES
3137  GC0313*> ----- Definition of a Paragraph or Section
3138  GC0313          PERFORM 360-Release-Def
3139  GC0313          MOVE SPACES TO WS-Token-Prev-TXT
3140  GC0313          EXIT SECTION
```

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   3141  GC0313     END-IF
   3142             IF NOT WS-TT-Token-Is-Identifier-BOOL
   3143                 EXIT SECTION
   3144             END-IF
   3145             EVALUATE WS-Curr-Verb-TXT
   3146             WHEN 'ACCEPT'
   3147                 PERFORM 351-ACCEPT
   3148             WHEN 'ADD'
   3149                 PERFORM 351-ADD
   3150             WHEN 'ALLOCATE'
   3151                 PERFORM 351-ALLOCATE
   3152             WHEN 'CALL'
   3153                 PERFORM 351-CALL
   3154             WHEN 'COMPUTE'
   3155                 PERFORM 351-COMPUTE
   3156             WHEN 'DIVIDE'
   3157                 PERFORM 351-DIVIDE
   3158             WHEN 'FREE'
   3159                 PERFORM 351-FREE
   3160  GC1213     WHEN 'GENERATE'
   3161  GC1213         PERFORM 351-GENERATE
   3162             WHEN 'INITIALIZE'
   3163                 PERFORM 351-INITIALIZE
   3164  GC1213     WHEN 'INITIATE'
   3165  GC1213         PERFORM 351-GENERATE
   3166             WHEN 'INSPECT'
   3167                 PERFORM 351-INSPECT
   3168             WHEN 'MOVE'
   3169                 PERFORM 351-MOVE
   3170             WHEN 'MULTIPLY'
   3171                 PERFORM 351-MULTIPLY
   3172             WHEN 'PERFORM'
   3173                 PERFORM 351-PERFORM
   3174             WHEN 'SET'
   3175                 PERFORM 351-SET
   3176             WHEN 'STRING'
   3177                 PERFORM 351-STRING
   3178             WHEN 'SUBTRACT'
   3179                 PERFORM 351-SUBTRACT
   3180  GC1213     WHEN 'TERMINATE'
   3181  GC1213         PERFORM 351-GENERATE
   3182             WHEN 'TRANSFORM'
   3183                 PERFORM 351-TRANSFORM
   3184             WHEN 'UNSTRING'
   3185                 PERFORM 351-UNSTRING
   3186             WHEN OTHER
   3187                 PERFORM 361-Release-Ref
   3188             END-EVALUATE
   3189             .
   3190        /
   3191      351-ACCEPT SECTION.
   3192             EVALUATE WS-Token-Prev-TXT
   3193             WHEN 'ACCEPT'
   3194                 PERFORM 362-Release-Upd
```

```
3195                MOVE SPACES TO WS-Token-Prev-TXT
3196            WHEN OTHER
3197                PERFORM 361-Release-Ref
3198            END-EVALUATE
3199            .
3200
3201        351-ADD SECTION.
3202            EVALUATE WS-Token-Prev-TXT
3203            WHEN 'GIVING'
3204                PERFORM 362-Release-Upd
3205            WHEN 'TO'
3206                PERFORM 362-Release-Upd
3207            WHEN OTHER
3208                PERFORM 361-Release-Ref
3209            END-EVALUATE
3210            .
3211
3212        351-ALLOCATE SECTION.
3213            EVALUATE WS-Token-Prev-TXT
3214            WHEN 'ALLOCATE'
3215                PERFORM 362-Release-Upd
3216                MOVE SPACES TO WS-Token-Prev-TXT
3217            WHEN 'RETURNING'
3218                PERFORM 362-Release-Upd
3219            WHEN OTHER
3220                PERFORM 361-Release-Ref
3221            END-EVALUATE
3222            .
3223
3224        351-CALL SECTION.
3225            EVALUATE WS-Token-Prev-TXT
3226            WHEN 'RETURNING'
3227                PERFORM 362-Release-Upd
3228            WHEN 'GIVING'
3229                PERFORM 362-Release-Upd
3230            WHEN OTHER
3231 GC1213        PERFORM 365-Release-Arg
3232            END-EVALUATE
3233            .
3234
3235        351-COMPUTE SECTION.
3236            EVALUATE WS-Token-Prev-TXT
3237            WHEN 'COMPUTE'
3238                PERFORM 362-Release-Upd
3239            WHEN OTHER
3240                PERFORM 361-Release-Ref
3241            END-EVALUATE
3242            .
3243
3244        351-DIVIDE SECTION.
3245            EVALUATE WS-Token-Prev-TXT
3246            WHEN 'INTO'
3247                PERFORM 363-Set-Upd
3248                MOVE F-Sort-Work-REC TO WS-Held-Reference-TXT
```

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3249               WHEN 'GIVING'
3250                   IF WS-Held-Reference-TXT NOT = SPACES
3251                       MOVE WS-Held-Reference-TXT To F-Sort-Work-REC
3252                       MOVE SPACES          To WS-Held-Reference-TXT
3253                                               F-SW-Ref-Flag-CHR
3254                       RELEASE F-Sort-Work-REC
3255                   END-IF
3256                   PERFORM 362-Release-Upd
3257               WHEN 'REMAINDER'
3258                   PERFORM 362-Release-Upd
3259               WHEN OTHER
3260                   PERFORM 361-Release-Ref
3261               END-EVALUATE
3262               .
3263
3264           351-FREE SECTION.
3265               PERFORM 362-Release-Upd
3266               .
3267
3268  GC1213 351-GENERATE SECTION.
3269  GC1213     PERFORM 362-Release-Upd
3270  GC1213     .
3271
3272           351-INITIALIZE SECTION.
3273               EVALUATE WS-Token-Prev-TXT
3274               WHEN 'INITIALIZE'
3275                   PERFORM 362-Release-Upd
3276               WHEN 'REPLACING'
3277                   PERFORM 361-Release-Ref
3278               END-EVALUATE
3279               .
3280
3281  GC1213 351-INITIATE SECTION.
3282  GC1213     PERFORM 362-Release-Upd
3283  GC1213     .
3284
3285           351-INSPECT SECTION.
3286               EVALUATE WS-Token-Prev-TXT
3287               WHEN 'INSPECT'
3288                   PERFORM 364-Set-Ref
3289                   MOVE SPACES TO WS-Held-Reference-TXT
3290                   MOVE SPACES TO WS-Token-Prev-TXT
3291               WHEN 'TALLYING'
3292                   PERFORM 362-Release-Upd
3293                   MOVE SPACES TO WS-Token-Prev-TXT
3294               WHEN 'REPLACING'
3295                   IF WS-Held-Reference-TXT NOT = SPACES
3296                       MOVE WS-Held-Reference-TXT TO F-Sort-Work-REC
3297                       MOVE SPACES          TO WS-Held-Reference-TXT
3298                       MOVE '*'             TO F-SW-Ref-Flag-CHR
3299                       RELEASE F-Sort-Work-REC
3300                   END-IF
3301                   MOVE SPACES TO WS-Token-Prev-TXT
3302               WHEN 'CONVERTING'
```

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3303                    IF WS-Held-Reference-TXT NOT = SPACES
3304                        MOVE WS-Held-Reference-TXT TO F-Sort-Work-REC
3305                        MOVE SPACES          TO WS-Held-Reference-TXT
3306                        MOVE '*'             TO F-SW-Ref-Flag-CHR
3307                        RELEASE F-Sort-Work-REC
3308                    END-IF
3309                    MOVE SPACES TO WS-Token-Prev-TXT
3310                WHEN OTHER
3311                    PERFORM 361-Release-Ref
3312                END-EVALUATE
3313                    .
3314
3315        351-MOVE SECTION.
3316            EVALUATE WS-Token-Prev-TXT
3317            WHEN 'TO'
3318                PERFORM 362-Release-Upd
3319            WHEN OTHER
3320                PERFORM 361-Release-Ref
3321            END-EVALUATE
3322                .
3323
3324        351-MULTIPLY SECTION.
3325            EVALUATE WS-Token-Prev-TXT
3326            WHEN 'BY'
3327                PERFORM 363-Set-Upd
3328                MOVE F-Sort-Work-REC TO WS-Held-Reference-TXT
3329            WHEN 'GIVING'
3330                MOVE WS-Held-Reference-TXT TO F-Sort-Work-REC
3331                MOVE SPACES          TO WS-Held-Reference-TXT
3332                                        F-SW-Ref-Flag-CHR
3333                RELEASE F-Sort-Work-REC
3334                PERFORM 362-Release-Upd
3335            WHEN OTHER
3336                PERFORM 361-Release-Ref
3337            END-EVALUATE
3338                .
3339
3340        351-PERFORM SECTION.
3341            EVALUATE WS-Token-Prev-TXT
3342            WHEN 'VARYING'
3343                PERFORM 362-Release-Upd
3344                MOVE SPACES TO WS-Token-Prev-TXT
3345            WHEN 'AFTER'
3346                PERFORM 362-Release-Upd
3347                MOVE SPACES TO WS-Token-Prev-TXT
3348            WHEN OTHER
3349                PERFORM 361-Release-Ref
3350            END-EVALUATE
3351                .
3352
3353        351-SET SECTION.
3354            EVALUATE WS-Token-Prev-TXT
3355            WHEN 'SET'
3356                PERFORM 362-Release-Upd
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3357             WHEN OTHER
3358                 PERFORM 361-Release-Ref
3359             END-EVALUATE
3360             .
3361
3362        351-STRING SECTION.
3363             EVALUATE WS-Token-Prev-TXT
3364             WHEN 'INTO'
3365                 PERFORM 362-Release-Upd
3366             WHEN 'POINTER'
3367                 PERFORM 362-Release-Upd
3368             WHEN OTHER
3369                 PERFORM 361-Release-Ref
3370             END-EVALUATE
3371             .
3372
3373        351-SUBTRACT SECTION.
3374             EVALUATE WS-Token-Prev-TXT
3375             WHEN 'GIVING'
3376                 PERFORM 362-Release-Upd
3377             WHEN 'FROM'
3378                 PERFORM 362-Release-Upd
3379             WHEN OTHER
3380                 PERFORM 361-Release-Ref
3381             END-EVALUATE
3382             .
3383
3384  GC1213 351-TERMINATE SECTION.
3385  GC1213     PERFORM 362-Release-Upd
3386  GC1213     .
3387
3388        351-TRANSFORM SECTION.
3389             EVALUATE WS-Token-Prev-TXT
3390             WHEN 'TRANSFORM'
3391                 PERFORM 362-Release-Upd
3392                 MOVE SPACES TO WS-Token-Prev-TXT
3393             WHEN OTHER
3394                 PERFORM 361-Release-Ref
3395             END-EVALUATE
3396             .
3397
3398        351-UNSTRING SECTION.
3399             EVALUATE WS-Token-Prev-TXT
3400             WHEN 'INTO'
3401                 PERFORM 362-Release-Upd
3402             WHEN 'DELIMITER'
3403                 PERFORM 362-Release-Upd
3404             WHEN 'COUNT'
3405                 PERFORM 362-Release-Upd
3406             WHEN 'POINTER'
3407                 PERFORM 362-Release-Upd
3408             WHEN 'TALLYING'
3409                 PERFORM 362-Release-Upd
3410             WHEN OTHER
```

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3411              PERFORM 361-Release-Ref
3412          END-EVALUATE
3413          .
3414
3415      360-Release-Def SECTION.
3416          MOVE SPACES              TO F-Sort-Work-REC
3417          MOVE WS-Curr-Prog-ID-TXT      TO F-SW-Prog-ID-TXT
3418          MOVE WS-Token-Curr-Uc-TXT     TO F-SW-Token-Uc-TXT
3419          MOVE WS-Token-Curr-TXT        TO F-SW-Token-TXT
3420          MOVE WS-Curr-Section-TXT      TO F-SW-Section-TXT
3421          MOVE WS-Curr-Line-NUM         TO F-SW-Def-Line-NUM
3422          MOVE 0                   TO F-SW-Ref-Line-NUM
3423          RELEASE F-Sort-Work-REC
3424          .
3425
3426      361-Release-Ref SECTION.
3427          PERFORM 364-Set-Ref
3428          RELEASE F-Sort-Work-REC
3429          .
3430
3431      362-Release-Upd SECTION.
3432          PERFORM 363-Set-Upd
3433          RELEASE F-Sort-Work-REC
3434          .
3435
3436      363-Set-Upd SECTION.
3437          MOVE SPACES              TO F-Sort-Work-REC
3438          MOVE WS-Curr-Prog-ID-TXT      TO F-SW-Prog-ID-TXT
3439          MOVE WS-Token-Curr-Uc-TXT     TO F-SW-Token-Uc-TXT
3440          MOVE WS-Token-Curr-TXT        TO F-SW-Token-TXT
3441          MOVE WS-Curr-Section-TXT      TO F-SW-Section-TXT
3442          MOVE WS-Curr-Line-NUM         TO F-SW-Ref-Line-NUM
3443          MOVE '*'                 TO F-SW-Ref-Flag-CHR
3444          .
3445
3446      364-Set-Ref SECTION.
3447          MOVE SPACES              TO F-Sort-Work-REC
3448          MOVE WS-Curr-Prog-ID-TXT      TO F-SW-Prog-ID-TXT
3449          MOVE WS-Token-Curr-Uc-TXT     TO F-SW-Token-Uc-TXT
3450          MOVE WS-Token-Curr-TXT        TO F-SW-Token-TXT
3451          MOVE WS-Curr-Section-TXT      TO F-SW-Section-TXT
3452          MOVE WS-Curr-Line-NUM         TO F-SW-Ref-Line-NUM
3453          .
3454
3455  GC1213 365-Release-Arg SECTION.
3456  GC1213     PERFORM 366-Set-Arg
3457  GC1213     RELEASE F-Sort-Work-REC
3458  GC1213     .
3459
3460  GC1213 366-Set-Arg SECTION.
3461  GC1213     MOVE SPACES              TO F-Sort-Work-REC
3462  GC1213     MOVE WS-Curr-Prog-ID-TXT      TO F-SW-Prog-ID-TXT
3463  GC1213     MOVE WS-Token-Curr-Uc-TXT     TO F-SW-Token-Uc-TXT
3464  GC1213     MOVE WS-Token-Curr-TXT        TO F-SW-Token-TXT
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  3465  GC1213     MOVE WS-Curr-Section-TXT    TO F-SW-Section-TXT
  3466  GC1213     MOVE WS-Curr-Line-NUM       TO F-SW-Ref-Line-NUM
  3467  GC1213     MOVE 'C'                    TO F-SW-Ref-Flag-CHR
  3468  GC1213        .
  3469
  3470        /
  3471         400-Produce-Xref-Listing SECTION.
  3472             MOVE SPACES        TO WS-Xref-Detail-Line-TXT
  3473                                   WS-Group-Indicators-TXT
  3474             MOVE 0           TO WS-I-SUB
  3475                                   WS-Lines-Left-NUM
  3476  GC0710     MOVE 'N'         TO WS-RS-Duplicate-CHR
  3477             PERFORM FOREVER
  3478                 RETURN F-Sort-Work-FILE AT END
  3479  GC1213          IF WS-Xref-Detail-Line-TXT NOT = SPACES
  3480  GC1213              PERFORM 410-Generate-Report-Line
  3481  GC1213          END-IF
  3482  GC1213          MOVE SPACES TO WS-Xref-Detail-Line-TXT
  3483  GC1213          PERFORM 410-Generate-Report-Line
  3484  GC1213              UNTIL WS-Lines-Left-NUM = 0
  3485  GC1213          MOVE 'Y' TO WS-Suppress-FF-CHR
  3486  GC1213          PERFORM 420-Generate-Xref-Footer
  3487                  EXIT PERFORM
  3488                END-RETURN
  3489                IF F-SW-Prog-ID-TXT  NOT = WS-GI-Prog-ID-TXT
  3490                OR F-SW-Token-Uc-TXT NOT = WS-GI-Token-TXT
  3491  GC0710          MOVE 'N' TO WS-RS-Duplicate-CHR
  3492                  IF WS-Xref-Detail-Line-TXT NOT = SPACES
  3493                      PERFORM 410-Generate-Report-Line
  3494                  END-IF
  3495                  IF F-SW-Prog-ID-TXT NOT = WS-GI-Prog-ID-TXT
  3496  GC1213              MOVE SPACES TO WS-Xref-Detail-Line-TXT
  3497  GC1213              PERFORM 410-Generate-Report-Line
  3498  GC1213                  UNTIL WS-Lines-Left-NUM = 0
  3499                  END-IF
  3500                  MOVE F-SW-Prog-ID-TXT  TO WS-GI-Prog-ID-TXT
  3501                  MOVE F-SW-Token-Uc-TXT TO WS-GI-Token-TXT
  3502                END-IF
  3503  GC0710     IF F-SW-Token-Uc-TXT = WS-GI-Token-TXT
  3504  GC0710     AND F-SW-Def-Line-NUM NOT = SPACES
  3505  GC0710     AND WS-Xref-Detail-Line-TXT NOT = SPACES
  3506  GC0710         MOVE 'Y' TO WS-RS-Duplicate-CHR
  3507  GC0710         PERFORM 410-Generate-Report-Line
  3508  GC0710         MOVE 0 TO WS-I-SUB
  3509  GC0710         MOVE F-SW-Prog-ID-TXT TO WS-XDL-Prog-ID-TXT
  3510  GC0710         MOVE '  (Duplicate Definition)' TO WS-XDL-Token-TXT
  3511  GC0710         MOVE F-SW-Section-TXT TO WS-XDL-Section-TXT
  3512  GC0710         MOVE F-SW-Def-Line-NUM TO WS-XDL-Def-Line-NUM
  3513  GC0710         EXIT PERFORM CYCLE
  3514  GC0710     END-IF
  3515  GC0710     IF F-SW-Token-Uc-TXT = WS-GI-Token-TXT
  3516  GC0710     AND F-SW-Def-Line-NUM = SPACES
  3517  GC0710     AND WS-RS-Duplicate-CHR = 'Y'
  3518  GC0710         MOVE 'N' TO WS-RS-Duplicate-CHR
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  3519  GC0710           PERFORM 410-Generate-Report-Line
  3520  GC0710           MOVE 0 TO WS-I-SUB
  3521  GC0710           MOVE F-SW-Prog-ID-TXT TO WS-XDL-Prog-ID-TXT
  3522  GC0710           MOVE '  (Duplicate References)' TO WS-XDL-Token-TXT
  3523  GC0710         END-IF
  3524               IF WS-Xref-Detail-Line-TXT = SPACES
  3525                   MOVE F-SW-Prog-ID-TXT TO WS-XDL-Prog-ID-TXT
  3526                   MOVE F-SW-Token-TXT TO WS-XDL-Token-TXT
  3527                   MOVE F-SW-Section-TXT TO WS-XDL-Section-TXT
  3528                   IF F-SW-Def-Line-NUM NOT = SPACES
  3529                       MOVE F-SW-Def-Line-NUM TO WS-XDL-Def-Line-NUM
  3530                   END-IF
  3531               END-IF
  3532               IF F-SW-Reference-TXT > '000000'
  3533                   ADD 1 TO WS-I-SUB
  3534                   IF WS-I-SUB > WS-Xref-Lines-Per-Rec-NUM
  3535                       PERFORM 410-Generate-Report-Line
  3536                       MOVE 1 TO WS-I-SUB
  3537                   END-IF
  3538                   MOVE F-SW-Ref-Line-NUM
  3539                     TO WS-XDL-Ref-Line-NUM (WS-I-SUB)
  3540                   MOVE F-SW-Ref-Flag-CHR
  3541                     TO WS-XDL-Ref-Flag-CHR (WS-I-SUB)
  3542               END-IF
  3543           END-PERFORM
  3544           IF WS-Xref-Detail-Line-TXT NOT = SPACES
  3545               PERFORM 410-Generate-Report-Line
  3546           END-IF
  3547           .
  3548      /
  3549       410-Generate-Report-Line SECTION.
  3550           IF WS-Lines-Left-NUM < 1
  3551  GC1213       PERFORM 420-Generate-Xref-Footer
  3552  GC1213       ADD  1        TO WS-Page-NUM
  3553  GC1213       MOVE 'Page:'    TO WS-PN-Literal-TXT
  3554  GC1213       MOVE WS-Page-NUM TO WS-PN-Page-NUM
  3555  GC1213       CALL 'C$JUSTIFY' USING WS-PN-Page-NUM, 'Left'
  3556  GC1213       CALL 'C$JUSTIFY' USING WS-Page-No-TXT, 'Right'
  3557  GC1213       IF L-Listing-CD = 1 *> LANDSCAPE
  3558  GC1213           MOVE WS-Version-TXT
  3559  GC1213             TO F-Listing-135-REC
  3560  GC1213           MOVE 'Cross-Reference Listing'
  3561  GC1213             TO F-Listing-135-REC(25:23)
  3562  GC1213           MOVE WS-Formatted-DT
  3563  GC1213             TO F-Listing-135-REC(126:10)
  3564  GC1213           WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #1
  3565  GC1213           MOVE WS-Program-Path-TXT
  3566  GC1213             TO F-Listing-135-REC
  3567  GC1213           WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #2
  3568  GC1213           MOVE 'PROGRAM-ID      Identifier/Register/Function' &
  3569  GC1213               '   Defn   Where Defined   References'
  3570  GC1213             TO F-Listing-135-REC
  3571  GC1213           MOVE WS-Page-No-TXT
  3572  GC1213             TO F-Listing-135-REC(126:10)
```

```
ACS Cobol Xref v2.02.04       Dictionary File for GCIC (LISTING) 06/03/2022  23:09:11:05    Page   92

 3573  GC1213              WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #3
 3574  GC1213              MOVE ALL '=' TO F-Listing-135-REC
 3575  GC1213              MOVE SPACE TO F-Listing-135-REC(16:1)
 3576  GC1213                           F-Listing-135-REC(49:1)
 3577  GC1213                           F-Listing-135-REC(56:1)
 3578  GC1213                           F-Listing-135-REC(72:1)
 3579  GC1213              WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #4
 3580  GC1213          ELSE              *> PORTRAIT
 3581  GC1213              MOVE WS-Version-TXT
 3582  GC1213                TO F-Listing-96-REC
 3583  GC1213              MOVE 'Cross-Reference Listing'
 3584  GC1213                TO F-Listing-96-REC(25:23)
 3585  GC1213              MOVE WS-Formatted-DT
 3586  GC1213                TO F-Listing-96-REC(87:10)
 3587  GC1213              WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #1
 3588  GC1213              MOVE WS-Program-Path-TXT(40:96)
 3589  GC1213                TO F-Listing-96-REC
 3590  GC1213              WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #2
 3591  GC1213              MOVE 'PROGRAM-ID      Identifier/Register/Function' &
 3592  GC1213                    '    Defn   Where Defined   References'
 3593  GC1213                TO F-Listing-96-REC
 3594  GC1213              MOVE WS-Page-No-TXT
 3595  GC1213                TO F-Listing-96-REC(87:10)
 3596  GC1213              WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #3
 3597  GC1213              MOVE ALL '=' TO F-Listing-96-REC
 3598  GC1213              MOVE SPACE TO F-Listing-96-REC(16:1)
 3599  GC1213                           F-Listing-96-REC(49:1)
 3600  GC1213                           F-Listing-96-REC(56:1)
 3601  GC1213                           F-Listing-96-REC(72:1)
 3602  GC1213              WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #4
 3603  GC1213          END-IF
 3604  GC1213          COMPUTE WS-Lines-Left-NUM = WS-Lines-Per-Page-NUM - 4
 3605          END-IF
 3606  GC1213      IF L-Listing-CD = 1 *> LANDSCAPE
 3607  GC1213          WRITE F-Listing-135-REC FROM WS-Xref-Detail-Line-TXT
 3608  GC1213              BEFORE 1
 3609  GC1213      ELSE                 *> PORTRAIT
 3610  GC1213          WRITE F-Listing-96-REC FROM WS-Xref-Detail-Line-TXT
 3611  GC1213              BEFORE 1
 3612  GC1213      END-IF
 3613          MOVE SPACES TO WS-Xref-Detail-Line-TXT
 3614          MOVE 0 TO WS-I-SUB
 3615          SUBTRACT 1 FROM WS-Lines-Left-NUM
 3616              .
 3617  GC1213 420-Generate-Xref-Footer SECTION.
 3618  GC1213      IF L-Listing-CD = 1 *> LANDSCAPE
 3619  GC1213          WRITE F-Listing-135-REC FROM SPACES BEFORE 1 *> Footer Line #1
 3620  GC1213          MOVE ALL '='
 3621  GC1213            TO F-Listing-135-REC
 3622  GC1213          WRITE F-Listing-135-REC BEFORE 1 *> Footer Line #2
 3623  GC1213          MOVE WS-Copyright-TXT
 3624  GC1213            TO F-Listing-135-REC
 3625  GC1213          MOVE WS-Page-No-TXT
 3626  GC1213            TO F-Listing-135-REC(126:10)
```

```
ACS Cobol Xref v2.02.04          Dictionary File for GCIC (LISTING) 06/03/2022  23:09:11:06    Page   93
  3627  GC1213         IF WS-Suppress-FF-CHR = 'Y'
  3628  GC1213             WRITE F-Listing-135-REC BEFORE 1 *> Footer Line #3
  3629  GC1213         ELSE
  3630  GC1213             WRITE F-Listing-135-REC BEFORE PAGE *> Footer Line #3
  3631  GC1213             WRITE F-Listing-135-REC FROM SPACES BEFORE 1 *> Spaces After FF Character
  3632  GC1213         END-IF
  3633  GC1213     ELSE                *> PORTRAIT
  3634  GC1213         WRITE F-Listing-96-REC FROM SPACES BEFORE 1 *> Footer Line #1
  3635  GC1213         MOVE ALL '='
  3636  GC1213           TO F-Listing-96-REC
  3637  GC1213         WRITE F-Listing-96-REC BEFORE 1 *> Footer Line #2
  3638  GC1213         MOVE WS-Copyright-TXT
  3639  GC1213           TO F-Listing-96-REC
  3640  GC1213         MOVE WS-Page-No-TXT
  3641  GC1213           TO F-Listing-96-REC(87:10)
  3642  GC1213         IF WS-Suppress-FF-CHR = 'Y'
  3643  GC1213             WRITE F-Listing-96-REC BEFORE 1 *> Footer Line #3
  3644  GC1213         ELSE
  3645  GC1213             WRITE F-Listing-96-REC BEFORE PAGE *> Footer Line #3
  3646  GC1213             WRITE F-Listing-96-REC FROM SPACES BEFORE 1 *> Spaces After FF Character
  3647  GC1213         END-IF
  3648  GC1213     END-IF
  3649  GC1213       .
  3650        /
  3651       500-Produce-Source-Listing SECTION.
  3652           OPEN INPUT F-Original-Src-FILE
  3653                      F-Expanded-Src-FILE
  3654           MOVE 0 TO WS-Src-Line-NUM
  3655           PERFORM FOREVER
  3656             READ F-Expanded-Src-FILE AT END
  3657  GC1213         MOVE SPACES TO WS-Src-Detail-Line-TXT
  3658  GC1213         PERFORM 530-Generate-Source-Line
  3659  GC1213             UNTIL WS-Lines-Left-NUM = 0
  3660                    EXIT PERFORM
  3661             END-READ
  3662  GC0712       IF F-ES-1-7-TXT NOT = '#DEFLIT'
  3663  GC0712           IF F-ES-1-CHR = '#'
  3664  GC0712               PERFORM 510-Control-Record
  3665  GC0712           ELSE
  3666  GC0712               PERFORM 520-Expanded-Src-Record
  3667  GC0712           END-IF
  3668  GC0712       END-IF
  3669           END-PERFORM
  3670           CLOSE F-Original-Src-FILE
  3671                 F-Expanded-Src-FILE
  3672             .
  3673        /
  3674       510-Control-Record SECTION.
  3675           UNSTRING F-ES-2-256-TXT-256
  3676               DELIMITED BY '"'
  3677               INTO WS-Temp-10-Chars-TXT
  3678                    WS-Temp-256-Chars-TXT
  3679                    WS-Dummy-TXT
  3680  GC1010     IF UPPER-CASE(TRIM(WS-Temp-256-Chars-TXT,Trailing)) =
```

```
3681  GC1010        TRIM(WS-Main-Module-Name-TXT) *> Main Pgm
3682                    SET WS-RS-In-Main-Module-BOOL TO TRUE
3683                    IF WS-Src-Line-NUM > 0
3684                        READ F-Expanded-Src-FILE END-READ
3685                    END-IF
3686        *    ELSE *> COPY
3687                    SET WS-RS-In-Copybook-BOOL TO TRUE
3688                END-IF
3689                    .
3690        /
3691         520-Expanded-Src-Record SECTION.
3692             IF WS-RS-In-Main-Module-BOOL
3693                    ADD 1 To WS-Curr-Line-NUM
3694  GC0712        READ F-Original-Src-FILE AT END CONTINUE END-READ
3695                    ADD 1 TO WS-Src-Line-NUM
3696                    MOVE SPACES TO WS-Src-Detail-Line-TXT
3697                    MOVE WS-Src-Line-NUM TO WS-SDL-Line-NUM
3698  GC1213        MOVE F-Original-Src-REC TO WS-SDL-Statement-TXT
3699  GC0712        MOVE LOWER-CASE(TRIM(F-OS-8-72-TXT,LEADING))
3700  GC0712          TO WS-Temp-65-Chars-TXT
3701  GC0712        INSPECT WS-Temp-65-Chars-TXT REPLACING ALL '.' BY SPACE
3702  GC0712        EVALUATE TRUE
3703  GC0712            WHEN F-OS-7-CHR = '/'
3704  GC1213                MOVE SPACES TO WS-Src-Detail-Line-TXT
3705  GC1213                PERFORM 530-Generate-Source-Line
3706  GC1213                    UNTIL WS-Lines-Left-NUM = 0
3707  GC0712            WHEN WS-Temp-65-Chars-TXT = "eject"
3708  GC1213                MOVE SPACES TO WS-Src-Detail-Line-TXT
3709  GC1213                PERFORM 530-Generate-Source-Line
3710  GC1213                    UNTIL WS-Lines-Left-NUM = 0
3711  GC0712                EXIT SECTION
3712  GC0712            WHEN WS-Temp-65-Chars-TXT = "skip1"
3713  GC0712                MOVE SPACES TO WS-Src-Detail-Line-TXT
3714  GC0712                PERFORM 530-Generate-Source-Line
3715  GC0712                EXIT SECTION
3716  GC0712            WHEN WS-Temp-65-Chars-TXT = "skip2"
3717  GC0712                MOVE SPACES TO WS-Src-Detail-Line-TXT
3718  GC0712                PERFORM 530-Generate-Source-Line 2 TIMES
3719  GC0712                EXIT SECTION
3720  GC0712            WHEN WS-Temp-65-Chars-TXT = "skip3"
3721  GC0712                MOVE SPACES TO WS-Src-Detail-Line-TXT
3722  GC0712                PERFORM 530-Generate-Source-Line 3 TIMES
3723  GC0712                EXIT SECTION
3724  GC0712        END-EVALUATE
3725                    PERFORM 530-Generate-Source-Line
3726             ELSE
3727                    IF F-Expanded-Src-REC NOT = SPACES
3728                        MOVE SPACES TO WS-Src-Detail-Line-TXT
3729  GC1213            MOVE F-Expanded-Src-REC
3730                        TO WS-SDL-Statement-TXT
3731  GC0712            MOVE LOWER-CASE(TRIM(F-OS-8-72-TXT,LEADING))
3732  GC0712              TO WS-Temp-65-Chars-TXT
3733  GC0712            INSPECT WS-Temp-65-Chars-TXT
3734  GC0712                REPLACING ALL '.' BY SPACE
```

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 3735  GC0712              EVALUATE TRUE
 3736  GC0712                  WHEN WS-Temp-65-Chars-TXT = "eject"
 3737  GC0712                      MOVE 0 TO WS-Lines-Left-NUM
 3738  GC0712                      EXIT SECTION
 3739  GC0712                  WHEN WS-Temp-65-Chars-TXT = "skip1"
 3740  GC0712                      MOVE SPACES TO WS-Src-Detail-Line-TXT
 3741  GC0712                      PERFORM 530-Generate-Source-Line
 3742  GC0712                      EXIT SECTION
 3743  GC0712                  WHEN WS-Temp-65-Chars-TXT = "skip2"
 3744  GC0712                      MOVE SPACES TO WS-Src-Detail-Line-TXT
 3745  GC0712                      PERFORM 530-Generate-Source-Line 2 TIMES
 3746  GC0712                      EXIT SECTION
 3747  GC0712                  WHEN WS-Temp-65-Chars-TXT = "skip3"
 3748  GC0712                      MOVE SPACES TO WS-Src-Detail-Line-TXT
 3749  GC0712                      PERFORM 530-Generate-Source-Line 3 TIMES
 3750  GC0712                      EXIT SECTION
 3751  GC0712              END-EVALUATE
 3752                      PERFORM 530-Generate-Source-Line
 3753                  END-IF
 3754              END-IF
 3755              .
 3756        /
 3757         530-Generate-Source-Line SECTION.
 3758  GC1213     MOVE 1 TO WS-Src-Lines-NUM
 3759  GC1213     IF L-Listing-CD = 1 *> LANDSCAPE
 3760  GC1213         IF WS-SDL-Statement-TXT(129:128) > SPACES
 3761  GC1213             ADD 1 TO WS-Src-Lines-NUM
 3762  GC1213         END-IF
 3763  GC1213     ELSE                  *> PORTRAIT
 3764  GC1213         IF WS-SDL-Statement-TXT(90:167) > SPACES
 3765  GC1213             ADD 1 TO WS-Src-Lines-NUM
 3766  GC1213             IF WS-SDL-Statement-TXT(179:78) > SPACES
 3767  GC1213                 ADD 1 TO WS-Src-Lines-NUM
 3768  GC1213             END-IF
 3769  GC1213         END-IF
 3770  GC1213     END-IF
 3771  GC1213     IF WS-Lines-Left-NUM < WS-Src-Lines-NUM
 3772  GC1213         IF WS-Page-Num > 0 *> Don't print footer before page 1
 3773  GC1213             IF L-Listing-CD = 1 *> LANDSCAPE
 3774  GC1213                 IF WS-Src-Lines-NUM = 2
 3775  GC1213                     WRITE F-Listing-135-REC FROM SPACES BEFORE 1 *> Blank Line
 3776  GC1213                 END-IF
 3777  GC1213                 WRITE F-Listing-135-REC FROM SPACES BEFORE 1 *> Footer Line #1
 3778  GC1213                 MOVE ALL '='
 3779  GC1213                   TO F-Listing-135-REC
 3780  GC1213                 WRITE F-Listing-135-REC BEFORE 1 *> Footer Line #2
 3781  GC1213                 MOVE WS-Copyright-TXT
 3782  GC1213                   TO F-Listing-135-REC
 3783  GC1213                 MOVE WS-Page-No-TXT
 3784  GC1213                   TO F-Listing-135-REC(126:10)
 3785  GC1213                 WRITE F-Listing-135-REC BEFORE PAGE *> Footer Line #3
 3786  GC1213                 WRITE F-Listing-135-REC FROM SPACES BEFORE 1 *> Spaces After FF Character
 3787  GC1213             ELSE                *> PORTRAIT
 3788  GC1213                 EVALUATE WS-Src-Lines-NUM
```

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC (LISTING) 06/03/2022  23:09:11:06     Page    96
  3789  GC1213                    WHEN 1 *> Need no extra blank lines
  3790  GC1213                        CONTINUE
  3791  GC1213                    WHEN 2 *> Need 1 extra blank line
  3792  GC1213                        WRITE F-Listing-96-REC FROM SPACES BEFORE 1
  3793  GC1213                    WHEN 3 *> Need 2 extra blank lines
  3794  GC1213                        WRITE F-Listing-96-REC FROM SPACES BEFORE 1
  3795  GC1213                        WRITE F-Listing-96-REC FROM SPACES BEFORE 1
  3796  GC1213                    END-EVALUATE
  3797  GC1213                    WRITE F-Listing-96-REC FROM SPACES BEFORE 1 *> Footer Line #1
  3798  GC1213                    MOVE ALL '='
  3799  GC1213                      TO F-Listing-96-REC
  3800  GC1213                    WRITE F-Listing-96-REC BEFORE 1 *> Footer Line #2
  3801  GC1213                    MOVE WS-Copyright-TXT
  3802  GC1213                      TO F-Listing-96-REC
  3803  GC1213                    MOVE WS-Page-No-TXT
  3804  GC1213                      TO F-Listing-96-REC(87:10)
  3805  GC1213                    WRITE F-Listing-96-REC BEFORE PAGE *> Footer Line #3
  3806  GC1213                    WRITE F-Listing-96-REC FROM SPACES BEFORE 1 *> Spaces After FF Character
  3807  GC1213                END-IF
  3808  GC1213            END-IF
  3809  GC1213            ADD  1        TO WS-Page-NUM
  3810  GC1213            MOVE 'Page:'    TO WS-PN-Literal-TXT
  3811  GC1213            MOVE WS-Page-NUM TO WS-PN-Page-NUM
  3812  GC1213            CALL 'C$JUSTIFY' USING WS-PN-Page-NUM, 'Left'
  3813  GC1213            CALL 'C$JUSTIFY' USING WS-Page-No-TXT, 'Right'
  3814  GC1213            IF L-Listing-CD = 1 *> LANDSCAPE
  3815  GC1213                MOVE WS-Version-TXT
  3816  GC1213                  TO F-Listing-135-REC
  3817  GC1213                MOVE 'Source Listing'
  3818  GC1213                  TO F-Listing-135-REC(25:14)
  3819  GC1213                MOVE WS-Formatted-DT
  3820  GC1213                  TO F-Listing-135-REC(126:10)
  3821  GC1213                WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #1
  3822  GC1213                MOVE WS-Program-Path-TXT
  3823  GC1213                  TO F-Listing-135-REC
  3824  GC1213                WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #2
  3825  GC1213                MOVE 'Line   Statement'
  3826  GC1213                  TO F-Listing-135-REC
  3827  GC1213                MOVE WS-Page-No-TXT
  3828  GC1213                  TO F-Listing-135-REC(126:10)
  3829  GC1213                WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #3
  3830  GC1213                MOVE WS-Src-Dashes-TXT
  3831  GC1213                  TO F-Listing-135-REC
  3832  GC1213                WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #4
  3833  GC1213            ELSE               *> PORTRAIT
  3834  GC1213                MOVE WS-Version-TXT
  3835  GC1213                  TO F-Listing-96-REC
  3836  GC1213                MOVE 'Source Listing'
  3837  GC1213                  TO F-Listing-96-REC(25:14)
  3838  GC1213                MOVE WS-Formatted-DT
  3839  GC1213                  TO F-Listing-96-REC(87:10)
  3840  GC1213                WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #1
  3841  GC1213                MOVE WS-Program-Path-TXT(40:96)
  3842  GC1213                  TO F-Listing-96-REC
```

```
3843  GC1213            WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #2
3844  GC1213            MOVE 'Line   Statement'
3845  GC1213              TO F-Listing-96-REC
3846  GC1213            MOVE WS-Page-No-TXT
3847  GC1213              TO F-Listing-96-REC(87:10)
3848  GC1213            WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #3
3849  GC1213            MOVE WS-Src-Dashes-TXT
3850  GC1213              TO F-Listing-96-REC
3851  GC1213            WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #4
3852  GC1213          END-IF
3853  GC1213          COMPUTE WS-Lines-Left-NUM = WS-Lines-Per-Page-NUM - 4
3854  GC1213        END-IF
3855  GC1213        IF L-Listing-CD = 1 *> LANDSCAPE
3856  GC1213          EVALUATE WS-Src-Lines-NUM
3857  GC1213          WHEN 1
3858  GC1213            MOVE WS-Src-Detail-Line-TXT TO F-Listing-135-REC
3859  GC1213            WRITE F-Listing-96-REC BEFORE 1
3860  GC1213            SUBTRACT 1 FROM WS-Lines-Left-NUM
3861  GC1213          WHEN 2
3862  GC1213            MOVE WS-SDL-Statement-TXT TO WS-Src-Hold-TXT
3863  GC1213            MOVE WS-Src-Detail-Line-TXT TO F-Listing-135-REC
3864  GC1213            WRITE F-Listing-135-REC BEFORE 1 *> Prints chars 1-128 of stmnt
3865  GC1213            MOVE SPACES TO WS-Src-Detail-Line-TXT
3866  GC1213            MOVE WS-Src-Hold-TXT(129:128) TO WS-SDL-Statement-TXT
3867  GC1213            MOVE WS-Src-Detail-Line-TXT TO F-Listing-135-REC
3868  GC1213            WRITE F-Listing-135-REC BEFORE 1 *> Prints chars 129-256 of stmnt
3869  GC1213            SUBTRACT 2 FROM WS-Lines-Left-NUM
3870  GC1213          END-EVALUATE
3871  GC1213        ELSE                *> PORTRAIT
3872  GC1213          EVALUATE WS-Src-Lines-NUM
3873  GC1213          WHEN 1 *> Print only chars 1-89 of stmnt
3874  GC1213            WRITE F-Listing-96-REC FROM WS-Src-Detail-Line-TXT
3875  GC1213              BEFORE 1
3876  GC1213            SUBTRACT 1 FROM WS-Lines-Left-NUM
3877  GC1213          WHEN 2 *> Print only chars 1-89 and 90-178 of text
3878  GC1213            MOVE WS-SDL-Statement-TXT TO WS-Src-Hold-TXT
3879  GC1213            WRITE F-Listing-96-REC FROM WS-Src-Detail-Line-TXT
3880  GC1213              BEFORE 1
3881  GC1213            MOVE SPACES TO WS-Src-Detail-Line-TXT
3882  GC1213            MOVE WS-Src-Hold-TXT(90:89) TO WS-SDL-Statement-TXT
3883  GC1213            WRITE F-Listing-96-REC FROM WS-Src-Detail-Line-TXT
3884  GC1213              BEFORE 1
3885  GC1213            SUBTRACT 2 FROM WS-Lines-Left-NUM
3886  GC1213          WHEN 3 *> Print chars 1-89, 90-178 and 179-256 of stmnt
3887  GC1213            MOVE WS-SDL-Statement-TXT TO WS-Src-Hold-TXT
3888  GC1213            WRITE F-Listing-96-REC FROM WS-Src-Detail-Line-TXT
3889  GC1213              BEFORE 1
3890  GC1213            MOVE SPACES TO WS-Src-Detail-Line-TXT
3891  GC1213            MOVE WS-Src-Hold-TXT(90:89) TO WS-SDL-Statement-TXT
3892  GC1213            WRITE F-Listing-96-REC FROM WS-Src-Detail-Line-TXT
3893  GC1213              BEFORE 1
3894  GC1213            MOVE SPACES TO WS-Src-Detail-Line-TXT
3895  GC1213            MOVE WS-Src-Hold-TXT(179:78) TO WS-SDL-Statement-TXT
3896  GC1213            WRITE F-Listing-96-REC FROM WS-Src-Detail-Line-TXT
```

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   3897  GC1213                    BEFORE 1
   3898  GC1213                SUBTRACT 3 FROM WS-Lines-Left-NUM
   3899  GC1213          END-EVALUATE
   3900  GC1213      END-IF
   3901          MOVE SPACES TO WS-Src-Detail-Line-TXT
   3902          .
   3903
   3904       END PROGRAM LISTING.
   3905      *>>>Info: Total Copy Depth Used = 02;  Caution messages issued =   1
```

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ACS Cobol Xref v2.02.04       Dictionary File for GCIC (LISTING) 06/03/2022  23:09:11:07    Page   99
Symbols of Module: GCIC (LISTING)
-------------------------------

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

F-ES-1-7-TXT                  001631F  002776 003662
F-ES-1-CHR                    001628F  002777 003663
F-ES-2-256-TXT-256            001629F  002920 003675
F-ES-8-256-TXT                001632F
F-EXPANDED-SRC-FILE           001617F  001626 002709 002756 002766 003653 003656 003671 003684
F-EXPANDED-SRC-REC            001627F  002710 002764 002788 002790 002820 002824 002833 002837
                                       002846 002850 002858 002876 002961 002966 003727 003729
F-EXPANDED-SRC2-REC           001630F
F-LISTING-135-REC             001636F  003559 003561 003563 003564 003566 003567 003570 003572
                                       003573 003574 003575 003576 003577 003578 003579 003607
                                       003619 003621 003622 003624 003626 003628 003630 003631
                                       003775 003777 003779 003780 003782 003784 003785 003786
                                       003816 003818 003820 003821 003823 003824 003826 003828
                                       003829 003831 003832 003858 003863 003864 003867 003868
F-LISTING-96-REC              001635F  003582 003584 003586 003587 003589 003590 003593 003595
                                       003596 003597 003598 003599 003600 003601 003602 003610
                                       003634 003636 003637 003639 003641 003643 003645 003646
                                       003792 003794 003795 003797 003799 003800 003802 003804
                                       003805 003806 003835 003837 003839 003840 003842 003843
                                       003845 003847 003848 003850 003851 003859 003874 003879
                                       003883 003888 003892 003896
F-LISTING-FILE                001619F  001634 002613 002621
F-LISTING-REC                 001637F
F-ORIGINAL-SRC-FILE           001621F  001639 003652 003670 003694
F-ORIGINAL-SRC-REC            001640F  003698
F-OS-1-128-TXT                001641F
F-OS-129-256-TXT              001646F
F-OS-7-CHR                    001643F  003703
F-OS-8-72-TXT                 001644F  003699 003731
F-SORT-WORK-FILE              001623F  001648 002615 003478
F-SORT-WORK-REC               001649F  002731 002733 002768 002770 003248 003251 003254 003296
                                       003299 003304 003307 003328 003330 003333 003416 003423
                                       003428 003433 003437 003447 003457 003461
F-SW-DEF-LINE-NUM             001654F  003421 003504 003512 003516 003528 003529
F-SW-PROG-ID-TXT              001650F  002616 003417 003438 003448 003462 003489 003495 003500
                                       003509 003521 003525
F-SW-REF-FLAG-CHR             001657F  003253 003298 003306 003332 003443 003467 003540
F-SW-REF-LINE-NUM             001656F  002618 003422 003442 003452 003466 003538
F-SW-REFERENCE-TXT            001655F  003532
F-SW-SECTION-TXT              001653F  003420 003441 003451 003465 003511 003527
F-SW-TOKEN-TXT                001652F  003419 003440 003450 003464 003526
F-SW-TOKEN-UC-TXT             001651F  002617 003418 003439 003449 003463 003490 003501 003503
                                       003515
L-LISTING-FN-TXT              001619F  002593 002605
L-SRC-FN-TXT                  001621F  002595 002606 002642 002643 002645 002650 002654 002666
                                       002667 002669 002671 002676
WS-EXPANDED-SRC-FN-TXT        001617F  001697 002684 002685
```

```
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Symbols of Module: GCIC (LISTING)
-------------------------------

Data Section (WORKING-STORAGE)  Defn     Locations
-----------------------------+-------------------------------------------------------------------

WS-CD-IN-DATA-DIV-BOOL          001674W  002741
WS-CD-IN-ENV-DIV-BOOL           001673W  002739
WS-CD-IN-IDENT-DIV-BOOL         001672W  002737
WS-CD-IN-PROC-DIV-BOOL          001675W  002743
WS-COPYRIGHT-TXT                001660W  002631 002637 003623 003638 003781 003801
WS-CPI-13-15-TXT                001681W  003032
WS-CPI-16-CHR                   001682W  003031
WS-CS-1-CHR                     001685W  002954
WS-CS-11-14-TXT                 001688W  002956 002957
WS-CS-15-CHR                    001689W  002959
WS-CS-2-14-TXT                  001686W  002955
WS-CURR-CHAR-IS-PUNCT-BOOL      001663W  002799 002807 002812
WS-CURR-CHAR-IS-QUOTE-BOOL      001667W  002818
WS-CURR-CHAR-IS-X-BOOL          001668W  002831
WS-CURR-CHAR-IS-Z-BOOL          001669W  002844
WS-CURR-CHR                     001662W  002789 002792 002794 002800 002808 002814 002821
WS-CURR-DIVISION-TXT            001671W  002714 002750 002801 002809 002909 003025 003044 003070
                                         003126 003131
WS-CURR-LINE-NUM                001677W  002713 002773 002932 002972 003421 003442 003452 003466
                                         003693
WS-CURR-PROG-ID-TXT             001679W  002703 003030 003417 003438 003448 003462
WS-CURR-SECTION-TXT             001684W  002935 002940 003049 003075 003121 003122 003420 003441
                                         003451 003465
WS-CURR-VERB-TXT                001691W  002704 002728 002752 003136 003145
WS-DELIM-TXT                    001693W  002861 002863 002881 002883 002886
WS-DUMMY-TXT                    001695W  002679 002924 002953 002986 002991 002992 003679
WS-EXPANDED-SRC-FN-TXT          001697W  002684 002685
WS-FILENAME-TXT                 001699W  002678 002681 002952 002955
WS-FLAGS-TXT                    001701W
WS-FORMATTED-DT                 001704W  002702 003562 003585 003819 003838
WS-GI-PROG-ID-TXT               001707W  003489 003495 003500
WS-GI-TOKEN-TXT                 001708W  003490 003501 003503 003515
WS-GROUP-INDICATORS-TXT         001706W  003473
WS-HELD-REFERENCE-TXT           001710W  002705 002730 002731 002732 002767 002768 002769 003248
                                         003250 003251 003252 003289 003295 003296 003297 003303
                                         003304 003305 003328 003330 003331
WS-I-SUB                        001712W  002643 002646 002649 002653 002669 002672 002673 002676
                                         002929 002932 002943 002946 002947 002950 003474 003508
                                         003520 003533 003534 003536 003539 003541 003614
WS-J-SUB                        001714W  002670 002674 002944 002948
WS-LINES-LEFT-NUM               001716W  003475 003484 003498 003550 003604 003615 003659 003706
                                         003710 003737 003771 003853 003860 003869 003876 003885
                                         003898
WS-LINES-PER-PAGE-ENV-TXT       001720W  002659 002663 002690 002691
WS-LINES-PER-PAGE-NUM           001718W  002692 002695 002697 002700 003604 003853
WS-MAIN-MODULE-NAME-TXT         001722W  002650 002655 002931 003681
WS-NEXT-CHAR-IS-QUOTE-BOOL      001725W  002831 002844
WS-NEXT-CHR                     001724W  002791 002834 002847
WS-OS-TYPE-FILLER-TXT           001727W  001733
```

```
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Symbols of Module: GCIC (LISTING)
-------------------------------


Data Section (WORKING-STORAGE)  Defn    Locations
-----------------------------+--------------------------------------------------------------


WS-OS-TYPE-TXT                001734W  002633
WS-OS-TYPES-TXT               001733W
WS-PAGE-NO-TXT                001739W  003556 003571 003594 003625 003640 003783 003803 003813
                                       003827 003846
WS-PAGE-NUM                   001737W  002629 003552 003554 003772 003809 003811
WS-PN-LITERAL-TXT             001740W  003553 003810
WS-PN-PAGE-NUM                001741W  003554 003555 003811 003812
WS-PROGRAM-PATH-TXT           001743W  002667 002668 003565 003588 003822 003841
WS-RESERVED-WORD-TABLE-TXT    002500W
WS-RESERVED-WORD-TXT          002501W  002896
WS-RESERVED-WORDS-TXT         001745W  002500
WS-RS-DUPLICATE-CHR           002509W  003476 003491 003506 003517 003518
WS-RS-IN-COPYBOOK-BOOL        002512W  002938 003687
WS-RS-IN-MAIN-MODULE-BOOL     002511W  002933 002971 003682 003692
WS-RS-IN-WHICH-PGM-CHR        002510W
WS-RS-LAST-TOKEN-ENDED-SENT-CHR 002513W 002762 002908
WS-RS-PROCESSING-PICTURE-CHR  002514W  002857 002871 003080
WS-RS-TOKEN-ENDED-SENTENCE-CHR 002515W 002749 002761 002763 002796 002825 002838 002851 002864
                                       002884
WS-RS-VERB-HAS-BEEN-FOUND-CHR 002516W  002715 002900 003022
WS-RUNTIME-SWITCHES           002508W
WS-RW-IDX                     002504W  002897 002898
WS-RW-TYPE-CD                 002505W  002898
WS-RW-WORD-TXT                002503W  002506 002897
WS-SAVED-SECTION-TXT          002518W  002934 002935 002939 002940
WS-SDL-LINE-NUM               002525W  003697
WS-SDL-STATEMENT-TXT          002527W  003698 003730 003760 003764 003766 003862 003866 003878
                                       003882 003887 003891 003895
WS-SRC-DASHES-TXT             002520W  003830 003849
WS-SRC-DETAIL-LINE-TXT        002524W  003657 003696 003704 003708 003713 003717 003721 003728
                                       003740 003744 003748 003858 003863 003865 003867 003874
                                       003879 003881 003883 003888 003890 003892 003894 003896
                                       003901
WS-SRC-HOLD-TXT               002529W  003862 003866 003878 003882 003887 003891 003895
WS-SRC-LINE-NUM               002531W  003654 003683 003695 003697
WS-SRC-LINES-NUM              002533W  003758 003761 003765 003767 003771 003774 003788 003856
                                       003872
WS-SRC-SUB                    002535W  002711 002764 002765 002784 002788 002790 002793 002802
                                       002813 002819 002823 002824 002826 002832 002836 002837
                                       002839 002845 002849 002850 002852 002862 002865 002882
                                       002887 002962 002967 002969
WS-SUPPRESS-FF-CHR            001702W  002630 003485 003627 003642
WS-TALLY-QTY                  002537W  003001 003003 003004 003008 003009
WS-TEMP-10-CHARS-TXT          002539W  002922 002925 002926 002927 002929 003677
WS-TEMP-256-CHARS-TXT         002549W  002686 002923 002930 002942 002945 002950 003678 003680
WS-TEMP-32-CHARS-1-TXT        002541W  002977 002978 002980 002987
WS-TEMP-32-CHARS-2-TXT        002543W  002984 002989 002995 002996 003002 003005 003012
WS-TEMP-32-CHARS-3-TXT        002545W  002985 002990 002998 002999 003007 003010 003012
WS-TEMP-65-CHARS-TXT          002547W  003700 003701 003707 003712 003716 003720 003732 003733
```

```
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Symbols of Module: GCIC (LISTING)
--------------------------------

Data Section (WORKING-STORAGE)  Defn    Locations
-----------------------------+----------------------------------------------------------------

                                        003736 003739 003743 003747
WS-TODAY-DT                     002551W 002701 002702
WS-TOKEN-CURR-TXT               002553W 002721 002725 002794 002803 002814 002822 002835 002848
                                        002860 002867 002880 002890 002892 002910 002977 003024
                                        003030 003043 003048 003069 003074 003078 003112 003130
                                        003419 003440 003450 003464
WS-TOKEN-CURR-UC-TXT            002555W 002722 002725 002728 002747 003124 003418 003439 003449
                                        003463
WS-TOKEN-PREV-TXT               002557W 002729 002747 002751 002810 003025 003028 003029 003044
                                        003049 003053 003070 003075 003084 003085 003089 003092
                                        003095 003098 003101 003104 003107 003110 003125 003131
                                        003135 003139 003192 003195 003202 003213 003216 003225
                                        003236 003245 003273 003286 003290 003293 003301 003309
                                        003316 003325 003341 003344 003347 003354 003363 003374
                                        003389 003392 003399
WS-TOKEN-SEARCH-TXT             002559W 002890 002891 002897
WS-TOKEN-TYPE-CD                002561W 002795 002804 002815 002868 002872 002893 002898 002911
WS-TT-TOKEN-IS-ARGTYPE-BOOL     002562W 003019 003039 003065
WS-TT-TOKEN-IS-EOF-BOOL         002563W 002718 002772
WS-TT-TOKEN-IS-FUNCTION-BOOL    002564W 003059
WS-TT-TOKEN-IS-IDENTIFIER-BOOL  002565W 002905 003052 003088 003134 003142
WS-TT-TOKEN-IS-KEYWORD-BOOL     002566W 002723 002746 003023 003042 003047 003068 003073 003079
                                        003129
WS-TT-TOKEN-IS-LIT-ALPHA-BOOL   002567W 002828 002854
WS-TT-TOKEN-IS-LIT-NUMBER-BOOL  002568W 002841 002907 002981 003013
WS-TT-TOKEN-IS-RESERVED-WD-BOOL 002570W 002724 003020 003040 003066 003083
WS-TT-TOKEN-IS-VERB-BOOL        002569W 002727 002899
WS-USERNAMES-QTY                002572W 002712
WS-VERSION-TXT                  002574W 002641 003558 003581 003815 003834
WS-XDL-DEF-LINE-NUM             002581W 003512 003529
WS-XDL-PROG-ID-TXT              002577W 003509 003521 003525
WS-XDL-REF-FLAG-CHR             002587W 003541
WS-XDL-REF-LINE-NUM             002586W 003539
WS-XDL-REFERENCE-TXT            002585W
WS-XDL-SECTION-TXT              002583W 003511 003527
WS-XDL-TOKEN-TXT                002579W 003510 003522 003526
WS-XREF-DETAIL-LINE-TXT         002576W 003472 003479 003482 003492 003496 003505 003524 003544
                                        003607 003610 003613
WS-XREF-LINES-PER-REC-NUM       002590W 002658 002662 003534
```

```
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Symbols of Module: GCIC (LISTING)
-------------------------------

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

L-LISTING-CD                    002603K  002610 002657 002694 003557 003606 003618 003759 003773
                                         003814 003855
L-LISTING-FN-TXT                002593K  002605
L-LPP-NUM                       002599K  002608 002695
L-LPP-PORT-NUM                  002601K  002609 002697
L-OS-TYPE-CD                    002597K  002607 002633
L-SRC-FN-TXT                    002595K  002606 002642 002643 002645 002650 002654 002666 002667
                                         002669 002671 002676


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Symbols of Module: GCIC (LISTING)
-------------------------------
Variable Tested [S]          Symbol (88-Conditions)
---------------------------------------------------------------

WS-CURR-CHR                  WS-CURR-CHAR-IS-PUNCT-BOOL
WS-CURR-CHR                  WS-CURR-CHAR-IS-QUOTE-BOOL
WS-CURR-CHR                  WS-CURR-CHAR-IS-X-BOOL
WS-CURR-CHR                  WS-CURR-CHAR-IS-Z-BOOL
WS-CURR-DIVISION-TXT         WS-CD-IN-IDENT-DIV-BOOL
WS-CURR-DIVISION-TXT         WS-CD-IN-ENV-DIV-BOOL
WS-CURR-DIVISION-TXT         WS-CD-IN-DATA-DIV-BOOL
WS-CURR-DIVISION-TXT         WS-CD-IN-PROC-DIV-BOOL
WS-NEXT-CHR                  WS-NEXT-CHAR-IS-QUOTE-BOOL
WS-RS-IN-WHICH-PGM-CHR       WS-RS-IN-MAIN-MODULE-BOOL
WS-RS-IN-WHICH-PGM-CHR       WS-RS-IN-COPYBOOK-BOOL
WS-TOKEN-TYPE-CD             WS-TT-TOKEN-IS-ARGTYPE-BOOL
WS-TOKEN-TYPE-CD             WS-TT-TOKEN-IS-EOF-BOOL
WS-TOKEN-TYPE-CD             WS-TT-TOKEN-IS-FUNCTION-BOOL
WS-TOKEN-TYPE-CD             WS-TT-TOKEN-IS-IDENTIFIER-BOOL
WS-TOKEN-TYPE-CD             WS-TT-TOKEN-IS-KEYWORD-BOOL
WS-TOKEN-TYPE-CD             WS-TT-TOKEN-IS-LIT-ALPHA-BOOL
WS-TOKEN-TYPE-CD             WS-TT-TOKEN-IS-LIT-NUMBER-BOOL
WS-TOKEN-TYPE-CD             WS-TT-TOKEN-IS-VERB-BOOL
WS-TOKEN-TYPE-CD             WS-TT-TOKEN-IS-RESERVED-WD-BOOL
```

```
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Symbols of Module: GCIC (LISTING)
--------------------------------
Variable Tested            Symbol (88-Conditions) [S]
-------------------------------------------------------------

WS-CURR-DIVISION-TXT       WS-CD-IN-DATA-DIV-BOOL
WS-CURR-DIVISION-TXT       WS-CD-IN-ENV-DIV-BOOL
WS-CURR-DIVISION-TXT       WS-CD-IN-IDENT-DIV-BOOL
WS-CURR-DIVISION-TXT       WS-CD-IN-PROC-DIV-BOOL
WS-CURR-CHR                WS-CURR-CHAR-IS-PUNCT-BOOL
WS-CURR-CHR                WS-CURR-CHAR-IS-QUOTE-BOOL
WS-CURR-CHR                WS-CURR-CHAR-IS-X-BOOL
WS-CURR-CHR                WS-CURR-CHAR-IS-Z-BOOL
WS-NEXT-CHR                WS-NEXT-CHAR-IS-QUOTE-BOOL
WS-RS-IN-WHICH-PGM-CHR     WS-RS-IN-COPYBOOK-BOOL
WS-RS-IN-WHICH-PGM-CHR     WS-RS-IN-MAIN-MODULE-BOOL
WS-TOKEN-TYPE-CD           WS-TT-TOKEN-IS-ARGTYPE-BOOL
WS-TOKEN-TYPE-CD           WS-TT-TOKEN-IS-EOF-BOOL
WS-TOKEN-TYPE-CD           WS-TT-TOKEN-IS-FUNCTION-BOOL
WS-TOKEN-TYPE-CD           WS-TT-TOKEN-IS-IDENTIFIER-BOOL
WS-TOKEN-TYPE-CD           WS-TT-TOKEN-IS-KEYWORD-BOOL
WS-TOKEN-TYPE-CD           WS-TT-TOKEN-IS-LIT-ALPHA-BOOL
WS-TOKEN-TYPE-CD           WS-TT-TOKEN-IS-LIT-NUMBER-BOOL
WS-TOKEN-TYPE-CD           WS-TT-TOKEN-IS-RESERVED-WD-BOOL
WS-TOKEN-TYPE-CD           WS-TT-TOKEN-IS-VERB-BOOL
```

```
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Symbols of Module: GCIC (LISTING)
--------------------------------
Functions                   Defn    Locations
-----------------------------+-----------------------------------------------------------------

LOWER-CASE                  003699I  003731
NUMVAL                      002691I  002929
TRIM                        002642I  002669 002681 002930 002931 002942 003680 003681 003699
                                     003731
UPPER-CASE                  002650I  002654 002721 002867 002890 002930 003680

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Symbols of Module: GCIC (LISTING)
--------------------------------
Called Procedures           Type    Locations
-----------------------------+-----------------------------------------------------------------

C$JUSTIFY                   SYSTEM 002668 003555 003556 003812 003813
CBL_CHECK_FILE_EXIST        SYSTEM 002685

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Symbols of Module: GCIC (LISTING)
--------------------------------
Procedure                   Defn    Locations
-----------------------------+-----------------------------------------------------------------

COMP-VERS                   002641P
COMP-YEAR                   002635P
```

```
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Symbols of Module: GCIC (LISTING)
--------------------------------
Unreferenced Working Storage Symbols

CBL_CHECK_FILE_EXIST            002685C
F-ES-8-256-TXT                  001632F
F-EXPANDED-SRC2-REC             001630F
F-LISTING-REC                   001637F
F-OS-1-128-TXT                  001641F
F-OS-129-256-TXT                001646F
WS-FLAGS-TXT                    001701W
WS-OS-TYPES-TXT                 001733W
WS-RESERVED-WORD-TABLE-TXT      002500W
WS-RS-IN-WHICH-PGM-CHR          002510W
WS-RUNTIME-SWITCHES             002508W
WS-XDL-REFERENCE-TXT            002585W


ACS Cobol Xref v2.02.04          Dictionary File for GCIC (LISTING) 06/03/2022  23:09:11:07     Page  110
Symbols of Module: GCIC (LISTING)
--------------------------------
Unreferenced Procedures

COMP-VERS                       002641P
COMP-YEAR                       002635P
```

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   *>   **

====== ===

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

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```

```
GNU COBOL 2.1 23NOV2013 Source Listing                                     2014/03/27
                                  C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
Line    Statement                                                              Page: 3
====== =================================================================================
    99        *> SCB-Function-CD                                        **
   100        *>-------------------------------------------------------------**
   101        *>                                                        **
   102        *> The appropriate subordinate level-88 must be set to TRUE to  **
   103        *> select a function you'd like to execute against a file.  You **
   104        *> may also simply move one of the string values listed on the  **
   105        *> level-88 items to "SCB-Function-CD".                   **
   106        *>                                                        **
   107        *> Available functions are as follows:                    **
   108        *>                                                        **
   109        *> SCB-Func-OPEN-BOOL                                     **
   110        *>                                                        **
   111        *>     This must be the function specified the first time you  **
   112        *>     call STREAMIO for any given file.  It opens the file &  **
   113        *>     makes it available for use according to the        **
   114        *>     "SCB-Mode-CD" specification.                       **
   115        *>                                                        **
   116        *>     The filename being opened must be specified in the **
   117        *>     "SCB-Filename-TXT" field.                          **
   118        *>                                                        **
   119        *>     The SCB-Offset-NUM field will be initialized to ZERO.  **
   120        *>                                                        **
   121        *>     If "arg2" is specified in conjunction with this funct- **
   122        *>     ion, it will be ignored.                           **
   123        *>                                                        **
   124        *> SCB-Func-CLOSE-BOOL                                    **
   125        *>                                                        **
   126        *>     This function should be the one specified the LAST time **
   127        *>     you call STREAMIO against a specific file.  After this  **
   128        *>     function has been executed, you'll have to re-open the  **
   129        *>     file if you wish to use it with STREAMIO again.     **
   130        *>                                                        **
   131        *>     The SCB-Handle-NUM item will be reset to ZERO.     **
   132        *>                                                        **
   133        *>     If "arg2" is specified in conjunction with this funct- **
   134        *>     ion, it will be ignored.                           **
   135        *>                                                        **
   136        *> SCB-Func-DELETE-BOOL                                   **
   137        *>                                                        **
   138        *>     This function will delete the file specified in the **
   139        *>     control block (see SCB-Filename-TXT).              **
   140        *>                                                        **
   141        *>     This function should not be performed against a file  **
   142        *>     that is open.                                      **
   143        *>                                                        **
   144        *>     If "arg2" is specified in conjunction with this funct- **
   145        *>     ion, it will be ignored.                           **
   146        *>                                                        **
   147        *> SCB-Func-READ-BOOL                                     **

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```

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

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

```
GNU COBOL 2.1 23NOV2013 Source Listing                                      2014/03/27
                            C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
Line    Statement                                                             Page: 5
======  =================================================================================
   197      *>      ferences:                                          **
   198      *>                                                         **
   199      *>      1. When data is read from the file, only that data read **
   200      *>         up to BUT NOT INCLUDING an end-of-line delimiter    **
   201      *>         sequence (either a LF or CRLF) will be retained in   **
   202      *>         the buffer - the remainder of the buffer from the    **
   203      *>         end-of-line sequence onward will be reset to SPACES. **
   204      *>         The file-offset value (SCB-Offset-NUM) will be in-   **
   205      *>         cremented ONLY by the amount of data transferred up  **
   206      *>         to AND INCLUDING the end-of-line sequence.           **
   207      *>                                                         **
   208      *>      2. When data is read from the file and an end-of-line   **
   209      *>         delimiter sequence (either a LF or a CRLF) cannot be **
   210      *>         found within the buffer, the assumption is made that **
   211      *>         the record is too long to fit within the buffer.  In **
   212      *>         these instances, an SCB-Return-CD value of 02 will   **
   213      *>         be returned and the SCB-Offset-NUM value will be     **
   214      *>         incremented past the next end-of-line sequence in    **
   215      *>         the file (this will involve at least one additional  **
   216      *>         call to CBL_READ_FILE to locate that eol sequence,   **
   217      *>         but any additional such reads will be done internal- **
   218      *>         ly to STREAMIO and will be entirely transparent to   **
   219      *>         the caller of STREAMIO.                         **
   220      *>                                                         **
   221      *>      DO NOT USE the Streamio-READ-Delim function if the    **
   222      *>      possibility exists that linefeed (X"0A") or carriage-  **
   223      *>      return (X"0D") characters could exist as actual data   **
   224      *>      characters in the file.                              **
   225      *>                                                         **
   226      *> SCB-Func-WRITE-Delim-BOOL                                 **
   227      *>                                                         **
   228      *>      SCB-Func-WRITE-Delim-BOOL acts like the Streamio-    **
   229      *>      FUNC-WRITE function, with the following difference:    **
   230      *>                                                         **
   231      *>      After the specified data is written to the file, an   **
   232      *>      end-of-line sequence will also be written to the file. **
   233      *>      The file-offset value (SCB-Value) will be incremented **
   234      *>      by the byte-count size of the data PLUS the size of the **
   235      *>      end-of-line sequence.  One of two possible end-of-line **
   236      *>      sequences must be specified using the value of SCB-    **
   237      *>      Delimter-Mode.                                        **
   238      *>                                                         **
   239      *>-----------------------------------------------------------**
   240      *> SCB-Delimiter-Mode-CD                                     **
   241      *>-----------------------------------------------------------**
   242      *>                                                         **
   243      *> This data item is needed only when issuing the Streamio-   **
   244      *> FUNC-WRITE-Delim function.  In those circumstances, this   **
   245      *> item defines what end-of-line delimiter sequence is to be  **

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```

```
GNU COBOL 2.1 23NOV2013 Source Listing                                    2014/03/27
                                    C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
Line    Statement                                                              Page: 6
======  =======================================================================================
   246        *> written:                                              **
   247        *>                                                        **
   248        *> If SCB-Delim-Unix-BOOL is true, a linefeed character will    **
   249        *> be written.                                           **
   250        *>                                                        **
   251        *> If SCB-Delim-Windows-BOOL is true, a carriage-return and    **
   252        *> linefeed sequence will be written.                    **
   253        *>                                                        **
   254        *>---------------------------------------------------------------**
   255        *> SCB-Offset-NUM                                         **
   256        *>---------------------------------------------------------------**
   257        *>                                                        **
   258        *> This data item specifies the next relative byte number with- **
   259        *> in the file where the next read or write will start.  **
   260        *>                                                        **
   261        *> SCB-Offset-NUM is automatically set to 0 (the first byte)    **
   262        *> when the file is opened, and is automatically incremented as **
   263        *> the file is read or written via STREAMIO.             **
   264        *>                                                        **
   265        *> You may also manually set this value as desired before any   **
   266        *> call to STREAMIO.                                      **
   267        *>                                                        **
   268        *>---------------------------------------------------------------**
   269        *> SCB-Error-Routine-PTR                                  **
   270        *>---------------------------------------------------------------**
   271        *>                                                        **
   272        *> To specify a general error-handling routine for handling     **
   273        *> STREAMIO failures, Create the routine and define an entry-    **
   274        *> name for it via the ENTRY statement.  Then use the following **
   275        *> to set that routine up as the error handler:          **
   276        *>                                                        **
   277        *>    SET SCB-Error-Routine-PTR TO ENTRY "entry-name"     **
   278        *>                                                        **
   279        *> To "turn off" the error-routine:                      **
   280        *>                                                        **
   281        *>    SET SCB-Error-Routine-PTR TO NULL                   **
   282        *>                                                        **
   283        *> If a fatal error occurs (any error not marked with a ">" in  **
   284        *> the SCB-Return-CD discussion), the error routine you spe-    **
   285        *> cified (if any) will be set up as an exit routine via the    **
   286        *> CBL_EXIT_PROC subroutine; the STREAMIO routine will then is- **
   287        *> sue a STOP RUN to intentionally trigger your error routine.  **
   288        *> You will not be able to recover your program once your error **
   289        *> routine triggers.  If you wish to be able to recover from    **
   290        *> fatal STREAMIO errors, you should NOT use the SCB-Error-     **
   291        *> Routine feature but instead you should explicitly test the   **
   292        *> SCB-Return-CD value after every call to STREAMIO.     **
   293        *>                                                        **
   294        *> A default error routine is defined by the "STREAMIOError.cpy"**

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```

```
GNU COBOL 2.1 23NOV2013 Source Listing                                    2014/03/27
                               C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
Line    Statement                                                            Page: 7
====== =================================================================================
   295        *> copybook.                                             **
   296        *>                                                       **
   297        *>-----------------------------------------------------------**
   298        *> SCB-Return-CD                                          **
   299        *>-----------------------------------------------------------**
   300        *>                                                       **
   301        *> The following are the possible SCB-Return-CD values.  The   **
   302        *> ones marked with a ">" will NOT trigger an error-routine, if **
   303        *> one is currently registered via SCB-Error-Routine-PTR.      **
   304        *>                                                       **
   305        *>   12 I/O error writing to file                        **
   306        *>   11 File does not exist                              **
   307        *>   10 File already OPEN or already CLOSEd               **
   308        *> > 02 READ-Delim was truncated                         **
   309        *> > 01 No more data is available from the current       **
   310        *>      SCB-Offset-NUM                                   **
   311        *> > 00 OK - the operation was successful                **
   312        *>   -1 Invalid SCB-Function-CD                          **
   313        *>   -2 Invalid SCB-Mode-CD                              **
   314        *>   -3 CBL_xxxxx_FILE routine rejected operation        **
   315        *>   -4 Invalid delimiter mode specified (Not U/W)       **
   316        *>                                                       **
   317        *>-----------------------------------------------------------**
   318        *> SCB-Filename-TXT                                       **
   319        *>-----------------------------------------------------------**
   320        *>                                                       **
   321        *> This is the name of the file you wish to access.      **
   322        *>                                                       **
   323        *> If you are planning on reading the file, the file MUST exist **
   324        *> at the time the SCB-Func-OPEN-BOOL is executed.       **
   325        *>                                                       **
   326        *> If you are planning on writing to the file, the file need   **
   327        *> exist when the SCB-Func-OPEN-BOOL is issued.          **
   328        *>                                                       **
   329        *> In general, the contents of SCB-Filename-TXT should re-     **
   330        *> flect the complete path to the file as well as the name of  **
   331        *> the file itself, unless the file is contained in whatever   **
   332        *> directory is current at the time the SCB-Func-OPEN-BOOL is  **
   333        *> executed.                                             **
   334        *>                                                       **
   335        *> The following special values may be used for          **
   336        *> SCB-Filename-TXT:                                     **
   337        *>                                                       **
   338        *> SPACES If the filename is SPACES, a filename will be created **
   339        *>        automatically for you in whatever directory is de-   **
   340        *>        fined by the TEMP environment variable.  If there IS  **
   341        *>        no TEMP variable defined, the "/tmp" folder will be   **
   342        *>        assumed.  The filename will be STREAMIO-nnnnnnnn.dat  **
   343        *>        where "nnnnnnnn" is a random number.           **

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```

```
GNU COBOL 2.1 23NOV2013 Source Listing                                      2014/03/27
                           C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
Line    Statement                                                              Page: 8
====== =================================================================================
  344      *>                                                              **
  345      *> .      If you specify only a dot (period) as the filename,   **
  346      *>        the behavior will be the same as with a value of      **
  347      *>        SPACES except there will be no ".dat" at the end of    **
  348      *>        the generated filename.                               **
  349      *>                                                              **
  350      *> .ext   If you specify a filename extension prefixed with a   **
  351      *>        dot (period), the behavior will be the same as if a   **
  352      *>        value of SPACES were specified, except that the given **
  353      *>        extension will be used instead of ".dat".  Note that  **
  354      *>        if you are using a Unix/Cygwin implementation of      **
  355      *>        OpenCOBOL and you'd like to specify a hidden file in  **
  356      *>        the current directory as the SCB-Filename-TXT, you    **
  357      *>        MUST code the filename as "./.xxxxx" to avoid having   **
  358      *>        it treated as this special name.                      **
  359      *>                                                              **
  360      *>**************************************************************
  361       ENVIRONMENT DIVISION.
  362       CONFIGURATION SECTION.
  363       REPOSITORY.
  364           FUNCTION ALL INTRINSIC.
  365       DATA DIVISION.
  366       WORKING-STORAGE SECTION.
  367       01  WS-Access-Mode-CD                PIC X(1) COMP-X.
  368       01  WS-Arg-Length-NUM                PIC X(4) COMP-X.
  369       01  WS-Buffer-TXT                    PIC X(256).
  370       01  WS-Delim-Buffer-TXT              PIC X(2).
  371       01  WS-Env-Temp-TXT                  PIC X(256).
  372       01  WS-Slash-CHR                     PIC X(1).
  373       01  WS-Tally-NUM                     USAGE BINARY-LONG.
  374       01  WS-8-Digit-NUM                   PIC 9(8).
  375       01  WS-256-Byte-TXT                  PIC X(256).
  376       LINKAGE SECTION.
  377       01  L-StreamIO-Control-Block-TXT.
  378           COPY STREAMIOcb
  379               REPLACING LEADING ==SCB-== BY ==L-SCB-==.
       05 L-SCB-Handle-NUM PIC X(4) COMP-X.
       05 L-SCB-Mode-CD PIC X(1).
       88 L-SCB-MODE-Input-BOOL VALUE 'I' 'i'.
       88 L-SCB-MODE-Output-BOOL VALUE 'O' 'o'.
       88 L-SCB-MODE-Both-BOOL VALUE 'B' 'b'.
       05 L-SCB-Function-CD PIC X(2).
       88 L-SCB-Func-CLOSE-BOOL VALUE 'C ' 'c '.
       88 L-SCB-Func-DELETE-BOOL VALUE 'D ' 'd '.
       88 L-SCB-Func-OPEN-BOOL VALUE 'O ' 'o '.
       88 L-SCB-Func-READ-BOOL VALUE 'R ' 'r '.
       88 L-SCB-Func-READ-Delim-BOOL VALUE 'RD' 'rd'
       'rD' 'Rd'.
       88 L-SCB-Func-WRITE-BOOL VALUE 'W ' 'w '.


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```

Line   Statement   Page: 9
====== ===
       88 L-SCB-Func-WRITE-Delim-BOOL VALUE 'WD' 'wd'
       'wD' 'Wd'.
       05 L-SCB-Delimiter-Mode-CD PIC X(1).
       88 L-SCB-DELIM-Unix-BOOL VALUE 'U' 'u'.
       88 L-SCB-DELIM-Windows-BOOL VALUE 'W' 'w'.
       05 L-SCB-Offset-NUM PIC X(8) COMP-X.
       05 L-SCB-Error-Routine-PTR USAGE PROGRAM-POINTER.
       05 L-SCB-Error-Routine-NUM REDEFINES L-SCB-Error-Routine-PTR
       USAGE BINARY-LONG.
       05 L-SCB-Return-CD USAGE BINARY-LONG.
       05 L-SCB-Filename-TXT PIC X(256).
   380   01 L-Arg2-TXT   PIC X ANY LENGTH.
   381   PROCEDURE DIVISION USING L-StreamIO-Control-Block-TXT,
   382   L-Arg2-TXT.
   383   000-Main SECTION.
   384   MOVE 00 TO L-SCB-Return-CD
   385   EVALUATE TRUE
   386   WHEN L-SCB-Func-CLOSE-BOOL
   387   PERFORM 030-Validate-Handle-NonZero
   388   PERFORM 200-CLOSE
   389   WHEN L-SCB-Func-DELETE-BOOL
   390   CALL "CBL_DELETE_FILE" USING L-SCB-Filename-TXT
   391   WHEN L-SCB-Func-OPEN-BOOL
   392   PERFORM 020-Validate-Handle-Zero
   393   PERFORM 100-OPEN
   394   WHEN L-SCB-Func-READ-BOOL
   395   PERFORM 030-Validate-Handle-NonZero
   396   PERFORM 400-READ
   397   WHEN L-SCB-Func-READ-Delim-BOOL
   398   PERFORM 030-Validate-Handle-NonZero
   399   PERFORM 500-READ-Delim
   400   WHEN L-SCB-Func-WRITE-BOOL
   401   PERFORM 030-Validate-Handle-NonZero
   402   PERFORM 300-WRITE
   403   WHEN L-SCB-Func-WRITE-Delim-BOOL
   404   EVALUATE TRUE
   405   WHEN L-SCB-Delim-Unix-BOOL
   406   PERFORM 030-Validate-Handle-NonZero
   407   PERFORM 300-WRITE
   408   MOVE 1 TO WS-Arg-Length-NUM
   409   MOVE X"0A" TO WS-Delim-Buffer-TXT
   410   WHEN L-SCB-Delim-Windows-BOOL
   411   PERFORM 030-Validate-Handle-NonZero
   412   PERFORM 300-WRITE
   413   MOVE 2 TO WS-Arg-Length-NUM
   414   MOVE X"0D0A" TO WS-Delim-Buffer-TXT
   415   WHEN OTHER
   416   MOVE -4 TO L-SCB-Return-CD
   417   PERFORM 099-ERROR-Return

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```
GNU COBOL 2.1 23NOV2013 Source Listing                                          2014/03/27
                                    C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
Line   Statement                                                                   Page: 10
====== =====================================================================================
   418                     END-EVALUATE
   419                     CALL "CBL_WRITE_FILE" USING L-SCB-Handle-NUM
   420                                               L-SCB-Offset-NUM
   421                                               WS-Arg-Length-NUM
   422                                               0
   423                                               WS-Delim-Buffer-TXT
   424                     PERFORM 040-Check-WRITE-SCB-Return-CD
   425                     ADD WS-Arg-Length-NUM TO L-SCB-Offset-NUM
   426                 WHEN OTHER
   427                     MOVE -1 TO L-SCB-Return-CD
   428                     PERFORM 099-ERROR-Return
   429             END-EVALUATE
   430             GOBACK
   431             .
   432      020-Validate-Handle-Zero SECTION.
   433         IF L-SCB-Handle-NUM NOT = ZERO
   434             MOVE 10 TO L-SCB-Return-CD
   435             PERFORM 099-ERROR-Return
   436         END-IF
   437             .
   438      030-Validate-Handle-NonZero SECTION.
   439         IF L-SCB-Handle-NUM = ZERO
   440             MOVE 10 TO L-SCB-Return-CD
   441             PERFORM 099-ERROR-Return
   442         END-IF
   443             .
   444      040-Check-WRITE-SCB-Return-CD SECTION.
   445         IF RETURN-CODE < 0
   446             MOVE -3 TO L-SCB-Return-CD
   447             PERFORM 099-ERROR-Return
   448         END-IF
   449         IF RETURN-CODE = 30
   450             MOVE 12 TO L-SCB-Return-CD
   451             PERFORM 099-ERROR-Return
   452         END-IF
   453         MOVE 00 TO L-SCB-Return-CD
   454             .
   455      050-Check-READ-SCB-Return-CD SECTION.
   456         IF RETURN-CODE < 0
   457             MOVE -3 TO L-SCB-Return-CD
   458             PERFORM 099-ERROR-Return
   459         END-IF
   460         IF RETURN-CODE = 10
   461             MOVE 01 TO L-SCB-Return-CD
   462             GOBACK
   463         END-IF
   464         MOVE 00 TO L-SCB-Return-CD
   465             .
   466      060-Identify-TEMP SECTION.

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

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

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

```
GNU COBOL 2.1 23NOV2013 Source Listing                                       2014/03/27
                                   C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
Line   Statement                                                                  Page: 12
====== =====================================================================================
   516                      RANDOM(SECONDS-PAST-MIDNIGHT) * 100000000
   517                  STRING
   518                      TRIM(WS-Env-Temp-TXT,TRAILING)
   519                      WS-Slash-CHR
   520                      "STREAMIO-"
   521                      WS-8-Digit-NUM
   522                      TRIM(WS-256-Byte-TXT,TRAILING)
   523                      DELIMITED BY SIZE
   524                      INTO L-SCB-Filename-TXT
   525              END-EVALUATE
   526              EVALUATE TRUE
   527                  WHEN L-SCB-Mode-Input-BOOL
   528                      MOVE 1 TO WS-Access-Mode-CD
   529                  WHEN L-SCB-Mode-Output-BOOL
   530                      MOVE 2 TO WS-Access-Mode-CD
   531                  WHEN L-SCB-Mode-Both-BOOL
   532                      MOVE 3 TO WS-Access-Mode-CD
   533                  WHEN OTHER
   534                      MOVE -2 TO L-SCB-Return-CD
   535                      PERFORM 099-ERROR-Return
   536              END-EVALUATE
   537              CALL "CBL_OPEN_FILE" USING TRIM(L-SCB-Filename-TXT,TRAILING)
   538                                        WS-Access-Mode-CD
   539                                        0
   540                                        0
   541                                        L-SCB-Handle-NUM
   542              IF RETURN-CODE = 35
   543                  MOVE 11 TO L-SCB-Return-CD
   544                  PERFORM 099-ERROR-Return
   545              END-IF
   546              IF RETURN-CODE < 0
   547                  MOVE -2 TO L-SCB-Return-CD
   548                  PERFORM 099-ERROR-Return
   549              END-IF
   550              MOVE 00 TO L-SCB-Return-CD
   551              MOVE 0 TO L-SCB-Offset-NUM
   552              .
   553          200-CLOSE SECTION.
   554              CALL "CBL_CLOSE_FILE" USING L-SCB-Handle-NUM
   555              IF RETURN-CODE < 0
   556                  MOVE -2 TO L-SCB-Return-CD
   557                  PERFORM 099-ERROR-Return
   558              END-IF
   559              MOVE 00 TO L-SCB-Return-CD
   560              MOVE 0 TO L-SCB-Handle-NUM
   561              .
   562          300-WRITE SECTION.
   563              CALL "C$PARAMSIZE" USING 2
   564              MOVE RETURN-CODE TO WS-Arg-Length-NUM

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```

Line   Statement   Page: 13
====== ===
```
   565             CALL "CBL_WRITE_FILE" USING L-SCB-Handle-NUM
   566                                        L-SCB-Offset-NUM
   567                                        WS-Arg-Length-NUM
   568                                        0
   569                                        L-Arg2-TXT
   570             PERFORM 040-Check-WRITE-SCB-Return-CD
   571             ADD WS-Arg-Length-NUM TO L-SCB-Offset-NUM
   572             .
   573         400-READ SECTION.
   574             CALL "C$PARAMSIZE" USING 2
   575             MOVE RETURN-CODE TO WS-Arg-Length-NUM
   576             MOVE SPACES TO L-Arg2-TXT(1:WS-Arg-Length-NUM)
   577             CALL "CBL_READ_FILE" USING L-SCB-Handle-NUM
   578                                       L-SCB-Offset-NUM
   579                                       WS-Arg-Length-NUM
   580                                       0
   581                                       L-Arg2-TXT
   582             PERFORM 050-Check-READ-SCB-Return-CD
   583             ADD WS-Arg-Length-NUM TO L-SCB-Offset-NUM
   584             .
   585         500-READ-Delim SECTION.
   586             CALL "C$PARAMSIZE" USING 2
   587             MOVE RETURN-CODE TO WS-Arg-Length-NUM
   588             MOVE SPACES TO L-Arg2-TXT(1:WS-Arg-Length-NUM)
   589             CALL "CBL_READ_FILE" USING L-SCB-Handle-NUM
   590                                       L-SCB-Offset-NUM
   591                                       WS-Arg-Length-NUM
   592                                       0
   593                                       L-Arg2-TXT
   594             PERFORM 050-Check-READ-SCB-Return-CD
   595             MOVE 0 TO WS-Tally-NUM
   596             INSPECT L-Arg2-TXT(1:WS-Arg-Length-NUM)
   597                 TALLYING WS-Tally-NUM FOR ALL X"0A"
   598             IF WS-Tally-NUM = 0 *> No LF found - return truncated data and position past n
   ext LF (if any)
   599                 IF L-Arg2-TXT(WS-Arg-Length-NUM:1) = X"0D"
   600                     MOVE SPACE TO L-Arg2-TXT(WS-Arg-Length-NUM:1)
   601                 END-IF
   602                 ADD WS-Arg-Length-NUM TO L-SCB-Offset-NUM
   603                 MOVE 02 TO L-SCB-Return-CD
   604                 MOVE 256 TO WS-Arg-Length-NUM
   605                 PERFORM UNTIL 0 = 1
   606                     MOVE SPACES TO WS-Buffer-TXT
   607                     CALL "CBL_READ_FILE" USING L-SCB-Handle-NUM
   608                                               L-SCB-Offset-NUM
   609                                               WS-Arg-Length-NUM
   610                                               0
   611                                               WS-Buffer-TXT
   612                     IF RETURN-CODE < 0
```
==
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```
GNU COBOL 2.1 23NOV2013 Source Listing                                    2014/03/27
                                C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
Line    Statement                                                               Page: 14
====== =======================================================================================
   613                         MOVE -3 TO L-SCB-Return-CD
   614                         PERFORM 099-ERROR-Return
   615                     END-IF
   616                     IF RETURN-CODE = 10
   617                         GOBACK
   618                     END-IF
   619                     MOVE 0 TO WS-Tally-NUM
   620                     INSPECT WS-Buffer-TXT
   621                         TALLYING WS-Tally-NUM FOR ALL X"0A"
   622                     IF WS-Tally-NUM = 0
   623                         ADD 256 TO L-SCB-Offset-NUM
   624                     ELSE
   625                         MOVE 0 TO WS-Tally-NUM
   626                         INSPECT WS-Buffer-TXT
   627                             TALLYING WS-Tally-NUM
   628                             FOR CHARACTERS BEFORE INITIAL X"0A"
   629                         ADD WS-Tally-NUM, 1 TO L-SCB-Offset-NUM
   630                         GOBACK
   631                     END-IF
   632                 END-PERFORM
   633         ELSE          *> There is (at least) one LF in the buffer
   634             MOVE 0 TO WS-Tally-NUM
   635             INSPECT L-Arg2-TXT(1:WS-Arg-Length-NUM)
   636                 TALLYING WS-Tally-NUM
   637                 FOR CHARACTERS BEFORE INITIAL X"0A"
   638             ADD WS-Tally-NUM, 1 TO L-SCB-Offset-NUM
   639             IF WS-Tally-NUM > 1
   640                 IF L-Arg2-TXT(WS-Tally-NUM:1) = X"0D"
   641                     COMPUTE WS-Arg-Length-NUM =
   642                             WS-Arg-Length-NUM
   643                             - WS-Tally-NUM
   644                             + 1
   645                 ELSE
   646                     COMPUTE WS-Arg-Length-NUM =
   647                             WS-Arg-Length-NUM
   648                             - WS-Tally-NUM
   649                     ADD 1 TO WS-Tally-NUM
   650                 END-IF
   651                 MOVE SPACES
   652                   TO L-Arg2-TXT(WS-Tally-NUM:WS-Arg-Length-NUM)
   653             ELSE
   654                 MOVE SPACES
   655                   TO L-Arg2-TXT(1:WS-Arg-Length-NUM)
   656             END-IF
   657         END-IF
   658         .



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


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```
GNU COBOL 2.1 23NOV2013 Cross-Reference Listing                      2014/03/27
                          C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
PROGRAM-ID       Identifier/Register/Function   Defn   Where Defined   References     Page: 16
===============  ==============================  ======  ==============  ========================
                                                                        608C    623*    629*
                                                                        638*
STREAMIO         L-SCB-Return-CD                 379  [STREAMIOcb    ]   384*    416*    427*
                                                                        434*    440*    446*
                                                                        450*    453*    457*
                                                                        461*    464*    488*
                                                                        534*    543*    547*
                                                                        550*    556*    559*
                                                                        603*    613*
STREAMIO         L-StreamIO-Control-Block-TXT    377  LINKAGE           381
STREAMIO         RETURN-CODE                          PROCEDURE         445     449     456
                                                                        460     542     546
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STREAMIO         WS-256-Byte-TXT                 375  WORKING-STORAGE   510*    512*    522
STREAMIO         WS-8-Digit-NUM                  374  WORKING-STORAGE   496*    503     515*
                                                                        521
STREAMIO         WS-Access-Mode-CD               367  WORKING-STORAGE   528*    530*    532*
                                                                        538C
STREAMIO         WS-Arg-Length-NUM               368  WORKING-STORAGE   408*    413*    421C
                                                                        425     564*    567C
                                                                        571     575*    576
                                                                        579C    583     587*
                                                                        588     591C    596
                                                                        599     600     602
                                                                        604*    609C    635
                                                                        641*    642     646*
                                                                        647     652     655
STREAMIO         WS-Buffer-TXT                   369  WORKING-STORAGE   606*    611C
STREAMIO         WS-Delim-Buffer-TXT             370  WORKING-STORAGE   409*    414*    423C
STREAMIO         WS-Env-Temp-TXT                 371  WORKING-STORAGE   467*    469     471
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STREAMIO         WS-Slash-CHR                    372  WORKING-STORAGE   470*    472*    475*
                                                                        501     519
STREAMIO         WS-Tally-NUM                    373  WORKING-STORAGE   595*    597*    598
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                                                                        625*    627*    629
                                                                        634*    636*    638
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                                                                        648     649*    652
```

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