GnuCOBOL Sample Programs

For Version 3.2 - Final [13 December 2024 at 13:35 GMT.], for 3.3 and 4.0 (partial & tentative only).

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This manual documents GnuCOBOL 3.2 - Final, 13 December 2024 at 13:35 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 current 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 06 MOVE 'LS Multiple records    ' 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 24 MOVE 'KEY BOUNDARY VIOLATION ' 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 71 MOVE 'BAD CHARACTER          ' TO MSG
      WHEN 91 MOVE 'FILE NOT AVAILABLE     ' TO MSG
```

```
          WHEN OTHER MOVE 'UNKNOWN ERROR           ' 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 ''----------------> <---
```

```
GNUCOBOL 3.1.2 06MAR202 Source Listing                            2022/03/06
                                                                  COBDUMP.cbl
Line   Statement                                                  Page: 3
====== =========================================================================================
  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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ACS Cobol Xref v2.02.02        Dictionary File for COLORS    07/12/2019  16:57:00:17
  163   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 VALUE 'X'.
  164   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 VALUE 'X'.
  165   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 VALUE 'X'.
  166   05 LINE + 1.
  167   10 COL 12  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 VALUE 'X'.
  168   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 VALUE 'X'.
  169   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 VALUE 'X'.
  170   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 VALUE 'X'.
  171   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 VALUE 'X'.
  172   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 VALUE 'X'.
  173   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 VALUE 'X'.
  174   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 VALUE 'X'.
  175   05 LINE + 1.
  176   10 COL 12  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 VALUE 'X'.
  177   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 VALUE 'X'.
  178   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 VALUE 'X'.
  179   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 VALUE 'X'.
  180   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 VALUE 'X'.
  181   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 VALUE 'X'.
  182   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 VALUE 'X'.
  183   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 VALUE 'X'.
  184   05 LINE + 1.
  185   10 COL 12  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 VALUE 'X'.
  186   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 VALUE 'X'.
  187   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 VALUE 'X'.
  188   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 VALUE 'X'.
  189   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 VALUE 'X'.
  190   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 VALUE 'X'.
  191   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 VALUE 'X'.
  192   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 VALUE 'X'.
  193   05 LINE + 1.
  194   10 COL 12  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 VALUE 'X'.
  195   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 VALUE 'X'.
  196   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 VALUE 'X'.
  197   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 VALUE 'X'.
  198   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 VALUE 'X'.
  199   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 VALUE 'X'.
  200   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 VALUE 'X'.
  201   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 VALUE 'X'.
  202   *> #3
  203   05 LINE 05.
  204   10 COL 22  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
  205   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
  206   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
  207   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
  208   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
  209   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
  210   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
  211   10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
  212   05 LINE + 1.
  213   10 COL 22  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
  214   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
  215   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
  216   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
```

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ACS Cobol Xref v2.02.02        Dictionary File for COLORS    07/12/2019  16:57:00:17
    217   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    218   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    219   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    220   10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    221   05 LINE + 1.
    222   10 COL 22  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    223   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    224   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    225   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
    226   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    227   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    228   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    229   10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    230   05 LINE + 1.
    231   10 COL 22  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    232   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    233   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    234   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
    235   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    236   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    237   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    238   10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    239   05 LINE + 1.
    240   10 COL 22  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    241   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    242   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    243   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
    244   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    245   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    246   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    247   10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    248   05 LINE + 1.
    249   10 COL 22  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    250   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    251   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    252   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
    253   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    254   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    255   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    256   10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    257   05 LINE + 1.
    258   10 COL 22  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    259   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    260   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    261   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
    262   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
    263   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
    264   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
    265   10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
    266   05 LINE + 1.
    267   10 COL 22  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
    268   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
    269   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
    270   10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
```

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

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  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'.
```

```
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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  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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  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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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'.
```

```
   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’.
```

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

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

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

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

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

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

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

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

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

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

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

S-COLORTST-SCR                 000007S  000934
```

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

None
```

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

None
```

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

None
```

4 DAY-FROM-DATE

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

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

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

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

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

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

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

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

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

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

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

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

5 GCic

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

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

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

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

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

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

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

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

The program source and cross-reference listing, 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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ACS Cobol Xref v2.02.04         Dictionary File for GCIC    06/03/2022  23:09:10:97   Page    8
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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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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   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
```

```
    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
```

```
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
```

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ACS Cobol Xref v2.02.04        Dictionary File for GCIC    06/03/2022  23:09:10:98   Page   18
  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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ACS Cobol Xref v2.02.04      Dictionary File for GCIC    06/03/2022  23:09:10:98   Page   19
 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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ACS Cobol Xref v2.02.04      Dictionary File for GCIC     06/03/2022  23:09:10:98   Page   21
 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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ACS Cobol Xref v2.02.04        Dictionary File for GCIC    06/03/2022  23:09:10:99   Page   22
 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
```

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

```
ACS Cobol Xref v2.02.04        Dictionary File for GCIC    06/03/2022  23:09:10:99   Page   24

 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  GCO909            STRING LOWER-CASE(WS-Prog-Folder-TXT (1:1))
   1298  GCO909                INTO WS-Cmd-TXT
   1299  GCO909                WITH POINTER WS-I-SUB
   1300  GCO909            PERFORM
   1301  GCO909                VARYING WS-J-SUB FROM 3 BY 1
   1302  GCO909                UNTIL WS-J-SUB > LENGTH(TRIM(WS-Prog-Folder-TXT))
   1303  GCO909                IF WS-Prog-Folder-TXT (WS-J-SUB:1) = '\'
   1304  GCO909                    STRING '/'
   1305  GCO909                        INTO WS-Cmd-TXT
   1306  GCO909                        WITH POINTER WS-I-SUB
   1307  GCO909                ELSE
   1308  GCO909                    STRING WS-Prog-Folder-TXT (WS-J-SUB:1)
   1309  GCO909                        INTO WS-Cmd-TXT
   1310  GCO909                        WITH POINTER WS-I-SUB
   1311  GCO909                END-IF
   1312  GCO909            END-PERFORM
   1313  GCO909          ELSE
   1314  GCO410            STRING '"' TRIM(WS-Prog-Folder-TXT,TRAILING)
   1315  GCO909                INTO WS-Cmd-TXT
   1316  GCO909                WITH POINTER WS-I-SUB
   1317  GCO712            SET WS-RS-Double-Quote-Used-BOOL TO TRUE
   1318  GCO909          END-IF
   1319  GCO712          STRING WS-OS-Dir-CHR
   1320  GCO909              INTO WS-Cmd-TXT
   1321  GCO909              WITH POINTER WS-I-SUB
   1322  GCO909        ELSE
   1323  GCO909          IF WS-OS-Cygwin-BOOL OR WS-OS-UNIX-BOOL
   1324  GCO909            STRING './'
   1325  GCO909                INTO WS-Cmd-TXT
   1326  GCO909                WITH POINTER WS-I-SUB
   1327  GCO909          END-IF
   1328              END-IF
   1329        *>**************************************************************
   1330        *> Insert program filename                                  **
   1331        *>**************************************************************
   1332  GCO909    STRING TRIM(WS-Pgm-Nm-TXT,TRAILING)
   1333  GCO909        INTO WS-Cmd-TXT
   1334  GCO909        WITH POINTER WS-I-SUB
   1335        *>**************************************************************
   1336        *> Insert proper extension                                  **
   1337        *>**************************************************************
   1338  GCO712    IF WS-CS-LIBRARY-CHR = ' '
   1339  GCO712        IF WS-OS-Exe-Ext-CONST > ' '
   1340  GCO712            STRING WS-OS-Exe-Ext-CONST DELIMITED SPACE
   1341  GCO712                INTO WS-Cmd-TXT
   1342  GCO712                WITH POINTER WS-I-SUB
   1343  GCO712        END-IF
   1344  GCO712    ELSE
   1345  GCO712        IF WS-OS-Lib-Ext-CONST > ' '
   1346  GCO712            STRING WS-OS-Lib-Ext-CONST DELIMITED SPACE
   1347  GCO712                INTO WS-Cmd-TXT
   1348  GCO712                WITH POINTER WS-I-SUB
   1349  GCO712        END-IF
   1350  GCO712    END-IF
```

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 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                    **
```

```
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        /
```

```
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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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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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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
```

```
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 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
```

```
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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
```

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

UPPER-CASE                     001534I
```

```
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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

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Symbols of Module: GCIC (CHECKSRC)
---------------------------------
Unreferenced Procedures

None
```

```
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).
```

```
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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     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).
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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
```

```
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
```

```
 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
```

```
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'
```

```
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
```

```
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
```

```
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)
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  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)
```

```
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)) =
```

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 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
```

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  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
```

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ACS Cobol Xref v2.02.04      Dictionary File for GCIC (LISTING) 06/03/2022  23:09:11:06    Page   97
  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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ACS Cobol Xref v2.02.04        Dictionary File for GCIC (LISTING) 06/03/2022  23:09:11:06     Page   98
  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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Symbols of Module: GCIC (LISTING)
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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)
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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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--------------------------------


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


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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.

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

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

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

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```

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

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

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

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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GCic for OSX Copyright (C) 2009-2014, Gary L. Cutler, GPL                        Page: 8
```

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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```

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

```
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          .
```

```
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
                                                                         555     564     575
                                                                         587     612     616
STREAMIO         WS-256-Byte-TXT                  375 WORKING-STORAGE   510*    512*    522
STREAMIO         WS-8-Digit-NUM                   374 WORKING-STORAGE   496*    503     515*
                                                                         521
STREAMIO         WS-Access-Mode-CD                367 WORKING-STORAGE   528*    530*    532*
                                                                         538C
STREAMIO         WS-Arg-Length-NUM                368 WORKING-STORAGE   408*    413*    421C
                                                                         425     564*    567C
                                                                         571     575*    576
                                                                         579C    583     587*
                                                                         588     591C    596
                                                                         599     600     602
                                                                         604*    609C    635
                                                                         641*    642     646*
                                                                         647     652     655
STREAMIO         WS-Buffer-TXT                    369 WORKING-STORAGE   606*    611C
STREAMIO         WS-Delim-Buffer-TXT              370 WORKING-STORAGE   409*    414*    423C
STREAMIO         WS-Env-Temp-TXT                  371 WORKING-STORAGE   467*    469     471
                                                                         474*    500     518
STREAMIO         WS-Slash-CHR                     372 WORKING-STORAGE   470*    472*    475*
                                                                         501     519
STREAMIO         WS-Tally-NUM                     373 WORKING-STORAGE   595*    597*    598
                                                                         619*    621*    622
                                                                         625*    627*    629
                                                                         634*    636*    638
                                                                         639     640     643
                                                                         648     649*    652
```

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