GnuCOBOL Sample Programs

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This manual documents GnuCOBOL 3.0 rc2, 06Dec2018 build.

Table of Contents

1. FileStat-Msgs

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

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

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

Here's the FileStat-Msgs.cpy copybook:

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

2. COBDUMP

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

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

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

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

- Coding a GnuCOBOL subroutine

- Using "USAGE POINTER" data items

- Using the "ANY LENGTH" data item attribute

- Coding for an "OPTIONAL" subprogram argument

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

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

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

```
GNU COBOL 2.1 23NOV2013 Source Listing                                  2014/03/27
                        C:/Users/tda010/Documents/Programs/Samples/COBDUMP.cbl
Line    Statement                                                        Page: 1
======  ==========================================================================
     1        >>SOURCE FORMAT IS FIXED
     2         IDENTIFICATION DIVISION.
     3         PROGRAM-ID.   COBDUMP.
     4        *>***********************************************************
     5        *> This is an OpenCOBOL subroutine that will generate a      **
     6        *> formatted Hex/Char dump of a storage area.  To use this   **
     7        *> subroutine, simply CALL it as follows:                    **
     8        *>                                                           **
     9        *> CALL "COBDUMP" USING <data-item>                          **
    10        *>                    [ <length> ]                           **
    11        *>                                                           **
    12        *> If specified, the <length> argument specifies how many    **
    13        *> bytes of <data-item> are to be dumped.  If absent, all of **
    14        *> <data-item> will be dumped (i.e. LENGTH(<data-item>) will **
    15        *> be assumed for <length>).                                 **
    16        *>                                                           **
    17        *> >>> Note that the subroutine name MUST be specified in  <<< **
    18        *> >>> UPPERCASE                                         <<< **
    19        *>                                                           **
    20        *> The dump is generated to STDERR, so you may pipe it to a   **
    21        *> file when you execute your program using "2> file".        **
    22        *>                                                           **
    23        *> AUTHOR:      GARY L. CUTLER                               **
    24        *>                                                           **
    25        *> NOTE:        The author has a sentimental attachment to   **
    26        *>              this subroutine - it's been around since 1971 **
    27        *>              and it's been converted to and run on 10 dif- **
    28        *>              ferent operating system/compiler environments **
    29        *>                                                           **
    30        *> DATE-WRITTEN: October 14, 1971                            **
    31        *>                                                           **
    32        *>***********************************************************
    33        *>  DATE  CHANGE DESCRIPTION                                 **
    34        *> ====== ================================================= **
    35        *> GC1071 Initial coding - Univac Dept. of Defense COBOL '68  **
    36        *> 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)       **

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```

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

==

```
GNU COBOL 2.1 23NOV2013 Source Listing                                    2014/03/27
                              C:/Users/tda010/Documents/Programs/Samples/COBDUMP.cbl
Line    Statement                                                             Page: 3
======  ==============================================================================
    99         01  WS-Output-SUB                        PIC 9(2) COMP-5.
   100
   101         >>SOURCE FORMAT IS FREE
   102         01  WS-Output-Header-1-TXT.
   103            05 VALUE '<-Addr-> Byte <--------------- Hexadecimal ''----------------> <---
       - Char ---->' PIC X(80).
   104
   105         01  WS-Output-Header-2-TXT.
   106            05 VALUE '======== ==== ============================================ ======
       =========' PIC X(80).
   107         >>SOURCE FORMAT IS FIXED
   108
   109         LINKAGE SECTION.
   110         01  L-Buffer-TXT                          PIC X ANY LENGTH.
   111
   112         01  L-Buffer-Length-NUM                   USAGE BINARY-LONG.
   113
   114         PROCEDURE DIVISION USING L-Buffer-TXT,
   115                             OPTIONAL L-Buffer-Length-NUM.
   116         000-Main SECTION.
   117            IF NUMBER-OF-CALL-PARAMETERS = 1
   118                MOVE LENGTH(L-Buffer-TXT) TO WS-Buffer-Length-NUM
   119            ELSE
   120                MOVE L-Buffer-Length-NUM  TO WS-Buffer-Length-NUM
   121            END-IF
   122            MOVE SPACES TO WS-Output-Detail-TXT
   123            SET WS-Addr-PTR TO ADDRESS OF L-Buffer-TXT
   124            PERFORM 100-Generate-Address
   125            MOVE 0 TO WS-Output-SUB
   126            DISPLAY WS-Output-Header-1-TXT UPON SYSERR
   127            DISPLAY WS-Output-Header-2-TXT UPON SYSERR
   128            PERFORM VARYING WS-Buffer-SUB FROM 1 BY 1
   129                    UNTIL WS-Buffer-SUB > WS-Buffer-Length-NUM
   130                ADD 1 TO WS-Output-SUB
   131                IF WS-Output-SUB = 1
   132                    MOVE WS-Buffer-SUB TO WS-OD-Relative-Byte-NUM
   133                END-IF
   134                MOVE L-Buffer-TXT (WS-Buffer-SUB : 1)
   135                  TO WS-OD-ASCII-CHR (WS-Output-SUB)
   136                     WS-Buffer-Byte-CHR
   137                DIVIDE WS-Buffer-Byte-NUM BY 16
   138                    GIVING WS-Nibble-Left-SUB
   139                    REMAINDER WS-Nibble-Right-SUB
   140                ADD 1 TO WS-Nibble-Left-SUB
   141                       WS-Nibble-Right-SUB
   142                MOVE WS-Hex-Digit-CHR (WS-Nibble-Left-SUB)
   143                  TO WS-OD-Hex-1-CHR  (WS-Output-SUB)
   144                MOVE WS-Hex-Digit-CHR (WS-Nibble-Right-SUB)
   145                  TO WS-OD-Hex-2-CHR  (WS-Output-SUB)


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```

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

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

```
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```

3. Colors

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

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

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

The program source and cross-reference listing, produced using the 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/colors.cbl
Line    Statement                                                                Page: 1
======  =================================================================================
    1        >>SOURCE FREE
    2  IDENTIFICATION DIVISION.
    3  PROGRAM-ID. colors.
    4  DATA DIVISION.
    5  SCREEN SECTION.
    6  01 S-COLORTST-SCR BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 BLANK SCREEN.
    7  05 LINE 01.
    8  10 COL 1 VALUE ' LOWLIGHT  -------- HIGHLIGHT  LOWLIGHT  -------- HIGHLIGHT'.
    9  05 LINE + 1.
   10  10 COL 1 VALUE ' --------  --------  --------  --------  --------  --------'.
   11  05 LINE + 1.
   12  10 COL 1 VALUE ' --------  --------  --------   REVERSE    REVERSE    REVERSE'.
   13  05 LINE + 1.
   14  10 COL 1 VALUE ' 01234567  01234567  01234567  01234567  01234567  01234567'.
   15  05 LINE + 1.
   16  10 COL 1 VALUE '0         0         0         0         0         0        '.
   17  05 LINE + 1.
   18  10 COL 1 VALUE '1         1         1         1         1         1        '.
   19  05 LINE + 1.
   20  10 COL 1 VALUE '2         2         2         2         2         2        '.
   21  05 LINE + 1.
   22  10 COL 1 VALUE '3    1    3    2    3    3    3    4    3    5    3    6    '.
   23  05 LINE + 1.
   24  10 COL 1 VALUE '4         4         4         4         4         4        '.
   25  05 LINE + 1.
   26  10 COL 1 VALUE '5         5         5         5         5         5        '.
   27  05 LINE + 1.
   28  10 COL 1 VALUE '6         6         6         6         6         6        '.
   29  05 LINE + 1.
   30  10 COL 1 VALUE '7         7         7         7         7         7        '.
   31  05 LINE + 1.
   32  10 COL 1 VALUE ' LOWLIGHT  -------- HIGHLIGHT  LOWLIGHT  -------- HIGHLIGHT'.
   33  05 LINE + 1.
   34  10 COL 1 VALUE '    BLINK     BLINK     BLINK     BLINK     BLINK     BLINK'.
   35  05 LINE + 1.
   36  10 COL 1 VALUE ' --------  --------  --------   REVERSE    REVERSE    REVERSE'.
   37  05 LINE + 1.
   38  10 COL 1 VALUE ' 01234567  01234567  01234567  01234567  01234567  01234567'.
   39  05 LINE + 1.
   40  10 COL 1 VALUE '0         0         0         0         0         0        '.
   41  05 LINE + 1.
   42  10 COL 1 VALUE '1         1         1         1         1         1        '.
   43  05 LINE + 1.
   44  10 COL 1 VALUE '2         2         2         2         2         2        '.
   45  05 LINE + 1.
   46  10 COL 1 VALUE '3    7    3    8    3    9    3   10    3   11    3   12    '.
   47  05 LINE + 1.
   48  10 COL 1 VALUE '4         4         4         4         4         4        '.
   49  05 LINE + 1.

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```

```
GNU COBOL 2.1 23NOV2013 Source Listing                                 2014/03/27
                                C:/Users/tda010/Documents/Programs/Samples/colors.cbl
Line   Statement                                                          Page: 2
====== =========================================================================
    50 10 COL 1 VALUE '5       5       5       5       5       5       '.
    51 05 LINE + 1.
    52 10 COL 1 VALUE '6       6       6       6       6       6       '.
    53 05 LINE + 1.
    54 10 COL 1 VALUE '7       7       7       7       7       7       '.
    55 *> #1
    56 05 LINE 05.
    57 10 COL 2   BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 LOWLIGHT VALUE 'X'.
    58 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 LOWLIGHT VALUE 'X'.
    59 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 LOWLIGHT VALUE 'X'.
    60 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 LOWLIGHT VALUE 'X'.
    61 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 LOWLIGHT VALUE 'X'.
    62 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 LOWLIGHT VALUE 'X'.
    63 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 LOWLIGHT VALUE 'X'.
    64 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 LOWLIGHT VALUE 'X'.
    65 05 LINE + 1.
    66 10 COL 2   BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 LOWLIGHT VALUE 'X'.
    67 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 LOWLIGHT VALUE 'X'.
    68 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 LOWLIGHT VALUE 'X'.
    69 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 LOWLIGHT VALUE 'X'.
    70 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 LOWLIGHT VALUE 'X'.
    71 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 LOWLIGHT VALUE 'X'.
    72 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 LOWLIGHT VALUE 'X'.
    73 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 LOWLIGHT VALUE 'X'.
    74 05 LINE + 1.
    75 10 COL 2   BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 LOWLIGHT VALUE 'X'.
    76 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 LOWLIGHT VALUE 'X'.
    77 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 LOWLIGHT VALUE 'X'.
    78 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 LOWLIGHT VALUE 'X'.
    79 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 LOWLIGHT VALUE 'X'.
    80 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 LOWLIGHT VALUE 'X'.
    81 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 LOWLIGHT VALUE 'X'.
    82 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 LOWLIGHT VALUE 'X'.
    83 05 LINE + 1.
    84 10 COL 2   BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 LOWLIGHT VALUE 'X'.
    85 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 LOWLIGHT VALUE 'X'.
    86 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 LOWLIGHT VALUE 'X'.
    87 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 LOWLIGHT VALUE 'X'.
    88 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 LOWLIGHT VALUE 'X'.
    89 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 LOWLIGHT VALUE 'X'.
    90 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 LOWLIGHT VALUE 'X'.
    91 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 LOWLIGHT VALUE 'X'.
    92 05 LINE + 1.
    93 10 COL 2   BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 LOWLIGHT VALUE 'X'.
    94 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 LOWLIGHT VALUE 'X'.
    95 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 LOWLIGHT VALUE 'X'.
    96 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 LOWLIGHT VALUE 'X'.
    97 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 LOWLIGHT VALUE 'X'.
    98 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 LOWLIGHT VALUE 'X'.

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```

```
====== ================================================================================
   99 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 LOWLIGHT VALUE 'X'.
  100 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 LOWLIGHT VALUE 'X'.
  101 05 LINE + 1.
  102 10 COL 2  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 LOWLIGHT VALUE 'X'.
  103 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 LOWLIGHT VALUE 'X'.
  104 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 LOWLIGHT VALUE 'X'.
  105 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 LOWLIGHT VALUE 'X'.
  106 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 LOWLIGHT VALUE 'X'.
  107 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 LOWLIGHT VALUE 'X'.
  108 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 LOWLIGHT VALUE 'X'.
  109 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 LOWLIGHT VALUE 'X'.
  110 05 LINE + 1.
  111 10 COL 2  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 LOWLIGHT VALUE 'X'.
  112 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 LOWLIGHT VALUE 'X'.
  113 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 LOWLIGHT VALUE 'X'.
  114 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 LOWLIGHT VALUE 'X'.
  115 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 LOWLIGHT VALUE 'X'.
  116 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 LOWLIGHT VALUE 'X'.
  117 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 LOWLIGHT VALUE 'X'.
  118 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 LOWLIGHT VALUE 'X'.
  119 05 LINE + 1.
  120 10 COL 2  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 LOWLIGHT VALUE 'X'.
  121 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 LOWLIGHT VALUE 'X'.
  122 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 LOWLIGHT VALUE 'X'.
  123 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 LOWLIGHT VALUE 'X'.
  124 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 LOWLIGHT VALUE 'X'.
  125 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 LOWLIGHT VALUE 'X'.
  126 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 LOWLIGHT VALUE 'X'.
  127 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 LOWLIGHT VALUE 'X'.
  128 *> #2
  129 05 LINE 05.
  130 10 COL 12  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 VALUE 'X'.
  131 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 VALUE 'X'.
  132 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 VALUE 'X'.
  133 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 VALUE 'X'.
  134 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 VALUE 'X'.
  135 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 VALUE 'X'.
  136 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 VALUE 'X'.
  137 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 VALUE 'X'.
  138 05 LINE + 1.
  139 10 COL 12  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 VALUE 'X'.
  140 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 VALUE 'X'.
  141 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 VALUE 'X'.
  142 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 VALUE 'X'.
  143 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 VALUE 'X'.
  144 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 VALUE 'X'.
  145 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 VALUE 'X'.
  146 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 VALUE 'X'.
  147 05 LINE + 1.
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Line   Statement   Page: 4
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   148 10 COL 12 BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 VALUE 'X'.
   149 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 VALUE 'X'.
   150 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 VALUE 'X'.
   151 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 VALUE 'X'.
   152 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 VALUE 'X'.
   153 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 VALUE 'X'.
   154 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 VALUE 'X'.
   155 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 VALUE 'X'.
   156 05 LINE + 1.
   157 10 COL 12 BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 VALUE 'X'.
   158 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 VALUE 'X'.
   159 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 VALUE 'X'.
   160 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 VALUE 'X'.
   161 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 VALUE 'X'.
   162 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 VALUE 'X'.
   163 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 VALUE 'X'.
   164 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 VALUE 'X'.
   165 05 LINE + 1.
   166 10 COL 12 BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 VALUE 'X'.
   167 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 VALUE 'X'.
   168 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 VALUE 'X'.
   169 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 VALUE 'X'.
   170 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 VALUE 'X'.
   171 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 VALUE 'X'.
   172 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 VALUE 'X'.
   173 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 VALUE 'X'.
   174 05 LINE + 1.
   175 10 COL 12 BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 VALUE 'X'.
   176 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 VALUE 'X'.
   177 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 VALUE 'X'.
   178 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 VALUE 'X'.
   179 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 VALUE 'X'.
   180 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 VALUE 'X'.
   181 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 VALUE 'X'.
   182 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 VALUE 'X'.
   183 05 LINE + 1.
   184 10 COL 12 BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 VALUE 'X'.
   185 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 VALUE 'X'.
   186 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 VALUE 'X'.
   187 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 VALUE 'X'.
   188 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 VALUE 'X'.
   189 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 VALUE 'X'.
   190 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 VALUE 'X'.
   191 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 VALUE 'X'.
   192 05 LINE + 1.
   193 10 COL 12 BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 VALUE 'X'.
   194 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 VALUE 'X'.
   195 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 VALUE 'X'.
   196 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 VALUE 'X'.

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Line   Statement   Page: 5
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   197 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 VALUE ’X’.
   198 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 VALUE ’X’.
   199 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 VALUE ’X’.
   200 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 VALUE ’X’.
   201 *> #3
   202 05 LINE 05.
   203 10 COL 22 BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 HIGHLIGHT VALUE ’X’.
   204 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 HIGHLIGHT VALUE ’X’.
   205 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 HIGHLIGHT VALUE ’X’.
   206 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 HIGHLIGHT VALUE ’X’.
   207 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 HIGHLIGHT VALUE ’X’.
   208 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 HIGHLIGHT VALUE ’X’.
   209 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 HIGHLIGHT VALUE ’X’.
   210 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 HIGHLIGHT VALUE ’X’.
   211 05 LINE + 1.
   212 10 COL 22 BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 HIGHLIGHT VALUE ’X’.
   213 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 HIGHLIGHT VALUE ’X’.
   214 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 HIGHLIGHT VALUE ’X’.
   215 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 HIGHLIGHT VALUE ’X’.
   216 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 HIGHLIGHT VALUE ’X’.
   217 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 HIGHLIGHT VALUE ’X’.
   218 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 HIGHLIGHT VALUE ’X’.
   219 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 HIGHLIGHT VALUE ’X’.
   220 05 LINE + 1.
   221 10 COL 22 BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 HIGHLIGHT VALUE ’X’.
   222 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 HIGHLIGHT VALUE ’X’.
   223 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 HIGHLIGHT VALUE ’X’.
   224 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 HIGHLIGHT VALUE ’X’.
   225 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 HIGHLIGHT VALUE ’X’.
   226 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 HIGHLIGHT VALUE ’X’.
   227 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 HIGHLIGHT VALUE ’X’.
   228 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 HIGHLIGHT VALUE ’X’.
   229 05 LINE + 1.
   230 10 COL 22 BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 HIGHLIGHT VALUE ’X’.
   231 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 HIGHLIGHT VALUE ’X’.
   232 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 HIGHLIGHT VALUE ’X’.
   233 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 HIGHLIGHT VALUE ’X’.
   234 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 HIGHLIGHT VALUE ’X’.
   235 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 HIGHLIGHT VALUE ’X’.
   236 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 HIGHLIGHT VALUE ’X’.
   237 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 HIGHLIGHT VALUE ’X’.
   238 05 LINE + 1.
   239 10 COL 22 BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 HIGHLIGHT VALUE ’X’.
   240 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 HIGHLIGHT VALUE ’X’.
   241 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 HIGHLIGHT VALUE ’X’.
   242 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 HIGHLIGHT VALUE ’X’.
   243 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 HIGHLIGHT VALUE ’X’.
   244 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 HIGHLIGHT VALUE ’X’.
   245 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 HIGHLIGHT VALUE ’X’.

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GNU COBOL 2.1 23NOV2013 Source Listing                                  2014/03/27
                                 C:/Users/tda010/Documents/Programs/Samples/colors.cbl
Line   Statement                                                          Page: 6
====== ==========================================================================
   246 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
   247 05 LINE + 1.
   248 10 COL 22  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
   249 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
   250 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
   251 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
   252 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
   253 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
   254 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
   255 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
   256 05 LINE + 1.
   257 10 COL 22  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
   258 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
   259 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
   260 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
   261 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
   262 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
   263 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
   264 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
   265 05 LINE + 1.
   266 10 COL 22  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 HIGHLIGHT VALUE 'X'.
   267 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 HIGHLIGHT VALUE 'X'.
   268 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 HIGHLIGHT VALUE 'X'.
   269 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 HIGHLIGHT VALUE 'X'.
   270 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 HIGHLIGHT VALUE 'X'.
   271 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 HIGHLIGHT VALUE 'X'.
   272 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 HIGHLIGHT VALUE 'X'.
   273 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 HIGHLIGHT VALUE 'X'.
   274 *> #4
   275 05 LINE 05.
   276 10 COL 32  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   277 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   278 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   279 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   280 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   281 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   282 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   283 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   284 05 LINE + 1.
   285 10 COL 32  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   286 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   287 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   288 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   289 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   290 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   291 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   292 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   293 05 LINE + 1.
   294 10 COL 32  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
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====== ===
   295 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   296 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   297 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   298 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   299 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   300 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   301 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   302 05 LINE + 1.
   303 10 COL 32 BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   304 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   305 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   306 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   307 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   308 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   309 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   310 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   311 05 LINE + 1.
   312 10 COL 32 BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   313 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   314 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   315 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   316 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   317 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   318 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   319 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   320 05 LINE + 1.
   321 10 COL 32 BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   322 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   323 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   324 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   325 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   326 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   327 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   328 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   329 05 LINE + 1.
   330 10 COL 32 BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   331 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   332 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   333 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   334 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   335 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   336 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   337 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   338 05 LINE + 1.
   339 10 COL 32 BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   340 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   341 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   342 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   343 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 LOWLIGHT REVERSE-VIDEO VALUE 'X'.

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GNU COBOL 2.1 23NOV2013 Source Listing                                   2014/03/27
                                   C:/Users/tda010/Documents/Programs/Samples/colors.cbl
Line    Statement                                                                Page: 8
======  ==============================================================================
   344 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   345 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   346 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 LOWLIGHT REVERSE-VIDEO VALUE 'X'.
   347 *> #5
   348 05 LINE 05.
   349 10 COL 42  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
   350 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
   351 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
   352 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
   353 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
   354 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
   355 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
   356 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
   357 05 LINE + 1.
   358 10 COL 42  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
   359 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
   360 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
   361 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
   362 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
   363 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
   364 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
   365 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
   366 05 LINE + 1.
   367 10 COL 42  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
   368 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
   369 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
   370 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
   371 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
   372 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
   373 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
   374 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
   375 05 LINE + 1.
   376 10 COL 42  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
   377 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
   378 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
   379 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
   380 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
   381 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
   382 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
   383 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
   384 05 LINE + 1.
   385 10 COL 42  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
   386 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
   387 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
   388 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
   389 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
   390 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
   391 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
   392 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.

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Line   Statement   Page: 9
====== ===
   393 05 LINE + 1.
   394 10 COL 42 BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
   395 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
   396 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
   397 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
   398 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
   399 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
   400 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
   401 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
   402 05 LINE + 1.
   403 10 COL 42 BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
   404 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
   405 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
   406 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
   407 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
   408 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
   409 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
   410 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
   411 05 LINE + 1.
   412 10 COL 42 BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 REVERSE-VIDEO VALUE 'X'.
   413 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 REVERSE-VIDEO VALUE 'X'.
   414 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 REVERSE-VIDEO VALUE 'X'.
   415 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 REVERSE-VIDEO VALUE 'X'.
   416 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 REVERSE-VIDEO VALUE 'X'.
   417 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 REVERSE-VIDEO VALUE 'X'.
   418 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 REVERSE-VIDEO VALUE 'X'.
   419 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 REVERSE-VIDEO VALUE 'X'.
   420 *> #6
   421 05 LINE 05.
   422 10 COL 52 BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   423 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   424 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   425 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   426 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   427 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   428 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   429 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   430 05 LINE + 1.
   431 10 COL 52 BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   432 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   433 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   434 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   435 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   436 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   437 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   438 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   439 05 LINE + 1.
   440 10 COL 52 BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   441 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.

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   442 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   443 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   444 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   445 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   446 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   447 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   448 05 LINE + 1.
   449 10 COL 52 BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   450 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   451 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   452 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   453 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   454 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   455 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   456 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   457 05 LINE + 1.
   458 10 COL 52 BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   459 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   460 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   461 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   462 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   463 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   464 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   465 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   466 05 LINE + 1.
   467 10 COL 52 BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   468 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   469 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   470 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   471 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   472 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   473 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   474 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   475 05 LINE + 1.
   476 10 COL 52 BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   477 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   478 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   479 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   480 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   481 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   482 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   483 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   484 05 LINE + 1.
   485 10 COL 52 BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   486 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   487 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   488 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   489 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   490 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.

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   491 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   492 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 HIGHLIGHT REVERSE-VIDEO VALUE 'X'.
   493 *> #7
   494 05 LINE 17.
   495 10 COL 02  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
   496 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
   497 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
   498 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
   499 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
   500 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
   501 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
   502 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
   503 05 LINE + 1.
   504 10 COL 02  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
   505 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
   506 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
   507 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
   508 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
   509 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
   510 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
   511 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
   512 05 LINE + 1.
   513 10 COL 02  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
   514 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
   515 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
   516 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
   517 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
   518 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
   519 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
   520 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
   521 05 LINE + 1.
   522 10 COL 02  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
   523 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
   524 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
   525 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
   526 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
   527 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
   528 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
   529 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
   530 05 LINE + 1.
   531 10 COL 02  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
   532 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
   533 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
   534 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
   535 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
   536 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
   537 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
   538 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
   539 05 LINE + 1.
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   540 10 COL 02 BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
   541 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
   542 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
   543 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
   544 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
   545 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
   546 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
   547 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
   548 05 LINE + 1.
   549 10 COL 02 BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
   550 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
   551 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
   552 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
   553 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
   554 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
   555 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
   556 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
   557 05 LINE + 1.
   558 10 COL 02 BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 LOWLIGHT BLINK VALUE 'X'.
   559 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 LOWLIGHT BLINK VALUE 'X'.
   560 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 LOWLIGHT BLINK VALUE 'X'.
   561 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 LOWLIGHT BLINK VALUE 'X'.
   562 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 LOWLIGHT BLINK VALUE 'X'.
   563 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 LOWLIGHT BLINK VALUE 'X'.
   564 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 LOWLIGHT BLINK VALUE 'X'.
   565 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 LOWLIGHT BLINK VALUE 'X'.
   566 *> #8
   567 05 LINE 17.
   568 10 COL 12 BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
   569 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
   570 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
   571 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
   572 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
   573 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
   574 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
   575 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
   576 05 LINE + 1.
   577 10 COL 12 BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
   578 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
   579 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
   580 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
   581 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
   582 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
   583 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
   584 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
   585 05 LINE + 1.
   586 10 COL 12 BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
   587 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
   588 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 BLINK VALUE 'X'.

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   589 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
   590 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
   591 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
   592 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
   593 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
   594 05 LINE + 1.
   595 10 COL 12  BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
   596 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
   597 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
   598 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
   599 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
   600 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
   601 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
   602 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
   603 05 LINE + 1.
   604 10 COL 12  BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
   605 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
   606 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
   607 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
   608 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
   609 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
   610 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
   611 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
   612 05 LINE + 1.
   613 10 COL 12  BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
   614 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
   615 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
   616 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
   617 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
   618 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
   619 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
   620 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
   621 05 LINE + 1.
   622 10 COL 12  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
   623 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
   624 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
   625 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
   626 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
   627 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
   628 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
   629 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
   630 05 LINE + 1.
   631 10 COL 12  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 BLINK VALUE 'X'.
   632 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 BLINK VALUE 'X'.
   633 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 BLINK VALUE 'X'.
   634 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 BLINK VALUE 'X'.
   635 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 BLINK VALUE 'X'.
   636 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 BLINK VALUE 'X'.
   637 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 BLINK VALUE 'X'.
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   638 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 BLINK VALUE 'X'.
   639 *> #9
   640 05 LINE 17.
   641 10 COL 22 BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 HIGHLIGHT BLINK VALUE 'X'.
   642 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 HIGHLIGHT BLINK VALUE 'X'.
   643 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 HIGHLIGHT BLINK VALUE 'X'.
   644 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 HIGHLIGHT BLINK VALUE 'X'.
   645 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 HIGHLIGHT BLINK VALUE 'X'.
   646 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 HIGHLIGHT BLINK VALUE 'X'.
   647 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 HIGHLIGHT BLINK VALUE 'X'.
   648 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE 'X'.
   649 05 LINE + 1.
   650 10 COL 22 BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 HIGHLIGHT BLINK VALUE 'X'.
   651 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 HIGHLIGHT BLINK VALUE 'X'.
   652 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 HIGHLIGHT BLINK VALUE 'X'.
   653 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 HIGHLIGHT BLINK VALUE 'X'.
   654 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 HIGHLIGHT BLINK VALUE 'X'.
   655 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 HIGHLIGHT BLINK VALUE 'X'.
   656 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 HIGHLIGHT BLINK VALUE 'X'.
   657 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE 'X'.
   658 05 LINE + 1.
   659 10 COL 22 BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 HIGHLIGHT BLINK VALUE 'X'.
   660 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 HIGHLIGHT BLINK VALUE 'X'.
   661 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 HIGHLIGHT BLINK VALUE 'X'.
   662 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 HIGHLIGHT BLINK VALUE 'X'.
   663 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 HIGHLIGHT BLINK VALUE 'X'.
   664 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 HIGHLIGHT BLINK VALUE 'X'.
   665 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 HIGHLIGHT BLINK VALUE 'X'.
   666 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE 'X'.
   667 05 LINE + 1.
   668 10 COL 22 BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 HIGHLIGHT BLINK VALUE 'X'.
   669 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 HIGHLIGHT BLINK VALUE 'X'.
   670 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 HIGHLIGHT BLINK VALUE 'X'.
   671 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 HIGHLIGHT BLINK VALUE 'X'.
   672 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 HIGHLIGHT BLINK VALUE 'X'.
   673 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 HIGHLIGHT BLINK VALUE 'X'.
   674 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 HIGHLIGHT BLINK VALUE 'X'.
   675 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE 'X'.
   676 05 LINE + 1.
   677 10 COL 22 BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 HIGHLIGHT BLINK VALUE 'X'.
   678 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 HIGHLIGHT BLINK VALUE 'X'.
   679 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 HIGHLIGHT BLINK VALUE 'X'.
   680 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 HIGHLIGHT BLINK VALUE 'X'.
   681 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 HIGHLIGHT BLINK VALUE 'X'.
   682 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 HIGHLIGHT BLINK VALUE 'X'.
   683 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 HIGHLIGHT BLINK VALUE 'X'.
   684 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE 'X'.
   685 05 LINE + 1.
   686 10 COL 22 BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 HIGHLIGHT BLINK VALUE 'X'.

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Line   Statement   Page: 15
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   687 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 HIGHLIGHT BLINK VALUE ’X’.
   688 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 HIGHLIGHT BLINK VALUE ’X’.
   689 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 HIGHLIGHT BLINK VALUE ’X’.
   690 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 HIGHLIGHT BLINK VALUE ’X’.
   691 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 HIGHLIGHT BLINK VALUE ’X’.
   692 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 HIGHLIGHT BLINK VALUE ’X’.
   693 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE ’X’.
   694 05 LINE + 1.
   695 10 COL 22 BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 HIGHLIGHT BLINK VALUE ’X’.
   696 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 HIGHLIGHT BLINK VALUE ’X’.
   697 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 HIGHLIGHT BLINK VALUE ’X’.
   698 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 HIGHLIGHT BLINK VALUE ’X’.
   699 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 HIGHLIGHT BLINK VALUE ’X’.
   700 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 HIGHLIGHT BLINK VALUE ’X’.
   701 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 HIGHLIGHT BLINK VALUE ’X’.
   702 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE ’X’.
   703 05 LINE + 1.
   704 10 COL 22 BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 HIGHLIGHT BLINK VALUE ’X’.
   705 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 HIGHLIGHT BLINK VALUE ’X’.
   706 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 HIGHLIGHT BLINK VALUE ’X’.
   707 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 HIGHLIGHT BLINK VALUE ’X’.
   708 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 HIGHLIGHT BLINK VALUE ’X’.
   709 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 HIGHLIGHT BLINK VALUE ’X’.
   710 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 HIGHLIGHT BLINK VALUE ’X’.
   711 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 HIGHLIGHT BLINK VALUE ’X’.
   712 *> #10
   713 05 LINE 17.
   714 10 COL 32 BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   715 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   716 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   717 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   718 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   719 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   720 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   721 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   722 05 LINE + 1.
   723 10 COL 32 BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   724 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   725 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   726 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   727 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   728 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   729 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   730 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   731 05 LINE + 1.
   732 10 COL 32 BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   733 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   734 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   735 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE ’X’.

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GCic for Windows/MinGW Copyright (C) 2009-2014, Gary L. Cutler, GPL   Page: 15

Line   Statement   Page: 16
====== ==
   736 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   737 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   738 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   739 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   740 05 LINE + 1.
   741 10 COL 32 BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   742 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   743 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   744 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   745 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   746 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   747 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   748 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   749 05 LINE + 1.
   750 10 COL 32 BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   751 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   752 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   753 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   754 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   755 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   756 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   757 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   758 05 LINE + 1.
   759 10 COL 32 BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   760 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   761 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   762 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   763 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   764 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   765 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   766 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   767 05 LINE + 1.
   768 10 COL 32 BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   769 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   770 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   771 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   772 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   773 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   774 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   775 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   776 05 LINE + 1.
   777 10 COL 32 BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   778 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   779 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   780 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   781 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   782 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   783 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   784 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 LOWLIGHT BLINK REVERSE-VIDEO VALUE 'X'.

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Line   Statement   Page: 17
====== ==
   785 *> #11
   786 05 LINE 17.
   787 10 COL 42 BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE 'X'.
   788 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE 'X'.
   789 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE 'X'.
   790 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE 'X'.
   791 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE 'X'.
   792 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE 'X'.
   793 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE 'X'.
   794 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE 'X'.
   795 05 LINE + 1.
   796 10 COL 42 BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE 'X'.
   797 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE 'X'.
   798 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE 'X'.
   799 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE 'X'.
   800 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE 'X'.
   801 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE 'X'.
   802 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE 'X'.
   803 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE 'X'.
   804 05 LINE + 1.
   805 10 COL 42 BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE 'X'.
   806 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE 'X'.
   807 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE 'X'.
   808 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE 'X'.
   809 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE 'X'.
   810 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE 'X'.
   811 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE 'X'.
   812 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE 'X'.
   813 05 LINE + 1.
   814 10 COL 42 BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE 'X'.
   815 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE 'X'.
   816 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE 'X'.
   817 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE 'X'.
   818 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE 'X'.
   819 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE 'X'.
   820 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE 'X'.
   821 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE 'X'.
   822 05 LINE + 1.
   823 10 COL 42 BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE 'X'.
   824 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE 'X'.
   825 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE 'X'.
   826 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE 'X'.
   827 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE 'X'.
   828 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE 'X'.
   829 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE 'X'.
   830 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE 'X'.
   831 05 LINE + 1.
   832 10 COL 42 BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE 'X'.
   833 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE 'X'.

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```
GNU COBOL 2.1 23NOV2013 Source Listing                                   2014/03/27
                                   C:/Users/tda010/Documents/Programs/Samples/colors.cbl
Line    Statement                                                             Page: 18
======  ================================================================================
   834 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE ’X’.
   835 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE ’X’.
   836 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE ’X’.
   837 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE ’X’.
   838 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE ’X’.
   839 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE ’X’.
   840 05 LINE + 1.
   841 10 COL 42  BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE ’X’.
   842 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE ’X’.
   843 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE ’X’.
   844 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE ’X’.
   845 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE ’X’.
   846 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE ’X’.
   847 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE ’X’.
   848 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE ’X’.
   849 05 LINE + 1.
   850 10 COL 42  BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 BLINK REVERSE-VIDEO VALUE ’X’.
   851 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 BLINK REVERSE-VIDEO VALUE ’X’.
   852 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 BLINK REVERSE-VIDEO VALUE ’X’.
   853 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 BLINK REVERSE-VIDEO VALUE ’X’.
   854 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 BLINK REVERSE-VIDEO VALUE ’X’.
   855 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 BLINK REVERSE-VIDEO VALUE ’X’.
   856 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 BLINK REVERSE-VIDEO VALUE ’X’.
   857 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 BLINK REVERSE-VIDEO VALUE ’X’.
   858 *> #12
   859 05 LINE 17.
   860 10 COL 52  BACKGROUND-COLOR 0 FOREGROUND-COLOR 0 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   861 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 1 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   862 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 2 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   863 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 3 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   864 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   865 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   866 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   867 10 COL + 1 BACKGROUND-COLOR 0 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   868 05 LINE + 1.
   869 10 COL 52  BACKGROUND-COLOR 1 FOREGROUND-COLOR 0 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   870 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 1 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   871 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 2 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   872 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 3 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   873 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   874 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   875 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   876 10 COL + 1 BACKGROUND-COLOR 1 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   877 05 LINE + 1.
   878 10 COL 52  BACKGROUND-COLOR 2 FOREGROUND-COLOR 0 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   879 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 1 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   880 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 2 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   881 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 3 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.
   882 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE ’X’.

=========================================================================================
GCic for Windows/MinGW Copyright (C) 2009-2014, Gary L. Cutler, GPL            Page: 18
```

Line   Statement   Page: 19
====== ==
   883 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   884 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   885 10 COL + 1 BACKGROUND-COLOR 2 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   886 05 LINE + 1.
   887 10 COL 52 BACKGROUND-COLOR 3 FOREGROUND-COLOR 0 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   888 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 1 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   889 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 2 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   890 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 3 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   891 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   892 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   893 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   894 10 COL + 1 BACKGROUND-COLOR 3 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   895 05 LINE + 1.
   896 10 COL 52 BACKGROUND-COLOR 4 FOREGROUND-COLOR 0 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   897 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 1 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   898 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 2 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   899 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 3 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   900 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   901 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   902 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   903 10 COL + 1 BACKGROUND-COLOR 4 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   904 05 LINE + 1.
   905 10 COL 52 BACKGROUND-COLOR 5 FOREGROUND-COLOR 0 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   906 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 1 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   907 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 2 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   908 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 3 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   909 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   910 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   911 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   912 10 COL + 1 BACKGROUND-COLOR 5 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   913 05 LINE + 1.
   914 10 COL 52 BACKGROUND-COLOR 6 FOREGROUND-COLOR 0 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   915 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 1 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   916 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 2 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   917 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 3 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   918 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   919 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   920 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   921 10 COL + 1 BACKGROUND-COLOR 6 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   922 05 LINE + 1.
   923 10 COL 52 BACKGROUND-COLOR 7 FOREGROUND-COLOR 0 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   924 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 1 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   925 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 2 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   926 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 3 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   927 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 4 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   928 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 5 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   929 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 6 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   930 10 COL + 1 BACKGROUND-COLOR 7 FOREGROUND-COLOR 7 HIGHLIGHT BLINK REVERSE-VIDEO VALUE 'X'.
   931 PROCEDURE DIVISION.

==

Line   Statement   Page: 20
====== ===
    932 000-Main SECTION.
    933 DISPLAY S-COLORTST-SCR
    934 STOP RUN
    935 .

==

```
GNU COBOL 2.1 23NOV2013 Cross-Reference Listing                          2014/03/27
                                    C:/Users/tda010/Documents/Programs/Samples/colors.cbl
PROGRAM-ID         Identifier/Register/Function   Defn   Where Defined   References        Page: 21
==============     ==============================  ====== =============== ========================
colors             000-Main                        932 PROCEDURE
colors             S-COLORTST-SCR                    6 SCREEN              933
```

```
==================================================================================================
GCic for Windows/MinGW Copyright (C) 2009-2014, Gary L. Cutler, GPL                    Page: 21
```

4. DAY-FROM-DATE

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

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

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

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

- Coding a GnuCOBOL user-defined function

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

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

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

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

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

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

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

==
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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, produced using this program, begins on the next page.

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

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

====== ===

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

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

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

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

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

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

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


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

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


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```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                        /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                            Page: 9
====== ========================================================================================
   286 GC0712 >>ELIF OS = 'UNIX'
   287 GC0712 01  WS-OS-Dir-CHR        VALUE '/'      PIC X(1).
   288 GC0712 78  WS-OS-Exe-Ext-CONST  VALUE ' '.
   289 GC0712 78  WS-OS-Lib-Ext-CONST  VALUE '.so'.
   290 GC0712 78  WS-OS-Lib-Type-CONST VALUE 'SO)'.
   291 GC0712 01  WS-OS-Type-CD        VALUE 3        PIC 9(1).
   292 GC0712 >>ELIF OS = 'WINDOWS'
   293 GC0712 01  WS-OS-Dir-CHR        VALUE '\'      PIC X(1).
   294 GC0712 78  WS-OS-Exe-Ext-CONST  VALUE '.exe'.
   295 GC0712 78  WS-OS-Lib-Ext-CONST  VALUE '.dll'.
   296 GC0712 78  WS-OS-Lib-Type-CONST VALUE 'DLL)'.
   297 GC0712 01  WS-OS-Type-CD        VALUE 1        PIC 9(1).
   298 GC0712 >>END-IF
   299 GC0909     88 WS-OS-Windows-BOOL VALUE 1, 5.
   300 GC0909     88 WS-OS-Cygwin-BOOL  VALUE 2.
   301 GC0712     88 WS-OS-UNIX-BOOL    VALUE 3, 4.
   302 GC0712     88 WS-OS-OSX-BOOL     VALUE 4.
   303
   304        01  WS-OS-Type-FILLER-TXT.
   305            05 VALUE 'Windows'              PIC X(14).
   306            05 VALUE 'Windows/Cygwin'       PIC X(14).
   307            05 VALUE 'UNIX/Linux'           PIC X(14).
   308            05 VALUE 'OSX'                  PIC X(14).
   309            05 VALUE 'Windows/MinGW'        PIC X(14).
   310        01  WS-OS-Types-TXT REDEFINES WS-OS-Type-FILLER-TXT.
   311            05 WS-OS-Type-TXT               OCCURS 5 TIMES
   312                                            PIC X(14).
   313
   314        01  WS-Output-Msg-TXT              PIC X(80).
   315
   316        01  WS-Path-Delimiter-CHR          PIC X(1).
   317
   318        01  WS-Prog-Extension-TXT          PIC X(256).
   319
   320        01  WS-Prog-Folder-TXT             PIC X(256).
   321
   322 GC0712 01  WS-Prog-File-Name-TXT.
   323 GC0712     05 WS-PFN-CHR                   OCCURS 256 TIMES
   324 GC0712                                     PIC X(1).
   325
   326 GC0712 01  WS-Pgm-Nm-TXT                  PIC X(31).
   327
   328        01  WS-Runtime-Switches-TXT.
   329            05 WS-RS-Compile-OK-CHR         PIC X(1).
   330               88 WS-RS-Compile-OK-BOOL     VALUE 'Y'.
   331 GC0909        88 WS-RS-Compile-OK-Warn-BOOL VALUE 'W'.
   332               88 WS-RS-Compile-Failed-BOOL VALUE 'N'.
   333 GC0609     05 WS-RS-Complete-CHR           PIC X(1).
   334 GC0609        88 WS-RS-Complete-BOOL       VALUE 'Y'.
   335 GC0609        88 WS-RS-Not-Complete-BOOL   VALUE 'N'.
   336 GC0712     05 WS-RS-Quote-CHR              PIC X(1).
   337 GC0712        88 WS-RS-Double-Quote-Used-BOOL  VALUE 'Y' FALSE 'N'.
   338 GC0809     05 WS-RS-IDENT-DIV-CHR          PIC X(1).
====== ========================================================================================
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```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                      2017/12/24
                                                /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                           Page: 10
======  ======================================================================================
   339 GC0809          88 WS-RS-1st-Prog-Complete-BOOL      VALUE 'Y'.
   340 GC0809          88 WS-RS-More-To-1st-Prog-BOOL       VALUE 'N'.
   341             05 WS-RS-No-Switch-Chgs-CHR              PIC X(1).
   342                88 WS-RS-No-Switch-Changes-BOOL       VALUE 'Y'.
   343                88 WS-RS-Switch-Changes-BOOL          VALUE 'N'.
   344 GC0709       05 WS-RS-Output-File-Busy-CHR           PIC X(1).
   345 GC0709          88 WS-RS-Output-File-Busy-BOOL       VALUE 'Y'.
   346 GC0709          88 WS-RS-Output-File-Avail-BOOL      VALUE 'N'.
   347 GC0809       05 WS-RS-Source-Record-Type-CHR         PIC X(1).
   348 GC0809          88 WS-RS-Source-Rec-Linkage-BOOL     VALUE 'L'.
   349 GC0809          88 WS-RS-Source-Rec-Ident-BOOL       VALUE 'I'.
   350 GC0712          88 WS-RS-Source-Rec-Ignored-BOOL     VALUE ' '.
   351             05 WS-RS-Switch-Error-CHR                PIC X(1).
   352                88 WS-RS-Switch-Is-Bad-BOOL           VALUE 'Y'.
   353                88 WS-RS-Switch-Is-Good-BOOL          VALUE 'N'.
   354
   355       01  WS-Tally-QTY                               USAGE BINARY-LONG.
```

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

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

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

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

```
====== =====================================================================================
   409        *> simply by setting their 'terminal' application's font to "Lucida Console".
   410        *>
   411        >>IF LINEDRAW IS EQUAL TO 0
   412        78 LD-UL-Corner                 VALUE ' '.
   413        78 LD-LL-Corner                 VALUE ' '.
   414        78 LD-UR-Corner                 VALUE ' '.
   415        78 LD-LR-Corner                 VALUE ' '.
   416        78 LD-Upper-T                   VALUE ' '.
   417        78 LD-Lower-T                   VALUE ' '.
   418        78 LD-Horiz-Line               VALUE ' '.
   419        78 LD-Vert-Line                VALUE ' '.
   420        >>ELIF LINEDRAW IS EQUAL TO 1
   421        78 LD-UL-Corner                 VALUE X'DA'.
   422        78 LD-LL-Corner                 VALUE X'C0'.
   423        78 LD-UR-Corner                 VALUE X'BF'.
   424        78 LD-LR-Corner                 VALUE X'D9'.
   425        78 LD-Upper-T                   VALUE X'C2'.
   426        78 LD-Lower-T                   VALUE X'C1'.
   427        78 LD-Horiz-Line               VALUE X'C4'.
   428        78 LD-Vert-Line                VALUE X'B3'.
   429        >>ELSE
   430        78 LD-UL-Corner                 VALUE '+'.
   431        78 LD-LL-Corner                 VALUE '+'.
   432        78 LD-UR-Corner                 VALUE '+'.
   433        78 LD-LR-Corner                 VALUE '+'.
   434        78 LD-Upper-T                   VALUE '+'.
   435        78 LD-Lower-T                   VALUE '+'.
   436        78 LD-Horiz-Line               VALUE '-'.
   437        78 LD-Vert-Line                VALUE '|'.
   438        >>END-IF
   439
   440        01 S-Blank-SCR LINE 1 COLUMN 1 BLANK SCREEN.
   441
   442        01 S-Switches-SCR BACKGROUND-COLOR COB-COLOR-BLACK
   443                          FOREGROUND-COLOR COB-COLOR-WHITE AUTO.
   444        *>
   445        *> GENERAL SCREEN FRAMEWORK
   446        *>
   447           03 BACKGROUND-COLOR COB-COLOR-BLACK
   448              FOREGROUND-COLOR COB-COLOR-GREEN HIGHLIGHT.
   449 GC0712     05 LINE 02 COL 01          VALUE LD-UL-Corner.
   450 GC0712     05         COL 02 PIC X(78) FROM  WS-Horizontal-Line-TXT.
   451           05         COL 80          VALUE LD-UR-Corner.
   452
   453 GC0712     05 LINE 03 COL 01          VALUE LD-Vert-Line.
   454           05         COL 80          VALUE LD-Vert-Line.
   455
   456 GC0712     05 LINE 04 COL 01          VALUE LD-Vert-Line.
   457           05         COL 80          VALUE LD-Vert-Line.
   458
   459 GC0712     05 LINE 05 COL 01          VALUE LD-LL-Corner.
   460 GC0712     05         COL 02 PIC X(78) FROM  WS-Horizontal-Line-TXT.
   461           05         COL 80          VALUE LD-LR-Corner.

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

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                         /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                           Page: 13
======= ==============================================================================
    462
    463 GC0712     05 LINE 07 COL 01           VALUE LD-UL-Corner.
    464 GC0712     05         COL 02 PIC X(65) FROM  WS-Horizontal-Line-TXT.
    465 GC0712     05         COL 67           VALUE LD-Upper-T.
    466 GC0712     05         COL 68 PIC X(12) FROM  WS-Horizontal-Line-TXT.
    467        05         COL 80           VALUE LD-UR-Corner.
    468
    469 GC0712     05 LINE 08 COL 01           VALUE LD-Vert-Line.
    470 GC0712     05         COL 67           VALUE LD-Vert-Line.
    471        05         COL 80           VALUE LD-Vert-Line.
    472
    473 GC0712     05 LINE 09 COL 01           VALUE LD-Vert-Line.
    474 GC0712     05         COL 67           VALUE LD-Vert-Line.
    475        05         COL 80           VALUE LD-Vert-Line.
    476
    477 GC0712     05 LINE 10 COL 01           VALUE LD-Vert-Line.
    478 GC0712     05         COL 67           VALUE LD-Vert-Line.
    479        05         COL 80           VALUE LD-Vert-Line.
    480
    481 GC0712     05 LINE 11 COL 01           VALUE LD-Vert-Line.
    482 GC0712     05         COL 67           VALUE LD-Vert-Line.
    483        05         COL 80           VALUE LD-Vert-Line.
    484
    485 GC0712     05 LINE 12 COL 01           VALUE LD-Vert-Line.
    486 GC0712     05         COL 67           VALUE LD-Vert-Line.
    487        05         COL 80           VALUE LD-Vert-Line.
    488
    489 GC0712     05 LINE 13 COL 01           VALUE LD-LL-Corner.
    490 GC0712     05         COL 02 PIC X(65) FROM  WS-Horizontal-Line-TXT.
    491 GC0712     05         COL 67           VALUE LD-Lower-T.
    492 GC0712     05         COL 68 PIC X(12) FROM  WS-Horizontal-Line-TXT.
    493        05         COL 80           VALUE LD-LR-Corner.
    494
    495 GC0712     05 LINE 15 COL 01           VALUE LD-UL-Corner.
    496 GC0712     05         COL 02 PIC X(78) FROM  WS-Horizontal-Line-TXT.
    497        05         COL 80           VALUE LD-UR-Corner.
    498
    499 GC0712     05 LINE 16 COL 01           VALUE LD-Vert-Line.
    500        05         COL 80           VALUE LD-Vert-Line.
    501
    502 GC0712     05 LINE 17 COL 01           VALUE LD-Vert-Line.
    503        05         COL 80           VALUE LD-Vert-Line.
    504
    505 GC0712     05 LINE 18 COL 01           VALUE LD-LL-Corner.
    506 GC0712     05         COL 02 PIC X(78) FROM  WS-Horizontal-Line-TXT.
    507        05         COL 80           VALUE LD-LR-Corner.
    508
    509 GC0712     05 LINE 20 COL 01           VALUE LD-UL-Corner.
    510 GC0712     05         COL 02 PIC X(78) FROM  WS-Horizontal-Line-TXT.
    511        05         COL 80           VALUE LD-UR-Corner.
    512
    513 GC0712     05 LINE 21 COL 01           VALUE LD-Vert-Line.
    514        05         COL 80           VALUE LD-Vert-Line.

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

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

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

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                        /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                            Page: 15
======  =============================================================================
   568 GC0712      05 LINE 04 COL 65 VALUE ':   Quit       '.
   569      *>
   570      *> TOP SECTION PROGRAM INFO
   571      *>
   572          03 BACKGROUND-COLOR COB-COLOR-BLACK
   573             FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
   574 GC0712      05 LINE 03 COL 13 PIC X(66) FROM WS-Prog-File-Name-TXT.
   575 GC0712      05 LINE 04 COL 13 PIC X(66) FROM WS-Prog-Folder-TXT.
   576      *>
   577      *> MIDDLE LEFT SECTION F-KEYS
   578      *>
   579          03 BACKGROUND-COLOR COB-COLOR-BLACK
   580             FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
   581 GC0712      05 LINE 08 COL 03 VALUE 'F1'.
   582 GC0712      05 LINE 09 COL 03 VALUE 'F2'.
   583 GC0712      05 LINE 10 COL 03 VALUE 'F3'.
   584 GC0712      05 LINE 11 COL 03 VALUE 'F4'.
   585 GC0712      05 LINE 12 COL 03 VALUE 'F5'.
   586
   587 GC0712      05 LINE 08 COL 35 VALUE 'F6'.
   588 GC0712      05 LINE 09 COL 35 VALUE 'F7'.
   589 GC0712      05 LINE 10 COL 35 VALUE 'F8'.
   590 GC0712      05 LINE 11 COL 35 VALUE 'F9'.
   591      *>
   592      *> MIDDLE LEFT SECTION SWITCHES
   593      *>
   594          03 BACKGROUND-COLOR COB-COLOR-BLACK
   595             FOREGROUND-COLOR COB-COLOR-RED   HIGHLIGHT.
   596 GC0712      05 LINE 08 COL 06 PIC X(1) FROM WS-CS-DEBUG-CHR.
   597 GC0712      05 LINE 09 COL 06 PIC X(1) FROM WS-CS-TRACEALL-CHR.
   598 GC0712      05 LINE 10 COL 06 PIC X(1) FROM WS-CS-LIBRARY-CHR.
   599 GC0712      05 LINE 11 COL 06 PIC X(1) FROM WS-CS-EXECUTE-CHR.
   600 GC0712      05 LINE 12 COL 06 PIC X(1) FROM WS-CS-LISTING-CHR.
   601
   602 GC0712      05 LINE 08 COL 38 PIC X(1) FROM WS-CS-NOFUNC-CHR.
   603 GC0712      05 LINE 09 COL 38 PIC X(1) FROM WS-CS-WARNALL-CHR.
   604 GC0712      05 LINE 10 COL 38 PIC X(1) FROM WS-CS-FREE-CHR.
   605 GC0712      05 LINE 11 COL 38 PIC X(1) FROM WS-CS-NOTRUNC-CHR.
   606      *>
   607      *> MIDDLE LEFT SECTION BACKGROUND
   608      *>
   609          03 BACKGROUND-COLOR COB-COLOR-BLACK
   610             FOREGROUND-COLOR COB-COLOR-GREEN HIGHLIGHT.
   611 GC0712      05 LINE 08 COL 07 VALUE 'Assume WITH DEBUGGING MODE'.
   612 GC0712      05 LINE 09 COL 07 VALUE 'Procedure+Statement Trace '.
   613 GC0712      05 LINE 10 COL 07 VALUE 'Make a Library ('.
   614 GC0712      05         COL 23 VALUE WS-OS-Lib-Type-CONST.
   615 GC0712      05 LINE 11 COL 07 VALUE 'Execute If Compilation OK '.
   616 GC1213      05 LINE 12 COL 07 FROM  WS-Listing-TXT.
   617
   618 GC0712      05 LINE 08 COL 39 VALUE '"FUNCTION" Is Optional    '.
   619 GC0712      05 LINE 09 COL 39 VALUE 'Enable All Warnings       '.
   620 GC0712      05 LINE 10 COL 39 VALUE 'Source Is Free-Format     '.

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

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                          /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                          Page: 16
====== =================================================================================
   621 GC0712       05 LINE 11 COL 39 VALUE 'No COMP/BINARY Truncation '.
   622       *>
   623       *> MIDDLE RIGHT SECTION Text
   624       *>
   625           03 BACKGROUND-COLOR COB-COLOR-BLACK
   626              FOREGROUND-COLOR COB-COLOR-GREEN HIGHLIGHT.
   627 GC0712       05 LINE 08 COL 69 VALUE 'Current'.
   628 GC0712       05 LINE 09 COL 69 VALUE 'Config:'.
   629       *>
   630       *> MIDDLE RIGHT SECTION CONFIG FILE
   631       *>
   632           03 BACKGROUND-COLOR COB-COLOR-BLACK
   633              FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
   634 GC0712       05 LINE 10 COL 69 PIC X(10)
   635 GC0712          FROM WS-CS-Filename-TXT (WS-CS-Config-NUM).
   636       *>
   637       *> FREE-FORM OPTIONS FIELDS
   638       *>
   639           03 BACKGROUND-COLOR COB-COLOR-BLACK
   640              FOREGROUND-COLOR COB-COLOR-WHITE HIGHLIGHT.
   641 GC0712       05 LINE 16 COL 03 PIC X(76) USING WS-CS-Extra-H1-TXT.
   642 GC0712       05 LINE 17 COL 03 PIC X(76) USING WS-CS-Extra-H2-TXT.
   643 GC0712       05 LINE 21 COL 03 PIC X(76) USING WS-CS-Arg-H1-TXT.
   644 GC0712       05 LINE 22 COL 03 PIC X(76) USING WS-CS-Arg-H2-TXT.
```

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

====== ===

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

==

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

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

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

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

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

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

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

==

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                          2017/12/24
                                             /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                                   Page: 23
======  =================================================================================
   864 GC0712                               MOVE SELCHAR TO WS-CS-NOFUNC-CHR
   865 GC0712                           ELSE
   866 GC0712                               MOVE ' ' TO WS-CS-NOFUNC-CHR
   867 GC0712                           END-IF
   868 GC0712                       WHEN COB-SCR-F7
   869 GC0712                           IF WS-CS-WARNALL-CHR = SPACE
   870 GC0712                               MOVE SELCHAR TO WS-CS-WARNALL-CHR
   871 GC0712                           ELSE
   872 GC0712                               MOVE ' ' TO WS-CS-WARNALL-CHR
   873 GC0712                           END-IF
   874 GC0712                       WHEN COB-SCR-F8
   875 GC0712                           IF WS-CS-FREE-CHR = SPACE
   876 GC0712                               MOVE SELCHAR TO WS-CS-FREE-CHR
   877 GC0712                           ELSE
   878 GC0712                               MOVE ' ' TO WS-CS-FREE-CHR
   879 GC0712                           END-IF
   880 GC0712                       WHEN COB-SCR-F9
   881 GC0712                           IF  WS-CS-NOTRUNC-CHR = SPACE
   882 GC0712                               MOVE SELCHAR TO WS-CS-NOTRUNC-CHR
   883 GC0712                           ELSE
   884 GC0712                               MOVE ' ' TO WS-CS-NOTRUNC-CHR
   885 GC0712                           END-IF
   886                             WHEN COB-SCR-ESC
   887                                 PERFORM 900-Terminate
   888      * ------------------ Control will NOT return
   889 GC0712                       WHEN COB-SCR-F12
   890 GC0712                           ADD 1 TO WS-CS-Config-NUM
   891 GC0712                           IF WS-CS-Config-NUM > 7
   892 GC0712                               MOVE 1 TO WS-CS-Config-NUM
   893 GC0712                           END-IF
   894                             WHEN OTHER
   895                                 MOVE 'An unsupported key was pressed'
   896                                   TO WS-Output-Msg-TXT
   897                         END-EVALUATE
   898                     ELSE
   899                         SET WS-RS-No-Switch-Changes-BOOL TO TRUE
   900                     END-IF
   901             END-PERFORM
   902             .
```

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

====== ===

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

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

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

```
==================================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL            Page: 26
```

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

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

====== ===

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

==

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                            /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                             Page: 29
====== =======================================================================================
  1123 GC0909      ELSE
  1124 GC0909          IF WS-OS-Cygwin-BOOL OR WS-OS-UNIX-BOOL
  1125 GC0909              STRING './'
  1126 GC0909                  INTO WS-Cmd-TXT
  1127 GC0909                  WITH POINTER WS-I-SUB
  1128 GC0909          END-IF
  1129             END-IF
  1130         *>************************************************************
  1131         *> Insert program filename                                 **
  1132         *>************************************************************
  1133 GC0909      STRING TRIM(WS-Pgm-Nm-TXT,TRAILING)
  1134 GC0909          INTO WS-Cmd-TXT
  1135 GC0909          WITH POINTER WS-I-SUB
  1136         *>************************************************************
  1137         *> Insert proper extension                                 **
  1138         *>************************************************************
  1139 GC0712      IF WS-CS-LIBRARY-CHR = ' '
  1140 GC0712          IF WS-OS-Exe-Ext-CONST > ' '
  1141 GC0712              STRING WS-OS-Exe-Ext-CONST DELIMITED SPACE
  1142 GC0712                  INTO WS-Cmd-TXT
  1143 GC0712                  WITH POINTER WS-I-SUB
  1144 GC0712          END-IF
  1145 GC0712      ELSE
  1146 GC0712          IF WS-OS-Lib-Ext-CONST > ' '
  1147 GC0712              STRING WS-OS-Lib-Ext-CONST DELIMITED SPACE
  1148 GC0712                  INTO WS-Cmd-TXT
  1149 GC0712                  WITH POINTER WS-I-SUB
  1150 GC0712          END-IF
  1151 GC0712      END-IF
  1152 GC0712      IF WS-RS-Double-Quote-Used-BOOL
  1153 GC0712          STRING '"' DELIMITED SIZE
  1154 GC0712              INTO WS-Cmd-TXT
  1155 GC0712              WITH POINTER WS-I-SUB
  1156 GC0712      END-IF
  1157             IF WS-CS-Args-TXT NOT = SPACES
  1158 GC0809          STRING ' ' TRIM(WS-CS-Args-TXT,TRAILING)
  1159                  INTO WS-Cmd-TXT
  1160                  WITH POINTER WS-I-SUB
  1161             END-IF
  1162         *>************************************************************
  1163         *> Run the program                                         **
  1164         *>************************************************************
  1165 GC0114      CALL X'E4'
  1166             CALL 'SYSTEM' USING TRIM(WS-Cmd-TXT,TRAILING)
  1167 GC0712      MOVE SPACES TO WS-Output-Msg-TXT
  1168 GC0114      ACCEPT WS-Output-Msg-TXT(1:1) AT 0101
  1169             PERFORM 900-Terminate
  1170         * -- Control will NOT return
  1171             .
```

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

====== ===

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

==

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                       2017/12/24
                                           /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                              Page: 31
====== ================================================================================

 1209 GC0712*>*******************************************************************
 1210 GC0712*> Attempt to open the listing file as a command.  This will - **
 1211 GC1113*> if the user has associated filetype/extension 'gclst' with  **
 1212 GC0712*> an application - invoke the appropriate application to      **
 1213 GC0712*> allow the user to view the listing.                        **
 1214 GC0712*>*******************************************************************'
 1215 GC0712 250-Autoload-Listing SECTION.
 1216 GC0712     EVALUATE TRUE
 1217 GC0712         WHEN WS-OS-Windows-BOOL OR WS-OS-Cygwin-BOOL
 1218 GC0712             MOVE SPACES TO WS-Cmd-TXT
 1219 GC0712             STRING
 1220 GC0712                 'cmd /c '
 1221 GC0712                 TRIM(WS-Listing-Filename-TXT,TRAILING)
 1222 GC0712                 DELIMITED SIZE INTO WS-Cmd-TXT
 1223 GC0712             CALL 'SYSTEM' USING TRIM(WS-Cmd-TXT,TRAILING)
 1224 GC0712         WHEN WS-OS-OSX-BOOL
 1225 GC0712             MOVE SPACES TO WS-Cmd-TXT
 1226 GC0712             STRING
 1227 GC0712                 'open -t '
 1228 GC0712                 TRIM(WS-Listing-Filename-TXT,TRAILING)
 1229 GC0712                 DELIMITED SIZE INTO WS-Cmd-TXT
 1230 GC0712             CALL 'SYSTEM' USING TRIM(WS-Cmd-TXT,TRAILING)
 1231 GC0712     END-EVALUATE
 1232 GC0712*>    *********************************************************
 1233 GC0712*>    ** Since we had to do our own '-save-temps' when we     **
 1234 GC0712*>    ** compiled (in order to generate the cross-reference   **
 1235 GC0712*>    ** listing) we now need to clean up after ourselves.    **
 1236 GC0712*>    *********************************************************
 1237 GC1112     DISPLAY S-Blank-SCR
 1238 GC0712     IF WS-OS-Windows-BOOL
 1239 GC0712         MOVE CONCATENATE('del ',TRIM(WS-Pgm-Nm-TXT,TRAILING))
 1240 GC0712           TO WS-Cmd-TXT
 1241 GC0712     ELSE
 1242 GC0712         MOVE CONCATENATE('rm ',TRIM(WS-Pgm-Nm-TXT,TRAILING))
 1243 GC0712           TO WS-Cmd-TXT
 1244 GC0712     END-IF
 1245 GC0712     CALL 'SYSTEM'
 1246 GC0712         USING CONCATENATE(TRIM(WS-Cmd-TXT,TRAILING),'.c')
 1247 GC0712     CALL 'SYSTEM'
 1248 GC0712         USING CONCATENATE(TRIM(WS-Cmd-TXT,TRAILING),'.c.h')
 1249 GC0712     CALL 'SYSTEM'
 1250 GC0712         USING CONCATENATE(TRIM(WS-Cmd-TXT,TRAILING),'.c.l*.h')
 1251 GC0712     CALL 'SYSTEM'
 1252 GC0712         USING CONCATENATE(TRIM(WS-Cmd-TXT,TRAILING),'.i')
 1253 GC0712     CALL 'SYSTEM'
 1254 GC0712         USING CONCATENATE(TRIM(WS-Cmd-TXT,TRAILING),'.o')
 1255
 1256 GC0712     .



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

===

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

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

```
====================================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL                 Page: 33
```

====== ==

```
 1316 GC0712 PROCEDURE DIVISION USING BY VALUE     L-Argument-1-TXT
 1317 GC0712                          BY REFERENCE L-Argument-2-CHR.
 1318        000-Main SECTION.
 1319            SET L-A2-Nothing-Special-BOOL TO TRUE
 1320            IF L-A1-CHR (7) = '*'
 1321                GOBACK
 1322            END-IF
 1323            .
 1324      *>
 1325      *> Compress multiple consecutive spaces
 1326      *>
 1327            SET WS-RS-Not-Skipping-SPACE-BOOL TO TRUE
 1328            MOVE 0 TO WS-J-SUB
 1329            MOVE SPACES TO WS-Compressed-Src-TXT
 1330            PERFORM VARYING WS-I-SUB FROM 1 BY 1
 1331                    UNTIL WS-I-SUB > 80
 1332              IF L-A1-CHR (WS-I-SUB) = SPACE
 1333                 IF WS-RS-Not-Skipping-SPACE-BOOL
 1334                    ADD 1 TO WS-J-SUB
 1335                    MOVE UPPER-CASE(L-A1-CHR (WS-I-SUB))
 1336                      TO WS-CS-CHR (WS-J-SUB)
 1337                    SET WS-RS-Skipping-SPACE-BOOL TO TRUE
 1338                 END-IF
 1339              ELSE
 1340                 SET WS-RS-Not-Skipping-SPACE-BOOL TO TRUE
 1341                 ADD 1 TO WS-J-SUB
 1342                 MOVE L-A1-CHR (WS-I-SUB) TO WS-CS-CHR (WS-J-SUB)
 1343              END-IF
 1344            END-PERFORM
 1345      *>
 1346      *> Scan the compressed source line
 1347      *>
 1348            PERFORM VARYING WS-I-SUB FROM 1 BY 1
 1349                    UNTIL WS-I-SUB > 66
 1350              EVALUATE TRUE
 1351                WHEN WS-CS-CHR (WS-I-SUB) = '*'
 1352                    IF WS-Compressed-Src-TXT (WS-I-SUB : 2) = '*>'
 1353                       GOBACK
 1354                    END-IF
 1355                WHEN (WS-CS-CHR (WS-I-SUB) = 'L') AND (WS-I-SUB < 66)
 1356                    IF WS-Compressed-Src-TXT (WS-I-SUB : 15)
 1357                       = 'LINKAGE SECTION'
 1358                       SET L-A2-LINKAGE-SECTION-BOOL TO TRUE
 1359                       GOBACK
 1360                    END-IF
 1361                WHEN (WS-CS-CHR (WS-I-SUB) = 'I') AND (WS-I-SUB < 58)
 1362                    IF WS-Compressed-Src-TXT (WS-I-SUB : 23)
 1363                       = 'IDENTIFICATION DIVISION'
 1364                       SET L-A2-IDENT-DIVISION-BOOL TO TRUE
 1365                       GOBACK
 1366                    END-IF
 1367              END-EVALUATE
```

==

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                   2017/12/24
                                       /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                          Page: 35
======  ==========================================================================================
  1368          END-PERFORM
  1369       *>
  1370       *> If we get to here, we never found anything!
  1371       *>
  1372 +         GOBACK
  1373           .
  1374      END PROGRAM CHECKSRC.
  1375
  1376      IDENTIFICATION DIVISION.
  1377      PROGRAM-ID.  LISTING.
  1378       *>****************************************************************
  1379       *> This subprogram generates a cross-reference listing of an   **
  1380       *> GNU COBOL program.                                          **
  1381       *>****************************************************************
  1382       *>                                                             **
  1383       *> AUTHOR:      GARY L. CUTLER                                 **
  1384       *>              Copyright (C) 2010, Gary L. Cutler, GPL        **
  1385       *>                                                             **
  1386       *> DATE-WRITTEN: April 1, 2010                                 **
  1387       *>                                                             **
  1388       *>****************************************************************
  1389       *>  DATE   CHANGE DESCRIPTION                                  **
  1390       *> ====== ================================================== **
  1391       *> GC0410 Initial coding                                       **
  1392       *> GC0711 Updates to accommodate the 12MAR2010 version of OC   **
  1393       *> GC0710 Handle duplicate data names (i.e. 'CORRESPONDING' or **
  1394       *>        qualified items) better; ignore 'END PROGRAM' recs   **
  1395       *>        so program name doesn't appear in listing.          **
  1396       *> GC0313 Fix problem where the first procedure name defined   **
  1397       *>        in the PROCEDURE DIVISION lacks a "Defined" line     **
  1398       *>        number.                                              **
  1399       *> GC1213 Updated for 23NOV2013 version of GNU COBOL 2.1; Stop **
  1400       *>        showing functions as if they were identifiers in the **
  1401       *>        xref listing; Flag all CALL argument references with **
  1402       *>        a "C" rather than "*" because they aren't necessari- **
  1403       *>        ly altered; Fixed assorted formatting bugs; DOWN-    **
  1404       *>        WARD COMPATIBLE WITH GNU COBOL 2.0 SYNTAX            **
  1405       *> GC0314 Fix problem where 1st char of 1st token on a line is **
  1406       *>        lost if >>SOURCE MODE IS FREE is in effect and the   **
  1407       *>        1st character is non-blank.                          **
  1408       *> VC1217 Updated compiler version & date to v3.0 & 24DEC2017. **
  1409       *>****************************************************************
  1410      ENVIRONMENT DIVISION.
  1411      CONFIGURATION SECTION.
  1412      REPOSITORY.
  1413          FUNCTION ALL INTRINSIC.
  1414      INPUT-OUTPUT SECTION.
  1415      FILE-CONTROL.
  1416          SELECT F-Expanded-Src-FILE  ASSIGN TO WS-Expanded-Src-Fn-TXT
  1417                                      ORGANIZATION IS LINE SEQUENTIAL.
  1418 GC0712   SELECT F-Listing-FILE       ASSIGN TO L-Listing-Fn-TXT
  1419                                      ORGANIZATION IS LINE SEQUENTIAL.
  1420          SELECT F-Original-Src-FILE  ASSIGN TO L-Src-Fn-TXT

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```

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

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

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                         2017/12/24
                                              /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                               Page: 37
====== ===========================================================================================
 1474 GC1010    88 WS-CD-In-PROC-DIV-BOOL              VALUE 'p', 'P'.
 1475
 1476         01  WS-Curr-Line-NUM                     PIC 9(6).
 1477
 1478         01  WS-Curr-Prog-ID-TXT.
 1479             05 FILLER                            PIC X(12).
 1480             05 WS-CPI-13-15-TXT                  PIC X(3).
 1481 GC0712      05 WS-CPI-16-CHR                     PIC X(1).
 1482
 1483         01  WS-Curr-Section-TXT.
 1484             05 WS-CS-1-CHR                       PIC X(1).
 1485             05 WS-CS-2-14-TXT.
 1486                10 FILLER                         PIC X(10).
 1487                10 WS-CS-11-14-TXT                PIC X(3).
 1488             05 WS-CS-15-CHR                      PIC X(1).
 1489
 1490         01  WS-Curr-Verb-TXT                     PIC X(12).
 1491
 1492         01  WS-Delim-TXT                         PIC X(2).
 1493
 1494         01  WS-Dummy-TXT                         PIC X(1).
 1495
 1496         01  WS-Expanded-Src-Fn-TXT               PIC X(256).
 1497
 1498         01  WS-Filename-TXT                      PIC X(256).
 1499
 1500 GC1213 01  WS-Flags-TXT.
 1501 GC1213      05 WS-Suppress-FF-CHR                PIC X(1).
 1502
 1503 GC1213 01  WS-Formatted-DT                       PIC 9999/99/99.
 1504
 1505         01  WS-Group-Indicators-TXT.
 1506             05 WS-GI-Prog-ID-TXT                 PIC X(15).
 1507             05 WS-GI-Token-TXT                   PIC X(32).
 1508
 1509         01  WS-Held-Reference-TXT                PIC X(100).
 1510
 1511         01  WS-I-SUB                             USAGE BINARY-LONG.
 1512
 1513         01  WS-J-SUB                             USAGE BINARY-LONG.
 1514
 1515         01  WS-Lines-Left-NUM                    USAGE BINARY-LONG.
 1516
 1517         01  WS-Lines-Per-Page-NUM                USAGE BINARY-LONG.
 1518
 1519         01  WS-Lines-Per-Page-Env-TXT            PIC X(256).
 1520
 1521 GC1010 01  WS-Main-Module-Name-TXT               PIC X(256).
 1522
 1523         01  WS-Next-CHR                          PIC X(1).
 1524             88 WS-Next-Char-Is-Quote-BOOL        VALUE '"', '''.
 1525
 1526         01  WS-OS-Type-FILLER-TXT.

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====== =====================================================================================
 1527            05 VALUE 'Windows'                 PIC X(14).
 1528            05 VALUE 'Windows/Cygwin'          PIC X(14).
 1529            05 VALUE 'UNIX/Linux'              PIC X(14).
 1530            05 VALUE 'OSX'                      PIC X(14).
 1531            05 VALUE 'Windows/MinGW'           PIC X(14).
 1532       01  WS-OS-Types-TXT REDEFINES WS-OS-Type-FILLER-TXT.
 1533            05 WS-OS-Type-TXT                  PIC X(14)
 1534                                     OCCURS 5 TIMES .
 1535
 1536 GC0712 01  WS-Page-NUM                        USAGE BINARY-LONG.
 1537
 1538 GC0712 01  WS-Page-No-TXT.
 1539 GC0712     05 WS-PN-Literal-TXT               PIC X(6).
 1540 GC0712     05 WS-PN-Page-NUM                  PIC Z(3)9.
 1541
 1542 GC1213 01  WS-Program-Path-TXT               PIC X(135).
 1543
 1544       01  WS-Reserved-Words-TXT.
 1545            05 VALUE '                        ' PIC X(33).
 1546 GC1213     05 VALUE 'FABS                    ' PIC X(33).
 1547            05 VALUE 'VACCEPT                 ' PIC X(33).
 1548            05 VALUE ' ACCESS                 ' PIC X(33).
 1549 GC1213     05 VALUE 'FACOS                   ' PIC X(33).
 1550            05 VALUE ' ACTIVE-CLASS           ' PIC X(33).      UNIMPLEMENTED
 1551            05 VALUE 'VADD                    ' PIC X(33).
 1552            05 VALUE ' ADDRESS                ' PIC X(33).
 1553            05 VALUE ' ADVANCING              ' PIC X(33).
 1554            05 VALUE 'KAFTER                  ' PIC X(33).
 1555            05 VALUE ' ALIGNED                ' PIC X(33).      UNIMPLEMENTED
 1556            05 VALUE ' ALL                    ' PIC X(33).
 1557            05 VALUE 'VALLOCATE               ' PIC X(33).
 1558            05 VALUE ' ALPHABET               ' PIC X(33).
 1559            05 VALUE ' ALPHABETIC             ' PIC X(33).
 1560            05 VALUE ' ALPHABETIC-LOWER       ' PIC X(33).
 1561            05 VALUE ' ALPHABETIC-UPPER       ' PIC X(33).
 1562            05 VALUE ' ALPHANUMERIC           ' PIC X(33).
 1563            05 VALUE ' ALPHANUMERIC-EDITED    ' PIC X(33).
 1564            05 VALUE ' ALSO                   ' PIC X(33).
 1565            05 VALUE 'VALTER                  ' PIC X(33).
 1566            05 VALUE ' ALTERNATE              ' PIC X(33).
 1567            05 VALUE ' AND                    ' PIC X(33).
 1568 GC1213     05 VALUE 'FANNUITY                ' PIC X(33).
 1569            05 VALUE ' ANY                    ' PIC X(33).
 1570            05 VALUE ' ANYCASE                ' PIC X(33).      UNIMPLEMENTED
 1571            05 VALUE ' ARE                    ' PIC X(33).
 1572            05 VALUE ' AREA                   ' PIC X(33).
 1573            05 VALUE ' AREAS                  ' PIC X(33).
 1574            05 VALUE ' ARGUMENT-NUMBER        ' PIC X(33).
 1575            05 VALUE ' ARGUMENT-VALUE         ' PIC X(33).
 1576            05 VALUE ' ARITHMETIC             ' PIC X(33).      UNIMPLEMENTED
 1577            05 VALUE ' AS                     ' PIC X(33).
 1578            05 VALUE ' ASCENDING              ' PIC X(33).
 1579            05 VALUE ' ASCII                  ' PIC X(33).
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=====  =======================================================================
 1580 GC1213      05 VALUE 'FASIN                        ' PIC X(33).
 1581             05 VALUE ' ASSIGN                      ' PIC X(33).
 1582             05 VALUE ' AT                          ' PIC X(33).
 1583 GC1213      05 VALUE 'FATAN                        ' PIC X(33).
 1584 GC0711      05 VALUE ' ATTRIBUTE                   ' PIC X(33).
 1585             05 VALUE ' AUTHOR                      ' PIC X(33).     OBSOLETE
 1586             05 VALUE ' AUTO                        ' PIC X(33).
 1587             05 VALUE ' AUTO-SKIP                   ' PIC X(33).
 1588             05 VALUE ' AUTOMATIC                   ' PIC X(33).
 1589             05 VALUE ' AUTOTERMINATE               ' PIC X(33).
 1590             05 VALUE ' AWAY-FROM-ZERO              ' PIC X(33).
 1591             05 VALUE ' B-AND                       ' PIC X(33).    UNIMPLEMENTED
 1592             05 VALUE ' B-NOT                       ' PIC X(33).    UNIMPLEMENTED
 1593             05 VALUE ' B-OR                        ' PIC X(33).    UNIMPLEMENTED
 1594             05 VALUE ' B-XOR                       ' PIC X(33).    UNIMPLEMENTED
 1595             05 VALUE ' BACKGROUND-COLOR            ' PIC X(33).
 1596             05 VALUE ' BACKGROUND-COLOUR           ' PIC X(33).
 1597             05 VALUE ' BASED                       ' PIC X(33).
 1598             05 VALUE ' BEEP                        ' PIC X(33).
 1599             05 VALUE ' BEFORE                      ' PIC X(33).
 1600             05 VALUE ' BELL                        ' PIC X(33).
 1601             05 VALUE ' BINARY                      ' PIC X(33).
 1602             05 VALUE ' BINARY-C-LONG               ' PIC X(33).
 1603             05 VALUE ' BINARY-CHAR                 ' PIC X(33).
 1604             05 VALUE ' BINARY-DOUBLE               ' PIC X(33).
 1605             05 VALUE ' BINARY-INT                  ' PIC X(33).
 1606             05 VALUE ' BINARY-LONG                 ' PIC X(33).
 1607             05 VALUE ' BINARY-LONG-LONG            ' PIC X(33).
 1608             05 VALUE ' BINARY-SHORT                ' PIC X(33).
 1609             05 VALUE ' BIT                         ' PIC X(33).    UNIMPLEMENTED
 1610             05 VALUE ' BLANK                       ' PIC X(33).
 1611             05 VALUE ' BLINK                       ' PIC X(33).
 1612             05 VALUE ' BLOCK                       ' PIC X(33).
 1613             05 VALUE ' BOOLEAN                     ' PIC X(33).    UNIMPLEMENTED
 1614 GC1213      05 VALUE 'FBOOLEAN-OF-INTEGER          ' PIC X(33).    UNIMPLEMENTED
 1615             05 VALUE ' BOTTOM                      ' PIC X(33).
 1616             05 VALUE 'YBY                          ' PIC X(33).
 1617 GC1213      05 VALUE 'FBYTE-LENGTH                 ' PIC X(33).
 1618             05 VALUE 'MC01                         ' PIC X(33).
 1619             05 VALUE 'MC02                         ' PIC X(33).
 1620             05 VALUE 'MC03                         ' PIC X(33).
 1621             05 VALUE 'MC04                         ' PIC X(33).
 1622             05 VALUE 'MC05                         ' PIC X(33).
 1623             05 VALUE 'MC06                         ' PIC X(33).
 1624             05 VALUE 'MC07                         ' PIC X(33).
 1625             05 VALUE 'MC08                         ' PIC X(33).
 1626             05 VALUE 'MC09                         ' PIC X(33).
 1627             05 VALUE 'MC10                         ' PIC X(33).
 1628             05 VALUE 'MC11                         ' PIC X(33).
 1629             05 VALUE 'MC12                         ' PIC X(33).
 1630             05 VALUE 'VCALL                        ' PIC X(33).
 1631             05 VALUE 'MCALL-CONVENTION             ' PIC X(33).
 1632             05 VALUE 'VCANCEL                      ' PIC X(33).
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======  ==============================================================================
 1633           05 VALUE ' CAPACITY                     ' PIC X(33).    UNIMPLEMENTED
 1634           05 VALUE ' CD                           ' PIC X(33).    OBSOLETE
 1635           05 VALUE ' CENTER                       ' PIC X(33).    UNIMPLEMENTED
 1636           05 VALUE ' CF                           ' PIC X(33).
 1637           05 VALUE ' CH                           ' PIC X(33).
 1638           05 VALUE ' CHAIN                        ' PIC X(33).    UNIMPLEMENTED
 1639           05 VALUE ' CHAINING                     ' PIC X(33).
 1640 GC1213    05 VALUE 'FCHAR                         ' PIC X(33).
 1641 GC1213    05 VALUE 'FCHAR-NATIONAL                ' PIC X(33).    UNIMPLEMENTED
 1642           05 VALUE ' CHARACTER                    ' PIC X(33).
 1643           05 VALUE ' CHARACTERS                   ' PIC X(33).
 1644           05 VALUE ' CLASS                        ' PIC X(33).
 1645           05 VALUE ' CLASS-ID                     ' PIC X(33).    UNIMPLEMENTED
 1646 GC0711    05 VALUE ' CLASSIFICATION               ' PIC X(33).
 1647           05 VALUE 'VCLOSE                        ' PIC X(33).
 1648 GC1213    05 VALUE 'FCOB-CRT-STATUS               ' PIC X(33).
 1649           05 VALUE ' CODE                         ' PIC X(33).
 1650           05 VALUE ' CODE-SET                     ' PIC X(33).
 1651           05 VALUE ' COL                          ' PIC X(33).
 1652           05 VALUE ' COLLATING                    ' PIC X(33).
 1653           05 VALUE ' COLS                         ' PIC X(33).
 1654           05 VALUE ' COLUMN                       ' PIC X(33).
 1655           05 VALUE ' COLUMNS                      ' PIC X(33).
 1656 GC1213    05 VALUE 'FCOMBINED-DATETIME            ' PIC X(33).
 1657           05 VALUE ' COMMA                        ' PIC X(33).
 1658           05 VALUE ' COMMAND-LINE                 ' PIC X(33).
 1659           05 VALUE 'VCOMMIT                       ' PIC X(33).
 1660           05 VALUE ' COMMON                       ' PIC X(33).
 1661           05 VALUE ' COMMUNICATION                ' PIC X(33).    OBSOLETE
 1662           05 VALUE ' COMP                         ' PIC X(33).
 1663           05 VALUE ' COMP-1                       ' PIC X(33).
 1664           05 VALUE ' COMP-2                       ' PIC X(33).
 1665           05 VALUE ' COMP-3                       ' PIC X(33).
 1666           05 VALUE ' COMP-4                       ' PIC X(33).
 1667           05 VALUE ' COMP-5                       ' PIC X(33).
 1668           05 VALUE ' COMP-6                       ' PIC X(33).
 1669           05 VALUE ' COMP-X                       ' PIC X(33).
 1670           05 VALUE ' COMPUTATIONAL                ' PIC X(33).
 1671           05 VALUE ' COMPUTATIONAL-1              ' PIC X(33).
 1672           05 VALUE ' COMPUTATIONAL-2              ' PIC X(33).
 1673           05 VALUE ' COMPUTATIONAL-3              ' PIC X(33).
 1674           05 VALUE ' COMPUTATIONAL-4              ' PIC X(33).
 1675           05 VALUE ' COMPUTATIONAL-5              ' PIC X(33).
 1676           05 VALUE ' COMPUTATIONAL-X              ' PIC X(33).
 1677           05 VALUE 'VCOMPUTE                      ' PIC X(33).
 1678 GC1213    05 VALUE 'FCONCATENATE                  ' PIC X(33).
 1679 GC0712    05 VALUE ' CONDITION                    ' PIC X(33).
 1680           05 VALUE 'KCONFIGURATION                ' PIC X(33).
 1681           05 VALUE 'MCONSOLE                      ' PIC X(33).
 1682           05 VALUE ' CONSTANT                     ' PIC X(33).
 1683           05 VALUE ' CONTAINS                     ' PIC X(33).
 1684 GC0712    05 VALUE 'ACONTENT                      ' PIC X(33).
 1685           05 VALUE 'VCONTINUE                     ' PIC X(33).

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======  ======================================================================================
 1686            05 VALUE ' CONTROL                    ' PIC X(33).
 1687            05 VALUE ' CONTROLS                   ' PIC X(33).
 1688 GC0711     05 VALUE ' CONVERSION                 ' PIC X(33).
 1689            05 VALUE 'KCONVERTING                 ' PIC X(33).
 1690            05 VALUE ' COPY                       ' PIC X(33).
 1691            05 VALUE ' CORR                       ' PIC X(33).
 1692            05 VALUE ' CORRESPONDING              ' PIC X(33).
 1693 GC1213     05 VALUE 'FCOS                        ' PIC X(33).
 1694            05 VALUE 'KCOUNT                      ' PIC X(33).
 1695            05 VALUE ' CRT                        ' PIC X(33).
 1696            05 VALUE ' CRT-UNDER                  ' PIC X(33).
 1697            05 VALUE 'MCSP                        ' PIC X(33).
 1698            05 VALUE ' CURRENCY                   ' PIC X(33).
 1699 GC1213     05 VALUE 'FCURRENCY-SYMBOL            ' PIC X(33).
 1700 GC1213     05 VALUE 'FCURRENT-DATE               ' PIC X(33).
 1701            05 VALUE ' CURSOR                     ' PIC X(33).
 1702            05 VALUE ' CYCLE                      ' PIC X(33).
 1703            05 VALUE 'KDATA                       ' PIC X(33).
 1704            05 VALUE ' DATA-POINTER               ' PIC X(33).    UNIMPLEMENTED
 1705            05 VALUE ' DATE                       ' PIC X(33).
 1706            05 VALUE ' DATE-COMPILED              ' PIC X(33).    OBSOLETE
 1707            05 VALUE ' DATE-MODIFIED              ' PIC X(33).    OBSOLETE
 1708 GC1213     05 VALUE 'FDATE-OF-INTEGER            ' PIC X(33).
 1709 GC1213     05 VALUE 'FDATE-TO-YYYYMMDD           ' PIC X(33).
 1710            05 VALUE ' DATE-WRITTEN               ' PIC X(33).    OBSOLETE
 1711            05 VALUE ' DAY                        ' PIC X(33).
 1712 GC1213     05 VALUE 'FDAY-OF-INTEGER             ' PIC X(33).
 1713            05 VALUE ' DAY-OF-WEEK                ' PIC X(33).
 1714 GC1213     05 VALUE 'IDAY-TO-YYYYDDD             ' PIC X(33).
 1715            05 VALUE ' DE                         ' PIC X(33).
 1716 GC0712     05 VALUE 'IDEBUG-CONTENTS             ' PIC X(33).
 1717 GC0712     05 VALUE 'IDEBUG-ITEM                 ' PIC X(33).
 1718 GC0712     05 VALUE 'IDEBUG-LINE                 ' PIC X(33).
 1719 GC0712     05 VALUE 'IDEBUG-NAME                 ' PIC X(33).
 1720 GC0712     05 VALUE 'IDEBUG-SUB-1                ' PIC X(33).
 1721 GC0712     05 VALUE 'IDEBUG-SUB-2                ' PIC X(33).
 1722 GC0712     05 VALUE 'IDEBUG-SUB-3                ' PIC X(33).
 1723            05 VALUE ' DEBUGGING                  ' PIC X(33).
 1724            05 VALUE ' DECIMAL-POINT              ' PIC X(33).
 1725            05 VALUE ' DECLARATIVES               ' PIC X(33).
 1726            05 VALUE ' DEFAULT                    ' PIC X(33).
 1727            05 VALUE 'VDELETE                     ' PIC X(33).
 1728            05 VALUE ' DELIMITED                  ' PIC X(33).
 1729            05 VALUE 'KDELIMITER                  ' PIC X(33).
 1730            05 VALUE ' DEPENDING                  ' PIC X(33).
 1731            05 VALUE ' DESCENDING                 ' PIC X(33).
 1732            05 VALUE ' DESTINATION                ' PIC X(33).    UNIMPLEMENTED
 1733            05 VALUE ' DETAIL                     ' PIC X(33).
 1734 GC0711     05 VALUE ' DISC                       ' PIC X(33).
 1735            05 VALUE ' DISK                       ' PIC X(33).
 1736            05 VALUE 'VDISPLAY                    ' PIC X(33).
 1737 GC1213     05 VALUE 'FDISPLAY-OF                 ' PIC X(33).    UNIMPLEMENTED
 1738            05 VALUE 'VDIVIDE                     ' PIC X(33).

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====== =================================================================================
  1739           05 VALUE 'KDIVISION                      ' PIC X(33).
  1740           05 VALUE 'KDOWN                          ' PIC X(33).
  1741           05 VALUE ' DUPLICATES                    ' PIC X(33).
  1742           05 VALUE ' DYNAMIC                       ' PIC X(33).
  1743 GC1213    05 VALUE 'FE                             ' PIC X(33).
  1744           05 VALUE ' EBCDIC                        ' PIC X(33).
  1745 GC0712    05 VALUE ' EC                            ' PIC X(33).
  1746           05 VALUE ' EGI                           ' PIC X(33).    OBSOLETE
  1747           05 VALUE 'VELSE                          ' PIC X(33).
  1748           05 VALUE ' EMI                           ' PIC X(33).    OBSOLETE
  1749           05 VALUE ' EMPTY-CHECK                   ' PIC X(33).
  1750           05 VALUE 'VENABLE                        ' PIC X(33).    OBSOLETE
  1751 GC0710    05 VALUE 'KEND                           ' PIC X(33).
  1752           05 VALUE ' END-ACCEPT                    ' PIC X(33).
  1753           05 VALUE ' END-ADD                       ' PIC X(33).
  1754           05 VALUE ' END-CALL                      ' PIC X(33).
  1755           05 VALUE ' END-CHAIN                     ' PIC X(33).    UNIMPLEMENTED
  1756           05 VALUE ' END-COMPUTE                   ' PIC X(33).
  1757           05 VALUE ' END-DELETE                    ' PIC X(33).
  1758           05 VALUE ' END-DISPLAY                   ' PIC X(33).
  1759           05 VALUE ' END-DIVIDE                    ' PIC X(33).
  1760           05 VALUE ' END-EVALUATE                  ' PIC X(33).
  1761           05 VALUE ' END-IF                        ' PIC X(33).
  1762           05 VALUE ' END-MULTIPLY                  ' PIC X(33).
  1763           05 VALUE ' END-OF-PAGE                   ' PIC X(33).
  1764           05 VALUE ' END-PERFORM                   ' PIC X(33).
  1765           05 VALUE ' END-READ                      ' PIC X(33).
  1766           05 VALUE ' END-RECEIVE                   ' PIC X(33).    OBSOLETE
  1767           05 VALUE ' END-RETURN                    ' PIC X(33).
  1768           05 VALUE ' END-REWRITE                   ' PIC X(33).
  1769           05 VALUE ' END-SEARCH                    ' PIC X(33).
  1770           05 VALUE ' END-START                     ' PIC X(33).
  1771           05 VALUE ' END-STRING                    ' PIC X(33).
  1772           05 VALUE ' END-SUBTRACT                  ' PIC X(33).
  1773           05 VALUE ' END-UNSTRING                  ' PIC X(33).
  1774           05 VALUE ' END-WRITE                     ' PIC X(33).
  1775           05 VALUE 'VENTRY                         ' PIC X(33).
  1776           05 VALUE ' ENTRY-CONVENTION              ' PIC X(33).    UNIMPLEMENTED
  1777           05 VALUE 'KENVIRONMENT                   ' PIC X(33).
  1778           05 VALUE ' ENVIRONMENT-NAME              ' PIC X(33).
  1779           05 VALUE ' ENVIRONMENT-VALUE             ' PIC X(33).
  1780           05 VALUE ' EO                            ' PIC X(33).    UNIMPLEMENTED
  1781           05 VALUE ' EOL                           ' PIC X(33).
  1782           05 VALUE ' EOP                           ' PIC X(33).
  1783           05 VALUE ' EOS                           ' PIC X(33).
  1784           05 VALUE ' EQUAL                         ' PIC X(33).
  1785           05 VALUE 'KEQUALS                        ' PIC X(33).
  1786           05 VALUE ' ERASE                         ' PIC X(33).
  1787           05 VALUE ' ERROR                         ' PIC X(33).
  1788           05 VALUE ' ESCAPE                        ' PIC X(33).
  1789           05 VALUE ' ESI                           ' PIC X(33).    OBSOLETE
  1790           05 VALUE 'VEVALUATE                      ' PIC X(33).
  1791           05 VALUE ' EXCEPTION                     ' PIC X(33).
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====== =============================================================================
  1792 GC1213      05 VALUE 'FEXCEPTION-FILE               ' PIC X(33).
  1793 GC1213      05 VALUE 'FEXCEPTION-FILE-N             ' PIC X(33).    UNIMPLEMENTED
  1794 GC1213      05 VALUE 'FEXCEPTION-LOCATION           ' PIC X(33).
  1795 GC1213      05 VALUE 'FEXCEPTION-LOCATION-N         ' PIC X(33).    UNIMPLEMENTED
  1796             05 VALUE ' EXCEPTION-OBJECT             ' PIC X(33).    UNIMPLEMENTED
  1797 GC1213      05 VALUE 'FEXCEPTION-STATEMENT          ' PIC X(33).
  1798 GC1213      05 VALUE 'FEXCEPTION-STATUS             ' PIC X(33).
  1799             05 VALUE ' EXCLUSIVE                    ' PIC X(33).
  1800             05 VALUE 'VEXIT                         ' PIC X(33).
  1801 GC1213      05 VALUE 'FEXP                          ' PIC X(33).
  1802 GC1213      05 VALUE 'FEXP10                        ' PIC X(33).
  1803             05 VALUE ' EXPANDS                      ' PIC X(33).    UNIMPLEMENTED
  1804             05 VALUE ' EXTEND                       ' PIC X(33).
  1805             05 VALUE ' EXTERNAL                     ' PIC X(33).
  1806 GC1213      05 VALUE 'FFACTORIAL                    ' PIC X(33).
  1807             05 VALUE ' FACTORY                      ' PIC X(33).    UNIMPLEMENTED
  1808             05 VALUE ' FALSE                        ' PIC X(33).
  1809             05 VALUE 'KFD                           ' PIC X(33).
  1810             05 VALUE 'KFILE                         ' PIC X(33).
  1811             05 VALUE ' FILE-CONTROL                 ' PIC X(33).
  1812             05 VALUE ' FILE-ID                      ' PIC X(33).
  1813 GC1113      05 VALUE ' FILLER                       ' PIC X(33).
  1814             05 VALUE ' FINAL                        ' PIC X(33).
  1815             05 VALUE ' FIRST                        ' PIC X(33).
  1816 GC0712      05 VALUE ' FLOAT-BINARY-128             ' PIC X(33).    UNIMPLEMENTED
  1817 GC0712      05 VALUE ' FLOAT-BINARY-32              ' PIC X(33).    UNIMPLEMENTED
  1818 GC0712      05 VALUE ' FLOAT-BINARY-64              ' PIC X(33).    UNIMPLEMENTED
  1819             05 VALUE ' FLOAT-DECIMAL-16             ' PIC X(33).
  1820             05 VALUE ' FLOAT-DECIMAL-34             ' PIC X(33).
  1821             05 VALUE ' FLOAT-EXTENDED               ' PIC X(33).    UNIMPLEMENTED
  1822 GC0712      05 VALUE ' FLOAT-INFINITY               ' PIC X(33).    UNIMPLEMENTED
  1823             05 VALUE ' FLOAT-LONG                   ' PIC X(33).
  1824 GC0712      05 VALUE ' FLOAT-NOT-A-NUMBER           ' PIC X(33).    UNIMPLEMENTED
  1825             05 VALUE ' FLOAT-SHORT                  ' PIC X(33).
  1826             05 VALUE ' FOOTING                      ' PIC X(33).
  1827             05 VALUE ' FOR                          ' PIC X(33).
  1828             05 VALUE ' FOREGROUND-COLOR             ' PIC X(33).
  1829             05 VALUE ' FOREGROUND-COLOUR            ' PIC X(33).
  1830 GC0711      05 VALUE ' FOREVER                      ' PIC X(33).
  1831             05 VALUE ' FORMAT                       ' PIC X(33).    UNIMPLEMENTED
  1832 GC1213      05 VALUE 'FFORMATTED-CURRENT-DATE       ' PIC X(33).    UNIMPLEMENTED
  1833 GC1213      05 VALUE 'FFORMATTED-DATE               ' PIC X(33).    UNIMPLEMENTED
  1834 GC1213      05 VALUE 'FFORMATTED-DATETIME           ' PIC X(33).    UNIMPLEMENTED
  1835 GC1213      05 VALUE 'FFORMATTED-TIME               ' PIC X(33).    UNIMPLEMENTED
  1836             05 VALUE 'MFORMFEED                     ' PIC X(33).
  1837 GC1213      05 VALUE 'FFRACTION-PART                ' PIC X(33).
  1838             05 VALUE 'VFREE                         ' PIC X(33).
  1839             05 VALUE ' FROM                         ' PIC X(33).
  1840             05 VALUE ' FULL                         ' PIC X(33).
  1841             05 VALUE ' FUNCTION                     ' PIC X(33).
  1842 GC0712      05 VALUE 'KFUNCTION-ID                  ' PIC X(33).
  1843             05 VALUE ' FUNCTION-POINTER             ' PIC X(33).    UNIMPLEMENTED
  1844             05 VALUE 'VGENERATE                     ' PIC X(33).

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 1845           05 VALUE ' GET               ' PIC X(33).     UNIMPLEMENTED
 1846           05 VALUE 'KGIVING            ' PIC X(33).
 1847           05 VALUE ' GLOBAL            ' PIC X(33).
 1848           05 VALUE 'VGO                ' PIC X(33).
 1849           05 VALUE 'VGOBACK            ' PIC X(33).
 1850           05 VALUE ' GREATER           ' PIC X(33).
 1851           05 VALUE ' GROUP             ' PIC X(33).
 1852           05 VALUE ' GROUP-USAGE       ' PIC X(33).     UNIMPLEMENTED
 1853           05 VALUE ' HEADING           ' PIC X(33).
 1854           05 VALUE ' HIGH-VALUE        ' PIC X(33).
 1855           05 VALUE ' HIGH-VALUES       ' PIC X(33).
 1856 GC1213    05 VALUE 'FHIGHEST-ALGEBRAIC ' PIC X(33).
 1857           05 VALUE ' HIGHLIGHT         ' PIC X(33).
 1858           05 VALUE ' I-O               ' PIC X(33).
 1859           05 VALUE ' I-O-CONTROL       ' PIC X(33).
 1860           05 VALUE 'KID                ' PIC X(33).
 1861           05 VALUE 'KIDENTIFICATION    ' PIC X(33).
 1862           05 VALUE 'VIF                ' PIC X(33).
 1863           05 VALUE ' IGNORE            ' PIC X(33).
 1864           05 VALUE ' IGNORING          ' PIC X(33).
 1865           05 VALUE ' IMPLEMENTS        ' PIC X(33).     UNIMPLEMENTED
 1866           05 VALUE ' IN                ' PIC X(33).
 1867           05 VALUE ' INDEX             ' PIC X(33).
 1868           05 VALUE 'KINDEXED           ' PIC X(33).
 1869           05 VALUE ' INDICATE          ' PIC X(33).
 1870           05 VALUE ' INDIRECT          ' PIC X(33).     UNIMPLEMENTED
 1871           05 VALUE ' INHERITS          ' PIC X(33).     UNIMPLEMENTED
 1872           05 VALUE ' INITIAL           ' PIC X(33).
 1873           05 VALUE 'VINITIALISE        ' PIC X(33).
 1874           05 VALUE ' INITIALISED       ' PIC X(33).
 1875           05 VALUE 'VINITIALIZE        ' PIC X(33).
 1876           05 VALUE ' INITIALIZED       ' PIC X(33).
 1877           05 VALUE 'VINITIATE          ' PIC X(33).
 1878           05 VALUE ' INPUT             ' PIC X(33).
 1879           05 VALUE 'KINPUT-OUTPUT      ' PIC X(33).
 1880           05 VALUE 'VINSPECT           ' PIC X(33).
 1881           05 VALUE ' INSTALLATION      ' PIC X(33).     OBSOLETE
 1882 GC1213    05 VALUE 'FINTEGER           ' PIC X(33).
 1883 GC1213    05 VALUE 'FINTEGER-OF-BOOLEAN ' PIC X(33).    UNIMPLEMENTED
 1884 GC1213    05 VALUE 'FINTEGER-OF-DATE   ' PIC X(33).
 1885 GC1213    05 VALUE 'FINTEGER-OF-DAY    ' PIC X(33).
 1886 GC1213    05 VALUE 'FINTEGER-OF-FORMATTED-DATE ' PIC X(33).  UNIMPLEMENTED
 1887 GC1213    05 VALUE 'FINTEGER-PART      ' PIC X(33).
 1888           05 VALUE ' INTERFACE         ' PIC X(33).     UNIMPLEMENTED
 1889           05 VALUE ' INTERFACE-ID      ' PIC X(33).     UNIMPLEMENTED
 1890           05 VALUE ' INTERMEDIATE      ' PIC X(33).     UNIMPLEMENTED
 1891           05 VALUE 'KINTO              ' PIC X(33).
 1892           05 VALUE ' INTRINSIC         ' PIC X(33).
 1893           05 VALUE ' INVALID           ' PIC X(33).
 1894           05 VALUE ' INVOKE            ' PIC X(33).     UNIMPLEMENTED
 1895           05 VALUE ' IS                ' PIC X(33).
 1896           05 VALUE ' JUST              ' PIC X(33).
 1897           05 VALUE ' JUSTIFIED         ' PIC X(33).
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 1898           05 VALUE ' KEPT                      ' PIC X(33).
 1899           05 VALUE ' KEY                       ' PIC X(33).
 1900           05 VALUE ' KEYBOARD                  ' PIC X(33).
 1901           05 VALUE ' LABEL                     ' PIC X(33).
 1902           05 VALUE ' LAST                      ' PIC X(33).
 1903           05 VALUE ' LC_ALL                    ' PIC X(33).     UNIMPLEMENTED
 1904           05 VALUE ' LC_COLLATE                ' PIC X(33).     UNIMPLEMENTED
 1905           05 VALUE ' LC_CTYPE                  ' PIC X(33).     UNIMPLEMENTED
 1906           05 VALUE ' LC_MESSAGES               ' PIC X(33).     UNIMPLEMENTED
 1907           05 VALUE ' LC_MONETARY               ' PIC X(33).     UNIMPLEMENTED
 1908           05 VALUE ' LC_NUMERIC                ' PIC X(33).     UNIMPLEMENTED
 1909           05 VALUE ' LC_TIME                   ' PIC X(33).     UNIMPLEMENTED
 1910           05 VALUE ' LEADING                   ' PIC X(33).
 1911           05 VALUE ' LEFT                      ' PIC X(33).
 1912           05 VALUE ' LEFT-JUSTIFY              ' PIC X(33).     UNIMPLEMENTED
 1913           05 VALUE ' LEFTLINE                  ' PIC X(33).
 1914 GC1213    05 VALUE 'FLENGTH                    ' PIC X(33).
 1915 GC1213    05 VALUE 'FLENGTH-AN                 ' PIC X(33).
 1916           05 VALUE ' LENGTH-CHECK              ' PIC X(33).
 1917           05 VALUE ' LESS                      ' PIC X(33).
 1918           05 VALUE ' LIMIT                     ' PIC X(33).
 1919           05 VALUE ' LIMITS                    ' PIC X(33).
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 1921           05 VALUE 'ILINAGE-COUNTER            ' PIC X(33).
 1922           05 VALUE ' LINE                      ' PIC X(33).
 1923 GC1213    05 VALUE 'ILINE-COUNTER              ' PIC X(33).
 1924           05 VALUE ' LINES                     ' PIC X(33).
 1925           05 VALUE 'KLINKAGE                   ' PIC X(33).
 1926           05 VALUE 'KLOCAL-STORAGE             ' PIC X(33).
 1927           05 VALUE ' LOCALE                    ' PIC X(33).
 1928 GC1213    05 VALUE 'FLOCALE-COMPARE            ' PIC X(33).
 1929 GC1213    05 VALUE 'FLOCALE-DATE               ' PIC X(33).
 1930 GC1213    05 VALUE 'FLOCALE-TIME               ' PIC X(33).
 1931 GC1213    05 VALUE 'FLOCALE-TIME-FROM-SECONDS  ' PIC X(33).
 1932           05 VALUE ' LOCK                      ' PIC X(33).
 1933 GC1213    05 VALUE 'FLOG                       ' PIC X(33).
 1934 GC1213    05 VALUE 'FLOG10                     ' PIC X(33).
 1935           05 VALUE ' LOW-VALUE                 ' PIC X(33).
 1936           05 VALUE ' LOW-VALUES                ' PIC X(33).
 1937           05 VALUE ' LOWER                     ' PIC X(33).
 1938 GC1213    05 VALUE 'FLOWER-CASE                ' PIC X(33).
 1939 GC1213    05 VALUE 'FLOWEST-ALGEBRAIC          ' PIC X(33).
 1940           05 VALUE ' LOWLIGHT                  ' PIC X(33).
 1941           05 VALUE ' MANUAL                    ' PIC X(33).
 1942 GC1213    05 VALUE 'FMAX                       ' PIC X(33).
 1943 GC1213    05 VALUE 'FMEAN                      ' PIC X(33).
 1944 GC1213    05 VALUE 'FMEDIAN                    ' PIC X(33).
 1945           05 VALUE ' MEMORY                    ' PIC X(33).
 1946           05 VALUE 'VMERGE                     ' PIC X(33).
 1947           05 VALUE ' MESSAGE                   ' PIC X(33).     OBSOLETE
 1948           05 VALUE ' METHOD                    ' PIC X(33).     UNIMPLEMENTED
 1949           05 VALUE ' METHOD-ID                 ' PIC X(33).     UNIMPLEMENTED
 1950 GC1213    05 VALUE 'FMIDRANGE                  ' PIC X(33).

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 1951 GC1213      05 VALUE 'FMIN                         ' PIC X(33).
 1952              05 VALUE ' MINUS                       ' PIC X(33).
 1953 GC1213      05 VALUE 'FMOD                         ' PIC X(33).
 1954              05 VALUE ' MODE                        ' PIC X(33).
 1955 GC1213      05 VALUE 'FMODULE-CALLER-ID            ' PIC X(33).
 1956 GC1213      05 VALUE 'FMODULE-DATE                 ' PIC X(33).
 1957 GC1213      05 VALUE 'FMODULE-FORMATTED-DATE       ' PIC X(33).
 1958 GC1213      05 VALUE 'FMODULE-ID                   ' PIC X(33).
 1959 GC1213      05 VALUE 'FMODULE-PATH                 ' PIC X(33).
 1960 GC1213      05 VALUE 'FMODULE-SOURCE               ' PIC X(33).
 1961 GC1213      05 VALUE 'FMODULE-TIME                 ' PIC X(33).
 1962 GC1213      05 VALUE 'FMONETARY-DECIMAL-POINT      ' PIC X(33).
 1963 GC1213      05 VALUE 'FMONETARY-THOUSANDS-SEPARATOR ' PIC X(33).
 1964              05 VALUE 'VMOVE                        ' PIC X(33).
 1965              05 VALUE ' MULTIPLE                    ' PIC X(33).
 1966              05 VALUE 'VMULTIPLY                    ' PIC X(33).
 1967 GC0711      05 VALUE ' NAME                        ' PIC X(33).
 1968              05 VALUE ' NATIONAL                    ' PIC X(33).
 1969              05 VALUE ' NATIONAL-EDITED             ' PIC X(33).
 1970 GC1213      05 VALUE 'FNATIONAL-OF                 ' PIC X(33).      UNIMPLEMENTED
 1971              05 VALUE ' NATIVE                      ' PIC X(33).
 1972              05 VALUE ' NEAREST-AWAY-FROM-ZERO      ' PIC X(33).
 1973              05 VALUE ' NEAREST-EVEN                ' PIC X(33).
 1974              05 VALUE ' NEAREST-TOWARD-ZERO         ' PIC X(33).
 1975              05 VALUE ' NEGATIVE                    ' PIC X(33).
 1976              05 VALUE ' NESTED                      ' PIC X(33).      UNIMPLEMENTED
 1977              05 VALUE 'VNEXT                        ' PIC X(33).
 1978              05 VALUE ' NO                          ' PIC X(33).
 1979              05 VALUE ' NO-ECHO                     ' PIC X(33).
 1980              05 VALUE ' NONE                        ' PIC X(33).      UNIMPLEMENTED
 1981              05 VALUE ' NORMAL                      ' PIC X(33).
 1982              05 VALUE ' NOT                         ' PIC X(33).
 1983              05 VALUE ' NULL                        ' PIC X(33).
 1984              05 VALUE ' NULLS                       ' PIC X(33).
 1985              05 VALUE ' NUMBER                      ' PIC X(33).
 1986              05 VALUE 'INUMBER-OF-CALL-PARAMETERS   ' PIC X(33).
 1987              05 VALUE ' NUMBERS                     ' PIC X(33).
 1988              05 VALUE ' NUMERIC                     ' PIC X(33).
 1989 GC1213      05 VALUE 'FNUMERIC-DECIMAL-POINT        ' PIC X(33).
 1990              05 VALUE ' NUMERIC-EDITED              ' PIC X(33).
 1991 GC1213      05 VALUE 'FNUMERIC-THOUSANDS-SEPARATOR  ' PIC X(33).
 1992 GC1213      05 VALUE 'FNUMVAL                      ' PIC X(33).
 1993 GC1213      05 VALUE 'FNUMVAL-C                    ' PIC X(33).
 1994 GC1213      05 VALUE 'FNUMVAL-F                    ' PIC X(33).
 1995              05 VALUE ' OBJECT                      ' PIC X(33).      UNIMPLEMENTED
 1996              05 VALUE ' OBJECT-COMPUTER             ' PIC X(33).
 1997              05 VALUE ' OBJECT-REFERENCE            ' PIC X(33).      UNIMPLEMENTED
 1998              05 VALUE ' OCCURS                      ' PIC X(33).
 1999              05 VALUE ' OF                          ' PIC X(33).
 2000              05 VALUE ' OFF                         ' PIC X(33).
 2001              05 VALUE ' OMITTED                     ' PIC X(33).
 2002              05 VALUE ' ON                          ' PIC X(33).
 2003              05 VALUE ' ONLY                        ' PIC X(33).

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 2004           05 VALUE 'VOPEN                       ' PIC X(33).
 2005           05 VALUE ' OPTIONAL                    ' PIC X(33).
 2006           05 VALUE ' OPTIONS                     ' PIC X(33).      UNIMPLEMENTED
 2007           05 VALUE ' OR                          ' PIC X(33).
 2008 GC1213    05 VALUE 'FORD                         ' PIC X(33).
 2009 GC1213    05 VALUE 'FORD-MAX                     ' PIC X(33).
 2010 GC1213    05 VALUE 'FORD-MIN                     ' PIC X(33).
 2011           05 VALUE ' ORDER                       ' PIC X(33).
 2012           05 VALUE ' ORGANISATION                ' PIC X(33).
 2013           05 VALUE ' ORGANIZATION                ' PIC X(33).
 2014           05 VALUE ' OTHER                       ' PIC X(33).
 2015           05 VALUE ' OUTPUT                      ' PIC X(33).
 2016           05 VALUE ' OVERFLOW                    ' PIC X(33).
 2017           05 VALUE ' OVERLINE                    ' PIC X(33).
 2018           05 VALUE ' OVERRIDE                    ' PIC X(33).
 2019           05 VALUE ' PACKED-DECIMAL              ' PIC X(33).
 2020           05 VALUE ' PADDING                     ' PIC X(33).
 2021           05 VALUE ' PAGE                        ' PIC X(33).
 2022 GC1213    05 VALUE 'IPAGE-COUNTER                ' PIC X(33).
 2023           05 VALUE ' PARAGRAPH                   ' PIC X(33).
 2024           05 VALUE 'VPERFORM                     ' PIC X(33).
 2025           05 VALUE ' PF                          ' PIC X(33).
 2026           05 VALUE ' PH                          ' PIC X(33).
 2027 GC1213    05 VALUE 'FPI                          ' PIC X(33).
 2028           05 VALUE 'KPIC                         ' PIC X(33).
 2029           05 VALUE 'KPICTURE                     ' PIC X(33).
 2030           05 VALUE ' PLUS                        ' PIC X(33).
 2031           05 VALUE 'KPOINTER                     ' PIC X(33).
 2032           05 VALUE ' POSITION                    ' PIC X(33).
 2033           05 VALUE ' POSITIVE                    ' PIC X(33).
 2034           05 VALUE ' PREFIXED                    ' PIC X(33).      UNIMPLEMENTED
 2035           05 VALUE ' PRESENT                     ' PIC X(33).
 2036 GC1213    05 VALUE 'FPRESENT-VALUE               ' PIC X(33).
 2037           05 VALUE ' PREVIOUS                    ' PIC X(33).
 2038           05 VALUE 'MPRINTER                     ' PIC X(33).
 2039           05 VALUE ' PRINTING                    ' PIC X(33).
 2040           05 VALUE 'KPROCEDURE                   ' PIC X(33).
 2041           05 VALUE ' PROCEDURE-POINTER           ' PIC X(33).
 2042           05 VALUE ' PROCEDURES                  ' PIC X(33).
 2043           05 VALUE ' PROCEED                     ' PIC X(33).
 2044           05 VALUE ' PROGRAM                     ' PIC X(33).
 2045           05 VALUE 'KPROGRAM-ID                  ' PIC X(33).
 2046           05 VALUE ' PROGRAM-POINTER             ' PIC X(33).
 2047           05 VALUE ' PROHIBITED                  ' PIC X(33).
 2048           05 VALUE ' PROMPT                      ' PIC X(33).
 2049           05 VALUE ' PROPERTY                    ' PIC X(33).      UNIMPLEMENTED
 2050           05 VALUE ' PROTOTYPE                   ' PIC X(33).      UNIMPLEMENTED
 2051           05 VALUE ' PURGE                       ' PIC X(33).      OBSOLETE
 2052           05 VALUE ' QUEUE                       ' PIC X(33).      OBSOLETE
 2053           05 VALUE ' QUOTE                       ' PIC X(33).
 2054           05 VALUE ' QUOTES                      ' PIC X(33).
 2055           05 VALUE ' RAISE                       ' PIC X(33).      UNIMPLEMENTED
 2056           05 VALUE ' RAISING                     ' PIC X(33).      UNIMPLEMENTED

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 2057 GC1213       05 VALUE 'FRANDOM                      ' PIC X(33).
 2058 GC1213       05 VALUE 'FRANGE                       ' PIC X(33).
 2059 GC1213       05 VALUE 'KRD                          ' PIC X(33).
 2060              05 VALUE 'VREAD                        ' PIC X(33).
 2061              05 VALUE 'VREADY                       ' PIC X(33).
 2062              05 VALUE 'VRECEIVE                     ' PIC X(33).     OBSOLETE
 2063              05 VALUE ' RECORD                      ' PIC X(33).
 2064              05 VALUE ' RECORDING                   ' PIC X(33).
 2065              05 VALUE ' RECORDS                     ' PIC X(33).
 2066              05 VALUE ' RECURSIVE                   ' PIC X(33).
 2067              05 VALUE 'KREDEFINES                   ' PIC X(33).
 2068              05 VALUE ' REEL                        ' PIC X(33).
 2069 GC0712       05 VALUE 'AREFERENCE                   ' PIC X(33).
 2070              05 VALUE ' REFERENCES                  ' PIC X(33).
 2071              05 VALUE ' RELATION                    ' PIC X(33).     UNIMPLEMENTED
 2072              05 VALUE ' RELATIVE                    ' PIC X(33).
 2073              05 VALUE 'VRELEASE                     ' PIC X(33).
 2074 GC1213       05 VALUE 'FREM                         ' PIC X(33).
 2075              05 VALUE ' REMAINDER                   ' PIC X(33).
 2076              05 VALUE ' REMARKS                     ' PIC X(33).     OBSOLETE
 2077              05 VALUE ' REMOVAL                     ' PIC X(33).
 2078              05 VALUE 'KRENAMES                     ' PIC X(33).
 2079              05 VALUE ' REPLACE                     ' PIC X(33).
 2080              05 VALUE 'KREPLACING                   ' PIC X(33).
 2081              05 VALUE 'KREPORT                      ' PIC X(33).
 2082              05 VALUE ' REPORTING                   ' PIC X(33).
 2083              05 VALUE ' REPORTS                     ' PIC X(33).
 2084              05 VALUE ' REPOSITORY                  ' PIC X(33).
 2085              05 VALUE ' REQUIRED                    ' PIC X(33).
 2086              05 VALUE ' RESERVE                     ' PIC X(33).
 2087              05 VALUE 'VRESET                       ' PIC X(33).
 2088              05 VALUE ' RESUME                      ' PIC X(33).     UNIMPLEMENTED
 2089              05 VALUE ' RETRY                       ' PIC X(33).     UNIMPLEMENTED
 2090              05 VALUE 'VRETURN                      ' PIC X(33).
 2091              05 VALUE 'IRETURN-CODE                 ' PIC X(33).
 2092              05 VALUE 'KRETURNING                   ' PIC X(33).
 2093 GC1213       05 VALUE 'FREVERSE                     ' PIC X(33).
 2094              05 VALUE ' REVERSE-VIDEO               ' PIC X(33).
 2095              05 VALUE ' REVERSED                    ' PIC X(33).
 2096              05 VALUE ' REWIND                      ' PIC X(33).
 2097              05 VALUE 'VREWRITE                     ' PIC X(33).
 2098              05 VALUE ' RF                          ' PIC X(33).
 2099              05 VALUE ' RH                          ' PIC X(33).
 2100              05 VALUE ' RIGHT                       ' PIC X(33).
 2101              05 VALUE ' RIGHT-JUSTIFY               ' PIC X(33).     UNIMPLEMENTED
 2102              05 VALUE 'VROLLBACK                    ' PIC X(33).
 2103              05 VALUE ' ROUNDED                     ' PIC X(33).
 2104              05 VALUE ' ROUNDING                    ' PIC X(33).     UNIMPLEMENTED
 2105              05 VALUE ' RUN                         ' PIC X(33).
 2106              05 VALUE ' SAME                        ' PIC X(33).
 2107              05 VALUE 'KSCREEN                      ' PIC X(33).
 2108              05 VALUE ' SCROLL                      ' PIC X(33).
 2109              05 VALUE 'KSD                          ' PIC X(33).

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 2110           05 VALUE 'VSEARCH                      ' PIC X(33).
 2111           05 VALUE ' SECONDS                     ' PIC X(33).      UNIMPLEMENTED
 2112 GC1213    05 VALUE 'FSECONDS-FROM-FORMATTED-TIME  ' PIC X(33).
 2113 GC1213    05 VALUE 'FSECONDS-PAST-MIDNIGHT       ' PIC X(33).
 2114           05 VALUE 'KSECTION                     ' PIC X(33).
 2115           05 VALUE ' SECURE                      ' PIC X(33).
 2116           05 VALUE ' SECURITY                    ' PIC X(33).      OBSOLETE
 2117           05 VALUE ' SEGMENT                     ' PIC X(33).      OBSOLETE
 2118           05 VALUE ' SEGMENT-LIMIT               ' PIC X(33).
 2119           05 VALUE ' SELECT                      ' PIC X(33).
 2120           05 VALUE ' SELF                        ' PIC X(33).      UNIMPLEMENTED
 2121           05 VALUE 'VSEND                        ' PIC X(33).      OBSOLETE
 2122           05 VALUE ' SENTENCE                    ' PIC X(33).
 2123           05 VALUE ' SEPARATE                    ' PIC X(33).
 2124           05 VALUE ' SEQUENCE                    ' PIC X(33).
 2125           05 VALUE ' SEQUENTIAL                  ' PIC X(33).
 2126           05 VALUE 'VSET                         ' PIC X(33).
 2127           05 VALUE ' SHARING                     ' PIC X(33).
 2128 GC1213    05 VALUE 'FSIGN                        ' PIC X(33).
 2129           05 VALUE ' SIGNED                      ' PIC X(33).
 2130           05 VALUE ' SIGNED-INT                  ' PIC X(33).
 2131           05 VALUE ' SIGNED-LONG                 ' PIC X(33).
 2132           05 VALUE ' SIGNED-SHORT                ' PIC X(33).
 2133 GC1213    05 VALUE 'FSIN                         ' PIC X(33).
 2134           05 VALUE ' SIZE                        ' PIC X(33).
 2135           05 VALUE 'VSORT                        ' PIC X(33).
 2136           05 VALUE ' SORT-MERGE                  ' PIC X(33).
 2137           05 VALUE 'ISORT-RETURN                 ' PIC X(33).
 2138           05 VALUE ' SOURCE                      ' PIC X(33).
 2139           05 VALUE ' SOURCE-COMPUTER             ' PIC X(33).
 2140           05 VALUE ' SOURCES                     ' PIC X(33).      UNIMPLEMENTED
 2141           05 VALUE ' SPACE                       ' PIC X(33).
 2142           05 VALUE ' SPACE-FILL                  ' PIC X(33).      UNIMPLEMENTED
 2143           05 VALUE ' SPACES                      ' PIC X(33).
 2144           05 VALUE ' SPECIAL-NAMES               ' PIC X(33).
 2145 GC1213    05 VALUE 'FSQRT                        ' PIC X(33).
 2146           05 VALUE ' STANDARD                    ' PIC X(33).
 2147           05 VALUE ' STANDARD-1                  ' PIC X(33).
 2148           05 VALUE ' STANDARD-2                  ' PIC X(33).
 2149           05 VALUE ' STANDARD-BINARY             ' PIC X(33).      UNIMPLEMENTED
 2150 GC1213    05 VALUE 'FSTANDARD-COMPARE            ' PIC X(33).      UNIMPLEMENTED
 2151           05 VALUE ' STANDARD-DECIMAL            ' PIC X(33).      UNIMPLEMENTED
 2152 GC1213    05 VALUE 'FSTANDARD-DEVIATION          ' PIC X(33).
 2153           05 VALUE 'VSTART                       ' PIC X(33).
 2154           05 VALUE ' STATEMENT                   ' PIC X(33).      UNIMPLEMENTED
 2155           05 VALUE ' STATIC                      ' PIC X(33).
 2156           05 VALUE ' STATUS                      ' PIC X(33).
 2157           05 VALUE ' STDCALL                     ' PIC X(33).
 2158           05 VALUE 'MSTDERR                      ' PIC X(33).
 2159           05 VALUE 'MSTDIN                       ' PIC X(33).
 2160           05 VALUE 'MSTDOUT                      ' PIC X(33).
 2161           05 VALUE ' STEP                        ' PIC X(33).
 2162           05 VALUE 'VSTOP                        ' PIC X(33).
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  2163 GC1213     05 VALUE 'FSTORED-CHAR-LENGTH              ' PIC X(33).
  2164            05 VALUE 'VSTRING                          ' PIC X(33).
  2165            05 VALUE ' STRONG                          ' PIC X(33).    UNIMPLEMENTED
  2166            05 VALUE ' SUB-QUEUE-1                     ' PIC X(33).    OBSOLETE
  2167            05 VALUE ' SUB-QUEUE-2                     ' PIC X(33).    OBSOLETE
  2168            05 VALUE ' SUB-QUEUE-3                     ' PIC X(33).    OBSOLETE
  2169 GC1213     05 VALUE 'FSUBSTITUTE                      ' PIC X(33).
  2170 GC1213     05 VALUE 'FSUBSTITUTE-CASE                 ' PIC X(33).
  2171            05 VALUE 'VSUBTRACT                        ' PIC X(33).
  2172 GC1213     05 VALUE 'FSUM                             ' PIC X(33).
  2173            05 VALUE ' SUPER                           ' PIC X(33).    UNIMPLEMENTED
  2174            05 VALUE 'VSUPPRESS                        ' PIC X(33).
  2175            05 VALUE 'MSW0                             ' PIC X(33).
  2176            05 VALUE 'MSW1                             ' PIC X(33).
  2177            05 VALUE 'MSW10                            ' PIC X(33).
  2178            05 VALUE 'MSW11                            ' PIC X(33).
  2179            05 VALUE 'MSW12                            ' PIC X(33).
  2180            05 VALUE 'MSW13                            ' PIC X(33).
  2181            05 VALUE 'MSW14                            ' PIC X(33).
  2182            05 VALUE 'MSW15                            ' PIC X(33).
  2183            05 VALUE 'MSW2                             ' PIC X(33).
  2184            05 VALUE 'MSW3                             ' PIC X(33).
  2185            05 VALUE 'MSW4                             ' PIC X(33).
  2186            05 VALUE 'MSW5                             ' PIC X(33).
  2187            05 VALUE 'MSW6                             ' PIC X(33).
  2188            05 VALUE 'MSW7                             ' PIC X(33).
  2189            05 VALUE 'MSW8                             ' PIC X(33).
  2190            05 VALUE 'MSW9                             ' PIC X(33).
  2191            05 VALUE 'MSWITCH-0                        ' PIC X(33).
  2192            05 VALUE 'MSWITCH-1                        ' PIC X(33).
  2193            05 VALUE 'MSWITCH-10                       ' PIC X(33).
  2194            05 VALUE 'MSWITCH-11                       ' PIC X(33).
  2195            05 VALUE 'MSWITCH-12                       ' PIC X(33).
  2196            05 VALUE 'MSWITCH-13                       ' PIC X(33).
  2197            05 VALUE 'MSWITCH-14                       ' PIC X(33).
  2198            05 VALUE 'MSWITCH-15                       ' PIC X(33).
  2199            05 VALUE 'MSWITCH-2                        ' PIC X(33).
  2200            05 VALUE 'MSWITCH-3                        ' PIC X(33).
  2201            05 VALUE 'MSWITCH-4                        ' PIC X(33).
  2202            05 VALUE 'MSWITCH-5                        ' PIC X(33).
  2203            05 VALUE 'MSWITCH-6                        ' PIC X(33).
  2204            05 VALUE 'MSWITCH-7                        ' PIC X(33).
  2205            05 VALUE 'MSWITCH-8                        ' PIC X(33).
  2206            05 VALUE 'MSWITCH-9                        ' PIC X(33).
  2207            05 VALUE ' SYMBOL                          ' PIC X(33).    UNIMPLEMENTED
  2208            05 VALUE ' SYMBOLIC                        ' PIC X(33).
  2209            05 VALUE ' SYNC                            ' PIC X(33).
  2210            05 VALUE ' SYNCHRONISED                    ' PIC X(33).
  2211            05 VALUE ' SYNCHRONIZED                    ' PIC X(33).
  2212            05 VALUE 'MSYSERR                          ' PIC X(33).
  2213            05 VALUE 'MSYSIN                           ' PIC X(33).
  2214            05 VALUE 'MSYSIPT                          ' PIC X(33).
  2215            05 VALUE 'MSYSLIST                         ' PIC X(33).

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

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


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GNUCOBOL 3.0 24DEC2017  Source Listing                                         2017/12/24
                                              /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                             Page: 53
====== ======================================================================================
 2322
 2323        01  WS-Src-Detail-Line-TXT.
 2324            05 WS-SDL-Line-NUM                    PIC ZZZZZ9.
 2325            05 FILLER                             PIC X(1).
 2326            05 WS-SDL-Statement-TXT               PIC X(256).
 2327
 2328 GC1213 01  WS-Src-Hold-TXT                       PIC X(256).
 2329
 2330        01  WS-Src-Line-NUM                       PIC 9(6).
 2331
 2332 GC1213 01  WS-Src-Lines-NUM                      USAGE BINARY-LONG.
 2333
 2334        01  WS-Src-SUB                            USAGE BINARY-LONG.
 2335
 2336        01  WS-Tally-QTY                          USAGE BINARY-LONG.
 2337
 2338        01  WS-Temp-10-Chars-TXT                  PIC X(10).
 2339
 2340        01  WS-Temp-32-Chars-1-TXT                PIC X(32).
 2341
 2342 GC0711 01  WS-Temp-32-Chars-2-TXT                PIC X(32).
 2343
 2344 GC0711 01  WS-Temp-32-Chars-3-TXT                PIC X(32).
 2345
 2346 GC0712 01  WS-Temp-65-Chars-TXT                  PIC X(65).
 2347
 2348        01  WS-Temp-256-Chars-TXT                 PIC X(256).
 2349
 2350        01  WS-Today-DT                           PIC 9(8).
 2351
 2352        01  WS-Token-Curr-TXT                     PIC X(32).
 2353
 2354        01  WS-Token-Curr-Uc-TXT                  PIC X(32).
 2355
 2356        01  WS-Token-Prev-TXT                     PIC X(32).
 2357
 2358        01  WS-Token-Search-TXT                   PIC X(32).
 2359
 2360        01  WS-Token-Type-CD                      PIC X(1).
 2361 GC0712     88 WS-TT-Token-Is-Argtype-BOOL        VALUE 'A'.
 2362            88 WS-TT-Token-Is-EOF-BOOL            VALUE HIGH-VALUES.
 2363 GC1213     88 WS-TT-Token-Is-Function-BOOL       VALUE 'F'.
 2364            88 WS-TT-Token-Is-Identifier-BOOL     VALUE 'I'.
 2365 GC0712     88 WS-TT-Token-Is-Keyword-BOOL        VALUE 'K', 'V', 'A'.
 2366            88 WS-TT-Token-Is-Lit-Alpha-BOOL      VALUE 'L'.
 2367            88 WS-TT-Token-Is-Lit-Number-BOOL     VALUE 'N'.
 2368            88 WS-TT-Token-Is-Verb-BOOL           VALUE 'V'.
 2369 GC1213     88 WS-TT-Token-Is-Reserved-Wd-BOOL    VALUE ' ', 'F'.
 2370
 2371        01  WS-Usernames-QTY                      USAGE BINARY-LONG.
 2372
 2373        01  WS-Version-TXT                        PIC X(23).
 2374

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GNUCOBOL 3.0 24DEC2017  Source Listing                                        2017/12/24
                                                /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                                Page: 54
====== =========================================================================================
  2375       01  WS-Xref-Detail-Line-TXT.
  2376           05 WS-XDL-Prog-ID-TXT                 PIC X(15).
  2377           05 FILLER                             PIC X(1).
  2378           05 WS-XDL-Token-TXT                   PIC X(32).
  2379           05 FILLER                             PIC X(1).
  2380           05 WS-XDL-Def-Line-NUM                PIC ZZZZZ9.
  2381           05 FILLER                             PIC X(1).
  2382           05 WS-XDL-Section-TXT                 PIC X(15).
  2383           05 FILLER                             PIC X(1).
  2384           05 WS-XDL-Reference-TXT               OCCURS 8 TIMES.
  2385              10 WS-XDL-Ref-Line-NUM             PIC ZZZZZ9.
  2386              10 WS-XDL-Ref-Flag-CHR             PIC X(1).
  2387              10 FILLER                          PIC X(1).
  2388
  2389 GC1213 01  WS-Xref-Lines-Per-Rec-NUM           PIC 9(1).
  2390
  2391       LINKAGE SECTION.
  2392 GC0712 01  L-Listing-Fn-TXT                    PIC X(256).
  2393
  2394       01  L-Src-Fn-TXT                         PIC X(256).
  2395
  2396 GC0712 01  L-OS-Type-CD                         PIC 9(1).
  2397
  2398 GC1213 01  L-LPP-NUM                           USAGE BINARY-LONG.
  2399
  2400 GC1213 01  L-LPP-Port-NUM                      USAGE BINARY-LONG.
  2401
  2402 GC1213 01  L-Listing-CD                         PIC 9(1).
```

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

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

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

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

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

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

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

==

```
====== ====================================================================================
  2603          END-IF
  2604          IF WS-Curr-Char-Is-Punct-BOOL
  2605              ADD 1 TO WS-Src-SUB
  2606              MOVE WS-Curr-CHR TO WS-Token-Curr-TXT
  2607              MOVE SPACE TO WS-Token-Type-CD
  2608              EXIT SECTION
  2609          END-IF
  2610          IF WS-Curr-Char-Is-Quote-BOOL
  2611              ADD 1 TO WS-Src-SUB
  2612              UNSTRING F-Expanded-Src-REC
  2613                  DELIMITED BY WS-Curr-CHR
  2614                  INTO WS-Token-Curr-TXT
  2615                  WITH POINTER WS-Src-SUB
  2616              IF F-Expanded-Src-REC(WS-Src-SUB : 1) = '.'
  2617                  MOVE 'Y' TO WS-RS-Token-Ended-Sentence-CHR
  2618                  ADD 1 TO WS-Src-SUB
  2619              END-IF
  2620              SET WS-TT-Token-Is-Lit-Alpha-BOOL TO TRUE
  2621              EXIT SECTION
  2622          END-IF
  2623          IF WS-Curr-Char-Is-X-BOOL AND WS-Next-Char-Is-Quote-BOOL
  2624              ADD 2 TO WS-Src-SUB
  2625              UNSTRING F-Expanded-Src-REC
  2626                  DELIMITED BY WS-Next-CHR
  2627                  INTO WS-Token-Curr-TXT
  2628                  WITH POINTER WS-Src-SUB
  2629              IF F-Expanded-Src-REC(WS-Src-SUB : 1) = '.'
  2630                  MOVE 'Y' TO WS-RS-Token-Ended-Sentence-CHR
  2631                  ADD 1 TO WS-Src-SUB
  2632              END-IF
  2633              SET WS-TT-Token-Is-Lit-Number-BOOL TO TRUE
  2634              EXIT SECTION
  2635          END-IF
  2636          IF WS-Curr-Char-Is-Z-BOOL AND WS-Next-Char-Is-Quote-BOOL
  2637              ADD 2 TO WS-Src-SUB
  2638              UNSTRING F-Expanded-Src-REC
  2639                  DELIMITED BY WS-Next-CHR
  2640                  INTO WS-Token-Curr-TXT
  2641                  WITH POINTER WS-Src-SUB
  2642              IF F-Expanded-Src-REC(WS-Src-SUB : 1) = '.'
  2643                  MOVE 'Y' TO WS-RS-Token-Ended-Sentence-CHR
  2644                  ADD 1 TO WS-Src-SUB
  2645              END-IF
  2646              SET WS-TT-Token-Is-Lit-Alpha-BOOL TO TRUE
  2647              EXIT SECTION
  2648          END-IF
  2649          IF WS-RS-Processing-PICTURE-CHR = 'Y'
  2650              UNSTRING F-Expanded-Src-REC
  2651                  DELIMITED BY '. ' OR ' '
  2652                  INTO WS-Token-Curr-TXT
  2653                  DELIMITER IN WS-Delim-TXT
  2654                  WITH POINTER WS-Src-SUB
  2655              IF WS-Delim-TXT = '. '
```

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

====== ===
  2709   .

==

====== ===

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

==

====== ===

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

==

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

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

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                        2017/12/24
                                             /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                               Page: 67
======  =================================================================================

  2830          330-ENVIRONMENT-DIVISION SECTION.
  2831 GC0712    IF WS-TT-Token-Is-Argtype-BOOL
  2832 GC0712       SET WS-TT-Token-Is-Reserved-Wd-BOOL TO TRUE
  2833 GC0712    END-IF
  2834          IF WS-TT-Token-Is-Keyword-BOOL
  2835          AND WS-Token-Curr-TXT = 'DIVISION'
  2836             MOVE WS-Token-Prev-TXT TO WS-Curr-Division-TXT
  2837             EXIT SECTION
  2838          END-IF
  2839          IF WS-TT-Token-Is-Keyword-BOOL
  2840          AND WS-Token-Curr-TXT = 'SECTION'
  2841             MOVE WS-Token-Prev-TXT TO WS-Curr-Section-TXT
  2842             EXIT SECTION
  2843          END-IF
  2844          IF WS-TT-Token-Is-Identifier-BOOL
  2845 GC0712       IF WS-Token-Prev-TXT = 'FUNCTION'
  2846 GC0712          PERFORM 360-Release-Def
  2847 GC0712       ELSE
  2848 GC0712          PERFORM 361-Release-Ref
  2849 GC0712       END-IF
  2850          END-IF
  2851 GC1213    IF WS-TT-Token-Is-Function-BOOL
  2852 GC1213       PERFORM 361-Release-Ref
  2853 GC1213    END-IF
  2854             .
```

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

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

==

====== ===
  2908   EXIT SECTION
  2909   END-IF
  2910   .

====== ==

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

===

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

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

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

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

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

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

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

==

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

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```

====== ==

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

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```
GNUCOBOL 3.0 24DEC2017  Source Listing                                    2017/12/24
                                        /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                           Page: 79
======  =======================================================================================
  3315 GC0710          END-IF
  3316                 IF WS-Xref-Detail-Line-TXT = SPACES
  3317                     MOVE F-SW-Prog-ID-TXT TO WS-XDL-Prog-ID-TXT
  3318                     MOVE F-SW-Token-TXT TO WS-XDL-Token-TXT
  3319                     MOVE F-SW-Section-TXT TO WS-XDL-Section-TXT
  3320                     IF F-SW-Def-Line-NUM NOT = SPACES
  3321                         MOVE F-SW-Def-Line-NUM TO WS-XDL-Def-Line-NUM
  3322                     END-IF
  3323                 END-IF
  3324                 IF F-SW-Reference-TXT > '000000'
  3325                     ADD 1 TO WS-I-SUB
  3326                     IF WS-I-SUB > WS-Xref-Lines-Per-Rec-NUM
  3327                         PERFORM 410-Generate-Report-Line
  3328                         MOVE 1 TO WS-I-SUB
  3329                     END-IF
  3330                     MOVE F-SW-Ref-Line-NUM
  3331                       TO WS-XDL-Ref-Line-NUM (WS-I-SUB)
  3332                     MOVE F-SW-Ref-Flag-CHR
  3333                       TO WS-XDL-Ref-Flag-CHR (WS-I-SUB)
  3334                 END-IF
  3335             END-PERFORM
  3336             IF WS-Xref-Detail-Line-TXT NOT = SPACES
  3337                 PERFORM 410-Generate-Report-Line
  3338             END-IF
  3339             .
```

```
====================================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL                    Page: 79
```

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

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

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```

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


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```

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

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

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

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

====== ===

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

===

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

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

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

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

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```

```
GNUCOBOL 3.0 24DEC2017  Source Listing                                        2017/12/24
                                                /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
Line    Statement                                                                   Page: 87
======  ========================================================================================
  3599 GC1213           END-IF
  3600 GC1213         END-IF
  3601 GC1213         ADD  1         TO WS-Page-NUM
  3602 GC1213         MOVE 'Page:'    TO WS-PN-Literal-TXT
  3603 GC1213         MOVE WS-Page-NUM TO WS-PN-Page-NUM
  3604 GC1213         CALL 'C$JUSTIFY' USING WS-PN-Page-NUM, 'Left'
  3605 GC1213         CALL 'C$JUSTIFY' USING WS-Page-No-TXT, 'Right'
  3606 GC1213         IF L-Listing-CD = 1 *> LANDSCAPE
  3607 GC1213           MOVE WS-Version-TXT
  3608 GC1213             TO F-Listing-135-REC
  3609 GC1213           MOVE 'Source Listing'
  3610 GC1213             TO F-Listing-135-REC(25:14)
  3611 GC1213           MOVE WS-Formatted-DT
  3612 GC1213             TO F-Listing-135-REC(126:10)
  3613 GC1213           WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #1
  3614 GC1213           MOVE WS-Program-Path-TXT
  3615 GC1213             TO F-Listing-135-REC
  3616 GC1213           WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #2
  3617 GC1213           MOVE 'Line   Statement'
  3618 GC1213             TO F-Listing-135-REC
  3619 GC1213           MOVE WS-Page-No-TXT
  3620 GC1213             TO F-Listing-135-REC(126:10)
  3621 GC1213           WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #3
  3622 GC1213           MOVE WS-Src-Dashes-TXT
  3623 GC1213             TO F-Listing-135-REC
  3624 GC1213           WRITE F-Listing-135-REC BEFORE 1 *> Page Header Line #4
  3625 GC1213         ELSE               *> PORTRAIT
  3626 GC1213           MOVE WS-Version-TXT
  3627 GC1213             TO F-Listing-96-REC
  3628 GC1213           MOVE 'Source Listing'
  3629 GC1213             TO F-Listing-96-REC(25:14)
  3630 GC1213           MOVE WS-Formatted-DT
  3631 GC1213             TO F-Listing-96-REC(87:10)
  3632 GC1213           WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #1
  3633 GC1213           MOVE WS-Program-Path-TXT(40:96)
  3634 GC1213             TO F-Listing-96-REC
  3635 GC1213           WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #2
  3636 GC1213           MOVE 'Line   Statement'
  3637 GC1213             TO F-Listing-96-REC
  3638 GC1213           MOVE WS-Page-No-TXT
  3639 GC1213             TO F-Listing-96-REC(87:10)
  3640 GC1213           WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #3
  3641 GC1213           MOVE WS-Src-Dashes-TXT
  3642 GC1213             TO F-Listing-96-REC
  3643 GC1213           WRITE F-Listing-96-REC BEFORE 1 *> Page Header Line #4
  3644 GC1213         END-IF
  3645 GC1213         COMPUTE WS-Lines-Left-NUM = WS-Lines-Per-Page-NUM - 4
  3646 GC1213       END-IF
  3647 GC1213       IF L-Listing-CD = 1 *> LANDSCAPE
  3648 GC1213         EVALUATE WS-Src-Lines-NUM
  3649 GC1213         WHEN 1
  3650 GC1213           MOVE WS-Src-Detail-Line-TXT TO F-Listing-135-REC
  3651 GC1213           WRITE F-Listing-96-REC BEFORE 1
======  ========================================================================================
GCic for UNIX/Linux Copyright (C) 2009-2018, Gary L. Cutler, GPL                    Page: 87
```

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

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

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```

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

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

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```
GNUCOBOL 3.0 24DEC2017  Cross-Reference Listing                        2017/12/24
                                     /home/vince/cobolsrc/Cobol-Tools/ocic/GCic.cbl
PROGRAM-ID      Identifier/Register/Function   Defn   Where Defined   References      Page: 92
==============  ==============================  ======  ===============  ========================
GCic            COB-SCR-OK                       181  [screenio    ]
GCic            COB-SCR-PAGE-DOWN                181  [screenio    ]
GCic            COB-SCR-PAGE-UP                  181  [screenio    ]
GCic            Cob-Scr-Page_Down                181  [screenio    ]
GCic            Cob-Scr-Page_Up                  181  [screenio    ]
GCic            COB-SCR-PRINT                    181  [screenio    ]
GCic            COB-SCR-TAB                      181  [screenio    ]
GCic            COB-SCR-TIME-OUT                 181  [screenio    ]
GCic            F-Cobc-Output-FILE               173  FILE              164      1011     1029
GCic            F-Cobc-Output-REC                174  FILE             1012     1017*     1018
                                                                       1026*     1027
GCic            F-Source-Code-FILE               176  FILE              167       658     1177
                                                                       1181      1182     1195
                                                                       1196      1203
GCic            F-Source-Code-REC                177  FILE             1186C    1200C
GCic            F1                                    WORKING-STORAGE   209
GCic            F12                                   WORKING-STORAGE   203
GCic            F2                                    WORKING-STORAGE   216
GCic            F3                                    WORKING-STORAGE   212
GCic            F4                                    WORKING-STORAGE   210
GCic            F5                                    WORKING-STORAGE   213       260
GCic            F6                                    WORKING-STORAGE   214
GCic            F7                                    WORKING-STORAGE   217
GCic            F8                                    WORKING-STORAGE   211
GCic            F9                                    WORKING-STORAGE   215
GCic            LD-Horiz-Line                    436  SCREEN            804
GCic            LD-LL-Corner                     431  SCREEN            459       489      505
                                                                        519
GCic            LD-Lower-T                       435  SCREEN            491
GCic            LD-LR-Corner                     433  SCREEN            461       493      507
                                                                        521
GCic            LD-UL-Corner                     430  SCREEN            449       463      495
                                                                        509
GCic            LD-Upper-T                       434  SCREEN            465
GCic            LD-UR-Corner                     432  SCREEN            451       467      497
                                                                        511
GCic            LD-Vert-Line                     437  SCREEN            453       454      456
                                                                        457       469      470
                                                                        471       473      474
                                                                        475       477      478
                                                                        479       481      482
                                                                        483       485      486
                                                                        487       499      500
                                                                        502       503      513
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LISTING         WS-Curr-Section-TXT             1483 WORKING-STORAGE 2727*   2732    2841*
                                                                     2867*   2913    2914*
                                                                     3212    3233    3243
                                                                     3257
LISTING         WS-Curr-Verb-TXT                1490 WORKING-STORAGE 2496*   2520*   2544*
                                                                     2928    2937
LISTING         WS-Delim-TXT                    1492 WORKING-STORAGE 2653*   2655    2673*
                                                                     2675    2678
LISTING         WS-Dummy-TXT                    1494 WORKING-STORAGE 2471*   2716*   2745*
                                                                     2778*   2783*   2784
                                                                     3471*
LISTING         WS-Expanded-Src-Fn-TXT          1496 WORKING-STORAGE 1416    2476*   2477C
LISTING         WS-Filename-TXT                 1498 WORKING-STORAGE 2470*   2473    2744*
                                                                     2747
LISTING         WS-Flags-TXT                    1500 WORKING-STORAGE
LISTING         WS-Formatted-DT                 1503 WORKING-STORAGE 2494*   3354    3377
                                                                     3611    3630
LISTING         WS-GI-Prog-ID-TXT               1506 WORKING-STORAGE 3281    3287    3292*

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

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

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

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

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```

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

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

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

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

6. STREAMIO

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

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

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

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

- Coding a GnuCOBOL subroutine

- Using the `"REPLACING"` clause on a CDF `"COPY"` statement

- Using hexadecimal alphanumeric literals

- Using the following statements:

    o `"ACCEPT FROM ENVIRONMENT"` statement

    o `"INSPECT"` statement

    o `"STRING"` statement

- Using the following built-in subroutines:

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

    o `"CBL_CLOSE_FILE"` built-in system subroutine

    o `"CBL_DELETE_FILE"` built-in system subroutine

    o `"CBL_EXIT_PROC"` built-in system subroutine

    o `"CBL_OPEN_FILE"` built-in system subroutine

    o `"CBL_READ_FILE"` built-in system subroutine

    o `"CBL_WRITE_FILE"` built-in system subroutine

- Using the following intrinsic functions:

    o `"RANDOM"` intrinsic function

    o `"TRIM"` intrinsic function

First, here is the STREAMIOcb.cpy copybook:

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

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

Line   Statement   Page: 1
====== ==
```
    1         >>SOURCE FORMAT IS FIXED
    2          IDENTIFICATION DIVISION.
    3          PROGRAM-ID. STREAMIO.
    4         *>****************************************************************
    5         *> Author: Gary L. Cutler                                      **
    6         *>                                                             **
    7         *> This routine centralizes all bytestream file I/O  functions **
    8         *> into one routine.  The manner in which this routine is      **
    9         *> CALLed is as follows:                                       **
   10         *>                                                             **
   11         *>         CALL "STREAMIO" USING control-block [ , arg2 ]      **
   12         *>                                                             **
   13         *> where 'control-block' is defined by the "STREAMIOcb.cpy"    **
   14         *> copybook and 'arg2' will vary, depending upon the function  **
   15         *> specified in the control block.                             **
   16         *>                                                             **
   17         *> The STREAMIO routine has an advantage over the various      **
   18         *> "CBL_xxxxxx_FILE" routines in that:                         **
   19         *>                                                             **
   20         *> 1. It automates the establishment and on-going adjustment of **
   21         *>    the file-offset value in such a way as to simplify the   **
   22         *>    sequential processing of a bytestream file (you may still **
   23         *>    specify a file-offset manually on each read or write, if **
   24         *>    you wish)                                                **
   25         *>                                                             **
   26         *> 2. It auto-detects the size of the I/O buffer you supply to **
   27         *>    STREAMIO, using that as the byte-count of all read and   **
   28         *>    write operations.                                        **
   29         *>                                                             **
   30         *> 3. Not only does it support the raw input and output of data **
   31         *>    that the CBL_READ_FILE and CBL_WRITE_FILE routines do,   **
   32         *>    but on input it is also capable of delivering just a     **
   33         *>    single newline-delimited or carriage-return/newline de-  **
   34         *>    limited record to the caller.                            **
   35         *>                                                             **
   36         *> 4. On output, STREAMIO can optionally append either a new-  **
   37         *>    line or carriage-return/newline sequence (your choice) to **
   38         *>    the end of every record it writes.                       **
   39         *>                                                             **
   40         *> 5. STREAMIO can automatically generate filenames for output **
   41         *>    files if you wish, simplifying the process of creating   **
   42         *>    scratch or work files.                                   **
   43         *>                                                             **
   44         *> 6. The STREAMIO routine also allows you to (optionally) re- **
   45         *>    gister a general error-handling routine to be given con- **
   46         *>    trol should a fatal error be detected with STREAMIO.     **
   47         *>                                                             **
   48         *>    This routine can be "turned on" and "turned off" at will. **
   49         *>                                                             **
```
==
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```
GNU COBOL 2.1 23NOV2013 Source Listing                                    2014/03/27
                                C:/Users/tda010/Documents/Programs/Samples/STREAMIO.cbl
Line    Statement                                                                Page: 2
======  ================================================================================
    50          *> The control block format is as follows.  This structure must **
    51          *> be defined under an 01-level data item of your creation and  **
    52          *> should be INITIALIZEd before any items within it are used.    **
    53          *>                                                               **
    54          *> 05 SCB-Handle-NUM                PIC X(4) COMP-X.              **
    55          *> 05 SCB-Mode-CD                   PIC X(1).                     **
    56          *>    88 SCB-Mode-Input-BOOL        VALUE 'I', 'i'.               **
    57          *>    88 SCB-Mode-Output-BOOL       VALUE 'O', 'o'.               **
    58          *>    88 SCB-Mode-Both-BOOL         VALUE 'B', 'b'.               **
    59          *> 05 SCB-Function-CD               PIC X(2).                     **
    60          *>    88 SCB-Func-CLOSE-BOOL        VALUE 'C ', 'c '.             **
    61          *>    88 SCB-Func-DELETE-BOOL       VALUE 'D ', 'd '.             **
    62          *>    88 SCB-Func-OPEN-BOOL         VALUE 'O ', 'o '.             **
    63          *>    88 SCB-Func-READ-BOOL         VALUE 'R ', 'r '.             **
    64          *>    88 SCB-Func-READ-Delim-BOOL   VALUE 'RD', 'rd',             **
    65          *>                                        'rD', 'Rd'.             **
    66          *>    88 SCB-Func-WRITE-BOOL        VALUE 'W ', 'w '.             **
    67          *>    88 SCB-Func-WRITE-Delim-BOOL  VALUE 'WD', 'wd',             **
    68          *>                                        'wD', 'Wd'.             **
    69          *> 05 SCB-Delimiter-Mode-CD         PIC X(1).                     **
    70          *>    88 SCB-Delim-Unix-BOOL        VALUE 'U', 'u'.               **
    71          *>    88 SCB-Delim-Windows-BOOL     VALUE 'W', 'w'.               **
    72          *> 05 SCB-Offset-NUM               PIC X(8) COMP-X.               **
    73          *> 05 SCB-Error-Routine-PTR         USAGE PROGRAM-POINTER.        **
    74          *> 05 SCB-Error-Routine-NUM REDEFINES SCB-Error-Routine-PTR      **
    75          *>                                  USAGE BINARY-LONG.            **
    76          *> 05 SCB-Return-CD                 USAGE BINARY-LONG.            **
    77          *> 05 SCB-Filename-TXT              PIC X(256).                   **
    78          *>                                                               **
    79          *> Such a structure is defined for your use using the copybook   **
    80          *> "STREAMIOcb.cpy" (you may also define your own, provided it   **
    81          *> conforms to the above layout).                                **
    82          *>-------------------------------------------------------------**
    83          *> SCB-Handle-NUM                                                **
    84          *>-------------------------------------------------------------**
    85          *>                                                               **
    86          *> Serves as a file handle to the file once it has been opened   **
    87          *> (via the "SCB-Func-OPEN-BOOL" function).                      **
    88          *>                                                               **
    89          *>-------------------------------------------------------------**
    90          *> SCB-Mode-CD                                                   **
    91          *>-------------------------------------------------------------**
    92          *>                                                               **
    93          *> Prior to calling "STREAMIO" for the first time for a file,    **
    94          *> the appropriate subordinate level-88 must be set to TRUE to   **
    95          *> select an I/O mode.  You may also simply move one of the      **
    96          *> string values listed on the level-88 items to "SCB-Mode-CD".  **
    97          *>                                                               **
    98          *>-------------------------------------------------------------**

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

====== ===
    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   **

==

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

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

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

===

```
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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```

====== ===
    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.   **

==

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

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

==

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

==

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

Line   Statement   Page: 13
====== ===
    565   CALL "CBL_WRITE_FILE" USING L-SCB-Handle-NUM
    566   L-SCB-Offset-NUM
    567   WS-Arg-Length-NUM
    568   0
    569   L-Arg2-TXT
    570   PERFORM 040-Check-WRITE-SCB-Return-CD
    571   ADD WS-Arg-Length-NUM TO L-SCB-Offset-NUM
    572   .
    573   400-READ SECTION.
    574   CALL "C$PARAMSIZE" USING 2
    575   MOVE RETURN-CODE TO WS-Arg-Length-NUM
    576   MOVE SPACES TO L-Arg2-TXT(1:WS-Arg-Length-NUM)
    577   CALL "CBL_READ_FILE" USING L-SCB-Handle-NUM
    578   L-SCB-Offset-NUM
    579   WS-Arg-Length-NUM
    580   0
    581   L-Arg2-TXT
    582   PERFORM 050-Check-READ-SCB-Return-CD
    583   ADD WS-Arg-Length-NUM TO L-SCB-Offset-NUM
    584   .
    585   500-READ-Delim SECTION.
    586   CALL "C$PARAMSIZE" USING 2
    587   MOVE RETURN-CODE TO WS-Arg-Length-NUM
    588   MOVE SPACES TO L-Arg2-TXT(1:WS-Arg-Length-NUM)
    589   CALL "CBL_READ_FILE" USING L-SCB-Handle-NUM
    590   L-SCB-Offset-NUM
    591   WS-Arg-Length-NUM
    592   0
    593   L-Arg2-TXT
    594   PERFORM 050-Check-READ-SCB-Return-CD
    595   MOVE 0 TO WS-Tally-NUM
    596   INSPECT L-Arg2-TXT(1:WS-Arg-Length-NUM)
    597   TALLYING WS-Tally-NUM FOR ALL X"0A"
    598   IF WS-Tally-NUM = 0 *> No LF found - return truncated data and position past n
       ext LF (if any)
    599   IF L-Arg2-TXT(WS-Arg-Length-NUM:1) = X"0D"
    600   MOVE SPACE TO L-Arg2-TXT(WS-Arg-Length-NUM:1)
    601   END-IF
    602   ADD WS-Arg-Length-NUM TO L-SCB-Offset-NUM
    603   MOVE 02 TO L-SCB-Return-CD
    604   MOVE 256 TO WS-Arg-Length-NUM
    605   PERFORM UNTIL 0 = 1
    606   MOVE SPACES TO WS-Buffer-TXT
    607   CALL "CBL_READ_FILE" USING L-SCB-Handle-NUM
    608   L-SCB-Offset-NUM
    609   WS-Arg-Length-NUM
    610   0
    611   WS-Buffer-TXT
    612   IF RETURN-CODE < 0

==

====== ==

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

==

```
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