

File created: 15-Mar-89 16:24:43 {ERIS}<NOTECARDS>DOC>HACKS>DIGI-CLOCK.;5

changes to: (VARS DIGI-CLOCKCOMS)  
(FNS DC-DELETE-ALARM-SETTING DIGI-CLOCK DC-KILL-PROCESS DC-PROMPT-FOR-ALARM-MESSAGE  
DC-START-PROCESS DC-ADD-AUXW DC-SHAPE-TO-FIT DC-SET-ALARM)

previous date: 22-Feb-89 16:50:15 {ERIS}<NOTECARDS>DOC>HACKS>DIGI-CLOCK.;4

Read Table: XCL

Package: INTERLISP

Format: XCCS

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(RPAQQ **DIGI-CLOCKCOMS**

(;; Top level functions

(FNS DIGI-CLOCK DC-START-PROCESS DC-KILL-PROCESS DC-BUTTONEVENTFN DC-AUXW-BUTTONEVENTFN  
DC-SET-TIME-BUTTONEVENTFN ST)

;; Dc-buttoneventfns

(FNS DC-PROCESS DC-UPDATE DC-GET-OPERATION)

;; Auxw functions

(FNS DC-AUXW-GET-OPERATION DC-ADD-AUXW DC-DELETE-AUXW DC-AUXW-UPDATE)

;; Set time functions

(FNS DC-WARNING-TIME-NOT-SET)

(FNS DC-SET-TIME DC-UPDATE-TIME-ITEM DC-VALID-DATE-P DC-SET-LAST-DAY-FOR-MONTH)

(FNS DC-INITIALIZE-SET-TIME-MENU DC-MAKE-NEW-SET-TIME-MENU DC-OPEN-SET-TIME-MENUW)

(FNS DC-EXTRACT-STARTING-SET-TIME-DATE DC-SET-TIME-MAKE-DATE-STRING)

(FNS DC-SET-TIME-ZONE-HEADING DC-SET-TIME-ZONE DC-GET-TIME-ZONE)

;; Alarm functions

(FNS DC-SET-ALARM DC-ADD-ALARM-SETTING DC-DELETE-ALARM-SETTING)

(FNS DC-ALARM-DUE-TO-RING? DC-RING-ALARM DC-TURN-ALARM-OFF)

(FNS DC-PROMPT-FOR-ALARM-MESSAGE DC-GET-MESSAGE-WINDOW DC-CLOSE-MESSAGE-WINDOW)

;; Display & Misc functions

(FNS DC-DISPLAY-TIME DC-MAKE-DISPLAY-TIME-STRING DC-PRINT-JUSTIFIED-STRING DC-CONVERT-DATE-FORMAT  
DC-SHAPE-TO-FIT DC-GET-DATE DC-MENU-POSITION)

;; Font functions

(FNS DC-SET-FONT DC-FONT-FAMILY-MENU DC-FONT-SIZE-MENU DC-FONT-FACE-MENU)

;; List of the world's time zones

(VARS \*DC-TIME-ZONE-LIST\*)

;; Call digi-clock

))

;; Top level functions

(DEFINEQ

(**DIGI-CLOCK**

(LAMBDA (RESTART-FROM-SCRATCH)

; Edited 22-Feb-89 16:21 by Mountford

(|if| (FIND.PROCESS "DIGITAL CLOCK")

|then| (DEL.PROCESS "DIGITAL CLOCK"))

(|if| (NOT (MEMBER "DIGITAL CLOCK" IDLE.SUSPEND.PROCESS.NAMES))

|then| (|push| IDLE.SUSPEND.PROCESS.NAMES "DIGITAL CLOCK"))

(BLOCK)

(ADD.PROCESS (LIST 'DC-START-PROCESS RESTART-FROM-SCRATCH)

'NAME "DIGITAL CLOCK" 'RESTARTABLE T)))

(**DC-START-PROCESS**

(LAMBDA (RESTART-FROM-SCRATCH)

; Edited 17-Feb-89 16:04 by Mountford

(|if| (GREATERP (IDATE)

0)

|then| (SETQ \*DC-OLD-DATE\* (DATE)))

|else| (SETQ \*DC-OLD-DATE\* " 1-Jan-88 08:00:00"))

(|if| (BOUNDP ' \*DC-WINDOW\* )

|then| (WINDOWPROP \*DC-WINDOW\* 'CLOSEFN (REMOVE 'DC-KILL-PROCESS (WINDOWPROP \*DC-WINDOW\* 'CLOSEFN)))

(CLOSEW \*DC-WINDOW\* )

(WINDOWPROP \*DC-WINDOW\* 'CLOSEFN 'DC-KILL-PROCESS))

(|if| (OR RESTART-FROM-SCRATCH (NOT (BOUNDP ' \*DC-WINDOW\* ))

(NULL \*DC-WINDOW\* ))

|then| (SETQ \*DC-WINDOW\* (CREATEW (CREATEREGION 1 (IDIFFERENCE SCREENHEIGHT 46)  
430 46)))

(WINDOWPROP \*DC-WINDOW\* 'RESHAPEFN 'DON\T)

(SETQ \*DC-DATEFORMAT\* (DATEFORMAT SPACES NO.SECONDS DAY.OF.WEEK DAY.SHORT))

(WINDOWPROP \*DC-WINDOW\* 'BUTTONEVENTFN 'DC-BUTTONEVENTFN)

(WINDOWPROP \*DC-WINDOW\* 'CLOSEFN 'DC-KILL-PROCESS)

(SETQ \*DC-AUXW-FONT\* (FONTCREATE 'HELVETICA 18))

(SETQ \*DC-FONT\* (FONTCREATE 'HELVETICA 36))

```

(WINDOWPROP *DC-WINDOW* 'ALARM-MODE 'LOUD)
(WINDOWPROP *DC-WINDOW* 'CAN-UPDATE T)
(DSPFONT *DC-FONT* *DC-WINDOW*)
(DC-ADD-AUXW)
(DC-PROCESS)))

```

**(DC-KILL-PROCESS**

```

(LAMBDA NIL
  (|if| (FIND.PROCESS "DIGITAL CLOCK")
    |then| (DEL.PROCESS "DIGITAL CLOCK"))))

```

; Edited 22-Feb-89 16:16 by Mountford

**(DC-BUTTONEVENTFN**

```

(LAMBDA (WINDOW)
  (|if| (WINDOWPROP *DC-WINDOW* 'CAN-UPDATE)
    |then| (WINDOWPROP *DC-WINDOW* 'CAN-UPDATE NIL)
    (TOTOPW WINDOW)
    (|if| (MOUSESTATE MIDDLE)
      |then| (SELECTQ (DC-GET-OPERATION)
        (* \; "")
        (|Set Font| (|if| (DC-SET-FONT)
          |then| (DC-UPDATE (IDATE)))))
        (|Set Time| (DC-SET-TIME))
        (|Set Alarm| (DC-SET-ALARM))
        (|Turn Alarm Off|
          (DC-TURN-ALARM-OFF)
          (DC-UPDATE (IDATE)))
        (|Delete Alarm Setting|
          (DC-DELETE-ALARM-SETTING))
        (|Quiet Alarm|
          (WINDOWPROP *DC-WINDOW* 'ALARM-MODE 'QUIET))
        (|Loud Alarm| (WINDOWPROP *DC-WINDOW* 'ALARM-MODE 'LOUD))
        (|12-Hour Clock|
          (WINDOWPROP *DC-WINDOW* '12-HOUR-MODE T)
          (DC-UPDATE (IDATE)))
        (|24-Hour Clock|
          (WINDOWPROP *DC-WINDOW* '12-HOUR-MODE NIL)
          (DC-UPDATE (IDATE)))
        (|Set Local Time Zone|
          (DC-PRINT-JUSTIFIED-STRING *DC-WINDOW* "Select Local Time Zone" 'CENTER
            'CLEARW)
          (DC-SET-TIME-ZONE WINDOW)
          (DC-UPDATE (IDATE)))
        (|Add New Regional Time Zone|
          (DC-ADD-AUXW))
        (|Shape to Fit|
          (DC-SHAPE-TO-FIT *DC-WINDOW* (DC-MAKE-DISPLAY-TIME-STRING (DATE *DC-DATEFORMAT*
            (WINDOWPROP *DC-WINDOW* '12-HOUR-MODE)))
          (DC-UPDATE (IDATE)))
        NIL))
    (|if| (MOUSESTATE LEFT)
      |then| (DC-UPDATE (IDATE)))
    (WINDOWPROP *DC-WINDOW* 'CAN-UPDATE T))))

```

; Edited 15-Aug-88 07:01 by Mountford

**(DC-AUXW-BUTTONEVENTFN**

```

(LAMBDA (WINDOW)
  (|if| (WINDOWPROP *DC-WINDOW* 'CAN-UPDATE)
    |then| (WINDOWPROP *DC-WINDOW* 'CAN-UPDATE NIL)
    (TOTOPW WINDOW)
    (|if| (MOUSESTATE MIDDLE)
      |then| (SELECTQ (DC-AUXW-GET-OPERATION)
        (* \; "")
        (|Set Font for Aux Clocks|
          (|if| (DC-SET-FONT WINDOW 'ALL-AUXW)
            |then| (DC-UPDATE (IDATE)))))
        (|Set Aux Clock Font In Just This Window|
          (|if| (DC-SET-FONT WINDOW)
            |then| (DC-UPDATE (IDATE)))))
        (|Delete This Window|
          (DC-DELETE-AUXW WINDOW))
        (|Set Time-Zone Heading|
          (DC-SET-TIME-ZONE-HEADING WINDOW)
          (DC-UPDATE (IDATE)))
        (|Set Regional Time Zone|
          (DC-SET-TIME-ZONE WINDOW)
          (DC-UPDATE (IDATE)))
        NIL))
    (|if| (MOUSESTATE LEFT)
      |then| (DC-UPDATE (IDATE)))
    (WINDOWPROP *DC-WINDOW* 'CAN-UPDATE T))))

```

; Edited 2-Sep-88 15:45 by Mountford

**(DC-SET-TIME-BUTTONEVENTFN**

```

(LAMBDA (ITEM MENU BUTTON)
  (LET (DISPLAY-TIME)

```

; Edited 15-Aug-88 07:16 by Mountford

```

(COND
  ((EQ ITEM ' |Set|)
   (CLOSEW *DC-SET-TIME-MENUW*)
   (|if| (WINDOWPROP *DC-SET-TIME-WINDOW* 'SETTING-ALARM)
    |then| (DC-ADD-ALARM-SETTING (DC-SET-TIME-MAKE-DATE-STRING))
    |else| (SETTIME (DC-SET-TIME-MAKE-DATE-STRING)
      (SETQ *DC-OLD-DATE* (DATE))
      (|until| (WINDOWPROP *DC-WINDOW* 'CAN-UPDATE) |do| (BLOCK 1000))
      (DC-UPDATE (IDATE))))
   ((EQ ITEM ' |Esc|)
    (CLOSEW *DC-SET-TIME-MENUW*))
  (T (DC-UPDATE-TIME-ITEM ITEM)
   (SETQ DISPLAY-TIME (DC-CONVERT-DATE-FORMAT (DC-SET-TIME-MAKE-DATE-STRING)
     ' (DATEFORMAT NO.SECONDS)))
   (SETQ DISPLAY-TIME (DC-MAKE-DISPLAY-TIME-STRING DISPLAY-TIME (WINDOWPROP *DC-WINDOW*
     '12-HOUR-MODE)))
   (DC-PRINT-JUSTIFIED-STRING *DC-SET-TIME-WINDOW* DISPLAY-TIME 'CENTERED 'CLEARW))))))

```

(ST

```

(LAMBDA (HOUR MINUTE DATE MONTH YEAR) ; Edited 25-Jul-88 11:45 by Mountford
  (|if| (NOT (BOUNDP '*DC-OLD-DATE*))
   |then| (SETQ *DC-OLD-DATE* " 1-Jan-88 08:00:00"))
  (|if| (NOT HOUR)
   |then| (SETTIME *DC-OLD-DATE*)
   |else| (|if| (NOT MINUTE)
    |then| (SETQ MINUTE 0))
    (|if| (NOT DATE)
     |then| (SETQ DATE (SUBSTRING *DC-OLD-DATE* 1 2)))
    (|if| (NOT MONTH)
     |then| (SETQ MONTH (SUBSTRING *DC-OLD-DATE* 4 6)))
    (|if| (NOT YEAR)
     |then| (SETQ YEAR (SUBSTRING *DC-OLD-DATE* 8 9)))
    (SETTIME (CONCAT MONTH "-" DATE "-" YEAR " " HOUR ":" MINUTE)))
  (CLRPROPT)
  (SETQ *DC-OLD-DATE* (DATE)))
)

```

;; Dc-buttoneventfns

(DEFINEQ

(DC-PROCESS

```

(LAMBDA NIL ; Edited 15-Aug-88 06:52 by Mountford
  (PROG NIL
   TOP (|if| (WINDOWPROP *DC-WINDOW* 'CAN-UPDATE)
    |then| (WINDOWPROP *DC-WINDOW* 'CAN-UPDATE NIL)
    (DC-UPDATE (IDATE))
    (WINDOWPROP *DC-WINDOW* 'CAN-UPDATE T))
    (BLOCK 60000) ; BLOCK FOR A MINUTE
    (GO TOP))))

```

(DC-UPDATE

```

(LAMBDA (ITIME) ; Edited 15-Aug-88 08:13 by Mountford
  (LET ((MERIDIAN (WINDOWPROP *DC-WINDOW* '12-HOUR-MODE))
        (AUX-CLOCKS (WINDOWPROP *DC-WINDOW* 'ATTACHEDWINDOWS)))
    (|if| (IGREATERP ITIME 0)
     |then| (DC-DISPLAY-TIME ITIME MERIDIAN)
      (|if| (DC-ALARM-DUE-TO-RING? ITIME)
       |then| (DC-RING-ALARM)
       (SETQ AUX-CLOCKS (CDR AUX-CLOCKS)))
      (|for| WINDOW |in| AUX-CLOCKS |do| (DC-AUXW-UPDATE ITIME MERIDIAN WINDOW))
     |else| (DC-WARNING-TIME-NOT-SET))))

```

(DC-GET-OPERATION

```

(LAMBDA NIL ; Edited 13-Aug-88 10:40 by Mountford
  (LET ((MENU-LIST (LIST ' |Set Font| ' |Set Time| ' |Set Alarm| (|if| (EQ (WINDOWPROP *DC-WINDOW* 'ALARM-MODE)
    'QUIET)
    |then| ' |Loud Alarm|
    |else| ' |Quiet Alarm|)
    (COND
      ((WINDOWPROP *DC-WINDOW* 'ALARM-RINGING)
       ' |Turn Alarm Off|)
      ((WINDOWPROP *DC-WINDOW* 'ALARM-LIST)
       ' |Delete Alarm Setting|)
      (T ' | )))
    ' |Shape to Fit|
    (|if| (WINDOWPROP *DC-WINDOW* '12-HOUR-MODE)
     |then| ' |24-Hour Clock|
     |else| ' |12-Hour Clock|)
    ' |Set Local Time Zone|
    ' |Add New Regional Time Zone|)))
  (MENU (|create| MENU
    ITEMS _ MENU-LIST

```

CENTERFLG \_ T))))))

)

;; Auxw functions

(DEFINEQ

**(DC-AUXW-GET-OPERATION**

; Edited 2-Sep-88 13:53 by Mountford

```
(LAMBDA NIL
  (MENU (|create| MENU
    ITEMS _ ' (|Delete This Window| (|Set Font for Aux Clocks| ' |Set Font for Aux Clocks| NIL
      (SUBITEMS |Set Aux Clock Font In Just This Window|))
    |Set Time-Zone Heading| |Set Regional Time Zone|)
  CENTERFLG _ T))))
```

**(DC-ADD-AUXW**

; Edited 17-Feb-89 16:08 by Mountford

```
(LAMBDA NIL
  (LET ((AUXW)
    (ITIME (IDATE))
    (MERIDIAN (WINDOWPROP *DC-WINDOW* '12-HOUR-MODE))
    (WINDOW-HEIGHT (HEIGHTIFWINDOW (FONTPROP *DC-AUXW-FONT* 'HEIGHT))))
    (SETQ AUXW (CREATEW (CREATEREGION 1 (IDIFFERENCE SCREENHEIGHT WINDOW-HEIGHT)
      430 WINDOW-HEIGHT)
      NIL NIL T))
    (ATTACHWINDOW AUXW *DC-WINDOW* 'BOTTOM 'JUSTIFY)
    (DSPFONT *DC-AUXW-FONT* AUXW)
    (DC-PRINT-JUSTIFIED-STRING AUXW "Select Time Zone for this Window" 'CENTER 'CLEARW)
    (|if| (DC-SET-TIME-ZONE AUXW)
      |then| (WINDOWPROP AUXW 'BUTTONEVENTFN 'DC-AUXW-BUTTONEVENTFN)
      (DC-SHAPE-TO-FIT *DC-WINDOW* (DC-MAKE-DISPLAY-TIME-STRING (GDATE ITIME *DC-DATEFORMAT*
        MERIDIAN))
      (|if| (IGREATERP ITIME 0)
        |then| (DC-AUXW-UPDATE ITIME MERIDIAN AUXW)
        |else| (DC-AUXW-UPDATE (IDATE *DC-OLD-DATE*)
          MERIDIAN AUXW))
      |else| (DETACHWINDOW AUXW)
      (CLOSEW AUXW))))))
```

**(DC-DELETE-AUXW**

; Edited 25-Jul-88 06:59 by Mountford

```
(LAMBDA (WINDOW)
  (DETACHWINDOW WINDOW)
  (CLOSEW WINDOW)
  (LET ((WINDOW-LIST (WINDOWPROP *DC-WINDOW* 'ATTACHEDWINDOWS)))
    (|for| W |in| WINDOW-LIST |do| (DETACHWINDOW W))
    (|for| W |in| WINDOW-LIST |do| (ATTACHWINDOW W *DC-WINDOW* 'BOTTOM 'JUSTIFY))))))
```

**(DC-AUXW-UPDATE**

; Edited 13-Aug-88 11:20 by Mountford

```
(LAMBDA (ITIME MERIDIAN WINDOW)
  (LET ((LOCATION (WINDOWPROP WINDOW 'LOCATION))
    (TIME-OFFSET (WINDOWPROP WINDOW 'TIME-ZONE-OFFSET))
    REGIONAL-TIME DISPLAY-TIME)
    (SETQ REGIONAL-TIME (DC-GET-DATE *DC-DATEFORMAT* ITIME TIME-OFFSET))
    (SETQ DISPLAY-TIME (DC-MAKE-DISPLAY-TIME-STRING REGIONAL-TIME MERIDIAN))
    (DC-PRINT-JUSTIFIED-STRING WINDOW LOCATION 'LEFT 'CLEARW)
    (DC-PRINT-JUSTIFIED-STRING WINDOW DISPLAY-TIME 'RIGHT)
    DISPLAY-TIME)))
```

)

;; Set time functions

(DEFINEQ

**(DC-WARNING-TIME-NOT-SET**

; Edited 15-Aug-88 06:42 by Mountford

```
(LAMBDA NIL
  (LET ((WINDOWS (CONS *DC-WINDOW* (WINDOWPROP *DC-WINDOW* 'ATTACHEDWINDOWS))))
    (DC-PRINT-JUSTIFIED-STRING *DC-WINDOW* "Time not set." 'CENTER 'CLEARW)
    (|for| I |to| 10 |do| (|for| W |in| WINDOWS |do| (BLOCK 100)
      (INVERTW W)
      (BLOCK 100)
      (INVERTW W))))))
```

)

(DEFINEQ

**(DC-SET-TIME**

; Edited 25-Jul-88 07:25 by Mountford

```
(LAMBDA NIL
  (DC-INITIALIZE-SET-TIME-MENU)
  (WINDOWPROP *DC-SET-TIME-WINDOW* 'SETTING-ALARM NIL)))
```

**(DC-UPDATE-TIME-ITEM**

; Edited 1-Aug-88 06:23 by Mountford

```

(LAMBDA (ITEM)
  (LET ((CHANGE (CAR ITEM))
        (ITEM (CADR ITEM)))
    (IF (EQ CHANGE '+)
        [then] (WINDOWPROP *DC-SET-TIME-WINDOW* ITEM (ADD1 (WINDOWPROP *DC-SET-TIME-WINDOW* ITEM)))
        ([if] (NOT (DC-VALID-DATE-P (DC-SET-TIME-MAKE-DATE-STRING)))
              [then] (COND
                        ((EQ ITEM 'DY)
                         (WINDOWPROP *DC-SET-TIME-WINDOW* 'DY 1))
                        ((EQ ITEM 'MO)
                         ([if] (IGREATERP (WINDOWPROP *DC-SET-TIME-WINDOW* 'MO)
                                             12)
                              [then] (WINDOWPROP *DC-SET-TIME-WINDOW* 'MO 1)
                              [else] (DC-SET-LAST-DAY-FOR-MONTH)))
                        ((EQ ITEM 'YR)
                         (WINDOWPROP *DC-SET-TIME-WINDOW* 'YR 1))
                        ((OR (EQ ITEM 'HR)
                             (EQ ITEM 'MIN))
                         (WINDOWPROP *DC-SET-TIME-WINDOW* ITEM 0))
                        (T (WINDOWPROP *DC-SET-TIME-WINDOW* ITEM (SUB1 (WINDOWPROP *DC-SET-TIME-WINDOW*
                                                                                     ITEM))))))
        [else] (WINDOWPROP *DC-SET-TIME-WINDOW* ITEM (SUB1 (WINDOWPROP *DC-SET-TIME-WINDOW* ITEM)))
        ([if] (NOT (DC-VALID-DATE-P (DC-SET-TIME-MAKE-DATE-STRING)))
              [then] (COND
                        ((EQ ITEM 'DY)
                         (DC-SET-LAST-DAY-FOR-MONTH))
                        ((EQ ITEM 'MO)
                         ([if] (ILESSP (WINDOWPROP *DC-SET-TIME-WINDOW* 'MO)
                                         1)
                              [then] (WINDOWPROP *DC-SET-TIME-WINDOW* 'MO 12)
                              [else] (DC-SET-LAST-DAY-FOR-MONTH)))
                        ((EQ ITEM 'YR)
                         (WINDOWPROP *DC-SET-TIME-WINDOW* 'YR 99))
                        ((EQ ITEM 'HR)
                         (WINDOWPROP *DC-SET-TIME-WINDOW* ITEM 23))
                        ((EQ ITEM 'MIN)
                         (WINDOWPROP *DC-SET-TIME-WINDOW* ITEM 59))
                        (T (WINDOWPROP *DC-SET-TIME-WINDOW* ITEM (ADD1 (WINDOWPROP *DC-SET-TIME-WINDOW*
                                                                                     ITEM)))))))))

```

**(DC-VALID-DATE-P**

; Edited 23-Jul-88 10:56 by Mountford

```

(LAMBDA (DATE-STRING)
  ([if] (IDATE DATE-STRING)
        [then] DATE-STRING))

```

**(DC-SET-LAST-DAY-FOR-MONTH**

; Edited 31-Jul-88 14:54 by Mountford

```

(LAMBDA NIL
  (SELECTQ (WINDOWPROP *DC-SET-TIME-WINDOW* 'MO)
    (2 ([if] (ZEROP (IREMAINDER (WINDOWPROP *DC-SET-TIME-WINDOW* 'YR)
                                   4))
         [then] (WINDOWPROP *DC-SET-TIME-WINDOW* 'DY 29)
         [else] (WINDOWPROP *DC-SET-TIME-WINDOW* 'DY 28)))
    ((4 6 9 11)
     (WINDOWPROP *DC-SET-TIME-WINDOW* 'DY 30))
    ((1 3 5 7 8 10 12)
     (WINDOWPROP *DC-SET-TIME-WINDOW* 'DY 31))
    NIL))

```

)

(DEFINEQ

**(DC-INITIALIZE-SET-TIME-MENU**

; Edited 14-Aug-88 21:35 by Mountford

```

(LAMBDA NIL
  ([if] (OR (NOT (BOUNDP '*DC-SET-TIME-MENUW*))
            (NULL *DC-SET-TIME-MENUW*))
        [then] (DC-MAKE-NEW-SET-TIME-MENU))
  (LET ((MERIDIAN (WINDOWPROP *DC-WINDOW* '12-HOUR-MODE))
        DATE-STRING DISPLAY-TIME)
    ([if] (IGREATERP (IDATE *DC-OLD-DATE*)
                     (IDATE))
          [then] (SETQ DATE-STRING (DC-CONVERT-DATE-FORMAT *DC-OLD-DATE* '(NUMBER.OF.MONTH NO.SECONDS)))
                  (SETQ DISPLAY-TIME (DC-CONVERT-DATE-FORMAT *DC-OLD-DATE* '(NO.SECONDS)))
          [else] (SETQ DATE-STRING (DATE (DATEFORMAT NUMBER.OF.MONTH NO.SECONDS)))
                  (SETQ DISPLAY-TIME (DATE (DATEFORMAT NO.SECONDS))))
    (SETQ DISPLAY-TIME (DC-MAKE-DISPLAY-TIME-STRING DISPLAY-TIME MERIDIAN))
    (DC-OPEN-SET-TIME-MENUW)
    (DC-PRINT-JUSTIFIED-STRING *DC-SET-TIME-WINDOW* DISPLAY-TIME 'CENTERED 'CLEARW)
    (DC-EXTRACT-STARTING-SET-TIME-DATE DATE-STRING)))

```

**(DC-MAKE-NEW-SET-TIME-MENU**

; Edited 31-Dec-00 16:10 by Mountford

```

(LAMBDA NIL
  (LET ((TITLE-FONT (FONTCREATE 'HELVETICA 12))

```

```

(MENU-FONT (FONTCREATE 'HELVETICA 18)))
(SETQ *DC-SET-TIME-MENUW*
  (ADDMENU (|create| MENU
    ITEMS _ ' ((+ DY)
      (\ - DY)
      (+ MO)
      (\ - MO)
      (+ YR)
      (\ - YR)
      (+ HR)
      (\ - HR)
      (+ MIN)
      (\ - MIN)
      |Set| |Esc|)
    MENUROWS _ 2
    MENUFONT _ MENU-FONT
    MENUTITLEFONT _ TITLE-FONT
    TITLE _ "DY MO YR HR MIN SET "
    WHENSELECTEDFN _ 'DC-SET-TIME-BUTTONEVENTFN)))
(SETQ *DC-SET-TIME-WINDOW* (CREATEW (CREATERECTION LASTMOUSEX LASTMOUSEY 120 27)
  NIL NIL T))
(ATTACHWINDOW *DC-SET-TIME-WINDOW* *DC-SET-TIME-MENUW* 'TOP 'JUSTIFY)
(DSPFONT MENU-FONT *DC-SET-TIME-WINDOW*))

```

**(DC-OPEN-SET-TIME-MENUW**

; Edited 25-Jul-88 07:33 by Mountford

```

(LAMBDA NIL
  (LET ((CLOCK-REGION (WINDOWPROP *DC-WINDOW* 'REGION)))
    (|if| (IGREATERP (IPLUS (CAR CLOCK-REGION)
      (CADDR CLOCK-REGION)
      215)
      SCREENWIDTH)
      |then| (ATTACHWINDOW *DC-SET-TIME-MENUW* *DC-WINDOW* 'LEFT 'TOP)
      |else| (ATTACHWINDOW *DC-SET-TIME-MENUW* *DC-WINDOW* 'RIGHT 'TOP))
    (DETACHWINDOW *DC-SET-TIME-MENUW*)
    (OPENW *DC-SET-TIME-MENUW*)))
)

```

(DEFINEQ

**(DC-EXTRACT-STARTING-SET-TIME-DATE**

; Edited 4-Aug-88 06:16 by Mountford

```

(LAMBDA (DATE-STRING)
  (|if| (EQUAL " " (SUBSTRING DATE-STRING 1 1))
    |then| (WINDOWPROP *DC-SET-TIME-WINDOW* 'DY (MKATOM (SUBSTRING DATE-STRING 2 2)))
    |else| (WINDOWPROP *DC-SET-TIME-WINDOW* 'DY (MKATOM (SUBSTRING DATE-STRING 1 2))))
  (WINDOWPROP *DC-SET-TIME-WINDOW* 'MO (MKATOM (SUBSTRING DATE-STRING 4 5)))
  (WINDOWPROP *DC-SET-TIME-WINDOW* 'YR (MKATOM (SUBSTRING DATE-STRING 7 8)))
  (WINDOWPROP *DC-SET-TIME-WINDOW* 'HR (MKATOM (SUBSTRING DATE-STRING 10 11)))
  (WINDOWPROP *DC-SET-TIME-WINDOW* 'MIN (MKATOM (SUBSTRING DATE-STRING 13 14)))))

```

**(DC-SET-TIME-MAKE-DATE-STRING**

; Edited 25-Jul-88 07:31 by Mountford

```

(LAMBDA NIL
  (CONCAT (WINDOWPROP *DC-SET-TIME-WINDOW* 'MO)
    "_ "
    (WINDOWPROP *DC-SET-TIME-WINDOW* 'DY)
    "_ "
    (WINDOWPROP *DC-SET-TIME-WINDOW* 'YR)
    " "
    (WINDOWPROP *DC-SET-TIME-WINDOW* 'HR)
    " : "
    (WINDOWPROP *DC-SET-TIME-WINDOW* 'MIN)))
)

```

(DEFINEQ

**(DC-SET-TIME-ZONE-HEADING**

; Edited 20-Jul-88 23:42 by Mountford

```

(LAMBDA (WINDOW)
  (LET ((LOCATION (WINDOWPROP WINDOW 'LOCATION)))
    (CLEARW WINDOW)
    (MOVETOUPPERLEFT WINDOW)
    (WINDOWPROP WINDOW 'LOCATION (PROMPTFORWORD "Location Name: " LOCATION NIL WINDOW NIL 'TTY
      (CHARCODE (EOL ESCAPE LF TAB))))))
)

```

**(DC-SET-TIME-ZONE**

; Edited 25-Jul-88 06:54 by Mountford

```

(LAMBDA (WINDOW)
  (LET ((TIME-ZONE-INFO (DC-GET-TIME-ZONE)))
    (|if| TIME-ZONE-INFO
      |then| (|if| (EQ WINDOW *DC-WINDOW*)
        |then| (SETQ |\\TimezoneComp| (CDR TIME-ZONE-INFO))
        (|for| W |in| (WINDOWPROP *DC-WINDOW* 'ATTACHEDWINDOWS)
          |do| (WINDOWPROP W 'TIME-ZONE-OFFSET (ITIMES 3600 (IDIFFERENCE (WINDOWPROP
            W
            'TIME-ZONE)

```



**(DC-RING-ALARM**

```
(LAMBDA NIL ; Edited 25-Jul-88 06:57 by Mountford
  (LET ((ALARM-MESSAGE (CDR (WINDOWPROP *DC-WINDOW* 'ALARM-RINGING)))
        (MESSAGE-WINDOW (DC-GET-MESSAGE-WINDOW)))
    (DC-PRINT-JUSTIFIED-STRING MESSAGE-WINDOW ALARM-MESSAGE 'CENTERED 'CLEARW)
    (|if| (EQ (WINDOWPROP *DC-WINDOW* 'ALARM-MODE)
              'LOUD)
          |then| (RINGBELLS)
          |else| (|for| I |to| 30 |do| (VIDEOCOLOR (NOT (VIDEOCOLOR)))
                                     (BLOCK 110))))))
```

**(DC-TURN-ALARM-OFF**

```
(LAMBDA (ITEM MENU BUTTON) ; Edited 25-Jul-88 06:53 by Mountford
  (LET ((TEMP-ALARM-LIST)
        (|for| ALARM |in| (WINDOWPROP *DC-WINDOW* 'ALARM-LIST) |do| (|if| (CAR ALARM)
                                                                              |then| (SETQ TEMP-ALARM-LIST
                                                                              (APPEND TEMP-ALARM-LIST (LIST ALARM))
                                                                              )))
    (WINDOWPROP *DC-WINDOW* 'ALARM-LIST TEMP-ALARM-LIST)
    (WINDOWPROP *DC-WINDOW* 'ALARM-RINGING NIL)
    (DC-CLOSE-MESSAGE-WINDOW)))
```

)

(DEFINEQ

**(DC-PROMPT-FOR-ALARM-MESSAGE**

```
(LAMBDA (MESSAGE-WINDOW) ; Edited 22-Feb-89 16:19 by Mountford
  (LET (MESSAGE)
    (WINDOWPROP *DC-WINDOW* 'CAN-UPDATE NIL)
    (CLEARW MESSAGE-WINDOW)
    (MOVETOUPPERLEFT WINDOW)
    (SETQ MESSAGE (PROMPTFORWARD " Message: " "No Message" NIL MESSAGE-WINDOW NIL 'TTY
                                (CHARCODE (EOL ESCAPE LF TAB))))
    (WINDOWPROP *DC-WINDOW* 'CAN-UPDATE T)
    MESSAGE)))
```

**(DC-GET-MESSAGE-WINDOW**

```
(LAMBDA NIL ; Edited 25-Jul-88 07:07 by Mountford
  (OR (CAR (WINDOWPROP *DC-WINDOW* 'ATTACHEDWINDOWS))
    (LET ((MESSAGE-WINDOW (CREATEW (CREATEREGION 1 (IDIFFERENCE SCREENHEIGHT 25)
                                              430 30)))
        (ATTACHWINDOW MESSAGE-WINDOW *DC-WINDOW* 'BOTTOM 'JUSTIFY)
        (WINDOWPROP MESSAGE-WINDOW 'MESSAGE-WINDOW T)
        (DSPFONT *DC-AUXW-FONT* MESSAGE-WINDOW)
        MESSAGE-WINDOW)))
```

**(DC-CLOSE-MESSAGE-WINDOW**

```
(LAMBDA NIL ; Edited 25-Jul-88 06:58 by Mountford
  (LET ((MESSAGE-WINDOW (CAR (WINDOWPROP *DC-WINDOW* 'ATTACHEDWINDOWS)))
        (|if| (WINDOWPROP MESSAGE-WINDOW 'MESSAGE-WINDOW)
              |then| (DETACHWINDOW MESSAGE-WINDOW)
              (CLOSEW MESSAGE-WINDOW))))))
```

)

;; Display &amp; Misc functions

(DEFINEQ

**(DC-DISPLAY-TIME**

```
(LAMBDA (ITIME MERIDIAN) ; Edited 1-Aug-88 08:00 by Mountford
  (LET* ((LOCAL-TIME (DC-GET-DATE *DC-DATEFORMAT* ITIME))
        (DISPLAY-TIME (DC-MAKE-DISPLAY-TIME-STRING LOCAL-TIME MERIDIAN)))
    (DC-PRINT-JUSTIFIED-STRING *DC-WINDOW* DISPLAY-TIME 'CENTERED 'CLEARW)))
```

**(DC-MAKE-DISPLAY-TIME-STRING**

```
(LAMBDA (DATE-STRING MERIDIAN) ; Edited 15-Aug-88 09:18 by Mountford
  (LET ((DISPLAY-TIME DATE-STRING)
        (HOUR (MKATOM (SUBSTRING DATE-STRING 11 12))))
    ;; If *DC-DATEFORMAT* is changed to number.of.month, it causes the clock to break in 12-hour mode.
    (|if| MERIDIAN
          |then| (LET ((DAY (SUBSTRING DATE-STRING 16)))
                  (COND
                     ((ZEROP HOUR)
                      (SETQ DISPLAY-TIME (CONCAT (SUBSTRING DATE-STRING 1 10)
                                                    "12"
                                                    (SUBSTRING DATE-STRING 13 15)
                                                    "am"))))
                     ((ILESSP HOUR 10)
                      (SETQ DISPLAY-TIME (CONCAT (SUBSTRING DATE-STRING 1 10)
```



```

" "
(SUBSTRING DATE-STRING 12 15)
"am"))
((ILESSP HOUR 12)
 (SETQ DISPLAY-TIME (CONCAT (SUBSTRING DATE-STRING 1 15)
                             "am")))
((EQP HOUR 12)
 (SETQ DISPLAY-TIME (CONCAT (SUBSTRING DATE-STRING 1 15)
                             "pm")))
((ILESSP HOUR 22)
 (SETQ DISPLAY-TIME (CONCAT (SUBSTRING DATE-STRING 1 10)
                             " "
                             (IDIFFERENCE HOUR 12)
                             (SUBSTRING DATE-STRING 13 15)
                             "pm"))))
(T (SETQ DISPLAY-TIME (CONCAT (SUBSTRING DATE-STRING 1 10)
                              (IDIFFERENCE HOUR 12)
                              (SUBSTRING DATE-STRING 13 15)
                              "pm"))))
(|if| DAY
  |then| (SETQ DISPLAY-TIME (CONCAT DISPLAY-TIME DAY))))
(|if| (EQUAL " " (SUBSTRING DISPLAY-TIME 1 1))
  |then| (SETQ DISPLAY-TIME (SUBSTRING DISPLAY-TIME 2)))
DISPLAY-TIME))

```

**(DC-PRINT-JUSTIFIED-STRING**

; Edited 15-Aug-88 06:41 by Mountford

```

(LAMBDA (WINDOW STRING JUSTIFICATION CLEARW?)
  (LET ((STRING-WIDTH (STRINGWIDTH STRING WINDOW))
        (WINDOW-WIDTH (WINDOWPROP WINDOW 'WIDTH)))
    (|if| CLEARW?
      |then| (CLEARW WINDOW))
    (MOVETOUPPERLEFT WINDOW)
    (COND
      ((IGREATERP STRING-WIDTH WINDOW-WIDTH)
       (DC-SHAPE-TO-FIT *DC-WINDOW* STRING)
       (SETQ WINDOW-WIDTH (WINDOWPROP WINDOW 'WIDTH))))
    (COND
      ((EQ JUSTIFICATION 'LEFT)
       (SETQ STRING (CONCAT " " STRING)))
      ((EQ JUSTIFICATION 'RIGHT)
       (SETQ STRING (CONCAT STRING " ")))
      (SETQ STRING-WIDTH (IPLUS 3 (STRINGWIDTH STRING WINDOW)))
      (DSPXPOSITION (IDIFFERENCE WINDOW-WIDTH STRING-WIDTH)
                    WINDOW))
    ('CENTER (DSPXPOSITION (IQUOTIENT (IDIFFERENCE WINDOW-WIDTH STRING-WIDTH)
                                     2)
                          WINDOW)))
    (PRINTOUT WINDOW STRING)))

```

**(DC-CONVERT-DATE-FORMAT**

; Edited 25-Jul-88 11:50 by Mountford

```

(LAMBDA (DATE-STRING NEW-FORMAT-LIST)
  (|if| (EQ (CAR NEW-FORMAT-LIST)
            'DATEFORMAT)
    |then| (GDATE (IDATE DATE-STRING)
                  NEW-FORMAT-LIST)
    |else| (GDATE (IDATE DATE-STRING)
                  (CONS 'DATEFORMAT NEW-FORMAT-LIST))))

```

**(DC-SHAPE-TO-FIT**

; Edited 17-Feb-89 16:12 by Mountford

```

(LAMBDA (WINDOW STRING)
  (LET ((WINDOW-LIST (WINDOWPROP *DC-WINDOW* 'ATTACHEDWINDOWS))
        (STRING-WIDTH (STRINGWIDTH (CONCAT " " STRING)
                                       WINDOW))
        (HEIGHT (HEIGHTIFWINDOW (FONTPROP WINDOW 'HEIGHT)))
        (REGION (WINDOWPROP WINDOW 'REGION))
        STRING-WIDTH AUXW-STRING-WIDTH AUXW-HEIGHT X Y)
    (WINDOWPROP WINDOW 'RESHAPEFN NIL)
    (|for| AUXW |in| WINDOW-LIST |do| (DETACHWINDOW AUXW)
      (SETQ AUXW-STRING-WIDTH (STRINGWIDTH (CONCAT (WINDOWPROP AUXW
                                                                'LOCATION)
                                                                " "
                                                                " "
                                                                STRING)
                                             AUXW)))
    (|if| (IGREATERP AUXW-STRING-WIDTH STRING-WIDTH)
      |then| (SETQ STRING-WIDTH AUXW-STRING-WIDTH))
    (SETQ X (CAR REGION))
    (SETQ Y (CADR REGION))
    (SETQ WIDTH (WIDTHIFWINDOW STRING-WIDTH))
    (SHAPEW WINDOW (LIST X Y WIDTH HEIGHT))
    (SETQ AUXW-HEIGHT (HEIGHTIFWINDOW (FONTPROP (CAR WINDOW-LIST)
                                                  'HEIGHT)))
    (|for| AUXW |in| WINDOW-LIST |do| (SHAPEW AUXW (LIST X Y WIDTH AUXW-HEIGHT))
      (ATTACHWINDOW AUXW *DC-WINDOW* 'BOTTOM 'JUSTIFY))
    (WINDOWPROP *DC-WINDOW* 'RESHAPEFN 'DON\('T'))))

```

**(DC-GET-DATE**

```
(LAMBDA (DATEFORMAT ITIME OFFSET)
  (|if| ITIME
    |then| (|if| OFFSET
      |then| (GDATE (IDIFFERENCE ITIME OFFSET)
        DATEFORMAT)
      |else| (GDATE ITIME DATEFORMAT))
    |else| (|if| OFFSET
      |then| (GDATE (IDIFFERENCE (IDATE)
        OFFSET)
        DATEFORMAT)
      |else| (GDATE (IDATE)
        DATEFORMAT))))
```

; Edited 1-Aug-88 07:55 by Mountford

**(DC-MENU-POSITION**

```
(LAMBDA (MENU)
  (LET ((WINDOW-REGION (WINDOWPROP *DC-WINDOW* 'REGION))
    (MENU-HEIGHT (CADDR (MENUMREGION MENU))))
    (CONS (IPLUS (CAR WINDOW-REGION)
      (CADDR WINDOW-REGION))
      (IDIFFERENCE (IPLUS (CADR WINDOW-REGION)
        (CADDR WINDOW-REGION))
        MENU-HEIGHT))))
```

; Edited 11-Aug-88 06:14 by Mountford

)

;; Font functions

(DEFINEQ

**(DC-SET-FONT**

```
(LAMBDA (WINDOW ALL-AUXW-P)
  (LET ((FAMILY (DC-FONT-FAMILY-MENU))
    (SIZE (DC-FONT-SIZE-MENU))
    (FACE (DC-FONT-FACE-MENU))
    OLD-FONT NEW-FONT)
    (|if| (NOT (AND FAMILY SIZE FACE))
      |then| (|if| WINDOW
        |then| (SETQ OLD-FONT (DSPFONT NIL WINDOW))
        |else| (SETQ OLD-FONT (DSPFONT NIL *DC-WINDOW*)))
      (|if| (NOT FAMILY)
        |then| (SETQ FAMILY (FONTPROP OLD-FONT 'FAMILY)))
      (|if| (NOT SIZE)
        |then| (SETQ SIZE (FONTPROP OLD-FONT 'SIZE)))
      (|if| (NOT FACE)
        |then| (SETQ FACE (FONTPROP OLD-FONT 'FACE))))
    (DC-PRINT-JUSTIFIED-STRING *DC-WINDOW* "Fetchng Font" 'CENTER 'CLEARW)
    (SETQ NEW-FONT (FONTCREATE FAMILY SIZE FACE NIL NIL 'NOERRORFLG))
    (|if| NEW-FONT
      |then| (COND
        (ALL-AUXW-P (SETQ *DC-AUXW-FONT* NEW-FONT)
          (|for| AUXW |in| (WINDOWPROP *DC-WINDOW* 'ATTACHEDWINDOWS)
            |do| (DSPFONT *DC-AUXW-FONT* AUXW)))
        (WINDOW (DSPFONT NEW-FONT WINDOW))
        (T (SETQ *DC-FONT* NEW-FONT)
          (DSPFONT *DC-FONT* *DC-WINDOW*)))
        (DC-SHAPE-TO-FIT *DC-WINDOW* (DC-MAKE-DISPLAY-TIME-STRING (GDATE (IDATE)
          *DC-DATEFORMAT*)
          (WINDOWPROP *DC-WINDOW* '12-HOUR-MODE))))
      |else| (DC-PRINT-JUSTIFIED-STRING *DC-WINDOW* "Font Not Found" 'CENTER 'CLEARW)
      NEW-FONT)))
```

; Edited 2-Sep-88 15:44 by Mountford

**(DC-FONT-FAMILY-MENU**

```
(LAMBDA NIL
  (|if| (OR (NOT (BOUNDP '*DC-FONT-FAMILY-MENU*))
    (NULL *DC-FONT-FAMILY-MENU*))
    |then| (SETQ *DC-FONT-FAMILY-MENU* (|create| MENU
      ITEMS _ '((Titan| 'TITAN)
        (Hippo| 'HIPPO)
        (Gacha| 'GACHA)
        (Classic| 'CLASSIC)
        (BoldPS| 'BOLDPS)
        (Modern| 'MODERN)
        (Terminal| 'TERMINAL)
        (Helvetica| 'HELVETICA)
        (Helveticad| 'HELVETICAD)
        ("Old English" 'OLDENGLISH)
        ("Letter Gothic" 'LETTERGOTHIC)
        ("Times Roman" 'TIMESROMAN)
        ("Times Romand" 'TIMESROMAND))
      CENTERFLG _ T
      TITLE _ " Font ")))
  (MENU *DC-FONT-FAMILY-MENU* (DC-MENU-POSITION *DC-FONT-FAMILY-MENU*)))
```

; Edited 13-Aug-88 11:01 by Mountford

**(DC-FONT-SIZE-MENU**

```
(LAMBDA NIL
  (|if| (OR (NOT (BOUNDP '*DC-FONT-SIZE-MENU*))
            (NULL *DC-FONT-SIZE-MENU*))
    |then| (SETQ *DC-FONT-SIZE-MENU*
      (|create| MENU
        ITEMS _ '(6 7 8 9 10 11 12 14 16 18 24 26 30 36 72)
        MENUCOLUMNS _ 3
        TITLE _ " Size ")))
  (MENU *DC-FONT-SIZE-MENU* (DC-MENU-POSITION *DC-FONT-SIZE-MENU*)))))
```

; Edited 13-Aug-88 10:52 by Mountford

**(DC-FONT-FACE-MENU**

```
(LAMBDA NIL
  (|if| (OR (NOT (BOUNDP '*DC-FONT-FACE-MENU*))
            (NULL *DC-FONT-FACE-MENU*))
    |then| (SETQ *DC-FONT-FACE-MENU* (|create| MENU
      ITEMS _ '((|Bold| 'BRR)
                (|Italic| 'MIR)
                ("Bold Italic" 'BIR)
                (|Regular| 'MRR))
      TITLE _ " Face "
      CENTERFLG _ T)))
  (MENU *DC-FONT-FACE-MENU* (DC-MENU-POSITION *DC-FONT-FACE-MENU*)))))
```

; Edited 11-Aug-88 06:46 by Mountford

)

;; List of the world's time zones

**(RPAQQ \*DC-TIME-ZONE-LIST\***

```
((("Nome, Alaska" '("Nome, Alaska: " . 11)
  '(-180 . -165))
 ("Honolulu, Hawaii" '("Honolulu, Hawaii: " . 10)
  '(-165 . -150))
 ("Marquesas Islands" '("Marquesas Islands: " . 9)
  '(-150 . -135))
 ("San Francisco, California" '("San Francisco, California: " . 8)
  '(-135 . -120))
 ("Denver, Colorado" '("Denver, Colorado: " . 7)
  '(-120 . -105))
 ("Houston, Texas" '("Houston, Texas: " . 6)
  '(-105 . -90))
 ("Washington DC" '("Washington DC: " . 5)
  '(-90 . -75))
 ("Buenos Aires, Argentina" '("Buenos Aires, Argentina: " . 4)
  '(-75 . -60))
 ("Brasilia, Brasil" '("Brasilia, Brasil: " . 3)
  '(-60 . -45))
 ("Rio de Janeiro, Brasil" '("Rio de Janeiro, Brasil: " . 2)
  '(-45 . -30))
 ("Reykjavik, Iceland" '("Reykjavik, Iceland: " . 1)
  '(-30 . -15))
 ("Greenwich, England" '("Greenwich, England: " . 0)
  '(-15 . 0))
 ("Paris, France" '("Paris, France: " . -1)
  '(0 . 15))
 ("Athens, Greece" '("Athens, Greece: " . -2)
  '(15 . 30))
 ("Moscow, USSR" '("Moscow, USSR: " . -3)
  '(30 . 45))
 ("Riyadh, Arabia" '("Riyadh, Arabia: " . -4)
  '(45 . 60))
 ("Kabul, Afganistan" '("Kabul, Afganistan: " . -5)
  '(60 . 75))
 ("Kathmandu, Nepal" '("Kathmandu, Nepal: " . -6)
  '(75 . 90))
 ("Bangkok, Thailand" '("Bangkok, Thailand: " . -7)
  '(90 . 105))
 ("Hong Kong" '("Hong Kong: " . -8)
  '(105 . 120))
 ("Seoul, South Korea" '("Seoul, South Korea: " . -9)
  '(120 . 135))
 ("Tokyo, Japan" '("Tokyo, Japan: " . -10)
  '(135 . 150))
 ("Sydney Austrailia" '("Sydney Austrailia: " . -11)
  '(150 . 165))
 ("Aukland, New Zealand" '("Aukland, New Zealand: " . -12)
  '(165 . 180)))))
```

;; Call digi-clock

(PUTPROPS **DIGI-CLOCK COPYRIGHT** ("XEROX Corporation" 1988 1989))

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FUNCTION INDEX

DC-ADD-ALARM-SETTING .....	7	DC-MENU-POSITION .....	10
DC-ADD-AUXW .....	4	DC-OPEN-SET-TIME-MENUW .....	6
DC-ALARM-DUE-TO-RING? .....	7	DC-PRINT-JUSTIFIED-STRING .....	9
DC-AUXW-BUTTONEVENTFN .....	2	DC-PROCESS .....	3
DC-AUXW-GET-OPERATION .....	4	DC-PROMPT-FOR-ALARM-MESSAGE .....	8
DC-AUXW-UPDATE .....	4	DC-RING-ALARM .....	8
DC-BUTTONEVENTFN .....	2	DC-SET-ALARM .....	7
DC-CLOSE-MESSAGE-WINDOW .....	8	DC-SET-FONT .....	10
DC-CONVERT-DATE-FORMAT .....	9	DC-SET-LAST-DAY-FOR-MONTH .....	5
DC-DELETE-ALARM-SETTING .....	7	DC-SET-TIME .....	4
DC-DELETE-AUXW .....	4	DC-SET-TIME-BUTTONEVENTFN .....	2
DC-DISPLAY-TIME .....	8	DC-SET-TIME-MAKE-DATE-STRING .....	6
DC-EXTRACT-STARTING-SET-TIME-DATE .....	6	DC-SET-TIME-ZONE .....	6
DC-FONT-FACE-MENU .....	11	DC-SET-TIME-ZONE-HEADING .....	6
DC-FONT-FAMILY-MENU .....	10	DC-SHAPE-TO-FIT .....	9
DC-FONT-SIZE-MENU .....	11	DC-START-PROCESS .....	1
DC-GET-DATE .....	10	DC-TURN-ALARM-OFF .....	8
DC-GET-MESSAGE-WINDOW .....	8	DC-UPDATE .....	3
DC-GET-OPERATION .....	3	DC-UPDATE-TIME-ITEM .....	5
DC-GET-TIME-ZONE .....	7	DC-VALID-DATE-P .....	5
DC-INITIALIZE-SET-TIME-MENU .....	5	DC-WARNING-TIME-NOT-SET .....	4
DC-KILL-PROCESS .....	2	DIGI-CLOCK .....	1
DC-MAKE-DISPLAY-TIME-STRING .....	8	ST .....	3
DC-MAKE-NEW-SET-TIME-MENU .....	5		

---

VARIABLE INDEX

*DC-TIME-ZONE-LIST* .....	11
---------------------------	----

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