File created: 12-Sep-88 01:29:15 **{ERINYES}<LISPUSERS>MEDLEY>BICLOCK.;5**

changes to: (FNS BICLOCK BICLOCKPROCESS)
(VARS BICLOCKCOMS)

previous date: 14-Dec-87 17:32:47 {ERINYES}<LISPUSERS>MEDLEY>BICLOCK.;2

Read Table: INTERLISP

Package: INTERLISP

Format: XCCS

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(RPAQQ BICLOCKCOMS
       [(FNS BICLOCK BICLOCKBEFN BICLOCKCFN BICLOCKFINDFONT BICLOCKNRFN BICLOCKPROCESS BICLOCKRPFN BICLOCKRSFN
             BICLOCKSETALARM BICLOCKSETALARM1 BICLOCKSETALARM2 IDLE.BICLOCK)
        (RECORDS BICLOCKPARMS UPTIMEREC)
        [INITVARS (BICLOCKWINDOW)
               (BICLOCKDEFAULTPROPS '(SECONDS T COLOR SHADOW MARKS NIL DIGITS 1 CHIME NIL ALARM NIL SIZE 152
                                          HORIZONTAL LEFT-OF-LOGO VERTICAL TOP CREATE T))
               (BICLOCKUSERPROPS)
               (BICLOCKINITIALPROPS)
               (BICLOCKIDLEPROPS '(HORIZONTAL CENTER VERTICAL CENTER]
        [P (CL:PROCLAIM '(CL:SPECIAL BICLOCKWINDOW BICLOCKDEFAULTPROPS BICLOCKUSERPROPS BICLOCKINITIALPROPS
                                BICLOCKIDLEPROPS]
        [DECLARE%: DONTEVAL@LOAD DOCOPY (VARS (BICLOCKWINDOW (BICLOCK BICLOCKINITIALPROPS]
        (ADDVARS (IDLE.FUNCTIONS (Biclock 'IDLE.BICLOCK))
               (IDLE.SUSPEND.PROCESS.NAMES BICLOCKPROCESS))
        (DECLARE%: DONTEVAL@LOAD DOEVAL@COMPILE DONTCOPY COMPILERVARS (ADDVARS (NLAMA)
                                                                              (NLAML)
                                                                              (LAMA BICLOCK])

(DEFINEQ

(BICLOCK
  [LAMBDA PROPS                                                    ; Edited 12-Sep-88 01:25 by masinter
    (LET
     ((PLIST (APPEND (if [AND (EQ PROPS 1)
                              (OR (NULL (ARG PROPS 1))
                                  (LISTP (ARG PROPS 1]
                         then (ARG PROPS 1)
                        else (for I from 1 to PROPS collect (ARG PROPS I)))
                     BICLOCKUSERPROPS BICLOCKDEFAULTPROPS)))
      (if [OR (ODDP (LENGTH PLIST))
              (find P in PLIST by (CDDR P) suchthat (NOT (LITATOM P]
          then (ERROR "ARG NOT PROPLIST IN BICLOCK" PLIST))
      (if (LISTGET PLIST 'CREATE)
          then
          (LET
           ((W
             (OR
              (LISTGET PLIST 'WINDOW)
              (CREATEW
               (OR
                (for P in PLIST by (CDDR P) as V in (CDR PLIST) by (CDDR V)
                   do
                   (SELECTQ P
                        (SIZE (RETURN (if V
                                          then (CREATEREGION (SELECTQ (LISTGET PLIST 'HORIZONTAL)
                                                                      (LEFT 0)
                                                                      (CENTER (QUOTIENT (DIFFERENCE SCREENWIDTH V)
                                                                                        2))
                                                                      (LEFT-OF-LOGO (-
                                                                                     SCREENWIDTH V
                                                                                     (if LOGOW
                                                                                         then (WINDOWPROP LOGOW
                                                                                                          'WIDTH)
                                                                                       else 0)))
                                                                      (RIGHT (DIFFERENCE (DIFFERENCE SCREENWIDTH V)
                                                                                         1))
                                                                      (OR (NUMBERP (LISTGET PLIST 'HORIZONTAL))
                                                                          0))
                                                             (SELECTQ (LISTGET PLIST 'VERTICAL)
                                                                  (BOTTOM 0)
                                                                  (CENTER (QUOTIENT (DIFFERENCE SCREENHEIGHT V)
                                                                                    2))
                                                                  (BELOW-LOGO (- SCREENHEIGHT V
                                                                                 (if LOGOW
                                                                                     then (WINDOWPROP LOGOW 'HEIGHT)
                                                                                   else 0)))
                                                                  (TOP (DIFFERENCE (DIFFERENCE SCREENHEIGHT V)
                                                                                   1))
                                                                  (OR (NUMBERP (LISTGET PLIST 'VERTICAL))
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                                                    0))
                                                V V))))
                    (REGION (RETURN V))
                    NIL))
              (GETREGION 20 20 NIL 'BICLOCKNRFN))
            NIL 0)))
          [PARMS (create BICLOCKPARMS
                         SECONDSMODE _ (LISTGET PLIST 'SECONDS)
                         COLORMODE _ (LISTGET PLIST 'COLOR)
                         MARKMODE _ [SELECTQ (LISTGET PLIST 'MARKS)
                                             (HOUR 5)
                                             ((HOUR&MINUTE MINUTE)
                                                 1)
                                             (|3/6/9/12| 15)
                                             (NUMBERP (LISTGET PLIST 'MARKS]
                         DIGMODE _ [SELECTQ (LISTGET PLIST 'DIGITS)
                                            (HOUR 1)
                                            (|3/6/9/12| 3)
                                            (NUMBERP (LISTGET PLIST 'DIGITS]
                         CHIMEMODE _ [SELECTQ (LISTGET PLIST 'CHIME)
                                              (HOUR 60)
                                              (QUORTER 15)
                                              (NUMBERP (LISTGET PLIST 'CHIME]
                         ROMANDIGS _ (for P in PLIST by (CDDR P) as V in (CDR PLIST) by (CDDR V)
                                        do (SELECTQ P
                                                  (ROMAN (RETURN V))
                                                  (ARABIC (RETURN (NOT V)))
                                                 NIL))
                         ADJUSTEVENT _ (CREATE.EVENT)
                         ALARMTIME _ (if (LISTGET PLIST 'ALARMTIME)
                                         then (IDATE (LISTGET PLIST 'ALARMTIME]
          P)
         (if (NOT (LISTGET PLIST 'IDLE))
             then (DEL.PROCESS 'BICLOCKPROCESS)
                  (AND BICLOCKWINDOW (CLOSEW BICLOCKWINDOW)))
         (SETQ P (ADD.PROCESS (LIST (FUNCTION BICLOCKPROCESS)
                                    (KWOTE W)
                                    (KWOTE PARMS))
                              'RESTARTABLE
                              'HARDRESET))
         (WINDOWPROP W 'PROCESS P)
         (WINDOWPROP W 'NEWREGIONFN (FUNCTION BICLOCKNRFN))
         (WINDOWPROP W 'RESHAPEFN (FUNCTION BICLOCKRSFN))
         (WINDOWPROP W 'REPAINTFN (FUNCTION BICLOCKRPFN))
         (WINDOWPROP W 'CLOSEFN (FUNCTION BICLOCKCFN))
         (WINDOWPROP W 'AFTERMOVEFN (FUNCTION BICLOCKRPFN))
         (WINDOWPROP W 'PARMS PARMS)
         (WINDOWPROP W 'WINDOWENTRYFN (FUNCTION BICLOCKBEFN))
         (WINDOWPROP W 'BUTTONEVENTFN (FUNCTION BICLOCKBEFN))
         W])
```

(BICLOCKBEFN

```
[LAMBDA (W)                                                    (* lmm "19-Nov-86 07:41")
  (LET
   [(PROC (WINDOWPROP W 'PROCESS]
   [if (PROCESS.FINISHEDP PROC)
       then (PRINTOUT PROMPTWINDOW T "RESTARING BICLOCK PROCESS")
            (WINDOWPROP W 'PROCESS (SETQ PROC (ADD.PROCESS [LIST (FUNCTION BICLOCKPROCESS)
                                                                 (KWOTE W)
                                                                 (KWOTE (WINDOWPROP W 'PARMS]
                                                          'RESTARTABLE
                                                          'HARDRESET]
   (if (.COPYKEYDOWNP.)
       then (SUSPEND.PROCESS PROC)
            (INVERTW W)
            (UNTILMOUSESTATE (NOT (OR LEFT MIDDLE)))
            (BKSYSBUF (DATE))
            (INVERTW W)
            (WAKE.PROCESS PROC)
     else (with BICLOCKPARMS (WINDOWPROP W 'PARMS)
                (if (MOUSESTATE LEFT)
                    then (if ALARMTIME
                             then (PROMPTPRINT (DATE)
                                               "   ALARM AT "
                                               (GDATE ALARMTIME))
                           else (PROMPTPRINT (DATE)
                                             "    NO ALARM SET"))
                  elseif (MOUSESTATE MIDDLE)
                    then (LET [(SEL (MENU (create MENU
                                                  ITEMS _ '(("Seconds On" 'SON)
                                                            ("Seconds Off" 'SOFF)
                                                            ("White" 'WHITE "White with border"
                                                                   (SUBITEMS ("Shadow" 'SHADOW "White with
                                                                                               shadow")))
                                                            ("Black" 'BLACK)
                                                            ["Markers" 'MINSEC "Use Submenu to Change number of
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                                                    Markers" (SUBITEMS ("No markers" 'NOMARKER)
                                                                       ("3/6/9/12 Markers"
                                                                        '3HOURMARKS)
                                                                       ("Only hours" 'HOURMARKS)
                                                                       ("Hours and minutes"
                                                                        'MINHOURMARKS]
                                                   ["Digits" 'HOUR "Use Submenu to Change number of
                                                          Digits" (SUBITEMS ("No Digits" 'NODIG)
                                                                            ("3/6/9/12 Hours" '3HOUR)
                                                                            ("All Hours" 'HOUR)
                                                                            ("Arabic digits" 'ARABIC)
                                                                            ("Roman digits" 'ROMAN]
                                                   ["Chime" 'CHIME "Use Submenu to Change Chime
                                                          interval" (SUBITEMS ("No chime" 'NOCHIME)
                                                                              ("Hours" 'CHIME)
                                                                              ("Hours and quarters"
                                                                               'CHIME15MIN]
                                                   ("Set Alarm" 'ALARM)
                                                   ("Alarm Off" 'AOFF]
                                  (SELECTQ SEL
                                       (SON (SETQ SECONDSMODE T))
                                       (SOFF (SETQ SECONDSMODE NIL))
                                       ((WHITE BLACK SHADOW)
                                           (SETQ COLORMODE SEL))
                                       (NOMARKER (SETQ MARKMODE NIL))
                                       (3HOURMARKS (SETQ MARKMODE 15))
                                       (HOURMARKS (SETQ MARKMODE 5))
                                       (MINHOURMARKS (SETQ MARKMODE 1))
                                       (NODIG (SETQ DIGMODE NIL))
                                       (3HOUR (SETQ DIGMODE 3))
                                       (HOUR (SETQ DIGMODE 1))
                                       (ARABIC (SETQ ROMANDIGS NIL))
                                       (ROMAN (SETQ ROMANDIGS T))
                                       (NOCHIME (SETQ CHIMEMODE NIL))
                                       (CHIME (SETQ CHIMEMODE 60))
                                       (CHIME15MIN (SETQ CHIMEMODE 15))
                                       (ALARM (BICLOCKSETALARM W))
                                       (AOFF (SETQ ALARMTIME NIL))
                                       NIL)
                                  (if (MEMB SEL '(NOMARKER 3HOURMARKS HOURMARKS MINHOURMARKS NODIG 3HOUR HOUR ARABIC
                                                    ROMAN))
                                      then (RESTART.PROCESS (WINDOWPROP W 'PROCESS))
                                    else (WAKE.PROCESS (WINDOWPROP W 'PROCESS])
```

(BICLOCKCFN

```
  [LAMBDA (W)
    (DEL.PROCESS (WINDOWPROP W 'PROCESS])
```

(BICLOCKFINDFONT

```
  [LAMBDA (SIZE MODERNCLASSIC)                                  ; Edited 26-Nov-86 14:46 by Pavel
    (LET [(ALLFONTS (FONTSAVAILABLE '* '* 'MRR 0 'DISPLAY]
         [SORT ALLFONTS (FUNCTION (LAMBDA (F1 F2)
                                  (OR [AND MODERNCLASSIC (MEMB (CAR F1)
                                                               '(MODERN CLASSIC))
                                           (NOT (MEMB (CAR F2)
                                                      '(MODERN CLASSIC]
                                      (GREATERP (CADR F1)
                                                (CADR F2))
                                      (AND (EQP (CADR F1)
                                                (CADR F2))
                                           (for FAM in '(MODERN CLASSIC GACHA HELVETICA HELVETICAD TERMINAL)
                                              do (if (EQ FAM (CAR F1))
                                                     then (RETURN T)
                                                   elseif (EQ FAM (CAR F2))
                                                     then (RETURN NIL]
         (find FONT in ALLFONTS suchthat (LEQ (CADR FONT)
                                              SIZE])
```

(BICLOCKNRFN

```
  [LAMBDA (FP MP)                                               (* BN "17-Sep-84 10:40")
    (COND
       [MP (with POSITION MP (PROG [(DX (IDIFFERENCE XCOORD (fetch (POSITION XCOORD) of FP)))
                                    (DY (IDIFFERENCE YCOORD (fetch (POSITION YCOORD) of FP]
                                   [COND
                                      [(IGREATERP (IABS DX)
                                                  (IABS DY))
                                       (SETQ YCOORD (IPLUS (fetch (POSITION YCOORD) of FP)
                                                           (ITIMES DX (COND
                                                                        ((MINUSP (ITIMES DX DY))
                                                                         -1)
                                                                        (T 1]
                                      (T (SETQ XCOORD (IPLUS (fetch (POSITION XCOORD) of FP)
                                                             (ITIMES DY (COND
                                                                          ((MINUSP (ITIMES DX DY))
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                                                                    -1)
                                                                   (T 1]
                                (RETURN MP]
       (T FP])
```

(BICLOCKPROCESS

```
  [LAMBDA (W PARMS)                                          ; Edited 12-Sep-88 01:26 by masinter
    (CENTERPRINTINREGION "Wait" NIL W)
    (with
     BICLOCKPARMS PARMS
     (PROG [(WIDTH (WINDOWPROP W 'WIDTH))
            (HEIGHT (WINDOWPROP W 'HEIGHT]
           (while T
              bind S (BM _ (BITMAPCREATE WIDTH HEIGHT))
                   (BG _ (BITMAPCREATE WIDTH HEIGHT))
                   (BM1 _ (BITMAPCREATE WIDTH HEIGHT))
                   (SHADOW _ (BITMAPCREATE WIDTH HEIGHT))
                   (XC _ (IQUOTIENT WIDTH 2))
                   (YC _ (IQUOTIENT HEIGHT 2))
                   (SX _ (ARRAY 60 'FIXP 0 0))
                   (SY _ (ARRAY 60 'FIXP 0 0))
                  MX MY HX HY MP HP R MARKUR MARKLR MARK1LR DOTR SECR MINR HOURR CIRCW MARKW MARK1W SECW MINW
                  HOURW DIGW DIGFONT NOW SECS (SLOWMODE _ T)
                   (SMODE _ T)
                   (MEAN _ 50)
                   (LIMIT _ 1000)
                  CL0 REF NOSEC INVERTFLG LASTCHIME (CHIMECOUNT _ 0)
              first                                          ; First set up some relations
                  (BLOCK)
                  (WINDOWPROP W 'ICONIMAGE BM)
                  (WINDOWPROP W 'ICONMASK BG)
                  (SETQ R (- (IMIN XC YC)
                             4))
                  (SETQ MARKUR (CL:* R 1.0))
                  (SETQ MARKLR (CL:* R 0.9))
                  (SETQ MARK1LR (CL:* R 0.98))
                  (SETQ DOTR (CL:* R 0.05))
                  (SETQ SECR (CL:* R 1.0))
                  (SETQ MINR (CL:* R 0.9))
                  (BLOCK)
                  (SETQ HOURR (CL:* R 0.6))
                  (SETQ CIRCW (CL:* R 0.03))
                  (SETQ MARKW (CL:* R (SELECTQ COLORMODE
                                          (SHADOW 0.05)
                                          0.0375)))
                  (SETQ MARK1W (CL:* R 0.009))
                  (SETQ SECW (IMAX 1 (CL:* R 0.01)))
                  (SETQ MINW (IMAX 2 (CL:* R 0.037)))
                  (SETQ HOURW (IMAX 3 (CL:* R 0.07)))
                  (SETQ DIGW (CL:* R (if (NUMBERP MARKMODE)
                                         then 0.75
                                       else 0.9)))
                  (SETQ S (DSPCREATE BM))
                  (DSPXOFFSET XC S)
                  (DSPYOFFSET YC S)
                  ;; Generate signature
                  (if (SETQ DIGFONT (BICLOCKFINDFONT (TIMES R 0.15)))
                      then (DSPFONT DIGFONT S)
                           (CENTERPRINTINREGION "BN" (CREATEREGION (MINUS XC)
                                                                   (MINUS (QUOTIENT (TIMES YC 4)
                                                                                    5))
                                                                   WIDTH
                                                                   (QUOTIENT (TIMES YC 4)
                                                                             5))
                                                     S))
                  (SETQ DIGFONT (BICLOCKFINDFONT (CL:* R (if (NUMBERP MARKMODE)
                                                             then 0.2
                                                           else 0.25))
                                                 ROMANDIGS))
                  (DSPFONT DIGFONT S)
                  (DSPOPERATION 'PAINT S)                    ; Generate background Hour Marks
                  (for H from 1 to 12 as V from 60 by -30 bind SYM
                     do (BLOCK)
                        (SETQ HX (COS V))
                        (SETQ HY (SIN V))
                        (if (AND (NUMBERP MARKMODE)
                                 (ZEROP (IMOD (CL:* H 5)
                                              MARKMODE)))
                            then (DRAWLINE (CL:* HX MARKUR)
                                           (CL:* HY MARKUR)
                                           (CL:* HX MARKLR)
                                           (CL:* HY MARKLR)
                                           MARKW
                                           'REPLACE S))
                        (if (AND DIGFONT (NUMBERP DIGMODE)
```

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                        (ZEROP (IMOD H DIGMODE)))
                   then (SETQ SYM
                              (if ROMANDIGS
                                  then (CAR (NTH '(■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■ ■)
                                                 H))
                                  else H))
                        (MOVETO (- (CL:* HX DIGW)
                                   (QUOTIENT (STRINGWIDTH SYM S)
                                             2))
                                (- (CL:* HY DIGW)
                                   (if ROMANDIGS
                                       then (- (QUOTIENT (FONTPROP S 'HEIGHT)
                                                         2)
                                               (FONTPROP S 'DESCENT))
                                       else (QUOTIENT (FONTPROP S 'ASCENT)
                                                      2)))
                                S)
                        (PRIN1 SYM S)))                    ; Generate background Second Marks
    (for I from 0 to 59 as V from 90 by -6 do (BLOCK)
                                              (SETA SX I (FIX (CL:* (SETQ MX (COS V))
                                                                    SECR)))
                                              (SETA SY I (FIX (CL:* (SETQ MY (SIN V))
                                                                    SECR)))
                                              (if (AND (NUMBERP MARKMODE)
                                                       (ZEROP (IMOD I MARKMODE)))
                                                  then (DRAWLINE (CL:* MX SECR)
                                                                 (CL:* MY SECR)
                                                                 (CL:* MX MARK1LR)
                                                                 (CL:* MY MARK1LR)
                                                                 MARK1W
                                                                 'REPLACE S)))
    (BLOCK)
    (FILLCIRCLE 0 0 DOTR BLACKSHADE S)                     ; Let this be the Background to be used in the loop
    (BITBLT BM NIL NIL BG)                                 ; Determine a reference point for millisecond clock, that is half a
                                                           ; second ahead...
    (while (= (DAYTIME)
              T1)
       bind (T1 _ (DAYTIME)) do (BLOCK) finally (SETQ REF (IPLUS (CLOCK 0)
                                                                 500)))
do  (BITBLT BG NIL NIL BM)                                 ; Compute number of seconds since midnight
    (SETQ NOW (DAYTIME))
    (SETQ SECS (with UPTIMEREC (\UNPACKDATE (if ADJUSTALARM
                                                then ALARMTIME
                                                else NOW))
                               (IPLUS (CL:* HOUR 3600)
                                      (CL:* MINUTE 60)
                                      SECOND)))
    (if SLOWMODE
        then (BLOCK))                                      ; Draw Hour Arm
    (COND
       ((EQP HP (IQUOTIENT SECS 120))
        (DRAWLINE 0 0 HX HY HOURW 'REPLACE S))
       (T (DRAWLINE 0 0 (SETQ HX (FIX (CL:* (SIN (SETQ HP (IQUOTIENT SECS 120)))
                                            HOURR)))
                        (SETQ HY (FIX (CL:* (COS HP)
                                            HOURR)))
                        HOURW
                        'REPLACE S)))
    (if SLOWMODE
        then (BLOCK))                                      ; Draw Minute Arm
    (COND
       ((EQP MP (IQUOTIENT SECS 10))
        (DRAWLINE 0 0 MX MY MINW 'REPLACE S))
       (T (DRAWLINE 0 0 (SETQ MX (FIX (CL:* (SIN (SETQ MP (IQUOTIENT SECS 10)))
                                            MINR)))
                        (SETQ MY (FIX (CL:* (COS MP)
                                            MINR)))
                        MINW
                        'REPLACE S)))
    (if SLOWMODE
        then (BLOCK))                                      ; Draw Seconds Arm
    (COND
       ((NOT NOSEC)
        (DRAWLINE 0 0 (ELT SX (IMOD SECS 60))
                  (ELT SY (IMOD SECS 60))
                  SECW
                  'REPLACE S)))                            ; Now, Generate The Shadow
    (if SLOWMODE
        then (BLOCK))
    [SELECTQ COLORMODE
        (SHADOW (BITBLT BM NIL NIL SHADOW)
                [for DX from 0 to 1
                   do (for DY from -2 to 0
                         do (if SLOWMODE
                                then (BLOCK))
                            (BITBLT SHADOW NIL NIL SHADOW DX DY NIL NIL 'INPUT 'PAINT)
                         when (OR (NEQ DX 0)
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                                    (NEQ DY 0])
        (PROGN (BITBLT BM NIL NIL SHADOW)
               (for DX from -1 to 1
                  do (for DY from -1 to 1
                        do (if SLOWMODE
                               then (BLOCK))
                           (BITBLT SHADOW NIL NIL SHADOW DX DY NIL NIL 'INPUT 'PAINT)
                        when (OR (NEQ DX 0)
                                 (NEQ DY 0]
(if SLOWMODE
    then (BLOCK))                                    ; Find the Real background
(TOTOPW W)
(BITBLT (WINDOWPROP W 'IMAGECOVERED)
       NIL NIL BM1)
(BITBLT SHADOW NIL NIL BM1 NIL NIL NIL NIL 'INPUT (SELECTQ COLORMODE
                                                          ((WHITE SHADOW)
                                                              'PAINT)
                                                          (BLACK 'ERASE)
                                                          NIL))
(if SLOWMODE
    then (BLOCK))
(BITBLT BM NIL NIL BM1 NIL NIL NIL NIL 'INPUT (SELECTQ COLORMODE
                                                    ((WHITE SHADOW)
                                                        'ERASE)
                                                    (BLACK 'PAINT)
                                                    NIL))
                                                     ; Now, at last, Output it
(BITBLT BM1 NIL NIL W NIL NIL NIL NIL (if INVERTFLG
                                          then 'INVERT
                                        else 'INPUT)
       'REPLACE)
[if SLOWMODE
    then (if [AND CHIMEMODE (OR (NULL LASTCHIME)
                                (NOT (= (IQUOTIENT LASTCHIME (CL:* CHIMEMODE 60))
                                        (IQUOTIENT SECS (CL:* CHIMEMODE 60]
             then (if LASTCHIME
                      then (SETQ CHIMECOUNT
                                 (if (= (IMOD (IQUOTIENT SECS 60)
                                              60)
                                        0)
                                     then (IPLUS (IMOD (- (IQUOTIENT SECS (CL:* 60 60))
                                                          1)
                                                       12)
                                                 1)
                                   else 1)))
                  (SETQ LASTCHIME SECS))
         (if (> CHIMECOUNT 0)
             then (add CHIMECOUNT -1)
                  (BEEPON 440)
                  (BLOCK 25)
                  (BEEPON 220)
                  (BLOCK 25)
                  (BEEPOFF))
         (for N from 1 to (COND
                             (SMODE 10)
                             (T 1))
            bind (DEL _ (COND
                           ((OR SMODE (AND ALARMTIME (<= ALARMTIME NOW))
                                (> CHIMECOUNT 0))
                            1000)
                           (T 60000)))
            until (OR ADJUSTALARM (AND ALARMTIME (<= ALARMTIME NOW)))
            repeatwhile (AND NOSEC (> MEAN LIMIT))
            do (BLOCK (- DEL (IMOD (- (CLOCK 0)
                                      REF)
                                   DEL)))
               (SETQ CL0 (CLOCK 0))
               (BLOCK)
               (SETQ MEAN (IQUOTIENT (IPLUS (CL:* MEAN 8)
                                            (CL:* (IMAX (IMIN (- (CLOCK 0)
                                                                 CL0)
                                                              500)
                                                        0)
                                                  2))
                                     10]
(SETQ SLOWMODE (NOT ADJUSTALARM))
(SETQ SMODE SECONDSMODE)
(SETQ NOSEC (AND (OR (NOT SMODE)
                     (> MEAN LIMIT))
                 (NOT ADJUSTALARM)))
(SETQ INVERTFLG (if (AND ALARMTIME (ILEQ ALARMTIME NOW))
                    then (BEEPON (if INVERTFLG
                                     then 440
                                   else 880))
                         (BLOCK 50)
                         (BEEPOFF)
                         (NOT INVERTFLG)
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                                elseif ADJUSTALARM
                                  then (AWAIT.EVENT ADJUSTEVENT)
                                       NIL))
                        (SETQ LIMIT (IMIN (if (> LIMIT (/ (CL:* MEAN 10)
                                                          9))
                                            then (- LIMIT 1)
                                          else (+ LIMIT 1))
                                          50])
```

(BICLOCKRPFN

```
[LAMBDA (W)
  (WAKE.PROCESS (WINDOWPROP W 'PROCESS])
```

(BICLOCKRSFN

```
[LAMBDA (W)                                                    (* lmm "24-Oct-86 15:17")
  (RESTART.PROCESS (WINDOWPROP W 'PROCESS])
```

(BICLOCKSETALARM

```
[LAMBDA (W)                                                    (* lmm "24-Oct-86 15:21")
  (LET
   [(M
     (OR (WINDOWPROP W 'ADJUSTMENUW)
         (MENUWINDOW
          (create MENU
                  ITEMS _
                  `(("<Hr>")
                    ("<Min>")
                    ("<Sec>")
                    ,@[for I1 in '(24 12 3 1 -1 -3 -12 -24) as I2
                         in '(30 15 5 1 -1 -5 -15 -30)
                         join (for QQQ in '(T NIL NIL) as SCALE in (CONSTANT (LIST (TIMES 60 60)
                                                                                  60 1))
                                 as HELP in '("Will Increment/Decrement Hours by that Amount" "Will
                                              Increment/Decrement Minutes by that Amount" "Will
                                              Increment/Decrement Seconds by that Amount")
                                 collect (LET ((I (if QQQ
                                                      then I1
                                                    else I2)))
                                           (LIST I (LIST (FUNCTION BICLOCKSETALARM1)
                                                         (KWOTE W)
                                                         (KWOTE (TIMES I SCALE)))
                                                 HELP]
                    ("OK!" (BICLOCKSETALARM2 ,(KWOTE W))
                           "Will Exit Adjust Mode")
                    ("_0" (BICLOCKSETALARM1 ,(KWOTE W)
                                   3600 T)
                          "Will Reset Alarm Time to Hr:00:00")
                    ("_0" (BICLOCKSETALARM1 ,(KWOTE W)
                                   60 T)
                          "Will Reset Alarm Time to Hr:Min:00"))
                  TITLE _ "Adjust Alarm"
                  CENTERFLG _ T
                  MENUCOLUMNS _ 3]
     (WINDOWPROP W 'ADJUSTMENUW M)
     (ATTACHWINDOW M W 'BOTTOM 'JUSTIFY)
     (with BICLOCKPARMS (WINDOWPROP W 'PARMS)
           (SETQ ALARMTIME (OR ALARMTIME (PLUS (DAYTIME)
                                               60)))
           (SETQ ADJUSTALARM T)
           (NOTIFY.EVENT ADJUSTEVENT)
           (PROMPTPRINT (GDATE ALARMTIME])
```

(BICLOCKSETALARM1

```
[LAMBDA (W DSEC MODULOFLG)                                     (* lmm "24-Oct-86 15:21")
  (with BICLOCKPARMS (WINDOWPROP W 'PARMS)
       [LET [(OLDTIME (OR ALARMTIME (PLUS (DAYTIME)
                                          60]
            (SETQ ALARMTIME (if MODULOFLG
                                then (DIFFERENCE OLDTIME (IMOD (with UPTIMEREC (\UNPACKDATE ALARMTIME)
                                                                      (IPLUS (ITIMES HOUR 3600)
                                                                             (ITIMES MINUTE 60)
                                                                             SECOND))
                                                               DSEC))
                              else (IPLUS OLDTIME DSEC]
       (NOTIFY.EVENT ADJUSTEVENT)
       (PROMPTPRINT (GDATE ALARMTIME])
```

(BICLOCKSETALARM2

```
[LAMBDA (W)                                                    (* lmm "24-Oct-86 15:17")
  (with BICLOCKPARMS (WINDOWPROP W 'PARMS)
       (SETQ ADJUSTALARM NIL)
       (NOTIFY.EVENT ADJUSTEVENT)
```

```
          (DETACHWINDOW (WINDOWPROP W 'ADJUSTMENUW))
          (CLOSEW (WINDOWPROP W 'ADJUSTMENUW])
```

(IDLE.BICLOCK

```
  [LAMBDA (W)                                                    (* BKN "17-Jun-86 14:22")
    (RESETLST
        [LET ((BW (BICLOCK BICLOCKIDLEPROPS)))
             (RESETSAVE NIL (LIST (FUNCTION CLOSEW)
                                  BW))
             (while T do (BLOCK 5000)
                         (if (NEQ (\GETBASEPTR BW 2)
                                  W)
                             then (TOTOPW W))
                         (MOVEW BW [RAND 0 (DIFFERENCE SCREENWIDTH (WINDOWPROP BW 'WIDTH]
                                   (RAND 0 (DIFFERENCE SCREENHEIGHT (WINDOWPROP BW 'HEIGHT])])

)

(DECLARE%: EVAL@COMPILE

(DATATYPE BICLOCKPARMS (SECONDSMODE COLORMODE MARKMODE DIGMODE CHIMEMODE ROMANDIGS ALARMTIME ADJUSTALARM
                            ADJUSTEVENT))

(RECORD UPTIMEREC (YEAR MONTH DAY HOUR MINUTE SECOND QQQ))
)

(/DECLAREDATATYPE 'BICLOCKPARMS '(POINTER POINTER POINTER POINTER POINTER POINTER POINTER POINTER POINTER)
       ;; ---field descriptor list elided by lister---
       '18)

(RPAQ? BICLOCKWINDOW )

(RPAQ? BICLOCKDEFAULTPROPS '(SECONDS T COLOR SHADOW MARKS NIL DIGITS 1 CHIME NIL ALARM NIL SIZE 152 HORIZONTAL
                                    LEFT-OF-LOGO VERTICAL TOP CREATE T))

(RPAQ? BICLOCKUSERPROPS )

(RPAQ? BICLOCKINITIALPROPS )

(RPAQ? BICLOCKIDLEPROPS '(HORIZONTAL CENTER VERTICAL CENTER))

(CL:PROCLAIM '(CL:SPECIAL BICLOCKWINDOW BICLOCKDEFAULTPROPS BICLOCKUSERPROPS BICLOCKINITIALPROPS
                    BICLOCKIDLEPROPS))

(DECLARE%: DONTEVAL@LOAD DOCOPY

(RPAQ BICLOCKWINDOW (BICLOCK BICLOCKINITIALPROPS))
)

(ADDTOVAR IDLE.FUNCTIONS (Biclock 'IDLE.BICLOCK))

(ADDTOVAR IDLE.SUSPEND.PROCESS.NAMES BICLOCKPROCESS)

(DECLARE%: DONTEVAL@LOAD DOEVAL@COMPILE DONTCOPY COMPILERVARS

(ADDTOVAR NLAMA )

(ADDTOVAR NLAML )

(ADDTOVAR LAMA BICLOCK)
)

(PUTPROPS BICLOCK COPYRIGHT ("Bernt Nilsson @ University of Linkoeping" 1984 1985 1986 1987 1988))
```

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