File created: 17-Mar-87 17:03:54 **{DSK}<XAVIER>TRANSOR.;16**

changes to: (VARS TRANSORCOMS)
(FNS PRECH1 TRANSOUT)

previous date: 17-Mar-87 17:00:04 {DSK}<XAVIER>TRANSOR.;15

Read Table: INTERLISP

Package: INTERLISP

Format: XCCS

```
(RPAQQ TRANSORCOMS
       ((FNS TRANSOR TRANSOR-PROCEED TRANSORFORM TRANSORFNS TRANSFORM TRANSIT TRANXT TRANSEXIT KEEPLIST TRANSERR
             TRANSOUT PPASS1 TRANSLIST TRANSLIST1 PREMTEXT WACHADOON PRECH PRECH1 PRECH2 RETAIL LNC PRESCAN)
        TRANSORMACROS TRANSOREMARKS TRANSORGLOBALS (VARS (MAXLOOP 1530)
                                                          (TESTRAN)
                                                          (USERMACROS (APPEND TRANSORMACROS USERMACROS))
                                                          (GLOBALVARS (APPEND TRANSORGLOBALS GLOBALVARS))
                                                          (EDITCOMSA (UNION '(NLAM NLAMIT DOTHESE DOTHIS XFORMER
                                                                                   CONTINUE)
                                                                            EDITCOMSA))
                                                          (EDITCOMSL (UNION '(REMARK)
                                                                            EDITCOMSL))
                                                          (TRANSITCONSES '(ORR NIL XFORMER))
                                                          (PRESCARRAY (ARRAY 127 127)))
        (INITVARS (NLISTPCOMS)
               (LAMBDACOMS)
               (TRANSOUTREADTABLE FILERDTBL))
        (DECLARE%: DOEVAL@LOAD DOEVAL@COMPILE DONTCOPY (PROP BLKLIBRARYDEF TAILP))
        (PROP FILEGROUP TRANSOR)
        (BLOCKS (PRECHBLOCK PRECH PRECH1 PRECH2 RETAIL LNC (ENTRIES PRECH)
                      (BLKLIBRARY TAILP MEMB LAST LENGTH ASSOC GETP))
               (TRANSITBLOCK TRANSIT WACHADOON (ENTRIES TRANSIT WACHADOON)
                      (GLOBALVARS WACHADID WHENTODOIT TRANSITCONSES LAMBDACOMS NLISTPCOMS)
                      (BLKLIBRARY TAILP MEMB LAST LENGTH ASSOC GETP))
               (TRANXTBLOCK TRANXT (ENTRIES TRANXT)
                      (BLKLIBRARY TAILP MEMB LAST LENGTH ASSOC GETP))
               (NIL PRESCAN (GLOBALVARS PRESCARRAY)))
        (DECLARE%: DONTEVAL@LOAD DOEVAL@COMPILE DONTCOPY COMPILERVARS (ADDVARS (NLAMA)
                                                                             (NLAML TRANSERR KEEPLIST
                                                                                    TRANSOR-PROCEED)
                                                                             (LAMA)))
        (EDITHIST TRANSOR)))

(DEFINEQ

(TRANSOR
  [LAMBDA (SOURCEFILE)                                          ; Edited  6-Mar-87 14:36 by DJVB
    (RESETFORM (SETREADTABLE FILERDTBL)
           (PROG (INPUTFILE OUTPUTFILE LISTFILE LISTING NAMEFIELD EXPRESSION TMP)
                 (DECLARE%: (SPECVARS LISTFILE LISTING))
                 (COND
                    ((NLISTP TRANSFORMATIONS)
                     (ERROR '"No transformations loaded." '"" T))
                    ((NULL (SETQ INPUTFILE (INFILEP SOURCEFILE)))
                     (ERROR '"Cannot find file:" SOURCEFILE T)))
                 (SETQ NAMEFIELD (FILENAMEFIELD INPUTFILE 'NAME))
                 (COND
                    ([NULL (SETQ OUTPUTFILE (OPENSTREAM (SETQ TMP (PACKFILENAME 'NAME NAMEFIELD 'EXTENSION
                                                                         "TRAN"))
                                                   'OUTPUT]
                     (ERROR '"Cannot open file:" TMP T))
                    ([NULL (SETQ LISTFILE (OPENSTREAM (SETQ TMP (PACKFILENAME 'NAME NAMEFIELD 'EXTENSION
                                                                       '"LSTRAN"))
                                                 'OUTPUT]
                     (ERROR '"Cannot open file." TMP T)))       (* All the preliminary error checks ok.
                                                                Open files, print headers.)
                 (SETQ INPUTFILE (OPENSTREAM INPUTFILE 'INPUT))
                 (PRIN1 '"(PRIN1(QUOTE %"
                         Transoring of" OUTPUTFILE)
                 (PRINT (FULLNAME INPUTFILE)
                        OUTPUTFILE)
                 (PRIN1 '" done on " OUTPUTFILE)
                 (PRIN1 (DATE)
                        OUTPUTFILE)
                 (PRIN1 '" %")T)" OUTPUTFILE)
                 (TERPRI OUTPUTFILE)
                 (TERPRI OUTPUTFILE)
                 (PRIN1 '"      Listing from TRANSORing of file " LISTFILE)
                 (PRINT (FULLNAME INPUTFILE)
                        LISTFILE)
                 (PRIN1 '"      done on " LISTFILE)
                 (PRIN1 (DATE)
                        LISTFILE)
                 (TERPRI LISTFILE)
                 (TERPRI LISTFILE)
             LP   (COND
                    ([NULL (NLSETQ (PROG NIL                    (* Rebind HELPCLOCK so that when over-read EOF no error
                                                                message or BREAK will occur.)
                                         (SETQ EXPRESSION (READ INPUTFILE]
                     (GO DONE)))
                  [SELECTQ EXPRESSION
                      (STOP

          (* Only check for STOP, no check for NIL. Foreign files never have STOPs on them and rarely have extra parens or NIL's.
          Extra NIL's on a file usually indicate that the reading machinery is screwed up, probably because user forgot to perform
          (ESCAPE)%, or, even worse, there is a different ESCAPE character.
          I therefore must ERRORSET protect the READ above anyway, and try to keep reading until can read no further.)

                            (GO DONE))
                      (COND
                         ((NLISTP EXPRESSION)
                          (TRANSERR NIL "NLISTP expression on file - expression discarded:" (EXPRESSION))
                          (GO LP]
                  (SETQ EXPRESSION (TRANSFORM EXPRESSION))
                  (TRANSOUT EXPRESSION OUTPUTFILE)
                  (GO LP)
             DONE
                  (AND (OPENP INPUTFILE)
                       (CLOSEF INPUTFILE))
                  (ENDFILE OUTPUTFILE)
                  (TRANSLIST LISTING LISTFILE)
                  (CLOSEF LISTFILE)
                  (RETURN (LIST (FULLNAME OUTPUTFILE)
                                (FULLNAME LISTFILE])

(TRANSOR-PROCEED
  [NLAMBDA (FLG)                                                ; Edited  6-Mar-87 14:37 by DJVB
    (PROG ((L L)
           STOPPEDUP WHERETOGONEXT CONTINUEL CONTINUETAIL TRANSITL TRANSITAIL OLDLENGTH)
          (DECLARE%: (SPECVARS L STOPPEDUP WHERETOGONEXT CONTINUEL CONTINUETAIL TRANSITL TRANSITAIL OLDLENGTH))
      LP  (COND
             ([ERSETQ (SETQ L
                       (EDITL L (SELECTQ FLG
                                    (DOTHIS '[(IF (TAILP (CAR L)
                                                         (CADR L))
                                                  ((REMARK TAILP/DOTHIS)
                                                   1)
                                                  NIL)
                                               MARK
                                               (ORR (NX UP (E (PROG (LISPXHIST)
                                                                    (SETQ STOPPEDUP (%##)))
                                                              T))
                                                    (!NX UP (E (PROG (LISPXHIST)
                                                                     (SETQ STOPPEDUP (%##)))
                                                               T))
                                                    NIL)
                                               __
                                               (LPQ (COMS (TRANSIT)
                                                          (TRANXT])
                                    (DOTHESE '[MARK (ORR ([IF (NOT (TAILP (CAR L)
                                                                          (CADR L]
                                                           NX UP (E (PROG (LISPXHIST)
                                                                          (SETQ STOPPEDUP (%##)))
                                                                    T))
                                                          (!NX UP (E (PROG (LISPXHIST)
                                                                           (SETQ STOPPEDUP (%##)))
                                                                     T))
                                                          NIL)
                                                    __ 1 (LPQ (COMS (TRANSIT)
                                                                    (TRANXT])
                                    (TRANSFORM '[(LPQ (COMS (TRANSIT)
                                                            (TRANXT])
                                    (OKCOMS '[(LPQ (COMS (TRANXT)
                                                         (TRANSIT])
                                    (HELP]
              (SETQ FLG 'OKCOMS)
              (GO LP))
             (T (TRANSERR TRANSERROR "Fail return to TRANSOR from EDITOR. Show Jim Goodwin." (CURRENTFORM
                                                                                             CURRENTCOMS
                                                                                             ])

(TRANSORFORM
  [LAMBDA (FORM)                                                ; Edited  6-Mar-87 14:36 by DJVB
    (PROG (LISTFILE LISTING)
          (DECLARE%: (SPECVARS LISTFILE LISTING))
          (SETQ FORM (TRANSFORM FORM))
          (AND LISTING (ERSETQ (TRANSLIST LISTING)))            (* ERRORSET so user can abort with ^E, especially when used
     in TXTEST.)
          (RETURN FORM])
```

```
(TRANSORFNS
  [LAMBDA (FNLIST)                                              ; Edited  6-Mar-87 14:36 by DJVB
    (PROG (LISTING LISTFILE DEF)
          (DECLARE%: (SPECVARS LISTING LISTFILE))
          [MAPC FNLIST (FUNCTION (LAMBDA (FN)
                                   (COND
                                      ([AND (LITATOM FN)
                                            (EXPRP (SETQ DEF (VIRGINFN FN]
                                       (TRANSFORM DEF FN))
                                      (T (PRINT (CONS FN '(NOT FOUND))
                                                T T]
          (ERSETQ (TRANSLIST LISTING))
          (RETURN FNLIST])
```

```
(TRANSFORM
  [LAMBDA (SOURCEXPR FNAME)                                     ; Edited  6-Mar-87 14:37 by DJVB

          (* TRANSFORM is the entry to the translator. It returns the translated SOURCEXPR, and resets LISTING and uses
          LISTFILE freely (see KEEPLIST)%. -
          The source expression is embedded one level so that top-level embeds will work
          (i.e. the case where the source expression is (FOO --) and the transformation for FOO is MBD)%.
          -
          FNAME is provided only by TRANSORFNS. Thus if not provided, SOURCEXPR is a FORM from TRANSORFORM or
          TRANSOR's file, and we begin translation at SOURCEXPR, but if FNAME is given, SOURCEXPR is a LAMBDA expression
          and we do a 3 command first, to get to a FORM. -
          RETAIL also checks this top-level expression. If the top level is
          (NIL &) it is of no interest to user. But if FNAME was given, top level is
          (FNAME &) and should be printed, otherwise user will see only a LAMBDA expression and not know where it came from.)

    (PROG (L PASS1 HELPCLOCK)
          (DECLARE%: (SPECVARS L PASS1))
          [COND
             [FNAME (SETQ L (LIST (CADDR SOURCEXPR)
                                  SOURCEXPR
                                  (LIST FNAME SOURCEXPR]
             (T (SETQ L (LIST SOURCEXPR (LIST NIL SOURCEXPR]
          (WACHADOON T)
          (TRANSOR-PROCEED TRANSFORM)
          (MAPC (DREVERSE PASS1)
                (FUNCTION PPASS1))
          (RETURN (COND
                     (FNAME (CADR L))
                     (T (CAR L])
```

```
(TRANSIT
  [LAMBDA NIL                                                   (* DJVB " 3-Feb-87 13:21")
    (PROG ((HERE (CAR L))
           TMP)
          (WACHADOON)
          [COND
             ((TAILP HERE (CADR L))
              (TRANSERR TRANSERROR "The function TRANSIT reached a TAILP position; show Jim Goodwin."
                     (CURRENTFORM CURRENTCOMS))
              (SETQ L (CONS (SETQ HERE (CAR HERE))
                            (CDR L]
          (SETQ CURRENTFORM HERE)
          (SETQ CONTINUEL)
          [SETQ WHERETOGONEXT '(ORR 2 NX !NX ((E (TRANSEXIT]

          (* The call to TRANSEXIT above causes the exits from PROCEED which occur because of dropoff.)

          (SETQ OLDLENGTH (LENGTH (CADR L)))
          (SETQ TRANSITL L)
          [COND
             ((AND LASTAIL (EQ (CAR LASTAIL)
                               HERE))
              (SETQ TRANSITAIL LASTAIL))
             ((OR [NULL (SETQ TRANSITAIL (MEMB HERE (CADR L]
                  (MEMB HERE (CDR TRANSITAIL)))
              (HELP '"The editor lost LASTAIL, and with it its sense of direction." '"Show Jim Goodwin."]
          [SETQ CURRENTCOMS (COND
                               ([AND STOPPEDUP (EQ HERE (CAR STOPPEDUP))
                                     (OR (LISTP HERE)
                                         (EQ STOPPEDUP (%## UP]  (* Exit on match with STOPPEDUP.)
                                (RETFROM 'TRANSOR-PROCEED))
                               ((NLISTP HERE)
                                NLISTPCOMS)
                               ((LITATOM (CAR HERE))

          (* If user commands cause an error it will be trapped by the ORR and XFORMER will be executed.
          XFORMER is a TRANSORMACRO which makes a remark on the error.
          Don't make the list if no commands.)

                                (GETP (CAR HERE)
                                     'XFORM))
                               ((LISTP (CAR HERE))
                                LAMBDACOMS)
                               (T '((COMSQ (REMARK ILLCAR)
                                           DOTHESE]
          (RETURN (COND
                     (CURRENTCOMS (FRPLACA (CDR TRANSITCONSES)
                                         CURRENTCOMS)

          (* If CURRENTCOMS is NIL, return NIL; otherwise effectively embed CURRENTCOMS in orr such that if CURRENTCOMS
          fail, xformer will be executed. Xformer is a transormacro which calls TRANSERR appropriately for a faulty transformation.)

                            TRANSITCONSES])


(TRANXT
  [LAMBDA NIL
    (PROG (NEWFORM NEWLENGTH TMP NEWTAIL)
          (COND
             (CONTINUEL (SETQ L CONTINUEL)
                    (SETQ LASTAIL CONTINUETAIL)
                    (RETURN)))
          (SETQ NEWFORM (CAR TRANSITAIL))
          (SETQ NEWLENGTH (LENGTH (CADR TRANSITL)))
          (COND
             ((NEQ NEWLENGTH OLDLENGTH)
              (GO DELETED))
             ((OR (EQ NEWFORM CURRENTFORM)
                  (EQ WHERETOGONEXT 'NLAMIT))

          (* If containing list still points at same EQ structure, or if he's declared he's done with whatever is there, no problem.)

              )
             ((AND (LISTP NEWFORM)
                   (EDITFINDP NEWFORM (SETQ TMP (CONS '== CURRENTFORM))
                          T))

          (* Net effect was an MBD. If we went on from here in normal fashion, we would embed it again and again.
          Find original expression and go on from there.)

              (SETQ WHERETOGONEXT (CONS TMP WHERETOGONEXT)))
             ((AND (LISTP CURRENTFORM)
                   (EDITFINDP CURRENTFORM (CONS '== NEWFORM)
                          T))

          (* Net effect was XTR. If we went on normally, we'd miss the form extracted.
          Set continuation commands to NIL so we stay where we are)

              (SETQ WHERETOGONEXT))
             (T

          (* User did a %: or DELETE where effect was (%: NIL)%. Assume the stuff he put in place of old does not need translation.
          perform NLAM for him.)

                (SETQQ WHERETOGONEXT NLAM)))

          (* Ready to return. Fix up L, smashing CAR to point to right thing.
          In normal case, (EQ CURRENTFORM NEWFORM)%, it already does and this FRPLACA is a NOP.)

      ZIPPO
          (SETQ L (FRPLACA TRANSITL NEWFORM))
          (SETQ LASTAIL TRANSITAIL)                             (* Finally, return the commands which will locate the next form
                                                                to translate.)

          (RETURN WHERETOGONEXT)
      DELETED
          (COND
             ((NEQ (SUB1 OLDLENGTH)
                   NEWLENGTH)

          (* This could happen if user cheated by doing a !0 and deleting several things or inserting things.)

              (TRANSERR OUTOFBOUNDS "Your transformations cheated and changed something out of bounds."
                     (CURRENTFORM CURRENTCOMS)))
             [(NOT (TAILP TRANSITAIL (CADR L)))                 (* User deleted the form, but it was the last form on its
                                                                containing list.)

              (RETURN '(ORR !NX ((E (TRANSEXIT]
             (T

          (* User deleted the form, but was not last thing, thus NEWFORM is already bound to the NX thing after the one we just
          %'translated' by deleting it. Set WHERETOGONEXT to NIL so we do not move at all.)

                (SETQ WHERETOGONEXT)
                (GO ZIPPO])

(TRANSEXIT
  [LAMBDA NIL                                                   (* DJVB " 3-Feb-87 13:22")
```

```
    [COND
       (STOPPEDUP (TRANSERR TRANSERROR "The function TRANSEXIT missed the exit. Show Jim Goodwin." (CURRENTFORM
                                                                                                     CURRENTCOMS
                                                                                                      ]
    (RETFROM 'TRANSOR-PROCEED])

(KEEPLIST
  [NLAMBDA (REMNAME)
    (PROG (TMP)
          [COND
             ((NLISTP LISTING)                                  (* Initialize if first remark in this LISTING.)
              (SETQ LISTING (LIST 1)))
             (T (FRPLACA LISTING (ADD1 (CAR LISTING]
          (SETQ PASS1 (CONS (CONS (CAR LISTING)
                                  (CONS REMNAME L))
                            PASS1))                             (* Save pass2 stuff for TRANSLIST.)
          [COND
             (TESTRAN                                           (* Skip pass2 if testing)
                   NIL)
             [[NULL (SETQ TMP (FASSOC REMNAME (CDR LISTING]     (* First use of this remark.)
              (NCONC1 LISTING (LIST REMNAME (CAR LISTING]
             (T (NCONC1 TMP (CAR LISTING]
          (RETURN])

(TRANSERR
  [NLAMBDA (REM MESS VARS)
    (AND REM (APPLY (FUNCTION KEEPLIST)
                    (LIST REM)))
    [AND MESS (NLSETQ (PROGN (TERPRI T)
                             (TERPRI T)
                             (PRIN1 '"
                                    TRANSOR made a translation error: " T)
                             (PRIN1 MESS T)
                             (TERPRI T]
    (AND VARS (NLSETQ (PROGN (PRINTLEVEL 3)
                             [MAPC VARS (FUNCTION (LAMBDA (X)
                                                    (PRIN2 X T T)
                                                    (PRIN1 '":  " T)
                                                    (PRINT (EVALV X]
                             (PRINTLEVEL 1000)
                             (TERPRI T])

(TRANSOUT
  [LAMBDA (XPR FILE)                                            ; Edited 17-Mar-87 16:37 by DJVB
    (RESETFORM (OUTPUT FILE)
           (RESETFORM (SETREADTABLE TRANSOUTREADTABLE)          (* XPR is a transored form which is to be put on the output file.)
                  (COND
                     ((EQ FILE 'NIL%:))
                     ((EQ 'DEFINEQ (CAR XPR))                   (* Special formatting for function lists.)
                      (PRIN1 '"(DEFINEQ")
                      (TERPRI)
                      [MAPC (CDR XPR)
                            (FUNCTION (LAMBDA (X)
                                        (TERPRI)
                                        (PRIN1 '%()
                                        (PRINT (CAR X))
                                        (PRINTDEF (CADR X)
                                               NIL T)
                                        (PRIN1 '%))
                                        (TERPRI]
                      (PRIN1 '%))
                      (TERPRI))
                     [(AND (EQ 'PROGN (CAR XPR))
                           (EQ 'DEFUN (CAADR XPR)))             (* Special formatting for commonlisp function lists.)
                      (MAPC (CDR XPR)
                            (FUNCTION (LAMBDA (X)
                                        (TERPRI)
                                        (COND
                                           ((EQ (CAR X)
                                                'DEFUN)
                                            (PRIN1 "(DEFUN ")
                                            (AND LAMBDAFONT FONTCHANGEFLG (CHANGEFONT LAMBDAFONT))
                                            (PRIN2 (CADR X))
                                            (AND LAMBDAFONT FONTCHANGEFLG (CHANGEFONT DEFAULTFONT))
                                            (PRIN2 (CADDR X))
                                            (PRINTDEF (CDDDR X)
                                                   6 T T)
                                            (PRIN1 ")"))
                                           (T (PRINTDEF XPR)))
                                        (TERPRI]
                     (T (TERPRI)
                        (PRINTDEF XPR)
                        (TERPRI])
```

```
(PPASS1
  [LAMBDA (P1)
    (PRIN1 (CAR P1)
           LISTFILE)
    (PRIN1 '". " LISTFILE)
    (PRIN1 (CADR P1)
           LISTFILE)
    (PRIN1 '" at " LISTFILE)
    (PRECH (CDDR P1)
           NIL LISTFILE T)
    (TERPRI LISTFILE])

(TRANSLIST
  [LAMBDA (LISTING LISTFILE)                                    (* TRANSLIST must dump the second half of the listing prettily.)
    (PROG (OLDO)
          (COND
             (TESTRAN                                           (* See TXTEST.)
                    (RETURN))
             ((EQ LISTFILE 'NIL%:)
              (RETURN)))
          (SETQ OLDO (OUTPUT LISTFILE))                         (* See KEEPLIST for discussion of format of LISTING.)
          [COND
             ((NULL LISTING)

          (* User would like to know if this happens rather than just wondering where his output went.)

              (PRIN1 '"
                                  No REMARKS -- empty listing.
                      "))
             (T (PRIN1 '"
                     Index of Remarks



                        ")
                (MAPC (SORT (CDR LISTING)
                            T)
                      (FUNCTION TRANSLIST1]
          (TERPRI)
          (OUTPUT OLDO)
          (RETURN])

(TRANSLIST1
  [LAMBDA (L1)
    (PRIN1 (CAR L1))                                            (* Name of remark.)
    (PRIN1 '" at ")
    (MAPRINT (CDR L1)
           NIL NIL '".
                    " '", ")
    (PREMTEXT (CAR L1))
    (TERPRI])

(PREMTEXT
  [LAMBDA (RNAM)
    (PROG (TXT)
          [COND
             ((OR (SETQ TXT (ASSOC RNAM USERNOTES))
                  (SETQ TXT (ASSOC RNAM TRANSOREMARKS)))
              (SETQ TXT (CADR TXT)))
             (T (SETQQ TXT                                      (* The text of this remark was not defined in the
                                                                TRANSFORMATIONS file.)]
          (SPACES 5)
          [COND
             ((EQ (CADR TXT)
                  '%%)

          (* Lower-case the comment before using it, if he is testing and it hasn't been dumped before.)

              (RPLACD TXT (COMMENT3 (CDDR TXT)
                                 NIL T]
          (MAPRINT (CDR TXT))
          (TERPRI])

(WACHADOON
  [LAMBDA (FLG)
    (OR TESTRAN (PROG ((NOW (CLOCK)))
                      (COND
                         (FLG (SETQ WACHADID)
                              (SETQ WHENTODOIT NOW)
                              (RETURN))
                         ((ILESSP NOW WHENTODOIT)
                          (RETURN)))
                      (PRECH L WACHADID T)
                      (SETQ WACHADID L)
                      (SETQ WHENTODOIT (IPLUS 180000 NOW])

(PRECH
  [LAMBDA (ECH OLDECH FILE PRTYFLG)                             (* Function to Print a Reversed Edit CHain in my special format.)
    (PROG ((OLDO (OUTPUT FILE))
           X)
          [SETQ X (PRECH1 (RETAIL (COND
                                      (OLDECH (LNC ECH OLDECH))
                                      (T ECH]
          (COND
             (PRTYFLG (PRINTDEF X))
             (T (PRINT X)))
          (TERPRI)
          (OUTPUT OLDO)
          (RETURN])

(PRECH1
  [LAMBDA (RECH)                                                ; Edited 17-Mar-87 14:24 by DJVB
    (PROG (LASTALE (N -2)
                 LST)
          [COND
             ((NULL (CDR RECH))
              (RETURN (MKSTRING (PRECH2 (CAR RECH)
                                       4]
          [SETQ LASTALE (SOME (CAR RECH)
                              (FUNCTION (LAMBDA (E)
                                           (ADD1VAR N)
                                           (EQ E (CADR RECH]
          (AND (MINUSP N)
               (GO OUT))
          (SETQ LST (CONS (COND
                              ((NLISTP (CAAR RECH))
                               (CAAR RECH))
                              (T (PRECH2 (CAAR RECH)
                                        3)))
                          LST))
          [SELECTQ N
               (0)
               (1 (SETQ LST (CONS (COND
                                     ((NLISTP (CADAR RECH))
                                      (CADAR RECH))
                                     (T '&))
                                  LST)))
               (COND
                  [(AND (EQ 'DEFUN (CAAR RECH))
                        (LITATOM (CADAR RECH)))                  (* DJVB put in for TO-COMMONLISP to identify DEFUNs)
                   (SETQ LST (CONS [COND
                                      [(EQ N 2)
                                       (COND
                                          ((NLISTP (CADDAR RECH))
                                           (CADDAR RECH))
                                          (T '&]
                                      (T (PACK* '|...| (SUB1 N)
                                                '|...|]
                                   (CONS (CADAR RECH)
                                         LST]
                  (T (SETQ LST (CONS (PACK* '|...| N '|...|)
                                     LST]
      OUT (SETQ LST (CONS (PRECH1 (CDR RECH))
                          LST))
          [COND
             ((CDR LASTALE)
              (SETQ LST (CONS '-- LST]
          (RETURN (DREVERSE LST])
```

```
(PRECH2
  [LAMBDA (X LEVEL)
    (COND
       ((NLISTP X)
        X)
       ((EQ (CAR X)
            COMMENTFLG)
        '"**COMMENT**")
       ((ILESSP LEVEL 1)
        '&)
       (T (MAPCAR X [FUNCTION (LAMBDA (XELT)
                                 (SUB1VAR LEVEL)
                                 (COND
                                    ((MINUSP LEVEL)
                                     '--)
                                    (T (PRECH2 XELT LEVEL]
                 (FUNCTION (LAMBDA (TAIL)

          (* At last!!!! I get to use the second functional argument to a mapping function.
          To implement a triangular PRINTLEVEL, step the LEVEL down in the first function and select hyphens when it hits bottom;
          cut off the rest of the MAP by checking for bottom here.)

                              (AND (NULL (MINUSP LEVEL))
                                   (CDR TAIL])
```

```
(RETAIL
  [LAMBDA (L)                                                     ; Edited  6-Mar-87 14:39 by DJVB
    (DECLARE%: (SPECVARS L))
    (PROG (RES)
          [SETQ RES (LIST (COND
                              ((TAILP (CAR L)
                                      (CADR L))
                               (CAAR L))
                              (T (CAR L]
          [MAP (CDR L)
               (FUNCTION (LAMBDA (TAIL)
                            (COND
                               [(NULL (CDR TAIL))

          (* At end. If top-most expression is (NIL &) don't include it. Otherwise is from TRANSORFNS, so include it.
          See TRANSFORM.)

                                (AND (CAAR TAIL)
                                     (SETQ RES (CONS (CAR TAIL)
                                                     RES]
                               ((MEMB (CAR TAIL)
                                     (CADR TAIL))

          (* If not a TAIL, must be MEMB, otherwise edit chain screwed up.
          We want every one that's MEMB.)

                               (SETQ RES (CONS (CAR TAIL)
                                               RES]
          (RETURN RES])
```

(**LNC**

```
  [LAMBDA (L1 L2)

          (* LNC is for Last New Cons. Returns last tail of L1 such that it is not common with L2.
          L1 is the edit chain representing TRANSOR's current location; L2 is the chain from the last call to WACHADOON.
          Value is (LAST L1) if nothing in common, i.e. we are transoring an entirely different source expression.)

    (PROG (X)
          (COND
             ((NLISTP L1)
              (HELP))
             ((NEQ (SETQ X (LAST L1))
                   (LAST L2))                                (* Quick check for commonest case, we are in a totally different
              source expression.)
              (RETURN X)))
      LP  (COND
             ((TAILP (CDR L1)
                     L2)
              (RETURN L1)))
          (SETQ L1 (CDR L1))
          (GO LP])
```

(**PRESCAN**

```
  [LAMBDA (FILE CHARLST PRESCANFN)                           (* DJVB "22-NOV-83 21:41")

          (* FIX UP TO ALLOW NULL'S (ZERO'S) IN CHARLST. AT PRESENT JUST FILTERS %'EM ALL OUT, IF YOU PUT 0 IN
          CHARLST GIVES ILLEGAL SETA.)

          (* PRESCAN is for pre-digesting files from alien environments where special characters, etc., are all different.
          -
          FILE is input file; output goes to next higher version. -
          CHARLST is list of dot-pairs of character codes (old . new)%, so that you can for example replace all tabs in a file with
          spaces by including (9 . 32) on CHARLST. -
          PRESCANFN is function for user. If the new character code for any character is NIL, then PRESCANFN is called giving the
          character code as its first argument. PRESCANFN can then do what it needs to process the upcoming file information.
          The second argument to PRESCANFN is the input file, and the third is the output file.
          -
          Original impetus for this was MIT Lisp's special recognition of semicolon%: any line beginning with semicolon was comment,
          a la macro files. With (59) on CHARLST, where 59 is character code for semicolon, PRESCANFN can process those lines,
          making them into regular comments. Note that no output is done for these special characters unless PRESCANFN does it.)

    (PROG ((INF (INPUT (INFILE FILE)))
           [OUTF (OUTPUT (OUTFILE (NAMEFIELD FILE T]
           (I 127))
      TOP (COND
             ((NOT (ZEROP I))
              (SETA PRESCARRAY I I)
              (SUB1VAR I)
              (GO TOP)))
          [MAPC CHARLST (FUNCTION (LAMBDA (PR)
                                    (SETA PRESCARRAY (CAR PR)
                                          (OR (CDR PR)
                                              0]
          (SELECTQ (SYSTEMTYPE)
               ((TENEX TOPS-20)
                   (D-ASSEM::ASSEMBLE NIL (CQ INF)
                          (FASTCALL IFSET)
                          (HRRZI 1 %, FCHAR (FX))            (* Store ptr to single-character buffer for input file on -2<np>.)
                          (PUSHN)
                          (HRRZ 1 %, FILEN (FX))             (* Store input jfn on -1<np>.)
                          (PUSHN)
                          (VARS (HRRZ 2 %, OUTF))
                          (FASTCALL IFSET)
                          (HRRZ 1 %, FILEN (FX))             (* Store output jfn on 0<np>.)
                          (PUSHN)
                          (CQ PRESCARRAY)
                          (SKIPA 4 (TIMES %, 1))
                          (XWD 2 1)
                          (add 4 %, 1)

          (* Ac4 now has PRESCARRAY<2> i.e. indirect ref thru 4 will get Nth element of PRESCARRAY, where N is in ac2.
          Note ac4 must be saved on CP since LH is bits, RH is ptr.)

                          LOOP
                          (NREF (MOVE 1 %, -1))
                          (JSYS 40)                          (* BIN)
                          (JUMPE 2 %, DONE)
                          MIDDLE
                          (SKIPG 0 %, @ 4)
                          (JRST SPECIAL)
                          (MOVE 2 %, @ 4)
                          LOUT
                          (NREF (MOVE 1 %, 0))
                          (JSYS 41)                      (* BOUT)
                          (JRST LOOP)
                          DONE
                          (JSYS 20)                      (* GTSTS)
                          (TLNE 2 %, 512)
                          (JRST DONE!)                   (* Filter NULL's.)
                          (JRST LOOP)
                          SPECIAL
                          (MOVE 1 %, 2)
                          (CLISP%  (SETQ CP (CONS %, (CONS 4 CP)))
                                 push CP %, 4)
                          (CQ (SETQ I (LOC (AC)))
                              (APPLY* PRESCANFN I INF OUTF))
                          (CLISP%  (PROG1 (CAR CP)
                                       (SETQ CP (CDR CP)))
                                 pop CP %, 4)
                          (NREF (HRRZ 2 %, @ -2))        (* If single-char buff. empty,)
                          (JUMPE 2 %, LOOP)              (* Then next char. must be read from file,)
                          (NREF (HLRM 2 %, @ -2))

          (* Else clear buff. to prevent next call to PRESCANFN from seeing it with READC or whatever,)

                          (JRST MIDDLE)                  (* And be sure the char from buff gets matched and output.)
                          DONE!
                          (POPNN 3)))
               (VAX (SETQ INF (\GETOFD INF ’INPUT))
                    (SETQ OUTF (\GETOFD OUTF ’OUTPUT))
                    [CLISP%  (PROG ($$VAL AC AT)
                               $$LP
                                   (COND
                                      ((\EOFP INF)
                                       (RETURN $$VAL))
                                      ((ZEROP (SETQ AC (BIN INF)))
                                       (GO $$ITERATE)))
                                   (COND
                                      ((SETQ AT (ELT PRESCARRAY AC))
                                       (BOUT OUTF AT))
                                      (T (APPLY* PRESCANFN AC INF OUTF)))
                               $$ITERATE
                                   (GO $$LP))
                           until
                           (\EOFP INF)
                           bind AC AT unless (ZEROP (SETQ AC (BIN INF)))
                           do
                           (COND
                              ((SETQ AT (ELT PRESCARRAY AC))
                               (BOUT OUTF AT))
                              (T (APPLY* PRESCANFN AC INF OUTF])
               (D (SETQ INF (GETSTREAM INF ’INPUT))
                  (SETQ OUTF (GETSTREAM OUTF ’OUTPUT))
                  [CLISP%  (PROG ($$VAL AC AT)
                             $$LP
                                 (COND
                                    ((EOFP INF)
                                     (RETURN $$VAL))
                                    ((ZEROP (SETQ AC (BIN INF)))
                                     (GO $$ITERATE)))
                                 (COND
                                    ((SETQ AT (ELT PRESCARRAY AC))
                                     (BOUT OUTF AT))
                                    (T (APPLY* PRESCANFN AC INF OUTF)))
                             $$ITERATE
                                 (GO $$LP))
                         until
                         (EOFP INF)
                         bind AC AT unless (ZEROP (SETQ AC (BIN INF)))
                         do
                         (COND
                            ((SETQ AT (ELT PRESCARRAY AC))
                             (BOUT OUTF AT))
                            (T (APPLY* PRESCANFN AC INF OUTF])
               (HELP))
          (CLOSEF INF)
          (RETURN (CLOSEF OUTF])

)

(RPAQQ TRANSORMACROS
       ((REMARK (TXT)
               (E (KEEPLIST TXT)
                  T))
        (NLAM NIL (E (SETQQ WHERETOGONEXT NLAMIT)
                     T))
        [NLAMIT NIL (ORR NX !NX ((E (TRANSEXIT]
        (DOTHESE NIL (E (TRANSOR-PROCEED DOTHESE)
                        T)
               NLAM)
        (DOTHIS NIL (E (TRANSOR-PROCEED DOTHIS)
                       T)
               NLAM)
        (XFORMER NIL (E (TRANSERR TRANSFORMATIONERROR "FAULTY TRANSFORMATION" (CURRENTFORM CURRENTCOMS))
                        T))))

(RPAQQ TRANSOREMARKS
       ((TRANSFORMATIONERROR (* The TRANSFORMATIONS specified for this form failed to work properly. The TTY
                                message %'FAULTY TRANSFORMATION' was printed, any commands remaining in the
                                transformation after the erroneous one were skipped, and translation continued
                                as if the transformation had been normally completed. The user should treat the
                                translated form with caution and amend his transformation to avoid future
                                problems.))
        (TRANSERROR (* TRANSOR got confused at this point. The TTY message %'SHOW JIM GOODWIN' was printed and
                       translation continued with the next form, but the user should treat the compromised area
                       of code with caution.))
        (BLAMBDA1 (* Non-atomic CAR of form, but not an open lambda. Either a parenthesis error or computed CAR
                     of form. Computed CAR of form is no longer legal in BBN-LISP; APPLY* is used instead. If
                     computed CAR of form was intended, the translation to APPLY* will run ok. See manual for
                     discussion of APPLY*.))
        (BLAMBDA2 (* Open LAMBDA with wrong number of args. What can it mean?))
        (BLAMBDA3 (* Lambda-expression without forms. What can it mean?))
        (ILLCAR (* Illegal data-type encountered as CAR of form Expression treated as list of forms.))
        (TAILP/DOTHIS (* When the transormacro DOTHIS is executed at a TAILP position, TRANSOR does a 1 command
                         first, assuming that the current position is a list of forms and CAR of it is the form
                         intended. The user should make sure that this is what was intended by the
                         TRANSFORMATIONS which called DOTHIS, i.e. the TRANSFORMATIONS for the form containing
                         this one.))))

(RPAQQ TRANSORGLOBALS (USERNOTES USERNOTES TESTFORM TESTFORM TRANSFORMATIONS TRANSFORMATIONS XFORMSFNS
                       XFORMSVARS XFORMSVARS DUMPFILE TRANSFORMATIONS TRANSFORMATIONS TRANSFORMATIONS
                       TRANSFORMATIONS))

(RPAQQ MAXLOOP 1530)

(RPAQQ TESTRAN NIL)

(RPAQ USERMACROS (APPEND TRANSORMACROS USERMACROS))

(RPAQ GLOBALVARS (APPEND TRANSORGLOBALS GLOBALVARS))

(RPAQ EDITCOMSA (UNION '(NLAM NLAMIT DOTHESE DOTHIS XFORMER CONTINUE)
                       EDITCOMSA))

(RPAQ EDITCOMSL (UNION '(REMARK)
                       EDITCOMSL))

(RPAQQ TRANSITCONSES (ORR NIL XFORMER))

(RPAQ PRESCARRAY (ARRAY 127 127))

(RPAQ? NLISTPCOMS )

(RPAQ? LAMBDACOMS )

(RPAQ? TRANSOUTREADTABLE FILERDTBL)

(DECLARE%: DOEVAL@LOAD DOEVAL@COMPILE DONTCOPY

(PUTPROPS TAILP BLKLIBRARYDEF [LAMBDA (.BLKVAR.X .BLKVAR.Y)
                                     (* True if .BLKVAR.X is A tail of .BLKVAR.Y .BLKVAR.X and .BLKVAR.Y
                                        non-null.)
                                     (* Included with editor for block compilation purposes.)
                                     (AND .BLKVAR.X (PROG NIL LP (COND ((NLISTP .BLKVAR.Y)
                                                                        (RETURN NIL))
                                                                       ((EQ .BLKVAR.X .BLKVAR.Y)
                                                                        (RETURN .BLKVAR.X)))
                                                          (SETQ .BLKVAR.Y (CDR .BLKVAR.Y))
                                                          (GO LP])
)

(PUTPROPS TRANSOR FILEGROUP (TRANSOR TSET))

(DECLARE%: DONTEVAL@LOAD DOEVAL@COMPILE DONTCOPY

(BLOCK%: PRECHBLOCK PRECH PRECH1 PRECH2 RETAIL LNC (ENTRIES PRECH)
       (BLKLIBRARY TAILP MEMB LAST LENGTH ASSOC GETP))

(BLOCK%: TRANSITBLOCK TRANSIT WACHADOON (ENTRIES TRANSIT WACHADOON)
       (GLOBALVARS WACHADID WHENTODOIT TRANSITCONSES LAMBDACOMS NLISTPCOMS)
       (BLKLIBRARY TAILP MEMB LAST LENGTH ASSOC GETP))

(BLOCK%: TRANXTBLOCK TRANXT (ENTRIES TRANXT)
       (BLKLIBRARY TAILP MEMB LAST LENGTH ASSOC GETP))

(BLOCK%: NIL PRESCAN (GLOBALVARS PRESCARRAY))
)

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

(ADDTOVAR NLAMA )

(ADDTOVAR NLAML TRANSERR KEEPLIST TRANSOR-PROCEED)

(ADDTOVAR LAMA )
)

(DECLARE%: DONTCOPY

(ADDTOVAR EDITHISTALIST
          (TRANSOR (" 5-Feb-87 16:18:06" DJVB {DSK}<XAVIER>TRANSOR.;11 (TRANSOR)
                          (FIXED TO WORK WITH NEW FILE RULES IN LYRIC))
                 (" 6-Feb-87 15:24:20" DJVB {DSK}<XAVIER>TRANSOR.;12 (TRANSOR))
                 (" 6-Mar-87 14:41:26" DJVB {DSK}<XAVIER>TRANSOR.;13 (TRANSOR TRANSOR-PROCEED TRANSORFORM
                                                                            TRANSORFNS TRANSFORM RETAIL))
                 ("17-Mar-87 17:01:53" DJVB {DSK}<XAVIER>TRANSOR.;15 (PRECH1 TRANSOUT)
                        (ADDED SPLIT READ/WRITE READTABLES AND PP FOR DEFUN))))
)

(PUTPROPS TRANSOR COPYRIGHT (NONE))
```

{MEDLEY}<lispusers>TRANSOR.;1 28-Jun-2024 18:34:03

-- Listed on 30-Jun-2024 13:15:03 --

FUNCTION INDEX

VARIABLE INDEX

PROPERTY INDEX