*File created:* 8-Feb-2023 16:21:26 **{DSK}<home>larry>il>medley>sources>PRETTY.;3**

*edit by:* lmm

*changes to:* (FNS PRINTDATE1)

*previous date:* 19-Jan-2022 20:35:18 {DSK}<home>larry>il>medley>sources>PRETTY.;1

*Read Table:* INTERLISP

*Package:* INTERLISP

*Format:* XCCS

```
(RPAQQ PRETTYCOMS
       [(FNS PRETTYDEF PRETTYDEFCOMS PRETTYDEF0 PRETTYDEF1 PRINTDATE PRINTDATE1 PRINTFNS PRETTYCOM PRETTYVAR
             PRETTYVAR1 PRETTYCOM1 ENDFILE MAKEDEFLIST PP PP* PPT PRETTYPRINT PRETTYPRINT1 PRETTYPRINT2
             PRETTYPRINT3 PRINTDEF1 SUPERPRINTEQ SUPERPRINTGETPROP CHANGEFONT)
        (FNS READARRAY PRINTARRAY READARRAY-FROM-LIST PRINTARRAY-TO-LIST)
        (COMS (DECLARE%: DONTCOPY (MACROS CHANGFONT)))
        (COMS                                                    ; COPYRIGHT
              (FNS PRINTCOPYRIGHT PRINTCOPYRIGHT1 SAVECOPYRIGHT)
              (BLOCKS (NIL PRINTCOPYRIGHT PRINTCOPYRIGHT1 SAVECOPYRIGHT (LOCALVARS . T)
                           (NOLINKFNS PRINTCOPYRIGHT1)))
              (GLOBALVARS COPYRIGHTFLG COPYRIGHTOWNERS DEFAULTCOPYRIGHTKEYLST DEFAULTCOPYRIGHTOWNER
                     COPYRIGHTSRESERVED)
              (INITVARS (COPYRIGHTFLG)
                     (DEFAULTCOPYRIGHTOWNER)
                     (COPYRIGHTPRETTYFLG T)
                     (COPYRIGHTOWNERS)
                     [DEFAULTCOPYRIGHTKEYLST '((NONE "
                                                     " EXPLAINSTRING "NONE - No copyright ever on this file"
                                                     CONFIRM T RETURN 'NONE)
                                               [%[ "owner: " EXPLAINSTRING "[ - new copyright owner -- type one
                                                   line of text" NOECHOFLG T KEYLST ((ŸŸ "
                                                                                      " RETURN
                                                                                      (SUBSTRING (CADR ANSWER)
                                                                                             2 -2]
                                               (%] "No copyright notice now
                                                   " EXPLAINSTRING "] - no copyright notice now" NOECHOFLG T
                                                   RETURN NIL]
                     (COPYRIGHTSRESERVED T)
                     (*NEW-INTERLISP-MAKEFILE-ENVIRONMENT* '(:READTABLE "INTERLISP" :PACKAGE "INTERLISP" :FORMAT
                                                                  :XCCS))
                     (*DEFAULT-MAKEFILE-ENVIRONMENT*))
              (GLOBALVARS COPYRIGHTOWNERS DEFAULTCOPYRIGHTKEYLST COPYRIGHTPRETTYFLG COMMENTFLG
                     *DEFAULT-MAKEFILE-ENVIRONMENT* *NEW-INTERLISP-MAKEFILE-ENVIRONMENT*))
        (INITVARS (COMMENTFLG '*)
               (**COMMENT**FLG '"  **COMMENT**  ")
               (PRETTYFLG T)
               (%#RPARS 4)
               (CLISPIFYPRETTYFLG)
               (PRETTYTRANFLG)
               (FONTCHANGEFLG)
               (CHANGECHARTABSTR)
               (PRETTYTABFLG T)
               (DECLARETAGSLST '(COMPILERVARS COPY COPYWHEN DOCOPY DOEVAL@COMPILE DOEVAL@LOAD DONTCOPY
                                       DONTEVAL@COMPILE DONTEVAL@LOAD EVAL@COMPILE EVAL@COMPILEWHEN EVAL@LOAD
                                       EVAL@LOADWHEN FIRST NOTFIRST))
               (AVERAGEVARLENGTH 4)
               (AVERAGEFNLENGTH 5)
               (%#CAREFULCOLUMNS 0)
               (CHANGECHAR '%|)
               (ENDLINEUSERFN))
        [INITVARS (PRETTYDEFMACROS)
               (PRETTYPRINTMACROS)
               (PRETTYEQUIVLST)
               (PRETTYPRINTYPEMACROS)
               (FILEPKGCOMSPLST '(DECLARE%: SPECVARS LOCALVARS GLOBALVARS PROP IFPROP P VARS INITVARS ADDVARS
                                        APPENDVARS FNS ARRAY E COMS ORIGINAL BLOCKS *))
               (SYSPROPS '(PROPTYPE ALISTTYPE DELDEF EDITDEF PUTDEF GETDEF WHENCHANGED NOTICEFN NEWCOMFN
                                 PRETTYTYPE DELFROMPRETTYCOM ADDTOPRETTYCOM ACCESSFN ACS AMAC ARGNAMES
                                 BLKLIBRARYDEF BROADSCOPE CLISPCLASS CLISPCLASSDEF CLISPFORM CLISPIFYISPROP
                                 CLISPINFIX CLISPISFORM CLISPISPROP CLISPNEG CLISPTYPE CLISPWORD CLMAPS CODE
                                 CONVERT COREVAL CROPS CTYPE EDIT-SAVE EXPR FILE FILECHANGES FILEDATES FILEDEF
                                 FILEGROUP FILEHISTORY FILEMAP FILETYPE GLOBALVAR HISTORY I.S.OPR I.S.TYPE INFO
                                 LASTVALUE LISPFN MACRO MAKE NAMESCHANGED NARGS OLDVALUE OPD SETFN SUBR UBOX
                                 UNARYOP VALUE \DEF CLISPBRACKET TRYHARDER]
        (BLOCKS (PRETTYPRINTBLOCK PRETTYPRINT PRETTYPRINT1 PRETTYPRINT2 (ENTRIES PRETTYPRINT)
                      (SPECVARS FNSLST FILEFLG)))
          (GLOBALVARS DECLARETAGSLST LISPXPRINTFLG SYSPROPS FILEPKGCOMSPLST DWIMLOADFNSFLG PRETTYHEADER FILERDTBL
                 PRETTYEQUIVLST PRETTYTRANFLG CLISPIFYPRETTYFLG LISPXHISTORY DWIMFLG USERWORDS COMMENTFLG)
          [DECLARE%: EVAL@COMPILE DOCOPY (P (CL:PROCLAIM '(CL:SPECIAL DEFAULTFONT LAMBDAFONT PRETTYCOMFONT
                                                                      COMMENTFONT **COMMENT**FLG PRETTYPRINTMACROS]
          (DECLARE%: DOEVAL@COMPILE DONTCOPY                          ; IMPORT because FILEPKG has records EXPORTed but is not
                                                                      ; a member of EXPORTFILES
                 (FILES (IMPORT)
                        FILEPKG))
          (DECLARE%: DONTEVAL@LOAD DOEVAL@COMPILE DONTCOPY COMPILERVARS (ADDVARS (NLAMA PPT PP* PP)
                                                                                  (NLAML)
                                                                                  (LAMA])

(DEFINEQ

(PRETTYDEF
  [LAMBDA (PRTTYFNS PRTTYFILE PRTTYCOMS REPRINTFNS SOURCEFILE CHANGES FORMAT)
                                                                      ; Edited  9-Jul-2021 14:12 by rmk:
                                                                      ; Edited 29-Jun-2021 17:23 by rmk:
    (DECLARE (SPECVARS PRTTYFILE REPRINTFNS SOURCEFILE CHANGES))
    (RESETLST
        [RESETSAVE (RESETUNDO)
               '(AND RESETSTATE (RESETUNDO OLDVALUE]

        ;; Says undo everything if there is an error or control-D This is particularly necessary if user is using the PRINT* prettyprintmacro which
        ;; updates comments to point to the newest version.

        (PROG ((NEWFILEMAP (AND BUILDMAPFLG (LIST NIL)))
               (%#RPARS %#RPARS)
               (*PRINT-ARRAY* T)
               (XCL:*PRINT-STRUCTURE* T)
               (*PRINT-LEVEL* NIL)
               (*PRINT-LENGTH* NIL)
               FILEFLG FNSLST PRTTYTEM PRETTYCOMSLST PRTTYSPELLFLG OLDFILEMAP MAPADR NLAMALST NLAMLST LAMALST
               LAM?LST FILEDATES ORIGFLG ROOTNAME DESTINATIONENV SOURCEFILENV SOURCEFC FCLOCATION DEFAULTDESTENV
               )
              (DECLARE (SPECVARS *PRINT-ARRAY* XCL:*PRINT-STRUCTURE* *PRINT-LEVEL* *PRINT-LENGTH* NEWFILEMAP
                                ORIGFLG FILEFLG NLAMALST PRTTYSPELLFLG PRETTYCOMSLST PRTTYCOMS LAM?LST FNSLST
                                OLDFILEMAP LAMALST MAPADR ORIGFLG NLAMLST DESTINATIONENV SOURCEFILENV %#RPARS))
                                                                      ; NEWFILEMAP corresponds to the map being built for the file
                                                                      ; being written.  OLDFILEMAP corresponds to the map that
                                                                      ; exists for SOURCEFILE, if any.
              (COND
                 ((OR (NULL (\DTEST PRTTYFILE 'LITATOM))
                      (EQ PRTTYFILE T))                               ; we no longer support any of the crufty alternatives to writing a
                                                                      ; brand new file
                  (\ILLEGAL.ARG PRTTYFILE)))
              (SETQ ROOTNAME (ROOTFILENAME PRTTYFILE))
              (if (OR (EQ SOURCEFILE T)
                      (AND REPRINTFNS (NULL SOURCEFILE)))
                  then
                       ;; SOURCEFILE plays the role of CFILE for recompiling.  It permits PRETTYPRINT to obtain the definitions from the file
                       ;; withou having to reprettyprint them, or even having them loaded into core.  T (or NIL if REPRINTFNS is specified) is the
                       ;; same as PRETTYFILE.

                       ;; REPRINTFNS specifies those functions to be printed anew.  REPRINTFNS=T means reprint all EXPRS, a la recompile.
                       ;; For example, if you have an entire file loaded in, but only change a few functions, using this option can speed up
                       ;; dumping the file by a factor of two.  If REPRINTFNS=ALL, all functions that contain in core exprs, whether on function
                       ;; definition cell or property lists, are reprinted.  REPRINTFNS can also be a list.  MAKEFILE uses this for the REMAKE
                       ;; option by specifying as REPRINTFNS the list CHANGES.  In any case, if the function does not contain an in core
                       ;; defnition, prettyprint will try to find one on the file.  i.e., act as though REPRINTFNS were NIL.

                       (SETQ SOURCEFILE ROOTNAME))
              [if (SETQ DESTINATIONENV (GET ROOTNAME 'MAKEFILE-ENVIRONMENT))
                  then (SETQ DESTINATIONENV (\DO-DEFINE-FILE-INFO NIL DESTINATIONENV))
                else                                                  ; see if we already know the environment of the source
                     (CL:MULTIPLE-VALUE-SETQ (SOURCEFILENV OLDFILEMAP SOURCEFC)
                            (LOOKUP-ENVIRONMENT-AND-FILEMAP (OR SOURCEFILE ROOTNAME)
                                   (OR (NULL SOURCEFILE)
                                       (EQ SOURCEFILE ROOTNAME]
              (if SOURCEFILE
                  then (if [NULL (NLSETQ (SETQ SOURCEFILE (OPENSTREAM SOURCEFILE 'INPUT]
                           then                                       ; can't find file to reprint from.
                                                                      ; OPENSTREAM was called in order that 'correction' take place.
                                (SETQ SOURCEFILE NIL)
                                (PRINTOUT T PRTTYFILE " not found, so it will be written anew." T)
                         elseif (RANDACCESSP SOURCEFILE)
                           then (RESETSAVE NIL (LIST 'CLOSEF SOURCEFILE))
                                                                      ; The typical case:  File is open
                                (RESETSAVE (INPUT SOURCEFILE))
                                [if (EQ REPRINTFNS 'EXPRS)
                                    then (SETQ REPRINTFNS T)
                                  elseif (EQ REPRINTFNS 'CHANGES)
                                    then (SETQ REPRINTFNS (UNION (FILEPKG.CHANGEDFNS CHANGES)
                                                                 (FILEPKG.CHANGEDFNS (fetch FILECHANGES
                                                                                        of ROOTNAME]
                                (CL:UNLESS SOURCEFILENV               ; if we didn't have environment cached, look it up from the actual
                                                                      ; stream now
                                    (CL:MULTIPLE-VALUE-SETQ (SOURCEFILENV OLDFILEMAP SOURCEFC)
                                           (GET-ENVIRONMENT-AND-FILEMAP SOURCEFILE)))
```

```
                              (\EXTERNALFORMAT SOURCEFILE (FETCH (READER-ENVIRONMENT REFORMAT) OF SOURCEFILENV
                                                                  ))
                              (if (NULL OLDFILEMAP)
                                  then                          ; no map on file, so we will build one as needed
                                       (SETFILEPTR SOURCEFILE (OR SOURCEFC 0))
                                elseif (NULL (CAR OLDFILEMAP))
                                  then                          ; complete map.
                                elseif (LISTP (CAR OLDFILEMAP))
                                  then                          ; only partial map built up.  should only happen for files that were
                                                                ; made with BUILDMAPFLG=NIL, since otherwise there would
                                                                ; be a coplete map on the file.
                                       (SETFILEPTR SOURCEFILE (CAAR OLDFILEMAP))
                                else                            ; Redundancy check.  Should only occur if there was a compiled
                                                                ; function in the file.  and a partial map was formed that stopped
                                                                ; after that function.
                                     (HELP))
                    else                                        ; Can't copy from non-randaccessp source
                         (SETQ SOURCEFILE NIL)))

        ;; Now figure out what environment to write the new file in.

            (CL:UNLESS DESTINATIONENV                           ; Don't yet have a destination environment
                (SETQ DESTINATIONENV (if SOURCEFILENV
                                         then                   ; use same as source
                                              (if (EQUAL-READER-ENVIRONMENT SOURCEFILENV
                                                         *OLD-INTERLISP-READ-ENVIRONMENT*)
                                                  then          ; Coercing to the new style
                                                       (\DO-DEFINE-FILE-INFO NIL
                                                              *NEW-INTERLISP-MAKEFILE-ENVIRONMENT*)
                                                else            ; use same env on new file as old. But copy in case something
                                                                ; changes
                                                     (CREATE READER-ENVIRONMENT USING SOURCEFILENV))
                                       elseif *DEFAULT-MAKEFILE-ENVIRONMENT*
                                         then ;; new file, use default

                                              (\DO-DEFINE-FILE-INFO NIL *DEFAULT-MAKEFILE-ENVIRONMENT*))))
            (CL:WHEN FORMAT
                (REPLACE (READER-ENVIRONMENT REFORMAT) OF DESTINATIONENV WITH FORMAT))

        ;; We now have a DESTINATIONENV

            (if (NULL SOURCEFILE)
                then                                            ; get rid of anything we knew about source
                     (SETQ OLDFILEMAP NIL)
                     (SETQ SOURCEFC NIL)
                     (SETQ SOURCEFILENV NIL)
              elseif (AND SOURCEFILENV (EQUAL-READER-ENVIRONMENT SOURCEFILENV DESTINATIONENV))
                then                                            ; source and destination compatible, so we won't need to worry
                                                                ; about it in PRETTYPRINT1/2
                     (SETQ SOURCEFILENV NIL))

        ;; Ready to go.  Clean up by closing and deleting file if aborted.

            [RESETSAVE NIL (LIST (FUNCTION PRETTYDEF0)
                                 (SETQ PRTTYFILE (OPENSTREAM PRTTYFILE 'OUTPUT]
            (\EXTERNALFORMAT PRTTYFILE (FETCH (READER-ENVIRONMENT REFORMAT) OF DESTINATIONENV))
            (RESETSAVE (OUTPUT PRTTYFILE))
            (PRINT-READER-ENVIRONMENT DESTINATIONENV)
            (SETQ FCLOCATION (GETFILEPTR PRTTYFILE))
            (WITH-READER-ENVIRONMENT DESTINATIONENV
                (CL:UNLESS (SYNTAXP (CHARCODE "[")
                                  'LEFTBRACKET)                 ; can't use brackets on this read table
                    (SETQ %#RPARS NIL))
                (SETQ FILEDATES (PRINTDATE PRTTYFILE CHANGES))
                (AND (NEQ COPYRIGHTFLG 'NEVER)
                     ROOTNAME
                     (PRINTCOPYRIGHT ROOTNAME))
                (SETQ FILEFLG T)
                (SETQ CHANGES (FILEPKG.CHANGEDFNS CHANGES))     ; Used freely by PRETTYPRINT to decide clispifying.
                (CL:UNLESS (RANDACCESSP PRTTYFILE)              ; No point building a map, since we won't be able to go back to
                                                                ; the start to point at it
                    (SETQ NEWFILEMAP NIL))
                (CL:WHEN FONTCHANGEFLG                          ; this is expensive in that it costs as many conses as there are
                                                                ; functions, but you can afford it for a makefile.
                    (SETQ FNSLST (OR (for FL in (GETPROP ROOTNAME 'FILEGROUP)
                                        when (fetch FILEPROP of FL) join (FILEFNSLST FL))
                                     (FILEFNSLST ROOTNAME))))
                (CL:WHEN (OR (LISTP PRTTYFNS)
                             (LISTP (GETTOPVAL PRTTYFNS)))      ; Ancient cruft from before the days of MAKEFILE.
                    (PRINTFNS PRTTYFNS T)
                    (PRETTYCOM PRTTYFNS T))
                (CL:WHEN [SETQ PRETTYCOMSLST (OR (LISTP PRTTYCOMS)
                                                 (AND (LITATOM PRTTYCOMS)
                                                      (LISTP (GETTOPVAL PRTTYCOMS]
                    (PRETTYCOM PRTTYCOMS T)                     ; PRTTYCOMS is just like the argument to a COMS command.
                                                                ; see comment in prettycom1
                    (for L on PRETTYCOMSLST do (PRETTYCOM (CAR L)
                                                      NIL L))   ; The original value of PRTTYCOMS is saved so that it can be
                                                                ; rewritten if a spelling correction occurs.  The list
                                                                ; PRTTYCOMSLST is searched by PRETTYCOM1 for *
                                                                ; commands to see if the variable has be dumped out as well.
                         )
                      (if (PRETTYDEF1)
                          then                                                  ; The coms were reprinted by PRETTYDEF1 due to a change to
                                                                                ; nlama and or nlaml
                        elseif PRTTYSPELLFLG
                          then                                                  ; A correction on prettycoms was performed, so dump it out aain
                                                                                ; to get the corrected version on the file.
                                (PRETTYCOM PRTTYCOMS T))
                      (CL:UNLESS (EQ COPYRIGHTFLG 'NEVER)
                             (SAVECOPYRIGHT ROOTNAME))
                      (CL:WHEN NEWFILEMAP
                          (PRIN1 "(")
                          (PRIN2 'DECLARE%:)
                          (SPACES 1)
                          (PRIN2 'DONTCOPY)
                          (TERPRI)
                          (SPACES 2)
                          (for ADR in MAPADR do (SETQ PRTTYTEM (GETFILEPTR PRTTYFILE))
                                                (SETFILEPTR PRTTYFILE ADR)
                                                                                ; Write the current file positon into the filecreated expression, and
                                                                                ; then restores the file pointer.
                                                (PRIN2 PRTTYTEM)
                                                (SETFILEPTR PRTTYFILE PRTTYTEM))
                          (PRIN2 (LIST 'FILEMAP NEWFILEMAP))                    ; printed instead of prettyprinted, so wont take up two pages of
                                                                                ; listing.
                          (PRIN1 ")")
                          (TERPRI)

                          ;; Also save map, so can be used for subsequent makefiles.

                          (PUTFILEMAP (FULLNAME PRTTYFILE)
                                 NEWFILEMAP NIL DESTINATIONENV NIL FCLOCATION))
                      (ENDFILE PRTTYFILE)
                      (CL:WHEN (AND FILEDATES ROOTNAME)
                             (/replace FILEDATES of ROOTNAME with FILEDATES)))
                  (RETURN (FULLNAME PRTTYFILE))))])

(PRETTYDEFCOMS
  [LAMBDA (PRTTYCOMS FNSLST)                                                    ; Edited 19-Aug-88 16:07 by raf
    (DECLARE (SPECVARS FNSLST))
    (PROG ((%#RPARS %#RPARS)
           (*PRINT-ARRAY* T)
           (XCL:*PRINT-STRUCTURE* T)
           (*PRINT-LEVEL* NIL)
           (*PRINT-LENGTH* NIL)
           BUILDMAPFLG PRTTYSPELLFLG ORIGFLG SOURCEFILE)
          (DECLARE (SPECVARS *PRINT-ARRAY* XCL:*PRINT-STRUCTURE* *PRINT-LEVEL* *PRINT-LENGTH* BUILDMAPFLG
                          NEWFILEMAP ORIGFLG PRTTYSPELLFLG LAM?LST ORIGFLG SOURCEFILE %#RPARS))
          (if (NOT (SYNTAXP (CHARCODE "[")
                          'LEFTBRACKET))
              then                                                              ; can't use brackets on this read table
                   (SETQ %#RPARS NIL))
          (for L on [OR (LISTP PRTTYCOMS)
                        (AND (LITATOM PRTTYCOMS)
                             (LISTP (GETTOPVAL PRTTYCOMS]
             do (PRETTYCOM (CAR L)
                       NIL L])

(PRETTYDEF0
  [LAMBDA (MADEFILE)                                                            (* bvm%: " 2-Aug-86 16:24")

    ;; Cleans up after prettydef in case of control-d.

    (COND
       ((OPENP MADEFILE 'OUTPUT)
        (DELFILE (CLOSEF MADEFILE])

(PRETTYDEF1
  [LAMBDA NIL                                                                   (* wt%: " 9-SEP-78 16:05")
                                                                                ; Updates the DECLARE: for NLAMA/NLAML
    (PROG (PRTTYCOM PRTTYTEM PRTTYNEW)
          (COND
             [[NULL (SOME PRETTYCOMSLST (FUNCTION (LAMBDA (X)
                                                    (AND (EQ (CAR X)
                                                             'DECLARE%:)
                                                         (SETQ PRTTYTEM (MEMB 'COMPILERVARS (SETQ PRTTYCOM X)))
                                                         (EQ (CAAR (SETQ PRTTYTEM (CDR PRTTYTEM)))
                                                             'ADDVARS]
               (AND (NULL NLAMALST)
                    (NULL NLAMLST)
                    (NULL LAMALST)
                    (RETURN NIL))

               ;; If thee is no DECLARE: and no nlambdas, dont bother to add any.  note tha if thee is IS a DECLARE:, then we must check even if
               ;; there are no nlambdas, because consider what happens when user changes the only nlambda to a lambda
```

```
                ;; must replace the declare: by a nop addvars.

                [SETQ PRTTYCOM (SUBPAIR '(NLAMALST NLAMLST LAMALST)
                                (LIST NLAMALST NLAMLST LAMALST)
                                '(DECLARE%: DONTEVAL@LOAD DOEVAL@COMPILE DONTCOPY COMPILERVARS
                                        (ADDVARS (NLAMA . NLAMALST)
                                               (NLAML . NLAMLST)
                                               (LAMA . LAMALST]
                (COND
                   ((AND (LISTP PRETTYCOMSLST)
                         (NLISTP PRTTYCOMS))
                    (/NCONC1 PRETTYCOMSLST PRTTYCOM)
                    (PRETTYCOM PRTTYCOMS T]
               ([NOT (EQUAL (CAR PRTTYTEM)
                            (SETQ PRTTYNEW (LIST 'ADDVARS [CONS 'NLAMA (UNION NLAMALST (INTERSECTION LAM?LST
                                                                                                  (CDADAR PRTTYTEM]
                                                 [CONS 'NLAML (UNION NLAMLST (INTERSECTION LAM?LST
                                                                                        (CDR (CADDAR PRTTYTEM]
                                                 (CONS 'LAMA (UNION LAMALST (INTERSECTION
                                                                             LAM?LST
                                                                             (CDR (CADDDR (CAR PRTTYTEM]

                ;; The reason for the unions and intersections is that prettydef simply may not know the fntyps of some of the functions in the file,
                ;; namely those on lam?lst, and theefore tese should not be removed from NLAMA and NLAML if they are there from a previous
                ;; makefile.

                (/RPLACA PRTTYTEM PRTTYNEW)
                (AND (NLISTP PRTTYCOMS)
                     (PRETTYCOM PRTTYCOMS T)))
               (T (RETURN NIL)))
           (PRETTYCOM PRTTYCOM)
           (RETURN T])
```

(**PRINTDATE**

```
  [LAMBDA (OUTSTREAM CHANGES)                                    (* bvm%: " 1-Aug-86 15:51")

;;; assumes that OUTSTREAM is a file open for output, and prints the date information for that file on it

    (PROG ((DAT (DATE))
           (ROOTNAME (ROOTFILENAME OUTSTREAM))
           PREVPAIR FILEDATES)
          (if FILEPKGFLG
              then [if ROOTNAME
                       then (/replace FILECHANGES of ROOTNAME with (SETQ CHANGES (FILEPKG.MERGECHANGES CHANGES
                                                                                       (fetch FILECHANGES
                                                                                          of ROOTNAME]

                     ;; The reason for the order of arguments in UNION is so that the changes will be listed in roughly the order made.

                     [SETQ FILEDATES (CONS (create FILEDATEPAIR
                                                   FILEDATE _ DAT
                                                   DATEFILENAME _ (FULLNAME OUTSTREAM))
                                           (SETQ PREVPAIR (LAST (fetch FILEDATES of ROOTNAME]

;;; Right now, FILEDATES simply keeps latest version and date, and original version and date.  Latter for integrity checks on makefile remake, as
;;; described in filepackage.  Note that don't want to change FILEDATES property until PRETTDEF completes.  In case of control-d, the file will be
;;; deleted automatically.

                     )
          (PRINTDATE1 OUTSTREAM CHANGES DAT (fetch FILEDATE of (CAR PREVPAIR))
                 (fetch DATEFILENAME of (CAR PREVPAIR)))            ; PRINTDATE1 does the actual printing.  It is a separate function
                                                                    ; so that it can be advised.
          (RETURN FILEDATES])
```

(**PRINTDATE1**

```
  [LAMBDA (OUTSTREAM CHANGES DAT PREVDATE PREVERS TERMINATING.STRING)
                                                                    ; Edited  8-Feb-2023 16:21 by lmm
                                                                    ; Edited 30-Nov-2021 21:31 by larry
                                                                    (* bvm%: "18-Sep-86 19:08")

;;; does the printing for PRINTDATE

    (printout OUTSTREAM .FONT DEFAULTFONT "(" .P2 'FILECREATED %, .P2 DAT %, .FONT LAMBDAFONT .P2 (FULLNAME
                                                                                                 OUTSTREAM)
           .FONT DEFAULTFONT)

    ;; note that CHANGEFONT checks for FONTCHANGEFLG explicitly so that it won't do anything if FONTCHANGEFLG is NIL

    (if (AND BUILDMAPFLG (NOT (DISPLAYP OUTSTREAM)))
        then (push MAPADR (ADD1 (GETFILEPTR OUTSTREAM)))
             (PRIN3 "        " OUTSTREAM)

             ;; The address of where the map begins will be stored in this slot.  8 spaces left because when radix is 8, can overflow seven spaces by
             ;; a file of 300000 characters (Alice did it). The push is because of a feature no longer used where there could be two FILECREATED
             ;; expressions at the head of a file font
             )
    [if FILEPKGFLG
        then (if INITIALS
                 then (printout OUTSTREAM T T 6 .P2 :EDIT-BY %, .P2 INITIALS))
```

```
            (if CHANGES
                then (printout OUTSTREAM T T 6 .P2 :CHANGES-TO %, .PPVTL CHANGES))
            (if PREVDATE
                then (printout OUTSTREAM T T 6 .P2 :PREVIOUS-DATE %, .P2 PREVDATE)
                     (if PREVERS
                         then (printout OUTSTREAM %, .P2 PREVERS]
    (PRIN1 (OR TERMINATING.STRING "


              ")
           OUTSTREAM])
```

## (PRINTFNS

```
  [LAMBDA (X PRETTYDEFLG)                                            (* lmm "13-OCT-82 16:44")
                                                                     ; prettydeflg=T when called from prettydef.
    (AND X (PROG (FNADRLST)
                 [COND
                    ((AND PRETTYDEFLG NEWFILEMAP)
                     (SETQ FNADRLST (TCONC NIL (GETFILEPTR PRTTYFILE)))
                     (TCONC FNADRLST NIL)
                     (NCONC1 NEWFILEMAP (CAR FNADRLST]
                 (PRIN1 '%()
                 (PRINT 'DEFINEQ)
                 (PRETTYPRINT X (AND PRETTYDEFLG (OR FNADRLST T))
                        FNSLST)                                      ; FNSLST bound in prettydef to list of functions on this file.  used
                                                                     ; for font stuff.
                 (PRIN1 '%))
                 (AND FNADRLST (RPLACA (CDAR FNADRLST)
                                       (GETFILEPTR PRTTYFILE)))
                 (TERPRI])
```

## (PRETTYCOM

```
  [LAMBDA (PRTTYCOM PRTTYFLG PRETTYCOMSTAIL)                         ; Edited 14-Apr-88 18:26 by bvm
    (PROG (PRTTYTEM)
          [COND
             ((NULL PRTTYCOM)                                        ; So that RECOMPILE and BRECOMPILE do not have to check
                                                                     ; before calling PRETTYCOM.
              (RETURN))
             ((AND PRTTYFLG (NEQ PRTTYFILE T))
              (PRINT (COND
                        (LISPXPRINTFLG

                               ;; PRETTYCOMPRINT is an nlambda that does a lispxprint, except when prettyheader is NIL, in hich case it
                               ;; does nothing.

                               (LIST 'PRETTYCOMPRINT PRTTYCOM))
                        (T (LIST 'PRINT (LIST 'QUOTE PRTTYCOM)
                                 T T]
          (COND
             ((LITATOM PRTTYCOM)
              (COND
                 ((AND (NULL PRTTYFLG)
                       (NOT (BOUNDP PRTTYCOM))
                       DWIMFLG
                       (SETQ PRTTYTEM (FIXSPELL PRTTYCOM 70 USERWORDS T PRETTYCOMSTAIL (FUNCTION BOUNDP)))
                       (SETQ PRTTYSPELLFLG T))
                  (SETQ PRTTYCOM PRTTYTEM)))
              (PRETTYVAR PRTTYCOM PRTTYFLG)

              ;; FNS and VARS are printed as (RPAQQ atom value T) so that LOAD ALLPROP will still stre them in the value cell.

              (RETURN PRTTYCOM))
             (PRTTYFLG                                               ; PRETTYDEF called with a list for FNS or VARS,
                    (RETURN PRTTYCOM)))
      TOP [COND
             [[AND (NULL ORIGFLG)
                   (SETQ PRTTYTEM (fetch (FILEPKGCOM MACRO) of (CAR PRTTYCOM]
              (for X on (SUBPAIR (CAR PRTTYTEM)
                                 (PRETTYCOM1 PRTTYCOM T T)
                                 (CDR PRTTYTEM))
                 do (PRETTYCOM (CAR X)
                           NIL
                           (AND PRETTYCOMSTAIL X]
             (T (SELECTQ (CAR PRTTYCOM)
                    (FNS (PROG (PRTTYSPELLFLG)
                               (PRINTFNS (PRETTYCOM1 PRTTYCOM T T)
                                      (NOT (NULL PRETTYCOMSTAIL)))
                               (AND PRTTYSPELLFLG (EQ (CADR PRTTYCOM)
                                                      '*)
                                    (LITATOM (SETQ PRTTYTEM (CADDR PRTTYCOM)))
                                    (PRETTYCOM PRTTYTEM))            ; The FNSlst had an error in it that was corrected.

                          ))
                    ((VARS ARRAY)
                         (for X in (PRETTYCOM1 PRTTYCOM T T) do (PRETTYVAR X)))
                    (DECLARE%:  ;; Normally, expressions appearing in a symbolic file are (1) evaluated upon loading the file, (2) not evaluated
                                ;; when compiling the file, and (3) copied to the compile file.  DECLARE: can be used to change state around
```

```
                                        ;; any PRETTYCOM.  The atomic symbols DONTCOPY, DOCOPY, DONTEVAL@COMPILE,
                                        ;; DOEVAL@COMPILE, DONTEVAL@LOAD, and DOEVAL@LOAD have the obvious meaning.  DECLARE:
                                        ;; eliminates the pretty commands DECLARE, COMPROP, COMPROP*, PD, PC, and PC*.  DECLARE: is
                                        ;; defined as a functionthat evaluates all list expressions except when under a DONTEVAL@LOAD state.

                                        (PRIN1 "(")
                                        (PRIN2 'DECLARE%:)
                                        (SPACES 1)
                                        (for LST on (PRETTYCOM1 PRTTYCOM T T)
                                           do (COND
                                                 ((NLISTP (CAR LST))
                                                  [COND
                                                     ((NOT (MEMB (CAR LST)
                                                                 DECLARETAGSLST))
                                                      (COND
                                                         ((AND DWIMFLG (FIXSPELL (CAR LST)
                                                                                 70 DECLARETAGSLST T LST))
                                                          (SETQ PRTTYSPELLFLG T))
                                                         (T (GO ERROR]
                                                  (PRIN2 (CAR LST))
                                                  (SPACES 1))
                                                 (T (TERPRI)
                                                    (PRETTYCOM (CAR LST)
                                                           NIL LST)))
                                              (SELECTQ (CAR LST)
                                                  ((EVAL@LOADWHEN EVAL@COMPILEWHEN COPYWHEN)
                                                       (COND
                                                          ((SETQ LST (CDR LST))
                                                           (PRINTDEF (CAR LST))
                                                           (SPACES 1))))
                                                  NIL))
                                        (PRIN1 '")
                                             "))
                            ((CL:EVAL-WHEN)                  ;; Has the syntax (EVAL-WHEN (times ...) coms ...).  Dumps an EVAL-WHEN form on the file
                                                             ;; containing whatever is dumped by the given COMS.

                                 (CL:ASSERT [AND (CL:CONSP (CADR PRTTYCOM))
                                                 (CL:SUBSETP (CADR PRTTYCOM)
                                                        '(EVAL CL:EVAL COMPILE CL:COMPILE LOAD CL:LOAD]
                                        NIL "The first argument to the ~S command must be a list of times")
                                 (CL:FORMAT T "(~S ~S" 'CL:EVAL-WHEN (CADR PRTTYCOM))
                                 (for LST on (PRETTYCOM1 (CDR PRTTYCOM)
                                                        T NIL)
                                    do (CL:TERPRI)
                                       (PRETTYCOM (CAR LST)
                                              NIL LST))
                                 (CL:FORMAT T "~&)~%%"))
                            ((SPECVARS LOCALVARS GLOBALVARS)
                                 (SETQ PRTTYTEM (CONS (CAR PRTTYCOM)
                                                      (PRETTYCOM1 PRTTYCOM T T)))
                                 (PRIN1 "(")
                                 (MAPRINT '(DECLARE%: DOEVAL@COMPILE DONTCOPY)
                                        NIL NIL NIL NIL (FUNCTION PRIN2))
                                 (TERPRI)
                                 (PRINTDEF1 PRTTYTEM)
                                 (PRIN1 ")
                                        "))
                            ((PROP IFPROP)
                                 [PROG ((PRTTYFLG (EQ (CAR PRTTYCOM)
                                                      'IFPROP))
                                        (PRTTYTEM (CADR PRTTYCOM))
                                        (PRTTYX (PRETTYCOM1 (CDR PRTTYCOM)
                                                       T T)))            ; IFPROP only dumps those property values that are non-NIL.
                                       (COND
                                          ((LISTP PRTTYTEM)
                                           (for X in PRTTYTEM do (MAKEDEFLIST PRTTYX X PRTTYFLG)))
                                          ((NEQ PRTTYTEM 'ALL)
                                           (MAKEDEFLIST PRTTYX PRTTYTEM PRTTYFLG PRTTYCOM))
                                          [(ASSOC 'PUTPROPS PRETTYPRINTMACROS)
                                           (for ATM in PRTTYX
                                              do (PRINTDEF1 (CONS 'PUTPROPS
                                                                  (CONS ATM (CONS (for X on (GETPROPLIST ATM)
                                                                                     by (CDDR X)
                                                                                     unless (MEMB (CAR X)
                                                                                                  SYSPROPS)
                                                                                     join (LIST (CAR X)
                                                                                                (CADR X]
                                          (T (for ATM in PRTTYX do (printout NIL %,, "(" .P2 'PUTPROPS %, .P2 ATM)
                                                                  (SETQ PRTTYTEM (ADD1 (POSITION)))
                                                                  (for X on (GETPROPLIST ATM) by (CDDR X)
                                                                     unless (MEMB (CAR X)
                                                                                  SYSPROPS)
                                                                     do (printout NIL .TAB PRTTYTEM .PPV (CAR X)
                                                                               %, .PPV (CADR X)))
                                                                  (PRIN1 '")
                                                                         "])
                            (P                                                 ; Arbitrary expression to evaluate when loaded.  Be sure to
                                                                               ; prettyprint as code
```

```
                        (for X in (SETQ PRTTYTEM (PRETTYCOM1 PRTTYCOM T)) do (PRINTDEF1 X T)))
                     (INITVARS [for X in (PRETTYCOM1 PRTTYCOM T T) do (COND
                                                                          ((LISTP X)
                                                                           (OR (EQ (CAR X)
                                                                                   COMMENTFLG)
                                                                               (PRETTYVAR1 'RPAQ? (CAR X)
                                                                                      (CDR X)
                                                                                      NIL T)))
                                                                          (T (PRETTYVAR1 'RPAQ? X NIL])
                     (ADDVARS (for X in (PRETTYCOM1 PRTTYCOM T T)
                                 do (PRETTYVAR1 'ADDTOVAR [CAR (OR (LISTP X)
                                                                     (ERRORX (LIST 4 X]
                                           (CDR X)
                                           NIL T)))
                     (APPENDVARS (for X in (PRETTYCOM1 PRTTYCOM T T)
                                    do (PRETTYVAR1 'APPENDTOVAR [CAR (OR (LISTP X)
                                                                           (ERRORX (LIST 4 X]
                                              (CDR X)
                                              NIL T)))
                     (E (for X in (PRETTYCOM1 PRTTYCOM T) do (EVAL X)))
                     (COMS (for X on (PRETTYCOM1 PRTTYCOM T) do (PRETTYCOM (CAR X)
                                                                        NIL
                                                                        (AND PRETTYCOMSTAIL X))))
                     (ORIGINAL [LET ((ORIGFLG T))
                                    (DECLARE (SPECVARS ORIGFLG))
                                    (for X on (PRETTYCOM1 PRTTYCOM T) do (PRETTYCOM (CAR X)
                                                                                 NIL
                                                                                  (AND PRETTYCOMSTAIL X])
                     (BLOCKS (SETQ PRTTYTEM (PRETTYCOM1 PRTTYCOM T T))
                             (PRIN1 "(")
                             (MAPRINT '(DECLARE%: DONTEVAL@LOAD DOEVAL@COMPILE DONTCOPY)
                                    NIL NIL NIL NIL (FUNCTION PRIN2))
                             (TERPRI)
                             (for X in PRTTYTEM do (PRINTDEF1 (CONS 'BLOCK%: X)))
                             (PRIN1 ")
                                    "))
                     ((*)
                         [COND
                            ((EQ (CADR PRTTYCOM)
                                 '*)                                 ; Form-feed if super-comment indicated.  Use * no matter what
                                                                     ; current COMMENTFLG is.
                              (printout NIL .PAGE))
                            (T (RPTQ 3 (TERPRI]
                         (COND
                            ((AND [COND
                                      (FILEFLG FONTCHANGEFLG)
                                      (T (EQ FONTCHANGEFLG 'ALL]
                                  LAMBDAFONT)
                              (CHANGEFONT LAMBDAFONT)
                              (PRIN2 PRTTYCOM)
                              (CHANGEFONT DEFAULTFONT))
                            (T (PRIN2 PRTTYCOM)))
                         (RPTQ 2 (TERPRI)))
                     (COND
                        ((AND (LITATOM (CAR PRTTYCOM))
                              (fetch (FILEPKGTYPE GETDEF) of (CAR PRTTYCOM)))
                                                                     ; If its the name of a type with a GETDEF, put out PUTDEF
                                                                     ; expressions.
                         (for X in (PRETTYCOM1 PRTTYCOM T T) do (printout NIL "(" .P2 'PUTDEF %, .P2
                                                                        (KWOTE X)
                                                                        %, .P2 (KWOTE (CAR PRTTYCOM))
                                                                        %, .PPV (KWOTE (GETDEF X (CAR PRTTYCOM)))
                                                                        ")" T)))
                        ((FIXSPELL (CAR PRTTYCOM)
                                70 FILEPKGCOMSPLST T PRTTYCOM)
                         (SETQ PRTTYSPELLFLG T)
                         (GO TOP))
                        (T (GO ERROR]
          (RETURN PRTTYCOM)
      ERROR
          (ERROR "bad file package command" PRTTYCOM])

(PRETTYVAR
  [LAMBDA (VAR FLG)                                                (* lmm "27-Aug-84 20:15")
                                                                   ; I don't see what FLG is used for--rmk
    (PROG (VAL TEM)

     ;; Dumps value of VAR for reloading.  If VAR is non-atomic, of form (var form) where VAR is to be dumped so as to be set to value of form,
     ;; computed at LOAD time.

          (COND
             ((LITATOM VAR)
              (AND (EQ (SETQ VAL (GETTOPVAL VAR))
                       'NOBIND)
                   (printout T T "****WARNING:  " .P2 VAR " is unbound" T T))
              (PRETTYVAR1 'RPAQQ VAR VAL))
             [(LISTP VAR)
```

```
              (SETQ VAL (CDR VAR))
              (SETQ VAR (CAR VAR))
              (COND
                 ((AND (EQ [CAR (SETQ TEM (LISTP (CAR (LISTP VAL]
                           'QUOTE)
                       (LISTP (CDR TEM)))
                  (PRETTYVAR1 'RPAQQ VAR (CADR TEM)))
                 ((EQ VAR COMMENTFLG)                             ; don't print out comments

                  )
                 ([OR (NULL VAL)
                      (AND (LISTP VAL)
                           (OR (NUMBERP (CAR VAL))
                               (EQ T (CAR VAL))
                               (NULL (CAR VAL)))
                           (NULL (CDR VAL]                        ; A minor optimization for RPAQQ's to suppresses unnecessary
                                                                  ; load-time eval's.
                  (PRETTYVAR1 'RPAQQ VAR (CAR VAL)))
                 (T (PRETTYVAR1 'RPAQ VAR VAL NIL T]
             (T (ERROR "Bad variable specification" VAR])
```

## (PRETTYVAR1

```
  [LAMBDA (OP VAR E DEF TAILFLG)                                  ; Edited 10-Feb-87 18:01 by Pavel
```

;; does printing for VAR, ADDVAR, and PROP commands. OP is the name of the function, VAR the operand, and E the rest of the expression to
;; be printed, either as an element, or as a tail if TAILFLG=T. VAR is printed in LAMBDAFONT. If VAR is a list, each element is printed in
;; LAMBDAFONT. This option is used to print both the name of the atom and its property for PROP commands.

```
    (PROG ((LASTCOL (LINELENGTH))
           TEM
           (*PRINT-ARRAY* T))                                     ; This is supposed to be bound above here but isn't in some case
                                                                  ; I can't find. --Pavel
          (TERPRI)
```

;; because if you have a really bold font, it lines up the bottoms, but you can get crowded into the line above.

```
          [COND
             ((AND (MEMB OP '(RPAQQ RPAQ RPAQ?))
                   (EQ [TYPENAME (SETQ TEM (COND
                                              (TAILFLG (CAR E))
                                              (T E]
                       'ARRAYP))
```

;; dump arrays and bitmaps specially. This really ought to be handled by having *PRINT-ARRAY* say how to dump these, so that
;; only a single expression ends up on the file.

;; 1 December 1986, Pavel: Well, I fixed bitmaps for this. Maybe I'll fix arrays as well...

;; 10 February 1987, Pavel: ARRAYP's are now fixed as well, but not by using *PRINT-ARRAY*. Rather than invent another
;; non-standard reader macro, I simply store the elements in a list and use a non-READing version of READARRAY.

```
              (COND
                 ((EQ OP 'RPAQQ)
                  (SETQQ OP RPAQ)))
              (printout NIL "(" .P2 OP %, .P2 VAR %,)
              [PRIN2 `(READARRAY-FROM-LIST ,(ARRAYSIZE TEM)
                             ',(ARRAYTYP TEM)
                             ,(ARRAYORIG TEM)
                             ',(PRINTARRAY-TO-LIST TEM]
              (printout NIL '%) T))
             ((ASSOC OP PRETTYPRINTMACROS)
              (OR TAILFLG (SETQ E (CONS E)))
              (PRINTDEF [CONS OP (COND
                                    ((LISTP VAR)
                                     (APPEND VAR E))
                                    (T (CONS VAR E]
                     0 DEF))
             (T (PRIN1 '%()
                (PRIN2 OP)
                (SPACES 1)
                (SETQ TEM (POSITION))
                (COND
                   ((AND FONTCHANGEFLG PRETTYCOMFONT)
                    (CHANGEFONT PRETTYCOMFONT)))
                (COND
                   ((LISTP VAR)
                    (MAPRINT VAR NIL NIL NIL NIL (FUNCTION PRIN2)))
                   (T (PRIN2 VAR)))
                (COND
                   ((AND FONTCHANGEFLG PRETTYCOMFONT)
                    (CHANGEFONT DEFAULTFONT)))
                (SPACES 1)
                (PRINTDEF E (COND
                               ((OR (NLISTP E)
                                    (FITP E NIL NIL LASTCOL))
                                (POSITION))
                               (T TEM))
                       DEF TAILFLG)
                (PRIN1 '%)]
          (TERPRI])
```

```
(PRETTYCOM1
  [LAMBDA (PRTYCOM PRTYFLG REMOVECOMMENTS)                          (* rmk%: "13-Feb-85 22:54")
    (PROG (PRTYX)
          [COND
             ((AND (EQ [CAR (LISTP (SETQ PRTYX (CDR PRTYCOM]
                       '*)
                   (CDR PRTYX))
              (COND
                 ((AND (LITATOM (SETQ PRTYX (CADR PRTYX)))
                       PRTYFLG)                                     ; Checks to see if the variable is already being dumped and
                                                                    ; dumps it if not.
                  (PRETTYCOM PRTYX)))
              (SETQ PRTYX (COND
                             (PRTYFLG (EVAL PRTYX))
                             ((LITATOM PRTYX)
                              (AND (NEQ (SETQ PRTYX (GETTOPVAL PRTYX))
                                        'NOBIND)
                                   PRTYX))
                             (T (RESETVARS (DWIMLOADFNSFLG)
                                           (RETURN (AND (ERSETQ (SETQ PRTYX (EVAL PRTYX)))
                                                        PRTYX]
          (RETURN (if (AND REMOVECOMMENTS (LISTP PRTYX))
                      then [SUBSET PRTYX (FUNCTION (LAMBDA (X)
                                                     (OR (NLISTP X)
                                                         (NEQ (CAR X)
                                                              COMMENTFLG]
                    else PRTYX])

(ENDFILE
  [LAMBDA (FILE)                                                    (* wt%: "10-SEP-78 13:54")
    (PRINT 'STOP FILE)
    (CLOSEF FILE])

(MAKEDEFLIST
  [LAMBDA (X PROP FLG)                                              ; Edited 11-Feb-87 11:10 by bvm:
    (for Z in X bind TEM do (COND
                               [[AND (LITATOM Z)
                                     (SETQ TEM (SOME (GETPROPLIST Z)
                                                     [FUNCTION (LAMBDA (X)
                                                                 (EQ X PROP]
                                                     'CDDR]
                                (PRETTYVAR1 'PUTPROPS (LIST Z PROP)
                                       (CADR TEM)
                                       (OR (EQ PROP 'EXPR)
                                           (MEMB PROP MACROPROPS]
                               ((NULL FLG)                          ; PROP command
                                (EXEC-FORMAT "(no ~S property for ~S)~%%" PROP Z])

(PP
  [NLAMBDA X                                                        (* lmm "15-Nov-86 00:54")
    (DECLARE (LOCALVARS . T))
    (MAPC (NLAMBDA.ARGS X)
          (FUNCTION (LAMBDA (NAME)
                      (for TYPE in (TYPESOF NAME NIL '(FIELDS)
                                          'CURRENT)
                         do (CL:FORMAT *TERMINAL-IO* "~A definition for ~S:~%%" TYPE NAME)
                            (SHOWDEF NAME TYPE])

(PP*
  [NLAMBDA X                                                        (* lmm "14-Aug-84 19:11")
    (DECLARE (LOCALVARS . T))

    ;; Prettyprints definitions to terminal with comments not suppressed.

    (LET [(**COMMENT**FLG NIL)
          (*STANDARD-OUTPUT* (GETSTREAM T 'OUTPUT]
         (DECLARE (SPECVARS **COMMENT**FLG *STANDARD-OUTPUT*))
         (PRETTYPRINT (NLAMBDA.ARGS X])

(PPT
  [NLAMBDA X                                                        (* lmm "14-Aug-84 19:12")
    (DECLARE (LOCALVARS . T))

    ;; Prettyprints definitions to terminal with clisp translations shown.

    (LET [(*STANDARD-OUTPUT* (GETSTREAM T 'OUTPUT]
         (DECLARE (SPECVARS *STANDARD-OUTPUT*))
         (RESETVARS ((PRETTYTRANFLG T))
                    (RETURN (PRETTYPRINT (NLAMBDA.ARGS X])

(PRETTYPRINT
  [LAMBDA (FNS PRETTYDEFLG FNSLST)                                       ; Edited 11-Feb-87 11:11 by bvm:

    ;; PRETTYDEFLG is supplied when called from PRINTFNS.  it is either a paatial file map or T, so that it is also used as a flag for whether you are
    ;; being called from prettydef.

    ;; Note that prettyprint does all of its printing to standard output file and using current readtable.  it assumes that higher functions have set these
    ;; appropriately, as is the case when called from prettydef, pp, pp*,

    (RESETLST
        [RESETSAVE NIL (LIST (FUNCTION DSPFONT)
                             (DSPFONT)
                             (GETSTREAM NIL 'OUTPUT]
        (PROG ((CLK (CLOCK 0))
               (NEWADRLST (LISTP PRETTYDEFLG))
               [FILEFLG (NOT (DISPLAYP (OUTPUT]
               FN DEF ADR LST SKIPPEDLST TEM)                            ; NEWADRLST Corresponds to the current entry on
                                                                         ; NEWFILEMAP.  Is in TCONC format.
              [COND
                 ((ATOM (SETQ LST FNS))
                  (SETQ LST (EVALV FNS]
          LP  (COND
                 ((NLISTP LST)
                  (RETURN FNS))
                 ((AND FILEFLG (IGREATERP (CLOCKDIFFERENCE CLK)
                                      30000))                            ; Every 30 seconds say what function we're working on
                  (SETQ CLK (CLOCK 0))
                  (PRIN2 (CAR LST)
                         T T)
                  (PRIN1 '", " T)))
              (SETQ FN (CAR LST))
              (TERPRI)                                                   ; The initial TERPRI is not in map
              [AND NEWADRLST (TCONC NEWADRLST (LIST FN (GETFILEPTR PRTTYFILE]
                                                                         ; Address of start.
          LP1 (SETQ DEF (VIRGINFN FN))
              (AND PRETTYDEFLG (SELECTQ (ARGTYPE DEF)
                                   (1 (SETQ NLAMLST (CONS FN NLAMLST)))
                                   (2 (SETQ LAMALST (CONS FN LAMALST)))
                                   (3 (SETQ NLAMALST (CONS FN NLAMALST)))
                                   (NIL (SETQ LAM?LST (CONS FN LAM?LST)))
                                   NIL))                                 ; So prettydef can add the appropriate DECLARE:
              [COND
                 [(NULL DEF)
                  (COND
                     ((AND (NULL PRETTYDEFLG)
                           FN
                           (BOUNDP FN))                                  ; No fn definition, but is a variable.  Only make this check when
                                                                         ; called via PP or PP*
                      (PRINTDEF (EVALV FN)
                             2))
                     (T (GO NOPRINT]
                 ((NULL (EXPRP DEF))
                  (GO NOPRINT))
                 (T (AND ADDSPELLFLG (ADDSPELL FN))
                    (COND
                       ((AND PRETTYDEFLG SOURCEFILE (NULL SOURCEFILENV)
                             [NULL (SELECTQ REPRINTFNS
                                       (ALL T)
                                       ((T EXPRS)
                                            (EXPRP FN))
                                       (AND (LISTP REPRINTFNS)
                                            (FMEMB FN REPRINTFNS]
                             (PRETTYPRINT1 FN))                          ; Was a fn to be copied from old file, and we succeeded

                        )
                       (T                                                ; Prettyprint afresh
                          (PRETTYPRINT3 FN DEF PRETTYDEFLG]
          DEFPRINTED

;;; At this point we have prettyprinted FN one way or another

              (AND NEWADRLST (RPLACD (CDADR NEWADRLST)
                                    (GETFILEPTR PRTTYFILE)))             ; Store end address
              (TERPRI)                                                   ; TERPRI is not included in map address
              (SETQ LST (CDR LST))
              (GO LP)
          NOPRINT
              (COND
                 ((AND FILEFLG SOURCEFILE (PRETTYPRINT1 FN))
                  (GO DEFPRINTED))
                 ((AND (NULL PRETTYDEFLG)
                       (SETQ TEM (EDITLOADFNS? FN)))                     ; only make this check when called from PP or PP*
                  (LOADFNS FN TEM 'PROP)
                  (COND
                     ((GETPROP FN 'EXPR)
                      (GO LP1)))
                  (PRINT (CONS FN '(not found))
                         T T))
                 ((AND DWIMFLG (NULL DEF)
                       (SETQ TEM (MISSPELLED? FN 70 USERWORDS (AND PRETTYDEFLG T)
                                        LST))
                       (NEQ TEM FN))
                  (/RPLACA LST (SETQ FN TEM))
                  (AND NEWADRLST (FRPLACA (CADR NEWADRLST)
                                        FN))                      ; Fixes filemap.
                  (AND PRETTYDEFLG (SETQ PRTTYSPELLFLG T))
                  (GO LP1)))
              (EXEC-FORMAT "(~S not printable)~%%" FN)
              (AND LISPXHISTORY (LISPXPUT '*ERROR* FN NIL (CAAR LISPXHISTORY)))
              (COND
                 (NEWADRLST (SETQ TEM (NLEFT (CAR NEWADRLST)
                                             2))
                        (RPLACD TEM)
                        (RPLACD NEWADRLST TEM)))
          LP3 (SETQ LST (CDR LST))
              (GO LP)))])
```

(**PRETTYPRINT1**

```
  [LAMBDA (FN)                                                    (* bvm%: "30-Aug-86 17:25")
```

;;; Like BRECOMPILE1. Obtains FN from SOURCEFILE. works whether the file has previously been mapped by PRETTYDEF, LOAD, or LOADFNS
;;; (or patially mapped)

```
    (WITH-READER-ENVIRONMENT (OR SOURCEFILENV DESTINATIONENV)
        [PROG (ADR TEM)
             (COND
                ((NULL OLDFILEMAP)
                 (GO DEFQLP))
                ((PRETTYPRINT2 FN)
                 (RETURN FN))
                ((NULL (CAR OLDFILEMAP))
                 (RETURN NIL)                                     ; The entire file has been scanned.

                 )
                (T (GO FNLP)                                      ; Already inside of DEFINEQ.

                   ))
        DEFQLP
                                                                  ; Find DEFINEQ
             (SELECTQ (SETQ TEM (RATOM SOURCEFILE))
                 ((STOP NIL)                                      ; End of file reached.
                      (SETQ OLDFILEMAP (CONS NIL OLDFILEMAP))     ; Just to inform future calls to PRETTYPRINT1 not to bother
                                                                  ; scanning.
                      (RETURN NIL))
                 (%( [COND
                        ((EQ (SETQ TEM (RATOM SOURCEFILE))
                             'DEFINEQ)
                         (COND
                            ((NULL OLDFILEMAP)
                             (SETQ OLDFILEMAP (LIST T))

                             ;; In case functionis found right off, OLDFILEMAP must not be left as NIL or else next call to PRETTYPRINT1
                             ;; will not realize are alredy inside of DEFINEQ.

                             ))
                         (GO FNLP))
                        (T (SKREAD SOURCEFILE '%(])
                 (SKREAD SOURCEFILE TEM))
             (GO DEFQLP)
        FNLP
             (SELECTQ (SETQ TEM (RATOM SOURCEFILE))
                 (%)                                              ; End of DEFINEQ.
                     (GO DEFQLP))
                 ((%( %[)
                     NIL)
                 (SCANFILEHELP))
             (SETQ ADR (SUB1 (GETFILEPTR SOURCEFILE)))
             (SETQ TEM (RATOM SOURCEFILE))
             (SETFILEPTR SOURCEFILE ADR)
             (SKREAD SOURCEFILE)
             (COND
                ((EQ TEM FN)
                 (PRETTYPRINT2 FN ADR (GETFILEPTR SOURCEFILE))   ; copies the bytes.
                 (RETURN FN))
                (T (SETQ OLDFILEMAP (CONS (CONS TEM (CONS ADR (GETFILEPTR SOURCEFILE)))
                                          OLDFILEMAP))

                   ;; Note that this situation only occurs when (a) the entire file was not peviously scanned, e.g. if loaded with buildmapflg off,
                   ;; and (b) user is doing a remake, and (c) this functio was either dumped directly because it was changed, or else it has been
                   ;; deleted from the FNS. The function is added to OLDFILEMAP just in case it is out of order.

                   (GO FNLP])])
```

(**PRETTYPRINT2**

```
  [LAMBDA (FN FROM TO)                                            (* bvm%: "30-Aug-86 18:13")
```

```
    ;; Copies function from sourcefile to prettyfile.  looking it up on the map when not already given address.  returns nil if not there
    (PROG (TEM)
          (COND
             (FROM)
             ([for X in OLDFILEMAP thereis (COND
                                               ((NLISTP X)
                                                NIL)
                                               ((EQ (CAR X)
                                                    FN)

                                                ;; occurs when remaking a file without a map, and a function is previously skipped that later
                                                ;; is needed.

                                                (SETQ TEM X))
                                               ((LISTP (CDDR X))
                                                (SETQ TEM (FASSOC FN (CDDR X]
              (SETQ FROM (CADR TEM))
              (SETQ TO (CDDR TEM)))
             (T (RETURN NIL)))
          (SETFILEPTR SOURCEFILE FROM)
          (RATOM SOURCEFILE)

     ;; The RATOM skips the paren.  the reason for the RATOM instead of simply setting file ptr to (ADD1 FROM) is that there may be font info there.

          (COND
             ((NEQ FN (SETQ TEM (READ SOURCEFILE)))                       ; Consistency check.
              (LISPXPRINT (CONS FN TEM)
                     T)
              (ERROR '"filemap does not agree with contents of" SOURCEFILE T)))
          (if (NULL SOURCEFILENV)
              then                                                         ; compatible environments, just copy characters
                   (COPYCHARS SOURCEFILE PRTTYFILE FROM TO)
            else                                                           ; incompatible, have to read old def and reprettyprint
                 (SETQ TEM (READ SOURCEFILE))                              ; old definition
                 (WITH-READER-ENVIRONMENT DESTINATIONENV (PRETTYPRINT3 FN TEM T)))
                                                                           ; Initial and final TERPRI's are done by callers;  they are not in
                                                                           ; map.
          (RETURN FN])
```

## (PRETTYPRINT3

```
  [LAMBDA (FN DEF PRETTYDEFLG)                                             (* bvm%: "30-Aug-86 17:18")
    (LET (TEM)
         (AND (OR (SELECTQ CLISPIFYPRETTYFLG
                      ((T EXPRS)
                           (EXPRP FN))
                      (ALL T)
                      (CHANGES (AND PRETTYDEFLG (MEMB FN CHANGES)))
                      (MEMB FN CLISPIFYPRETTYFLG))
                  (AND (SUPERPRINTEQ (CAR (SETQ TEM (CADDR DEF)))
                              COMMENTFLG)
                       (EQ (CADR TEM)
                           'DECLARATIONS%:)
                       (MEMB 'CLISPIFY TEM)))
              (SETQ DEF (CLISPIFY DEF)))

         ;; If the function is stored on property list, only clispify if user specifically said MAKEFILE (file CLISPIFY), otherwise, assume that functions
         ;; on property list have already been clispified

         (COND
            ((AND LAMBDAFONT FONTCHANGEFLG)
             (PRIN1 '%()

             ;; The font change is after the paren because of problems with updating filemaps when moving back and forth between -10 and -D
             ;; systems--rmk

             (CHANGEFONT LAMBDAFONT)
             (PRIN2 FN)
             (CHANGEFONT DEFAULTFONT)
             (TERPRI))
            (T (PRIN1 '%()
               (PRINT FN)))
         (PRINTDEF DEF 2 'FNS NIL FNSLST)
         (PRIN1 '%))
         FN])
```

## (PRINTDEF1

```
  [LAMBDA (EXPR FORMFLG)

    ;; Edited 19-Jan-2022 20:35 by rmk: Added DEFMACRO

    ;; Edited 16-Apr-2018 21:35 by rmk:

    ;; Edited 16-Apr-2018 10:14 by rmk:

    ;; Edited 14-Apr-88 18:21 by bvm

    ;; RMK: Special for DEFUNs: build filemap as per PRINTFNS

    ;; Used by MAKEFILE to print P, etc expressions.

    (TERPRI)
    (LET (STARTPOS ENDPOS)
        (IF [AND FORMFLG NEWFILEMAP (MEMB (CAR EXPR)
                                          '(CL:DEFUN DEFMACRO)]
            THEN (SETQ STARTPOS (GETFILEPTR PRTTYFILE)))
        (PRINTDEF EXPR NIL FORMFLG NIL FNSLST)
        [IF STARTPOS
            THEN (SETQ ENDPOS (GETFILEPTR PRTTYFILE))
                 (NCONC1 NEWFILEMAP (LIST STARTPOS ENDPOS (CONS (CADR EXPR)
                                                                (CONS STARTPOS ENDPOS]
        (TERPRI])
```

(**SUPERPRINTEQ**

```
  [LAMBDA (X Y)
    (OR (EQ X Y)
        (AND Y (EQ (CDR (FASSOC X PRETTYEQUIVLST))
                   Y])
```

(**SUPERPRINTGETPROP**

```
  [LAMBDA (ATM PROP)                                          (* wt%: "17-SEP-79 15:57")
    (OR (GETPROP (CDR (FASSOC ATM PRETTYEQUIVLST))
               PROP)
        (GETPROP ATM PROP])
```

(**CHANGEFONT**

```
  [LAMBDA (FONTCLASS FILE)                                    (* lmm "17-Jan-86 20:59")
```

;; for calls to changefont when not under prettyprin prettydef. This is only for non-D systems. For D, DSPFONT is moved'ed in.

;; Don't bother testing for FONTCHANGEFLG=ALL, because presumably the FONTCLASS will have a NULL entry if display printing isn't wanted.
;; FONTCHANGEFLG=ALL tests are really only needed if something expensive can be avoided by advance knowledge.

```
    (AND FONTCHANGEFLG FONTCLASS (DSPFONT FONTCLASS FILE])
)

(DEFINEQ
```

(**READARRAY**

```
  [LAMBDA (SIZE TYPE ORIG)                                    (* rrb " 4-JUL-80 17:07")
```

;; type is one of: POINTER, FIXP, SMALLPOSP BYTE DOUBLEPOINTER or a number which is the place (between 0 and SIZE) where FIXPs stop
;; and POINTERs begin.

```
    (PROG (X (A (ARRAY SIZE TYPE NIL ORIG))
             M DELTA)
      LP  (COND
             ((NEQ (READC)
                   '%()
              (GO LP)))
          (SETQ M 1)
          (SETQ DELTA (SUB1 (OR ORIG 1)))
      LP1 (COND
             ((NOT (IGREATERP M SIZE))
              (SETA A (IPLUS M DELTA)
                    (READ))
              (SETQ M (ADD1 M))
              (GO LP1))
             ((NULL (READ))
```

;; PRINTARRAY writes a NIL if there are no elements in the array for which the left half must be set using SETD, otherwise it writes a
;; T.

```
              (GO OUT)))
          [SETQ M (COND
                     ((NUMBERP TYPE)
                      (ADD1 TYPE))
                     ((EQ TYPE 'DOUBLEPOINTER)
                      1)
                     (T (SHOULDNT]
      LP2 (COND
             ((NOT (IGREATERP M SIZE))
              (SETD A (IPLUS M DELTA)
                    (READ))
              (SETQ M (ADD1 M))
              (GO LP2)))
      OUT (READ)                                              ; Reads the final right parentheses surrounding the elements of
                                                              ; the array.
          (RETURN A])
```

(**PRINTARRAY**

```
  [LAMBDA (V)                                                 (* bvm%: " 3-Oct-86 12:57")
                                                              ; Used by prettydef.  Included in ABASIC because it uses LOC
                                                              ; and VAG on the 10
    (PROG (A N M TYPE FLG DOUBLEFLG ORIG)
          [COND
             [[AND (LITATOM V)
                   (ARRAYP (SETQ A (EVALV V 'PRINTARRAY]
              (PRINT `(SETQ ,V (READARRAY ,(SETQ N (ARRAYSIZE A))
                                       ',(SETQ TYPE (ARRAYTYP A))
                                       ,(SETQ ORIG (ARRAYORIG A]
             ((ARRAYP V)                                           ; Just dumps the element expression--assumes that
                                                              ; READARRAY has already been written
              (SETQ A V)
              (SETQ N (ARRAYSIZE A))
              (SETQ TYPE (ARRAYTYP A))
              (SETQ ORIG (ARRAYORIG A)))
             (T (RETURN (HELP V "not array"]
          (PRIN1 '%()
          (SETQ DOUBLEFLG (OR (EQ TYPE 'DOUBLEPOINTER)
                              (NUMBERP TYPE)))                     ; note if this array has different ELTD.
          (SETQ M 1)
      LP  (COND
             ((NOT (IGREATERP M N))
              (COND
                 [(OR (EQ TYPE 'POINTER)
                      DOUBLEFLG)
                  (PRINT (ELT A (SUB1 (IPLUS M ORIG]
                 (T                                                ; changed from PRINT to PRIN2 so would look better in file.
                    [PRIN2 (ELT A (SUB1 (IPLUS M ORIG]
                    (SPACES 1)))

              ;; check for any non-NIL entries in the ELTD part of the double arrays.  If there are none, format for print out avoids lots of NILs.

              (AND DOUBLEFLG (COND
                                ((NUMBERP TYPE)                    ; check for M being in the double pointer part of the array
                                 (IGREATERP M TYPE))
                                (T T))
                   (ELTD A (SUB1 (IPLUS M ORIG)))
                   (SETQ FLG T))
              (SETQ M (ADD1 M))
              (GO LP))
             ((NULL (PRINT FLG))                                   ; if FLG is NULL, there are non-NIL double word entries.
              (GO OUT)))
          [SETQ M (COND
                     ((EQ TYPE 'DOUBLEPOINTER)                     ; all entries are double
                      1)
                     ((NUMBERP TYPE)                               ; first TYPE elements in the array are numbers
                      (ADD1 TYPE]
      LP1 (COND
             ((NOT (IGREATERP M N))
              [PRINT (ELTD A (SUB1 (IPLUS M ORIG]
              (SETQ M (ADD1 M))
              (GO LP1)))
      OUT (PRIN1 '%))
          (RETURN A])
```

(**READARRAY-FROM-LIST**

```
  [LAMBDA (SIZE TYPE ORIG ELEMENTS)                             ; Edited 10-Feb-87 17:59 by Pavel

;;; This is not written in the most straightforward way possible.  Rather, in order to minimize the possibility of destabilization, we have kept this as much
;;; like READARRAY as possible.  In essence, the only change is to use POP instead of READ.

    ;; type is one of: POINTER, FIXP, SMALLPOSP BYTE DOUBLEPOINTER or a number which is the place (between 0 and SIZE) where FIXPs stop
    ;; and POINTERs begin.

    (PROG (X (A (ARRAY SIZE TYPE NIL ORIG))
             M DELTA)
   LP  (SETQ M 1)
       (SETQ DELTA (SUB1 (OR ORIG 1)))
   LP1 (COND
          ((NOT (IGREATERP M SIZE))
           (SETA A (IPLUS M DELTA)
                 (pop ELEMENTS))
           (SETQ M (ADD1 M))
           (GO LP1))
          ((NULL (pop ELEMENTS))

           ;; PRINTARRAY writes a NIL if there are no elements in the array for which the left half must be set using SETD, otherwise it writes a
           ;; T.

           (GO OUT)))
       [SETQ M (COND
                  ((NUMBERP TYPE)
                   (ADD1 TYPE))
                  ((EQ TYPE 'DOUBLEPOINTER)
                   1)
                  (T (SHOULDNT]
   LP2 (COND
          ((NOT (IGREATERP M SIZE))
           (SETD A (IPLUS M DELTA)
                 (pop ELEMENTS))
           (SETQ M (ADD1 M))
           (GO LP2)))
   OUT (RETURN A])
```

(**PRINTARRAY-TO-LIST**

```
  [LAMBDA (V)                                                         ; Edited 10-Feb-87 18:09 by Pavel
```

;;; This code is not written in the most straighforward way possible. Rather, to minimize the possibility of destabilization, we attempt to make it as much
;;; like PRINTARRAY as we can. In essence, the only changes are to PUSH the elements onto RESULT instead of printing them. At the end, we return
;;; the reversal of RESULT.

```
    (PROG ((RESULT NIL)
           A N M TYPE FLG DOUBLEFLG ORIG)
          [COND
             ((ARRAYP V)
              (SETQ A V)
              (SETQ N (ARRAYSIZE A))
              (SETQ TYPE (ARRAYTYP A))
              (SETQ ORIG (ARRAYORIG A)))
             (T (RETURN (HELP V "not array"]
          (SETQ DOUBLEFLG (OR (EQ TYPE 'DOUBLEPOINTER)
                              (NUMBERP TYPE)))                        ; note if this array has different ELTD.
          (SETQ M 1)
      LP  (COND
             ((NOT (IGREATERP M N))
              [push RESULT (ELT A (SUB1 (IPLUS M ORIG]

              ;; check for any non-NIL entries in the ELTD part of the double arrays.  If there are none, format for print out avoids lots of NILs.

              (AND DOUBLEFLG (COND
                                ((NUMBERP TYPE)                       ; check for M being in the double pointer part of the array
                                 (IGREATERP M TYPE))
                                (T T))
                   (ELTD A (SUB1 (IPLUS M ORIG)))
                   (SETQ FLG T))
              (SETQ M (ADD1 M))
              (GO LP)))
          (push RESULT FLG)
          (COND
             ((NULL FLG)                                              ; if FLG is NULL, there are non-NIL double word entries.
              (GO OUT)))
          [SETQ M (COND
                     ((EQ TYPE 'DOUBLEPOINTER)                        ; all entries are double
                      1)
                     ((NUMBERP TYPE)                                  ; first TYPE elements in the array are numbers
                      (ADD1 TYPE]
      LP1 (COND
             ((NOT (IGREATERP M N))
              [push RESULT (ELTD A (SUB1 (IPLUS M ORIG]
              (SETQ M (ADD1 M))
              (GO LP1)))
      OUT (RETURN (REVERSE RESULT])
)

(DECLARE%: DONTCOPY

(DECLARE%: EVAL@COMPILE

(PUTPROPS CHANGFONT MACRO (= . DSPFONT))
)
)
```

;; COPYRIGHT

```
(DEFINEQ
```

(**PRINTCOPYRIGHT**

```
  [LAMBDA (FILENAME)                                                  ; Edited 11-Sep-2021 09:07 by larry
                                                                      ; Edited 31-Aug-99 09:01 by rmk:
                                                                      (* edited%: " 1-Jan-85 20:16")
```

;;; CALLED BY PRETTYDEF TO PUT a copyright notice on a file. The globalvar COPYRIGHTOWNERS is used to determine the possible copyright
;;; owners when it is determined the file doesn't have a copyright yet and has never been asked if the programmer wanted one. The whole copyright
;;; mechanism can be turned off by setting COPYRIGHTFLG to NEVER -- originaly NIL. If the file is copyrighted, any year the file is editted the new year
;;; is tacked on to the list of copyright years. The copyright notice comes immediately after the FILECREATED expression

;; 9/10/2021 LMM: Add COPYRIGHTFLG value PRESERVE meaning no new copyright (or year) but retain old

```
    (PROG [(OWNER (GETPROP FILENAME 'COPYRIGHT]
          (AND [OR OWNER
                   (AND COPYRIGHTFLG (NEQ COPYRIGHTFLG 'PRESERVE)
                        (SETQ OWNER
                         (ASKUSER (if (EQ COPYRIGHTFLG 'DEFAULT)
                                      then 0
                                    else DWIMWAIT)
                                (CONSTANT (CHARACTER (CHARCODE LF)))
                                (CONCAT "Copyright owner for file " FILENAME ": ")
                                (NCONC [MAPCAR COPYRIGHTOWNERS (FUNCTION (LAMBDA (X)
                                                                           (LIST (CAR X)
                                                                                 ""
                                                                                 'EXPLAINSTRING
                                                                                 (CONCAT (CAR X)
                                                                                         " - "
```

```
                                                                                                         (CADR X))
                                                                                                 'RETURN
                                                                                                 (CADR X)
                                                                                                 'CONFIRMFLG T]
                                                 (CONS (if (SETQ OWNER (ASSOC DEFAULTCOPYRIGHTOWNER COPYRIGHTOWNERS))
                                                          then (LIST (CONSTANT (CHARACTER (CHARCODE LF)))
                                                                      (CONCAT DEFAULTCOPYRIGHTOWNER "
                                                                             ")
                                                                      'EXPLAINSTRING
                                                                      (CONCAT "<LF> - " (CADR OWNER)
                                                                             " [Default]")
                                                                      'NOECHOFLG T 'RETURN (CADR OWNER))
                                                        else '(%
"No copyright notice now
" EXPLAINSTRING "<LF> - no copyright notice now [Default]" NOECHOFLG T RETURN NIL))
                                                       DEFAULTCOPYRIGHTKEYLST))
                                          T T))
                                  (/PUTPROP FILENAME 'COPYRIGHT (SETQ OWNER (LIST OWNER]
                         (COND
                            ((NEQ (CAR OWNER)
                                  'NONE)
                             (PROG ((CURRENTYEAR (SUBATOM (DATE (DATEFORMAT YEAR.LONG NO.TIME))
                                                        -4 -1)))

                                   ;; see github Interlisp/medley issue #207  (lmm 9/11/2021)

                                   (OR (EQ COPYRIGHTFLG 'PRESERVE)
                                       (MEMBER CURRENTYEAR (CDR OWNER))
                                       (NCONC1 OWNER CURRENTYEAR)))
                             (PRINTCOPYRIGHT1 OWNER])
```

## (PRINTCOPYRIGHT1

```
  [LAMBDA (OWNER)                                                   ; Edited 21-Feb-2021 10:58 by rmk:
                                                                    ; Edited  6-Apr-90 10:36 by jds
    (PROG ((DATES (CDR OWNER))
           (SEMICOLON (AND (READTABLEPROP *READTABLE* 'COMMONLISP)
                           "; "))
           (PRIVATE NIL))
          (COND
             ((EQ (CAR DATES)
                  T)
              (SETQ PRIVATE T)
              (pop DATES)))
          (COND
             (SEMICOLON                                             ; do CommonLisp style comment
                    (PRIN1 SEMICOLON))
             (T                                                     ; Print IL-style comment, with a ; in it so the pretty printer will
                                                                    ; render it as a CL-style comment.
                (printout NIL "(* ; %"" T)))
          (PRIN3 "Copyright (c) ")
          [for Y START END on DATES do                              ; print years of copyright, e.g., 1985, 1986. Print intervals for
                                                                    ; successive years
                                       (SETQ START (SETQ END (CAR Y)))
                                       (FOR NEXT IN (CDR Y) WHILE (EQ (ADD1 END)
                                                                      NEXT)
                                          DO (SETQ END NEXT)
                                             (POP Y))
                                       (PRIN3 START)
                                       (CL:UNLESS (EQ START END)
                                           (PRIN3 "-")
                                           (PRIN3 END))
                                       (COND
                                          ((CDR Y)
                                           (PRIN3 ", "]
          (PRIN3 " by ")
          (PRIN3 (CAR OWNER))
          (PRIN3 ".")
          (AND COPYRIGHTSRESERVED (PRIN3 "  All rights reserved."))
          (TERPRI)
          [COND
             (PRIVATE (for LINE in (CONS (CONCAT "The following program was created in " (CAR DATES)
                                                " but has not been published")
                                         '("within the meaning of the copyright law, is furnished under
                                            license," "and may not be used, copied and/or disclosed except in
                                                  accordance" "with the terms of said license."))
                             do (COND
                                   (SEMICOLON (PRIN1 SEMICOLON)))
                                (PRIN3 LINE)
                                (TERPRI]
          (COND
             ((NOT SEMICOLON)
              (PRIN3 "%")")
              (TERPRI)))
          (TERPRI])
```

## (SAVECOPYRIGHT

```
  [LAMBDA (FILENAME)                                                    (* lmm "25-DEC-82 16:48")

     ;; Called from PRETTYDEF to save copyright info on end of file

     (AND (NEQ COPYRIGHTFLG 'NEVER)
          (PROG (X)
                (COND
                   ((SETQ X (GETPROP FILENAME 'COPYRIGHT))
                    (PRINT (LIST 'PUTPROPS FILENAME 'COPYRIGHT X])
)

(DECLARE%: DONTEVAL@LOAD DOEVAL@COMPILE DONTCOPY

(BLOCK%: NIL PRINTCOPYRIGHT PRINTCOPYRIGHT1 SAVECOPYRIGHT (LOCALVARS . T)
       (NOLINKFNS PRINTCOPYRIGHT1))
)

(DECLARE%: DOEVAL@COMPILE DONTCOPY

(GLOBALVARS COPYRIGHTFLG COPYRIGHTOWNERS DEFAULTCOPYRIGHTKEYLST DEFAULTCOPYRIGHTOWNER COPYRIGHTSRESERVED)
)

(RPAQ? COPYRIGHTFLG )

(RPAQ? DEFAULTCOPYRIGHTOWNER )

(RPAQ? COPYRIGHTPRETTYFLG T)

(RPAQ? COPYRIGHTOWNERS )

(RPAQ? DEFAULTCOPYRIGHTKEYLST
       '((NONE "
              " EXPLAINSTRING "NONE - No copyright ever on this file" CONFIRM T RETURN 'NONE)
         [%[ "owner: " EXPLAINSTRING "[ - new copyright owner -- type one line of text" NOECHOFLG T KEYLST
             ((ŸŸ "
                 " RETURN (SUBSTRING (CADR ANSWER)
                                 2 -2]
         (%] "No copyright notice now
             " EXPLAINSTRING "] - no copyright notice now" NOECHOFLG T RETURN NIL)))

(RPAQ? COPYRIGHTSRESERVED T)

(RPAQ? *NEW-INTERLISP-MAKEFILE-ENVIRONMENT* '(:READTABLE "INTERLISP" :PACKAGE "INTERLISP" :FORMAT :XCCS))

(RPAQ? *DEFAULT-MAKEFILE-ENVIRONMENT* )

(DECLARE%: DOEVAL@COMPILE DONTCOPY

(GLOBALVARS COPYRIGHTOWNERS DEFAULTCOPYRIGHTKEYLST COPYRIGHTPRETTYFLG COMMENTFLG *DEFAULT-MAKEFILE-ENVIRONMENT*
       *NEW-INTERLISP-MAKEFILE-ENVIRONMENT*)
)

(RPAQ? COMMENTFLG '*)

(RPAQ? **COMMENT**FLG '"  **COMMENT**  ")

(RPAQ? PRETTYFLG T)

(RPAQ? %#RPARS 4)

(RPAQ? CLISPIFYPRETTYFLG )

(RPAQ? PRETTYTRANFLG )

(RPAQ? FONTCHANGEFLG )

(RPAQ? CHANGECHARTABSTR )

(RPAQ? PRETTYTABFLG T)

(RPAQ? DECLARETAGSLST '(COMPILERVARS COPY COPYWHEN DOCOPY DOEVAL@COMPILE DOEVAL@LOAD DONTCOPY DONTEVAL@COMPILE
                             DONTEVAL@LOAD EVAL@COMPILE EVAL@COMPILEWHEN EVAL@LOAD EVAL@LOADWHEN FIRST
                             NOTFIRST))

(RPAQ? AVERAGEVARLENGTH 4)

(RPAQ? AVERAGEFNLENGTH 5)

(RPAQ? %#CAREFULCOLUMNS 0)

(RPAQ? CHANGECHAR '%|)

(RPAQ? ENDLINEUSERFN )

(RPAQ? PRETTYDEFMACROS )

(RPAQ? PRETTYPRINTMACROS )
```

```
(RPAQ? PRETTYEQUIVLST )

(RPAQ? PRETTYPRINTYPEMACROS )

(RPAQ? FILEPKGCOMSPLST '(DECLARE%: SPECVARS LOCALVARS GLOBALVARS PROP IFPROP P VARS INITVARS ADDVARS
                                APPENDVARS FNS ARRAY E COMS ORIGINAL BLOCKS *))

(RPAQ? SYSPROPS
       '(PROPTYPE ALISTTYPE DELDEF EDITDEF PUTDEF GETDEF WHENCHANGED NOTICEFN NEWCOMFN PRETTYTYPE
               DELFROMPRETTYCOM ADDTOPRETTYCOM ACCESSFN ACS AMAC ARGNAMES BLKLIBRARYDEF BROADSCOPE CLISPCLASS
               CLISPCLASSDEF CLISPFORM CLISPIFYISPROP CLISPINFIX CLISPISFORM CLISPISPROP CLISPNEG CLISPTYPE
               CLISPWORD CLMAPS CODE CONVERT COREVAL CROPS CTYPE EDIT-SAVE EXPR FILE FILECHANGES FILEDATES
               FILEDEF FILEGROUP FILEHISTORY FILEMAP FILETYPE GLOBALVAR HISTORY I.S.OPR I.S.TYPE INFO LASTVALUE
               LISPFN MACRO MAKE NAMESCHANGED NARGS OLDVALUE OPD SETFN SUBR UBOX UNARYOP VALUE \DEF CLISPBRACKET
               TRYHARDER))

(DECLARE%: DONTEVAL@LOAD DOEVAL@COMPILE DONTCOPY

(BLOCK%: PRETTYPRINTBLOCK PRETTYPRINT PRETTYPRINT1 PRETTYPRINT2 (ENTRIES PRETTYPRINT)
       (SPECVARS FNSLST FILEFLG))
)

(DECLARE%: DOEVAL@COMPILE DONTCOPY

(GLOBALVARS DECLARETAGSLST LISPXPRINTFLG SYSPROPS FILEPKGCOMSPLST DWIMLOADFNSFLG PRETTYHEADER FILERDTBL
       PRETTYEQUIVLST PRETTYTRANFLG CLISPIFYPRETTYFLG LISPXHISTORY DWIMFLG USERWORDS COMMENTFLG)
)

(DECLARE%: EVAL@COMPILE DOCOPY

(CL:PROCLAIM '(CL:SPECIAL DEFAULTFONT LAMBDAFONT PRETTYCOMFONT COMMENTFONT **COMMENT**FLG PRETTYPRINTMACROS))
)

(DECLARE%: DOEVAL@COMPILE DONTCOPY

(FILESLOAD (IMPORT)
       FILEPKG)
)

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

(ADDTOVAR NLAMA PPT PP* PP)

(ADDTOVAR NLAML )

(ADDTOVAR LAMA )
)

(PUTPROPS PRETTY COPYRIGHT ("Venue & Xerox Corporation" T 1984 1985 1986 1987 1988 1989 1990 1999 2018 2023))
```

## FUNCTION INDEX

## VARIABLE INDEX

## MACRO INDEX