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DEFPROP TRACE
(LAMBDA L.)

(PROG (W X Y Z)

B (COND ((NULL L.) (RETURN Y)))

(SETQ X (SETQ Z (CAR L.)))

(COND ((NULL (CDR Z)) (GD B))

((EQ (CADR Z) (GUOTE TRACE.))

((MEMBER (CADR Z) (GUOTE (EXPR FEXPR SUBR FSUBR)))

(SETQ Z (CDDR Z))

(SETQ Z (CDDR Z))

(SETQ Z (CDDR Z))

(SETQ Y (NCONC Y (LIST X)))

(RPLACD (CDDR (SETQ W (GENSYM))) Z)

(RPLACD X
                                                                                                                                                   PAGE 1
                                                                                                                                     -LSUBR
                         W
(CONS
                            (QUOTE FEXPR)
                            CONS
                                (QUOTE LAMBDA)
(QUOTE (/-L+)
(NDONC
                                 NEONC
(LIST (SUBST W X (QUOTE PROG))
(QUOTE (/=8 /-C))
(LIST (SUBST W X (QUOTE PRINT))
(LIST (SUBST W X (QUOTE QUOTE))
(LIST (SUBST W X (QUOTE ENTERING) X))))
                                  CAPPEND
                                    ISUBST
                                        ((OR (EQ (CAR Z) (QUOTE FSUBR))

(EQ (CAR Z) (QUOTE FEXPR))

(QUOTE ((PRINT (SETQ /=C /=L))))
                                           QUOTE
                                            ((PRINT (SETQ /-B (EVAL (CONS (QUOTE LIST) /-L))))
                                              (PRINT (SEIN /- (PRINT (SEIN /- (PRINT (SEIN /- E))))
(COND ((NULL /-B) (GD /-E)))
(SEIN /-C (NCONC /-C
(SEIN /-C (NCONC /-C
(LIST (CONS (QUOTE QUOTE)
(LIST (CAR /-B))))))
                                 (SETW /-C )...

(SETW /-B (CDR /-B))

(GO /-D)))))

(LIST (QUOTE /-B)

(SUBST W X (LIST (QUOTE SETQ))

(LIST (QUOTE CONS)

(LIST (QUOTE QUOTE)

W)
                                               (LIST (SUBST W X (QUOTE PRINT))
(LIST (SUBST W X (QUOTE QUOTE))
                                               (SUBST W X (QUOTE (RETURN (PRINT /-B)))))) PAGE 1.1
               (CDR X)))))
(GO B)))
 FEXPR)
(DEEPROP UNTRACE
(LAMBDA (L)
(PROG (X Y)
                (X Y)
(COND ((NULL L) (RETURN Y)))
(SETQ X (CAR L))
(COND ((NULL (CDR X)) (GO D))
((EQ (QUOTE TRACE) (CADR X))
((RPLACD X (CDDR (CDDR (CDR X)))))
((SETQ X (CDDR X)) (GD C)))
(SETQ Y (CONS (CAR L) Y))
(SETQ L (CDR L))
 FEXPR)
((LAMBDA (IBASE) (MAPCAR (FUNCTION (LAMBDA (L) (EVAL (CONS (QUOTE DEFPROP) L)))) (EVAL (READ)))) (SETO L
(LAMBDA (G F) (PROG2 (G (QUOTE / ) 17) (READ) (G (QUOTE / ) 7)))

(FUNCTION (LAMBDA (L N) (EQ (EVAL (LIST (QUOTE ARRAY) L T N)) (F N))))

(FUNCTION (LAMBDA (N) (AND (NOT (MINUSP N))))

(APPEND (GET L (QUOTE (L N) (LIST (CAR T) (QUOTE PNAME)) (CADDR (SIORE (L N) (LIST (CAR T) (QUOTE PNAME)))))))))
([EBIT (LAMBDA (L) (PROG2 (PUTPROP (CADDR L) (SUBST (CAR L) (CADR L) (CADDR (SETO L (CADDR L)))) (CADR L)
 (GRINDEF
(UAMBDA (L) (PRUSE (FORM))

(GRINDEF
(UAMBDA (L) (ERR ((LAMBDA (H) (MAPC (FUNCTION (EAMBDA (F) (AND (TURPRI) (TURPRI) (SPRINT (LIST (QUOTE LINEL (S)))))
                                                                                                                ((SETO H (APPEND C H)))))
                                (QUOTE (EXPR FEXPR VALUE MAGROTT)))
  (F G H)

(AND (LESSP N CHRCT) | (LSH (*DIF LINEL N) -3) (LSH (*DIF LINEL CHRCT) -3))))

(PRINC (/ (*DIF N)))

(PRINC (/ (*DIF N)))

(AND (OR (LESSP (PEUS GODE PROG)))

(SETG F (EQ (CAR L))

(PRINC (QUOTE //1))

(PRINC (QUOTE //1))

(ERRSETIAND (MARR L)) (NOT (LESSP (MAXPAN (CDR L) CHRCT) N)))

(OR (ATOM
```

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D

```
(PROG NIL SET SET Q PAGE 1.2 | PAGE 1.2 | SERRE (LESSP (MAXPAN (LAST L) PAGE 1.2 (LAST L) CHRCT)
                                                                                              (PRINT (CAR L))

(PRINT (QUOTE / ))

(PRINT (CDR (SETQ L (CDR L))) G (GO A)))))
                                                                      (SETQ N CHRCT* (GAR L) (QUOTE (DEFPROP LABEL LAMBDA))))
                                                                      SPRINT (CAR L)

(SPRINT (CAR L)

(COND (SETO G (AND F (CAR L)) (ATOM (CAR L)))) (PLUS N 5)) (N))

(COND (SETO L (CDR L))) (ADD1 M)) ((ATOM L) (PLUS 4 M (FLAT (COND ((ATOM L) (ATOM L) (PRINC (QUOTE / /-/)) (PRIN1 L)) (RETURN (PRINC (QUOTE / )))

(COND (H (SETO H NL) (AND G (ATOM (CAR L)))) (TURPRI)))

(GOR (LESSP CHRCI N) (AND G (ATOM (CAR L))))
                                                                      (GO 81)
                    EXPR)
(MAXPAN (LAMBDA (L N) (PROG (G)
                                                                                     (G)
(SETB G D)
(SETB G (PLUS G (PANMAX (CAR L) N (COND ((NULL (SETD L (CDR L))) (A
((ATOM L) (PLUS M 4 (FL
(O)))
                                                                                     (AND (ATOM U) (RETURN G))
(GO A)))
**
                    EXPR)

(PANMAX (LAMBDA (L N M) (COND ((LESSP (PLUS M =1 (FLATSIZE L)) N) 1)

((OR (LESSP N 3) (ATOM L)) (ERR(GUOTE(50)))

((AND (NOT (ATOM (CDR L)))

(ATOM (CAR L))

(SETO N (DIFFERENCE N 1 (FLATSIZE (CAR L))))

(SETO L (CDR L))
                                                                                         ((MAXPAN & (SUB1 N))))
                   EXPR)

(GRIND1 (LAMBDA (L)

(PROG (Linel g tg tr th)

(SETS LINEL ±20)

(EVAL (CONS (GUOTE UWRITE) (AND (CDDR L) (LAST L))))

(EVAL (CONS (GUOTE UWRITE) (AND (CDDR L) (LAST L))))

(SETG th (SETG LINET 73))

(IGC RO)

A (COND ((LESSP (TURPRI)

(CAR(ERRSET(REMAINDER (PANMAX (SETG G (CAR (OR (ERRSET (REA INDER CONS (GUOT CHRCT O))))))
                                                                       (SETO LINCT 73)
(TYO 14)
(SETO CHRCT LINEL))
((TURPRI)))
(SPRINT G CHRCT U)
                                      (GD A)))
FEXPR)))(QUOTE EDIT)
(COND ((GET (QUOTE COMPILING) (QUOTE NOW))
                                                                                                                                                            PAGE 1.3
   (SET@ SCOUNT 0)
(DEFPROP GENSYM
(LAMBDA NIL
                     (MAKNAM
                        (APPEND
```

```
(EXPLODE (Q S))
(EXPLODE (SETO SCOUNT
                                                   (ADD1 SCOUNT))+++)
EXPR)
(SPECIAL
SCURSOR SC1 SIND SOB
SAM SVT SFF SSL SLP SRP SSP SPT SH SCR
SEF SCH STB SRO SCO)))
(DEFPROP MCONS
                 (L)
(COND (INULL (CDDR L)) (CADR L))
(F (LIST (@ CONS)
(CADR L)
(CONS (CAR L)
(CDBR L+)))+)
  MACRON
(LAMBDA (L) (CONS (QUOTE QUOTE)
                MACRO
(MAPC
(FUNCTION
(UAMBDA (X)
(SET
(GAR X)
       (CAR A)
(INTERN
(LIST (CAR NIL)
(W PNAME)
(LIST (CD)
                    (@ PNAME)
(LIST (CDDR (LSH (CADR X)
35)))))))
   (0 (ISTB 11) (SEF 12)
                        (SUF 12)
(SYT 13)
(SFE 14)
(SCR 15)
(SRR 177)
(SSP 40)
(SCD 54)
(SLP 50)
(SRP 51)
(SPT 56)
 (SETO SCURSOR NIL)
 (ARRAY SECCAR T 40)
 (ARRAY SCONDAR T 10)
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224 225

D

(ARRAY SCONDAR T 10)

(DEEPROP SCURLOC (LAMBDA (L) (CONS (Q CAR) (CDR L)))

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PAGE 1.4
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(COND ((EQ (SCURCON S) R)
(RETURN (CONS S (SCURCON C))))
(SETQ S (CDR S))
(GO LOOP)))
EXPR)
 (DEFPROP SDOWN
(LAMBDA (C)
(COND
       LIAND C
         (SCURLOG C)
(NOT (ATOM (SCUREXPR C))))
ICONS (SCUREXPR C) ()))
  EXPR
(DEEPROP SUP
(LAMBDA (C)
(COND ((NULL C) NIL)
((LAMBDA (X)
(COND ((AND X (SCURGON X))
 (DEFPROP SKILL
(LAMBDA (C)
(COND
       ((SCURLOC C)
(PROG
(CUR)
           COND
             ((SCURLOC (SETQ CUR (SRIGHT C)))
(RPLACD (RPLACA (SCURLOC C)
           (CDR ($CURLOC CUR)))

(RETURN C$)

((SETQ CUR ($LEFT C*))

(RETURN ($CURLOC CUR) NIL)

(RETURN ($RIGHT GUR)))

((SETQ CUR ($UP C*))

(RPLACA ($CURLOC CUR) NIL)

(RETURN CUR)))

RETURN NIL))))
 (DEEPROP SOPER
(LAMBDA (OP N)
(PROG (CUR)
(SETW CUR SCURSOR)
EOOP (COND ((AND (*GREAT (SETW N)
                                                                    (SUB1 N##
                EXPR.
(DEEPROP SR
(LAMBDA (L)
(SOPER (G SRIGHT)
(COND (L (CAR L))
(1)7))
 IDEEPROP SL
                 $L
(LAMBDA (L)
(SOPER (W SLEFT)
(COND (L (CAR L))
(1))))
 I BEEPROP SD
                 SD (LAMBDA (L) (SOPER (G SDOWN) (COND (L (CAR L)) (11)))
(DEEPROP SU
(LAMBDA (L)
(SOPER (W SUP)
(COND (L (CAR L))
(11)))
(DEEPROP SK
(LAMBDA (L)
(SOPER (@ SKILL)
(COND (L (CAR L))
(1)))
```

MACRO

(DEEPROP SLEFT (LAMBDA (C) (PROG

IR SI

LOOP

292 293

301 302

319 320

334 335

337 338

349 350

352 353

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(BEEPROP SCUREXPR (LAMBDA (L) (CONS (Q CAAR) (CDR L)))

(DEEPROP SCURCON (LAMBDA (L) (CONS (U CDR) (CDR L)))
MACRO)

(DERPROP SRIGHT
(LAMBDA (C)
(COND (IAND C (SCURLOC C+)
(CONS (SCURCON (SCURLOC C+)
(SCURCON C+))))

PAGE 1.5

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PAGE 1.6
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```
$S1
(LAMBDA (CMS C)
(COND ((OR (NULL CMS)
(NULL C))
                                                                  ((ICAR CMS) (CUR CMS)
                           EXPR)
  (DEBPROP SATM
(LAMBDA (CMS C)
                         (LAMBDA (CMS C)
(COND ([AND (SCURLOC C)
(EQUAL (CAR CMS)
(SCUREXPR C)))
(SS1 (CDR CMS)
(SRIGHT C))))
                           EXPR)
  (DEEPROP SLPR
(LAMBDA (CMS C)
(SS1 CMS (SDOWN C)))
 (BEEPROP SRPR
(EAMBDA (CMS C)
(COND ((NOT (SRIGHT C))
(SS1 CMS (SRIGHT (SUP C7)))))
  (DEEPROP SSEARCH2
(LAMBDA (CMS C)
(PROG (SC1)
A (COND ((SETG C
                     (SET@ C (SDDWN SC17) (GO A))
((SET@ C (SDDWN SC17) (GO A))
((SET@ C (SRIGHT SC1)) (GO A))
((SET@ C (SRIGHT (SUP SC1)))
(FOT A)))
(RETURN G)))
    EXPR:
| IDEEPROP SSEARCH1 | (LAMBDA () (PROG (CH CMS OP NAME CUR) | S1 (SETQ NAME (SETQ OP NIL)) | S2 (SETQ CH (READCH)) (COND ((EQ CH SAM) (GO SAM)) ((EQ CH SAP) (GO SEP)) ((EQ CH SSP) (GO SEP)) ((EQ CH SSP) (GO SSP)) ((MEMQ CH (LIST SCR SLF)) (GO SSP)) (SETQ NAME (CONS CH NAME)) | S3 (GO S2) | SLP(SETQ OP (Q SLPR)) (GO SSP) | (GO SSP) | STSETQ OP (Q SLPR)) (SSP(AND
   SSP (AND
NAME
(SETQ CMS
          (SETO CMS
(MCONS (READLIST (REVERSE NAME))
(Q $ATM)
CMS)))
[AND OP (SETO CMS (CONS OP CMS)))
  (GO S1)
SAM(AND
NAME
              ISETQ CMS
                             (MCONS (READLIST (REVERSE NAME))
(Q SATM)
(CMS)))
           (AND (SET@ CUR (SSEARCH2 (REVERSE CMS)
SCURSOR))
(SET@ SCURSOR CUR))
(RETURN (SCURLOC SCURSOR))))
EXPRY

IDEEPROP SGL
(LAMBDA (X)

(COND (IEG (CAR X) (G PNAME))

(G (((SNOT FOUNDS)))))

(IATOM (CADR X))

(SGL (CDDR X)))

($ (SET@ SIND (CAR X))

(LIST (CADR X)

(LIST (CADR X)))))
   IBEEPROP SYANK
ILAMBDA (O 1)
ISCURLOC ISETE
SCURSOR
              (COND
                 (COND (SETE SOB O))
                     COND
((SETQ SIND 1)
((LAMBDA (X)
(COND (X (LIST X (LIST X)))
((Q (((SNUT FOUNDS)))))))
(I (SETQ SIND NIU) (SGL (CDR 0))))
```

(BEFPROP SINSERT (LAMBDA (S C) (COND

EXPRY

COND

(INULE C)
(SRIGHT (SDOWN (LIST (LIST (LIST S)))**)

(ISCURCON C)
(COND

(ISCURLOC C)
(IRPLACA
(RPLAGD (SCURLOC C))
(CONS (CAR (SCURLOC C))))

S)

(SRIGHT C); (ISETO C (SWEFT C)) (RPWACD (SCURLOC C) (WIST ST) (SRIGHT (SRIGHT C))))))

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PAGE 1.8
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(LAMBDA (0 1)

(LAMBDA (X Y)

(COND ((ATOM X)

(PUTPROP X Y (COND (1) (SIND))))

((PROG2 (RPLACA X (CAR Y))
  (COND (O) (SOB))
(COND (SCURSOR (CAAR (LAST SCURSOR?)))))
EXER)
(DEFPROP SREMBREAK
(BAMBDA (N)
(LEAMBDA (L)
(GOND (L (RPEACA (CAR (CADDR L))
(STORE (SLOCAR N) NIL)
(STORE (SCONDAR N) NIL)
        T)+)
 (DEFPROP SRB
         OND

(NULL X)

(PROG (N A)

(SETQ N 7)

LOOP (COND ((SREMBREAK N)

(SETQ A (CONS N A))))

(COND ((MINUSP (SETQ N (SUB1 N))))

(RETURN A))

(GO LOOP))))
      ICOND
    ([MAPC (FUNCTION SREMBREAK) X99))
FEXPR
  (BEEPROP SSETBREAK
(LAMBDA 10 1 C N CND)
(PROG (PROGL)
(SSEW PROGL (COND (C (CAR C)))
(COND ((ATOM PROGL) (RETURN NIL)))
(SREMBREAK N)
                      ($REMBREAK N)
(RPLACA (RPLACA PROGL
(CONS N
(CAR PROGL)))
($TORE ($LOCAR N) (LIST I O C))
($TORE ($CONDAR N)
(COND ((NULL CND) T) (GND)))
(RETURN ($CURLOC $CURSOR))))
   (DEFPROP SBREAK
(LAMBDA (SE SAL)
((LAMBDA (SC)
((LAMBDA (SL) SCN)
(COND ((EVAL SCN SAL)
(SLISP (CAR SE)))
(CDR SE))))
        EXPRY
      (DEFPROP S
                           (LAMBDA (X SA) (EVAL (SBREAK X SA) SA))
      (DEFPROP SI
                           (LAMBDA (X) (SINSERT (CAR X)
SCURSOR))
                           FEXPR)
       (DEEPROP $S (LAMBDA () (SSEARCH1)) EXPR)
     (DEFPROP SY

(LAMBDA (L)

(COND ((NULL L) NIE)

((NULL (CDR L))

(SYANK (CAR L) NIE))

((SYANK (CAR L)

(CADR L)))))
      (DERPROP SF
(LAMBDA (L)
(COND ((NUEL L)
(SFILE NIE NIE))
((NUEL (CDR L))
(SFILE (CAR L) NIE†)
((SFILE (CAR L)
(CADR L))))
     IDEFPROP SC
(LAMBDA NIL
(SCURLOC
(LIAMBDA (X)
(ILIAMBDA (X)
(SETO SCURSOR (LIST X (LIST X)?))
(APPEND (SCUREXPR (LAST SCURSOR?)
NIL)?))
        (DEFPROP SB
(LAMBDA (L)
(SSETBREAK SOB
SIND
                                       SCURSOR
(COND (L (CAR L)) (0))
(COND ((AND L (CDR L))
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(I(LAMBDA (X)
(GOND ((ATOM X)
(Q (((SNOT FOUNDS)))))
(T (LIST X (LIST X)))))

PAGE 1.9

PAGE 1.10 (CADR LI) 600 601 602 603 605 606 607 608 612 613 614 615 616 617 618 619 622 FEXPR) (DEFPROP SLISP
(LAMBDA (NO)
(PROG (EX)
(PRINT (Q BREAK))
(PRINT (SCUREXPR SCURSOR))
LOOP
(TERPRI)
(SETQ EX (ERRSET (READ)))
(SCOND ((NULL EX) (GO LOOP)))
(SETQ EX (CAR EX))
(SETQ EX (ERRSET (EVAL EX)))
(COND ((NULL EX) (GO LOOP)))
(PRINC SSP)
(PRINT (CAR EX))
(GO LOOP)))
EXPR) (DEFPROP SP (LAMBDA () (RETURN NIL) + EXPR)