```
  (PROGN (PRIN1 (QUOTE FILE" CREATED ")
      T)
    (PRIN1 (QUOTE Ø8/22/68" 1522:26")
      T)
    (TERPRI T))
(DEFINEQ

(DOCTOR
  (LAMBDA NIL
    (PROG (SENTENCE KEYSTACK MEMSTACK TIMON)
          (SETSEPR 1Ø9 1Ø6 Ø)
          (SETBRK 14 12 31 1 13 8 9 27 26 3)
          (CONTROL T)
          (GCGAG NIL)
          (SETQ FLIPFLOP Ø)
          (SETQ TIMON (QUOTIENT (CLOCK)
              6Ø))
          (RECONSTRUCT (QUOTE (TELL ME YOUR PROBLEMS","
                  PLEASE TERMINATE INPUT WITH A PERIOD OR A
                  QUESTION MARK "."))
            T)
          (SETNONE)
      A   (PRIN1 (QUOTE "
*"))
          (COND
            ((NULL (SETQ SENTENCE (MAKESENTENCE)))
              (GO A)))
          (SETQ KEYSTACK (CDR SENTENCE))
          (SETQ SENTENCE (CAR SENTENCE))
          (COND
            ((EQUAL SENTENCE (QUOTE (GOODBYE)))
              (RETURN (RECONSTRUCT (APPEND (QUOTE (IT'S BEEN
                          MY PLEASURE"," THAT'S))
                    (CONS (PACK (LIST (QUOTE $)
                          (REMAINDER (PLUS (QUOTIENT
                                  (CLOCK)
                                6Ø)
                              (MINUS TIMON)
                              144Ø)
                            144Ø)
                          (QUOTE Ø)))
                      (QUOTE (PLEASE "."))))
                  T))))
          (ANALYZE)
          (GO A)
      )))
```

```
(MAKESENTENCE
  (LAMBDA NIL
    (PROG (FLAG WORD SENTENCE KEYSTACK)
      A1  (SETQ KEYSTACK (CONS))
          (SETQ SENTENCE (CONS))
      A   (SETQ WORD (RATOM))
          (COND
            ((NUMBERP WORD)
              (SETQ WORD (PACK (LIST (QUOTE *)
                   WORD)))))
          (COND
            ((EQ WORD RUBOUT)
              (RETURN (TERPRI)))
            ((MEMBER WORD TRMLIS)
              (TERPRI)
              (RETURN (RPLACD SENTENCE KEYSTACK)))
            ((MEMBER WORD PCTLIS)
              (COND
                ((NULL (CDR KEYSTACK))
                  (GO A1))
                ((NULL (SETQ FLAG (MAKESENTENCE)))
                  (RETURN))
                ((AND (CDDR FLAG)
                    (NOT (GREATERP (GETP (CDR KEYSTACK)
                           (QUOTE PRIORITY))
                         (GETP (CDDR FLAG)
                           (QUOTE PRIORITY)))))
                  (RETURN FLAG))
                (T (RETURN (RPLACD SENTENCE KEYSTACK))))))
          (TCONC (COND
              ((GETP WORD (QUOTE TRANSLATION)))
              (WORD))
            SENTENCE)
          (COND
            ((SETQ FLAG (GETP WORD (QUOTE MEMR)))
              (SETQ MEMSTACK (APPEND FLAG MEMSTACK))))
          (COND
            ((AND (SETQ FLAG (GETP WORD (QUOTE PRIORITY)))
                (CDR KEYSTACK)
                (GREATERP FLAG (GETP (CDR KEYSTACK)
                    (QUOTE PRIORITY))))
              (RPLACD KEYSTACK (CONS (CDR KEYSTACK)
                  (CDR WORD))))
            (FLAG (BCONC (CDR WORD)
                KEYSTACK)))
          (GO A)
      )))
```

```
(ANALYZE
  (LAMBDA NIL
    (PROG (RULES PARSELIST CR)
          (BCONC (GETP (QUOTE NONE)
              (COND
                ((ZEROP (SETQ FLIPFLOP (PLUS 2 (MINUS
                                FLIPFLOP))))
                  (QUOTE MEM))
                ((QUOTE LASTRESORT))))
            KEYSTACK)
          (SETQ KEYSTACK (CDR KEYSTACK))
     A    (SETQ RULES (GETP KEYSTACK (QUOTE RULES)))
     B    (COND
            ((OR (NULL RULES)
                (EQ (CAR RULES)
                  (QUOTE NEWKEY)))
              (SETQ KEYSTACK (CAR KEYSTACK))
              (GO A))
            ((ATOM (CAR RULES))
              (SETQ RULES (GETP (CAR RULES)
                  (QUOTE RULES)))
              (GO B)))
          (SETQ PARSELIST (CONS NIL NIL))
          (COND
            ((NOT (TEST (CAAR RULES)
                  SENTENCE))
              (SETQ RULES (CDR RULES)))
            ((ATOM (SETQ CR (CAR (SETQ RULES (CAR (ADVANCE
                                RULES)))))))
            ((EQ (CAR CR)
                (QUOTE PRE))
              (SETQ SENTENCE (RECONSTRUCT (CADR CR)))
              (SETQ RULES (CDDR CR)))
            (T (RECONSTRUCT CR T)
              (MEMORY)
              (RETURN)))
          (GO B)
      )))
```

```
(TEST
  (LAMBDA (D S)
    (PROG (CD PSV)
          (SETQ PSV (CDR PARSELIST))
      LP  (COND
            ((NULL D)
              (COND
                (S (GO RN))
                (T (SETQ PARSELIST (CAR PARSELIST))
                  (RETURN T))))
            ((EQ Ø (SETQ CD (CAR D)))
              (GO TØ))
            ((NULL S)
              (GO RN))
            ((NUMBERP CD)
              (TCONC S PARSELIST)
              (COND
                ((SETQ S (NTH S CD))
                  (GO T3))
                (T (GO RN))))
            ((ATOM CD)
              (COND
                ((EQ CD (CAR S)))
                (T (GO RN))))
            ((CAR CD)
              (COND
                ((MEMBER (CAR S)
                    CD))
                (T (GO RN))))
            ((TEST4 (CAR S)
                (CDR CD)))
            (T (GO RN)))
          (TCONC S PARSELIST)
      T3  (SETQ S (CDR S))
          (SETQ D (CDR D))
          (GO LP)
      TØ  (TCONC S PARSELIST)
          (COND
            ((NULL (SETQ D (CDR D)))
              (SETQ PARSELIST (CAR PARSELIST))
              (RETURN T)))
      T1  (COND
            ((TEST D S)
              (RETURN T))
            ((SETQ S (CDR S))
              (GO T1)))
      RN  (RPLACD PARSELIST (COND
              (PSV (RPLACD PSV NIL))))
          (RETURN NIL)
      )))
```

```
(TEST4
  (LAMBDA (CS L)
    (PROG NIL
      LP  (COND
            ((GETP CS (CAR L))
              (RETURN T))
            ((SETQ L (CDR L))
              (GO LP)))
          (RETURN NIL)
      )))

(ADVANCE
  (LAMBDA (RULES)
    (RPLACA (CDAR RULES)
      (COND
        ((NULL (CDADAR RULES))
          (CDDAR RULES))
        ((CDADAR RULES))))))

(RECONSTRUCT
  (LAMBDA (RULE PF)
    (PROG (SENT CR V1 V2 TPF QMF)
          (COND
            ((NULL PF)
              (SETQ SENT (CONS))))
      LP  (COND
            ((NULL RULE)
              (COND
                (PF (COND
                      ((NULL QMF)
                        (PRIN1 (QUOTE ?))))
                    (TERPRI)))
              (RETURN (CAR SENT)))
            ((NUMBERP (SETQ CR (CAR RULE)))
              (GO T1))
            (PF (COND
                  ((MEMBER CR TRMLIS)
                    (PRIN1 CR)
                    (SETQ QMF T))
                  (T (COND
                       (TPF (SPACES 1))
                       (T (TERPRI)
                         (SETQ TPF T)))
                    (PRIN1 CR))))
            (T (TCONC CR SENT)))
      T3  (SETQ RULE (CDR RULE))
          (GO LP)
      T1  (SETQ V1 (CAR (SETQ CR (NTH PARSELIST CR))))
          (SETQ V2 (CADR CR))
      T2  (COND
              ((EQ V1 V2)
                (GO T3))
              (PF (COND
                  (TPF (SPACES 1))
                  (T (TERPRI)
                    (SETQ TPF T)))
                (PRIN1 (CAR V1)))
              (T (TCONC (CAR V1)
                  SENT)))
            (SETQ V1 (CDR V1))
            (GO T2)
        )))

(MEMORY
  (LAMBDA NIL
    (PROG (PARSELIST X)
      LP  (COND
            ((NULL MEMSTACK)
              (RETURN)))
          (SETQ PARSELIST (CONS NIL NIL))
          (COND
            ((TEST (CAAR MEMSTACK)
                SENTENCE)
              (RPLACA (SETQ X (CDAADR (GETP (QUOTE NONE)
                        (QUOTE MEM))))
                (CONS (CAR X)
                  (CONS (RECONSTRUCT (CAAR (ADVANCE MEMSTACK)))
                    (CDAR X))))))
          (SETQ MEMSTACK (CDR MEMSTACK))
          (GO LP)
        )))

(BCONC
  (LAMBDA (WHAT LIST)
    (COND
      ((NULL LIST)
        (CONS (SETQ LIST (CONS NIL WHAT))
          LIST))
      ((NULL (CAR LIST))
        (RPLACA LIST (CDR (RPLACD LIST (CONS NIL WHAT)))))
      ((RPLACA LIST (CAR (RPLACA (CAR LIST)
              (RPLACA (CONS LIST WHAT)
                NIL))))))))

(RPLQQ
  (NLAMBDA RPLQ
    (RPLACD (CAR RPLQ)
      (CDR RPLQ))))
```

```
(SETNONE
  (LAMBDA NIL
   (PROG (A)
         (SETQ A (GENSYM))
         (RPLACD A (GETP (QUOTE NONE)
             (QUOTE LASTRESORT)))
         (PUT (QUOTE NONE)
           (QUOTE MEM)
           (LIST (QUOTE RULES)
             (LIST (LIST (LIST Ø)
                 (LIST NIL)
                 A)))))
      )))
)
  (PRINT (QUOTE DOCFNS))
  (RPAQQ DOCFNS (DOCTOR MAKESENTENCE ANALYZE TEST TEST4
        ADVANCE RECONSTRUCT MEMORY BCONC RPLQQ SETNONE))
  (PRINT (QUOTE DOCVARS))
  (RPAQQ DOCVARS (TRMLIS PCTLIS RUBOUT STOP))
  (RPAQQ TRMLIS ("." ! ?))
  (RPAQQ PCTLIS ("," ; "(" ")" :))
  (RPAQQ RUBOUT #)
STOP
```