

File created: 9-Oct-2025 15:20:59 {WMEDLEY}<sources>MEDLEYFONTFORMAT.;242

edit by: rmk

changes to: (FNS MEDLEYFONT.GETCHARSET)

previous date: 7-Oct-2025 12:43:33 {WMEDLEY}<sources>MEDLEYFONTFORMAT.;241

Read Table: INTERLISP

Package: INTERLISP

Format: MCCS

(RPAQQ MEDLEYFONTFORMATCOMS

;; Eventually, MEDLEYFONT should be a package

;; Main public entries

(FNS MEDLEYFONT.WRITE.FONT MEDLEYFONT.GETCHARSET MEDLEYFONT.CHARSET? MEDLEYFONT.GETFILEPROP
MEDLEYFONT.FILEP)

;; Reading

(FNS MEDLEYFONT.READ.FONT MEDLEYFONT.READ.CHARSET MEDLEYFONT.READ.ITEM MEDLEYFONT.PEEK.ITEM
MEDLEYFONT.READ.FONTPROPS MEDLEYFONT.READ.VERIFIEDFONT)

;; Writing

(FNS MEDLEYFONT.WRITE.CHARSET MEDLEYFONT.WRITE.ITEM MEDLEYFONT.WRITE.FONTPROPS
MEDLEYFONT.WRITE.HEADER)

(FNS MEDLEYFONT.FILENAME)

(ADDVARS (DISPLAYFONTEXTENSIONS MEDLEYDISPLAYFONT)

(DISPLAYCHARSETFNS (MEDLEYFONT MEDLEYFONT.FILEP MEDLEYFONT.GETCHARSET))

(INTERPRESSFONTEXTENSIONS MEDLEYINTERPRESSFONT))

(DECLARE%: EVAL@COMPILE DONTCOPY (CONSTANTS (PRINTDATA 0)

(SMALLPDATA 1)

(BITMAPDATA 2)

(WORDBLOCKDATA 3)

(CLARRAYDATA 4)

(FIXPDATA 5)

(ILPOINTERARRAY 6)

(ILNUMBERARRAY 11)

(HPRINTDATA 7)

(ALISTDATA 8)

(PLISTDATA 9)

(LISTDATA 10])

;; Eventually, MEDLEYFONT should be a package

;; Main public entries

(DEFINEQ

MEDLEYFONT.WRITE.FONT

[LAMBDA (FONT FILE CHARSETNOS OTHERFONTPROPS NOINDIRECTS)

; Edited 2-Sep-2025 23:01 by rmk

; Edited 15-Jul-2025 16:43 by rmk

; Edited 9-Jul-2025 09:32 by rmk

; Edited 19-Jun-2025 10:59 by rmk

; Edited 9-Jun-2025 12:17 by rmk

; Edited 25-May-2025 20:48 by rmk

; Edited 23-May-2025 14:59 by rmk

; Edited 22-May-2025 09:58 by rmk

; Edited 16-May-2025 20:17 by rmk

; Edited 14-May-2025 17:45 by rmk

(SETQ FONT (FONTCREATE FONT))

(CL:UNLESS FILE

(SETQ FILE (MEDLEYFONT.FILENAME FONT CHARSETNOS)))

(SETQ CHARSETNOS (SORT (MKLIST CHARSETNOS)))

(CL:WITH-OPEN-FILE (STREAM FILE :DIRECTION :OUTPUT :IF-EXISTS :NEW-VERSION)

(MEDLEYFONT.WRITE.HEADER STREAM OTHERFONTPROPS)

(LET ((CHARSETLOCS (CL:MAKE-ARRAY 256 :INITIAL-ELEMENT 0))

(FONTCHARENCODING (FONTPROP FONT 'CHARENCODING))

(*READTABLE* (FIND-READTABLE "INTERLISP"))

CSVECTORPTRLOC CSVECTORLOC FILECHARSETS)

;; Figure out the actual non empty/sluggish charsets that will be written.

(SETQ FILECHARSETS (for CSNO CSINFO from 0 to \MAXCHARSET when (OR (NULL CHARSETNOS)

(MEMB CSNO

CHARSETNOS)))

when (SETQ CSINFO (\GETCHARSETINFO FONT CSNO))

unless (fetch (CHARSETINFO CSSLUGP) of CSINFO) collect CSNO))

(CL:UNLESS FILECHARSETS (ERROR "No character sets to write" FONT))

;; Right after the header, leave 4 bytes for the pointer to the charset dispatch vector. If writing a single charset, we store the negative
 ;; of the byte location so we can still easily skip the font properties without writing the whole vector. The byte in front of the single
 ;; charset holds its number.

;;

(SETQ CSVECTORPTRLOC (GETFILEPTR STREAM)) ; Ptr is before fontproperties, vector is after
 (\FIXPOUT STREAM 0)

(MEDLEYFONT.WRITE.FONTPROPS STREAM FONT)

(if (CDR FILECHARSETS)

then (PRINTOUT STREAM "CHARSET LOCATIONS" T)

; Allocate the vector space if multiple

(SETQ CSVECTORLOC (GETFILEPTR STREAM))

(for I from 0 to \MAXCHARSET do (\FIXPOUT STREAM 0))

(TERPRI STREAM)

(for CSNO in FILECHARSETS do

;; LOC remains zero for missing charsets, slug properties are determined by
 ;; font-level properties.

(CL:SETF (CL:SVREF CHARSETLOCS CSNO)

(GETFILEPTR STREAM))

(MEDLEYFONT.WRITE.CHARSET FONT CSNO STREAM
 NOINDIRECTS))

(SETFILEPTR STREAM CSVECTORLOC)

(for CSNO from 0 to \MAXCHARSET do (\FIXPOUT STREAM (CL:SVREF CHARSETLOCS CSNO))

)

else

;; Only one. The "vector" is the charset byte immediately before the charset, the sign bit tells the tale.

(SETQ CSVECTORLOC (IMINUS (GETFILEPTR STREAM)))

(BOUT STREAM (CAR FILECHARSETS))

(MEDLEYFONT.WRITE.CHARSET FONT (CAR FILECHARSETS)

STREAM NOINDIRECTS))

(SETFILEPTR STREAM CSVECTORPTRLOC)

(\FIXPOUT STREAM CSVECTORLOC)

; Pointer to the charset dispatch vector--or negative of actual
 ; location for a singleton

(FULLNAME STREAM])

(MEDLEYFONT.GETCHARSET

[LAMBDA (STREAM CHARSET FONT)

; Edited 9-Oct-2025 15:18 by rmk

; Edited 3-Sep-2025 11:32 by rmk

; Edited 15-Jul-2025 17:09 by rmk

; Edited 9-Jul-2025 15:45 by rmk

; Edited 14-May-2025 17:46 by rmk

;; If open, assume its a medleyfont stream, that the initial Me etc. has been checked, and we are positioned after the header information. FONT is
 ;; provided so that properties of the fontdescriptor can be read through this interface--otherwise the fontcreate function of each device might have to
 ;; also have a list of functions to try.

(CL:UNLESS (<= 0 CHARSET \MAXCHARSET)

(\ILLEGAL.ARG CHARSET))

(RESETLST

(CL:UNLESS (\GETSTREAM STREAM 'INPUT T)

[RESETSAVE (SETQ STREAM (OPENSTREAM STREAM 'INPUT))

'(PROGN (CLOSEF? OLDVALUE]

(CL:UNLESS (MEDLEYFONT.FILEP STREAM)

; Checks and positions, if reopening.

(ERROR "NOT A MEDLEYFONT FILE" (FULLNAME STREAM))))

(LET ((CSVECTORLOC (\FIXPIN STREAM))

CSLOC)

(if (thereis CS from 0 to \MAXTHINCHAR suchthat (\GETCHARSETINFO FONT CS))

then

;; Font fields have been initialized, just update for this charset

(for P VAL in (MEDLEYFONT.READ.FONTPROPS STREAM) do (SETQ VAL (CADR P))

(SELECTQ (CAR VAL)

(\SFAscent (change (fetch (

FONTDESCRIPTOR

\SFAscent

)

of FONT)

(IMAX VAL

DATUM)))

(\SFDDescent (change (fetch (

FONTDESCRIPTOR

```

\SFDescent
)
of FONT)
(IMAX VAL
DATUM)
))
(\SFHeight (fetch (
FONTDESCRIPTOR
\SFHeight)
of FONT))
NIL))

```

```

else ;; First charset, probably 0: establish the overall font properties.

```

```

(MEDLEYFONT.READ.VERIFIEDFONT STREAM FONT))
(replace (FONTDESCRIPTOR FONTCOMPLETEP) of FONT with NIL)

```

```

;; One charset doesn't "complete" a complete font--maybe that's only an incore property?

```

```

;; We know now that this file has information about the requested charset, including NIL entries for empty/sluggish ones in the middle of
;; populated ones. A file that would have contain a single empty/sluggish charset cannot be created--the caller would recognize the
;; case of a missing file and provide either NIL or a slug-vector.

```

```

(CL:WHEN (if (ILESSP CSVECTORLOC 0)

```

```

then ;; File contains only one charset. Is it the one we want? If the intended charset is empty/sluggish, the file
;; would not have been constructed and we wouldn't be here.

```

```

(SETFILEPTR STREAM (IMINUS CSVECTORLOC))
(EQ CHARSET (BIN STREAM))

```

```

else ;; The vector-entry points to the one we want. Is it there?

```

```

(SETFILEPTR STREAM (IPLUS CSVECTORLOC (UNFOLD CHARSET BYTESPERCELL)))
(CL:UNLESS (EQ 0 (SETQ CSLOC (\FIXPIN STREAM)))

```

```

(SETFILEPTR STREAM CSLOC)))

```

```

(MEDLEYFONT.READ.CHARSET STREAM CHARSET))))))

```

```

(MEDLEYFONT.CHARSET?
[LAMBDA (FILE CHARSET)

```

```

; Edited 15-Jul-2025 15:21 by rmk

```

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; Edited 25-May-2025 20:53 by rmk

```

```

; Edited 21-May-2025 11:35 by rmk

```

```

; Edited 17-May-2025 11:29 by rmk

```

```

; Edited 14-May-2025 17:46 by rmk

```

```

;; If CHARSET, returns CHARSET if FILE contains a non-slug entry for CHARSET. If not CHARSET, returns the list of non-slug charsets in FILE.

```

```

(CL:WITH-OPEN-FILE (STREAM FILE :DIRECTION :INPUT)

```

```

(CL:UNLESS (MEDLEYFONT.FILEP STREAM)
(ERROR "Not a MEDLEYFONT file" FILE))

```

```

(LET ((CSVECTORLOC (\FIXPIN STREAM)))

```

```

(CL:WHEN (if (ILESSP CSVECTORLOC 0)

```

```

then ;; File contains only one charse, is it the one we want?

```

```

(SETFILEPTR STREAM (IMINUS CSVECTORLOC))
(EQ CHARSET (BIN STREAM))

```

```

else (SETFILEPTR STREAM (IPLUS CSVECTORLOC (UNFOLD CHARSET
BYTESPERCELL)))

```

```

(NEQ 0 (\FIXPIN STREAM)))

```

```

CHARSET])

```

```

(MEDLEYFONT.GETFILEPROP
[LAMBDA (FILE PROP)

```

```

; Edited 27-Aug-2025 17:12 by rmk

```

```

; Edited 15-Jul-2025 20:21 by rmk

```

```

; Edited 10-Jul-2025 17:50 by rmk

```

```

; Edited 25-May-2025 20:53 by rmk

```

```

; Edited 21-May-2025 11:36 by rmk

```

```

; Edited 17-May-2025 19:07 by rmk

```

```

; Edited 14-May-2025 17:46 by rmk

```

```

(CL:UNLESS (OR (LITATOM FILE)
(STRINGP FILE))

```

```

[SETQ FILE (CAR (FONTFILES (FONTPROP (FONTCREATE FILE)

```

```

'SPEC])
(CL:WITH-OPEN-FILE (STREAM FILE :DIRECTION :INPUT)
  (LET (HEADERPROPS CSVECTORLOC)
    (CL:UNLESS (SETQ HEADERPROPS (MEDLEYFONT.FILEP STREAM))
      (ERROR "Not a MEDLEYFONT file" (FULLNAME STREAM)))
    (SETQ CSVECTORLOC (\FIXPIN STREAM))
    (SELECTQ PROP
      (OTHERPROPS
        (CDDR HEADERPROPS))
      (DATE (CADR HEADERPROPS))
      (FONTPROPS
        (MEDLEYFONT.READ.FONTPROPS STREAM))
      (CHARSETS (if (ILESSP CSVECTORLOC 0)
        then ;; File contains only one charset
          (SETFILEPTR STREAM (IMINUS CSVECTORLOC))
          (CONS (BIN STREAM))
        else (SETFILEPTR STREAM CSVECTORLOC)
          (for CS from 0 to \MAXCHARSET unless (EQ 0 (\FIXPIN STREAM)) collect CS)))
      (ERROR "Unknown MEDLEYFONT property"])))

```

(MEDLEYFONT.FILEP
[LAMBDA (FILE)

; Edited 6-Jul-2025 11:44 by rmk
; Edited 10-Jun-2025 18:19 by rmk
; Edited 8-Jun-2025 22:55 by rmk
; Edited 25-May-2025 20:54 by rmk
; Edited 21-May-2025 11:37 by rmk
; Edited 16-May-2025 21:58 by rmk
; Edited 14-May-2025 17:00 by rmk

;; Me in first 2 bytes distinguishes MEDLEYFONT format from others. This may be called after the first 2 bytes have been read to verify the "Me", if
;; not we skip over it here.

;; For a valid file, returns (fullname date)

;; If FILE is an open stream, it is left open. Otherwise it is opened and closed.

```

(RESETLST
  [LET (STREAM VERSION DATE)
    [if (\GETSTREAM FILE 'INPUT T)
      then (SETQ STREAM FILE)
      else (RESETSAVE (SETQ STREAM (OPENSTREAM FILE 'INPUT))
        '(PROGN (CLOSEF? OLDVALUE)
          (CL:UNLESS (ZEROP (GETFILEPTR STREAM))
            (SETFILEPTR STREAM 0))
          (CL:WHEN (for C in (CONSTANT (CHCON "Medley font"))) always (EQ C (READCCODE STREAM)))
          [CAR (NLSETQ [CL:WHEN (EQ 0 (SETQ VERSION (MEDLEYFONT.READ.ITEM STREAM 'VERSION)
            '(, (FULLNAME STREAM)
              ,(MEDLEYFONT.READ.ITEM STREAM 'DATE)
              ,VERSION
              ,@(MEDLEYFONT.READ.ITEM STREAM 'OTHERFONTPROPS)])))]))

```

)

;; Reading

(DEFINEQ

(MEDLEYFONT.READ.FONT
[LAMBDA (FILE CHARSETNOS FONT)

; Edited 31-Aug-2025 14:42 by rmk
; Edited 15-Jul-2025 20:20 by rmk
; Edited 9-Jul-2025 00:06 by rmk
; Edited 6-Jul-2025 11:45 by rmk

```

(CL:UNLESS FILE (SETQ FILE FONT))
(CL:WHEN (OR (type? FONTDESCRIPTOR FILE)
  (LISTP FILE))
  (SETQ FILE (MEDLEYFONT.FILENAME FILE)))
(SETQ CHARSETNOS (SORT (MKLIST CHARSETNOS)))
(CL:WITH-OPEN-FILE (STREAM FILE :DIRECTION :INPUT)
  (CL:UNLESS (MEDLEYFONT.FILEP STREAM)
    (ERROR "NOT A MEDLEYFONT FILE" (FULLNAME STREAM)))

```

```
(LET ((*READTABLE* (FIND-READTABLE "INTERLISP"))
      CSVECTORLOC NOTFOUND SINGLECSNO)
```

```
(SETQ CSVECTORLOC (IFIXPIN STREAM)) ; Byte location of the charset dispatch vector
```

```
;; We know now that this file has information about all requested charsets, including NIL entries for empty/sluggish ones in the
;; middle of populated ones. A file that would have contain a single empty/sluggish charset cannot be created--the caller would
;; recognize the case of a missing file and provide either NIL or a slug-vector.
```

```
(SETQ FONT (MEDLEYFONT.READ.VERIFIEDFONT STREAM FONT))
```

```
(CL:UNLESS (EQ CSVECTORLOC 0) ; Not empty
```

```
  [if (ILESSP CSVECTORLOC 0)
```

```
    then
```

```
    ;; File contains only one charset and it's the one we want. Its CHARSET number is in the first byte.
```

```
    ;; If the intended charset is empty/sluggish, the file would not have been constructed and we wouldn't be here.
```

```
    (SETFILEPTR STREAM (IMINUS CSVECTORLOC))
```

```
    (SETQ SINGLECSNO (BIN STREAM))
```

```
    (CL:WHEN CHARSETNOS
```

```
      (CL:UNLESS (AND (EQ SINGLECSNO (CAR CHARSETNOS))
```

```
                    (NULL (CDR CHARSETNOS))))
```

```
      (ERROR (CONCAT FILE " does not contain information for charsets "
```

```
                (REMOVE SINGLECSNO CHARSETNOS))))))
```

```
    (\SETCHARSETINFO FONT SINGLECSNO (MEDLEYFONT.READ.CHARSET STREAM
                                         SINGLECSNO))
```

```
  else
```

```
    ;; Gather all of the CSLOCs before reading, so that we always move forward
```

```
    (for CSNO CSLOC in (OR CHARSETNOS (for I from 0 to \MAXCHARSET collect I))
```

```
      eachtime (SETFILEPTR STREAM (IPLUS CSVECTORLOC (UNFOLD CSNO
                                                                BYTESPERCELL))))
```

```
      (SETQ CSLOC (IFIXPIN STREAM))
```

```
      (CL:WHEN (ZEROP CSLOC)
```

```
        (push NOTFOUND CSNO))
```

```
      unless (ZEROP CSLOC) collect (CONS CSNO CSLOC) finally (CL:WHEN (AND
```

```
        CHARSETNOS
        NOTFOUND)
```

```
      (ERROR FILE (CONCAT
                    " does not
                    contain
                    information
                    for charsets
```

```
                    (DREVERSE
```

```
                    NOTFOUND
                    ))))
```

```
    (for X CS in $VAL
```

```
      do (SETQ CSNO (CAR X))
```

```
        (SETFILEPTR STREAM
```

```
          (CDR X))
```

```
        (\SETCHARSETINFO
```

```
          FONT CSNO (
```

```
            MEDLEYFONT.READ.CHARSET
```

```
              STREAM
```

```
              CSNO))
```

```
    FONT))
```

```
(MEDLEYFONT.READ.CHARSET
 [LAMBDA (STREAM CHARSET)
```

```
  ; Edited 4-Sep-2025 10:39 by rmk
```

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  ; Edited 28-Aug-2025 15:27 by rmk
```

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  ; Edited 26-Aug-2025 23:36 by rmk
```

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  ; Edited 25-May-2025 20:54 by rmk
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  ; Edited 16-May-2025 20:19 by rmk
```

```
  ; Edited 14-May-2025 10:43 by rmk
```

```
  ; Edited 12-May-2025 07:55 by rmk
```

```
  ; Throwaway for looking with text editor
```

```
(MEDLEYFONT.READ.ITEM STREAM 'CHARSETSTRING)
```

```

(LET (CSNO INDIRECT)
  (CL:UNLESS [EQ CHARSET (SETQ CSNO (MEDLEYFONT.READ.ITEM STREAM 'CHARSET]
    (ERROR "Charset mismatch" (LIST CHARSET CSNO)))
    (if (EQ 'INDIRECTCHARSET (CAR (MEDLEYFONT.PEEK.ITEM STREAM)))
      then
        ;; Read what we peeked and use it to create a complete charset from another file (e.g. shared Kanji).
        (SETQ INDIRECT (MEDLEYFONT.READ.ITEM STREAM 'INDIRECTCHARSET))
        (READCHARSET INDIRECT CHARSET)
      else (bind PAIR LABEL ITEM (CSINFO ← (create CHARSETINFO
        WIDTHS ← NIL
        OFFSETS ← NIL))
        everytime (SETQ PAIR (MEDLEYFONT.READ.ITEM STREAM))
          (SETQ LABEL (CAR PAIR))
          (SETQ ITEM (CADR PAIR))
        until (EQ LABEL 'STOP) do (SELECTQ LABEL
          (WIDTHS (replace (CHARSETINFO WIDTHS) of CSINFO with ITEM))
          (OFFSETS (replace (CHARSETINFO OFFSETS) of CSINFO with ITEM))
          (IMAGEWIDTHS
            (replace (CHARSETINFO IMAGEWIDTHS) of CSINFO with ITEM))
          (YWIDTHS (replace (CHARSETINFO YWIDTHS) of CSINFO with ITEM))
          (ASCENT (replace (CHARSETINFO CHARSETASCENT) of CSINFO
            with ITEM))
          (DESCENT (replace (CHARSETINFO CHARSETDESCENT) of CSINFO
            with ITEM))
          (LEFTKERN (replace (CHARSETINFO LEFTKERN) of CSINFO with
            ITEM
            ))
          (BITMAP (replace (CHARSETINFO CHARSETBITMAP) of CSINFO
            with ITEM))
          (CSINFOPROPS
            (replace (CHARSETINFO CSINFOPROPS) of CSINFO with ITEM))
          (CSCOMLETEP
            (replace (CHARSETINFO CSCOMLETEP) of CSINFO with ITEM))
          (HELP "Unrecognized charsetinfo label" LABEL))
        finally (CL:UNLESS (fetch (CHARSETINFO IMAGEWIDTHS) of CSINFO)
          (replace (CHARSETINFO IMAGEWIDTHS) of CSINFO with (fetch (CHARSETINFO WIDTHS)
            of CSINFO)))
          (replace (CHARSETINFO CHARSETNO) of CSINFO with CHARSET)
          (RETURN CSINFO))
    )
  )

```

```

(MEDLEYFONT.READ.ITEM
  [LAMBDA (STREAM LABEL?)

```

```

; Edited 27-Jul-2025 22:22 by rmk
; Edited 24-Jul-2025 22:07 by rmk
; Edited 14-Jul-2025 15:47 by rmk

```

;; Reads and returns the (label data) that starts at the current position in STREAM according to its storage type. If LABEL? is provided, error if the
 ;; data read does not have that label.

```

(LET [(ITEM (GETSTREAMPROP STREAM 'MEDLEYFONT.PEEKEDITEM)
  (if ITEM
    then (PUTSTREAMPROP STREAM 'MEDLEYFONT.PEEKEDITEM NIL)
    else (LET ((*READTABLE* (FIND-READTABLE 'INTERLISP))
      (*PACKAGE* (CL:FIND-PACKAGE 'INTERLISP))
      LABEL NELTS)
      (SETQ LABEL (RATOM STREAM))
      (READCCODE STREAM)
      [SETQ ITEM (LIST LABEL (SELECTC (BIN STREAM)
        (SMALLPDATA
          (\WIN STREAM))
        (FIXPDATA (\FIXPIN STREAM))
        (PRINTDATA (READ STREAM))
        (ALISTDATA (bind X until [EQ 'STOP (CAR (SETQ X (
          MEDLEYFONT.READ.ITEM
          STREAM]
          collect (CONS (CAR X)
            (CADR X))))
        (PLISTDATA (bind X until [EQ 'STOP (CAR (SETQ X (
          MEDLEYFONT.READ.ITEM
          STREAM]
          join X))

```

```

(LISTDATA (bind ELT until [EQ 'STOP (CAR (SETQ ELT (
MEDLEYFONT.READ.ITEM
STREAM]
collect (CADR ELT) finally (CL:WHEN (CADR ELT)
(NCONC $$VAL ELT))))
(BITMAPDATA
(READBINARYBITMAP STREAM))
(CLARRAYDATA
(LET [[ARRAY (CL:MAKE-ARRAY (READ STREAM)
:ELEMENT-TYPE
(MEDLEYFONT.READ.ITEM STREAM
'ELEMENT-TYPE]
(ALLFIXED (EQ 1 (BIN STREAM)
(for I from 0 to (\FIXPIN STREAM) do [CL:SETF (
XCL:ROW-MAJOR-AREF
ARRAY I)
(CL:IF ALLFIXED
(\FIXPIN
STREAM
)
(CADR
(MEDLEYFONT.READ.ITEM
STREAM)))]
1
finally (RETURN ARRAY)))]
(ILPOINTERARRAY
(LET [(NELTS (\FIXPIN STREAM))
(ORIG (BIN STREAM))
(ALLFIXED (EQ 1 (BIN STREAM)
(for I (ARRAY ← (ARRAY NELTS NIL NIL ORIG)) from ORIG
to (CL:IF (EQ ORIG 1)
NELTS
(SUB1 NELTS))
do (SETA ARRAY I (CL:IF ALLFIXED
(\FIXPIN STREAM)
(MEDLEYFONT.READ.ITEM STREAM
I)))
finally (RETURN ARRAY)))]
(ILNUMBERARRAY
(LET [(NELTS (\FIXPIN STREAM))
(ORIG (BIN STREAM))
(AIN (ARRAY NELTS (MEDLEYFONT.READ.ITEM STREAM
'ARRAYTYP)
NIL ORIG)
ORIG NELTS STREAM)))]
(WORDBLOCKDATA
(LET* [(NWORDS (\FIXPIN STREAM))
(BLOCK (ALLOCBLOCK (FOLDHI NWORDS
WORDSPERCELL]
(BINS STREAM BLOCK 0 (UNFOLD NWORDS
BYTESPERWORD))
BLOCK))
(HPRINTDATA
(HREAD STREAM))
(SHOULDNT "UNKNOWN MEDLEYFONT DATA TYPE"]
; Skip the EOL
(READCCODE STREAM)))
(CL:WHEN (AND LABEL? (NEQ LABEL? (CAR ITEM)))
(ERROR (CONCAT LABEL? " item not found")
ITEM))
(CL:IF LABEL?
(CADR ITEM)
ITEM))

```

```

(MEDLEYFONT.PEEK.ITEM
[LAMBDA (STREAM LABEL?)

```

; Edited 6-Jul-2025 14:10 by rmk

;; If previously peeked and not read, returns that item. Otherwise calls the reader to get the new item. We always record the (LABEL DATA pair)

```

(LET [(PEEKEDITEM (GETSTREAMPROP STREAM 'MEDLEYFONT.PEEKEDITEM)
  (CL:UNLESS PEEKEDITEM
    (PUTSTREAMPROP STREAM 'MEDLEYFONT.PEEKEDITEM (SETQ PEEKEDITEM (MEDLEYFONT.READ.ITEM
      STREAM))))))
  (CL:WHEN (AND LABEL? (NEQ LABEL? (CAR PEEKEDITEM)))
    (ERROR (CONCAT "Peeked " (CAR PEEKEDITEM)
      " instead of " LABEL?)
      PEEKEDITEM))
  (CL:IF LABEL?
    (CADR PEEKEDITEM)
    PEEKEDITEM))]

```

```

(MEDLEYFONT.READ.FONTPROPS
[LAMBDA (STREAM)

```

```

; Edited 25-May-2025 20:55 by rmk
; Edited 16-May-2025 21:58 by rmk
; Edited 14-May-2025 09:11 by rmk

```

```

(bind PAIR until [EQ 'STOP (CAR (SETQ PAIR (MEDLEYFONT.READ.ITEM STREAM) collect PAIR])

```

```

(MEDLEYFONT.READ.VERIFIEDFONT
[LAMBDA (STREAM FONT)

```

```

; Edited 2-Sep-2025 23:52 by rmk
; Edited 12-Aug-2025 17:57 by rmk
; Edited 10-Jun-2025 20:57 by rmk
; Edited 21-May-2025 22:55 by rmk
; Edited 19-May-2025 17:42 by rmk
; Edited 16-May-2025 10:28 by rmk

```

```

(CL:UNLESS FONT
  (SETQ FONT (create FONTDIRECTOR)))
(LET ((FONTPROPS (MEDLEYFONT.READ.FONTPROPS STREAM)))
  (for P VAL in FONTPROPS do (SETQ VAL (CADR P))
    (SELECTQ (CAR P)
      (FONTEDEVICE
        (replace (FONTDIRECTOR FONTEDEVICE) of FONT with VAL))
      (FONTCOMPLETEP
        (replace (FONTDIRECTOR FONTCOMPLETEP) of FONT with VAL))
      (FONTFAMILY
        (replace (FONTDIRECTOR FONTFAMILY) of FONT with VAL))
      (FONTSIZE (replace (FONTDIRECTOR FONTSIZE) of FONT with VAL))
      (FONTFACE (replace (FONTDIRECTOR FONTFACE) of FONT with VAL))
      (\SFAscent (replace (FONTDIRECTOR \SFAscent) of FONT with VAL))
      (\SFDescent (replace (FONTDIRECTOR \SFDescent) of FONT with VAL))
      (\SFHeight (replace (FONTDIRECTOR \SFHeight) of FONT with VAL))
      (ROTATION (replace (FONTDIRECTOR ROTATION) of FONT with VAL))
      (FONTSUGLUGWIDTH
        (replace (FONTDIRECTOR FONTSUGLUGWIDTH) of FONT with VAL))
      (FONTTOMCCSFN
        (replace (FONTDIRECTOR FONTTOMCCSFN) of FONT with VAL))
      (FONTEDEVESPEC
        (replace (FONTDIRECTOR FONTEDEVESPEC) of FONT with VAL))
      (OTHERDEVESPECFONTPROPS
        (replace (FONTDIRECTOR OTHERDEVESPECFONTPROPS) of FONT
          with VAL))
      (FONTSFSCALE (replace (FONTDIRECTOR FONTSFSCALE) of FONT with
        VAL
      ))
      (\SFFACECODE
        (replace (FONTDIRECTOR \SFFACECODE) of FONT with VAL))
      (FONTAVGCHARWIDTH
        (replace (FONTDIRECTOR FONTAVGCHARWIDTH) of FONT with
        VAL
      ))
      (FONTCHARENCEODING
        (replace (FONTDIRECTOR FONTCHARENCEODING) of FONT with
        VAL
      ))
      (FONTCHARSETVECTOR
        (replace (FONTDIRECTOR FONTCHARSETVECTOR) of FONT
          with VAL))
      (FONTHASLEFTKERN

```

```

    (replace (FONTDESCRIPTOR FONTHASLEFTKERNS) of FONT with VAL
    ))
    (FONTEXTRAFIELD2
    (replace (FONTDESCRIPTOR FONTEXTRAFIELD2) of FONT with VAL))
    (HELP "UNKNOWN FONTDESCRIPTOR PROPERTY: P"))
  FONT])
)

;; Writing

(DEFINEQ

(MEDLEYFONT.WRITE.CHARSET
[LAMBDA (FONT CHARSET STREAM NOINDIRECTS)
    ; Edited 4-Sep-2025 11:41 by rmk
    ; Edited 30-Aug-2025 23:44 by rmk
    ; Edited 28-Aug-2025 21:00 by rmk
    ; Edited 9-Jul-2025 19:14 by rmk
    ; Edited 25-May-2025 20:49 by rmk
    ; Edited 22-May-2025 09:58 by rmk
    ; Edited 16-May-2025 20:18 by rmk
    ; Edited 13-May-2025 23:26 by rmk

    (LET ((CSINFO (\INSURECHARSETINFO FONT CHARSET))
          CSCHARENCODING)
      (MEDLEYFONT.WRITE.ITEM STREAM 'CHARSETSTRING (MKSTRING CHARSET))
      ; For human file-scan
      (MEDLEYFONT.WRITE.ITEM STREAM 'CHARSET CHARSET)
      (CL:UNLESS (OR (NULL CSINFO)
                     (fetch (CHARSETINFO CSSLUGP) of CSINFO))
        ; Slug info is determined by FONT properties
        ;; Copy the fonts charencoding down to each charset info so that it is available when the charsetinfo is read. The fontdescriptor isn't
        ;; available at that point and coercion could lead to fonts of different encodings. At least this would make it possible to fix things up.
        (if (CL:UNLESS NOINDIRECTS (INDIRECTCHARSETP CSINFO FONT))
            then
            ;; This charset is is taken entirely from on another file, no need to copy it to this file.
            (MEDLEYFONT.WRITE.ITEM STREAM 'INDIRECTCHARSET (CHARSETPROP CSINFO 'SOURCE)
              NIL
              'PRINT)
            else (MEDLEYFONT.WRITE.ITEM STREAM 'CSINFOPROPS (fetch (CHARSETINFO CSINFOPROPS) of CSINFO
              NIL
              'ALIST)
            (MEDLEYFONT.WRITE.ITEM STREAM 'WIDTHS (fetch (CHARSETINFO WIDTHS) of CSINFO))
            (CL:UNLESS [OR (EQ (fetch (CHARSETINFO IMAGEWIDTHS) of CSINFO)
                             (fetch (CHARSETINFO WIDTHS) of CSINFO))
                        (for I (W ← (fetch (CHARSETINFO WIDTHS) of CSINFO))
                              (IM ← (fetch (CHARSETINFO IMAGEWIDTHS) of CSINFO)) from 0
                              to (SUB1 (IPLUS \MAXTHINCHAR 3)) always (EQ (GETBASE W I)
                                                                           (GETBASE IM I)
                                (MEDLEYFONT.WRITE.ITEM STREAM 'IMAGEWIDTHS (fetch (CHARSETINFO IMAGEWIDTHS)
                                          of CSINFO)))
            (MEDLEYFONT.WRITE.ITEM STREAM 'OFFSETS (fetch (CHARSETINFO OFFSETS) of CSINFO))
            (MEDLEYFONT.WRITE.ITEM STREAM 'YWIDTHS (fetch (CHARSETINFO YWIDTHS) of CSINFO))
            (MEDLEYFONT.WRITE.ITEM STREAM 'ASCENT (fetch (CHARSETINFO CHARSETASCENT) of CSINFO)
            )
            (MEDLEYFONT.WRITE.ITEM STREAM 'DESCENT (fetch (CHARSETINFO CHARSETDESCENT) of CSINFO
            ))
            (MEDLEYFONT.WRITE.ITEM STREAM 'LEFTKERN (fetch (CHARSETINFO LEFTKERN) of CSINFO))
            (MEDLEYFONT.WRITE.ITEM STREAM 'BITMAP (fetch (CHARSETINFO CHARSETBITMAP) of CSINFO))
            (MEDLEYFONT.WRITE.ITEM STREAM 'CSCOMPLETEP (fetch (CHARSETINFO CSCOMPLETEP)
            of CSINFO))
            (MEDLEYFONT.WRITE.ITEM STREAM 'STOP T))))))

(MEDLEYFONT.WRITE.ITEM
[LAMBDA (STREAM LABEL ITEM EVENIFNIL TYPE BLOCKNELTS)

```

; Edited 24-Jul-2025 22:07 by rmk
 ; Edited 15-Jul-2025 11:06 by rmk
 ; Edited 8-Jul-2025 23:03 by rmk
 ; Edited 20-Jun-2025 11:10 by rmk
 ; Edited 8-Jun-2025 21:14 by rmk
 ; Edited 25-May-2025 20:48 by rmk
 ; Edited 23-May-2025 10:58 by rmk
 ; Edited 22-May-2025 10:31 by rmk
 ; Edited 17-May-2025 10:10 by rmk
 ; Edited 14-May-2025 00:07 by rmk

:: Writes ITEM preceded by LABEL. BLOCKNELTS overrides the default for array blocks, because of the uncertainty/complexity in determining
 :: arrayblock length.

```
(LET [(*READTABLE* (FIND-READTABLE 'INTERLISP))
      (*PACKAGE* (CL:FIND-PACKAGE 'INTERLISP)
      (CL:WHEN (OR ITEM EVENIFNIL)
        (PRIN2 LABEL STREAM)
        (PRIN1 " " STREAM)
        (SELECTQ (OR TYPE (TYPENAME ITEM))
          (SMALLP (BOUT STREAM SMALLPDATA)
            (\WOUT STREAM ITEM))
          (FIXP
            (BOUT STREAM FIXPDATA)
            (\FIXPOUT STREAM ITEM))
          ((LITATOM STRINGP PRINT)
            (BOUT STREAM PRINTDATA)
            (PRIN2 ITEM STREAM))
          (LISTP [if (for TAIL on ITEM always (ATOM (CAR TAIL))) finally
            ; Check the final CDR.
            (CL:UNLESS (ATOM TAIL)
              (RETURN NIL)))
            then (BOUT STREAM PRINTDATA)
              (PRIN2 ITEM STREAM)
            else (BOUT STREAM LISTDATA)
              (for TAIL on ITEM as I from 1 do (MEDLEYFONT.WRITE.ITEM STREAM I (CAR TAIL)
                T)
              (CL:UNLESS (LISTP (CDR TAIL))
                (MEDLEYFONT.WRITE.ITEM STREAM 'STOP (CDR TAIL)
                T)
              (RETURN)))]])
      (ALIST
        ; This could be done as LISTDATA, but this way it uses the alist keys as labels.
        (BOUT STREAM ALISTDATA)
        (for X KEY in ITEM do (SETQ KEY (CAR X))
          (CL:UNLESS (OR (LITATOM KEY)
            (SMALLP KEY))
            (ERROR "NOT AN ALIST" ITEM))
          (MEDLEYFONT.WRITE.ITEM STREAM KEY (CDR X)
            EVENIFNIL))
        (MEDLEYFONT.WRITE.ITEM STREAM 'STOP T))
      (PLIST (BOUT STREAM PLISTDATA)
        (for DTAIL KEY on ITEM by (CDDR DTAIL) do (SETQ KEY (CAR DTAIL))
          (CL:UNLESS (OR (LITATOM KEY)
            (SMALLP KEY))
            (ERROR "NOT A PLIST" ITEM))
          (MEDLEYFONT.WRITE.ITEM STREAM KEY (CADR DTAIL)
            DTAIL)
          EVENIFNIL))
        (MEDLEYFONT.WRITE.ITEM STREAM 'STOP T))
      (BITMAP (BOUT STREAM BITMAPDATA)
        (\PRINTBINARYBITMAP ITEM STREAM))
      ((ONED-ARRAY TWOD-ARRAY GENERAL-ARRAY)
        ; Note: can't be used in MAKEINIT fonts
        (BOUT STREAM CLARRAYDATA)
        (PRIN2 (CL:ARRAY-DIMENSIONS ITEM)
          STREAM)
        ; A list, READ's OK
        (MEDLEYFONT.WRITE.ITEM STREAM 'ELEMENT-TYPE (CL:ARRAY-ELEMENT-TYPE ITEM))
        (for I ALLFIXED ELT from 0 to (SUB1 (CL:ARRAY-TOTAL-SIZE ITEM)) first [SETQ ALLFIXED
```

```

                                (for I from 0
                                  to (SUB1 (
                                      CL:ARRAY-TOTAL-SIZE
                                      ITEM))
                                    always (FIXP (
                                                XCL:ROW-MAJOR-AREF
                                                ITEM I]
                                  (BOUT STREAM
                                    (CL:IF ALLFIXED
                                      1
                                      0))
                                  (\FIXPOUT STREAM
                                    (SUB1 (
                                      CL:ARRAY-TOTAL-SIZE
                                      ITEM))))

do (SETQ ELT (XCL:ROW-MAJOR-AREF ITEM I))
  (CL:IF ALLFIXED
    (\FIXPOUT STREAM ELT)
    (MEDLEYFONT.WRITE.ITEM STREAM I ELT T)))
  (ARRAYP (if (EQ 'POINTER (ARRAYTYP ITEM))
    then (BOUT STREAM ILPOINTERARRAY)
          (\FIXPOUT STREAM (ARRAYSIZE ITEM))
          (BOUT STREAM (ARRAYORIG ITEM))
          (for I ALLFIXED from (ARRAYORIG ITEM) to (IPLUS (ARRAYORIG ITEM)
                                                            (SUB1 (ARRAYSIZE ITEM))))
          first [SETQ ALLFIXED (for I from (ARRAYORIG ITEM) to (IPLUS (ARRAYORIG ITEM)
                                                                      (SUB1 (ARRAYSIZE
                                                                    ITEM))))
                    always (FIXP (ELT ITEM I]
                    (BOUT STREAM (CL:IF ALLFIXED
                                  1
                                  0))
                    do
;; Don't need to do the item recursion if all integers
                    (CL:IF ALLFIXED
                      (\FIXPOUT STREAM (ELT ITEM I))
                      (MEDLEYFONT.WRITE.ITEM STREAM I (ELT ITEM I)
                    T)))
                    else (BOUT STREAM ILNUMBERARRAY)
                          (\FIXPOUT STREAM (ARRAYSIZE ITEM))
                          (BOUT STREAM (ARRAYORIG ITEM))
                          (MEDLEYFONT.WRITE.ITEM STREAM 'ARRAYTYP (ARRAYTYP ITEM))
                          (AOUT ITEM (ARRAYORIG ITEM)
                            (ARRAYSIZE ITEM)
                            STREAM)))
  (if (\BLOCKDATAP ITEM)
    then
;; This assumes word-element blocks. We can distinguish pointer blocks (from the DTD, see BLOCKEQUALP), caller
;; would have to tell us (a different TYPE?) whether we are looking at full integer or word blocks--how to interpret
;; NELTS
      (BOUT STREAM WORDBLOCKDATA)
      (CL:UNLESS BLOCKNELTS ; Why 3 ?
        (SETQ BLOCKNELTS (IPLUS \MAXTHINCHAR 3)))
      (\FIXPOUT STREAM BLOCKNELTS)
      (\BOUTS STREAM ITEM 0 (UNFOLD BLOCKNELTS BYTESPERWORD))
    else (BOUT STREAM HPRINTDATA) ; A datatype?
          (HPRINT ITEM STREAM T T)))
;; Terpri to make sure ratom is OK, also looks better
(TERPRI STREAM)))

```

(MEDLEYFONT.WRITE.FONTPROPS
[LAMBDA (STREAM FONT)

; Edited 12-Aug-2025 17:55 by rmk
; Edited 10-Jun-2025 20:50 by rmk
; Edited 25-May-2025 20:50 by rmk
; Edited 22-May-2025 10:31 by rmk
; Edited 19-May-2025 10:42 by rmk
; Edited 14-May-2025 17:26 by rmk

;; RECORDFIELDACCESS would be more succinct but would depend on runtime availability of the record. If the record changes, this and the
;; reader have to be updated.

;; HPRINT would be obvious, but it would get charsetvector etc.

;; Exclude FONTCHARSETVECTOR and \SFFACECODE

;; Write even NIL values for default overrides

```
(MEDLEYFONT.WRITE.ITEM STREAM 'FONTDEVICE (fetch (FONTDESCRIPTOR FONTDEVICE) of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM 'FONTCOMPLETEP (fetch (FONTDESCRIPTOR FONTCOMPLETEP) of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM 'FONTFAMILY (fetch (FONTDESCRIPTOR FONTFAMILY) of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM 'FONTSIZE (fetch (FONTDESCRIPTOR FONTSIZE) of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM 'FONTFACE (fetch (FONTDESCRIPTOR FONTFACE) of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM '\SFAscent (fetch (FONTDESCRIPTOR \SFAscent) of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM '\SFDDescent (fetch (FONTDESCRIPTOR \SFDDescent) of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM '\SFHeight (fetch (FONTDESCRIPTOR \SFHeight) of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM 'ROTATION (fetch (FONTDESCRIPTOR ROTATION) of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM 'FONTSUGWIDTH (fetch (FONTDESCRIPTOR FONTSUGWIDTH) of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM 'FONTTOMCCSFN (fetch (FONTDESCRIPTOR FONTTOMCCSFN) of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM 'FONTDEVICESPEC (fetch (FONTDESCRIPTOR FONTDEVICESPEC) of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM 'OTHERDEVICEFONTPROPS (fetch (FONTDESCRIPTOR
OTHERDEVICEFONTPROPS)
of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM 'FONTSIZE (fetch (FONTDESCRIPTOR FONTSIZE) of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM 'FONTAVGCHARWIDTH (fetch (FONTDESCRIPTOR FONTAVGCHARWIDTH)
of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM 'FONTCHARENCODING (fetch (FONTDESCRIPTOR FONTCHARENCODING)
of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM 'FONTHASLEFTKERN (fetch (FONTDESCRIPTOR FONTHASLEFTKERN)
of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM 'FONTEXTRAFIELD2 (fetch (FONTDESCRIPTOR FONTEXTRAFIELD2) of FONT)
T)
(MEDLEYFONT.WRITE.ITEM STREAM 'STOP T))
```

(MEDLEYFONT.WRITE.HEADER
[LAMBDA (STREAM OTHERFONTPROPS)

; Edited 25-May-2025 20:51 by rmk
; Edited 16-May-2025 20:20 by rmk
; Edited 14-May-2025 17:01 by rmk

;; Me in first 2 bytes distinguishes MEDLEYFONT format from others

```
(PRINTOUT STREAM "Medley font" T)
(MEDLEYFONT.WRITE.ITEM STREAM 'VERSION 0)
(MEDLEYFONT.WRITE.ITEM STREAM 'DATE (DATE))
(MEDLEYFONT.WRITE.ITEM STREAM 'OTHERFONTPROPS OTHERFONTPROPS T))
```

)

(DEFINEQ

(MEDLEYFONT.FILENAME
[LAMBDA (FONT CHARSET EXTENSION DIRECTORY)

; Edited 7-Oct-2025 11:50 by rmk
; Edited 4-Sep-2025 08:48 by rmk
; Edited 10-Jun-2025 11:02 by rmk
; Edited 25-May-2025 21:25 by rmk
; Edited 19-May-2025 17:42 by rmk

; Edited 16-May-2025 14:09 by rmk

:: If EXTENSION and FILE are NIL, puts the file in the MEDLEYDIR fonts/medley[device]fonts/ directory with extension MEDLEY[device]FONT. If
 :: CHARSET, goes in the CHARSET subdirectory.

```
(LET (FAMILY SIZE FACE DEVICE ROTATION FILENAME)
  (SPREADFONTSPEC (CL:IF (type? FONTDESCRIPTOR FONT)
    (FONTPROP FONT 'SPEC)
    (\FONT.CHECKARGS FONT)))
  (CL:UNLESS EXTENSION
    (SETQ EXTENSION (CONCAT "MEDLEY" (U-CASE DEVICE)
      "FONT"))))
  (CL:UNLESS DIRECTORY
    [SETQ DIRECTORY (PSEUDOFILNAME (CONCAT (MEDLEYDIR)
      (CONCAT "fonts/" (L-CASE EXTENSION)
        "s"))
    (SETQ FILENAME (PACK* FAMILY (CL:IF (ILEQ SIZE 9)
      "0"
      ""))
      SIZE "-" (FONTFACETOATOM FACE)
      (CL:IF (SMALLP CHARSET)
        (CONCAT "-C" (OCTALSTRING CHARSET))
        "")
      "." EXTENSION))
    (CONCAT DIRECTORY ">" FILENAME)])
)

(ADDOVAR DISPLAYFONTEXTENSIONS MEDLEYDISPLAYFONT)

(ADDOVAR DISPLAYCHARSETFNS (MEDLEYFONT MEDLEYFONT.FILEP MEDLEYFONT.GETCHARSET))

(ADDOVAR INTERPRESSFONTEXTENSIONS MEDLEYINTERPRESSFONT)

(DECLARE%: EVAL@COMPILE DONTCOPY

(DECLARE%: EVAL@COMPILE

(RPAQQ PRINTDATA 0)

(RPAQQ SMALLPDATA 1)

(RPAQQ BITMAPDATA 2)

(RPAQQ WORDBLOCKDATA 3)

(RPAQQ CLARRAYDATA 4)

(RPAQQ FIXPDATA 5)

(RPAQQ ILPOINTERARRAY 6)

(RPAQQ ILNUMBERARRAY 11)

(RPAQQ HPRINTDATA 7)

(RPAQQ ALISTDATA 8)

(RPAQQ PLISTDATA 9)

(RPAQQ LISTDATA 10)

(CONSTANTS (PRINTDATA 0)
  (SMALLPDATA 1)
  (BITMAPDATA 2)
  (WORDBLOCKDATA 3)
  (CLARRAYDATA 4)
  (FIXPDATA 5)
  (ILPOINTERARRAY 6)
  (ILNUMBERARRAY 11)
  (HPRINTDATA 7)
  (ALISTDATA 8)
  (PLISTDATA 9)
```

{MEDLEY}<sources>MEDLEYFONTFORMAT.;1

(LISTDATA 10))

)
)

FUNCTION INDEX

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