

File created: 17-Sep-87 15:17:45 {MCS:MCS:STANFORD}<LANE>STORAGE.;16

changes to: (VARS STORAGECOMS)
(FNS SHOWSTORAGE REPAINT)

```
previous date:      9-Sep-87 10:06:41  {MCS:MCS:STANFORD}<LANE>STORAGE.;13
```

Read Table: INTERLISP

Package: INTERLISP

Format: XCCS

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```
(RPAQQ STORAGEMCOMS
  [(LOCALVARS . T)
   (FNS SHOWSTORAGE)
   (FNS SHOWSTORAGEBUTTONFN SHOWSTORAGEREPAINF SHOWSTORAGEUPDATE SHOWSTORAGEDISPLAY SHOWSTORAGEALLOCMD)
   (ADDVARS (SHOWSTORAGEIGNORE SMALLP LITATOM CHARACTER CL::STRUCTURE-OBJECT))
   (INITVARS (SHOWSTAGEMODES ' (ITEM PAGE BOX))
              (SHOWSTAGEWINDOWSIZE 275)
              (SHOWSTAGEDEFAULTTHRESHOLD 1)
              (SHOWSTAGEFONT (bind FONT for ROTATION in ' (90 0)
                                   thereis
                                   (for SIZE from 5 to 10 thereis (SETQ FONT (FONTCREATE 'HELVETICA SIZE
                                                                                          'MRR ROTATION
                                                                                          'DISPLAY T))))
                                   finally
                                   (RETURN FONT))))
   SHOWSTAGEPRIN2FLG)
  (GLOBALVARS SHOWSTAGEIGNORE SHOWSTAGEMODES SHOWSTAGEWINDOWSIZE SHOWSTAGEDEFAULTTHRESHOLD
               SHOWSTAGEFONT SHOWSTAGEPRIN2FLG)
  (DECLARE%: DONTCOPY (CONSTANTS (SHOWSTAGESHADE 42405]))
```

```
(DECLARE%: DOEVAL@COMPILE DONTCOPY
```

```
(LOCALVARS . T)
)
```

(DEFINEQ

```
(SHOWSTORAGE
 [LAMBDA (PAGETHRESHOLD MODE ROTATION)
; Edited 9-Sep-87 10:06 by cdl
```

```

AMBD (PAGETHRESHOLD MODE ROTATION)
(if (NOT (MEMB MODE SHOWSTORAGEMODES))
    then (SETQ MODE (CAR SHOWSTORAGEMODES)))
(if (NOT (NUMBERP PAGETHRESHOLD))
    then (SETQ PAGETHRESHOLD SHOWSTORAGEDEFAULTTHRESHOLD))
(LET (WINDOW SIZE (TYPES (SHOWSTORAGEALLOCMS PAGETHRESHOLD))
      (FONT (if ROTATION
                  then (FONTCOPY SHOWSTORAGEFONT 'ROTATION ROTATION)
                  else SHOWSTORAGEFONT)))
  [SETQ SIZE (TIMES (LENGTH TYPES)
                    (FONTPROP FONT 'HEIGHT)
                    (SELECTQ (FONTPROP FONT 'ROTATION)
                              (90 (GETBOXREGION (WIDTHIFWINDOW SIZE)
                                                    (HEIGHTIFWINDOW SHOWSTORAGEWINDOWSIZE T)))
                              (GETBOXREGION (WIDTHIFWINDOW SHOWSTORAGEWINDOWSIZE)
                                              (HEIGHTIFWINDOW SIZE T)))
                              (CONCAT "Datatype Storage by " MODE " count, threshold = " PAGETHRESHOLD)))
    (DSPFONT FONT WINDOW)
    (WINDOWPROP WINDOW 'BUTTONEVENTFN (FUNCTION SHOWSTORAGEBUTTONFN))
    (WINDOWPROP WINDOW 'RESHAPEFN (FUNCTION SHOWSTORAGEREPAIN))
    (WINDOWPROP WINDOW 'REPAINTFN (FUNCTION SHOWSTORAGEREPAIN))
    (WINDOWPROP WINDOW 'EXPANDFN (FUNCTION SHOWSTORAGEUPDATE))
    (WINDOWPROP WINDOW 'MODE MODE)
    (WINDOWPROP WINDOW 'THRESHOLD PAGETHRESHOLD)
    (WINDOWPROP WINDOW 'ALLOCMS TYPES)
    (REDISPLAYW WINDOW)])

```

)

(DEFINEQ

```
(SHOWSTORAGEBUTTONFN
[LAMBDA (WINDOW) ; Edited 9-Sep-87 08:10 by cdl
```

[illegible]

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(DSPFILL (SELECTQ (FONT (DSPFONT NIL WINDOW)
                        'ROTATION)
              (90 (create REGION
                     HEIGHT _ (WINDOWPROP WINDOW 'DIVISION) using (DSPCLIPPINGREGION NIL WINDOW))
              )
          (create REGION
              WIDTH _ (WINDOWPROP WINDOW 'DIVISION) using (DSPCLIPPINGREGION NIL WINDOW)))
          WHITESHADE
          'REPLACE WINDOW)
(SHOWSTORAGEUPDATE WINDOW))
(until (MOUSESTATE UP) do (BLOCK])

```

(SHOWSTORAGEREPAINT

; Edited 17-Sep-87 15:07 by cdl

```

[LAMBDA (WINDOW)
  (PROG ((FONT (DSPFONT NIL WINDOW))
         (REGION (DSPCLIPPINGREGION NIL WINDOW))
         (DATATYPES SIZE DIVISION FONTHEIGHT ROTATION)
         [if [NULL (SETQ DATATYPES (WINDOWPROP WINDOW 'ALLOCMDS)
                                then (WINDOWPROP WINDOW 'ALLOCMDS (SETQ DATATYPES (SHOWSTORAGEALLOCMDS (WINDOWPROP WINDOW
                                                                                                     'THRESHOLD)
                                                                                                     (WINDOWPROP WINDOW 'DATATYPES (SETQ DATATYPES (in DATATYPES collect CAR)))
                                                                                                     (if (NEQ [SETQ SIZE (TIMES (LENGTH DATATYPES)
                                                                                                     (SETQ FONTHEIGHT (FONTPROP FONT 'HEIGHT)
                                                                                                     (with REGION REGION (SELECTQ (SETQ ROTATION (FONTPROP FONT 'ROTATION)
                                                                                                     (90 WIDTH)
                                                                                                     HEIGHT)))
                                                                                                     then [SHAPEW WINDOW (SELECTQ ROTATION
                                                                                                     (90 (create REGION
                                                                                                     WIDTH _ (WIDTHIFWINDOW SIZE) using (WINDOWPROP WINDOW
                                                                                                     'REGION)))
                                                                                                     (create REGION
                                                                                                     HEIGHT _ (HEIGHTIFWINDOW SIZE T) using (WINDOWPROP WINDOW
                                                                                                     'REGION]
                                                                                                     (RETURN))
                                                                                                     [WINDOWPROP WINDOW 'DIVISION (SETQ DIVISION (DIFFERENCE (with REGION REGION (SELECTQ ROTATION
                                                                                                     (90 TOP)
                                                                                                     RIGHT))
                                                                                                     (STRINGWIDTH (for DATATYPE in DATATYPES
                                                                                                     largest (NCHARS DATATYPE
                                                                                                     SHOWSTORAGEPRIN2FLG))
                                                                                                     FONT SHOWSTORAGEPRIN2FLG]
                                                                                                     (bind (WIDTH _ (ADD1 DIVISION))
                                                                                                     [HEIGHT _ (SELECTQ ROTATION
                                                                                                     (90 (FONTPROP FONT 'ASCENT))
                                                                                                     (FONTPROP FONT 'DESCENT]
                                                                                                     for DATATYPE in DATATYPES do (SELECTQ ROTATION
                                                                                                     (90 (MOVETO HEIGHT WIDTH WINDOW))
                                                                                                     (MOVETO WIDTH HEIGHT WINDOW))
                                                                                                     (if SHOWSTORAGEPRIN2FLG
                                                                                                     then (printout WINDOW .P2 DATATYPE)
                                                                                                     else (printout WINDOW DATATYPE))
                                                                                                     (add HEIGHT FONTHEIGHT))
                                                                                                     (SHOWSTORAGEUPDATE WINDOW])

```

(SHOWSTORAGEUPDATE

; Edited 9-Sep-87 07:48 by cdl

```

[LAMBDA (WINDOW)
  (DECLARE (SPECVARS WINDOW)
           (GLOBALVARS WAITINGCURSOR))
  (RESETFORM (CURSOR WAITINGCURSOR)
    (LET ((FONT (DSPFONT NIL WINDOW))
          (DIVISION (WINDOWPROP WINDOW 'DIVISION))
          (MODE (WINDOWPROP WINDOW 'MODE))
          (DATATYPES (WINDOWPROP WINDOW 'DATATYPES))
          (ALLOCMDSLST (WINDOWPROP WINDOW 'ALLOCMDS NIL))
          (FREE (CREATECELL \FIXP))
          (ALLOCMDS DATATYPE REGION ITEMSPERMDS TYPENUMBER ROTATION FONTHEIGHT)
          (DECLARE (SPECVARS ALLOCMDS))
          (SETQ FONTHEIGHT (FONTPROP FONT 'HEIGHT))
          (SETQ REGION (SELECTQ (SETQ ROTATION (FONTPROP FONT 'ROTATION))
                                (90 (create REGION
                                             WIDTH _ FONTHEIGHT
                                             LEFT _ 1))
                                (create REGION
                                             HEIGHT _ FONTHEIGHT
                                             BOTTOM _ 0)))
          (for DATATYPE in DATATYPES
            do (SETQ TYPENUMBER (\TYPENUMBERFROMNAME DATATYPE))
              (SELECTQ MODE
                ((PAGE ITEM)
                 (\StatsZero FREE)
                 (if (NULL ALLOCMDSLST)
                     then (SETQ ALLOCMDSLST (SHOWSTORAGEALLOCMDS (WINDOWPROP WINDOW
                                                                                                     'THRESHOLD)
                                                                                                     DATATYPE)))
                 (SETQ ALLOCMDS (CADR (pop ALLOCMDSLST)))

```

```

[if (EQ 'LISTP (\TYPENAMEFROMNUMBER TYPENUMBER))
  then [SETQ ITEMSPERMDS (CONSTANT (FIX (FQUOTIENT \MDSIncrement 2.2)
    (for (LSTPAG _ (create POINTER
      PAGE# _ (fetch (DTD DTDNEXTPAGE) of \LISTPDTD)))
      by (create POINTER
        PAGE# _ (fetch (CONSPAGE NEXTPAGE) of LSTPAG))
      while LSTPAG do (\BOXIPLUS FREE (fetch (CONSPAGE CNT) of LSTPAG)))
    else (with DTD (\GETDTD TYPENUMBER)
      (SETQ ITEMSPERMDS (QUOTIENT \MDSIncrement DTDSize))
      (for (PTR _ DTDFREE) by (\GETBASEPTR PTR 0) while PTR
        do (\BOXIPLUS FREE 1))
      NIL)
    (SELECTQ MODE
      (PAGE (SHOWSTORAGEDISPLAY (TIMES ALLOCMDs (QUOTIENT \MDSIncrement WORDSPERPAGE))
        (TIMES (QUOTIENT FREE ITEMSPERMDS)
          (QUOTIENT \MDSIncrement WORDSPERPAGE))
        WINDOW REGION))
      (ITEM (SHOWSTORAGEDISPLAY (TIMES ALLOCMDs ITEMSPERMDS)
        FREE WINDOW REGION))
      (BOX (SHOWSTORAGEDISPLAY (BOXCOUNT TYPENUMBER)
        NIL WINDOW REGION))
      (SHOULDNT))
    (with REGION REGION (SELECTQ ROTATION
      (90 (add LEFT FONTHEIGHT))
      (add BOTTOM FONTHEIGHT]))

```

(SHOWSTORAGEDISPLAY

(* cdl "28-Jan-87 18:22")

```

[LAMBDA (TOTAL FREE WINDOW REGION)
  (PROG ((FONT (DSPFONT NIL WINDOW))
    (DIVISION (WINDOWPROP WINDOW 'DIVISION))
    ROTATION INUSE OFFSET STRINGWIDTH)
    (with REGION REGION [SELECTQ (SETQ ROTATION (FONTPROP FONT 'ROTATION))
      (90 (SETQ HEIGHT TOTAL)
        (SETQ BOTTOM (DIFFERENCE DIVISION TOTAL))
        [SETQ OFFSET (PLUS LEFT (SUB1 (FONTPROP FONT 'ASCENT))
          (PROGN (SETQ WIDTH TOTAL)
            (SETQ LEFT (DIFFERENCE DIVISION TOTAL))
            (SETQ OFFSET (PLUS BOTTOM (FONTPROP FONT 'DESCENT))
              (DSPFILL REGION BLACKSHADE NIL WINDOW)
              (if (NULL FREE)
                then (if (GREATERP TOTAL (STRINGWIDTH TOTAL FONT))
                  then (SELECTQ ROTATION
                    (90 (MOVETO OFFSET (ADD1 (MAX BOTTOM 0))
                      WINDOW))
                    (MOVETO (ADD1 (MAX LEFT 0))
                      OFFSET WINDOW))
                    (printout WINDOW TOTAL))
                  (RETURN))
                (if (GREATERP (SETQ INUSE (DIFFERENCE TOTAL FREE))
                  (STRINGWIDTH INUSE FONT))
                  then (SELECTQ ROTATION
                    (90 (MOVETO OFFSET (ADD1 (MAX (PLUS BOTTOM FREE)
                      0))
                      WINDOW))
                    (MOVETO (ADD1 (MAX (PLUS LEFT FREE)
                      0))
                      OFFSET WINDOW))
                    (DSPOPERATION 'INVERT WINDOW)
                    (PRIN1 INUSE WINDOW)
                    (DSPOPERATION 'REPLACE WINDOW))
                  (SELECTQ ROTATION
                    (90 (SETQ HEIGHT FREE))
                    (SETQ WIDTH FREE))
                  (DSPFILL REGION SHOWSTORAGE SHADE NIL WINDOW)
                  (if (AND (GREATERP FREE (SETQ STRINGWIDTH (STRINGWIDTH FREE FONT)))
                    (GREATERP (DIFFERENCE DIVISION INUSE)
                      STRINGWIDTH))
                    then (SELECTQ ROTATION
                      (90 (MOVETO OFFSET (ADD1 (MAX BOTTOM 0))
                        WINDOW))
                      (MOVETO (ADD1 (MAX LEFT 0))
                        OFFSET WINDOW))
                      (PRIN1 FREE WINDOW]))

```

(SHOWSTORAGEALLOCMDs

; Edited 9-Sep-87 10:05 by cdl

```

[LAMBDA (THRESHOLD TYPES)
  (DECLARE (SPECVARS THRESHOLD)
    (GLOBALVARS WAITINGCURSOR))
  (RESETFORM (CURSOR WAITINGCURSOR)
    (bind ALLOCMDs declare%: (SPECVARS ALLOCMDs) for DATATYPE inside (OR TYPES (LDIFFERENCE (DATATYPES)
      SHOWSTORAGEIGNORE))
      everytime (SETQ ALLOCMDs 0)
        [\MAPMDs (\TYPENUMBERFROMNAME DATATYPE)
          (FUNCTION (LAMBDA NIL
            (ADDIVAR ALLOCMDs)

```

```
      when (GEQ (TIMES ALLOCMD5 (QUOTIENT \MDSIncrement WORDSPERPAGE))
              THRESHOLD)
      collect (LIST DATATYPE ALLOCMD5])

)

(ADDTOTVAR SHOWSTORAGEIGNORE SMALLP LITATOM CHARACTER CL::STRUCTURE-OBJECT)

(RPAQ? SHOWSTORAGEMODES '(ITEM PAGE BOX))

(RPAQ? SHOWSTORAGEWINDOWSIZE 275)

(RPAQ? SHOWSTORAGEDEFAULTTHRESHOLD 1)

(RPAQ? SHOWSTORAGEFONT
  (bind FONT for ROTATION in '(90 0)
    thereis
      (for SIZE from 5 to 10 thereis (SETQ FONT (FONTCREATE 'HELVETICA SIZE 'MRR ROTATION 'DISPLAY T)))
    finally
      (RETURN FONT)))

(RPAQ? SHOWSTORAGEPRIN2FLG NIL)

(DECLARE%: DOEVAL@COMPILE DONTCOPY

(GLOBALVARS SHOWSTORAGEIGNORE SHOWSTORAGEMODES SHOWSTORAGEWINDOWSIZE SHOWSTORAGEDEFAULTTHRESHOLD SHOWSTORAGEFONT
  SHOWSTORAGEPRIN2FLG)

)

(DECLARE%: DONTCOPY

(DECLARE%: EVAL@COMPILE

(RPAQQ SHOWSTORAGE SHADE 42405)

(CONSTANTS (SHOWSTORAGE SHADE 42405))
)
)

(PUTPROPS STORAGE COPYRIGHT ("Stanford University" 1984 1985 1986 1987))
```

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