

File created: 5-Dec-2020 16:35:48 {DSK}<Users>arunwelch>SKYDRIVE>DOCUMENTS>UNIX>LISP>LDE>ROOM  
S>MEDLEY-35>ROOMS-PLACEMENT-EDITOR.;2

previous date: 17-Aug-90 13:25:31 {DSK}<Users>arunwelch>SKYDRIVE>DOCUMENTS>UNIX>LISP>LDE>ROOMS>MEDLEY-35>ROOMS-P  
LACEMENT-EDITOR.;1

Read Table: XCL

Package: ROOMS

Format: XCCS

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```
(IL:RPAQQ IL:ROOMS-PLACEMENT-EDITORCOMS
  ((FILE-ENVIRONMENTS IL:ROOMS-PLACEMENT-EDITOR)
   (IL:P (REQUIRE "ROOMS")
          (EXPORT '(GET-PE PRINT-PEP-TITLE-STRING)
                   "ROOMS")))
  (IL:STRUCTURES PLACEMENT-EDITOR PE-PLACEMENT)
  (IL:VARIABLES *PLACEMENT-EDITORS* *PE-INHIBIT-REDISPLAY*)
  (IL:FUNCTIONS GET-PE MAKE-PE FIND-PE PE-WINDOW-P PE-CLOSEFN PE-REPAINTFN PE-RESHAPEFN PE-TOTOPFN
                UPDATE-PE? UPDATE-PE UPDATE-PEPS UPDATE-PEP-SAVE-BITMAP UPDATE-PE-WINDOW PLACED-REGION)
  (IL:COMS
   (IL:VARIABLES *DEFAULT-ICON-SIZE* *PE-TITLE-FONT* *PEP-TITLE-FONT* *PEP-INCLUDED-SHADE*
                 *PE-BORDER*)
   (IL:FUNCTIONS DISPLAY-PEPS SAVE-PEP-IMAGE DISPLAY-PE-TITLE DISPLAY-PE-BORDER DISPLAY-PEP
                 PRINT-PEP-TITLE PRINT-PEP-TITLE-STRING)
   (IL:VARIABLES *DISPLAY-PE-DEPTH*)
   (IL:WINDOW-TYPES :PLACEMENT-EDITOR))
  (IL:FUNCTIONS PE-RIGHTBUTTONFN ; mouse trackers
                PE-BUTTONEVENTFN PE-BUTTONEVENTFN-INTERNAL PE-TRACK-MOUSE PE-GETMOUSESTATE
                PE-TRACK-LEFT-BUTTON PE-TRACK-MIDDLE-BUTTON PEP-GETBOXPOSITION PEP-GETBOXPOSITION-INTERNAL)
  (IL:COMS ; editing
   (IL:FUNCTIONS PE-ROOM-CHANGED-FN PEP-SELECTED EXPAND-PLACEMENT PEP-SELECTED-COPY-OR-MOVE
                 PE-ROOM-SELECTED)
   (EVAL-WHEN (LOAD)
    (IL:P (PUSHNEW 'PE-ROOM-CHANGED-FN *ROOM-CHANGED-FUNCTIONS*))))
  (IL:GLOBALVARS IL:TINYFONT IL:CROSSHAIRS)))
```

```
(DEFINE-FILE-ENVIRONMENT IL:ROOMS-PLACEMENT-EDITOR :COMPILER :COMPILE-FILE
  :PACKAGE "ROOMS"
  :READTABLE "XCL")
```

```
(REQUIRE "ROOMS")
```

```
(EXPORT '(GET-PE PRINT-PEP-TITLE-STRING)
  "ROOMS")
```

```
(DEFSTRUCT (PLACEMENT-EDITOR (:CONC-NAME "PE-")
  (:CONSTRUCTOR MAKE-PE-INTERNAL)
  (:PRINT-FUNCTION (LAMBDA (PE STREAM DEPTH)
    (FORMAT STREAM "#<Placement Editor for ~S>"
              (PE-ROOM-NAME PE)))))
  (CHANGED? T :TYPE (MEMBER T NIL :PLACEMENTS))
  (ROOM-NAME NIL)
  (SCALE *ONE-TO-ONE* :TYPE SCALE)
  (PEPS NIL :TYPE LIST)
  (WINDOW NIL)
  (TITLE-TEXT NIL :TYPE TEXT)
  (CLIPPING-REGION NIL))
```

```
(DEFSTRUCT (PE-PLACEMENT (:CONC-NAME "PEP-")
  (:PRINT-FUNCTION (LAMBDA (PEP STREAM DEPTH)
    (FORMAT STREAM "#<PEP ~O,~O>" (IL:\\HILOC PEP)
              (IL:\\LOLOC PEP)))))
  (PLACEMENT NIL :TYPE PLACEMENT)
  (SCALED-REGION NIL :TYPE REGION)
  (IMMEDIATE? NIL :TYPE (MEMBER T NIL))
  (OPEN? NIL :TYPE (MEMBER T NIL))
  (SAVE-BITMAP NIL)
  (UNSCALED-REGION NIL :TYPE REGION))
```

```
(DEFGLOBALVAR *PLACEMENT-EDITORS* (MAKE-HASH-TABLE :TEST 'EQUAL))
```

```
(DEFVAR *PE-INHIBIT-REDISPLAY* NIL)
```

```
(DEFUN GET-PE (ROOM-NAME &OPTIONAL REGION)
```

;;; returns the PE for ROOM, creating one if required. if REGION is provided then the PE will occupy it.

```
(LET ((PE (FIND-PE ROOM-NAME)))
```

```

(IF PE
  ;; this code optimized so there is never more than one redisplay when entering overview
  (LET* ((WINDOW (PE-WINDOW PE))
         (ICON (WINDOW-ICON WINDOW))
         (SHAPED?))
    ;; this gets smashed when window closed
    (IL:WINDOWPROP WINDOW :PLACEMENT-EDITOR PE)
    (LET ((*PE-INHIBIT-REDISPLAY* T))
      (UN-HIDE-WINDOW WINDOW)
      (IL:OPENW WINDOW)
      (IL:TOTOPW WINDOW)
      (WHEN REGION (SHAPE-WINDOW WINDOW REGION)))
    (UPDATE-PE? PE)
    PE)
  (MAKE-PE ROOM-NAME REGION)))

```

```
(DEFUN MAKE-PE (ROOM-NAME &OPTIONAL REGION)
```

```
;; don't call this. call GET-PE instead. we depend on there only being on PE per room.
```

```

(LET* ((WINDOW (IL:CREATEW REGION NIL 0))
      (PE (MAKE-PE-INTERNAL :ROOM-NAME ROOM-NAME :WINDOW WINDOW :TITLE-TEXT (MAKE-TEXT :STRING
                                                                                          (IF (STRINGP ROOM-NAME)
                                                                                          ROOM-NAME
                                                                                          (PRINC-TO-STRING
                                                                                          ROOM-NAME))
                                                                                          :SHADOWS T :FONT
                                                                                          *PE-TITLE-FONT*)))))
  (IL:WINDOWPROP WINDOW 'IL:CLOSEFN 'PE-CLOSEFN)
  (IL:WINDOWPROP WINDOW :PLACEMENT-EDITOR PE)
  (IL:WINDOWPROP WINDOW 'IL:BUTTONEVENTFN 'PE-BUTTONEVENTFN)
  (IL:WINDOWPROP WINDOW 'IL:RIGHTBUTTONFN 'PE-RIGHTBUTTONFN)
  (IL:WINDOWPROP WINDOW 'IL:REPAINTFN 'PE-REPAINTFN)
  (IL:WINDOWPROP WINDOW 'IL:RESHAPEFN 'PE-RESHAPEFN)
  (IL:WINDOWPROP WINDOW 'IL:TOTOPFN 'PE-TOTOPFN)
  (IL:WINDOWPROP WINDOW 'IL:AFTERMOVEFN 'PE-TOTOPFN)
  (IL:WINDOWPROP WINDOW 'IL:OPENFN 'PE-TOTOPFN)
  (IL:DSPFONT *PEP-TITLE-FONT* WINDOW)
  (SETF (FIND-PE ROOM-NAME)
        PE)
  ;; update things
  (UPDATE-PE-WINDOW PE)
  (UPDATE-PE PE)
  PE))

```

```
(DEFMACRO FIND-PE (ROOM-NAME)
  `(GETHASH ,ROOM-NAME *PLACEMENT-EDITORS*))
```

```
(DEFUN PE-WINDOW-P (WINDOW)
  (PLACEMENT-EDITOR-P (IL:WINDOWPROP WINDOW :PLACEMENT-EDITOR)))
```

```
(DEFUN PE-CLOSEFN (WINDOW)
  ;; remove circularity
  (IL:WINDOWPROP WINDOW :PLACEMENT-EDITOR NIL))
```

```
(DEFUN PE-REPAINTFN (WINDOW &REST IGNORE)
  (LET ((PE (IL:WINDOWPROP WINDOW :PLACEMENT-EDITOR)))
    (DISPLAY-PE-TITLE PE)
    (DISPLAY-PE-BORDER PE)
    (SETF (PE-CHANGED? PE)
          T)
    (UPDATE-PE PE)))
```

```
(DEFUN PE-RESHAPEFN (WINDOW &REST IGNORE)
  (LET ((PE (IL:WINDOWPROP WINDOW :PLACEMENT-EDITOR)))
    (UPDATE-PE-WINDOW PE)
    (SETF (PE-CHANGED? PE)
          T)
    (UNLESS *PE-INHIBIT-REDISPLAY* (UPDATE-PE PE))))
```

```
(DEFUN PE-TOTOPFN (WINDOW)
  (IL:TOTOPW WINDOW T)
  (LET ((PE (IL:WINDOWPROP WINDOW :PLACEMENT-EDITOR)))
    (WHEN PE
      (DISPLAY-PE-TITLE PE)
      (UNLESS *PE-INHIBIT-REDISPLAY* (UPDATE-PE? PE)))))
```

```
(DEFUN UPDATE-PE? (PE)
  (WHEN (PE-CHANGED? PE)
    (UPDATE-PE PE)))
```

```
(DEFUN UPDATE-PE (PE)
```

```
;; update PE per the current state of rooms
```

```
  (LET ((*PE-INHIBIT-REDISPLAY* T)
    ;; don't want TOTOP to update too
    (ROOM (ROOM-NAMED (PE-ROOM-NAME PE))))
    (WHEN ROOM
      (LET ((DSP (IL:GETSTREAM (PE-WINDOW PE))))
        (CASE (PE-CHANGED? PE)
          (:PLACEMENTS ; incremental redisplay
            (LET ((OLD-PEPS (PE-PEPS PE)))
              (UPDATE-PEPS PE OLD-PEPS)
              (DISPLAY-PEPS PE DSP OLD-PEPS)))
          (T ; total redisplay
            (UPDATE-PEPS PE)
            (PAINT-BACKGROUND ROOM DSP :SCALE (PE-SCALE PE)
              :NO-TEXT T :CLIPPING-REGION (PE-CLIPPING-REGION PE))
            (DISPLAY-PEPS PE DSP)))
        (SETF (PE-CHANGED? PE)
          NIL))))))
```

```
(DEFUN UPDATE-PEPS (PE &OPTIONAL OLD-PEPS)
```

```
;; build a new list of PEPs for PE.
```

```
;; the redisplay code depends upon us leaving EQ peps only when the placement hasn't changed.
```

```
  (LET ((ROOM (ROOM-NAMED (PE-ROOM-NAME PE))))
    (WHEN ROOM
      (LET ((IMMEDIATE-PLACEMENTS (ROOM-PLACEMENTS ROOM))
        (SCALE (PE-SCALE PE)))
        (DO* ((ALL (FIND-PLACEMENTS ROOM))
          (TAIL ALL (CDR TAIL)))
          ((NULL TAIL)
            (SETF (PE-PEPS PE)
              ALL))
          (SETF (FIRST TAIL)
            (LET* ((PLACEMENT (FIRST TAIL))
              (IMMEDIATE? (MEMBER PLACEMENT IMMEDIATE-PLACEMENTS :TEST 'EQ))
              (SCALED-REGION (PLACED-REGION PLACEMENT)))
              (OR (DOLIST (PEP OLD-PEPS)
                ;; try to find an old PEP for placement
                (WHEN (EQ (PEP-PLACEMENT PEP)
                  PLACEMENT)
                  ;; found it
                  (WHEN (EQ PEP (FIRST OLD-PEPS))
                    ;; speed future searches
                    (POP OLD-PEPS))
                    (RETURN (WHEN (AND (IF (PEP-IMMEDIATE? PEP)
                      IMMEDIATE?
                      (NOT IMMEDIATE?))
                    (EQUAL (PEP-UNSCALED-REGION PEP)
                      SCALED-REGION))
                      ; ok to use it
                      PEP))))
              (UPDATE-PEP-SAVE-BITMAP (MAKE-PE-PLACEMENT :PLACEMENT PLACEMENT :IMMEDIATE?
                IMMEDIATE? :SCALED-REGION (SCALE-REGION
                  SCALED-REGION
                  SCALE)
                :UNSCALED-REGION SCALED-REGION))))))))))
```

```
(DEFUN UPDATE-PEP-SAVE-BITMAP (PEP)
```

```
  (LET* ((SCALED-REGION (PEP-SCALED-REGION PEP))
    (SAVE (IL:BITMAPCREATE (REGION-WIDTH SCALED-REGION)
      (REGION-HEIGHT SCALED-REGION)))
    (DSP (IL:LOADTIMECONSTANT (IL:DSPCREATE))))
    (IL:DSPDESTINATION SAVE DSP)
    (IL:DSPXOFFSET (- (REGION-LEFT SCALED-REGION)
      DSP)
    (IL:DSPYOFFSET (- (REGION-BOTTOM SCALED-REGION)
      DSP)
    (DISPLAY-PEP PEP DSP)
    (SETF (PEP-SAVE-BITMAP PEP)
      SAVE)
    (SETF (PEP-OPEN? PEP)
```

```

        NIL)
    PEP))

```

```

(DEFUN UPDATE-PE-WINDOW (PE)
  (LET* ((WINDOW (PE-WINDOW PE))
         (DSP (IL:GETSTREAM WINDOW))
         (WINDOW-REGION (WINDOW-REGION WINDOW))
         (WINDOW-HEIGHT (REGION-HEIGHT WINDOW-REGION))
         (TEXT (PE-TITLE-TEXT PE))
         (HEIGHT (- WINDOW-HEIGHT (TEXT-%HEIGHT TEXT)))
         (TWICE-BORDER (* *PE-BORDER* 2))
         (CLIPPING-REGION (MAKE-REGION :LEFT *PE-BORDER* :BOTTOM *PE-BORDER* :WIDTH (- (REGION-WIDTH
                                                                                          WINDOW-REGION)
                                                                                          TWICE-BORDER)
                                       :HEIGHT
                                       (- HEIGHT TWICE-BORDER))))
    ;; update scale & clipping region
    (SETF (PE-CLIPPING-REGION PE)
          CLIPPING-REGION)
    (SETF (PE-SCALE PE)
          (MAKE-SCALE CLIPPING-REGION))
    (SETF (TEXT-POSITION TEXT)
          (MAKE-POSITION *PE-BORDER* HEIGHT))
    (DISPLAY-PE-TITLE PE)
    (DISPLAY-PE-BORDER PE)))

```

```

(DEFUN PLACED-REGION (PLACEMENT)

```

;;; returns the region PLACEMENT would occupy on the screen. for non-shrunken placements this is just the PLACEMENT-REGION, but for shrunken placements we need to figure what the region of the icon would be.

```

  (IF (PLACEMENT-SHRUNKEN? PLACEMENT)
      (LET* ((ICON-POSITION (PLACEMENT-ICON-POSITION PLACEMENT))
             (ICON (WINDOW-ICON (PLACEMENT-WINDOW PLACEMENT)))
             (ICON-REGION (IF ICON (WINDOW-REGION ICON))))
        (MAKE-REGION :LEFT (POSITION-X ICON-POSITION)
                     :BOTTOM
                     (POSITION-Y ICON-POSITION)
                     :WIDTH
                     (IF ICON
                        (REGION-WIDTH ICON-REGION)
                        *DEFAULT-ICON-SIZE*)
                     :HEIGHT
                     (IF ICON
                        (REGION-HEIGHT ICON-REGION)
                        *DEFAULT-ICON-SIZE*)))
      (PLACEMENT-REGION PLACEMENT)))

```

;; display

```

(DEFVAR *DEFAULT-ICON-SIZE*

```

;;; when we draw a placement for a non-existent icon, we draw it as a square with this many (scaled) pixels per side.

```

75)

```

```

(DEFGLOBALVAR *PE-TITLE-FONT* (IL:FONTCREATE 'IL:HELVETICA 36 ' (IL:BOLD IL:REGULAR IL:REGULAR)
                                             NIL
                                             'IL:DISPLAY))

```

```

(DEFGLOBALPARAMETER *PEP-TITLE-FONT* (IL:FONTCREATE IL:TINYFONT NIL NIL NIL 'IL:DISPLAY))

```

```

(DEFGLOBALPARAMETER *PEP-INCLUDED-SHADE* 4680)

```

```

(DEFGLOBALPARAMETER *PE-BORDER* 4)

```

```

(DEFUN DISPLAY-PEPS (PE DSP &OPTIONAL OLD-PEPS)

```

;;; displays PE on DSP. Should be called DISPLAY-PE-INTERNAL.

```

  (LET ((OLD OLD-PEPS)
        (NEW (PE-PEPS PE)))
    (LOOP
      ;; pop off the EQ peps on the bottom of window stack
      (WHEN (OR (NULL OLD)
                (NULL NEW)
                (NOT (EQ (FIRST OLD)
                        (FIRST NEW)))))

```

```

        (RETURN))
      (POP OLD)
      (POP NEW))
;; remove image of remaining old peps
(DOLIST (PEP (REVERSE OLD))
  (SAVE-PEP-IMAGE DSP PEP PE))
;; display remaining new peps
(DOLIST (PEP NEW)
  (SAVE-PEP-IMAGE DSP PEP PE)))

(DEFUN SAVE-PEP-IMAGE (DSP PEP PE)
  ;; switch contents of PEP's save & its region of DSP.

  (LET* ((REGION (PEP-SCALED-REGION PEP))
        (LEFT (POP REGION))
        (BOTTOM (POP REGION))
        (WIDTH (POP REGION))
        (HEIGHT (POP REGION))
        (CLIPPING (PE-CLIPPING-REGION PE))
        (CLIPPING-LEFT (POP CLIPPING))
        (CLIPPING-BOTTOM (POP CLIPPING))
        (CLIPPING-WIDTH (POP CLIPPING))
        (CLIPPING-HEIGHT (POP CLIPPING))
        (SAVE (PEP-SAVE-BITMAP PEP)))
    (IL:UNINTERRUPTABLY
      (IL:BITBLT SAVE 0 0 DSP LEFT BOTTOM WIDTH HEIGHT 'IL:INPUT 'IL:INVERT NIL CLIPPING)
      (IL:BITBLT DSP (MAX LEFT CLIPPING-LEFT)
        (MAX BOTTOM CLIPPING-BOTTOM)
        SAVE 0 0 (MIN WIDTH (- (+ CLIPPING-WIDTH CLIPPING-LEFT)
          LEFT))
        (MIN HEIGHT (- (+ CLIPPING-HEIGHT CLIPPING-BOTTOM)
          BOTTOM))
        'IL:INPUT
        'IL:INVERT)
      (IL:BITBLT SAVE 0 0 DSP LEFT BOTTOM WIDTH HEIGHT 'IL:INPUT 'IL:INVERT NIL CLIPPING))
    (SETF (PEP-OPEN? PEP)
      (NOT (PEP-OPEN? PEP)))))

(DEFUN DISPLAY-PE-TITLE (PE)
  (LET* ((WINDOW (PE-WINDOW PE))
        (WINDOW-REGION (WINDOW-REGION WINDOW))
        (DSP (IL:GETSTREAM WINDOW))
        (TEXT (PE-TITLE-TEXT PE))
        (WINDOW-HEIGHT (REGION-HEIGHT WINDOW-REGION))
        (BOTTOM (- WINDOW-HEIGHT (TEXT-%HEIGHT TEXT))))
    ;; blt the background into the title bar
    (IL:BITBLT (IL:WINDOWPROP WINDOW 'IL:IMAGECOVERED)
      0 BOTTOM DSP 0 BOTTOM (REGION-WIDTH WINDOW-REGION)
      (- WINDOW-HEIGHT BOTTOM))
    (IF (EQUAL (PE-ROOM-NAME PE)
      *BACK-DOOR-ROOM-NAME*)
      ;; the title of the back door room gets special shadows
      (WHEN (EQ (TEXT-SHADOWS TEXT)
        T)
        (SETF (TEXT-SHADOWS TEXT)
          (MAPLIST #'(LAMBDA (TAIL)
            (IF (REST TAIL)
              (FIRST TAIL)
              (IL:CONSTANT (MAKE-TEXT-SHADOW :SOURCE-TYPE 'IL:MERGE :TEXTURE
                42405 :OPERATION 'IL:INVERT))))
            (GET-TEXT-SHADOWS-INTERNAL *PE-TITLE-FONT*)))
          (UPDATE-TEXT-CACHES TEXT))
        (UNLESS (EQ (TEXT-SHADOWS TEXT)
          T)
          ;; used to be back-door room
          (SETF (TEXT-SHADOWS TEXT)
            T)
          (UPDATE-TEXT-CACHES TEXT)))
        (DISPLAY-TEXT TEXT DSP)))

(DEFUN DISPLAY-PE-BORDER (PE)
  (LET* ((WINDOW (PE-WINDOW PE))
        (WINDOW-REGION (WINDOW-REGION WINDOW)))
    ;; draw the window border & clear inside it
    (DRAW&FILL-BOX-WITHIN (MAKE-REGION :LEFT 0 :BOTTOM 0 :WIDTH (REGION-WIDTH WINDOW-REGION)
      :HEIGHT
      (- (REGION-HEIGHT WINDOW-REGION)

```

```

(TEXT-%HEIGHT (PE-TITLE-TEXT PE)))
(IL:GETSTREAM WINDOW)
:BORDER-WIDTH
(FLOOR *PE-BORDER* 2)))

```

```
(DEFUN DISPLAY-PEP (PEP DSP)
```

```
;; displays a PE-PLACEMENT
```

```
;; draw a box around the region & fill it if it represents an immediate placement in the room of this PEP.
```

```

(DRAW&FILL-BOX-WITHIN (PEP-SCALED-REGION PEP)
  DSP :BORDER-WIDTH 1 :SHADE (IF (PEP-IMMEDIATE? PEP)
    IL:WHITESHAE
    *PEP-INCLUDED-SHADE*))

```

```
(PRINT-PEP-TITLE PEP DSP))
```

```
(DEFUN PRINT-PEP-TITLE (PEP DSP)
```

```
;; print something within the box drawn for PEP on DSP
```

```

(LET* ((WINDOW-TYPE (WINDOW-TYPE (PLACEMENT-WINDOW (PEP-PLACEMENT PEP)
  T)))
  (WHEN WINDOW-TYPE
    (LET ((TITLE (WINDOW-TYPE-PROP WINDOW-TYPE :TITLE)))
      ;; interpret the TITLE property of the window type of the placement this PEP represents
      (COND
        ((NULL TITLE)
          ;; if none specified, just print the name of the type
          (PRINT-PEP-TITLE-STRING (STRING (WINDOW-TYPE-NAME WINDOW-TYPE))
            (PEP-SCALED-REGION PEP)
            DSP :NO-TITLE-BAR? (PLACEMENT-SHRUNKEN? (PEP-PLACEMENT PEP))))
        ((STRINGP TITLE)
          ;; if it's a string, print it
          (PRINT-PEP-TITLE-STRING TITLE (PEP-SCALED-REGION PEP)
            DSP :NO-TITLE-BAR? (PLACEMENT-SHRUNKEN? (PEP-PLACEMENT PEP))))
        (T
          ;; otherwise assume it's a function & call it
          (FUNCALL TITLE (PEP-PLACEMENT PEP)
            (PEP-SCALED-REGION PEP)
            DSP))))))

```

```
(DEFUN PRINT-PEP-TITLE-STRING (STRING REGION DSP &KEY (FONT *PEP-TITLE-FONT*)
  NO-TITLE-BAR?)
```

```
;; prints STRING in the top left corner of REGION if it will fit.
```

```

(LET* ((STRING (IF (STRINGP STRING)
  STRING
  (PRINC-TO-STRING STRING)))
  (FONT-HEIGHT (IL:FONTHEIGHT FONT))
  (TITLE-Y (- (+ (REGION-BOTTOM REGION)
    (REGION-HEIGHT REGION))
    FONT-HEIGHT
    (IF NO-TITLE-BAR?
      1
      0)))
  (STRING-WIDTH (IL:STRINGWIDTH STRING FONT))
  (WHEN (AND (< STRING-WIDTH (- (REGION-WIDTH REGION)
    2))
    (< FONT-HEIGHT (- (REGION-HEIGHT REGION)
      2)))
    (UNLESS NO-TITLE-BAR?
      (IL:BLTSHADE IL:BLACKSHADE DSP (REGION-LEFT REGION)
        (1- TITLE-Y)
        (REGION-WIDTH REGION)
        FONT-HEIGHT
        'IL:PAINT))
      (IL:DSOPERATION (IF NO-TITLE-BAR?
        'IL:PAINT
        'IL:INVERT)
        DSP)
      (IL:DSPFONT FONT DSP)
      (IL:MOVETO (+ (REGION-LEFT REGION)
        (IF NO-TITLE-BAR?
          (- (FLOOR (REGION-WIDTH REGION)
            2)
          (FLOOR STRING-WIDTH 2))
        2))
        (IF NO-TITLE-BAR?
          (+ (REGION-BOTTOM REGION)
            (- (FLOOR (REGION-HEIGHT REGION)
              2)

```

```

(FLOOR FONT-HEIGHT 2))
(IL:FONTDESCENT FONT))
(+ TITLE-Y (IL:FONTDESCENT FONT)))
DSP)
(CHECK-TYPE DSP STREAM)
(IL:\\SOUT STRING DSP)
(IL:DSPOPERATION 'IL:REPLACE DSP))))

```

```

(DEFPARAMETER *DISPLAY-PE-DEPTH* 1
  "Depth to recursively display placement editors within placement editors")

```

```

(DEF-WINDOW-TYPE :PLACEMENT-EDITOR :RECOGNIZER (LAMBDA (WINDOW)
  (PLACEMENT-EDITOR-P (IL:WINDOWPROP WINDOW
    :PLACEMENT-EDITOR)))

:ABTRACTER (LAMBDA (WINDOW)
  (LET ((PE (IL:WINDOWPROP WINDOW :PLACEMENT-EDITOR)))
    (WHEN PE
      `(:REGION , (EXTERNALIZE-REGION (WINDOW-REGION (PE-WINDOW PE)))
        :ROOM-NAME
        , (PE-ROOM-NAME (IL:WINDOWPROP WINDOW :PLACEMENT-EDITOR))))))

:RECONSTITUTER (LAMBDA (PLIST)
  (PE-WINDOW (GET-PE (GETF PLIST :ROOM-NAME)
    (INTERNALIZE-REGION (GETF PLIST :REGION)))))

:TITLE (LAMBDA (PLACEMENT REGION DSP)
  (LET ((PE (IL:WINDOWPROP (PLACEMENT-WINDOW PLACEMENT)
    :PLACEMENT-EDITOR)))
    (WHEN PE
      (PRINT-PEP-TITLE-STRING (LET ((NAME (PE-ROOM-NAME PE)))
        (IF (STRINGP NAME)
          NAME
          (PRINC-TO-STRING NAME)))
        REGION DSP)
      )))

```

```

#|(when (> *display-pe-depth* 0) (let ((*display-pe-depth* (1- *display-pe-depth*)) (old-scale (pe-scale pe)) (old-peps (pe-peps pe)) (old-clipping-region (pe-clipping-region pe)) (new-clipping-region (make-region :left (+ (region-left region) 1) :bottom (+ (region-bottom region) 1) :width (- (region-width region) 2) :height (- (region-height region) 2) (il:fontheight *pep-title-font*)))) (unwind-protect (progn (setf (pe-scale pe) (make-scale new-clipping-region)) (setf (pe-changed? pe) t) (setf (pe-clipping-region pe) new-clipping-region) (update-peps pe) (il:* il:;;| "recursively display pictogram") (display-peps pe dsp)) (setf (pe-scale pe) old-scale) (setf (pe-peps pe) old-peps) (setf (pe-clipping-region pe) old-clipping-region))))|#
)))

```

```

(DEFUN PE-RIGHTBUTTONFN (WINDOW)
  (UNLESS (EQ *CURRENT-ROOM* *OVERVIEW-ROOM*)
    (IL:DOWINDOWCOM WINDOW)))

```

```

(DEFUN PE-BUTTONEVENTFN (WINDOW)
  (IL:TOTOPW WINDOW)
  (LET ((PE (IL:WINDOWPROP WINDOW :PLACEMENT-EDITOR)))
    (IF (IL:INSIDE (PE-CLIPPING-REGION PE)
      (IL:LASTMOUSEX WINDOW)
      (IL:LASTMOUSEY WINDOW))
      (PE-BUTTONEVENTFN-INTERNAL PE WINDOW)
      (UNLESS (EQ *CURRENT-ROOM* *OVERVIEW-ROOM*)
        (CASE (MENU ' ("ReFetch" :RE-FETCH))
          (:RE-FETCH (UPDATE-PLACEMENTS)))))))

```

```

(DEFUN PE-BUTTONEVENTFN-INTERNAL (PE WINDOW)
  (LET ((WINDOW WINDOW)
    (PE PE))
    (LOOP (WHEN (AND (PLACEMENT-EDITOR-P PE)
      (PE-TRACK-MOUSE PE WINDOW))
      (RETURN))
      (PE-GETMOUSESTATE)
      (UNLESS (IL:LASTMOUSESTATE (OR IL:LEFT IL:MIDDLE))
        (RETURN))
      (SETQ WINDOW (IL:WHICHW))
      (SETQ PE (WHEN WINDOW (IL:WINDOWPROP WINDOW :PLACEMENT-EDITOR))))))

```

```

(DEFUN PE-TRACK-MOUSE (PE WINDOW)
  (LET ((*TIMER* (IL:SETUPTIMER *BUTTON-HELP-DELAY*)))
    (DECLARE (SPECIAL *TIMER*))
    (COND
      ((IL:LASTMOUSESTATE (IL:ONLY IL:LEFT))
        (LET ((SELECTED-PEP (PE-TRACK-LEFT-BUTTON PE)))
          (WHEN SELECTED-PEP
            (PEP-SELECTED SELECTED-PEP PE)
            ;; return true when something's been selected
            T)))
      ((IL:LASTMOUSESTATE IL:MIDDLE)
        (LET ((ROOM-SELECTED? (PE-TRACK-MIDDLE-BUTTON PE)))

```

```

(WHEN ROOM-SELECTED?
  (PE-ROOM-SELECTED PE)
  ;; return true when something's been selected
  T)))))

```

```
(DEFUN PE-GETMOUSESTATE ()
```

```
;; call GETMOUSESTATE, and if the mouse hasn't moved, block. This is in case we're in the Overview, so the keyboard watcher will run.
```

```

(LET ((X IL:LASTMOUSEX)
      (Y IL:LASTMOUSEY))
  (IL:GETMOUSESTATE)
  (WHEN (AND (= X IL:LASTMOUSEX)
              (= Y IL:LASTMOUSEY))
    (IL:BLOCK))))

```

```
(DEFUN PE-TRACK-LEFT-BUTTON (PE)
```

```
(DECLARE (SPECIAL *TIMER*))
```

```

(LET ((SELECTED-PEP NIL)
      (CLIPPING-REGION (PE-CLIPPING-REGION PE))
      (WINDOW (PE-WINDOW PE))

```

```
;; need PEPs in top down order to handle occlusion correctly
```

```
(PEPS (REVERSE (PE-PEPS PE))))
```

```

(MACROLET ((INVERT-SELECTED-PEP NIL `(LET ((REGION (PEP-SCALED-REGION SELECTED-PEP))
                                           (IL:BLTSHADE IL:BLACKSHADE WINDOW (REGION-LEFT REGION)
                                                         (REGION-BOTTOM REGION)
                                                         (REGION-WIDTH REGION)
                                                         (REGION-HEIGHT REGION)
                                                         'IL:INVERT CLIPPING-REGION))))

```

```

      (LOOP (UNLESS (AND (IL:LASTMOUSESTATE (IL:ONLY IL:LEFT))
                        (IL:INSIDEP CLIPPING-REGION (IL:LASTMOUSEX WINDOW)
                                     (IL:LASTMOUSEY WINDOW))))

```

```
(RETURN (WHEN SELECTED-PEP
```

```
;; restore the display
```

```
(INVERT-SELECTED-PEP)
```

```
(WHEN (AND (NOT (IL:LASTMOUSESTATE IL:MIDDLE))
```

```

      (IL:INSIDEP CLIPPING-REGION (IL:LASTMOUSEX WINDOW)
                    (IL:LASTMOUSEY WINDOW))))

```

```
;; return the PEP if there's one selected & the button event fn should be exited.
```

```
SELECTED-PEP)))
```

```

(DOLIST
  (PEP PEPs (WHEN SELECTED-PEP ;; look down the occlusion stack

```

```
;; bottomed out -- must be in the background
```

```
;; have to de-select selection
```

```
(INVERT-SELECTED-PEP)
```

```
(SETQ SELECTED-PEP NIL)))
```

```

      (WHEN (IL:INSIDEP (PEP-SCALED-REGION PEP)
                        (IL:LASTMOUSEX WINDOW)
                        (IL:LASTMOUSEY WINDOW))

```

```
;; we're in a PEP
```

```
(UNLESS (EQ PEP SELECTED-PEP)
```

```
;; it's a new selection
```

```
(WHEN SELECTED-PEP
```

```
;; unselect the current selection
```

```
(INVERT-SELECTED-PEP))
```

```
;; select the new one
```

```
(SETQ SELECTED-PEP PEP)
```

```
(INVERT-SELECTED-PEP))
```

```
;; pop to the outer loop
```

```
(RETURN)))
```

```
(WHEN (AND *TIMER* (IL:TIMEREXPIRED? *TIMER*))
```

```
(NOTIFY-USER "Use LEFT to select placements, MIDDLE Rooms.")
```

```
(IL:TOTOPW WINDOW T)
```

```
(SETQ *TIMER* NIL))
```

```
(PE-GETMOUSESTATE))))
```

```
(DEFUN PE-TRACK-MIDDLE-BUTTON (PE)
```

```
(DECLARE (SPECIAL *TIMER*))
```

```
(LET* ((WINDOW (PE-WINDOW PE))
```

```
       (REGION (WINDOW-REGION WINDOW)))
```

```
(UNWIND-PROTECT
```

```
(PROGN (IL:INVERTW WINDOW)
```

```
(LOOP (UNLESS (IL:INSIDEP REGION IL:LASTMOUSEX IL:LASTMOUSEY)
```

```
;; return NIL if mouse leaves clipping region
```



```

        (RETURN NIL))
    (UNLESS (IL:LASTMOUSESTATE IL:MIDDLE)
      ;; return true iff room was selected
      (RETURN (NOT (IL:LASTMOUSESTATE (OR IL:LEFT IL:RIGHT)))))
    (WHEN (AND *TIMER* (IL:TIMEREXPIRED? *TIMER*))
      (NOTIFY-USER "Use LEFT to select placements, MIDDLE Rooms.")
      (IL:TOTOPW WINDOW T)
      (SETQ *TIMER* NIL))
    (PE-GETMOUSESTATE)))
  (IL:INVERTW WINDOW)))

```

```
(DEFUN PEP-GETBOXPOSITION (PE PEP)
```

```
;; called when a placement is MOVE or COPY selected to get the new position for the placement.
```

```
;; returns two values - a position and a PE - or NIL
```

```

  (LET* ((OLD-CURSOR (IL:CURSOR))
        (OLD-TTY (IL:TTY.PROCESS)))
    (UNWIND-PROTECT
      (PROGN (IL:CURSOR IL:CROSSHAIRS)
              (IL:TTY.PROCESS (IL:THIS.PROCESS))
              (IL:CURSORPOSITION (MAKE-POSITION (REGION-LEFT (PEP-SCALED-REGION PEP))
                                                  (REGION-BOTTOM (PEP-SCALED-REGION PEP)))
                                (PE-WINDOW PE))
              (DO* ((PLACED-REGION (PLACED-REGION (PEP-PLACEMENT PEP)))
                    (HEIGHT (REGION-HEIGHT PLACED-REGION))
                    (WIDTH (REGION-WIDTH PLACED-REGION))
                    (WINDOW NIL)
                     ;; the window the cursor is over (if any)
                     (IL:WHICHW))
                    (PE NIL
                      ;; the PE the cursor is over (if any)
                      (IF (AND WINDOW (PE-WINDOW-P WINDOW))
                          (IL:WINDOWPROP WINDOW :PLACEMENT-EDITOR)))
                    (POSITION NIL
                      ;; the selected position within PE (if any)
                      (IF PE
                        (LET ((CLIPPING-REGION (PE-CLIPPING-REGION PE))
                              (SCALE (PE-SCALE PE)))
                          (IF (IL:INSIDEP CLIPPING-REGION (IL:LASTMOUSEX WINDOW)
                                          (IL:LASTMOUSEY WINDOW))
                              ;; have to rescale box for each PE
                              (PEP-GETBOXPOSITION-INTERNAL (SCALE-WIDTH WIDTH SCALE)
                                                            (SCALE-HEIGHT HEIGHT SCALE)
                                                            (PE-CLIPPING-REGION PE)
                                                            WINDOW)
                              (IL:GETMOUSESTATE)))
                        (IL:GETMOUSESTATE))))
                    ((OR POSITION (IL:LASTMOUSESTATE (OR IL:LEFT IL:MIDDLE IL:RIGHT)))
                     (WHEN POSITION
                       (VALUES (UN-SCALE-POSITION POSITION (PE-SCALE PE))
                               PE))))))
      (IL:CURSOR OLD-CURSOR)
      (IL:TTY.PROCESS OLD-TTY)))

```

```
(DEFUN PEP-GETBOXPOSITION-INTERNAL (WIDTH HEIGHT CLIPPING-REGION WINDOW)
```

```
;; track a box WIDTH by HEIGHT within CLIPPING-REGION in WINDOW. if a button goes down return the X,Y position. if cursor goes outside
;; CLIPPING-REGION then return NIL.
```

```

  (LET* ((DSP (IL:GETSTREAM WINDOW))
        (OLD-OPERATION (IL:DSOPERATION NIL DSP))
        (LAST-X (IL:LASTMOUSEX DSP))
        (LAST-Y (IL:LASTMOUSEY DSP)))
    (MACROLET ((INVERT-BOX NIL `(IL:DRAWGRAYBOX LAST-X LAST-Y (+ LAST-X WIDTH)
                                                  (+ LAST-Y HEIGHT)
                                                  DSP IL:GRAYSHADE)))
      (UNWIND-PROTECT
        (PROGN (IL:TOTOPW WINDOW)
                (IL:DSOPERATION 'IL:INVERT DSP)
                (INVERT-BOX)
                (TAGBODY LOOP (UNLESS (IL:INSIDEP CLIPPING-REGION LAST-X LAST-Y)
                                      (RETURN-FROM PEP-GETBOXPOSITION-INTERNAL))
                      (WHEN (IL:MOUSESTATE (OR IL:LEFT IL:MIDDLE IL:RIGHT))
                        (RETURN-FROM PEP-GETBOXPOSITION-INTERNAL (MAKE-POSITION LAST-X LAST-Y)))
                      (UNLESS (AND (= (IL:LASTMOUSEX DSP)
                                      LAST-X)
                                (= (IL:LASTMOUSEY DSP)
                                      LAST-Y))
                        (RETURN-FROM PEP-GETBOXPOSITION-INTERNAL))))
                (RETURN-FROM PEP-GETBOXPOSITION-INTERNAL))))

```

```

(IL:UNINTERRUPTABLY
  ;; un-draw old
  (INVERT-BOX)
  (SETQ LAST-X (IL:LASTMOUSEX DSP))
  (SETQ LAST-Y (IL:LASTMOUSEY DSP))
  ;; re-draw new
  (INVERT-BOX))
(GO LOOP)))
(INVERT-BOX)
(IL:DSPOPERATION OLD-OPERATION DSP))))))

```

;; editing

```

(DEFUN PE-ROOM-CHANGED-FN (ROOM REASON)
  (WHEN (EQ REASON :DELETED)
    ;; if ROOM has been deleted then delete the placement editor
    (LET ((PE (FIND-PE (ROOM-NAME ROOM))))
      (WHEN PE
        (LET ((WINDOW (PE-WINDOW PE)))
          ;; delete the placement editor
          (UN-HIDE-WINDOW WINDOW)
          (CLOSE-WINDOW WINDOW)
          (REMHASH (ROOM-NAME ROOM)
                    *PLACEMENT-EDITORS*))))))
    (LET ((INCLUDERS (ROOM-INCLUDERS ROOM T)))
      ;; ensure PE's for all rooms which include ROOM will be redisplayed
      (DOLIST (INCLUSER INCLUDERS)
        (LET ((PE (FIND-PE (ROOM-NAME INCLUSER))))
          (WHEN PE
            ;; otherwise mark it as needing update
            (UNLESS (EQ (PE-CHANGED? PE)
                        T)
              ;; OK to upgrade :PLACEMENTS to T, but not vice versa
              (SETF (PE-CHANGED? PE)
                    (IF (EQ REASON :PLACEMENTS)
                        REASON
                        T)))
              (LET ((WINDOW (PE-WINDOW PE)))
                (WHEN (AND (IL:OPENWP WINDOW)
                          (NOT (WINDOW-HIDDEN? WINDOW))))
                  ;; update the PE if it's visible
                  (UPDATE-PE PE))))))))))

```

```

(DEFUN PEP-SELECTED (PEP PE)

```

;;; called when a placement is selected in PE

```

  (LET ((OP (COND
    ((COPY-KEY-DOWN-P)
     :COPY)
    ((MOVE-KEY-DOWN-P)
     :MOVE)
    ((DELETE-KEY-DOWN-P)
     :DELETE)
    ((EXPAND-KEY-DOWN-P)
     :EXPAND)
    (T (OV-OPERATION)))))
    (CASE OP
      ((:COPY :MOVE) (PEP-SELECTED-COPY-OR-MOVE OP PEP PE))
      (:DELETE (INTERACTIVE-CLOSE-WINDOW (PLACEMENT-WINDOW (PEP-PLACEMENT PEP))
      (ROOM-NAMED (PE-ROOM-NAME PE))))
      (:EXPAND (EXPAND-PLACEMENT (PEP-PLACEMENT PEP)))
      (T (NOTIFY-USER "Use a modifier (eg. COPY, MOVE or DELETE)")))))

```

```

(DEFUN EXPAND-PLACEMENT (PLACEMENT)
  (LET ((WINDOW (PLACEMENT-WINDOW PLACEMENT)))
    (IF (WINDOW-HIDDEN? WINDOW)
      (PROGN (NOTIFY-USER "Click LEFT when finished")
              (PLACE-PLACEMENT PLACEMENT)
              (LOOP (WHEN (IL:MOUSESTATE IL:LEFT)
                        (RETURN)))
              (HIDE-WINDOW WINDOW))
      (IL:FLASHWINDOW (IF (SHRUNKEN? WINDOW)
                          (WINDOW-ICON WINDOW)
                          WINDOW))))))

```

```

(DEFUN PEP-SELECTED-COPY-OR-MOVE (OP PEP PE)
  (MULTIPLE-VALUE-BIND (DESTINATION-POS DESTINATION-PE)
    (PEP-GETBOXPOSITION PE PEP)
    (IF DESTINATION-POS
      (LET* ((OLD-PLACEMENT (PEP-PLACEMENT PEP))
              (NEW-PLACEMENT (COPY-PLACEMENT OLD-PLACEMENT)))
        ;; adjust the position of the new placement
        (IF (PLACEMENT-SHRUNKEN? NEW-PLACEMENT)
          (SETF (PLACEMENT-ICON-POSITION NEW-PLACEMENT)
                DESTINATION-POS)
          (SETF (PLACEMENT-REGION NEW-PLACEMENT)
                (MAKE-REGION :LEFT (POSITION-X DESTINATION-POS)
                             :BOTTOM
                             (POSITION-Y DESTINATION-POS)
                             :WIDTH
                             (REGION-WIDTH (PLACEMENT-REGION NEW-PLACEMENT))
                             :HEIGHT
                             (REGION-HEIGHT (PLACEMENT-REGION NEW-PLACEMENT))))))
        ;; do the move/copy
        (LET ((PE-ROOM (ROOM-NAMED (PE-ROOM-NAME PE)))
              (DESTINATION-ROOM (ROOM-NAMED (PE-ROOM-NAME DESTINATION-PE)))
              (MULTIPLE-VALUE-BIND (PLACEMENT SOURCE-ROOM)
                ;; find the room this placement is due to

                (FIND-PLACEMENT (PLACEMENT-WINDOW OLD-PLACEMENT)
                                PE-ROOM)
                (ECASE OP
                  (:MOVE
                    (IF (EQ PE DESTINATION-PE)
                      ;; Allow inherited placements to be moved in place -- w/o moving them to the room they're visible in.
                      (SETQ DESTINATION-ROOM SOURCE-ROOM)
                      (UNLESS (EQ DESTINATION-ROOM SOURCE-ROOM)
                        ;; We don't bother deleting first when source & destination are same, as we know ADD-PLACEMENT
                        ;; will delete the old & we only want to redisplay once
                        (DELETE-PLACEMENT PLACEMENT SOURCE-ROOM)))
                    (ADD-PLACEMENT NEW-PLACEMENT DESTINATION-ROOM)
                    (:COPY (ADD-PLACEMENT NEW-PLACEMENT DESTINATION-ROOM))))))
              (NOTIFY-USER "Invalid destination."))))))

(DEFUN PE-ROOM-SELECTED (PE)
  ;;; called when a room is selected in PE

  (LET ((ROOM (ROOM-NAMED (PE-ROOM-NAME PE)))
        (OP (COND
              ((IL:KEYDOWNP 'IL:SPACE)
               :ENTER)
              ((EDIT-KEY-DOWN-P)
               :EDIT)
              ((COPY-KEY-DOWN-P)
               :COPY)
              ((MOVE-KEY-DOWN-P)
               :MOVE)
              ((DELETE-KEY-DOWN-P)
               :DELETE)
              (T (IF (EQ *CURRENT-ROOM* *OVERVIEW-ROOM*)
                     (OV-OPERATION)
                     :ENTER)))))
    (CASE OP
      (:EDIT (EDIT-ROOM ROOM))
      (:COPY (INTERACTIVE-COPY-ROOM ROOM))
      (:MOVE (INTERACTIVE-RENAME-ROOM ROOM))
      (:DELETE (INTERACTIVE-DELETE-ROOM ROOM))
      (:ENTER (GO-TO-ROOM ROOM))
      (T (NOTIFY-USER "Use a modifier (eg. COPY, DELETE or GO TO).")))))

(EVAL-WHEN (LOAD)
  (PUSHNEW 'PE-ROOM-CHANGED-FN *ROOM-CHANGED-FUNCTIONS*)
  )

(IL:DECLARE\ : IL:DOEVAL@COMPILE IL:DONTCOPY

(IL:GLOBALVARS IL:TINYFONT IL:CROSSHAIRS)
)

(IL:PUTPROPS IL:ROOMS-PLACEMENT-EDITOR IL:COPYRIGHT ("Venue & Xerox Corporation" 1987 1988 1990 2020))

```

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