

File created: 13-Nov-87 15:59:49 {QV}<HDAVIS>LISP>LYRIC>USERS>REGION.;5

changes to: (VARS REGIONCOMS)
(FNS MAKEREGIONEVENT ENABLE-WINDOW DISABLE-WINDOW REMOVEREGIONEVENT ADDREGIONEVENT)
(VARIABLES DISABLEDFLG)
(PROPS (REGION MAKEFILE-ENVIRONMENT))

previous date: 12-Nov-87 18:11:28 {QV}<HDAVIS>LISP>LYRIC>USERS>REGION.;4

Read Table: INTERLISP

Package: INTERLISP

Format: XCCS

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```
(RPAQQ REGIONCOMS
  ((RECORDS REGIONEVENT)
   (FNS ADDREGIONEVENT DISABLE-WINDOW DISABLED-WINDOW? ENABLE-WINDOW MAKEREGIONEVENT MOUSE-POSITION
        MOUSE-REGIONS REGIONEVENTFN REGIONINFN REGIONMOVEDFN REGIONOUTFN REGIONREPAINTFN REMOVEREGIONEVENT
        SET-REGIONS SETUP-FOR-REGIONS UPDATE-MOUSE-IN-WINDOW)
   (GLOBALVARS DISABLEDFLG)
   (PROP MAKEFILE-ENVIRONMENT REGION)
   (VARIABLES DISABLEDFLG)))
```

(DECLARE%: EVAL@COMPILE

(RECORD REGIONEVENT (EVENTREGION REGIONBUTTONFN REGIONMOVEDFN REGIONINFN REGIONOUTFN REGIONREPAINTFN DATA))
)

(DEFINEQ

(**ADDREGIONEVENT**

[LAMBDA (Window RegionEvent) ; Edited 12-Nov-87 18:07 by hed
(WINDOWADDPROP Window 'REGIONEVENTLST RegionEvent T)])

(**DISABLE-WINDOW**

[LAMBDA (Window) ; Edited 12-Nov-87 18:10 by hed
(if (EQ DISABLEDFLG T)
 then NIL
 elseif (NULL DISABLEDFLG)
 then (SETQ DISABLEDFLG (LIST Window))
 elseif (WINDOWP DISABLEDFLG)
 then (SETQ DISABLEDFLG (LIST Window DISABLEDFLG))
 elseif (NLISTP DISABLEDFLG)
 then (SETQ DISABLEDFLG (LIST Window))
 else (CL:PUSHNEW Window DISABLEDFLG])

(**DISABLED-WINDOW?**

[LAMBDA (Window) ; Edited 10-Nov-87 19:33 by hed
(OR (EQ DISABLEFLG T)
(EQ DISABLEFLG Window)
(AND (LISTP DISABLEFLG)
(FMEMB Window DISABLEFLG])

(**ENABLE-WINDOW**

[LAMBDA (Window) ; Edited 12-Nov-87 18:07 by hed
(if (EQ DISABLEDFLG Window)
 then (SETQ DISABLEDFLG NIL)
 elseif (LISTP DISABLEDFLG)
 then (DREMOVE Window DISABLEDFLG)
 else (ERROR "Can't enable just one window when DISABLEDFLG is T.")]

(**MAKEREGIONEVENT**

[LAMBDA (EventRegion Data ButtonFn MovedFn InFn OutFn RepaintFn) ; Edited 13-Nov-87 15:56 by hed
(create REGIONEVENT
 EVENTREGION _ EventRegion
 REGIONBUTTONFN _ ButtonFn
 REGIONMOVEDFN _ MovedFn
 REGIONINFN _ InFn
 REGIONOUTFN _ OutFn
 REGIONREPAINTFN _ RepaintFn
 DATA _ Data)])

(**MOUSE-POSITION**

[LAMBDA (Window) ; Edited 10-Nov-87 19:25 by hed
(create POSITION (XCOORD _ (WINDOWPROP Window 'LASTMOUSEX))
(YCOORD _ (WINDOWPROP Window 'LASTMOUSEY))

(MOUSE-REGIONS

```
[LAMBDA (Window)
  (for Reg in (WINDOWPROP Window 'REGIONEVENTLST) collect Reg when (INSIDEP (fetch EVENTREGION of Reg)
    (WINDOWPROP Window 'LASTMOUSEX)
    (WINDOWPROP Window 'LASTMOUSEY))
  ; Edited 11-Nov-87 11:22 by hed
```

(REGIONEVENTFN

```
[LAMBDA (Window)
  ; Called whenever a mouse button is changed in a regionized window. Calls the REGIONBUTTONFN of every region the mouse is in.
  (if (NOT (DISABLED-WINDOW? Window))
    then (for Reg in (MOUSE-REGIONS Window) bind FN do (if (SETQ FN (fetch REGIONBUTTONFN of Reg))
      then (APPLY* FN Window (MOUSE-POSITION Window))
    ; Edited 11-Nov-87 11:39 by hed
```

(REGIONINFN

```
[LAMBDA (Window)
  ; Called whenever the cursor moves into a regionized window. Calls the CURSORINFN of every region which the cursor is now in.
  (UPDATE-MOUSE-IN-WINDOW Window)
  (if (NOT (DISABLED-WINDOW? Window))
    then (for Reg in (MOUSE-REGIONS Window) bind FN do (if (SETQ FN (fetch REGIONINFN of Reg))
      then (APPLY* FN Window Reg))
    ; Edited 11-Nov-87 11:34 by hed
```

(REGIONMOVEDFN

```
[LAMBDA (Window)
  ; Called whenever the mouse moves within a regionized window. Calls the REGIONOUTFN of any regions the mouse has left, the REGIONINFN
  ; of any regions the mouse has now entered, and the REGIONMOVEDFN of any regions the mouse has moved around in. Also updates the
  ; LASTMOUSEX and LASTMOUSEY window properties for the next time.
  ; Edited 11-Nov-87 11:37 by hed
  (LET ((OldActives (MOUSE-REGIONS Window))
    NewActives)
    (UPDATE-MOUSE-IN-WINDOW Window)
    (if (NOT (DISABLED-WINDOW? Window))
      then (SETQ NewActives (MOUSE-REGIONS Window))
      [for Reg in (INTERSECTION OldActives NewActives) bind FN
        do (if (SETQ FN (fetch REGIONMOVEDFN of Reg))
          then (APPLY* FN Window (MOUSE-POSITION Window))
        (for Reg in (LDIFFERENCE OldActives NewActives) bind FN
          do (if (SETQ FN (fetch REGIONOUTFN of Reg))
            then (APPLY* FN Window Reg))
        (for Reg in (LDIFFERENCE NewActives OldActives) bind FN
          do (if (SETQ FN (fetch REGIONINFN of Reg))
            then (APPLY* FN Window Reg))
    ])
```

(REGIONOUTFN

```
[LAMBDA (Window)
  ; Called whenever the mouse leaves a regionized window. Calls the CURSOROUTFN of every region the mouse was in. The mouse's position
  ; within the window is cached on the window properties LASTMOUSEX and LASTMOUSEY, updated by REGIONINFN and REGIONMOVEDFN,
  ; so we can tell where the mouse was before leaving.
  ; Edited 11-Nov-87 11:36 by hed
  (if (NOT (DISABLED-WINDOW? Window))
    then (for Reg in (MOUSE-REGIONS Window) bind FN do (if (SETQ FN (fetch REGIONOUTFN of Reg))
      then (APPLY* FN Window Reg)
    (UPDATE-MOUSE-IN-WINDOW Window)
    ; Will put some negative numbers in there, but that's OK.
  ])
```

(REGIONREPAINTFN

```
[LAMBDA (Window RepaintRegion)
  ; Called whenever a regionized window is repainted. Calls the REGIONREPAINTFN of every region intersecting the RepaintRegion.
  ; Edited 11-Nov-87 11:41 by hed
  (if (NOT (DISABLED-WINDOW? Window))
    then (for Reg in (WINDOWPROP Window 'REGIONEVENTLST) bind FN
      do (if (SETQ FN (fetch REGIONREPAINTFN of Reg))
        then (APPLY* FN Window Reg))
    when (REGIONSINTERSECTP RepaintRegion (fetch EVENTREGION of Reg))
```

(REMOVEREGIONEVENT

```
[LAMBDA (Window RegionEvent)
  (WINDOWDELPROP Window 'REGIONEVENTLST RegionEvent))
  ; Edited 12-Nov-87 18:07 by hed
```

(SET-REGIONS

```
[LAMBDA (Window RegionEvents)
  (WINDOWPROP Window 'REGIONEVENTLST RegionEvents)
  (SETUP-FOR-REGIONS Window)
  (UPDATE-MOUSE-IN-WINDOW Window))
  ; Edited 11-Nov-87 11:08 by hed
```

(SETUP-FOR-REGIONS

```
[LAMBDA (Window) ; Edited 10-Nov-87 19:32 by hed
  (WINDOWPROP Window 'CURSORINFN (FUNCTION REGIONINFN))
  (WINDOWPROP Window 'CURSOROUTFN (FUNCTION REGIONOUTFN))
  (WINDOWPROP Window 'REPAINTFN (FUNCTION REGIONREPAINTFN))
  (WINDOWPROP Window 'CURSORMOVEDFN (FUNCTION REGIONMOVEDFN))
  (WINDOWPROP Window 'BUTTONEVENTFN (FUNCTION REGIONEVENTFN))
```

(UPDATE-MOUSE-IN-WINDOW

```
[LAMBDA (Window) ; Edited 11-Nov-87 10:59 by hed
  ;; Updates LASTMOUSEX and LASTMOUSEY properties of Window with latest mouse location in window co-ordinates.
  (LET [(WinReg (WINDOWPROP Window 'REGION)
    (WINDOWPROP Window 'LASTMOUSEX (LASTMOUSEX Window))
    (WINDOWPROP Window 'LASTMOUSEY (LASTMOUSEY Window))
  )
  (DECLARE%: DOEVAL@COMPILE DONTCOPY
  (GLOBALVARS DISABLEDFLG)
  )
  (PUTPROPS REGION MAKEFILE-ENVIRONMENT (:READTABLE "INTERLISP" :PACKAGE "INTERLISP"))
  (CL:DEFVAR DISABLEDFLG NIL
    "NIL -> REGIONS is running for all windows; T -> REGIONS is off for all windows; Window or list of windows ->
    REGIONS is disabled for the specified windows.")
  (PUTPROPS REGION COPYRIGHT ("Xerox Corporation" 1987))
```

FUNCTION INDEX

ADDREGIONEVENT	1	MAKEREGIONEVENT	1	REGIONINFN	2	REMOVEREGIONEVENT	2
DISABLE-WINDOW	1	MOUSE-POSITION	1	REGIONMOVEDFN	2	SET-REGIONS	2
DISABLED-WINDOW?	1	MOUSE-REGIONS	2	REGIONOUTFN	2	SETUP-FOR-REGIONS	3
ENABLE-WINDOW	1	REGIONEVENTFN	2	REGIONREPAINTFN	2	UPDATE-MOUSE-IN-WINDOW ..	3

VARIABLE INDEX

DISABLEDFLG	3
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PROPERTY INDEX

REGION	3
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RECORD INDEX

REGIONEVENT	1
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