

File created: 5-Dec-2023 00:44:59 {WMEDLEY}<library>sketch>SKETCH-STREAM.;1

edit by: rmk

changes to: (FNS OPENSKECHSTREAM)

previous date: 12-Jun-90 15:21:13 {WMEDLEY}<library>sketch>SKETCHSTREAM.;1

Read Table: INTERLISP

Package: INTERLISP

Format: XCCS

(RPAQQ SKETCH-STREAMCOMS

;; contains the functions needed to support sketch streams. Sketch streams allow a user program to print, draw, etc. to a stream and builds a sketch of the result.

```
(FNS OPENSKECHSTREAM \SKETCHSTREAM.POSITION.CHANGED \SKETCHSTREAMINIT \SK.SET.FONT
\SKSTRM.WINDOW.FROM.STREAM ZOOM.SKETCH.STREAM)
; fns to support stream operations on sketches
(FNS \DSPFONT.SKETCH \DSPLEFTMARGIN.SKETCH \DSPRIGHTMARGIN.SKETCH \DSPLINEFEED.SKETCH
\DSPXPOSITION.SKETCH \DSPYPOSITION.SKETCH \DRAWCURVE.SKETCH \DRAWCIRCLE.SKETCH \FILLCIRCLE.SKETCH
\FILLPOLYGON.SKETCH \DRAWELLIPSE.SKETCH \DRAWARC.SKETCH \DRAWLINE.SKETCH \BOUT.SKETCH
\DSPCOLOR.SKETCH \DSPBACKCOLOR.SKETCH \DSPOPERATION.SKETCH \STRINGWIDTH.SKETCH \BLTSHADE.1BITSKETCH
\NEWPAGE.SKETCH \CHARWIDTH.SKETCH \BITBLT.1BITSKETCH \DSPCLIPPINGREGION.SKETCH \DSPRESET.SKETCH
\DSPSCALE.SKETCH \DRAWPOLYGON.SKETCH)
(ALISTS (IMAGESTREAMTYPES SKETCH))
(GLOBALVARS SketchFDEV)
(DECLARE%: DONTVAL@LOAD DOCOPY (P (\SKETCHSTREAMINIT))
```

;; contains the functions needed to support sketch streams. Sketch streams allow a user program to print, draw, etc. to a stream and builds a sketch of the result.

(DEFINEQ

(OPENSKECHSTREAM

[LAMBDA (TITLE OPTIONS)

(* rrb "20-Dec-84 12:12")

(* opens a stream onto a window that will keep a sketch of what is displayed there.)

(* changes default alignment to left baseline and default font to the default font of display device.)

```
(PROG ((SKW (SKETCHW.CREATE NIL (LISTGET OPTIONS 'SKETCHREGION)
(LISTGET OPTIONS 'REGION)
TITLE)))
```

(* changes default alignment to left baseline and default font to the default font of display device.)

```
(SK.SET.TEXT.HORIZ.ALIGN SKW 'LEFT)
[SK.SET.FONT SKW (FONTNAMELIST (DEFAULTFONT 'DISPLAY]
(RETURN (create STREAM
DEVICE _ SketchFDEV
ACCESS _ 'OUTPUT
USERCLOSEABLE _ NIL
OUTCHARFN _ (FUNCTION \BOUT.SKETCH)
IMAGEOPS _ \SKETCHIMAGEOPS
IMAGEDATA _ NIL
F1 _ SKW]))
```

(\SKETCHSTREAM.POSITION.CHANGED

```
[LAMBDA (SKW)
(RESET.LINE.BEING.INPUT SKW)
(SKED.CLEAR.SELECTION SKW)]
```

(* called whenever the position of a sketch stream changes.)

(\SKETCHSTREAMINIT

[LAMBDA NIL

(* rrb " 4-Oct-85 17:35")

(* Initializes global variables for the Sketch device)

(* Sketch Streams are referred to only by themselves so they do not need directory operations.
Most of the fields in the DisplayDevice are empty to avoid something bad happening.)

```
(DECLARE (GLOBALVARS SketchFDEV \SKETCHIMAGEOPS))
(SETQ \SKETCHIMAGEOPS (create IMAGEOPS
IMAGETYPE _ 'SKETCH
IMFONT _ (FUNCTION \DSPFONT.SKETCH)
IMLEFTMARGIN _ (FUNCTION \DSPLEFTMARGIN.SKETCH)
IMRIGHTMARGIN _ (FUNCTION \DSPRIGHTMARGIN.SKETCH)
IMLINEFEED _ (FUNCTION \DSPLINEFEED.SKETCH)
IMXPOSITION _ (FUNCTION \DSPXPOSITION.SKETCH)
IMYPOSITION _ (FUNCTION \DSPYPOSITION.SKETCH)
IMCLOSEFN _ (FUNCTION NIL)
IMDRAWCURVE _ (FUNCTION \DRAWCURVE.SKETCH)
IMFILLCIRCLE _ (FUNCTION \FILLCIRCLE.SKETCH)
IMFILLPOLYGON _ (FUNCTION \FILLPOLYGON.SKETCH)
```

```

IMDRAWPOLYGON _ (FUNCTION \DRAWPOLYGON.SKETCH)
IMDRAWLINE _ (FUNCTION \DRAWLINE.SKETCH)
IMDRAWELLIPSE _ (FUNCTION \DRAWELLIPSE.SKETCH)
IMDRAWCIRCLE _ (FUNCTION \DRAWCIRCLE.SKETCH)
IMBITBLT _ (FUNCTION \BITBLT.1BITSKETCH)
IMBLTSHADE _ (FUNCTION \BLTSHADE.1BITSKETCH)
IMNEWPAGE _ (FUNCTION \NEWPAGE.SKETCH)
IMSCALE _ (FUNCTION \DSPSCALE.SKETCH)
IMSPACEFACTOR _ (FUNCTION \DSPSPACEFACTOR.DISPLAY)
IMFONTCREATE _ 'DISPLAY
IMCOLOR _ (FUNCTION \DSPCOLOR.SKETCH)
IMBACKCOLOR _ (FUNCTION \DSPBACKCOLOR.SKETCH)
IMOPERATION _ (FUNCTION \DSPOPERATION.SKETCH)
IMSTRINGWIDTH _ (FUNCTION \STRINGWIDTH.SKETCH)
IMCHARWIDTH _ (FUNCTION \CHARWIDTH.SKETCH)
IMCLIPPINGREGION _ (FUNCTION \DSPCLIPPINGREGION.SKETCH)
IMRESET _ (FUNCTION \DSPRESET.SKETCH)
IMDRAWARC _ (FUNCTION \DRAWARC.SKETCH))

```

```

(SETQ SketchFDEV (create FDEV
  DEVICENAME _ 'SKETCH
  RESETABLE _ NIL
  RANDOMACCESSP _ NIL
  PAGEMAPPED _ NIL
  CLOSEFILE _ (FUNCTION NIL)
  DELETEFILE _ (FUNCTION NIL)
  GETFILEINFO _ (FUNCTION NIL)
  OPENFILE _ [FUNCTION (LAMBDA (NAME ACCESS RECOG OTHERINFO FDEV)
    NAME)
  READPAGES _ (FUNCTION \ILLEGAL.DEVICEOP)
  SETFILEINFO _ (FUNCTION NIL)
  GENERATEFILES _ (FUNCTION \GENERATENOFILES)
  TRUNCATEFILE _ (FUNCTION NIL)
  WRITEPAGES _ (FUNCTION \ILLEGAL.DEVICEOP)
  GETFILENAME _ [FUNCTION (LAMBDA (NAME RECOG FDEV)
    NAME)
  REOPENFILE _ [FUNCTION (LAMBDA (NAME)
    NAME)
  EVENTFN _ (FUNCTION NIL)
  DIRECTORYNAMEP _ (FUNCTION NIL)
  HOSTNAMEP _ (FUNCTION NIL)
  BIN _ (FUNCTION \ILLEGAL.DEVICEOP)
  BOUT _ (FUNCTION \BOUT.SKETCH)
  PEEKBIN _ (FUNCTION \ILLEGAL.DEVICEOP)
  BACKFILEPTR _ (FUNCTION \ILLEGAL.DEVICEOP)
  BLOCKIN _ (FUNCTION \ILLEGAL.DEVICEOP)
  BLOCKOUT _ (FUNCTION \ILLEGAL.DEVICEOP)))
  (\DEFINEDEVICE NIL SketchFDEV])

```

(\SK.SET.FONT

[LAMBDA (FONTDESC SKW)

(* rrb "12-Dec-84 08:48")

(* sets the default font from a font descriptor.)

(replace (SKETCHCONTEXT SKETCHFONT) of (WINDOWPROP SKW 'SKETCHCONTEXT) with (FONTNAMELIST FONTDESC])

(\SKSTRM.WINDOW.FROM.STREAM

[LAMBDA (SKSTRM)

(* rrb "12-Dec-84 08:53")

(* returns the window that is associated with a sketch stream.)

(fetch (STREAM F1) of SKSTRM])

(\ZOOM.SKETCH.STREAM

[LAMBDA (REGION SKSTREAM)

; Edited 9-Jan-87 16:13 by rrb

(* changes the part of the sketch seen in a sketch window.)

(PROG1 (SKETCH.REGION.VIEWED (\SKSTRM.WINDOW.FROM.STREAM SKSTREAM))

[AND REGION (COND

((REGIONP REGION)

(* move the sketch region to be the new clipping region.)

(SKETCH.GLOBAL.REGION.ZOOM (\SKSTRM.WINDOW.FROM.STREAM SKSTREAM)

REGION))

(T (\ILLEGAL.ARG REGION])))

)

;; fns to support stream operations on sketches

(DEFINEQ

(\DSPFONT.SKETCH

[LAMBDA (SKETCHSTREAM FONT)

(* rrb "2-Aug-85 10:12")

(* sets the font that a display stream uses to print characters. SKETCHSTREAM is guaranteed to be a stream of type sketch)

(PROG ((SKETCHWINDOW (\SKSTRM.WINDOW.FROM.STREAM SKETCHSTREAM))

RESULT)

(SETQ RESULT (DSPFONT FONT SKETCHWINDOW))

(* if the font was changed, update the current font.)

(COND

(FONT (\SKETCHSTREAM.POSITION.CHANGED SKETCHWINDOW))

```

      (\SK.SET.FONT (DSPFONT NIL SKETCHWINDOW)
        SKETCHWINDOW))
  (RETURN RESULT)]

```

(\DSPLEFTMARGIN.SKETCH

[LAMBDA (SKSTRM LEFTMARGIN)

(* rrb "21-Dec-84 08:55")
 (* version which passed the operation through without doing anything.)

```

  (DSPLEFTMARGIN LEFTMARGIN (\SKSTRM.WINDOW.FROM.STREAM SKSTRM])

```

(\DSPRIGHTMARGIN.SKETCH

[LAMBDA (SKSTRM RIGHTMARGIN)

(* rrb "21-Dec-84 08:55")
 (* version which passed the operation through without doing anything.)

```

  (DSPRIGHTMARGIN RIGHTMARGIN (\SKSTRM.WINDOW.FROM.STREAM SKSTRM])

```

(\DSPLINEFEED.SKETCH

[LAMBDA (SKSTRM LINEFEED)

(* rrb "21-Dec-84 08:55")
 (* version which passed the operation through without doing anything.)

```

  (DSPLINEFEED LINEFEED (\SKSTRM.WINDOW.FROM.STREAM SKSTRM])

```

(\DSPXPOSITION.SKETCH

[LAMBDA (SKSTRM XPOSITION)

(* rrb "2-Aug-85 09:26")
 (* version which passed the operation through without doing anything.)

```

  (PROG ((SKW (\SKSTRM.WINDOW.FROM.STREAM SKSTRM))
    RESULT)
    (SETQ RESULT (DSPXPOSITION XPOSITION SKW))
    (AND XPOSITION (\SKETCHSTREAM.POSITION.CHANGED SKW))
    (RETURN RESULT))

```

(\DSPYPOSITION.SKETCH

[LAMBDA (SKSTRM YPOSITION)

(* rrb "2-Aug-85 09:25")
 (* version which passed the operation through without doing anything.)

```

  (PROG ((SKW (\SKSTRM.WINDOW.FROM.STREAM SKSTRM))
    RESULT)
    (SETQ RESULT (DSPYPOSITION YPOSITION SKW))
    (AND YPOSITION (\SKETCHSTREAM.POSITION.CHANGED SKW))
    (RETURN RESULT))

```

(\DRAWCURVE.SKETCH

[LAMBDA (SKSTRM KNOTS CLOSED BRUSH DASHING)

(* rrb "30-Oct-85 14:25")
 (* draws a spline curve with a given brush.)

```

  (PROG ((SKW (\SKSTRM.WINDOW.FROM.STREAM SKSTRM)))
    (\SKETCHSTREAM.POSITION.CHANGED SKW)
    (RETURN (SK.ADD.ELEMENT (SK.CURVE.CREATE KNOTS CLOSED BRUSH DASHING (SK.INPUT.SCALE SKW))
      SKW]))

```

(\DRAWCIRCLE.SKETCH

[LAMBDA (SKSTRM CENTERX CENTERY RADIUS BRUSH DASHING)

(* rrb "30-Oct-85 14:25")
 (* draws a circle on a sketch stream)

```

  (PROG ((SKW (\SKSTRM.WINDOW.FROM.STREAM SKSTRM))
    SKCONTEXT)
    (\SKETCHSTREAM.POSITION.CHANGED SKW)
    (SETQ SKCONTEXT (WINDOWPROP SKW 'SKETCHCONTEXT))
    (RETURN (SK.ADD.ELEMENT (SK.CIRCLE.CREATE (create POSITION
      XCOORD _ CENTERX
      YCOORD _ CENTERY)
      (create POSITION
        XCOORD _ (PLUS CENTERX RADIUS)
        YCOORD _ CENTERY)
      BRUSH DASHING (SK.INPUT.SCALE SKW)
      (fetch (SKETCHCONTEXT SKETCHFILLING) of SKCONTEXT))
      SKW]))

```

(\FILLCIRCLE.SKETCH

[LAMBDA (SKSTRM CENTERX CENTERY RADIUS TEXTURE)

(* rrb "27-Sep-85 09:25")
 (* implements fill circle on a sketch stream.)
 (* put the radius point on a horizontal line.)

```

  (PROG ((SKW (\SKSTRM.WINDOW.FROM.STREAM SKSTRM)))
    (\SKETCHSTREAM.POSITION.CHANGED SKW)
    (RETURN (SK.ADD.ELEMENT (SK.CIRCLE.CREATE (create POSITION
      XCOORD _ CENTERX
      YCOORD _ CENTERY)
      (create POSITION
        XCOORD _ (PLUS CENTERX RADIUS)
        YCOORD _ CENTERY)
      (create BRUSH

```

```

BRUSHSIZE _ 0)
(fetch (SKETCHCONTEXT SKETCHDASHING) of (WINDOWPROP SKW 'SKETCHCONTEXT))
(SK.INPUT.SCALE SKW)
(SK.INSURE.FILLING TEXTURE))
SKW])

```

(\FILLPOLYGON.SKETCH

```

[LAMBDA (SKSTRM KNOTS TEXTURE)
  (* rrb "26-Sep-85 18:04")
  (* implements fill polygon on a sketch stream.)
  (PROG ((SKW (\SKSTRM.WINDOW.FROM.STREAM SKSTRM)))
    (\SKETCHSTREAM.POSITION.CHANGED SKW)
    (* add a closed wire element with a filling.)
    (RETURN (SK.ADD.ELEMENT (SK.WIRE.CREATE KNOTS (create BRUSH
      BRUSHSIZE _ 0)
      (fetch (SKETCHCONTEXT SKETCHDASHING) of (WINDOWPROP SKW 'SKETCHCONTEXT))
      T
      (SK.INPUT.SCALE SKW)
      NIL
      (SK.INSURE.FILLING TEXTURE SKW))
    SKW]))

```

(\DRAWELLIPSE.SKETCH

```

[LAMBDA (SKSTRM CENTERX CENTERY SEMIMINORRADIUS SEMIMAJORRADIUS ORIENTATION BRUSH DASHING)
  (* rrb "30-Oct-85 14:25")
  (* draws an ellipse on a sketch stream)
  (* put the radius point on a horizontal line.)
  (PROG ((SKW (\SKSTRM.WINDOW.FROM.STREAM SKSTRM)))
    (\SKETCHSTREAM.POSITION.CHANGED SKW)
    (* have the major radius be the point on the circle, the minor one be perpendicular to it.)
    (RETURN (SK.ADD.ELEMENT (ELLIPSE.CREATE (create POSITION
      XCOORD _ CENTERX
      YCOORD _ CENTERY)
      [create POSITION
        XCOORD _ [PLUS CENTERX (TIMES SEMIMINORRADIUS
          (COS (PLUS ORIENTATION 90)
        YCOORD _ (PLUS CENTERY (TIMES SEMIMINORRADIUS
          (SIN (PLUS ORIENTATION 90)
      [create POSITION
        XCOORD _ (PLUS CENTERX (TIMES SEMIMAJORRADIUS (COS ORIENTATION))
        YCOORD _ (PLUS CENTERY (TIMES SEMIMAJORRADIUS (SIN ORIENTATION)
      BRUSH DASHING (SK.INPUT.SCALE SKW))
    SKW]))

```

(\DRAWARC.SKETCH

```

[LAMBDA (SKSTRM CENTERX CENTERY RADIUS STARTANGLE NDEGREES BRUSH DASHING)
  (* rrb "30-Oct-85 14:26")
  (* draws an ellipse on a sketch stream)
  (* put the radius point on a horizontal line.)
  (PROG ((SKW (\SKSTRM.WINDOW.FROM.STREAM SKSTRM)))
    (\SKETCHSTREAM.POSITION.CHANGED SKW)
    (* have the major radius be the point on the circle, the minor one be perpendicular to it.)
    (RETURN (SK.ADD.ELEMENT (ARC.CREATE (create POSITION
      XCOORD _ CENTERX
      YCOORD _ CENTERY)
      [create POSITION
        XCOORD _ (PLUS CENTERX (TIMES RADIUS (COS STARTANGLE)))
        YCOORD _ (PLUS CENTERY (TIMES RADIUS (SIN STARTANGLE]
      [create POSITION
        XCOORD _ [PLUS CENTERX (TIMES RADIUS (COS (PLUS STARTANGLE
          NDEGREES]
        YCOORD _ (PLUS CENTERY (TIMES RADIUS (SIN (PLUS STARTANGLE
          NDEGREES]
      BRUSH DASHING (SK.INPUT.SCALE SKW)
      NIL
      (LESSP NDEGREES 0))
    SKW]))

```

(\DRAWLINE.SKETCH

```

[LAMBDA (SKETCHSTREAM X1 Y1 X2 Y2 WIDTH OPERATION COLOR DASHING)
  (* rrb " 4-Sep-85 16:34")
  (* draws a line on a sketch stream)
  (PROG ((SKW (\SKSTRM.WINDOW.FROM.STREAM SKETCHSTREAM)))
    (\SKETCHSTREAM.POSITION.CHANGED SKW)
    (RETURN (SK.ADD.ELEMENT (WIRE.INPUTFN SKW (LIST (create POSITION
      XCOORD _ X1
      YCOORD _ Y1)
      (create POSITION
      XCOORD _ X2
      YCOORD _ Y2))
    NIL
    (OR WIDTH 1)

```

```

(SK.INPUT.SCALE SKW)
DASHING)
SKW])

```

(\BOUT.SKETCH

[LAMBDA (SKETCHSTREAM CHARCODE)

(* rrb " 4-Sep-85 16:34")

(* bout function for the device that makes a sketch)

(* It would be faster to keep the characters until a CR or reset line is done but it is unclear what happens if the last operation is printing.)

```

(PROG ((SKW (\SKSTRM.WINDOW.FROM.STREAM SKETCHSTREAM)))
(COND
  ((NULL (WINDOWPROP SKW 'SELECTION))
   (SKED.SET.SELECTION (create POSITION
                                XCOORD _ (DSPXPOSITION NIL SKW)
                                YCOORD _ (DSPYPOSITION NIL SKW))
                        SKW)))
  (SKED.INSERT (LIST CHARCODE)
               SKW
               (SK.INPUT.SCALE SKW)))
(RETURN CHARCODE]))

```

(\DSPCOLOR.SKETCH

[LAMBDA (SKSTRM COLOR)

(* rrb "20-Dec-84 10:53")

(* sketch stream function for changing the color.)

```

(DSPCOLOR COLOR (\SKSTRM.WINDOW.FROM.STREAM SKSTRM])

```

(\DSPBACKCOLOR.SKETCH

[LAMBDA (SKSTRM COLOR)

(* rrb "20-Dec-84 10:52")

(* sketch stream function for changing the background color.)

```

(DSPBACKCOLOR COLOR (\SKSTRM.WINDOW.FROM.STREAM SKSTRM])

```

(\DSPOPERATION.SKETCH

[LAMBDA (SKSTRM OPERATION)

(* rrb "20-Dec-84 10:53")

(* sketch stream function for changing the operation.)

```

(DSPOPERATION OPERATION (\SKSTRM.WINDOW.FROM.STREAM SKSTRM])

```

(\STRINGWIDTH.SKETCH

[LAMBDA (SKSTRM STR RDTBL)

(* rrb "21-Dec-84 08:56")

(* computes the string width for a sketch stream.)

(* calls the display stream function directly and probably shouldn't.)

```

(\STRINGWIDTH.DISPLAY (WINDOWPROP (\SKSTRM.WINDOW.FROM.STREAM SKSTRM)
                                   'DSP)
STR RDTBL))

```

(\BLTSHADE.1BITSKETCH

[LAMBDA (TEXTURE SKETCHSTREAM DESTINATIONLEFT DESTINATIONBOTTOM WIDTH HEIGHT OPERATION CLIPPINGREGION)

(* rrb " 4-Sep-85 16:35")

(* implements blt shade for a sketch stream.)

```

(PROG ((SKW (\SKSTRM.WINDOW.FROM.STREAM SKETCHSTREAM)))
(RETURN (SK.ADD.ELEMENT (SK.BOX.CREATE (CREATEREGION DESTINATIONLEFT DESTINATIONBOTTOM WIDTH HEIGHT)
                                       (create BRUSH
                                               BRUSHSIZE _ 0)
                                       NIL
                                       (SK.INPUT.SCALE SKW)
                                       TEXTURE)
                        SKW)))

```

(\NEWPAGE.SKETCH

[LAMBDA (SKSTRM)

(* rrb " 1-Aug-85 11:59")

(* NEWPAGE function for sketch streams.)

(* should probably save the current sketch before resetting it and if DSPRESET ever resets defaults this shouldn't.)

```

(\DSPRESET.SKETCH SKSTRM])

```

(\CHARWIDTH.SKETCH

[LAMBDA (SKSTRM CHARCODE)

(* rrb "21-Dec-84 08:54")

(* computes the character width for a sketch stream.)

(* calls the display stream function directly and probably shouldn't.)

```

(\CHARWIDTH.DISPLAY (WINDOWPROP (\SKSTRM.WINDOW.FROM.STREAM SKSTRM)
                                   'DSP)
CHARCODE])

```

(\BITBLT.1BITSKETCH

```
[LAMBDA (SOURCEBITMAP SOURCELEFT SOURCEBOTTOM DESTSTRM DESTINATIONLEFT DESTINATIONBOTTOM WIDTH HEIGHT
SOURCECETYPE OPERATION TEXTURE CLIPPINGREGION CLIPPEDSOURCELEFT CLIPPEDSOURCEBOTTOM)
; Edited 9-Jan-87 16:03 by rrb
(* handles bitblt to a sketch stream.
Does it by creating a bitmap imageobject.)

(COND
  ((BITMAPP SOURCEBITMAP) (* only handles simple cases.)
    (PROG ((SKW (\SKSTRM.WINDOW.FROM.STREAM DESTSTRM))
      (BMWIDTH (OR WIDTH (BITMAPWIDTH SOURCEBITMAP)))
      (BMHEIGHT (OR HEIGHT (BITMAPHEIGHT SOURCEBITMAP)))
      BM)
      (SETQ BM (BITMAPCREATE BMWIDTH BMHEIGHT))
      (BITBLT SOURCEBITMAP SOURCELEFT SOURCEBOTTOM BM 0 0 WIDTH HEIGHT NIL 'REPLACE NIL)
      (SK.ADD.ELEMENT (SK.ELEMENT.FROM.IMAGEOBJ (BITMAPEDITOBJ BM 1 0)
        SKW
        (create POSITION
          XCOORD _ DESTINATIONLEFT
          YCOORD _ DESTINATIONBOTTOM)
        SKW)))
    (T (BITBLT SOURCEBITMAP SOURCELEFT SOURCEBOTTOM (WINDOWPROP (\SKSTRM.WINDOW.FROM.STREAM DESTSTRM)
      'DSP)
      DESTINATIONLEFT DESTINATIONBOTTOM WIDTH HEIGHT SOURCECETYPE OPERATION TEXTURE CLIPPINGREGION]))
```

(\DSPCLIPPINGREGION.SKETCH

; Edited 17-Aug-88 12:18 by jds

```
[LAMBDA (SKSTRM REGION)
;; sets the clipping region in a sketch stream.
;; (DSPCLIPPINGREGION REGION (\SKSTRM.WINDOW.FROM.STREAM SKSTRM))
```

```
;;; JDS: Changed this to be a NO-OP, but to return the existing clipping region for the underlying windo. Changing the clipping region for the window
;;; KILLS the screen.
```

```
(DSPCLIPPINGREGION NIL (\SKSTRM.WINDOW.FROM.STREAM SKSTRM))
```

(\DSPRESET.SKETCH

```
(* rrb "9-Jul-85 12:42")
(* reset the properties of a sketch stream.)
```

```
(PROG ((W (\SKSTRM.WINDOW.FROM.STREAM SKSTRM))
  SKETCH OLDSKETCH)
  (SKED.CLEAR.SELECTION W)
  [WINDOWPROP W 'SKETCH (SETQ SKETCH (COND
    ((SETQ OLDSKETCH (WINDOWPROP W 'SKETCH))
      (* copy properties and defaults from old sketch.)
      (create SKETCH using OLDSKETCH SKETCHELTS _ NIL))
    (T (SKETCH.CREATE NIL)
      (* for now, don't reset the defaults other than position.))
    (DSPRESET W)
    (\DSPXPOSITION.SKETCH SKSTRM (DSPXPOSITION NIL W))
    (\DSPYPOSITION.SKETCH SKSTRM (DSPYPOSITION NIL W))
    (WINDOWPROP W 'SCALE INITIAL.SCALE)
    (SK.UPDATE.REGION.VIEWED W)
    (MAP.SKETCHSPEC.INTO.VIEWER SKETCH W)
    (SK.CREATE.HOTSPOT.CACHE W)
    (WINDOWPROP W 'GRIDFACTOR (SK.DEFAULT.GRIDFACTOR W))
    (WINDOWPROP W 'USEGRID NIL)
    (WINDOWPROP W 'SKETCHCHANGED NIL))])
```

(\DSPSCALE.SKETCH

```
; Edited 9-Jan-87 16:00 by rrb
(* returns the scale of a sketch stream.)
```

```
(PROG ((SKWINDOW (\SKSTRM.WINDOW.FROM.STREAM SKSTRM))
  OLDSCALE)
  (RETURN (PROG1 (SETQ OLDSCALE (VIEWER.SCALE SKWINDOW))
    [AND SCALE (COND
      [(NUMBERP SCALE) (* zoom the current sketch view around the center.)
        (* don't redraw if scale is the same.)
        (OR (EQ OLDSCALE SCALE)
          (PROG [NEWWIDTH NEWHEIGHT (CENTERPT (REGION.CENTER (
            SKETCH.REGION.VIEWED SKWINDOW)
            [SETQ NEWWIDTH (TIMES SCALE (WINDOWPROP SKWINDOW 'WIDTH)
            [SETQ NEWHEIGHT (TIMES SCALE (WINDOWPROP SKWINDOW 'HEIGHT)
            (SKETCH.GLOBAL.REGION.ZOOM SKWINDOW
              (CREATEREGION (DIFFERENCE (fetch (POSITION XCOORD)
                of CENTERPT)
                (QUOTIENT NEWWIDTH 2))
              (DIFFERENCE (fetch (POSITION YCOORD) of CENTERPT)
                (QUOTIENT NEWHEIGHT 2))
              NEWWIDTH NEWHEIGHT]
            (T (\ILLEGAL.ARG SCALE)))]))
```

(\DRAWPOLYGON.SKETCH

(* rrb "26-Sep-85 18:07")

```
[LAMBDA (SKETCHSTREAM POINTS CLOSED BRUSH DASHING)
```

```
(* draws a polygon on a sketch stream)
(PROG ((SKW (\SKSTRM.WINDOW.FROM.STREAM SKETCHSTREAM)))
  (\SKETCHSTREAM.POSITION.CHANGED SKW)
  (RETURN (SK.ADD.ELEMENT (SK.WIRE.CREATE POINTS BRUSH DASHING T (SK.INPUT.SCALE SKW)
    NIL NIL)
    SKW]))
)

(ADDTOTVAR IMAGESTREAMTYPES (SKETCH (OPENSTREAM OPENSKECHSTREAM)
  (FONTCREATE \CREATEDISPLAYFONT)))

(DECLARE%: DOEVAL@COMPILE DONTCOPY

(GLOBALVARS SketchFDEV)
)

(DECLARE%: DONTEVAL@LOAD DOCOPY

(\SKETCHSTREAMINIT)
)
```

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