

File created: 15-Aug-90 16:03:54 {DSK}<usr>local>lde>SOURCES>loops>LIBRARY>GAUGE BARS.;2

changes to: (VARS GAUGE BARSCOMS)

previous date: 11-Mar-88 12:03:16 {DSK}<usr>local>lde>SOURCES>loops>LIBRARY>GAUGE BARS.;1

Read Table: INTERLISP

Package: INTERLISP

Format: XCCS

::  
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(RPAQQ **GAUGE BARSCOMS**

((DECLARE%: DONTCOPY (PROP MAKEFILE-ENVIRONMENT GAUGE BARS)  
(PROP FILETYPE GAUGE BARS))

; File created by BANE

(CLASSES MultiValueMixin SSDigiMeter BarChart HBarChart SSBarChart SSHBarChart)  
(METHODS BarChart.DrawInstrument BarChart.Set BarChart.SetParameters BarChart.ShowReading  
BarChart.Update HBarChart.DrawInstrument HBarChart.Set HBarChart.SetParameters  
HBarChart.ShowReading MultiValueMixin.AddLabel MultiValueMixin.Attach MultiValueMixin.DeleteLabel  
MultiValueMixin.Detach MultiValueMixin.MaxCurrentReading MultiValueMixin.OutOfBounds  
MultiValueMixin.SetUp)  
(FNS)  
(VARS)  
(INSTANCES))

(DECLARE%: DONTCOPY

(PUTPROPS **GAUGE BARS MAKEFILE-ENVIRONMENT** (:PACKAGE "IL" :READTABLE "INTERLISP" :BASE 10))

(PUTPROPS **GAUGE BARS FILETYPE** :COMPILE-FILE)

)

:: File created by BANE

(DEFCLASSES MultiValueMixin SSDigiMeter BarChart HBarChart SSBarChart SSHBarChart)

(DEFCLASS MultiValueMixin (MetaClass Class Edited%: (\* dgb%:"22-JUL-83 16:56")  
doc "This is the default metaClass for all classes")

(Supers Object)  
(InstanceVariables (displayVal NIL doc "List of participants. Each element of displayVal is a triple  
(Label xPos YValue) where label is an atom, and will be used both to identify  
the column, and label it on the bottom. xPos is the horizontal position, and  
Ypos is the vertical height starting at scaleBottom+1")  
(barWidth 10 doc "standard width of the bar")  
(scaleBottom 30 doc "Bottom edge of scale")))

(DEFCLASS SSDigiMeter (MetaClass Class doc "Self-scaling DigiMeter." Edited%:  
(\* edited%:"10-JUL-83 14:04"))

(Supers SelfScaleMixin DigiMeter))

(DEFCLASS BarChart (MetaClass Class doc "A gauge with multiple vertical scales." Edited%:  
(\* dgb%:"22-JUL-83 15:50"))

(Supers MultiValueMixin VerticalScale)  
(InstanceVariables (maxLabelWidth 0 doc "maximum width of a label string."  
(scaleLeft 3)  
(scaleBottom 30)))

(DEFCLASS HBarChart (MetaClass Class doc "Horizontally oriented BarChart" Edited%:  
; Edited 9-Mar-88 16:40 by jrb:

)  
(Supers MultiValueMixin HorizontalScale)  
(InstanceVariables (width 250 doc "Inside width of entire window" min 250)  
(scaleLeft 40 doc "position from left of names")  
(width 250 doc "Inside width of entire window" min 250)  
(maxLabelWidth 0 doc "maxSize in dots of the widest label")))

(DEFCLASS SSBarChart (MetaClass Class doc "Self-scaling BarChart" Edited%:  
(\* edited%:"10-JUL-83 14:03"))

(Supers SelfScaleMixin BarChart))

(DEFCLASS SSHBarChart (MetaClass Class doc "This is a self scaling Horizontally oriented barChart" Edited%:  
(\* dgb%:"23-JUL-83 00:46"))

(Supers SelfScaleMixin HBarChart))

(\BatchMethodDefs)

(METH BarChart DrawInstrument NIL "dgb: 9-JUN-83 22:14" (category (VerticalScale)))

(METH BarChart Set (reading label)  
"dgb: 10-JUN-83 11:07"  
(category (VerticalScale)))

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{MEDLEY}<loops>library>GAUGE BARS.;1

(METH BarChart SetParameters NIL "Set scale height from height" (category (Internal)))
(METH BarChart ShowReading NIL "dgb: 9-JUN-83 22:14" (category (VerticalScale)))
(METH BarChart Update NIL "dgb: 22-JUL-83 17:32" (category (Window)))
(METH HBarChart DrawInstrument NIL "dgb: 23-JUL-83 00:16" (category (HorizontalScale)))
(METH HBarChart Set (reading label)
  "dgb: 22-JUL-83 23:28"
  (category (HorizontalScale)))
(METH HBarChart SetParameters NIL "Set scale width from width" (category (Internal)))
(METH HBarChart ShowReading NIL "dgb: 23-JUL-83 00:26" (category (HorizontalScale)))
(METH MultiValueMixin AddLabel (label labelReading)
  "mjs: 22-JUL-83 11:42"
  (category (MultiValueMixin)))
(METH MultiValueMixin Attach (obj varName propName type xOrPos y label)
  "Attach to obj varName and label it in chart with label"
  (category (MultiValueMixin)))
(METH MultiValueMixin DeleteLabel (label updateFlg)
  "mjs: 22-JUL-83 11:43"
  (category (MultiValueMixin)))
(METH MultiValueMixin Detach (label)
  "JRB - attachedTo seems to no longer exist. The info is stored in the list of GaugeAVs in containedInAV"
  (category (MultiValueMixin)))
(METH MultiValueMixin MaxCurrentReading NIL "mjs: 22-JUL-83 11:43" (category (MultiValueMixin)))
(METH MultiValueMixin OutOfBounds (outFlg)
  "mjs: 22-JUL-83 11:43"
  (category (MultiValueMixin)))
(METH MultiValueMixin SetUp (listOfObjects ivName chartTitle maxScale path machine xOrPos y)
  "edited: 10-Sep-87 10:22"
  (category (MultiValueMixin)))
[Method ((BarChart DrawInstrument)
  self)
  "dgb: 9-JUN-83 22:14" "Print the labels under each bar."
  (for triple in (@ displayVal) bind [labelY _ (IPLUS (@ scaleBottom)
    (DSPLINEFEED NIL (@ window)
      do (MOVETO (IPLUS (CADR triple)
        (IQUOTIENT [IDIFFERENCE (@ maxLabelWidth)
          (STRINGWIDTH (CAR triple)
            (DSPFONT NIL (@ window)
              2))
          labelY
            (@ window))
        (PRIN1 (CAR triple)
          (@ window))

(Method ((BarChart Set)
  self reading label)
  "dgb: 10-JUN-83 11:07" "show reading on vertical scale" (PROG ((quad (FASSOC label (@ displayVal)))
    (newSetting (_ self ComputeDisplayVal
      reading)))
    (COND
      ((NULL quad)
        (ERROR label "not in this BarChart")))
    (RPLACA (CDDDR quad)
      reading)
    (ChangeVerticalSetting
      (IPLUS (CADR quad)
        (IQUOTIENT (IDIFFERENCE
          (@ maxLabelWidth)
            (@ barWidth))
          2))
      (CADDR quad)
      newSetting
        (@ window)
        (@ barWidth))
    (RPLACA (CDDR quad)
      newSetting)))

[Method ((BarChart SetParameters)
  self)
  "Set scale height from height"
  (DSPFONT (@ font)
    (@ window))
  [_@
  range
; dgb: 9-JUN-83 22:14

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(_@
 scaleHeight
 (IDIFFERENCE (@ height)
  (IPLUS (FONTHEIGHT (@ font))
   (@ scaleBottom))
[for triple in (@ displayVal) finally (_@
                                     maxLabelWidth w)
  bind (w _ 0)
        (wf _ (DSPFONT NIL (@ window)))
  do (SETQ w (IMAX w (STRINGWIDTH (CAR triple)
                                   wf])
        (* Now set up the xPosition of the bar)
      (RPLACA (CDR triple)
       (IPLUS (@ scaleLeft)
        totalW))
      (SETQ totalW (IPLUS totalW (@ maxLabelWidth)))

  finally (_@
           scaleWidth totalW))
(_@
 lower
 (@ scaleBottom))
(_@
 width%:,min
 (_@
  width
  (IPLUS (@ scaleLeft)
   (@ scaleWidth)
  (COND
   ((@ ticks)
    (IPLUS (@ ticks%:,tickLength)
     45))
   (T 0)

```

```

(Method ((BarChart ShowReading)
 self)
 ;dgb: 10-JUN-83 02:02
 "dgb: 9-JUN-83 22:14" "show the line at initial level. intrnal displayVal is really line heigt"
 [for triple in (@ displayVal) bind (c _ (IQUOTIENT (IDIFFERENCE (@ maxLabelWidth)
                                                                (@ barWidth)
                                                                2))
  do (ChangeVerticalSetting (IPLUS c (CADR triple))
   (@ scaleBottom)
   (CADDR triple)
   (@ window)
   (@ barWidth]

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```

(Method ((BarChart Update)
 self)
 "dgb: 22-JUL-83 17:32" "Scale internal readings to min and max for update"
 [for quad in (@ displayVal) do (RPLACA (CDDR quad)
   (_ self ComputeDisplayVal (CADDR quad)
   (_Super
   self Update))

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```

(Method ((HBarChart DrawInstrument)
 self)
 "dgb: 23-JUL-83 00:16" "Print the labels next to each bar."
 [for quad in (@ displayVal) first (MOVETO 1 (IPLUS (@ scaleBottom)
                                                    (@ scaleHeight)
                                                    (DSPLINEFEED NIL (@ window)))
   (@ window))
  do (PRINT (CAR quad)
   (@ window]

```

```

(Method ((HBarChart Set)
 self reading label)
 "dgb: 22-JUL-83 23:28" "show reading on vertical scale" (PROG ((quad (FASSOC label (@ displayVal)))
   (newSetting (_ self ComputeDisplayVal
   reading)))
 (COND
  ((NULL quad)
   (ERROR label "not in this BarChart")))
 (RPLACA (CADDR quad)
  reading)
 (ChangeHorizontalSetting (CADR quad)
  (CADDR quad)
  newSetting
  (@ window)
  (@ barWidth))
 (RPLACA (CDDR quad)
  newSetting)))

```

```

(Method ((HBarChart SetParameters)
 self)
 ;dgb: 23-JUL-83 00:36
 "Set scale width from width"
 (DSPFONT (@ font)
  (@ window))
 (PROG [linePos (1f (MINUS (DSPLINEFEED NIL (@ window)

```

```

(_@
 barWidth
 (IPLUS lf -3)) ; barWidth is height of font -3.0 height of gauge is 3 lines heigher
 ; than number of entries

(_@
 scaleBottom lf)
[_@
 scaleHeight
 (ITIMES lf (LENGTH (@ displayVal)
[_@
 height%:.,min
 (_@
 height
 (IPLUS (@ scaleBottom)
 (@ scaleHeight)
 (@ ticks%:,tickLength)
 lf
 (FONTHEIGHT (@ font)
[for quad in (@ displayVal) finally (_@
 maxLabelWidth w)
 bind (w _ 0)
 (wf _ (DSPFONT NIL (@ window)))
 do (SETQ w (IMAX w (STRINGWIDTH (CAR quad)
 wf]
[_@
 lower
 (_@
 scaleLeft
 (IPLUS 8 (@ maxLabelWidth)
[_@
 range
 (_@
 scaleWidth
 (IDIFFERENCE (@ width)
 (IPLUS (@ scaleLeft)
 16]
(SETQ linePos (IPLUS (@ scaleBottom)
 (@ scaleHeight)))
(for quad in (@ displayVal) do (SETQ linePos (IDIFFERENCE linePos lf))
 (RPLACA (CDR quad)
 linePos) ; Compute position of bar, and then its internal value
 (RPLACA (CDDR quad)
 (_ self ComputeDisplayVal (CADDR quad)

```

```

(Method ((HBarChart ShowReading)
 self)
 "dgb: 23-JUL-83 00:26" "show the line at initial level. intrnal displayVal is really line heigt"
 (for quad in (@ displayVal) bind (c _ (@ scaleLeft)) do (ChangeHorizontalSetting (CADR quad)
 c
 (CADDR quad)
 (@ window)
 (@ barWidth]

```

```

(Method ((MultiValueMixin AddLabel)
 self label labelReading)
 "mjs: 22-JUL-83 11:42" "add to the list of bars on the chart" (_@
 displayVal
 (CONS (LIST label 0 (_ self
 ComputeDisplayVal
 labelReading)
 labelReading)
 (LISTP (@ displayVal)

```

```

(Method ((MultiValueMixin Attach)
 self obj varName propName type xOrPos y label) ; edited: 8-Sep-87 09:44
 "Attach to obj varName and label it in chart with label"

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::: JRB - attachedTo no longer exists. Look at containedInAV instead.

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(PROG NIL
 (OR label (SETQ label varName)
 (RETURN NIL))
 (COND
 ((FASSOC label (@ displayVal)
 (ERROR label "is already in use in MultiValueMixin")))
 (_ self AttachProbe obj varName label propName type)
 (_ self AddLabel label (GetValue obj varName propName))
 (_ self Update) ; (* Move if not attached before)
 (OR (CDR (@ containedInAV))
 (_ self Move xOrPos y))
 self))

```

```

(Method ((MultiValueMixin DeleteLabel)
 self label updateFlg)
 "mjs: 22-JUL-83 11:43" "Remove a bar from a chart" (COND
 [label (_@
 displayVal

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```

                                (DEASSOC label (@ displayVal]
                                (T (_@
                                  displayVal NIL)))
(AND updateFlg (_ self Update)))

[Method ((MultiValueMixin Detach)
  self label) ; edited: 8-Sep-87 11:34
"JRB - attachedTo seems to no longer exist. The info is stored in the list of GaugeAVs in containedInAV"
"Detach gauge from attachedPlaces it is attached to"
(COND
  ((NULL label) (* If no label is specified, iterate thru labels and detach them all.)
   (for (dv lab) in (@ displayVal) do (SETQ lab (CAR dv))
        (_ self Detach lab)))
  ((NULL (FASSOC label (@ displayVal)))
   (_ self Attached?))
  (T (_ self DeleteLabel label)
   (printout PROMPTWINDOW "Detaching" T)
   (_@
    containedInAV
    (for place in (@ containedInAV) join (COND
      ((EQ label (@ place label))
       (_ self DetachProbe place)
       NIL)
      (T (* Keep this place)
        (LIST place)

(Method ((MultiValueMixin MaxCurrentReading)
  self)
"mjs: 22-JUL-83 11:43" "return the max readinr in (@ reading)" (for quad in (@ displayVal)
  bind (max _ (@ inputLower))
  do (SETQ max (IMAX (CADDR quad)
                    max))
  finally (RETURN max)))

(Method ((MultiValueMixin OutOfBounds)
  self outFlg)
"mjs: 22-JUL-83 11:43" "Print ? if out, space other wise" (MOVETO (IDIFFERENCE (fetch WIDTH
  of (WINDOWPROP
    (@ window)
    'REGION))
  24)
  2
  (@ window))

(PRINT (COND
  (outFlg "??")
  (T " "))
  (@ window))

(Method ((MultiValueMixin SetUp)
  self listOfObjects ivName chartTitle maxScale path machine xOrPos y)
"edited: 10-Sep-87 10:22" "Attach a bar chart to the iv of specified by the object in the list, and the
path. path can be an atom, meaning that IV, or it can be a list of atoms to be followed, each an iv name.
Each bar on the chart will be labelled with the name of the object on listOfObjects. title will be used
for the BarChart." (bind gaugedObj first (_@
  self title chartTitle)
  for obj in listOfObjects bind label do (SETQ gaugedObj (GetPathObj obj path))
  (SETQ label (OR (GetObjectName obj)
                 obj))
  (_ self AttachProbe gaugedObj ivName label
   machine)
  (_ self AddLabel label (_ gaugedObj Get ivName
  )))
  finally (AND maxScale (_ self SetScale 0 maxScale))
  (_ self Update)
  (_ self Move xOrPos y)
  (RETURN self))

(\UnbatchMethodDefs)

(PUTPROPS GAUGE BARS COPYRIGHT ("Venue & Xerox Corporation" 1987 1988 1990))

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**PROPERTY INDEX**

GAUGEARS .....1

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