Returns
boolean

Description
This function destroys the help menu. Each button is individually destroyed and all whenevers used by the widget are deactivated. The main "Help" menu button is also destroyed.

1.4.18 histogramgui - Tool

Package display
Module widgets

Window to display a histogram and allow selection of data min and max.
include "histogramgui.g"

Constructors

histogramgui	*Construct a histogramgui*

Functions

disable	*Not yet implemented.*
dismiss	*Removes the GUI from screen.*
done	*Destroys the widget and disables all whenevers.*
enable	*Not yet implemented.*
gui	*Build the GUI*
newdata	*Supply the widget with new data to use to plot the histogram.*
setselection	*Set a new selection to be shown on the histogram.*
setstats	*Set new image statistics*

General description

Description

This window is designed for use by a more complex GUI responsible for displaying an image. It takes an array of data, which it plots as a histogram, and allows the user to drag a region of the histogram, which the widget then fires as an event. Once the user has selected a region, they can resize or move the region. The widget has functions to allow the external chaging of a selection, and also the supply of different histogram data.
The controlling GUI is responsible for recalculating the histogram data etc when

required and also actually setting the selection it receives from the histogramgui window.

Graphical User Interface

Description

The main screen is shown below. Several options are available to the user via drop down option menus. The 'range' option menu allows selection of a percentage of pixels. Selecting 95% causes the central 95% of pixels to be selected. The other option for automatic selection is that of +/- n Sigma. This selects +/- n standard deviations away from the mean, or median (depending on selection). The other two option menus deal with the display options. Selecting from the 'scale' menu causes the count axis to be plotted logarithmically or linearly, depending on selection. The final user option allows for the selection of a different hightlight color to the default (yellow). The reset button resets all menus to their defaults, unselects the histogram and returns to the default zoom level.
Control of the plot region is handled by the mouse. Selection of a region is obtained by using the left (Button - 1) mouse button. Clicking and dragging will cause a region to be created. Once a region is created it can be:

- Moved, *by dragging the region once the mouse is inside it. The cursor will change to a cross when the region can be moved.*
- Resized (click), *by clicking outside the region. The region will extend to the location of the click. The mouse will appear as a normal arrow when the region can be resized via a click.*
- Resized (dragged), *by holding the mouse over the ends of the region, the region can be resized by dragging either of its end points. The cursor will change to a resizing arrow when over either end.*

Zooming is handled using the middle (Button - 2) mouse button. Clicking the middle button anywhere in the plot area will cause a zoom window to be opened. By moving the mouse after clicking, the box can be resized. Clicking the middle button again causes the plot area to zoom into the selected region. To unzoom, use ¡Control - Button - 2¿.
The scroll bar can be used to move along the x - axis. You can click and drag, or simply click to either side of the scroll tab.
Note: *All AIPS++ GUIs have popup help. Just rest your mouse cursor on top of a GUI element (e.g. a button) and a little frame will appear outlining the funtionality of this element. If you then press and hold down the right mouse button you will get a detailed description. The information given there should be sufficient to let you operate that GUI element.*

Events

The most important event emitted by histogramgui is the `change` *event. It's* `$value` *field contains an array (length 2) which contains the new selection choosen by the user. The window may also emit other events, depending on the user. If the user requests the use of standard deviation, mean or median, the histogram will emit a* `newstats` *event, the value field of which will contain a string array containing the desired statistics ('stddev', 'mean', 'median'). This indicates that an update is expected via the newstats function. The only other event emitted by the gui is a* `close` *event. This lets the controlling GUI know that calculation of the histogram etc is no longer required.*

Example

```
include 'histogramgui.g'

histwindow := histogramgui(xmin=-5, xmax=5,
   array=myHistogramArray,
   units='Jy/Beam');
histwindowgui := histwindow.gui();

whenever histwindow->change do {
# $value now contains an array representing the selection
        # made by the user.
print 'New selection is: ', $value;
}

whenever somethinglocal->happens do {
# Something locally changed the selection, so update the
# histogram window
histwindow.setselection($value)
}
```

histogramgui - Constructor

Package	**display**
Module	**widgets**
Tool	**histogramgui**

Construct a histogramgui

Synopsis

histogramgui(xmin, xmax, array, units, widgetset)

Arguments

xmin	*Start of selection to begin with* *Allowed: Number* *Default: 0*
xmax	*End of selection to begin with* *Allowed: Number* *Default: 1*
array	*Record containing array to plot* *Allowed: Record containing .values and .counts* *Default: unset*
units	*Units to use on labels* *Allowed: String* *Default: 'unknown'*
widgetset	*Widgetset to use* *Allowed: Widgetset* *Default: dws*

Returns
T

Description
Constructs a new histogram gui with the specified parameters (does not build the gui).

---

histogramgui.gui - Function

Package	**display**
Module	**widgets**
Tool	**histogramgui**

Build the GUI

Synopsis
gui()

Description
Maps the GUI onto screen.

histogramgui.newdata - Function

Package	**display**
Module	**widgets**
Tool	**histogramgui**

Supply the widget with new data to use to plot the histogram.

Synopsis
newdata(array, xmin, xmax)

Arguments

array	*Record containing histogram data (.values and .counts)* *Allowed: Record* *Default: unset*
xmin	*New start of selection (min)* *Allowed: Number*
xmax	*New end of selection (max)* *Allowed: Number*

Description
This function supplies the widget with a new array from which to plot the histogram. It can also supply a new selection range.

histogramgui.setstats - Function

Package	**display**
Module	**widgets**
Tool	**histogramgui**

Set new image statistics

Synopsis
setstats(mean, median, stddev)

Arguments

mean	*Mean data value* *Allowed: Number* *Default: F*
median	*Median data value* *Allowed: Number* *Default: F*
stddev	*Standard deviation of data* *Allowed: Number* *Default: F*

Description

This function accepts new statistics to use for automatic selection of a region. The histogram window will wait for this function to be called after firing a 'newstats' event.

---

histogramgui.setselection - Function

Package	**display**
Module	**widgets**
Tool	**histogramgui**

Set a new selection to be shown on the histogram.

Synopsis

setselection(sel, forcenosel, forceselection)

Arguments

sel	*New selection* *Allowed: Array*
forcenosel	*Force the gui not to create or draw a selection* *Allowed: Boolean* *Default: F*
forceselection	*Force the gui to draw a selection* *Allowed: Boolean* *Default: F*

Description

This function accepts an array, from which it updates the region displayed on the histogram.

---

histogramgui.dismiss - Function

Package	**display**
Module	**widgets**
Tool	**histogramgui**

Removes the GUI from screen.

Synopsis
dismiss()

Description
This function unmaps the frame containing the GUI from the screen.

---

histogramgui.done - Function

Package	**display**
Module	**widgets**
Tool	**histogramgui**

Destroys the widget and disables all whenevers.

Synopsis
done()

Description
This function destroys the widget.

---

histogramgui.disable - Function

Package	**display**
Module	**widgets**
Tool	**histogramgui**

Not yet implemented.