RUBY/TK - SCROLLBAR WIDGET

Description:

A **Scrollbar** helps the user to see all parts of another widget, whose content is typically much larger than what can be shown in the available screen space.

A scrollbar displays two arrows, one at each end of the scrollbar, and a slider in the middle portion of the scrollbar. The position and size of the slider indicate which portion of the document is visible in the associated window.

Syntax:

Here is a simple syntax to create this widget:

```
TkScrollbar.new{
  .....Standard Options....
  .....Widget-specific Options....
}
```

Standard Options:

- activebackground
- highlightbackground
- orient
- takefocus
- background
- highlightcolor
- relief
- troughcolor
- borderwidth
- highlightthickness
- repeatdelay
- cursor
- jump
- repeatinterval

These options have been described in previous chapter.

Widget-specific Options:

SN	Options with Description
1	**activerelief** => String Specifies the *relief* to use when displaying the element that is active, if any. Elements other than the active element are always displayed with a raised relief.

2 **command** => String

Specifies a callback to invoke to change the view in the widget associated with the scrollbar. When a user requests a view change by manipulating the scrollbar, the callback is invoked.

3 **elementborderwidth** => Integer

Specifies the width of borders drawn around the internal elements of the scrollbar.

4 **width** => Integer

Specifies the desired narrow dimension of the scrollbar window, not including 3-D border, if any. For vertical scrollbars this will be the width and for horizontal scrollbars this will be the height.

Elements of Scrollbar:

A scrollbar displays five elements, which are referred to in the methods for the scrollbar:

- **arrow1:** The top or left arrow in the scrollbar.
- **trough1:** The region between the slider and arrow1.
- **slider:** The rectangle that indicates what is visible in the associated widget.
- **trough2:** The region between the slider and arrow2.
- **arrow2:** The bottom or right arrow in the scrollbar.

Manipulating Scrollbar:

There are following useful methods to manipulate the content of an scrollbar:

- **activate**$?element?$**:** Marks the element indicated by *element* as active, which causes it to be displayed as specified by the **activebackground** and **activerelief** options. The only element values understood by this command are **arrow1**, **slider**, or **arrow2**.
- **delta**$deltaX, deltaY$**:** Returns a real number indicating the fractional change in the scrollbar setting that corresponds to a given change in slider position.
- **fraction**x, y**:** Returns a real number between 0 and 1 indicating where the point given by x and y lies in the trough area of the scrollbar. The value 0 corresponds to the top or left of the trough, the value 1 corresponds to the bottom or right, 0.5 corresponds to the middle, and so on.
- **get:**Returns the scrollbar settings in the form of a list whose elements are the arguments to the most recent set method.
- **identify**x, y**:** Returns the name of the element under the point given by x and y $suchasarrow1$, or an empty string if the point does not lie in any element of the scrollbar. X and y must be pixel coordinates relative to the scrollbar widget.
- **set**$first, last$**:** This command is invoked by the scrollbar's associated widget to tell the scrollbar about the current view in the widget. The command takes two arguments, each of which is a real fraction between 0 and 1. The fractions describe the range of the document that is visible in the associated widget.

Event Bindings:

Ruby/Tk automatically creates class bindings for scrollbars that give them the following default behavior. If the behavior is different for vertical and horizontal scrollbars, the horizontal behavior is described in parentheses:

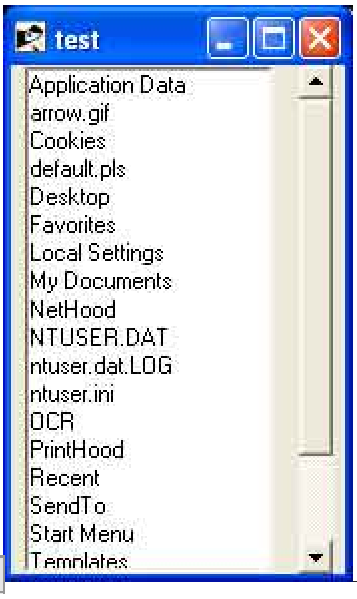
- Pressing button 1 over arrow1 causes the view in the associated widget to shift up *left* by one unit so that the document appears to move down *right* one unit. If the button is held down, the action auto-repeats.
- Pressing button 1 over trough1 causes the view in the associated widget to shift up *left* by one screenful so that the document appears to move down *right* one screenful. If the button is held down, the action auto-repeats.
- Pressing button 1 over the slider and dragging causes the view to drag with the slider. If the jump option is true, then the view doesn't drag along with the slider; it changes only when the mouse button is released.
- Pressing button 1 over trough2 causes the view in the associated widget to shift down *right* by one screenful so that the document appears to move up *left* one screenful. If the button is held down, the action auto-repeats.
- Pressing button 1 over arrow2 causes the view in the associated widget to shift down *right* by one unit so that the document appears to move up *left* one unit. If the button is held down, the action auto-repeats.
- If button 2 is pressed over the trough or the slider, it sets the view to correspond to the mouse position; dragging the mouse with button 2 down causes the view to drag with the mouse. If button 2 is pressed over one of the arrows, it causes the same behavior as pressing button 1.
- If button 1 is pressed with the Control key down, then if the mouse is over arrow1 or trough1 the view changes to the very top *left* of the document; if the mouse is over arrow2 or trough2 the view changes to the very bottom *right* of the document; if the mouse is anywhere else then the button press has no effect.
- In vertical scrollbars the Up and Down keys have the same behavior as mouse clicks over arrow1 and arrow2, respectively. In horizontal scrollbars these keys have no effect.
- In vertical scrollbars Control-Up and Control-Down have the same behavior as mouse clicks over trough1 and trough2, respectively. In horizontal scrollbars these keys have no effect.
- In horizontal scrollbars the Up and Down keys have the same behavior as mouse clicks over arrow1 and arrow2, respectively. In vertical scrollbars these keys have no effect.
- In horizontal scrollbars Control-Up and Control-Down have the same behavior as mouse clicks over trough1 and trough2, respectively. In vertical scrollbars these keys have no effect.
- The Prior and Next keys have the same behavior as mouse clicks over trough1 and trough2, respectively.
- The Home key adjusts the view to the top *leftedge* of the document.
- The End key adjusts the view to the bottom *rightedge* of the document.

Examples:

```
require "tk"

list = scroll = nil

list = TkListbox.new {
  yscroll proc{|idx|
 scroll.set *idx
  }
  width 20
  height 16
  setgrid 1
  pack('side' => 'left', 'fill' => 'y', 'expand' => 1)
}
scroll = TkScrollbar.new {
  command proc{|idx|
 list.yview *idx
```

```
  }
  pack('side' => 'left', 'fill' => 'y', 'expand' => 1)
}

for f in Dir.glob("*")
  list.insert 'end', f
end

Tk.mainloop
```

This will produce the following result:



```
Application Data
arrow.gif
Cookies
default.pls
Desktop
Favorites
Local Settings
My Documents
NetHood
NTUSER.DAT
ntuser.dat.LOG
ntuser.ini
OCR
PrintHood
Recent
SendTo
Start Menu
Templates
```