

Package ‘svWidgets’

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Description High level management of widgets, windows and other graphical resources.

License GPL-2

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svWidgets-package	<i>SciViews GUI API - Widgets & Windows</i>
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Description

High level management of widgets, windows and other graphical resources.

Details

Package: svWidgets
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 Version: 0.9-42
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 License: GPL 2 or above, at your convenience

Author(s)

Philippe Grosjean
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Img	<i>Manipulate image resources for the GUIs</i>
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Description

Mechanism provided here is very simple and allows for automatic loading of image resources from any package subdirectory. Currently, only Tk images loaded from GIF files are supported... but more formats could be added in the future.

Usage

```
ImgAdd(file, type = "gif", imgtype = "tkImage", update = FALSE, ...)
ImgDel(image)
ImgGet(image)
ImgNames()
ImgType(image, warn = TRUE)
```

```
ImgRead(dir, type = "gif", imgtype = "tkImage")
ImgReadPackage(package, subdir = "gui", type = "gif", imgtype = "tkImage")

## S3 method for class 'guiImg'
print(x, ...)
```

Arguments

file	image file from where to download the resource.
type	type of image. Currently, only 'gif' is supported.
imgtype	the type of image resource to create. Currently, only 'tkImage' is supported and it is a Tcl/Tk resource.
update	do we update an already loaded image resource, or not?
image	Name of an image.
warn	do we issue a warning if the type of image is not recognized?
dir	the directory that contains one or more image files to read.
package	name of a package from where to load image resources.
subdir	subdirectory in the package where the graphical resources are stored. By default, it is the "gui\" subdirectory.
x	an object of class 'guiImg'.
...	further arguments (currently not used).

Details

These functions care about (un)loading image resources. A list of these resources is maintained in '.guiImgs' located in the 'TempEnv' environment.

Value

ImgAdd() and ImgGet() return the handle to the newly created image (invisibly for the ImgAdd()). ImgDel() returns invisibly TRUE if the resource is found and deleted, FALSE otherwise. ImgNames() return the list of all images registered in .guiImgs in the 'TempEnv' environment. ImgRead() and ImgReadPackage() return invisibly the list of image files that are imported as resources.

Author(s)

Philippe Grosjean

See Also

[ToolAdd](#)

Examples

```
## Not run:
## These cannot be run by examples() but should be OK when pasted
## into an interactive R session with the tcltk package loaded

ImgNames()
myImg <- ImgAdd(system.file("gui", "logoSciViews.gif", package = "svWidgets"))
myImg # Note that $Tk. is prepended to the name!
ImgNames()
ImgType(myImg)
## Place that logo in a Tk window
timg <- WinAdd("timg", title = "A Tk window with image", pos = "-40+20")
labImg <- tklabel(timg, image = ImgGet(myImg), bg = "white")
tkpack(labImg)
## When the image resource is deleted, it is not displayed any more (no error)
ImgDel(myImg)
ImgNames()
WinDel("timg")
## To read all image resources at once (place this in .Lib.first())
ImgReadPackage("svWidgets")
ImgNames()
rm(myImg)

## End(Not run)
```

Menu

Conveniently manipulate menus, whatever the window

Description

These functions provide an unifying way of dealing with menus in R. It is inspired from the win-MenuXXX() functions under Windows that allow easy manipulation of custom menus in Rgui.exe. Currently, they support all the functionalities of winMenuXXX() functions and they bring a convenient similar layer on top of Tk menus to manipulate them in a similar way.

Usage

```
MenuAdd(menu, ...)
MenuAddItem(menu, item, action, image = "", accel = "", options = "")
MenuDel(menu)
MenuDelItem(menu, item)
MenuNames()
MenuItems(menu)
MenuType(menu, warn = TRUE)
MenuInvoke(menu, item)
MenuChangeItem(menu, item, action = "", options = "")
MenuStateItem(menu, item, active = TRUE)
MenuRead(file = "Menus.txt")
```

```
MenuReadPackage(package, subdir = "gui", file = "Menus.txt")

## S3 method for class 'guiMenu'
print(x, ...)
```

Arguments

menu	name of a menu.
item	name of a menu item.
action	action the menu triggers (R code).
image	name of an image to display at left of the menu item.
accel	accelerator (keystroke) to use to trigger this menu item.
options	additional options, for instance "disable" to disable the menu at creation.
warn	do we issue a warning if the type of menu is not recognized?
active	do we enable or disable the menu item?
file	a file containing menu specifications to read.
package	name of a package from where to load menu specifications.
subdir	subdirectory in the package where the menu specifications are stored. By default, it is the "gui" subdirectory.
x	an object of class 'guiMenu'.
...	further arguments passed to the function.

Details

These functions care about creating, deleting and managing custom menus. Informations and handles to the various menus created with these functions are stored in the `.guiMenus` variable, located in the 'TempEnv' environment.

Value

`MenuAdd()` and `MenuAddItem()` return the handle to the newly created menu/menu item invisibly. `MenuDel()` and `MenuDelItem()` return invisibly TRUE if the resource is found and deleted, FALSE otherwise. `MenuNames()` returns the list of all menus registered in `.guiMenus` in the 'TempEnv' environment. `MenuInvoke()` returns invisibly TRUE if the menu item was invoked, FALSE otherwise. `MenuRead()` and `MenuReadPackage()` return invisibly the list of menus that are imported and created.

Author(s)

Philippe Grosjean

See Also

[tkMenuAdd](#), [ImgReadPackage](#)

Examples

```

## Not run:
## These cannot be run by examples() but should be OK when pasted
## into an interactive R session with the tcltk package loaded
## Run these commands one at a time and look at menus...

### Under RGui and Windows only! ###
## Create menus in Rgui, using a specification file
MenuReadPackage("svWidgets")
MenuNames()
(MenuItems("$ConsoleMain/Testit"))

## Create menus manually in Rgui
MenuAdd("$ConsoleMain/Testit2")
MenuAddItem("$ConsoleMain/Testit2", "Trial", "ls()")
MenuNames()
(MenuItems("$ConsoleMain/Testit2"))
MenuStateItem("$ConsoleMain/Testit2", "Trial", FALSE)
MenuStateItem("$ConsoleMain/Testit2", "Trial", TRUE)
## Buggy? -> MenuChangeItem("$ConsoleMain/Testit2", "Trial", "search()")
(MenuItems("$ConsoleMain/Testit2"))

### Under any system supporting Tcl/Tk ###
## Create and manipulate Tk menus
WinAdd("tt", title = "A Tk window with menus", pos = "-40+20")
MenuAdd("$Tk.tt/Misc")
MenuNames()
(MenuItems("$Tk.tt/Misc")) # Still nothing in it
MenuAddItem("$Tk.tt/Misc", "List &variables", "print(ls(envir = .GlobalEnv))")
MenuAddItem("$Tk.tt/Misc", "Say &yo!", "cat('yo!\n')")

MenuDelItem("$Tk.tt/Misc", "Say &yo!")
MenuAddItem("$Tk.tt/Misc", "-")
MenuAddItem("$Tk.tt/Misc", "&Say yo! twice", "cat('yo! yo!\n')")
(MenuItems("$Tk.tt/Misc"))

ImgReadPackage("svWidgets") # Make sure images are loaded
MenuAdd("$Tk.tt/Misc/Sub&Menu")
MenuAddItem("$Tk.tt/Misc/Sub&Menu", "T&rial", "cat('Trial triggerred!\n')")
MenuAddItem("$Tk.tt/Misc", "Tria&l2", "cat('Trial with image and accel!\n')",
image = "$Tk.butOpen", accel = "Ctrl+T")
MenuNames()
(MenuItems("$Tk.tt/Misc"))
MenuStateItem("$Tk.tt/Misc", "Tria&l2", FALSE)
MenuStateItem("$Tk.tt/Misc", "Tria&l2", TRUE)
MenuStateItem("$Tk.tt/Misc", "Sub&Menu", FALSE)
MenuStateItem("$Tk.tt/Misc", "Sub&Menu", TRUE)
MenuChangeItem("$Tk.tt/Misc", "Tria&l2", options = "underline = 1")
## This is the way to change binding
tkbind(WinGet("tt"), "<Control-r>", function() MenuInvoke("$Tk.tt/Misc", "Tria&l2"))

```

```
MenuChangeItem("$Tk.tt/Misc", "Tria&l2", action = 'cat("new action for Tria&l2!\n")')
MenuInvoke("$Tk.tt/Misc", "Tria&l2")
(MenuItems("$Tk.tt/Misc"))
MenuDelItem("$Tk.tt/Misc", "Tria&l2")
MenuDel("$Tk.tt/Misc")
MenuNames()
## The following command generates an error!
(MenuItems("$Tk.tt/Misc"))
WinDel("tt")

## End(Not run)
```

tkImg

Manipulate image resources for Tcl/Tk GUIs

Description

These functions read image files on disk and create Tk image resources.

Usage

```
tkImgAdd(file, type = "gif", update = FALSE)
tkImgDel(image)
tkImgRead(dir, type = "gif")
```

Arguments

file	image file from where to download the resource.
type	type of image. Currently, only 'gif' is supported.
update	do we update an already loaded image resource, or not?
image	name of an image.
dir	the directory that contains one or more image files to read.

Details

These functions should not be called directly, but by means of `ImgAdd()`, `ImgDel()` or `ImgRead()`.

Value

`tkImgAdd()` returns the handle to the newly created image invisibly. `tkImgDel()` returns invisibly TRUE if the resource is found and deleted, FALSE otherwise. `tkImgRead()` returns invisibly the list of image files that are imported as resources.

Author(s)

Philippe Grosjean

See Also

[ImgAdd](#), [ImgDel](#), [ImgRead](#)

tkMenu

Conveniently manipulate Tk menus

Description

These functions provide an easy way to create and manipulate Tk menus under R. Note that the corresponding MenuXXX() function also manipulate Tk menus the same way, but are capable of manipulating other menus as well. One should, thus, preferably use MenuXXX()!

Usage

```
tkMenuAdd(menu, tearoff = FALSE)
tkMenuAddItem(menu, item, action, image = "", accel = "", options = "")
tkMenuDel(menu)
tkMenuDelItem(menu, item)
tkMenuItems(menu)
tkMenuChangeItem(menu, item, action = "", options = "")
tkMenuStateItem(menu, item, active = TRUE)
tkMenuInvoke(menu, item)
tkMenuItemCall(expr)
```

Arguments

menu	name of a menu.
tearoff	should the menu be detachable?
item	name of a menu item.
action	action the menu triggers (R code).
image	name of an image to display at left of the menu item.
accel	accelerator (keystroke) to use to trigger this menu item.
options	additional options, for instance 'state = "disable"' to disable the menu at creation.
active	do we enable or disable the menu item?
expr	an expression to execute corresponding to the menu item call.

Details

Do not use these functions directly. Prefer the corresponding MenuXXX() functions that will call them if Tk menus or menu items are provided.

Value

tkMenuAdd() and tkMenuAddItem() return the handle of the newly created menu/menu item invisibly. tkMenuDel() and tkMenuDelItem() return invisibly TRUE if the resource is found and deleted, FALSE otherwise. tkMenuItems() returns the list of all items in a given menu. tkMenuInvoke() returns invisibly TRUE if the menu item was invoked, FALSE otherwise. tkMenuStateItem() returns the new state of the menu. tkMenuItemCall() is usually not called directly by the end-user, but rather through a menu. It is a user-visible function so that it is possible to substitute it with a custom function to manage menu item calls differently in a custom GUI, for instance.

Author(s)

Philippe Grosjean

See Also

[MenuAdd](#)

tkTool

Conveniently manipulate Tk toolbars

Description

These functions provide an easy way to create and manipulate Tk toolbars under R. Note that the corresponding ToolXXX() function also manipulate Tk toolbars the same way, but are capable of manipulating other toolbars as well (not currently, but that could be implemented in the future). One should, thus, preferably use ToolXXX()!

Usage

```
tkToolAdd(toolbar, side = "top")
tkToolAddItem(toolbar, item, action, image = "", options = "")
tkToolDel(toolbar)
tkToolDelItem(toolbar, item)
tkToolItems(toolbar)
tkToolChangeItem(toolbar, item, action = "", options = "")
tkToolStateItem(toolbar, item, active = TRUE)
tkToolInvoke(toolbar, item)
```

Arguments

toolbar	name of a Tk toolbar.
side	where to place the toolbar in the window ("top", "bottom", "left", or "right")?
item	name of a toolbutton.
action	action the toolbutton triggers (R code).
image	name of a Tk image to display in the toolbutton.

options	additional options, for instance 'state = "disable"' to disable the toolbutton at creation.
active	do we enable or disable the toolbutton?

Details

Do not use these functions directly. Prefer the corresponding ToolXXX() functions that will call them if Tk toolbars or toolbutton are provided.

Value

tkToolAdd() and tkToolAddItem() return the handle of the newly created toolbar or toolbutton invisibly. tkToolDel() and tkToolDelItem() return invisibly TRUE if the resource is found and deleted, FALSE otherwise. tkToolItems() returns the list of all items in a given toolbar. tkToolInvoke() returns invisibly TRUE if the toolbutton was invoked, FALSE otherwise. tkToolStateItem() returns the new state of the toolbutton.

Author(s)

Philippe Grosjean

See Also

[ToolAdd](#)

tkWin

Conveniently manipulate Tk windows

Description

These functions provide an easy way to create and manipulate Tk windows under R. Note that the corresponding WinXXX() function also manipulate Tk windows the same way, but are capable of manipulating other windows as well (in the future). One should, thus, preferably use WinXXX()!

Usage

```
tkWinAdd(name = "win1", parent = .TkRoot, title = NULL, pos = NULL,
         bind.delete = TRUE, ...)
tkWinDel(window)
```

Arguments

name	name for a new Tk window.
parent	parent of this window.
title	title of the window.

pos	where to place the window. A string like '+XX+YY' where XX is the horizontal position in pixels, and YY is the vertical position. Using negative values place the window relative to the right or bottom side of the screen. Specifying NULL (by default) allows for automatic placement of the window.
bind.delete	do we automatically bind tkWinDel() to the window delete event (strongly advised for correct housekeeping)?
...	additional options to pass to the window creator.
window	the name of a 'tkguiWin' object.

Details

Do not use these functions directly. Prefer the corresponding WinXXX() functions that will call them if Tk windows are concerned.

Value

tkWinAdd() returns the handle of the newly created window invisibly. tkMenuDel() returns invisibly TRUE if the window is found and deleted, FALSE otherwise.

Author(s)

Philippe Grosjean

See Also

[WinAdd](#)

Tool

Conveniently manipulate toolbars, whatever the window

Description

These functions provide an unifying way of dealing with (simple) toolbars in R. Currently, they support only Tcl/Tk toolbars and toolbuttons, but other graphical toolboxes could be supported too in the future.

Usage

```

ToolAdd(toolbar, side = "top")
ToolAddItem(toolbar, item, action, image = "", options = "")
ToolDel(toolbar)
ToolDelItem(toolbar, item)
ToolNames()
ToolItems(toolbar)
ToolType(toolbar, warn = TRUE)
ToolInvoke(toolbar, item)
ToolChangeItem(toolbar, item, action = "", options = "")

```

```

ToolSpaceItem(toolbar, item, active = TRUE)
ToolRead(file = "Tools.txt")
ToolReadPackage(package, subdir = "gui", file = "Tools.txt")

## S3 method for class 'guiTool'
print(x, ...)

```

Arguments

toolbar	name of a toolbar.
side	where to place the toolbar in the window ("top", "bottom", "left", or "right")?
item	name of a toolbar item (a toolbar button).
action	action the toolbar button triggers (R code).
image	name of an image to display in the toolbar button.
options	additional options, for instance "disable" to disable the toolbar button at creation.
warn	do we issue a warning if the type of menu is not recognized?
active	do we enable or disable the toolbar button?
file	a file containing toolbar specifications to read.
package	name of a package from where to load toolbar specifications.
subdir	subdirectory in the package where the toolbar specifications are stored. By default, it is the "gui" subdirectory.
x	an object of class 'guiTool'.
...	further arguments (currently not used).

Details

These functions care about creating, deleting and managing custom toolbars. Informations and handles to the various toolbars created with these functions are stored in the `.guiTools` variable, located in the 'TempEnv' environment.

Use 'Img' resources to load images to display in the toolbar buttons.

Value

`ToolAdd()`, `ToolAddItem()` return the handle to the newly created toolbar or toolbar button invisibly. `ToolDel()` and `ToolDelItem()` return invisibly TRUE if the resource is found and deleted, FALSE otherwise. `ToolNames()` returns the list of all toolbars registered in `.guiTools` in the 'TempEnv' environment. `ToolInvoke()` returns invisibly TRUE if the toolbar button was invoked, FALSE otherwise. `ToolRead()` and `ToolReadPackage()` return invisibly the list of toolbars that are imported and created.

Author(s)

Philippe Grosjean

See Also

[tkToolAdd](#), [ImgReadPackage](#)

Examples

```
## Not run:
## These cannot be run by examples() but should be OK when pasted
## into an interactive R session with the tcltk package loaded
## Run these commands one at a time

WinAdd("tt", title = "A Tk window with toolbars", pos = "-40+20")
ImgReadPackage("svWidgets") # Make sure images are loaded
## Create a toolbar and populate it
ToolAdd("$Tk.tt/Main")
ToolNames()
(ToolItems("$Tk.tt/Main")) # Still nothing in it
ToolAddItem("$Tk.tt/Main", "List variables",
  action = "print(ls(envir = .GlobalEnv))", image = "$Tk.butCopy")
ToolAddItem("$Tk.tt/Main", "Say yo!", action = "cat('yo!\n')")
ToolAddItem("$Tk.tt/Main", "-")
ToolAddItem("$Tk.tt/Main", "Search",
  action = "print(search())", image = "$Tk.butPaste")
(ToolItems("$Tk.tt/Main"))
## Change state of buttons in the toolbar
ToolStateItem("$Tk.tt/Main", "Search", FALSE)
ToolStateItem("$Tk.tt/Main", "Search", TRUE)
ToolStateItem("$Tk.tt/Main", "Say yo!", FALSE)
ToolStateItem("$Tk.tt/Main", "Say yo!", TRUE)
## Invoke a button
ToolInvoke("$Tk.tt/Main", "Say yo!")
## Remove a button and add another one (always at the end!)
ToolDelItem("$Tk.tt/Main", "Say yo!")
ToolAddItem("$Tk.tt/Main", "Say yo! twice", "cat('yo! yo!\n')")
(ToolItems("$Tk.tt/Main"))
ToolDel("$Tk.tt/Main")
ToolNames()
(ToolItems("$Tk.tt/Main"))
WinDel("tt")

## End(Not run)
```

Description

R can combine various windows (native, Tk, Gtk, etc.). There could be problems when a GUI uses various kinds of windows together. For instance, it is very difficult to define a modal window that is modal for the whole application. These functions manage windows and ease their clean creation and destruction.

Usage

```

WinAdd(name = "win1", type = "tkWin", parent = .TkRoot, title = NULL,
       pos = NULL, bind.delete = TRUE, ...)
WinDel(window)
WinGet(window)
WinNames()

## S3 method for class 'guiWin'
print(x, ...)

```

Arguments

name	name for a new window
type	type of window to create. Currently, only Tk windows ("tkWin") are supported
parent	parent of this window
title	title of the window
pos	where to place the window. A string like '+XX+YY' where XX is the horizontal position in pixels, and YY is the vertical position. Using negative values place the window relative to the right or bottom side of the screen. Specifying NULL (by default) allows for automatic placement of the window.
bind.delete	do we automatically bind WinDel() to the windows delete event (strongly advised for correct housekeeping)?
...	additional options to pass to the window creator, or the print() method.
window	the name of a 'guiWin' object .
x	an object of class 'guiWin'.

Details

The list of windows and pointers to their handles are stored in '.guiWins' in the 'TempEnv' environment.

Value

WinAdd() and WinGet() return the handle to the window (invisibly for WinAdd()). WinNames() return the list of all windows registered in .guiWins. WinDel() returns invisibly TRUE if the window is found and deleted, FALSE otherwise.

Author(s)

Philippe Grosjean

See Also

[tkWinAdd](#), [MenuReadPackage](#)

Examples

```
## Not run:
## These cannot be run by examples() but should be OK when pasted
## into an interactive R session with the tcltk package loaded

## Creating and destroying a Tk window and inspecting the list
WinNames()
WinAdd("tt", title = "My win", pos = "-40+20")
WinNames()
tkwm.deiconify(WinGet("tt")) # Standard tcltk functions on the window
WinDel("tt")
WinNames()

## End(Not run)
```

winMenu

Additional winMenuXXX() functions

Description

A couple of winMenuXXX() functions are defined in the package 'utils' to manipulate custom menus of Rgui (under windows only). Here are some additional ones. Note that you should preferably use the corresponding MenuXXX() function defined in this package (they work with windows menus as well as other menus, like Tk).

Usage

```
winMenuChangeItem(menu, item, action, options = "")
winMenuStateItem(menu, item, active = TRUE)
winMenuInvoke(menu, item)
```

Arguments

menu	name of a menu.
item	name of a menu item.
action	action the menu triggers (R code).
options	additional options. Only supports "enable" or "disable", currently.
active	do we enable or disable the menu item?

Details

These functions are used only under Windows, and when RGui.exe is executed.

These functions complement the winMenuXXX() functions in package 'utils'. Do prefer to use the corresponding MenuXXX() functions that work with all types of menus (currently, only Windows RGui and Tk, but more could be added in the future).

Author(s)

Philippe Grosjean

See Also

[MenuChangeItem](#), [MenuStateItem](#), [MenuInvoke](#)

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