

# Package ‘widgetTools’

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**Title** Creates an interactive tcltk widget

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**Description** This packages contains tools to support the construction of tcltk widgets

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**Suggests** Biobase

**biocViews** Infrastructure

**LazyLoad** yes

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|               |                                                           |
|---------------|-----------------------------------------------------------|
| basicPW-class | <i>Class "basicPW", a basic class for primary widgets</i> |
|---------------|-----------------------------------------------------------|

---

### Description

This class defines the behavior shared by primary widget object used to build a GUI type interface

### Objects from the Class

Objects can be created by calls of the form `new("basicPW", ...)`. Constructors have been defined to create objects of this class for specific widgets such as buttons, list boxes, ..

### Slots

**wName:** Object of class "character" - a string for the name of the object

**wType:** Object of class "character" - a string defining the type of the primary widget. (e.g. button)

**wValue:** Object of class "ANY" - the initial value to be associated with the object

**wWidth:** Object of class "numeric" - an integer for the width of the object to be rendered (if applicable)

**wHeight:** Object of class "numeric" - an integer for the height of the object to be rendered (if applicable)

**wFuns:** Object of class "list" - a list of R functions to be executed before the widget is activated

**wPreFun:** Object of class "function" - a list of functions to be executed before the value of the widget to be updated

**wPostFun:** Object of class "function" - a list of functions to be executed before the value of the widget to be retrieved

**wNotify:** Object of class "list" - a list of functions to be executed each time when the value of the widget changes

**wEnv:** Object of class "environment" - an R environment object within which the value of the object is stored

**wView:** Object of class "widgetView" - a object of the class widgetView to which the widget is rendered

### Methods

**wEnv<-** signature(object = "basicPW"): Set the value for wEnv slot

**wEnv** signature(object = "basicPW"): Get the value for wEnv slot

**wFuns<-** signature(object = "basicPW"): Set the value for wFuns slot

**wFuns** signature(object = "basicPW"): Get the value for wFuns slot

**wHeight<-** signature(object = "basicPW"): Set the value for wHeight slot

**wHeight** signature(object = "basicPW"): Get the value for wHeight slot

**wName<-** signature(object = "basicPW"): Set the value for wName slot  
**wName** signature(object = "basicPW"): Get the value for wName slot  
**wNotify<-** signature(object = "basicPW"): Set the value for wNotify slot  
**wNotify** signature(object = "basicPW"): Get the value for wNotify slot  
**wPostFun<-** signature(object = "basicPW"): Set the value for wPostFun slot  
**wPostFun** signature(object = "basicPW"): Get the value for wPostFun slot  
**wPreFun<-** signature(object = "basicPW"): Set the value for wPreFun slot  
**wPreFun** signature(object = "basicPW"): Get the value for wPreFun slot  
**wType<-** signature(object = "basicPW"): Set the value for wType slot  
**wType** signature(object = "basicPW"): Get the value for wType slot  
**wValue<-** signature(object = "basicPW"): Set the value for wValue slot  
**wValue** signature(object = "basicPW"): Get the value for wValue slot  
**wView<-** signature(object = "basicPW"): Set the value for wView slot  
**wView** signature(object = "basicPW"): Get the value for wView slot  
**wWidth<-** signature(object = "basicPW"): Set the value for wWidth slot  
**wWidth** signature(object = "basicPW"): Get the value for wWidth slot

### Author(s)

Jianhua Zhang

### References

Programming with data

### See Also

[widgetView-class,widget-class](#)

### Examples

```
# Create an R environment to store the values of primary widgets
PWEnv <- new.env(hash = TRUE, parent = parent.frame(1))

# Create a label
label1 <- label(wName = "label1", wValue = "File Name: ", wEnv = PWEnv)

# Create an entry box with "Feed me using brows" as the default value
entry1 <- entryBox(wName = "entry1", wValue = "Feed me using browse",
                  wEnv = PWEnv)
```

---

 button

*Functions to construct objects of primary widgets and render them*


---

### Description

All the primary widgets such as button, text box, and so on are objects of basicPW class. The functions are constructors of primary widgets that are subjects of basicPW class with behaviors specific to primary widgets.

### Usage

```

button(wName, wEnv, wValue = "", wWidth = 12, wHeight = 0, wFuns = list(),
wNotify = list(), wPreFun = function(x) x, wPostFun = function(x) x,
wView = new("widgetView") )
entryBox(wName, wEnv, wValue = "", wWidth = 50, wHeight = 0, wFuns = list(),
wNotify = list(), wPreFun = function (x) x, wPostFun = function(x) x,
wView = new("widgetView"))
textBox(wName, wEnv, wValue = "", wWidth = 25, wHeight = 12, wFuns = list(),
wNotify = list(), wPreFun = function (x) x, wPostFun = function(x) x,
wView = new("widgetView"))
listBox(wName, wEnv, wValue = "", wWidth = 25, wHeight = 10, wFuns = list(),
wNotify = list(), wPreFun = function (x) x, wPostFun = function(x) x,
wView = new("widgetView"))
checkButton(wName, wEnv, wValue, wWidth = 50, wFuns = list(), wNotify =
list(), wPreFun = function (x) x, wPostFun = function(x) x,
wView = new("widgetView"))
radioButton(wName, wEnv, wValue, wWidth = 50, wFuns = list(), wNotify =
list(), wPreFun = function (x) x, wPostFun = function(x) x,
wView = new("widgetView"))
label(wName, wEnv, wValue = "", wWidth = 0, wHeight = 0, wFuns = list(),
wNotify = list(), wPreFun = function (x) x, wPostFun = function(x) x,
wView = new("widgetView"))
widget(wTitle, pWidgets, funs = list(), preFun = function()
print("Hello"), postFun = function() print("Bye"), env, defaultNames =c(
"Finish", "Cancel"))
widgetView(WVTitle, vName, widgetids = list(), theWidget = new("widget"),
winid)

```

### Arguments

|       |                                                                                                                                                               |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| wName | wName a character string for the name to be associated with a given primary widget                                                                            |
| vName | vName same as wName but for a widget object                                                                                                                   |
| wEnv  | wEnv an R environment object within which the original values for each primary widget will be stored and updating and retrieval of the values will take place |
| env   | env same as wEnv but for a widget object                                                                                                                      |

|              |                                                                                                                                                                                 |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| wValue       | wValue the initial values to be associated with a given primary widget                                                                                                          |
| wWidth       | wWidth an integer for the width of the primary widget (if applicable)                                                                                                           |
| wHeight      | wHeight an integer for the height of the primary widget (if applicable)                                                                                                         |
| wFuns        | wFuns a list of R functions that will be associated with a primary widget and invoked when an operation (e.g. click, get focus, ...) is applied to the primary widget           |
| funcs        | funcs same as wFuns but for a widget object                                                                                                                                     |
| wNotify      | wNotify a list of functions defining the actions to be performed when the value of the primary widget changes                                                                   |
| wPreFun      | wPreFun an R function that should be applied when the widget is activated                                                                                                       |
| preFun       | preFun same as wPreFun but for a view                                                                                                                                           |
| wPostFun     | wPostFun an R function that will be applied when the widget is inactivated                                                                                                      |
| postFun      | postFun same as wPostFun but for a view                                                                                                                                         |
| wTitle       | wTitle a character string for the title to be displayed when the widget is rendered                                                                                             |
| pWidgets     | pWidget a list of primary widgets (e.g. button, list box, ...) to be rendered                                                                                                   |
| WVTitle      | WVTitle same as wTitle                                                                                                                                                          |
| widgetids    | widgetids a list of tkwin ids for the primary widgets to be rendered                                                                                                            |
| theWidget    | theWidget a <a href="#">widget</a> object to render the primary widgets                                                                                                         |
| wView        | wView an object of class <a href="#">widgetView</a>                                                                                                                             |
| winid        | winid an object of class <a href="#">winid</a>                                                                                                                                  |
| defaultNames | defaultName a vector of character string of length two for the text to be shown on the two default buttons. The first is to end the process and the second to abort the process |

## Details

[button](#) constructs a button widget object.

[button](#) constructs an entry box widget object.

[textBox](#) constructs a text box widget object.

[listBox](#) constructs a list box widget object. Value for a listbox object should be a named vector with names being the content to be shown in the list box and values being TRUE (default value) or FALSE.

[checkButton](#) constructs a group of check box widget objects. Value for check button objects should be a named vector with names being the content to be shown in the list box and values being TRUE (checked) or FALSE (not checked).

[radioButton](#) constructs a group of radio button widget objects. Value for radio button objects should be a named vector with names being the content to be shown in the list box and values being TRUE (default) or FALSE.

[label](#) constructs a text label widget object with the value displayed as the text.

[widget](#) constructs a widget object to render the primary widgets.

[widgetView](#) constructs a [widgetView](#) object. This class is for internal use by class [widget-class](#). Users trying to create GUI type widget do not need to use this class.

**Value**

Each constructor returns a tkwin object for the primary widget object.

**Author(s)**

Jianhua Zhang

**References**

R tcltk

**See Also**

[widget-class](#), [basicPW-class](#)

**Examples**

```
# Create an R environment to store the values of primary widgets
PWEnv <- new.env(hash = TRUE, parent = parent.frame(1))

# Create a label
label1 <- label(wName = "label1", wValue = "File Name: ", wEnv = PWEnv)

# Create an entry box with "Feed me using brows" as the default value
entry1 <- entryBox(wName = "entry1", wValue = "Feed me using browse",
                  wEnv = PWEnv)

# Create a button that will call the function browse2Entry1 when
# pressed.
browse2Entry1 <- function(){
  tempValue <- tclvalue(tkgetOpenFile())
  temp <- get(wName(entry1), env = PWEnv)
  wValue(temp) <- paste(tempValue, sep = "", collapse = ";")
  assign(wName(entry1), temp, env = PWEnv)
}
button1 <- button(wName = "button1", wValue = "Browse",
                 wFuns = list(command = browse2Entry1), wEnv = PWEnv)

# Create a list box with "Option1", "Option2", and "Option3" as the
# content and "Option1" selected
list1 <- listBox(wName = "list1", wValue = c(Option1 = TRUE, Option2 = FALSE,
                                           Option3 = FALSE), wEnv = PWEnv)

# Create a text box with "Feed me something" displayed
text1 <- textBox(wName = "text1", wValue = "Feed me something",
                wEnv = PWEnv)

# Create a set of radio buttons with "radio1" as the default
label2 <- label(wName = "label2", wValue = "Select one: ", wEnv = PWEnv)
radios1 <- radioButton(wName = "radios1", wValue = c(radio1 = TRUE,
                                                    radio2 = FALSE, radio3 = FALSE), wEnv = PWEnv)
```

```

# Create a set of check boxes with "check1" selected and "check2" and
# "check3" not selected
label3 <- label(wName = "label3", wValue = "Select one to many: ",
wEnv = PWEEnv)
checks1 <- checkButton(wName = "checks1", wValue = c(check1 = TRUE,
check22 = FALSE, check3 = FALSE), wEnv = PWEEnv)

# Please note that the name of the primary widget object (e.g. checks1)
# should be the same as the value of the name slot of the object
# (e. g. name = "checks1")

# Render the widgets
pWidgets <- list(topRow = list(label1 = label1, entry1 = entry1,
button1 = button1), textRow = list(list1 = list1,
text1 = text1), radGroup = list(label2 = label2,
radios1 = radios1), chkGroup = list(label3 = label3,
checks1 = checks1))

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

aWidget <- widget(wTitle = "A test widget", pWidgets, funs = list(),
preFun = function() print("Hello"),
postFun = function() print("Bye"), env = PWEEnv)

## End(Not run)

```

---

dropdownList

*A widget to mimic a dropdown list*


---

## Description

The current tcltk library does not support dropdown lists unless an extension is included. The function dropdownList provide an alternative.

## Usage

```

dropdownList(base, options, textvariable, width = 10, default, editable
= FALSE)
getListOption(targetWidget, options, height, vScroll = FALSE)

```

## Arguments

|              |                                                                                                              |
|--------------|--------------------------------------------------------------------------------------------------------------|
| base         | base a tkwin object that is the parent frame of the dropdown list to be created                              |
| options      | options a vector of character strings for the content of the dropdown list                                   |
| textvariable | textvariable a tclVar object to be associated with the selected item of the dropdown list                    |
| width        | width an integer for the width in number of characters of the selection containing part of the dropdown list |

|              |                                                                                                                                                      |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| default      | default a character string for the default selection that is going to be shown in the selection containing window of the dropdown list               |
| targetWidget | targetWidget a tkwin object for an entry box to which a button will be associated to make the look of a dropdown list                                |
| editable     | editable a boolean indicating whether the dropdown list will be editable or not                                                                      |
| height       | height an integer for the height of the dropdown list box. If missing, height will be assigned the length of the options to be shown in the list box |
| vScroll      | vScroll a boolean indicating whether a vertical scroll bar will be associated with the dropdown list box                                             |

### Details

base can be a top window or a frame.

The widget returns a frame that contains a dropdown list. The frame need to be placed using any of the layout methods of tcltk. The value of the selection will be accessed through the tclVar object passed to the function.

getListOptions is called by dropdown list to get the selected item

### Value

dropdownList returns a tkwin object for the frame that contains a dropdown list

getListOptions returns a character string for the selected item

### Author(s)

Jianhua Zhang

### References

tcltk

### See Also

[tooltip](#)

### Examples

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

base <- tkoplevel()
selection <- tclVar()
dropdownList(base, c("Option 1", "Option 2", "Option 3"),
             selection, 15, "Option 2")
tclvalue(selection)
# Destroy toplevel widget
# tkdestroy(base)

## End(Not run)
```



---

`makeViewer`*Put a Scrollable List Box into a tkWidget.*

---

**Description**

This function associates a tk listbox with a scroll bar and then puts them into a given tk widget.

**Usage**

```
makeViewer(target, vWidth = "", vHeight = "", hScroll = FALSE,  
vScroll = TRUE, what = "list", side = "left", text = "")
```

**Arguments**

|                               |                                                                                                                                                        |
|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>target</code>           | tk widget that can accommodate a list box.                                                                                                             |
| <code>vWidth, vHeight</code>  | integers giving width and height of the listbox.                                                                                                       |
| <code>hScroll, vScroll</code> | logicals indicating whether a horizontal or vertical scroll bar should be associated with the list box.                                                |
| <code>what</code>             | A character string indicating the type of the viewer to be put on a widget. Valid types include "list" for list box, "canvas", and "text" for text box |
| <code>side</code>             | A character string for the geometry management of the viewer on the widget. Valid values include "left", "right", "top", and "bottom"                  |
| <code>text</code>             | A character string to be displayed                                                                                                                     |

**Details**

Tk list boxes (or canvas, text box) and scroll bars are separate widgets. This function provides a common interface to put them together and functionally associated.

**Value**

This function does not return any value.

**Author(s)**

Jianhua (John) Zhang

**See Also**

[tklistbox](#) (from the 'tcltk' package).

## Examples

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

# Create a top level window and put a list box in it
base <- tkoplevel()
listBox <- makeViewer(base)

# Destroy toplevel widget
# tkdestroy(base)

## End(Not run)
```

---

|             |                                                                                            |
|-------------|--------------------------------------------------------------------------------------------|
| oneVScrList | <i>A function that creates a groups of list boxes sharing a single vertical scroll bar</i> |
|-------------|--------------------------------------------------------------------------------------------|

---

## Description

This function creates a group of list boxes what share a common vertical scroll bar. Values in all the list boxes scroll up or down when the scroll bar is dragged

## Usage

```
oneVScrList(base, data)
```

## Arguments

|      |                                                                                |
|------|--------------------------------------------------------------------------------|
| base | base a tkwin object that will be the container of the list boxes to be created |
| data | data a matrix with data to be put in the list boxes                            |

## Details

The matrix should have names for its columns. The names of the list boxes to be created will be the same as the corresponding columns of the matrix.

Data in the list boxes can be sorted based on values in any of the list boxes.

## Value

This function returns a list containing the tkwin objects of the list boxes created.

## Author(s)

Jianhua Zhang

## References

tcltk

**See Also**

[dropdownList](#), [tooltip](#)

**Examples**

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

testData <- matrix(c(1:50, 100:51), ncol = 2)
colnames(testData) <- c("Column 1", "Column 2")
base <- tkoplevel()
tt <- oneVScrList(base, testData)

# Destroy toplevel widget
# tkdestroy(base)

## End(Not run)
```

---

|              |                                                                                  |
|--------------|----------------------------------------------------------------------------------|
| safeFileOpen | <i>A function that checks to see if a connection can be made to a given file</i> |
|--------------|----------------------------------------------------------------------------------|

---

**Description**

This function checks to see if a given file name exists. If so, the function returns a connection to the file. Otherwise, it returns "fileName does not exist".

**Usage**

```
safeFileOpen(fileName)
```

**Arguments**

|          |                                                                                          |
|----------|------------------------------------------------------------------------------------------|
| fileName | fileName a character string for the name of a file to which a connection is to be opened |
|----------|------------------------------------------------------------------------------------------|

**Details**

When this function is used, users have to make sure to check to see if the returned object inherits object "connection". Otherwise, the file does not exist or a connection has not been made.

**Value**

The function returns a connection object that inherits class "connection" if the file exists and is opened. Otherwise, the string "fileName does not exist"

**Note**

This function is no placed here to be used by various widgets. May be moved to a more suitable place later

**Author(s)**

Jianhua Zhang

**See Also**

[file](#)

**Examples**

```
write("A test file", "testFile4safeFileOpen")
tt <- safeFileOpen("testFile4safeFileOpen")
inherits(tt, "connection")
unlink("testFile4safeFileOpen")
tt <- safeFileOpen("testFile4safeFileOpen")
inherits(tt, "connection")
```

---

tooltip

*A tcltk widget to mimic a tooltip*

---

**Description**

Current tcltk library does not support tooltip unless an extension is included. The function tooltip is implemented as an alternative.

**Usage**

```
tooltip(text, targetWidget, width = 350)
```

**Arguments**

|              |                                                                                                |
|--------------|------------------------------------------------------------------------------------------------|
| text         | text a character string for the content of the tooltip                                         |
| targetWidget | targetWidget a tkwin object for the target tcltk widget to which a tool tip will be associated |
| width        | width an integer for the width (in pixels) of the tooltip                                      |

**Details**

Given a target tcltk widget, a tooltip will be associated with the widget. The content of the tooltip will be shown when mouse moves over the widget and disappear when mouse moves out of the widget.

**Value**

This function returns invisible()

**Author(s)**

Jianhua Zhang

**References**

tcltk

**See Also**

[dropdownList](#)

**Examples**

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

base <- tkoplevel()
but <- tkbutton(base, text = "Move Mouse Over Me")
tkpack(but)
tkbind(but, "<Enter>", expression(tooltip("Move mouse off me", but)))

# Destroy toplevel widget
# tkdestroy(base)

## End(Not run)
```

---

widget-class

*Class "widget" creates a widget with primary widgets contained in the list pWidgets rendered*

---

**Description**

This class takes a list of primary widgets and then creates a "widgetView" object that renders the primary widgets

**Objects from the Class**

Objects can be created by calls of the form `new("widget", ...)`.

**Slots**

**wTitle:** Object of class "character" - a character string for the title of the widget to be created

**pWidgets:** Object of class "list" - a list of "basicPW" objects representing widget elements to be rendered

**env:** Object of class "environment" - an R environment for the object to work within

**funcs:** Object of class "list" - a list of functions that will be associated with buttons on the widget to be rendered. The name of the function in the list will be the text appears on the button and the function will be executed when the button is pressed

**preFun:** Object of class "function" - a function that will be executed before the widget is constructed

**postFun:** Object of class "function" - a function that will be executed before the widget is destroyed

**Methods**

**env<-** signature(object = "widget"): set the value for env

**wEnv** signature(object = "widget"): get the value for env

**funcs<-** signature(object = "widget"): set the value for funcs

**funcs** signature(object = "widget"): get the value for funcs

**postFuns<-** signature(object = "widget"): set the value for postFuns

**postFun** signature(object = "widget"): get the value for postFuns

**preFuns<-** signature(object = "widget"): set the value for preFun

**preFun** signature(object = "widget"): get the value for preFun

**pWidgets<-** signature(object = "widget"): set the value for pWidgets

**pWidgets** signature(object = "widget"): get the value for pWidgets

**updateCheck** signature(object = "widget"): update the value of check buttons of the widget to be rendered

**updateList** signature(object = "widget"): update the value of list box/entry of the widget to be rendered

**updateRadio** signature(object = "widget"): update the value of radio buttons of the widget to be rendered

**updateText** signature(object = "widget"): update the value of text box of the widget to be rendered

**wTitle<-** signature(object = "widget"): set the value of wTitle

**wTitle** signature(object = "widget"): get the value of wTitle

**Author(s)**

Jianhua Zhang

**References**

Programming with data

**See Also**

[basicPW-class](#), [widgetView-class](#)

**Examples**

```
PWEnv <- new.env(hash = TRUE, parent = parent.frame(1))

label1 <- label(wName = "label1", wValue = "File Name: ", wEnv = PWEnv)
entry1 <- entryBox(wName = "entry1", wValue = "Feed me using browse",
                  wEnv = PWEnv)
browse2Entry1 <- function(){
  tempValue <- fileBrowser()
  temp <- get(wName(entry1), wEnv = PWEnv)
  wValue(temp) <- paste(tempValue, sep = "", collapse = ";")
  assign(wName(entry1), temp, env = PWEnv)
}
button1 <- button(wName = "button1", wValue = "Browse",
                  wFuns = list(command = browse2Entry1), wEnv = PWEnv)
list1 <- listBox(wName = "list1", wValue = c(Option1 = TRUE, Option2 = FALSE,
                                           Option3 = FALSE), wEnv = PWEnv)
text1 <- textBox(wName = "text1", wValue = "Feed me something",
                wEnv = PWEnv)
label2 <- label(wName = "label2", wValue = "Select one: ", wEnv = PWEnv)
radios1 <- radioButton(wName = "radios1", wValue = c(radio1 = TRUE,
                                                    radio2 = FALSE, radio3 = FALSE), wEnv = PWEnv)
label3 <- label(wName = "label3", wValue = "Select one to many: ",
              wEnv = PWEnv)
checks1 <- checkButton(wName = "checks1", wValue = c(check1 = TRUE,
                                                    check22 = FALSE, check3 = FALSE), wEnv = PWEnv)
pWidgets <- list(topRow = list(label1 = label1, entry1 = entry1,
                              button1 = button1), textRow = list(list1 = list1,
                                                                    text1 = text1), radGroup = list(label2 = label2,
                                                                    radios1 = radios1), chkGroup = list(label3 = label3,
                                                                    checks1 = checks1))

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

aWidget <- widget(wTitle = "A test widget", pWidgets, funs = list(),
                 preFun = function() print("Hello"),
                 postFun = function() print("Bye"), env = PWEnv)

## End(Not run)
```

---

widgetView-class

*Class "widgetView", a class for a GUI type widget holding widget elements*

---

**Description**

"widgetView" renders element widgets

**Objects from the Class**

Objects can be created by calls of the form `new("widgetView", ...)`. This class is for internal use by class `widget-class`. Users trying to create GUI type widget do not need to use this class.

**Slots**

**WVTitle:** Object of class "character" - a character string that will be displayed as the title of the widget to be created

**vName:** Object of class "character" - a character string for the vName of the widget

**winid:** Object of class "tkwin" - a tkwin object for the id of the top window for the widget

**widgetids:** Object of class "list" - a list of tkwin ids for element widgets

**theWidget:** Object of class "widget" - a widget object that creates the widgetView

**Methods**

**killWin** signature(tkWidget = "widgetView"): destroys the window representing the widgetView

**vName<-** signature(object = "widgetView"): set the value for vName

**vName** signature(object = "widgetView"): get the value for vName

**renderWidgets** signature(widgetView = "widgetView", pWidgets = "list"): takes a list of "basicPW" objects (pWidgets) and renders them accordingly

**renewView** signature(widgetView = "widgetView", pWidgets = "list"): using values contained by the "basicPW" objects of pWidgets to update the values of widget elements displayed

**theWidget<-** signature(object = "widgetView"): set the value for theWidget

**theWidget** signature(object = "widgetView"): get the value for theWidget

**updateDisplay** signature(widgetView = "widgetView"): update the value of list box or text box element widgets

**widgetids<-** signature(object = "widgetView"): set the value of widgetids

**widgetids** signature(object = "widgetView"): get the value of widgetids

**winid<-** signature(object = "widgetView"): set the value of winid

**winid** signature(object = "widgetView"): set the value of winid

**winWait** signature(tkWidget = "widgetView"): make widgetView modal

**WVTitle** signature(object = "widgetView"): get the value for WVTitle

**Author(s)**

Jianhua Zhang

**References**

Programming with data



**See Also**

[widget-class](#), [basicPW-class](#)

**Examples**

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

  widgetView <- widgetView(WVTitle = "demo", vName = "widget1")

## End(Not run)
```

---

 writeText

*Functions that read from and write to tcltk widgets*


---

**Description**

These functions provide some of the common read and write operations for tcltk widgets

**Usage**

```
writeText(widget, value, clear = TRUE)
writeList(widget, value, clear = TRUE)
getListValue(which)
getTextValue(which)
getEntryValue(which)
```

**Arguments**

|        |                                                                                     |
|--------|-------------------------------------------------------------------------------------|
| widget | widget a tkwin object for the tcltk widget to be read or written to                 |
| value  | value the text of numerical value to be written to a tcltk widget                   |
| clear  | clear a boolean to indicate whether a value will append to the existing one (FALSE) |
| which  | which a tkwin object for the tcltk widget whose value will be retrieved             |

**Details**

[writeText](#) writes to a given tcltk text box widget.

[writeList](#) writes to a given tcltk list or entry box widget.

[getListValue](#) retrieves the selected value in a tcltk list widget.

[getTextValue](#) retrieves the value of a text box.

[getEntryValue](#) retrieves the value of an entry box.

**Value**

`getListValue` returns the selected value in a tcltk list widget.

`getTextValue` returns the value of a text box.

`getEntryValue` returns the value of an entry box.

**Author(s)**

Jianhua Zhang

**References**

R tcltk

**See Also**

[basicPW-class](#), [widget-class](#)

**Examples**

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

# Create the widgets
base <- tktoplevel()
list <- tklistbox(base, width = 20, height = 5)

entry <- tkentry(base)
text <- tktext(base, width = 20, height = 5)
tkpack(list, entry, text)
# Write and read from the widgets
writeList(list, c("Option1", "Option2", "Option3"))
writeList(entry, "An Entry box")
writeText(text, "A text box")
# Will be NULL if not selected
getListValue(list)
getTextValue(text)
getEntryValue(entry)
# Destroy toplevel widget
# tkdestroy(base)

## End(Not run)
```

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