

Package ‘periscope’

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Type Package

Title Enterprise Streamlined 'Shiny' Application Framework

Version 0.4.7

Description An enterprise-targeted scalable and UI-standardized 'shiny' framework including a variety of developer convenience functions with the goal of both streamlining robust application development while assisting with creating a consistent user experience regardless of application or developer.

URL <https://github.com/cb4ds/periscope.git>,
<http://periscopeapps.org:3838>, <http://canvasxpress.org>

BugReports <https://github.com/cb4ds/periscope/issues>

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add_ui_body	<i>Add UI Elements to the Body area</i>
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Description

This function registers UI elements to the body of the application (the right side). Items are added in the order given.

Usage

```
add_ui_body(elementlist = NULL, append = FALSE)
```

Arguments

elementlist	list of UI elements to add to the body
append	whether to append the elementlist to the currently registered elements or replace the currently registered elements completely

Shiny Usage

Call this function after creating elements in `program/ui_body.R` to register them to the application framework and show them on the body area of the dashboard application

See Also

[add_ui_sidebar_basic](#)
[add_ui_sidebar_advanced](#)

Examples

```
require(shiny)

body1 <- htmlOutput("example1")
body2 <- actionButton("exButton", label = "Example")

add_ui_body(list(body1, body2))
```

add_ui_sidebar_advanced

Add UI Elements to the Sidebar (Advanced Tab)

Description

This function registers UI elements to the secondary (rear-most) tab on the dashboard sidebar. The default name of the tab is **Advanced** but can be renamed using the `tabname` argument.

Usage

```
add_ui_sidebar_advanced(elementlist = NULL, append = FALSE,
  tabname = "Advanced")
```

Arguments

<code>elementlist</code>	list of UI elements to add to the sidebar tab
<code>append</code>	whether to append the <code>elementlist</code> to the currently registered elements or replace the currently registered elements completely
<code>tabname</code>	change the label on the UI tab (default = "Advanced")

Shiny Usage

Call this function after creating elements in `program/ui_sidebar.R` to register them to the application framework and show them on the Advanced tab in the dashboard sidebar

See Also

[add_ui_sidebar_basic](#)

[add_ui_body](#)

Examples

```
require(shiny)

s1 <- selectInput("sample1", "A Select", c("A", "B", "C"))
s2 <- radioButtons("sample2", NULL, c("A", "B", "C"))

add_ui_sidebar_advanced(list(s1, s2), append = FALSE)
```

add_ui_sidebar_basic *Add UI Elements to the Sidebar (Basic Tab)*

Description

This function registers UI elements to the primary (front-most) tab on the dashboard sidebar. The default name of the tab is **Basic** but can be renamed using the `tabname` argument. This tab will be active on the sidebar when the user first opens the shiny application.

Usage

```
add_ui_sidebar_basic(elementlist = NULL, append = FALSE,
  tabname = "Basic")
```

Arguments

<code>elementlist</code>	list of UI elements to add to the sidebar tab
<code>append</code>	whether to append the <code>elementlist</code> to currently registered elements or replace the currently registered elements.
<code>tabname</code>	change the label on the UI tab (default = "Basic")

Shiny Usage

Call this function after creating elements in `ui_sidebar.R` to register them to the application framework and show them on the **Basic** tab in the dashboard sidebar

See Also

[add_ui_sidebar_advanced](#)

[add_ui_body](#)

Examples

```
require(shiny)

s1 <- selectInput("sample1", "A Select", c("A", "B", "C"))
s2 <- radioButtons("sample2", NULL, c("A", "B", "C"))

add_ui_sidebar_basic(list(s1, s2), append = FALSE)
```

add_ui_sidebar_right *Add UI Elements to the Right Sidebar*

Description

This function registers UI elements at the right dashboard sidebar. The UI element should be of type `rightSidebarTabContent`.

Usage

```
add_ui_sidebar_right(elementlist = NULL, append = FALSE)
```

Arguments

<code>elementlist</code>	list of UI elements to add to the sidebar tab
<code>append</code>	whether to append the <code>elementlist</code> to the currently registered elements or replace the currently registered elements completely

Shiny Usage

Call this function after creating elements in `program/ui_sidebar_right.R` to register them to the application framework and show them on the right dashboard sidebar

See Also

[add_ui_sidebar_basic](#)
[add_ui_body](#)
[rightSidebarTabContent](#)

Examples

```
require(shiny)
require(shinydashboardPlus)

s1 <- rightSidebarTabContent(id = 1, icon = "desktop", title = "Tab 1 - Plots", active = TRUE,
  div(helpText(align = "center", "Sample UI Text"),
    selectInput("sample1", "A Select", c("A", "B", "C"))) )

add_ui_sidebar_right(list(s1), append = FALSE)
```

`create_new_application`*Create a new templated framework application*

Description

Creates ready-to-use templated application files using the periscope framework. The application can be created either empty (default) or with a sample/documented example application.

A running instance of the exact sample application that will be created is [hosted here](#) if you would like to see the sample application before creating your own copy.

Usage

```
create_new_application(name, location, sampleapp = FALSE,  
  resetbutton = TRUE, rightsidebar = FALSE)
```

Arguments

<code>name</code>	name for the new application and directory
<code>location</code>	base path for creation of name
<code>sampleapp</code>	whether to create a sample shiny application
<code>resetbutton</code>	whether the reset button should be added on the Advanced (left) sidebar.
<code>rightsidebar</code>	parameter to set the right sidebar. It can be TRUE/FALSE or a character containing the name of a shiny::icon().

Name

The name directory must not exist in location. If the code detects that this directory exists it will abort the creation process with a warning and will not create an application template.

Use only filesystem-compatible characters in the name (ideally w/o spaces)

Directory Structure

```
name  
  -- www (supporting shiny files)  
  -- program (user application)  
  -- -- data (user application data)  
  -- -- fxn (user application function)  
  -- log (log files)
```

File Information

All user application creation and modifications will be done in the **program** directory. The names & locations of the framework-provided .R files should not be changed or the framework will fail to work as expected.

name/program/ui_body.R :

Create body UI elements in this file and register them with the framework using a call to [add_ui_body](#)

name/program/ui_sidebar.R :

Create sidebar UI elements in this file and register them with the framework using a call to [add_ui_sidebar_basic](#) or [add_ui_sidebar_advanced](#)

name/program/ui_sidebar_right.R :

Create right sidebar UI elements in this file and register them with the framework using a call to [add_ui_sidebar_right](#)

name/program/data directory :

Use this location for data files. There is a **.gitignore** file included in this directory to prevent accidental versioning of data

name/program/global.R :

Use this location for code that would have previously resided in global.R and for setting application parameters using [set_app_parameters](#). Anything placed in this file will be accessible across all user sessions as well as within the UI context.

name/program/server_global.R :

Use this location for code that would have previously resided in server.R above (i.e. outside of) the call to `shinyServer(...)`. Anything placed in this file will be accessible across all user sessions.

name/program/server_local.R :

Use this location for code that would have previously resided in server.R inside of the call to `shinyServer(...)`. Anything placed in this file will be accessible only within a single user session.

Do not modify the following files:

```
name\global.R
name\server.R
name\ui.R
name\www\img\loader.gif
name\www\img\tooltip.png
```

Right Sidebar

```
value
FALSE --- no sidebar
```

TRUE --- sidebar with default icon ('gears').
 "table" --- sidebar with table icon. The character string should be a valid "font-awesome" icon.

See Also

[shiny:icon\(\)](#)

Examples

```
# sample app named 'mytestapp' created in a temp dir
create_new_application(name = 'mytestapp', location = tempdir(), sampleapp = TRUE)

# sample app named 'mytestapp' with a right sidebar using a custom icon created in a temp dir
create_new_application(name = 'mytestapp', location = tempdir(), sampleapp = TRUE,
  rightsidebar = "table")

# blank app named 'myblankapp' created in a temp dir
create_new_application(name = 'mytestapp', location = tempdir())
```

downloadablePlot

downloadablePlot Module

Description

Server-side function for the downloadablePlotUI. This is a custom plot output paired with a linked downloadFile button.

Usage

```
downloadablePlot(input, output, session, logger, filenameroot,
  aspectratio = 1, downloadfxns = list(), visibleplot)
```

Arguments

input	provided by shiny::callModule
output	provided by shiny::callModule
session	provided by shiny::callModule
logger	logging logger to use
filenameroot	the base text used for user-downloaded file - can be either a character string or a reactive expression returning a character string
aspectratio	the downloaded chart image width:height ratio (ex: 1 = square, 1.3 = 4:3, 0.5 = 1:2). Where not applicable for a download type it is ignored (e.g. data, html downloads)

downloadfxns	a named list of functions providing download images or data tables as return values. The names for the list should be the same names that were used when the plot UI was created.
visibleplot	function or reactive expression providing the plot to display as a return value. This function should require no input parameters.

Notes

When there are no values to download in any of the linked downloadfxns the button will be hidden as there is nothing to download.

Shiny Usage

This function is not called directly by consumers - it is accessed in server.R using the same id provided in downloadablePlotUI:

```
callModule(downloadablePlot, id, logger, filenameroot, downloadfxns, visibleplot)
```

See Also

[downloadablePlotUI](#)

[callModule](#)

[logging](#)

Examples

```
# Inside server_local.R

# callModule(downloadablePlot,
#             "object_id1",
#             logger = ss_userAction.Log,
#             filenameroot = "mydownload1",
#             aspectratio = 1.33,
#             downloadfxns = list(png = myplotfxn, tsv = mydatafxn),
#             visibleplot = myplotfxn)
```

downloadablePlotUI *downloadablePlot UI*

Description

Creates a custom plot output that is paired with a linked downloadFile button. This module is compatible with ggplot2, grob and lattice produced graphics.

Usage

```
downloadablePlotUI(id, downloadtypes = c("png"),
  download_hovertext = NULL, width = "100%", height = "400px",
  btn_halign = "right", btn_valign = "bottom", btn_overlap = TRUE,
  clickOpts = NULL, hoverOpts = NULL, brushOpts = NULL)
```

Arguments

id	character id for the object
downloadtypes	vector of values for download types
download_hovertext	download button tooltip hover text
width	plot width (any valid css size value)
height	plot height (any valid css size value)
btn_halign	horizontal position of the download button ("left", "center", "right")
btn_valign	vertical position of the download button ("top", "bottom")
btn_overlap	whether the button should appear on top of the bottom of the plot area to save on vertical space (<i>there is often a blank area where a button can be overlaid instead of utilizing an entire horizontal row for the button below the plot area</i>)
clickOpts	NULL or an object created by the clickOpts function
hoverOpts	NULL or an object created by the hoverOpts function
brushOpts	NULL or an object created by the brushOpts function

Example

```
downloadablePlotUI("myplotID", c("png", "csv"), "Download Plot or Data", "300px")
```

Notes

When there is nothing to download in any of the linked downloadfxns the button will be hidden as there is nothing to download. The linked downloadfxns are set in the paired callModule (see the **Shiny Usage** section)

This module is NOT compatible with the built-in (base) graphics (*any functions provided by the [graphics](#) package such as [plot](#)*) because they cannot be saved into an object and are directly output by the system at the time of creation.

Shiny Usage

Call this function at the place in ui.R where the plot should be placed.

Paired with a call to shiny::callModule(downloadablePlot, id, ...) in server.R

See Also

[downloadablePlot](#)
[downloadFileButton](#)
[clickOpts](#)
[hoverOpts](#)
[brushOpts](#)

Examples

```
# Inside ui_body.R or ui_sidebar.R
downloadablePlotUI("object_id1",
  downloadtypes = c("png", "csv"),
  download_hovertext = "Download the plot and data here!",
  height = "500px",
  btn_halign = "left")
```

downloadableTable *downloadableTable Module*

Description

Server-side function for the downloadableTableUI. This is a custom high-functionality table paired with a linked downloadFile button.

Usage

```
downloadableTable(input, output, session, logger, filenameroot,
  downloaddatafxns = list(), tabledata, rownames = TRUE,
  caption = NULL, selection = NULL)
```

Arguments

input	provided by shiny::callModule
output	provided by shiny::callModule
session	provided by shiny::callModule
logger	logging logger to use
filenameroot	the base text used for user-downloaded file - can be either a character string or a reactive expression returning a character string
downloaddatafxns	a named list of functions providing the data as return values. The names for the list should be the same names that were used when the table UI was created.

tabledata	function or reactive expression providing the table display data as a return value. This function should require no input parameters.
rownames	whether or not to show the rownames in the table
caption	table caption
selection	function or reactive expression providing the row_ids of the rows that should be selected.

Value

Reactive expression containing the currently selected rows in the display table

Notes

When there are no rows to download in any of the linked downloaddatafxns the button will be hidden as there is nothing to download.

Shiny Usage

This function is not called directly by consumers - it is accessed in server.R using the same id provided in downloadableTableUI:

```
callModule(downloadableTable, id, logger, filenameroot, downloaddatafxns, tabledata,
rownames, caption, selection)
```

Note: callModule returns the reactive expression containing the currently selected rows in the display table.

See Also

[downloadableTableUI](#)

[callModule](#)

[logging](#)

Examples

```
# Inside server_local.R

# selectedrows <- callModule(downloadableTable,
#                             "object_id1",
#                             logger = ss_userAction.Log,
#                             filenameroot = "mydownload1",
#                             downloaddatafxns = list(csv = mydatafxn1, tsv = mydatafxn2),
#                             tabledata = mydatafxn3,
#                             rownames = FALSE,
#                             caption = "This is a great table! By: Me",
#                             selection = mydataRowIds)

# selectedrows is the reactive return value, captured for later use
```

downloadableTableUI *downloadableTable UI*

Description

Creates a custom high-functionality table paired with a linked downloadFile button. The table has search and highlight functionality, infinite scrolling, sorting by columns and returns a reactive dataset of selected items.

Usage

```
downloadableTableUI(id, downloadtypes = c("csv"), hovertext = NULL,  
  contentHeight = "200px", singleSelect = FALSE)
```

Arguments

id	character id for the object
downloadtypes	vector of values for data download types
hovertext	download button tooltip hover text
contentHeight	viewable height of the table (any valid css size value)
singleSelect	whether the table should only allow a single row to be selected at a time (FALSE by default allows multi-select).

Table Features

- Consistent styling of the table
- downloadFile module button functionality built-in to the table
- Ability to show different data from the download data
- Table is automatically fit to the window size with infinite y-scrolling
- Table search functionality including highlighting built-in
- Multi-select built in, including reactive feedback on which table items are selected

Example

```
downloadableTableUI("mytableID",c("csv","tsv"),"Click Here","300px")
```

Notes

When there are no rows to download in any of the linked downloaddatafxns the button will be hidden as there is nothing to download. The linked downloaddatafxns are set in the paired callModule (see the **Shiny Usage** section)

Shiny Usage

Call this function at the place in ui.R where the table should be placed.

Paired with a call to shiny::callModule(downloadableTable, id, ...) in server.R

See Also[downloadableTable](#)[downloadFileButton](#)**Examples**

```
# Inside ui_body.R or ui_sidebar.R
downloadableTableUI("object_id1",
  downloadtypes = c("csv", "tsv"),
  hovertext = "Download the data here!",
  contentHeight = "300px",
  singleSelect = FALSE)
```

 downloadFile

downloadFile Module

Description

Server-side function for the `downloadFileButton`. This is a custom high-functionality button for file downloads supporting single or multiple download types. The server function is used to provide the data for download.

Usage

```
downloadFile(input, output, session, logger, filenameroot,
  datafxns = list(), aspectratio = 1)
```

Arguments

input	provided by <code>shiny::callModule</code>
output	provided by <code>shiny::callModule</code>
session	provided by <code>shiny::callModule</code>
logger	logging logger to use
filenameroot	the base text used for user-downloaded file - can be either a character string or a reactive expression that returns a character string
datafxns	a named list of functions providing the data as return values. The names for the list should be the same names that were used when the button UI was created.
aspectratio	the downloaded chart image width:height ratio (ex: 1 = square, 1.3 = 4:3, 0.5 = 1:2). Where not applicable for a download type it is ignored (e.g. data downloads).

Shiny Usage

This function is not called directly by consumers - it is accessed in server.R using the same id provided in downloadFileButton:

```
callModule(downloadFile, id, logger, filenameroot, datafxns)
```

See Also

[downloadFileButton](#)

[downloadFile_ValidateTypes](#)

[downloadFile_AvailableTypes](#)

[callModule](#)

[logging](#)

Examples

```
# Inside server_local.R

#single download type
# callModule(downloadFile,
#             "object_id1",
#             logger = ss_userAction.Log,
#             filenameroot = "mydownload1",
#             datafxns = list(csv = mydatafxn1),
#             aspectratio = 1)

#multiple download types
# callModule(downloadFile,
#             "object_id2",
#             logger = ss_userAction.Log,
#             filenameroot = "mytype2",
#             datafxns = list(csv = mydatafxn1, xlsx = mydatafxn2),
#             aspectratio = 1)
```

downloadFileButton *downloadFileButton UI*

Description

Creates a custom high-functionality button for file downloads with two states - single download type or multiple-download types. The button image and pop-up menu (if needed) are set accordingly. A tooltip can also be set for the button.

Usage

```
downloadFileButton(id, downloadtypes = c("csv"), hovertext = NULL)
```

Arguments

id	character id for the object
downloadtypes	vector of values for data download types
hovertext	tooltip hover text

Button Features

- Consistent styling of the button, including a hover tooltip
- Single or multiple types of downloads
- Ability to download different data for each type of download

Example

```
downloadFileUI("mybuttonID1",c("csv","tsv"),"Click Here") downloadFileUI("mybuttonID2","csv","Click to download")
```

Shiny Usage

Call this function at the place in ui.R where the button should be placed.

It is paired with a call to `shiny::callModule(downloadFile, id, ...)` in server.R

See Also

[downloadFile](#)

[downloadFile_ValidateTypes](#)

[downloadFile_AvailableTypes](#)

Examples

```
# Inside ui_body.R or ui_sidebar.R

#single download type
downloadFileButton("object_id1",
  downloadtypes = c("csv"),
  hovertext = "Button 1 Tooltip")

#multiple download types
downloadFileButton("object_id2",
  downloadtypes = c("csv", "tsv"),
  hovertext = "Button 2 Tooltip")
```

downloadFile_AvailableTypes
downloadFile Helper

Description

Returns a list of all supported types

Usage

```
downloadFile_AvailableTypes()
```

Value

a vector of all supported types

See Also

[downloadFileButton](#)

[downloadFile](#)

downloadFile_ValidateTypes
downloadFile Helper

Description

Checks a given list of file types and warns if an invalid type is included

Usage

```
downloadFile_ValidateTypes(types)
```

Arguments

types list of types to test

Value

the list input given in types

Example

```
downloadFile_ValidateTypes(c("csv","tsv"))
```

See Also[downloadFileButton](#)[downloadFile](#)

get_url_parameters	<i>Get URL Parameters</i>
--------------------	---------------------------

Description

This function returns any url parameters passed to the application as a named list. Keep in mind url parameters are always user-session scoped

Usage

```
get_url_parameters(session)
```

Arguments

session	shiny session object
---------	----------------------

Value

named list of url parameters and values. List may be empty if no URL parameters were passed when the application instance was launched.

periscope	<i>Periscope Shiny Application Framework</i>
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Description

This package supports a ui-standardized environment as well as a variety of convenience functions for shiny applications. Base reusable functionality as well as UI paradigms are included to ensure a consistent user experience regardless of application or developer.

Details

A gallery of example apps is hosted at <http://periscopeapps.org>

Function Overview

Create a new framework application instance:

[create_new_application](#)

Set application parameters in program/global.R:

[set_app_parameters](#)

Get any url parameters passed to the application:

[get_url_parameters](#)

Register user-created UI objects to the requisite application locations:

[add_ui_sidebar_basic](#)

[add_ui_sidebar_advanced](#)

[add_ui_sidebar_right](#)

[add_ui_body](#)

Included shiny modules with a customized UI:

[downloadFileButton](#)

[downloadableTableUI](#)

[downloadablePlotUI](#)

High-functionality standardized tooltips:

[ui_tooltip](#)

More Information

`browseVignettes(package = 'periscope')`

set_app_parameters	<i>Set Application Parameters</i>
--------------------	-----------------------------------

Description

This function sets global parameters customizing the shiny application.

Usage

```
set_app_parameters(title, titleinfo = NULL, loglevel = "DEBUG",  
  showlog = TRUE, app_version = "1.0.0")
```

Arguments

title	application title text
titleinfo	character string, HTML value or NULL

- A **character** string will be used to set a link target. This means the user will be able to click on the application title and be redirected in a new window to whatever value is given in the string. Any valid URL, File, or other script functionality that would normally be accepted in an `` tag is allowed.
 - An **HTML** value will be used to as the HTML content for a modal pop-up window that will appear on-top of the application when the user clicks on the application title.
 - Supplying **NULL** will disable the title link functionality.
- | | |
|-------------|--|
| loglevel | character string designating the log level to use for the userlog (default = 'DEBUG') |
| showlog | enable or disable the visible userlog at the bottom of the body on the application. Logging will still take place, this disables the visible functionality only. |
| app_version | character string designating the application version (default = '1.0.0'). |

Shiny Usage

Call this function from `program/global.R` to set the application parameters.

See Also

[logging](#)

ui_tooltip	<i>Insert a standardized tooltip</i>
------------	--------------------------------------

Description

This function inserts a standardized tooltip image, label (optional), and hover text into the application UI

Usage

```
ui_tooltip(id, label = "", text = "")
```

Arguments

id	character id for the tooltip object
label	text label to appear to the left of the tooltip image
text	tooltip text shown when the user hovers over the image

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