Package ‘periscope’

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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.
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Author Constance Brett [aut, cre],
      Isaac Neuhaus [aut] (canvasXpress JavaScript Library Maintainer),
      Ger Inberg [ctb],
      Bristol-Meyers Squibb (BMS) [cph]
Maintainer Constance Brett <connie@aggregate-genius.com>
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**add_left_sidebar**

Add the left sidebar to an existing application.

**Description**

Add the left sidebar to an existing application.

**Usage**

```r
add_left_sidebar(location)
```

**Arguments**

- `location`: path of the existing application.
**add_reset_button**

Add the reset button to an existing application.

**Description**

Add the reset button to an existing application.

**Usage**

```
add_reset_button(location)
```

**Arguments**

- location: path of the existing application.

**add_right_sidebar**

Add the right sidebar to an existing application.

**Description**

Add the right sidebar to an existing application.

**Usage**

```
add_right_sidebar(location)
```

**Arguments**

- location: path of the existing application.

**add_ui_body**

Add UI Elements to the Body area

**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)
```
add_ui_sidebar_advanced

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>elementlist</td>
<td>list of UI elements to add to the body</td>
</tr>
<tr>
<td>append</td>
<td>whether to append the elementlist to the currently registered elements or replace the currently registered elements completely</td>
</tr>
</tbody>
</table>

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

```r
require(shiny)

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

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

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

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

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>elementlist</td>
<td>list of UI elements to add to the sidebar tab</td>
</tr>
<tr>
<td>append</td>
<td>whether to append the elementlist to the currently registered elements or replace the currently registered elements completely</td>
</tr>
<tr>
<td>tabname</td>
<td>change the label on the UI tab (default = &quot;Advanced&quot;)</td>
</tr>
</tbody>
</table>
**add_ui_sidebar_basic**

**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**

```r
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)
```

---

**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**

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

**Arguments**

- `elementlist`  list of UI elements to add to the sidebar tab
- `append`      whether to append the `elementlist` to currently registered elements or replace the currently registered elements.
- `tabname`    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

```r
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

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

### Arguments

- **elementlist**: list of UI elements to add to the sidebar tab
- **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_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

```r
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,
  leftsidebar = TRUE
)

Arguments

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

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_sidebars.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_sidebars_right.R** :
Create right sidebar UI elements in this file and register them with the framework using a call to **add_ui_sidebars_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 = 'myblankapp', location = tempdir())
# blank app named 'myblankapp' without a left sidebar created in a temp dir
create_new_application(name = 'myblankapp', location = tempdir(), leftsidebar = FALSE)
downloadablePlot

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 (there is often a blank area where a button can be overlayed instead of utilizing an entire horizontal row for the button below the plot area)
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**

```r
# 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,
)
downloadableTable

```r
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`:

```r
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"),
  hover text = NULL,
  contentHeight = "200px",
  singleSelect = FALSE
)

Arguments

id character id for the object
downloadtypes vector of values for data download types
hover text download button tooltip hover text
contentHeight viewable height of the table (any valid css size value)
downloadableTableUI

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**

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

**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 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`:

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

**See Also**
- downloadFileButton
- downloadFile_VerifyTypes
- downloadFile_AvailableTypes
- callModule
- logging

**Examples**

```r
# 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)
```

**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**

```r
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_VaidiateTypes`
- `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()
```
**downloadFile.ValidateTypes**

**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  Get URL Parameters

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  Periscope Shiny Application Framework

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')

remove_reset_button Remove the reset button from an existing application.

Description
Remove the reset button from an existing application.

Usage
remove_reset_button(location)

Arguments
location path of the existing application.

set_app_parameters Set Application Parameters

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 `<a href=...>` 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

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

**Description**

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

**Usage**

```r
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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