Package 'datamods'

July 13, 2022

Title Modules to Import and Manipulate Data in 'Shiny'

Version 1.3.3

Description 'Shiny' modules to import data into an application or 'addin' from various sources, and to manipulate them after that.

License GPL-3

URL https://github.com/dreamRs/datamods

BugReports https://github.com/dreamRs/datamods/issues

Encoding UTF-8

RoxygenNote 7.1.2

Imports data.table, htmltools, htmlwidgets, phosphoricons, reactable, readxl, rio, rlang, shiny (>= 1.5.0), shinyWidgets (>= 0.5.3), tibble, tools

Suggests jsonlite, knitr, MASS, rmarkdown, testthat, validate

VignetteBuilder knitr

NeedsCompilation no

Author Victor Perrier [aut, cre, cph], Fanny Meyer [aut], Zauad Shahreer Abeer [aut], Eduard Szöcs [ctb]

Maintainer Victor Perrier <victor.perrier@dreamrs.fr>

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R topics documented:

`filter-data` *Shiny module to interactively filter a* `data.frame`

Description

Module generate inputs to filter `data.frame` according column's type. Code to reproduce the filter is returned as an expression with filtered data.

Usage

```
filter_data_ui(id, show_nrow = TRUE, max_height = NULL)

filter_data_server(
  id,
  data = reactive(NULL),
  vars = reactive(NULL),
  name = reactive("data"),
  defaults = reactive(NULL),
  drop_ids = TRUE,
  widget_char = c("select", "picker"),
  widget_num = c("slider", "range"),
  widget_date = c("slider", "range"),
  label_na = "NA",
  value_na = TRUE
)
```

Arguments

`id`	Module id. See `shiny::callModule()`.
`show_nrow`	Show number of filtered rows and total.
`max_height`	Maximum height for filters panel, useful if you have many variables to filter and limited space.
`data`	`shiny::reactive()` function returning a `data.frame` to filter.
`vars`	`shiny::reactive()` function returning a `character` vector of variables for which to add a filter. If a named `list`, names are used as labels.

name	shiny::reactive() function returning a character string representing data name, only used for code generated.
defaults	shiny::reactive() function returning a named list of variable:value pairs which will be used to set the filters.
drop_ids	Drop columns containing more than 90% of unique values, or than 50 distinct values.
widget_char	Widget to use for character variables: shinyWidgets::pickerInput() or shiny::selectInput() (default).
widget_num	Widget to use for numeric variables: shinyWidgets::numericRangeInput() or shiny::sliderInput() (default).
widget_date	Widget to use for date/time variables: shiny::dateRangeInput() or shiny::sliderInput() (default).
label_na	Label for missing value widget.
value_na	Default value for all NA's filters.

Value

- UI: HTML tags that can be included in shiny's UI
- Server: a list with four slots:
  - **filtered**: a reactive function returning the data filtered.
  - **code**: a reactive function returning the dplyr pipeline to filter data.
  - **expr**: a reactive function returning an expression to filter data.
  - **values**: a reactive function returning a named list of variables and filter values.

Examples

```
library(shiny)
library(shinyWidgets)
library(datamods)
library(MASS)

# Add some NAs to mpg
mtcars_na <- mtcars
mtcars_na[] <- lapply(
  X = mtcars_na,
  FUN = function(x) {
    x[sample.int(n = length(x), size = sample(5:10, 1))] <- NA
    x
  }
)

datetime <- data.frame(
  date = seq(Sys.Date(), by = "day", length.out = 300),
  datetime = seq(Sys.time(), by = "hour", length.out = 300),
  num = sample.int(1e5, 300)
)

one_column_numeric <- data.frame(
```

```
  var1 = rnorm(100)
)

ui <- fluidPage(
  tags$h2("Filter data.frame"),
  actionButton("saveFilterButton","Save Filter Values"),
  actionButton("loadFilterButton","Load Filter Values"),
  radioButtons(
    inputId = "dataset",
    label = "Data:",
    choices = c(
      "iris",
      "mtcars",
      "mtcars_na",
      "Cars93",
      "datetime",
      "one_column_numeric"
    ),
    inline = TRUE
  ),

  fluidRow(
    column(
      width = 3,
      filter_data_ui("filtering", max_height = "500px")
    ),
    column(
      width = 9,
      progressBar(
        id = "pbar", value = 100,
        total = 100, display_pct = TRUE
      ),
      reactable::reactableOutput(outputId = "table"),
      tags$b("Code dplyr:"),
      verbatimTextOutput(outputId = "code_dplyr"),
      tags$b("Expression:"),
      verbatimTextOutput(outputId = "code"),
      tags$b("Filtered data:"),
      verbatimTextOutput(outputId = "res_str")
    )
  )
)

server <- function(input, output, session) {
  savedFilterValues <- reactiveVal()
  data <- reactive({
    get(input$dataset)
  })

  vars <- reactive({
    if (identical(input$dataset, "mtcars")) {
      setNames(as.list(names(mtcars)[1:5]), c(
        "Miles/(US) gallon",
```

```
      "Number of cylinders",
      "Displacement (cu.in.)",
      "Gross horsepower",
      "Rear axle ratio"
    ))
  } else {
    NULL
  }
})

observeEvent(input$saveFilterButton,{
  savedFilterValues <<- res_filter$values()
},ignoreInit = T)

defaults <- reactive({
  input$loadFilterButton
  savedFilterValues
})

res_filter <- filter_data_server(
  id = "filtering",
  data = data,
  name = reactive(input$dataset),
  vars = vars,
  defaults = defaults,
  widget_num = "slider",
  widget_date = "slider",
  label_na = "Missing"
)

observeEvent(res_filter$filtered(), {
  updateProgressBar(
    session = session, id = "pbar",
    value = nrow(res_filter$filtered()), total = nrow(data())
  )
})

output$table <- reactable::renderReactable({
  reactable::reactable(res_filter$filtered())
})


output$code_dplyr <- renderPrint({
  res_filter$code()
})
output$code <- renderPrint({
  res_filter$expr()
})

output$res_str <- renderPrint({
  str(res_filter$filtered())
})
```

```
}

if (interactive())
  shinyApp(ui, server)
```

`get_data_packages` *Get packages containing datasets*

Description

Get packages containing datasets

Usage

```
get_data_packages()
```

Value

a character vector of packages names

Examples

```
if (interactive()) {

  get_data_packages()

}
```

`i18n` *Internationalization*

Description

Simple mechanism to translate labels in a Shiny application.

Usage

```
i18n(x, translations = i18n_translations())

i18n_translations(package = packageName(parent.frame(2)))

set_i18n(value, packages = c("datamods", "esquisse"))
```

Arguments

x	Label to translate.
translations	Either a list or a data.frame with translations.
package	Name of the package where the function is called, use NULL outside a package. It will retrieve option "i18n.<PACKAGE>" (or "i18n" if no package) to returns appropriate labels.
value	Value to set for translation. Can be: • single character to use a supported language ("fr", "mk", "al", "pt" for esquisse and datamods packages). • a list with labels as names and translations as values. • a data.frame with 2 column: label & translation. • path to a CSV file with same structure as for data.frame above.
packages	Name of packages for which to set i18n, default to esquisse and datamods

Value

i18n() returns a character, i18n_translations() returns a list or a data.frame.

Examples

```
library(datamods)

# Use with an objet
my.translations <- list(
  "Hello" = "Bonjour"
)
i18n("Hello", my.translations)

# Use with options()
options("i18n" = list(
  "Hello" = "Bonjour"
))
i18n("Hello")

# With a package
options("datamods.i18n" = "fr")
i18n("Browse...", translations = i18n_translations("datamods"))
# If you call i18n() from within a function of your package
# you don't need second argument, e.g.:
# i18n("Browse...")
```

---

import-copypaste *Import data with copy & paste*

Description

Let the user copy data from Excel or text file then paste it into a text area to import it.

Usage

```
import_copypaste_ui(id, title = TRUE, name_field = TRUE)

import_copypaste_server(
  id,
  btn_show_data = TRUE,
  show_data_in = c("popup", "modal"),
  trigger_return = c("button", "change"),
  return_class = c("data.frame", "data.table", "tbl_df"),
  reset = reactive(NULL),
  fread_args = list()
)
```

Arguments

id	Module's ID.
title	Module's title, if TRUE use the default title, use NULL for no title or a shiny.tag for a custom one.
name_field	Show or not a field to add a name to data (that is returned server-side).
btn_show_data	Display or not a button to display data in a modal window if import is successful.
show_data_in	Where to display data: in a "popup" or in a "modal" window.
trigger_return	When to update selected data: "button" (when user click on button) or "change" (each time user select a dataset in the list).
return_class	Class of returned data: data.frame, data.table or tbl_df (tibble).
reset	A reactive function that when triggered resets the data.
fread_args	list of additional arguments to pass to data.table::fread() when reading data.

Value

- UI: HTML tags that can be included in shiny's UI
- Server: a list with three slots:
  - **status**: a reactive function returning the status: NULL, error or success.
  - **name**: a reactive function returning the name of the imported data as character.
  - **data**: a reactive function returning the imported data.frame.

Examples

```
library(shiny)
library(datamods)

ui <- fluidPage(
  tags$h3("Import data with copy & paste"),
  fluidRow(
    column(
```

```
      width = 4,
      import_copypaste_ui("myid")
    ),
    column(
      width = 8,
      tags$b("Import status:"),
      verbatimTextOutput(outputId = "status"),
      tags$b("Name:"),
      verbatimTextOutput(outputId = "name"),
      tags$b("Data:"),
      verbatimTextOutput(outputId = "data")
    )
  )
)

server <- function(input, output, session) {

  imported <- import_copypaste_server("myid")

  output$status <- renderPrint({
    imported$status()
  })
  output$name <- renderPrint({
    imported$name()
  })
  output$data <- renderPrint({
    imported$data()
  })

}

if (interactive())
  shinyApp(ui, server)
```

`import-file` *Import data from a file*

Description

Let user upload a file and import data

Usage

```
import_file_ui(
  id,
  title = TRUE,
  preview_data = TRUE,
 file_extensions = c(".csv", ".txt", ".xls", ".xlsx", ".rds", ".fst", ".sas7bdat",
    ".sav")
)
```

```
import_file_server(
  id,
  btn_show_data = TRUE,
  show_data_in = c("popup", "modal"),
  trigger_return = c("button", "change"),
  return_class = c("data.frame", "data.table", "tbl_df"),
  reset = reactive(NULL),
  read_fns = list()
)
```

Arguments

`id`	Module's ID.
`title`	Module's title, if `TRUE` use the default title, use `NULL` for no title or a `shiny.tag` for a custom one.
`preview_data`	Show or not a preview of the data under the file input.
`file_extensions`	File extensions accepted by `shiny::fileInput()`, can also be MIME type.
`btn_show_data`	Display or not a button to display data in a modal window if import is successful.
`show_data_in`	Where to display data: in a `"popup"` or in a `"modal"` window.
`trigger_return`	When to update selected data: `"button"` (when user click on button) or `"change"` (each time user select a dataset in the list).
`return_class`	Class of returned data: `data.frame`, `data.table` or `tbl_df` (tibble).
`reset`	A `reactive` function that when triggered resets the data.
`read_fns`	Named list with custom function(s) to read data: • the name must be the extension of the files to which the function will be applied • the value must be a function that can have 4 arguments, passed by user through the interface: – `file`: path to the file – `sheet`: for Excel files, sheet to read – `skip`: number of row to skip – `encoding`: file encoding

Value

- UI: HTML tags that can be included in shiny's UI
- Server: a `list` with three slots:
  - **status**: a `reactive` function returning the status: `NULL`, `error` or `success`.
  - **name**: a `reactive` function returning the name of the imported data as `character`.
  - **data**: a `reactive` function returning the imported `data.frame`.

Examples

```
library(shiny)
library(datamods)

ui <- fluidPage(
  tags$h3("Import data from a file"),
  fluidRow(
    column(
      width = 4,
      import_file_ui(
        id = "myid",
        file_extensions = c(".csv", ".txt", ".xls", ".xlsx", ".json")
      )
    ),
    column(
      width = 8,
      tags$b("Import status:"),
      verbatimTextOutput(outputId = "status"),
      tags$b("Name:"),
      verbatimTextOutput(outputId = "name"),
      tags$b("Data:"),
      verbatimTextOutput(outputId = "data")
    )
  )
)

server <- function(input, output, session) {

  imported <- import_file_server(
    id = "myid",
    # Custom functions to read data
    read_fns = list(
      xls = function(file, sheet, skip, encoding) {
        readxl::read_xls(path = file, sheet = sheet, skip = skip)
      },
      json = function(file) {
        jsonlite::read_json(file, simplifyVector = TRUE)
      }
    ),
    show_data_in = "modal"
  )

  output$status <- renderPrint({
    imported$status()
  })
  output$name <- renderPrint({
    imported$name()
  })
  output$data <- renderPrint({
    imported$data()
```

```
  })

}

if (interactive())
  shinyApp(ui, server)
```

`import-globalenv` *Import data from an Environment*

Description

Let the user select a dataset from its own environment or from a package's environment.

Usage

```
import_globalenv_ui(
  id,
  globalenv = TRUE,
  packages = get_data_packages(),
  title = TRUE
)

import_globalenv_server(
  id,
  btn_show_data = TRUE,
  show_data_in = c("popup", "modal"),
  trigger_return = c("button", "change"),
  return_class = c("data.frame", "data.table", "tbl_df"),
  reset = reactive(NULL)
)
```

Arguments

`id`	Module's ID.
`globalenv`	Search for data in Global environment.
`packages`	Name of packages in which to search data.
`title`	Module's title, if `TRUE` use the default title, use `NULL` for no title or a `shiny.tag` for a custom one.
`btn_show_data`	Display or not a button to display data in a modal window if import is successful.
`show_data_in`	Where to display data: in a `"popup"` or in a `"modal"` window.
`trigger_return`	When to update selected data: `"button"` (when user click on button) or `"change"` (each time user select a dataset in the list).
`return_class`	Class of returned data: `data.frame`, `data.table` or `tbl_df` (tibble).
`reset`	A `reactive` function that when triggered resets the data.

Value

- UI: HTML tags that can be included in shiny's UI
- Server: a `list` with three slots:
  - **status**: a `reactive` function returning the status: `NULL`, `error` or `success`.
  - **name**: a `reactive` function returning the name of the imported data as `character`.
  - **data**: a `reactive` function returning the imported `data.frame`.

Examples

```
if (interactive()) {
  library(shiny)
  library(datamods)

  # Create some data.frames

  my_df <- data.frame(
    variable1 = sample(letters, 20, TRUE),
    variable2 = sample(1:100, 20, TRUE)
  )

  results_analysis <- data.frame(
    id = sample(letters, 20, TRUE),
    measure = sample(1:100, 20, TRUE),
    response = sample(1:100, 20, TRUE)
  )


  # Application

  ui <- fluidPage(
    fluidRow(
      column(
        width = 4,
        import_globalenv_ui("myid")
      ),
      column(
        width = 8,
        tags$b("Import status:"),
        verbatimTextOutput(outputId = "status"),
        tags$b("Name:"),
        verbatimTextOutput(outputId = "name"),
        tags$b("Data:"),
        verbatimTextOutput(outputId = "data")
      )
    )
  )

  server <- function(input, output, session) {

    imported <- import_globalenv_server("myid")
```

```
    output$status <- renderPrint({
      imported$status()
    })
    output$name <- renderPrint({
      imported$name()
    })
    output$data <- renderPrint({
      imported$data()
    })

  }

  shinyApp(ui, server)
}
```

`import-googlesheets` *Import data from Googlesheet*

Description

Let user paste link to a Google sheet then import the data.

Usage

```
import_googlesheets_ui(id, title = TRUE)

import_googlesheets_server(
  id,
  btn_show_data = TRUE,
  show_data_in = c("popup", "modal"),
  trigger_return = c("button", "change"),
  return_class = c("data.frame", "data.table", "tbl_df"),
  reset = reactive(NULL)
)
```

Arguments

`id`	Module's ID.
`title`	Module's title, if `TRUE` use the default title, use `NULL` for no title or a `shiny.tag` for a custom one.
`btn_show_data`	Display or not a button to display data in a modal window if import is successful.
`show_data_in`	Where to display data: in a `"popup"` or in a `"modal"` window.
`trigger_return`	When to update selected data: `"button"` (when user click on button) or `"change"` (each time user select a dataset in the list).
`return_class`	Class of returned data: `data.frame`, `data.table` or `tbl_df` (tibble).
`reset`	A `reactive` function that when triggered resets the data.

Value

- UI: HTML tags that can be included in shiny's UI
- Server: a `list` with three slots:
  - **status**: a `reactive` function returning the status: `NULL`, `error` or `success`.
  - **name**: a `reactive` function returning the name of the imported data as `character`.
  - **data**: a `reactive` function returning the imported `data.frame`.

Examples

```
library(shiny)
library(datamods)

ui <- fluidPage(
  tags$h3("Import data from Googlesheets"),
  fluidRow(
    column(
      width = 4,
      import_googlesheets_ui("myid")
    ),
    column(
      width = 8,
      tags$b("Import status:"),
      verbatimTextOutput(outputId = "status"),
      tags$b("Name:"),
      verbatimTextOutput(outputId = "name"),
      tags$b("Data:"),
      verbatimTextOutput(outputId = "data")
    )
  )
)

server <- function(input, output, session) {

  imported <- import_googlesheets_server("myid")

  output$status <- renderPrint({
    imported$status()
  })
  output$name <- renderPrint({
    imported$name()
  })
  output$data <- renderPrint({
    imported$data()
  })

}

if (interactive())
  shinyApp(ui, server)
```

`import-modal` *Import from all sources*

Description

Wrap all import modules into one, can be displayed inline or in a modal window..

Usage

```
import_ui(id, from = c("env", "file", "copypaste", "googlesheets", "url"))

import_server(
  id,
  validation_opts = NULL,
  allowed_status = c("OK", "Failed", "Error"),
  return_class = c("data.frame", "data.table", "tbl_df")
)

import_modal(id, from, title = "Import data", size = "l")
```

Arguments

`id`	Module's id
`from`	The import_ui & server to use, i.e. the method. There are 5 options to choose from. ("env", "file", "copypaste", "googlesheets", "url")
`validation_opts`	`list` of arguments passed to [validation_server().
`allowed_status`	Vector of statuses allowed to confirm dataset imported, if you want that all validation rules are successful before importing data use `allowed_status = "OK"`.
`return_class`	Class of returned data: `data.frame`, `data.table` or `tbl_df` (tibble).
`title`	Modal window title.
`size`	Modal window size, default to `"l"` (large).

Value

- UI: HTML tags that can be included in shiny's UI
- Server: a `list` with three slots:
  - **status**: a `reactive` function returning the status: `NULL`, `error` or `success`.
  - **name**: a `reactive` function returning the name of the imported data as `character`.
  - **data**: a `reactive` function returning the imported `data.frame`.

Examples

```
library(shiny)
library(datamods)

ui <- fluidPage(
  # Try with different Bootstrap version
  # theme = bslib::bs_theme(version = 4),
  fluidRow(
    column(
      width = 4,
      checkboxGroupInput(
        inputId = "from",
        label = "From",
        choices = c("env", "file", "copypaste", "googlesheets", "url"),
        selected = c("file", "copypaste")
      ),
      actionButton("launch_modal", "Launch modal window")
    ),
    column(
      width = 8,
      tags$b("Imported data:"),
      verbatimTextOutput(outputId = "name"),
      verbatimTextOutput(outputId = "data")
    )
  )
)

server <- function(input, output, session) {

  observeEvent(input$launch_modal, {
    req(input$from)
    import_modal(
      id = "myid",
      from = input$from,
      title = "Import data to be used in application"
    )
  })

  imported <- import_server("myid", return_class = "tbl_df")

  output$name <- renderPrint({
    req(imported$name())
    imported$name()
  })

  output$data <- renderPrint({
    req(imported$data())
    imported$data()
  })
}
```

```
if (interactive())
  shinyApp(ui, server)
```

`import-url` *Import data from a URL*

Description

Let user paste link to a JSON then import the data.

Usage

```
import_url_ui(id, title = TRUE)

import_url_server(
  id,
  btn_show_data = TRUE,
  show_data_in = c("popup", "modal"),
  trigger_return = c("button", "change"),
  return_class = c("data.frame", "data.table", "tbl_df"),
  reset = reactive(NULL)
)
```

Arguments

`id`	Module's ID.
`title`	Module's title, if `TRUE` use the default title, use `NULL` for no title or a `shiny.tag` for a custom one.
`btn_show_data`	Display or not a button to display data in a modal window if import is successful.
`show_data_in`	Where to display data: in a `"popup"` or in a `"modal"` window.
`trigger_return`	When to update selected data: `"button"` (when user click on button) or `"change"` (each time user select a dataset in the list).
`return_class`	Class of returned data: `data.frame`, `data.table` or `tbl_df` (tibble).
`reset`	A `reactive` function that when triggered resets the data.

Value

- UI: HTML tags that can be included in shiny's UI
- Server: a `list` with three slots:
  - **status**: a `reactive` function returning the status: `NULL`, `error` or `success`.
  - **name**: a `reactive` function returning the name of the imported data as `character`.
  - **data**: a `reactive` function returning the imported `data.frame`.

Examples

```
library(shiny)
library(datamods)

ui <- fluidPage(
  tags$h3("Import data from URL"),
  fluidRow(
    column(
      width = 4,
      import_url_ui("myid")
    ),
    column(
      width = 8,
      tags$b("Import status:"),
      verbatimTextOutput(outputId = "status"),
      tags$b("Name:"),
      verbatimTextOutput(outputId = "name"),
      tags$b("Data:"),
      verbatimTextOutput(outputId = "data")
    )
  )
)

server <- function(input, output, session) {

  imported <- import_url_server("myid")

  output$status <- renderPrint({
    imported$status()
  })
  output$name <- renderPrint({
    imported$name()
  })
  output$data <- renderPrint({
    imported$data()
  })

}

if (interactive())
  shinyApp(ui, server)
```

---

list_pkg_data *List dataset contained in a package*

Description

List dataset contained in a package

Usage

```
list_pkg_data(pkg)
```

Arguments

pkg	Name of the package, must be installed.

Value

a character vector or NULL.

Examples

```
list_pkg_data("ggplot2")
```

---

show_data *Display a table in a window*

Description

Display a table in a window

Usage

```
show_data(
  data,
  title = NULL,
  options = NULL,
  show_classes = TRUE,
  type = c("popup", "modal"),
  width = "80%"
)
```

Arguments

data	a data object (either a matrix or a data.frame).
title	Title to be displayed in window.
options	Arguments passed to reactable::reactable().
show_classes	Show variables classes under variables names in table header.
type	Display table in a pop-up or in modal window.
width	Width of the window, only used if type = "popup".

Value

No value.

Examples

```
library(shiny)
library(datamods)

ui <- fluidPage(
  actionButton(
    inputId = "show1",
    label = "Show data in popup",
    icon = icon("eye")
  ),
  actionButton(
    inputId = "show2",
    label = "Show data in modal",
    icon = icon("eye")
  ),
  actionButton(
    inputId = "show3",
    label = "Show data without classes",
    icon = icon("eye")
  )
)

server <- function(input, output, session) {
  observeEvent(input$show1, {
    show_data(mtcars, title = "My data")
  })
  observeEvent(input$show2, {
    show_data(mtcars, title = "My data", type = "modal")
  })
  observeEvent(input$show3, {
    show_data(
      data = mtcars,
      title = "My data",
      show_classes = FALSE,
      options = list(searchable = TRUE, highlight = TRUE)
    )
  })
}

if (interactive())
  shinyApp(ui, server)
```

---

update-variables *Select, rename and convert variables*

Description

Select, rename and convert variables

Usage

```
update_variables_ui(id, title = TRUE)

update_variables_server(id, data, height = NULL)
```

Arguments

id	Module's ID
title	Module's title, if TRUE use the default title, use NULL for no title or a shiny.tag for a custom one.
data	a data.frame or a reactive function returning a data.frame.
height	Height for the table.

Value

A reactive function returning the updated data.

Examples

```
library(shiny)
library(datamods)

testdata <- data.frame(
  date_as_char = as.character(Sys.Date() + 0:9),
  date_as_num = as.numeric(Sys.Date() + 0:9),
  datetime_as_char = as.character(Sys.time() + 0:9 * 3600*24),
  datetime_as_num = as.numeric(Sys.time() + 0:9 * 3600*24),
  num_as_char = as.character(1:10),
  char = month.name[1:10],
  char_na = c("A", "A", "B", NA, "B", "A", NA, "B", "A", "B"),
  stringsAsFactors = FALSE
)

ui <- fluidPage(
  tags$h3("Select, rename and convert variables"),
  fluidRow(
    column(
      width = 6,
      # radioButtons()
      update_variables_ui("vars")
    ),
    column(
      width = 6,
      tags$b("original data:"),
      verbatimTextOutput("original"),
      verbatimTextOutput("original_str"),
      tags$b("Modified data:"),
      verbatimTextOutput("modified"),
      verbatimTextOutput("modified_str")
```

```
    )
  )
)

server <- function(input, output, session) {

  updated_data <- update_variables_server(
    id = "vars",
    data = reactive(testdata)
  )

  output$original <- renderPrint({
    testdata
  })
  output$original_str <- renderPrint({
    str(testdata)
  })

  output$modified <- renderPrint({
    updated_data()
  })
  output$modified_str <- renderPrint({
    str(updated_data())
  })
}

if (interactive())
  shinyApp(ui, server)
```

---

validation_ui *Validation module*

Description

Check that a dataset respect some validation expectations.

Usage

```
validation_ui(id, display = c("dropdown", "inline"), max_height = NULL, ...)

validation_server(
  id,
  data,
  n_row = NULL,
  n_col = NULL,
  n_row_label = "Valid number of rows",
  n_col_label = "Valid number of columns",
  btn_label = "Dataset validation:",
  rules = NULL,
  bs_version = 3
)
```

Arguments

id	Module's ID.
display	Display validation results in a dropdown menu by clicking on a button or display results directly in interface.
max_height	Maximum height for validation results element, useful if you have many rules.
...	Arguments passed to actionButton or uiOutput depending on display mode, you cannot use inputId/outputId, label or icon (button only).
data	a reactive function returning a data.frame.
n_row, n_col	A one-sided formula to check number of rows and columns respectively, see below for examples.
n_row_label, n_col_label	Text to be displayed with the result of the check for number of rows/columns.
btn_label	Label for the dropdown button, will be followed by validation result.
rules	An object of class validator created with validate::validator.
bs_version	Bootstrap version used, it may affect rendering, especially status badges.

Value

- UI: HTML tags that can be included in shiny's UI
- Server: a list with two slots:
  - **status**: a reactive function returning the best status available between "OK", "Failed" or "Error".
  - **details**: a reactive function returning a list with validation details.

Examples

```
library(datamods)
library(shiny)

if (requireNamespace("validate")) {
  library(validate)

  # Define some rules to be applied to data
  myrules <- validator(
    is.character(Manufacturer) | is.factor(Manufacturer),
    is.numeric(Price),
    Price > 12, # we should use 0 for testing positivity, but that's for the example
    !is.na(Luggage.room),
    in_range(Cylinders, min = 4, max = 8),
    Man.trans.avail %in% c("Yes", "No")
  )
  # Add some labels
  label(myrules) <- c(
    "Variable Manufacturer must be character",
    "Variable Price must be numeric",
    "Variable Price must be strictly positive",
    "Luggage.room must not contain any missing values",
```

```
  "Cylinders must be between 4 and 8",
  "Man.trans.avail must be 'Yes' or 'No'"
)
# you can also add a description()

ui <- fluidPage(
  tags$h2("Validation"),
  fluidRow(
    column(
      width = 4,
      radioButtons(
        inputId = "dataset",
        label = "Choose dataset:",
        choices = c("mtcars", "MASS::Cars93")
      ),
      tags$p("Dropdown example:"),
      validation_ui("validation1"),

      tags$br(),

      tags$p("Inline example:"),
      validation_ui("validation2", display = "inline")
    ),
    column(
      width = 8,
      tags$b("Status:"),
      verbatimTextOutput("status"),
      tags$b("Details:"),
      verbatimTextOutput("details")
    )
  )
)

server <- function(input, output, session) {

  dataset <- reactive({
    if (input$dataset == "mtcars") {
      mtcars
    } else {
      MASS::Cars93
    }
  })

  results <- validation_server(
    id = "validation1",
    data = dataset,
    n_row = ~ . > 20, # more than 20 rows
    n_col = ~ . >= 3, # at least 3 columns
    rules = myrules
  )

  validation_server(
    id = "validation2",
```

```
      data = dataset,
      n_row = ~ . > 20, # more than 20 rows
      n_col = ~ . >= 3, # at least 3 columns
      rules = myrules
    )

    output$status <- renderPrint(results$status())
    output$details <- renderPrint(results$details())

  }

  if (interactive())
    shinyApp(ui, server)
}
```

Index