

Package ‘sortable’

July 23, 2025

Type Package

Title Drag-and-Drop in 'shiny' Apps with 'SortableJS'

Version 0.5.0

Description Enables drag-and-drop behaviour in Shiny apps, by exposing the functionality of the 'SortableJS' <<https://sortablejs.github.io/Sortable/>> JavaScript library as an 'htmlwidget'.
You can use this in Shiny apps and widgets, 'learnr' tutorials as well as R Markdown. In addition, provides a custom 'learnr' question type - 'question_rank()' - that allows ranking questions with drag-and-drop.

License MIT + file LICENSE

URL <https://rstudio.github.io/sortable/>

BugReports <https://github.com/rstudio/sortable/issues>

Imports htmltools, htmlwidgets, learnr (>= 0.10.0), shiny, assertthat, jsonlite, utils, ellipsis, rlang

Suggests base64enc, knitr, testthat (>= 2.1.0), withr, rmarkdown, magrittr, webshot, spelling, covr

VignetteBuilder knitr

Encoding UTF-8

RoxygenNote 7.2.3

Language en-US

Config/testthat/edition 3

NeedsCompilation no

Author Andrie de Vries [cre, aut],
Barret Schloerke [aut],
Kenton Russell [aut, ccp] (Original author),
RStudio [cph, fnd],
Lebedev Konstantin [cph] ('SortableJS',
<https://sortablejs.github.io/Sortable/>)

Maintainer Andrie de Vries <apdevries@gmail.com>

Repository CRAN

Date/Publication 2023-03-26 17:20:09 UTC

Contents

add_rank_list	2
bucket_list	3
chain_js_events	5
is_sortable_options	5
question_rank	6
rank_list	7
render_sortable	9
sortable_js	9
sortable_js_capture_input	11
sortable_options	12
sortable_output	14
update_bucket_list	15
update_rank_list	16

Index	17
--------------	-----------

add_rank_list	<i>Add a rank list inside bucket list.</i>
---------------	--

Description

Since a [bucket_list](#) can contain more than one [rank_list](#), you need an easy way to define the contents of each individual rank list. This function serves as a specification of a rank list.

Usage

```
add_rank_list(text, labels = NULL, input_id = NULL, css_id = input_id, ...)
```

Arguments

text	Text to appear at top of list.
labels	A character vector with the text to display inside the widget. This can also be a list of html tag elements. The text content of each label or label name will be used to set the shiny input_id value.
input_id	output variable to read the plot/image from.
css_id	This is the css id to use, and must be unique in your shiny app. This defaults to the value of input_id, and will be appended to the value "rank-list-container", to ensure the CSS id is unique for the container as well as the labels. If NULL, the function generates an id of the form rank_list_id_1, and will automatically increment for every rank_list.
...	Other arguments passed to rank_list

Value

A list of class add_rank_list

See Also

[bucket_list\(\)](#), [rank_list\(\)](#) and [update_rank_list\(\)](#)

bucket_list	Create a bucket list.
-------------	-----------------------

Description

A bucket list can contain more than one [rank_list](#) and allows drag-and-drop of items between the different lists.

Usage

```
bucket_list(
  header = NULL,
  ...,
  group_name,
  css_id = group_name,
  group_put_max = rep(Inf, length(labels)),
  options = sortable_options(),
  class = "default-sortable",
  orientation = c("horizontal", "vertical")
)
```

Arguments

header	Text that appears at the top of the bucket list. (This is encoded as an HTML <p> tag, so not strictly speaking a header.) Note that you must explicitly provide header argument, especially in the case where you want the header to be empty - to do this use header = NULL or header = NA.
...	One or more specifications for a rank list, and must be defined by add_rank_list .
group_name	Passed to SortableJS as the group name. Also the input value set in Shiny. (input[[group_name]])
css_id	This is the css id to use, and must be unique in your shiny app. This defaults to the value of group_id, and will be appended to the value "bucket-list-container", to ensure the CSS id is unique for the container as well as the embedded rank lists.
group_put_max	Not yet implemented
options	Options to be supplied to sortable_js object. See sortable_options for more details
class	A css class applied to the bucket list and rank lists. This can be used to define custom styling.
orientation	Either horizontal or vertical, and specifies the layout of the components on the page.

Value

A list with class `bucket_list`

See Also

[rank_list](#), [update_rank_list](#)

Examples

```
## -- example-bucket-list -----

## bucket list

if(interactive()) {
  bucket_list(
    header = "This is a bucket list. You can drag items between the lists.",
    add_rank_list(
      text = "Drag from here",
      labels = c("a", "bb", "ccc")
    ),
    add_rank_list(
      text = "to here",
      labels = NULL
    )
  )
}

## bucket list with three columns

if(interactive()) {
  bucket_list(
    header = c("Sort these items into Letters and Numbers"),
    add_rank_list(
      text = "Drag from here",
      labels = sample(c(1:3, letters[1:2]))
    ),
    add_rank_list(
      text = "Letters"
    ),
    add_rank_list(
      text = "Numbers"
    )
  )
}

## Example of a shiny app
if (interactive()) {
  app <- system.file(
    "shiny-examples/bucket_list/app.R",
    package = "sortable"
  )
  shiny::runApp(app)
}
```

chain_js_events	<i>Chain multiple JavaScript events</i>
-----------------	---

Description

SortableJS does not have an event based system. To be able to call multiple JavaScript events under the same event execution, they need to be executed one after another.

Usage

```
chain_js_events(...)
```

Arguments

... JavaScript functions defined by [htmlwidgets::JS](#)

Value

A single JavaScript function that will call all methods provided with the event

See Also

Other JavaScript functions: [sortable_js_capture_input\(\)](#)

is_sortable_options	<i>Check if object is sortable options.</i>
---------------------	---

Description

Check if object is sortable options.

Usage

```
is_sortable_options(x)
```

Arguments

x Object to test

Value

Logical vector. TRUE if the object inherits from sortable_options

Examples

```
is_sortable_options("foo") # returns FALSE
```

question_rank

Ranking question for learnr tutorials.

Description

Add interactive ranking tasks to your learnr tutorials. The student can drag-and-drop the answer options into the desired order.

Usage

```
question_rank(
  text,
  ...,
  correct = "Correct!",
  incorrect = "Incorrect",
  loading = c("**Loading:** ", text, "<br/><br/><br/>"),
  submit_button = "Submit Answer",
  try_again_button = "Try Again",
  allow_retry = FALSE,
  random_answer_order = TRUE,
  options = sortable_options()
)
```

Arguments

text	Question or option text
...	parameters passed onto learnr::question() .
correct	For question, text to print for a correct answer (defaults to "Correct!"). For answer, a boolean indicating whether this answer is correct.
incorrect	Text to print for an incorrect answer (defaults to "Incorrect") when allow_retry is FALSE.
loading	Loading text to display as a placeholder while the question is loaded. If not provided, generic "Loading..." or placeholder elements will be displayed.
submit_button	Label for the submit button. Defaults to "Submit Answer"
try_again_button	Label for the try again button. Defaults to "Submit Answer"
allow_retry	Allow retry for incorrect answers. Defaults to FALSE.
random_answer_order	Display answers in a random order.
options	Options to be supplied to sortable_js object. See sortable_options for more details

Details

Each set of answer options must contain the same set of answer options. When the question is completed, the first correct answer will be displayed.

Note that, by default, the answer order is randomized.

Value

A custom learnr question, with type = sortable_rank. See [learnr::question\(\)](#).

Examples

```
## Example of rank problem inside a learnr tutorial
if (interactive()) {
  learnr::run_tutorial("question_rank", package = "sortable")
}
```

rank_list	<i>Create a ranking item list.</i>
-----------	------------------------------------

Description

Creates a ranking item list using the SortableJS framework, and generates an htmlwidgets element. The elements of this list can be dragged and dropped in any order.

You can embed a ranking question inside a learnr tutorial, using [question_rank\(\)](#).

To embed a rank_list inside a shiny app, see the Details section.

Usage

```
rank_list(
  text = "",
  labels,
  input_id,
  css_id = input_id,
  options = sortable_options(),
  orientation = c("vertical", "horizontal"),
  class = "default-sortable"
)
```

Arguments

text	Text to appear at top of list.
labels	A character vector with the text to display inside the widget. This can also be a list of html tag elements. The text content of each label or label name will be used to set the shiny input_id value.
input_id	output variable to read the plot/image from.

css_id	This is the css id to use, and must be unique in your shiny app. This defaults to the value of input_id, and will be appended to the value "rank-list-container", to ensure the CSS id is unique for the container as well as the labels. If NULL, the function generates an id of the form rank_list_id_1, and will automatically increment for every rank_list.
options	Options to be supplied to sortable_js object. See sortable_options for more details
orientation	Set this to "horizontal" to get horizontal orientation of the items.
class	A css class applied to the rank list. This can be used to define custom styling.

Details

You can embed a rank_list inside a Shiny app, to capture the preferred ranking order of your user. The widget automatically updates a Shiny output, with the matching input_id.

See Also

[update_rank_list](#), [sortable_js](#), [bucket_list](#) and [question_rank](#)

Examples

```
## - example-rank-list -----

if (interactive()) {
  rank_list(
    text = "You can drag, drop and re-order these items:",
    labels = c("one", "two", "three", "four", "five"),
    input_id = "example_2"
  )
}

## - example-rank-list-multidrag -----

if (interactive()) {
  rank_list(
    text = "You can select multiple items and drag as a group:",
    labels = c("one", "two", "three", "four", "five"),
    input_id = "example_2",
    options = sortable_options(
      multiDrag = TRUE
    )
  )
}

## - example-rank-list-swap -----

if (interactive()) {
  rank_list(
    text = "You can re-order these items, and notice the swapping behaviour:",
    labels = c("one", "two", "three", "four", "five"),
    input_id = "example_2",
    options = sortable_options(
```

```

        swap = TRUE
      )
    )
  }
  ## Example of a shiny app
  if (interactive()) {
    app <- system.file("shiny-examples/rank_list/app.R", package = "sortable")
    shiny::runApp(app)
  }

```

render_sortable	<i>Widget render function for use in Shiny.</i>
-----------------	---

Description

Widget render function for use in Shiny.

Usage

```
render_sortable(expr, env = parent.frame(), quoted = FALSE)
```

Arguments

expr	An expression
env	The environment in which to evaluate expr.
quoted	Is expr a quoted expression (with quote())? This is useful if you want to save an expression in a variable.

sortable_js	<i>Creates an htmlwidget with embedded 'SortableJS' library.</i>
-------------	--

Description

Creates an htmlwidget that provides **SortableJS** to use for drag-and-drop interactivity in Shiny apps and R Markdown.

Usage

```

sortable_js(
  css_id,
  options = sortable_options(),
  width = 0,
  height = 0,
  elementId = NULL,
  preRenderHook = NULL
)

```

Arguments

css_id	String <code>css_id</code> id on which to apply SortableJS. Note, <code>sortable_js</code> works with any html element, not just <code>ul/li</code> .
options	Options to be supplied to <code>sortable_js</code> object. See sortable_options for more details
width	Fixed width for widget (in css units). The default is NULL, which results in intelligent automatic sizing based on the widget's container.
height	Fixed height for widget (in css units). The default is NULL, which results in intelligent automatic sizing based on the widget's container.
elementId	Use an explicit element ID for the widget (rather than an automatically generated one). Useful if you have other JavaScript that needs to explicitly discover and interact with a specific widget instance.
preRenderHook	A function to be run on the widget, just prior to rendering. It accepts the entire widget object as input, and should return a modified widget object.

See Also

[sortable_options\(\)](#)

Examples

```
## -- example-sortable-js -----
# Simple example of sortable_js.
# Important: set the tags CSS `id` equal to the sortable_js `css_id`

if (interactive()) {
  if (require(htmltools)) {
    html_print(
      tagList(
        tags$p("You can drag and reorder the items in this list:"),
        tags$ul(
          id = "example_1",
          tags$li("Move"),
          tags$li("Or drag"),
          tags$li("Each of the items"),
          tags$li("To different positions")
        ),
        sortable_js(css_id = "example_1")
      )
    )
  }
}
```

 sortable_js_capture_input

Construct JavaScript method to capture Shiny inputs on change.

Description

This captures the state of a sortable list. It will look for a data-rank-id attribute of the first child for each element. If no? attribute exists for that particular item's first child, the inner text will be used as an identifier.

Usage

```
sortable_js_capture_input(input_id)
```

```
sortable_js_capture_bucket_input(input_id, input_ids, css_ids)
```

Arguments

input_id	Shiny input name to set
input_ids	Set of Shiny input ids to set corresponding to the provided css_ids
css_ids	Set of SortableJS css_id values to help retrieve all to set as an object

Details

This method is used with the onSort option of sortable_js. See [sortable_options\(\)](#).

Value

A character vector with class JS_EVAL. See [htmlwidgets::JS\(\)](#).

See Also

[sortable_js](#) and [rank_list](#).

Other JavaScript functions: [chain_js_events\(\)](#)

Examples

```
## -- example-sortable-js-capture -----
# Simple example of sortable_js_capture.
# Important: set the tags CSS `id` equal to the sortable_js `css_id`

if(interactive()) {
  library(shiny)
  library(sortable)

  ui <- fluidPage(
    div(
      id = "sortable",
```

```

      div(id = 1, `data-rank-id` = "HELLO", class = "well", "Hello"),
      div(id = 2, `data-rank-id` = "WORLD", class = "well", "world")
    ),
    verbatimTextOutput("chosen"),
    sortable_js(
      css_id = "sortable",
      options = sortable_options(
        onSort = sortable_js_capture_input(input_id = "selected")
      )
    )
  )
}

server <- function(input, output){
  output$chosen <- renderPrint(input$selected)
}

shinyApp(ui, server)
}

## -----
# For an example, see the Shiny app at
system.file("shiny-examples/drag_vars_to_plot/app.R", package = "sortable")

```

sortable_options	<i>Define options to pass to a sortable object.</i>
------------------	---

Description

Use this function to define the options for [sortable_js](#) and [rank_list](#), which will pass these in turn to the SortableJS JavaScript library.

Usage

```

sortable_options(
  ...,
  swap = NULL,
  multiDrag = NULL,
  group = NULL,
  sort = NULL,
  delay = NULL,
  disabled = NULL,
  animation = NULL,
  handle = NULL,
  filter = NULL,
  draggable = NULL,
  swapThreshold = NULL,
  invertSwap = NULL,

```

```

    direction = NULL,
    scrollSensitivity = NULL,
    scrollSpeed = NULL,
    onStart = NULL,
    onEnd = NULL,
    onAdd = NULL,
    onUpdate = NULL,
    onSort = NULL,
    onRemove = NULL,
    onFilter = NULL,
    onMove = NULL,
    onLoad = NULL
)

```

Arguments

...	other arguments passed onto SortableJS
swap	If TRUE, modifies the behaviour of sortable to allow for items to be swapped with each other rather than sorted. Once dragging starts, the user can drag over other items and there will be no change in the elements. However, the item that the user drops on will be swapped with the originally dragged item. See also https://github.com/SortableJS/Sortable/tree/master/plugins/Swap
multiDrag	If TRUE, allows the selection of multiple items within a sortable at once, and drag them as one item. Once placed, the items will unfold into their original order, but all beside each other at the new position. See also https://github.com/SortableJS/Sortable/wiki/Drag-Multiple-Items-in-Sortable
group	To drag elements from one list into another, both lists must have the same group value. See Sortable#group-option for more details. ["name"]
sort	Boolean that allows sorting inside a list. [TRUE]
delay	Time in milliseconds to define when the sorting should start. [0]
disabled	Boolean that disables the sortable if set to true. [FALSE]
animation	Millisecond duration of the animation of items when sorting [0 (no animation)]
handle	CSS selector used for the drag handle selector within list items. [".my-handle"]
filter	CSS selector or JS function used for elements that cannot be dragged. [".ignore-elements"]
draggable	CSS selector of which items inside the element should be draggable. [".item"]
swapThreshold	Percentage of the target that the swap zone will take up, as a number between 0 and 1. [1]
invertSwap	Set to TRUE to set the swap zone to the sides of the target, for the effect of sorting "in between" items. [FALSE]
direction	Direction of sortable ["horizontal"]
scrollSensitivity	Number of pixels the mouse needs to be to an edge to start scrolling. [30]
scrollSpeed	Number of pixels for the speed of scrolling. [10]
onStart, onEnd	JS function called when an element dragging starts or ends

onAdd	JS function called when an element is dropped into the list from another list
onUpdate	JS function called when the sorting is changed within a list
onSort	JS function called by any change to the list (add / update / remove)
onRemove	JS function called when an element is removed from the list into another list
onFilter	JS function called when an attempt is made to drag a filtered element
onMove	JS function called when an item is moved in a list or between lists
onLoad	JS function dispatched on the "next tick" after SortableJS has initialized

Details

Many of the SortableJS options will accept a JavaScript function. You can do this using the `htmlwidgets::JS` function.

Value

A list with class `sortable_options`

References

<https://github.com/sortablejs/Sortable/>

See Also

[sortable_js](#)

Examples

```
sortable_options(sort = FALSE)
```

sortable_output	<i>Widget output function for use in Shiny.</i>
-----------------	---

Description

Widget output function for use in Shiny.

Usage

```
sortable_output(input_id, width = "0px", height = "0px")
```

Arguments

<code>input_id</code>	output variable to use for the sortable object
<code>width</code>	Fixed width for widget (in css units). The default is <code>NULL</code> , which results in intelligent automatic sizing based on the widget's container.
<code>height</code>	Fixed height for widget (in css units). The default is <code>NULL</code> , which results in intelligent automatic sizing based on the widget's container.

update_bucket_list	<i>Change the value of a bucket list.</i>
--------------------	---

Description

At the moment, you can only update the text of the bucket_list, not the labels.

Usage

```
update_bucket_list(  
  css_id,  
  header = NULL,  
  session = shiny::getDefaultReactiveDomain()  
)
```

Arguments

css_id	This is the css id to use, and must be unique in your shiny app. This defaults to the value of group_id, and will be appended to the value "bucket-list-container", to ensure the CSS id is unique for the container as well as the embedded rank lists.
header	Text that appears at the top of the bucket list. (This is encoded as an HTML <p> tag, so not strictly speaking a header.) Note that you must explicitly provide header argument, especially in the case where you want the header to be empty - to do this use header = NULL or header = NA.
session	The session object passed to function given to shinyServer.

See Also

[bucket_list](#)

Examples

```
## Example of a shiny app that updates a bucket list and rank list  
if (interactive()) {  
  app <- system.file(  
    "shiny-examples/update/app.R",  
    package = "sortable"  
  )  
  shiny::runApp(app)  
}
```

update_rank_list	<i>Change the value of a rank list.</i>
------------------	---

Description

At the moment, you can only update the text of the rank_list, not the labels.

Usage

```
update_rank_list(  
  css_id,  
  text = NULL,  
  session = shiny::getDefaultReactiveDomain()  
)
```

Arguments

css_id	This is the css id to use, and must be unique in your shiny app. This defaults to the value of input_id, and will be appended to the value "rank-list-container", to ensure the CSS id is unique for the container as well as the labels. If NULL, the function generates an id of the form rank_list_id_1, and will automatically increment for every rank_list.
text	Text to appear at top of list.
session	The session object passed to function given to shinyServer.

See Also

[rank_list](#)

Index

* JavaScript functions

chain_js_events, [5](#)

sortable_js_capture_input, [11](#)

add_rank_list, [2](#), [3](#)

bucket_list, [2](#), [3](#), [8](#), [15](#)

bucket_list(), [3](#)

chain_js_events, [5](#), [11](#)

htmlwidgets::JS, [5](#)

htmlwidgets::JS(), [11](#)

is_sortable_options, [5](#)

learnr::question(), [6](#), [7](#)

question_rank, [6](#), [8](#)

question_rank(), [7](#)

rank_list, [2–4](#), [7](#), [11](#), [12](#), [16](#)

rank_list(), [3](#)

render_sortable, [9](#)

sortable_js, [3](#), [6](#), [8](#), [9](#), [10–12](#), [14](#)

sortable_js_capture_bucket_input

(sortable_js_capture_input), [11](#)

sortable_js_capture_input, [5](#), [11](#)

sortable_options, [3](#), [6](#), [8](#), [10](#), [12](#)

sortable_options(), [10](#), [11](#)

sortable_output, [14](#)

update_bucket_list, [15](#)

update_rank_list, [4](#), [8](#), [16](#)

update_rank_list(), [3](#)