Package ‘bslib’

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Title Custom 'Bootstrap' 'Sass' Themes for 'shiny' and 'rmarkdown'

Version 0.8.0

Description Simplifies custom 'CSS' styling of both 'shiny' and 'rmarkdown' via 'Bootstrap' 'Sass'. Supports 'Bootstrap' 3, 4 and 5 as well as their various 'Bootswatch' themes. An interactive widget is also provided for previewing themes in real time.

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URL https://rstudio.github.io/bslib/, https://github.com/rstudio/bslib

BugReports https://github.com/rstudio/bslib/issues

Depends R (>= 2.10)

Imports base64enc, cachem, fastmap (>= 1.1.1), grDevices, htmltools (>= 0.5.8), jquerylib (>= 0.1.3), jsonlite, lifecycle, memoise (>= 2.0.1), mime, rlang, sass (>= 0.4.9)

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'bs-dependencies.R' 'bs-global.R' 'bs-remove.R'
'bs-theme-layers.R' 'bs-theme-preset-bootswatch.R'
'bs-theme-preset-builtin.R' 'bs-theme-preset.R' 'utils.R'
'bs-theme-preview.R' 'bs-theme-update.R' 'bs-theme.R'
'bslib-package.R' 'buttons.R' 'card.R' 'deprecated.R' 'files.R'
'fill.R' 'imports.R' 'input-dark-mode.R' 'input-switch.R'
'layout.R' 'nav-items.R' 'nav-update.R' 'navs-legacy.R'
'navs.R' 'onLoad.R' 'page.R' 'popover.R' 'precompiled.R'
'print.R' 'shiny-devmode.R' 'sidebar.R' 'staticimports.R'
'tooltip.R' 'utils-deps.R' 'utils-shiny.R' 'utils-tags.R'
'value-box.R' 'version-default.R' 'versions.R'

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Contents

`accordion` *Create a vertically collapsing accordion*

Description

[Experimental]

An accordion can be used to organize UI elements and content in a limited space. It comprises multiple, vertically stacked panels that expand or collapse when clicked, providing a compact layout that works well for grouping input elements in a `sidebar()` or for organizing detailed context-specific information.

Usage

```
accordion(
  ...,
  id = NULL,
  open = NULL,
  multiple = TRUE,
  class = NULL,
  width = NULL,
  height = NULL
)

accordion_panel(title, ..., value = title, icon = NULL)
```

Arguments

...	Named arguments become attributes on the element. Unnamed arguments should be accordion_panel()s.
id	If provided, you can use input$id in your server logic to determine which of the accordion_panel()s are currently active. The value will correspond to the accordion_panel()'s value argument.
open	A character vector of accordion_panel() values to open (i.e., show) by default. The default value of NULL will open the first accordion_panel(). Use a value of TRUE to open all (or FALSE to open none) of the items. It's only possible to open more than one panel when multiple=TRUE.
multiple	Whether multiple accordion_panel() can be open at once.
class	Additional CSS classes to include on the accordion div.
width, height	Any valid CSS unit; for example, height="100%".
title	A title to appear in the accordion_panel()'s header.
value	A character string that uniquely identifies this panel.
icon	A htmltools::tag child (e.g., bsicons::bs_icon()) which is positioned just before the title.

References

bslib's accordion component is derived from the Bootstrap Accordion component. Accordions are also featured on the bslib website:

- Get Started: Dashboards
- Sidebars: Accordions

See Also

accordion_panel_set(), accordion_panel_open() and accordion_panel_close() programmatically interact with the state of an accordion panel.

accordion_panel_insert(), accordion_panel_remove() and accordion_panel_update() add or remove accordion panels from an accordion.

Other Components: card(), popover(), tooltip(), value_box()

Examples

```
items <- lapply(LETTERS, function(x) {
  accordion_panel(paste("Section", x), paste("Some narrative for section", x))
})

# First shown by default
accordion(!!!items)
# Nothing shown by default
accordion(!!!items, open = FALSE)
# Everything shown by default
accordion(!!!items, open = TRUE)
```

```
# Show particular sections
accordion(!!!items, open = "Section B")
accordion(!!!items, open = c("Section A", "Section B"))

# Provide an id to create a shiny input binding
library(shiny)

ui <- page_fluid(
  accordion(!!!items, id = "acc")
)

server <- function(input, output) {
  observe(print(input$acc))
}

shinyApp(ui, server)
```

---

accordion_panel_set *Dynamically update accordions*

Description

[Experimental]

Dynamically update/modify accordion()s in a Shiny app. To be updated programmatically, the accordion() must have an id. These functions require an active Shiny session and only work with a running Shiny app.

Usage

```
accordion_panel_set(id, values, session = get_current_session())

accordion_panel_open(id, values, session = get_current_session())

accordion_panel_close(id, values, session = get_current_session())

accordion_panel_insert(
  id,
  panel,
  target = NULL,
  position = c("after", "before"),
  session = get_current_session()
)

accordion_panel_remove(id, target, session = get_current_session())

accordion_panel_update(
```

```
  id,
  target,
  ...,
  title = NULL,
  value = NULL,
  icon = NULL,
  session = get_current_session()
)
```

Arguments

id	an character string that matches an existing accordion()'s id.
values	either a character string (used to identify particular accordion_panel()s by their value) or TRUE (i.e., all values).
session	a shiny session object (the default should almost always be used).
panel	an accordion_panel().
target	The value of an existing panel to insert next to. If removing: the value of the accordion_panel() to remove.
position	Should panel be added before or after the target? When target is NULL (the default), "after" will append after the last panel and "before" will prepend before the first panel.
...	Elements that become the new content of the panel.
title	A title to appear in the accordion_panel()'s header.
value	A character string that uniquely identifies this panel.
icon	A htmltools::tag child (e.g., bsicons::bs_icon()) which is positioned just before the title.

Functions

- accordion_panel_set(): same as accordion_panel_open(), except it also closes any currently open panels.
- accordion_panel_open(): open accordion_panel()s.
- accordion_panel_close(): close accordion_panel()s.
- accordion_panel_insert(): insert a new accordion_panel()
- accordion_panel_remove(): remove accordion_panel()s.
- accordion_panel_update(): update a accordion_panel().

See Also

accordion() and accordion_panel() create the accordion component.

as_fill_carrier *Test and/or coerce fill behavior*

Description

Filling layouts in bslib are built on the foundation of fillable containers and fill items (fill carriers are both fillable and fill). This is why most bslib components (e.g., `card()`, `card_body()`, `layout_sidebar()`) possess both `fillable` and `fill` arguments (to control their fill behavior). However, sometimes it's useful to add, remove, and/or test fillable/fill properties on arbitrary `htmltools::tag()`, which these functions are designed to do.

Usage

```
as_fill_carrier(
  x,
  ...,
  min_height = NULL,
  max_height = NULL,
  gap = NULL,
  class = NULL,
  style = NULL,
  css_selector = NULL
)

as_fillable_container(
  x,
  ...,
  min_height = NULL,
  max_height = NULL,
  gap = NULL,
  class = NULL,
  style = NULL,
  css_selector = NULL
)

as_fill_item(
  x,
  ...,
  min_height = NULL,
  max_height = NULL,
  class = NULL,
  style = NULL,
  css_selector = NULL
)

remove_all_fill(x)
```

```
is_fill_carrier(x)

is_fillable_container(x)

is_fill_item(x)
```

Arguments

x	An htmltools::tag().
...	Currently ignored.
min_height, max_height	Any valid CSS unit (e.g., 150).
gap	Any valid CSS unit.
class	A character vector of class names to add to the tag.
style	A character vector of CSS properties to add to the tag.
css_selector	A character string containing a CSS selector for targeting particular (inner) tag(s) of interest. For more details on what selector(s) are supported, see htmltools::tagAppendAttribu

Details

Although as_fill(), as_fillable(), and as_fill_carrier() can work with non-tag objects that have a htmltools::as.tags method (e.g., htmlwidgets), they return the "tagified" version of that object.

Value

- For as_fill(), as_fillable(), and as_fill_carrier(): the *tagified* version x, with relevant tags modified to possess the relevant fill properties.
- For is_fill(), is_fillable(), and is_fill_carrier(): a logical vector, with length matching the number of top-level tags that possess the relevant fill properties.

References

The Filling Layouts article on the bslib website introduces the concept of fillable containers and fill items.

See Also

These functions provide a convenient interface to the underlying htmltools::bindFillRole() function.

Examples

```
library(shiny)
shinyApp(
  page_fillable(
    # without `as_fill_carrier()`, the plot won't fill the page because
    # `uiOutput()` is neither a fillable container nor a fill item by default.
```

```
    as_fill_carrier(uiOutput("ui"))
  ),
  function(input, output) {
    output$ui <- renderUI({
      div(
        class = "bg-info text-white",
        as_fill_item(),
        "A fill item"
      )
    })
  }
)
```

`bind_task_button` *Bind* `input_task_button` *to* `ExtendedTask`

Description

Sets up a shiny::ExtendedTask to relay its state to an existing `input_task_button()`, so the task button stays in its "busy" state for as long as the extended task is running.

Note that `bind_task_button` does *not* automatically cause button presses to invoke the extended task; you still need to use `shiny::bindEvent()` (or `shiny::observeEvent()`) to cause the button press to trigger an invocation, as in the example below.

`bind_task_button` cannot be used to bind one task button to multiple `ExtendedTask` objects; if you attempt to do so, any bound `ExtendedTask` that completes will cause the button to return to "ready" state.

Usage

```
bind_task_button(target, task_button_id, ...)

## Default S3 method:
bind_task_button(target, task_button_id, ...)

## S3 method for class 'ExtendedTask'
bind_task_button(target, task_button_id, ..., session = get_current_session())
```

Arguments

`target`	The target object (i.e. `ExtendedTask`).
`task_button_id`	A string matching the `id` argument passed to the corresponding `input_task_button()` call.
`...`	Further arguments passed to other methods.
`session`	A Shiny session object (the default should almost always be used).

Value

The `target` object that was passed in.

Examples

```
library(shiny)
library(bslib)
library(future)
plan(multisession)

ui <- page_sidebar(
  sidebar = sidebar(
    input_task_button("recalc", "Recalculate")
  ),
  textOutput("outval")
)

server <- function(input, output) {
  rand_task <- ExtendedTask$new(function() {
    future({
      # Slow operation goes here
      Sys.sleep(2)
      runif(1)
    }, seed = TRUE)
  })

  # Make button state reflect task.
  # If using R >=4.1, you can do this instead:
  # rand_task <- ExtendedTask$new(...) |> bind_task_button("recalc")
  bind_task_button(rand_task, "recalc")

  observeEvent(input$recalc, {
    rand_task$invoke()
  })

  output$outval <- renderText({
    rand_task$result()
  })
}

shinyApp(ui, server)
```

---

bootswatch_themes *Obtain a list of all available bootswatch themes.*

Description

Obtain a list of all available bootswatch themes.

Usage

```
bootswatch_themes(version = version_default(), full_path = FALSE)
```

Arguments

version	The major version of Bootswatch.
full_path	Whether to return a path to the installed theme.

Value

Returns a character vector of Bootswatch themes.

See Also

Other Bootstrap theme utility functions: bs_get_variables(), builtin_themes(), theme_bootswatch(), theme_version(), versions()

---

breakpoints *Define breakpoint values*

Description

[Experimental]

A generic constructor for responsive breakpoints.

Usage

```
breakpoints(..., xs = NULL, sm = NULL, md = NULL, lg = NULL)
```

Arguments

...	Other breakpoints (e.g., xl).
xs	The default value to apply to the xs breakpoint. Note that this breakpoint is generally equivalent to "all sizes" and is typically treated as the base case or a value to apply by default across all breakpoints unless overridden by a larger breakpoint.
sm	Values to apply at the sm breakpoint.
md	Values to apply at the md breakpoint.
lg	Values to apply at the lg breakpoint.

References

Bootstrap's Breakpoints article provides more detail on breakpoints and how they are used and customized.

See Also

`breakpoints()` is used by `layout_columns()`.

Examples

```
breakpoints(sm = c(4, 4, 4), md = c(3, 3, 6), lg = c(-2, 8, -2))
```

`bs_add_variables` *Add low-level theming customizations*

Description

These functions provide direct access to the layers of a bslib theme created with `bs_theme()`. Learn more about composable Sass layers on the **sass** website.

Usage

```
bs_add_variables(
  theme,
  ...,
  .where = "defaults",
  .default_flag = identical(.where, "defaults")
)

bs_add_rules(theme, rules)

bs_add_functions(theme, functions)

bs_add_mixins(theme, mixins)

bs_bundle(theme, ...)
```

Arguments

`theme`	A `bs_theme()` object.
`...`	• `bs_add_variables()`: Should be named Sass variables or values that can be passed in directly to the `defaults` argument of a `sass::sass_layer()`. • `bs_bundle()`: Should be arguments that can be handled by `sass::sass_bundle()` to be appended to the `theme`
`.where`	Whether to place the variable definitions before other Sass `"defaults"`, after other Sass `"declarations"`, or after other Sass `"rules"`.
`.default_flag`	Whether or not to add a `!default` flag (if missing) to variable expressions. It's recommended to keep this as `TRUE` when `.where = "defaults"`.
`rules`	Sass rules. Anything understood by `sass::as_sass()` may be provided (e.g., a list, character vector, `sass::sass_file()`, etc)

functions	A character vector or sass::sass_file() containing functions definitions.
mixins	A character vector or sass::sass_file() containing mixin definitions.

Details

Compared to higher-level theme customization available in bs_theme(), these functions are a more direct interface to Bootstrap Sass, and therefore, do nothing to ensure theme customizations are portable between major Bootstrap versions.

Value

Returns a modified bs_theme() object.

Functions

- bs_add_variables(): Add Bootstrap Sass variable defaults.
- bs_add_rules(): Add additional Sass rules.
- bs_add_functions(): Add additional Sass functions.
- bs_add_mixins(): Add additional Sass mixins.
- bs_bundle(): Add additional sass::sass_bundle() objects to an existing theme.

References

- bslib's theming capabilities are powered by the sass package.
- Learn more about composable Sass layers on the **sass** website.

See Also

bs_theme() creates a Bootstrap theme object, and is the best place to start learning about bslib's theming capabilities.

Other Bootstrap theme functions: bs_current_theme(), bs_dependency(), bs_global_theme(), bs_remove(), bs_theme(), bs_theme_dependencies(), bs_theme_preview()

Examples

```
# Function to preview the styling a (primary) Bootstrap button
library(htmltools)
button <- tags$a(class = "btn btn-primary", href = "#", role = "button", "Hello")
preview_button <- function(theme) {
  browsable(tags$body(bs_theme_dependencies(theme), button))
}

# Here we start with a theme based on a Bootswatch theme,
# then override some variable defaults
theme <- bs_add_variables(
  bs_theme(bootswatch = "sketchy", primary = "orange"),
  "body-bg" = "#EEEEEE",
  "font-family-base" = "monospace",
```

```
  "font-size-base" = "1.4rem",
  "btn-padding-y" = ".16rem",
  "btn-padding-x" = "2rem"
)

preview_button(theme)

# If you need to set a variable based on another Bootstrap variable
theme <- bs_add_variables(theme, "body-color" = "$success", .where = "declarations")
preview_button(theme)

# Start a new global theme and add some custom rules that
# use Bootstrap variables to define a custom styling for a
# 'person card'
person_rules <- system.file("custom", "person.scss", package = "bslib")
theme <- bs_add_rules(bs_theme(), sass::sass_file(person_rules))

# Include custom CSS that leverages bootstrap Sass variables
person <- function(name, title, company) {
  tags$div(
    class = "person",
    h3(class = "name", name),
    div(class = "title", title),
    div(class = "company", company)
  )
}

page_fluid(
  theme = theme,
  person("Andrew Carnegie", "Owner", "Carnegie Steel Company"),
  person("John D. Rockefeller", "Chairman", "Standard Oil")
)
```

`bs_current_theme` *Obtain the currently active theme at render time*

Description

Intended for advanced use by developers to obtain the currently active theme *at render time* and primarily for implementing themable widgets that can't otherwise be themed via `bs_dependency_defer()`.

Usage

```
bs_current_theme(session = get_current_session(FALSE))
```

Arguments

`session`	The current Shiny session (if any).

Details

This function should generally only be called at print/render time. For example:

- Inside the preRenderHook of `htmlwidgets::createWidget()`.
- Inside of a custom print method that generates htmltools::tags.
- Inside of a `htmltools::tagFunction()`

Calling this function at print/render time is important because it does different things based on the context in which it's called:

- If a reactive context is active, `session$getCurrentTheme()` is called (which is a reactive read).
- If no reactive context is active, `shiny::getCurrentTheme()` is called (which returns the current app's theme, if relevant).
- If `shiny::getCurrentTheme()` comes up empty, then `bs_global_get()` is called, which is relevant for `rmarkdown::html_document()`, and possibly other static rendering contexts.

Value

Returns a `bs_theme()` object.

See Also

Other Bootstrap theme functions: `bs_add_variables()`, `bs_dependency()`, `bs_global_theme()`, `bs_remove()`, `bs_theme()`, `bs_theme_dependencies()`, `bs_theme_preview()`

---

bs_dependency *Themeable HTML components*

Description

Themeable HTML components use Sass to generate CSS rules from Bootstrap Sass variables, functions, and/or mixins (i.e., stuff inside of theme). `bs_dependencies()` makes it a bit easier to create themeable components by compiling `sass::sass()` (input) together with Bootstrap Sass inside of a theme, and packaging up the result into an `htmltools::htmlDependency()`.

Themable components can also be *dynamically* themed inside of Shiny (i.e., they may be themed in 'real-time' via `bs_themer()`, and more generally, update their styles in response to shiny::session's `setCurrentTheme()` method). Dynamically themeable components provide a "recipe" (i.e., a function) to `bs_dependency_defer()`, describing how to generate new CSS stylesheet(s) from a new theme. This function is called when the HTML page is first rendered, and may be invoked again with a new theme whenever shiny::session's `setCurrentTheme()` is called.

Usage

```
bs_dependency(
  input = list(),
  theme,
  name,
  version,
  cache_key_extra = NULL,
  .dep_args = list(),
  .sass_args = list()
)

bs_dependency_defer(func, memoise = TRUE)
```

Arguments

input	Sass rules to compile, using theme.
theme	A bs_theme() object.
name	Library name
version	Library version
cache_key_extra	Extra information to add to the sass cache key. It is useful to add the version of your package.
.dep_args	A list of additional arguments to pass to htmltools::htmlDependency(). Note that package has no effect and script must be absolute path(s).
.sass_args	A list of additional arguments to pass to sass::sass_partial().
func	a *non-anonymous* function, with a *single* argument. This function should accept a bs_theme() object and return a single htmltools::htmlDependency(), a list of them, or NULL.
memoise	whether or not to memoise (i.e., cache) func results for a short period of time. The default, TRUE, can have large performance benefits when many instances of the same themable widget are rendered. Note that you may want to avoid memoisation if func relies on side-effects (e.g., files on-disk) that need to change for each themable widget instance.

Value

bs_dependency() returns an htmltools::htmlDependency() and bs_dependency_defer() returns an htmltools::tagFunction()

References

- Theming: Custom components gives a tutorial on creating a dynamically themable custom component.

See Also

Other Bootstrap theme functions: bs_add_variables(), bs_current_theme(), bs_global_theme(), bs_remove(), bs_theme(), bs_theme_dependencies(), bs_theme_preview()

Examples

```
myWidgetVersion <- "1.2.3"

myWidgetDependency <- function() {
  list(
    bs_dependency_defer(myWidgetCss),
    htmlDependency(
      name = "mywidget-js",
      version = myWidgetVersion,
      src = system.file(package = "mypackage", "js"),
      script = "mywidget.js"
    )
  )
}

myWidgetCSS <- function(theme) {
  if (!is_bs_theme(theme)) {
    return(
      htmlDependency(
        name = "mywidget-css",
        version = myWidgetVersion,
        src = system.file(package = "mypackage", "css"),
        stylesheet = "mywidget.css"
      )
    )
  }

  # Compile mywidget.scss using the variables and defaults from the theme
  # object.
  sass_input <- sass::sass_file(system.file(package = "mypackage", "scss/mywidget.scss"))

  bs_dependency(
    input = sass_input,
    theme = theme,
    name = "mywidget",
    version = myWidgetVersion,
    cache_key_extra = utils::packageVersion("mypackage")
  )
}

# Note that myWidgetDependency is not defined inside of myWidget. This is so
# that, if `myWidget()` is called multiple times, Shiny can tell that the
# function objects are identical and deduplicate them.
myWidget <- function(id) {
  div(
    id = id,
    span("myWidget"),
    myWidgetDependency()
  )
}
```

bs_get_variables *Retrieve Sass variable values from the current theme*

Description

Useful for retrieving a variable from the current theme and using the value to inform another R function.

Usage

```
bs_get_variables(theme, varnames)

bs_get_contrast(theme, varnames)
```

Arguments

theme	A bs_theme() object.
varnames	A character string referencing a Sass variable in the current theme.

Value

Returns a character string containing a CSS/Sass value. If the variable(s) are not defined, their value is NA.

References

Theming: Bootstrap 5 variables provides a searchable reference of all theming variables available in Bootstrap 5.

See Also

Other Bootstrap theme utility functions: bootswatch_themes(), builtin_themes(), theme_bootswatch(), theme_version(), versions()

Examples

```
vars <- c("body-bg", "body-color", "primary", "border-radius")
bs_get_variables(bs_theme(), varnames = vars)
bs_get_variables(bs_theme(bootswatch = "darkly"), varnames = vars)

bs_get_contrast(bs_theme(), c("primary", "dark", "light"))

library(htmltools)
div(
  class = "bg-primary",
  style = css(
    color = bs_get_contrast(bs_theme(), "primary")
  )
```

```
)
```

`bs_global_theme` *Global theming*

Description

`bs_global_theme()` creates and sets the global Bootstrap Sass theme. This theme is typically found by `bs_theme_dependencies()` in the app or document where the global theme is being used. You can obtain the current global theme with `bs_global_get()` or directly set the global theme with `bs_global_set()`.

Usage

```
bs_global_theme(
  version = version_default(),
  preset = NULL,
  bg = NULL,
  fg = NULL,
  primary = NULL,
  secondary = NULL,
  success = NULL,
  info = NULL,
  warning = NULL,
  danger = NULL,
  base_font = NULL,
  code_font = NULL,
  heading_font = NULL,
  ...,
  bootswatch = NULL
)

bs_global_set(theme = bs_theme())

bs_global_get()

bs_global_clear()

bs_global_add_variables(
  ...,
  .where = "defaults",
  .default_flag = identical(.where, "defaults")
)

bs_global_add_rules(...)
```

```
bs_global_bundle(...)

bs_global_theme_update(
  ...,
  preset = NULL,
  bg = NULL,
  fg = NULL,
  primary = NULL,
  secondary = NULL,
  success = NULL,
  info = NULL,
  warning = NULL,
  danger = NULL,
  base_font = NULL,
  code_font = NULL,
  heading_font = NULL,
  bootswatch = NULL
)
```

Arguments

version	The major version of Bootstrap to use (see versions() for possible values). Defaults to the currently recommended version for new projects (currently Bootstrap 5).
preset	The name of a theme preset, either a built-in theme provided by bslib or a Bootswatch theme (see builtin_themes() and bootswatch_themes() for possible values). This argument takes precedence over the bootswatch argument and only one preset or bootswatch can be provided. When no bootswatch theme is specified, and version is 5 or higher, preset defaults to "shiny". To remove the "shiny" preset, provide a value of "bootstrap" (this value will also work in bs_theme_update() to remove a preset or bootswatch theme).
bg	A color string for the background.
fg	A color string for the foreground.
primary	A color to be used for hyperlinks, to indicate primary/default actions, and to show active selection state in some Bootstrap components. Generally a bold, saturated color that contrasts with the theme's base colors.
secondary	A color for components and messages that don't need to stand out. (Not supported in Bootstrap 3.)
success	A color for messages that indicate an operation has succeeded. Typically green.
info	A color for messages that are informative but not critical. Typically a shade of blue-green.
warning	A color for warning messages. Typically yellow.
danger	A color for errors. Typically red.
base_font	The default typeface.
code_font	The typeface to be used for code. Be sure this is monospace!

heading_font	The typeface to be used for heading elements.
...	arguments passed along to bs_add_variables().
bootswatch	The name of a bootswatch theme (see bootswatch_themes() for possible values). When provided to bs_theme_update(), any previous Bootswatch theme is first removed before the new one is applied (use bootswatch = "bootstrap" to effectively remove the Bootswatch theme).
theme	A bs_theme() object.
.where	Whether to place the variable definitions before other Sass "defaults", after other Sass "declarations", or after other Sass "rules".
.default_flag	Whether or not to add a !default flag (if missing) to variable expressions. It's recommended to keep this as TRUE when .where = "defaults".

Value

Functions that modify the global theme (e.g., bs_global_set()) invisibly return the previously set theme. bs_global_get() returns the current global theme.

See Also

Other Bootstrap theme functions: bs_add_variables(), bs_current_theme(), bs_dependency(), bs_remove(), bs_theme(), bs_theme_dependencies(), bs_theme_preview()

Examples

```
# Remember the global state now (so we can restore later)
theme <- bs_global_get()

# Use Bootstrap 3 (globally) with some theme customization
bs_global_theme(3, bg = "#444", fg = "#e4e4e4", primary = "#e39777")
if (rlang::is_interactive()) {
  bs_theme_preview(with_themer = FALSE)
}

# If no global theme is active, bs_global_get() returns NULL
bs_global_clear()
bs_global_get()

# Restore the original state
bs_global_set(theme)
```

---

bs_remove *Remove or retrieve Sass code from a theme*

Description

A Bootstrap theme created with bs_theme() is comprised of many Sass layers. bs_remove() and bs_retrieve() allow you to remove or retrieve an individual layer, either to reduce the size of the compiled CSS or to extract styles from a theme.

Usage

```
bs_remove(theme, ids = character(0))

bs_retrieve(theme, ids = character(0), include_unnamed = TRUE)
```

Arguments

theme	A bs_theme() object.
ids	a character vector of ids
include_unnamed	whether or not to include unnamed sass::sass_layer()s (e.g., Bootstrap Sass variables, functions, and mixins).

Value

Returns a modified bs_theme() object.

See Also

Other Bootstrap theme functions: bs_add_variables(), bs_current_theme(), bs_dependency(), bs_global_theme(), bs_theme(), bs_theme_dependencies(), bs_theme_preview()

Examples

```
bs4 <- bs_theme(version = 4)

# Retrieve sass bundle for print styles
bs_retrieve(bs4, "_print", include_unnamed = FALSE)

# Remove CSS rules for print and carousels
bs4_no_print <- bs_remove(bs4, c("_print", "_carousel"))
suppressWarnings(
  bs_retrieve(bs4_no_print, "_print", include_unnamed = FALSE)
)

# Remove BS3 compatibility layer
bs4_no_compat <- bs_remove(bs4, "bs3compat")
```

---

bs_theme *Create a Bootstrap theme*

Description

Creates a Bootstrap theme object, where you can:

- Choose a (major) Bootstrap version.
- Choose a Bootswatch theme (optional).

- Customize main colors and fonts via explicitly named arguments (e.g., `bg`, `fg`, `primary`, etc).
- Customize other, lower-level, Bootstrap Sass variable defaults via `...`.

To learn more about how to implement custom themes, as well as how to use them inside Shiny and R Markdown, see here.

Usage

```
bs_theme(
  version = version_default(),
  preset = NULL,
  ...,
  bg = NULL,
  fg = NULL,
  primary = NULL,
  secondary = NULL,
  success = NULL,
  info = NULL,
  warning = NULL,
  danger = NULL,
  base_font = NULL,
  code_font = NULL,
  heading_font = NULL,
  font_scale = NULL,
  bootswatch = NULL
)

bs_theme_update(
  theme,
  ...,
  preset = NULL,
  bg = NULL,
  fg = NULL,
  primary = NULL,
  secondary = NULL,
  success = NULL,
  info = NULL,
  warning = NULL,
  danger = NULL,
  base_font = NULL,
  code_font = NULL,
  heading_font = NULL,
  font_scale = NULL,
  bootswatch = NULL
)

is_bs_theme(x)
```

Arguments

version	The major version of Bootstrap to use (see versions() for possible values). Defaults to the currently recommended version for new projects (currently Bootstrap 5).
preset	The name of a theme preset, either a built-in theme provided by bslib or a Bootswatch theme (see builtin_themes() and bootswatch_themes() for possible values). This argument takes precedence over the bootswatch argument and only one preset or bootswatch can be provided. When no bootswatch theme is specified, and version is 5 or higher, preset defaults to "shiny". To remove the "shiny" preset, provide a value of "bootstrap" (this value will also work in bs_theme_update() to remove a preset or bootswatch theme).
...	arguments passed along to bs_add_variables().
bg	A color string for the background.
fg	A color string for the foreground.
primary	A color to be used for hyperlinks, to indicate primary/default actions, and to show active selection state in some Bootstrap components. Generally a bold, saturated color that contrasts with the theme's base colors.
secondary	A color for components and messages that don't need to stand out. (Not supported in Bootstrap 3.)
success	A color for messages that indicate an operation has succeeded. Typically green.
info	A color for messages that are informative but not critical. Typically a shade of blue-green.
warning	A color for warning messages. Typically yellow.
danger	A color for errors. Typically red.
base_font	The default typeface.
code_font	The typeface to be used for code. Be sure this is monospace!
heading_font	The typeface to be used for heading elements.
font_scale	A scalar multiplier to apply to the base font size. For example, a value of 1.5 scales font sizes to 150% and a value of 0.8 scales to 80%. Must be a positive number.
bootswatch	The name of a bootswatch theme (see bootswatch_themes() for possible values). When provided to bs_theme_update(), any previous Bootswatch theme is first removed before the new one is applied (use bootswatch = "bootstrap" to effectively remove the Bootswatch theme).
theme	A bs_theme() object.
x	an object.

Value

Returns a sass::sass_bundle() (list-like) object.

Colors

Colors may be provided in any format that `htmltools::parseCssColors()` can understand. To control the vast majority of the ('grayscale') color defaults, specify both the `fg` (foreground) and `bg` (background) colors. The `primary` and `secondary` theme colors are also useful for accenting the main grayscale colors in things like hyperlinks, tabset panels, and buttons.

Fonts

Use `base_font`, `code_font`, and `heading_font` to control the main typefaces. These arguments set new defaults for the relevant `font-family` CSS properties, but don't necessarily import the relevant font files. To both set CSS properties *and* import font files, consider using the various `font_face()` helpers.

Each `*_font` argument may be a single font or a `font_collection()`. A font can be created with `font_google()`, `font_link()`, or `font_face()`, or it can be a character vector of font names in the following format:

- A single unquoted name (e.g., `"Source Sans Pro"`).
- A single quoted name (e.g., `"'Source Sans Pro'"`).
- A comma-separated list of names w/ individual names quoted as necessary. (e.g. `c("Open Sans", "'Source Sans Pro'", "'Helvetica Neue', Helvetica, sans-serif")`)

`font_google()` sets `local = TRUE` by default, which ensures that the font files are downloaded from Google Fonts when your document or app is rendered. This guarantees that the client has access to the font family, making it relatively safe to specify just one font family:

```
bs_theme(base_font = font_google("Pacifico", local = TRUE))
```

That said, we recommend you specify multiple "fallback" font families, especially when relying on remote and/or system fonts being available. Fallback fonts are useful not only for handling missing fonts, but also ensure that your users don't experience a Flash of Invisible Text (FOIT) which can be quite noticeable with remote web fonts on a slow internet connection.

```
bs_theme(base_font = font_collection(font_google("Pacifico", local = FALSE), "Roboto", "sans-serif"))
```

References

- Get Started: Theming introduces theming with bslib in Shiny apps and R Markdown documents.
- Theming: Bootstrap 5 variables provides a searchable reference of all theming variables available in Bootstrap 5.
- Theming: Custom components gives a tutorial on creating a dynamically themable custom component.
- bslib's theming capabilities are powered by the sass package.
- Bootstrap's utility classes can be helpful when you want to change the appearance of an element without writing CSS or customizing your `bs_theme()`.

See Also

Other Bootstrap theme functions: bs_add_variables(), bs_current_theme(), bs_dependency(), bs_global_theme(), bs_remove(), bs_theme_dependencies(), bs_theme_preview()

Examples

```
theme <- bs_theme(
  # Controls the default grayscale palette
  bg = "#202123", fg = "#B8BCC2",
  # Controls the accent (e.g., hyperlink, button, etc) colors
  primary = "#EA80FC", secondary = "#48DAC6",
  base_font = c("Grandstander", "sans-serif"),
  code_font = c("Courier", "monospace"),
  heading_font = "'Helvetica Neue', Helvetica, sans-serif",
  # Can also add lower-level customization
  "input-border-color" = "#EA80FC"
)

bs_theme_preview(theme)

# Lower-level bs_add_*() functions allow you to work more
# directly with the underlying Sass code
theme <- bs_add_variables(theme, "my-class-color" = "red")
theme <- bs_add_rules(theme, ".my-class { color: $my-class-color }")
```

---

bs_theme_dependencies *Compile Bootstrap Sass with (optional) theming*

Description

bs_theme_dependencies() compiles Bootstrap Sass into CSS and returns it, along with other HTML dependencies, as a list of htmltools::htmlDependency()s. Most users won't need to call this function directly as Shiny & R Markdown will perform this compilation automatically when handed a bs_theme(). If you're here looking to create a themeable component, see bs_dependency().

Usage

```
bs_theme_dependencies(
  theme,
  sass_options = sass::sass_options_get(output_style = "compressed"),
  cache = sass::sass_cache_get(),
  jquery = jquerylib::jquery_core(3),
  precompiled = get_precompiled_option("bslib.precompiled", default = TRUE)
)
```

Arguments

theme	A bs_theme() object.
sass_options	a sass::sass_options() object.
cache	This can be a directory to use for the cache, a FileCache object created by sass_file_cache(), or FALSE or NULL for no caching.
jquery	a jquerylib::jquery_core() object.
precompiled	Before compiling the theme object, first look for a precompiled CSS file for the theme_version(). If precompiled = TRUE and a precompiled CSS file exists for the theme object, it will be fetched immediately and not compiled. At the moment, we only provide precompiled CSS for "stock" builds of Bootstrap (i.e., no theming additions, Bootswatch themes, or non-default sass_options).

Value

Returns a list of HTML dependencies containing Bootstrap CSS, Bootstrap JavaScript, and jquery. This list may contain additional HTML dependencies if bundled with the theme.

Sass caching and precompilation

If Shiny Developer Mode is enabled (by setting options(shiny.devmode = TRUE) or calling shiny::devmode(TRUE)), both **sass** caching and **bslib** precompilation are disabled by default; that is, a call to bs_theme_dependencies(theme) expands to bs_theme_dependencies(theme, cache = F, precompiled = F)). This is useful for local development as enabling caching/precompilation may produce incorrect results if local changes are made to bslib's source files.

See Also

Other Bootstrap theme functions: bs_add_variables(), bs_current_theme(), bs_dependency(), bs_global_theme(), bs_remove(), bs_theme(), bs_theme_preview()

Examples

```
# Function to preview the styling a (primary) Bootstrap button
library(htmltools)
button <- tags$a(class = "btn btn-primary", href = "#", role = "button", "Hello")
preview_button <- function(theme) {
  browsable(tags$body(bs_theme_dependencies(theme), button))
}

# Latest Bootstrap
preview_button(bs_theme())
# Bootstrap 3
preview_button(bs_theme(3))
# Bootswatch 4 minty theme
preview_button(bs_theme(4, bootswatch = "minty"))
# Bootswatch 4 sketchy theme
preview_button(bs_theme(4, bootswatch = "sketchy"))
```

`bs_theme_preview` *Preview a Bootstrap theme*

Description

Launches an example shiny app that can be used to get a quick preview of a `bs_theme()`, as well as an interactive GUI for tweaking some of the main theme settings. Calling `bs_theme_preview()` with no arguments starts the theme preview app with the default theme, which is a great way to see the available theme presets or to start creating your own theme.

Usage

```
bs_theme_preview(theme = bs_theme(), ..., with_themer = TRUE)
```

Arguments

`theme`	A `bs_theme()` object.
`...`	passed along to `shiny::runApp()`.
`with_themer`	whether or not to run the app with `run_with_themer()`.

Details

The app that this launches is subject to change as new features are developed in **bslib** and **shiny**.

Value

nothing, this function is called for its side-effects (launching an application).

See Also

Use `run_with_themer()` or `bs_themer()` to add the theming UI to an existing shiny app.

Other Bootstrap theme functions: `bs_add_variables()`, `bs_current_theme()`, `bs_dependency()`, `bs_global_theme()`, `bs_remove()`, `bs_theme()`, `bs_theme_dependencies()`

Examples

```
theme <- bs_theme(bg = "#6c757d", fg = "white", primary = "orange")
bs_theme_preview(theme)
```

builtin_themes *Obtain a list of all available built-in* **bslib** *themes.*

Description

Obtain a list of all available built-in **bslib** themes.

Usage

```
builtin_themes(version = version_default(), full_path = FALSE)
```

Arguments

version	the major version of Bootstrap.
full_path	whether to return a path to the installed theme.

Value

Returns a character vector of built-in themes provided by **bslib**.

See Also

Other Bootstrap theme utility functions: bootswatch_themes(), bs_get_variables(), theme_bootswatch(), theme_version(), versions()

card *A Bootstrap card component*

Description

[Experimental]

A general purpose container for grouping related UI elements together with a border and optional padding. To learn more about card()s, see the Cards article or the other articles listed in the *References* section below.

Usage

```
card(
  ...,
  full_screen = FALSE,
  height = NULL,
  max_height = NULL,
  min_height = NULL,
  fill = TRUE,
  class = NULL,
  wrapper = card_body,
  id = NULL
)
```

Arguments

`...`	Unnamed arguments can be any valid child of an htmltools tag (which includes card items such as `card_body()`. Named arguments become HTML attributes on returned UI element.
`full_screen`	If `TRUE`, an icon will appear when hovering over the card body. Clicking the icon expands the card to fit viewport size.
`height`	Any valid CSS unit (e.g., `height="200px"`). Doesn't apply when a card is made `full_screen` (in this case, consider setting a `height` in `card_body()`).
`max_height, min_height`	Any valid CSS unit (e.g., `max_height="200px"`). Doesn't apply when a card is made `full_screen` (in this case, consider setting a `max_height` in `card_body()`).
`fill`	Whether or not to allow the card to grow/shrink to fit a fillable container with an opinionated height (e.g., `page_fillable()`).
`class`	Additional CSS classes for the returned UI element.
`wrapper`	A function (which returns a UI element) to call on unnamed arguments in `...` which are not already card item(s) (like `card_header()`, `card_body()`, etc.). Note that non-card items are grouped together into one `wrapper` call (e.g. given `card("a", "b", card_body("c"), "d")`, `wrapper` would be called twice, once with `"a"` and `"b"` and once with `"d"`).
`id`	Provide a unique identifier for the `card()` or `value_box()` to report its full screen state to Shiny. For example, using `id = "my_card"`, you can observe the card's full screen state with `input$my_card_full_screen`.

Value

A `htmltools::div()` tag.

References

Several articles on the bslib website feature the card component:

- Cards
- Get Started: Dashboards
- Get Started: Any Project
- Column-based layouts
- Filling layouts: Full-screen cards

See Also

Card item functions create the various parts of a card.

`navset_card_tab()`, `navset_card_pill()` and `navset_card_underline()` create cards with tabbed navigation.

`layout_columns()` and `layout_column_wrap()` help position multiple cards into columns and rows and can also be used inside a card.

`layout_sidebar()` adds a sidebar to a card when nested in `card()` or `card_body()`.

value_box() uses card() to highlight a showcase a key piece of information.

Other Components: accordion(), popover(), tooltip(), value_box()

Examples

```
library(htmltools)

card(
  full_screen = TRUE,
  card_header(
    "This is the header"
  ),
  card_body(
    p("This is the body."),
    p("This is still the body.")
  ),
  card_footer(
    "This is the footer"
  )
)
```

---

card_body *Card items*

Description

Components designed to be provided as direct children of a card(). For a general overview of the card() API, see the Cards article or the other articles listed in the *References* section of the card() documentation.

Usage

```
card_body(
  ...,
  fillable = TRUE,
  min_height = NULL,
  max_height = NULL,
  max_height_full_screen = max_height,
  height = NULL,
  padding = NULL,
  gap = NULL,
  fill = TRUE,
  class = NULL
)

card_title(..., container = htmltools::h5)
```

```
card_header(..., class = NULL, container = htmltools::div)

card_footer(..., class = NULL)

card_image(
  file,
  ...,
  alt = "",
  src = NULL,
  href = NULL,
  border_radius = c("auto", "top", "bottom", "all", "none"),
  mime_type = NULL,
  class = NULL,
  height = NULL,
  fill = FALSE,
  width = NULL,
  container = NULL
)

as.card_item(x)

is.card_item(x)
```

Arguments

`...`	Unnamed arguments can be any valid child of an htmltools tag. Named arguments become HTML attributes on returned UI element.
`fillable`	Whether or not the card item should be a fillable (i.e. flexbox) container.
`min_height, max_height, max_height_full_screen`	Any valid CSS length unit.
`height`	Any valid CSS unit (e.g., `height="200px"`). Doesn't apply when a card is made `full_screen` (in this case, consider setting a `height` in `card_body()`).
`padding`	Padding to use for the body. This can be a numeric vector (which will be interpreted as pixels) or a character vector with valid CSS lengths. The length can be between one and four. If one, then that value will be used for all four sides. If two, then the first value will be used for the top and bottom, while the second value will be used for left and right. If three, then the first will be used for top, the second will be left and right, and the third will be bottom. If four, then the values will be interpreted as top, right, bottom, and left respectively.
`gap`	A CSS length unit defining the `gap` (i.e., spacing) between elements provided to `...`. This argument is only applicable when `fillable = TRUE`
`fill`	Whether to allow this element to grow/shrink to fit its `card()` container.
`class`	Additional CSS classes for the returned UI element.
`container`	A function to generate an HTML element to contain the image. Setting this value to `card_body()` places the image inside the card body area, otherwise the image will extend to the edges of the card.

file	A file path pointing an image. Local images (i.e. not a URI starting with https:// or similar) will be base64 encoded and provided to the src attribute of the <img>. Alternatively, you may directly set the image src, in which case file is ignored.
alt	Alternate text for the image, used by screen readers and assistive devices. Provide alt text with a description of the image for any images with important content. If alt text is not provided, the image will be considered to be decorative and will not be read or announced by screen readers. For more information, the Web Accessibility Initiative (WAI) has a helpful tutorial on alt text.
src	The src attribute of the <img> tag. If provided, file is ignored entirely. Use src to provide a relative path to a file that will be served by the Shiny application and should not be base64 encoded.
href	An optional URL to link to when a user clicks on the image.
border_radius	Which side of the image should have rounded corners, useful when card_image() is used as an image cap at the top or bottom of the card. The value of border_radius determines whether the card-img-top ("top"), card-img-bottom ("bottom"), or card-img ("all") Bootstrap classes are applied to the card. The default "auto" value will use the image's position within a card() to automatically choose the appropriate class.
mime_type	The mime type of the file when it is base64 encoded. This argument is available for advanced use cases where mime::guess_type() is unable to automatically determine the file type.
width	Any valid CSS unit (e.g., width="100%").
x	an object to test (or coerce to) a card item.

Value

An htmltools::div() tag.

Functions

- card_body(): A general container for the "main content" of a card().
- card_title(): Similar to card_header() but without the border and background color.
- card_header(): A header (with border and background color) for the card(). Typically appears before a card_body().
- card_footer(): A header (with border and background color) for the card(). Typically appears after a card_body().
- card_image(): Include static images in a card, for example as an image cap at the top or bottom of the card.
- as.card_item(): Mark an object as a card item. This will prevent the card() from putting the object inside a wrapper (i.e., a card_body()).

See Also

`card()` creates a card component.

`navset_card_tab()`, `navset_card_pill()` and `navset_card_underline()` create cards with tabbed navigation.

`layout_columns()` and `layout_column_wrap()` help position multiple cards into columns and rows and can also be used inside a card.

`layout_sidebar()` adds a sidebar to a card when nested in `card()` or `card_body()`.

`font_face` *Helpers for importing web fonts*

Description

`font_google()`, `font_link()`, and `font_face()` are all re-exported from the **sass** package (see `sass::font_face()` for details). For a quick example of how to use these functions with `bs_theme()`, see the examples section below.

Examples

```
# If you have an internet connection, running the following code
# will download, cache, and import the relevant Google Font files
# for local use
theme <- bs_theme(
  base_font = font_google("Fira Sans"),
  code_font = font_google("Fira Code"),
  heading_font = font_google("Fredoka One")
)
if (interactive()) {
  bs_theme_preview(theme)
}

# Three different yet equivalent ways of importing a remotely-hosted Google Font
a <- font_google("Crimson Pro", wght = "200..900", local = FALSE)
b <- font_link(
  "Crimson Pro",
  href = "https://fonts.googleapis.com/css2?family=Crimson+Pro:wght@200..900"
)
url <- "https://fonts.gstatic.com/s/crimsonpro/v13/q5uDsoa5M_tv7IihmnkabARboYF6CsKj.woff2"
c <- font_face(
  family = "Crimson Pro",
  style = "normal",
  weight = "200 900",
  src = paste0("url(", url, ") format('woff2')")
)
theme <- bs_theme(base_font = c)
if (interactive()) {
  bs_theme_preview(theme)
}
```

input_dark_mode *Dark mode input control*

Description

[Experimental]

Creates a button that toggles between dark and light modes, specifically for toggling between light and dark Bootstrap color modes – a new feature added in Bootstrap 5.3.

Usage

```
input_dark_mode(..., id = NULL, mode = NULL)

toggle_dark_mode(mode = NULL, ..., session = get_current_session())
```

Arguments

`...`	Additional attributes to be passed to the input control UI, such as `class`, `style`, etc. In `toggle_dark_mode()`, the `...` are included for future extensibility and are currently ignored.
`id`	An optional input id, required to reactively read the current color mode.
`mode`	The initial mode of the dark mode switch. By default or when set to `NULL`, the user's system settings for preferred color scheme will be used. Otherwise, set to `"light"` or `"dark"` to force a particular initial mode.
`session`	A Shiny session object (the default should almost always be used).

Value

Returns a UI element for a dark mode switch input control. The server value received for the input corresponding to `id` will be a string value with the current color mode (`"light"` or `"dark"`).

Functions

- `input_dark_mode()`: Create a dark mode switch input control
- `toggle_dark_mode()`: Programmatically toggle or set the current light or dark color mode.

See Also

Other input controls: `input_switch()`

input_switch *Switch input control*

Description

[Experimental]

Create an on-off style switch control for specifying logical values.

Usage

```
input_switch(id, label, value = FALSE, width = NULL)

update_switch(id, label = NULL, value = NULL, session = get_current_session())

toggle_switch(id, value = NULL, session = get_current_session())
```

Arguments

id	An input id.
label	A label for the switch.
value	Whether or not the switch should be checked by default.
width	Any valid CSS unit (e.g., width="200px").
session	a shiny session object (the default should almost always be used).

Value

Returns a UI element for a switch input control. The server value received for the input corresponding to id will be a logical (TRUE/FALSE) value.

See Also

Other input controls: input_dark_mode()

Examples

```
library(shiny)
library(bslib)

ui <- page_fixed(
  title = "Keyboard Settings",
  h2("Keyboard Settings"),
  input_switch("auto_capitalization", "Auto-Capitalization", TRUE),
  input_switch("auto_correction", "Auto-Correction", TRUE),
  input_switch("check_spelling", "Check Spelling", TRUE),
  input_switch("smart_punctuation", "Smart Punctuation"),
  h2("Preview"),
  verbatimTextOutput("preview")
```

```
)

server <- function(input, output, session) {
  output$preview <- renderPrint({
    list(
      auto_capitalization = input$auto_capitalization,
      auto_correction = input$auto_correction,
      check_spelling = input$check_spelling,
      smart_punctuation = input$smart_punctuation
    )
  })
}

shinyApp(ui, server)
```

`input_task_button` *Button for launching longer-running operations*

Description

`input_task_button` is a button that can be used in conjuction with `shiny::bindEvent()` (or the older `shiny::eventReactive()` and `shiny::observeEvent()` functions) to trigger actions or recomputation.

It is similar to `shiny::actionButton()`, except it prevents the user from clicking when its operation is already in progress.

Upon click, it automatically displays a customizable progress message and disables itself; and after the server has dealt with whatever reactivity is triggered from the click, the button automatically reverts to its original appearance and re-enables itself.

Usage

```
input_task_button(
  id,
  label,
  ...,
  icon = NULL,
  label_busy = "Processing...",
  icon_busy = rlang::missing_arg(),
  type = "primary",
  auto_reset = TRUE
)

update_task_button(id, ..., state = NULL, session = get_current_session())
```

Arguments

id	The input slot that will be used to access the value.
label	The label of the button while it is in ready (clickable) state; usually a string.
...	Named arguments become attributes to include on the <button> element.
icon	An optional icon to display next to the label while the button is in ready state. See fontawesome::fa_i().
label_busy	The label of the button while it is busy.
icon_busy	The icon to display while the button is busy. By default, fontawesome::fa_i("refresh", class = "fa-spin", "aria-hidden" = "true") is used, which displays a spinning "chasing arrows" icon. You can create spinning icons out of other Font Awesome icons by using the same expression, but replacing "refresh" with a different icon name. See fontawesome::fa_i().
type	One of the Bootstrap theme colors ("primary", "default", "secondary", "success", "danger", "warning", "info", "light", "dark"), or NULL to leave off the Bootstrap-specific button CSS classes altogether.
auto_reset	If TRUE (the default), automatically put the button back in "ready" state after its click is handled by the server.
state	If "busy", put the button into busy/disabled state. If "ready", put the button into ready/enabled state.
session	The session object; using the default is recommended.

Manual button reset

In some advanced use cases, it may be necessary to keep a task button in its busy state even after the normal reactive processing has completed. Calling update_task_button(id, state = "busy") from the server will opt out of any currently pending reset for a specific task button. After doing so, the button can be re-enabled by calling update_task_button(id, state = "ready") after each click's work is complete.

You can also pass an explicit auto_reset = FALSE to input_task_button(), which means that button will *never* be automatically re-enabled and will require update_task_button(id, state = "ready") to be called each time.

Note that, as a general rule, Shiny's update family of functions do not take effect at the instant that they are called, but are held until the end of the current reactive cycle. So if you have many different reactive calculations and outputs, you don't have to be too careful about when you call update_task_button(id, state = "ready"), as the button on the client will not actually re-enable until the same moment that all of the updated outputs simultaneously sent to the client.

Server value

An integer of class "shinyActionButtonValue". This class differs from ordinary integers in that a value of 0 is considered "falsy". This implies two things:

- Event handlers (e.g., shiny::observeEvent(), shiny::eventReactive()) won't execute on initial load.
- Input validation (e.g., shiny::req(), shiny::need()) will fail on initial load.

See Also

bind_task_button()

Examples

```
library(shiny)
library(bslib)

ui <- page_sidebar(
  sidebar = sidebar(
    open = "always",
    input_task_button("resample", "Resample"),
  ),
  verbatimTextOutput("summary")
)

server <- function(input, output, session) {
  sample <- eventReactive(input$resample, ignoreNULL=FALSE, {
    Sys.sleep(2)  # Make this artificially slow
    rnorm(100)
  })

  output$summary <- renderPrint({
    summary(sample())
  })
}

shinyApp(ui, server)
```

---

layout_columns *Responsive 12-column grid layouts*

Description

Create responsive, column-based grid layouts, based on a 12-column grid.

Usage

```
layout_columns(
  ...,
  col_widths = NA,
  row_heights = NULL,
  fill = TRUE,
  fillable = TRUE,
  gap = NULL,
  class = NULL,
  height = NULL,
  min_height = NULL,
```

```
  max_height = NULL
)
```

Arguments

`...`	Unnamed arguments should be UI elements (e.g., `card()`). Named arguments become attributes on the containing htmltools::tag element.
`col_widths`	One of the following: • `NA` (the default): Automatically determines a sensible number of columns based on the number of children. • A numeric vector of integers between 1 and 12, where each element represents the number of columns for the relevant UI element. Elements that happen to go beyond 12 columns wrap onto the next row. For example, `col_widths = c(4, 8, 12)` allocates 4 columns to the first element, 8 columns to the second element, and 12 columns to the third element (which wraps to the next row). Negative values are also allowed, and are treated as empty columns. For example, `col_widths = c(-2, 8, -2)` would allocate 8 columns to an element (with 2 empty columns on either side). • A `breakpoints()` object, where each breakpoint may be either of the above.
`row_heights`	One of the following: • A numeric vector, where each value represents the fractional unit (`fr`) height of the relevant row. If there are more rows than values provided, the pattern will repeat. For example, `row_heights = c(1, 2)` allows even rows to take up twice as much space as odd rows. • A list of numeric and CSS length units, where each value represents the height of the relevant row. If more rows are needed than values provided, the pattern will repeat. For example, `row_heights = list("auto", 1)` allows the height of odd rows to be driven my it's contents and even rows to be `1fr`. • A character vector/string of CSS length units. In this case, the value is supplied directly to `grid-auto-rows`. • A `breakpoints()` object, where each breakpoint may be either of the above.
`fill`	Whether or not to allow the layout to grow/shrink to fit a fillable container with an opinionated height (e.g., `page_fillable()`).
`fillable`	Whether or not each element is wrapped in a fillable container.
`gap`	A CSS length unit defining the `gap` (i.e., spacing) between elements provided to `...`. This argument is only applicable when `fillable = TRUE`
`class`	Additional CSS classes for the returned UI element.
`height`	Any valid CSS unit (e.g., `height="200px"`). Doesn't apply when a card is made `full_screen` (in this case, consider setting a `height` in `card_body()`).
`min_height, max_height`	The maximum or minimum height of the layout container. Can be any valid CSS unit (e.g., `max_height="200px"`). Use these arguments in filling layouts to ensure that a layout container doesn't shrink below `min_height` or grow beyond `max_height`.

References

Column-based layouts on the bslib website.

See Also

`breakpoints()` for more information on specifying column widths at responsive breakpoints.

Other Column layouts: `layout_column_wrap()`

Examples

```
x <- card("A simple card")

page_fillable(
  layout_columns(x, x, x, x)
)

# Or add a list of items, spliced with rlang's `!!!` operator
page_fillable(
 layout_columns(!!!list(x, x, x))
)

page_fillable(
  layout_columns(
    col_widths = c(6, 6, 12),
    x, x, x
  )
)

page_fillable(
  layout_columns(
    col_widths = c(6, 6, -2, 8),
    row_heights = c(1, 3),
    x, x, x
  )
)

page_fillable(
  fillable_mobile = TRUE,
  layout_columns(
    col_widths = breakpoints(
      sm = c(12, 12, 12),
      md = c(6, 6, 12),
      lg = c(4, 4, 4)
    ),
    x, x, x
  )
)
```

layout_column_wrap *Column-first uniform grid layouts*

Description

[Experimental]

Wraps a 1d sequence of UI elements into a 2d grid. The number of columns (and rows) in the grid dependent on the column `width` as well as the size of the display. For more explanation and illustrative examples, see the *References* section below.

Usage

```
layout_column_wrap(
  ...,
  width = "200px",
  fixed_width = FALSE,
  heights_equal = c("all", "row"),
  fill = TRUE,
  fillable = TRUE,
  height = NULL,
  height_mobile = NULL,
  min_height = NULL,
  max_height = NULL,
  gap = NULL,
  class = NULL
)
```

Arguments

`...`	Unnamed arguments should be UI elements (e.g., `card()`). Named arguments become attributes on the containing htmltools::tag element.
`width`	The desired width of each card, which can be any of the following: • A (unit-less) number between 0 and 1. – This should be specified as `1/num`, where `num` represents the number of desired columns. • A CSS length unit – Either the minimum (when `fixed_width=FALSE`) or fixed width (`fixed_width=TRUE`). • `NULL` – Allows power users to set the `grid-template-columns` CSS property manually, either via a `style` attribute or a CSS stylesheet.
`fixed_width`	When `width` is greater than 1 or is a CSS length unit, e.g. `"200px"`, `fixed_width` indicates whether that `width` value represents the absolute size of each column (`fixed_width=TRUE`) or the minimum size of a column (`fixed_width=FALSE`). When `fixed_width=FALSE`, new columns are added to a row when `width` space is available and columns will never exceed the container or viewport size. When

fixed_width=TRUE, all columns will be exactly width wide, which may result in columns overflowing the parent container.

heights_equal
: If "all" (the default), every card in every row of the grid will have the same height. If "row", then every card in *each* row of the grid will have the same height, but heights may vary between rows.

fill
: Whether or not to allow the layout to grow/shrink to fit a fillable container with an opinionated height (e.g., page_fillable()).

fillable
: Whether or not each element is wrapped in a fillable container.

height
: Any valid CSS unit (e.g., height="200px"). Doesn't apply when a card is made full_screen (in this case, consider setting a height in card_body()).

height_mobile
: Any valid CSS unit to use for the height when on mobile devices (or narrow windows).

min_height, max_height
: The maximum or minimum height of the layout container. Can be any valid CSS unit (e.g., max_height="200px"). Use these arguments in filling layouts to ensure that a layout container doesn't shrink below min_height or grow beyond max_height.

gap
: A CSS length unit defining the gap (i.e., spacing) between elements provided to .... This argument is only applicable when fillable = TRUE

class
: Additional CSS classes for the returned UI element.

References

The bslib website features layout_column_wrap() in two places:

- Column-based layouts
- Cards: Multiple cards

See Also

Other Column layouts: layout_columns()

Examples

```
x <- card("A simple card")

# Always has 2 columns (on non-mobile)
layout_column_wrap(width = 1/2, x, x, x)

# Automatically lays out three cards into columns
# such that each column is at least 200px wide:
layout_column_wrap(x, x, x)

# To use larger column widths by default, set `width`.
# This example has 3 columns when the screen is at least 900px wide:
layout_column_wrap(width = "300px", x, x, x)

# You can add a list of items, spliced with rlang's `!!!` operator
```

```
layout_column_wrap(!!!list(x, x, x))
```

---

nav-items *Navigation items*

Description

Create nav item(s) for use inside nav containers (e.g., navset_tab(), navset_bar(), etc).

Usage

```
nav_panel(title, ..., value = title, icon = NULL)

nav_panel_hidden(value, ..., icon = NULL)

nav_menu(title, ..., value = title, icon = NULL, align = c("left", "right"))

nav_item(...)

nav_spacer()
```

Arguments

title	A title to display. Can be a character string or UI elements (i.e., htmltools::tags).
...	Depends on the function: • For nav_panel() and nav_panel_hidden(): UI elements (i.e., htmltools::tags) to display when the item is active. • For nav_menu(): a collection of nav items (e.g., nav_panel(), nav_item()). • For nav_item(): UI elements (i.e., htmltools::tags) to place directly in the navigation panel (e.g., search forms, links to external content, etc).
value	A character string to assign to the nav item. This value may be supplied to the relevant container's selected argument in order to show particular nav item's content immediately on page load. This value is also useful for programmatically updating the selected content via nav_select(), nav_hide(), etc (updating selected tabs this way is often useful for showing/hiding panels of content via other UI controls like shiny::radioButtons() – in this scenario, consider using nav_panel_hidden() with navset_hidden()).
icon	Optional icon to appear next to the nav item's title.
align	horizontal alignment of the dropdown menu relative to dropdown toggle.

Value

A nav item that may be passed to a nav container (e.g. navset_tab()).

Functions

- `nav_panel()`: Content to display when the given item is selected.
- `nav_panel_hidden()`: Create nav content for use inside `navset_hidden()` (for creating custom navigation controls via `navs_select()`),
- `nav_menu()`: Create a menu of nav items.
- `nav_item()`: Place arbitrary content in the navigation panel (e.g., search forms, links to external content, etc.)
- `nav_spacer()`: Adding spacing between nav items.

See Also

navset create the navigation container holding the nav panels.

`nav_menu()`, `nav_item()`, `nav_spacer()` create menus, items, or space in the navset control area.

`nav_insert()`, `nav_remove()` programmatically add or remove nav panels.

`nav_select()`, `nav_show()`, `nav_hide()` change the state of a `nav_panel()` in a navset.

Other Panel container functions: `nav_select()`, `navset`

---

navset *Navigation containers*

Description

Render a collection of `nav_panel()` items into a container.

Usage

```
navset_tab(..., id = NULL, selected = NULL, header = NULL, footer = NULL)

navset_pill(..., id = NULL, selected = NULL, header = NULL, footer = NULL)

navset_underline(..., id = NULL, selected = NULL, header = NULL, footer = NULL)

navset_pill_list(
  ...,
  id = NULL,
  selected = NULL,
  header = NULL,
  footer = NULL,
  well = TRUE,
  fluid = TRUE,
  widths = c(4, 8)
)

navset_hidden(..., id = NULL, selected = NULL, header = NULL, footer = NULL)
```

```
navset_bar(
  ...,
  title = NULL,
  id = NULL,
  selected = NULL,
  sidebar = NULL,
  fillable = TRUE,
  gap = NULL,
  padding = NULL,
  position = c("static-top", "fixed-top", "fixed-bottom"),
  header = NULL,
  footer = NULL,
  bg = NULL,
  inverse = "auto",
  collapsible = TRUE,
  fluid = TRUE
)

navset_card_tab(
  ...,
  id = NULL,
  selected = NULL,
  title = NULL,
  sidebar = NULL,
  header = NULL,
  footer = NULL,
  height = NULL,
  full_screen = FALSE,
  wrapper = card_body
)

navset_card_pill(
  ...,
  id = NULL,
  selected = NULL,
  title = NULL,
  sidebar = NULL,
  header = NULL,
  footer = NULL,
  height = NULL,
  placement = c("above", "below"),
  full_screen = FALSE,
  wrapper = card_body
)

navset_card_underline(
  ...,
```

```
  id = NULL,
  selected = NULL,
  title = NULL,
  sidebar = NULL,
  header = NULL,
  footer = NULL,
  height = NULL,
  full_screen = FALSE,
  wrapper = card_body
)
```

Arguments

...	a collection of nav_panel() items.
id	a character string used for dynamically updating the container (see nav_select()).
selected	a character string matching the value of a particular nav_panel() item to selected by default.
header	UI element(s) (htmltools::tags) to display *above* the nav content.
footer	UI element(s) (htmltools::tags) to display *below* the nav content.
well	TRUE to place a well (gray rounded rectangle) around the navigation list.
fluid	TRUE to use fluid layout; FALSE to use fixed layout.
widths	Column widths of the navigation list and tabset content areas respectively.
title	A (left-aligned) title to place in the card header/footer. If provided, other nav items are automatically right aligned.
sidebar	A sidebar() component to display on every nav_panel() page.
fillable	Whether or not to allow fill items to grow/shrink to fit the browser window. If TRUE, all nav_panel() pages are fillable. A character vector, matching the value of nav_panel()s to be filled, may also be provided. Note that, if a sidebar is provided, fillable makes the main content portion fillable.
gap	A CSS length unit defining the gap (i.e., spacing) between elements provided to ....
padding	Padding to use for the body. This can be a numeric vector (which will be interpreted as pixels) or a character vector with valid CSS lengths. The length can be between one and four. If one, then that value will be used for all four sides. If two, then the first value will be used for the top and bottom, while the second value will be used for left and right. If three, then the first will be used for top, the second will be left and right, and the third will be bottom. If four, then the values will be interpreted as top, right, bottom, and left respectively.
position	Determines whether the navbar should be displayed at the top of the page with normal scrolling behavior ("static-top"), pinned at the top ("fixed-top"), or pinned at the bottom ("fixed-bottom"). Note that using "fixed-top" or "fixed-bottom" will cause the navbar to overlay your body content, unless you add padding, e.g.: tags$style(type="text/css", "body {padding-top: 70px;}")
bg	a CSS color to use for the navbar's background color.

inverse	Either TRUE for a light text color or FALSE for a dark text color. If "auto" (the default), the best contrast to bg is chosen.
collapsible	TRUE to automatically collapse the navigation elements into an expandable menu on mobile devices or narrow window widths.
height	Any valid CSS unit (e.g., height="200px"). Doesn't apply when a card is made full_screen (in this case, consider setting a height in card_body()).
full_screen	If TRUE, an icon will appear when hovering over the card body. Clicking the icon expands the card to fit viewport size.
wrapper	A function (which returns a UI element) to call on unnamed arguments in ... which are not already card item(s) (like card_header(), card_body(), etc.). Note that non-card items are grouped together into one wrapper call (e.g. given card("a", "b", card_body("c"), "d"), wrapper would be called twice, once with "a" and "b" and once with "d").
placement	placement of the nav items relative to the content.

Examples

A basic example:

This first example creates a simple tabbed navigation container with two tabs. The tab name and the content of each tab are specified in the nav_panel() calls and navset_tab() creates the tabbed navigation around these two tabs.

```
library(htmltools)

navset_tab(
  nav_panel(title = "One", p("First tab content.")),
  nav_panel(title = "Two", p("Second tab content."))
)
```

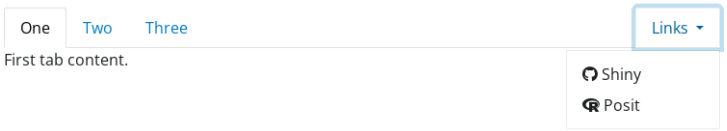
In the rest of the examples, we'll include links among the tabs (or pills) in the navigation controls.

```
link_shiny <- tags$a(shiny::icon("github"), "Shiny", href = "https://github.com/rstudio/shiny", targ
link_posit <- tags$a(shiny::icon("r-project"), "Posit", href = "https://posit.co", target = "_blank")
```

navset_tab():

You can fully customize the controls in the navigation component. In this example, we've added a direct link to the Shiny repository using nav_item(). We've also included a dropdown menu using nav_menu() containing an option to select a third tab panel and another direct link to Posit's website. Finally, we've separated the primary tabs on the left from the direct link and dropdown menu on the right using nav_spacer().

```
navset_tab(
  nav_panel(title = "One", p("First tab content.")),
  nav_panel(title = "Two", p("Second tab content.")),
  nav_panel(title = "Three", p("Third tab content")),
  nav_spacer(),
  nav_menu(
    title = "Links",
    nav_item(link_shiny),
    nav_item(link_posit)
  )
)
```



`navset_pill()`:

`navset_pill()` creates a navigation container that behaves exactly like `navset_tab()`, but the tab toggles are *pills* or button-shaped.

```
navset_pill(
  nav_panel(title = "One", p("First tab content.")),
  nav_panel(title = "Two", p("Second tab content.")),
  nav_panel(title = "Three", p("Third tab content")),
  nav_spacer(),
  nav_menu(
    title = "Links",
    nav_item(link_shiny),
    nav_item(link_posit)
  )
)
```

`navset_underline()`:

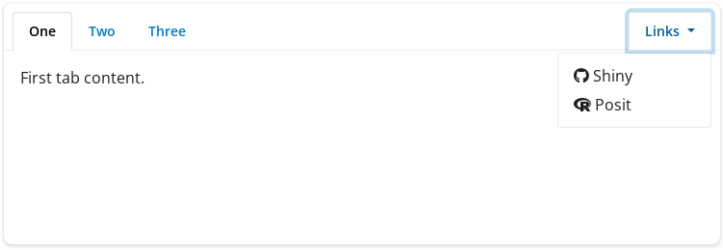
`navset_underline()` creates a navigation container that behaves exactly like `navset_tab()` and `navset_pill()`, but the active/focused navigation links are styled with an underline.

```
navset_underline(
  nav_panel(title = "One", p("First tab content.")),
  nav_panel(title = "Two", p("Second tab content.")),
  nav_panel(title = "Three", p("Third tab content")),
  nav_spacer(),
  nav_menu(
    title = "Links",
    nav_item(link_shiny),
    nav_item(link_posit)
  )
)
```

`navset_card_tab()`:

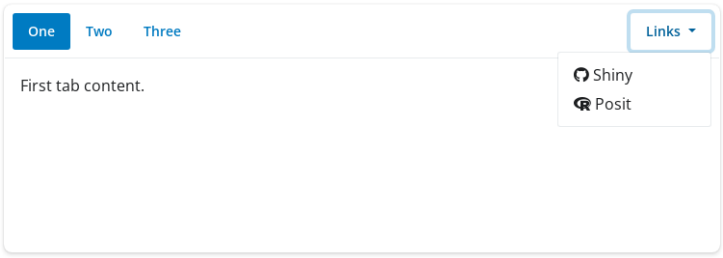
The tabbed navigation container can also be used in a `card()` component thanks to `navset_card_tab()`. Learn more about this approach in the article about Cards, including how to add a shared sidebar to all tabs in the card using the `sidebar` argument of `navset_card_tab()`.

```
navset_card_tab(
  nav_panel(title = "One", p("First tab content.")),
  nav_panel(title = "Two", p("Second tab content.")),
  nav_panel(title = "Three", p("Third tab content")),
  nav_spacer(),
  nav_menu(
    title = "Links",
    nav_item(link_shiny),
    nav_item(link_posit)
  )
)
```



`navset_card_pill()`:
Similar to `navset_pill()`, `navset_card_pill()` provides a pill-shaped variant to `navset_card_tab()`. You can use the `placement` argument to position the navbar `"above"` or `"below"` the card body.

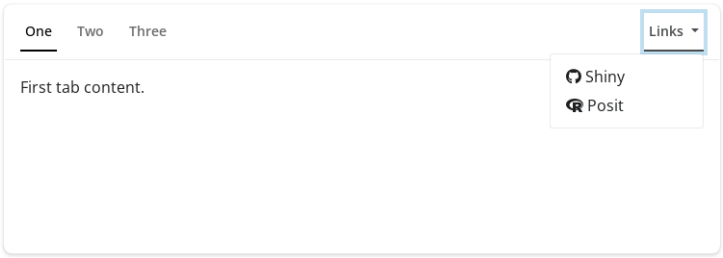
```
navset_card_pill(
  placement = "above",
  nav_panel(title = "One", p("First tab content.")),
  nav_panel(title = "Two", p("Second tab content.")),
  nav_panel(title = "Three", p("Third tab content")),
  nav_spacer(),
  nav_menu(
    title = "Links",
    nav_item(link_shiny),
    nav_item(link_posit)
  )
)
```



`navset_card_underline()`:
`navset_card_underline()` provides a card-based variant of `navset_underline()`.

```
navset_card_underline(
  nav_panel(title = "One", p("First tab content.")),
  nav_panel(title = "Two", p("Second tab content.")),
  nav_panel(title = "Three", p("Third tab content")),
  nav_spacer(),
  nav_menu(
    title = "Links",
    nav_item(link_shiny),
    nav_item(link_posit)
```

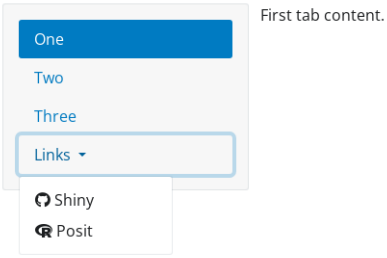
```
  )
)
```



`navset_pill_list()`:

Furthermore, `navset_pill_list()` creates a vertical list of navigation controls adjacent to, rather than on top of, the tab content panels.

```
navset_pill_list(
  nav_panel(title = "One", p("First tab content.")),
  nav_panel(title = "Two", p("Second tab content.")),
  nav_panel(title = "Three", p("Third tab content")),
  nav_spacer(),
  nav_menu(
    title = "Links",
    nav_item(link_shiny),
    nav_item(link_posit)
  )
)
```



`page_navbar()`:

Finally, `page_navbar()` provides full-page navigation container similar to `navset_underline()` but where each `nav_panel()` is treated as a full page of content and the navigation controls appear in a top-level navigation bar. Note also that the underline styling can be removed via the `underline` argument.

```
page_navbar(
  title = "My App",
  bg = "#0062cc",
  underline = TRUE,
```

```
  nav_panel(title = "One", p("First tab content.")),
  nav_panel(title = "Two", p("Second tab content.")),
  nav_panel(title = "Three", p("Third tab content")),
  nav_spacer(),
  nav_menu(
    title = "Links",
    align = "right",
    nav_item(link_shiny),
    nav_item(link_posit)
  )
)
```

See Also

`nav_panel()`, `nav_panel_hidden()` create panels of content.

`nav_menu()`, `nav_item()`, `nav_spacer()` create menus, items, or space in the navset control area.

`nav_insert()`, `nav_remove()` programmatically add or remove nav panels.

`nav_select()`, `nav_show()`, `nav_hide()` change the state of a `nav_panel()` in a navset.

Other Panel container functions: `nav-items`, `nav_select()`

---

nav_select *Dynamically update nav containers*

Description

Functions for dynamically updating nav containers (e.g., select, insert, and remove nav items). These functions require an `id` on the nav container to be specified and must be called within an active Shiny session.

Usage

```
nav_select(id, selected = NULL, session = get_current_session())

nav_insert(
  id,
  nav,
  target = NULL,
  position = c("after", "before"),
```

```
  select = FALSE,
  session = get_current_session()
)

nav_remove(id, target, session = get_current_session())

nav_show(id, target, select = FALSE, session = get_current_session())

nav_hide(id, target, session = get_current_session())
```

Arguments

id	a character string used to identify the nav container.
selected	a character string used to identify a particular nav_panel() item.
session	a shiny session object (the default should almost always be used).
nav	a nav_panel() item.
target	The value of an existing nav_panel() item, next to which tab will be added. If removing: the value of the nav_panel() item that you want to remove.
position	Should nav be added before or after the target?
select	Should nav be selected upon being inserted?

See Also

Navset functions create the navigation container holding the nav panels.

nav_panel(), nav_panel_hidden() create panels of content.

nav_menu(), nav_item(), nav_spacer() create menus, items, or space in the navset control area.

Other Panel container functions: nav-items, navset

Examples

```
can_browse <- function() rlang::is_interactive() && require("shiny")

# Selecting a tab
if (can_browse()) {
  shinyApp(
    page_fluid(
      radioButtons("item", "Choose", c("A", "B")),
      navset_hidden(
        id = "container",
        nav_panel_hidden("A", "a"),
        nav_panel_hidden("B", "b")
      )
    ),
    function(input, output) {
      observe(nav_select("container", input$item))
    }
  )
}
```

```
# Inserting and removing
if (can_browse()) {
  ui <- page_fluid(
    actionButton("add", "Add 'Dynamic' tab"),
    actionButton("remove", "Remove 'Foo' tab"),
    navset_tab(
      id = "tabs",
      nav_panel("Hello", "hello"),
      nav_panel("Foo", "foo"),
      nav_panel("Bar", "bar tab")
    )
  )
  server <- function(input, output) {
    observeEvent(input$add, {
      nav_insert(
        "tabs", target = "Bar", select = TRUE,
        nav_panel("Dynamic", "Dynamically added content")
      )
    })
    observeEvent(input$remove, {
      nav_remove("tabs", target = "Foo")
    })
  }
  shinyApp(ui, server)
}
```

---

page *Modern Bootstrap page layouts*

Description

These functions are small wrappers around shiny's page constructors (i.e., `shiny::fluidPage()`, `shiny::navbarPage()`, etc) that differ in two ways:

- The `theme` parameter defaults bslib's recommended version of Bootstrap (for new projects).
- The return value is rendered as an static HTML page when printed interactively at the console.

Usage

```
page(..., title = NULL, theme = bs_theme(), lang = NULL)

page_fluid(..., title = NULL, theme = bs_theme(), lang = NULL)

page_fixed(..., title = NULL, theme = bs_theme(), lang = NULL)
```

Arguments

...	UI elements for the page. Named arguments become HTML attributes.
title	The browser window title (defaults to the host URL of the page)
theme	A bs_theme() object.
lang	ISO 639-1 language code for the HTML page, such as "en" or "ko". This will be used as the lang in the <html> tag, as in <html lang="en">. The default (NULL) results in an empty string.

Functions

- page(): A **bslib** wrapper for shiny::bootstrapPage(), a basic Boostrap page where the content is added directly to the page body.
- page_fluid(): A **bslib** wrapper for shiny::fluidPage(), a fluid Bootstrap-based page layout that extends to the full viewport width.
- page_fixed(): A **bslib** wrapper for shiny::fixedPage(), a fixed Bootstrap-based page layout where the page content container is centered horizontally and its width is constrained.

See Also

Dashboard-style pages: page_sidebar(), page_navbar(), page_fillable().

---

page_fillable *A screen-filling page layout*

Description

[Experimental]

A Bootstrap-based page layout whose contents fill the full height and width of the browser window.

Usage

```
page_fillable(
  ...,
  padding = NULL,
  gap = NULL,
  fillable_mobile = FALSE,
  title = NULL,
  theme = bs_theme(),
  lang = NULL
)
```

Arguments

...	UI elements for the page. Named arguments become HTML attributes.
padding	Padding to use for the body. This can be a numeric vector (which will be interpreted as pixels) or a character vector with valid CSS lengths. The length can be between one and four. If one, then that value will be used for all four sides. If two, then the first value will be used for the top and bottom, while the second value will be used for left and right. If three, then the first will be used for top, the second will be left and right, and the third will be bottom. If four, then the values will be interpreted as top, right, bottom, and left respectively.
gap	A CSS length unit defining the gap (i.e., spacing) between elements provided to ....
fillable_mobile	Whether or not the page should fill the viewport's height on mobile devices (i.e., narrow windows).
title	The browser window title (defaults to the host URL of the page)
theme	A bs_theme() object.
lang	ISO 639-1 language code for the HTML page, such as "en" or "ko". This will be used as the lang in the <html> tag, as in <html lang="en">. The default (NULL) results in an empty string.

References

- Filling Layouts on the bslib website.
- Getting Started with Dashboards on the bslib website.

See Also

layout_columns() and layout_column_wrap() for laying out content into rows and columns.

layout_sidebar() for 'floating' sidebar layouts.

accordion() for grouping related input controls in the sidebar.

card() for wrapping outputs in the 'main' content area.

value_box() for highlighting values.

Other Dashboard page layouts: page_navbar(), page_sidebar()

Examples

```
library(shiny)
library(ggplot2)

ui <- page_fillable(
  h1("Example", code("mtcars"), "dashboard"),
  layout_columns(
    card(
      full_screen = TRUE,
      card_header("Number of forward gears"),
```

```
      plotOutput("gear")
    ),
    card(
      full_screen = TRUE,
      card_header("Number of carburetors"),
      plotOutput("carb")
    )
  ),
  card(
    full_screen = TRUE,
    card_header("Weight vs. Quarter Mile Time"),
    layout_sidebar(
      sidebar = sidebar(
        varSelectInput("var_x", "Compare to qsec:", mtcars[-7], "wt"),
        varSelectInput("color", "Color by:", mtcars[-7], "cyl"),
        position = "right"
      ),
      plotOutput("var_vs_qsec")
    )
  )
)

server <- function(input, output) {
  for (var in c("cyl", "vs", "am", "gear", "carb")) {
    mtcars[[var]] <- as.factor(mtcars[[var]])
  }

  output$gear <- renderPlot({
    ggplot(mtcars, aes(gear)) + geom_bar()
  })

  output$carb <- renderPlot({
    ggplot(mtcars, aes(carb)) + geom_bar()
  })

  output$var_vs_qsec <- renderPlot({
    req(input$var_x, input$color)

    ggplot(mtcars) +
      aes(y = qsec, x = !!input$var_x, color = !!input$color) +
      geom_point()
  })
}

shinyApp(ui, server)
```

---

page_navbar *Multi-page app with a top navigation bar*

Description

Create a page that contains a top level navigation bar that can be used to toggle a set of nav_panel() elements. Use this page layout to create the effect of a multi-page app, where your app's content is broken up into multiple "pages" that can be navigated to via the top navigation bar.

Usage

```
page_navbar(
  ...,
  title = NULL,
  id = NULL,
  selected = NULL,
  sidebar = NULL,
  fillable = TRUE,
  fillable_mobile = FALSE,
  gap = NULL,
  padding = NULL,
  position = c("static-top", "fixed-top", "fixed-bottom"),
  header = NULL,
  footer = NULL,
  bg = NULL,
  inverse = "auto",
  underline = TRUE,
  collapsible = TRUE,
  fluid = TRUE,
  theme = bs_theme(),
  window_title = NA,
  lang = NULL
)
```

Arguments

...	a collection of nav_panel() items.
title	A (left-aligned) title to place in the card header/footer. If provided, other nav items are automatically right aligned.
id	a character string used for dynamically updating the container (see nav_select()).
selected	a character string matching the value of a particular nav_panel() item to selected by default.
sidebar	A sidebar() component to display on every nav_panel() page.
fillable	Whether or not to allow fill items to grow/shrink to fit the browser window. If TRUE, all nav_panel() pages are fillable. A character vector, matching the value of nav_panel()s to be filled, may also be provided. Note that, if a sidebar is provided, fillable makes the main content portion fillable.
fillable_mobile	Whether or not fillable pages should fill the viewport's height on mobile devices (i.e., narrow windows).

gap	A CSS length unit defining the gap (i.e., spacing) between elements provided to ....
padding	Padding to use for the body. This can be a numeric vector (which will be interpreted as pixels) or a character vector with valid CSS lengths. The length can be between one and four. If one, then that value will be used for all four sides. If two, then the first value will be used for the top and bottom, while the second value will be used for left and right. If three, then the first will be used for top, the second will be left and right, and the third will be bottom. If four, then the values will be interpreted as top, right, bottom, and left respectively.
position	Determines whether the navbar should be displayed at the top of the page with normal scrolling behavior ("static-top"), pinned at the top ("fixed-top"), or pinned at the bottom ("fixed-bottom"). Note that using "fixed-top" or "fixed-bottom" will cause the navbar to overlay your body content, unless you add padding, e.g.: tags$style(type="text/css", "body {padding-top: 70px;}")
header	UI element(s) (htmltools::tags) to display *above* the nav content.
footer	UI element(s) (htmltools::tags) to display *below* the nav content.
bg	a CSS color to use for the navbar's background color.
inverse	Either TRUE for a light text color or FALSE for a dark text color. If "auto" (the default), the best contrast to bg is chosen.
underline	Whether or not to add underline styling to page links when active or focused.
collapsible	TRUE to automatically collapse the navigation elements into an expandable menu on mobile devices or narrow window widths.
fluid	TRUE to use fluid layout; FALSE to use fixed layout.
theme	A bs_theme() object.
window_title	the browser window title. The default value, NA, means to use any character strings that appear in title (if none are found, the host URL of the page is displayed by default).
lang	ISO 639-1 language code for the HTML page, such as "en" or "ko". This will be used as the lang in the <html> tag, as in <html lang="en">. The default (NULL) results in an empty string.

References

Getting Started with Dashboards on the bslib website.

See Also

nav_panel(), nav_menu(), and nav_item() for adding content sections and organizing or creating items in the navigation bar.

layout_columns() and layout_column_wrap() for laying out content into rows and columns.

card() for wrapping outputs in the 'main' content area.

value_box() for highlighting values.

accordion() for grouping related input controls in the sidebar.

Other Dashboard page layouts: page_fillable(), page_sidebar()

Examples

```
library(shiny)
library(bslib)

link_shiny <- tags$a(
  shiny::icon("github"), "Shiny",
  href = "https://github.com/rstudio/shiny",
  target = "_blank"
)
link_posit <- tags$a(
  shiny::icon("r-project"), "Posit",
  href = "https://posit.co",
  target = "_blank"
)

ui <- page_navbar(
  title = "My App",
  nav_panel(title = "One", p("First page content.")),
  nav_panel(title = "Two", p("Second page content.")),
  nav_panel("Three", p("Third page content.")),
  nav_spacer(),
  nav_menu(
    title = "Links",
    align = "right",
    nav_item(link_shiny),
    nav_item(link_posit)
  )
)

server <- function(...) { } # not used in this example

shinyApp(ui, server)
```

---

page_sidebar *A sidebar page (i.e., dashboard)*

Description

[Experimental]

Create a dashboard layout with a full-width header (`title`) and `sidebar()`.

Usage

```
page_sidebar(
  ...,
  sidebar = NULL,
  title = NULL,
  fillable = TRUE,
```

```
  fillable_mobile = FALSE,
  theme = bs_theme(),
  window_title = NA,
  lang = NULL
)
```

Arguments

...	UI elements to display in the 'main' content area (i.e., next to the sidebar). These arguments are passed to layout_sidebar(), which has more details.
sidebar	A sidebar() object.
title	A string, number, or htmltools::tag() child to display as the title (just above the sidebar).
fillable	Whether or not the main content area should be considered a fillable (i.e., flexbox) container.
fillable_mobile	Whether or not the page should fill the viewport's height on mobile devices (i.e., narrow windows).
theme	A bs_theme() object.
window_title	the browser window title. The default value, NA, means to use any character strings that appear in title (if none are found, the host URL of the page is displayed by default).
lang	ISO 639-1 language code for the HTML page, such as "en" or "ko". This will be used as the lang in the <html> tag, as in <html lang="en">. The default (NULL) results in an empty string.

References

Getting Started with Dashboards on the bslib website.

See Also

layout_columns() and layout_column_wrap() for laying out content into rows and columns.

accordion() for grouping related input controls in the sidebar.

card() for wrapping outputs in the 'main' content area.

value_box() for highlighting values.

Other Dashboard page layouts: page_fillable(), page_navbar()

Examples

```
library(shiny)
library(ggplot2)

ui <- page_sidebar(
  title = "Example dashboard",
  sidebar = sidebar(
```

```
    varSelectInput("var", "Select variable", mtcars)
  ),
  card(
    full_screen = TRUE,
    card_header("My plot"),
    plotOutput("p")
  )
)

server <- function(input, output) {
  output$p <- renderPlot({
    ggplot(mtcars) + geom_histogram(aes(!!input$var))
  })
}

shinyApp(ui, server)
```

---

popover *Add a popover to a UI element*

Description

[Experimental]

Display additional information when clicking on a UI element (typically a button).

Usage

```
popover(
  trigger,
  ...,
  title = NULL,
  id = NULL,
  placement = c("auto", "top", "right", "bottom", "left"),
  options = list()
)

toggle_popover(id, show = NULL, session = get_current_session())

update_popover(id, ..., title = NULL, session = get_current_session())
```

Arguments

trigger	The UI element to serve as the popover trigger (typically a shiny::actionButton() or similar). If trigger renders as multiple HTML elements (e.g., it's a tagList()), the last HTML element is used for the trigger. If the trigger should contain all of those elements, wrap the object in a htmltools::div() or htmltools::span().

...	UI elements for the popover's body. Character strings are automatically escaped unless marked as `htmltools::HTML()`.
title	A title (header) for the popover. To remove a header with `update_popover()`, provide a either an empty string or `character(0)`.
id	A character string. Required to re-actively respond to the visibility of the popover (via the `input[[id]]` value) and/or update the visibility/contents of the popover.
placement	The placement of the popover relative to its trigger.
options	A list of additional options.
show	Whether to show (`TRUE`) or hide (`FALSE`) the popover. The default (`NULL`) will show if currently hidden and hide if currently shown. Note that a popover will not be shown if the trigger is not visible (e.g., it's hidden behind a tab).
session	A Shiny session object (the default should almost always be used).

Functions

- `popover()`: Add a popover to a UI element
- `toggle_popover()`: Programmatically show/hide a popover.
- `update_popover()`: Update the contents of a popover.

Closing popovers

In addition to clicking the `close_button`, popovers can be closed by pressing the Esc/Space key when the popover (and/or its trigger) is focused.

Theming/Styling

Like other bslib components, popovers can be themed by supplying relevant theming variables to `bs_theme()`, which effects styling of every popover on the page. To style a *specific* popover differently from other popover, utilize the `customClass` option:

```
popover(
  "Trigger", "Popover message",
  options = list(customClass = "my-pop")
)
```

And then add relevant rules to `bs_theme()` via `bs_add_rules()`:

```
bs_theme() |> bs_add_rules(".my-pop { max-width: none; }")
```

Accessibility of Popover Triggers

Because the user needs to interact with the `trigger` element to see the popover, it's best practice to use an element that is typically accessible via keyboard interactions, like a button or a link. If you use a non-interactive element, like a `<span>` or text, bslib will automatically add the `tabindex="0"` attribute to the trigger element to make sure that users can reach the element with the keyboard. This means that in most cases you can use any element you want as the trigger.

One place where it's important to consider the accessibility of the trigger is when using an icon without any accompanying text. In these cases, many R packages that provide icons will create an icon element with the assumption that the icon is decorative, which will make it inaccessible to users of assistive technologies.

When using an icon as the primary trigger, ensure that the icon does not have `aria-hidden="true"` or `role="presentation"` attributes. Icon packages typically provide a way to specify a title for the icon, as well as a way to specify that the icon is not decorative. The title should be a short description of the purpose of the trigger, rather than a description of the icon itself.

- If you're using `bsicons::bs_icon()`, provide a `title`.
- If you're using `fontawesome::fa()`, set `a11y = "sem"` and provide a `title`.

For example:

```
popover(
  bsicons::bs_icon("gear", title = "Settings"),
  title = "Settings",
  sliderInput("n", "Number of points", 1, 100, 50)
)

popover(
  fontawesome::fa("gear", a11y = "sem", title = "Settings"),
  title = "Settings",
  sliderInput("n", "Number of points", 1, 100, 50)
)
```

References

Popovers are based on Bootstrap's Popover component. See the bslib website for an interactive introduction to tooltips and popovers.

See Also

`tooltip()` provides an alternative way to display informational text on demand, typically when focusing or hovering over a trigger element.

Other Components: `accordion()`, `card()`, `tooltip()`, `value_box()`

Examples

```
popover(
  shiny::actionButton("btn", "A button"),
  "Popover body content...",
  title = "Popover title"
)

library(shiny)

ui <- page_fixed(
  card(class = "mt-5",
```

```
    card_header(
      popover(
        uiOutput("card_title", inline = TRUE),
        title = "Provide a new title",
        textInput("card_title", NULL, "An editable title")
      )
    ),
    "The card body..."
  )
)

server <- function(input, output) {
  output$card_title <- renderUI({
    list(input$card_title, bsicons::bs_icon("pencil-square"))
  })
}

shinyApp(ui, server)
```

`run_with_themer` *Theme customization UI*

Description

A 'real-time' theme customization UI that you can use to easily make common tweaks to Bootstrap variables and immediately see how they would affect your app's appearance. There are two ways you can launch the theming UI. For most Shiny apps, just use `run_with_themer()` in place of `shiny::runApp()`; they should take the same arguments and work the same way. Alternatively, you can call the `bs_themer()` function from inside your server function (or in an R Markdown app that is using `runtime: shiny`, you can call this from any code chunk). Note that this function is only intended to be used for development!

Usage

```
run_with_themer(appDir = getwd(), ..., gfonts = TRUE, gfonts_update = FALSE)

bs_themer(gfonts = TRUE, gfonts_update = FALSE)
```

Arguments

`appDir`	The application to run. This can be a file or directory path, or a `shiny::shinyApp()` object. See `shiny::runApp()` for details.
`...`	Additional parameters to pass through to `shiny::runApp()`.
`gfonts`	whether or not to detect Google Fonts and wrap them in `font_google()` (so that their font files are automatically imported).
`gfonts_update`	whether or not to update the internal database of Google Fonts.

Details

To help you utilize the changes you see in the preview, this utility prints `bs_theme()` code to the R console.

Value

nothing. These functions are called for their side-effects.

Limitations

- Doesn't work with Bootstrap 3.
- Doesn't work with IE11.
- Only works inside Shiny apps and `runtime: shiny` R Markdown documents.
  - Can't be used with static R Markdown documents.
  - Can be used to some extent with `runtime: shiny_prerendered`, but only UI rendered through a `context="server"` may update in real-time.
- Doesn't work with '3rd party' custom widgets that don't make use of `bs_dependency_defer()` or `bs_current_theme()`.

Examples

```
library(shiny)

ui <- fluidPage(
  theme = bs_theme(bg = "black", fg = "white"),
  h1("Heading 1"),
  h2("Heading 2"),
  p(
    "Paragraph text;",
    tags$a(href = "https://www.rstudio.com", "a link")
  ),
  p(
    actionButton("cancel", "Cancel"),
    actionButton("continue", "Continue", class = "btn-primary")
  ),
  tabsetPanel(
    tabPanel("First tab",
      "The contents of the first tab"
    ),
    tabPanel("Second tab",
      "The contents of the second tab"
    )
  )
)

if (interactive()) {
  run_with_themer(shinyApp(ui, function(input, output) {}))
}
```

sidebar *Sidebar layouts*

Description

[Experimental]

Sidebar layouts place UI elements, like input controls or additional context, next to the main content area which often holds output elements like plots or tables.

There are several page, navigation, and layout functions that allow you to create a sidebar layout. In each case, you can create a collapsing sidebar layout by providing a `sidebar()` object to the `sidebar` argument the following functions.

- `page_sidebar()` creates a "page-level" sidebar.
- `page_navbar()` creates a multi-panel app with an (optional, page-level) sidebar that is shown on every panel.
- `layout_sidebar()` creates a "floating" sidebar layout component which can be used inside any `page()` and/or `card()` context.
- `navset_card_tab()` and `navset_card_pill()` create multi-tab cards with a shared sidebar that is accessible from every panel.

See the Sidebars article on the bslib website to learn more.

Usage

```
sidebar(
  ...,
  width = 250,
  position = c("left", "right"),
  open = NULL,
  id = NULL,
  title = NULL,
  bg = NULL,
  fg = NULL,
  class = NULL,
  max_height_mobile = NULL,
  gap = NULL,
  padding = NULL
)

layout_sidebar(
  ...,
  sidebar = NULL,
  fillable = TRUE,
  fill = TRUE,
  bg = NULL,
  fg = NULL,
```

```
  border = NULL,
  border_radius = NULL,
  border_color = NULL,
  padding = NULL,
  gap = NULL,
  height = NULL
)

toggle_sidebar(id, open = NULL, session = get_current_session())
```

Arguments

...	Unnamed arguments can be any valid child of an htmltools tag and named arguments become HTML attributes on returned UI element. In the case of `layout_sidebar()`, these arguments are passed to the main content tag (not the sidebar+main content container).
width	A valid CSS unit used for the width of the sidebar.
position	Where the sidebar should appear relative to the main content.
open	The initial state of the sidebar, choosing from the following options: • `"desktop"`: The sidebar starts open on desktop screen, closed on mobile. This is default sidebar behavior. • `"open"` or `TRUE`: The sidebar starts open. • `"closed"` or `FALSE`: The sidebar starts closed. • `"always"` or `NA`: The sidebar is always open and cannot be closed. Alternatively, you can use a list with `desktop` or `mobile` items to set the initial sidebar state independently for `desktop` and `mobile` screen sizes. In this case, `desktop` or `mobile` can use any of the above options except `"desktop"`, which is equivalent to `list(desktop = "open", mobile = "closed")`. You can also choose to place an always open sidebar above the main content on mobile devices by setting `mobile = "always-above"`. In `sidebar_toggle()`, `open` indicates the desired state of the sidebar, where the default of `open = NULL` will cause the sidebar to be toggled open if closed or vice versa. Note that `sidebar_toggle()` can only open or close the sidebar, so it does not support the `"desktop"` and `"always"` options.
id	A character string. Required if wanting to re-actively read (or update) the `collapsible` state in a Shiny app.
title	A character title to be used as the sidebar title, which will be wrapped in a `<header>` element with class `sidebar-title`. You can also provide a custom `htmltools::tag()` for the title element, in which case you'll likely want to give this element `class = "sidebar-title"`.
bg, fg	A background or foreground color. If only one of either is provided, an accessible contrasting color is provided for the opposite color, e.g. setting `bg` chooses an appropriate `fg` color.
class	CSS classes for the sidebar container element, in addition to the fixed `.sidebar` class.

`max_height_mobile`
: A CSS length unit defining the maximum height of the horizontal sidebar when viewed on mobile devices. Only applies to always-open sidebars that use `open = "always"`, where by default the sidebar container is placed below the main content container on mobile devices.

`gap`
: A CSS length unit defining the vertical `gap` (i.e., spacing) between adjacent elements provided to `...`.

`padding`
: Padding within the sidebar itself. This can be a numeric vector (which will be interpreted as pixels) or a character vector with valid CSS lengths. `padding` may be one to four values. If one, then that value will be used for all four sides. If two, then the first value will be used for the top and bottom, while the second value will be used for left and right. If three, then the first will be used for top, the second will be left and right, and the third will be bottom. If four, then the values will be interpreted as top, right, bottom, and left respectively.

`sidebar`
: A `sidebar()` object.

`fillable`
: Whether or not the `main` content area should be considered a fillable (i.e., flexbox) container.

`fill`
: Whether or not to allow the layout container to grow/shrink to fit a fillable container with an opinionated height (e.g., `page_fillable()`).

`border`
: Whether or not to add a border.

`border_radius`
: Whether or not to add a border radius.

`border_color`
: The border color that is applied to the entire layout (if `border = TRUE`) and the color of the border between the sidebar and the main content area.

`height`
: Any valid CSS unit (e.g., `height="200px"`). Doesn't apply when a card is made `full_screen` (in this case, consider setting a `height` in `card_body()`).

`session`
: A Shiny session object (the default should almost always be used).

Functions

- `toggle_sidebar()`: Toggle a `sidebar()` state during an active Shiny user session.

References

Sidebar layouts are featured in a number of pages on the bslib website:

- Sidebars
- Cards: Sidebars
- Getting Started: Dashboards

theme_bootswatch *Obtain a theme's Bootswatch theme name*

Description

Obtain a theme's Bootswatch theme name

Usage

```
theme_bootswatch(theme)
```

Arguments

theme	A bs_theme() object.

Value

Returns the Bootswatch theme named used (if any) in the theme.

See Also

Other Bootstrap theme utility functions: bootswatch_themes(), bs_get_variables(), builtin_themes(), theme_version(), versions()

theme_version *Obtain a theme's Bootstrap version*

Description

Obtain a theme's Bootstrap version

Usage

```
theme_version(theme)
```

Arguments

theme	A bs_theme() object.

Value

Returns the major version of Bootstrap used in the theme.

See Also

Other Bootstrap theme utility functions: bootswatch_themes(), bs_get_variables(), builtin_themes(), theme_bootswatch(), versions()

tooltip *Add a tooltip to a UI element*

Description

[Experimental]

Display additional information when focusing (or hovering over) a UI element.

Usage

```
tooltip(
  trigger,
  ...,
  id = NULL,
  placement = c("auto", "top", "right", "bottom", "left"),
  options = list()
)

toggle_tooltip(id, show = NULL, session = get_current_session())

update_tooltip(id, ..., session = get_current_session())
```

Arguments

trigger	A UI element (i.e., htmltools tag) to serve as the tooltip trigger. If `trigger` renders as multiple HTML elements (e.g., it's a `tagList()`), the last HTML element is used for the trigger. If the `trigger` should contain all of those elements, wrap the object in a `htmltools::div()` or `htmltools::span()`.
...	UI elements for the tooltip. Character strings are automatically escaped unless marked as `htmltools::HTML()`.
id	a character string that matches an existing tooltip id.
placement	The placement of the tooltip relative to its trigger.
options	A list of additional options.
show	Whether to show (`TRUE`) or hide (`FALSE`) the tooltip. The default (`NULL`) will show if currently hidden and hide if currently shown. Note that a tooltip will not be shown if the trigger is not visible (e.g., it's hidden behind a tab).
session	A Shiny session object (the default should almost always be used).

Functions

- `tooltip()`: Add a tooltip to a UI element
- `toggle_tooltip()`: Programmatically show/hide a tooltip.
- `update_tooltip()`: Update the contents of a tooltip.

Theming/Styling

Like other bslib components, tooltips can be themed by supplying relevant theming variables to `bs_theme()`, which effects styling of every tooltip on the page. To style a *specific* tooltip differently from other tooltip, utilize the `customClass` option:

```
tooltip(
  "Trigger", "Tooltip message",
  options = list(customClass = "my-tip")
)
```

And then add relevant rules to `bs_theme()` via `bs_add_rules()`:

```
bs_theme() |> bs_add_rules(".my-tip { max-width: none; }")
```

Accessibility of Tooltip Triggers

Because the user needs to interact with the `trigger` element to see the tooltip, it's best practice to use an element that is typically accessible via keyboard interactions, like a button or a link. If you use a non-interactive element, like a `<span>` or text, bslib will automatically add the `tabindex="0"` attribute to the trigger element to make sure that users can reach the element with the keyboard. This means that in most cases you can use any element you want as the trigger.

One place where it's important to consider the accessibility of the trigger is when using an icon without any accompanying text. In these cases, many R packages that provide icons will create an icon element with the assumption that the icon is decorative, which will make it inaccessible to users of assistive technologies.

When using an icon as the primary trigger, ensure that the icon does not have `aria-hidden="true"` or `role="presentation"` attributes. Icon packages typically provide a way to specify a title for the icon, as well as a way to specify that the icon is not decorative. The title should be a short description of the purpose of the trigger, rather than a description of the icon itself.

- If you're using `bsicons::bs_icon()`, provide a `title`.
- If you're using `fontawesome::fa()`, set `a11y = "sem"` and provide a `title`.

For example:

```
tooltip(
  bsicons::bs_icon("info-circle", title = "About tooltips"),
  "Text shown in the tooltip."
)

tooltip(
  fontawesome::fa("info-circle", a11y = "sem", title = "About tooltips"),
  "Text shown in the tooltip."
)
```

References

Tooltips are based on Bootstrap's Tooltip component. See the bslib website for an interactive introduction to tooltips and popovers.

See Also

popover() provides a an alternative and more persistent container for additional elements, typically revealed by clicking on a target element.

Other Components: accordion(), card(), popover(), value_box()

Examples

```
tooltip(
  shiny::actionButton("btn", "A button"),
  "A message"
)

card(
  card_header(
    tooltip(
      span("Card title ", bsicons::bs_icon("question-circle-fill")),
      "Additional info",
      placement = "right"
    )
  ),
  "Card body content..."
)
```

---

value_box *Value box*

Description

[Experimental]

An opinionated (card()-powered) box, designed for displaying a value and title. Optionally, a showcase can provide for context for what the value represents (for example, it could hold a bsicons::bs_icon(), or even a shiny::plotOutput()). Find examples and template code you can use to create engaging value boxes on the bslib website.

Usage

```
value_box(
  title,
  value,
  ...,
  showcase = NULL,
  showcase_layout = c("left center", "top right", "bottom"),
  full_screen = FALSE,
  theme = NULL,
  height = NULL,
```

```
  max_height = NULL,
  min_height = NULL,
  fill = TRUE,
  class = NULL,
  id = NULL,
  theme_color = deprecated()
)

value_box_theme(name = NULL, bg = NULL, fg = NULL)

showcase_left_center(
  width = 0.3,
  width_full_screen = "1fr",
  max_height = "100px",
  max_height_full_screen = 0.67
)

showcase_top_right(
  width = 0.4,
  width_full_screen = "1fr",
  max_height = "75px",
  max_height_full_screen = 0.67
)

showcase_bottom(
  width = "100%",
  width_full_screen = NULL,
  height = "auto",
  height_full_screen = "2fr",
  max_height = "100px",
  max_height_full_screen = NULL
)
```

Arguments

title, value	A string, number, or htmltools::tag() child to display as the title or value of the value box. The title appears above the value.
...	Unnamed arguments may be any htmltools::tag() children to display below value. Named arguments become attributes on the containing element.
showcase	A htmltools::tag() child to showcase (e.g., a bsicons::bs_icon(), a plotly::plotlyOutput(), etc).
showcase_layout	One of "left center" (default), "top right" or "bottom". Alternatively, you can customize the showcase layout options with the showcase_left_center(), showcase_top_right(), or showcase_bottom() functions. Use the options functions when you want to control the height or width of the showcase area.
full_screen	If TRUE, an icon will appear when hovering over the card body. Clicking the icon expands the card to fit viewport size.

theme
: The name of a theme for the value box, or a theme constructed with `value_box_theme()`. The theme names provide a convenient way to use your app's Bootstrap theme colors as the foreground or background colors of the value box. See below for more details on the provided themes. For more control, you can create your own theme with `value_box_theme()` where you can pass foreground and background colors directly. See the **Themes** section for more details.

max_height
: The maximum height of the `value_box()` or the showcase area when used in a `showcase_layout_*()` function. Can be any valid CSS unit (e.g., `max_height="200px"`).

min_height
: The minimum height of the values box. Can be any valid CSS unit (e.g., `min_height="200px"`).

fill
: Whether to allow the value box to grow/shrink to fit a fillable container with an opinionated height (e.g., `page_fillable()`).

class
: Utility classes for customizing the appearance of the summary card. Use `bg-*` and `text-*` classes (e.g, `"bg-danger"` and `"text-light"`) to customize the background/foreground colors.

id
: Provide a unique identifier for the `card()` or `value_box()` to report its full screen state to Shiny. For example, using `id = "my_card"`, you can observe the card's full screen state with `input$my_card_full_screen`.

theme_color
: **[Deprecated]** Use `theme` instead.

name
: The name of the theme, e.g. `"primary"`, `"danger"`, `"purple"`.

bg, fg
: The background and foreground colors for the theme. If only `bg` is provided, then the foreground color is automatically chosen from `$black` or `$white` to provide the best contrast with the background color.

width, width_full_screen, height, height_full_screen
: one of the following:

  - A proportion (i.e., a number between 0 and 1) of available width or height to allocate to the showcase.
  - A valid CSS unit defining the width or height of the showcase column, or a valid value accepted by the `grid-template-columns` (width) or `grid-template-rows` (height) CSS property to define the width or height of the showcase column or row. Accepted values in the second category are `"auto"`, `"min-content"`, `"max-content"`, a fractional unit (e.g. `2fr`), or a `minmax()` function (e.g., `minmax(100px, 1fr)`).

max_height_full_screen
: A proportion (i.e., a number between 0 and 1) or any valid CSS unit defining the showcase `max_height` in a full screen card.

Build-a-Box App

Explore all of the `value_box()` options and layouts interactively with the Build-a-Box app, available online thanks to shinyapps.io. Or, you can run the app locally with:

```
# shiny >= 1.8.1
shiny::runExample("build-a-box", package = "bslib")

# shiny < 1.8.1
shiny::runApp(system.file("examples-shiny", "build-a-box", package = "bslib"))
```

Themes

The appearance of a `value_box()` can be controlled via the `theme` argument in one of two ways:

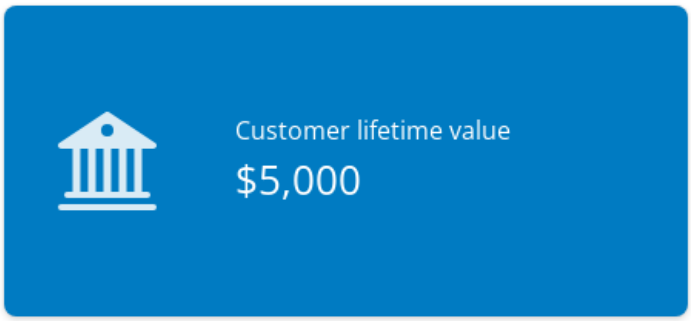
1. a character value describing the theme, such as `theme = "primary"` or `theme = "blue"`; or
2. `theme = value_box_theme()` to create a custom theme.

We recommend using named themes for most value boxes (the first approach), because these themes will automatically match your Bootstrap theme.

Named themes:

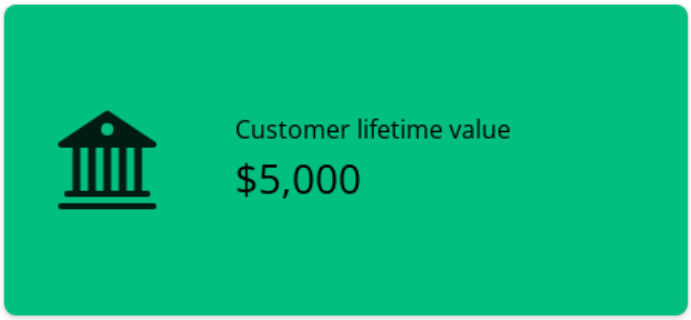
Bootstrap provides a list of theme colors, with semantic names like `"primary"`, `"secondary"`, `"success"`, `"danger"`, etc. You can set `theme` to one of these names to use the corresponding theme color as the background color of your value box.

```
value_box(
  title = "Customer lifetime value",
  value = "$5,000",
  showcase = bsicons::bs_icon("bank2"),
  theme = "primary"
)
```



Bootstrap's theme colors are drawn from a second color list that includes variations on several main colors, named literally. These colors include `"blue"`, `"purple"`, `"pink"`, `"red"`, `"orange"`, `"yellow"`, `"green"`, `"teal"`, and `"cyan"`.

```
value_box(
  title = "Customer lifetime value",
  value = "$5,000",
  showcase = bsicons::bs_icon("bank2"),
  theme = "teal"
)
```

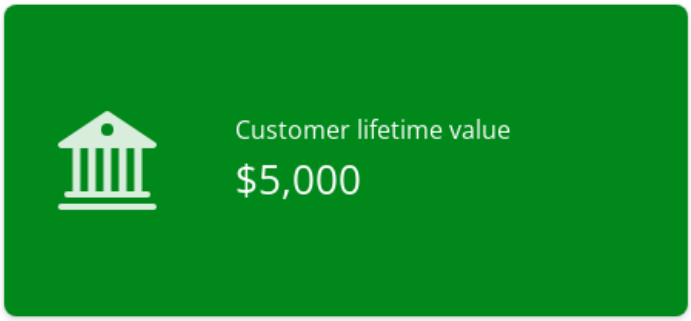


Background colors:

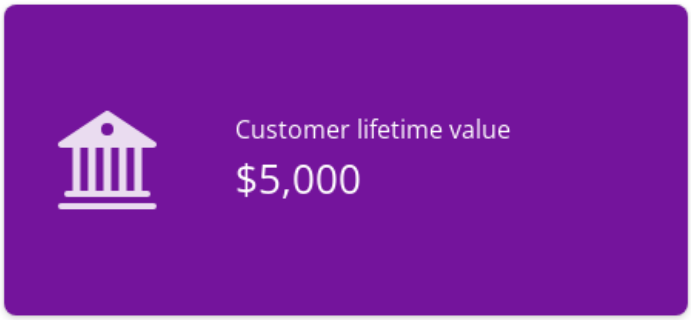
If the theme or color name is provided without any prefix, the color will be used for the background of the value box. You can also explicitly prefix the theme or color name with `bg-` to indicate that it should apply to the value box background. When the theme sets the background color, either black or white is chosen automatically for the text color using Bootstrap's color contrast algorithm.

As before, you can reference semantic theme color names or literal color names.

```
value_box(
  title = "Customer lifetime value",
  value = "$5,000",
  showcase = bsicons::bs_icon("bank2"),
  theme = "bg-success"
)
```



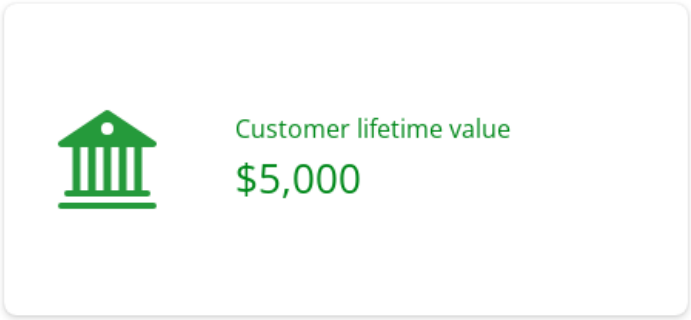

```
value_box(
  title = "Customer lifetime value",
  value = "$5,000",
  showcase = bsicons::bs_icon("bank2"),
  theme = "bg-purple"
)
```



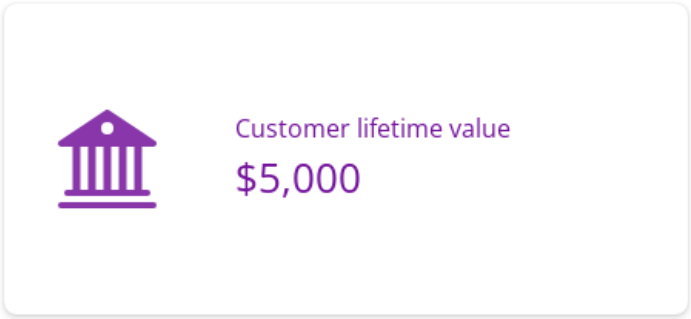
Foreground colors:

To set only the foreground colors of the value box, you can prefix the theme or color name with `text-`. This changes the text color without affecting the background color.

```
value_box(
  title = "Customer lifetime value",
  value = "$5,000",
  showcase = bsicons::bs_icon("bank2"),
  theme = "text-success"
)
```

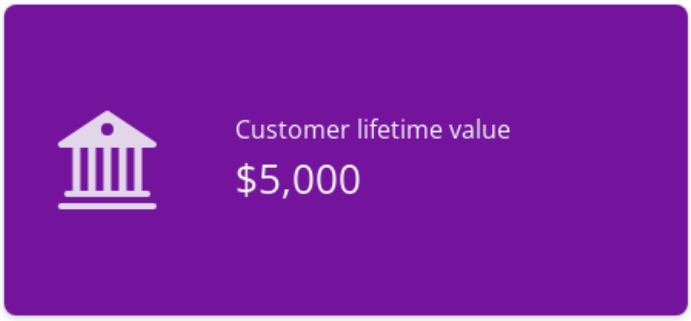



```
value_box(
  title = "Customer lifetime value",
  value = "$5,000",
  showcase = bsicons::bs_icon("bank2"),
  theme = "text-purple"
)
```



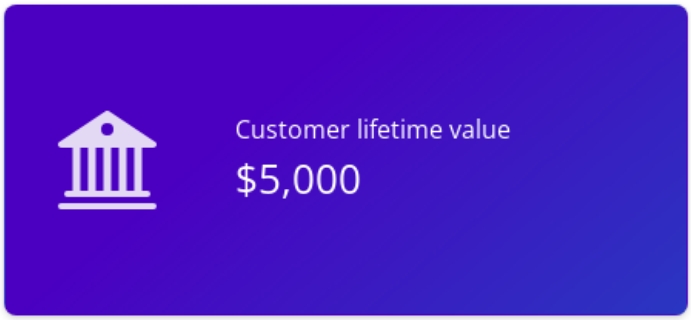
Occasionally you may want to adjust use both background and foreground themes on your value box. To achieve this, set `theme` to one of the theme names and use `class` for the complementary style. The example below uses `theme = "purple"` (which could also be `"bg-purple"`) for a purple background, and `class = "text-light"` for light-colored text.

```
value_box(
  title = "Customer lifetime value",
  value = "$5,000",
  showcase = bsicons::bs_icon("bank2"),
  theme = "purple",
  class = "text-light"
)
```



Gradient backgrounds:
For a vibrant and attention-grabbing effect, bslib provides an array of gradient background options. Provide `theme` with a theme name in the form `bg-gradient-{from}-{to}`, where `{from}` and `{to}` are named main colors, e.g. `bg-gradient-indigo-blue`.

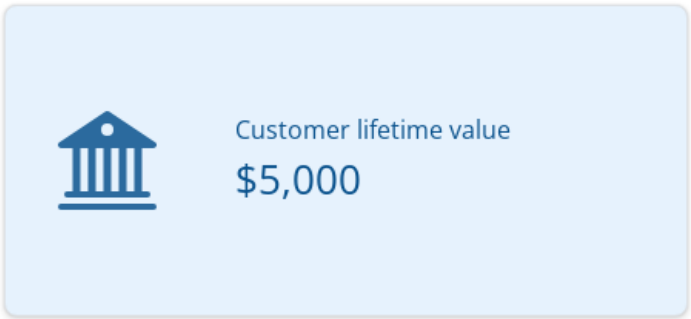
```
value_box(
  title = "Customer lifetime value",
  value = "$5,000",
  showcase = bsicons::bs_icon("bank2"),
  theme = "bg-gradient-indigo-blue"
)
```



Custom colors:

Finally, for complete customization, you can use `value_box_theme()` to create a custom theme. This function takes arguments `bg` and `fg` to set the background and foreground colors, respectively. Like with the `bg-` theme names, if only `bg` is provided, `value_box_theme()` will choose an appropriate light or dark color for the text color.

```
value_box(
  title = "Customer lifetime value",
  value = "$5,000",
  showcase = bsicons::bs_icon("bank2"),
  theme = value_box_theme(bg = "#e6f2fd", fg = "#0B538E"),
  class = "border"
)
```



Note that `value_box_theme()` optionally takes a `theme` name, which can be helpful if you want to use a named theme and modify the default `bg` or `fg` colors of that theme.

```
value_box_theme(name = "orange", bg = "#FFFFFF")
value_box_theme(name = "text-danger", fg = "#FFB6C1")
```

Also note that `bg`/`fg` *must* be CSS colors, not Bootstrap theme or color names. This means that `theme = "purple"` will use your Bootstrap theme's purple color, and `bg = "purple"` will use the CSS color for *purple*, i.e. `"#800080"`.

Showcase Layouts

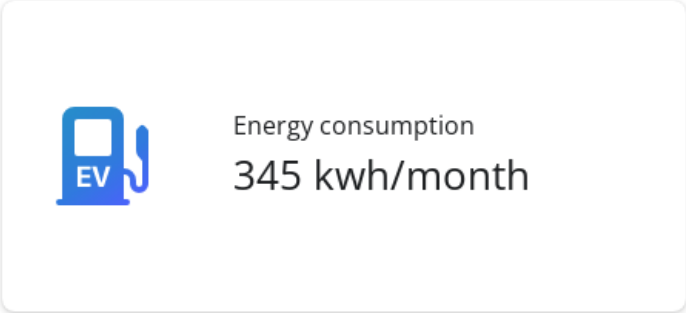
Use the `showcase` argument to add a plot or icon to your `value_box()`. There are three layouts available: `"left center"`, `"top right"`, and `"bottom"`. Set `showcase` to the name of the layout you'd like, or use the `showcase_left_center()`, `showcase_top_right()`, or `showcase_bottom()` helper functions to customize the showcase area's size.

If you're using a plot as your showcase, you may also want to set `fullscreen = TRUE` so that your users can expand the value box into a full screen card. See the value box article for more details.

Left-center showcase:

The `"left center"` showcase layout is the default, and is perfect for an icon or a small plot. This layout works best for short value boxes.

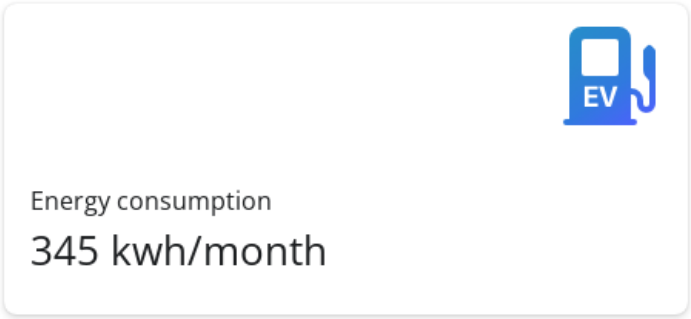
```
value_box(
  title = "Energy consumption",
  value = "345 kwh/month",
  showcase = bsicons::bs_icon("ev-station-fill")
)
```



Top-right showcase:

The `"top right"` showcase layout places the icon or plot in the upper right corner of the value box. This layout works best for medium-height to square value boxes.

```
value_box(
  title = "Energy consumption",
  value = "345 kwh/month",
  showcase = bsicons::bs_icon("ev-station-fill"),
  showcase_layout = "top right"
)
```

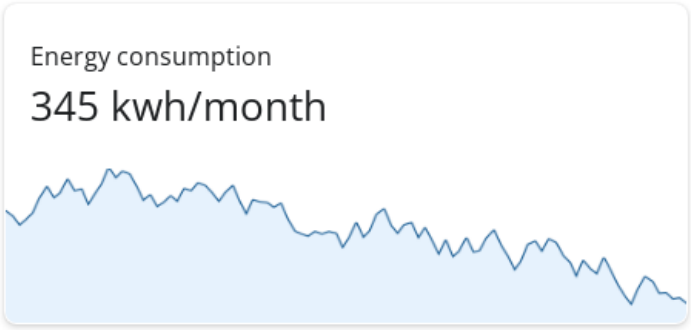


Bottom showcase:

Finally, the `"bottom"` showcase layout is perfect for full-bleed plots. This layout places the plot below the title and value, with the plot taking up the full width of the bottom half.

Try this layout with sparkline-style plots. These can be a little tricky to set up, so be sure to check out the Expandable sparklines section of the value boxes article on the bslib website. In this example, we've created a sparkline plot using base R graphics, which isn't generally recommended. View the bslib documentation online to see the source of `sparkline_plot()`.

```
value_box(
  title = "Energy consumption",
  value = "345 kwh/month",
  showcase = sparkline_plot(),
  showcase_layout = "bottom"
)
```



References

Value boxes are featured on the bslib website in a few articles:

- Value boxes
- Build-a-Box App
- Get Started: Dashboards

See Also

Value boxes are a specialized form of a `card()` component.

`layout_columns()` and `layout_column_wrap()` help position multiple value boxes into columns and rows.

Other Components: `accordion()`, `card()`, `popover()`, `tooltip()`

Examples

```
library(htmltools)

value_box(
  "KPI Title",
  h1(HTML("$1 <i>Billion</i> Dollars")),
  span(
    bsicons::bs_icon("arrow-up"),
    " 30% VS PREVIOUS 30 DAYS"
  ),
  showcase = bsicons::bs_icon("piggy-bank"),
  theme = "success"
)
```

---

versions *Available Bootstrap versions*

Description

Available Bootstrap versions

Usage

```
versions()

version_default()
```

Value

Returns a list of the Bootstrap versions available.

See Also

Other Bootstrap theme utility functions: `bootswatch_themes()`, `bs_get_variables()`, `builtin_themes()`, `theme_bootswatch()`, `theme_version()`

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