

# Package ‘bslib’

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

**Version** 0.4.1

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

**Depends** R (>= 2.10)

**Imports** grDevices, htmltools (>= 0.5.2), jsonlite, sass (>= 0.4.0), jquerylib (>= 0.1.3), rlang, cachem, memoise (>= 2.0.1)

**Suggests** shiny (>= 1.6.0), rmarkdown (>= 2.7), thematic, knitr, testthat, withr, rappdirs, curl, magrittr

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bootswatch_themes	<i>Obtain a list of all available bootswatch themes.</i>
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### 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**

a character vector of Bootswatch themes.

---

bs_add_variables	<i>Add low-level theming customizations</i>
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---

**Description**

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.

**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 <code>bs_theme()</code> object.
...	<ul style="list-style-type: none"> <li><code>bs_add_variables()</code>: Should be named Sass variables or values that can be passed in directly to the <code>defaults</code> argument of a <code>sass::sass_layer()</code>.</li> <li><code>bs_bundle()</code>: Should be arguments that can be handled by <code>sass::sass_bundle()</code> to be appended to the theme</li> </ul>
.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 <code>!default</code> flag (if missing) to variable expressions. It's recommended to keep this as <code>TRUE</code> when <code>.where = "defaults"</code> .

rules	Sass rules. Anything understood by <code>sass::as_sass()</code> may be provided (e.g., a list, character vector, <code>sass::sass_file()</code> , etc)
functions	A character vector or <code>sass::sass_file()</code> containing functions definitions.
mixins	A character vector or <code>sass::sass_file()</code> containing mixin definitions.

**Value**

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**

<https://getbootstrap.com/docs/4.4/getting-started/theming/>  
<https://rstudio.github.io/sass/articles/sass.html#layering>

**Examples**

```
# Function to preview the styling a (primary) Bootstrap button
library(htmltools)
button <- tags$a(class = "btn btn-primary", href = "#", role = "button", "Hello")
preview_button <- function(theme) {
  if (interactive()) {
    browsable(tags$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)
  )
}
if (interactive()) {
  browsable(shiny::fluidPage(
    theme = theme,
    person("Andrew Carnegie", "Owner", "Carnegie Steel Company"),
    person("John D. Rockefeller", "Chairman", "Standard Oil")
  ))
}

```

---

bs_current_theme	<i>Obtain the currently active theme at render time</i>
------------------	---

---

### 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_reactive_domain())
```

### 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

a `bs_theme()` object.

---

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 `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 <code>bs_theme()</code> 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 <code>htmltools::htmlDependency()</code> . Note that package has no effect and script must be absolute path(s).
.sass_args	A list of additional arguments to pass to <code>sass::sass_partial()</code> .
func	a <i>non-anonymous</i> function, with a <i>single</i> argument. This function should accept a <code>bs_theme()</code> object and return a single <code>htmlDependency()</code> , 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**

<https://rstudio.github.io/bslib/articles/custom-components.html>

**Examples**

```
## Not run:

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()
  )
}

## End(Not run)

```

---

**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

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

### 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	<i>Global theming</i>
-----------------	-----------------------

---

### Description

`bs_global_theme()` creates a new (global) Bootstrap Sass theme which `bs_theme_dependencies()` (or `sass_partial()`) can consume (their theme argument defaults to `bs_global_get()`, which get the current global theme).

### Usage

```
bs_global_theme(  
  version = version_default(),  
  bootswatch = 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,  
    ...  
)  
  
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(  
  ...,  
  bootswatch = 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  
)
```

### Arguments

version	The major version of Bootstrap to use (see <a href="#">versions()</a> for possible values). Defaults to the currently recommended version for new projects (currently Bootstrap 5).
bootswatch	The name of a bootswatch theme (see <a href="#">bootswatch_themes()</a> for possible val-

ues). When provided to `bs_theme_update()`, any previous Bootswatch theme is first removed before the new one is applied (use `bootswatch = "default"` to effectively remove the Bootswatch theme).

<code>bg</code>	A color string for the background.
<code>fg</code>	A color string for the foreground.
<code>primary</code>	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.
<code>secondary</code>	A color for components and messages that don't need to stand out. (Not supported in Bootstrap 3.)
<code>success</code>	A color for messages that indicate an operation has succeeded. Typically green.
<code>info</code>	A color for messages that are informative but not critical. Typically a shade of blue-green.
<code>warning</code>	A color for warning messages. Typically yellow.
<code>danger</code>	A color for errors. Typically red.
<code>base_font</code>	The default typeface.
<code>code_font</code>	The typeface to be used for code. Be sure this is monospace!
<code>heading_font</code>	The typeface to be used for heading elements.
<code>...</code>	arguments passed along to <code>bs_add_variables()</code> .
<code>theme</code>	a <code>bs_theme()</code> object.
<code>.where</code>	Whether to place the variable definitions before other Sass "defaults", after other Sass "declarations", or after other Sass "rules".
<code>.default_flag</code>	Whether or not to add a <code>!default</code> flag (if missing) to variable expressions. It's recommended to keep this as <code>TRUE</code> when <code>.where = "defaults"</code> .

### 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

[bs\\_theme\(\)](#), [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 (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	<i>Remove or retrieve Sass code from a theme</i>
-----------	--

---

### Description

Remove or retrieve Sass code 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

a modified `bs_theme()` object.

### Examples

```
# Remove CSS rules for print and carousels
bs4 <- bs_theme(version = 4)
bs_remove(bs4, c("_print", "_carousel"))
```

```
# Remove BS3 compatibility layer
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(),  
  bootswatch = 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  
)
```

```
bs_theme_update(  
  theme,  
  ...,  
  bootswatch = 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
  )

  is_bs_theme(x)

```

### Arguments

version	The major version of Bootstrap to use (see <a href="#">versions()</a> for possible values). Defaults to the currently recommended version for new projects (currently Bootstrap 5).
bootswatch	The name of a bootswatch theme (see <a href="#">bootswatch_themes()</a> for possible values). When provided to <code>bs_theme_update()</code> , any previous Bootswatch theme is first removed before the new one is applied (use <code>bootswatch = "default"</code> to effectively remove the Bootswatch theme).
...	arguments passed along to <a href="#">bs_add_variables()</a> .
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.
theme	a <a href="#">bs_theme()</a> object.
x	an object.

### Value

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 collection of character vectors, `font_google()`s, `font_link()`s and/or `font_face()`s. Note that a character vector can have:

- 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")`)

Since `font_google(..., local = TRUE)` guarantees that the client has access to the font family, meaning it's relatively safe to specify just one font family, for instance:

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

However, specifying multiple "fallback" font families is recommended, especially when relying on remote and/or system fonts being available, for instance. Fallback fonts are useful not only for handling missing fonts, but also for handling 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

<https://rstudio.github.io/bslib/articles/bslib.html>

<https://rstudio.github.io/sass/>

## See Also

[bs\\_add\\_variables\(\)](#), [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"
)
if (interactive()) {
  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 <code>bs_theme()</code> object.
sass_options	a <code>sass::sass_options()</code> object.
cache	This can be a directory to use for the cache, a <code>FileCache</code> object created by <code>sass_file_cache()</code> , or FALSE or NULL for no caching.
jquery	a <code>jquerylib::jquery_core()</code> object.
precompiled	Before compiling the theme object, first look for a precompiled CSS file for the <code>theme_version()</code> . If <code>precompiled = TRUE</code> 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 <code>sass_options</code> ).



**Value**

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**

[bs\\_theme\(\)](#), [bs\\_dependency\(\)](#)

**Examples**

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

---

**Description**

Launches an example shiny app via `run_with_themer()` and `bs_theme_dependencies()`. Useful for getting a quick preview of the current theme setting as well as an interactive GUI for tweaking some of the main theme settings.

**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.

**Value**

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

**See Also**

[run\\_with\\_themer\(\)](#)

**Examples**

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

---

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)
}

```

---

nav

*Navigation items*


---

## Description

Create nav item(s) for use inside nav containers (e.g., `navs_tab()`, `navs_bar()`, etc).

## Usage

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

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

```
nav_content(value, ..., icon = NULL)
```

```
nav_item(...)
```

```
nav_spacer()
```

## Arguments

`title` A title to display. Can be a character string or UI elements (i.e., [tags](#)).

`...` Depends on the function:

- For `nav()` and `nav_content()`: UI elements (i.e., [tags](#)) to display when the item is active.
- For `nav_menu()`: a collection of nav items (e.g., `nav()`, `nav_item()`).
- For `nav_item()`: UI elements (i.e., [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 <code>nav_select()</code> , <code>nav_hide()</code> , etc (updating selected tabs this way is often useful for showing/hiding panels of content via other UI controls like <code>shiny::radioButtons()</code> – in this scenario, consider using <code>nav_content()</code> with <code>navs_hidden()</code> ).
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. `navs_tab()`).

**Functions**

- `nav()`: Content to display when the given item is selected.
- `nav_menu()`: Create a menu of nav items.
- `nav_content()`: Create nav content for use inside `navs_hidden()` (for creating custom navigation controls via `navs_select()`),
- `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**

[navs\\_tab\(\)](#), [nav\\_select\(\)](#).

---

navs\_tab

*Navigation containers*

---

**Description**

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

**Usage**

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

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

```
navs_pill_list(
  ...,
  id = NULL,
  selected = NULL,
  header = NULL,
```

```

    footer = NULL,
    well = TRUE,
    fluid = TRUE,
    widths = c(4, 8)
  )

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

navs_bar(
  ...,
  title = NULL,
  id = NULL,
  selected = NULL,
  position = c("static-top", "fixed-top", "fixed-bottom"),
  header = NULL,
  footer = NULL,
  bg = NULL,
  inverse = "auto",
  collapsible = TRUE,
  fluid = TRUE
)

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

navs_pill_card(
  ...,
  id = NULL,
  selected = NULL,
  header = NULL,
  footer = NULL,
  placement = c("above", "below")
)

```

### Arguments

...	a collection of <a href="#">nav()</a> items.
id	a character string used for dynamically updating the container (see <a href="#">nav_select()</a> ).
selected	a character string matching the value of a particular <a href="#">nav()</a> item to selected by default.
header	UI element(s) ( <a href="#">tags</a> ) to display <i>above</i> the nav content.
footer	UI element(s) ( <a href="#">tags</a> ) to display <i>below</i> 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	The title to display in the navbar

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.: <code>tags\$style(type="text/css", "body {padding-top: 70px;}")</code>
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 a menu when the width of the browser is less than 940 pixels (useful for viewing on smaller touch-screen device)
placement	placement of the nav items relative to the content.

### See Also

[nav\(\)](#), [nav\\_select\(\)](#).

### Examples

```
library(shiny)

nav_items <- function(prefix) {
  list(
    nav("a", paste(prefix, ": tab a content")),
    nav("b", paste(prefix, ": tab b content")),
    nav_item(
      tags$a(icon("github"), "Shiny", href = "https://github.com/rstudio/shiny", target = "_blank")
    ),
    nav_spacer(),
    nav_menu(
      "Other links", align = "right",
      nav("c", paste(prefix, ": tab c content")),
      nav_item(
        tags$a(icon("r-project"), "RStudio", href = "https://rstudio.com", target = "_blank")
      )
    )
  )
}

if (interactive()) {
  shinyApp(
    page_navbar(
      title = "page_navbar()",
      bg = "#0062cc",
      !!!nav_items("page_navbar()"),
      footer = div(
        style = "width:80%; margin: 0 auto",
        h4("navs_tab()"),
        navs_tab(!!!nav_items("navs_tab()"))
      )
    )
  )
}
```

```

    h4("navs_pill()"),
    navs_pill(!!!nav_items("navs_pill()")),
    h4("navs_tab_card()"),
    navs_tab_card(!!!nav_items("navs_tab_card()")),
    h4("navs_pill_card()"),
    navs_pill_card(!!!nav_items("navs_pill_card()")),
    h4("navs_pill_list()"),
    navs_pill_list(!!!nav_items("navs_pill_list()"))
  )
),
function(...) { }
)
}

```

---

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.

### Usage

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

```
nav_insert(
  id,
  nav,
  target = NULL,
  position = c("after", "before"),
  select = FALSE,
  session = getDefaultReactiveDomain()
)
```

```
nav_remove(id, target, session = getDefaultReactiveDomain())
```

```
nav_show(id, target, select = FALSE, session = getDefaultReactiveDomain())
```

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

### Arguments

id	a character string used to identify the nav container.
selected	a character string used to identify a particular <code>nav()</code> item.
session	a shiny session object (the default should almost always be used).
nav	a <code>nav()</code> item.

target	The value of an existing nav() item, next to which tab will be added. If removing: the value of the nav() 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**

[nav\(\)](#), [navs\\_tab\(\)](#).

**Examples**

```
can_browse <- function() interactive() && require("shiny")

# Selecting a tab
if (can_browse()) {
  shinyApp(
    page_fluid(
      radioButtons("item", "Choose", c("A", "B")),
      navs_hidden(
        id = "container",
        nav_content("A", "a"),
        nav_content("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"),
    navs_tab(
      id = "tabs",
      nav("Hello", "hello"),
      nav("Foo", "foo"),
      nav("Bar", "bar tab")
    )
  )
  server <- function(input, output) {
    observeEvent(input$add, {
      nav_insert(
        "tabs", target = "Bar", select = TRUE,
        nav("Dynamic", "Dynamically added content")
      )
    })
    observeEvent(input$remove, {
      nav_remove("tabs", target = "Foo")
    })
  }
}
```



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

---

page

*Create a Bootstrap page*

---

## 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)
```

```
page_fill(..., padding = 0, title = NULL, theme = bs_theme(), lang = NULL)
```

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

**Arguments**

...	The contents of the document body.
title	The browser window title (defaults to the host URL of the page)
theme	One of the following: <ul style="list-style-type: none"> <li>• NULL (the default), which implies a "stock" build of Bootstrap 3.</li> <li>• A <code>bslib:bs_theme()</code> object. This can be used to replace a stock build of Bootstrap 3 with a customized version of Bootstrap 3 or higher.</li> <li>• A character string pointing to an alternative Bootstrap stylesheet (normally a css file within the www directory, e.g. <code>www/bootstrap.css</code>).</li> </ul>
lang	ISO 639-1 language code for the HTML page, such as "en" or "ko". This will be used as the lang in the <code>&lt;html&gt;</code> tag, as in <code>&lt;html lang="en"&gt;</code> . The default (NULL) results in an empty string.
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.
id	a character string used for dynamically updating the container (see <code>nav_select()</code> ).
selected	a character string matching the value of a particular <code>nav()</code> item to selected by default.
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.: <code>tags\$style(type="text/css", "body {padding-top: 70px;}")</code>
header	UI element(s) ( <code>tags</code> ) to display <i>above</i> the nav content.
footer	UI element(s) ( <code>tags</code> ) to display <i>below</i> 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.
collapsible	TRUE to automatically collapse the navigation elements into a menu when the width of the browser is less than 940 pixels (useful for viewing on smaller touch-screen device)
fluid	TRUE to use fluid layout; FALSE to use fixed layout.
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).

**See Also**

[shiny::bootstrapPage\(\)](#)  
[shiny::fluidPage\(\)](#)  
[shiny::fixedPage\(\)](#)  
[shiny::fillPage\(\)](#)  
[shiny::navbarPage\(\)](#)

---

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**

<code>appDir</code>	The application to run. This can be a file or directory path, or a <a href="#">shiny::shinyApp()</a> object. See <a href="#">shiny::runApp()</a> for details.
<code>...</code>	Additional parameters to pass through to <a href="#">shiny::runApp()</a> .
<code>gfonts</code>	whether or not to detect Google Fonts and wrap them in <a href="#">font_google()</a> (so that their font files are automatically imported).
<code>gfonts_update</code>	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) {}))
}
```

---

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**

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

---

theme_version	<i>Obtain a theme's Bootstrap version</i>
---------------	---

---

**Description**

Obtain a theme's Bootstrap version

**Usage**

```
theme_version(theme)
```

**Arguments**

theme            a `bs_theme()` object.

**Value**

the major version of Bootstrap used in the theme.

---

versions	<i>Available Bootstrap versions</i>
----------	-------------------------------------

---

**Description**

Available Bootstrap versions

**Usage**

```
versions()
```

```
version_default()
```

**Value**

A list of the Bootstrap versions available.

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