Package ‘simplevis’

Type Package
Title Simple Visualisation with ‘ggplot2’ and ‘leaflet’ Wrappers
Version 1.2.0
Description Provides ‘ggplot2’ and ‘leaflet’ wrapper functions designed to simplify the cre-
ation of high quality graph and map visualisations. These functions only require in-
puts of data, variables and titles to provide beautiful interactive or image visualisations. How-
ever they allow for more flexibility if required. The intent is that high quality well-
designed graphs and maps can be made more consistently with less effort, code and exper-
tise than would otherwise be required.
License MIT + file LICENSE
URL https://statisticsnz.github.io/simplevis,
https://github.com/statisticsnz/simplevis
BugReports https://github.com/statisticsNZ/simplevis/issues
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Author David Hodge [aut, cre] (<https://orcid.org/0000-0002-3868-7501>),
Statistics New Zealand [cph]
Maintainer David Hodge <davidhodge931@gmail.com>
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**a4_height_mm**

Description

The height of useable space within an a4 sheet.

Usage

```
a4_height_mm
```

Format

An object of class numeric of length 1.

Value

A numeric value.
**a4_width_mm**  
*A4 useable width.*

**Description**

The width of useable space within an A4 sheet.

**Usage**

```
a4_width_mm
```

**Format**

An object of class `numeric` of length 1.

**Value**

A numeric value.

---

**example_sf_nz_livestock**  
*Example sf object of New Zealand livestock.*

**Description**

Example sf object of New Zealand livestock.

**Usage**

```
example_sf_nz_livestock
```

**Format**

An `sf` object.

**Examples**

```
example_sf_nz_livestock
```
**example_sf_nz_river_wq**

*Example sf object of New Zealand river water quality trends.*

---

**Description**

Example sf object of New Zealand river water quality trends.

**Usage**

`example_sf_nz_river_wq`

**Format**

An sf object.

**Examples**

`example_sf_nz_river_wq`

---

**example_stars_nz_drp**

*Example stars object of New Zealand modelled river water DRP concentrations.*

---

**Description**

Example stars object of New Zealand modelled river water dissolved reactive phosphorus concentrations.

**Usage**

`example_stars_nz_drp`

**Format**

An stars object.

**Examples**

`example_stars_nz_drp`
**Example stars object of New Zealand modelled river water NO3N concentrations.**

**Description**

Example stars object of New Zealand modelled river water nitrate concentrations.

**Usage**

```r
example_stars_nz_no3n
```

**Format**

An stars object.

**Examples**

```r
example_stars_nz_no3n
```

---

**ggplot_box**

*Vertical box ggplot.*

**Description**

Vertical box ggplot that is not coloured and not facetted.

**Usage**

```r
ggplot_box(data, x_var, y_var = NULL, stat = "boxplot", y_scale_zero = TRUE, y_scale_trans = "identity", pal = NULL, title = "[Title]", subtitle = NULL, x_title = "[X title]", y_title = "[Y title]", caption = ",", font_family = "Helvetica", font_size_title = NULL, font_size_body = NULL, wrap_title = 70, wrap_subtitle = 80, wrap_x_title = 50, wrap_y_title = 50, wrap_caption = 80, isMobile = FALSE)
```

**Arguments**

- `data` A tibble or dataframe. Required input.
- `x_var` Unquoted categorical variable to be on the x axis. Required input.
- `y_var` Unquoted numeric variable to be on the y axis. Defaults to NULL. Required if stat equals "boxplot".
- `stat` String of "boxplot" or "identity". Defaults to "boxplot". If identity is selected, data provided must be grouped by the x_var with ymin, lower, middle, upper, ymax variables. Note "identity" does not provide outliers.
ggplot_box

y_scale_zero TRUE or FALSE of whether the minimum of the y scale is zero. Defaults to TRUE.

y_scale_trans TRUE or FALSE of whether the minimum of the y scale is zero. Defaults to TRUE.

y_scale_trans TRUE or FALSE of whether the minimum of the y scale is zero. Defaults to "identity".

Which has no transformation.

title Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.

title Title string. Defaults to "[Title]."

subtitle Subtitle string. Defaults to "[Subtitle]."

x_title X axis title string. Defaults to "[X title]."

y_title Y axis title string. Defaults to "[Y title]."

caption Caption title string. Defaults to NULL.

font_family Font family to use. Defaults to "Helvetica".

font_size Font size for the title text. Defaults to 11.

font_size_all Font size for all text other than the title. Defaults to 10.

wrap_title Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.

wrap_subtitle Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.

wrap_x_title Number of characters to wrap the x title to. Defaults to 50. Not applicable where isMobile equals TRUE.

wrap_y_title Number of characters to wrap the y title to. Defaults to 50. Not applicable where isMobile equals TRUE.

wrap_caption Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.

isMobile Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile.

Value

A ggplot object.

Examples

```r
plot_data <- iris %>%
tibble::as_tibble() %>%
dplyr::mutate(Species = stringr::str_to_sentence(Species))

plot <- ggplot_box(data = plot_data, x_var = Species, y_var = Petal.Length,
                   title = "Iris petal length by species",
                   x_title = "Species",
                   y_title = "Petal length (cm)"
)

plot
```
ggplot_box_facet

```r
plotly::ggplotly(plot, tooltip = "text")

plot_data <- iris %>%
  dplyr::group_by(Species) %>%
  dplyr::summarise(boxplot_stats = list(rlang::set_names(boxplot.stats(Petal.Length)$stats,
        c("ymin", "lower", "middle", "upper", "ymax")))) %>%
  tidyr::unnest_wider(boxplot_stats)

ggplot_box(data = plot_data, x_var = Species, y_var = Petal.Length, stat = "identity")
```

---

**Description**

Vertical box ggplot that is facetted, but not coloured.

**Usage**

```r
ggplot_box_facet(data = plot_data, x_var = Species, y_var = Petal.Length, stat = "identity")
```

**Arguments**

- `data`: An tibble or dataframe. Required input.
- `x_var`: Unquoted categorical variable to be on the x axis. Required input.
- `y_var`: Unquoted numeric variable to be on the y axis. Defaults to NULL. Required if stat equals "boxplot".
- `facet_var`: Unquoted categorical variable to facet the data by. Required input.
- `stat`: String of "boxplot" or "identity". Defaults to "boxplot". If identity is selected, data provided must be grouped by the x_var and facet_var with ymin, lower, middle, upper, ymax variables. Note "identity" does not provide outliers.
- `y_scale_zero`: TRUE or FALSE of whether the minimum of the y scale is zero. Defaults to TRUE.
- `y_scale_trans`: TRUEansformation of y-axis scale (e.g. "signed_sqrt"). Defaults to "identity", which has no transformation.
- `facet_scales`: Whether facet_scales should be "fixed" across facets, "free" in both directions, or free in just one direction (i.e. "free_x" or "free_y"). Defaults to "fixed".
- `facet_nrow`: The number of rows of facetted plots. Defaults to NULL, which generally chooses 2 rows. Not applicable to where isMobile is TRUE.
ggplot_box_facet

pal  Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.

title  Title string. Defaults to "[Title]".

subtitle  Subtitle string. Defaults to "[Subtitle]".

x_title  X axis title string. Defaults to "[X title]".

y_title  Y axis title string. Defaults to "[Y title]".

caption  Caption title string. Defaults to NULL.

font_family  Font family to use. Defaults to "Helvetica".

font_size_title  Font size for the title text. Defaults to 11.

font_size_body  Font size for all text other than the title. Defaults to 10.

wrap_title  Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.

wrap_subtitle  Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.

wrap_x_title  Number of characters to wrap the x title to. Defaults to 50. Not applicable where isMobile equals TRUE.

wrap_y_title  Number of characters to wrap the y title to. Defaults to 50. Not applicable where isMobile equals TRUE.

wrap_caption  Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.

isMobile  Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile.

Value

A ggplot object.

Examples

```r
plot_data <- ggplot2::diamonds %>%
  dplyr::mutate(price_thousands = (price / 1000)) %>%
  dplyr::sample_frac(0.05)

plot <- ggplot_box_facet(data = plot_data, x_var = cut, y_var = price_thousands, facet_var = color, facet_nrow = 4)

plot

plotly::ggplotly(plot, tooltip = "text")
```
Description

Horizontal bar ggplot that is not coloured and not facetted.

Usage

```
ggplot_hbar(data, x_var, y_var, hover_var = NULL, x_scale_zero = TRUE, 
x_scale_trans = "identity", y_scale_rev = FALSE, pal = NULL, 
width = 0.75, title = "[Title]", subtitle = NULL, 
x_title = "[X title]", y_title = "[Y title]", caption = "", 
font_family = "Helvetica", font_size_title = NULL, 
font_size_body = NULL, wrap_title = 70, wrap_subtitle = 80, 
wrap_x_title = 50, wrap_y_title = 50, wrap_y_label = 50, 
wrap_caption = 80, isMobile = FALSE)
```

Arguments

**data**
A tibble or dataframe. Required input.

**x_var**
Unquoted numeric variable to be on the x axis. Required input.

**y_var**
Unquoted categorical variable to be on the y axis. Required input.

**hover_var**
Unquoted variable to be an additional hover variable for when used inside plotly::ggplotly(). Defaults to NULL.

**x_scale_zero**
TRUE or FALSE whether the minimum of the x scale is zero. Defaults to TRUE.

**x_scale_trans**
A string specifying a transformation for the x axis scale. Defaults to "identity".

**y_scale_rev**
TRUE or FALSE of whether bar order from top to bottom is reversed from default. Defaults to FALSE.

**pal**
Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.

**width**
Width of bars. Defaults to 0.75.

**title**
Title string. Defaults to [Title].

**subtitle**
Subtitle string. Defaults to [Subtitle].

**x_title**
X axis title string. Defaults to [X title].

**y_title**
Y axis title string. Defaults to [Y title].

**caption**
Caption title string. Defaults to NULL.

**font_family**
Font family to use. Defaults to "Helvetica".

**font_size_title**
Font size for the title text. Defaults to 11.

**font_size_body**
Font size for all text other than the title. Defaults to 10.
wrap_title  Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.

wrap_subtitle Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.

wrap_x_title Number of characters to wrap the x title to. Defaults to 50. Not applicable where isMobile equals TRUE.

wrap_y_title Number of characters to wrap the y title to. Defaults to 50. Not applicable where isMobile equals TRUE.

wrap_y_label Number of characters to wrap the y labels to. Defaults to 50. Not applicable where isMobile equals TRUE.

wrap_caption Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.

isMobile Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shiny app, isMobile should be specified as input$isMobile.

Value

A ggplot object.

Examples

```r
plot_data <- ggplot2::diamonds %>%
    dplyr::mutate(cut = stringr::str_to_sentence(cut)) %>%
    dplyr::group_by(cut) %>%
    dplyr::summarise(average_price = mean(price)) %>%
    dplyr::mutate(average_price_thousands = round(average_price / 1000, 1))

plot <- ggplot_hbar(data = plot_data, x_var = average_price_thousands, y_var = cut,
    title = "Average diamond price by cut",
    x_title = "Average price ($US thousands)",
    y_title = "Cut")

plot

plotly::ggplotly(plot, tooltip = "text")
```

Description

Horizontal bar ggplot that is coloured, but not facettted.
Usage

```r
ggplot_hbar_col(data, x_var, y_var, col_var, hover_var = NULL,
x_scale_zero = TRUE, x_scale_trans = "identity",
y_scale_rev = FALSE, col_scale_rev = FALSE, col_scale_drop = FALSE,
position = "stack", pal = NULL, legend_ncol = 3, width = 0.75,
title = "[Title]", subtitle = NULL, x_title = "[X title]",
y_title = "[Y title]", col_title = "", caption = "",
legend_labels = NULL, font_family = "Helvetica",
font_size_title = NULL, font_size_body = NULL, wrap_title = 70,
wrap_subtitle = 80, wrap_x_title = 50, wrap_y_title = 50,
wrap_y_label = 50, wrap_col_title = 25, wrap_caption = 80,
isMobile = FALSE)
```

Arguments

data A tibble or dataframe. Required input.
x_var Unquoted numeric variable to be on the x axis. Required input.
y_var Unquoted categorical variable to be on the y axis. Required input.
col_var Unquoted categorical variable to colour the bars. Required input.
hover_var Unquoted variable to be an additional hover variable for when used inside plotly::ggplotly().
 Defaults to NULL.
x_scale_zero TRUE or FALSE whether the minimum of the x scale is zero. Defaults to TRUE.
x_scale_trans A string specifying a transformation for the x axis scale. Defaults to "identity".
y_scale_rev TRUE or FALSE of whether bar order from top to bottom is reversed from default. Defaults to FALSE.
col_scale_rev TRUE or FALSE of whether bar fill order from left to right is reversed from default. Defaults to FALSE.
col_scale_drop TRUE or FALSE of whether to drop unused levels from the legend. Defaults to FALSE.
position Whether bars are positioned by "stack" or "dodge". Defaults to "stack".
pal Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.
legend_ncol The number of columns in the legend.
width Width of bars. Defaults to 0.75.
title Title string. Defaults to [Title].
subtitle Subtitle string. Defaults to [Subtitle].
x_title X axis title string. Defaults to [X title].
y_title Y axis title string. Defaults to [Y title].
col_title Colour title string for the legend. Defaults to NULL.
caption Caption title string. Defaults to NULL.
legend_labels A vector of manual legend label values. Defaults to NULL, which results in automatic labels.
ggplot_hbar_col

- **font_family**: Font family to use. Defaults to "Helvetica".
- **font_size_title**: Font size for the title text. Defaults to 11.
- **font_size_body**: Font size for all text other than the title. Defaults to 10.
- **wrap_title**: Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.
- **wrap_subtitle**: Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.
- **wrap_x_title**: Number of characters to wrap the x title to. Defaults to 50. Not applicable where isMobile equals TRUE.
- **wrap_y_title**: Number of characters to wrap the y title to. Defaults to 50. Not applicable where isMobile equals TRUE.
- **wrap_y_label**: Number of characters to wrap the y labels to. Defaults to 50. Not applicable where isMobile equals TRUE.
- **wrap_col_title**: Number of characters to wrap the colour title to. Defaults to 25. Not applicable where isMobile equals TRUE.
- **wrap_caption**: Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.
- **isMobile**: Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile.

**Value**

A ggplot object.

**Examples**

```r
plot_data <- ggplot2::diamonds %>%
  dplyr::mutate(cut = stringr::str_to_sentence(cut)) %>%
  dplyr::group_by(cut, clarity) %>%
  dplyr::summarise(average_price = mean(price)) %>%
  dplyr::mutate(average_price_thousands = round(average_price / 1000, 1)) %>%
  dplyr::ungroup()

plot <- ggplot_hbar_col(data = plot_data,
  x_var = average_price_thousands,
  y_var = cut,
  col_var = clarity,
  legend_ncol = 4,
  title = "Average diamond price by cut and clarity",
  x_title = "Average price ($US thousands)",
  y_title = "Cut"
)

plot

plotly::ggplotly(plot, tooltip = "text")
```
ggplot_hbar_col_facet  
*Horizontal bar ggplot that is coloured and facetted.*

**Description**

Horizontal bar ggplot that is coloured and facetted.

**Usage**

```r
ggplot_hbar_col_facet(data, x_var, y_var, col_var, facet_var, 
hover_var = NULL, x_scale_zero = TRUE, x_scale_trans = "identity", 
y_scale_rev = FALSE, col_scale_rev = FALSE, col_scale_drop = FALSE, 
position = "stack", facet_scales = "fixed", facet_nrow = NULL, 
pal = NULL, legend_ncol = 3, width = 0.75, title = "[Title]", 
subtitle = NULL, x_title = "[X title]", y_title = "[Y title]", 
col_title = "", caption = "", legend_labels = NULL, 
font_family = "Helvetica", font_size_title = NULL, 
font_size_body = NULL, wrap_title = 70, wrap_subtitle = 80, 
wrap_x_title = 50, wrap_y_title = 50, wrap_y_label = 50, 
wrap_col_title = 25, wrap_caption = 80, isMobile = FALSE)
```

**Arguments**

- `data`: A tibble or dataframe. Required input.
- `x_var`: Unquoted numeric variable to be on the x axis. Required input.
- `y_var`: Unquoted categorical variable to be on the y axis. Required input.
- `col_var`: Unquoted categorical variable to colour the bars. Required input.
- `facet_var`: Unquoted categorical variable to facet the data by. Required input.
- `hover_var`: Unquoted variable to be an additional hover variable for when used inside plotly::ggplotly(). Defaults to NULL.
- `x_scale_zero`: TRUE or FALSE whether the minimum of the x scale is zero. Defaults to TRUE.
- `x_scale_trans`: A string specifying a transformation for the x scale. Defaults to "identity".
- `y_scale_rev`: TRUE or FALSE of whether bar order from top to bottom is reversed from default. Defaults to FALSE.
- `col_scale_rev`: TRUE or FALSE of whether bar fill order from left to right is reversed from default. Defaults to FALSE.
- `col_scale_drop`: TRUE or FALSE of whether to drop unused levels from the legend. Defaults to FALSE.
- `position`: Whether bars are positioned by "stack" or "dodge". Defaults to "stack".
- `facet_scales`: Whether facet_scales should be "fixed" across facets, "free" in both directions, or free in just one direction (i.e. "free_x" or "free_y"). Defaults to "fixed".
- `facet_nrow`: The number of rows of facetted plots. Defaults to NULL, which generally chooses 2 rows. Not applicable to where isMobile is TRUE.
ggplot_hbar_col_facet

pal
Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.

legend_ncol
The number of columns in the legend.

width
Width of bars. Defaults to 0.75.

title
Title string. Defaults to [Title].

subtitle
Subtitle string. Defaults to [Subtitle].

x_title
X axis title string. Defaults to [X title].

y_title
Y axis title string. Defaults to [Y title].

col_title
Colour title string for the legend. Defaults to NULL.

caption
Caption title string. Defaults to NULL.

legend_labels
A vector of manual legend label values. Defaults to NULL, which results in automatic labels.

font_family
Font family to use. Defaults to "Helvetica".

font_size_title
Font size for the title text. Defaults to 11.

font_size_body
Font size for all text other than the title. Defaults to 10.

wrap_title
Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.

wrap_subtitle
Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.

wrap_x_title
Number of characters to wrap the x title to. Defaults to 50. Not applicable where isMobile equals TRUE.

wrap_y_title
Number of characters to wrap the y title to. Defaults to 50. Not applicable where isMobile equals TRUE.

wrap_y_label
Number of characters to wrap the y labels to. Defaults to 50. Not applicable where isMobile equals TRUE.

wrap_col_title
Number of characters to wrap the colour title to. Defaults to 25. Not applicable where isMobile equals TRUE.

wrap_caption
Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.

isMobile
Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile.

Value
A ggplot object.

Examples

plot_data <- ggplot2::diamonds %>%
dplyr::mutate(cut = stringr::str_to_sentence(cut)) %>%
dplyr::group_by(cut, clarity, color) %>%
dplyr::summarise(average_price = mean(price)) %>%
dplyr::mutate(average_price_thousands = round(average_price / 1000, 1))

plot <- ggplot_hbar_col_facet(data = plot_data, x_var = average_price_thousands, 
y_var = color, col_var = clarity, facet_var = cut, 
title = "Average diamond price by colour, clarity and cut", 
x_title = "Average price ($US thousands)", 
y_title = "Colour")

plot

plotly::ggplotly(plot, tooltip = "text")

---

**ggplot_hbar_facet**  
*Horizontal bar ggplot that is faceted.*

**Description**

Horizontal bar ggplot that is faceted, but not coloured.

**Usage**

```
ggplot_hbar_facet(data, x_var, y_var, facet_var, hover_var = NULL, 
    x_scale_zero = TRUE, x_scale_trans = "identity", 
    y_scale_rev = FALSE, facet_scales = "fixed", facet_nrow = NULL, 
    pal = NULL, width = 0.75, title = "[Title]", subtitle = NULL, 
    x_title = "[X title]", y_title = "[Y title]", caption = "", 
    font_family = "Helvetica", font_size_title = NULL, 
    font_size_body = NULL, wrap_title = 70, wrap_subtitle = 80, 
    wrap_x_title = 50, wrap_y_title = 50, wrap_y_label = 50, 
    wrap_caption = 80, isMobile = FALSE)
```

**Arguments**

- **data**: A tibble or dataframe. Required input.
- **x_var**: Unquoted numeric variable to be on the x axis. Required input.
- **y_var**: Unquoted categorical variable to be on the y axis. Required input.
- **facet_var**: Unquoted categorical variable to facet the data by. Required input.
- **hover_var**: Unquoted variable to be an additional hover variable for when used inside plotly::ggplotly(). Defaults to NULL.
- **x_scale_zero**: TRUE or FALSE whether the minimum of the x scale is zero. Defaults to TRUE.
- **x_scale_trans**: A string specifying a transformation for the x scale. Defaults to "identity".
- **y_scale_rev**: TRUE or FALSE of whether bar order from top to bottom is reversed from default. Defaults to FALSE.
- **facet_scales**: Whether facet_scales should be "fixed" across facets, "free" in both directions, or free in just one direction (i.e. "free_x" or "free_y"). Defaults to "fixed".
facet_nrow  The number of rows of facetted plots. Defaults to NULL, which generally
chooses 2 rows. Not applicable to where isMobile is TRUE.
pal       Character vector of hex codes. Defaults to NULL, which selects the Stats NZ
palette.
width     Width of bars. Defaults to 0.75.
title     Title string. Defaults to [Title].
subtitle  Subtitle string. Defaults to [Subtitle].
x_title   X axis title string. Defaults to [X title].
y_title   Y axis title string. Defaults to [Y title].
caption   Caption title string. Defaults to NULL.
font_family Font family to use. Defaults NULL.
font_size_title Font size for the title text. Defaults to 11.
font_size_body Font size for all text other than the title. Defaults to 10.
wrap_title Number of characters to wrap the title to. Defaults to 70. Not applicable where
isMobile equals TRUE.
wrap_subtitle Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where
isMobile equals TRUE.
wrap_x_title Number of characters to wrap the x title to. Defaults to 50. Not applicable where
isMobile equals TRUE.
wrap_y_title Number of characters to wrap the y title to. Defaults to 50. Not applicable where
isMobile equals TRUE.
wrap_y_label Number of characters to wrap the y labels to. Defaults to 50. Not applicable where
isMobile equals TRUE.
wrap_caption Number of characters to wrap the caption to. Defaults to 80. Not applicable where
isMobile equals TRUE.

isMobile Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a
shinyapp, isMobile should be specified as input$isMobile.

Value

A ggplot object.

Examples

plot_data <- ggplot2::diamonds %>%
dplyr::mutate(cut = stringr::str_to_sentence(cut)) %>%
dplyr::group_by(cut, clarity) %>%
dplyr::summarise(average_price = mean(price)) %>%
dplyr::mutate(average_price_thousands = round(average_price / 1000, 1))

plot <- ggplot_hbar_facet(data = plot_data, x_var = average_price_thousands,
y_var = cut, facet_var = clarity,
title = "Average diamond price by cut and clarity",
x_title = "Average price ($US thousands)"
)
 ggplot_line
    
    y_title = "Cut")

    plot

    plotly::ggplotly(plot, tooltip = "text")

---

**ggplot_line**

Line ggplot.

**Description**

Line ggplot that is not coloured and not facetted.

**Usage**

```r
ggplot_line(data, x_var, y_var, hover_var = NULL, 
             x_scale_date_format = "%Y", y_scale_zero = TRUE, 
             y_scale_trans = "identity", points = TRUE, point_size = 1, 
             pal = NULL, title = "[Title]", subtitle = NULL, 
             x_title = "[X title]", y_title = "[Y title]", caption = "", 
             font_family = "Helvetica", font_size_title = NULL, 
             font_size_body = NULL, wrap_title = 70, wrap_subtitle = 80, 
             wrap_x_title = 50, wrap_y_title = 50, wrap_caption = 80, 
             isMobile = FALSE)
```

**Arguments**

- **data** A tibble or dataframe. Required input.
- **x_var** Unquoted numeric or date variable to be on the x axis. Required input.
- **y_var** Unquoted numeric variable to be on the y axis. Required input.
- **hover_var** Unquoted variable to be an additional hover variable for when used inside plotly::ggplotly(). Defaults to NULL.
- **x_scale_date_format** Date format for x axis labels.
- **y_scale_zero** TRUE or FALSE whether the minimum of the y scale is zero. Defaults to TRUE.
- **y_scale_trans** A string specifying a transformation for the y axis scale, such as "log10" or "sqrt". Defaults to "identity".
- **points** TRUE or FALSE of whether to include points. Defaults to TRUE.
- **point_size** Size of points. Defaults to 1. Only applicable to where points equals TRUE.
- **pal** Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.
- **title** Title string. Defaults to "[Title]".
- **subtitle** Subtitle string. Defaults to "[Subtitle]".
- **x_title** X axis title string. Defaults to "[X title]".
ggplot_line_col

y_title  Y axis title string. Defaults to "[Y title]."
caption  Caption title string. Defaults to NULL.
font_family  Font family to use. Defaults to "Helvetica".
font_size_title  Font size for the title text. Defaults to 11.
font_size_body  Font size for all text other than the title. Defaults to 10.
wrap_title  Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.
wrap_subtitle  Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.
wrap_x_title  Number of characters to wrap the x title to. Defaults to 50. Not applicable where isMobile equals TRUE.
wrap_y_title  Number of characters to wrap the y title to. Defaults to 50. Not applicable where isMobile equals TRUE.
wrap_caption  Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.
isMobile  Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile.

Value
A ggplot object.

Examples

```r
plot_data <- dplyr::storms %>%
dplyr::group_by(year) %>%
dplyr::summarise(wind = round(mean(wind), 2))

plot <- ggplot_line(data = plot_data, x_var = year, y_var = wind,
title = "Average wind speed of Atlantic storms, 1975-2015",
x_title = "Year",
y_title = "Average maximum sustained wind speed (knots)"
)

plot

plotly::ggplotly(plot, tooltip = "text")
```

---

**ggplot_line_col**  Line ggplot that is coloured.

**Description**

Line ggplot that is coloured, but not facetted.
Usage

```r
ggplot_line_col(data, x_var, y_var, col_var, hover_var = NULL, 
x_scale_date_format = "%Y", y_scale_zero = TRUE, 
y_scale_trans = "identity", col_scale_drop = FALSE, points = TRUE, 
point_size = 1, pal = NULL, rev_pal = FALSE, legend_ncol = 3, 
title = "[Title]", subtitle = NULL, x_title = "[X title]", 
y_title = "[Y title]", col_title = "", caption = "", 
legend_labels = NULL, font_family = "Helvetica", 
font_size_title = NULL, font_size_body = NULL, wrap_title = 70, 
wrap_subtitle = 80, wrap_x_title = 50, wrap_y_title = 50, 
wrap_col_title = 25, wrap_caption = 80, isMobile = FALSE)
```

Arguments

data A tibble or dataframe. Required input.
x_var Unquoted numeric or date variable to be on the x axis. Required input.
y_var Unquoted numeric variable to be on the y axis. Required input.
col_var Unquoted categorical variable for lines and points to be coloured by. Required input.
hover_var Unquoted variable to be an additional hover variable for when used inside plotly::ggplotly(). Defaults to NULL.
x_scale_date_format Date format for x axis labels.
y_scale_zero TRUE or FALSE whether the minimum of the y scale is zero. Defaults to TRUE.
y_scale_trans A string specifying a transformation for the y axis scale, such as "log10" or "sqrt". Defaults to "identity".
col_scale_drop TRUE or FALSE of whether to drop unused levels from the legend. Defaults to FALSE.
points TRUE or FALSE of whether to include points. Defaults to TRUE.
point_size Size of points. Defaults to 1. Only applicable to where points equals TRUE.
pal Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.
rev_pal Reverses the palette. Defaults to FALSE.
legend_ncol The number of columns in the legend.
title Title string. Defaults to "[Title]".
subtitle Subtitle string. Defaults to "[Subtitle]".
x_title X axis title string. Defaults to "[X title]".
y_title Y axis title string. Defaults to "[Y title]".
col_title Colour title string for the legend. Defaults to NULL.
caption Caption title string. Defaults to NULL.
legend_labels A vector of manual legend label values. Defaults to NULL, which results in automatic labels.
### ggplot_line_col_facet

**Description**

Line ggplot that is coloured and facetted.

#### font_family

Font family to use. Defaults to "Helvetica".

#### font_size_title

Font size for the title text. Defaults to 11.

#### font_size_body

Font size for all text other than the title. Defaults to 10.

#### wrap_title

Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.

#### wrap_subtitle

Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.

#### wrap_x_title

Number of characters to wrap the x title to. Defaults to 50. Not applicable where isMobile equals TRUE.

#### wrap_y_title

Number of characters to wrap the y title to. Defaults to 50. Not applicable where isMobile equals TRUE.

#### wrap_col_title

Number of characters to wrap the colour title to. Defaults to 25. Not applicable where isMobile equals TRUE.

#### wrap_caption

Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.

#### isMobile

Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile.

#### Value

A ggplot object.

#### Examples

```r
plot_data <- dplyr::storms %>%
  dplyr::mutate(status = stringr::str_to_sentence(status)) %>%
  dplyr::group_by(year, status) %>%
  dplyr::summarise(wind = round(mean(wind), 2))

plot <- ggplot_line_col(data = plot_data, x_var = year, y_var = wind, col_var = status)

plot

plotly::ggplotly(plot, tooltip = "text")
```

---

**ggplot_line_col_facet**

*Line ggplot that is coloured and facetted.*

**Description**

Line ggplot that is coloured and facetted.
Usage

```
ggplot_line_col_facet(data, x_var, y_var, col_var, facet_var,
  hover_var = NULL, x_scale_date_format = "%Y", y_scale_zero = TRUE,
  y_scale_trans = "identity", col_scale_drop = FALSE,
  facet_scales = "fixed", facet_nrow = NULL, points = TRUE,
  point_size = 1, pal = NULL, rev_pal = FALSE, legend_ncol = 3,
  title = "[Title]", subtitle = NULL, x_title = "[X title]",
  y_title = "[Y title]", col_title = "," , caption = ",",
  legend_labels = NULL, font_family = "Helvetica",
  font_size_title = NULL, font_size_body = NULL, wrap_title = 70,
  wrap_subtitle = 80, wrap_x_title = 50, wrap_y_title = 50,
  wrap_col_title = 25, wrap_caption = 80, isMobile = FALSE)
```

Arguments

data A tibble or dataframe. Required input.
x_var Unquoted numeric or date variable to be on the x axis. Required input.
y_var Unquoted numeric variable to be on the y axis. Required input.
col_var Unquoted categorical variable for lines and points to be coloured by. Required input.
facet_var Unquoted categorical variable to facet the data by. Required input.
hover_var Unquoted variable to be an additional hover variable for when used inside plotly::ggplotly(). Defaults to NULL.
x_scale_date_format Date format for x axis labels.
y_scale_zero TRUE or FALSE whether the minimum of the y scale is zero. Defaults to TRUE.
y_scale_trans A string specifying a transformation for the y axis scale, such as "log10" or "sqrt". Defaults to "identity".
col_scale_drop TRUE or FALSE of whether to drop unused levels from the legend. Defaults to FALSE.
facet_scales Whether facet_scales should be "fixed" across facets, "free" in both directions, or free in just one direction (i.e. "free_x" or "free_y"). Defaults to "fixed".
facet_nrow The number of rows of facetted plots. Defaults to NULL, which generally chooses 2 rows. Not applicable to where isMobile is TRUE.
points TRUE or FALSE of whether to include points. Defaults to TRUE.
point_size Size of points. Defaults to 1. Only applicable to where points equals TRUE.
pal Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.
rev_pal Reverses the palette. Defaults to FALSE.
legend_ncol The number of columns in the legend.
title Title string. Defaults to "[Title]".
subtitle Subtitle string. Defaults to "[Subtitle]".
x_title X axis title string. Defaults to "[X title]".
ggplot_line_col_facet

y_title Y axis title string. Defaults to "[Y title]."
col_title Colour title string for the legend. Defaults to NULL.
caption Caption title string. Defaults to NULL.
legend_labels A vector of manual legend label values. Defaults to NULL, which results in automatic labels.
font_family Font family to use. Defaults to "Helvetica".
font_size_title Font size for the title text. Defaults to 11.
font_size_body Font size for all text other than the title. Defaults to 10.
wrap_title Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.
wrap_subtitle Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.
wrap_x_title Number of characters to wrap the x title to. Defaults to 50. Not applicable where isMobile equals TRUE.
wrap_y_title Number of characters to wrap the y title to. Defaults to 50. Not applicable where isMobile equals TRUE.
wrap_col_title Number of characters to wrap the colour title to. Defaults to 25. Not applicable where isMobile equals TRUE.
wrap_caption Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.
isMobile Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile.

Value

A ggplot object.

Examples

plot_data <- dplyr::storms %>%
  dplyr::mutate(status = stringr::str_to_sentence(status)) %>%
  dplyr::group_by(year, status) %>%
  dplyr::summarise(wind = round(mean(wind), 2))
plot <- ggplot_line_col_facet(data = plot_data, x_var = year, y_var = wind, col_var = status, facet_var = status)
plot
plotly::ggplotly(plot, tooltip = "text")
ggplot_line_facet  
Line ggplot that is faceted.

Description
Line ggplot that is faceted, but not coloured.

Usage

```r
ggplot_line_facet(data, x_var, y_var, facet_var, hover_var = NULL, 
x_scale_date_format = "%Y", y_scale_zero = TRUE, 
y_scale_trans = "identity", facet_scales = "fixed", 
facet_nrow = NULL, points = TRUE, point_size = 1, pal = NULL, 
title = "[Title]", subtitle = NULL, x_title = "[X title]", 
y_title = "[Y title]", caption = "", font_family = "Helvetica", 
font_size_title = NULL, font_size_body = NULL, wrap_title = 70, 
wrap_subtitle = 80, wrap_x_title = 50, wrap_y_title = 50, 
wrap_caption = 80, isMobile = FALSE)
```

Arguments

- `data`: A tibble or dataframe. Required input.
- `x_var`: Unquoted numeric or date variable to be on the x axis. Required input.
- `y_var`: Unquoted numeric variable to be on the y axis. Required input.
- `facet_var`: Unquoted categorical variable to facet the data by. Required input.
- `hover_var`: Unquoted variable to be an additional hover variable for when used inside plotly::ggplotly(). Defaults to NULL.
- `x_scale_date_format`: Date format for x axis labels.
- `y_scale_zero`: TRUE or FALSE whether the minimum of the y scale is zero. Defaults to TRUE.
- `y_scale_trans`: A string specifying a transformation for the y axis scale, such as "log10" or "sqrt". Defaults to "identity".
- `facet_scales`: Whether facet_scales should be "fixed" across facets, "free" in both directions, or free in just one direction (i.e. "free_x" or "free_y"). Defaults to "fixed".
- `facet_nrow`: The number of rows of facetted plots. Defaults to NULL, which generally chooses 2 rows. Not applicable to where isMobile is TRUE.
- `points`: TRUE or FALSE of whether to include points. Defaults to TRUE.
- `point_size`: Size of points. Defaults to 1. Only applicable to where points equals TRUE.
- `pal`: Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.
- `title`: Title string. Defaults to "[Title]".
- `subtitle`: Subtitle string. Defaults to "[Subtitle]".
ggplot_scatter

x_title  X axis title string. Defaults to "[X title]".
y_title  Y axis title string. Defaults to "[Y title]".
caption  Caption title string. Defaults to NULL.
font_family  Font family to use. Defaults to "Helvetica".
font_size_title  Font size for the title text. Defaults to 11.
font_size_body  Font size for all text other than the title. Defaults to 10.
wrap_title  Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.
wrap_subtitle  Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.
wrap_x_title  Number of characters to wrap the x title to. Defaults to 50. Not applicable where isMobile equals TRUE.
wrap_y_title  Number of characters to wrap the y title to. Defaults to 50. Not applicable where isMobile equals TRUE.
wrap_caption  Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.
isMobile  Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile.

Value

A ggplot object.

Examples

```r
plot_data <- dplyr::storms %>%
dplyr::mutate(status = stringr::str_to_sentence(status)) %>%
dplyr::group_by(year, status) %>%
dplyr::summarise(wind = round(mean(wind), 2))

plot <- ggplot_line_facet(data = plot_data, x_var = year, y_var = wind, facet_var = status)
plot

plotly::ggplotly(plot, tooltip = "text")
```

rggplot_scatter  Scatter ggplot.

Description

Scatter ggplot that is not coloured and not facetted.
Usage

```r
ggplot_scatter(data, x_var, y_var, hover_var = NULL, size = 1, 
apal = NULL, x_scale_zero = TRUE, x_scale_trans = "identity", 
y_scale_zero = TRUE, y_scale_trans = "identity", title = "[Title]", 
subtitle = NULL, x_title = "[X title]", y_title = "[Y title]", 
caption = "", font_family = "Helvetica", font_size_title = NULL, 
font_size_body = NULL, wrap_title = 70, wrap_subtitle = 80, 
wrap_x_title = 50, wrap_y_title = 50, wrap_caption = 80, 
isMobile = FALSE)
```

Arguments

data An ungrouped summarised tibble or dataframe. Required input.
x_var Unquoted numeric variable to be on the x axis. Required input.
y_var Unquoted numeric variable to be on the y axis. Required input.
hover_var Unquoted variable to be an additional hover variable for when used inside plotly::ggplotly(). Defaults to NULL.
size Size of points. Defaults to 1.
pal Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.
x_scale_zero TRUE or FALSE whether the minimum of the x scale is zero. Defaults to TRUE.
x_scale_trans A string specifying a transformation for the x scale. Defaults to "identity".
y_scale_zero TRUE or FALSE whether the minimum of the y scale is zero. Defaults to TRUE.
y_scale_trans A string specifying a transformation for the y scale. Defaults to "identity".
title Title string. Defaults to "[Title]".
subtitle Subtitle string. Defaults to "[Subtitle]".
x_title X axis title string. Defaults to "[X title]".
y_title Y axis title string. Defaults to "[Y title]".
caption Caption title string. Defaults to NULL.
font_family Font family to use. Defaults to "Helvetica".
font_size_title Font size for the title text. Defaults to 11.
font_size_body Font size for all text other than the title. Defaults to 10.
wrap_title Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.
wrapSubtitle Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.
wrap_x_title Number of characters to wrap the x title to. Defaults to 50. Not applicable where isMobile equals TRUE.
wrap_y_title Number of characters to wrap the y title to. Defaults to 50. Not applicable where isMobile equals TRUE.
ggplot_scatter_col  

**wrap_caption**  
Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.

**isMobile**  
Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile.

**Value**  
A ggplot object.

**Examples**

```r
plot_data <- dplyr::sample_frac(ggplot2::diamonds, 0.05)

plot <- ggplot_scatter(data = plot_data, x_var = carat, y_var = price,
  title = "Diamond price by carat",
  x_title = "Carat",
  y_title = "Price ($US thousands)"
  
plot

plotly::ggplotly(plot, tooltip = "text")
```

---

**Description**

Scatter ggplot that is coloured, but not facetted.

**Usage**

```r
ggplot_scatter_col(data, x_var, y_var, col_var, hover_var = NULL,  
col_method = NULL, col_title = "", quantile_cuts = NULL,  
bin_cuts = NULL, size = 1, pal = NULL, rev_pal = FALSE,  
remove_na = FALSE, x_scale_zero = TRUE, x_scale_trans = "identity",  
y_scale_zero = TRUE, y_scale_trans = "identity",  
col_scale_drop = FALSE, legend_ncol = 3, legend_digits = 1,  
title = "[Title]", subtitle = NULL, x_title = "[X title]",  
y_title = "[Y title]", caption = "", legend_labels = NULL,  
font_family = "Helvetica", font_size_title = NULL,  
font_size_body = NULL, wrap_title = 70, wrap_subtitle = 80,  
wrap_x_title = 50, wrap_y_title = 50, wrap_col_title = 25,  
wrap_caption = 80, isMobile = FALSE)
```
Arguments

data  An ungrouped summarised tibble or dataframe. Required input.
x_var  Unquoted numeric variable to be on the x axis. Required input.
y_var  Unquoted numeric variable to be on the y axis. Required input.
col_var  Unquoted variable for points to be coloured by. Required input.
hover_var  Unquoted variable to be an additional hover variable for when used inside plotly::ggplotly(). Defaults to NULL.
col_method  The method of colouring features, either "bin", "quantile" or "category." If numeric, defaults to "quantile".
col_title  Colour title string for the legend. Defaults to NULL.
quantile_cuts  A vector of probability cuts applicable where col_method of "quantile" is selected. The first number in the vector should 0 and the final number 1. Defaults to quartiles.
bin_cuts  A vector of bin cuts applicable where col_method of "bin" is selected. The first number in the vector should be either -Inf or 0, and the final number Inf. If NULL, 'pretty' breaks are used.
size  Size of points. Defaults to 1.
pal  Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette or viridis.
rev_pal  Reverses the palette. Defaults to FALSE.
remove_na  TRUE or FALSE of whether to remove NAs of the colour variable. Defaults to FALSE.
x_scale_zero  TRUE or FALSE whether the minimum of the x scale is zero. Defaults to TRUE.
x_scale_trans  A string specifying a transformation for the x scale. Defaults to "identity".
y_scale_zero  TRUE or FALSE whether the minimum of the y scale is zero. Defaults to TRUE.
y_scale_trans  A string specifying a transformation for the y scale. Defaults to "identity".
col_scale_drop  TRUE or FALSE of whether to drop unused levels from the legend. Defaults to FALSE.
legend_ncol  The number of columns in the legend.
legend_digits  Select the appropriate number of decimal places for numeric variable auto legend labels. Defaults to 1.
title  Title string. Defaults to "[Title]".
subtitle  Subtitle string. Defaults to "[Subtitle]".
x_title  X axis title string. Defaults to "[X title]".
y_title  Y axis title string. Defaults to "[Y title]".
caption  Caption title string. Defaults to NULL.
legend_labels  A vector of manual legend label values. Defaults to NULL, which results in automatic labels.
font_family  Font family to use. Defaults to "Helvetica".
ggplot_scatter_col_facet

font_size_title
Font size for the title text. Defaults to 11.

font_size_body
Font size for all text other than the title. Defaults to 10.

wrap_title
Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.

wrap_subtitle
Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.

wrap_x_title
Number of characters to wrap the x title to. Defaults to 50. Not applicable where isMobile equals TRUE.

wrap_y_title
Number of characters to wrap the y title to. Defaults to 50. Not applicable where isMobile equals TRUE.

wrap_col_title
Number of characters to wrap the colour title to. Defaults to 25. Not applicable where isMobile equals TRUE.

wrap_caption
Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.

isMobile
Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile.

Value
A ggplot object.

Examples

```r
plot_data <- dplyr::sample_frac(ggplot2::diamonds, 0.05)
plot <- ggplot_scatter_col(data = plot_data, x_var = carat, y_var = price, col_var = color)
plot
plotly::ggplotly(plot, tooltip = "text")
```

Description
Scatter ggplot that is coloured and faceted.
ggplot_scatter_col_facet(data, x_var, y_var, col_var, facet_var, 
  hover_var = NULL, size = 1, pal = NULL, rev_pal = FALSE, 
  remove_na = FALSE, x_scale_zero = TRUE, x_scale_trans = "identity", 
  y_scale_zero = TRUE, y_scale_trans = "identity", 
  col_scale_drop = FALSE, facet_scales = "fixed", facet_nrow = NULL, 
  col_method = NULL, quantile_cuts = NULL, quantile_by_facet = TRUE, 
  bin_cuts = NULL, legend_ncol = 3, legend_digits = 1, 
  title = "[Title]", subtitle = NULL, x_title = "[X title]", 
  y_title = "[Y title]", col_title = "", caption = "", 
  legend_labels = NULL, font_family = "Helvetica", 
  font_size_title = NULL, font_size_body = NULL, wrap_title = 70, 
  wrap_subtitle = 80, wrap_x_title = 50, wrap_y_title = 50, 
  wrap_col_title = 25, wrap_caption = 80, isMobile = FALSE)

Arguments

data An ungrouped summarised tibble or dataframe. Required input.
x_var Unquoted numeric variable to be on the x axis. Required input.
y_var Unquoted numeric variable to be on the y axis. Required input.
col_var Unquoted variable for points to be coloured by. Required input.
facet_var Unquoted categorical variable to facet the data by. Required input.
hover_var Unquoted variable to be an additional hover variable for when used inside plotly::ggplotly(). Defaults to NULL.
size Size of points. Defaults to 1.
pal Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette or viridis.
rev_pal Reverses the palette. Defaults to FALSE.
remove_na TRUE or FALSE of whether to remove NAs of the colour variable. Defaults to FALSE.
x_scale_zero TRUE or FALSE whether the minimum of the x scale is zero. Defaults to TRUE.
x_scale_trans A string specifying a transformation for the x scale. Defaults to "identity".
y_scale_zero TRUE or FALSE whether the minimum of the y scale is zero. Defaults to TRUE.
y_scale_trans A string specifying a transformation for the y scale. Defaults to "identity".
col_scale_drop TRUE or FALSE of whether to drop unused levels from the legend. Defaults to FALSE.
facet_scales Whether facet_scales should be "fixed" across facets, "free" in both directions, or free in just one direction (i.e. "free_x" or "free_y"). Defaults to "fixed".
facet_nrow The number of rows of faceted plots. Defaults to NULL, which generally chooses 2 rows. Not applicable to where isMobile is TRUE.
col_method The method of colouring features, either "bin", "quantile" or "category." If numeric, defaults to "quantile".
quantile_cuts  A vector of probability cuts applicable where col_method of "quantile" is selected. The first number in the vector should 0 and the final number 1. Defaults to quartiles.

quantile_by_facet  TRUE of FALSE whether quantiles should be calculated for each group of the facet variable. Defaults to TRUE.

bin_cuts  A vector of bin cuts applicable where col_method of "bin" is selected. The first number in the vector should be either -Inf or 0, and the final number Inf. If NULL, 'pretty' breaks are used.

legend_ncol  The number of columns in the legend.

legend_digits  Select the appropriate number of decimal places for numeric variable auto legend labels. Defaults to 1.

title  Title string. Defaults to "[Title]".

subtitle  Subtitle string. Defaults to "[Subtitle]".

x_title  X axis title string. Defaults to "[X title]".

y_title  Y axis title string. Defaults to "[Y title]".

col_title  Colour title string for the legend. Defaults to NULL.

caption  Caption title string. Defaults to NULL.

legend_labels  A vector of manual legend label values. Defaults to NULL, which results in automatic labels.

font_family  Font family to use. Defaults to "Helvetica".

font_size_title  Font size for the title text. Defaults to 11.

font_size_body  Font size for all text other than the title. Defaults to 10.

wrap_title  Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.

wrap_subtitle  Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.

wrap_x_title  Number of characters to wrap the x title to. Defaults to 50. Not applicable where isMobile equals TRUE.

wrap_y_title  Number of characters to wrap the y title to. Defaults to 50. Not applicable where isMobile equals TRUE.

wrap_col_title  Number of characters to wrap the colour title to. Defaults to 25. Not applicable where isMobile equals TRUE.

wrap_caption  Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.

isMobile  Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$!isMobile.

Value  A ggplot object.
Examples

```r
plot_data <- ggplot2::diamonds %>%
dplyr::sample_frac(0.05) %>%
dplyr::mutate(cut = stringr::str_to_sentence(cut))

plot <- ggplot_scatter_col_facet(data = plot_data, x_var = carat, y_var = price, col_var = color, facet_var = cut)

plot

plotly::ggplotly(plot, tooltip = "text")
```

---

**ggplot_scatter_facet**  
*Scatter ggplot that is faceted.*

Description

Scatter ggplot that is faceted, but not coloured.

Usage

```r
ggplot_scatter_facet(data, x_var, y_var, facet_var, hover_var = NULL, size = 1, pal = NULL, x_scale_zero = TRUE, x_scale_trans = "identity", y_scale_zero = TRUE, y_scale_trans = "identity", facet_scales = "fixed", facet_nrow = NULL, title = "[Title]", subtitle = NULL, x_title = "[X title]", y_title = "[Y title]", caption = "", font_family = "Helvetica", font_size_title = NULL, font_size_body = NULL, wrap_title = 70, wrap_subtitle = 80, wrap_x_title = 50, wrap_y_title = 50, wrap_caption = 80, isMobile = FALSE)
```

Arguments

- **data**: An ungrouped summarised tibble or dataframe. Required input.
- **x_var**: Unquoted numeric variable to be on the x axis. Required input.
- **y_var**: Unquoted numeric variable to be on the y axis. Required input.
- **facet_var**: Unquoted categorical variable to facet the data by. Required input.
- **hover_var**: Unquoted variable to be an additional hover variable for when used inside plotly::ggplotly(). Defaults to NULL.
- **size**: Size of points. Defaults to 1.
- **pal**: Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.
- **x_scale_zero**: TRUE or FALSE whether the minimum of the x scale is zero. Defaults to TRUE.
ggplot_scatter_facet

- **x_scale_trans**: A string specifying a transformation for the x scale. Defaults to "identity".
- **y_scale_zero**: TRUE or FALSE whether the minimum of the y scale is zero. Defaults to TRUE.
- **y_scale_trans**: A string specifying a transformation for the y scale. Defaults to "identity".
- **facet_scales**: Whether facet scales should be "fixed" across facets, "free" in both directions, or free in just one direction (i.e. "free_x" or "free_y"). Defaults to "fixed".
- **facet_nrow**: The number of rows of facetted plots. Defaults to NULL, which generally chooses 2 rows. Not applicable to where isMobile is TRUE.
- **title**: Title string. Defaults to "[Title]".
- **subtitle**: Subtitle string. Defaults to "[Subtitle]".
- **x_title**: X axis title string. Defaults to "[X title]".
- **y_title**: Y axis title string. Defaults to "[Y title]".
- **caption**: Caption title string. Defaults to NULL.
- **font_family**: Font family to use. Defaults to "Helvetica".
- **font_size_title**: Font size for the title text. Defaults to 11.
- **font_size_body**: Font size for all text other than the title. Defaults to 10.
- **wrap_title**: Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.
- **wrap_subtitle**: Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.
- **wrap_x_title**: Number of characters to wrap the x title to. Defaults to 50. Not applicable where isMobile equals TRUE.
- **wrap_y_title**: Number of characters to wrap the y title to. Defaults to 50. Not applicable where isMobile equals TRUE.
- **wrap_caption**: Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.
- **isMobile**: Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile.

**Value**

A ggplot object.

**Examples**

```r
plot_data <- dplyr::sample_frac(ggplot2::diamonds, 0.05)

plot <- ggplot_scatter_facet(data = plot_data, x_var = carat, y_var = price, facet_var = color)

plot

plotly::ggplotly(plot, tooltip = "text")
```
ggplot_sf

Map of simple features in ggplot.

Description

Map of simple features in ggplot that is not coloured and not faceted.

Usage

```r
ggplot_sf(data, size = 0.5, alpha = 0.1, pal = NULL,
          coastline = NULL, title = "[Title]", subtitle = NULL,
          caption = "", font_family = "Helvetica", font_size_title = NULL,
          font_size_body = NULL, wrap_title = 70, wrap_subtitle = 80,
          wrap_caption = 80, isMobile = FALSE)
```

Arguments

data A sf object with defined coordinate reference system. Required input.
size Size of points. Defaults to 0.5.
alpha The alpha of the fill. Defaults to 0.1. Only applicable to polygons.
pal Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.
coastline Add a sf object as a coastline (or administrative boundaries). Defaults to NULL. Use nz (or nz_region) to add a new zealand coastline. Or add a custom sf object.
title Title string. Defaults to "[Title]".
subtitle Subtitle string. Defaults to "[Subtitle]".
caption Caption title string. Defaults to NULL.
font_family Font family to use. Defaults to "Helvetica".
font_size_title Font size for the title text. Defaults to 11.
font_size_body Font size for all text other than the title. Defaults to 10.
wrap_title Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.
wrap_subtitle Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.
wrap_caption Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.
isMobile Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shiny app, use input$inMobile if your app is able to retrieve this input. A method to do this is described at https://g3rv4.com/2017/08/shiny-detect-mobile-browsers
Value

A ggplot object.

Examples

```r
map_data <- example_sf_nz_river_wq %>%
  dplyr::filter(period == "1998-2017", indicator == "Nitrate-nitrogen")

ggplot_sf(data = map_data, coastline = nz)
```

Description

Map of simple features in ggplot that is coloured, but not facetted.

Usage

```r
ggplot_sf_col(data, col_var, col_method = NULL, bin_cuts = NULL,
  quantile_cuts = c(0, 0.25, 0.5, 0.75, 1), size = 0.5, alpha = 0.9,
  pal = NULL, rev_pal = FALSE, col_scale_drop = FALSE,
  remove_na = FALSE, coastline = NULL, coastline_behind = TRUE,
  coastline_pal = "#7f7f7f", legend_ncol = 3, legend_digits = 1,
  title = "[Title]", subtitle = NULL, col_title = "", caption = "",
  legend_labels = NULL, font_family = "Helvetica",
  font_size_title = NULL, font_size_body = NULL, wrap_title = 70,
  wrap_subtitle = 80, wrap_col_title = 25, wrap_caption = 80,
  isMobile = FALSE)
```

Arguments

data A sf object with defined coordinate reference system. Required input.

col_var Unquoted variable for points to be coloured by. Required input.

col_method The method of colouring features, either "bin", "quantile" or "category." NULL results in "category", if categorical or "quantile" if numeric col_var. Note all numeric variables are cut to be inclusive of the min in the range, and exclusive of the max in the range (except for the final bucket which includes the highest value).

bin_cuts A vector of bin cuts applicable where col_method of "bin" is selected. The first number in the vector should be either -Inf or 0, and the final number Inf. If NULL, 'pretty' breaks are used.

quantile_cuts A vector of probability cuts applicable where col_method of "quantile" is selected. The first number in the vector should be 0 and the final number 1. Defaults to quartiles. Only applicable where col_method equals "quantile".

size Size of points. Defaults to 0.5.
alpha  The opacity of polygons. Defaults to 0.9.

col_scale_drop  TRUE or FALSE of whether to drop unused levels from the legend. Defaults to FALSE.

remove_na  TRUE or FALSE of whether to remove NAs of the colour variable. Defaults to FALSE.

colour  A vector of manual legend label values. Defaults to NULL, which results in automatic labels.

title  Colour title string for the legend. Defaults to NULL.

caption  Caption title string. Defaults to NULL.

font_family  Font family to use. Defaults to "Helvetica".

font_size_title  Font size for the title text. Defaults to 11.

font_size_body  Font size for all text other than the title. Defaults to 10.

wrap_title  Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.

wrap_subtitle  Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.

wrap_col_title  Number of characters to wrap the colour title to. Defaults to 25. Not applicable where isMobile equals TRUE.

wrap_caption  Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.

isMobile  Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shiny app, use input$isMobile if your app is able to retrieve this input. A method to do this is described at https://g3rv4.com/2017/08/shiny-detect-mobile-browsers

Value
A ggplot object.
Examples

```r
ggplot_sf_col(data = example_sf_nz_livestock, col_var = dairydens, coastline = nz,
col_method = "bin", bin_cuts = c(0, 10, 50, 100, 150, 200, Inf),
legend_digits = 0,
title = "Dairy density in count per km\u00b2, 2017")
```

```r
ggplot_sf_col(data = example_sf_nz_livestock, col_var = dairydens, coastline = nz,
col_method = "quantile", quantile_cuts = c(0, 0.25, 0.5, 0.75, 0.95, 1),
title = "Dairy density in count per km\u00b2, 2017")
```

```r
map_data <- example_sf_nz_river_wq %>%
dplyr::filter(period == "1998-2017", indicator == "Nitrate-nitrogen")
pal <- c("#4575B4", "#D3D3D3", "#D73027")
```

```r
ggplot_sf_col(data = map_data, col_var = trend_category, coastline = nz,
pal = pal, col_method = "category",
title = "Monitored river nitrate-nitrogen trends, 2008-17")
```

---

**ggplot_sf_col_facet**  Map of simple features in ggplot that is coloured and facetted.

**Description**

Map of simple features in ggplot that is coloured and faceted.

**Usage**

```r
ggplot_sf_col_facet(data, col_var, facet_var, col_method = NULL,
bin_cuts = NULL, quantile_cuts = c(0, 0.25, 0.5, 0.75, 1),
quantile_by_facet = TRUE, size = 0.5, alpha = 0.9, pal = NULL,
rev_pal = FALSE, col_scale_drop = FALSE, remove_na = FALSE,
facet_nrow = NULL, legend_ncol = 3, legend_digits = 1,
coastline = NULL, coastline_behind = TRUE,
coastline_pal = "#7f7f7f", title = "[Title]", subtitle = NULL,
col_title = "", caption = "", legend_labels = NULL,
font_family = "Helvetica", font_size_title = NULL,
font_size_body = NULL, wrap_title = 70, wrap_subtitle = 80,
wrap_col_title = 25, wrap_caption = 80, isMobile = FALSE)
```

**Arguments**

- `data`  A sf object with defined coordinate reference system. Required input.
- `col_var`  Unquoted variable for points to be coloured by. Required input.
- `facet_var`  Unquoted categorical variable to facet the data by. Required input.
- `col_method`  The method of colouring features, either "bin", "quantile" or "category." NULL results in "category", if categorical or "quantile" if numeric col_var. Note all numeric variables are cut to be inclusive of the min in the range, and exclusive
of the max in the range (except for the final bucket which includes the highest value).

**bin_cuts**
A vector of bin cuts applicable where `col_method` of "bin" is selected. The first number in the vector should be either -Inf or 0, and the final number Inf. If NULL, 'pretty' breaks are used.

**quantile_cuts**
A vector of probability cuts applicable where `col_method` of "quantile" is selected. The first number in the vector should 0 and the final number 1. Defaults to quartiles. Only applicable where `col_method` equals "quantile".

**quantile_by_facet**
TRUE or FALSE whether quantiles should be calculated for each group of the facet variable. Defaults to TRUE.

**size**
Size of points. Defaults to 0.5.

**alpha**
The opacity of polygons. Defaults to 0.9.

**pal**
Character vector of hex codes. Defaults to NULL, which selects the colorbrewer Set1 or viridis.

**rev_pal**
Reverses the palette. Defaults to FALSE.

**col_scale_drop**
TRUE or FALSE of whether to drop unused levels from the legend. Defaults to FALSE.

**remove_na**
TRUE or FALSE of whether to remove NAs of the colour variable. Defaults to FALSE.

**facet_nrow**
The number of rows of facetted plots. Not applicable to where `isMobile` is TRUE.

**legend_ncol**
The number of columns in the legend.

**legend_digits**
Select the appropriate number of decimal places for numeric variable auto legend labels. Defaults to 1.

**coastline**
Add a sf object as a coastline (or administrative boundaries). Defaults to NULL. Use nz (or nz_region) to add a new zealand coastline. Or add a custom sf object.

**coastline_behind**
TRUE or FALSE as to whether the coastline is to be behind the sf object defined in the data argument. Defaults to FALSE.

**coastline_pal**
Colour of the coastline. Defaults to "#7F7F7F".

**title**
Title string. Defaults to "[Title]".

**subtitle**
Subtitle string. Defaults to "[Subtitle]".

**col_title**
Colour title string for the legend. Defaults to NULL.

**caption**
Caption title string. Defaults to NULL.

**legend_labels**
A vector of manual legend label values. Defaults to NULL, which results in automatic labels.

**font_family**
Font family to use. Defaults to "Helvetica".

**font_size_title**
Font size for the title text. Defaults to 11.

**font_size_body**
Font size for all text other than the title. Defaults to 10.
ggplot_sf_facet

Wrap the title, subtitle, colour title, and caption in ggplot

Value

A ggplot object.

Examples

```r
map_data <- example_sf_nz_river_wq %>%
dplyr::filter(period == "1998-2017", indicator %in% c("Nitrate-nitrogen", "Dissolved reactive phosphorus"))

pal <- c("#4575B4", "#D3D3D3", "#D73027")

ggplot_sf_col_facet(data = map_data, col_var = trend_category, facet_var = indicator, coastline = nz, pal = pal, title = "Monitored river nitrate-nitrogen trends, 2008-17")
```

Map of simple features in ggplot that is faceted.

Description

Map of simple features in ggplot that is faceted, but not coloured.

Usage

```r
ggplot_sf_facet(data, facet_var, size = 0.5, alpha = 0.1, pal = NULL, facet_nrow = NULL, coastline = NULL, coastline_behind = TRUE, coastline_pal = "#7f7f7f", title = "[Title]", subtitle = NULL, caption = "", font_family = "Helvetica", font_size_title = NULL, font_size_body = NULL, wrap_title = 70, wrap_subtitle = 80, wrap_caption = 80, isMobile = FALSE)
```
Arguments

- **data**: A sf object with defined coordinate reference system. Required input.
- **facet_var**: Unquoted categorical variable to facet the data by. Required input.
- **size**: Size of points. Defaults to 0.5.
- **alpha**: The alpha of the fill. Defaults to 0.1. Only applicable to polygons.
- **pal**: Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.
- **facet_nrow**: The number of rows of facetted plots. Not applicable to where isMobile is TRUE.
- **coastline**: Add a sf object as a coastline (or administrative boundaries). Defaults to NULL. Use nz (or nz_region) to add a new zealand coastline. Or add a custom sf object.
- **coastline_behind**: TRUE or FALSE as to whether the coastline is to be behind the sf object defined in the data argument. Defaults to FALSE.
- **coastline_pal**: Colour of the coastline. Defaults to "#7F7F7F".
- **title**: Title string. Defaults to "[Title]".
- **subtitle**: Subtitle string. Defaults to "[Subtitle]".
- **caption**: Caption title string. Defaults to NULL.
- **font_family**: Font family to use. Defaults to "Helvetica".
- **font_size_title**: Font size for the title text. Defaults to 11.
- **font_size_body**: Font size for all text other than the title. Defaults to 10.
- **wrap_title**: Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.
- **wrap_subtitle**: Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.
- **wrap_caption**: Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.
- **isMobile**: Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shiny app, use input$isMobile if your app is able to retrieve this input. A method to do this is described at https://g3rv4.com/2017/08/shiny-detect-mobile-browsers

Value

A ggplot object.

Examples

```r
map_data <- example_sf_nz_river_wq %>%
dplyr::filter(period == "1998-2017", indicator == "Nitrate-nitrogen")
ggplot_sf_facet(data = map_data, facet_var = trend_category, coastline = nz, title = "Monitored river nitrate-nitrogen trends, 2008-17")
```
Map of an array in ggplot.

**Description**

Map of an array in ggplot that is not coloured and not faceted.

**Usage**

```r
ggplot_stars(data, pal = NULL, coastline = NULL,
             coastline_behind = FALSE, coastline_pal = "black",
             title = "[Title]", subtitle = NULL, caption = "",
             font_family = "Helvetica", font_size_title = NULL,
             font_size_body = NULL, wrap_title = 70, wrap_subtitle = 80,
             wrap_caption = 80, isMobile = FALSE)
```

**Arguments**

- `data`: A stars object with 2 dimensions x and y. Required input.
- `pal`: Character vector of hex codes, or provided objects with pal_ prefixes.
- `coastline`: Add a sf object as a coastline (or administrative boundaries). Defaults to NULL. Use nz (or nz_region) to add a new zealand coastline. Or add a custom sf object.
- `coastline_behind`: TRUE or FALSE as to whether the coastline is to be behind the stars object defined in the data argument. Defaults to FALSE.
- `coastline_pal`: Colour of the coastline. Defaults to "#7F7F7F".
- `title`: Title string. Defaults to "[Title]".
- `subtitle`: Subtitle string. Defaults to "[Subtitle]".
- `caption`: Caption title string. Defaults to NULL.
- `font_family`: Font family to use. Defaults to "Helvetica".
- `font_size_title`: Font size for the title text. Defaults to 11.
- `font_size_body`: Font size for all text other than the title. Defaults to 10.
- `wrap_title`: Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.
- `wrap_subtitle`: Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.
- `wrap_caption`: Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.
- `isMobile`: Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile. TRUEhis enable mobile compatible apps, where apps have ui mobileDetect function defined and mobile.js file in www/js/ folder https://g3rv4.com/2017/08/shiny-detect-mobile-browsers
Value

A ggplot object.

Examples

```r
ggplot_stars(data = example_stars_nz_no3n, coastline = nz)
```

Description

Map of an array in ggplot that is coloured, but not facetted.

Usage

```r
ggplot_stars_col(data, col_method = "quantile", quantile_cuts = c(0,
0.25, 0.5, 0.75, 1), bin_cuts = NULL, pal = NULL, rev_pal = FALSE,
coastline = NULL, coastline_behind = TRUE,
coastline_pal = "#7f7f7f", legend_ncol = 3, legend_digits = 1,
title = "[Title]", subtitle = NULL, col_title = "", caption = "",
legend_labels = NULL, font_family = "Helvetica",
font_size_title = NULL, font_size_body = NULL, wrap_title = 70,
wrap_subtitle = 80, wrap_col_title = 25, wrap-caption = 80,
isMobile = FALSE)
```

Arguments

data A stars object with 2 dimensions x and y, and 1 attribute layer that will be
coloured. Required input.

col_method The method of colouring grid, either "bin", "quantile" or "category." Defaults to
"quantile".

quantile_cuts A vector of probability cuts applicable where col_method of "quantile" is se-
lected. The first number in the vector should 0 and the final number 1. Defaults
to quartiles. Only applicable where col_method equals "quantile".

bin_cuts A vector of bin cuts applicable where col_method of "bin" is selected. The
first number in the vector should be either -Inf or 0, and the final number Inf.
If NULL, ‘pretty’ breaks are used. Only applicable where col_method equals
"bin".

pal Character vector of hex codes, or provided objects with pal_ prefixes. Defaults
to viridis.

rev_pal Reverses the palette. Defaults to FALSE.

coastline Add a sf object as a coastline (or administrative boundaries). Defaults to NULL.
Use nz (or nz_region) to add a new zealand coastline. Or add a custom sf object.
ggplot_stars_col

- coastline_behind: TRUE or FALSE as to whether the coastline is to be behind the stars object defined in the data argument. Defaults to FALSE.
- coastline_pal: Colour of the coastline. Defaults to "#7F7F7F".
- legend_ncol: The number of columns in the legend.
- legend_digits: Select the appropriate number of decimal places for numeric variable auto legend labels. Defaults to 1.
- title: Title string. Defaults to "[Title]".
- subtitle: Subtitle string. Defaults to "[Subtitle]".
- col_title: Colour title string for the legend. Defaults to NULL.
- caption: Caption title string. Defaults to NULL.
- legend_labels: A vector of manual legend label values. Defaults to NULL, which results in automatic labels.
- font_family: Font family to use. Defaults to "Helvetica".
- font_size_title: Font size for the title text. Defaults to 11.
- font_size_body: Font size for all text other than the title. Defaults to 10.
- wrap_title: Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.
- wrap_subtitle: Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.
- wrap_col_title: Number of characters to wrap the colour title to. Defaults to 25. Not applicable where isMobile equals TRUE.
- wrap_caption: Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.
- isMobile: Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile. TRUEhis enable mobile compatible apps, where apps have ui mobileDetect function defined and mobile.js file in www/js/ folder https://g3rv4.com/2017/08/shiny-detect-mobile-browsers

Value

A ggplot object.

Examples

ggplot_stars_col(data = example_stars_nz_no3n, coastline = nz, 
col_method = "quantile", quantile_cuts = c(0, 0.05, 0.25, 0.5, 0.75, 0.95, 1), 
title = "River modelled median nitrate-nitrogen concentrations, 2013-17")
**ggplot_stars_col_facet**

*Map of an array in ggplot that is coloured and facettted.*

### Description

Map of an array in ggplot that is coloured and facettted.

### Usage

```r
ggplot_stars_col_facet(data, col_method = "quantile", quantile_cuts = c(0, 0.25, 0.5, 0.75, 1), quantile_by_facet = TRUE, bin_cuts = NULL, pal = NULL, rev_pal = FALSE, coastline = NULL, coastline_behind = TRUE, coastline_pal = "#7f7f7f", facet_nrow = NULL, legend_ncol = 3, legend_digits = 1, title = "[Title]", subtitle = NULL, col_title = ", caption = ", legend_labels = NULL, font_family = "Helvetica", font_size_title = NULL, font_size_body = NULL, wrap_title = 70, wrap_subtitle = 80, wrap_col_title = 25, wrap_caption = 80, isMobile = FALSE)
```

### Arguments

- **data**
  
  A stars object with 2 dimensions, x and y, and multiple named attribute layers with usual convention of lower case and underscores. Each attribute layer will be a facet. Required input.

- **col_method**
  
  The method of colouring features, either "bin", "quantile" or "category." Defaults to "quantile". Note all numeric variables are cut to be inclusive of the min in the range, and exclusive of the max in the range (except for the final bucket which includes the highest value).

- **quantile_cuts**
  
  A vector of probability cuts applicable where `col_method` of "quantile" is selected. The first number in the vector should 0 and the final number 1. Defaults to quartiles. Only applicable where `col_method` equals "quantile".

- **quantile_by_facet**
  
  TRUE of FALSE whether quantiles should be calculated for each group of the facet variable. Defaults to TRUE.

- **bin_cuts**
  
  A vector of bin cuts applicable where `col_method` of "bin" is selected. The first number in the vector should be either -Inf or 0, and the final number Inf. If NULL, 'pretty’ breaks are used. Only applicable where `col_method` equals "bin".

- **pal**
  
  Character vector of hex codes, or provided objects with pal_ prefixes. Defaults to viridis.

- **rev_pal**
  
  Reverses the palette. Defaults to FALSE.

- **coastline**
  
  Add a sf object as a coastline (or administrative boundaries). Defaults to NULL. Use nz (or nz_region) to add a new zealand coastline. Or add a custom sf object.
coastline_behind
TRUE or FALSE as to whether the coastline is to be behind the stars object defined in the data argument. Defaults to FALSE.

coastline_pal
Colour of the coastline. Defaults to "#7F7F7F".

facet_nrow
The number of rows of facetted plots. Not applicable to where isMobile is TRUE.

legend_ncol
The number of columns in the legend.

legend_digits
Select the appropriate number of decimal places for numeric variable auto legend labels. Defaults to 1.

title
Title string. Defaults to "[Title]".

subtitle
Subtitle string. Defaults to "[Subtitle]".

col_title
Colour title string for the legend. Defaults to NULL.

caption
Caption title string. Defaults to NULL.

legend_labels
A vector of manual legend label values. Defaults to NULL, which results in automatic labels.

font_family
Font family to use. Defaults to "Helvetica".

font_size_title
Font size for the title text. Defaults to 11.

font_size_body
Font size for all text other than the title. Defaults to 10.

wrap_title
Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.

wrap_subtitle
Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.

wrap_col_title
Number of characters to wrap the colour title to. Defaults to 25. Not applicable where isMobile equals TRUE.

wrap_caption
Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.

isMobile
Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile. TRUE this enable mobile compatible apps, where apps have ui mobileDetect function defined and mobile.js file in www/js/ folder https://g3rv4.com/2017/08/shiny-detect-mobile-browsers

Value
A ggplot object.

Examples

```r
map_data1 <- example_stars_nz_no3n %>%
  rlang::set_names("Nitrate nitrogen")

map_data2 <- example_stars_nz_drp %>%
  rlang::set_names("Dissolved reactive phosphorus")
```
map_data <- c(map_data1, map_data2)

ggplot_stars_col_facet(data = map_data, coastline = nz, 
  col_method = "quantile", quantile_cuts = c(0, 0.05, 0.25, 0.5, 0.75, 0.95, 1), 
  title = "River modelled nutrient concentrations, 2013-17")

---

**ggplot_stars_facet**  
*Map of an array in ggplot that is facetted.*

**Description**  
Map of an array in ggplot that is facetted, but not coloured.

**Usage**

```r
ggplot_stars_facet(data, pal = NULL, coastline = NULL, 
  coastline_behind = FALSE, coastline_pal = "black", 
  facet_nrow = NULL, title = "[Title]", subtitle = NULL, 
  caption = "", font_family = "Helvetica", font_size_title = NULL, 
  font_size_body = NULL, wrap_title = 70, wrap_subtitle = 80, 
  wrap_caption = 80, isMobile = FALSE)
```

**Arguments**

data  
A stars object with 2 dimensions, x and y, and multiple named attribute layers 
with usual convention of lower case and underscores. These attribute layers will 
be facetted. Required input.

pal  
Character vector of hex codes, or provided objects with pal_ prefixes.

coastline  
Add a sf object as a coastline (or administrative boundaries). Defaults to NULL. 
Use nz (or nz_region) to add a new zealand coastline. Or add a custom sf object.

coastline_behind  
TRUE or FALSE as to whether the coastline is to be behind the stars object 
defined in the data argument. Defaults to FALSE.

coastline_pal  
Colour of the coastline. Defaults to "#7F7F7F".

facet_nrow  
The number of rows of facetted plots. Not applicable to where isMobile is 
TRUE.

title  
Title string. Defaults to "[Title]".

subtitle  
Subtitle string. Defaults to "[Subtitle]".

caption  
Caption title string. Defaults to NULL.

font_family  
Font family to use. Defaults to "Helvetica".

font_size_title  
Font size for the title text. Defaults to 11.

font_size_body  
Font size for all text other than the title. Defaults to 10.
**ggplot_vbar**

Vertical bar ggplot.

**Description**

Vertical bar ggplot that is not coloured and not facetted.

**Usage**

```r
ggplot_vbar(data, x_var, y_var, hover_var = NULL, x_scale_date_format = "%Y", y_scale_zero = TRUE, y_scale_trans = "identity", pal = NULL, width = 0.75, title = "[Title]", subtitle = NULL, x_title = "[X title]", y_title = "[Y title]", caption = "", font_family = "Helvetica", font_size_title = NULL, font_size_body = NULL, wrap_title = 70, wrap_subtitle = 80, wrap_x_title = 50, wrap_y_title = 50, wrap_caption = 80, isMobile = FALSE)
```

**Value**

A ggplot object.

**Examples**

```r
map_data1 <- example_stars_nz_no3n %>%
  rlang::set_names("nitrate_nitrogen")

map_data2 <- example_stars_nz_drp %>%
  rlang::set_names("dissolved_reactive_phosphorus")

map_data <- c(map_data1, map_data2)

ggplot_stars_facet(data = map_data, coastline = nz)
```
Arguments

data A tibble or dataframe. Required input.
x_var Unquoted numeric, date or categorical variable to be on the x axis. Required input.
y_var Unquoted numeric variable to be on the y axis. Required input.
hover_var Unquoted variable to be an additional hover variable for when used inside plotly::ggplotly(). Defaults to NULL.
x_scale_date_format Date format for x axis labels.
y_scale_zero TRUE or FALSE of whether the minimum of the y scale is zero. Defaults to TRUE.
y_scale_trans A string specifying a transformation for the y axis scale, such as "log10" or "sqrt". Defaults to "identity".
pal Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.
width Width of bars. Defaults to 0.75.
title Title string. Defaults to [Title].
subtitle Subtitle string. Defaults to [Subtitle].
x_title X axis title string. Defaults to [X title].
y_title Y axis title string. Defaults to [Y title].
caption Caption title string. Defaults to NULL.
font_family Font family to use. Defaults to "Helvetica".
font_size_title Font size for the title text. Defaults to 11.
font_size_body Font size for all text other than the title. Defaults to 10.
wrap_title Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.
wrap_subtitle Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.
wrap_x_title Number of characters to wrap the x title to. Defaults to 50. Not applicable where isMobile equals TRUE.
wrap_y_title Number of characters to wrap the y title to. Defaults to 50. Not applicable where isMobile equals TRUE.
wrap_caption Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.
isMobile Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile.

Value

A ggplot object.
Examples

```r
plot_data <- dplyr::storms %>%
  dplyr::group_by(year) %>%
  dplyr::summarise(average_wind = round(mean(wind), 2))

plot <- ggplot_vbar(data = plot_data, x_var = year, y_var = average_wind,
  title = "Average wind speed of Atlantic storms, 1975-2015",
  x_title = "Year",
  y_title = "Average maximum sustained wind speed (knots)"
)

plot

plotly::ggplotly(plot, tooltip = "text")
```

Description

Vertical bar ggplot that is coloured, but not facetted.

Usage

```r
ggplot_vbar_col(data, x_var, y_var, col_var, hover_var = NULL,
  x_scale_date_format = "%Y", y_scale_zero = TRUE,
  y_scale_trans = "identity", col_scale_drop = FALSE,
  position = "stack", pal = NULL, legend_ncol = 3, width = 0.75,
  title = "[Title]", subtitle = NULL, x_title = "[X title]",
  y_title = "[Y title]", col_title = "", caption = "",
  legend_labels = NULL, font_family = "Helvetica",
  font_size_title = NULL, font_size_body = NULL, wrap_title = 70,
  wrap_subtitle = 80, wrap_x_title = 50, wrap_y_title = 50,
  wrap_col_title = 25, wrap_caption = 80, isMobile = FALSE)
```

Arguments

data: A tibble or dataframe. Required input.

x_var: Unquoted numeric, date or categorical variable to be on the x axis. Required input.

y_var: Unquoted numeric variable to be on the y axis. Required input.

col_var: Unquoted categorical variable to colour the bars. Required input.

hover_var: Unquoted variable to be an additional hover variable for when used inside plotly::ggplotly(). Defaults to NULL.

x_scale_date_format: Date format for x axis labels.
ggplot_vbar_col

y_scale_zero  TRUE or FALSE of whether the minimum of the y scale is zero. Defaults to TRUE.
y_scale_trans A string specifying a transformation for the y axis scale, such as "log10" or "sqrt". Defaults to "identity".
col_scale_drop TRUE or FALSE of whether to drop unused levels from the legend. Defaults to FALSE.
position Whether bars are positioned by "stack" or "dodge". Defaults to "stack".
pal Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.
legend_ncol The number of columns in the legend.
width Width of bars. Defaults to 0.75.
title Title string. Defaults to [Title].
subtitle Subtitle string. Defaults to [Subtitle].
x_title X axis title string. Defaults to [X title].
y_title Y axis title string. Defaults to [Y title].
col_title Colour title string for the legend. Defaults to NULL.
caption Caption title string. Defaults to NULL.
legend_labels A vector of manual legend label values. Defaults to NULL, which results in automatic labels.
font_family Font family to use. Defaults to "Helvetica".
font_size_title Font size for the title text. Defaults to 11.
font_size_body Font size for all text other than the title. Defaults to 10.
wrap_title Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.
wrap_subtitle Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.
wrap_x_title Number of characters to wrap the x title to. Defaults to 50. Not applicable where isMobile equals TRUE.
wrap_y_title Number of characters to wrap the y title to. Defaults to 50. Not applicable where isMobile equals TRUE.
wrap_col_title Number of characters to wrap the colour title to. Defaults to 25. Not applicable where isMobile equals TRUE.
wrap_caption Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.
isMobile Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile.

Value
A ggplot object.
Examples

plot_data <- dplyr::storms %>%
dplyr::mutate(status = stringr::str_to_sentence(status)) %>%
dplyr::group_by(year, status) %>%
dplyr::summarise(average_wind = round(mean(wind), 2))

plot <- ggplot_vbar_col(data = plot_data, x_var = year, y_var = average_wind, col_var = status)
plot
plotly::ggplotly(plot, tooltip = "text")

Description

Vertical bar ggplot that is coloured and faceted.

Usage

ggplot_vbar_col_facet(data, x_var, y_var, col_var, facet_var, hover_var = NULL, x_scale_date_format = "%Y", y_scale_zero = TRUE, y_scale_trans = "identity", col_scale_drop = FALSE, position = "stack", facet_scales = "fixed", facet_nrow = NULL, pal = NULL, legend_ncol = 3, width = 0.75, title = "[Title]", subtitle = NULL, x_title = "[X title]", y_title = "[Y title]", col_title = ", caption = ", legend_labels = NULL, font_family = "Helvetica", font_size_title = NULL, font_size_body = NULL, wrap_title = 70, wrap_subtitle = 80, wrap_x_title = 50, wrap_y_title = 50, wrap_col_title = 25, wrap_caption = 80, isMobile = FALSE)

Arguments

data A tibble or dataframe. Required input.
x_var Unquoted numeric, date or categorical variable to be on the x axis. Required input.
y_var Unquoted numeric variable to be on the y axis. Required input.
col_var Unquoted categorical variable to colour the bars. Required input.
facet_var Unquoted categorical variable to facet the data by. Required input.
hover_var Unquoted variable to be an additional hover variable for when used inside plotly::ggplotly(). Defaults to NULL.
x_scale_date_format Date format for x axis labels.
y_scale_zero  TRUE or FALSE of whether the minimum of the y scale is zero. Defaults to TRUE.
y_scale_trans A string specifying a transformation for the y axis scale, such as "log10" or "sqrt". Defaults to "identity".
col_scale_drop TRUE or FALSE of whether to drop unused levels from the legend. Defaults to FALSE.
position Whether bars are positioned by "stack" or "dodge". Defaults to "stack".
facet_scales Whether facet_scales should be "fixed" across facets, "free" in both directions, or free in just one direction (i.e. "free_x" or "free_y"). Defaults to "fixed".
facet_nrow The number of rows of faceted plots. Defaults to NULL, which generally chooses 2 rows. Not applicable to where isMobile is TRUE.
pal Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.
legend_ncol The number of columns in the legend.
width Width of bars. Defaults to 0.75.
title Title string. Defaults to [Title].
subtitle Subtitle string. Defaults to [Subtitle].
x_title X axis title string. Defaults to [X title].
y_title Y axis title string. Defaults to [Y title].
col_title Colour title string for the legend. Defaults to NULL.
caption Caption title string. Defaults to NULL.
legend_labels A vector of manual legend label values. Defaults to NULL, which results in automatic labels.
font_family Font family to use. Defaults to "Helvetica".
font_size_title Font size for the title text. Defaults to 11.
font_size_body Font size for all text other than the title. Defaults to 10.
wrap_title Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.
wrap_subtitle Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.
wrap_x_title Number of characters to wrap the x title to. Defaults to 50. Not applicable where isMobile equals TRUE.
wrap_y_title Number of characters to wrap the y title to. Defaults to 50. Not applicable where isMobile equals TRUE.
wrap_col_title Number of characters to wrap the colour title to. Defaults to 25. Not applicable where isMobile equals TRUE.
wrap_caption Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.
isMobile Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile.
**Value**

A ggplot object.

**Examples**

```r
plot_data <- dplyr::storms %>%
dplyr::mutate(status = stringr::str_to_sentence(status)) %>%
dplyr::group_by(year, status, name) %>%
dplyr::summarise(average_wind = round(mean(wind), 2)) %>%
dplyr::filter(year %in% 1975:1980) %>%
dplyr::filter(!(status == "Tropical storm" & year == 1980)) %>%
dplyr::filter(name %in% c("Karl", "Juliet", "Jeanne", "Ivan", "Hermine",
"Henri", "Gloria", "Georges", "Frederic"))

plot <- ggplot_vbar_col_facet(data = plot_data, x_var = year, y_var = average_wind, col_var = name, facet_var = status)

plot

plotly::ggplotly(plot, tooltip = "text")
```

---

**Description**

Vertical bar ggplot that is faceted, but not coloured.

**Usage**

```r
ggplot_vbar_facet(data, x_var, y_var, facet_var, hover_var = NULL, x_scale_date_format = "%Y", y_scale_zero = TRUE, y_scale_trans = "identity", facet_scales = "fixed", facet_nrow = NULL, pal = NULL, width = 0.75, title = "[Title]", subtitle = NULL, x_title = "[X title]", y_title = "[Y title]", caption = "", font_family = "Helvetica", font_size_title = NULL, font_size_body = NULL, wrap_title = 70, wrap_subtitle = 80, wrap_x_title = 50, wrap_y_title = 50, wrap_caption = 80, isMobile = FALSE)
```

**Arguments**

- `data` A tibble or dataframe. Required input.
- `x_var` Unquoted numeric, date or categorical variable to be on the x axis. Required input.
- `y_var` Unquoted numeric variable to be on the y axis. Required input.
- `facet_var` Unquoted categorical variable to facet the data by. Required input.
hover_var
Unquoted variable to be an additional hover variable for when used inside plotly::ggplotly(). Defaults to NULL.

x_scale_date_format
Date format for x axis labels.

y_scale_zero
TRUE or FALSE of whether the minimum of the y scale is zero. Defaults to TRUE.

y_scale_trans
A string specifying a transformation for the y axis scale, such as "log10" or "sqrt". Defaults to "identity".

facet_scales
Whether facet_scales should be "fixed" across facets, "free" in both directions, or free in just one direction (i.e. "free_x" or "free_y"). Defaults to "fixed".

facet_nrow
The number of rows of facetted plots. Defaults to NULL, which generally chooses 2 rows. Not applicable to where isMobile is TRUE.

pal
Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.

width
Width of bars. Defaults to 0.75.

title
Title string. Defaults to [Title].

subtitle
Subtitle string. Defaults to [Subtitle].

x_title
X axis title string. Defaults to [X title].

y_title
Y axis title string. Defaults to [Y title].

caption
Caption title string. Defaults to NULL.

font_family
Font family to use. Defaults NULL.

font_size_title
Font size for the title text. Defaults to 11.

font_size_body
Font size for all text other than the title. Defaults to 10.

wrap_title
Number of characters to wrap the title to. Defaults to 70. Not applicable where isMobile equals TRUE.

wrap_subtitle
Number of characters to wrap the subtitle to. Defaults to 80. Not applicable where isMobile equals TRUE.

wrap_x_title
Number of characters to wrap the x title to. Defaults to 50. Not applicable where isMobile equals TRUE.

wrap_y_title
Number of characters to wrap the y title to. Defaults to 50. Not applicable where isMobile equals TRUE.

wrap_caption
Number of characters to wrap the caption to. Defaults to 80. Not applicable where isMobile equals TRUE.

isMobile
Whether the plot is to be displayed on a mobile device. Defaults to FALSE. In a shinyapp, isMobile should be specified as input$isMobile.

Value
A ggplot object.
Examples

```r
plot_data <- dplyr::storms %>%
  dplyr::mutate(status = stringr::str_to_sentence(status)) %>%
  dplyr::group_by(year, status) %>%
  dplyr::summarise(average_wind = round(mean(wind), 2))

plot <- ggplot_vbar_facet(data = plot_data, x_var = year, y_var = average_wind,
    facet_var = status)

plot

plotly::ggplotly(plot, tooltip = "text")
```

leaflet_basemap_stack  

**Basemap stack in leaflet.**

Description

Make a stack of leaflet baselayers for use in shiny apps.

Usage

```r
leaflet_basemap_stack(top_layer = "light")
```

Arguments

- `top_layer`  
The first layer to start in the basemap stack. Either "light", "dark", "street", "satellite", or "ocean". Defaults to "light".

Value

A leaflet object.

Examples

```r
leaflet_basemap_stack("dark")
```
leaflet_basemap_stack_nz

_Basemap stack in leaflet for New Zealand._

**Description**

Make a stack of leaflet baselayers for use in New Zealand focussed shiny apps.

**Usage**

```r
leaflet_basemap_stack_nz(top_layer = "light")
```

**Arguments**

- `top_layer` The first layer to start in the basemap stack. Either "light", "dark", "street", "satellite", or "ocean". Defaults to "light".

**Value**

A leaflet object.

**Examples**

```r
leaflet_basemap_stack_nz("dark")
```

---

leaflet_sf

_Map of simple features in leaflet._

**Description**

Map of simple features in leaflet that is not coloured.

**Usage**

```r
leaflet_sf(data, pal = NULL, 
popup = leafpop::popupTable(sentence_spaced_colnames(data)), 
radius = 1, weight = 2, opacity = 0.1, stroke = TRUE, 
title = "[Title]", legend_digits = 1, legend_labels = "[Feature]", 
shiny = FALSE, basemap = "light", map_id = "map")
```
Arguments

- **data**: An sf object of geometry type point/multipoint, linestring/multilinestring or polygon/multipolygon geometry type. Required input.
- **pal**: Character vector of hex codes. Defaults to NULL, which selects the Stats NZ palette.
- **popup**: HTML strings for use in popup. Defaults to making a leafpop::popupTable of all attribute columns in the sf object.
- **radius**: Radius of points. Defaults to 1.
- **weight**: Stroke border size. Defaults to 2.
- **opacity**: The opacity of the fill. Defaults to 0.1. Only applicable to polygons.
- **stroke**: TRUE or FALSE of whether to draw a border around the features. Defaults to T.
- **title**: A title string that will be wrapped into the legend. Defaults to "Title".
- **legend_digits**: Select the appropriate number of decimal places for numeric variable auto legend labels. Defaults to 1.
- **legend_labels**: A vector of legend label values. Defaults to "Feature".
- **shiny**: TRUE or FALSE for whether the map is being run within a shiny app. Defaults to FALSE.
- **basemap**: The underlying basemap. Either "light", "dark", "satellite", "street", or "ocean". Defaults to "light". Only applicable where shiny equals FALSE.
- **map_id**: The shiny map id for a leaflet map within a shiny app. For standard single-map apps, id "map" should be used. For dual-map apps, "map1" and "map2" should be used. Defaults to "map".

Value

A leaflet object.

Examples

```r
map_data <- example_sf_nz_river_wq %>%
  dplyr::filter(period == "1998-2017", indicator == "Nitrate-nitrogen")

leaflet_sf(map_data)
```

Description

Map of simple features in leaflet that is coloured.
Usage

```r
leaflet_sf_col(data, col_var, col_method = NULL, bin_cuts = NULL,
  quantile_cuts = c(0, 0.25, 0.5, 0.75, 1), pal = NULL,
  rev_pal = FALSE, col_scale_drop = FALSE,
  popup = leafpop::popupTable(sentence_spaced_colnames(data)),
  radius = 1, weight = 2, opacity = 0.9, stroke = TRUE,
  remove_na = FALSE, title = "[Title]", legend_digits = 1,
  legend_labels = NULL, basemap = "light", shiny = FALSE,
  map_id = "map")
```

Arguments

data An sf object of geometry type point/multipoint, linestring/multilinestring or
  polygon/multipolygon geometry type. Required input.

col_var Unquoted variable to colour the features by. Required input.

col_method The method of colouring features, either "bin", "quantile" or "category." if cat-
  egorical colour variable, NULL results in "category". If numeric variable, de-
  fault to "quantile". Note all numeric variables are cut to be inclusive of the min
  in the range, and exclusive of the max in the range (except for the final bucket
  which includes the highest value).

bin_cuts A vector of bin cuts applicable where col_method of "bin" is selected. The
  first number in the vector should be either -Inf or 0, and the final number Inf.
  If NULL, 'pretty' breaks are used. Only applicable where col_method equals
  "bin".

quantile_cuts A vector of probability cuts applicable where col_method of "quantile" is se-
  lected. The first number in the vector should 0 and the final number 1. Defaults
to quartiles. Only applicable where col_method equals "quantile".

pal Character vector of hex codes. Defaults to NULL, which selects the colorbrewer
  Set1 or viridis.

rev_pal Reverses the palette. Defaults to F.

col_scale_drop TRUE or FALSE of whether to drop unused levels from the legend. Defaults to
  F.

popup HTML strings for use in popup. Defaults to making a leafpop::popupTable of
  all attribute columns in the sf object.

radius Radius of points. Defaults to 1.

weight Stroke border size. Defaults to 2.

opacity The opacity of polygons. Defaults to 0.9.

stroke TRUE or FALSE of whether to draw a border around the features. Defaults to T.

remove_na TRUE or FALSE of whether to remove NAs of the colour variable. Defaults to
  F.

title A title string that will be wrapped into the legend. Defaults to "Title".

legend_digits Select the appropriate number of decimal places for numeric variable auto leg-
  end labels. Defaults to 1.
leaflet_stars

Map of an array in leaflet.

Description
Map of an array in leaflet.

Usage

leaflet_stars(data, pal = NULL, opacity = 0.5, title = "[Title]",
legend_digits = 1, legend_labels = "[Array]", basemap = "light",
shiny = FALSE, map_id = "map")
Arguments

- **data**: A stars object with dimensions x and y with crs in wgs84 (epsg4326). Required input.
- **pal**: Character vector of hex codes, or provided objects with pal_ prefixes.
- **opacity**: Sets the opacity of the grid cells. Defaults to 0.1.
- **title**: A title string that will be wrapped into the legend. Defaults to "Title".
- **legend_digits**: Select the appropriate number of decimal places for numeric variable auto legend labels. Defaults to 1.
- **legend_labels**: A vector of legend label values. Defaults to "[Array]".
- **basemap**: The underlying basemap. Either "light", "dark", "satellite", "street", or "ocean". Defaults to "light". Only applicable where shiny equals FALSE.
- **shiny**: TRUE or FALSE for whether the map is being run within a shiny app. Defaults to FALSE.
- **map_id**: This argument is only relevant for within apps. For single map shiny apps, the id "map" can be used. For dual map apps, "map1" and "map2" should be used. Defaults to "map".

Value

A leaflet object.

Examples

```r
leaflet_stars(example_stars_nz_no3n)
```

---

leaflet_stars_col  
**Map of an array in leaflet that is coloured.**

Description

Map of an array in leaflet that is coloured.

Usage

```r
leaflet_stars_col(data, col_method = "quantile", quantile_cuts = c(0, 0.25, 0.5, 0.75, 1), bin_cuts = NULL, pal = NULL, rev_pal = FALSE, opacity = 1, legend_digits = 1, title = "[Title]", legend_labels = NULL, basemap = "light", shiny = FALSE, map_id = "map")
```
**Arguments**

- **data**
  A stars object with dimensions x and y, and 1 attribute layer with crs in wgs84 (epsg:4326). Required input.

- **col_method**
  The method of colouring features, either "bin", "quantile" or "category." Defaults to "quantile". Note all numeric variables are cut to be inclusive of the min in the range, and exclusive of the max in the range (except for the final bucket which includes the highest value).

- **quantile_cuts**
  A vector of probability cuts applicable where col_method of "quantile" is selected. The first number in the vector should 0 and the final number 1. Defaults to quartiles. Only applicable where col_method equals "quantile".

- **bin_cuts**
  A vector of bin cuts applicable where col_method of "bin" is selected. The first number in the vector should be either -Inf or 0, and the final number Inf. If NULL, 'pretty' breaks are used. Only applicable where col_method equals "bin".

- **pal**
  Character vector of hex codes, or provided objects with pal_ prefixes. Defaults to viridis.

- **rev_pal**
  Reverses the palette. Defaults to F.

- **opacity**
  Sets the opacity of the grid cells. Defaults to 0.9.

- **legend_digits**
  Select the appropriate number of decimal places for the auto legend. Defaults to 1.

- **title**
  A title string that will be wrapped into the legend. Defaults to "Title".

- **legend_labels**
  A vector of legend label values. Defaults to NULL, which results in automatic labels.

- **basemap**
  The underlying basemap. Either "light", "dark", "satellite", "street", or "ocean". Defaults to "light". Only applicable where shiny equals FALSE.

- **shiny**
  TRUE or FALSE for whether the map is being run within a shiny app. Defaults to FALSE.

- **map_id**
  This argument is only relevant for within apps. For single map shiny apps, the id "map" can be used. For dual map apps, "map1" and "map2" should be used. Defaults to "map".

**Value**

A leaflet object.

**Examples**

```r
leaflet_stars_col(example_stars_nz_no3n,
  col_method = "quantile", quantile_cuts = c(0, 0.05, 0.25, 0.5, 0.75, 0.95, 1),
  title = "River modelled median nitrate-nitrogen concentrations in g/m\u00b3, 2013\u201317")
```
numeric_legend_labels  Numeric legend labels.

Description
Pretty numeric legend labels.

Usage
numeric_legend_labels(bin_cuts, legend_digits = 1)

Arguments
- bin_cuts: A numeric vector of bin cuts from which to create a vector of legend labels.
- legend_digits: The number of digits to round the legend labels.

Value
A vector of labels.

nz  New Zealand coastline.

Description
New Zealand coastline, excluding the Chathams, that is simplified for ggplot.

Usage
nz

Format
An sf object.

Source

Examples
nz

ggplot_sf(nz)
ggplot_sf(dplyr::slice(nz, 2))
ggplot_sf(dplyr::slice(nz, 1, 3))
pal_ea19

Colour palette for categorical variables.

Description
Colour palette for categorical variables.

Usage
pal_ea19

Format
An object of class character of length 9.

Value
A vector of hex codes.

Examples
scales::show_col(pal_ea19)

pal_ea19_nof4
Colour palette for 4 categories from good to bad

Description
A colour palette used for depicting subcategories in the NZ conservation threat status.

Usage
pal_ea19_nof4

Format
An object of class character of length 4.

Value
A vector of hex codes.

Examples
scales::show_col(pal_ea19_nof4)
pal_ea19_nof5  Colour palette for 5 categories from good to bad

Description
A colour palette used for depicting subcategories in the NZ conservation threat status.

Usage
pal_ea19_nof5

Format
An object of class character of length 5.

Value
A vector of hex codes.

Examples
scales::show_col(pal_ea19_nof5)

pal_ea19_nztcs_c  Colour palette for the NZTCS.

Description
A colour palette used for depicting categories in the NZ conservation threat status.

Usage
pal_ea19_nztcs_c

Format
An object of class character of length 4.

Value
A vector of hex codes.

Examples
scales::show_col(pal_ea19_nztcs_c)
pal_ea19_trend2  

Colour palette for a categorical trend variable with 2 values.

Description
Colour palette for categorical variables.

Usage
pal_ea19_trend2

Format
An object of class character of length 2.

Value
A vector of hex codes.

Examples
scales::show_col(pal_ea19_trend2)

pal_ea19_trend3  

Colour palette for a categorical trend variable with 3 values.

Description
Colour palette for categorical variables.

Usage
pal_ea19_trend3

Format
An object of class character of length 3.

Value
A vector of hex codes.

Examples
scales::show_col(pal_ea19_trend3)
**pal_ea19_trend5**  
*Colour palette for a categorical trend variable with 5 values.*

**Description**

Colour palette for categorical variables.

**Usage**

```r
pal_ea19_trend5
```

**Format**

An object of class `character` of length 5.

**Value**

A vector of hex codes.

**Examples**

```r
scales::show_col(pal_ea19_trend5)
```

---

**pal_point_set1**  
*Colour palette for categorical variables for points.*

**Description**

Colour palette for categorical variables.

**Usage**

```r
pal_point_set1
```

**Format**

An object of class `character` of length 9.

**Value**

A vector of hex codes.

**Examples**

```r
scales::show_col(pal_point_set1)
```
pal_point_trend2

Colour palette for a categorical trend variable with 2 values for points.

Description

Colour palette for categorical variables.

Usage

gal_point_trend2

Format

An object of class character of length 2.

Value

A vector of hex codes.

Examples

scales::show_col(pal_point_trend2)

pal_point_trend3

Colour palette for a categorical trend variable with 3 values for points.

Description

Colour palette for categorical variables.

Usage

pal_point_trend3

Format

An object of class character of length 3.

Value

A vector of hex codes.

Examples

scales::show_col(pal_point_trend3)
**pal_point_trend5**

*Colour palette for a categorical trend variable with 5 values for points.*

**Description**

Colour palette for categorical variables.

**Usage**

```r
pal_point_trend5
```

**Format**

An object of class character of length 5.

**Value**

A vector of hex codes.

**Examples**

```r
scales::show_col(pal_point_trend5)
```

---

**pal_snz**

*Colour palette for categorical variables.*

**Description**

Colour palette for categorical variables.

**Usage**

```r
pal_snz
```

**Format**

An object of class character of length 9.

**Value**

A vector of hex codes.

**Examples**

```r
scales::show_col(pal_snz)
```
**pal_snz_nof4**

*Colour palette for 4 categories from good to bad*

**Description**

A colour palette used for depicting subcategories in the NZ conservation threat status.

**Usage**

`pal_snz_nof4`

**Format**

An object of class `character` of length 4.

**Value**

A vector of hex codes.

**Examples**

`scales::show_col(pal_snz_nof4)`

---

**pal_snz_nof5**

*Colour palette for 5 categories from good to bad*

**Description**

A colour palette used for depicting subcategories in the NZ conservation threat status.

**Usage**

`pal_snz_nof5`

**Format**

An object of class `character` of length 5.

**Value**

A vector of hex codes.

**Examples**

`scales::show_col(pal_snz_nof5)`
**Description**

A colour palette used for depicting categories in the NZ conservation threat status.

**Usage**

```r
pal_snz_nztcs_c
```

**Format**

An object of class character of length 4.

**Value**

A vector of hex codes.

**Examples**

```r
scales::show_col(pal_snz_nztcs_c)
```

---

**Description**

A colour palette used for depicting subcategories in the NZ conservation threat status.

**Usage**

```r
pal_snz_nztcs_s
```

**Format**

An object of class character of length 9.

**Value**

A vector of hex codes.

**Examples**

```r
scales::show_col(pal_snz_nztcs_s)
```
**pal_snz_trend2**

---

**pal_snz_trend2**  
*Colour palette for a categorical trend variable with 2 values.*

---

**Description**  
Colour palette for categorical variables.

**Usage**  
`pal_snz_trend2`

**Format**  
An object of class character of length 2.

**Value**  
A vector of hex codes.

**Examples**  
```r
scales::show_col(pal_snz_trend2)
```

---

**pal_snz_trend3**  
*Colour palette for a categorical trend variable with 3 values.*

---

**Description**  
Colour palette for categorical variables.

**Usage**  
`pal_snz_trend3`

**Format**  
An object of class character of length 3.

**Value**  
A vector of hex codes.

**Examples**  
```r
scales::show_col(pal_snz_trend3)
```
### pal_snz_trend5

**Description**

Colour palette for a categorical trend variable with 5 values.

**Usage**

```r
pal_snz_trend5
```

**Format**

An object of class character of length 5.

**Value**

A vector of hex codes.

**Examples**

```r
scales::show_col(pal_snz_trend5)
```

### plotly_order_legend

**Description**

Order plotly legend elements.

**Usage**

```r
plotly_order_legend(plotly, numeric_order = NULL)
```

**Arguments**

- **plotly**
  A plotly object.
- **numeric_order**
  A vector specifying the numeric order of elements. Required input.
Examples

```r
plot_data <- ggplot2::diamonds %>%
dplyr::mutate(cut = stringr::str_to_sentence(cut)) %>%
dplyr::mutate(blank = FALSE) %>%
dplyr::group_by(cut, clarity) %>%
dplyr::summarise(average_price = mean(price)) %>%
dplyr::mutate(average_price_thousands = round(average_price / 1000, 1)) %>%
dplyr::ungroup()

plot <- ggplot_hbar_col(data = plot_data,
x_var = average_price_thousands,
y_var = cut,
col_var = clarity,
legend_ncol = 4,
title = "Average diamond price by cut and clarity",
x_title = "Average price ($US thousands)",
y_title = "Cut")

plotly::ggplotly(plot, tooltip = "text")
plotly::ggplotly(plot, tooltip = "text") %>%
plotly_order_legend(c(4, 1, 3, 5, 8))}
```

```
plotly_remove_buttons  Remove plotly buttons from the mode bar, other than the camera and plotly logo.

Description

Remove plotly buttons from the mode bar, other than the camera and plotly logo.

Usage

plotly_remove_buttons(plotly, logo = FALSE)

Arguments

plotly A plotly object.
logo TRUE or FALSE of whether to display the plotly logo. Defaults to FALSE.

Examples

```r
plot_data <- dplyr::sample_frac(ggplot2::diamonds, 0.05)

plot <- ggplot_scatter(data = plot_data, x_var = carat, y_var = price)

plotly::ggplotly(plot, tooltip = "text") %>%
plotly_remove_buttons()
```
plotly_reverse_legend  Reverse plotly legend elements.

Description
Reverse plotly legend elements.

Usage
plotly_reverse_legend(plotly)

Arguments
plotly  A plotly object.

Examples
plot_data <- ggplot2::diamonds %>%
  dplyr::mutate(cut = stringr::str_to_sentence(cut)) %>%
  dplyr::group_by(cut, clarity) %>%
  dplyr::summarise(average_price = mean(price)) %>%
  dplyr::mutate(average_price_thousands = round(average_price / 1000, 1)) %>%
  dplyr::ungroup()

plot <- ggplot_hbar_col(data = plot_data,
  x_var = average_price_thousands,
  y_var = cut,
  col_var = clarity,
  legend_ncol = 4,
  title = "Average diamond price by cut and clarity",
  x_title = "Average price ($US thousands)",
  y_title = "Cut")

plotly::ggplotly(plot, tooltip = "text")
plotly::ggplotly(plot, tooltip = "text") %>%
  plotly_reverse_legend()

run_template  Run shiny template with option to download.

Description
Run shiny template with option to download.

Usage
run_template(template = "template!", ...)
Arguments

template  template name. Available templates are "template1" for a graph and table, and "template2" and "template3" also providing maps. Defaults to "template1".

... passed to shiny::runApp

---

**sentence_spaced_colnames**

*Convert column names to sentence case.*

Description

A function to convert column names to snakecase and then to sentence case to be used in functions for making hover values.

Usage

`sentence_spaced_colnames(data)`

Arguments

- `data` The number of digits to round the legend labels.

Value

A numeric value.

---

**signed_sqrt_trans**

*Signed square root ggplot scale transformation.*

Description

A signed square root ggplot scale transformation.

Usage

`signed_sqrt_trans()`

Value

A ggplot scale transformation.
**theme_box**  
*Theme for vertical box ggplots.*

**Description**

Theme for vertical box ggplots.

**Usage**

```r
theme_box(font_family = "Helvetica", font_size_title = 11,
           font_size_body = 10)
```

**Arguments**

- `font_family`: Font family to use. Defaults to "Helvetica".
- `font_size_title`: Font size for the title text. Defaults to 11.
- `font_size_body`: Font size for all text other than the title. Defaults to 10.

**Value**

A ggplot theme.

**Examples**

```r
ggplot2::ggplot() +
  theme_box("Courier", 9, 7) +
  ggplot2::ggtitle("This is a title of a selected font family and size")
```

---

**theme_hbar**  
*Theme for horizontal bar ggplots.*

**Description**

Theme for horizontal bar ggplots.

**Usage**

```r
theme_hbar(font_family = "Helvetica", font_size_title = 11,
            font_size_body = 10)
```
theme_line

Arguments

font_family  
Font family to use. Defaults to "Helvetica".

font_size_title  
Font size for the title text. Defaults to 11.

font_size_body  
Font size for all text other than the title. Defaults to 10.

Value

A ggplot theme.

Examples

```r
ggplot2::ggplot() +
  theme_hbar("Courier", 9, 7) +
  ggplot2::ggtitle("This is a title of a selected font family and size")
```

theme_line  
Theme for line ggplots.

Description

Theme for line ggplots.

Usage

```r
theme_line(font_family = "Helvetica", font_size_title = 11,
            font_size_body = 10)
```

Arguments

font_family  
Font family to use. Defaults to "Helvetica".

font_size_title  
Font size for the title text. Defaults to 11.

font_size_body  
Font size for all text other than the title. Defaults to 10.

Value

A ggplot theme.

Examples

```r
ggplot2::ggplot() +
  theme_line("Courier", 9, 7) +
  ggplot2::ggtitle("This is a title of a selected font family and size")
```
theme_scatter

Theme for scatter ggplots.

Description

Theme for scatter ggplots.

Usage

theme_scatter(font_family = "Helvetica", font_size_title = 11, font_size_body = 10)

Arguments

- font_family: Font family to use. Defaults to "Helvetica".
- font_size_title: Font size for the title text. Defaults to 11.
- font_size_body: Font size for all text other than the title. Defaults to 10.

Value

A ggplot theme.

Examples

```r
ggplot2::ggplot() +
  theme_scatter("Courier", 9, 7) +
  ggplot2::ggtitle("This is a title of a selected font family and size")
```

theme_sf

Theme for ggplot maps of simple features.

Description

Theme for ggplot maps of simple features.

Usage

theme_sf(font_family = "Helvetica", font_size_title = 11, font_size_body = 10)

Arguments

- font_family: Font family to use. Defaults to "Helvetica".
- font_size_title: Font size for the title text. Defaults to 11.
- font_size_body: Font size for all text other than the title. Defaults to 10.
theme_stars

Value

A ggplot theme.

Examples

```r
ggplot2::ggplot() +
  theme_sf("Courier", 9, 7) +
  ggplot2::ggtitle("This is a title of a selected font family and size")
```

theme_stars

Theme for ggplot maps of arrays.

Description

Theme for ggplot maps of arrays.

Usage

```r
theme_stars(font_family = "Helvetica", font_size_title = 11,
  font_size_body = 10)
```

Arguments

- `font_family` Font family to use. Defaults to "Helvetica".
- `font_size_title` Font size for the title text. Defaults to 11.
- `font_size_body` Font size for all text other than the title. Defaults to 10.

Value

A ggplot theme.

Examples

```r
ggplot2::ggplot() +
  theme_stars("Courier", 9, 7) +
  ggplot2::ggtitle("This is a title of a selected font family and size")
```
theme_vbar

Theme for vertical bar ggplots.

Usage

theme_vbar(font_family = "Helvetica", font_size_title = 11, font_size_body = 10)

Arguments

- font_family: Font family to use. Defaults to "Helvetica".
- font_size_title: Font size for the title text. Defaults to 11.
- font_size_body: Font size for all text other than the title. Defaults to 10.

Value

A ggplot theme.

Examples

```r
ggplot2::ggplot() +
  theme_vbar("Courier", 9, 7) +
  ggplot2::ggtitle("This is a title of a selected font family and size")
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