Package: mwmap (via r-universe)

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Title Create Maps of Malawi Administrative Boundaries

Version 1.0.0

Description Provides a tidy, high-level interface for creating polished maps of Malawi at country, region, district, and Traditional Authority level. Functions handle spatial data retrieval, administrative-name matching, joins from ordinary data frames, numeric and categorical choropleths, labels, highlights, and professional ggplot2 styling. Spatial boundary data are provided by the companion package 'mwmapdata'.

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`get_mw_palette` *Get Malawi Palette Colors*

Description

Extract specific colors from Malawi palettes for custom use.

Usage

```
get_mw_palette(name, n = NULL, reverse = FALSE, interpolate = TRUE)
```

Arguments

name	Palette name.
n	Number of colors to return. If NULL, returns all colors in palette. Default: NULL.
reverse	Logical. Reverse palette order. Default: FALSE.
interpolate	Logical. Interpolate to get exactly n colors. If FALSE, returns first n colors. Default: TRUE.

Value

A character vector of hex color codes.

Examples

```
# Get all health palette colors
get_mw_palette("health")

# Get 3 colors from malaria palette
get_mw_palette("malaria", n = 3)

# Get reversed regions palette
get_mw_palette("regions", reverse = TRUE)
```

---

get_mw_palettes *List Available Malawi Palettes*

Description

Returns a data frame of all available palettes with descriptions.

Usage

```
get_mw_palettes(category = NULL)
```

Arguments

category	Optional category filter: "health", "agriculture", "socioeconomic", "sequential", "diverging", "qualitative".

Value

A data frame with palette names and descriptions.

Examples

```
# List all palettes
get_mw_palettes()

# List only health palettes
get_mw_palettes("health")
```

`major_lakes` *Major Lakes of Malawi*

Description

Spatial data for the three major lakes in Malawi: Lake Malawi (Lake Nyasa), Lake Malombe, and Lake Chilwa.

Usage

```
major_lakes
```

Format

An sf object with 3 features and 3 fields:

name Lake name (Lake Malawi, Lake Malombe, Lake Chilwa)

area_km2 Approximate surface area in square kilometers

max_depth_m Maximum depth in meters (where available)

geometry MULTIPOLYGON geometry for lake boundaries

Source

Malawi Spatial Data Platform (MASDAP) / Department of Surveys

---

`mw_choropleth` *Create a Malawi Choropleth Map*

Description

A convenient wrapper around `mw_map()` for mapping numeric or categorical values attached to Malawi administrative units.

Usage

```
mw_choropleth(
  data,
  value,
  unit_col,
  level = 2,
  palette = NULL,
  title = NULL,
  subtitle = NULL,
  caption = NULL,
  legend_title = NULL,
  ...
)
```

Arguments

`data`	Data frame containing values to map.
`value`	Column to map to fill colour. May be quoted or unquoted.
`unit_col`	Column containing administrative unit names. May be quoted or unquoted. Defaults by `level`.
`level`	Administrative level. Use `"ta"` for Traditional Authorities.
`palette`	Malawi palette name, colour vector, or palette function.
`title, subtitle, caption`	Plot labels.
`legend_title`	Legend title.
`...`	Passed to `mw_map()`.

Value

A ggplot2 object.

Examples

```
district_data <- data.frame(
  district = c("Lilongwe", "Blantyre", "Mzuzu"),
  cases = c(120, 80, 35)
)
mw_choropleth(district_data, cases)

ta_data <- data.frame(
  ta = c("Mabuka", "Mwaulambia"),
  status = c("On track", "Needs support")
)
mw_choropleth(ta_data, status, level = "ta")
```

mw_clean_names *Clean Malawi Administrative Names*

Description

Standardise names for display and backwards-compatible workflows. For joins, `mw_join()` uses a stricter internal key that is robust to punctuation, case, and common suffixes such as "District" and "TA".

Usage

```
mw_clean_names(x)
```

Arguments

x	Character vector of names.

Value

A character vector.

Examples

```
mw_clean_names(c("lilongwe district", "Nkhata Bay", "T/A Mabuka"))
```

mw_districts *Get Malawi District Names*

Description

Return district names from the current **mwmapdata** boundary data.

Usage

```
mw_districts(
  region = NULL,
  type = c("standard", "admin", "short", "all"),
  sorted = TRUE,
  include_ta = FALSE,
  quiet = FALSE
)
```

Arguments

region	Optional region filter. Accepts "Northern", "Central", "Southern" and shortcuts such as "n", "c", and "s".
type	"standard", "admin", "short", or "all".
sorted	Sort alphabetically.
include_ta	Deprecated. Use mw_tas() for Traditional Authorities.
quiet	Suppress messages.

Value

A character vector, or a data frame when type = "all".

Examples

```
mw_districts()
mw_districts("Southern")
mw_districts(type = "all")
```

---

mw_districts_simple *Simple District Name Helper*

Description

Backwards-compatible alias for mw_districts().

Usage

```
mw_districts_simple(region = NULL)
```

Arguments

region	Optional region filter.

Value

Character vector of district names.

mw_get_map *Get Malawi Boundary Data*

Description

Return Malawi administrative boundaries from **mwmapdata**, with optional region, district, TA, and projection filters.

Usage

```
mw_get_map(
  level = 2,
  region = NULL,
  districts = NULL,
  tas = NULL,
  projection = "EPSG:4326"
)
```

Arguments

level	Administrative level: 0/"country", 1/"region", 2/"district", or 3/"ta".
region	Optional region filter.
districts	Optional district filter.
tas	Optional Traditional Authority filter.
projection	Coordinate reference system. Defaults to "EPSG:4326".

Value

An sf object.

Examples

```
mw_get_map("district")
mw_get_map("ta", districts = "Lilongwe")
```

mw_highlight *Highlight Selected Districts on Malawi Map*

Description

Adds emphasis to specific districts by overlaying them with custom fill, border, or label styles. Useful for drawing attention to areas of interest.

Usage

```
mw_highlight(
  districts,
  fill = "red",
  color = "black",
  alpha = 0.8,
  size = 1,
  linetype = "solid",
  label = FALSE,
  label_size = 4,
  label_color = "black",
  label_fontface = "bold",
  data = NULL,
  district_col = "ADM2_EN",
  outline_only = FALSE,
  ...
)
```

Arguments

districts	Character vector of district names to highlight. Case insensitive matching is applied.
fill	Fill colour for highlighted districts. Default: "red". Use NA for transparent fill.
color	Border colour for highlighted districts. Default: "black".
alpha	Transparency level (0-1). Default: 0.8.
size	Border size for highlighted districts. Default: 1.
linetype	Line type for borders. Default: "solid".
label	Logical. Add district labels to highlighted areas? Default: FALSE.
label_size	Numeric. Label text size. Default: 4.
label_color	Character. Label text colour. Default: "black".
label_fontface	Label font style. Default: "bold".
data	Optional sf object. If NULL, uses mwmapdata::mw_level_2.
district_col	Column containing district names. Default: "ADM2_EN".
outline_only	Logical. Show only outline without fill? Default: FALSE.
...	Additional arguments passed to ggplot2::geom_sf().

Value

A ggplot2 layer object that can be added to a map.

Examples

```
library(ggplot2)

# Basic highlighting
```

```
mw_map() +
  mw_highlight("Lilongwe")

# Multiple districts with custom styling
mw_map() +
  mw_highlight(c("Lilongwe", "Blantyre", "Mzuzu City"),
               fill = "gold", color = "darkred", alpha = 0.5)

# Outline only (for emphasis without obscuring)
mw_map(fill_color = "lightgrey") +
  mw_highlight("Mzimba", outline_only = TRUE, size = 1.2)

# With labels
mw_map() +
  mw_highlight("Zomba", label = TRUE, label_size = 5)
```

`mw_highlight_multi` *Highlight Multiple Districts with Different Colors*

Description

Highlights different districts with potentially different colors.

Usage

```
mw_highlight_multi(district_list, ...)
```

Arguments

`district_list`	Named list or vector. Names are district names, values are fill colors. Example: c("Lilongwe" = "red", "Blantyre" = "blue")
`...`	Additional arguments passed to `mw_highlight()` for all layers.

Value

List of ggplot2 layers.

Examples

```
mw_map() +
  mw_highlight_multi(c("Lilongwe" = "gold",
                       "Blantyre" = "steelblue",
                       "Mzimba" = "forestgreen"))
```

mw_join *Join Data to Malawi Boundaries*

Description

Join a regular data frame to Malawi administrative boundary geometries. The function is level-aware, so the default join key changes automatically for country, region, district, and Traditional Authority maps.

Usage

```
mw_join(
  data,
  unit_col,
  level = 2,
  map = NULL,
  map_col = NULL,
  keep_all = TRUE,
  unmatched = c("message", "warning", "error", "ignore"),
  quiet = FALSE,
  district_col = NULL,
  name_clean = NULL,
  by = NULL,
  verbose = NULL,
  ...
)
```

Arguments

data	A data frame containing values to map.
unit_col	Column in data containing the administrative unit names. May be quoted or unquoted. Defaults to country, region, district, or ta depending on level.
level	Administrative level: 0/"country", 1/"region", 2/"district", or 3/"ta".
map	Optional sf object to join to. Defaults to the corresponding object from **mwmapdata**.
map_col	Column in map containing administrative unit names. Defaults to the correct ADM column for level.
keep_all	If TRUE, keep all map features and attach matching values. If FALSE, keep only matched features.
unmatched	One of "message", "warning", "error", or "ignore". Controls how unmatched input names are reported.
quiet	Suppress matching messages.
district_col	Deprecated alias for unit_col.
name_clean	Deprecated. Name matching now uses mwmap's internal normalisation.

by	Optional explicit join specification passed to dplyr joins.
verbose	Deprecated alias for !quiet.
...	Passed to dplyr joins.

Value

An sf object with user columns joined to Malawi geometries.

Examples

```
district_data <- data.frame(
  district = c("Lilongwe", "Blantyre", "Mzuzu"),
  cases = c(120, 80, 35)
)
mw_join(district_data)

ta_data <- data.frame(
  ta = c("Mabuka", "Mwaulambia"),
  coverage = c(72, 64)
)
mw_join(ta_data, level = "ta")
```

---

mw_label_repel *Add Label Repel for Better Placement*

Description

Alternative to mw_labels that uses ggrepel to prevent overlapping labels. Requires the ggrepel package.

Usage

```
mw_label_repel(..., force = 1, max.overlaps = 10)
```

Arguments

...	Arguments passed to mw_labels()
force	Numeric. Repulsion force. Default: 1.
max.overlaps	Numeric. Maximum allowed overlaps. Default: 10.

Value

A ggrepel layer object.

Examples

```
if (requireNamespace("ggrepel", quietly = TRUE)) {
  mw_map() + mw_label_repel()
}
```

`mw_labels` *Add District Labels to Malawi Map*

Description

Adds text labels for districts to a Malawi map. Labels are positioned at district centroids with options for customization.

Usage

```
mw_labels(
  districts = NULL,
  size = 3,
  color = "black",
  fontface = "bold",
  family = "",
  alpha = 1,
  angle = 0,
  hjust = 0.5,
  vjust = 0.5,
  check_overlap = TRUE,
  show.legend = FALSE,
  data = NULL,
  label_column = "ADM2_EN",
  ...
)
```

Arguments

`districts`	Character vector of district names to label. If NULL, labels all districts. Default: NULL.
`size`	Numeric. Text size in points. Default: 3.
`color`	Character. Text colour. Default: "black".
`fontface`	Character or numeric. Font style: "plain", "bold", "italic", "bold.italic". Default: "bold".
`family`	Character. Font family. Default: "" (system default).
`alpha`	Numeric. Text transparency (0-1). Default: 1.
`angle`	Numeric. Text rotation angle in degrees. Default: 0.

hjust	Numeric. Horizontal justification (0-1). Default: 0.5.
vjust	Numeric. Vertical justification (0-1). Default: 0.5.
check_overlap	Logical. If TRUE, prevents overlapping labels. Default: TRUE.
show.legend	Logical. Include in legend? Default: FALSE.
data	Optional sf object. If NULL, uses mwmapdata::mw_level_2.
label_column	Character. Column name containing labels. Default: "ADM2_EN".
...	Additional arguments passed to ggplot2::geom_sf_text().

Value

A ggplot2 layer object that can be added to a map.

Examples

```
library(ggplot2)

# Basic usage
mw_map() + mw_labels()

# Customized labels
mw_map() +
  mw_labels(size = 4, color = "darkblue", fontface = "italic")

# Labels for specific districts only
library(dplyr)
selected_districts <- mwmapdata::mw_level_2 %>%
  filter(ADM2_EN %in% c("Lilongwe", "Blantyre", "Mzuzu City"))

mw_map() +
  mw_labels(data = selected_districts, color = "red", size = 5)
```

---

mw_layout *Apply Consistent Layout Styling to Malawi Maps*

Description

Adds professionally formatted titles, theme elements, and layout options to Malawi maps. Provides a consistent look and feel across visualizations.

Usage

```
mw_layout(
  title = NULL,
  subtitle = NULL,
  caption = NULL,
```

```
  legend_position = "right",
  legend_title = NULL,
  legend_direction = "vertical",
  theme = c("void", "minimal", "classic", "custom"),
  font_family = "",
  title_size = 16,
  title_face = "bold",
  subtitle_size = 12,
  subtitle_face = "plain",
  caption_size = 9,
  caption_face = "italic",
  legend_text_size = 10,
  legend_title_size = 11,
  legend_title_face = "bold",
  legend_key_size = 1,
  legend_spacing = 0.5,
  margin = grid::unit(c(0.2, 0.2, 0.2, 0.2), "cm"),
  panel_border = FALSE,
  panel_border_color = "grey50",
  background_color = "white",
  grid_color = "grey90",
  grid_major = FALSE,
  grid_minor = FALSE,
  axis_text = FALSE,
  axis_ticks = FALSE,
  ...
)
```

Arguments

`title`	Character. Main map title. Default: NULL.
`subtitle`	Character. Map subtitle. Default: NULL.
`caption`	Character. Map caption (usually data source). Default: NULL.
`legend_position`	Character or numeric. Legend position: "right", "left", "top", "bottom", "none", or coordinates c(x, y). Default: "right".
`legend_title`	Character. Legend title. If NULL, uses existing legend title. Default: NULL.
`legend_direction`	Character. Legend layout: "vertical" or "horizontal". Default: "vertical".
`theme`	Character. Base theme: "void", "minimal", "classic", or "custom". Default: "void".
`font_family`	Character. Base font family. Default: "" (system default).
`title_size`	Numeric. Title font size. Default: 16.
`title_face`	Character. Title font face. Default: "bold".
`subtitle_size`	Numeric. Subtitle font size. Default: 12.
`subtitle_face`	Character. Subtitle font face. Default: "plain".

`caption_size` Numeric. Caption font size. Default: 9.

`caption_face` Character. Caption font face. Default: "italic".

`legend_text_size` Numeric. Legend text size. Default: 10.

`legend_title_size` Numeric. Legend title size. Default: 11.

`legend_title_face` Character. Legend title font face. Default: "bold".

`legend_key_size` Numeric. Legend key size (in cm). Default: 1.

`legend_spacing` Numeric. Legend spacing (in cm). Default: 0.5.

`margin` Numeric vector or unit. Plot margins. Default: unit(c(0.2, 0.2, 0.2, 0.2), "cm").

`panel_border` Logical. Add panel border? Default: FALSE.

`panel_border_color` Character. Panel border color. Default: "grey50".

`background_color` Character. Plot background color. Default: "white".

`grid_color` Character. Grid line color. Default: "grey90".

`grid_major` Logical. Show major grid lines? Default: FALSE.

`grid_minor` Logical. Show minor grid lines? Default: FALSE.

`axis_text` Logical. Show axis text? Default: FALSE.

`axis_ticks` Logical. Show axis ticks? Default: FALSE.

`...` Additional arguments passed to `ggplot2::theme()`.

Value

A list of ggplot2 theme modifications and labs.

Examples

```
library(ggplot2)

# Basic layout
mw_map() +
  mw_layout("Malawi Health Districts")

# Full layout with all elements
mw_map(fill = "population") +
  mw_layout(
    title = "Population Distribution in Malawi",
    subtitle = "Data from 2023 Census",
    caption = "Source: National Statistical Office",
    legend_position = "bottom",
    legend_title = "Population",
    panel_border = TRUE,
    grid_major = TRUE
```

```
  )

# Minimal layout
mw_map() +
  mw_layout(
    theme = "minimal",
    legend_position = "none"
  )

# Custom colors
mw_map() +
  mw_layout(
    title = "Malawi Map",
    background_color = "#f5f5f5",
    panel_border = TRUE,
    panel_border_color = "darkblue"
  )
```

`mw_level_0` *Malawi Administrative Boundaries - Level 0 (Country)*

Description

National boundary of Malawi at administrative level 0. This represents the outermost border of the country, including major lakes.

Usage

```
mw_level_0
```

Format

An sf object with 1 feature and 3 fields:

ADM0_EN Country name (Malawi)

ADM0_PCODE Country ISO code (MWI)

geometry MULTIPOLYGON geometry for the national boundary

Source

Malawi Spatial Data Platform (MASDAP) / Department of Surveys

mw_level_1 *Malawi Administrative Boundaries - Level 1 (Regions)*

Description

Administrative regions of Malawi (Northern, Central, Southern) at level 1. These are the three main administrative regions.

Usage

```
mw_level_1
```

Format

An sf object with 3 features and 7 fields:

ADM1_EN Region name (Northern, Central, Southern)

ADM1_PCODE Region code (MW001, MW002, MW003)

ADM0_EN Country name

ADM0_PCODE Country code

Shape_Leng Perimeter length

Shape_Area Area in square meters

geometry MULTIPOLYGON geometry for regional boundaries

Source

Malawi Spatial Data Platform (MASDAP) / Department of Surveys

mw_level_2 *Malawi Administrative Boundaries - Level 2 (Districts)*

Description

District-level administrative boundaries for all 28 districts of Malawi. This is the most commonly used administrative level for mapping.

Usage

```
mw_level_2
```

Format

An sf object with 28 features and 11 fields:

ADM2_EN District name (e.g., Lilongwe, Blantyre, Mzimba)

ADM2_PCODE District code (e.g., MW0201)

ADM1_EN Region name

ADM1_PCODE Region code

ADM0_EN Country name

ADM0_PCODE Country code

Shape_Leng Perimeter length

Shape_Area Area in square meters

REGION Region name (short form)

DISTRICT District name (short form)

geometry MULTIPOLYGON geometry for district boundaries

Source

Malawi Spatial Data Platform (MASDAP) / Department of Surveys

---

mw_level_3 *Malawi Administrative Boundaries - Level 3 (Traditional Authorities)*

Description

Traditional Authority (TA) level administrative boundaries. This represents the third-level subdivisions within districts, governed by traditional leaders.

Usage

```
mw_level_3
```

Format

An sf object with approximately 250 features and 13 fields:

ADM3_EN Traditional Authority name

ADM3_PCODE Traditional Authority code

ADM2_EN District name

ADM2_PCODE District code

ADM1_EN Region name

ADM1_PCODE Region code

ADM0_EN Country name

ADM0_PCODE Country code

Shape_Leng Perimeter length

Shape_Area Area in square meters

TA Traditional Authority (short form)

DISTRICT District (short form)

geometry MULTIPOLYGON geometry for TA boundaries

Source

Malawi Spatial Data Platform (MASDAP) / Department of Surveys

---

`mw_map` *Create a Professional Malawi Map*

Description

`mw_map()` is the main high-level plotting function in mwmap. It can draw Malawi boundaries at country, region, district, or Traditional Authority level, join your data by name, and choose an appropriate colour scale for numeric or categorical values.

Usage

```
mw_map(
  data = NULL,
  fill,
  unit_col,
  level = 2,
  region = NULL,
  districts = NULL,
  tas = NULL,
  palette = NULL,
  scale_type = c("auto", "continuous", "discrete"),
  reverse = FALSE,
  na_color = "#D7DCE2",
  fill_color = "#F2F4F3",
  border_color = "#252222",
  border_size = 0.25,
  alpha = 1,
  lakes = FALSE,
  lake_color = "#A7D8F0",
  lake_border_color = "#5D9BC2",
  district_borders = NULL,
  district_border_color = "#2F3437",
  district_border_size = 0.45,
  highlight_districts = NULL,
  highlight_tas = NULL,
```

```
  highlight_color = "#D7263D",
  highlight_size = 1,
  labels = FALSE,
  label_column = NULL,
  label_size = NULL,
  label_color = "#222222",
  label_repel = FALSE,
  title = NULL,
  subtitle = NULL,
  caption = NULL,
  legend_title = NULL,
  legend_position = "right",
  projection = "EPSG:4326",
  scale_bar = FALSE,
  north_arrow = FALSE,
  interactive = FALSE,
  quiet = FALSE,
  ...
)
```

Arguments

`data`	Optional data frame or sf object. If a data frame is supplied it is joined to the selected Malawi boundaries.
`fill`	Optional column to map to fill colour. May be quoted or unquoted.
`unit_col`	Column in `data` containing names to join by. May be quoted or unquoted. Defaults to `country`, `region`, `district`, or `ta`, depending on `level`.
`level`	Administrative level: `0`/`"country"`, `1`/`"region"`, `2`/`"district"`, or `3`/`"ta"`.
`region`	Optional region filter.
`districts`	Optional district filter. For `level = "ta"`, this maps TAs only inside the selected districts.
`tas`	Optional Traditional Authority filter.
`palette`	Name of a Malawi palette, a vector of colours, or a palette function. Defaults to `"health"` for numeric data and `"qualitative_2"` for categorical data.
`scale_type`	`"auto"`, `"continuous"`, or `"discrete"`.
`reverse`	Reverse the fill palette.
`na_color`	Fill colour for missing values.
`fill_color`	Fill colour used when `fill` is not supplied.
`border_color`	Boundary colour.
`border_size`	Boundary line width.
`alpha`	Fill opacity.
`lakes`	Add Lake Malawi.
`lake_color`	Lake fill colour.

`lake_border_color`
: Lake border colour.

`district_borders`
: Add district outlines on TA maps.

`district_border_color`
: District outline colour on TA maps.

`district_border_size`
: District outline width on TA maps.

`highlight_districts`
: Districts to outline.

`highlight_tas`
: Traditional Authorities to outline.

`highlight_color`
: Highlight outline colour.

`highlight_size`
: Highlight outline width.

`labels`
: Add labels for mapped features.

`label_column`
: Optional label column. Defaults to the level name column.

`label_size`
: Label size.

`label_color`
: Label colour.

`label_repel`
: Use **ggrepel** for label placement if installed.

`title`, `subtitle`, `caption`
: Plot labels.

`legend_title`
: Legend title. Defaults to the fill column.

`legend_position`
: Legend position.

`projection`
: Coordinate reference system.

`scale_bar`
: Add a scale bar if **ggspatial** is installed.

`north_arrow`
: Add a north arrow if **ggspatial** is installed.

`interactive`
: Return a plotly object if **plotly** is installed.

`quiet`
: Suppress join messages.

`...`
: Additional arguments passed to `ggplot2::geom_sf()`.

Value

A ggplot2 object, or a plotly object when `interactive = TRUE`.

Examples

```
mw_map()

df <- data.frame(
  district = c("Lilongwe", "Blantyre", "Mzuzu"),
  cases = c(120, 80, 35)
)
mw_map(df, fill = cases)
```

```
ta_df <- data.frame(
  ta = c("Mabuka", "Mwaulambia"),
  coverage = c(72, 64)
)
mw_map(ta_df, fill = coverage, level = "ta", districts = "Mulanje")
```

`mw_points` *Add Point Locations to Malawi Map*

Description

Plot geographic points (e.g., survey clusters, health facilities, schools) on a Malawi map with extensive customization options.

Usage

```
mw_points(
  data,
  lon,
  lat,
  color = "red",
  size = 2,
  shape = 19,
  alpha = 0.8,
  stroke = 0.5,
  mapping = NULL,
  show.legend = TRUE,
  jitter = FALSE,
  jitter_width = 0.1,
  jitter_height = 0.1,
  label = FALSE,
  label_column = NULL,
  label_size = 3,
  label_color = "black",
  repel_labels = FALSE,
  ...
)
```

Arguments

`data`	Data frame containing coordinates and optional attributes.
`lon`	Longitude column (unquoted).
`lat`	Latitude column (unquoted).
`color`	Point color. Can be a single color or a column name for color mapping. Default: "red".

size	Point size. Can be a single value or a column name for size mapping. Default: 2.
shape	Point shape. Default: 19 (filled circle).
alpha	Point transparency (0-1). Default: 0.8.
stroke	Border thickness for points. Default: 0.5.
mapping	Optional aesthetic mapping created with ggplot2::aes().
show.legend	Logical. Show legend? Default: TRUE.
jitter	Logical. Add small random noise to points to reduce overplotting. Default: FALSE.
jitter_width	Numeric. Width of jitter. Default: 0.1.
jitter_height	Numeric. Height of jitter. Default: 0.1.
label	Logical. Add labels to points. Default: FALSE.
label_column	Column for point labels (if label = TRUE).
label_size	Size of point labels. Default: 3.
label_color	Color of point labels. Default: "black".
repel_labels	Use ggrepel to avoid overlapping labels. Default: FALSE.
...	Additional arguments passed to ggplot2::geom_point() or ggrepel::geom_text_repel().

Value

A ggplot2 layer object that can be added to a map.

Examples

```
library(ggplot2)

# Sample health facilities
facilities <- data.frame(
  name = c("Lilongwe Central Hospital", "Queen Elizabeth Central Hospital",
           "Mzuzu Central Hospital", "Zomba Central Hospital"),
  lon = c(33.78, 35.00, 34.02, 35.32),
  lat = c(-13.98, -15.78, -11.46, -15.38),
  type = c("Central", "Central", "Central", "Central"),
  beds = c(1200, 1350, 600, 450)
)

# Basic points
mw_map() +
  mw_points(facilities, lon, lat)

# Colored by type (pass column name as a string)
mw_map() +
  mw_points(facilities, lon, lat, color = "type")

# Sized by beds (pass column name as a string)
mw_map() +
```

```
  mw_points(facilities, lon, lat, size = "beds", alpha = 0.7)

# With labels
mw_map() +
  mw_points(facilities, lon, lat,
            label = TRUE, label_column = "name")

# Custom styling
mw_map() +
  mw_points(facilities, lon, lat,
            color = "darkblue", shape = 16, size = 4, alpha = 0.6)
```

`mw_regions` *Create a Malawi Regions Map*

Description

Draw Malawi's three administrative regions with the same polished defaults used by `mw_map()`.

Usage

```
mw_regions(
  data = NULL,
  fill,
  region_col,
  palette = "regions",
  labels = FALSE,
  title = NULL,
  subtitle = NULL,
  caption = NULL,
  ...
)
```

Arguments

`data`	Optional region-level data.
`fill`	Optional fill column. May be quoted or unquoted.
`region_col`	Region-name column in `data`. Defaults to `region`.
`palette`	Malawi palette name, colour vector, or palette function.
`labels`	Add region labels.
`title, subtitle, caption`	Plot labels.
`...`	Passed to `mw_map()`.

Value

A ggplot2 object.

Examples

```
mw_regions(labels = TRUE)

df <- data.frame(region = c("Northern", "Central", "Southern"),
                 value = c(1, 2, 3))
mw_regions(df, fill = value)
```

`mw_suggest_matches` *Suggest Close Malawi Name Matches*

Description

Suggest Close Malawi Name Matches

Usage

```
mw_suggest_matches(x, candidates, n = 3)
```

Arguments

`x`	Character. Name to match.
`candidates`	Character vector of valid names.
`n`	Number of suggestions.

Value

Character vector of suggested names.

Examples

```
mw_suggest_matches("Lilongwee", mw_districts())
```

`mw_ta_map` *Create a Traditional Authority Map*

Description

Map Malawi Traditional Authorities. This wrapper is optimised for TA-level work and supports numeric or categorical fills by TA name.

Usage

```
mw_ta_map(
  data = NULL,
  fill,
  ta_col,
  districts = NULL,
  region = NULL,
  tas = NULL,
  palette = NULL,
  labels = FALSE,
  title = NULL,
  subtitle = NULL,
  caption = NULL,
  district_borders = TRUE,
  ...
)
```

Arguments

`data`	Optional data frame with TA-level values.
`fill`	Optional column to map to fill colour. May be quoted or unquoted.
`ta_col`	Column in `data` containing TA names. Defaults to `ta`.
`districts`	Optional district filter.
`region`	Optional region filter.
`tas`	Optional TA filter.
`palette`	Malawi palette name, colour vector, or palette function.
`labels`	Add TA labels.
`title, subtitle, caption`	Plot labels.
`district_borders`	Add district outlines.
`...`	Passed to `mw_map()`.

Value

A ggplot2 object.

Examples

```
mw_ta_map(districts = "Lilongwe")

ta_data <- data.frame(
  ta = c("Mabuka", "Mwaulambia"),
  coverage = c(72, 64)
)
mw_ta_map(ta_data, fill = coverage, districts = "Mulanje")

ta_status <- data.frame(
  ta = c("Mabuka", "Mwaulambia"),
  status = c("On track", "Needs support")
)
mw_ta_map(ta_status, fill = status)
```

---

mw_tas *Get Malawi Traditional Authority Names*

Description

Return Traditional Authority names, with optional region or district filters.

Usage

```
mw_tas(
  region = NULL,
  districts = NULL,
  type = c("standard", "admin", "short", "all"),
  sorted = TRUE
)
```

Arguments

region	Optional region filter.
districts	Optional district filter.
type	"standard", "admin", "short", or "all".
sorted	Sort alphabetically.

Value

A character vector, or a data frame when type = "all".

Examples

```
mw_tas(districts = "Lilongwe")
mw_tas(region = "Southern", type = "all")
```

scale_fill_mw *Malawi Fill Scale*

Description

Apply Malawi-themed color palettes to ggplot2 maps. Supports both continuous and discrete scales with options for colorblind-friendly palettes.

Usage

```
scale_fill_mw(
  palette = "health",
  reverse = FALSE,
  discrete = FALSE,
  colorblind_friendly = FALSE,
  direction = 1,
  ...
)
```

Arguments

palette	Name of palette. See get_mw_palettes() for available options. Default: "health".
reverse	Logical. Reverse palette order. Default: FALSE.
discrete	Logical. Use discrete scale. Default: FALSE (continuous).
colorblind_friendly	Logical. Use only colorblind-friendly palettes. Default: FALSE.
direction	Numeric. Direction of palette: 1 = normal, -1 = reversed. Default: 1.
...	Additional arguments passed to ggplot2::scale_fill_gradientn() or ggplot2::discrete_scale()

Value

A ggplot2 scale object.

Examples

```
library(ggplot2)

df <- data.frame(
  district = c("Lilongwe", "Blantyre", "Mzimba"),
  value = c(10, 20, 30),
  category = c("A", "B", "A")
)
# Continuous scale
mw_map(data = df, fill = "value") +
  scale_fill_mw("population")

# Discrete scale
```

```
mw_map(data = df, fill = "category") +
  scale_fill_mw("qualitative_1", discrete = TRUE)

# Reversed
mw_map(data = df, fill = "value") +
  scale_fill_mw("malaria", reverse = TRUE)
```

`view_mw_palettes` *Visualize Malawi Palettes*

Description

Display all available palettes for visual inspection.

Usage

```
view_mw_palettes(n = NULL, ncol = 3)
```

Arguments

`n`	Number of colors to show for each palette. Default: NULL (all colors).
`ncol`	Number of columns in plot. Default: 3.

Value

A ggplot2 object showing palette swatches.

Examples

```
# Show all palettes
view_mw_palettes()

# Show 5 colors from each palette
view_mw_palettes(n = 5)
```

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