Package 'DSIR'

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Title Data Science Infrastructure for Global Health in R

Version 0.2.0

Description Tools for global health data analysis, including a publication-ready 'ggplot2' theme, a 'flextable' defaults helper, a thin pie chart wrapper, built-in regional country-code datasets, and convenience clients for the World Health Organization Global Health Observatory (GHO) OData API <https://ghoapi.azureedge.net/api/> and the United Nations Sustainable Development Goals (SDG) API <https://unstats.un.org/SDGAPI/swagger/>.

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Language en-US

URL https://github.com/shanlong-who/DSIR

BugReports https://github.com/shanlong-who/DSIR/issues

Encoding UTF-8

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Depends R (>= 4.1.0)

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Contents

`dsi_flextable_defaults` *Set DSIR Flextable Defaults*

Description

Applies a consistent set of `flextable` formatting defaults for publication-ready tables (booktabs theme, bold headers, modest padding). Pick any font you like — the default `""` leaves the `flextable` default in place so the call is safe on systems where Cambria is not installed.

Usage

```
dsi_flextable_defaults(
  font_size = 12,
  font_family = "",
  font_color = "#333333",
  border_color = "black",
  padding = c(3, 3, 4, 4)
)
```

Arguments

`font_size`	Font size in points. Default `12`.
`font_family`	Font family name. Default `""` keeps the existing `flextable` default; try `"Cambria"` for the original DSIR look on Windows.
`font_color`	Font color. Default `"#333333"`.
`border_color`	Border color. Default `"black"`.
`padding`	Numeric vector of length 1 (applied to all sides) or length 4 (`top`, `bottom`, `left`, `right`). Default `c(3, 3, 4, 4)`.

Value

Invisibly returns `NULL`. Called for its side effect of mutating the `flextable` global defaults via `flextable::set_flextable_defaults()`.

Examples

```
dsi_flextable_defaults()
```

`ggpie` *Create a Pie Chart with ggplot2*

Description

Builds a pie chart from a data frame using one categorical column and one numeric column. Slices are labeled with the category name and percentage share.

Usage

```
ggpie(
  df,
  .x,
  .y,
  .offset = 1,
  .color = "white",
  .legend = FALSE,
  .label = TRUE,
  .label_size = 3.5
)
```

Arguments

`df`	A data frame.
`.x`	Column name (string) of the categorical variable used for the slices.
`.y`	Column name (string) of the numeric variable used for the slice values.
`.offset`	Bar x position. Default `1`. Increase (e.g. `2`) to carve out a donut-chart hole.
`.color`	Border color between slices. Default `"white"`.
`.legend`	Logical. Show the legend? Default `FALSE`.
`.label`	Logical. Draw `"name\n(pct%)"` labels on the slices? Default `TRUE`.
`.label_size`	Label text size in mm. Default `3.5`.

Value

A `ggplot` object.

Examples

```
df <- data.frame(
  category = c("A", "B", "C"),
  value = c(40, 35, 25)
)
ggpie(df, "category", "value")
```

---

gho_data *Fetch GHO Data*

Description

Retrieves observations for a specific indicator from the WHO GHO OData API, with optional filters by spatial level, country / region and year range.

Usage

```
gho_data(
  indicator,
  spatial_type = NULL,
  area = NULL,
  year_from = NULL,
  year_to = NULL
)
```

Arguments

indicator	Character scalar. The indicator code (e.g. "NCDMORT3070"). Use gho_indicators() to find codes.
spatial_type	Character. Spatial dimension to filter on: one of "country", "region", "global", or NULL (all levels, the default).
area	Character vector of country or region codes (e.g. c("FRA", "DEU")). Default NULL returns all areas.
year_from	Numeric. Start year filter (inclusive). Default NULL.
year_to	Numeric. End year filter (inclusive). Default NULL.

Value

A data frame of indicator observations, or an empty data frame when the service is unreachable.

See Also

gho_indicators(), gho_dimensions().

Examples

```
## Not run:
# Country-level data for one indicator
gho_data("NCDMORT3070", spatial_type = "country")

# Specific countries and years
gho_data("WHOSIS_000001", area = c("FRA", "DEU"), year_from = 2015)

## End(Not run)
```

---

gho_dimensions *List Dimensions of a GHO Indicator*

Description

Returns the unique values of a given dimension across all observations of a GHO indicator. Useful for discovering which ages, sexes, regions, or other breakdowns are available before calling gho_data().

Usage

```
gho_dimensions(indicator, dimension = "SpatialDimType")
```

Arguments

indicator	Character scalar. The indicator code (e.g. "NCDMORT3070").
dimension	Character. Name of the dimension column in the indicator data. Common values include "SpatialDim", "SpatialDimType", "TimeDim", "Dim1", "Dim2", and "Dim3". Default "SpatialDimType".

Value

A character vector of unique, sorted dimension values, or an empty character vector when the service is unreachable or the dimension is missing.

See Also

gho_data(), gho_indicators().

Examples

```
## Not run:
gho_dimensions("NCDMORT3070")
gho_dimensions("NCDMORT3070", dimension = "Dim1")

## End(Not run)
```

gho_indicators *List GHO Indicators*

Description

Fetches the catalog of indicators from the WHO Global Health Observatory (GHO) OData API.

Usage

```
gho_indicators(search = NULL)
```

Arguments

search	Optional character string. If supplied, only indicators whose name contains search (case-insensitive) are returned.

Value

A data frame with columns IndicatorCode, IndicatorName and Language. Returns an empty data frame (with a message) when the service is unreachable.

See Also

gho_data(), gho_dimensions().

Examples

```
## Not run:
# All indicators
inds <- gho_indicators()

# Search by keyword
gho_indicators("mortality")

## End(Not run)
```

sdg_areas *List SDG Geographic Areas*

Description

Fetches the list of geographic areas available from the UN SDG database.

Usage

```
sdg_areas()
```

Value

A data frame with area codes and names, or NULL when the service is unreachable.

See Also

sdg_data().

Examples

```
## Not run:
sdg_areas()

## End(Not run)
```

---

sdg_data *Fetch SDG Data*

Description

Retrieves data for one or more SDG indicators from the UN SDG API, with optional filters by area and year.

Usage

```
sdg_data(
  indicator,
  area = NULL,
  year_from = NULL,
  year_to = NULL,
  page_size = 1000L
)
```

Arguments

indicator	Character vector of indicator codes (e.g. "1.1.1"). Use sdg_indicators() to find codes.
area	Character vector of area codes (e.g. c("32", "76")). Use sdg_areas() to find codes. Default NULL returns all areas.
year_from	Numeric. Start year filter (inclusive). Default NULL.
year_to	Numeric. End year filter (inclusive). Default NULL.
page_size	Integer. Number of records per page. Default 1000, maximum 10000.

Value

A data frame of indicator observations, or an empty data frame when the service is unreachable or there are no matching rows.

See Also

sdg_indicators(), sdg_areas().

Examples

```
## Not run:
# All data for indicator 1.1.1
sdg_data("1.1.1")

# Specific area and year range
sdg_data("3.2.1", area = "156", year_from = 2015, year_to = 2023)

## End(Not run)
```

---

sdg_goals *List SDG Goals*

Description

Fetches the list of Sustainable Development Goals from the UN SDG API.

Usage

```
sdg_goals(include_children = FALSE)
```

Arguments

include_children
: Logical. Include targets and indicators nested under each goal? Default FALSE.

Value

A list (or data frame) of SDG goals, or NULL when the service is unreachable.

See Also

sdg_targets(), sdg_indicators(), sdg_data().

Examples

```
## Not run:
sdg_goals()
sdg_goals(include_children = TRUE)

## End(Not run)
```

sdg_indicators *List SDG Indicators*

Description

Fetches the list of SDG indicators from the UN SDG API.

Usage

```
sdg_indicators()
```

Value

A list (or data frame) of SDG indicators, or NULL when the service is unreachable.

See Also

sdg_targets(), sdg_data().

Examples

```
## Not run:
sdg_indicators()

## End(Not run)
```

sdg_targets *List SDG Targets*

Description

Fetches the list of SDG targets from the UN SDG API.

Usage

```
sdg_targets(include_children = FALSE)
```

Arguments

include_children
: Logical. Include indicators nested under each target? Default FALSE.

Value

A list (or data frame) of SDG targets, or NULL when the service is unreachable.

See Also

sdg_goals(), sdg_indicators().

Examples

```
## Not run:
sdg_targets()

## End(Not run)
```

---

theme_dsi *DSIR ggplot2 Theme*

Description

A clean, publication-ready ggplot2 theme based on ggplot2::theme_minimal() with a consistent color accent and bordered panels.

Usage

```
theme_dsi(
  base_size = 12,
  base_family = "",
  color = "steelblue",
  grid_color = "grey85"
)
```

Arguments

base_size	Base font size in points. Default 12.
base_family	Base font family. Default "" (device default).
color	Accent color for text and panel borders. Default "steelblue".
grid_color	Color for major grid lines. Default "grey85".

Details

The default base_family = "" uses the graphics device's default font so the theme works on any system (including CRAN's Linux test machines). For the original DSIR look, pass base_family = "Cambria" on a system where that font is installed and registered with R (see grDevices::postscriptFonts() or the systemfonts package).

Value

A ggplot2 theme object that can be added to a plot with +.

Examples

```
library(ggplot2)
ggplot(women, aes(height, weight)) +
  geom_point(color = "steelblue") +
  theme_dsi()
```

`wpro_cty` *WPRO Member States (ISO 3166-1 alpha-3)*

Description

A character vector of ISO3 codes for countries and areas in the WHO Western Pacific Region.

Usage

```
wpro_cty
```

Format

A character vector of length N.

Index