

Package ‘brazilmaps’

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Type Package

Title Brazilian Maps from Different Geographic Levels

Version 1.0.0

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Description Provides simplified Brazilian territorial meshes derived from official data published by the Brazilian Institute of Geography and Statistics (IBGE) <<https://www.ibge.gov.br/>> as local spatial objects, with no download required at use time. Municipal meshes cover selected official editions from 2000 onwards whenever the number of municipalities changes, and current meshes are available for states, regions and other geographic levels. Convenience functions support filtering, joining and plotting the maps, as well as consulting Brazilian territorial codes.

Depends R (>= 4.1.0)

LazyData true

LazyDataCompression xz

License GPL-3

Encoding UTF-8

URL <https://github.com/rpradosiqueira/brazilmaps>

BugReports <https://github.com/rpradosiqueira/brazilmaps/issues>

Imports dplyr, ggplot2 (>= 3.5.0), rlang, sf

Suggests knitr, rmarkdown, sp, testthat (>= 3.0.0)

Config/testthat/edition 3

VignetteBuilder knitr

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NeedsCompilation no

Author Renato Prado Siqueira [aut, cre]

Maintainer Renato Prado Siqueira <rpradosiqueira@gmail.com>

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brmap_editions	<i>List bundled municipal mesh editions</i>
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Description

Returns the inventory generated with the spatial files. The package bundles the latest official edition from each consecutive run with the same municipality count. All listed editions are installed and read locally by [get_brmap()].

Usage

```
brmap_editions()

brmap_years()
```

Value

A data frame with edition year, feature count, file size, checksum, source and processing metadata.

Examples

```
brmap_editions()
```

deaths	<i>Municipal deaths in Brazil</i>
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Description

Example municipal mortality data.

Usage

deaths

Format

A data frame with 558 rows and 3 variables:

cod IBGE microregion code.

micro Microregion name.

ndeaths Registered deaths.

Source

DATASUS.

get_brmap	<i>Get a Brazilian territorial map</i>
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Description

Returns a simplified territorial mesh shipped with the package. No network connection is used. Municipal meshes can be selected by milestone edition year; other levels represent the current edition.

Usage

```
get_brmap(  
  level = "country",  
  filters = NULL,  
  output = c("sf", "data.frame", "sp"),  
  year = NULL,  
  geo = NULL,  
  geo_filter = NULL,  
  as = NULL,  
  geo.filter = NULL,  
  class = NULL  
)
```

Arguments

level	Geographic level in lower snake case. One of "country", "region", "state", "state_hex", "state_region", "intermediate_region", "immediate_region", "mesoregion", "microregion" or "municipality".
filters	Optional named list of code filters. Level shorthands such as 'list(region = 5, state = 50)' are accepted and combined with logical AND.
output	Output type: "sf", "data.frame" or "sp".
year	Bundled municipal mesh edition. 'NULL' selects the most recent edition. Historical years are available only for municipalities.
geo, geo_filter, as	Deprecated aliases for 'level', 'filters' and 'output'.
geo.filter, class	Older deprecated aliases for 'filters' and 'output'.

Value

An 'sf' object by default. "data.frame" removes the geometry; "sp" returns a legacy 'Spatial' object and requires package 'sp'.

See Also

[brmap_editions()], [join_brmap()], [plot_brmap()]

Examples

```
rio <- get_brmap("state", filters = list(state = 33))
municipalities_2010 <- get_brmap(
  "municipality", year = 2010, filters = list(region = 5)
)
plot_brmap(rio)
```

get_dtb

Query the Brazilian Territorial Division

Description

Looks up territorial identifiers and their hierarchy in the version of the Brazilian Territorial Division (DTB) shipped with the package.

Usage

```
get_dtb(code = NULL, name = NULL)
```

Arguments

code	Optional vector of IBGE territorial codes.
name	Optional vector of territory names. Matching ignores case and surrounding whitespace.

Value

A data frame. If both arguments are 'NULL', the complete table is returned. If both are supplied, rows matching either condition are returned.

References

<https://www.ibge.gov.br/geociencias/organizacao-do-territorio/estrutura-territorial/23701-divisao-territorial-brasileira.html>

See Also

[get_dtb_levels()]

Examples

```
get_dtb(code = c(50, 5002704, 1))
get_dtb(name = c("Campo Grande", "Recife"))
```

get_dtb_info

Deprecated DTB query

Description

'get_dtb_info()' is retained for compatibility. Use [get_dtb()] with argument 'code' and lower-snake-case output columns.

Usage

```
get_dtb_info(cod = NULL, name = NULL)
```

Arguments

cod	Optional vector of IBGE territorial codes.
name	Optional vector of territory names.

Value

A data frame using the legacy DTB column names.

`get_dtb_levels`*Relate levels of the Brazilian Territorial Division*

Description

Returns codes and names for one or more territorial levels using the hierarchy shipped with the package.

Usage

```
get_dtb_levels(  
  levels = c("municipality", "state", "region", "immediate_region",  
            "intermediate_region", "microregion", "mesoregion"),  
  filters = NULL  
)
```

Arguments

<code>levels</code>	Character vector containing any of "municipality", "state", "region", "immediate_region", "intermediate_region", "microregion" and "mesoregion".
<code>filters</code>	Optional named list of codes used to filter the result. Conditions are combined with logical AND.

Value

A data frame with explicit code/name pairs for the requested levels.

References

<https://www.ibge.gov.br/geociencias/organizacao-do-territorio/estrutura-territorial/23701-divisao-territorial-brasileira.html>

See Also

[`get_dtb()`]

Examples

```
get_dtb_levels(c("municipality", "region"))  
get_dtb_levels(c("state", "immediate_region"))
```

get_dtb_lvl	<i>Deprecated DTB level relationship helper</i>
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Description

'get_dtb_lvl()' is retained for compatibility. Use [get_dtb_levels()].

Usage

```
get_dtb_lvl(
  geo = c("City", "State", "Region", "Immediate", "Intermediary", "MicroRegion",
    "MesoRegion"),
  geo_filter = NULL
)
```

Arguments

geo	Legacy geographic level names.
geo_filter	Optional named list of legacy filters.

Value

A data frame using the legacy DTB column names.

gini2015	<i>Municipal Gini index in 2015</i>
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Description

Example data containing the 2015 municipal Gini index.

Usage

```
gini2015
```

Format

A data frame with 27 rows and 3 variables:

cod	IBGE state code.
uf	State name.
gini	Gini index.

Source

Brazilian Institute of Geography and Statistics (IBGE).

join_brmap	<i>Join tabular data to a Brazilian map</i>
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Description

A small type-preserving wrapper around `[dplyr::left_join()]`.

Usage

```
join_brmap(map, data, by = NULL)
```

```
join_data(map, data, by = NULL)
```

Arguments

map	An 'sf', 'SpatialPolygonsDataFrame' or 'data.frame' object.
data	A data frame containing the columns to add.
by	Join specification accepted by <code>[dplyr::left_join()]</code> .

Value

The same broad object type supplied in 'map'.

See Also

`[get_brmap()]`

Examples

```
data("pop2017")
municipalities <- get_brmap("municipality", year = 2023)
municipalities <- join_brmap(
  municipalities, pop2017, by = c("municipality_code" = "mun")
)
```

plot_brmap	<i>Plot a Brazilian map</i>
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Description

Creates a 'ggplot' using `[ggplot2::geom_sf()]`. The returned object can be extended with any regular ggplot2 layer, scale or label.

Usage

```
plot_brmmap(
  map,
  data = NULL,
  by = NULL,
  fill_by = NULL,
  theme = theme_brmmap(),
  border_colour = "grey30",
  border_linewidth = 0.15,
  fill = "white",
  data_to_join = NULL,
  join_by = NULL,
  var = NULL
)
```

Arguments

map	An 'sf' or legacy 'Spatial' polygon object.
data	Optional data frame to join before plotting.
by	Join specification accepted by [dplyr::left_join()].
fill_by	Optional single column name mapped to polygon fill.
theme	A complete or partial ggplot2 theme.
border_colour	Polygon border colour.
border_linewidth	Polygon border width.
fill	Constant fill used when 'fill_by' is 'NULL'.
data_to_join, join_by, var	Deprecated aliases for 'data', 'by' and 'fill_by'.

Value

A 'ggplot' object.

See Also

[get_brmmap()], [join_brmmap()]

Examples

```
data("pop2017")
south <- get_brmmap(
  "municipality", year = 2023, filters = list(region = 4)
)
plot_brmmap(
  south,
  data = pop2017,
  by = c("municipality_code" = "mun"),
```

```
    fill_by = "pop2017"
  )
```

pop2017

Municipal population estimates in 2017

Description

Example data containing 2017 municipal population estimates.

Usage

```
pop2017
```

Format

A data frame with 5,570 rows and 3 variables:

mun IBGE municipality code.

nome_mun Municipality name.

pop2017 Estimated 2017 population.

Source

Brazilian Institute of Geography and Statistics (IBGE).

theme_brmap

Minimal theme for Brazilian maps

Description

Minimal theme for Brazilian maps

Usage

```
theme_brmap(base_size = 9, base_family = "")
```

```
theme_map(base_size = 9, base_family = "")
```

Arguments

base_size Base font size.

base_family Base font family.

Value

A ggplot2 theme.

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