Package 'jpgrid'

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Type Package

Title Functions for the Grid Square Codes in Japan

Version 0.3.1

Description Provides functions for grid square codes in Japan (<https://www.stat.go.jp/english/data/mesh/index.html>). Generates the grid square codes from longitude/latitude, geometries, and the grid square codes of different scales, and vice versa.

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URL https://github.com/UchidaMizuki/jpgrid, https://uchidamizuki.github.io/jpgrid/

BugReports https://github.com/UchidaMizuki/jpgrid/issues

Depends R (>= 4.1.0)

Imports dplyr (>= 0.8.0), geosphere, purrr (>= 1.0.0), rlang (>= 0.3.0), stars, sf, stringr (>= 1.4.0), tibble, tidyr (>= 1.0.0), units, vctrs, lifecycle, pillar, tidyselect, cli

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R topics documented:

`as_tbl_grid` *Convert a data frame into a tbl_grid object*

Description

[Deprecated]

Usage

```
as_tbl_grid(x, var = NULL, grid_size = NULL, strict = TRUE, ...)
```

Arguments

`x`	An object to be converted into an object class `tbl_grid`.
`var`	A variable to specify the grid object. By default, the first column of the grid object is taken.
`grid_size`	A grid size.
`strict`	A logical scalar. Should the number of digits in the grid square code match a given number of digits?
`...`	Additional arguments passed to `tibble::new_tibble()`.

Details

It is recommended to use `grid_as_sf()`.

The `tbl_grid` object is a data frame with `grid` objects in the columns. `as_tbl_grid` converts a data frame into a tbl_grid object.

Value

A `tbl_grid` object.

`bbox_to_grid` *Converting bbox to grid square codes*

Description

Converting bbox to grid square codes

Usage

```
bbox_to_grid(bbox, grid_size)
```

Arguments

`bbox`	A `bbox`.
`grid_size`	A grid size.

Value

A `grid` vector.

`coords` *Conversion between grid square codes and coordinates (longitude and latitude)*

Description

Conversion between grid square codes and coordinates (longitude and latitude)

Usage

```
coords_to_grid(X, Y, grid_size)

grid_to_coords(grid, center = TRUE)
```

Arguments

X	A numeric vector of longitude.
Y	A numeric vector of latitude.
grid_size	A grid size.
grid	A grid class vector.
center	Should the center point of the grid be returned? Otherwise the end points will be returned. TRUE by default.

Value

coords_to_grid() returns a grid vector.

grid_to_coords() returns a tbl_df.

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geometry_to_grid *Converting sfc geometries to grid square codes*

Description

Converting sfc geometries to grid square codes

Usage

```
geometry_to_grid(geometry, grid_size, options = "ALL_TOUCHED=TRUE", ...)
```

Arguments

geometry	A sfc vector.
grid_size	A grid size.
options	Options vector for GDALRasterize passed on to stars::st_rasterize().
...	Passed on to stars::st_rasterize().

Value

A list of grid vectors.

grid_as_sf *Converting data frame containing grid square codes to sf*

Description

Converting data frame containing grid square codes to sf

Usage

```
grid_as_sf(
  x,
  as_points = FALSE,
  crs = sf::NA_crs_,
  grid_column_name = NULL,
  ...
)
```

Arguments

x	A data frame or a grid.
as_points	Return the center points of the grids or not?
crs	Coordinate reference system.
grid_column_name	A scalar character.
...	passed on to sf::st_as_sf().

Value

A sf object.

grid_as_stars *Converting data frame containing regional grids to stars*

Description

Converting data frame containing regional grids to stars

Usage

```
grid_as_stars(
  x,
  coords = NULL,
  crs = sf::NA_crs_,
  grid_column_name = NULL,
  ...
)
```

Arguments

x	A data frame or a grid.
coords	The column names or indices that form the cube dimensions.
crs	Coordinate reference system.
grid_column_name	A scalar character.
...	Passed on to stars::st_as_stars().

Value

A stars object.

---

grid_city *List of grid square codes by Japanese municipalities*

Description

List of grid square codes by Japanese municipalities

Usage

```
grid_city
```

Format

An object of class tbl_df (inherits from tbl, data.frame) with 462915 rows and 6 columns.

Source

https://www.stat.go.jp/data/mesh/m_itiran.html

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grid_class *Grid square code vector*

Description

[Deprecated]

Usage

```
grid_80km(x, strict = TRUE)

grid_10km(x, strict = TRUE)

grid_1km(x, strict = TRUE)

grid_500m(x, strict = TRUE)

grid_250m(x, strict = TRUE)

grid_125m(x, strict = TRUE)

grid_100m(x, strict = TRUE)

grid_auto(x, strict = TRUE)
```

Arguments

x	A list or vector.
strict	A logical scalar. Should the number of digits in the grid square code match a given number of digits?

Details

It is recommended to use `grid_parse()` or `grid_convert()`.

A series of functions return `grid` class for each grid size. `grid_auto()` returns automatically determine grid size by the largest grid size.

Value

A `grid` vector.

---

grid_convert *Convert the grid size of grid objects*

Description

Convert the grid size of grid objects

Usage

```
grid_convert(grid, grid_size)
```

Arguments

grid	A grid vector.
grid_size	A grid size.

Value

A grid vector.

Examples

```
grid_500m <- parse_grid(c("533945263", "533935863", "533945764"), "500m")
grid_convert(grid_500m, "10km")
```

---

grid_distance *Distance between grid square codes*

Description

If grid and grid_to are both vectors, the distance between grid and grid_to is calculated. If grid is a list, The path distance of each element is calculated.

Usage

```
grid_distance(
  grid,
  grid_to = NULL,
  close = FALSE,
  type = c("keep_na", "ignore_na", "skip_na")
)
```

Arguments

grid	A grid vector or a list of grid vector.
grid_to	A grid vector.
close	Should the path of each element be closed when grid is a list?
type	How is the NA grid treated when grid is a list? "skip_na" skips the NA grid and connects the paths. "keep_na" by default.

Value

A double vector.

grid_line *Draw line segments between grid square codes*

Description

If `grid` and `grid_to` are both vectors, the line between `grid` and `grid_to` is drawn (using Bresenham's line algorithm). If `grid` is a list, The path lines for each element in the grid will be drawn.

Usage

```
grid_line(grid, grid_to = NULL, close = FALSE, skip_na = FALSE)
```

Arguments

`grid`	A `grid` vector or a list of `grid` vector.
`grid_to`	A `grid` vector.
`close`	Should the path of each element be closed when `grid` is a list?
`skip_na`	Should skip the `NA` grid and connects the paths? `FALSE` by default.

Value

A list of `grid` vectors.

grid_move *Moving on grid square codes*

Description

Moving on grid square codes

Usage

```
grid_move(grid, n_X, n_Y)
```

Arguments

`grid`	A `grid` vector.
`n_X`	Number of moving cells in the longitude direction.
`n_Y`	Number of moving cells in the latitude direction.

Value

A `grid` vector.

grid_neighbor *Neighborhood grid square codes*

Description

Neighborhood grid square codes

Usage

```
grid_neighbor(grid, n = 1L, moore = TRUE, simplify = TRUE)
```

Arguments

grid	A grid vector.
n	A numeric vector of degrees.
moore	Moore neighborhood (TRUE) or Von Neumann neighborhood (FALSE).
simplify	Should simplify the format of the return?

Value

A list of grid vectors.

grid_subdivide *Subdivide grid square codes*

Description

grid_subdivide() makes the grid square codes finer.

Usage

```
grid_subdivide(grid, grid_size)
```

Arguments

grid	A grid vector.
grid_size	A grid size.

Value

A list of grid vector.

is_grid *Test if the object is a grid*

Description

Test if the object is a grid

Usage

```
is_grid(x, grid_size = NULL)
```

Arguments

x	An object.
grid_size	A grid size.

Value

TRUE if the object inherits from the grid class.

jpgrid *Functions for the Grid Square Codes in Japan*

Description

Provides functions for grid square codes in Japan (https://www.stat.go.jp/english/data/mesh/index.html). Generates the grid square codes from longitude/latitude, geometries, and the grid square codes of different scales, and vice versa.

Author(s)

Maintainer: Mizuki Uchida <uchidamizuki@vivaldi.net>

See Also

https://www.stat.go.jp/english/data/mesh/index.html

parse_grid *Parse grid square codes*

Description

Parse grid square codes

Usage

```
parse_grid(x, grid_size = NULL, strict = TRUE)
```

Arguments

x	A character vector of grid square codes.
grid_size	A grid size.
strict	A logical scalar. Should the number of digits in the grid square code match a given number of digits? By default, TRUE.

Examples

```
parse_grid("53394526313")
parse_grid("53394526313", "80km")
parse_grid("53394526313", "80km",
           strict = FALSE)
```

XY *Conversion between grid square codes and coordinates (longitude and latitude)*

Description

[Deprecated]

Usage

```
grid_to_XY(grid, center = TRUE)

XY_to_grid(X, Y, grid_size)
```

Arguments

grid	A grid class vector.
center	Should the center point of the grid be returned? Otherwise the end points will be returned. TRUE by default.
X	A numeric vector of longitude.
Y	A numeric vector of latitude.
grid_size	A grid size.

Value

grid_to_XY() returns a tbl_df.

XY_to_grid() returns a grid vector.

Index