

Package ‘rgeopat2’

January 27, 2018

Title Additional Functions for 'geoPAT' 2.0

Version 0.2.0

Description Supports analysis of spatial data processed with the 'geoPAT' 2.0 software <<http://sil.uc.edu/cms/index.php?id=geopat2>>. Available features include creation of a grid based on the 'geoPAT' 2.0 grid header file.

Depends R (>= 3.3.0)

Imports readr, sf, stringr

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Encoding UTF-8

LazyData true

RoxygenNote 6.0.1

Suggests covr, testthat, tidyverse

URL <https://github.com/Nowosad/rgeopat2>

BugReports <https://github.com/Nowosad/rgeopat2/issues>

NeedsCompilation no

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british_isles	<i>British Isles</i>
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Description

A dataset containing the British Isles outline map

Usage

```
british_isles
```

Format

An object of class sf (inherits from data.frame) with 1 rows and 1 columns.

Source

The rnatuarearth package

gpat_gridcreate	<i>Grid polygon creator</i>
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Description

Creates a polygon of a geoPAT grid based on the grid header

Usage

```
gpat_gridcreate(x, brick = FALSE)
```

Arguments

x	A filepath to the geoPAT 2.0 grid header file
brick	TRUE/FALSE; should a new grid polygon have a brick topology

Value

sfc_POLYGON

Examples

```
header_filepath = system.file("rawdata/Augusta2011_grid100.hdr", package="rgeopat2")
my_grid = gpat_gridcreate(header_filepath)
my_grid_brick = gpat_gridcreate(header_filepath, brick = TRUE)

plot(my_grid)
plot(my_grid_brick, add = TRUE, border = "red", lwd = 3)
```

gpat_header_parser *Parse a header of a geoPAT 2.0 grid file*

Description

Extracts basic information from a geoPAT 2.0 grid header file

Usage

```
gpat_header_parser(x)
```

Arguments

x A filepath to the geoPAT 2.0 grid header file

Value

data_frame

gpat_read_distmtx *Read a geoPAT distance matrix*

Description

Read a geoPAT distance matrix into R

Usage

```
gpat_read_distmtx(x)
```

Arguments

x A filepath to the geoPAT 2.0 distance matrix file

Value

dist

Examples

```
distmtx_filepath = system.file("rawdata/Augusta2011_matrix_grid.csv", package="rgeopat2")
my_distmtx = gpat_read_distmtx(distmtx_filepath)
```

gpat_read_txt *Read a geoPAT 2.0 text output*

Description

Read a text output of the geoPAT 2.0 functions into R

Usage

```
gpat_read_txt(x, signature = NULL)
```

Arguments

x A filepath to the geoPAT 2.0 text file

signature A signature used to create a geoPAT 2.0 text output (supported signatures: "lind", "linds")

Value

data.frame

Examples

```
polygon_filepath = system.file("rawdata/Augusta2011_polygon.txt", package = "rgeopat2")
my_polygon = gpat_read_txt(polygon_filepath)
```

```
points_filepath = system.file("rawdata/Augusta2011_points.txt", package = "rgeopat2")
my_points = gpat_read_txt(points_filepath)
```

```
lind_filepath = system.file("rawdata/Augusta2011_lind.txt", package = "rgeopat2")
my_lind = gpat_read_txt(lind_filepath, signature = "lind")
```

```
linds_filepath = system.file("rawdata/Augusta2011_linds.txt", package = "rgeopat2")
my_linds = gpat_read_txt(linds_filepath, signature = "linds")
```

gpat_st_make_grid *Grid polygon creator (without a header)*

Description

Creates a polygon of a gpat grid based on a given parameters

Usage

```
gpat_st_make_grid(x, n = c(10, 10), brick = FALSE)
```

Arguments

x	An object of class sf or sfc
n	An integer of length 1 or 2, number of grid cells in x and y direction (columns, rows)
brick	TRUE/FALSE; should a new grid polygon have a brick topology

Value

sfc_POLYGON

References

Based on the `st_make_grid` function from the sf package

Examples

```
## Not run:
library(sf)
nc = st_read(system.file("shape/nc.shp", package="sf"))

my_grid = gpat_st_make_grid(nc) %>%
  st_as_sf(data.frame(id = 1:100), .)

grid_centroids = st_centroid(my_grid) %>%
  st_coordinates(grid_centroids) %>%
  as_data_frame() %>%
  mutate(id = 1:100)

ggplot() +
  geom_sf(data = my_grid) +
  geom_text(data = grid_centroids, aes(x = X, y = Y, label = id)) +
  theme_void()

## End(Not run)
```

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Description

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