Package 'geouy'

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Type Package

Title Geographic Information of Uruguay

Version 0.2.8

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Description The toolbox have functions to load and process geographic information for Uruguay. And extra-function to get address coordinates and orthophotos through the uruguayan 'IDE' API <https://www.gub.uy/infraestructura-datos-espaciales/tramites-y-servicios/servicios/sistema-unico-direcciones-geograficas>.

License GPL-3

BugReports https://github.com/RichDeto/geouy/issues

Depends R (>= 3.4.0)

Imports assertthat, curl, dplyr, fs, ggplot2, ggspatial, ggthemes, glue, magrittr, methods, raster, rjson, rlang, sf, sp, stringr, tidyselect, utils, viridis

Suggests knitr, rmarkdown, spelling, testthat

VignetteBuilder knitr

ByteCompile true

Encoding UTF-8

Language en-US

LazyData TRUE

RoxygenNote 7.2.3

SystemRequirements 'unrar' (Linux/macOS) or '7-Zip' (Windows) to work with '.rar' files, C++11, GDAL (>= 2.0.1), GEOS (>= 3.8.0), PROJ (>= 6.2.1)

NeedsCompilation no

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`add_geom` *This function allows you to add a geom variable with a code variable of "zona", "barrio", "localidad", "segmentos", "secciones" or "departamentos".*

Description

This function allows you to add a geom variable with a code variable of "zona", "barrio", "localidad", "segmentos", "secciones" or "departamentos".

Usage

```
add_geom(data, unit, variable, crs = 32721)
```

Arguments

data	data.frame
unit	spatial unit of data, may be: "Departamentos", "Secciones", "Secc MVD 2004", "Segmentos", "Segm MVD 2004", "Segm URB INT 2004", "Zonas", "Zonas MVD 2004", "Zonas URB INT 2004", "Localidades pg", "Municipios" o "Barrios".
variable	Variable name of unit code (without duplicates)
crs	Coordinates Refence Sistem, usually in region 32721 or 4326 (default 32721)

Details

Disclaimer: This script is not an official INE product. Aviso: El script no es un producto oficial de INE.

Value

data.frame

See Also

Other service: `geocode_ide_uy()`, `load_geouy()`, `reverse_ide_uy()`, `tiles_geouy()`, `where_uy()`, `which_uy()`

Examples

```
pobre_x_dpto <- as.data.frame(cbind(nomdpto = c("ARTIGAS", "DURAZNO", "FLORIDA", "LAVALLEJA"),
                Pobreza = c(0.26, 0.27, 0.07, 0.10)))
pobre_x_dpto_geo <- add_geom(data = pobre_x_dpto, unit = "Deptos", variable = "nomdpto")
```

---

geocode_ide_uy *A function to geocoding directions using IDE_uy*

Description

A function to geocoding directions using IDE_uy

Usage

```
geocode_ide_uy(x, details = F)
```

Arguments

x	Dataframe with unless 3 variables: dpto = corresponding to the department, loc = city / location, dir = to the address.
details	Logical value, default FALSE for X and Y variables only, if TRUE keep all variables of the service.

Details

https://direcciones.ide.uy/swagger-ui.html#/geocode,_reverse,_inversa

Value

The DafaFrame x with the coordinates variables append (x and y)

See Also

Other service: `add_geom()`, `load_geouy()`, `reverse_ide_uy()`, `tiles_geouy()`, `where_uy()`, `which_uy()`

Examples

```
# x1 <- cbind(dpto="Montevideo",loc="Montevideo",dir="Av. 18 de julio 1453")
# x2 <- data.frame(x1, stringsAsFactors = F)
# geocode_ide_uy(x2)
```

---

geouy *geouy package*

Description

The toolbox have functions to load and process geographic information for Uruguay.

Details

See the README on Github

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is.uy32721 *This function test if an 'sf' object match with Uruguay at crs = 32721.*

Description

This function test if an 'sf' object match with Uruguay at crs = 32721.

Usage

```
is.uy32721(x)
```

Arguments

x	An 'sf' object with the same crs as the homonym parameter

Value

logical value based in crs parameter of the sf object

See Also

Other crs: `is.uy4326()`, `is.uy5381()`, `is.uy5382()`

Examples

```
is.uy32721(load_geouy("Uruguay"))
```

`is.uy4326` *This function test if an 'sf' object match with Uruguay at crs = 4326.*

Description

This function test if an 'sf' object match with Uruguay at crs = 4326.

Usage

```
is.uy4326(x)
```

Arguments

`x`	An 'sf' object with the same crs as the homonym parameter

Value

logical value based in crs parameter of the sf object

See Also

Other crs: `is.uy32721()`, `is.uy5381()`, `is.uy5382()`

Examples

```
is.uy4326(load_geouy("Peajes"))
```

is.uy5381 *This function test if an 'sf' object match with Uruguay at crs = 5381.*

Description

This function test if an 'sf' object match with Uruguay at crs = 5381.

Usage

```
is.uy5381(x)
```

Arguments

x	An 'sf' object with the same crs as the homonym parameter

Value

logical value based in crs parameter of the sf object

See Also

Other crs: `is.uy32721()`, `is.uy4326()`, `is.uy5382()`

Examples

```
is.uy5381(load_geouy("CCZ"))
```

is.uy5382 *This function test if an 'sf' object match with Uruguay at crs = 5382.*

Description

This function test if an 'sf' object match with Uruguay at crs = 5382.

Usage

```
is.uy5382(x)
```

Arguments

x	An 'sf' object with the same crs as the homonym parameter

Value

logical value based in crs parameter of the sf object

See Also

Other crs: `is.uy32721()`, `is.uy4326()`, `is.uy5381()`

Examples

```
is.uy5382(load_geouy("Uruguay"))
```

`load_geouy` *This function allows to take oficial uruguayan geometries, as object "sf", from various servers.*

Description

This function allows to take oficial uruguayan geometries, as object "sf", from various servers.

Usage

```
load_geouy(c, crs = 32721, folder = tempdir())
```

Arguments

`c`	Define the geometries to download: may be: "Departamentos", "Secciones", "Zonas", etc. View(metadata) for details.
`crs`	Define the Coordinate Reference Systems you want the output, default 32721
`folder`	Folder where are the files download if formato == "zip" in metadata. Default tempdir()

Value

sf object with the requested geometries

See Also

Other service: `add_geom()`, `geocode_ide_uy()`, `reverse_ide_uy()`, `tiles_geouy()`, `where_uy()`, `which_uy()`

Examples

```
secc <- load_geouy(c = "Secciones")
```

loc_agr_ine *INE "Localidades Agregadas"*

Description

A dataset containing the cods, names and others attributes of urban locations for Uruguay.

Usage

```
loc_agr_ine
```

Format

A data frame with 615 rows and 8 variables:

depto name of the "Departamento"

nomloc name of the "Localidad"

codloc code of the "Localidad"

pob2011 Population by "Censo 2011"

dens2011km Population density by "Censo 2011" (population/km)

Nom_loc_agr_13 name of the "Localidades agrupadas" (2013)

Loc_agr_13 code of the "Localidades agrupadas" (2013)

cat_loc_agr Tipical categories of "Localidades"

See Also

Other data: metadata_tables, metadata_wms, metadata, mvd_barrios_grid, uy_deptos_grid

metadata *Metadata of geoservices for Uruguay*

Description

A dataset containing the urls and other attributes of geoservices for Uruguay.

Usage

```
metadata
```

Format

A data frame with 86 rows and 10 variables:

capa name of the geoservice

productor name of the institution produced the data

repositor name of the institution that serves the data

crs Coordinate Reference Systems of data

formato name of the institution producing the data

anio year of data production

url url of the service

cod name of the variable that contains the cod value of the geometries

name name of the variable that contains the name of the geometries

enc name of the encoding of the geoservice table

See Also

Other data: loc_agr_ine, metadata_tables, metadata_wms, mvd_barrios_grid, uy_deptos_grid

---

`metadata_tables` *Metadata of tables for Uruguay*

Description

A dataset containing the urls and other attributes of geoservices for Uruguay.

Usage

```
metadata_tables
```

Format

A data frame with 3 rows and 3 variables:

tabla name of the geoservice

formato name of the institution producing the data

url url of the service

See Also

Other data: loc_agr_ine, metadata_wms, metadata, mvd_barrios_grid, uy_deptos_grid

metadata_wms *Metadata of WMS for Uruguay*

Description

A dataset containing the urls and other attributes of geoservices for Uruguay.

Usage

```
metadata_wms
```

Format

A data frame with 7 rows and 3 variables:

capa name of the geoservice

formato name of the institution producing the data

url url of the service

See Also

Other data: loc_agr_ine, metadata_tables, metadata, mvd_barrios_grid, uy_deptos_grid

mvd_barrios_grid *Montevideo barrios grid*

Description

A dataset containing the cods, names and others attributes as a geofacet grid

Usage

```
mvd_barrios_grid
```

Format

A data frame with 62 rows and 4 variables:

name name of the "Barrio"

code INE code of the "Barrio"

row row position in the grid

col col position in the grid

See Also

Other data: loc_agr_ine, metadata_tables, metadata_wms, metadata, uy_deptos_grid

plot_geouy *plot_geouy*

Description

This function allows you to set ggplot2 theme in our suggested format.

Usage

```
plot_geouy(x, col, viri_opt = "plasma", l = NULL, other_lab = NULL, ...)
```

Arguments

x	An sf object like load_geouy() results
col	Variable of "x" to plot (character)
viri_opt	A character string indicating the colormap option to use. Four options are available: "magma" (or "A"), "inferno" (or "B"), "plasma" (or "C"), "viridis" (or "D", the default option) and "cividis" (or "E")
l	If NULL none label added, if "%" porcentage with 1 decimal labels, if "n" the value is the label, if "c" put other variable in other_lab. Default NULL
other_lab	If l is "c" put here the variable name for the labels.
...	All parameters allowed from ggplot2 themes.

Value

ggplot object of a choropleth map with x geometries and col values.

Examples

```
secc <- load_geouy("Secciones")
plot_geouy(x = secc, col = "AREA")
```

reverse_ide_uy *A function to reverse geocoding from coordinates (EPSG 4326) using IDE_uy*

Description

A function to reverse geocoding from coordinates (EPSG 4326) using IDE_uy

Usage

```
reverse_ide_uy(x, details = F)
```

Arguments

x	Dataframe with unless 2 variables: lat = latitud in EPSG:4326 & longitud in EPSG:4326.
details	Logical value, default FALSE for X and Y variables only, if TRUE keep all variables of the service.

Details

https://direcciones.ide.uy/swagger-ui.html#/Geocode

Value

The DafaFrame x with the direction variables append (address, nomVia, tip_via, portalNumber, letra, postalCode, localidad, departamento, manzana, solar and km)

See Also

Other service: add_geom(), geocode_ide_uy(), load_geouy(), tiles_geouy(), where_uy(), which_uy()

Examples

```
# x <- data.frame(cbind(lat = -34.77882, lon = -56.06476))
# reverse_ide_uy(x)
```

---

tiles_geouy *This function allows to Download .jpg or .tif files from the IDEuy tiles repository, according to a 'sf' object bbox.*

Description

This function allows to Download .jpg or .tif files from the IDEuy tiles repository, according to a 'sf' object bbox.

Usage

```
tiles_geouy(x, d = NA, format = "rgb", folder = tempdir(), urban = FALSE)
```

Arguments

x	An 'sf' object with the same crs as the homonym parameter
d	numeric; buffer distance for all, or for each of the elements in x; in case dist is a units object, it should be convertible to arc_degree if x has geographic coordinates, and to st_crs(x)$units otherwise. Default NA, but if x is a only one point buffer default is 100.
format	Format of the archives to download (avaiable: "rgb" and "rgbi") Default "rgb"
folder	Folder where are the files or be download
urban	logical; If FALSE take orthophotos of national flight with 32cm per pixel, if TRUE take urban flight with 10cm per pixel (avaible only Montevideo at the moment)

Value

raster::stack object with th cropped tif corresponding to x bbox

See Also

Other service: `add_geom()`, `geocode_ide_uy()`, `load_geouy()`, `reverse_ide_uy()`, `where_uy()`, `which_uy()`

Examples

```
x <- data.frame(x = 577968, y = 6147753, id = 1)
x <- sf::st_as_sf(x, coords = c("x", "y"), crs = 32721)
x_tiles <- tiles_geouy(x, urban = TRUE)
```

---

uy_deptos_grid *Uruguay Departments grid*

Description

A dataset containing the cods, names and others attributes as a geofacet grid

Usage

```
uy_deptos_grid
```

Format

A data frame with 19 rows and 4 variables:

name name of the "Departamento"

code INE code of the "Departamento"

row row position in the grid

col col position in the grid

See Also

Other data: loc_agr_ine, metadata_tables, metadata_wms, metadata, mvd_barrios_grid

---

where_uy *This function return an 'sf' object with the geometry of the consult id or group of ids, of an administrative units in Uruguay.*

Description

This function return an 'sf' object with the geometry of the consult id or group of ids, of an administrative units in Uruguay.

Usage

```
where_uy(c = "Localidades pg", d = "cod", e, crs = 32721)
```

Arguments

c	Define the geometries to consult: may be: "Departamentos", "Secciones", "Zonas", etc. View(metadata) for details.
d	A vector who determines the variables to be consult, with two options: "cod" or "name". Default "cod".
e	A vector who determines the ids or names to identify.
crs	Define the Coordinate Reference Systems you want the output, default 32721

Value

sf object with the geometries of the d ids

See Also

Other service: add_geom(), geocode_ide_uy(), load_geouy(), reverse_ide_uy(), tiles_geouy(), which_uy()

Examples

```
x <- where_uy(c = "Localidades pg", d = "cod", e = c(1120, 2220))
```

which_uy *This function allows to add to an 'sf' object its spatial coincidence with one or more administrative units in Uruguay, generating the corresponding variables.*

Description

This function allows to add to an 'sf' object its spatial coincidence with one or more administrative units in Uruguay, generating the corresponding variables.

Usage

```
which_uy(x, c = c("Localidades pg", "Departamentos"), d = c("cod", "name"))
```

Arguments

x	An 'sf' object with the same crs as the homonym parameter
c	Define the geometries to download: may be: "Departamentos", "Secciones", "Zonas", etc. View(metadata) for details.
d	A vector who determines the variables to be added, with three options: "cod", "name", or "full". Default c("cod", "name").

Value

sf object with the x geometries, with d variables requested from c added

See Also

Other service: add_geom(), geocode_ide_uy(), load_geouy(), reverse_ide_uy(), tiles_geouy(), where_uy()

Examples

```
x <- load_geouy("Peajes")
x1 <- which_uy(x, c = "Deptos")
```

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