cleangeo - Cleaning Geometries from Spatial Objects in \mathbb{Q}

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Outline

Introduction

- 2 Using cleangeo
- 3 Conclusions & Perspectives

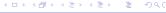
Conclusions & Perspectives

R spatial data processing

provides a lot of facilities to read and manipulate spatial data. We can mention some packages such as:

- sp, which provides a set of classes and methods to handle spatial objects
- maptools, a set of tools for reading and handling Spatial Objects
- rgdal, which provides an interface to the well-known Geospatial Data Abstraction Library (GDAL)
- rgeos, which provides an interface to the widely used Geometry Engine, Open Source (GEOS) library.

The main problem comes when spatial objects did not have valid geometries, or expose different types of geometry errors (e.g. orphaned holes), which prevents any easy spatial data processing.



A package for cleaning geometries from spatial objects in R

cleangeo was built in order:

- to facilitate handling and catching rgeos geometry issues
- to provide an utility to clean the spatial objects.

cleangeo appears to a useful tool to check, and eventual clean the data prior any spatial data processing.

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Usage - Installing cleangeo

cleangeo can be installed:

from CRAN

```
R> install.packages("cleangeo")
```

from Github, for latest updates (requires devtools package)

```
R> require(devtools)
R> install_github("eblondel/cleangeo")
```

Load cleangeo in R using:

```
R> require(cleangeo)
```

Usage - Identify geometry issues in spatial objects

Let's load some sample data in R:

```
R> require(maptools)
R> file <- system.file("extdata", "example.shp", package = "cleangeo")
R> sp <- readShapePoly(file)</pre>
```

cleangeo first allows to inspect spatial objects, and detect eventual issues:

The output indicates that 2 spatial objects have a problem of geometry validity.



Usage - Clean geometries spatial objects

cleangeo allows you to clean spatial objects:

```
R> sp.fixed <- clgeo_Clean(sp)</pre>
```

Let's analyse the new spatial objects:

And that's it! Now your spatial objects have clean geometries, you can safely do some spatial data processing on it.

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cleangeo Conclusions and Perspectives

Although cleangeo is at its early stages, it has proved to be a real benefit in the field of spatial data processing, providing a **quick** and **simple** way to check geometry issues and clean spatial objects.

cleangeo is currently focused on cleaning SpatialPolygons objects. A direct perspective is to extend it to other Spatial* objects.

Any suggestion from users is welcome to strenghten the cleangeo package.



Looking for Sponsors

cleangeo was initially born from some assistance provided to users that were facing issues in processing spatial data in R (see the original post). The prototype package was made available on Github on a voluntary basis in support to this users request.

To guarantee the sustainability of cleangeo, we are seeking for **fundings**, throught *sponsoring* or *donations* to:

- implement, test, validate and release improvements
- guarantee a quality maintenance of the package
- provide support to users and institutions that may take advantage of cleangeo

If you are interesting in supporting cleangeo, please do not hesitate to contact me!

- on Github.
 - source code: https://github.com/eblondel/cleangeo
 - online documentation: https://github.com/eblondel/cleangeo/blob/master/vignettes/quickst
- on the Comprehensive R Archive Network (CRAN): http://cran.r-project.org/package=cleangeo