Package ‘gibble’

January 30, 2020

Title  Geometry Decomposition
Version  0.3.0
Description  Build a map of path-based geometry, this is a simple description of the number
of parts in an object and their basic structure. Translation and restructuring operations for
planar shapes and other hierarchical types require a data model with a record of the underlying
relationships between elements. The gibble() function creates a geometry map, a simple record of
the underlying structure in path-based hierarchical types. There are methods for the planar shape
types in the ‘sf’ and ‘sp’ packages and for types in the ‘trip’ and in-development ‘silicate’ packages.

Depends  R (>= 3.3.0)
License  GPL-3
Encoding  UTF-8
LazyData  true
RoxygenNote  7.0.2
Imports  dplyr, methods, tibble, rlang
Suggests  covr, testthat, knitr, rmarkdown
URL  https://github.com/mdsummer/gibble
BugReports  https://github.com/mdsummer/gibble/issues
VignetteBuilder  knitr
NeedsCompilation  no
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Description

Path-based geometry decomposition to data frame.

Details

The goal of gibble is to provide a straightforward map of path-based data structures. Paths are connected linear sequences of coordinates, otherwise known as lines. Structured spatial data includes objects composed of paths, which are islands, holes within island, lines, and points. Polygons require an extra grouping level subobject to ensure holes are nested within their island, but this is ignored for other types.

Sequential linear structures are not optimal for many operations when working with spatial data, and gibble provides a simple bridge between existing paths and tools to decompose them to primitives.

Usage

```r
# S3 method for class 'POINT'
gibble(x, ...)

# S3 method for class 'MULTIPOINT'
gibble(x, ...)

# S3 method for class 'LINSTRING'
gibble(x, ...)

# S3 method for class 'MULTILINSTRING'
gibble(x, ...)
```
## S3 method for class 'POLYGON'
gibble(x, ...)

## S3 method for class 'MULTIPOLYGON'
gibble(x, ...)

## S3 method for class 'list'
gibble(x, ...)

## S3 method for class 'sfc'
gibble(x, ...)

## S3 method for class 'sf'
gibble(x, ...)

## S3 method for class 'PATH0'
gibble(x, ...)

## S3 method for class 'PATH'
gibble(x, ...)

## S3 method for class 'trip'
gibble(x, ...)

## S3 method for class 'Polygon'
gibble(x, ...)

## S3 method for class 'Polygons'
gibble(x, ...)

## S3 method for class 'SpatialPolygons'
gibble(x, ...)

## S3 method for class 'Line'
gibble(x, ...)

## S3 method for class 'Lines'
gibble(x, ...)

## S3 method for class 'SpatialLines'
gibble(x, ...)

## S3 method for class 'SpatialMultiPoints'
gibble(x, ...)

## S3 method for class 'SpatialPoints'
gibble(x, ...)
## S3 method for class 'Spatial'
gibble(x, ...)

gibble(x, ...)

## Default S3 method:
gibble(x, ...)

### Arguments

- **x**: geometry model
- **...**: arguments reserved for methods, none currently

### Details

Methods are provided for the sf classes. There is an internal version that is designed to work fast on sets of structures, by delaying conversion to list or data frame for as late as possible. A geometry map is not so helpful on its own, and so does not have a formal class. It is designed for use within other workflows such as updating the coordinates of model object or translating between superficially different formats.

Gibble is a distillation of the sc_path encoding of package silicate, which came from the map_table decompositions of spbabel, as an improvement on the single-table fortify model used in ggplot2.

### Value

data frame summarizing the geometry map, see Details

### Examples

```r
  gibble(minimal_mesh)
```

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### Description

A testing data set, a list of poly, line, points. The relationships between the objects cover many interesting cases. There are multi-island objects with holes and other objects that fall inside those holes. All paths share vertices with a neighbour. There is topological intersection along a diagonal line where two objects meet and are joined by shared vertices that were inserted deliberately.

### Details

hsh_sf is the holey home in sf format.
Description

A testing data set, minimal_mesh composed of two MULTIPOLYGONs sharing one edge.

Description

A testing data set, composed of two MULTIPOLYGONs, one is the manually constructed example from sf (and silicate::sfzoo$multipolygon), the second is South Australia, with many lake-islands in the main polygon, and one artificial hole in the Kangaroo Island polygon.
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