

# Package ‘geojsonio’

October 29, 2019

**Title** Convert Data from and to 'GeoJSON' or 'TopoJSON'

**Description** Convert data to 'GeoJSON' or 'TopoJSON' from various R classes, including vectors, lists, data frames, shape files, and spatial classes. 'geojsonio' does not aim to replace packages like 'sp', 'rgdal', 'rgeos', but rather aims to be a high level client to simplify conversions of data from and to 'GeoJSON' and 'TopoJSON'.

**Version** 0.8.0

**License** MIT + file LICENSE

**URL** <https://github.com/ropensci/geojsonio> (devel),  
<https://docs.ropensci.org/geojsonio> (docs)

**BugReports** <https://github.com/ropensci/geojsonio/issues>

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---

as.json

*Convert inputs to JSON*

---

### Description

Convert inputs to JSON

**Usage**

```
as.json(x, ...)
```

**Arguments**

x	Input
...	Further args passed on to <code>jsonlite::toJSON()</code>

**Examples**

```
## Not run:
(res <- geojson_list(us_cities[1:2,], lat='lat', lon='long'))
as.json(res)
as.json(res, pretty = TRUE)

vec <- c(-99.74, 32.45)
as.json(geojson_list(vec))
as.json(geojson_list(vec), pretty = TRUE)

## End(Not run)
```

---

as.location	<i>Convert a path or URL to a location object.</i>
-------------	--

---

**Description**

Convert a path or URL to a location object.

**Usage**

```
as.location(x, ...)
```

**Arguments**

x	Input.
...	Ignored.

**Examples**

```
## Not run:
# A file
file <- system.file("examples", "zillow_or.geojson", package = "geojsonio")
as.location(file)

# A URL
url <- "https://raw.githubusercontent.com/glynnbird/usstatesgeojson/master/california.geojson"
as.location(url)

## End(Not run)
```

---

bounds	<i>Get bounds for a list or geo_list</i>
--------	--

---

**Description**

Get bounds for a list or geo\_list

**Usage**

```
bounds(x, ...)
```

**Arguments**

x	An object of class list or geo_list
...	Ignored

**Value**

A vector of the form min longitude, min latitude, max longitude, max latitude

**Examples**

```
# numeric
vec <- c(-99.74, 32.45)
x <- geojson_list(vec)
bounds(x)

# list
mylist <- list(list(latitude=30, longitude=120, marker="red"),
               list(latitude=30, longitude=130, marker="blue"))
x <- geojson_list(mylist)
bounds(x)

# data.frame
x <- geojson_list(states[1:20,])
bounds(x)
```

---

canada_cities	<i>This is the same data set from the maps library, named differently</i>
---------------	---

---

**Description**

This database is of Canadian cities of population greater than about 1,000. Also included are province capitals of any population size.

**Format**

A list with 6 components, namely "name", "country.etc", "pop", "lat", "long", and "capital", containing the city name, the province abbreviation, approximate population (as at January 2006), latitude, longitude and capital status indication (0 for non-capital, 1 for capital, 2 for provincial

---

centroid	<i>Get centroid for a geo_list</i>
----------	------------------------------------

---

**Description**

Get centroid for a geo\_list

**Usage**

```
centroid(x, ...)
```

**Arguments**

x	An object of class geo_list
...	Ignored

**Value**

A vector of the form longitude, latitude

**Examples**

```
# numeric
vec <- c(-99.74, 32.45)
x <- geojson_list(vec)
centroid(x)

# list
mylist <- list(list(latitude=30, longitude=120, marker="red"),
               list(latitude=30, longitude=130, marker="blue"))
x <- geojson_list(mylist)
centroid(x)

# data.frame
x <- geojson_list(states[1:20,])
centroid(x)
```

---

file_to_geojson	<i>Convert spatial data files to GeoJSON from various formats.</i>
-----------------	--

---

## Description

You can use a web interface called OGRE, or do conversions locally using the `rgdal` package.

## Usage

```
file_to_geojson(input, method = "web", output = ".", parse = FALSE,
               encoding = "CP1250", verbose = FALSE, ...)
```

## Arguments

<code>input</code>	The file being uploaded, path to the file on your machine.
<code>method</code>	(character) One of "web" (default) or "local". Matches on partial strings. This parameter determines how the data is read. "web" means we use the OGRE web service, and "local" means we use <b>rgdal</b> . See Details for more.
<code>output</code>	Destination for output geojson file. Defaults to current working directory, and gives a random alphanumeric file name
<code>parse</code>	(logical) To parse geojson to data.frame like structures if possible. Default: FALSE
<code>encoding</code>	(character) The encoding passed to <code>rgdal::readOGR()</code> . Default: CP1250
<code>verbose</code>	(logical) Printing of <code>rgdal::readOGR()</code> progress. Default: FALSE
<code>...</code>	Additional parameters passed to <code>readOGR</code>

## Method parameter

The web option uses the OGRE web API. OGRE currently has an output size limit of 15MB. See here <http://ogre.adc4gis.com/> for info on the OGRE web API. The local option uses the function `writeOGR` from the package `rgdal`.

## Ogre

Note that for Shapefiles, GML, MapInfo, and VRT, you need to send zip files to OGRE. For other file types (.bna, .csv, .dgn, .dxf, .gxt, .txt, .json, .geojson, .rss, .georss, .xml, .gmt, .kml, .kmz) you send the actual file with that file extension.

## Linting GeoJSON

If you're having trouble rendering GeoJSON files, ensure you have a valid GeoJSON file by running it through the package **geojsonlint**, which has a variety of different GeoJSON linters.

## File size

When using method="web", be aware of file sizes. <https://ogre.adc4gis.com> that we use for this option does not document what file size is too large, but you should get an error message like "maximum file length exceeded" when that happens. method="local" shouldn't be sensitive to file sizes.

## Examples

```
## Not run:
file <- system.file("examples", "norway_maple.kml", package = "geojsonio")

# KML type file - using the web method
file_to_geojson(input=file, method='web', output='kml_web')
## read into memory
file_to_geojson(input=file, method='web', output = ":memory:")
file_to_geojson(input=file, method='local', output = ":memory:")

# KML type file - using the local method
file_to_geojson(input=file, method='local', output='kml_local')

# Shp type file - using the web method - input is a zipped shp bundle
file <- system.file("examples", "bison.zip", package = "geojsonio")
file_to_geojson(file, method='web', output='shp_web')

# Shp type file - using the local method - input is the actual .shp file
file <- system.file("examples", "bison.zip", package = "geojsonio")
dir <- tempdir()
unzip(file, exdir = dir)
list.files(dir)
shpfile <- file.path(dir, "bison-Bison_bison-20130704-120856.shp")
file_to_geojson(shpfile, method='local', output='shp_local')

# Neighborhoods in the US
## beware, this is a long running example
# url <- 'http://www.nws.noaa.gov/geodata/catalog/national/data/ci08au12.zip'
# out <- file_to_geojson(input=url, method='web', output='cities')

# geojson with .json extension
## this doesn't work anymore, hmmm
# x <- gsub("\n", "", paste0('https://gist.githubusercontent.com/hunterowens/
# 25ea24e198c80c9fbcc7/raw/7fd3efda9009f902b5a991a506cea52db19ba143/
# wards2014.json', collapse = ""))
# res <- file_to_geojson(x)
# jsonlite::fromJSON(res)
# res <- file_to_geojson(x, method = "local")
# jsonlite::fromJSON(res)

## End(Not run)
```

---

 geo2topo

*GeoJSON to TopoJSON and back*


---

## Description

GeoJSON to TopoJSON and back

## Usage

```
geo2topo(x, object_name = "foo", quantization = 0, ...)
```

```
topo2geo(x, ...)
```

## Arguments

<code>x</code>	GeoJSON or TopoJSON as a character string, json, a file path, or url
<code>object_name</code>	(character) name to give to the TopoJSON object created. Default: "foo"
<code>quantization</code>	(numeric) quantization parameter, use this to quantize geometry prior to computing topology. Typical values are powers of ten (1e4, 1e5, ...), default is 0 to not perform quantization. For more information about quantization, see this by Mike Bostock <a href="https://stackoverflow.com/questions/18900022/topojson-quantization-vs-simplification/18921214#18921214">https://stackoverflow.com/questions/18900022/topojson-quantization-vs-simplification/18921214#18921214</a>
<code>...</code>	for <code>geo2topo</code> args passed on to <code>jsonlite::fromJSON()</code> , and for <code>topo2geo</code> args passed on to <code>sf::st_read()</code>

## Value

An object of class `json`, of either GeoJSON or TopoJSON

## See Also

[topojson\\_write\(\)](#), [topojson\\_read\(\)](#)

## Examples

```
# geojson to topojson
x <- '{"type": "LineString", "coordinates": [ [100.0, 0.0], [101.0, 1.0] ]}'
z <- geo2topo(x)
jsonlite::prettify(z)
## Not run:
library(leaflet)
leaflet() %>%
  addProviderTiles(provider = "Stamen.Terrain") %>%
  addTopoJSON(z)

## End(Not run)

# geojson to topojson as a list
```



```

x <- list(
  '{"type": "LineString", "coordinates": [ [100, 0], [101, 1] ]}',
  '{"type": "LineString", "coordinates": [ [110, 0], [110, 1] ]}',
  '{"type": "LineString", "coordinates": [ [120, 0], [121, 1] ]}'
)
geo2topo(x)

# change the object name created
x <- '{"type": "LineString", "coordinates": [ [100.0, 0.0], [101.0, 1.0] ]}'
geo2topo(x, object_name = "HelloWorld")
geo2topo(x, object_name = "4")

x <- list(
  '{"type": "LineString", "coordinates": [ [100, 0], [101, 1] ]}',
  '{"type": "LineString", "coordinates": [ [110, 0], [110, 1] ]}',
  '{"type": "LineString", "coordinates": [ [120, 0], [121, 1] ]}'
)
geo2topo(x, "HelloWorld")
geo2topo(x, c("A", "B", "C"))

# topojson to geojson
w <- topo2geo(z)
jsonlite::prettify(w)

## larger examples
file <- system.file("examples", "us_states.topojson", package = "geojsonio")
topo2geo(file)

```

---

geojson-add

*Add together geo\_list or json objects*

---

## Description

Add together geo\_list or json objects

## Usage

```

## S3 method for class 'geo_list'
x1 + x2

## S3 method for class 'json'
x1 + x2

```

## Arguments

x1                    An object of class geo\_list or json  
x2                    A component to add to x1, of class geo\_list or json

## Details

If the first object is an object of class `geo_list`, you can add another object of class `geo_list` or of class `json`, and will result in a `geo_list` object.

If the first object is an object of class `json`, you can add another object of class `json` or of class `geo_list`, and will result in a `json` object.

## See Also

[geojson\\_list\(\)](#), [geojson\\_json\(\)](#)

## Examples

```
## Not run:
# geo_list + geo_list
## Note: geo_list is the output type from geojson_list, it's just a list with
## a class attached so we know it's geojson :)
vec <- c(-99.74,32.45)
a <- geojson_list(vec)
vecs <- list(c(100.0,0.0), c(101.0,0.0), c(101.0,1.0),
            c(100.0,1.0), c(100.0,0.0))
b <- geojson_list(vecs, geometry="polygon")
a + b

# json + json
c <- geojson_json(c(-99.74,32.45))
vecs <- list(c(100.0,0.0), c(101.0,0.0), c(101.0,1.0),
            c(100.0,1.0), c(100.0,0.0))
d <- geojson_json(vecs, geometry="polygon")
c + d
(c + d) %>% pretty

## End(Not run)
```

---

geojsonio

**I/O for GeoJSON**

---

## Description

Convert various data formats to/from GeoJSON or TopoJSON. This package focuses mostly on converting lists, `data.frame`'s, numeric, `SpatialPolygons`, `SpatialPolygonsDataFrame`, and more to GeoJSON with the help of **rgdal** and friends. You can currently read TopoJSON - writing TopoJSON will come in a future version of this package.

## Package organization

The core functions in this package are organized first around what you're working with or want to get, GeoJSON or TopoJSON, then convert to or read from various formats:

- [geojson\\_list\(\)](#) / [topojson\\_list\(\)](#) - convert to GeoJSON or TopoJSON as R list format

- `geojson_json()` / `topojson_json()` - convert to GeoJSON or TopoJSON as JSON
- `geojson_sp()` - convert to a spatial object from `geojson_list` or `geojson_json`
- `geojson_sf()` - convert to an sf object from `geojson_list` or `geojson_json`
- `geojson_read()` / `topojson_read()` - read a GeoJSON/TopoJSON file from file path or URL
- `geojson_write()` / `topojson_write()` - write a GeoJSON file locally (TopoJSON coming later)

Other interesting functions:

- `map_gist()` - Create a GitHub gist (renders as an interactive map)
- `map_leaf()` - Create a local interactive map using the leaflet package
- `geo2topo()` - Convert GeoJSON to TopoJSON
- `topo2geo()` - Convert TopoJSON to GeoJSON

All of the above functions have methods for various classes, including numeric vectors, `data.frame`, `list`, `SpatialPolygons`, `SpatialLines`, `SpatialPoints`, and many more - which will try to do the right thing based on the data you give as input.

#### Author(s)

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Andy Teucher <andy.teucher@gmail.com>

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gejsonio-defunct      *Defunct functions in gejsonio*

---

#### Description

- `lint()`: See `geojsonlint::geojson_hint`
- `validate()`: See `geojsonlint::geojson_lint`

---

gejson\_atomize      *Atomize*

---

#### Description

Atomize

#### Usage

```
gejson_atomize(x, combine = TRUE)
```

**Arguments**

x	(geo_list/geo_json/json/character) input object, either geo_json, geo_list, json, or character class. If character, must be valid JSON
combine	(logical) only applies to geo_json/json type inputs. combine valid JSON objects into a single valid JSON object. Default: TRUE

**Details**

A FeatureCollection is split into many Feature's, and a GeometryCollection is split into many geometries

Internally we use **jq** for JSON parsing

**Value**

same class as input object, but modified

**Examples**

```
##### lists
# featurecollection -> features
mylist <- list(list(latitude=30, longitude=120, marker="red"),
               list(latitude=30, longitude=130, marker="blue"))
(x <- geojson_list(mylist))
geojson_atomize(x)

# geometrycollection -> geometries
mylist <- list(list(latitude=30, longitude=120, marker="red"),
               list(latitude=30, longitude=130, marker="blue"))
(x <- geojson_list(mylist, type = "GeometryCollection"))
geojson_atomize(x)

# sf class
library(sf)
p1 <- rbind(c(0,0), c(1,0), c(3,2), c(2,4), c(1,4), c(0,0))
poly <- rbind(c(1,1), c(1,2), c(2,2), c(1,1))
poly_sfg <- st_polygon(list(p1))
(x <- geojson_list(poly_sfg))
geojson_atomize(x)

##### json
# featurecollection -> features
mylist <- list(list(latitude=30, longitude=120, marker="red"),
               list(latitude=30, longitude=130, marker="blue"))
(x <- geojson_json(mylist))
geojson_atomize(x)
geojson_atomize(x, FALSE)

# geometrycollection -> geometries
mylist <- list(list(latitude=30, longitude=120, marker="red"),
               list(latitude=30, longitude=130, marker="blue"))
(x <- geojson_json(mylist, type = "GeometryCollection"))
```

```

geojson_atomize(x)
geojson_atomize(x, FALSE)

# sf class
library(sf)
nc <- st_read(system.file("shape/nc.shp", package="sf"), quiet = TRUE)
(x <- geojson_json(nc))
geojson_atomize(x)
geojson_atomize(x, FALSE)

##### character
# featurecollection -> features
mylist <- list(list(latitude=30, longitude=120, marker="red"),
              list(latitude=30, longitude=130, marker="blue"))
(x <- geojson_json(mylist))
geojson_atomize(unclass(x))

```

---

geojson_json	<i>Convert many input types with spatial data to geojson specified as a json string</i>
--------------	---

---

## Description

Convert many input types with spatial data to geojson specified as a json string

## Usage

```

geojson_json(input, lat = NULL, lon = NULL, group = NULL,
             geometry = "point", type = "FeatureCollection",
             convert_wgs84 = FALSE, crs = NULL, ...)

```

## Arguments

input	Input list, data.frame, spatial class, or sf class. Inputs can also be dplyr tbl_df class since it inherits from data.frame.
lat	(character) Latitude name. The default is NULL, and we attempt to guess.
lon	(character) Longitude name. The default is NULL, and we attempt to guess.
group	(character) A grouping variable to perform grouping for polygons - doesn't apply for points
geometry	(character) One of point (Default) or polygon.
type	(character) The type of collection. One of 'auto' (default for 'sf' objects), 'FeatureCollection' (default for everything else), or 'GeometryCollection'. "skip" skips the coercion with package <b>geojson</b> functions; skipping can save significant run time on larger geojson objects. Spatial objects can only accept "FeatureCollection" or "skip". "skip" is not available as an option for numeric, list, and data.frame classes

<code>convert_wgs84</code>	Should the input be converted to the <b>standard CRS system for GeoJSON</b> (geographic coordinate reference system, using the WGS84 datum, with longitude and latitude units of decimal degrees; EPSG: 4326). Default is FALSE though this may change in a future package version. This will only work for <code>sf</code> or <code>Spatial</code> objects with a CRS already defined. If one is not defined but you know what it is, you may define it in the <code>crs</code> argument below.
<code>crs</code>	The CRS of the input if it is not already defined. This can be an epsg code as a four or five digit integer or a valid proj4 string. This argument will be ignored if <code>convert_wgs84</code> is FALSE or the object already has a CRS.
<code>...</code>	Further args passed on to internal functions. For <code>Spatial*</code> classes, it is passed through to <code>rgdal::writeOGR()</code> . For <code>sf</code> classes, <code>data.frames</code> , <code>lists</code> , <code>numerics</code> , and <code>geo_lists</code> , it is passed through to <code>jsonlite::toJSON()</code>

## Details

This function creates a `geojson` structure as a json character string; it does not write a file using `rgdal` - see `geojson_write()` for that

Note that all `sp` class objects will output as `FeatureCollection` objects, while other classes (`numeric`, `list`, `data.frame`) can be output as `FeatureCollection` or `GeometryCollection` objects. We're working on allowing `GeometryCollection` option for `sp` class objects.

Also note that with `sp` classes we do make a round-trip, using `rgdal::writeOGR()` to write GeoJSON to disk, then read it back in. This is fast and we don't have to think about it too much, but this disk round-trip is not ideal.

For `sf` classes (`sf`, `sfc`, `sfg`), the following conversions are made:

- `sfg`: the appropriate geometry `Point`, `LineString`, `Polygon`, `MultiPoint`, `MultiLineString`, `MultiPolygon`, `GeometryCollection`
- `sfc`: `GeometryCollection`, unless the `sfc` is length 1, then the geometry as above
- `sf`: `FeatureCollection`

## Value

An object of class `geo_json` (and `json`)

## Examples

```
## Not run:
# From a numeric vector of length 2, making a point type
geojson_json(c(-99.74,32.45))
geojson_json(c(-99.74,32.45), type = "GeometryCollection")

## polygon type
### this requires numeric class input, so inputting a list will dispatch
### on the list method
poly <- c(c(-114.345703125,39.436192999314095),
          c(-114.345703125,43.45291889355468),
          c(-106.61132812499999,43.45291889355468),
          c(-106.61132812499999,39.436192999314095),
          c(-114.345703125,39.436192999314095))
```

```

geojson_json(poly, geometry = "polygon")

# Lists
## From a list of numeric vectors to a polygon
vecs <- list(c(100.0,0.0), c(101.0,0.0), c(101.0,1.0), c(100.0,1.0), c(100.0,0.0))
geojson_json(vecs, geometry="polygon")

## from a named list
mylist <- list(list(latitude=30, longitude=120, marker="red"),
               list(latitude=30, longitude=130, marker="blue"))
geojson_json(mylist, lat='latitude', lon='longitude')

# From a data.frame to points
geojson_json(us_cities[1:2,], lat='lat', lon='long')
geojson_json(us_cities[1:2,], lat='lat', lon='long',
              type="GeometryCollection")

# from data.frame to polygons
head(states)
## make list for input to e.g., rMaps
geojson_json(states[1:351, ], lat='lat', lon='long', geometry="polygon", group='group')

# from a geo_list
a <- geojson_list(us_cities[1:2,], lat='lat', lon='long')
geojson_json(a)

# sp classes

## From SpatialPolygons class
library('sp')
poly1 <- Polygons(list(Polygon(cbind(c(-100,-90,-85,-100),
                                     c(40,50,45,40)))), "1")
poly2 <- Polygons(list(Polygon(cbind(c(-90,-80,-75,-90),
                                     c(30,40,35,30)))), "2")
sp_poly <- SpatialPolygons(list(poly1, poly2), 1:2)
geojson_json(sp_poly)

## Another SpatialPolygons
library("sp")
library("rgeos")
pt <- SpatialPoints(coordinates(list(x = 0, y = 0)), CRS("+proj=longlat +datum=WGS84"))
## transform to web mercator because geos needs project coords
crs <- gsub("\n", "", paste0("+proj=merc +a=6378137 +b=6378137 +lat_ts=0.0 +lon_0=0.0 +x_0=0.0
+y_0=0 +k=1.0 +units=m +nadgrids=@null +wktext +no_defs", collapse = ""))
pt <- spTransform(pt, CRS(crs))
## buffer
pt <- gBuffer(pt, width = 100)
pt <- spTransform(pt, CRS("+proj=longlat +datum=WGS84"))
geojson_json(pt)

## data.frame to geojson
geojson_write(us_cities[1:2,], lat='lat', lon='long') %>% as.json

```

```

# From SpatialPoints class
x <- c(1,2,3,4,5)
y <- c(3,2,5,1,4)
s <- SpatialPoints(cbind(x,y))
geojson_json(s)

## From SpatialPointsDataFrame class
s <- SpatialPointsDataFrame(cbind(x,y), mtcars[1:5,])
geojson_json(s)

## From SpatialLines class
library("sp")
c1 <- cbind(c(1,2,3), c(3,2,2))
c2 <- cbind(c1[,1]+.05,c1[,2]+.05)
c3 <- cbind(c(1,2,3),c(1,1.5,1))
L1 <- Line(c1)
L2 <- Line(c2)
L3 <- Line(c3)
Ls1 <- Lines(list(L1), ID = "a")
Ls2 <- Lines(list(L2, L3), ID = "b")
sl1 <- SpatialLines(list(Ls1))
sl12 <- SpatialLines(list(Ls1, Ls2))
geojson_json(sl1)
geojson_json(sl12)

## From SpatialLinesDataFrame class
dat <- data.frame(X = c("Blue", "Green"),
                  Y = c("Train", "Plane"),
                  Z = c("Road", "River"), row.names = c("a", "b"))
slidf <- SpatialLinesDataFrame(sl12, dat)
geojson_json(slidf)
geojson_json(slidf)

## From SpatialGrid
x <- GridTopology(c(0,0), c(1,1), c(5,5))
y <- SpatialGrid(x)
geojson_json(y)

## From SpatialGridDataFrame
sgdim <- c(3,4)
sg <- SpatialGrid(GridTopology(rep(0,2), rep(10,2), sgdim))
sgdf <- SpatialGridDataFrame(sg, data.frame(val = 1:12))
geojson_json(sgdf)

# From SpatialRings
library("rgeos")
r1 <- Ring(cbind(x=c(1,1,2,2,1), y=c(1,2,2,1,1)), ID="1")
r2 <- Ring(cbind(x=c(1,1,2,2,1), y=c(1,2,2,1,1)), ID="2")
r1r2 <- SpatialRings(list(r1, r2))
geojson_json(r1r2)

# From SpatialRingsDataFrame
dat <- data.frame(id = c(1,2), value = 3:4)

```



```

r1r2df <- SpatialRingsDataFrame(r1r2, data = dat)
geojson_json(r1r2df)

# From SpatialPixels
library("sp")
pixels <- suppressWarnings(SpatialPixels(SpatialPoints(us_cities[c("long", "lat")])))
summary(pixels)
geojson_json(pixels)

# From SpatialPixelsDataFrame
library("sp")
pixelsdf <- suppressWarnings(
  SpatialPixelsDataFrame(points = canada_cities[c("long", "lat")], data = canada_cities)
)
geojson_json(pixelsdf)

# From SpatialCollections
library("sp")
library("rgeos")
pts <- SpatialPoints(cbind(c(1,2,3,4,5), c(3,2,5,1,4)))
poly1 <- Polygons(list(Polygon(cbind(c(-100,-90,-85,-100), c(40,50,45,40)))), "1")
poly2 <- Polygons(list(Polygon(cbind(c(-90,-80,-75,-90), c(30,40,35,30)))), "2")
poly <- SpatialPolygons(list(poly1, poly2), 1:2)
dat <- SpatialCollections(pts, polygons = poly)
geojson_json(dat)

# From sf classes:
if (require(sf)) {
## sfg (a single simple features geometry)
p1 <- rbind(c(0,0), c(1,0), c(3,2), c(2,4), c(1,4), c(0,0))
poly <- rbind(c(1,1), c(1,2), c(2,2), c(1,1))
poly_sfg <- st_polygon(list(p1))
geojson_json(poly_sfg)

## sfc (a collection of geometries)
p1 <- rbind(c(0,0), c(1,0), c(3,2), c(2,4), c(1,4), c(0,0))
p2 <- rbind(c(5,5), c(5,6), c(4,5), c(5,5))
poly_sfc <- st_sfc(st_polygon(list(p1)), st_polygon(list(p2)))
geojson_json(poly_sfc)

## sf (collection of geometries with attributes)
p1 <- rbind(c(0,0), c(1,0), c(3,2), c(2,4), c(1,4), c(0,0))
p2 <- rbind(c(5,5), c(5,6), c(4,5), c(5,5))
poly_sfc <- st_sfc(st_polygon(list(p1)), st_polygon(list(p2)))
poly_sf <- st_sf(foo = c("a", "b"), bar = 1:2, poly_sfc)
geojson_json(poly_sf)
}

## Pretty print a json string
geojson_json(c(-99.74,32.45))
geojson_json(c(-99.74,32.45)) %>% pretty

# skipping the pretty geojson class coercion with the geojson pkg

```

```

if (require(sf)) {
  library(sf)
  p1 <- rbind(c(0,0), c(1,0), c(3,2), c(2,4), c(1,4), c(0,0))
  p2 <- rbind(c(5,5), c(5,6), c(4,5), c(5,5))
  poly_sfc <- st_sfc(st_polygon(list(p1)), st_polygon(list(p2)))
  geojson_json(poly_sfc)
  geojson_json(poly_sfc, type = "skip")
}

## End(Not run)

```

---

geojson_list	<i>Convert many input types with spatial data to geojson specified as a list</i>
--------------	--

---

### Description

Convert many input types with spatial data to geojson specified as a list

### Usage

```

geojson_list(input, lat = NULL, lon = NULL, group = NULL,
  geometry = "point", type = "FeatureCollection",
  convert_wgs84 = FALSE, crs = NULL, precision = NULL, ...)

```

### Arguments

input	Input list, data.frame, spatial class, or sf class. Inputs can also be dplyr tbl_df class since it inherits from data.frame
lat	(character) Latitude name. The default is NULL, and we attempt to guess.
lon	(character) Longitude name. The default is NULL, and we attempt to guess.
group	(character) A grouping variable to perform grouping for polygons - doesn't apply for points
geometry	(character) One of point (Default) or polygon.
type	(character) The type of collection. One of FeatureCollection (default) or GeometryCollection.
convert_wgs84	Should the input be converted to the <b>standard CRS for GeoJSON</b> (geographic coordinate reference system, using the WGS84 datum, with longitude and latitude units of decimal degrees; EPSG: 4326). Default is FALSE though this may change in a future package version. This will only work for sf or Spatial objects with a CRS already defined. If one is not defined but you know what it is, you may define it in the crs argument below.
crs	The CRS of the input if it is not already defined. This can be an epsg code as a four or five digit integer or a valid proj4 string. This argument will be ignored if convert_wgs84 is FALSE or the object already has a CRS.

precision	(integer) desired number of decimal places for the coordinates in the geojson file. Only used with classes from <b>sprgeos</b> classes; ignored for other classes. Using fewer decimal places can decrease file sizes (at the cost of precision). This changes the underlying precision stored in the data. <code>options(digits = &lt;some number&gt;)</code> changes the maximum number of digits displayed (to find out what yours is set at see <code>getOption("digits")</code> ); the value of this parameter will change what's displayed in your console up to the value of <code>getOption("digits")</code>
...	Ignored

## Details

This function creates a geojson structure as an R list; it does not write a file using **rgdal** - see `geojson_write()` for that.

Note that all sp class objects will output as FeatureCollection objects, while other classes (numeric, list, data.frame) can be output as FeatureCollection or GeometryCollection objects. We're working on allowing GeometryCollection option for sp class objects.

Also note that with sp classes we do make a round-trip, using `rgdal::writeOGR()` to write GeoJSON to disk, then read it back in. This is fast and we don't have to think about it too much, but this disk round-trip is not ideal.

For sf classes (sf, sfc, sfg), the following conversions are made:

- sfg: the appropriate geometry Point, LineString, Polygon, MultiPoint, MultiLineString, MultiPolygon, GeometryCollection
- sfc: GeometryCollection, unless the sfc is length 1, then the geometry as above
- sf: FeatureCollection

For list and data.frame objects, you don't have to pass in lat and lon parameters if they are named appropriately (e.g., lat/latitude, lon/long/longitude), as they will be auto-detected. If they can not be found, the function will stop and warn you to specify the parameters specifically.

## Examples

```
## Not run:
# From a numeric vector of length 2 to a point
vec <- c(-99.74, 32.45)
geojson_list(vec)

# Lists
## From a list
mylist <- list(list(latitude=30, longitude=120, marker="red"),
              list(latitude=30, longitude=130, marker="blue"))
geojson_list(mylist)

## From a list of numeric vectors to a polygon
vecs <- list(c(100.0, 0.0), c(101.0, 0.0), c(101.0, 1.0),
            c(100.0, 1.0), c(100.0, 0.0))
geojson_list(vecs, geometry="polygon")

# from data.frame to points
(res <- geojson_list(us_cities[1:2,], lat='lat', lon='long'))
```

```

as.json(res)
## guess lat/long columns
geojson_list(us_cities[1:2,])
geojson_list(states[1:3,])
geojson_list(states[1:351,], geometry="polygon", group='group')
geojson_list(canada_cities[1:30,])
## a data.frame with columns not named appropriately, but you can
## specify them
# dat <- data.frame(a = c(31, 41), b = c(-120, -110))
# geojson_list(dat)
# geojson_list(dat, lat="a", lon="b")

# from data.frame to polygons
head(states)
geojson_list(states[1:351, ], lat='lat', lon='long',
  geometry="polygon", group='group')

# From SpatialPolygons class
library('sp')
poly1 <- Polygons(list(Polygon(cbind(c(-100,-90,-85,-100),
  c(40,50,45,40)))), "1")
poly2 <- Polygons(list(Polygon(cbind(c(-90,-80,-75,-90),
  c(30,40,35,30)))), "2")
sp_poly <- SpatialPolygons(list(poly1, poly2), 1:2)
geojson_list(sp_poly)

# From SpatialPolygons class with precision agreement
x_coord <- c(-114.345703125, -114.345703125, -106.61132812499999,
  -106.61132812499999, -114.345703125)
y_coord <- c(39.436192999314095, 43.45291889355468, 43.45291889355468,
  39.436192999314095, 39.436192999314095)
coords <- cbind(x_coord, y_coord)
poly <- Polygon(coords)
polys <- Polygons(list(poly), 1)
sp_poly2 <- SpatialPolygons(list(polys))
geojson_list(sp_poly2, geometry = "polygon", precision = 4)
geojson_list(sp_poly2, geometry = "polygon", precision = 3)
geojson_list(sp_poly2, geometry = "polygon", precision = 2)

# From SpatialPoints class with precision
points <- SpatialPoints(cbind(x_coord,y_coord))
geojson_list(points)

# From SpatialPolygonsDataFrame class
sp_polydf <- as(sp_poly, "SpatialPolygonsDataFrame")
geojson_list(input = sp_polydf)

# From SpatialPoints class
x <- c(1,2,3,4,5)
y <- c(3,2,5,1,4)
s <- SpatialPoints(cbind(x,y))
geojson_list(s)

```

```

# From SpatialPointsDataFrame class
s <- SpatialPointsDataFrame(cbind(x,y), mtcars[1:5,])
geojson_list(s)

# From SpatialLines class
library("sp")
c1 <- cbind(c(1,2,3), c(3,2,2))
c2 <- cbind(c1[,1]+.05,c1[,2]+.05)
c3 <- cbind(c(1,2,3),c(1,1.5,1))
L1 <- Line(c1)
L2 <- Line(c2)
L3 <- Line(c3)
Ls1 <- Lines(list(L1), ID = "a")
Ls2 <- Lines(list(L2, L3), ID = "b")
s11 <- SpatialLines(list(Ls1))
s112 <- SpatialLines(list(Ls1, Ls2))
geojson_list(s11)
geojson_list(s112)
as.json(geojson_list(s112))
as.json(geojson_list(s112), pretty=TRUE)

# From SpatialLinesDataFrame class
dat <- data.frame(X = c("Blue", "Green"),
                 Y = c("Train", "Plane"),
                 Z = c("Road", "River"), row.names = c("a", "b"))
sldf <- SpatialLinesDataFrame(s112, dat)
geojson_list(sldf)
as.json(geojson_list(sldf))
as.json(geojson_list(sldf), pretty=TRUE)

# From SpatialGrid
x <- GridTopology(c(0,0), c(1,1), c(5,5))
y <- SpatialGrid(x)
geojson_list(y)

# From SpatialGridDataFrame
sgdim <- c(3,4)
sg <- SpatialGrid(GridTopology(rep(0,2), rep(10,2), sgdim))
sgdf <- SpatialGridDataFrame(sg, data.frame(val = 1:12))
geojson_list(sgdf)

# From SpatialRings
library("rgeos")
r1 <- Ring(cbind(x=c(1,1,2,2,1), y=c(1,2,2,1,1)), ID="1")
r2 <- Ring(cbind(x=c(1,1,2,2,1), y=c(1,2,2,1,1)), ID="2")
r1r2 <- SpatialRings(list(r1, r2))
geojson_list(r1r2)

# From SpatialRingsDataFrame
dat <- data.frame(id = c(1,2), value = 3:4)
r1r2df <- SpatialRingsDataFrame(r1r2, data = dat)
geojson_list(r1r2df)

```

```

# From SpatialPixels
library("sp")
pixels <- suppressWarnings(
  SpatialPixels(SpatialPoints(us_cities[c("long", "lat")]))
summary(pixels)
geojson_list(pixels)

# From SpatialPixelsDataFrame
library("sp")
pixelsdf <- suppressWarnings(
  SpatialPixelsDataFrame(points = canada_cities[c("long", "lat")],
    data = canada_cities)
)
geojson_list(pixelsdf)

# From SpatialCollections
library("sp")
poly1 <- Polygons(
  list(Polygon(cbind(c(-100,-90,-85,-100), c(40,50,45,40))), "1")
poly2 <- Polygons(
  list(Polygon(cbind(c(-90,-80,-75,-90), c(30,40,35,30))), "2")
poly <- SpatialPolygons(list(poly1, poly2), 1:2)
coordinates(us_cities) <- ~long+lat
dat <- SpatialCollections(points = us_cities, polygons = poly)
out <- geojson_list(dat)
out$SpatialPoints
out$SpatialPolygons

## End(Not run)

# From sf classes:
if (require(sf)) {
## sfg (a single simple features geometry)
p1 <- rbind(c(0,0), c(1,0), c(3,2), c(2,4), c(1,4), c(0,0))
poly <- rbind(c(1,1), c(1,2), c(2,2), c(1,1))
poly_sfg <- st_polygon(list(p1))
geojson_list(poly_sfg)

## sfc (a collection of geometries)
p1 <- rbind(c(0,0), c(1,0), c(3,2), c(2,4), c(1,4), c(0,0))
p2 <- rbind(c(5,5), c(5,6), c(4,5), c(5,5))
poly_sfc <- st_sfc(st_polygon(list(p1)), st_polygon(list(p2)))
geojson_list(poly_sfc)

## sf (collection of geometries with attributes)
p1 <- rbind(c(0,0), c(1,0), c(3,2), c(2,4), c(1,4), c(0,0))
p2 <- rbind(c(5,5), c(5,6), c(4,5), c(5,5))
poly_sfc <- st_sfc(st_polygon(list(p1)), st_polygon(list(p2)))
poly_sf <- st_sf(foo = c("a", "b"), bar = 1:2, poly_sfc)
geojson_list(poly_sf)
}

```

---

geojson_read	<i>Read geojson or other formats from a local file or a URL</i>
--------------	---

---

### Description

Read geojson or other formats from a local file or a URL

### Usage

```
geojson_read(x, parse = FALSE, what = "list",
             stringsAsFactors = FALSE, query = NULL, ...)
```

### Arguments

x	(character) Path to a local file or a URL.
parse	(logical) To parse geojson to data.frame like structures if possible. Default: FALSE
what	(character) What to return. One of "list", "sp" (for Spatial class), or "json". Default: "list". "list" "and" sp run through package <code>sf</code> . if "json", returns json as character class
stringsAsFactors	Convert strings to Factors? Default FALSE.
query	(character) A SQL query, see also <a href="#">postgis</a>
...	Further args passed on to <a href="#">sf::st_read()</a>

### Details

This function supports various geospatial file formats from a URL, as well as local kml, shp, and geojson file formats.

### Value

various, depending on what's chosen in what parameter

- list: geojson as a list using [jsonlite::fromJSON\(\)](#)
- sp: geojson as an sp class object using [sf::st\\_read\(\)](#)
- json: geojson as character string, to parse downstream as you wish

### Linting GeoJSON

If you're having trouble rendering GeoJSON files, ensure you have a valid GeoJSON file by running it through the package `geojsonlint`, which has a variety of different GeoJSON linters.

### File size

We previously used [file\\_to\\_geojson\(\)](#) in this function, leading to file size problems; this should no longer be a concern, but let us know if you run into file size problems

**See Also**

[topojson\\_read\(\)](#), [geojson\\_write\(\)](#) [postgis](#)

**Examples**

```
## Not run:
# From a file
file <- system.file("examples", "california.geojson", package = "geojsonio")
(out <- geojson_read(file))
geojson_read(file)

# From a URL
url <- "https://raw.githubusercontent.com/glynnbird/usstatesgeojson/master/california.geojson"
geojson_read(url)
geojson_read(url, parse = TRUE)

# Use as.location first if you want
geojson_read(as.location(file))

# output a SpatialClass object
## read kml
file <- system.file("examples", "norway_maple.kml", package = "geojsonio")
geojson_read(as.location(file), what = "sp")
## read geojson
file <- system.file("examples", "california.geojson", package = "geojsonio")
geojson_read(as.location(file), what = "sp")
## read geojson from a url
url <- "https://raw.githubusercontent.com/glynnbird/usstatesgeojson/master/california.geojson"
geojson_read(url, what = "sp")
## read from a shape file
file <- system.file("examples", "bison.zip", package = "geojsonio")
dir <- tempdir()
unzip(file, exdir = dir)
shpfile <- list.files(dir, pattern = ".shp", full.names = TRUE)
geojson_read(shpfile, what = "sp")

x <- "https://raw.githubusercontent.com/johan/world.geo.json/master/countries.geo.json"
geojson_read(x, what = "sp")
geojson_read(x, what = "list")

utils::download.file(x, destfile = basename(x))
geojson_read(basename(x), what = "sp")

# from a Postgres database - your Postgres instance must be running
## MAKE SURE to run the setup in the postgis manual file first!
if (requireNamespace("DBI") && requireNamespace("RPostgres")) {
  library(DBI)
  conn <- tryCatch(dbConnect(RPostgres::Postgres(), dbname = 'postgistest'),
    error = function(e) e)
  if (inherits(conn, "PqConnection")) {
    state <- "SELECT row_to_json(fc)
      FROM (SELECT 'FeatureCollection' As type, array_to_json(array_agg(f)) As features
```



```

FROM (SELECT 'Feature' As type
      , ST_AsGeoJSON(lg.geog)::json As geometry
      , row_to_json((SELECT l FROM (SELECT loc_id, loc_name) As l
                        )) As properties
FROM locations As lg ) As f ) As fc;"
json <- geojson_read(conn, query = state, what = "json")
map_leaf(json)
}
}

## End(Not run)

```

---

geojson\_sf

*Convert output of geojson\_list or geojson\_json to sf classes*


---

## Description

Convert output of `geojson_list` or `geojson_json` to sf classes

## Usage

```
geojson_sf(x, stringsAsFactors = FALSE, ...)
```

## Arguments

`x` Object of class `geo_list` or `geo_json`

`stringsAsFactors` Convert strings to Factors? Default FALSE.

`...` Further args passed on to `sf::st_read()`

## Details

The type of sf object returned will depend on the input GeoJSON. Sometimes you will get back a POINTS class, and sometimes a POLYGON class, etc., depending on what the structure of the GeoJSON.

The reading and writing of the CRS to/from geojson is inconsistent. You can directly set the CRS by passing a valid PROJ4 string or epsg code to the `crs` argument in `sf::st_read()`

## Value

An sf class object, see Details.

**Examples**

```

## Not run:
library(sf)

# geo_list -----
## From a numeric vector of length 2 to a point
vec <- c(-99.74,32.45)
geojson_list(vec) %>% geojson_sf

## Lists
## From a list
mylist <- list(list(latitude=30, longitude=120, marker="red"),
               list(latitude=30, longitude=130, marker="blue"))
geojson_list(mylist) %>% geojson_sf
geojson_list(mylist) %>% geojson_sf %>% plot

## From a list of numeric vectors to a polygon
vecs <- list(c(100.0,0.0), c(101.0,0.0), c(101.0,1.0), c(100.0,1.0), c(100.0,0.0))
geojson_list(vecs, geometry="polygon") %>% geojson_sf
geojson_list(vecs, geometry="polygon") %>% geojson_sf %>% plot

# geo_json -----
## from point
geojson_json(c(-99.74,32.45)) %>% geojson_sf
geojson_json(c(-99.74,32.45)) %>% geojson_sf %>% plot

# from featurecollectino of points
geojson_json(us_cities[1:2,], lat='lat', lon='long') %>% geojson_sf
geojson_json(us_cities[1:2,], lat='lat', lon='long') %>% geojson_sf %>% plot

# Set the CRS via the crs argument
geojson_json(us_cities[1:2,], lat='lat', lon='long') %>% geojson_sf(crs = "+init=epsg:4326")

# json -----
x <- geojson_json(us_cities[1:2,], lat='lat', lon='long')
geojson_sf(x)

## End(Not run)

```

---

 geojson\_sp

---

*Convert output of geojson\_list or geojson\_json to spatial classes*


---

**Description**

Convert output of geojson\_list or geojson\_json to spatial classes

**Usage**

```
geojson_sp(x, disambiguateFIDs = FALSE, stringsAsFactors = FALSE, ...)
```

**Arguments**

`x` Object of class `geo_list` or `geo_json`

`disambiguateFIDs` Ignored, and will be removed in a future version. Previously was passed to `rgdal::readOGR()`, which is no longer used.

`stringsAsFactors` Convert strings to Factors? Default FALSE.

`...` Further args passed on to `sf::st_read()`

**Details**

The spatial class object returned will depend on the input GeoJSON. Sometimes you will get back a `SpatialPoints` class, and sometimes a `SpatialPolygonsDataFrame` class, etc., depending on what the structure of the GeoJSON.

The reading and writing of the CRS to/from geojson is inconsistent. You can directly set the CRS by passing a valid PROJ4 string or epsg code to the `crs` argument in `sf::st_read()`

**Value**

A spatial class object, see Details.

**Examples**

```
## Not run:
library(sp)

# geo_list -----
## From a numeric vector of length 2 to a point
vec <- c(-99.74,32.45)
geojson_list(vec) %>% geojson_sp

## Lists
## From a list
mylist <- list(list(latitude=30, longitude=120, marker="red"),
              list(latitude=30, longitude=130, marker="blue"))
geojson_list(mylist) %>% geojson_sp
geojson_list(mylist) %>% geojson_sp %>% plot

## From a list of numeric vectors to a polygon
vecs <- list(c(100.0,0.0), c(101.0,0.0), c(101.0,1.0), c(100.0,1.0), c(100.0,0.0))
geojson_list(vecs, geometry="polygon") %>% geojson_sp
geojson_list(vecs, geometry="polygon") %>% geojson_sp %>% plot

# geo_json -----
## from point
geojson_json(c(-99.74,32.45)) %>% geojson_sp
geojson_json(c(-99.74,32.45)) %>% geojson_sp %>% plot

# from featurecollectino of points
geojson_json(us_cities[1:2,], lat='lat', lon='long') %>% geojson_sp
```

```

geojson_json(us_cities[1:2,], lat='lat', lon='long') %>% geojson_sp %>% plot

# Set the CRS via the crs argument
geojson_json(us_cities[1:2,], lat='lat', lon='long') %>%
  geojson_sp(crs = "+init=epsg:4326")

# json -----
x <- geojson_json(us_cities[1:2,], lat='lat', lon='long')
geojson_sp(x)

## End(Not run)

```

---

geojson\_style

*Style a data.frame or list prior to converting to geojson*

---

### Description

This helps you add styling following the Simplestyle Spec. See Details

### Usage

```

geojson_style(input, var = NULL, var_col = NULL, var_sym = NULL,
  var_size = NULL, var_stroke = NULL, var_stroke_width = NULL,
  var_stroke_opacity = NULL, var_fill = NULL,
  var_fill_opacity = NULL, color = NULL, symbol = NULL,
  size = NULL, stroke = NULL, stroke_width = NULL,
  stroke_opacity = NULL, fill = NULL, fill_opacity = NULL)

```

### Arguments

input	A data.frame or a list
var	(character) A single variable to map colors, symbols, and/or sizes to
var_col	(character) A single variable to map colors to.
var_sym	(character) A single variable to map symbols to.
var_size	(character) A single variable to map size to.
var_stroke	(character) A single variable to map stroke to.
var_stroke_width	(character) A single variable to map stroke width to.
var_stroke_opacity	(character) A single variable to map stroke opacity to.
var_fill	(character) A single variable to map fill to.
var_fill_opacity	(character) A single variable to map fill opacity to
color	(character) Valid RGB hex color. Assigned to the variable marker-color

symbol	(character) An icon ID from the Maki project <a href="http://www.mapbox.com/maki/">http://www.mapbox.com/maki/</a> or a single alphanumeric character (a-z or 0-9). Assigned to the variable marker-symbol
size	(character) One of 'small', 'medium', or 'large'. Assigned to the variable marker-size
stroke	(character) Color of a polygon edge or line (RGB). Assigned to the variable stroke
stroke_width	(numeric) Width of a polygon edge or line (number > 0). Assigned to the variable stroke-width
stroke_opacity	(numeric) Opacity of a polygon edge or line (0.0 - 1.0). Assigned to the variable stroke-opacity
fill	(character) The color of the interior of a polygon (GRB). Assigned to the variable fill
fill_opacity	(character) The opacity of the interior of a polygon (0.0-1.0). Assigned to the variable fill-opacity

### Details

The parameters color, symbol, size, stroke, stroke\_width, stroke\_opacity, fill, and fill\_opacity expect a vector of size 1 (recycled), or exact length of vector being applied to in your input data.

This function helps add styling data to a list or data.frame following the Simplestyle Spec (<https://github.com/mapbox/simplestyle-spec/tree/master/1.1.0>), used by MapBox and GitHub Gists (that renders geoJSON/topoJSON as interactive maps).

There are a few other style variables, but deal with polygons

GitHub has a nice help article on geoJSON files <https://help.github.com/articles/mapping-geojson-files-on-github/>

Please do get in touch if you think anything should change in this function.

### Examples

```
## Not run:
## from data.frames - point data
library("RColorBrewer")
smalluscities <-
  subset(us_cities, country.etc == 'OR' | country.etc == 'NY' | country.etc == 'CA')

### Just color
geojson_style(smalluscities, var = 'country.etc',
  color=brewer.pal(length(unique(smalluscities$country.etc)), "Blues"))
### Just size
geojson_style(smalluscities, var = 'country.etc', size=c('small','medium','large'))
### Color and size
geojson_style(smalluscities, var = 'country.etc',
  color=brewer.pal(length(unique(smalluscities$country.etc)), "Blues"),
  size=c('small','medium','large'))

## from lists - point data
mylist <- list(list(latitude=30, longitude=120, state="US"),
  list(latitude=32, longitude=130, state="OR"),
```

```

        list(latitude=38, longitude=125, state="NY"),
        list(latitude=40, longitude=128, state="VT"))
# just color
geojson_style(mylist, var = 'state',
  color=brewer.pal(length(unique(sapply(mylist, '[' , 'state'))), "Blues"))
# color and size
geojson_style(mylist, var = 'state',
  color=brewer.pal(length(unique(sapply(mylist, '[' , 'state'))), "Blues"),
  size=c('small', 'medium', 'large', 'large'))
# color, size, and symbol
geojson_style(mylist, var = 'state',
  color=brewer.pal(length(unique(sapply(mylist, '[' , 'state'))), "Blues"),
  size=c('small', 'medium', 'large', 'large'),
  symbol="zoo")
# stroke, fill
geojson_style(mylist, var = 'state',
  stroke=brewer.pal(length(unique(sapply(mylist, '[' , 'state'))), "Blues"),
  fill=brewer.pal(length(unique(sapply(mylist, '[' , 'state'))), "Greens"))

# from data.frame - polygon data
smallstates <- states[states$group %in% 1:3, ]
head(smallstates)
geojson_style(smallstates, var = 'group',
  stroke = brewer.pal(length(unique(smallstates$group)), "Blues"),
  stroke_width = c(1, 2, 3),
  fill = brewer.pal(length(unique(smallstates$group)), "Greens"))

## End(Not run)

```

---

geojson\_write

*Convert many input types with spatial data to a geojson file*

---

## Description

Convert many input types with spatial data to a geojson file

## Usage

```

geojson_write(input, lat = NULL, lon = NULL, geometry = "point",
  group = NULL, file = "myfile.geojson", overwrite = TRUE,
  precision = NULL, convert_wgs84 = FALSE, crs = NULL, ...)

```

## Arguments

input	Input list, data.frame, spatial class, or sf class. Inputs can also be dplyr tbl_df class since it inherits from data.frame
lat	(character) Latitude name. The default is NULL, and we attempt to guess.
lon	(character) Longitude name. The default is NULL, and we attempt to guess.
geometry	(character) One of point (Default) or polygon.

group	(character) A grouping variable to perform grouping for polygons - doesn't apply for points
file	(character) A path and file name (e.g., myfile), with the .geojson file extension. Default writes to current working directory.
overwrite	(logical) Overwrite the file given in file with input. Default: TRUE. If this param is FALSE and the file already exists, we stop with error message.
precision	desired number of decimal places for the coordinates in the geojson file. Using fewer decimal places can decrease file sizes (at the cost of precision).
convert_wgs84	Should the input be converted to the <b>standard CRS for GeoJSON</b> (geographic coordinate reference system, using the WGS84 datum, with longitude and latitude units of decimal degrees; EPSG: 4326). Default is FALSE though this may change in a future package version. This will only work for sf or Spatial objects with a CRS already defined. If one is not defined but you know what it is, you may define it in the crs argument below.
crs	The CRS of the input if it is not already defined. This can be an epsg code as a four or five digit integer or a valid proj4 string. This argument will be ignored if convert_wgs84 is FALSE or the object already has a CRS.
...	Further args passed on to internal functions. For Spatial* classes, data.frames, regular lists, and numerics, it is passed through to <code>rgdal::writeOGR()</code> . For sf classes, geo_lists and json classes, it is passed through to <code>jsonlite::toJSON()</code> .

### Value

A `geojson_write` class, with two elements:

- path: path to the file with the GeoJSON
- type: type of object the GeoJSON came from, e.g., `SpatialPoints`

### See Also

[geojson\\_list\(\)](#), [geojson\\_json\(\)](#), [topojson\\_write\(\)](#)

### Examples

```
## Not run:
# From a data.frame
## to points
geojson_write(us_cities[1:2,], lat='lat', lon='long')

## to polygons
head(states)
geojson_write(input=states, lat='lat', lon='long',
              geometry='polygon', group="group")

## partial states dataset to points (defaults to points)
geojson_write(input=states, lat='lat', lon='long')

## Lists
### list of numeric pairs
```

```

poly <- list(c(-114.345703125,39.436192999314095),
            c(-114.345703125,43.45291889355468),
            c(-106.61132812499999,43.45291889355468),
            c(-106.61132812499999,39.436192999314095),
            c(-114.345703125,39.436192999314095))
geojson_write(poly, geometry = "polygon")

### named list
mylist <- list(list(latitude=30, longitude=120, marker="red"),
              list(latitude=30, longitude=130, marker="blue"))
geojson_write(mylist)

# From a numeric vector of length 2
## Expected order is lon, lat
vec <- c(-99.74, 32.45)
geojson_write(vec)

## polygon from a series of numeric pairs
### this requires numeric class input, so inputting a list will
### dispatch on the list method
poly <- c(c(-114.345703125,39.436192999314095),
          c(-114.345703125,43.45291889355468),
          c(-106.61132812499999,43.45291889355468),
          c(-106.61132812499999,39.436192999314095),
          c(-114.345703125,39.436192999314095))
geojson_write(poly, geometry = "polygon")

# Write output of geojson_list to file
res <- geojson_list(us_cities[1:2,], lat='lat', lon='long')
class(res)
geojson_write(res)

# Write output of geojson_json to file
res <- geojson_json(us_cities[1:2,], lat='lat', lon='long')
class(res)
geojson_write(res)

# From SpatialPolygons class
library('sp')
poly1 <- Polygons(list(Polygon(cbind(c(-100,-90,-85,-100),
                                   c(40,50,45,40)))), "1")
poly2 <- Polygons(list(Polygon(cbind(c(-90,-80,-75,-90),
                                   c(30,40,35,30)))), "2")
sp_poly <- SpatialPolygons(list(poly1, poly2), 1:2)
geojson_write(sp_poly)

# From SpatialPolygonsDataFrame class
sp_polydf <- as(sp_poly, "SpatialPolygonsDataFrame")
geojson_write(input = sp_polydf)

# From SpatialGrid
x <- GridTopology(c(0,0), c(1,1), c(5,5))
y <- SpatialGrid(x)

```



```

geojson_write(y)

# From SpatialGridDataFrame
sgdim <- c(3,4)
sg <- SpatialGrid(GridTopology(rep(0,2), rep(10,2), sgdim))
sgdf <- SpatialGridDataFrame(sg, data.frame(val = 1:12))
geojson_write(sgdf)

# From SpatialRings
library(rgeos)
r1 <- Ring(cbind(x=c(1,1,2,2,1), y=c(1,2,2,1,1)), ID="1")
r2 <- Ring(cbind(x=c(1,1,2,2,1), y=c(1,2,2,1,1)), ID="2")
r1r2 <- SpatialRings(list(r1, r2))
geojson_write(r1r2)

# From SpatialRingsDataFrame
dat <- data.frame(id = c(1,2), value = 3:4)
r1r2df <- SpatialRingsDataFrame(r1r2, data = dat)
geojson_write(r1r2df)

# From SpatialPixels
library("sp")
pixels <- suppressWarnings(SpatialPixels(SpatialPoints(us_cities[c("long", "lat")]))))
summary(pixels)
geojson_write(pixels)

# From SpatialPixelsDataFrame
library("sp")
pixelsdf <- suppressWarnings(
  SpatialPixelsDataFrame(points = canada_cities[c("long", "lat")], data = canada_cities)
)
geojson_write(pixelsdf)

# From SpatialCollections
library("sp")
poly1 <- Polygons(list(Polygon(cbind(c(-100,-90,-85,-100), c(40,50,45,40)))), "1")
poly2 <- Polygons(list(Polygon(cbind(c(-90,-80,-75,-90), c(30,40,35,30)))), "2")
poly <- SpatialPolygons(list(poly1, poly2), 1:2)
coordinates(us_cities) <- ~long+lat
dat <- SpatialCollections(points = us_cities, polygons = poly)
geojson_write(dat)

## End(Not run)

# From sf classes:
if (require(sf)) {
  file <- system.file("examples", "feature_collection.geojson", package = "geojsonio")
  sf_fc <- st_read(file, quiet = TRUE)
  geojson_write(sf_fc)
}

```

---

 map\_gist

*Publish an interactive map as a GitHub gist*


---

## Description

There are two ways to authorize to work with your GitHub account:

- PAT - Generate a personal access token (PAT) at <https://help.github.com/articles/creating-an-access-token-for-command-line-use> and record it in the GITHUB\_PAT envvar in your .Renvirom file.
- Interactive - Interactively login into your GitHub account and authorise with OAuth.

Using the PAT method is recommended.

Using the `gist_auth()` function you can authenticate separately first, or if you're not authenticated, this function will run internally with each function call. If you have a PAT, that will be used, if not, OAuth will be used.

## Usage

```
map_gist(input, lat = "lat", lon = "long", geometry = "point",
         group = NULL, type = "FeatureCollection", file = "myfile.geojson",
         description = "", public = TRUE, browse = TRUE, ...)
```

## Arguments

input	Input object
lat	Name of latitude variable
lon	Name of longitude variable
geometry	(character) Are polygons in the object
group	(character) A grouping variable to perform grouping for polygons - doesn't apply for points
type	(character) One of FeatureCollection or GeometryCollection
file	File name to use to put up as the gist file
description	Description for the GitHub gist, or leave to default (=no description)
public	(logical) Want gist to be public or not? Default: TRUE
browse	If TRUE (default) the map opens in your default browser.
...	Further arguments passed on to <code>httr::POST()</code>

**Examples**

```

## Not run:
# From file
file <- "myfile.geojson"
geojson_write(us_cities[1:20, ], lat='lat', lon='long', file = file)
map_gist(file=as.location(file))

# From SpatialPoints class
library("sp")
x <- c(1,2,3,4,5)
y <- c(3,2,5,1,4)
s <- SpatialPoints(cbind(x,y))
map_gist(s)

# from SpatialPointsDataFrame class
x <- c(1,2,3,4,5)
y <- c(3,2,5,1,4)
s <- SpatialPointsDataFrame(cbind(x,y), mtcars[1:5,])
map_gist(s)

# from SpatialPolygons class
poly1 <- Polygons(list(Polygon(cbind(c(-100,-90,-85,-100),
  c(40,50,45,40)))), "1")
poly2 <- Polygons(list(Polygon(cbind(c(-90,-80,-75,-90),
  c(30,40,35,30)))), "2")
sp_poly <- SpatialPolygons(list(poly1, poly2), 1:2)
map_gist(sp_poly)

# From SpatialPolygonsDataFrame class
sp_polydf <- as(sp_poly, "SpatialPolygonsDataFrame")
map_gist(sp_poly)

# From SpatialLines class
c1 <- cbind(c(1,2,3), c(3,2,2))
c2 <- cbind(c1[,1]+.05,c1[,2]+.05)
c3 <- cbind(c(1,2,3),c(1,1.5,1))
L1 <- Line(c1)
L2 <- Line(c2)
L3 <- Line(c3)
Ls1 <- Lines(list(L1), ID = "a")
Ls2 <- Lines(list(L2, L3), ID = "b")
s11 <- SpatialLines(list(Ls1))
s112 <- SpatialLines(list(Ls1, Ls2))
map_gist(s11)

# From SpatialLinesDataFrame class
dat <- data.frame(X = c("Blue", "Green"),
  Y = c("Train", "Plane"),
  Z = c("Road", "River"), row.names = c("a", "b"))
sldf <- SpatialLinesDataFrame(s112, dat)
map_gist(sldf)

```

```

# From SpatialGrid
x <- GridTopology(c(0,0), c(1,1), c(5,5))
y <- SpatialGrid(x)
map_gist(y)

# From SpatialGridDataFrame
sgdim <- c(3,4)
sg <- SpatialGrid(GridTopology(rep(0,2), rep(10,2), sgdim))
sgdf <- SpatialGridDataFrame(sg, data.frame(val = 1:12))
map_gist(sgdf)

# from data.frame
## to points
map_gist(us_cities)

## to polygons
head(states)
map_gist(states[1:351, ], lat='lat', lon='long', geometry="polygon", group='group')

## From a list
mylist <- list(list(lat=30, long=120, marker="red"),
               list(lat=30, long=130, marker="blue"))
map_gist(mylist, lat="lat", lon="long")

# From a numeric vector
## of length 2 to a point
vec <- c(-99.74,32.45)
map_gist(vec)

## this requires numeric class input, so inputting a list will dispatch on the list method
poly <- c(c(-114.345703125,39.436192999314095),
          c(-114.345703125,43.45291889355468),
          c(-106.61132812499999,43.45291889355468),
          c(-106.61132812499999,39.436192999314095),
          c(-114.345703125,39.436192999314095))
map_gist(poly, geometry = "polygon")

# From a json object
(x <- geojson_json(c(-99.74,32.45)))
map_gist(x)
## another example
map_gist(geojson_json(us_cities[1:10,], lat='lat', lon='long'))

# From a geo_list object
(res <- geojson_list(us_cities[1:2,], lat='lat', lon='long'))
map_gist(res)

# From SpatialPixels
pixels <- suppressWarnings(SpatialPixels(SpatialPoints(us_cities[c("long", "lat")])))
summary(pixels)
map_gist(pixels)

# From SpatialPixelsDataFrame

```

```

pixelsdf <- suppressWarnings(
  SpatialPixelsDataFrame(points = canada_cities[c("long", "lat")], data = canada_cities)
)
map_gist(pixelsdf)

# From SpatialRings
library("rgeos")
r1 <- Ring(cbind(x=c(1,1,2,2,1), y=c(1,2,2,1,1)), ID="1")
r2 <- Ring(cbind(x=c(1,1,2,2,1), y=c(1,2,2,1,1)), ID="2")
r1r2 <- SpatialRings(list(r1, r2))
map_gist(r1r2)

# From SpatialRingsDataFrame
dat <- data.frame(id = c(1,2), value = 3:4)
r1r2df <- SpatialRingsDataFrame(r1r2, data = dat)
map_gist(r1r2df)

## End(Not run)

```

---

map\_leaf

*Make an interactive map locally*


---

## Description

Make an interactive map locally

## Usage

```
map_leaf(input, lat = NULL, lon = NULL, basemap = "Stamen.Toner",
  ...)
```

## Arguments

input	Input object
lat	Name of latitude variable
lon	Name of longitude variable
basemap	Basemap to use. See <code>leaflet::addProviderTiles</code> . Default: <code>Stamen.Toner</code>
...	Further arguments passed on to <code>leaflet::addPolygons</code> , <code>leaflet::addMarkers</code> , <code>leaflet::addGeoJSON</code> , or <code>leaflet::addPolylines</code>

## Examples

```

## Not run:
# We'll need leaflet below
library("leaflet")

# From file
file <- "myfile.geojson"

```

```

geojson_write(us_cities[1:20, ], lat='lat', lon='long', file = file)
map_leaf(as.location(file))

# From SpatialPoints class
library("sp")
x <- c(1,2,3,4,20)
y <- c(3,2,5,3,4)
s <- SpatialPoints(cbind(x,y))
map_leaf(s)

# from SpatialPointsDataFrame class
x <- c(1,2,3,4,5)
y <- c(3,2,5,1,4)
s <- SpatialPointsDataFrame(cbind(x,y), mtcars[1:5,])
map_leaf(s)

# from SpatialPolygons class
poly1 <- Polygons(list(Polygon(cbind(c(-100,-90,-85,-100),
  c(40,50,45,40)))), "1")
poly2 <- Polygons(list(Polygon(cbind(c(-90,-80,-75,-90),
  c(30,40,35,30)))), "2")
sp_poly <- SpatialPolygons(list(poly1, poly2), 1:2)
map_leaf(sp_poly)

# From SpatialPolygonsDataFrame class
sp_polydf <- as(sp_poly, "SpatialPolygonsDataFrame")
map_leaf(sp_poly)

# From SpatialLines class
c1 <- cbind(c(1,2,3), c(3,2,2))
c2 <- cbind(c1[,1]+.05,c1[,2]+.05)
c3 <- cbind(c(1,2,3),c(1,1.5,1))
L1 <- Line(c1)
L2 <- Line(c2)
L3 <- Line(c3)
Ls1 <- Lines(list(L1), ID = "a")
Ls2 <- Lines(list(L2, L3), ID = "b")
s11 <- SpatialLines(list(Ls1))
s112 <- SpatialLines(list(Ls1, Ls2))
map_leaf(s11)
map_leaf(s112)

# From SpatialLinesDataFrame class
dat <- data.frame(X = c("Blue", "Green"),
  Y = c("Train", "Plane"),
  Z = c("Road", "River"), row.names = c("a", "b"))
slidf <- SpatialLinesDataFrame(s112, dat)
map_leaf(slidf)

# From SpatialGrid
x <- GridTopology(c(0,0), c(1,1), c(5,5))
y <- SpatialGrid(x)
map_leaf(y)

```

```

# From SpatialGridDataFrame
sgdim <- c(3,4)
sg <- SpatialGrid(GridTopology(rep(0,2), rep(10,2), sgdim))
sgdf <- SpatialGridDataFrame(sg, data.frame(val = 1:12))
map_leaf(sgdf)

# from data.frame
map_leaf(us_cities)

## another example
head(states)
map_leaf(states[1:351, ])

## From a named list
mylist <- list(list(lat=30, long=120, marker="red"),
               list(lat=30, long=130, marker="blue"))
map_leaf(mylist, lat="lat", lon="long")

## From an unnamed list
poly <- list(c(-114.345703125, 39.436192999314095),
             c(-114.345703125, 43.45291889355468),
             c(-106.61132812499999, 43.45291889355468),
             c(-106.61132812499999, 39.436192999314095),
             c(-114.345703125, 39.436192999314095))
map_leaf(poly)
## NOTE: Polygons from lists aren't supported yet

# From a json object
map_leaf(geojson_json(c(-99.74, 32.45)))
map_leaf(geojson_json(c(-119, 45)))
map_leaf(geojson_json(c(-99.74, 32.45)))
## another example
map_leaf(geojson_json(us_cities[1:10,], lat='lat', lon='long'))

# From a geo_list object
(res <- geojson_list(us_cities[1:2,], lat='lat', lon='long'))
map_leaf(res)

# From SpatialPixels
pixels <- suppressWarnings(SpatialPixels(SpatialPoints(us_cities[c("long", "lat")])))
summary(pixels)
map_leaf(pixels)

# From SpatialPixelsDataFrame
pixelsdf <- suppressWarnings(
  SpatialPixelsDataFrame(points = canada_cities[c("long", "lat")], data = canada_cities)
)
map_leaf(pixelsdf)

# From SpatialRings
library("rgeos")
r1 <- Ring(cbind(x=c(1,1,2,2,1), y=c(1,2,2,1,1)), ID="1")

```

```

r2 <- Ring(cbind(x=c(1,1,2,2,1), y=c(1,2,2,1,1)), ID="2")
r1r2 <- SpatialRings(list(r1, r2))
map_leaf(r1r2)

# From SpatialRingsDataFrame
dat <- data.frame(id = c(1,2), value = 3:4)
r1r2df <- SpatialRingsDataFrame(r1r2, data = dat)
map_leaf(r1r2df)

# basemap toggling -----
map_leaf(us_cities, basemap = "Acetate.terrain")
map_leaf(us_cities, basemap = "CartoDB.Positron")
map_leaf(us_cities, basemap = "OpenTopoMap")

# leaflet options -----
map_leaf(us_cities) %>%
  addPopups(-122.327298, 47.597131, "foo bar", options = popupOptions(closeButton = FALSE))

##### not working yet
# From a numeric vector
## of length 2 to a point
## vec <- c(-99.74,32.45)
## map_leaf(vec)

## End(Not run)

```

---

postgis

*PostGIS setup*

---

## Description

`geojson_read()` allows you to get data out of a PostgreSQL database set up with PostGIS. Below are steps for setting up data that we can at the end query with `geojson_read()`

## Details

If you don't already have PostgreSQL or PostGIS:

- PostgreSQL installation: <http://www.postgresql.org/download/>
- PostGIS installation: <http://postgis.net/install>

Once you have both of those installed, you can proceed below.

## Examples

```

## Not run:
if (requireNamespace("DBI") && requireNamespace("RPostgres")) {
  library("DBI")
  library("RPostgres")
}

```



```

# Create connection
conn <- dbConnect(RPostgres::Postgres())

# Create database
dbSendQuery(conn, "CREATE DATABASE postgistest")

# New connection to the created database
conn <- dbConnect(RPostgres::Postgres(), dbname = 'postgistest')

# Initialize PostGIS in Postgres
dbSendQuery(conn, "CREATE EXTENSION postgis")
dbSendQuery(conn, "SELECT postgis_full_version()")

# Create table
dbSendQuery(conn, "CREATE TABLE locations(loc_id integer primary key
, loc_name varchar(70), geog geography(POINT) );")

# Insert data
dbSendQuery(conn, "INSERT INTO locations(loc_id, loc_name, geog)
VALUES (1, 'Waltham, MA', ST_GeogFromText('POINT(42.40047 -71.2577)') )
, (2, 'Manchester, NH', ST_GeogFromText('POINT(42.99019 -71.46259)') )
, (3, 'TI Blvd, TX', ST_GeogFromText('POINT(-96.75724 32.90977)') );")

# Get data (notice warnings of unknown field type for geog)
dbGetQuery(conn, "SELECT * from locations")

# Once you're setup, use geojson_read()
conn <- dbConnect(RPostgres::Postgres(), dbname = 'postgistest')
state <- "SELECT row_to_json(fc)
FROM (SELECT 'FeatureCollection' As type, array_to_json(array_agg(f)) As features
FROM (SELECT 'Feature' As type
, ST_AsGeoJSON(lg.geog)::json As geometry
, row_to_json((SELECT l FROM (SELECT loc_id, loc_name) As l
)) As properties
FROM locations As lg ) As f ) As fc;"
json <- geojson_read(conn, query = state, what = "json")

## map the geojson with map_leaf()
map_leaf(json)
}

## End(Not run)

```

---

pretty

---

*Convert json input to pretty printed output*


---

## Description

Convert json input to pretty printed output

**Usage**

```
pretty(x, indent = 4)
```

**Arguments**

x	Input, character string
indent	(integer) Number of spaces to indent

**Details**

Only works with json class input. This is a simple wrapper around `jsonlite::pretty()`, so you can easily use that yourself.

---

projections

*topojson projections and extensions*

---

**Description**

topojson projections and extensions

**Usage**

```
projections(proj, rotate = NULL, center = NULL, translate = NULL,
  scale = NULL, clipAngle = NULL, precision = NULL,
  parallels = NULL, clipExtent = NULL, invert = NULL)
```

**Arguments**

proj	Map projection name. One of <code>albers</code> , <code>albersUsa</code> , <code>azimuthalEqualArea</code> , <code>azimuthalEquidistant</code> , <code>conicEqualArea</code> , <code>conicConformal</code> , <code>conicEquidistant</code> , <code>equiarectangular</code> , <code>gnomonic</code> , <code>mercator</code> , <code>orthographic</code> , <code>stereographic</code> , or <code>transverseMercator</code> .
rotate	If rotation is specified, sets the projection's three-axis rotation to the specified angles yaw, pitch and roll (or equivalently longitude, latitude and roll) in degrees and returns the projection. If rotation is not specified, returns the current rotation which defaults <code>[0, 0, 0]</code> . If the specified rotation has only two values, rather than three, the roll is assumed to be 0.
center	If center is specified, sets the projection's center to the specified location, a two-element array of longitude and latitude in degrees and returns the projection. If center is not specified, returns the current center which defaults to <code>(0,0)</code>
translate	If point is specified, sets the projection's translation offset to the specified two-element array <code>[x, y]</code> and returns the projection. If point is not specified, returns the current translation offset which defaults to <code>[480, 250]</code> . The translation offset determines the pixel coordinates of the projection's center. The default translation offset places <code>(0,0)</code> at the center of a <code>960x500</code> area.

scale	If scale is specified, sets the projection's scale factor to the specified value and returns the projection. If scale is not specified, returns the current scale factor which defaults to 150. The scale factor corresponds linearly to the distance between projected points. However, scale factors are not consistent across projections.
clipAngle	If angle is specified, sets the projection's clipping circle radius to the specified angle in degrees and returns the projection. If angle is null, switches to antimeridian cutting rather than small-circle clipping. If angle is not specified, returns the current clip angle which defaults to null. Small-circle clipping is independent of viewport clipping via clipExtent.
precision	If precision is specified, sets the threshold for the projection's adaptive resampling to the specified value in pixels and returns the projection. This value corresponds to the Douglas-Peucker distance. If precision is not specified, returns the projection's current resampling precision which defaults to $\text{Math.SQRT}(1/2)$ .
parallels	Depends on the projection used! See <a href="https://github.com/mboostock/d3/wiki/Geo-Projections#standard-projections">https://github.com/mboostock/d3/wiki/Geo-Projections#standard-projections</a> for help
clipExtent	If extent is specified, sets the projection's viewport clip extent to the specified bounds in pixels and returns the projection. The extent bounds are specified as an array $[[x_0, y_0], [x_1, y_1]]$ , where $x_0$ is the left-side of the viewport, $y_0$ is the top, $x_1$ is the right and $y_1$ is the bottom. If extent is null, no viewport clipping is performed. If extent is not specified, returns the current viewport clip extent which defaults to null. Viewport clipping is independent of small-circle clipping via clipAngle.
invert	Projects backward from Cartesian coordinates (in pixels) to spherical coordinates (in degrees). Returns an array $[\text{longitude}, \text{latitude}]$ given the input array $[x, y]$ .

### Examples

```

projections(proj="albers")
projections(proj="albers", rotate='[98 + 00 / 60, -35 - 00 / 60]', scale=5700)
projections(proj="albers", scale=5700)
projections(proj="albers", translate='[55 * width / 100, 52 * height / 100]')
projections(proj="albers", clipAngle=90)
projections(proj="albers", precision=0.1)
projections(proj="albers", parallels='[30, 62]')
projections(proj="albers", clipExtent='[[105 - 87, 40], [105 + 87 + 1e-6, 82 + 1e-6]]')
projections(proj="albers", invert=60)
projections("orthographic")

```

---

states

*This is the same data set from the ggplot2 library*

---

### Description

This is a data.frame with "long", "lat", "group", "order", "region", and "subregion" columns specifying polygons for each US state.

---

topojson_json	<i>Convert many input types with spatial data to TopoJSON as a JSON string</i>
---------------	--

---

## Description

Convert many input types with spatial data to TopoJSON as a JSON string

## Usage

```
topojson_json(input, lat = NULL, lon = NULL, group = NULL,
  geometry = "point", type = "FeatureCollection",
  convert_wgs84 = FALSE, crs = NULL, ...)
```

## Arguments

input	Input list, data.frame, spatial class, or sf class. Inputs can also be dplyr tbl_df class since it inherits from data.frame.
lat	(character) Latitude name. The default is NULL, and we attempt to guess.
lon	(character) Longitude name. The default is NULL, and we attempt to guess.
group	(character) A grouping variable to perform grouping for polygons - doesn't apply for points
geometry	(character) One of point (Default) or polygon.
type	(character) The type of collection. One of 'auto' (default for 'sf' objects), 'FeatureCollection' (default for everything else), or 'GeometryCollection'. "skip" skips the coercion with package <b>geojson</b> functions; skipping can save significant run time on larger geojson objects. Spatial objects can only accept "FeatureCollection" or "skip". "skip" is not available as an option for numeric, list, and data.frame classes
convert_wgs84	Should the input be converted to the <b>standard CRS system for GeoJSON</b> (geographic coordinate reference system, using the WGS84 datum, with longitude and latitude units of decimal degrees; EPSG: 4326). Default is FALSE though this may change in a future package version. This will only work for sf or Spatial objects with a CRS already defined. If one is not defined but you know what it is, you may define it in the crs argument below.
crs	The CRS of the input if it is not already defined. This can be an epsg code as a four or five digit integer or a valid proj4 string. This argument will be ignored if convert_wgs84 is FALSE or the object already has a CRS.
...	Further args passed on to internal functions. For Spatial* classes, it is passed through to <code>rgdal::writeOGR()</code> . For sf classes, data.frames, lists, numerics, and geo_lists, it is passed through to <code>jsonlite::toJSON()</code>

## Details

The type parameter is automatically converted to type="auto" if a sf, sfc, or sfg class is passed to input

**Value**

An object of class `geo_json` (and `json`)

**Examples**

```
## Not run:
# From a numeric vector of length 2, making a point type
topojson_json(c(-99.74,32.45), pretty=TRUE)
topojson_json(c(-99.74,32.45), type = "GeometryCollection")

## polygon type
### this requires numeric class input, so inputting a list will dispatch on the list method
poly <- c(c(-114.345703125,39.436192999314095),
          c(-114.345703125,43.45291889355468),
          c(-106.61132812499999,43.45291889355468),
          c(-106.61132812499999,39.436192999314095),
          c(-114.345703125,39.436192999314095))
topojson_json(poly, geometry = "polygon", pretty=TRUE)

# Lists
## From a list of numeric vectors to a polygon
vecs <- list(c(100.0,0.0), c(101.0,0.0), c(101.0,1.0), c(100.0,1.0), c(100.0,0.0))
topojson_json(vecs, geometry="polygon", pretty=TRUE)

## from a named list
mylist <- list(list(latitude=30, longitude=120, marker="red"),
              list(latitude=30, longitude=130, marker="blue"))
topojson_json(mylist, lat='latitude', lon='longitude')

# From a data.frame to points
topojson_json(us_cities[1:2,], lat='lat', lon='long', pretty=TRUE)
topojson_json(us_cities[1:2,], lat='lat', lon='long',
              type="GeometryCollection", pretty=TRUE)

# from data.frame to polygons
head(states)
## make list for input to e.g., rMaps
topojson_json(states[1:351, ], lat='lat', lon='long', geometry="polygon", group='group')

# from a geo_list
a <- geojson_list(us_cities[1:2,], lat='lat', lon='long')
topojson_json(a)

# sp classes

## From SpatialPolygons class
library('sp')
poly1 <- Polygons(list(Polygon(cbind(c(-100,-90,-85,-100),
                                   c(40,50,45,40)))), "1")
poly2 <- Polygons(list(Polygon(cbind(c(-90,-80,-75,-90),
                                   c(30,40,35,30)))), "2")
sp_poly <- SpatialPolygons(list(poly1, poly2), 1:2)
```

```

topojson_json(sp_poly)
topojson_json(sp_poly, pretty=TRUE)

## Another SpatialPolygons
library("sp")
library("rgeos")
pt <- SpatialPoints(coordinates(list(x = 0, y = 0)), CRS("+proj=longlat +datum=WGS84"))
## transform to web mercator because geos needs project coords
crs <- gsub("\n", "", paste0("+proj=merc +a=6378137 +b=6378137 +lat_ts=0.0 +lon_0=0.0 +x_0=0.0
  +y_0=0 +k=1.0 +units=m +nadgrids=@null +wktext +no_defs", collapse = ""))
pt <- spTransform(pt, CRS(crs))
## buffer
pt <- gBuffer(pt, width = 100)
pt <- spTransform(pt, CRS("+proj=longlat +datum=WGS84"))
topojson_json(pt)

## data.frame to geojson
geojson_write(us_cities[1:2,], lat='lat', lon='long') %>% as.json

# From SpatialPoints class
x <- c(1,2,3,4,5)
y <- c(3,2,5,1,4)
s <- SpatialPoints(cbind(x,y))
topojson_json(s)

## From SpatialPointsDataFrame class
s <- SpatialPointsDataFrame(cbind(x,y), mtcars[1:5,])
topojson_json(s)

## From SpatialLines class
library("sp")
c1 <- cbind(c(1,2,3), c(3,2,2))
c2 <- cbind(c1[,1]+.05, c1[,2]+.05)
c3 <- cbind(c(1,2,3), c(1,1.5,1))
L1 <- Line(c1)
L2 <- Line(c2)
L3 <- Line(c3)
Ls1 <- Lines(list(L1), ID = "a")
Ls2 <- Lines(list(L2, L3), ID = "b")
s11 <- SpatialLines(list(Ls1))
s112 <- SpatialLines(list(Ls1, Ls2))
topojson_json(s11)
topojson_json(s112)

## From SpatialLinesDataFrame class
dat <- data.frame(X = c("Blue", "Green"),
  Y = c("Train", "Plane"),
  Z = c("Road", "River"), row.names = c("a", "b"))
sldf <- SpatialLinesDataFrame(s112, dat)
topojson_json(sldf)
topojson_json(sldf, pretty=TRUE)

## From SpatialGrid

```

```

x <- GridTopology(c(0,0), c(1,1), c(5,5))
y <- SpatialGrid(x)
topojson_json(y)

## From SpatialGridDataFrame
sgdim <- c(3,4)
sg <- SpatialGrid(GridTopology(rep(0,2), rep(10,2), sgdim))
sgdf <- SpatialGridDataFrame(sg, data.frame(val = 1:12))
topojson_json(sgdf)

# From SpatialRings
library("rgeos")
r1 <- Ring(cbind(x=c(1,1,2,2,1), y=c(1,2,2,1,1)), ID="1")
r2 <- Ring(cbind(x=c(1,1,2,2,1), y=c(1,2,2,1,1)), ID="2")
r1r2 <- SpatialRings(list(r1, r2))
topojson_json(r1r2)

# From SpatialRingsDataFrame
dat <- data.frame(id = c(1,2), value = 3:4)
r1r2df <- SpatialRingsDataFrame(r1r2, data = dat)
topojson_json(r1r2df)

# From SpatialPixels
library("sp")
pixels <- suppressWarnings(SpatialPixels(SpatialPoints(us_cities[c("long", "lat")])))
summary(pixels)
topojson_json(pixels)

# From SpatialPixelsDataFrame
library("sp")
pixelsdf <- suppressWarnings(
  SpatialPixelsDataFrame(points = canada_cities[c("long", "lat")], data = canada_cities)
)
topojson_json(pixelsdf)

# From SpatialCollections
library("sp")
library("rgeos")
pts <- SpatialPoints(cbind(c(1,2,3,4,5), c(3,2,5,1,4)))
poly1 <- Polygons(list(Polygon(cbind(c(-100,-90,-85,-100), c(40,50,45,40))), "1")
poly2 <- Polygons(list(Polygon(cbind(c(-90,-80,-75,-90), c(30,40,35,30))), "2")
poly <- SpatialPolygons(list(poly1, poly2), 1:2)
dat <- SpatialCollections(pts, polygons = poly)
topojson_json(dat)

# From sf classes:
if (require(sf)) {
## sfg (a single simple features geometry)
p1 <- rbind(c(0,0), c(1,0), c(3,2), c(2,4), c(1,4), c(0,0))
poly <- rbind(c(1,1), c(1,2), c(2,2), c(1,1))
poly_sfg <- st_polygon(list(p1))
topojson_json(poly_sfg)
}

```

```

## sfc (a collection of geometries)
p1 <- rbind(c(0,0), c(1,0), c(3,2), c(2,4), c(1,4), c(0,0))
p2 <- rbind(c(5,5), c(5,6), c(4,5), c(5,5))
poly_sfc <- st_sfc(st_polygon(list(p1)), st_polygon(list(p2)))
topojson_json(poly_sfc)

## sf (collection of geometries with attributes)
p1 <- rbind(c(0,0), c(1,0), c(3,2), c(2,4), c(1,4), c(0,0))
p2 <- rbind(c(5,5), c(5,6), c(4,5), c(5,5))
poly_sfc <- st_sfc(st_polygon(list(p1)), st_polygon(list(p2)))
poly_sf <- st_sf(foo = c("a", "b"), bar = 1:2, poly_sfc)
topojson_json(poly_sf)
}

## Pretty print a json string
topojson_json(c(-99.74,32.45))
topojson_json(c(-99.74,32.45)) %>% pretty

## End(Not run)

```

---

topojson\_list

*Convert many input types with spatial data to TopoJSON as a list*


---

## Description

Convert many input types with spatial data to TopoJSON as a list

## Usage

```

topojson_list(input, lat = NULL, lon = NULL, group = NULL,
  geometry = "point", type = "FeatureCollection",
  convert_wgs84 = FALSE, crs = NULL, ...)

```

## Arguments

input	Input list, data.frame, spatial class, or sf class. Inputs can also be dplyr tbl_df class since it inherits from data.frame
lat	(character) Latitude name. The default is NULL, and we attempt to guess.
lon	(character) Longitude name. The default is NULL, and we attempt to guess.
group	(character) A grouping variable to perform grouping for polygons - doesn't apply for points
geometry	(character) One of point (Default) or polygon.
type	(character) The type of collection. One of FeatureCollection (default) or GeometryCollection.



convert_wgs84	Should the input be converted to the <b>standard CRS for GeoJSON</b> (geographic coordinate reference system, using the WGS84 datum, with longitude and latitude units of decimal degrees; EPSG: 4326). Default is FALSE though this may change in a future package version. This will only work for sf or Spatial objects with a CRS already defined. If one is not defined but you know what it is, you may define it in the crs argument below.
crs	The CRS of the input if it is not already defined. This can be an epsg code as a four or five digit integer or a valid proj4 string. This argument will be ignored if convert_wgs84 is FALSE or the object already has a CRS.
...	Ignored

### Details

Internally, we call `topojson_json()`, then use an internal function to convert that JSON output to a list

The type parameter is automatically converted to `type="auto"` if a sf, sfc, or sfg class is passed to input

### Value

a list with TopoJSON

### Examples

```
## Not run:
# From a numeric vector of length 2 to a point
vec <- c(-99.74,32.45)
topojson_list(vec)

# Lists
## From a list
mylist <- list(list(latitude=30, longitude=120, marker="red"),
               list(latitude=30, longitude=130, marker="blue"))
topojson_list(mylist)

## From a list of numeric vectors to a polygon
vecs <- list(c(100.0,0.0), c(101.0,0.0), c(101.0,1.0), c(100.0,1.0), c(100.0,0.0))
topojson_list(vecs, geometry="polygon")

# from data.frame to points
(res <- topojson_list(us_cities[1:2,], lat='lat', lon='long'))
as.json(res)
## guess lat/long columns
topojson_list(us_cities[1:2,])
topojson_list(states[1:3,])
topojson_list(states[1:351,], geometry="polygon", group='group')
topojson_list(canada_cities[1:30,])

# from data.frame to polygons
head(states)
```

```

topojson_list(states[1:351, ], lat='lat', lon='long', geometry="polygon", group='group')

# From SpatialPolygons class
library('sp')
poly1 <- Polygons(list(Polygon(cbind(c(-100,-90,-85,-100),
  c(40,50,45,40)))), "1")
poly2 <- Polygons(list(Polygon(cbind(c(-90,-80,-75,-90),
  c(30,40,35,30)))), "2")
sp_poly <- SpatialPolygons(list(poly1, poly2), 1:2)
topojson_list(sp_poly)

# From SpatialPolygonsDataFrame class
sp_polydf <- as(sp_poly, "SpatialPolygonsDataFrame")
topojson_list(input = sp_polydf)

# From SpatialPoints class
x <- c(1,2,3,4,5)
y <- c(3,2,5,1,4)
s <- SpatialPoints(cbind(x,y))
topojson_list(s)

# From SpatialPointsDataFrame class
s <- SpatialPointsDataFrame(cbind(x,y), mtcars[1:5,])
topojson_list(s)

# From SpatialLines class
library("sp")
c1 <- cbind(c(1,2,3), c(3,2,2))
c2 <- cbind(c1[,1]+.05,c1[,2]+.05)
c3 <- cbind(c(1,2,3),c(1,1.5,1))
L1 <- Line(c1)
L2 <- Line(c2)
L3 <- Line(c3)
Ls1 <- Lines(list(L1), ID = "a")
Ls2 <- Lines(list(L2, L3), ID = "b")
s11 <- SpatialLines(list(Ls1))
s112 <- SpatialLines(list(Ls1, Ls2))
topojson_list(s11)
topojson_list(s112)
as.json(topojson_list(s112))
as.json(topojson_list(s112), pretty=TRUE)

# From SpatialLinesDataFrame class
dat <- data.frame(X = c("Blue", "Green"),
  Y = c("Train", "Plane"),
  Z = c("Road", "River"), row.names = c("a", "b"))
sldf <- SpatialLinesDataFrame(s112, dat)
topojson_list(sldf)
as.json(topojson_list(sldf))
as.json(topojson_list(sldf), pretty=TRUE)

# From SpatialGrid
x <- GridTopology(c(0,0), c(1,1), c(5,5))

```

```

y <- SpatialGrid(x)
topojson_list(y)

# From SpatialGridDataFrame
sgdim <- c(3,4)
sg <- SpatialGrid(GridTopology(rep(0,2), rep(10,2), sgdim))
sgdf <- SpatialGridDataFrame(sg, data.frame(val = 1:12))
topojson_list(sgdf)

# From SpatialRings
library("rgeos")
r1 <- Ring(cbind(x=c(1,1,2,2,1), y=c(1,2,2,1,1)), ID="1")
r2 <- Ring(cbind(x=c(1,1,2,2,1), y=c(1,2,2,1,1)), ID="2")
r1r2 <- SpatialRings(list(r1, r2))
topojson_list(r1r2)

# From SpatialRingsDataFrame
dat <- data.frame(id = c(1,2), value = 3:4)
r1r2df <- SpatialRingsDataFrame(r1r2, data = dat)
topojson_list(r1r2df)

# From SpatialPixels
library("sp")
pixels <- suppressWarnings(SpatialPixels(SpatialPoints(us_cities[c("long", "lat")])))
summary(pixels)
topojson_list(pixels)

# From SpatialPixelsDataFrame
library("sp")
pixelsdf <- suppressWarnings(
  SpatialPixelsDataFrame(points = canada_cities[c("long", "lat")], data = canada_cities)
)
topojson_list(pixelsdf)

# From SpatialCollections
library("sp")
poly1 <- Polygons(list(Polygon(cbind(c(-100,-90,-85,-100), c(40,50,45,40)))), "1")
poly2 <- Polygons(list(Polygon(cbind(c(-90,-80,-75,-90), c(30,40,35,30)))), "2")
poly <- SpatialPolygons(list(poly1, poly2), 1:2)
coordinates(us_cities) <- ~long+lat
dat <- SpatialCollections(points = us_cities, polygons = poly)
out <- topojson_list(dat)
out[[1]]
out[[2]]

## End(Not run)

# From sf classes:
if (require(sf)) {
## sfg (a single simple features geometry)
p1 <- rbind(c(0,0), c(1,0), c(3,2), c(2,4), c(1,4), c(0,0))
poly <- rbind(c(1,1), c(1,2), c(2,2), c(1,1))
poly_sfg <-st_polygon(list(p1))

```

```
topojson_list(poly_sfg)

## sfc (a collection of geometries)
p1 <- rbind(c(0,0), c(1,0), c(3,2), c(2,4), c(1,4), c(0,0))
p2 <- rbind(c(5,5), c(5,6), c(4,5), c(5,5))
poly_sfc <- st_sfc(st_polygon(list(p1)), st_polygon(list(p2)))
topojson_list(poly_sfc)

## sf (collection of geometries with attributes)
p1 <- rbind(c(0,0), c(1,0), c(3,2), c(2,4), c(1,4), c(0,0))
p2 <- rbind(c(5,5), c(5,6), c(4,5), c(5,5))
poly_sfc <- st_sfc(st_polygon(list(p1)), st_polygon(list(p2)))
poly_sf <- st_sf(foo = c("a", "b"), bar = 1:2, poly_sfc)
topojson_list(poly_sf)
}
```

---

topojson\_read

*Read topojson from a local file or a URL*

---

## Description

Read topojson from a local file or a URL

## Usage

```
topojson_read(x, ...)
```

## Arguments

x	Path to a local file or a URL.
...	Further args passed on to <a href="#">sf::st_read()</a>

## Details

Returns a sf class, but you can easily and quickly get this to geojson, see examples.

Note that this does not give you Topojson, but gives you a sf class - which you can use then to turn it into geojson as a list or json

## Value

an object of class sf/data.frame

## See Also

[geojson\\_read\(\)](#), [topojson\\_write\(\)](#)

**Examples**

```
## Not run:
# From a file
file <- system.file("examples", "us_states.topojson", package = "geojsonio")
topojson_read(file)

# From a URL
url <- "https://raw.githubusercontent.com/shawnbot/d3-cartogram/master/data/us-states.topojson"
topojson_read(url)

# Use as.location first if you want
topojson_read(as.location(file))

# quickly convert to geojson as a list
file <- system.file("examples", "us_states.topojson", package = "geojsonio")
tmp <- topojson_read(file)
geojson_list(tmp)
geojson_json(tmp)

# pass on args
topojson_read(file, quiet = TRUE)
topojson_read(file, stringsAsFactors = FALSE)

## End(Not run)
```

---

topojson_write	<i>Write TopoJSON from various inputs</i>
----------------	---

---

**Description**

Write TopoJSON from various inputs

**Usage**

```
topojson_write(input, lat = NULL, lon = NULL, geometry = "point",
  group = NULL, file = "myfile.topojson", overwrite = TRUE,
  precision = NULL, convert_wgs84 = FALSE, crs = NULL,
  object_name = "foo", quantization = 0, ...)
```

**Arguments**

input	Input list, data.frame, spatial class, or sf class. Inputs can also be dplyr tbl_df class since it inherits from data.frame
lat	(character) Latitude name. The default is NULL, and we attempt to guess.
lon	(character) Longitude name. The default is NULL, and we attempt to guess.
geometry	(character) One of point (Default) or polygon.
group	(character) A grouping variable to perform grouping for polygons - doesn't apply for points

file	(character) A path and file name (e.g., myfile), with the .geojson file extension. Default writes to current working directory.
overwrite	(logical) Overwrite the file given in file with input. Default: TRUE. If this param is FALSE and the file already exists, we stop with error message.
precision	desired number of decimal places for the coordinates in the geojson file. Using fewer decimal places can decrease file sizes (at the cost of precision).
convert_wgs84	Should the input be converted to the <b>standard CRS for GeoJSON</b> (geographic coordinate reference system, using the WGS84 datum, with longitude and latitude units of decimal degrees; EPSG: 4326). Default is FALSE though this may change in a future package version. This will only work for sf or Spatial objects with a CRS already defined. If one is not defined but you know what it is, you may define it in the crs argument below.
crs	The CRS of the input if it is not already defined. This can be an epsg code as a four or five digit integer or a valid proj4 string. This argument will be ignored if convert_wgs84 is FALSE or the object already has a CRS.
object_name	(character) name to give to the TopoJSON object created. Default: "foo"
quantization	(numeric) quantization parameter, use this to quantize geometry prior to computing topology. Typical values are powers of ten (1e4, 1e5, ...), default is 0 to not perform quantization. For more information about quantization, see this by Mike Bostock <a href="https://stackoverflow.com/questions/18900022/topojson-quantization-vs-simplification/18921214#18921214">https://stackoverflow.com/questions/18900022/topojson-quantization-vs-simplification/18921214#18921214</a>
...	Further args passed on to internal functions. For Spatial* classes, data.frames, regular lists, and numerics, it is passed through to <code>rgdal::writeOGR()</code> . For sf classes, geo_lists and json classes, it is passed through to <code>jsonlite::toJSON()</code> .

### Details

Under the hood we simply wrap `geojson_write()`, then take the GeoJSON output of that operation, then convert to TopoJSON with `geo2topo()`, then write to disk.

Unfortunately, this process requires a number of round trips to disk, so speed ups will hopefully come soon.

Any intermediate geojson files are cleaned up (deleted).

### Value

A `topojson_write` class, with two elements:

- path: path to the file with the TopoJSON
- type: type of object the TopoJSON came from, e.g., `SpatialPoints`

### See Also

`geojson_write()`, `topojson_read()`

**Examples**

```

# From a data.frame
## to points
topojson_write(us_cities[1:2,], lat='lat', lon='long')

## to polygons
head(states)
topojson_write(input=states, lat='lat', lon='long',
  geometry='polygon', group="group")

##### cleanup
unlink("myfile.topojson")

## Not run:
## partial states dataset to points (defaults to points)
topojson_write(input=states, lat='lat', lon='long')

## Lists
### list of numeric pairs
poly <- list(c(-114.345703125,39.436192999314095),
  c(-114.345703125,43.45291889355468),
  c(-106.61132812499999,43.45291889355468),
  c(-106.61132812499999,39.436192999314095),
  c(-114.345703125,39.436192999314095))
topojson_write(poly, geometry = "polygon")

### named list
mylist <- list(list(latitude=30, longitude=120, marker="red"),
  list(latitude=30, longitude=130, marker="blue"))
topojson_write(mylist)

# From a numeric vector of length 2
## Expected order is lon, lat
vec <- c(-99.74, 32.45)
topojson_write(vec)

# from TopoJSON as JSON
x <- system.file("examples/point.json", package = "geojsonio")
tj <- structure(paste0(readLines(x), collapse = ""), class = "json")
topojson_write(tj, file = "my.topojson")

# convert GeoJSON to TopoJSON, then write
x <- '{"type": "LineString", "coordinates": [ [100.0, 0.0], [101.0, 1.0] ]}'
topojson_write(geo2topo(x), file = "out.topojson")

# SpatialPoints class
library(sp)
x <- c(1,2,3,4,5)
y <- c(3,2,5,1,4)
s <- SpatialPoints(cbind(x,y))
res <- topojson_write(s, file = "out.topojson")
readLines("out.topojson")

```

```

# SpatialPointsDataFrame class
s <- SpatialPointsDataFrame(cbind(x,y), mtcars[1:5,])
topojson_write(s, file = "out.topojson")
readLines("out.topojson")

# SpatialLines class
c1 <- cbind(c(1,2,3), c(3,2,2))
c2 <- cbind(c1[,1]+.05,c1[,2]+.05)
c3 <- cbind(c(1,2,3),c(1,1.5,1))
L1 <- Line(c1)
L2 <- Line(c2)
L3 <- Line(c3)
Ls1 <- Lines(list(L1), ID = "a")
Ls2 <- Lines(list(L2, L3), ID = "b")
s11 <- SpatialLines(list(Ls1))
s112 <- SpatialLines(list(Ls1, Ls2))
topojson_write(s11, file = "out.topojson")
readLines("out.topojson")

# SpatialLinesDataFrame class
dat <- data.frame(X = c("Blue", "Green"),
                 Y = c("Train", "Plane"),
                 Z = c("Road", "River"), row.names = c("a", "b"))
slidf <- SpatialLinesDataFrame(s112, dat)
topojson_write(slidf, file = "out.topojson")
readLines("out.topojson")

# SpatialPolygons class
library('sp')
poly1 <- Polygons(list(Polygon(cbind(c(-100,-90,-85,-100),
c(40,50,45,40)))), "1")
poly2 <- Polygons(list(Polygon(cbind(c(-90,-80,-75,-90),
c(30,40,35,30)))), "2")
sp_poly <- SpatialPolygons(list(poly1, poly2), 1:2)
res <- topojson_write(sp_poly, file = "out.topojson")
readLines(res$path)

# From SpatialPolygonsDataFrame class
sp_polydf <- as(sp_poly, "SpatialPolygonsDataFrame")
res <- topojson_write(sp_polydf, file = "out.topojson")
readLines(res$path)

# From SpatialGrid
x <- GridTopology(c(0,0), c(1,1), c(5,5))
y <- SpatialGrid(x)
topojson_write(y)

# From SpatialGrid
x <- GridTopology(c(0,0), c(1,1), c(5,5))
y <- SpatialGrid(x)
res <- topojson_write(y)
readLines(res$path)

```



```

# From SpatialGridDataFrame
sgdim <- c(3,4)
sg <- SpatialGrid(GridTopology(rep(0,2), rep(10,2), sgdim))
sgdf <- SpatialGridDataFrame(sg, data.frame(val = 1:12))
topojson_write(sgdf)

# From SpatialPixels
library("sp")
pixels <- suppressWarnings(SpatialPixels(SpatialPoints(us_cities[c("long", "lat")]))))
summary(pixels)
topojson_write(pixels)

# From SpatialPixelsDataFrame
library("sp")
pixelsdf <- suppressWarnings(
  SpatialPixelsDataFrame(points = canada_cities[c("long", "lat")], data = canada_cities)
)
topojson_write(pixelsdf)

# From SpatialRings
library(rgeos)
r1 <- Ring(cbind(x=c(1,1,2,2,1), y=c(1,2,2,1,1)), ID="1")
r2 <- Ring(cbind(x=c(1,1,2,2,1), y=c(1,2,2,1,1)), ID="2")
r1r2 <- SpatialRings(list(r1, r2))
class(r1r2)
topojson_write(r1r2)

# From SpatialRingsDataFrame
dat <- data.frame(id = c(1,2), value = 3:4)
r1r2df <- SpatialRingsDataFrame(r1r2, data = dat)
geojson_write(r1r2df)

# From SpatialCollections
library("sp")
library("rgeos")
poly1 <- Polygons(list(Polygon(cbind(c(-100,-90,-85,-100), c(40,50,45,40)))), "1")
poly2 <- Polygons(list(Polygon(cbind(c(-90,-80,-75,-90), c(30,40,35,30)))), "2")
poly <- SpatialPolygons(list(poly1, poly2), 1:2)
coordinates(us_cities) <- ~long+lat
dat <- SpatialCollections(points = us_cities, polygons = poly)
topojson_write(dat)

# From sf classes:
if (require(sf)) {
  file <- system.file("examples", "feature_collection.geojson", package = "geojsonio")
  sf_fc <- st_read(file, quiet = TRUE)
  topojson_write(sf_fc)
}

# Change the object name created
vec <- c(-99.74, 32.45)
x <- topojson_write(vec, object_name = "California")

```

```
readLines(x$path)
## End(Not run)
```

---

us\_cities

*This is the same data set from the maps library, named differently*

---

### **Description**

This database is of us cities of population greater than about 40,000. Also included are state capitals of any population size.

### **Format**

A list with 6 components, namely "name", "country.etc", "pop", "lat", "long", and "capital", containing the city name, the state abbreviation, approximate population (as at January 2006), latitude, longitude and capital status indication (0 for non-capital, 1 for capital, 2 for state capital).

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