Package 'maptiles'

November 21, 2022

Title Download and Display Map Tiles

Version 0.4.0

Description To create maps from tiles, 'maptiles' downloads, composes and displays tiles from a large number of providers (e.g. 'OpenStreetMap', 'Stamen', 'Esri', 'CARTO', or 'Thunderforest').

URL https://github.com/riatelab/maptiles/

BugReports https://github.com/riatelab/maptiles/issues/

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Depends R (>= 3.5.0)

Imports sf (>= 0.9-5), curl, graphics, grDevices, png, terra, tools, slippymath

Suggests covr, tinytest

Encoding UTF-8

RoxygenNote 7.2.2

NeedsCompilation no

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R topics documented:

get_credit *Get basemap tiles attribution*

Description

Get the attribution of map tiles.

Usage

```
get_credit(provider)
```

Arguments

provider	provider name

Examples

```
get_credit("OpenStreetMap")
```

get_tiles *Get basemap tiles from map servers*

Description

Get map tiles based on a spatial object extent. Maps can be fetched from various map servers.

Usage

```
get_tiles(
  x,
  provider = "OpenStreetMap",
  zoom,
  crop = FALSE,
  verbose = FALSE,
  apikey,
  cachedir,
  forceDownload = FALSE
)
```

Arguments

x	an sf, sfc, bbox, SpatRaster, SpatVerctor or SpatExtent object. If x is a SpatExtent it must express coordinates in lon/lat WGS84 (epsg:4326).
provider	the tile server from which to get the map. It can be a name (see Details for providers) or a named list like this one: `provider = list(src = "name of the source",q = "server address", sub = "subdomains", cit = "how to cite the tiles")` (see Examples).
zoom	the zoom level (see Details).
crop	TRUE if results should be cropped to the specified x extent, FALSE otherwise. If x is an sf object with one POINT, crop is set to FALSE.
verbose	if TRUE, tiles filepaths, zoom level and citation are displayed.
apikey	API key, needed for Thunderforest servers
cachedir	name of a directory used to cache tiles. If not set, tiles are cached in a tempdir folder.
forceDownload	if TRUE, existing cached tiles may be overwritten

Details

Zoom levels are described on the OpenStreetMap wiki: https://wiki.openstreetmap.org/wiki/Zoom_levels.

Providers:
"OpenStreetMap.MapnikBW", "OpenStreetMap", "OpenStreetMap.DE", "OpenStreetMap.France", "OpenStreetMap.HOT",
"Stamen.Toner", "Stamen.TonerBackground", "Stamen.TonerHybrid", "Stamen.TonerLines", "Stamen.TonerLabels", "Stamen.TonerLite", "Stamen.Watercolor", "Stamen.Terrain", "Stamen.TerrainBackground", "Stamen.TerrainLabels",
"Esri.WorldStreetMap", "Esri.DeLorme", "Esri.WorldTopoMap", "Esri.WorldImagery", "Esri.WorldTerrain", "Esri.WorldShadedRelief", "Esri.OceanBasemap", "Esri.NatGeoWorldMap", "Esri.WorldGrayCanvas",
"CartoDB.Positron", "CartoDB.PositronNoLabels", "CartoDB.PositronOnlyLabels", "CartoDB.DarkMatter", "CartoDB.DarkMatterNoLabels", "CartoDB.DarkMatterOnlyLabels", "CartoDB.Voyager", "CartoDB.VoyagerNoLabels", "CartoDB.VoyagerOnlyLabels",
"Thunderforest.OpenCycleMap", "Thunderforest.Transport", "Thunderforest.TransportDark", "Thunderforest.SpinalMap", "Thunderforest.Landscape", "Thunderforest.Outdoors", "Thunderforest.Pioneer", "Thunderforest.MobileAtlas", "Thunderforest.Neighbourhood",
"OpenTopoMap",
"HikeBike",
"Wikimedia",

Value

A SpatRaster is returned.

Examples

```
library(sf)
library(maptiles)
nc <- st_read(system.file("shape/nc.shp", package="sf"), quiet = TRUE)
nc_osm <- get_tiles(nc, crop = TRUE, zoom = 6)
plot_tiles(nc_osm)

# Download tiles from OSM, no labels
osm <- list(
  src = 'OSM',
  q = '"http://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png"',
  sub = c('a','b', 'c'),
  cit = '© OpenStreetMap contributors.'
)
# dowload tiles and compose raster (SpatRaster)
nc_osm2 <- get_tiles(x = nc, provider = osm, crop = TRUE,
                     zoom = 6, verbose = TRUE)
# Plot the tiles
plot_tiles(nc_osm2)
```

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maptiles *Download and Display Map Tiles*

Description

To create maps from tiles, maptiles downloads, composes and displays tiles from a large number of providers (e.g. OpenStreetMap, Stamen, Esri, CARTO, or Thunderforest).

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plot_tiles *Plot map tiles*

Description

Plot a SpatRaster object over a map. It can be used to plot tiles.

Usage

```
plot_tiles(x, adjust = FALSE, add = FALSE, ...)
```

Arguments

x	a SpatRaster object.
adjust	if TRUE, plot the raster without zoom-in or zoom-out in the graphic device: add margins if the raster is smaller than the graphic device, zoom-in if the raster is larger than the graphic device.
add	whether to add the layer to an existing plot (TRUE) or not (FALSE).
...	bgalpha, interpolate, or other arguments passed to be passed to plotRGB

Note

This function is a wrapper for plotRGB from the terra package.

Examples

```
library(sf)
library(maptiles)
nc <- st_read(system.file("shape/nc.shp", package="sf"), quiet = TRUE)
nc_osm <- get_tiles(nc, crop = TRUE)
plot_tiles(nc_osm)
```

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