

Package ‘leafpop’

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Type Package

Title Include Tables, Images and Graphs in Leaflet Pop-Ups

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Description Creates 'HTML' strings to embed tables, images or graphs in pop-ups of interactive maps created with packages like 'leaflet' or 'mapview'. Handles local images located on the file system or via remote URL. Handles graphs created with 'lattice' or 'ggplot2' as well as interactive plots created with 'htmlwidgets'.

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URL <https://github.com/r-spatial/leafpop>

BugReports <https://github.com/r-spatial/leafpop/issues>

Encoding UTF-8

Imports base64enc, brew, htmltools, htmlwidgets, sf, svglite, uuid

Suggests lattice, leaflet (>= 2.0.0), sp

RoxygenNote 7.1.1

NeedsCompilation no

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leafpop-package	<i>Include Tables, Images and Graphs in Leaflet Popups</i>
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Description

Include Tables, Images and Graphs in Leaflet Popups

Details

Creates HTML strings to embed tables, images or graphs in popups of interactive maps created with packages 'leaflet' or 'mapview'. Handles local paths to images on the file system or remote urls. Handles graphs created with 'base' graphics, 'lattice' or 'ggplot2' as well as interactive plots created with 'htmlwidgets'.

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addPopupGraphs	<i>Add graph/plot popups to leaflet layers.</i>
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Description

Add graph/plot popups to leaflet layers.

Usage

```
addPopupGraphs(map, graph, group, width = 300, height = 300, ...)
```

Arguments

map	the leaflet map to add the popups to.
graph	A list of lattice or ggplot2 objects. Needs to be a list, even for a single plot!
group	the map group to which the popups should be added.
width	the width of the graph(s) in pixels.
height	the height of the graph(s) in pixels.
...	additional arguments passed to addPopupImages .

Value

A leaflet map.

Examples

```
if (interactive()) {
  library(sf)
  library(leaflet)
  library(lattice)

  pt = data.frame(x = 174.764474, y = -36.877245)
  pt = st_as_sf(pt, coords = c("x", "y"), crs = 4326)

  p2 = levelplot(t(volcano), col.regions = terrain.colors(100))

  leaflet() %>%
    addTiles() %>%
    addCircleMarkers(data = pt, group = "pt") %>%
    addPopupGraphs(list(p2), group = "pt", width = 300, height = 400)
}
```

addPopupImages

Add image popups to leaflet layers.

Description

Add image popups to leaflet layers.

Usage

```
addPopupImages(
  map,
  image,
  group,
  width = NULL,
  height = NULL,
  tooltip = FALSE,
  ...
)
```

Arguments

map	the leaflet map to add the popups to.
image	A character vector of file path(s) or web-URL(s) to any sort of image file(s).
group	the map group to which the popups should be added.
width	the width of the image(s) in pixels.
height	the height of the image(s) in pixels.
tooltip	logical, whether to show image(s) as popup(s) (on click) or tooltip(s) (on hover).

... additional options passed on to the JavaScript creator function. See <https://leafletjs.com/reference-1.7.1.html#popup> & <https://leafletjs.com/reference-1.7.1.html#tooltip> for details.

Value

A leaflet map.

Examples

```
if (interactive()) {
  ## remote images -----
  ### one image
  library(leaflet)
  library(sf)
  library(lattice)

  pnt = st_as_sf(data.frame(x = 174.764474, y = -36.877245),
                 coords = c("x", "y"),
                 crs = 4326)

  img = "http://bit.ly/1TVwRiR"

  leaflet() %>%
    addTiles() %>%
    addCircleMarkers(data = pnt, group = "pnt") %>%
    addPopupImages(img, group = "pnt")

  ### multiple file (types)
  library(sf)
  images = c(img,
             "https://upload.wikimedia.org/wikipedia/commons/9/91/0cticons-mark-github.svg",
             "https://www.r-project.org/logo/Rlogo.png",
             "https://upload.wikimedia.org/wikipedia/commons/d/d6/MeanMonthlyP.gif")

  pt4 = data.frame(x = jitter(rep(174.764474, 4), factor = 0.01),
                  y = jitter(rep(-36.877245, 4), factor = 0.01))
  pt4 = st_as_sf(pt4, coords = c("x", "y"), crs = 4326)

  leaflet() %>%
    addTiles() %>%
    addMarkers(data = pt4, group = "points") %>%
    addPopupImages(images, group = "points", width = 400) # NOTE the gif animation

  ## local images -----
  pnt = st_as_sf(data.frame(x = 174.764474, y = -36.877245),
                 coords = c("x", "y"), crs = 4326)
  img = system.file("img", "Rlogo.png", package="png")
  leaflet() %>%
    addTiles() %>%
    addCircleMarkers(data = pnt, group = "pnt") %>%
    addPopupImages(img, group = "pnt")
}
```

```
}

```

popupGraph

Create HTML strings for popups

Description

Create HTML strings for popup graphs used as input for mapview or leaflet.

Create HTML strings for popup images used as input for mapview or leaflet.

Create HTML strings for popup tables used as input for mapview or leaflet. This optionally allows the user to include only a subset of feature attributes.

Usage

```
popupGraph(
  graphs,
  type = c("png", "svg", "html"),
  width = 300,
  height = 300,
  ...
)
```

```
popupImage(img, src = c("local", "remote"), embed = FALSE, ...)
```

```
popupTable(x, zcol, row.numbers = TRUE, feature.id = TRUE, className = NULL)
```

Arguments

graphs	A list of figures associated with x.
type	Output filetype, one of "png" (default), "svg" or "html".
width	popup width in pixels.
height	popup height in pixels.
...	further arguments passed on to underlying methods such as height and width.
img	A character vector of file path(s) or web-URL(s) to any sort of image file(s).
src	Whether the source is "local" (i.e. valid file path(s)) or "remote" (i.e. valid URL(s)).
embed	whether to embed the (local) images in the popup html as base64 encoded. Set this to TRUE if you want to save and share your map, unless you want render many images, then set to FALSE and make sure to copy ../graphs when copying the map to a different location.
x	A Spatial* object.
zcol	numeric or character vector indicating the columns included in the output popup table. If missing, all columns are displayed.

row.numbers	logical whether to include row numbers in the popup table.
feature.id	logical whether to add 'Feature ID' entry to popup table.
className	CSS class name(s) that can be used to style the table through additional css dependencies (see attachDependencies).

Details

Type `svg` uses native `svg` encoding via [readLines](#). height and width are set via `...` and passed on to [svg](#)

Type `png` embeds via "`<img src = ...`". height and width are set via `...` and passed on to [png](#)

Type `html` embeds via "`<iframe src = ...`". height and width are set directly in pixels.

Value

A list of HTML strings required to create popup graphs.

A list of HTML strings required to create popup graphs.

A list of HTML strings required to create feature popup tables.

Examples

```
if (interactive()) {
### example: svg -----

library(sp)
library(lattice)

data(meuse)
coordinates(meuse) = ~ x + y
proj4string(meuse) = CRS("+init=epsg:28992")
meuse = spTransform(meuse, CRS("+init=epsg:4326"))

## create plots with points colored according to feature id
library(lattice)
p = xyplot(copper ~ cadmium, data = meuse@data, col = "grey")
p = mget(rep("p", length(meuse)))

clr = rep("grey", length(meuse))
p = lapply(1:length(p), function(i) {
  clr[i] = "red"
  update(p[[i]], col = clr)
})

leaflet() %>%
  addTiles() %>%
  addCircleMarkers(data = meuse, popup = popupGraph(p, type = "svg"))

### example: png -----
pt = data.frame(x = 174.764474, y = -36.877245)
```

```

coordinates(pt) = ~ x + y
proj4string(pt) = "+init=epsg:4326"

p2 = levelplot(t(volcano), col.regions = terrain.colors(100))

leaflet() %>%
  addTiles() %>%
  addCircleMarkers(data = pt, popup = popupGraph(p2, width = 300, height = 400))

### example: html -----
leaflet() %>%
  addTiles() %>%
  addCircleMarkers(
    data = breweries91[, ],
    popup = popupGraph(
      leaflet() %>%
        addProviderTiles("Esri.WorldImagery") %>%
        addMarkers(data = breweries91[, ],
          popup = popupTable(breweries91[, ])),
      type = "html"
    )
  )
}

if (interactive()) {
  ## remote images -----
  ### one image
  library(sf)

  pnt = st_as_sf(data.frame(x = 174.764474, y = -36.877245),
    coords = c("x", "y"),
    crs = 4326)

  img = "http://bit.ly/1TVwRiR"

  leaflet() %>%
    addTiles() %>%
    addCircleMarkers(data = pnt, popup = popupImage(img, src = "remote"))

  ### multiple file (types)
  library(sp)
  images = c(img,
    "https://upload.wikimedia.org/wikipedia/commons/9/91/Octicons-mark-github.svg",
    "https://www.r-project.org/logo/Rlogo.png",
    "https://upload.wikimedia.org/wikipedia/commons/d/d6/MeanMonthlyP.gif")

  pt4 = data.frame(x = jitter(rep(174.764474, 4), factor = 0.01),
    y = jitter(rep(-36.877245, 4), factor = 0.01))
  coordinates(pt4) = ~ x + y
  proj4string(pt4) = "+init=epsg:4326"

  leaflet() %>%

```

```

addTiles() %>%
addMarkers(data = pt4, popup = popupImage(images)) # NOTE the gif animation

## local images ----
pnt = st_as_sf(data.frame(x = 174.764474, y = -36.877245),
                coords = c("x", "y"), crs = 4326)
img = system.file("img", "Rlogo.png", package="png")
leaflet() %>%
  addTiles() %>%
  addCircleMarkers(data = pnt, popup = popupImage(img))
}

library(leaflet)

leaflet() %>% addTiles() %>% addCircleMarkers(data = breweries91)

leaflet() %>%
  addTiles() %>%
  addCircleMarkers(data = breweries91,
                  popup = popupTable(breweries91))

leaflet() %>%
  addTiles() %>%
  addCircleMarkers(data = breweries91,
                  popup = popupTable(breweries91,
                                     zcol = c("brewery", "zipcode", "village"),
                                     feature.id = FALSE,
                                     row.numbers = FALSE))

## using a custom css to style the table
className = "my-popup"

css = list(
  "background" = "#ff00ff"
)

css = list(css)
names(css) = sprintf("table.%s", className)

evenodd = list("#ffff00", "#00ffff")
names(evenodd) = rep("background", 2)

evenodd = lapply(evenodd, function(i) {
  list("background" = i)
})

names(evenodd) = c(
  sprintf("table.%s tr:nth-child(even)", className)
  , sprintf("table.%s tr:nth-child(odd)", className)
)

lst = append(css, evenodd)

```

```
jnk = Map(function(...) do.call(htmltools::css, ...), lst)

dir = tempfile()
dir.create(dir)
fl = file.path(dir, "myCSS.css")

cat(
  sprintf(
    "%s{ \n %s\n}\n\n"
    , names(jnk)
    , jnk
  )
  , sep = ""
  , file = fl
)

mymap = leaflet() %>%
  addTiles() %>%
  addCircleMarkers(data = breweries91,
                  popup = popupTable(breweries91, className = className))

addMyCSSDependency = function() {
  list(
    htmltools::htmlDependency(
      name = "mycss"
      , version = "0.0.1"
      , src = dir
      , stylesheet = basename(fl)
    )
  )
}

mymap$dependencies = c(
  mymap$dependencies
  , addMyCSSDependency()
)

mymap
```

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