Package ‘leaflet’

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Type Package

Title Create Interactive Web Maps with the JavaScript 'Leaflet' Library

Version 2.1.1

Description Create and customize interactive maps using the 'Leaflet' JavaScript library and the 'htmlwidgets' package. These maps can be used directly from the R console, from 'RStudio', in Shiny applications and R Markdown documents.

License GPL-3

URL https://rstudio.github.io/leaflet/

BugReports https://github.com/rstudio/leaflet/issues

Depends R (>= 3.1.0)

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addAwesomeMarkers

Description
Add Awesome Markers

Usage
addAwesomeMarkers(
  map,
  lng = NULL,
  lat = NULL,
  layerId = NULL,
  group = NULL,
  icon = NULL,
  popup = NULL,
  popupOptions = NULL,
  label = NULL,
  labelOptions = NULL,
  options = markerOptions(),
  clusterOptions = NULL,
  clusterId = NULL,
  data = getMapData(map)
)
Arguments

map the map to add awesome Markers to.

lng a numeric vector of longitudes, or a one-sided formula of the form ~x where x is a variable in data; by default (if not explicitly provided), it will be automatically inferred from data by looking for a column named lng, long, or longitude (case-insensitively)

lat a vector of latitudes or a formula (similar to the lng argument; the names lat and latitude are used when guessing the latitude column from data)

layerId the layer id

group the name of the group the newly created layers should belong to (for clearGroup and addLayersControl purposes). Human-friendly group names are permitted—they need not be short, identifier-style names. Any number of layers and even different types of layers (e.g. markers and polygons) can share the same group name.

icon the icon(s) for markers;

popup a character vector of the HTML content for the popups (you are recommended to escape the text using htmlEscape() for security reasons)

popupOptions A Vector of popupOptions to provide popups

label a character vector of the HTML content for the labels

labelOptions A Vector of labelOptions to provide label options for each label. Default NULL

options a list of extra options for tile layers, popups, paths (circles, rectangles, polygons, ...), or other map elements

clusterOptions if not NULL, markers will be clustered using Leaflet.markercluster; you can use markerClusterOptions() to specify marker cluster options

clusterId the id for the marker cluster layer

data the data object from which the argument values are derived; by default, it is the data object provided to leaflet() initially, but can be overridden

Description

Add graphics elements and layers to the map widget.

Usage

addControl(
  map,
  html,
  position = c("topleft", "topright", "bottomleft", "bottomright"),
  layerId = NULL,
  ...)

Graphics elements and layers
```r
addControl

className = "info legend",
data = getMapData(map)
)

addTiles(
map,
urlTemplate = "https://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png",
attribution = NULL,
layerId = NULL,
group = NULL,
options = tileOptions(),
data = getMapData(map)
)

addWMSTiles(
map,
baseUrl,
layerId = NULL,
group = NULL,
options = WMSTileOptions(),
attribution = NULL,
layers = "",
data = getMapData(map)
)

addPopups(
map,
lng = NULL,
lat = NULL,
popup,
layerId = NULL,
group = NULL,
options = popupOptions(),
data = getMapData(map)
)

addMarkers(
map,
lng = NULL,
lat = NULL,
layerId = NULL,
group = NULL,
icon = NULL,
popup = NULL,
popupOptions = NULL,
label = NULL,
labelOptions = NULL,
options = markerOptions(),
```
clusterOptions = NULL,
clusterId = NULL,
data = getMapData(map)
)

addLabelOnlyMarkers(
  map,
lng = NULL,
lat = NULL,
layerId = NULL,
group = NULL,
icon = NULL,
label = NULL,
labelOptions = NULL,
options = markerOptions(),
clusterOptions = NULL,
clusterId = NULL,
data = getMapData(map)
)

addCircleMarkers(
  map,
lng = NULL,
lat = NULL,
radius = 10,
layerId = NULL,
group = NULL,
stroke = TRUE,
color = "#03F",
weight = 5,
opacity = 0.5,
fill = TRUE,
fillColor = color,
fillOpacity = 0.2,
dashArray = NULL,
popup = NULL,
popupOptions = NULL,
label = NULL,
labelOptions = NULL,
options = pathOptions(),
clusterOptions = NULL,
clusterId = NULL,
data = getMapData(map)
)

highlightOptions(
  stroke = NULL,
color = NULL,
addControl

   weight = NULL,
   opacity = NULL,
   fill = NULL,
   fillColor = NULL,
   fillOpacity = NULL,
   dashArray = NULL,
   bringToFront = NULL,
   sendToBack = NULL
)

addCircles(
   map,
   lng = NULL,
   lat = NULL,
   radius = 10,
   layerId = NULL,
   group = NULL,
   stroke = TRUE,
   color = "#03F",
   weight = 5,
   opacity = 0.5,
   fill = TRUE,
   fillColor = color,
   fillOpacity = 0.2,
   dashArray = NULL,
   popup = NULL,
   popupOptions = NULL,
   label = NULL,
   labelOptions = NULL,
   options = pathOptions(),
   highlightOptions = NULL,
   data = getMapData(map)
)

addPolylines(
   map,
   lng = NULL,
   lat = NULL,
   layerId = NULL,
   group = NULL,
   stroke = TRUE,
   color = "#03F",
   weight = 5,
   opacity = 0.5,
   fill = FALSE,
   fillColor = color,
   fillOpacity = 0.2,
   dashArray = NULL,
addControl

smoothFactor = 1,
noClip = FALSE,
popup = NULL,
popupOptions = NULL,
label = NULL,
labelOptions = NULL,
options = pathOptions(),
highlightOptions = NULL,
data = getMapData(map)
}

addRectangles(
  map,
lng1, 
lat1, 
lng2, 
lat2, 
layerId = NULL,
group = NULL,
stroke = TRUE,
color = "#03F",
weight = 5,
opacity = 0.5,
fill = TRUE,
fillColor = color,
fillOpacity = 0.2,
dashArray = NULL,
smoothFactor = 1,
noClip = FALSE,
popup = NULL,
popupOptions = NULL,
label = NULL,
labelOptions = NULL,
options = pathOptions(),
highlightOptions = NULL,
data = getMapData(map)
}

addPolygons(
  map,
lng = NULL,
lat = NULL,
layerId = NULL,
group = NULL,
stroke = TRUE,
color = "#03F",
weight = 5,
opacity = 0.5,
addControl

```r
addControl(
  fill = TRUE,
  fillColor = color,
  fillOpacity = 0.2,
  dashArray = NULL,
  smoothFactor = 1,
  noClip = FALSE,
  popup = NULL,
  popupOptions = NULL,
  label = NULL,
  labelOptions = NULL,
  options = pathOptions(),
  highlightOptions = NULL,
  data = getMapData(map)
)
```

```r
addGeoJSON(
  map,
  geojson,
  layerId = NULL,
  group = NULL,
  stroke = TRUE,
  color = "#03F",
  weight = 5,
  opacity = 0.5,
  fill = TRUE,
  fillColor = color,
  fillOpacity = 0.2,
  dashArray = NULL,
  smoothFactor = 1,
  noClip = FALSE,
  options = pathOptions(),
  data = getMapData(map)
)
```

```r
addTopoJSON(
  map,
  topojson,
  layerId = NULL,
  group = NULL,
  stroke = TRUE,
  color = "#03F",
  weight = 5,
  opacity = 0.5,
  fill = TRUE,
  fillColor = color,
  fillOpacity = 0.2,
  dashArray = NULL,
  smoothFactor = 1,
  noClip = FALSE,
  options = pathOptions(),
  data = getMapData(map)
)
```
Arguments

map 
html 
position 
layerId 
className 
data 
urlTemplate 
attribution 
group 
options 
baseUrl 
layers 
lng 
lat 
popup 
icon 
popupOptions 
label 
labelOptions 
clusterOptions 

map 
a map widget object created from `leaflet()`
html 
position 
layerId 
className 
data 
urlTemplate 
attribution 
group 
options 
baseUrl 
layers 
lng 
lat 
popup 
icon 
popupOptions 
label 
labelOptions 
clusterOptions 

Nothing
addControl

clusterId  the id for the marker cluster layer
radius    a numeric vector of radii for the circles; it can also be a one-sided formula, in which case the radius values are derived from the data (units in meters for circles, and pixels for circle markers)
stroke    whether to draw stroke along the path (e.g. the borders of polygons or circles)
color     stroke color
weight    stroke width in pixels
opacity   stroke opacity (or layer opacity for tile layers)
fill      whether to fill the path with color (e.g. filling on polygons or circles)
fillColor fill color
fillOpacity  fill opacity
dashArray a string that defines the stroke dash pattern
bringToFront Whether the shape should be brought to front on hover.
sendToBack whether the shape should be sent to back on mouse out.
highlightOptions Options for highlighting the shape on mouse over.
smoothFactor how much to simplify the polyline on each zoom level (more means better performance and less accurate representation)
noClip     whether to disable polyline clipping
lng1, lat1, lng2, lat2 latitudes and longitudes of the south-west and north-east corners of rectangles
geojson   a GeoJSON list, or character vector of length 1
topojson  a TopoJSON list, or character vector of length 1

Value
the new map object

Functions

• addControl: Add arbitrary HTML controls to the map
• addTiles: Add a tile layer to the map
• addWMSTiles: Add a WMS tile layer to the map
• addPopups: Add popups to the map
• addMarkers: Add markers to the map
• addLabelOnlyMarkers: Add Label only markers to the map
• addCircleMarkers: Add circle markers to the map
• highlightOptions: Options to highlight a shape on hover
• addCircles: Add circles to the map
• addPolylines: Add polylines to the map
• addRectangles: Add rectangles to the map
• addPolygons: Add polygons to the map
• addGeoJSON: Add GeoJSON layers to the map
• addTopoJSON: Add TopoJSON layers to the map
References

The Leaflet API documentation: https://leafletjs.com/reference-1.3.4.html

See Also

tileOptions, WMSTileOptions, popupOptions, markerOptions, pathOptions

---

**addGraticule**

Add a Graticule on the map see https://github.com/turban/Leaflet.Graticule

**Description**

Add a Graticule on the map see https://github.com/turban/Leaflet.Graticule

**Usage**

```r
addGraticule(
  map,
  interval = 20,
  sphere = FALSE,
  style = list(color = "#333", weight = 1),
  layerId = NULL,
  group = NULL,
  options = pathOptions(pointerEvents = "none", clickable = FALSE)
)
```

**Arguments**

- `map`: a map widget object
- `interval`: The spacing in map units between horizontal and vertical lines.
- `sphere`: boolean. Default FALSE
- `style`: path options for the generated lines. See https://leafletjs.com/reference-1.3.4.html#path-option
- `layerId`: the layer id
- `group`: the name of the group this layer belongs to.
- `options`: the path options for the graticule layer

**Examples**

```r
leaf <- leaflet() %>%
  addTiles() %>%
  addGraticule()
leaf
```
addLayersControl  

Add UI controls to switch layers on and off

Description

Uses Leaflet’s built-in layers control feature to allow users to choose one of several base layers, and to choose any number of overlay layers to view.

Usage

addLayersControl(
  map,
  baseGroups = character(0),
  overlayGroups = character(0),
  position = c("topright", "bottomright", "bottomleft", "topleft"),
  options = layersControlOptions(),
  data = getMapData(map)
)

layersControlOptions(collapsed = TRUE, autoZIndex = TRUE, ...)

removeLayersControl(map)

Arguments

map the map to add the layers control to
baseGroups character vector where each element is the name of a group. The user will be able to choose one base group (only) at a time. This is most commonly used for mostly-opaque tile layers.
overlayGroups character vector where each element is the name of a group. The user can turn each overlay group on or off independently.
position position of control: "topleft", "topright", "bottomleft", or "bottomright"
options a list of additional options, intended to be provided by a call to layersControlOptions
data the data object from which the argument values are derived; by default, it is the data object provided to leaflet() initially, but can be overridden
collapsed if TRUE (the default), the layers control will be rendered as an icon that expands when hovered over. Set to FALSE to have the layers control always appear in its expanded state.
autoZIndex if TRUE, the control will automatically maintain the z-order of its various groups as overlays are switched on and off.
... other options for layersControlOptions()
Examples

```r
leaflet() %>%
  addTiles(group = "OpenStreetMap") %>%
  addProviderTiles("Stamen.Toner", group = "Toner by Stamen") %>%
  addMarkers(runif(20, -75, -74), runif(20, 41, 42), group = "Markers") %>%
  addLayersControl(
    baseGroups = c("OpenStreetMap", "Toner by Stamen"),
    overlayGroups = c("Markers")
  )
```

### addLegend

*Add a color legend to a map*

#### Description

When a color palette function is used in a map (e.g. `colorNumeric`), a color legend can be automatically derived from the palette function. You can also manually specify the colors and labels for the legend.

#### Usage

```r
addLegend(
  map,  
  position = c("topright", "bottomright", "bottomleft", "topleft"),
  pal,  
  values,
  na.label = "NA",
  bins = 7,
  colors,
  opacity = 0.5,
  labels = NULL,
  labFormat = labelFormat(),
  title = NULL,
  className = "info legend",
  layerId = NULL,
  group = NULL,
  data = getMapData(map)
)
```

```r
labelFormat(
  prefix = "",
  suffix = "",
  between = " &ndash; ",
  digits = 3,
```
Arguments

map a map widget object created from `leaflet()
position the position of the legend
pal the color palette function, generated from `colorNumeric()`, `colorBin()`, `colorQuantile()`, or `colorFactor()`
values the values used to generate colors from the palette function
na.label the legend label for NAs in values
bins an approximate number of tick-marks on the color gradient for the `colorNumeric` palette if it is of length one; you can also provide a numeric vector as the predefined breaks (equally spaced)
colors a vector of (HTML) colors to be used in the legend if `pal` is not provided
opacity the opacity of colors
labels a vector of text labels in the legend corresponding to `colors`.labFormat a function to format the labels derived from `pal` and `values` (see Details below to know what `labelFormat()` returns by default; you can either use the helper function `labelFormat()`, or write your own function)
title the legend title
className extra CSS classes to append to the control, space separated
layerId the ID of the legend; subsequent calls to `addLegend` or `addControl` with the same `layerId` will replace this legend. The ID can also be used with `removeControl`.
group group name of a leaflet layer group. Supplying this value will tie the legend to the leaflet layer group with this name and will auto add/remove the legend as the group is added/removed, for example via `layerControl`. You will need to set the group when you add a layer (e.g. `addPolygons`) and supply the same name here.
data the data object from which the argument values are derived; by default, it is the data object provided to `leaflet()` initially, but can be overridden
prefix a prefix of legend labels
suffix a suffix of legend labels
between a separator between `x[i]` and `x[i+1]` in legend labels (by default, it is a dash)
digits the number of digits of numeric values in labels
big.mark the thousand separator
transform a function to transform the label value
Details

The `labFormat` argument is a function that takes the argument type = c("numeric", "bin", "quantile", "factor"), plus, arguments for different types of color palettes. For the `colorNumeric()` palette, `labFormat` takes a single argument, which is the breaks of the numeric vector, and returns a character vector of the same length. For `colorBin()`, `labFormat` also takes a vector of breaks of length n but should return a character vector of length n - 1, with the i-th element representing the interval c(x[i], x[i + 1]). For `colorQuantile`, `labFormat` takes two arguments, the quantiles and the associated probabilities (each of length n), and should return a character vector of length n - 1 (similar to the `colorBin()` palette). For `colorFactor()`, `labFormat` takes one argument, the unique values of the factor, and should return a character vector of the same length.

By default, `labFormat` is basically `format(scientific = FALSE, big.mark = "",")` for the numeric palette, as.character() for the factor palette, and a function to return labels of the form `’x[i] - x[i + 1]’` for bin and quantile palettes (in the case of quantile palettes, x is the probabilities instead of the values of breaks).

Examples

```r
# !formatR
library(leaflet)

# a manual legend
leaflet() %>% addTiles() %>% addLegend(
  position = "bottomright",
  colors = rgb(t(col2rgb(palette())) / 255),
  labels = palette(), opacity = 1,
  title = "An Obvious Legend"
)

# an automatic legend derived from the color palette
df <- local({
  n <- 300; x <- rnorm(n); y <- rnorm(n)
  z <- sqrt(x ^ 2 + y ^ 2); z[sample(n, 10)] <- NA
data.frame(x, y, z)
})
pal <- colorNumeric("OrRd", df$z)
leaflet(df) %>%
  addFiles() %>%
  addCircleMarkers(~x, ~y, color = ~pal(z), group = "circles") %>%
  addLegend(pal = pal, values = ~z, group = "circles", position = "bottomleft") %>%
  addLayersControl(overlayGroups = c("circles"))

# format legend labels
df <- data.frame(x = rnorm(100), y = rexp(100, 2), z = runif(100))
pal <- colorBin("PuOr", df$z, bins = c(0, .1, .4, .9, 1))
leaflet(df) %>%
  addFiles() %>%
  addCircleMarkers(~x, ~y, color = ~pal(z), group = "circles") %>%
  addLegend(pal = pal, values = ~z, group = "circles", position = "bottomleft") %>%
  addLayersControl(overlayGroups = c("circles"))
```
leaflet(df) %>%
  addTiles() %>%
  addCircleMarkers(~x, ~y, color = ~pal(z), group = "circles") %>%
  addLegend(pal = pal, values = ~z, labFormat = labelFormat(
    prefix = "(" , suffix = ")%", between = ", " ,
    transform = function(x) 100 * x
  ), group = "circles", position = "bottomleft") %>%
  addLayersControl(overlayGroups = c("circles"))

--

addMapPane

Add additional panes to leaflet map to control layer order

Description

map panes can be created by supplying a name and a zIndex to control layer ordering. We recommend a zIndex value between 400 (the default overlay pane) and 500 (the default shadow pane). You can then use this pane to render overlays (points, lines, polygons) by setting the pane argument in leafletOptions. This will give you control over the order of the layers, e.g. points always on top of polygons. If two layers are provided to the same pane, overlay will be determined by order of adding. See examples below. See https://leafletjs.com/reference-1.3.4.html#map-pane for details.

If the error "Cannot read property 'appendChild' of undefined" occurs, make sure the pane being used for display has already been added to the map.

Usage

addMapPane(map, name, zIndex)

Arguments

map A leaflet or mapview object.
name The name of the new pane (refer to this in leafletOptions.
zIndex The zIndex of the pane. Panes with higher index are rendered above panes with lower indices.

Examples

rand_lng <- function(n = 10) rnorm(n, -93.65, .01)
rand_lat <- function(n = 10) rnorm(n, 42.0285, .01)

random_data <- data.frame(
  lng = rand_lng(50),
  lat = rand_lat(50),
  radius = runif(50, 50, 150),
  circleId = paste0("circle ", 1:50),
  lineId = paste0("circle ", 1:50)
)
# display circles (zIndex: 420) above the lines (zIndex: 410), even when added first
leaflet() %>%
  addTiles() %>%
  # move the center to Snedecor Hall
  setView(-93.65, 42.0285, zoom = 14) %>%
  addMapPane("ames_lines", zIndex = 410) %>% # shown below ames_circles
  addMapPane("ames_circles", zIndex = 420) %>% # shown above ames_lines
  # points above polygons
  addCircles(
    data = random_data, ~lng, ~lat, radius = ~radius, popup = ~circleId,
    options = pathOptions(pane = "ames_circles")
  ) %>%
  # lines in 'ames_lines' pane
  addPolylines(
    data = random_data, ~lng, ~lat, color = "#F00", weight = 20,
    options = pathOptions(pane = "ames_lines")
  )

# same example but circles (zIndex: 420) are below the lines (zIndex: 430)
leaflet() %>%
  addTiles() %>%
  # move the center to Snedecor Hall
  setView(-93.65, 42.0285, zoom = 14) %>%
  addMapPane("ames_lines", zIndex = 430) %>% # shown below ames_circles
  addMapPane("ames_circles", zIndex = 420) %>% # shown above ames_lines
  # points above polygons
  addCircles(
    data = random_data, ~lng, ~lat, radius = ~radius, popup = ~circleId,
    options = pathOptions(pane = "ames_circles")
  ) %>%
  # lines in 'ames_lines' pane
  addPolylines(
    data = random_data, ~lng, ~lat, color = "#F00", weight = 20,
    options = pathOptions(pane = "ames_lines")
  )

---

**addMeasure**

_add a measure control to the map._

**Description**

Add a measure control to the map.

**Usage**

```r
addMeasure(
  map,
)```


```r
position = "topright",
primaryLengthUnit = "feet",
secondaryLengthUnit = NULL,
primaryAreaUnit = "acres",
secondaryAreaUnit = NULL,
activeColor = "#ABE67E",
completedColor = "#C8F2BE",
popupOptions = list(className = "leaflet-measure-resultpopup", autoPanPadding = c(10, 10)),
captureZIndex = 10000,
localization = "en",
decPoint = ".",
thousandsSep = ","
)

Arguments

dropMeasure

map a map widget object

dropMeasure

position standard Leaflet control position options.

primaryLengthUnit, secondaryLengthUnit
units used to display length results. secondaryLengthUnit is optional. Valid values are "feet", "meters", "miles", and "kilometers".

primaryAreaUnit, secondaryAreaUnit
units used to display area results. secondaryAreaUnit is optional. Valid values are "acres", "hectares", "sqmeters", and "sqmiles".

activeColor base color to use for map features rendered while actively performing a measurement. Value should be a color represented as a hexadecimal string.

completedColor base color to use for features generated from a completed measurement. Value should be a color represented as a hexadecimal string.

popupOptions list of options applied to the popup of the resulting measure feature. Properties may be any standard Leaflet popup options.

captureZIndex Z-index of the marker used to capture measure clicks. Set this value higher than the z-index of all other map layers to disable click events on other layers while a measurement is active.

localization Locale to translate displayed text. Available locales include en (default), cn, de, es, fr, it, nl, pt, pt_BR, pt_PT, ru, and tr

decPoint Decimal point used when displaying measurements. If not specified, values are defined by the localization.

thousandsSep Thousands separator used when displaying measurements. If not specified, values are defined by the localization.

Value

modified map
Examples

```r
leaf <- leaflet() %>%
  addTiles() %>%
  # central park
  fitBounds(-73.9, 40.75, -73.95, 40.8) %>%
  addMeasure()

leaf

# customizing
leaf %>% addMeasure(
  position = "bottomleft",
  primaryLengthUnit = "meters",
  primaryAreaUnit = "sqmeters",
  activeColor = "#3D535D",
  completedColor = "#7D4479",
  localization = "de"
)
```

addMiniMap

Add a minimap to the Map

https://github.com/Norkart/Leaflet-MiniMap

Description

Add a minimap to the Map

https://github.com/Norkart/Leaflet-MiniMap

Usage

```r
addMiniMap(
  map,
  position = "bottomright",
  width = 150,
  height = 150,
  collapsedWidth = 19,
  collapsedHeight = 19,
  zoomLevelOffset = -5,
  zoomLevelFixed = FALSE,
  centerFixed = FALSE,
  zoomAnimation = FALSE,
  toggleDisplay = FALSE,
  autoToggleDisplay = FALSE,
  minimized = FALSE,
  aimingRectOptions = list(color = "#ff7800", weight = 1, clickable = FALSE),
  shadowRectOptions = list(color = "#000000", weight = 1, clickable = FALSE, opacity = 0, fillOpacity = 0),
  strings = list(hideText = "Hide MiniMap", showText = "Show MiniMap"),
)```
tiles = NULL,
mapOptions = list()
)

Arguments

map          a map widget object
position     The standard Leaflet.Control position parameter, used like all the other controls. Defaults to "bottomright".
width        The width of the minimap in pixels. Defaults to 150.
height       The height of the minimap in pixels. Defaults to 150.
collapsedWidth The width of the toggle marker and the minimap when collapsed, in pixels. Defaults to 19.
collapsedHeight The height of the toggle marker and the minimap when collapsed, in pixels. Defaults to 19.
zoomLevelOffset The offset applied to the zoom in the minimap compared to the zoom of the main map. Can be positive or negative, defaults to -5.
zoomLevelFixed Overrides the offset to apply a fixed zoom level to the minimap regardless of the main map zoom. Set it to any valid zoom level, if unset zoomLevelOffset is used instead.
centerFixed   Applies a fixed position to the minimap regardless of the main map’s view / position. Prevents panning the minimap, but does allow zooming (both in the minimap and the main map). If the minimap is zoomed, it will always zoom around the centerFixed point. You can pass in a LatLng-equivalent object. Defaults to false.
zoomAnimation Sets whether the minimap should have an animated zoom. (Will cause it to lag a bit after the movement of the main map.) Defaults to false.
toggleDisplay Sets whether the minimap should have a button to minimise it. Defaults to false.
autoToggleDisplay Sets whether the minimap should hide automatically, if the parent map bounds does not fit within the minimap bounds. Especially useful when 'zoomLevelFixed' is set.
minimized     Sets whether the minimap should start in a minimized position.
aimingRectOptions Sets the style of the aiming rectangle by passing in a Path.Options (https://leafletjs.com/reference-1.3.4.html#path-options) object. (Clickable will always be overridden and set to false.)
shadowRectOptions Sets the style of the aiming shadow rectangle by passing in a Path.Options (https://leafletjs.com/reference-1.3.4.html#path-option) object. (Clickable will always be overridden and set to false.)
strings       Overrides the default strings allowing for translation.
tiles         URL for tiles or one of the pre-defined providers.
mapOptions    Sets Leaflet options for the MiniMap map. It does not override the MiniMap default map options but extends them.
See Also

providers

Examples

```r
leaf <- leaflet() %>%
  addTiles() %>%
  addMiniMap()
leaf
```

addProviderTiles

Add a tile layer from a known map provider

Description

Add a tile layer from a known map provider

Usage

```r
addProviderTiles(
  map,
  provider,
  layerId = NULL,
  group = NULL,
  options = providerTileOptions()
)
```

providerTileOptions(
  errorTileUrl = "",
  noWrap = FALSE,
  opacity = NULL,
  zIndex = NULL,
  updateWhenIdle = NULL,
  detectRetina = FALSE,
  ...
)
```

Arguments

- `map` the map to add the tile layer to
- `provider` the name of the provider (see https://leaflet-extras.github.io/leaflet-providers/preview/ and https://github.com/leaflet-extras/leaflet-providers)
- `layerId` the layer id to assign
- `group` the name of the group the newly created layers should belong to (for clearGroup and addLayersControl purposes). Human-friendly group names are permitted—they need not be short, identifier-style names.
addRasterImage

options tile options
errorTileUrl, noWrap, opacity, zIndex, updateWhenIdle, detectRetina
the tile layer options; see https://leafletjs.com/reference-1.3.4.html#
tilelayer

... named parameters to add to the options

Value

modified map object

Examples

leaflet() %>%
  addProviderTiles("Stamen.Watercolor") %>%
  addProviderTiles("Stamen.TonerHybrid")

---

addRasterImage Add a raster image as a layer

Description

Create an image overlay from a RasterLayer object. This is only suitable for small to medium sized rasters, as the entire image will be embedded into the HTML page (or passed over the websocket in a Shiny context).

Usage

```r
addRasterImage(
  map,
  x,
  colors = if (raster::is.factor(x)) "Set1" else "Spectral",
  opacity = 1,
  attribution = NULL,
  layerId = NULL,
  group = NULL,
  project = TRUE,
  method = c("auto", "bilinear", "ngb"),
  maxBytes = 4 * 1024 * 1024,
  data = getMapData(map)
)
```

projectRasterForLeaflet(x, method)
Arguments

map  
a map widget object

x  
a RasterLayer object—see raster

colors  
the color palette (see colorNumeric) or function to use to color the raster values (hint: if providing a function, set na.color to "#00000000" to make NA areas transparent)

opacity  
the base opacity of the raster, expressed from 0 to 1

attribution  
the HTML string to show as the attribution for this layer

layerId  
the layer id

group  
the name of the group this raster image should belong to (see the same parameter under addTiles)

project  
if TRUE, automatically project x to the map projection expected by Leaflet (EPSG:3857); if FALSE, it's the caller's responsibility to ensure that x is already projected, and that extent(x) is expressed in WGS84 latitude/longitude coordinates

method  
the method used for computing values of the new, projected raster image. "bilinear" (the default) is appropriate for continuous data, "ngb" - nearest neighbor - is appropriate for categorical data. Ignored if project = FALSE. See projectRaster for details.

maxBytes  
the maximum number of bytes to allow for the projected image (before base64 encoding); defaults to 4MB.

data  
the data object from which the argument values are derived; by default, it is the data object provided to leaflet() initially, but can be overridden

Details

The maxBytes parameter serves to prevent you from accidentally embedding an excessively large amount of data into your htmlwidget. This value is compared to the size of the final compressed image (after the raster has been projected, colored, and PNG encoded, but before base64 encoding is applied). Set maxBytes to Inf to disable this check, but be aware that very large rasters may not only make your map a large download but also may cause the browser to become slow or unresponsive.

By default, the addRasterImage function will project the RasterLayer x to EPSG:3857 using the raster package's projectRaster function. This can be a time-consuming operation for even moderately sized rasters. Upgrading the raster package to 2.4 or later will provide a large speedup versus previous versions. If you are repeatedly adding a particular raster to your Leaflet maps, you can perform the projection ahead of time using projectRasterForLeaflet(), and call addRasterImage with project = FALSE.

Examples

library(raster)

r <- raster(xmn = -2.8, xmx = -2.79, ymn = 54.04, ymx = 54.05, nrows = 30, ncols = 30)
values(r) <- matrix(1:900, nrow(r), ncol(r), byrow = TRUE)

r <- CRS("+init=epsg:4326")
if (requireNamespace("rgdal")) {
    leaflet() %>% addTiles() %>%
    addRasterImage(r, colors = "Spectral", opacity = 0.8)
}

---

### addScaleBar

**Add or remove a scale bar**

**Description**

Uses Leaflet’s built-in scale bar feature to add a scale bar.

**Usage**

```r
addScaleBar(
    map, 
    position = c("topright", "bottomright", "bottomleft", "topleft"),
    options = scaleBarOptions()
)
```

```r
descBarOptions(
    maxWidth = 100,
    metric = TRUE,
    imperial = TRUE,
    updateWhenIdle = TRUE
)
```

```r
removeScaleBar(map)
```

**Arguments**

- **map**: the map to add the scale bar to
- **position**: position of control: "topleft", "topright", "bottomleft", or "bottomright"
- **options**: a list of additional options, intended to be provided by a call to `scaleBarOptions`
- **maxWidth**: maximum width of the control in pixels (default 100)
- **metric**: if TRUE (the default), show a scale bar in metric units (m/km)
- **imperial**: if TRUE (the default), show a scale bar in imperial units (ft/mi)
- **updateWhenIdle**: if FALSE (the default), the scale bar is always up-to-date (updated on move). If TRUE, the control is updated on moveend.
Examples

```r
leaflet() %>%
  addTiles() %>%
  addScaleBar()
```

---

**addSimpleGraticule**  
*Add a simple Graticule on the map see* [https://github.com/ablakey/Leaflet.SimpleGraticule](https://github.com/ablakey/Leaflet.SimpleGraticule)

**Description**

Add a simple Graticule on the map see [https://github.com/ablakey/Leaflet.SimpleGraticule](https://github.com/ablakey/Leaflet.SimpleGraticule)

**Usage**

```r
addSimpleGraticule(
  map,
  interval = 20,
  showOriginLabel = TRUE,
  redraw = "move",
  hidden = FALSE,
  zoomIntervals = list(),
  layerId = NULL,
  group = NULL
)
```

**Arguments**

- **map**: a map widget object
- **interval**: The spacing in map units between horizontal and vertical lines.
- **showOriginLabel**: true Whether or not to show `(0,0)` at the origin.
- **redraw**: on which map event to redraw the graticule. On move is default but moveend can be smoother.
- **hidden**: hide on start
- **zoomIntervals**: use different intervals in different zoom levels. If not specified, all zoom levels use value in interval option.
- **layerId**: the layer id
- **group**: the name of the group this layer belongs to.
Examples

```r
leaflet() %>%
  addTiles() %>%
  addSimpleGraticule()
```

---

`addTerminator`  
Add a daylight layer on top of the map

Description


Usage

```r
addTerminator(
  map,
  resolution = 2,
  time = NULL,
  layerId = NULL,
  group = NULL,
  options = pathOptions(pointerEvents = "none", clickable = FALSE)
)
```

Arguments

- `map`  
a map widget object
- `resolution`  
the step size at which the terminator points are computed. The step size is 1 degree/resolution, i.e. higher resolution values have smaller step sizes and more points in the polygon. The default value is 2.
- `time`  
Time
- `layerId`  
the layer id
- `group`  
the name of the group this layer belongs to.
- `options`  
the path options for the daynight layer

Examples

```r
leaf <- leaflet() %>%
  addTiles() %>%
  addTerminator()
leaf
```
atlStorms2005  Atlantic Ocean storms 2005

Description

Atlantic Ocean storms 2005

Format

sp::SpatialLinesDataFrame

Details

This dataset contains storm tracks for selected storms in the Atlantic Ocean basin for the year 2005

awesomeIconList  Make awesome-icon set

Description

Make awesome-icon set

Usage

awesomeIconList(...)

Arguments

...  icons created from makeAwesomeIcon()

Examples

iconSet <- awesomeIconList(
  home = makeAwesomeIcon(icon = "Home", library = "fa"),
  flag = makeAwesomeIcon(icon = "flag", library = "fa")
)

iconSet[c("home", "flag")]

awesomeIcons

Create a list of awesome icon data see https://github.com/lennardv2/Leaflet.awesome-markers

Description

An icon can be represented as a list of the form list(icon, library,...). This function is vectorized over its arguments to create a list of icon data. Shorter argument values will be re-cycled. NULL values for these arguments will be ignored.

Usage

```r
awesomeIcons(
  icon = "home",
  library = "glyphicon",
  markerColor = "blue",
  iconColor = "white",
  spin = FALSE,
  extraClasses = NULL,
  squareMarker = FALSE,
  iconRotate = 0,
  fontFamily = "monospace",
  text = NULL
)
```

Arguments

- **icon**: Name of the icon
- **library**: Which icon library. Default "glyphicon", other possible values are "fa" (fontawesome) or "ion" (ionicons).
- **markerColor**: Possible values are "red", "darkred", "lightred", "orange", "beige", "green", "darkgreen", "lightgreen", "blue", "darkblue", "lightblue", "purple", "darkpurple", "pink", "cadetblue", "white", "gray", "lightgray", "black"
- **iconColor**: The color to use for the icon itself. Use any CSS-valid color (hex, rgba, etc.) or a named web color.
- **spin**: If TRUE, make the icon spin (only works when library = "fa")
- **extraClasses**: Additional css classes to include on the icon.
- **squareMarker**: Whether to use a square marker.
- **iconRotate**: Rotate the icon by a given angle.
- **fontFamily**: Used when text option is specified.
- **text**: Use this text string instead of an icon. argument of addAwesomeMarkers().

Value

A list of awesome-icon data that can be passed to the icon
Selected breweries in Franconia

Description
Selected breweries in Franconia (zip code starting with 91...)

Format
sp::SpatialPointsDataFrame

Details
This dataset contains selected breweries in Franconia. It is a subset of a larger database that was compiled by students at the University of Marburg for a seminar called "The Geography of Beer, sustainability in the food industry"

Color mapping

Description
Conveniently maps data values (numeric or factor/character) to colors according to a given palette, which can be provided in a variety of formats.

Usage
colorNumeric(
  palette,
  domain,
  na.color = "#808080",
  alpha = FALSE,
  reverse = FALSE
)
colorBin(
  palette,
  domain,
  bins = 7,
  pretty = TRUE,
  na.color = "#808080",
  alpha = FALSE,
  reverse = FALSE,
  right = FALSE
)
Arguments

palette The colors or color function that values will be mapped to.
domain The possible values that can be mapped.

For `colorNumeric` and `colorBin`, this can be a simple numeric range (e.g. `c(0, 100)`); `colorQuantile` needs representative numeric data; and `colorFactor` needs categorical data.

If `NULL`, then whenever the resulting color function is called, the x value will represent the domain. This implies that if the function is invoked multiple times, the encoding between values and colors may not be consistent; if consistency is needed, you must provide a non-NULL domain.

na.color The color to return for NA values. Note that `na.color = NA` is valid.
alpha Whether alpha channels should be respected or ignored. If `TRUE` then colors without explicit alpha information will be treated as fully opaque.
reverse Whether the colors (or color function) in palette should be used in reverse order. For example, if the default order of a palette goes from blue to green, then `reverse = TRUE` will result in the colors going from green to blue.
bins Either a numeric vector of two or more unique cut points or a single number (greater than or equal to 2) giving the number of intervals into which the domain values are to be cut.

pretty Whether to use the function `pretty()` to generate the bins when the argument `bins` is a single number. When `pretty = TRUE`, the actual number of bins may not be the number of bins you specified. When `pretty = FALSE`, `seq()` is used to generate the bins and the breaks may not be "pretty".
right parameter supplied to cut. See Details

n Number of equal-size quantiles desired. For more precise control, use the probs argument instead.

probs See quantile. If provided, the n argument is ignored.

levels An alternate way of specifying levels; if specified, domain is ignored.

ordered If TRUE and domain needs to be coerced to a factor, treat it as already in the correct order

Details

colorNumeric is a simple linear mapping from continuous numeric data to an interpolated palette. colorBin also maps continuous numeric data, but performs binning based on value (see the cut function). colorBin defaults for the cut function are include.lowest = TRUE and right = FALSE. colorQuantile similarly bins numeric data, but via the quantile function.

colorFactor maps factors to colors. If the palette is discrete and has a different number of colors than the number of factors, interpolation is used.

The palette argument can be any of the following:

1. A character vector of RGB or named colors. Examples: palette(), c("#000000", "#0000FF", "#FFFFFF"), topo.colors(10)
2. The name of an RColorBrewer palette, e.g. "BuPu" or "Greens".
3. The full name of a viridis palette: "viridis", "magma", "inferno", or "plasma".
4. A function that receives a single value between 0 and 1 and returns a color. Examples: colorRamp(c("#000000", "#FFFFFF"), interpolate = "spline").

Value

A function that takes a single parameter x; when called with a vector of numbers (except for colorFactor, which expects factors/characters), #RRGGBB color strings are returned (unless alpha = TRUE in which case #RRGGBBAA may also be possible).

Examples

pal <- colorBin("Greens", domain = 0:100)
pal(runif(10, 60, 100))

if (interactive()) {
  # Exponential distribution, mapped continuously
  previewColors(colorNumeric("Blues", domain = NULL), sort(rexp(16)))
  # Exponential distribution, mapped by interval
  previewColors(colorBin("Blues", domain = NULL, bins = 4), sort(rexp(16)))
  # Exponential distribution, mapped by quantile
  previewColors(colorQuantile("Blues", domain = NULL), sort(rexp(16)))

  # Categorical data; by default, the values being colored span the gamut...
  previewColors(colorFactor("RdYlBu", domain = NULL), LETTERS[1:5])
  # ...unless the data is a factor, without droplevels...
createLeafletMap

Legacy functions

Description

These functions are provided for backwards compatibility with the first iteration of the leaflet bindings (https://github.com/jcheng5/leaflet-shiny).

Usage

createLeafletMap(session, outputId)

leafletMap(
  outputId,
  width,
  height,
  initialTileLayer = "https://{s}.tile.openstreetmap.org/{z}/{x}/{y}.png",
  initialTileLayerAttribution = NULL,
  options = NULL
)

Arguments

session, outputId
  Deprecated
width, height, initialTileLayer, initialTileLayerAttribution, options
  Deprecated

derivePoints

Given a data object and lng/lat arguments (which may be NULL [meaning infer from data], formula [which should be evaluated with respect to the data], or vector data [which should be used as-is]) return a lng/lat data frame.

Description

Given a data object and lng/lat arguments (which may be NULL [meaning infer from data], formula [which should be evaluated with respect to the data], or vector data [which should be used as-is]) return a lng/lat data frame.
Usage

```r
derivePoints(
    data,
    lng = NULL,
    lat = NULL,
    missingLng = missing(lng),
    missingLat = missing(lat),
    funcName = "f"
)
```

Arguments

- **data**: map data
- **lng**: longitude
- **lat**: latitude
- **missingLng**: whether lng is missing
- **missingLat**: whether lat is missing
- **funcName**: Name of calling function (for logging)

---

**derivePolygons**

*Given a data object and lng/lat arguments (which may be NULL [meaning infer from data], formula [which should be evaluated with respect to the data], or vector data [which should be used as-is]) return a spatial object*

---

Description

Given a data object and lng/lat arguments (which may be NULL [meaning infer from data], formula [which should be evaluated with respect to the data], or vector data [which should be used as-is]) return a spatial object

Usage

```r
derivePolygons(
    data,
    lng = NULL,
    lat = NULL,
    missingLng = missing(lng),
    missingLat = missing(lat),
    funcName = "f"
)
```
Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>data</td>
<td>map data</td>
</tr>
<tr>
<td>lng</td>
<td>longitude</td>
</tr>
<tr>
<td>lat</td>
<td>latitude</td>
</tr>
<tr>
<td>missingLng</td>
<td>whether lng is missing</td>
</tr>
<tr>
<td>missingLat</td>
<td>whether lat is missing</td>
</tr>
<tr>
<td>funcName</td>
<td>Name of calling function (for logging)</td>
</tr>
</tbody>
</table>

dispatch  

Extension points for plugins

Description

Extension points for plugins

Usage

```r
dispatch(
  map,
  funcName,
  leaflet = stop(paste(funcName, "requires a map proxy object")),
  leaflet_proxy = stop(paste(funcName, "does not support map proxy objects"))
)
```

```r
invokeMethod(map, data, method, ...)
```

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>map</td>
<td>a map object, as returned from leaflet or leafletProxy</td>
</tr>
<tr>
<td>funcName</td>
<td>the name of the function that the user called that caused this dispatch call; for error message purposes</td>
</tr>
<tr>
<td>leaflet</td>
<td>an action to be performed if the map is from leaflet</td>
</tr>
<tr>
<td>leaflet_proxy</td>
<td>an action to be performed if the map is from leafletProxy</td>
</tr>
<tr>
<td>data</td>
<td>a data object that will be used when evaluating formulas in ...</td>
</tr>
<tr>
<td>method</td>
<td>the name of the JavaScript method to invoke</td>
</tr>
<tr>
<td>...</td>
<td>unnamed arguments to be passed to the JavaScript method</td>
</tr>
</tbody>
</table>

Value

dispatch returns the value of leaflet or leaflet_proxy, or an error. invokeMethod returns the map object that was passed in, possibly modified.
**easyButtonState**

Create an easyButton state

**Description**

Create an easyButton state

Creates an easy button.

Add a EasyButton on the map see [https://github.com/CliffCloud/Leaflet.EasyButton](https://github.com/CliffCloud/Leaflet.EasyButton)

Add a easyButton bar on the map see [https://github.com/CliffCloud/Leaflet.EasyButton](https://github.com/CliffCloud/Leaflet.EasyButton)

**Usage**

```r
easyButtonState(stateName, icon, title, onClick)

easyButton(
  icon = NULL,
  title = NULL,
  onClick = NULL,
  position = "topleft",
  id = NULL,
  states = NULL
)
```

addEasyButton(map, button)

addEasyButtonBar(map, ..., position = "topleft", id = NULL)

**Arguments**

- **stateName**: a unique name for the state
- **icon**: the button icon
- **title**: text to show on hover
- **onClick**: the action to take
- **position**: topleft|topright|bottomleft|bottomright
- **id**: id for the button
- **states**: the states
- **map**: a map widget object
- **button**: the button object created with `easyButton`
- **...**: a list of buttons created with `easyButton`

**Functions**

- `easyButtonState`: state of an easyButton.
- `addEasyButton`: add an EasyButton to the map
- `addEasyButtonBar`: add an EasyButton to the map
evalFormula

Evaluate list members that are formulae, using the map data as the environment (if provided, otherwise the formula environment)

Description

Evaluate list members that are formulae, using the map data as the environment (if provided, otherwise the formula environment)

Usage

evalFormula(list, data)

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>list</td>
<td>with members as formulae</td>
</tr>
<tr>
<td>data</td>
<td>map data</td>
</tr>
</tbody>
</table>
expandLimits

Notifies the map of new latitude/longitude of items of interest on the map

Description
Notifies the map of new latitude/longitude of items of interest on the map

Usage
expandLimits(map, lat, lng)

Arguments
- map: map object
- lat: vector of latitudes
- lng: vector of longitudes

expandLimitsBbox

Same as expandLimits, but takes a polygon (that presumably has a bbox attr) rather than lat/lng.

Description
Same as expandLimits, but takes a polygon (that presumably has a bbox attr) rather than lat/lng.

Usage
expandLimitsBbox(map, poly)

Arguments
- map: map object
- poly: A spatial object representing a polygon.
filterNULL

---

**filterNULL**

*remove NULL elements from a list*

---

**Description**

remove NULL elements from a list

**Usage**

`filterNULL(x)`

**Arguments**

- `x` A list whose NULL elements will be filtered

---

gadmCHE

*Administrative borders of Switzerland (level 1)*

---

**Description**

Administrative borders of Switzerland (level 1)

**Format**

`sp::SpatialPolygonsDataFrame`

**Details**

This dataset comes from [https://gadm.org](https://gadm.org). It was downloaded using `getData`.

**Source**

[https://gadm.org](https://gadm.org)
getMapData

returns the map’s data

Description

returns the map’s data

Usage

groupOptions(groupOptions)

Arguments

map the map

groupOptions

Set options on layer groups

Description

Change options on layer groups. Currently the only option is to control what zoom levels a layer group will be displayed at. The zoomLevels option is not compatible with layers control; do not both assign a group to zoom levels and use it with addLayersControl.

Usage

groupOptions(map, group, zoomLevels = NULL)

Arguments

map the map to modify

group character vector of one or more group names to set options on

Examples

pal <- colorQuantile("YlOrRd", quakes$mag)

leaflet() %>%
  # Basic markers
  addTiles(group = "basic") %>%
  addMarkers(data = quakes, group = "basic") %>%
  # When zoomed in, we’ll show circles at the base of each marker whose
  # radius and color reflect the magnitude
  addProviderTiles(providers$Stamen.TonerLite, group = "detail") %>>
addCircleMarkers(data = quakes, group = "detail", fillOpacity = 0.5, radius = ~mag * 5, color = ~pal(mag), stroke = FALSE) ##
# Set the detail group to only appear when zoomed in
# groupOptions("detail", zoomLevels = 7:18)

iconList

### Make icon set

**Description**

Make icon set

**Usage**

iconList(...)

**Arguments**

... icons created from `makeIcon()`

**Examples**

iconSet <- iconList(
  red = makeIcon("leaf-red.png", iconWidth = 32, iconHeight = 32),
  green = makeIcon("leaf-green.png", iconWidth = 32, iconHeight = 32)
)

iconSet[c("red", "green", "red")]

icons

### Create a list of icon data

**Description**

An icon can be represented as a list of the form `list(iconUrl, iconSize, ...)`. This function is vectorized over its arguments to create a list of icon data. Shorter argument values will be re-cycled. NULL values for these arguments will be ignored.
Usage

```
icons(
  iconUrl = NULL,
  iconRetinaUrl = NULL,
  iconWidth = NULL,
  iconHeight = NULL,
  iconAnchorX = NULL,
  iconAnchorY = NULL,
  shadowUrl = NULL,
  shadowRetinaUrl = NULL,
  shadowWidth = NULL,
  shadowHeight = NULL,
  shadowAnchorX = NULL,
  shadowAnchorY = NULL,
  popupAnchorX = NULL,
  popupAnchorY = NULL,
  className = NULL
)
```

Arguments

- `iconUrl` the URL or file path to the icon image
- `iconRetinaUrl` the URL or file path to a retina sized version of the icon image
- `iconWidth`, `iconHeight` size of the icon image in pixels
- `iconAnchorX`, `iconAnchorY` the coordinates of the "tip" of the icon (relative to its top left corner, i.e. the top left corner means `iconAnchorX = 0` and `iconAnchorY = 0`), and the icon will be aligned so that this point is at the marker's geographical location
- `shadowUrl` the URL or file path to the icon shadow image
- `shadowRetinaUrl` the URL or file path to the retina sized version of the icon shadow image
- `shadowWidth`, `shadowHeight` size of the shadow image in pixels
- `shadowAnchorX`, `shadowAnchorY` the coordinates of the "tip" of the shadow
- `popupAnchorX`, `popupAnchorY` the coordinates of the point from which popups will "open", relative to the icon anchor
- `className` a custom class name to assign to both icon and shadow images

Value

A list of icon data that can be passed to the `icon` argument of `addMarkers()`.
Examples

library(leaflet)

# adapted from https://leafletjs.com/examples/custom-icons.html

c IconData <- data.frame(
  lat = c(rnorm(10, 0), rnorm(10, 1), rnorm(10, 2)),
  lng = c(rnorm(10, 0), rnorm(10, 3), rnorm(10, 6)),
  group = rep(sort(c("green", "red", "orange")), each = 10),
  stringsAsFactors = FALSE
)

leaflet() %>% addMarkers(
  data = IconData,
  icon = ~ icons(
    iconUrl = sprintf("https://leafletjs.com/examples/custom-icons/leaf-%s.png", group),
    shadowUrl = "https://leafletjs.com/examples/custom-icons/leaf-shadow.png",
    iconWidth = 38, iconHeight = 95, shadowWidth = 50, shadowHeight = 64,
    iconAnchorX = 22, iconAnchorY = 94, shadowAnchorX = 4, shadowAnchorY = 62,
    popupAnchorX = -3, popupAnchorY = -76
  )
)

# use point symbols from base R graphics as icons
pchIcons <- function(pch = 0:14, width = 30, height = 30, ...) {
  n <- length(pch)
  files <- character(n)
  # create a sequence of png images
  for (i in seq_len(n)) {
    f <- tempfile(fileext = ".png")
    png(f, width = width, height = height, bg = "transparent")
    par(mar = c(0, 0, 0, 0))
    plot.new()
    points(.5, .5, pch = pch[i], cex = min(width, height) / 8, ...)
    dev.off()
    files[i] <- f
  }
  files
}

iconData <- matrix(rnorm(500), ncol = 2)
res <- kmeans(iconData, 10)
iconData <- cbind(iconData, res$cluster)
colnames(iconData) <- c("lat", "lng", "group")
iconData <- as.data.frame(iconData)

# 10 random point shapes for the 10 clusters in iconData
shapes <- sample(0:14, 10)
iconFiles <- pchIcons(shapes, 40, 40, col = "steelblue", lwd = 2)
# note the data has 250 rows, and there are 10 icons in iconFiles; they are
# connected by the 'group' variable: the i-th row of iconData uses the
# group[i]-th icon in the icon list
leaflet() %>% addMarkers(
  data = iconData,
  icon = ~ icons(
    iconUrl = iconFiles[group],
    popupAnchorX = 20, popupAnchorY = 0
  ),
  popup = ~ sprintf(
    "lat = %.4f, long = %.4f, group = %s, pch = %s", lat, lng, group, shapes[group]
  )
)
unlink(iconFiles) # clean up the tmp png files that have been embedded

---

**leaflet**

*Create a Leaflet map widget*

**Description**

This function creates a Leaflet map widget using **htmlwidgets**. The widget can be rendered on HTML pages generated from R Markdown, Shiny, or other applications.

**Usage**

```r
leaflet(
  data = NULL,
  width = NULL,
  height = NULL,
  padding = 0,
  options = leafletOptions(),
  elementId = NULL,
  sizingPolicy = leafletSizingPolicy(padding = padding)
)

leafletOptions(
  minZoom = NULL,
  maxZoom = NULL,
  crs = leafletCRS(),
  worldCopyJump = NULL,
  preferCanvas = NULL,
  ...
)

leafletCRS(
```

---

**leaflet**

Create a Leaflet map widget

**Description**

This function creates a Leaflet map widget using **htmlwidgets**. The widget can be rendered on HTML pages generated from R Markdown, Shiny, or other applications.

**Usage**

```r
leaflet(
  data = NULL,
  width = NULL,
  height = NULL,
  padding = 0,
  options = leafletOptions(),
  elementId = NULL,
  sizingPolicy = leafletSizingPolicy(padding = padding)
)

leafletOptions(
  minZoom = NULL,
  maxZoom = NULL,
  crs = leafletCRS(),
  worldCopyJump = NULL,
  preferCanvas = NULL,
  ...
)

leafletCRS(
```
leaflet

```r
leaflet(
  crsClass = "L.CRS.EPSG3857",
  code = NULL,
  proj4def = NULL,
  projectedBounds = NULL,
  origin = NULL,
  transformation = NULL,
  scales = NULL,
  resolutions = NULL,
  bounds = NULL,
  tileSize = NULL
)
```

Arguments

- **data**: a data object. Currently supported objects are matrices, data frames, spatial objects from the `sp` package (SpatialPoints, SpatialPointsDataFrame, Polygon, Polygons, SpatialPolygons, SpatialPolygonsDataFrame, Line, Lines, SpatialLines, and SpatialLinesDataFrame), and spatial data frames from the `sf` package.
- **width**: the width of the map
- **height**: the height of the map
- **padding**: the padding of the map
- **options**: the map options
- **elementId**: Use an explicit element ID for the widget (rather than an automatically generated one).
- **sizingPolicy**: htmlwidgets sizing policy object. Defaults to `leafletSizingPolicy()`.
- **minZoom**: Minimum zoom level of the map. Overrides any minZoom set on map layers.
- **maxZoom**: Maximum zoom level of the map. This overrides any maxZoom set on map layers.
- **crs**: Coordinate Reference System to use. Don’t change this if you’re not sure what it means.
- **worldCopyJump**: With this option enabled, the map tracks when you pan to another "copy" of the world and seamlessly jumps to the original one so that all overlays like markers and vector layers are still visible.
- **preferCanvas**: Whether leaflet.js Paths should be rendered on a Canvas renderer.
- **...**: other options used for leaflet.js map creation.
- **crsClass**: One of L.CRS.EPSG3857, L.CRS.EPSG4326, L.CRS.EPSG3395, L.CRS.Simple, L.Proj.CRS
- **code**: CRS identifier
- **proj4def**: Proj4 string
- **projectedBounds**: DEPRECATED! Use the bounds argument.
- **origin**: Origin in projected coordinates, if set overrides transformation option.
- **transformation**: to use when transforming projected coordinates into pixel coordinates
scales  Scale factors (pixels per projection unit, for example pixels/meter) for zoom levels; specify either scales or resolutions, not both.

resolutions  factors (projection units per pixel, for example meters/pixel) for zoom levels; specify either scales or resolutions, not both.

bounds  Bounds of the CRS, in projected coordinates; if defined, Proj4Leaflet will use this in the getSize method, otherwise defaulting to Leaflet’s default CRS size.

tileSize  DEPRECATED! Specify the tilesize in the tileOptions() argument.

Details

The data argument is only needed if you are going to reference variables in this object later in map layers. For example, data can be a data frame containing columns latitude and longitude, then we may add a circle layer to the map by leaflet(data) %>% addCircles(lat = ~latitude, lng = ~longitude), where the variables in the formulae will be evaluated in the data.

Value

A HTML widget object, on which we can add graphics layers using %>% (see examples).

Functions

- leafletOptions: Options for map creation
- leafletCRS: class to create a custom CRS

See Also

leafletCRS for creating a custom CRS.

See https://leafletjs.com/reference-1.3.4.html#map-option for details and more options.

Examples

# !formatR
library(leaflet)
m <- leaflet() %>% addTiles()
m # a map with the default OSM tile layer

# set bounds
m %>% fitBounds(0, 40, 10, 50)

# move the center to Snedecor Hall
m <- m %>% setView(-93.65, 42.0285, zoom = 17)
m

# popup
m %>% addPopups(-93.65, 42.0285, “Here is the <b>Department of Statistics</b>, ISU”)
rand_lng <- function(n = 10) rnorm(n, -93.65, .01)
rand_lat <- function(n = 10) rnorm(n, 42.0285, .01)

# use automatic bounds derived from lng/lat data
m <- m %>% clearBounds()

# popup
m %>% addPopups(rand_lng(), rand_lat(), "Random popups")

# marker
m %>% addMarkers(rand_lng(), rand_lat())
m %>% addMarkers(
  rand_lng(), rand_lat(), popup = paste("A random letter", sample(LETTERS, 10))
)

Rlogo <- file.path(R.home("doc"), "html", "logo.jpg")
m %>% addMarkers(
  174.7690922, -36.8523071, icon = list(
    iconUrl = Rlogo, iconSize = c(100, 76)
  ), popup = "R was born here!"
)
m %>% addMarkers(rnorm(30, 175), rnorm(30, -37), icon = list(
  iconUrl = Rlogo, iconSize = c(25, 19)
))

# circle (units in metres)
m %>% addCircles(rand_lng(50), rand_lat(50), radius = runif(50, 50, 150))

# circle marker (units in pixels)
m %>% addCircleMarkers(rand_lng(50), rand_lat(50), color = "#ff0000")
m %>% addCircleMarkers(rand_lng(100), rand_lat(100), radius = runif(100, 5, 15))

# rectangle
m %>% addRectangles(
  rand_lng(), rand_lat(), rand_lng(), rand_lat(),
  color = "red", fill = FALSE, dashArray = "5,5", weight = 3
)

# polyline
m %>% addPolylines(rand_lng(50), rand_lat(50))

# polygon
m %>% addPolygons(rand_lng(), rand_lat(), layerId = "foo")

# geoJSON
seattle_geojson <- list(
  type = "Feature",
  geometry = list(
    type = "MultiPolygon",
    coordinates = list(list(list(
      c(-122.36075812146, 47.6759920119894),
      c(-122.360781646764, 47.6668890126755),
      c(-122.360782108665, 47.6592874248973),
      c(-122.366199035722, 47.6576254522105),
      c(-122.364582509469, 47.6576254522105),
    )),
    c(-122.36075812146, 47.6759920119894),
    c(-122.360781646764, 47.6668890126755),
    c(-122.360782108665, 47.6592874248973),
    c(-122.366199035722, 47.6576254522105),
    c(-122.364582509469, 47.6576254522105),
  )
)
leaflet
c(-122.363887331445, 47.6569107302038),
c(-122.36605528129, 47.6538418253251),
c(-122.36086157644, 47.6535254473167),
c(-122.36866581103, 47.653312675176),
c(-122.365256540691, 47.6541872926348),
c(-122.364442114483, 47.6551892850798),
c(-122.366077719797, 47.6560733960866),
c(-122.3688463838, 47.6579742346694),
c(-122.37011515943, 47.658873808334),
c(-122.3729567029, 47.6604356102328),
c(-122.37381369088, 47.66052362063),
c(-122.375522972109, 47.6606413027949),
c(-122.376079703095, 47.6608793094619),
c(-122.376206315662, 47.6609242364243),
c(-122.377610811371, 47.6606160735197),
c(-122.379857378879, 47.6610306942278),
c(-122.382454873022, 47.6627496239169),
c(-122.385357955057, 47.6638573778241),
c(-122.386007328104, 47.664065692386),
c(-122.38716831506, 47.6654326177161),
c(-122.387802656231, 47.6661492860294),
c(-122.388108244121, 47.666458739202),
c(-122.388177800763, 47.6663784774359),
c(-122.390582858689, 47.6665072251861),
c(-122.390793942299, 47.6659699214511),
c(-122.391507906234, 47.6659200946229),
c(-122.392883050767, 47.6664166747017),
c(-122.392842710144, 47.6678696739431),
c(-122.392904778401, 47.670901021624),
c(-122.39296705153, 47.6732047491624),
c(-122.39300803496, 47.6759322346603),
c(-122.3766645305, 47.675986300663),
c(-122.376486363943, 47.6759891899754),
c(-122.366078869215, 47.6759641734893),
c(-122.36075812146, 47.6759920119894)
))
),
properties = list(
  name = "Ballard",
  population = 48000,
  # You can inline styles if you want
  style = list(
    fillColor = "yellow",
    weight = 2,
    color = "#000000"
  ),
),
id = "ballard"
)
m %>% setView(-122.36075812146, 47.6759920119894, zoom = 13) %>% addGeoJSON(seattle_geojson)

# use the Dark Matter layer from CartoDB
leaflet() %>% addTiles("https://(s).basemaps.cartocdn.com/dark_all/(z)/(x)/(y).png,
  attribution = paste(
    "&copy; <a href="https://openstreetmap.org">OpenStreetMap</a> contributors",
    "&copy; <a href="https://cartodb.com/attributions">CartoDB</a>"
  )
) %>% setView(-122.36, 47.67, zoom = 10)

# provide a data frame to leaflet()
categories <- LETTERS[1:10]
df <- data.frame(
  lat = rand_lat(100), lng = rand_lng(100), size = runif(100, 5, 20),
  category = factor(sample(categories, 100, replace = TRUE), levels = categories),
  value = rnorm(100)
)
m <- leaflet(df) %>% addTiles()
m %>% addCircleMarkers(~lng, ~lat, radius = ~size)
m %>% addCircleMarkers(~lng, ~lat, radius = runif(100, 4, 10), color = c("red"))

# Discrete colors using the "RdYlBu" colorbrewer palette, mapped to categories
RdYlBu <- colorFactor("RdYlBu", domain = categories)
m %>% addCircleMarkers(~lng, ~lat, radius = ~size, color = ~RdYlBu(category), fillOpacity = 0.5)

# Continuous colors using the "Greens" colorbrewer palette, mapped to value
greens <- colorNumeric("Greens", domain = NULL)
m %>% addCircleMarkers(~lng, ~lat, radius = ~size, color = ~greens(value), fillOpacity = 0.5)

---

**Objects imported from other packages**

**Description**

These objects are imported from other packages. Follow the links to their documentation.

- **htmlwidgets** [JS]
- **magrittr** `%>%`

---

**Various leaflet dependency functions for use in downstream packages**

**Description**

Various leaflet dependency functions for use in downstream packages
Usage

leafletDependencies

Format

An object of class list of length 13.

Examples

## Not run:
addBootStrap <- function(map) {
  map$dependencies <- c(map$dependencies, leafletDependencies$bootstrap())
  map
}
## End(Not run)

leafletOutput

Wrapper functions for using leaflet in shiny

Description

Use leafletOutput() to create a UI element, and renderLeaflet() to render the map widget.

Usage

leafletOutput(outputId, width = "100\%", height = 400)

renderLeaflet(expr, env = parent.frame(), quoted = FALSE)

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>outputId</td>
<td>output variable to read from</td>
</tr>
<tr>
<td>width, height</td>
<td>the width and height of the map (see shinyWidgetOutput)</td>
</tr>
<tr>
<td>expr</td>
<td>An expression that generates an HTML widget (or a promise of an HTML widget).</td>
</tr>
<tr>
<td>env</td>
<td>The environment in which to evaluate expr.</td>
</tr>
<tr>
<td>quoted</td>
<td>Is expr a quoted expression (with quote())? This is useful if you want to save an expression in a variable.</td>
</tr>
</tbody>
</table>
Examples

```r
# !formatR
library(shiny)
app <- shinyApp(
  ui = fluidPage(leafletOutput('myMap'),
  server = function(input, output) {
    map = leaflet() %>% addTiles() %>% setView(-93.65, 42.0285, zoom = 17)
    output$myMap = renderLeaflet(map)
  }
)

if (interactive()) app
```

---

**leafletProxy**

*Send commands to a Leaflet instance in a Shiny app*

---

**Description**

Creates a map-like object that can be used to customize and control a map that has already been rendered. For use in Shiny apps and Shiny docs only.

**Usage**

```r
leafletProxy(
  mapId,
  session = shiny::getDefaultReactiveDomain(),
  data = NULL,
  deferUntilFlush = TRUE
)
```

**Arguments**

- **mapId** single-element character vector indicating the output ID of the map to modify (if invoked from a Shiny module, the namespace will be added automatically)
- **session** the Shiny session object to which the map belongs; usually the default value will suffice
- **data** a data object; see Details under the `leaflet` help topic
- **deferUntilFlush** indicates whether actions performed against this instance should be carried out right away, or whether they should be held until after the next time all of the outputs are updated; defaults to TRUE
Details

Normally, you create a Leaflet map using the `leaflet` function. This creates an in-memory representation of a map that you can customize using functions like `addPolygons` and `setView`. Such a map can be printed at the R console, included in an R Markdown document, or rendered as a Shiny output.

In the case of Shiny, you may want to further customize a map, even after it is rendered to an output. At this point, the in-memory representation of the map is long gone, and the user’s web browser has already realized the Leaflet map instance.

This is where `leafletProxy` comes in. It returns an object that can stand in for the usual Leaflet map object. The usual map functions like `addPolygons` and `setView` can be called, and instead of customizing an in-memory representation, these commands will execute on the live Leaflet map instance.

Examples

```r
library(shiny)

ui <- fluidPage(
  leafletOutput("map1")
)

map <- leaflet() %>% addCircleMarkers(
  lng = runif(10),
  lat = runif(10),
  layerId = paste0("marker", 1:10))

server <- function(input, output, session) {
  output$map1 <- renderLeaflet(map)

  observeEvent(input$map1_marker_click, {
    leafletProxy("map1", session) %>%
      removeMarker(input$map1_marker_click$id)
  })
}

app <- shinyApp(ui, server)
if (interactive()) app
```

---

`leafletSizingPolicy`  
**Leaflet sizing policy**

Description

Sizing policy used withing leaflet htmlwidgets. All arguments are passed directly to `htmlwidgets::sizingPolicy`
Usage

```r
leafletSizingPolicy(
  defaultWidth = "100%",
  defaultHeight = 400,
  padding = 0,
  browser.fill = TRUE,
  ...
)
```

Arguments

- `defaultWidth`: defaults to "100%" of the available width
- `defaultHeight`: defaults to 400px tall
- `padding`: defaults to 0px
- `browser.fill`: defaults to TRUE
- `...`: all other arguments supplied to `htmlwidgets::sizingPolicy`

Value

An `htmlwidgets::sizingPolicy` object

---

**makeAwesomeIcon**  
*Make Awesome Icon*

Description

Make Awesome Icon

Usage

```r
makeAwesomeIcon(
  icon = "home",
  library = "glyphicon",
  markerColor = "blue",
  iconColor = "white",
  spin = FALSE,
  extraClasses = NULL,
  squareMarker = FALSE,
  iconRotate = 0,
  fontFamily = "monospace",
  text = NULL
)
```
Arguments

icon  Name of the icon
library Which icon library. Default "glyphicon", other possible values are "fa" (fontawesome) or "ion" (ionicons).
markerColor Possible values are "red", "darkred", "lightred", "orange", "beige", "green", "darkgreen", "lightgreen", "blue", "darkblue", "lightblue", "purple", "darkpurple", "pink", "cadetblue", "white", "gray", "lightgray", "black"
iconColor The color to use for the icon itself. Use any CSS-valid color (hex, rgba, etc.) or a named web color.
spin If TRUE, make the icon spin (only works when library = "fa")
extraClasses Additional css classes to include on the icon.
squareMarker Whether to use a square marker.
iconRotate Rotate the icon by a given angle.
fontFamily Used when text option is specified.
text Use this text string instead of an icon. argument of addAwesomeMarkers().

makeIcon  Define icon sets

Description

Define icon sets

Usage

makeIcon(
    iconUrl = NULL,
    iconRetinaUrl = NULL,
    iconWidth = NULL,
    iconHeight = NULL,
    iconAnchorX = NULL,
    iconAnchorY = NULL,
    shadowUrl = NULL,
    shadowRetinaUrl = NULL,
    shadowWidth = NULL,
    shadowHeight = NULL,
    shadowAnchorX = NULL,
    shadowAnchorY = NULL,
    popupAnchorX = NULL,
    popupAnchorY = NULL,
    className = NULL
)
Arguments
iconUrl the URL or file path to the icon image
iconRetinaUrl the URL or file path to a retina sized version of the icon image
iconWidth size of the icon image in pixels
iconHeight size of the icon image in pixels
iconAnchorX the coordinates of the "tip" of the icon (relative to its top left corner, i.e. the top left corner means iconAnchorX = 0 and iconAnchorY = 0), and the icon will be aligned so that this point is at the marker's geographical location
iconAnchorY the coordinates of the "tip" of the icon (relative to its top left corner, i.e. the top left corner means iconAnchorX = 0 and iconAnchorY = 0), and the icon will be aligned so that this point is at the marker's geographical location
shadowUrl the URL or file path to the icon shadow image
shadowRetinaUrl the URL or file path to the retina sized version of the icon shadow image
shadowWidth size of the shadow image in pixels
shadowHeight size of the shadow image in pixels
shadowAnchorX the coordinates of the "tip" of the shadow
shadowAnchorY the coordinates of the "tip" of the shadow
popupAnchorX the coordinates of the point from which popups will "open", relative to the icon anchor
popupAnchorY the coordinates of the point from which popups will "open", relative to the icon anchor
className a custom class name to assign to both icon and shadow images

mapOptions Set options on a leaflet map object

Description
Set options on a leaflet map object

Usage
mapOptions(map, zoomToLimits = c("always", "first", "never"))

Arguments
map A map widget object created from leaflet()
zoomToLimits Controls whether the map is zooms to the limits of the elements on the map. This is useful for interactive applications where the map data is updated. If "always" (the default), the map always re-zooms when new data is received; if "first", it zooms to the elements on the first rendering, but does not re-zoom for subsequent data; if "never", it never re-zooms, not even for the first rendering.
Examples

```r
# Don't auto-zoom to the objects (can be useful in interactive applications)
leaflet() %>%
  addTiles() %>%
  addPopups(174.7690922, -36.8523071, "R was born here!") %>%
  mapOptions(zoomToLimits = "first")
```

---

**previewColors**  
*Color previewing utility*

**Description**

Color previewing utility

**Usage**

```r
previewColors(pal, values)
```

**Arguments**

- `pal`  
  A color mapping function, like those returned from `colorNumeric`, et al
- `values`  
  A set of values to preview colors for

**Value**

An HTML-based list of the colors and values

---

**providers**  
*Providers*

**Description**

List of all providers with their variations

**Format**

A list of characters

**Source**

[https://github.com/leaflet-extras/leaflet-providers/blob/0a9e27f8c6c26956b4e78c26e1945d748e3c2869/leaflet-providers.js](https://github.com/leaflet-extras/leaflet-providers/blob/0a9e27f8c6c26956b4e78c26e1945d748e3c2869/leaflet-providers.js)
removeControl

Remove elements from a map

Description
Remove one or more features from a map, identified by `layerId`; or, clear all features of the given type or group.

Usage
removeControl(map, layerId)
clearControls(map)
clearGroup(map, group)
removeImage(map, layerId)
clearImages(map)
removeTiles(map, layerId)
clearTiles(map)
removePopup(map, layerId)
clearPopups(map)
removeMarker(map, layerId)
clearMarkers(map)
removeMarkerCluster(map, layerId)
clearMarkerClusters(map)
removeMarkerFromCluster(map, layerId, clusterId)
removeShape(map, layerId)
clearShapes(map)
removeGeoJSON(map, layerId)
clearGeoJSON(map)
removeMeasure(map)
removeTopoJSON(map, layerId)
clearTopoJSON(map)

**Arguments**

- **map**: a map widget object, possibly created from `leaflet()` but more likely from `leafletProxy()`.
- **layerId**: character vector; the layer id(s) of the item to remove.
- **group**: the name of the group whose members should be removed.
- **clusterId**: the id of the marker cluster layer.

**Value**

the new map object.

**Note**

When used with a `leaflet()` map object, these functions don’t actually remove the features from the map object, but simply add an operation that will cause those features to be removed after they are added. In other words, if you add a polygon "foo" and the call `removeShape("foo")`, it’s not smart enough to prevent the polygon from being added in the first place; instead, when the map is rendered, the polygon will be added and then removed.

For that reason, these functions aren’t that useful with `leaflet` map objects and are really intended to be used with `leafletProxy` instead.

WMS tile layers are extensions of tile layers, so they can also be removed or cleared via `removeTiles()` or `clearTiles()`.

---

**Description**

A series of methods to manipulate the map.

**Usage**

- `setView(map, lng, lat, zoom, options = list())`
- `flyTo(map, lng, lat, zoom, options = list())`
- `fitBounds(map, lng1, lat1, lng2, lat2, options = list())`
- `flyToBounds(map, lng1, lat1, lng2, lat2, options = list())`
setMaxBounds(map, lng1, lat1, lng2, lat2)
clearBounds(map)

**Arguments**

- **map**: a map widget object created from `leaflet()`
- **lng**: The longitude of the map center
- **lat**: The latitude of the map center
- **zoom**: the zoom level
- **options**: a list of zoom/pan options (see [https://leafletjs.com/reference-1.3.4.html#zoom/pan-options](https://leafletjs.com/reference-1.3.4.html#zoom/pan-options))
- **lng1, lat1, lng2, lat2**: the coordinates of the map bounds

**Value**

The modified map widget.

**Functions**

- **setView**: Set the view of the map (center and zoom level)
- **flyTo**: Flies to a given location/zoom-level using smooth pan-zoom.
- **fitBounds**: Set the bounds of a map
- **flyToBounds**: Flies to given bound using smooth pan/zoom.
- **setMaxBounds**: Restricts the map view to the given bounds
- **clearBounds**: Clear the bounds of a map, and the bounds will be automatically determined from latitudes and longitudes of the map elements if available (otherwise the full world view is used)

**References**

[https://leafletjs.com/reference-1.3.4.html#map-methods-for-modifying-map-state](https://leafletjs.com/reference-1.3.4.html#map-methods-for-modifying-map-state)

**Examples**

```r
m <- leaflet() %>% addTiles() %>% setView(-71.0382679, 42.3489054, zoom = 18)
m # the RStudio 'headquarter'
m %>% fitBounds(-72, 40, -70, 43)
m %>% clearBounds() # world view
```
### showGroup

*Show or hide layer groups*

**Description**

Hide groups of layers without removing them from the map entirely. Groups are created using the `group` parameter that is included on most layer adding functions.

**Usage**

```r
showGroup(map, group)
hideGroup(map, group)
```

**Arguments**

- `map`: the map to modify
- `group`: character vector of one or more group names to show or hide

**See Also**

- `addLayersControl` to allow users to show/hide layer groups interactively

---

### tileOptions

*Extra options for map elements and layers*

**Description**

The rest of all possible options for map elements and layers that are not listed in the layer functions.

**Usage**

```r
tileOptions(
  minZoom = 0,
  maxZoom = 18,
  maxNativeZoom = NULL,
  tileSize = 256,
  subdomains = "abc",
  errorTileUrl = "",
  tms = FALSE,
  noWrap = FALSE,
  zoomOffset = 0,
  zoomReverse = FALSE,
  opacity = 1,
  zIndex = 1,
)```
unloadInvisibleTiles = NULL,
updateWhenIdle = NULL,
detectRetina = FALSE,
...)

WMSTileOptions(
  styles = "",
  format = "image/jpeg",
  transparent = FALSE,
  version = "1.1.1",
  crs = NULL,
  ...
)

popupOptions(
  maxWidth = 300,
  minWidth = 50,
  maxHeight = NULL,
  autoPan = TRUE,
  keepInView = FALSE,
  closeButton = TRUE,
  zoomAnimation = NULL,
  closeOnClick = NULL,
  className = "",
  ...
)

labelOptions(
  interactive = FALSE,
  clickable = NULL,
  noHide = NULL,
  permanent = FALSE,
  className = "",
  direction = "auto",
  offset = c(0, 0),
  opacity = 1,
  textsize = "10px",
  textOnly = FALSE,
  style = NULL,
  zoomAnimation = NULL,
  sticky = TRUE,
  ...
)

markerOptions(
  interactive = TRUE,
  clickable = NULL,
tileOptions

draggable = FALSE,
keyboard = TRUE,
title = "",
alt = "",
zIndexOffset = 0,
opacity = 1,
riseOnHover = FALSE,
riseOffset = 250,
...
)

markerClusterOptions(
    showCoverageOnHover = TRUE,
    zoomToBoundsOnClick = TRUE,
    spiderfyOnMaxZoom = TRUE,
    removeOutsideVisibleBounds = TRUE,
    spiderLegPolylineOptions = list(weight = 1.5, color = "#222", opacity = 0.5),
    freezeAtZoom = FALSE,
    ...
)

pathOptions(
    lineCap = NULL,
    lineJoin = NULL,
    clickable = NULL,
    interactive = TRUE,
    pointerEvents = NULL,
    className = "",
    ...
)

Arguments

minZoom, maxZoom, maxNativeZoom, tileSize, subdomains, errorTileUrl, tms, noWrap, zoomOffset, zoomReverse, unloadInvisibleTiles, updateWhenIdle, detectRetina

the tile layer options; see https://leafletjs.com/reference-1.3.4.html#tilelayer

opacity

Tooltip container opacity. Ranges from 0 to 1. Default value is 1 (different from leaflet.js 0.9); see https://leafletjs.com/reference-1.3.4.html#tooltip-opacity

... extra options passed to underlying Javascript object constructor.

styles

comma-separated list of WMS styles

format

WMS image format (use "image/png" for layers with transparency)

transparent

if TRUE, the WMS service will return images with transparency

version

version of the WMS service to use

crs

Coordinate Reference System to use for the WMS requests, defaults.

maxWidth, minWidth, maxHeight, autoPan, keepInView, closeButton, closeOnClick

popup options; see https://leafletjs.com/reference-1.3.4.html#popup-option
**tileOptions**

- **zoomAnimation**: deprecated. See [https://github.com/Leaflet/Leaflet/blob/master/CHANGELOG.md#api-changes-5](https://github.com/Leaflet/Leaflet/blob/master/CHANGELOG.md#api-changes-5)
- **className**: a CSS class name set on an element
- **interactive**: whether the element emits mouse events
- **clickable**: DEPRECATED! Use the interactive option.
- **noHide, direction, offset, permanent**: label options; see [https://leafletjs.com/reference-1.3.4.html#tooltip-option](https://leafletjs.com/reference-1.3.4.html#tooltip-option)
- **textsize**: Change the text size of a single tooltip
- **textOnly**: Display only the text, no regular surrounding box.
- **style**: list of css style to be added to the tooltip
- **sticky**: If true, the tooltip will follow the mouse instead of being fixed at the feature center. Default value is TRUE (different from leaflet.js FALSE); see [https://leafletjs.com/reference-1.3.4.html#tooltip-sticky](https://leafletjs.com/reference-1.3.4.html#tooltip-sticky)
- **draggable, keyboard, title, alt, zIndexOffset, riseOnHover, riseOffset**: marker options; see [https://leafletjs.com/reference-1.3.4.html#marker-option](https://leafletjs.com/reference-1.3.4.html#marker-option)
- **showCoverageOnHover**: when you mouse over a cluster it shows the bounds of its markers
- **zoomToBoundsOnClick**: when you click a cluster we zoom to its bounds
- **spiderfyOnMaxZoom**: when you click a cluster at the bottom zoom level we spiderfy it so you can see all of its markers
- **removeOutsideVisibleBounds**: clusters and markers too far from the viewport are removed from the map for performance
- **spiderLegPolylineOptions**: Allows you to specify PolylineOptions ([https://leafletjs.com/reference-1.3.4.html#polyline-option](https://leafletjs.com/reference-1.3.4.html#polyline-option)) to style spider legs. By default, they are weight: 1.5, color: "#222", opacity: 0.5
- **freezeAtZoom**: Allows you to freeze cluster expansion to a zoom level. Can be a zoom level e.g. 10, 12 or "max" or "maxKeepSpiderify" See [https://github.com/ghybs/Leaflet.MarkerCluster.Freezable#api-reference](https://github.com/ghybs/Leaflet.MarkerCluster.Freezable#api-reference)
- **lineCap**: a string that defines shape to be used at the end of the stroke
- **lineJoin**: a string that defines shape to be used at the corners of the stroke
- **pointerEvents**: sets the pointer-events attribute on the path if SVG backend is used

**Functions**

- **tileOptions**: Options for tile layers
- **WMSTileOptions**: Options for WMS tile layers
- **popupOptions**: Options for popups
- **labelOptions**: Options for labels
- **markerOptions**: Options for markers
- **markerClusterOptions**: Options for marker clusters
- **pathOptions**: Options for vector layers (polylines, polygons, rectangles, and circles, etc)
validateCoords

Utility function to check if a coordinates is valid

Description

Utility function to check if a coordinates is valid

Usage

validateCoords(lng, lat, funcName, warn = TRUE, mode = c("point", "polygon"))

Arguments

lng vector with longitude values
lat vector with latitude values
funcName Name of calling function
warn A boolean. Whether to generate a warning message if there are rows with missing/invalid data
mode if "point" then warn about any NA lng/lat values; if "polygon" then NA values are expected to be used as polygon delimiters

See Also

leafletCRS to map CRS (don’t change this if you’re not sure what it means)
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