Package ‘leaflet’

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Type Package

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

Version 2.2.2

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.

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

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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(),

Index

addAwesomeMarkers  Add Awesome Markers
```r
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` (case-insensitively)
- **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,
  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,
addControl

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,  
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,
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,
addControl

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)
)

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)
)

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()
)

Arguments

map a map widget object created from `leaflet()`
html the content of the control. May be provided as string or as HTML generated with Shiny/htmltools tags
position position of control: "topleft", "topright", "bottomleft", or "bottomright"
layerId the layer id
className extra CSS classes to append to the control, space separated
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
urlTemplate a character string as the URL template
attribute the attribution text of the tile layer (HTML)
groupName 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.
options a list of extra options for tile layers, popups, paths (circles, rectangles, polygons, ...), or other map elements
baseUrl a base URL of the WMS service
layers comma-separated list of WMS layers to show
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)
popup a character vector of the HTML content for the popups (you are recommended to escape the text using `htmlEscape()` for security reasons)
icon the icon(s) for markers; an icon is represented by an R list of the form `list(iconUrl = "?", iconSize = c(x, y))`, and you can use `icons()` to create multiple icons; note when you use an R list that contains images as local files, these local image files will be base64 encoded into the HTML page so the icon images will still be available even when you publish the map elsewhere
`addControl` 11

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
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
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:  

**See Also**

`tileOptions`, `WMSTileOptions`, `popupOptions`, `markerOptions`, `pathOptions`

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**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://web.archive.org/web/20220702182250/https://leafletjs.com/reference-1.3.4.html#path-option
addLayersControl

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
```

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

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

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

```r
removeLayersControl(map)
```

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>map</td>
<td>the map to add the layers control to</td>
</tr>
<tr>
<td>baseGroups</td>
<td>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.</td>
</tr>
<tr>
<td>overlayGroups</td>
<td>character vector where each element is the name of a group. The user can turn each overlay group on or off independently.</td>
</tr>
<tr>
<td>position</td>
<td>position of control: &quot;topleft&quot;, &quot;topright&quot;, &quot;bottomleft&quot;, or &quot;bottomright&quot;</td>
</tr>
<tr>
<td>options</td>
<td>a list of additional options, intended to be provided by a call to layersControlOptions</td>
</tr>
</tbody>
</table>
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",
)```

addLegend

layerId = NULL,
group = NULL,
data = getMapData(map)
)

labelFormat(
  prefix = "",
suffix = "",
between = " &ndash; ",
digits = 3,
big.mark = ",",
transform = identity
)

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 NA 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) %>%
  addTiles() %>%
  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) %>%
  addTiles() %>%
  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://web.archive.org/web/20220702182250/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,
  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
- `map` [a map widget object](https://leafletjs.com/)
- `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](https://leafletjs.com/).
- `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.
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

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://web.archive.org/web/20220702182250/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://web.archive.org/web/20220702182250/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()
)
```

```r
providerTileOptions()
```
**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/](https://leaflet-extras.github.io/leaflet-providers/preview/) and [https://github.com/leaflet-extras/leaflet-providers](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.
- **options**: tile options
  - `errorTileUrl`, `noWrap`, `opacity`, `zIndex`, `updateWhenIdle`, `detectRetina`
    - the tile layer options; see [https://web.archive.org/web/20220702182250/https://leafletjs.com/reference-1.3.4.html#tilelayer](https://web.archive.org/web/20220702182250/https://leafletjs.com/reference-1.3.4.html#tilelayer)
  - ... named parameters to add to the options

**Value**

modified map object

**Examples**

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

---

**addRasterImage**: *Add a raster image as a layer*

**Description**

Create an image overlay from a RasterLayer or a SpatRaster 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

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

projectRasterForLeaflet(x, method)

Arguments

map              a map widget object
x                a SpatRaster or 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). The palette is ignored if x is a SpatRaster with a color table or if it has RGB channels.
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.
options          a list of additional options, intended to be provided by a call to gridOptions
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.

To reduce the size of a SpatRaster, you can use spatSample as in x = spatSample(x, 100000, method="regular", as.raster=TRUE). With a RasterLayer you can use sampleRegular as in sampleRegular(x, 100000, asRaster=TRUE).

By default, the addRasterImage function will project the raster data x to the Pseudo-Mercator projection (EPSG:3857). This can be a time-consuming operation for even moderately sized rasters; although it is much faster for SpatRasters than for RasterLayers. 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.

See Also

addRasterLegend for an easy way to add a legend for a SpatRaster with a color table.

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)
crs(r) <- CRS("+init=epsg:4326")

apal <- colornumeric("Spectral", domain = c(0, 1000))
leaflet() %>% addTiles() %>%
  addRasterImage(r, colors = pal, opacity = 0.8) %>%
  addLegend(pal = pal, values = c(0, 1000))

addRasterLegend

Add a color legend for a SpatRaster to a map

Description

A function for adding a legend that is specifically designed for terra::SpatRaster objects, with categorical values, that carry their own color table.

Usage

addRasterLegend(map, x, layer = 1, ...)
addScaleBar

Description

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

Usage

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

Arguments

- `map`: a map widget object
- `x`: a SpatRaster object with a color table
- `layer`: the layer of the raster to target
- `...`: additional arguments to pass through to `addLegend()`

See Also

- `addRasterImage()`

Examples

```r
library(terra)

r <- rast("/vsicurl/https://geodata.ucdavis.edu/test/pr_nlcd.tif")
leaflet() %>%
  addTiles() %>%
  addRasterImage(r, opacity = 0.75) %>%
  addRasterLegend(r, opacity = 0.75)

plot.new() # pause in interactive mode

rr <- r
levels(rr) <- NULL
leaflet() %>%
  addTiles() %>%
  addRasterImage(rr, opacity = 0.75) %>%
  addRasterLegend(rr, opacity = 0.75)
```
addSimpleGraticule

maxWidth = 100,
metric = TRUE,
imperial = TRUE,
updateWhenIdle = TRUE
)

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

leaflet() %>%
  addTiles() %>%
  addScaleBar()

addSimpleGraticule  Add a simple Graticule on the map see https://github.com/ablakey/Leaflet.SimpleGraticule

Description

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

Usage

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()
```

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
go { 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**

```r
awesomeIconList(...)
```

**Arguments**

... | icons created from `makeAwesomeIcon()`
Examples

```r
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

---

**breweries91**  *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"

---

**colorNumeric**  *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**

```r
colorNumeric(
    palette,
    domain,
    na.color = "#808080",
    alpha = FALSE,
    reverse = FALSE
)
```

```r
colorBin(
```

```r
```
palette,  
domain,  
  bins = 7,  
  pretty = TRUE,  
  na.color = "#808080",  
  alpha = FALSE,  
  reverse = FALSE,  
  right = FALSE  
)

colorQuantile(  
  palette,  
  domain,  
  n = 4,  
  probs = seq(0, 1, length.out = n + 1),  
  na.color = "#808080",  
  alpha = FALSE,  
  reverse = FALSE,  
  right = FALSE  
)

colorFactor(  
  palette,  
  domain,  
  levels = NULL,  
  ordered = FALSE,  
  na.color = "#808080",  
  alpha = FALSE,  
  reverse = 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.
**colorNumeric**

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**

```r
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...
previewColors(colorFactor("RdYlBu", domain = NULL), factor(LETTERS[1:5], levels = LETTERS))
# ...or the domain is stated explicitly.
previewColors(colorFactor("RdYlBu", levels = LETTERS), LETTERS[1:5])

---

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.

Usage

```
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

derivePolygons(
    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)

Description

Extension points for plugins

Usage

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

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

Arguments

map a map object, as returned from `leaflet` or `leafletProxy`
funcName the name of the function that the user called that caused this dispatch call; for error message purposes
leaflet an action to be performed if the map is from `leaflet`
leaflet_proxy an action to be performed if the map is from `leafletProxy`
easyButtonState

- **data** a data object that will be used when evaluating formulas in ...
- **method** the name of the JavaScript method to invoke
- **...** unnamed arguments to be passed to the JavaScript method

**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

- **Create 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**

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

**See Also**

- `easyButton`
- https://github.com/CliffCloud/Leaflet.EasyButton
- `addEasyButton`

**Examples**

```r
leaf <- leaflet() %>%
  addTiles() %>%
  addEasyButton(easyButton(
    icon = htmltools::span(class = "star", htmltools::HTML("★")),
    onClick = JS("function(btn, map){ map.setZoom(1);}")))
leaf

leaf <- leaflet() %>%
  addTiles() %>%
  addEasyButtonBar(
    easyButton(
      icon = htmltools::span(class = "star", htmltools::HTML("★")),
      onClick = JS("function(btn, map){ alert("Button 1");}")),
    easyButton(
      icon = htmltools::span(class = "star", htmltools::HTML("&starf;")),
      onClick = JS("function(btn, map){ alert("Button 2");}"))
  )
leaf
```

---

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)
**expandLimits**

**Usage**

evalFormula(list, data)

**Arguments**

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

---

**Description**

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

**Usage**

expandLimits(map, lat, lng)

**Arguments**

<table>
<thead>
<tr>
<th>map</th>
<th>map object</th>
</tr>
</thead>
<tbody>
<tr>
<td>lat</td>
<td>vector of latitudes</td>
</tr>
<tr>
<td>lng</td>
<td>vector of longitudes</td>
</tr>
</tbody>
</table>

---

**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**

<table>
<thead>
<tr>
<th>map</th>
<th>map object</th>
</tr>
</thead>
<tbody>
<tr>
<td>poly</td>
<td>A spatial object representing a polygon.</td>
</tr>
</tbody>
</table>
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. It was downloaded using getData.

Source
https://gadm.org
getMapData

returns the map’s data

Description
returns the map’s data

Usage
getMapData(map)

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
zoomLevels numeric vector of zoom levels at which group(s) should be visible, or TRUE to
display at all zoom levels

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") %>%
```r
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**

```r
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.
**icons**

Usage

```r
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

```r
library(leaflet)

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

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)
```

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(
```

# 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
```r

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 matrix, data frame, spatial data from the `sf` package, `SpatVector` from the `terra` package, and the `Spatial*` objects from the `sp` package that represent points, lines, or polygons.

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://web.archive.org/web/20220702182250/https://leafletjs.com/reference-1.3.4.html#map-option](https://leafletjs.com/reference-1.3.4.html#map-option) for details and more options.

### Examples

```r
# !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, 47.6614990696722),
      c(-122.366199035722, 47.6614990696722),
      c(-122.366199035722, 47.6592874248973),
    ),
    c(-122.36075812146, 47.6759920119894),
  ),
)
c(-122.364582509469, 47.6576254522105),
c(-122.363887331445, 47.6569107301866),
c(-122.360865528129, 47.6535254473167),
c(-122.36086581103, 47.653126275176),
c(-122.362526540691, 47.6541872926348),
c(-122.364442114483, 47.6551892850798),
c(-122.36077719797, 47.65687308088334),
c(-122.370115159943, 47.6587398808328),
c(-122.37229567029, 47.660350102328),
c(-122.37381369088, 47.660582362063),
c(-122.375522972109, 47.660413027949),
c(-122.376079783005, 47.6608793094619),
c(-122.376206315662, 47.660924364243),
c(-122.37761081371, 47.660168735197),
c(-122.379857377887, 47.6610306942278),
c(-122.382454873022, 47.6627496239169),
c(-122.385357955057, 47.6638573778241),
c(-122.386007328104, 47.6640866592386),
c(-122.387186331506, 47.6654326177161),
c(-122.387802656231, 47.6661492860294),
c(-122.38818244121, 47.666458739202),
c(-122.389177800763, 47.6663784774359),
c(-122.390582858869, 47.665072251861),
c(-122.390793942299, 47.6659699214511),
c(-122.391507906234, 47.6659200946229),
c(-122.392883050767, 47.6664166747017),
c(-122.392847210144, 47.6678696739431),
c(-122.392904778401, 47.6709016021624),
c(-122.39296705153, 47.6732047491624),
c(-122.39300803496, 47.6759322346303),
c(-122.3766945305, 47.675989630663),
c(-122.376486363943, 47.6759891899754),
c(-122.36607869215, 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_lati(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)
leafletDependencies

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>
</tbody>
</table>
| expr       | An expression that generates an HTML widget (or a promise of an HTML widget).
| env        | The environment in which to evaluate expr.                                  |
| quoted     | Is expr a quoted expression (with quote())? This is useful if you want to save an expression in a variable. |
# 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

```
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, 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

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.
**previewColors**

### 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")
```

---

**Description**

Color previewing utility

**Usage**

```
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()`.

---

**setView**  
Methods to manipulate the map widget

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())
```
```r
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://web.archive.org/web/20220702182250/https://leafletjs.com/reference-1.3.4.html#zoom/pan-options](https://web.archive.org/web/20220702182250/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**


**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
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
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,
...
)

gridOptions(
  tileSize = 256,
  updateWhenIdle = NULL,
  zIndex = 1,
  minZoom = 0,
  maxZoom = NULL,
  ...
)

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,
tileOptions

style = NULL,
zoomAnimation = NULL,
sticky = TRUE,
...
)

markerOptions(
  interactive = TRUE,
clickable = NULL,
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
the tile layer options; see https://web.archive.org/web/20220702182250/
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://web.archive.org/web/20220702182250/
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://web.archive.org/web/20220702182250/https://leafletjs.com/reference-1.3.4.html#popup-option

zoomAnimation deprecated. See 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

textsize Change the text size of a single tooltip

textOnly Display only the text, no regular surrounding box.

style list of css styles 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://web.archive.org/web/20220702182250/https://leafletjs.com/reference-1.3.4.html#tooltip-sticky

draggable, keyboard, title, alt, zIndexOffset, riseOnHover, riseOffset

marker options; see https://web.archive.org/web/20220702182250/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 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>.
validateCoords

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
- gridOptions(): Options for grid 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)

See Also

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

---

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
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