

Package ‘mapdeck’

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Type Package

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Description Provides a mechanism to plot an interactive map using 'Mapbox GL' (<<https://docs.mapbox.com/mapbox-gl-js/api/>>), a javascript library for interactive maps, and 'Deck.gl' (<<https://deck.gl/>>), a javascript library which uses 'WebGL' for visualising large data sets.

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URL <https://symbolixau.github.io/mapdeck/articles/mapdeck.html>

BugReports <https://github.com/SymbolixAU/mapdeck/issues>

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| | |
|-------------------------------|-------------------------|
| <code>add_animated_arc</code> | <i>Add animated arc</i> |
|-------------------------------|-------------------------|

Description

The Arc Layer renders raised arcs joining pairs of source and target coordinates

Usage

```
add_animated_arc(
  map,
  data = get_map_data(map),
  layer_id = NULL,
  origin,
  destination,
  id = NULL,
  stroke_from = NULL,
  stroke_from_opacity = NULL,
  stroke_to = NULL,
  stroke_to_opacity = NULL,
  stroke_width = NULL,
  frequency = 1,
  animation_speed = 3,
  trail_length = 5,
  tilt = NULL,
  height = NULL,
  tooltip = NULL,
  auto_highlight = FALSE,
  highlight_colour = "#AAFFFFFF",
  legend = F,
  legend_options = NULL,
  legend_format = NULL,
  palette = "viridis",
  na_colour = "#808080FF",
  update_view = TRUE,
  focus_layer = FALSE,
  transitions = NULL,
  digits = 6,
  brush_radius = NULL
)
```

Arguments

| | |
|---------------------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| origin | vector of longitude and latitude columns, and optionally an elevation column, or an sfc column |
| destination | vector of longitude and latitude columns, and optionally an elevatino column, or an sfc column |
| id | an id value in data to identify layers when interacting in Shiny apps. |
| stroke_from | column of data or hex colour to use as the staring stroke colour. IIf using a hex colour, use either a single value, or a column of hex colours on data |
| stroke_from_opacity | Either a string specifying the column of data containing the stroke opacity of each shape, or a value between 1 and 255 to be applied to all the shapes. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| stroke_to | column of data or hex colour to use as the ending stroke colour. If using a hex colour, use either a single value, or a column of hex colours on data |
| stroke_to_opacity | Either a string specifying the column of data containing the stroke opacity of each shape, or a value between 1 and 255 to be applied to all the shapes. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| stroke_width | width of the stroke in pixels |
| frequency | column of data, or a single value indicating the number of arcs generated in each animation |
| animation_speed | the speed of animation |
| trail_length | the length of trail of each arc |
| tilt | value to tilt the arcs to the side, in degrees [-90, 90] |
| height | value to multiply the height. |
| tooltip | variable of data containing text or HTML to render as a tooltip |
| auto_highlight | logical indicating if the shape under the mouse should auto-highlight |
| highlight_colour | hex string colour to use for highlighting. Must contain the alpha component. |
| legend | either a logical indicating if the legend(s) should be displayed, or a named list indicating which colour attributes should be included in the legend. |
| legend_options | A list of options for controlling the legend. |
| legend_format | A list containing functions to apply to legend values. See section legend |

| | |
|--------------|---|
| palette | string or matrix. String will be one of <code>colourvalues::colour_palettes()</code> . A matrix must have at least 5 rows, and 3 or 4 columns of values between [0, 255], where the 4th column represents the alpha. You can use a named list to specify a different palette for different colour options (where available), e.g. <code>list(fill_colour = "viridis", stroke_colour = "inferno")</code> |
| na_colour | hex string colour to use for NA values |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |
| transitions | list specifying the duration of transitions. |
| digits | number of digits for rounding coordinates |
| brush_radius | radius of the brush in metres. Default NULL. If supplied, the arcs will only show if the origin or destination are within the radius of the mouse. If NULL, all arcs are displayed |

Details

add_arc supports POINT sf objects

MULTIPOINT objects will be treated as single points. That is, if an sf object has one row with a MULTIPOINT object consisting of two points, this will be expanded to two rows of single POINTs. Therefore, if the origin is a MULTIPOINT of two points, and the destination is a single POINT, the code will error as there will be an uneven number of rows

data

If the data is a simple feature object, the geometry column is automatically detected. If the sf object contains more than one geometry column and you want to use a specific one, you'll need to set the active geometry using `sf::st_geometry(x) <- "your_column"`, where "your_column" is the name of the column you're activating. See `?sf::st_geometry`

legend

The legend_options can be used to control the appearance of the legend. This should be a named list, where the names are one of

- css - a string of valid css for controlling the appearance of the legend
- title - a string to use for the title of the legend
- digits - number to round the legend values to

If the layer allows different fill and stroke colours, you can use different options for each. See examples in [add_arc](#).

The legend_format can be used to control the format of the values in the legend. This should be a named list, where the names are one of

- fill_colour
- stroke_colour

depending on which type of colouring the layer supports.

The list elements must be functions to apply to the values in the legend.

id

The id is returned to your R session from an interactive shiny environment by observing layer clicks. This is useful for returning the data.frame row relating to the clicked shape.

From within a shiny server you would typically use `observeEvent({input$map_arc_click})`, where 'map' is the map_id supplied to `mapdeckOutput()`, and 'arc' is the layer you are clicking on

Examples

```
## You need a valid access token from Mapbox
key <- 'abc'
set_token( key )

url <- 'https://raw.githubusercontent.com/plotly/datasets/master/2011_february_aa_flight_paths.csv'
flights <- read.csv(url)
flights$id <- seq_len(nrow(flights))
flights$stroke <- sample(1:3, size = nrow(flights), replace = TRUE)
flights$info <- paste0("<b>", flights$airport1, " - ", flights$airport2, "</b>")

mapdeck( style = mapdeck_style("dark"), pitch = 45 ) %>%
  add_animated_arc(
    data = flights
    , layer_id = "arc_layer"
    , origin = c("start_lon", "start_lat")
    , destination = c("end_lon", "end_lat")
    , stroke_from = "airport1"
    , stroke_to = "airport2"
    , stroke_width = "stroke"
    , trail_length = 10
    , tooltip = "info"
    , auto_highlight = TRUE
    , legend = TRUE
    , legend_options = list(
      stroke_from = list( title = "Origin airport" ),
      css = "max-height: 100px;" )
  )

## faster animation_speed
mapdeck( style = mapdeck_style("dark")) %>%
  add_animated_arc(
    data = flights
    , layer_id = "arc_layer"
    , origin = c("start_lon", "start_lat")
    , destination = c("end_lon", "end_lat")
    , stroke_from = "airport1"
    , stroke_to = "airport2"
    , stroke_width = "stroke"
    , trail_length = 10
    , animation_speed = 15
  )
```

| | |
|-------------------|--------------------------|
| add_animated_line | <i>Add Animated line</i> |
|-------------------|--------------------------|

Description

The Line Layer renders raised lines joining pairs of source and target coordinates

Usage

```
add_animated_line(  
  map,  
  data = get_map_data(map),  
  layer_id = NULL,  
  origin,  
  destination,  
  id = NULL,  
  stroke_colour = NULL,  
  stroke_width = NULL,  
  stroke_opacity = NULL,  
  frequency = 1,  
  animation_speed = 3,  
  trail_length = 5,  
  tooltip = NULL,  
  auto_highlight = FALSE,  
  highlight_colour = "#AAFFFFFF",  
  palette = "viridis",  
  na_colour = "#808080FF",  
  legend = FALSE,  
  legend_options = NULL,  
  legend_format = NULL,  
  update_view = TRUE,  
  focus_layer = FALSE,  
  digits = 6,  
  transitions = NULL,  
  brush_radius = NULL  
)
```

Arguments

| | |
|------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |

| | |
|-------------------------------|--|
| <code>layer_id</code> | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| <code>origin</code> | vector of longitude and latitude columns, and optionally an elevation column, or an <code>sfc</code> column |
| <code>destination</code> | vector of longitude and latitude columns, and optionally an elevation column, or an <code>sfc</code> column |
| <code>id</code> | an id value in data to identify layers when interacting in Shiny apps. |
| <code>stroke_colour</code> | variable or hex colour to use as the ending stroke colour. |
| <code>stroke_width</code> | width of the line in metres |
| <code>stroke_opacity</code> | Either a string specifying the column of data containing the opacity of each shape, or a single value in $[0,255]$, or $[0, 1)$, to be applied to all the shapes. Default 255. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| <code>frequency</code> | column of data, or a single value indicating the number of arcs generated in each animation |
| <code>animation_speed</code> | the speed of animation |
| <code>trail_length</code> | the length of trail of each arc |
| <code>tooltip</code> | variable of data containing text or HTML to render as a tooltip |
| <code>auto_highlight</code> | logical indicating if the shape under the mouse should auto-highlight |
| <code>highlight_colour</code> | hex string colour to use for highlighting. Must contain the alpha component. |
| <code>palette</code> | string or matrix. String will be one of <code>colourvalues::colour_palettes()</code> . A matrix must have at least 5 rows, and 3 or 4 columns of values between $[0, 255]$, where the 4th column represents the alpha. You can use a named list to specify a different palette for different colour options (where available), e.g. <code>list(fill_colour = "viridis", stroke_colour = "inferno")</code> |
| <code>na_colour</code> | hex string colour to use for NA values |
| <code>legend</code> | either a logical indicating if the legend(s) should be displayed, or a named list indicating which colour attributes should be included in the legend. |
| <code>legend_options</code> | A list of options for controlling the legend. |
| <code>legend_format</code> | A list containing functions to apply to legend values. See section <code>legend</code> |
| <code>update_view</code> | logical indicating if the map should update the bounds to include this layer |
| <code>focus_layer</code> | logical indicating if the map should update the bounds to only include this layer |
| <code>digits</code> | number of digits for rounding coordinates |
| <code>transitions</code> | list specifying the duration of transitions. |
| <code>brush_radius</code> | radius of the brush in metres. Default NULL. If supplied, the arcs will only show if the origin or destination are within the radius of the mouse. If NULL, all arcs are displayed |

Details

add_line supports POINT sf objects

MULTIPOINT objects will be treated as single points. That is, if an sf object has one row with a MULTIPOINT object consisting of two points, this will be expanded to two rows of single POINTs. Therefore, if the origin is a MULTIPOINT of two points, and the destination is a single POINT, the code will error as there will be an uneven number of rows

Examples

```
## You need a valid access token from Mapbox
key <- 'abc'
set_token( key )

url <- 'https://raw.githubusercontent.com/plotly/datasets/master/2011_february_aa_flight_paths.csv'
flights <- read.csv(url)
flights$id <- seq_len(nrow(flights))
flights$stroke <- sample(1:3, size = nrow(flights), replace = TRUE)

mapdeck(style = mapdeck_style("dark"), pitch = 45 ) %>%
  add_animated_line(
    data = flights
    , layer_id = "line_layer"
    , origin = c("start_lon", "start_lat")
    , destination = c("end_lon", "end_lat")
    , stroke_colour = "airport1"
    , stroke_width = "stroke"
    , auto_highlight = TRUE
    , trail_length = 1
    , animation_speed = 1
  )

## Using a 2-sfc-column sf object
library(sfheaders)

sf_flights <- sfheaders::sf_point( flights, x = "start_lon", y = "start_lat", keep = TRUE )
destination <- sfheaders::sfc_point( flights, x = "end_lon", y = "end_lat" )

sf_flights$destination <- destination

mapdeck() %>%
  add_animated_line(
    data = sf_flights
    , origin = 'geometry'
    , destination = 'destination'
    , layer_id = 'arcs'
    , stroke_colour = "airport1"
    , trail_length = 1
    , animation_speed = 2
  )
```

 add_arc

Add arc

Description

The Arc Layer renders raised arcs joining pairs of source and target coordinates

Usage

```
add_arc(
  map,
  data = get_map_data(map),
  layer_id = NULL,
  origin,
  destination,
  id = NULL,
  stroke_from = NULL,
  stroke_from_opacity = NULL,
  stroke_to = NULL,
  stroke_to_opacity = NULL,
  stroke_width = NULL,
  tilt = NULL,
  height = NULL,
  tooltip = NULL,
  auto_highlight = FALSE,
  highlight_colour = "#AAFFFFFF",
  legend = F,
  legend_options = NULL,
  legend_format = NULL,
  palette = "viridis",
  na_colour = "#808080FF",
  update_view = TRUE,
  focus_layer = FALSE,
  transitions = NULL,
  digits = 6,
  brush_radius = NULL,
  ...
)
```

Arguments

| | |
|------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |

| | |
|---------------------|--|
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| origin | vector of longitude and latitude columns, and optionally an elevation column, or an sfc column |
| destination | vector of longitude and latitude columns, and optionally an elevatino column, or an sfc column |
| id | an id value in data to identify layers when interacting in Shiny apps. |
| stroke_from | column of data or hex colour to use as the staring stroke colour. IIf using a hex colour, use either a single value, or a column of hex colours on data |
| stroke_from_opacity | Either a string specifying the column of data containing the stroke opacity of each shape, or a value between 1 and 255 to be applied to all the shapes. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| stroke_to | column of data or hex colour to use as the ending stroke colour. If using a hex colour, use either a single value, or a column of hex colours on data |
| stroke_to_opacity | Either a string specifying the column of data containing the stroke opacity of each shape, or a value between 1 and 255 to be applied to all the shapes. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| stroke_width | width of the stroke in pixels |
| tilt | value to tilt the arcs to the side, in degrees [-90, 90] |
| height | value to multiply the height. |
| tooltip | variable of data containing text or HTML to render as a tooltip |
| auto_highlight | logical indicating if the shape under the mouse should auto-highlight |
| highlight_colour | hex string colour to use for highlighting. Must contain the alpha component. |
| legend | either a logical indiciating if the legend(s) should be displayed, or a named list indicating which colour attributes should be included in the legend. |
| legend_options | A list of options for controlling the legend. |
| legend_format | A list containing functions to apply to legend values. See section legend |
| palette | string or matrix. String will be one of colourvalues::colour_palettes(). A matrix must have at least 5 rows, and 3 or 4 columns of values between [0, 255], where the 4th column represents the alpha. You can use a named list to specify a different palette for different colour options (where available), e.g. list(fill_colour = "viridis", stroke_colour = "inferno") |
| na_colour | hex string colour to use for NA values |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |
| transitions | list specifying the duration of transitions. |

| | |
|--------------|--|
| digits | number of digits for rounding coordinates |
| brush_radius | radius of the brush in metres. Default NULL. If supplied, the arcs will only show if the origin or destination are within the radius of the mouse. If NULL, all arcs are displayed |
| ... | clear_legend and clear_view arguments passed to 'clear_()' functions |

Details

add_arc supports POINT sf objects

MULTIPOINT objects will be treated as single points. That is, if an sf object has one row with a MULTIPOINT object consisting of two points, this will be expanded to two rows of single POINTs. Therefore, if the origin is a MULTIPOINT of two points, and the destination is a single POINT, the code will error as there will be an uneven number of rows

data

If data is a simple feature object, you need to supply the origin and destination columns, they aren't automatically detected.

id

The id is returned to your R session from an interactive shiny environment by observing layer clicks. This is useful for returning the data.frame row relating to the clicked shape.

From within a shiny server you would typically use observeEvent({input\$map_arc_click}), where 'map' is the map_id supplied to mapdeckOutput(), and 'arc' is the layer you are clicking on

legend

The legend_options can be used to control the appearance of the legend. This should be a named list, where the names are one of

- css - a string of valid css for controlling the appearance of the legend
- title - a string to use for the title of the legend
- digits - number to round the legend values to

If the layer allows different fill and stroke colours, you can use different options for each. See examples in [add_arc](#).

The legend_format can be used to control the format of the values in the legend. This should be a named list, where the names are one of

- fill_colour
- stroke_colour

depending on which type of colouring the layer supports.

The list elements must be functions to apply to the values in the legend.

transitions

The transitions argument lets you specify the time it will take for the shapes to transition from one state to the next. Only works in an interactive environment (Shiny) and on WebGL-2 supported browsers and hardware.

The time is in milliseconds

Available transitions for arc

```
list( origin = 0, destination = 0, stroke_from = 0, stroke_to = 0, stroke_width = 0 )
```

Examples

```
## You need a valid access token from Mapbox
key <- 'abc'
set_token( key )

url <- 'https://raw.githubusercontent.com/plotly/datasets/master/2011_february_aa_flight_paths.csv'
flights <- read.csv(url)
flights$id <- seq_len(nrow(flights))
flights$stroke <- sample(1:3, size = nrow(flights), replace = TRUE)
flights$info <- paste0("<b>", flights$airport1, " - ", flights$airport2, "</b>")

mapdeck( style = mapdeck_style("dark"), pitch = 45 ) %>%
  add_arc(
    data = flights
    , layer_id = "arc_layer"
    , origin = c("start_lon", "start_lat")
    , destination = c("end_lon", "end_lat")
    , stroke_from = "airport1"
    , stroke_to = "airport2"
    , stroke_width = "stroke"
    , tooltip = "info"
    , auto_highlight = TRUE
    , legend = TRUE
    , legend_options = list(
      stroke_from = list( title = "Origin airport" ),
      css = "max-height: 100px;" )
  )

mapdeck( style = mapdeck_style("dark")) %>%
  add_arc(
    data = flights
    , layer_id = "arc_layer"
    , origin = c("start_lon", "start_lat")
    , destination = c("end_lon", "end_lat")
    , stroke_from = "airport1"
    , stroke_to = "airport2"
    , stroke_width = "stroke"
  )

## Arcs can have an elevated start & destination
flights$start_elev <- sample(100000:1000000, size = nrow(flights), replace = TRUE )
```

```
mapdeck( style = mapdeck_style("dark")) %>%
  add_arc(
    data = flights
    , layer_id = "arc_layer"
    , origin = c("start_lon", "start_lat", "start_elev")
    , destination = c("end_lon", "end_lat", "start_elev")
    , stroke_from = "airport1"
    , stroke_to = "airport2"
    , stroke_width = "stroke"
  )
```

```
## Using a 2-sfc-column sf object
library(sfheaders)
```

```
sf_flights <- sfheaders::sf_point(
  flights
  , x = "start_lon"
  , y = "start_lat"
  , z = "start_elev"
  , keep = TRUE
)
destination <- sfheaders::sfc_point(
  flights
  , x = "end_lon"
  , y = "end_lat"
  , z = "start_elev"
)
```

```
sf_flights$destination <- destination
```

```
mapdeck(
) %>%
  add_arc(
    data = sf_flights
    , origin = 'geometry'
    , destination = 'destination'
    , layer_id = 'arcs'
    , stroke_from = "airport1"
    , stroke_to = "airport2"
  )
```

```
## using a brush
```

```
mapdeck(
  , style = mapdeck_style("light")
) %>%
  add_arc(
    data = sf_flights
    , origin = 'geometry'
    , destination = 'destination'
    , layer_id = 'arcs'
    , stroke_from = "airport1"
```

```

    , stroke_to = "airport2"
    , stroke_width = 4
    , brush_radius = 500000
)

```

add_bitmap

Add bitmap

Description

Adds an image to a map

Usage

```

add_bitmap(
  map,
  image,
  bounds,
  desaturate = 0,
  transparent_colour = "#000000",
  tint_colour = "#FFFFFF",
  layer_id = NULL,
  update_view = TRUE,
  focus_layer = FALSE
)

```

Arguments

| | |
|--------------------|---|
| map | a mapdeck map object |
| image | url to an image to use on the map |
| bounds | coordinates of the bounding box of the image [left, bottom, right, top] |
| desaturate | the desatruation of the bitmap, in range [0,1], 0 being the original colour and 1 being greyscale |
| transparent_colour | the colour to use for transparent pixels as a hex string |
| tint_colour | the colour to tint the bipmap by, as a hex string |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |

Examples

```

set_token( "MAPBOX_TOKEN" )

mapdeck(location = c(-122.3, 37.8), zoom = 10) %>%
  add_bitmap(
    image = paste0(
      'https://raw.githubusercontent.com/uber-common/deck.gl-data/master/',
      'website/sf-districts.png')
    , bounds = c(-122.519, 37.7045, -122.355, 37.829)
  )

mapdeck(location = c(-75.9, 40.9), zoom = 4) %>%
  add_bitmap(
    image = 'https://docs.mapbox.com/mapbox-gl-js/assets/radar.gif'
    , bounds = c(-80.425, 37.936, -71.516, 46.437)
  )

mapdeck(location = c(-75.9, 40.9), zoom = 4) %>%
  add_bitmap(
    image = 'https://docs.mapbox.com/mapbox-gl-js/assets/radar.gif'
    , bounds = c(-80.425, 37.936, -71.516, 46.437)
    , tint_colour = "#FF0000"
  )

mapdeck(location = c(-75.9, 40.9), zoom = 4) %>%
  add_bitmap(
    image = 'https://docs.mapbox.com/mapbox-gl-js/assets/radar.gif'
    , bounds = c(-80.425, 37.936, -71.516, 46.437)
    , desaturate = 1
  )

```

add_cesium

Add Cesium

Description

Renders 3D tiles data from Cesium ION assets. To use this layer you need a Cesium ION account <https://cesium.com/learn/cesiumjs-learn/cesiumjs-quickstart/#your-first-app>. This layer is experimental

Usage

```
add_cesium(map, data, point_size = 2, layer_id = NULL, ion_token = NULL)
```

Arguments

| | |
|------------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| point_size | size of point in pixels |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| ion_token | ion asset token |

Examples

```
## Melbourne point cloud
ion_asset <- 43978
ion_token <- "ION_TOKEN"
tile_data <- paste0("https://assets.ion.cesium.com/", ion_asset, "/tileset.json")

mapdeck(
  location = c(144.95, -37.82)
  , zoom = 14
  , pitch = 60
) %>%
  add_cesium(
    data = tile_data
    , ion_token = ion_token
  )
```

add_column

Add column

Description

The ColumnLayer can be used to render a heatmap of vertical cylinders. It renders a tessellated regular polygon centered at each given position (a "disk"), and extrude it in 3d.

Usage

```
add_column(
  map,
  data = get_map_data(map),
  polyline = NULL,
  lon = NULL,
  lat = NULL,
```

```

fill_colour = NULL,
fill_opacity = NULL,
stroke_colour = NULL,
stroke_opacity = NULL,
stroke_width = NULL,
radius = 1000,
elevation = NULL,
elevation_scale = 1,
coverage = 1,
angle = 0,
disk_resolution = 20,
tooltip = NULL,
auto_highlight = FALSE,
highlight_colour = "#AAFFFFFF",
layer_id = NULL,
id = NULL,
palette = "viridis",
na_colour = "#808080FF",
legend = FALSE,
legend_options = NULL,
legend_format = NULL,
update_view = TRUE,
focus_layer = FALSE,
digits = 6,
transitions = NULL,
brush_radius = NULL,
...
)

```

Arguments

| | |
|----------------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| polyline | column of data containing the polylines |
| lon | column containing longitude values |
| lat | column containing latitude values |
| fill_colour | column of data or hex colour for the fill colour. If using a hex colour, use either a single value, or a column of hex colours on data |
| fill_opacity | Either a string specifying the column of data containing the opacity of each shape, or a single value in [0,255], or [0, 1), to be applied to all the shapes. Default 255. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| stroke_colour | variable of data or hex colour for the stroke. If used, elevation is ignored. If using a hex colour, use either a single value, or a column of hex colours on data |
| stroke_opacity | Either a string specifying the column of data containing the opacity of each shape, or a single value in [0,255], or [0, 1), to be applied to all the shapes. |

| | |
|------------------|--|
| | Default 255. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| stroke_width | width of the stroke in meters. If used, elevation is ignored. Default 1. |
| radius | in metres. Default 1000 |
| elevation | the height the polygon extrudes from the map. Only available if neither stroke_colour or stroke_width are supplied. Default 0 |
| elevation_scale | value to scale the elevations of the columns Default 1 |
| coverage | radius multiplier, in range [0,1]. The radius of the disk is calculated by coverage * radius |
| angle | disk rotation, counter-clockwise, in degrees |
| disk_resolution | The number of sides to render the disk as. The disk is a regular polygon that fits inside the given radius. A higher resolution will yield a smoother look close-up, but also requires more resources to render. |
| tooltip | variable of data containing text or HTML to render as a tooltip |
| auto_highlight | logical indicating if the shape under the mouse should auto-highlight |
| highlight_colour | hex string colour to use for highlighting. Must contain the alpha component. |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| id | an id value in data to identify layers when interacting in Shiny apps. |
| palette | string or matrix. String will be one of colourvalues::colour_palettes(). A matrix must have at least 5 rows, and 3 or 4 columns of values between [0, 255], where the 4th column represents the alpha. You can use a named list to specify a different palette for different colour options (where available), e.g. list(fill_colour = "viridis", stroke_colour = "inferno") |
| na_colour | hex string colour to use for NA values |
| legend | either a logical indicating if the legend(s) should be displayed, or a named list indicating which colour attributes should be included in the legend. |
| legend_options | A list of options for controlling the legend. |
| legend_format | A list containing functions to apply to legend values. See section legend |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |
| digits | number of digits for rounding coordinates |
| transitions | list specifying the duration of transitions. |
| brush_radius | radius of the brush in metres. Default NULL. If supplied, the arcs will only show if the origin or destination are within the radius of the mouse. If NULL, all arcs are displayed |
| ... | clear_legend and clear_view arguments passed to 'clear_()' functions |

Details

add_column supports POINT and MULTIPOINT sf objects

data

If the data is a simple feature object, the geometry column is automatically detected. If the sf object contains more than one geometry column and you want to use a specific one, you'll need to set the active geometry using `sf::st_geometry(x) <- "your_column"`, where "your_column" is the name of the column you're activating. See `?sf::st_geometry`

legend

The legend_options can be used to control the appearance of the legend. This should be a named list, where the names are one of

- css - a string of valid css for controlling the appearance of the legend
- title - a string to use for the title of the legend
- digits - number to round the legend values to

If the layer allows different fill and stroke colours, you can use different options for each. See examples in [add_arc](#).

The legend_format can be used to control the format of the values in the legend. This should be a named list, where the names are one of

- fill_colour
- stroke_colour

depending on which type of colouring the layer supports.

The list elements must be functions to apply to the values in the legend.

id

The id is returned to your R session from an interactive shiny environment by observing layer clicks. This is useful for returning the data.frame row relating to the clicked shape.

From within a shiny server you would typically use `observeEvent({input$map_arc_click})`, where 'map' is the map_id supplied to `mapdeckOutput()`, and 'arc' is the layer you are clicking on

Examples

```
## Not run:

## You need a valid access token from Mapbox
key <- 'abc'
set_token( key )

df <- capitals
df$elev <- sample(50000:500000, size = nrow(df), replace = TRUE)
```

```
mapdeck(style = mapdeck_style("dark"), pitch = 45) %>%
add_column(
  data = df
  , lat = "lat"
  , lon = "lon"
  , elevation = "elev"
  , fill_colour = "lon"
  , disk_resolution = 20
  , radius = 100000
  , tooltip = "capital"
)

library(sfheaders)
sf <- sfheaders::sf_point( df, x = "lon", y = "lat" )

sf$elev <- df$elev

mapdeck( style = mapdeck_style("dark"), pitch = 45 ) %>%
add_column(
  data = sf
  , layer_id = "col_layer"
  , elevation = "elev"
  , radius = 100000
  , fill_colour = "country"
)

## End(Not run)
```

| | |
|------------------|-------------------------|
| add_dependencies | <i>Add Dependencies</i> |
|------------------|-------------------------|

Description

Adds the required mapdeck javascript dependencies to a map when not using a mapdeck map.

Usage

```
add_dependencies(map)
```

Arguments

map the map object to which dependencies will be added

Examples

```
## use with a google map from googleway
library(googleway)

set_key("GOOGLE_MAP_KEY")

google_map() %>%
  add_dependencies() %>%
  add_scatterplot(
    data = capitals
    , lon = "lon"
    , lat = "lat"
    , fill_colour = "country"
    , radius = 10000
  )
```

add_geojson

Add Geojson

Description

The GeoJson Layer takes in GeoJson formatted data and renders it as interactive polygons, lines and points

Usage

```
add_geojson(
  map,
  data = get_map_data(map),
  layer_id = NULL,
  stroke_colour = NULL,
  stroke_opacity = NULL,
  stroke_width = NULL,
  dash_size = NULL,
  dash_gap = NULL,
  fill_colour = NULL,
  fill_opacity = NULL,
  radius = NULL,
  elevation = NULL,
  extruded = FALSE,
  light_settings = list(),
  legend = F,
```

```

    legend_options = NULL,
    legend_format = NULL,
    auto_highlight = FALSE,
    tooltip = NULL,
    highlight_colour = "#AAFFFFFF",
    palette = "viridis",
    na_colour = "#808080FF",
    line_width_units = c("meters", "pixels"),
    line_width_scale = 1,
    line_width_min_pixels = 0,
    elevation_scale = 1,
    point_radius_scale = 1,
    point_radius_min_pixels = 1,
    update_view = TRUE,
    focus_layer = FALSE,
    digits = 6,
    transitions = NULL,
    ...
)

```

Arguments

| | |
|----------------|--|
| map | a mapdeck map object |
| data | data to be used in the layer. Can be a url to GeoJSON |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| stroke_colour | column of an sf object, or field inside a GeoJSON property to use for colour |
| stroke_opacity | column of an sf object, or field inside a GeoJSON property to use for opacity |
| stroke_width | column of an sf object, or field inside a GeoJSON property to use for width (in meters) |
| dash_size | size of each dash, relative to the width of the stroke |
| dash_gap | size of the gap between dashes, relative to the width of the stroke |
| fill_colour | column of an sf object, or field inside a GeoJSON property to use for colour |
| fill_opacity | column of an sf object, or field inside a GeoJSON property to use for opacity |
| radius | radius of points in meters. Default 1. See details |
| elevation | elevation of polygons. Default 0. See details |
| extruded | logical indicating if polygons should extrude from the map. If TRUE, stroke_colour for polygons is ignored |
| light_settings | list of light setting parameters. See light_settings |
| legend | either a logical indicating if the legend(s) should be displayed, or a named list indicating which colour attributes should be included in the legend. A legend is only shown if you supply one of the colour arguments (fill or stroke) |
| legend_options | A list of options for controlling the legend. |

| | |
|-------------------------|---|
| legend_format | A list containing functions to apply to legend values. See section legend |
| auto_highlight | logical indicating if the shape under the mouse should auto-highlight |
| tooltip | variable of data containing text or HTML to render as a tooltip. Only works on sf objects. |
| highlight_colour | hex string colour to use for highlighting. Must contain the alpha component. |
| palette | string or matrix. String will be one of <code>colourvalues::colour_palettes()</code> . A matrix must have at least 5 rows, and 3 or 4 columns of values between [0, 255], where the 4th column represents the alpha. You can use a named list to specify a different palette for different colour options (where available), e.g. <code>list(fill_colour = "viridis", stroke_colour = "inferno")</code> |
| na_colour | hex string colour to use for NA values |
| line_width_units | The units of the line width, one of 'meters', 'pixels'. When zooming in and out, meter sizes scale with the base map, and pixel sizes remain the same on screen. |
| line_width_scale | The line width multiplier that multiplied to all lines, including the LineString and MultiLineString features and also the outline for Polygon and MultiPolygon features if the stroked attribute is true |
| line_width_min_pixels | The minimum line width in pixels. |
| elevation_scale | Elevation multiplier. The final elevation is calculated by <code>elevationScale * getElevation(d)</code> . <code>elevationScale</code> is a handy property to scale all polygon elevation without updating the data |
| point_radius_scale | A global radius multiplier for all points. |
| point_radius_min_pixels | The minimum radius in pixels. |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |
| digits | number of digits for rounding coordinates |
| transitions | list specifying the duration of transitions. |
| ... | <code>clear_legend</code> and <code>clear_view</code> arguments passed to 'clear_()' functions |

transitions

The transitions argument lets you specify the time it will take for the shapes to transition from one state to the next. Only works in an interactive environment (Shiny) and on WebGL-2 supported browsers and hardware.

The time is in milliseconds

Available transitions for geojson

`list(fill_colour = 0, stroke_colour = 0, stroke_width = 0, elevation = 0, radius = 0)`

Raw Geojson

If using a GeoJSON string, and you **do not** supply one of the colouring arguments, the function will look for these fields inside the `properties` field of the Geojson

fill_colour

- `fill_colour`
- `fillColour`
- `fill_color`
- `fillColor`
- `fill`

stroke_colour

- `stroke_colour`
- `strokeColour`
- `stroke_color`
- `strokeColor`
- `stroke`
- `line_colour`
- `lineColour`
- `line_color`
- `lineColor`
- `line`

stroke_width

- `stroke_width`
- `strokeWdith`
- `line_width`
- `lineWidth`
- `width`
- `elevation`
- `radius`

These colour values should be valid hex-colour strings.

If you **do** provide values for the colouring arguments, the function will assume you want to use specific fields in the geojson for colouring. However, if you only supply a `fill_colour` value, the function will not automatically detect the `stroke_colour` (and vice versa)

data

If the data is a simple feature object, the geometry column is automatically detected. If the sf object contains more than one geometry column and you want to use a specific one, you'll need to set the active geometry using `sf::st_geometry(x) <- "your_column"`, where "your_column" is the name of the column you're activating. See `?sf::st_geometry`

legend

The `legend_options` can be used to control the appearance of the legend. This should be a named list, where the names are one of

- `css` - a string of valid css for controlling the appearance of the legend
- `title` - a string to use for the title of the legend
- `digits` - number to round the legend values to

If the layer allows different fill and stroke colours, you can use different options for each. See examples in [add_arc](#).

The `legend_format` can be used to control the format of the values in the legend. This should be a named list, where the names are one of

- `fill_colour`
- `stroke_colour`

depending on which type of colouring the layer supports.

The list elements must be functions to apply to the values in the legend.

Examples

```
## You need a valid access token from Mapbox
key <- 'abc'
set_token( key )

## Not supplying colouring arguments, the function will try and find them in the GeoJSON
mapdeck(
  , location = c(145, -37.9)
  , zoom = 8
  , style = mapdeck_style("dark")
  , pitch = 35
) %>%
  add_geojson(
    data = geojson
    , auto_highlight = TRUE
  )

## only supplying values to use for fill, the stroke will be default
mapdeck(
  , location = c(145, -37.9)
  , zoom = 8
  , style = mapdeck_style("dark")
  , pitch = 35
) %>%
  add_geojson(
    data = geojson
    , fill_colour = "random"
  )

mapdeck(
```

```

, location = c(145, -37.9)
, zoom = 8
, style = mapdeck_style("dark")
, pitch = 35
) %>%
add_geojson(
  data = geojson
  , fill_colour = "random"
  , stroke_colour = "random"
)

mapdeck(
  , location = c(145, -37.9)
  , zoom = 8
  , style = mapdeck_style("dark")
  , pitch = 35
) %>%
add_geojson(
  data = geojson
  , fill_colour = "random"
  , stroke_colour = "random"
  , elevation = 300
)

## putting elevation and width values onto raw GeoJSON
library(geojsonsf)
sf <- geojsonsf::geojson_sf( geojson )
sf$width <- sample(1:100, size = nrow(sf), replace = TRUE)
sf$elevation <- sample(100:1000, size = nrow(sf), replace = TRUE)
geo <- geojsonsf::sf_geojson( sf )

mapdeck(
  , location = c(145, -37.9)
  , zoom = 8
  , style = mapdeck_style("dark")
  , pitch = 35
) %>%
add_geojson(
  data = geo
  , extruded = TRUE ## required to show elevated polygons
)

```

Description

Renders flat arcs along the great circle joining pairs of source and target points, specified as longitude/latitude coordinates.

Usage

```
add_greatcircle(
  map,
  data = get_map_data(map),
  layer_id = NULL,
  origin,
  destination,
  id = NULL,
  stroke_from = NULL,
  stroke_from_opacity = NULL,
  stroke_to = NULL,
  stroke_to_opacity = NULL,
  stroke_width = NULL,
  wrap_longitude = FALSE,
  tooltip = NULL,
  auto_highlight = FALSE,
  highlight_colour = "#AAFFFFFF",
  legend = F,
  legend_options = NULL,
  legend_format = NULL,
  palette = "viridis",
  na_colour = "#808080FF",
  update_view = TRUE,
  focus_layer = FALSE,
  transitions = NULL,
  digits = 6,
  brush_radius = NULL,
  ...
)
```

Arguments

| | |
|-------------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| origin | vector of longitude and latitude columns, and optionally an elevation column, or an sfc column |
| destination | vector of longitude and latitude columns, and optionally an elevatino column, or an sfc column |

| | |
|----------------------------------|---|
| <code>id</code> | an id value in data to identify layers when interacting in Shiny apps. |
| <code>stroke_from</code> | column of data or hex colour to use as the starting stroke colour. If using a hex colour, use either a single value, or a column of hex colours on data |
| <code>stroke_from_opacity</code> | Either a string specifying the column of data containing the stroke opacity of each shape, or a value between 1 and 255 to be applied to all the shapes. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| <code>stroke_to</code> | column of data or hex colour to use as the ending stroke colour. If using a hex colour, use either a single value, or a column of hex colours on data |
| <code>stroke_to_opacity</code> | Either a string specifying the column of data containing the stroke opacity of each shape, or a value between 1 and 255 to be applied to all the shapes. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| <code>stroke_width</code> | width of the stroke in pixels |
| <code>wrap_longitude</code> | logical, whether to automatically wrap longitudes over the 180th antimeridian. |
| <code>tooltip</code> | variable of data containing text or HTML to render as a tooltip |
| <code>auto_highlight</code> | logical indicating if the shape under the mouse should auto-highlight |
| <code>highlight_colour</code> | hex string colour to use for highlighting. Must contain the alpha component. |
| <code>legend</code> | either a logical indicating if the legend(s) should be displayed, or a named list indicating which colour attributes should be included in the legend. |
| <code>legend_options</code> | A list of options for controlling the legend. |
| <code>legend_format</code> | A list containing functions to apply to legend values. See section legend |
| <code>palette</code> | string or matrix. String will be one of <code>colourvalues::colour_palettes()</code> . A matrix must have at least 5 rows, and 3 or 4 columns of values between [0, 255], where the 4th column represents the alpha. You can use a named list to specify a different palette for different colour options (where available), e.g. <code>list(fill_colour = "viridis", stroke_colour = "inferno")</code> |
| <code>na_colour</code> | hex string colour to use for NA values |
| <code>update_view</code> | logical indicating if the map should update the bounds to include this layer |
| <code>focus_layer</code> | logical indicating if the map should update the bounds to only include this layer |
| <code>transitions</code> | list specifying the duration of transitions. |
| <code>digits</code> | number of digits for rounding coordinates |
| <code>brush_radius</code> | radius of the brush in metres. Default NULL. If supplied, the arcs will only show if the origin or destination are within the radius of the mouse. If NULL, all arcs are displayed |
| <code>...</code> | <code>clear_legend</code> and <code>clear_view</code> arguments passed to <code>'clear_()'</code> functions |

Details

add_greatcircle supports POINT sf objects

MULTIPOINT objects will be treated as single points. That is, if an sf object has one row with a MULTIPOINT object consisting of two points, this will be expanded to two rows of single POINTs. Therefore, if the origin is a MULTIPOINT of two points, and the destination is a single POINT, the code will error as there will be an uneven number of rows

legend

The legend_options can be used to control the appearance of the legend. This should be a named list, where the names are one of

- css - a string of valid css for controlling the appearance of the legend
- title - a string to use for the title of the legend
- digits - number to round the legend values to

If the layer allows different fill and stroke colours, you can use different options for each. See examples in [add_arc](#).

The legend_format can be used to control the format of the values in the legend. This should be a named list, where the names are one of

- fill_colour
- stroke_colour

depending on which type of colouring the layer supports.

The list elements must be functions to apply to the values in the legend.

id

The id is returned to your R session from an interactive shiny environment by observing layer clicks. This is useful for returning the data.frame row relating to the clicked shape.

From within a shiny server you would typically use observeEvent({input\$map_arc_click}), where 'map' is the map_id supplied to mapdeckOutput(), and 'arc' is the layer you are clicking on

Examples

```
## You need a valid access token from Mapbox
set_token("MAPBOX_TOKEN")

url <- 'https://raw.githubusercontent.com/plotly/datasets/master/2011_february_aa_flight_paths.csv'
flights <- read.csv(url)
flights$id <- seq_len(nrow(flights))
flights$stroke <- sample(1:3, size = nrow(flights), replace = TRUE)
flights$info <- paste0("<b>", flights$airport1, " - ", flights$airport2, "</b>")

mapdeck( style = mapdeck_style("dark"), pitch = 45 ) %>%
  add_greatcircle(
    data = flights
```

```

    , layer_id = "greatcircle_layer"
    , origin = c("start_lon", "start_lat")
    , destination = c("end_lon", "end_lat")
    , stroke_from = "airport1"
    , stroke_to = "airport2"
    , stroke_width = "stroke"
    , tooltip = "info"
    , auto_highlight = TRUE
    , legend = TRUE
    , legend_options = list(
      stroke_from = list( title = "Origin airport" ),
      css = "max-height: 100px;")
  )

mapdeck( style = mapdeck_style("dark")) %>%
  add_greatcircle(
    data = flights
    , layer_id = "greatcircle_layer"
    , origin = c("start_lon", "start_lat")
    , destination = c("end_lon", "end_lat")
    , stroke_from = "airport1"
    , stroke_to = "airport2"
    , stroke_width = "stroke"
  )

## Using a 2-sfc-column sf object
library(sfheaders)

sf_flights <- sfheaders::sf_point( flights, x = "start_lon", y = "start_lat", keep = TRUE )
destination <- sfheaders::sfc_point( flights, x = "end_lon", y = "end_lat" )

sf_flights$destination <- destination

mapdeck() %>%
  add_greatcircle(
    data = sf_flights
    , origin = 'geometry'
    , destination = 'destination'
    , layer_id = 'greatcircles'
    , stroke_from = "airport1"
    , stroke_to = "airport2"
  )

```

Description

The Grid Layer renders a grid heatmap based on an array of points. It takes the constant size all each cell, projects points into cells. The color and height of the cell is scaled by number of points it contains.

Usage

```
add_grid(
  map,
  data = get_map_data(map),
  lon = NULL,
  lat = NULL,
  polyline = NULL,
  cell_size = 1000,
  extruded = TRUE,
  elevation = NULL,
  elevation_function = c("sum", "mean", "min", "max"),
  colour = NULL,
  colour_function = c("sum", "mean", "min", "max"),
  elevation_scale = 1,
  colour_range = NULL,
  legend = FALSE,
  legend_options = NULL,
  auto_highlight = FALSE,
  highlight_colour = "#AAFFFFFF",
  layer_id = NULL,
  update_view = TRUE,
  focus_layer = FALSE,
  digits = 6,
  transitions = NULL,
  brush_radius = NULL,
  ...
)
```

Arguments

| | |
|-----------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| lon | column containing longitude values |
| lat | column containing latitude values |
| polyline | optional column of data containing the polylines, if using encoded polylines |
| cell_size | size of each cell in meters. Default 1000 |
| extruded | logical indicating if cells are elevated or not. Default TRUE |
| elevation | the height the polygon extrudes from the map. Only available if neither stroke_colour or stroke_width are supplied. Default 0 |

| | |
|--------------------|---|
| elevation_function | one of 'min', 'mean', 'max', 'sum'. IF supplied it specifies how the elevation values are calculated. Defaults to sum. |
| colour | column containing numeric values to colour by. |
| colour_function | one of 'min', 'mean', 'max', 'sum'. If supplied it specifies how the colour values are calculated. Defaults to sum. |
| elevation_scale | elevation multiplier. |
| colour_range | vector of 6 hex colours |
| legend | either a logical indicating if the legend(s) should be displayed, or a named list indicating which colour attributes should be included in the legend. |
| legend_options | A list of options for controlling the legend. |
| auto_highlight | logical indicating if the shape under the mouse should auto-highlight |
| highlight_colour | hex string colour to use for highlighting. Must contain the alpha component. |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |
| digits | number of digits for rounding coordinates |
| transitions | list specifying the duration of transitions. |
| brush_radius | radius of the brush in metres. Default NULL. If supplied, the arcs will only show if the origin or destination are within the radius of the mouse. If NULL, all arcs are displayed |
| ... | clear_legend and clear_view arguments passed to 'clear()' functions |

Details

add_grid supports POINT and MULTIPOINT sf objects

data

If the data is a simple feature object, the geometry column is automatically detected. If the sf object contains more than one geometry column and you want to use a specific one, you'll need to set the active geometry using `sf::st_geometry(x) <- "your_column"`, where "your_column" is the name of the column you're activating. See `?sf::st_geometry`

See Also

add_hexagon

Examples

```

## You need a valid access token from Mapbox
key <- 'abc'
set_token( key )

df <- read.csv(paste0(
  'https://raw.githubusercontent.com/uber-common/deck.gl-data/master/',
  'examples/3d-heatmap/heatmap-data.csv'
))

df <- df[ !is.na(df$lng ), ]

mapdeck( style = mapdeck_style("dark"), pitch = 45 ) %>%
add_grid(
  data = df
  , lat = "lat"
  , lon = "lng"
  , cell_size = 5000
  , elevation_scale = 50
  , layer_id = "grid_layer"
  , auto_highlight = TRUE
)

## using sf object
library(sfheaders)
sf <- sfheaders::sf_point( df, x = "lng", y = "lat")

mapdeck( style = mapdeck_style("dark"), pitch = 45 ) %>%
add_grid(
  data = sf
  , cell_size = 5000
  , elevation_scale = 50
  , layer_id = "grid_layer"
  , auto_highlight = TRUE
)

## using colour and elevation functions, and legends
df$val <- sample(1:10, size = nrow(df), replace = TRUE)

mapdeck( style = mapdeck_style("dark"), pitch = 45 ) %>%
add_grid(
  data = df
  , lat = "lat"
  , lon = "lng"
  , layer_id = "hex_layer"
  , elevation_scale = 100
  , legend = TRUE
  , colour_function = "max"
  , colour = "val"
)

mapdeck( style = mapdeck_style("dark"), pitch = 45 ) %>%

```

```
add_grid(  
  data = df  
  , lat = "lat"  
  , lon = "lng"  
  , layer_id = "hex_layer"  
  , elevation_scale = 10  
  , legend = TRUE  
  , elevation_function = "mean"  
  , elevation = "val"  
)
```

add_h3

Add h3

Description

The h3 layer renders hexagons from the H3 geospatial indexing system. To use this layer you must specify `libraries = "h3"` within the `mapdeck()` call. See examples.

Usage

```
add_h3(  
  map,  
  data = get_map_data(map),  
  hexagon = NULL,  
  stroke_colour = NULL,  
  stroke_width = NULL,  
  stroke_opacity = NULL,  
  fill_colour = NULL,  
  fill_opacity = NULL,  
  elevation = NULL,  
  tooltip = NULL,  
  auto_highlight = FALSE,  
  elevation_scale = 1,  
  highlight_colour = "#AAFFFFFF",  
  light_settings = list(),  
  layer_id = NULL,  
  id = NULL,  
  palette = "viridis",  
  na_colour = "#808080FF",  
  legend = FALSE,  
  legend_options = NULL,  
  legend_format = NULL,  
  update_view = TRUE,  
  focus_layer = FALSE,
```

```

    transitions = NULL
  )

```

Arguments

| | |
|------------------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| hexagon | column of data containing the hexagon indexes |
| stroke_colour | variable of data or hex colour for the stroke. If used, elevation is ignored. If using a hex colour, use either a single value, or a column of hex colours on data |
| stroke_width | width of the stroke in meters. If used, elevation is ignored. Default 1. |
| stroke_opacity | Either a string specifying the column of data containing the opacity of each shape, or a single value in [0,255], or [0, 1), to be applied to all the shapes. Default 255. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| fill_colour | column of data or hex colour for the fill colour. If using a hex colour, use either a single value, or a column of hex colours on data |
| fill_opacity | Either a string specifying the column of data containing the opacity of each shape, or a single value in [0,255], or [0, 1), to be applied to all the shapes. Default 255. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| elevation | the height the polygon extrudes from the map. Only available if neither stroke_colour or stroke_width are supplied. Default 0 |
| tooltip | variable of data containing text or HTML to render as a tooltip |
| auto_highlight | logical indicating if the shape under the mouse should auto-highlight |
| elevation_scale | elevation multiplier. |
| highlight_colour | hex string colour to use for highlighting. Must contain the alpha component. |
| light_settings | list of light setting parameters. See light_settings |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| id | an id value in data to identify layers when interacting in Shiny apps. |
| palette | string or matrix. String will be one of <code>colourvalues::colour_palettes()</code> . A matrix must have at least 5 rows, and 3 or 4 columns of values between [0, 255], where the 4th column represents the alpha. You can use a named list to specify a different palette for different colour options (where available), e.g. <code>list(fill_colour = "viridis", stroke_colour = "inferno")</code> |
| na_colour | hex string colour to use for NA values |
| legend | either a logical indicating if the legend(s) should be displayed, or a named list indicating which colour attributes should be included in the legend. |

| | |
|----------------|---|
| legend_options | A list of options for controlling the legend. |
| legend_format | A list containing functions to apply to legend values. See section legend |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |
| transitions | list specifying the duration of transitions. |

Details

add_h3 supports a data.frame with a column of h3 indexes

transitions

The transitions argument lets you specify the time it will take for the shapes to transition from one state to the next. Only works in an interactive environment (Shiny) and on WebGL-2 supported browsers and hardware.

The time is in milliseconds

Available transitions for h3

```
list( elevation = 0 colour = 0 )
```

Examples

```
## Not run:

## You need a valid access token from Mapbox
key <- 'abc'
set_token( key )

mapdeck(
  style = mapdeck_style("dark")
  , location = c(0, 51.3)
  , zoom = 10
  , pitch = 60
  , libraries = "h3"
) %>%
add_h3(
  data = road_safety
  , hexagon = "hex"
  , fill_colour = "count"
  , auto_highlight = TRUE
  , legend = TRUE
  , elevation = "count"
  , elevation_scale = 20
  , palette = colourvalues::get_palette("inferno")
)

## End(Not run)
```

 add_heatmap

Add Heatmap

Description

The Heatmap Layer can be used to visualise spatial distribution of data. It implements Gaussian Kernel Density Estimation to render the heatmaps.

Usage

```
add_heatmap(
  map,
  data = get_map_data(map),
  lon = NULL,
  lat = NULL,
  polyline = NULL,
  weight = NULL,
  colour_range = NULL,
  radius_pixels = 30,
  intensity = 1,
  threshold = 0.05,
  layer_id = NULL,
  update_view = TRUE,
  focus_layer = FALSE,
  digits = 6,
  transitions = NULL,
  ...
)
```

Arguments

| | |
|---------------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| lon | column containing longitude values |
| lat | column containing latitude values |
| polyline | optional column of data containing the polylines, if using encoded polylines |
| weight | the weight of each value. Default 1 |
| colour_range | vector of 6 hex colours |
| radius_pixels | Radius of the circle in pixels, to which the weight of an object is distributed |
| intensity | Value that is multiplied with the total weight at a pixel to obtain the final weight. A value larger than 1 biases the output color towards the higher end of the spectrum, and a value less than 1 biases the output color towards the lower end of the spectrum |

| | |
|-------------|---|
| threshold | The HeatmapLayer reduces the opacity of the pixels with relatively low weight to create a fading effect at the edge. A larger threshold smoothens the boundaries of color blobs, while making pixels with low relative weight harder to spot (due to low alpha value). Threshold is defined as the ratio of the fading weight to the max weight, between 0 and 1. For example, 0.1 affects all pixels with weight under 10% of the max. |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |
| digits | number of digits for rounding coordinates |
| transitions | list specifying the duration of transitions. |
| ... | clear_legend and clear_view arguments passed to 'clear()' functions |

Details

add_heatmap supports POINT and MULTIPOINT sf objects

note

The current version of this layer is supported only for WebGL2 enabled browsers So you may find it doesn't render in the RStudio viewer.

transitions

The transitions argument lets you specify the time it will take for the shapes to transition from one state to the next. Only works in an interactive environment (Shiny) and on WebGL-2 supported browsers and hardware.

The time is in milliseconds

Available transitions for heatmap

```
list( intensity = 0, threshold = 0, radius_pixels = 0 )
```

data

If the data is a simple feature object, the geometry column is automatically detected. If the sf object contains more than one geometry column and you want to use a specific one, you'll need to set the active geometry using `sf::st_geometry(x) <- "your_column"`, where "your_column" is the name of the column you're activating. See `?sf::st_geometry`

Examples

```
## You need a valid access token from Mapbox
key <- 'abc'
set_token( key )
```

```

df <- read.csv(paste0(
  'https://raw.githubusercontent.com/uber-common/deck.gl-data/master/',
  'examples/3d-heatmap/heatmap-data.csv'
))

df <- df[ !is.na(df$lng), ]
df$weight <- sample(1:10, size = nrow(df), replace = TRUE)

mapdeck( style = mapdeck_style('dark'), pitch = 45 ) %>%
  add_heatmap(
    data = df
    , lat = "lat"
    , lon = "lng"
    , weight = "weight",
    , layer_id = "heatmap_layer"
  )

## as an sf object
library(sfheaders)
sf <- sfheaders::sf_point( df, x = "lng", y = "lat")

mapdeck( style = mapdeck_style('dark'), pitch = 45 ) %>%
  add_heatmap(
    data = sf
    , weight = "weight",
    , layer_id = "heatmap_layer"
  )

```

add_hexagon

Add hexagon

Description

The Hexagon Layer renders a hexagon heatmap based on an array of points. It takes the radius of hexagon bin, projects points into hexagon bins. The color and height of the hexagon is scaled by number of points it contains.

Usage

```

add_hexagon(
  map,
  data = get_map_data(map),
  polyline = NULL,
  lon = NULL,
  lat = NULL,
  layer_id = NULL,

```

```

radius = 1000,
elevation = NULL,
elevation_function = c("sum", "mean", "min", "max"),
colour = NULL,
colour_function = c("sum", "mean", "min", "max"),
legend = FALSE,
legend_options = NULL,
elevation_scale = 1,
auto_highlight = FALSE,
highlight_colour = "#AAFFFFFF",
colour_range = NULL,
update_view = TRUE,
focus_layer = FALSE,
digits = 6,
transitions = NULL,
brush_radius = NULL,
...
)

```

Arguments

| | |
|--------------------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| polyline | column of data containing the polylines |
| lon | column containing longitude values |
| lat | column containing latitude values |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| radius | in metres. Default 1000 |
| elevation | column containing the elevation of the value. |
| elevation_function | one of 'min', 'mean', 'max', 'sum'. IF supplied it specifies how the elevation values are calculated. Defaults to sum. |
| colour | column containing numeric values to colour by. |
| colour_function | one of 'min', 'mean', 'max', 'sum'. If supplied it specifies how the colour values are calculated. Defaults to sum. |
| legend | logical indicating if a legend should be displayed |
| legend_options | A list of options for controlling the legend. |
| elevation_scale | value to scale the elevations of the hexagons. Default 1 |
| auto_highlight | logical indicating if the shape under the mouse should auto-highlight |

| | |
|------------------|--|
| highlight_colour | hex string colour to use for highlighting. Must contain the alpha component. |
| colour_range | vector of 6 hex colours |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |
| digits | number of digits for rounding coordinates |
| transitions | list specifying the duration of transitions. |
| brush_radius | radius of the brush in metres. Default NULL. If supplied, the arcs will only show if the origin or destination are within the radius of the mouse. If NULL, all arcs are displayed |
| ... | clear_legend and clear_view arguments passed to 'clear_()' functions |

Details

add_hexagon supports POINT and MULTIPOINT sf objects

transitions

The transitions argument lets you specify the time it will take for the shapes to transition from one state to the next. Only works in an interactive environment (Shiny) and on WebGL-2 supported browsers and hardware.

The time is in milliseconds

Available transitions for hexagon

```
list( elevation = 0 colour = 0 )
```

data

If the data is a simple feature object, the geometry column is automatically detected. If the sf object contains more than one geometry column and you want to use a specific one, you'll need to set the active geometry using `sf::st_geometry(x) <- "your_column"`, where "your_column" is the name of the column you're activating. See `?sf::st_geometry`

Examples

```
## Not run:

## You need a valid access token from Mapbox
key <- 'abc'
set_token( key )

df <- read.csv(paste0(
  'https://raw.githubusercontent.com/uber-common/deck.gl-data/master/examples/'
  , '3d-heatmap/heatmap-data.csv'
))

df <- df[!is.na(df$lng), ]

mapdeck( style = mapdeck_style("dark"), pitch = 45) %>%
```

```

add_hexagon(
  data = df
  , lat = "lat"
  , lon = "lng"
  , layer_id = "hex_layer"
  , elevation_scale = 100
)

library(sfheaders)
sf <- sfheaders::sf_point( df, x = "lng", y = "lat" )

mapdeck( style = mapdeck_style("dark"), pitch = 45 ) %>%
add_hexagon(
  data = sf
  , layer_id = "hex_layer"
  , elevation_scale = 100
)

## Using elevation and colour
df$colour <- rnorm(nrow(df))
df$elevation <- rnorm(nrow(df))

mapdeck( style = mapdeck_style("dark"), pitch = 45) %>%
add_hexagon(
  data = df
  , lat = "lat"
  , lon = "lng"
  , layer_id = "hex_layer"
  , elevation_scale = 100
  , elevation = "weight"
  , colour = "colour"
)

mapdeck( style = mapdeck_style("dark"), pitch = 45) %>%
add_hexagon(
  data = df
  , lat = "lat"
  , lon = "lng"
  , layer_id = "hex_layer"
  , elevation_scale = 100
  , elevation = "weight"
  , elevation_function = "mean"
  , colour = "colour"
  , colour_function = "mean"
)

## with a legend
df$val <- sample(1:10, size = nrow(df), replace = TRUE)

mapdeck( style = mapdeck_style("dark"), pitch = 45) %>%
add_hexagon(
  data = df
  , lat = "lat"

```

```
, lon = "lng"
, layer_id = "hex_layer"
, elevation_scale = 100
, legend = TRUE
, legend_options = list( digits = 0 )
, colour_function = "mean"
, colour = "val"
)

## End(Not run)
```

add_i3s

Add I3S

Description

Adds OGC Indexed 3D Scene (I3S) tiles to the map. This layer is experimental.

Usage

```
add_i3s(map, data, layer_id = NULL)
```

Arguments

| | |
|----------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |

Examples

```
## San Francisco buildings
i3s <- paste0(
  'https://tiles.arcgis.com/tiles/z2tnIkrLQ2BRzr6P/arcgis/rest/services/'
  , 'SanFrancisco_Bldgs/SceneServer/layers/0'
)

mapdeck(
  location = c(-122.41, 37.77)
  , zoom = 16
  , pitch = 60
) %>%
  add_i3s(
    data = i3s
```

```
)
```

```
add_legend
```

```
Add Legend
```

Description

Add a custom legend to the map

Usage

```
add_legend(map, legend, layer_id)
```

Arguments

| | |
|----------|---|
| map | a mapdeck map object |
| legend | either a logical indicating if the legend(s) should be displayed, or a named list indicating which colour attributes should be included in the legend. |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |

Examples

```
sf <- spatialwidget::widget_melbourne
sf$my_colour <- ifelse( substr(sf$SA2_NAME, 1, 1) == "A", "#00FF00FF", "#FF0000FF")

l1 <- legend_element(
  variables = c("Begins with A", "Doesn't begin with A")
  , colours = c("#00FF00FF", "#FF0000FF")
  , colour_type = "fill"
  , variable_type = "category"
)
js <- mapdeck_legend(l1)

set_token( "MAPBOX_TOKEN" )
mapdeck() %>%
  add_legend(legend = js, layer_id = "my_layer")

mapdeck() %>%
  add_legend(legend = js, layer_id = "my_layer") %>%
  clear_legend(layer_id = "my_layer")
```

| | |
|----------|-----------------|
| add_line | <i>Add line</i> |
|----------|-----------------|

Description

The Line Layer renders raised lines joining pairs of source and target coordinates

Usage

```
add_line(
  map,
  data = get_map_data(map),
  layer_id = NULL,
  origin,
  destination,
  id = NULL,
  stroke_colour = NULL,
  stroke_width = NULL,
  stroke_opacity = NULL,
  tooltip = NULL,
  auto_highlight = FALSE,
  highlight_colour = "#AAFFFFFF",
  palette = "viridis",
  na_colour = "#808080FF",
  legend = FALSE,
  legend_options = NULL,
  legend_format = NULL,
  update_view = TRUE,
  focus_layer = FALSE,
  digits = 6,
  transitions = NULL,
  brush_radius = NULL,
  ...
)
```

Arguments

| | |
|----------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| origin | vector of longitude and latitude columns, and optionally an elevation column, or an sfc column |

| | |
|------------------|---|
| destination | vector of longitude and latitude columns, and optionally an elevation column, or an sf column |
| id | an id value in data to identify layers when interacting in Shiny apps. |
| stroke_colour | variable or hex colour to use as the ending stroke colour. |
| stroke_width | width of the line in metres |
| stroke_opacity | Either a string specifying the column of data containing the opacity of each shape, or a single value in [0,255], or [0, 1), to be applied to all the shapes. Default 255. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| tooltip | variable of data containing text or HTML to render as a tooltip |
| auto_highlight | logical indicating if the shape under the mouse should auto-highlight |
| highlight_colour | hex string colour to use for highlighting. Must contain the alpha component. |
| palette | string or matrix. String will be one of <code>colourvalues::colour_palettes()</code> . A matrix must have at least 5 rows, and 3 or 4 columns of values between [0, 255], where the 4th column represents the alpha. You can use a named list to specify a different palette for different colour options (where available), e.g. <code>list(fill_colour = "viridis", stroke_colour = "inferno")</code> |
| na_colour | hex string colour to use for NA values |
| legend | either a logical indicating if the legend(s) should be displayed, or a named list indicating which colour attributes should be included in the legend. |
| legend_options | A list of options for controlling the legend. |
| legend_format | A list containing functions to apply to legend values. See section legend |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |
| digits | number of digits for rounding coordinates |
| transitions | list specifying the duration of transitions. |
| brush_radius | radius of the brush in metres. Default NULL. If supplied, the arcs will only show if the origin or destination are within the radius of the mouse. If NULL, all arcs are displayed |
| ... | clear_legend and clear_view arguments passed to 'clear_()' functions |

Details

add_line supports POINT sf objects

MULTIPOINT objects will be treated as single points. That is, if an sf object has one row with a MULTIPOINT object consisting of two points, this will be expanded to two rows of single POINTs. Therefore, if the origin is a MULTIPOINT of two points, and the destination is a single POINT, the code will error as there will be an uneven number of rows

transitions

The transitions argument lets you specify the time it will take for the shapes to transition from one state to the next. Only works in an interactive environment (Shiny) and on WebGL-2 supported browsers and hardware.

The time is in milliseconds

Available transitions for line

```
list( origin = 0, destination = 0, stroke_colour = 0, stroke_width = 0 )
```

legend

The legend_options can be used to control the appearance of the legend. This should be a named list, where the names are one of

- css - a string of valid css for controlling the appearance of the legend
- title - a string to use for the title of the legend
- digits - number to round the legend values to

If the layer allows different fill and stroke colours, you can use different options for each. See examples in [add_arc](#).

The legend_format can be used to control the format of the values in the legend. This should be a named list, where the names are one of

- fill_colour
- stroke_colour

depending on which type of colouring the layer supports.

The list elements must be functions to apply to the values in the legend.

id

The id is returned to your R session from an interactive shiny environment by observing layer clicks. This is useful for returning the data.frame row relating to the clicked shape.

From within a shiny server you would typically use observeEvent({input\$map_arc_click}), where 'map' is the map_id supplied to mapdeckOutput(), and 'arc' is the layer you are clicking on

Examples

```
## You need a valid access token from Mapbox
key <- 'abc'
set_token( key )

url <- 'https://raw.githubusercontent.com/plotly/datasets/master/2011_february_aa_flight_paths.csv'
flights <- read.csv(url)
flights$id <- seq_len(nrow(flights))
flights$stroke <- sample(1:3, size = nrow(flights), replace = TRUE)

mapdeck(style = mapdeck_style("dark"), pitch = 45 ) %>%
```

```

add_line(
  data = flights
  , layer_id = "line_layer"
  , origin = c("start_lon", "start_lat")
  , destination = c("end_lon", "end_lat")
  , stroke_colour = "airport1"
  , stroke_width = "stroke"
  , auto_highlight = TRUE
)

## Using a 2-sfc-column sf object
library(sfheaders)

sf_flights <- sfheaders::sf_point( flights, x = "start_lon", y = "start_lat", keep = TRUE )
destination <- sfheaders::sfc_point( flights, x = "end_lon", y = "end_lat" )

sf_flights$destination <- destination

mapdeck() %>%
  add_line(
    data = sf_flights
    , origin = 'geometry'
    , destination = 'destination'
    , layer_id = 'arcs'
    , stroke_colour = "airport1"
  )

```

add_mesh

Add Mesh

Description

Adds polygons to the map from a mesh3d object

Usage

```

add_mesh(
  map,
  data = get_map_data(map),
  fill_opacity = NULL,
  elevation = NULL,
  tooltip = NULL,
  auto_highlight = FALSE,
  highlight_colour = "#AAFFFFFF",
  light_settings = list(),
  layer_id = NULL,
  id = NULL,

```

```

palette = "viridis",
na_colour = "#808080FF",
legend = FALSE,
legend_options = NULL,
legend_format = NULL,
update_view = TRUE,
focus_layer = FALSE,
digits = 6,
transitions = NULL,
brush_radius = NULL
)

```

Arguments

| | |
|------------------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| fill_opacity | Either a string specifying the column of data containing the opacity of each shape, or a single value in [0,255], or [0, 1), to be applied to all the shapes. Default 255. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| elevation | the height the polygon extrudes from the map. Only available if neither stroke_colour or stroke_width are supplied. Default 0 |
| tooltip | variable of data containing text or HTML to render as a tooltip |
| auto_highlight | logical indicating if the shape under the mouse should auto-highlight |
| highlight_colour | hex string colour to use for highlighting. Must contain the alpha component. |
| light_settings | list of light setting parameters. See light_settings |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| id | an id value in data to identify layers when interacting in Shiny apps. |
| palette | string or matrix. String will be one of <code>colourvalues::colour_palettes()</code> . A matrix must have at least 5 rows, and 3 or 4 columns of values between [0, 255], where the 4th column represents the alpha. You can use a named list to specify a different palette for different colour options (where available), e.g. <code>list(fill_colour = "viridis", stroke_colour = "inferno")</code> |
| na_colour | hex string colour to use for NA values |
| legend | either a logical indicating if the legend(s) should be displayed, or a named list indicating which colour attributes should be included in the legend. |
| legend_options | A list of options for controlling the legend. |
| legend_format | A list containing functions to apply to legend values. See section legend |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |

| | |
|--------------|--|
| digits | number of digits for rounding coordinates |
| transitions | list specifying the duration of transitions. |
| brush_radius | radius of the brush in metres. Default NULL. If supplied, the arcs will only show if the origin or destination are within the radius of the mouse. If NULL, all arcs are displayed |

Details

add_mesh supports mesh3d objects

legend

The legend_options can be used to control the appearance of the legend. This should be a named list, where the names are one of

- css - a string of valid css for controlling the appearance of the legend
- title - a string to use for the title of the legend
- digits - number to round the legend values to

If the layer allows different fill and stroke colours, you can use different options for each. See examples in [add_arc](#).

The legend_format can be used to control the format of the values in the legend. This should be a named list, where the names are one of

- fill_colour
- stroke_colour

depending on which type of colouring the layer supports.

The list elements must be functions to apply to the values in the legend.

id

The id is returned to your R session from an interactive shiny environment by observing layer clicks. This is useful for returning the data.frame row relating to the clicked shape.

From within a shiny server you would typically use observeEvent({input\$map_arc_click}), where 'map' is the map_id supplied to mapdeckOutput(), and 'arc' is the layer you are clicking on

Examples

```
## exaggerate the elevation slightly
m <- melbourne_mesh
m$vb[3, ] <- m$vb[3, ] * 50

mapdeck() %>%
  add_mesh(
    data = m
  )
```

| | |
|----------|-----------------|
| add_path | <i>Add Path</i> |
|----------|-----------------|

Description

The Path Layer takes in lists of coordinate points and renders them as extruded lines with mitering.

Usage

```
add_path(
  map,
  data = get_map_data(map),
  polyline = NULL,
  stroke_colour = NULL,
  stroke_width = NULL,
  stroke_opacity = NULL,
  dash_size = NULL,
  dash_gap = NULL,
  offset = NULL,
  width_units = c("meters", "common", "pixels"),
  width_min_pixels = NULL,
  width_max_pixels = NULL,
  width_scale = 1,
  tooltip = NULL,
  billboard = FALSE,
  layer_id = NULL,
  id = NULL,
  auto_highlight = FALSE,
  highlight_colour = "#AAFFFFFF",
  palette = "viridis",
  na_colour = "#808080FF",
  legend = FALSE,
  legend_options = NULL,
  legend_format = NULL,
  update_view = TRUE,
  focus_layer = FALSE,
  digits = 6,
  transitions = NULL,
  brush_radius = NULL,
  ...
)
```

Arguments

| | |
|------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |

| | |
|------------------|---|
| polyline | optional column of data containing the polylines, if using encoded polylines |
| stroke_colour | variable of data or hex colour for the stroke. If used, elevation is ignored. If using a hex colour, use either a single value, or a column of hex colours on data |
| stroke_width | width of the stroke in meters. Default 1. |
| stroke_opacity | Either a string specifying the column of data containing the opacity of each shape, or a single value in [0,255], or [0, 1), to be applied to all the shapes. Default 255. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| dash_size | size of each dash, relative to the width of the stroke |
| dash_gap | size of the gap between dashes, relative to the width of the stroke |
| offset | The offset to draw each path with, relative to the width of the path. Negative offset is to the left hand side, and positive offset is to the right hand side. 0 extrudes the path so that it is centered at the specified coordinates. |
| width_units | The units of the line width, one of 'meters', 'common' or 'pixels'. When zooming in and out, meter sizes scale with the base map, and pixel sizes remain the same on screen. |
| width_min_pixels | The minimum path width in pixels. This can be used to prevent the path from getting too thin when zoomed out. |
| width_max_pixels | The maximum path width in pixels. This prop can be used to prevent the path from getting too thick when zoomed in. |
| width_scale | The path width multiplier that multiplied to all paths. |
| tooltip | variable of data containing text or HTML to render as a tooltip |
| billboard | logical indicating if the path always faces the camera (TRUE) or if it always faces up (FALSE) |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| id | an id value in data to identify layers when interacting in Shiny apps. |
| auto_highlight | logical indicating if the shape under the mouse should auto-highlight |
| highlight_colour | hex string colour to use for highlighting. Must contain the alpha component. |
| palette | string or matrix. String will be one of <code>colourvalues::colour_palettes()</code> . A matrix must have at least 5 rows, and 3 or 4 columns of values between [0, 255], where the 4th column represents the alpha. You can use a named list to specify a different palette for different colour options (where available), e.g. <code>list(fill_colour = "viridis", stroke_colour = "inferno")</code> |
| na_colour | hex string colour to use for NA values |
| legend | either a logical indicating if the legend(s) should be displayed, or a named list indicating which colour attributes should be included in the legend. |
| legend_options | A list of options for controlling the legend. |
| legend_format | A list containing functions to apply to legend values. See section legend |

| | |
|--------------|--|
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |
| digits | number of digits for rounding coordinates |
| transitions | list specifying the duration of transitions. |
| brush_radius | radius of the brush in metres. Default NULL. If supplied, the arcs will only show if the origin or destination are within the radius of the mouse. If NULL, all arcs are displayed |
| ... | clear_legend and clear_view arguments passed to 'clear_()' functions |

Details

add_path supports LINESTRING and MULTILINESTRING sf objects

transitions

The transitions argument lets you specify the time it will take for the shapes to transition from one state to the next. Only works in an interactive environment (Shiny) and on WebGL-2 supported browsers and hardware.

The time is in milliseconds

Available transitions for path

```
list( path = 0, stroke_colour = 0, stroke_width = 0 )
```

gradient fill

If a colour is supplied for each coordinate (see examples), the colour along each segment of the line is gradient-filled. However, if either dash_gap, dash_size or offset are supplied the segment is filled with a solid colour, according to the first point on the segment.

data

If the data is a simple feature object, the geometry column is automatically detected. If the sf object contains more than one geometry column and you want to use a specific one, you'll need to set the active geometry using `sf::st_geometry(x) <- "your_column"`, where "your_column" is the name of the column you're activating. See `?sf::st_geometry`

legend

The legend_options can be used to control the appearance of the legend. This should be a named list, where the names are one of

- css - a string of valid css for controlling the appearance of the legend
- title - a string to use for the title of the legend
- digits - number to round the legend values to

If the layer allows different fill and stroke colours, you can use different options for each. See examples in [add_arc](#).

The legend_format can be used to control the format of the values in the legend. This should be a named list, where the names are one of

- fill_colour
- stroke_colour

depending on which type of colouring the layer supports.

The list elements must be functions to apply to the values in the legend.

id

The id is returned to your R session from an interactive shiny environment by observing layer clicks. This is useful for returning the data.frame row relating to the clicked shape.

From within a shiny server you would typically use `observeEvent({input$map_arc_click})`, where 'map' is the map_id supplied to `mapdeckOutput()`, and 'arc' is the layer you are clicking on

Examples

```
## You need a valid access token from Mapbox
key <- 'abc'
set_token( key )

mapdeck(
  style = mapdeck_style("dark")
) %>%
add_path(
  data = roads
  , stroke_colour = "RIGHT_LOC"
  , stroke_width = 20
  , layer_id = "path_layer"
  , tooltip = "ROAD_NAME"
  , auto_highlight = TRUE
  , legend = TRUE
)

## Dashed lines
mapdeck(
  style = mapdeck_style("dark")
) %>%
add_path(
  data = roads
  , stroke_colour = "RIGHT_LOC"
  , layer_id = "path_layer"
  , tooltip = "ROAD_NAME"
  , stroke_width = 1
  , dash_size = 0.5
  , dash_gap = 5
)

## Different dashes per path

sf <- mapdeck::roads
sf$dash_size <- sample(1:5, size = nrow( sf ), replace = TRUE )
```

```

sf$dash_gap <- sample(1:5, size = nrow( sf ), replace = TRUE )

mapdeck(
  style = mapdeck_style("dark")
) %>%
add_path(
  data = sf
  , stroke_colour = "RIGHT_LOC"
  , layer_id = "path_layer"
  , tooltip = "ROAD_NAME"
  , dash_size = "dash_size"
  , dash_gap = "dash_gap"
)

## Offset lines
sf <- mapdeck::roads
sf$offset <- sample(-10:10, size = nrow( sf ), replace = TRUE )

mapdeck(
  style = mapdeck_style("light")
) %>%
add_path(
  data = sf
  , stroke_colour = "ROAD_NAME"
  , offset = "offset"
)

## Multi Coloured line
## You need to supply one colour per coordinate in the sf object
sf_line <- sfheaders::sf_linestring(
  obj = data.frame(
    id = c(1,1,1,1,1,2,2,2,2)
    , x = c(0,0,1,1,2,-1,-1,0,0,1)
    , y = c(0,1,1,2,2,0,1,1,2,2)
    , col = c(1,2,3,4,5,5,4,3,2,1)
  )
  , x = "x"
  , y = "y"
  , linestring_id = "id"
  , list_columns = "col"
  , keep = TRUE
)

mapdeck(
  style = mapdeck_style("light")
) %>%
add_path(
  data = sf_line
  , stroke_colour = "col"
  , stroke_width = 50000
)

## If using dashed lines, colours won't be gradient-filled

```

```
mapdeck(  
  style = mapdeck_style("light")  
) %>%  
  add_path(  
    data = sf_line  
    , stroke_colour = "col"  
    , stroke_width = 500  
    , dash_size = 10  
    , dash_gap = 10  
  )
```

add_pointcloud

Add Pointcloud

Description

The Pointcloud Layer takes in coordinate points and renders them as circles with a certain radius.

Usage

```
add_pointcloud(  
  map,  
  data = get_map_data(map),  
  lon = NULL,  
  lat = NULL,  
  elevation = NULL,  
  polyline = NULL,  
  radius = 10,  
  fill_colour = NULL,  
  fill_opacity = NULL,  
  tooltip = NULL,  
  auto_highlight = FALSE,  
  highlight_colour = "#AAFFFFFF",  
  light_settings = list(),  
  layer_id = NULL,  
  id = NULL,  
  palette = "viridis",  
  na_colour = "#808080FF",  
  legend = FALSE,  
  legend_options = NULL,  
  legend_format = NULL,  
  update_view = TRUE,  
  focus_layer = FALSE,  
  digits = 6,
```

```

    transitions = NULL,
    brush_radius = NULL,
    ...
)

```

Arguments

| | |
|------------------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| lon | column containing longitude values |
| lat | column containing latitude values |
| elevation | column containing the elevation values. Default 0 |
| polyline | optional column of data containing the polylines, if using encoded polylines |
| radius | value in pixels of each point. Default 10. |
| fill_colour | column of data or hex colour for the fill colour. If using a hex colour, use either a single value, or a column of hex colours on data |
| fill_opacity | Either a string specifying the column of data containing the opacity of each shape, or a single value in [0,255], or [0, 1), to be applied to all the shapes. Default 255. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| tooltip | variable of data containing text or HTML to render as a tooltip |
| auto_highlight | logical indicating if the shape under the mouse should auto-highlight |
| highlight_colour | hex string colour to use for highlighting. Must contain the alpha component. |
| light_settings | list of light setting parameters. See light_settings |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| id | an id value in data to identify layers when interacting in Shiny apps. |
| palette | string or matrix. String will be one of <code>colourvalues::colour_palettes()</code> . A matrix must have at least 5 rows, and 3 or 4 columns of values between [0, 255], where the 4th column represents the alpha. You can use a named list to specify a different palette for different colour options (where available), e.g. <code>list(fill_colour = "viridis", stroke_colour = "inferno")</code> |
| na_colour | hex string colour to use for NA values |
| legend | either a logical indicating if the legend(s) should be displayed, or a named list indicating which colour attributes should be included in the legend. |
| legend_options | A list of options for controlling the legend. |
| legend_format | A list containing functions to apply to legend values. See section legend |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |

| | |
|--------------|--|
| digits | number of digits for rounding coordinates |
| transitions | list specifying the duration of transitions. |
| brush_radius | radius of the brush in metres. Default NULL. If supplied, the arcs will only show if the origin or destination are within the radius of the mouse. If NULL, all arcs are displayed |
| ... | clear_legend and clear_view arguments passed to 'clear_()' functions |

Details

add_pointcloud supports POINT and MULTIPOINT sf objects

transitions

The transitions argument lets you specify the time it will take for the shapes to transition from one state to the next. Only works in an interactive environment (Shiny) and on WebGL-2 supported browsers and hardware.

The time is in milliseconds

Available transitions for pointcloud

```
list( position = 0, fill_colour = 0 )
```

data

If the data is a simple feature object, the geometry column is automatically detected. If the sf object contains more than one geometry column and you want to use a specific one, you'll need to set the active geometry using `sf::st_geometry(x) <- "your_column"`, where "your_column" is the name of the column you're activating. See `?sf::st_geometry`

legend

The legend_options can be used to control the appearance of the legend. This should be a named list, where the names are one of

- css - a string of valid css for controlling the appearance of the legend
- title - a string to use for the title of the legend
- digits - number to round the legend values to

If the layer allows different fill and stroke colours, you can use different options for each. See examples in [add_arc](#).

The legend_format can be used to control the format of the values in the legend. This should be a named list, where the names are one of

- fill_colour
- stroke_colour

depending on which type of colouring the layer supports.

The list elements must be functions to apply to the values in the legend.

id

The id is returned to your R session from an interactive shiny environment by observing layer clicks. This is useful for returning the data.frame row relating to the clicked shape.

From within a shiny server you would typically use `observeEvent({input$map_arc_click})`, where 'map' is the map_id supplied to `mapdeckOutput()`, and 'arc' is the layer you are clicking on

Examples

```
## You need a valid access token from Mapbox
key <- 'abc'
set_token( key )

df <- capitals
df$z <- sample(10000:10000000, size = nrow(df))

mapdeck(style = mapdeck_style("dark")) %>%
  add_pointcloud(
    data = df
    , lon = 'lon'
    , lat = 'lat'
    , elevation = 'z'
    , layer_id = 'point'
    , fill_colour = "country"
    , tooltip = "country"
  )

## as an sf object with a Z attribute
library(sfheaders)
sf <- sfheaders::sf_point( df, x = "lon", y = "lat", z = "z" )

mapdeck(style = mapdeck_style("dark")) %>%
  add_pointcloud(
    data = sf
    , layer_id = 'point'
    , fill_colour = "country"
    , tooltip = "country"
    , update_view = FALSE
  )
```

 add_polygon

 Add Polygon

Description

The Polygon Layer renders filled and/or stroked polygons.

Usage

```

add_polygon(
  map,
  data = get_map_data(map),
  polyline = NULL,
  stroke_colour = NULL,
  stroke_width = NULL,
  stroke_opacity = NULL,
  fill_colour = NULL,
  fill_opacity = NULL,
  elevation = NULL,
  tooltip = NULL,
  auto_highlight = FALSE,
  elevation_scale = 1,
  highlight_colour = "#AAFFFFFF",
  light_settings = list(),
  layer_id = NULL,
  id = NULL,
  palette = "viridis",
  na_colour = "#808080FF",
  legend = FALSE,
  legend_options = NULL,
  legend_format = NULL,
  update_view = TRUE,
  focus_layer = FALSE,
  digits = 6,
  transitions = NULL,
  brush_radius = NULL,
  ...
)

```

Arguments

| | |
|-----------------------------|---|
| <code>map</code> | a mapdeck map object |
| <code>data</code> | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| <code>polyline</code> | optional column of data containing the polylines, if using encoded polylines |
| <code>stroke_colour</code> | variable of data or hex colour for the stroke. If used, <code>elevation</code> is ignored. If using a hex colour, use either a single value, or a column of hex colours on data |
| <code>stroke_width</code> | width of the stroke in meters. If used, <code>elevation</code> is ignored. Default 1. |
| <code>stroke_opacity</code> | Either a string specifying the column of data containing the opacity of each shape, or a single value in $[0,255]$, or $[0, 1)$, to be applied to all the shapes. Default 255. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| <code>fill_colour</code> | column of data or hex colour for the fill colour. If using a hex colour, use either a single value, or a column of hex colours on data |

| | |
|------------------|--|
| fill_opacity | Either a string specifying the column of data containing the opacity of each shape, or a single value in [0,255], or [0, 1), to be applied to all the shapes. Default 255. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| elevation | the height the polygon extrudes from the map. Only available if neither stroke_colour or stroke_width are supplied. Default 0 |
| tooltip | variable of data containing text or HTML to render as a tooltip |
| auto_highlight | logical indicating if the shape under the mouse should auto-highlight |
| elevation_scale | elevation multiplier. |
| highlight_colour | hex string colour to use for highlighting. Must contain the alpha component. |
| light_settings | list of light setting parameters. See light_settings |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| id | an id value in data to identify layers when interacting in Shiny apps. |
| palette | string or matrix. String will be one of colourvalues::colour_palettes(). A matrix must have at least 5 rows, and 3 or 4 columns of values between [0, 255], where the 4th column represents the alpha. You can use a named list to specify a different palette for different colour options (where available), e.g. list(fill_colour = "viridis", stroke_colour = "inferno") |
| na_colour | hex string colour to use for NA values |
| legend | either a logical indicating if the legend(s) should be displayed, or a named list indicating which colour attributes should be included in the legend. |
| legend_options | A list of options for controlling the legend. |
| legend_format | A list containing functions to apply to legend values. See section legend |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |
| digits | number of digits for rounding coordinates |
| transitions | list specifying the duration of transitions. |
| brush_radius | radius of the brush in metres. Default NULL. If supplied, the arcs will only show if the origin or destination are within the radius of the mouse. If NULL, all arcs are displayed |
| ... | clear_legend and clear_view arguments passed to 'clear_()' functions |

Details

add_polygon supports POLYGON and MULTIPOLYGON sf objects

data

If the data is a simple feature object, the geometry column is automatically detected. If the sf object contains more than one geometry column and you want to use a specific one, you'll need to set the active geometry using `sf::st_geometry(x) <- "your_column"`, where "your_column" is the name of the column you're activating. See `?sf::st_geometry`

transitions

The transitions argument lets you specify the time it will take for the shapes to transition from one state to the next. Only works in an interactive environment (Shiny) and on WebGL-2 supported browsers and hardware.

The time is in milliseconds

Available transitions for polygon

```
list( polygon = 0, fill_colour = 0, stroke_colour = 0, stroke_width = 0, elevation = 0 )
```

legend

The legend_options can be used to control the appearance of the legend. This should be a named list, where the names are one of

- css - a string of valid css for controlling the appearance of the legend
- title - a string to use for the title of the legend
- digits - number to round the legend values to

If the layer allows different fill and stroke colours, you can use different options for each. See examples in [add_arc](#).

The legend_format can be used to control the format of the values in the legend. This should be a named list, where the names are one of

- fill_colour
- stroke_colour

depending on which type of colouring the layer supports.

The list elements must be functions to apply to the values in the legend.

id

The id is returned to your R session from an interactive shiny environment by observing layer clicks. This is useful for returning the data.frame row relating to the clicked shape.

From within a shiny server you would typically use observeEvent({input\$map_arc_click}), where 'map' is the map_id supplied to mapdeckOutput(), and 'arc' is the layer you are clicking on

Examples

```
## You need a valid access token from Mapbox
key <- 'abc'
set_token( key )

library(geojsonsf)

sf <- geojsonsf::geojson_sf("https://symbolixau.github.io/data/geojson/SA2_2016_VIC.json")

mapdeck(
  style = mapdeck_style('dark')
```

```

) %>%
  add_polygon(
    data = sf
    , layer = "polygon_layer"
    , fill_colour = "SA2_NAME16"
  )

df <- melbourne ## data.frame with encoded polylines
df$elevation <- sample(100:5000, size = nrow(df))
df$info <- paste0("<b>SA2 - </b><br>",df$SA2_NAME)

mapdeck(
  style = mapdeck_style('dark')
  , location = c(145, -38)
  , zoom = 8
) %>%
  add_polygon(
    data = df
    , polyline = "geometry"
    , layer = "polygon_layer"
    , fill_colour = "SA2_NAME"
    , elevation = "elevation"
    , tooltip = 'info'
    , legend = TRUE
  )

```

add_scatterplot

Add Scatterplot

Description

The Scatterplot Layer takes in coordinate points and renders them as circles with a certain radius.

Usage

```

add_scatterplot(
  map,
  data = get_map_data(map),
  lon = NULL,
  lat = NULL,
  polyline = NULL,
  radius = NULL,
  radius_min_pixels = 1,
  radius_max_pixels = NULL,
  fill_colour = NULL,
  fill_opacity = NULL,

```

```

    stroke_colour = NULL,
    stroke_width = NULL,
    stroke_opacity = NULL,
    tooltip = NULL,
    auto_highlight = FALSE,
    highlight_colour = "#AAFFFFFF",
    layer_id = NULL,
    id = NULL,
    palette = "viridis",
    na_colour = "#808080FF",
    legend = FALSE,
    legend_options = NULL,
    legend_format = NULL,
    digits = 6,
    update_view = TRUE,
    focus_layer = FALSE,
    transitions = NULL,
    brush_radius = NULL,
    collision_filter = FALSE,
    ...
)

```

Arguments

| | |
|-------------------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| lon | column containing longitude values |
| lat | column containing latitude values |
| polyline | optional column of data containing the polylines, if using encoded polylines |
| radius | in metres. Default 1 |
| radius_min_pixels | the minimum radius in pixels. Can prevent circle from getting too small when zoomed out small for the given zoom level |
| radius_max_pixels | the maximum radius in pixels. Can prevent the circle from getting too big when zoomed in |
| fill_colour | column of data or hex colour for the fill colour. If using a hex colour, use either a single value, or a column of hex colours on data |
| fill_opacity | Either a string specifying the column of data containing the opacity of each shape, or a single value in [0,255], or [0, 1), to be applied to all the shapes. Default 255. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| stroke_colour | variable of data or hex colour for the stroke. If used, elevation is ignored. If using a hex colour, use either a single value, or a column of hex colours on data |
| stroke_width | width of the stroke in meters. If used, elevation is ignored. Default 1. |

| | |
|------------------|---|
| stroke_opacity | Either a string specifying the column of data containing the opacity of each shape, or a single value in [0,255], or [0, 1), to be applied to all the shapes. Default 255. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| tooltip | variable of data containing text or HTML to render as a tooltip |
| auto_highlight | logical indicating if the shape under the mouse should auto-highlight |
| highlight_colour | hex string colour to use for highlighting. Must contain the alpha component. |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| id | an id value in data to identify layers when interacting in Shiny apps. |
| palette | string or matrix. String will be one of <code>colourvalues::colour_palettes()</code> . A matrix must have at least 5 rows, and 3 or 4 columns of values between [0, 255], where the 4th column represents the alpha. You can use a named list to specify a different palette for different colour options (where available), e.g. <code>list(fill_colour = "viridis", stroke_colour = "inferno")</code> |
| na_colour | hex string colour to use for NA values |
| legend | either a logical indicating if the legend(s) should be displayed, or a named list indicating which colour attributes should be included in the legend. |
| legend_options | A list of options for controlling the legend. |
| legend_format | A list containing functions to apply to legend values. See section legend |
| digits | number of digits for rounding coordinates |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |
| transitions | list specifying the duration of transitions. |
| brush_radius | radius of the brush in metres. Default NULL. If supplied, the arcs will only show if the origin or destination are within the radius of the mouse. If NULL, all arcs are displayed |
| collision_filter | set to 'TRUE' if you want to hide features that overlap other features. Default is 'FALSE' |
| ... | clear_legend and clear_view arguments passed to 'clear_()' functions |

Details

add_scatterplot supports POINT and MULTIPOINT sf objects

transitions

The transitions argument lets you specify the time it will take for the shapes to transition from one state to the next. Only works in an interactive environment (Shiny) and on WebGL-2 supported browsers and hardware.

The time is in milliseconds

Available transitions for scatterplot

list(position = 0, fill_colour = 0, radius = 0)

data

If the data is a simple feature object, the geometry column is automatically detected. If the sf object contains more than one geometry column and you want to use a specific one, you'll need to set the active geometry using `sf::st_geometry(x) <- "your_column"`, where "your_column" is the name of the column you're activating. See `?sf::st_geometry`

legend

The `legend_options` can be used to control the appearance of the legend. This should be a named list, where the names are one of

- `css` - a string of valid css for controlling the appearance of the legend
- `title` - a string to use for the title of the legend
- `digits` - number to round the legend values to

If the layer allows different fill and stroke colours, you can use different options for each. See examples in [add_arc](#).

The `legend_format` can be used to control the format of the values in the legend. This should be a named list, where the names are one of

- `fill_colour`
- `stroke_colour`

depending on which type of colouring the layer supports.

The list elements must be functions to apply to the values in the legend.

id

The `id` is returned to your R session from an interactive shiny environment by observing layer clicks. This is useful for returning the data.frame row relating to the clicked shape.

From within a shiny server you would typically use `observeEvent({input$map_arc_click})`, where 'map' is the `map_id` supplied to `mapdeckOutput()`, and 'arc' is the layer you are clicking on

Examples

```
## You need a valid access token from Mapbox
key <- 'abc'
set_token( key )

mapdeck( style = mapdeck_style("dark"), pitch = 45 ) %>%
  add_scatterplot(
    data = capitals
    , lat = "lat"
    , lon = "lon"
    , radius = 100000
    , fill_colour = "country"
    , layer_id = "scatter_layer"
    , tooltip = "capital"
```

```

)

## using legend options
mapdeck( style = mapdeck_style("dark"), pitch = 45 ) %>%
add_scatterplot(
  data = capitals
  , lat = "lat"
  , lon = "lon"
  , radius = 100000
  , fill_colour = "lon"
  , stroke_colour = "lat"
  , layer_id = "scatter_layer"
  , tooltip = "capital"
  , legend = TRUE
  , legend_options = list( digits = 5 )
)

df <- read.csv(paste0(
'https://raw.githubusercontent.com/uber-common/deck.gl-data/master/' ,
'examples/3d-heatmap/heatmap-data.csv'
))

df <- df[ !is.na(df$lng), ]

mapdeck(style = mapdeck_style("dark"), pitch = 45 ) %>%
add_scatterplot(
  data = df
  , lat = "lat"
  , lon = "lng"
  , layer_id = "scatter_layer"
  , stroke_colour = "lng"
)

## as an sf object
library(sfheaders)
sf <- sfheaders::sf_point( df, x = "lng", y = "lat")

mapdeck( style = mapdeck_style("dark"), pitch = 45 ) %>%
add_scatterplot(
  data = sf
  , radius = 100
  , fill_colour = "country"
  , layer_id = "scatter_layer"
  , tooltip = "capital"
)

```

Description

The Screen Grid Layer takes in an array of latitude and longitude coordinated points, aggregates them into histogram bins and renders as a grid

Usage

```
add_screengrid(
  map,
  data = get_map_data(map),
  lon = NULL,
  lat = NULL,
  polyline = NULL,
  weight = NULL,
  aggregation = c("sum", "mean", "min", "max"),
  colour_range = NULL,
  opacity = 0.8,
  cell_size = 50,
  layer_id = NULL,
  update_view = TRUE,
  focus_layer = FALSE,
  digits = 6,
  ...
)
```

Arguments

| | |
|--------------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| lon | column containing longitude values |
| lat | column containing latitude values |
| polyline | optional column of data containing the polylines, if using encoded polylines |
| weight | the weight of each value. Default 1 |
| aggregation | one of 'min', 'mean', 'max', 'sum'. If supplied it specifies how the weights used. |
| colour_range | vector of 6 hex colours |
| opacity | opacity of cells. Value between 0 and 1. Default 0.8 |
| cell_size | size of grid squares in pixels. Default 50 |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |
| digits | number of digits for rounding coordinates |
| ... | clear_legend and clear_view arguments passed to 'clear_()' functions |

Details

add_screengrid supports POINT and MULTIPOINT sf objects

data

If the data is a simple feature object, the geometry column is automatically detected. If the sf object contains more than one geometry column and you want to use a specific one, you'll need to set the active geometry using `sf::st_geometry(x) <- "your_column"`, where "your_column" is the name of the column you're activating. See `?sf::st_geometry`

Examples

```
## You need a valid access token from Mapbox
key <- 'abc'
set_token( key )

df <- read.csv(paste0(
  'https://raw.githubusercontent.com/uber-common/deck.gl-data/master/',
  'examples/3d-heatmap/heatmap-data.csv'
))

df <- df[ !is.na(df$lng), ]
df$weight <- sample(1:10, size = nrow(df), replace = TRUE)

mapdeck( style = mapdeck_style('dark'), pitch = 45 ) %>%
add_screengrid(
  data = df
  , lat = "lat"
  , lon = "lng"
  , weight = "weight",
  , layer_id = "screengrid_layer"
  , cell_size = 10
  , opacity = 0.3
)

## as an sf object
library(sfheaders)
sf <- sfheaders::sf_point( df, x = "lng", y = "lat")

mapdeck( style = mapdeck_style('dark'), pitch = 45 ) %>%
add_screengrid(
  data = sf
  , weight = "weight",
  , layer_id = "screengrid_layer"
  , cell_size = 10
  , opacity = 0.3
)
```

| | |
|--------|---------------|
| add_sf | <i>Add sf</i> |
|--------|---------------|

Description

Adds an sf object to the map.

Usage

```
add_sf(map, data = get_map_data(map), ...)
```

Arguments

| | |
|------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| ... | other arguments passed to one of the plotting layers. See details |

Details

The plotting layer is determined by the type of sf geometries.

- POINT and MULTIPOINT objects will call [add_scatterplot](#)
- LINestring and MULTILINESTRING objects will call [add_path](#)
- POLYGON and MULTIPOLYGON objects will call [add_polygon](#)
- GEOMETRY objects will call [add_geojson](#)

| | |
|-------------|--------------------|
| add_terrain | <i>Add terrain</i> |
|-------------|--------------------|

Description

Adds mesh surfaces from height map images

Usage

```
add_terrain(
  map,
  layer_id = NULL,
  elevation_data,
  texture = NULL,
  elevation_decoder = c(1, 0, 0, 0),
  bounds = NULL,
  max_error = 4,
  update_view = TRUE,
  focus_layer = FALSE
)
```

Arguments

| | |
|-------------------|--|
| map | a mapdeck map object |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| elevation_data | Image URL that encodes height data. When elevation_data is a URL template, i.e. a string containing '{x}' and '{y}', it loads terrain tiles on demand and renders a mesh for each tile. If elevation_data is an absolute URL, as in the example, a single mesh is used, and the bounds argument is required to position it into the world space. |
| texture | Image URL to use as the texture |
| elevation_decoder | Four value used to convert a pixel to elevation in metres. The values correspond to rScale, gScale, bScale, offset. See details |
| bounds | Four values (c(left, bottom, right, top)). bounds of the image to fit in x,y coordinates into. left and right refers to the world longitude/x at the corresponding side of the image. top and bottom refers to the world latitude/y at the corresponding side of the image. Must be supplied when using non-tiled elevation_data |
| max_error | Martini error tolerance in metres, smaller number results in more detailed mesh. |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |

Details

The elevation_decoder contains four values representing

- rScale - Multiplier of the red channel
- gScale - Multiplier of the green channel
- bScale - Multiplier of the blue channel
- offset - translation of the sum

Each colour channel is a number between [0, 255].

Examples

```
set_token( "MAPBOX_TOKEN" )
## Digital elevation model from https://www.usgs.gov/
elevation <- 'https://raw.githubusercontent.com/visgl/deck.gl-data/master/website/terrain.png'
texture <- 'https://raw.githubusercontent.com/visgl/deck.gl-data/master/website/terrain-mask.png'
bounds <- c(-122.5233, 37.6493, -122.3566, 37.8159)

mapdeck() %>%
  add_terrain(
    , elevation_data = elevation
    , elevation_decoder = c(1,0,0,0)
```

```
    , texture = texture
    , bounds = bounds
    , max_error = 1
  )
```

add_text

Add Text

Description

The Text Layer renders text labels on the map

Usage

```
add_text(
  map,
  data = get_map_data(map),
  text,
  lon = NULL,
  lat = NULL,
  elevation = NULL,
  polyline = NULL,
  fill_colour = NULL,
  fill_opacity = NULL,
  size = NULL,
  angle = NULL,
  anchor = NULL,
  alignment_baseline = NULL,
  billboard = TRUE,
  font_family = "Monaco, monospace",
  font_weight = "normal",
  tooltip = NULL,
  layer_id = NULL,
  id = NULL,
  auto_highlight = FALSE,
  highlight_colour = "#AAFFFFFF",
  palette = "viridis",
  na_colour = "#808080FF",
  legend = FALSE,
  legend_options = NULL,
  legend_format = NULL,
  update_view = TRUE,
  focus_layer = FALSE,
  digits = 6,
  transitions = NULL,
```

```

brush_radius = NULL,
collision_filter = FALSE,
...
)

```

Arguments

| | |
|--------------------|---|
| map | a mapdeck map object |
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| text | column of data containing the text. The data must be a character. |
| lon | column containing longitude values |
| lat | column containing latitude values |
| elevation | column of data containing the elevation of the text. |
| polyline | optional column of data containing the polylines, if using encoded polylines |
| fill_colour | column of data or hex colour for the fill colour. If using a hex colour, use either a single value, or a column of hex colours on data |
| fill_opacity | Either a string specifying the column of data containing the opacity of each shape, or a single value in [0,255], or [0, 1), to be applied to all the shapes. Default 255. If a hex-string is used as the colour, this argument is ignored and you should include the alpha on the hex string |
| size | column of data containing the size of the text. Default 32 |
| angle | column of data containing the angle of the text. Default 0 |
| anchor | column of data containing the anchor of the text. One of 'start', 'middle' or 'end' |
| alignment_baseline | column of data containing the alignment. One of 'top', 'center' or 'bottom' |
| billboard | logical indicating if the text always faces the camera (TRUE) or if it always faces up (FALSE) |
| font_family | specifies a prioritised list of one or more font family names and/or generic family names. Follow the specifics for CSS font-family https://developer.mozilla.org/en-US/docs/Web/CSS/font-family |
| font_weight | specifies the font weight. Follow the specifics for CSS font-weight https://htmldog.com/references/css/properties/font-weight/ |
| tooltip | variable of data containing text or HTML to render as a tooltip |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| id | an id value in data to identify layers when interacting in Shiny apps. |
| auto_highlight | logical indicating if the shape under the mouse should auto-highlight |
| highlight_colour | hex string colour to use for highlighting. Must contain the alpha component. |

| | |
|------------------|---|
| palette | string or matrix. String will be one of <code>colourvalues::colour_palettes()</code> . A matrix must have at least 5 rows, and 3 or 4 columns of values between [0, 255], where the 4th column represents the alpha. You can use a named list to specify a different palette for different colour options (where available), e.g. <code>list(fill_colour = "viridis", stroke_colour = "inferno")</code> |
| na_colour | hex string colour to use for NA values |
| legend | either a logical indicating if the legend(s) should be displayed, or a named list indicating which colour attributes should be included in the legend. |
| legend_options | A list of options for controlling the legend. |
| legend_format | A list containing functions to apply to legend values. See section <code>legend</code> |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |
| digits | number of digits for rounding coordinates |
| transitions | list specifying the duration of transitions. |
| brush_radius | radius of the brush in metres. Default NULL. If supplied, the arcs will only show if the origin or destination are within the radius of the mouse. If NULL, all arcs are displayed |
| collision_filter | set to 'TRUE' if you want to hide features that overlap other features. Default is 'FALSE' |
| ... | <code>clear_legend</code> and <code>clear_view</code> arguments passed to 'clear_()' functions |

Details

`add_text` supports POINT and MULTIPOINT sf objects

transitions

The `transitions` argument lets you specify the time it will take for the shapes to transition from one state to the next. Only works in an interactive environment (Shiny) and on WebGL-2 supported browsers and hardware.

The time is in milliseconds

Available transitions for text

```
list( position = 0, fill_colour = 0, angle = 0, size = 0 )
```

legend

The `legend_options` can be used to control the appearance of the legend. This should be a named list, where the names are one of

- `css` - a string of valid css for controlling the appearance of the legend
- `title` - a string to use for the title of the legend
- `digits` - number to round the legend values to

If the layer allows different fill and stroke colours, you can use different options for each. See examples in [add_arc](#).

The `legend_format` can be used to control the format of the values in the legend. This should be a named list, where the names are one of

- `fill_colour`
- `stroke_colour`

depending on which type of colouring the layer supports.

The list elements must be functions to apply to the values in the legend.

id

The `id` is returned to your R session from an interactive shiny environment by observing layer clicks. This is useful for returning the data.frame row relating to the clicked shape.

From within a shiny server you would typically use `observeEvent({input$map_arc_click})`, where `'map'` is the `map_id` supplied to `mapdeckOutput()`, and `'arc'` is the layer you are clicking on

Examples

```
## You need a valid access token from Mapbox
key <- 'abc'
set_token( key )

mapdeck(
  style = mapdeck_style('dark')
) %>%
  add_text(
    data = capitals
    , lon = 'lon'
    , lat = 'lat'
    , fill_colour = 'country'
    , text = 'capital'
    , layer_id = 'text'
  )
```

add_title

Add Title

Description

Adds a title to a map

Usage

```
add_title(map, title, layer_id = NULL)
```

Arguments

| | |
|----------|---|
| map | a mapdeck map object |
| title | Either a single string for the title, or a list with a 'title' element, and an optional 'css' element. See examples |
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |

Examples

```
mapdeck() %>%
  add_title(title = "first title", layer_id = "first") %>%
  add_title(title = list(
    title = "second title",
    css = "background-color: red;"),
    layer_id = "second") %>%
  add_title(title = list(
    title = "Another title",
    css = "background-color: transparent;"),
    layer_id = "third")
```

 add_trips

Add Trips

Description

The Trips Layer takes an sf object with Z (elevation) and M (time) attributes and renders it as animated trips

Usage

```
add_trips(
  map,
  data = get_map_data(map),
  stroke_colour = NULL,
  stroke_width = NULL,
  width_units = c("meters", "pixels"),
  width_min_pixels = NULL,
  width_max_pixels = NULL,
```

```

width_scale = 1,
opacity = 0.3,
palette = "viridis",
trail_length = 180,
start_time = get_m_range_start(data),
end_time = get_m_range_end(data),
animation_speed = 30,
layer_id = NULL,
legend = FALSE,
legend_options = NULL,
legend_format = NULL,
update_view = TRUE,
focus_layer = FALSE,
digits = 6,
...
)

```

Arguments

| | |
|------------------|---|
| map | a mapdeck map object |
| data | sf object with XYZM dimensions. |
| stroke_colour | variable of data or hex colour for the stroke. |
| stroke_width | width of the stroke in meters. Default 1. |
| width_units | The units of the line width, one of 'meters', 'common' or 'pixels'. When zooming in and out, meter sizes scale with the base map, and pixel sizes remain the same on screen. |
| width_min_pixels | The minimum path width in pixels. This can be used to prevent the path from getting too thin when zoomed out. |
| width_max_pixels | The maximum path width in pixels. This prop can be used to prevent the path from getting too thick when zoomed in. |
| width_scale | The path width multiplier that multiplied to all paths. |
| opacity | single value in [0,1] |
| palette | string or matrix. String will be one of <code>colourvalues::colour_palettes()</code> . A matrix must have at least 5 rows, and 3 or 4 columns of values between [0, 255], where the 4th column represents the alpha. You can use a named list to specify a different palette for different colour options (where available), e.g. <code>list(fill_colour = "viridis", stroke_colour = "inferno")</code> |
| trail_length | how long it takes for the trail to completely fade out (in same units as timestamps)) |
| start_time | the minimum timestamp |
| end_time | the maximum timestamp |
| animation_speed | speed of animation |

| | |
|----------------|---|
| layer_id | single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly |
| legend | either a logical indicating if the legend(s) should be displayed, or a named list indicating which colour attributes should be included in the legend. |
| legend_options | A list of options for controlling the legend. |
| legend_format | A list containing functions to apply to legend values. See section legend |
| update_view | logical indicating if the map should update the bounds to include this layer |
| focus_layer | logical indicating if the map should update the bounds to only include this layer |
| digits | number of digits for rounding coordinates |
| ... | clear_legend and clear_view arguments passed to 'clear_()' functions |

Details

add_trips supports LINESTRING and MULTILINESTRING sf objects

legend

The legend_options can be used to control the appearance of the legend. This should be a named list, where the names are one of

- css - a string of valid css for controlling the appearance of the legend
- title - a string to use for the title of the legend
- digits - number to round the legend values to

If the layer allows different fill and stroke colours, you can use different options for each. See examples in [add_arc](#).

The legend_format can be used to control the format of the values in the legend. This should be a named list, where the names are one of

- fill_colour
- stroke_colour

depending on which type of colouring the layer supports.

The list elements must be functions to apply to the values in the legend.

id

The id is returned to your R session from an interactive shiny environment by observing layer clicks. This is useful for returning the data.frame row relating to the clicked shape.

From within a shiny server you would typically use observeEvent({input\$map_arc_click}), where 'map' is the map_id supplied to mapdeckOutput(), and 'arc' is the layer you are clicking on

Examples

```

set_token( "MAPBOX_TOKEN")
sf <- city_trail

mapdeck(
  style = mapdeck_style("dark")
) %>%
add_trips(
  data = sf
  , animation_speed = 500
  , trail_length = 500
  , stroke_colour = "#FFFFFF"
  , stroke_width = 25
)

## Multi-coloured trips
## requires a colour for each coordiante
## In this example I'm assining the elevation (z) value
## to a new column
df <- sfheaders::sf_to_df( city_trail )
df$colour <- df$z
sf <- sfheaders::sf_linestring(
  obj = df
  , x = "x"
  , y = "y"
  , z = "z"
  , m = "m"
  , keep = TRUE
  , list_column = "colour"
)

mapdeck(
  style = mapdeck_style("light")
) %>%
add_trips(
  data = sf
  , animation_speed = 1000
  , trail_length = 1000
  , stroke_colour = "colour"
  , stroke_width = 50
  , legend = TRUE
)

## New York Taxi Trips
json <- jsonify::from_json(
  "https://raw.githubusercontent.com/visgl/deck.gl-data/master/examples/trips/trips.json"
)

lens <- vapply( json$segments, nrow, 1L )
mat <- do.call( rbind, json$segments )
df <- setNames( as.data.frame( mat ), c("x","y","m") )

```

```

idx <- rep( seq_along( lens ), times = lens )
df$vendor <- rep( json$vendor, times = lens )

df$z <- 0 ## z column is required in SF object
df$idx <- idx

## Using the timestamp as a colour
df$timestamp <- df$m

sf_line <- sfheaders::sf_linestring(
  obj = df
  , x = "x"
  , y = "y"
  , z = "z"
  , m = "m"
  , linestring_id = "idx"
  , keep = TRUE
  , list_column = "timestamp"
)

mapdeck(
  style = mapdeck_style("dark")
) %>%
  add_trips(
    data = sf_line
    , stroke_colour = "timestamp"
    , animation_speed = 1000
    , trail_length = 1000
    , palette = colourvalues::get_palette("viridis")[100:256, ]
  )

```

capitals

Capital cities for each country

Description

A data set containing the coordinates of 200 capital cities in the world

Usage

```
capitals
```

Format

A data frame with 200 observations and 4 variables

country country name
capital capital name
lat latitude of capital
lon longitude of capital

| | |
|------------|-------------------|
| city_trail | <i>city_trail</i> |
|------------|-------------------|

Description

An sf object of a cyclist cycling around Melbourne's Capital City Trail

Usage

```
city_trail
```

Format

An object of class sf (inherits from data.frame) with 1 rows and 3 columns.

| | |
|--------------------|---------------------------|
| clear_animated_arc | <i>Clear Animated Arc</i> |
|--------------------|---------------------------|

Description

Clears elements from a map
Clears elements from a map

Usage

```
clear_animated_arc(map, layer_id = NULL, update_view = TRUE)
clear_line(map, layer_id = NULL, update_view = TRUE, clear_legend = TRUE)
clear_arc(map, layer_id = NULL, update_view = TRUE, clear_legend = TRUE)
clear_bitmap(map, layer_id = NULL, update_view = TRUE)
clear_column(map, layer_id = NULL, update_view = TRUE, clear_legend = TRUE)
clear_geojson(map, layer_id = NULL, update_view = TRUE, clear_legend = TRUE)
clear_greatcircle(
  map,
```

```
    layer_id = NULL,  
    update_view = TRUE,  
    clear_legend = TRUE  
  )  
  
clear_grid(map, layer_id = NULL, update_view = TRUE, clear_legend = TRUE)  
clear_h3_hexagon(map, layer_id = NULL, update_view = TRUE, clear_legend = TRUE)  
clear_h3(map, layer_id = NULL, update_view = TRUE, clear_legend = TRUE)  
clear_heatmap(map, layer_id = NULL, update_view = TRUE, clear_legend = TRUE)  
clear_hexagon(map, layer_id = NULL, update_view = TRUE, clear_legend = TRUE)  
clear_line(map, layer_id = NULL, update_view = TRUE, clear_legend = TRUE)  
clear_mesh(map, layer_id = NULL, update_view = TRUE, clear_legend = TRUE)  
clear_path(map, layer_id = NULL, update_view = TRUE, clear_legend = TRUE)  
clear_pointcloud(map, layer_id = NULL, update_view = TRUE, clear_legend = TRUE)  
clear_polygon(map, layer_id = NULL, update_view = TRUE, clear_legend = TRUE)  
  
clear_scatterplot(  
  map,  
  layer_id = NULL,  
  update_view = TRUE,  
  clear_legend = TRUE  
)  
  
clear_screengrid(map, layer_id = NULL, update_view = TRUE, clear_legend = TRUE)  
clear_terrain(map, layer_id = NULL, update_view = TRUE)  
clear_text(map, layer_id = NULL, update_view = TRUE, clear_legend = TRUE)  
clear_title(map, layer_id = NULL)  
clear_trips(map, layer_id = NULL, update_view = TRUE, clear_legend = TRUE)
```

Arguments

| | |
|--------------|---|
| map | a mapdeck map object |
| layer_id | the layer_id of the layer you want to clear |
| update_view | logical indicating if the map should update the bounds after removing the layer |
| clear_legend | logical indicating if the legend should be removed |

| | |
|--------------|---------------------|
| clear_legend | <i>Clear Legend</i> |
|--------------|---------------------|

Description

Clears the legend for a given layer_id

Removes a legend from the map

Usage

```
clear_legend(map, layer_id)
```

```
clear_legend(map, layer_id)
```

Arguments

map the map from which you want to clear the legend.

layer_id single value specifying an id for the layer. Use this value to distinguish between shape layers of the same type. Layers with the same id are likely to conflict and not plot correctly

Examples

```
sf <- spatialwidget::widget_melbourne
sf$my_colour <- ifelse( substr(sf$SA2_NAME, 1, 1) == "A", "#00FF00FF", "#FF0000FF")

l1 <- legend_element(
  variables = c("Begins with A", "Doesn't begin with A")
  , colours = c("#00FF00FF", "#FF0000FF")
  , colour_type = "fill"
  , variable_type = "category"
)
js <- mapdeck_legend(l1)

set_token( "MAPBOX_TOKEN" )

## Add a legend
mapdeck() %>%
  add_legend(legend = js, layer_id = "my_layer")

## Calling `clear_legend` should immediately remove it
mapdeck() %>%
  add_legend(legend = js, layer_id = "my_layer") %>%
  clear_legend(layer_id = "my_layer")
```

| | |
|--------------|---------------------|
| clear_tokens | <i>Clear tokens</i> |
|--------------|---------------------|

Description

Clears the access tokens

Usage

```
clear_tokens()
```

| | |
|---------|----------------|
| geojson | <i>Geojson</i> |
|---------|----------------|

Description

A GeoJSON object of polygons, lines and points in Melbourne

Usage

```
geojson
```

Format

a 'json' object

| | |
|----------------|-----------------------|
| legend_element | <i>Legend Element</i> |
|----------------|-----------------------|

Description

Creates a mapdeck legend element for when you want to manually specify a legend (using [mapdeck_legend](#))

Usage

```
legend_element(  
  variables,  
  colours,  
  colour_type = c("fill", "stroke"),  
  variable_type = c("category", "gradient"),  
  title = "",  
  css = ""  
)
```

Arguments

| | |
|---------------|---|
| variables | variables assigned to colours |
| colours | vector of hex colours assigned to variables |
| colour_type | one of "fill" or "stroke" |
| variable_type | one of category (discrete) or gradient (continuous) |
| title | string used as the legend title |
| css | string of css to control appearance. |

See Also

[mapdeck_legend](#)

Examples

```
l1 <- legend_element(
  variables = c("a", "b")
  , colours = c("#00FF00", "#FF0000")
  , colour_type = "fill"
  , variable_type = "category"
  , title = "my title"
)
```

light_settings

Light Settings

Description

List object containing light settings.

Details

Available in [add_geojson](#), [add_pointcloud](#) and [add_polygon](#)

- numberOfLights - the number of lights. Maximum of 5
- lightsPosition - vector of x, y, z coordinates. Must be 3x the number of lights
- ambientRatio - the ambient ratio of the lights

Examples

```
light <- list(
  lightsPosition = c(-150, 75, 0)
  , numberOfLights = 1
  , ambientRatio = 0.2
)
```

| | |
|---------|----------------|
| mapdeck | <i>mapdeck</i> |
|---------|----------------|

Description

mapdeck

Usage

```
mapdeck(
  data = NULL,
  token = get_access_token(api = "mapbox"),
  width = NULL,
  height = NULL,
  padding = 0,
  style = "mapbox://styles/mapbox/streets-v9",
  pitch = 0,
  zoom = 0,
  bearing = 0,
  libraries = NULL,
  max_zoom = 20,
  min_zoom = 0,
  max_pitch = 60,
  min_pitch = 0,
  location = c(0, 0),
  show_view_state = FALSE,
  repeat_view = FALSE
)
```

Arguments

| | |
|-----------|--|
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| token | Mapbox Access token. Use <code>set_token()</code> or <code>Sys.setenv()</code> to set a global token. See Access Tokens section for further details. If left empty layers will still be plotted, but without a Mapbox map. |
| width | the width of the map |
| height | the height of the map |
| padding | the padding of the map |
| style | the style of the map (see mapdeck_style) |
| pitch | the pitch angle of the map |
| zoom | zoom level of the map |
| bearing | bearing of the map between 0 and 360 |
| libraries | additional libraries required by some layers. Currently 'h3' is required for add_h3 . |

| | |
|------------------------------|--|
| <code>max_zoom</code> | sets the maximum zoom level |
| <code>min_zoom</code> | sets the minimum zoom level |
| <code>max_pitch</code> | sets the maximum pitch |
| <code>min_pitch</code> | sets the minimum pitch |
| <code>location</code> | unnamed vector of lon and lat coordinates (in that order) |
| <code>show_view_state</code> | logical, indicating whether to add the current View State to the map. When TRUE, the following is added as an overlay to the map <ul style="list-style-type: none"> • width • height • latitude & longitude • zoom • bearing • pitch • altitude • viewBounds • interactionState |
| <code>repeat_view</code> | Logical indicating if the layers should repeat at low zoom levels |

Access Tokens

If the token argument is not used, the map will search for the token, firstly by checking if `set_token()` was used, then it will search environment variables using `Sys.getenv()` and the following values, in this order

```
c("MAPBOX_TOKEN", "MAPBOX_KEY", "MAPBOX_API_TOKEN", "MAPBOX_API_KEY",
  "MAPBOX", "MAPDECK")
```

If multiple tokens are found, the first one is used

mapdeck-shiny

Shiny bindings for mapdeck

Description

Output and render functions for using mapdeck within Shiny applications and interactive Rmd documents.

Usage

```
mapdeckOutput(outputId, width = "100%", height = "400px")
```

```
renderMapdeck(expr, env = parent.frame(), quoted = FALSE)
```

Arguments

| | |
|---------------|--|
| outputId | output variable to read from |
| width, height | Must be a valid CSS unit (like '100%', '400px', 'auto') or a number, which will be coerced to a string and have 'px' appended. |
| expr | An expression that generates a mapdeck |
| 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. |

mapdeck_dependencies *Mapdeck Dependencies*

Description

Adds the required mapdeck javascript dependencies to a Shiny UI when you want to use mapdeck layers, but not with a mapdeck map.

Usage

```
mapdeck_dependencies()
```

mapdeck_dispatch *mapdeck dispatch*

Description

Extension points for plugins

Usage

```
mapdeck_dispatch(
  map,
  funcName,
  mapdeck = stop(paste(funcName, "requires a map update object")),
  mapdeck_update = stop(paste(funcName, "does not support map update objects"))
)

invoke_method(map, method, ...)
```

Arguments

| | |
|----------------|--|
| map | a map object, as returned from mapdeck |
| funcName | the name of the function that the user called that caused this mapdeck_dispatch call; for error message purposes |
| mapdeck | an action to be performed if the map is from mapdeck |
| mapdeck_update | an action to be performed if the map is from mapdeck_update |
| method | the name of the JavaScript method to invoke |
| ... | unnamed arguments to be passed to the JavaScript method |

Value

mapdeck_dispatch returns the value of mapdeck or or an error. invokeMethod returns the map object that was passed in, possibly modified.

| | |
|----------------|-----------------------|
| mapdeck_legend | <i>Mapdeck Legend</i> |
|----------------|-----------------------|

Description

Constructs legend elements into the correct JSON format for plotting on the map

Usage

```
mapdeck_legend(legend_elements)
```

Arguments

legend_elements
vector of legend elements (made from [legend_element](#))

See Also

[legend_element](#)

Examples

```
l1 <- legend_element(
  variables = c("a", "b")
  , colours = c("#00FF00", "#FF0000")
  , colour_type = "fill"
  , variable_type = "category"
  , title = "my title"
)

mapdeck_legend(l1)
```

| | |
|---------------|----------------------|
| mapdeck_style | <i>Mapdeck Style</i> |
|---------------|----------------------|

Description

Various styles available to all Mapbox accounts using a valid access token. Available styles are listed at <https://docs.mapbox.com/api/maps/#styles>.

Usage

```
mapdeck_style(  
  style = c("dark", "light", "outdoors", "streets", "satellite", "satellite-streets")  
)
```

Arguments

style one of streets, outdoors, light, dark, satellite, satellite-streets

Examples

```
## You need a valid access token from Mapbox  
key <- 'abc'  
  
## set a map style  
mapdeck(token = key, style = mapdeck_style("dark"))
```

| | |
|----------------|-----------------------|
| mapdeck_tokens | <i>Mapdeck_tokens</i> |
|----------------|-----------------------|

Description

Retrieves the mapdeck token that has been set

Usage

```
mapdeck_tokens()
```

| | |
|----------------|-----------------------|
| mapdeck_update | <i>Mapdeck update</i> |
|----------------|-----------------------|

Description

Update a Mapdeck map in a shiny app. Use this function whenever the map needs to respond to reactive content.

Usage

```
mapdeck_update(
  data = NULL,
  map_id,
  session = shiny::getDefaultReactiveDomain(),
  deferUntilFlush = TRUE,
  map_type = c("mapdeck_update", "google_map_update")
)
```

Arguments

| | |
|-----------------|--|
| data | data to be used in the layer. All coordinates are expected to be EPSG:4326 (WGS 84) coordinate system |
| map_id | string containing the output ID of the map in a shiny application. |
| session | the Shiny session object to which the map belongs; usually the default value will suffice. |
| 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. |
| map_type | either mapdeck_update or google_map_update |

| | |
|--------------|---------------------|
| mapdeck_view | <i>Mapdeck view</i> |
|--------------|---------------------|

Description

Changes the view of the of the map

Usage

```
mapdeck_view(  
  map,  
  location = NULL,  
  zoom = NULL,  
  pitch = NULL,  
  bearing = NULL,  
  duration = NULL,  
  transition = c("linear", "fly")  
)
```

Arguments

| | |
|------------|---|
| map | a mapdeck map object |
| location | unnamed vector of lon and lat coordinates (in that order) |
| zoom | zoom level of the map |
| pitch | the pitch angle of the map |
| bearing | bearing of the map between 0 and 360 |
| duration | time in milliseconds of the transition |
| transition | type of transition |

melbourne

Polygons in and around Melbourne

Description

A data set containing statistical area 2 regions of central (and surrounds) Melbourne.

Usage

```
melbourne
```

Format

An sfencoded and data frame object with 41 observations and 8 variables. See library googlePoly-lines for information on sfencoded objects

| | |
|----------------|-----------------------|
| melbourne_mesh | <i>Melbourne Mesh</i> |
|----------------|-----------------------|

Description

A mesh3d object of Melbourne

Usage

melbourne_mesh

Format

An object of class mesh3d (inherits from shape3d) of length 6.

| | |
|-------|-----------------------------------|
| roads | <i>Roads in central Melbourne</i> |
|-------|-----------------------------------|

Description

A simple feature sf object of roads in central Melbourne

Usage

roads

Format

An sf and data frame object with 18286 observations and 16 variables

Details

Obtained from <https://www.data.gov.au> and distributed under the Creative Commons 4 License <https://creativecommons.org/licenses/by/4.0/>

| | |
|-------------|--------------------|
| road_safety | <i>road_safety</i> |
|-------------|--------------------|

Description

A data.frame of counts of traffic accidents in the UK

Usage

```
road_safety
```

Format

An object of class data.frame with 19139 rows and 2 columns.

| | |
|-----------|------------------|
| set_token | <i>Set Token</i> |
|-----------|------------------|

Description

Sets an access token so it's available for all mapdeck calls. See details

Usage

```
set_token(token)
```

Arguments

| | |
|-------|---------------------|
| token | Mapbox access token |
|-------|---------------------|

Details

Use `set_token` to make access tokens available for all the `mapdeck()` calls in a session so you don't have to keep specifying the token argument each time

| | |
|--------------|---------------------|
| update_style | <i>update style</i> |
|--------------|---------------------|

Description

update style

Usage

```
update_style(map, style)
```

Arguments

| | |
|-------|---|
| map | a mapdeck map object |
| style | the style of the map (see mapdeck_style) |

| | |
|-----|-------------|
| %>% | <i>Pipe</i> |
|-----|-------------|

Description

Uses the pipe operator (%>%) to chain statements. Useful for adding layers to a mapdeck map

Arguments

| | |
|----------|--|
| lhs, rhs | A mapdeck map and a layer to add to it |
|----------|--|

Examples

```
token <- "your_api_token"
mapdeck(token = token) %>%
  add_scatterplot(
    data = capitals
    , lat = "lat"
    , lon = "lon"
    , radius = 100000
    , fill_colour = "country"
    , layer_id = "scatter_layer"
  )
```

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