mapsf, a new package for thematic mapping

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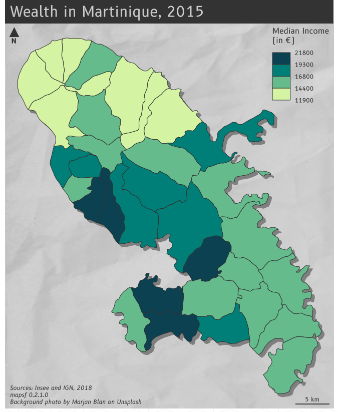
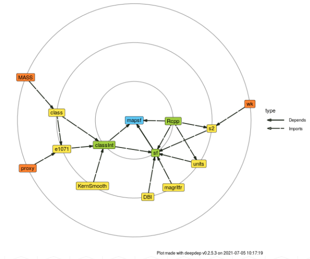


A minimal number of well-known dependencies



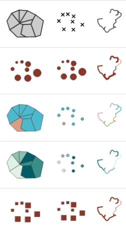
mf_map()

`mf_map()` is the main function of the package.

```
mf_map(x = sf_object,
       var = "variable",
       type = "map type",
       ...)
```


Map types

map type	type	data	polygon	point	line
Base Map	"base"	geometry			
Proportional Symbols	"prop"	stock			
Typology	"typo"	category			
Choropleth	"choro"	ratio			
Graduated Symbols	"grad"	stock			



Map types

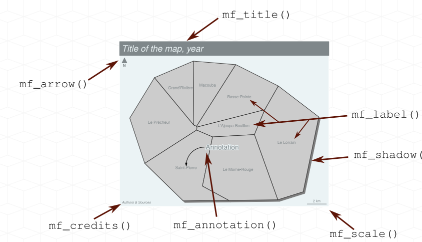
Symbols	"symb"	category		
Proportional Symbols + Typo	"prop_typo"	stock & category		
Proportional Symbols + Choro	"prop_choro"	stock & ratio		
Symbols + Choro	"symb_choro"	category & ratio		

?mf_map()

Arguments

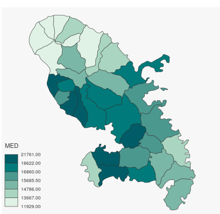
x	object of class sf or sfc
var	name(s) of the variable(s) to plot
type	one of "base", "prop", "choro", "typo", "symb", "grad", "prop_choro", "prop_typo", "symb_choro"
breaks	either a numeric vector with the actual breaks, or a classification method name (see mf_get_breaks)
nbreaks	number of classes
pal	a set of colors or a palette name (from hcl.colors)
alpha	if pal is a hcl.colors palette name, the alpha-transparency level in the range [0,1]
inches	size of the biggest symbol (radius for circles, half width for squares) in inches.
val_max	maximum value used for proportional symbols
symbol	type of symbols, 'circle' or 'square'
col	color
lwd_max	line width of the largest line
val_order	values order, a character vector that matches var modalities
pch	pch for symbols
cex	cex for symbols
border	border color
lwd	border width
bg	background color
col_na	color for missing values
cex_na	cex for NA values
pch_na	pch for NA values
leg_pos	position of the legend, one of 'topleft', 'top','topright', 'right', 'bottomright', 'bottom', 'bottomleft', 'left' or a vector of two coordinates in map units (c(x, y)). If leg_pos is 'n' then the legend is not plotted.
leg_title	legend title
leg_title_cex	size of the legend title
leg_val_cex	size of the values in the legend
leg_val_rnd	number of decimal places of the values in the legend
leg_no_data	label for missing values
leg_frame	whether to add a frame to the legend (TRUE) or not (FALSE)
add	whether to add the layer to an existing plot (TRUE) or not (FALSE)
...	further parameters from plot for sfc objects

Map layout



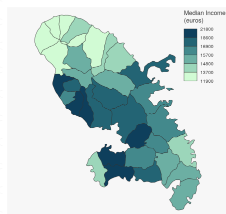
Example

```
mtq <- mf_get_mtq()
#
#
#
#
#
# Plot a choropleth map
mf_map(x = mtq, var = "MED", type = "choro")
#
#
#
#
#
#
#
#
#
#
#
#
#
#
#
#
```



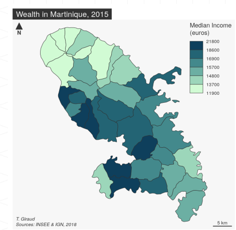
Example

```
mtq <- mf_get_mtq()
#
#
#
#
#
# Plot a choropleth map
mf_map(x = mtq, var = "MED", type = "choro",
       pal = "Dark Mint",
       breaks = "quantile",
       nbreaks = 6,
       leg_title = "Median Income\n(euros)",
       leg_val_rnd = -2,
       leg_pos = "topright")
#
#
#
#
#
#
#
#
#
#
```



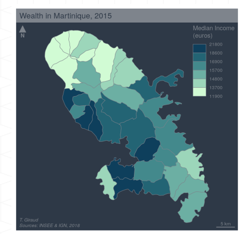
Example

```
mtq <- mf_get_mtq()
#
#
#
#
#
# Plot a choropleth map
mf_map(x = mtq, var = "MED", type = "choro",
       pal = "Dark Mint",
       breaks = "quantile",
       nbreaks = 6,
       leg_title = "Median Income\n(euros)",
       leg_val_rnd = -2,
       leg_pos = "topright")
#
#
#
#
#
# Plot a layout elements
mf_title("Wealth in Martinique, 2015")
mf_credits("T. Giraud\nSources: INSEE & IGN, 2018")
mf_scale(size = 5)
mf_arrow('topleft')
```



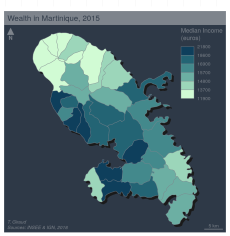
Example

```
mtq <- mf_get_mtq()
# Start a map using a theme
mf_init(x = mtq, theme = "dark")
#
#
# Plot a choropleth map
mf_map(x = mtq, var = "MED", type = "choro",
       pal = "Dark Mint",
       breaks = "quantile",
       nbreaks = 6,
       leg_title = "Median Income\n(euros)",
       leg_val_rnd = -2,
       leg_pos = "topright",
       add = TRUE)
#
#
#
#
# Plot a layout elements
mf_title("Wealth in Martinique, 2015")
mf_credits("T. Giraud\nSources: INSEE & IGN, 2018")
mf_scale(size = 5)
mf_arrow('topleft')
```



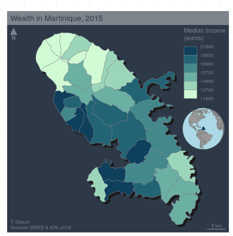
Example

```
mtq <- mf_get_mtq()
# Start a map using a theme
mf_init(x = mtq, theme = "dark")
#
# Plot a shadow
mf_shadow(mtq, col = "grey10", add = TRUE)
# Plot a choropleth map
mf_map(x = mtq, var = "MED", type = "choro",
       pal = "Dark Mint",
       breaks = "quantile",
       nbreaks = 6,
       leg_title = "Median Income\n(euros)",
       leg_val_rnd = -2,
       leg_pos = "topright",
       add = TRUE)
#
#
#
#
# Plot a layout elements
mf_title("Wealth in Martinique, 2015")
mf_credits("T. Giraud\nSources: INSEE & IGN, 2018")
mf_scale(size = 5)
mf_arrow('topleft')
```



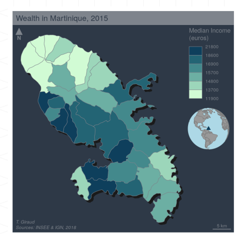
Example

```
mtq <- mf_get_mtq()
# Start a map using a theme
mf_init(x = mtq, theme = "dark")
#
# Plot a shadow
mf_shadow(mtq, col = "grey10", add = TRUE)
# Plot a choropleth map
mf_map(x = mtq, var = "MED", type = "choro",
       pal = "Dark Mint",
       breaks = "quantile",
       nbreaks = 6,
       leg_title = "Median Income\n(euros)",
       leg_val_rnd = -2,
       leg_pos = "topright",
       add = TRUE)
# Add an inset world map
mf_inset_on(x = "worldmap", pos = "right")
mf_worldmap(mtq, col = "#0E3F5C")
mf_inset_off()
# Plot a layout elements
mf_title("Wealth in Martinique, 2015")
mf_credits("T. Giraud\nSources: INSEE & IGN, 2018")
mf_scale(size = 5)
mf_arrow('topleft')
```



Examples

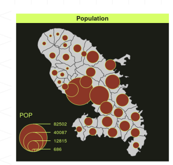
```
mtq <- mf_get_mtq()
# Start a map using a theme and extra margins
mf_init(x = mtq, theme = "dark",
        expandBB = c(0,0,0,.3))
# Plot a shadow
mf_shadow(mtq, col = "grey10", add = TRUE)
# Plot a choropleth map
mf_map(x = mtq, var = "MED", type = "choro",
       pal = "Dark Mint",
       breaks = "quantile",
       nbreaks = 6,
       leg_title = "Median Income\n(euros)",
       leg_val_rnd = -2,
       leg_pos = "topright",
       add = TRUE)
# Add an inset world map
mf_inset_on(x = "worldmap", pos = "right")
mf_worldmap(mtq, col = "#0E3F5C")
mf_inset_off()
# Plot a layout elements
mf_title("Wealth in Martinique, 2015")
mf_credits("T. Giraud\nSources: INSEE & IGN, 2018")
mf_scale(size = 5)
mf_arrow('topleft')
```

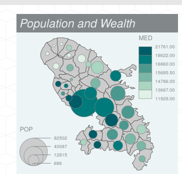


Pipe(s)

```
mf_theme("green", line = 1, cex = 0.8)
mtq |>
  mf_map() |>
  mf_map("POP", "prop")
mf_title("Population")
```

```
library(magrittr)
mf_theme("agolalight")
mtq %>%
  mf_map() %>%
  mf_map(c("POP","MED"), "prop_choro")
mf_title("Population and Wealth")
```



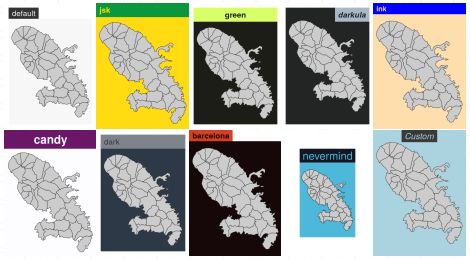


Insets

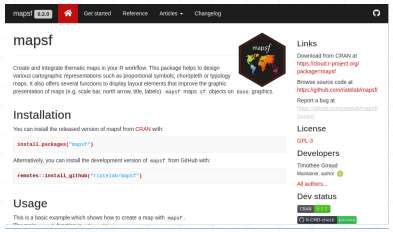
```
mf_map(mtq)
mf_inset_on(x = mtq[1, ], cex = .3)
mf_map(mtq[1, ])
mf_inset_off()
```

```
mf_map(mtq)
mf_inset_on(x = "worldmap", pos = "bottomleft")
mf_worldmap(x = mtq)
mf_inset_off()
```

Themes



https://riatelab.github.io/mapsf/



Vignettes

Thank You

riatelab.github.io/mapsf

github.com/rCarto/user2021

github.com/riatelab/mapsf

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rgeomatic.hypotheses.org