Package ‘treemapify’

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G20

Statistics on the G-20 group of major world economies.

Description

A dataset containing economic and demographic statistics about members of the G-20 group of major world economies.

Usage

G20

Format

A data frame with 20 rows and five variables:

- region: the country’s region
- country: the country
- gdp_mil_usd: the country’s GDP, in millions of US dollars
- hdi: the country’s Human Development Index
- econ_classification: the country’s economic classification
- hemisphere: the hemisphere in which the majority of the country’s landmass lies

Source

http://en.wikipedia.org/wiki/G-20_major_economies

geom_treemap

A 'ggplot2' geom to draw a treemap.

Description

A treemap is a rectangular plot divided into tiles, each of which represents a single observation. The relative area of each tile expresses a continuous variable.

Usage

gem_treemap(mapping = NULL, data = NULL, stat = "identity",
position = "identity", na.rm = FALSE, show.legend = NA,
inherit.aes = TRUE, fixed = NULL, layout = "squarified",
start = "bottomleft", ...)
Arguments

mapping, data, stat, position, na.rm, show.legend, inherit.aes, ...

Standard geom arguments as for 'ggplot2::geom_rect'.

fixed Deprecated. Use 'layout = "fixed"' instead. Will be removed in later versions.

layout The layout algorithm, one of either "squarified" (the default), "scol", "srow" or "fixed". See Details for full details on the different layout algorithms.

start The corner in which to start placing the tiles. One of 'bottomleft' (the default), 'topleft', 'topright' or 'bottomright'.

Details

'geom_treemap' requires an 'area' aesthetic. It will ignore any aesthetics relating to the x and y axes (e.g. 'xmin' or 'y'), as the x and y axes are not meaningful in a treemap. Several other standard 'ggplot2' aesthetics are supported (see Aesthetics). To add text labels to tiles, see 'geom_treemap_text'.

An optional 'subgroup' aesthetic will cause the tiles to be clustered in subgroups within the treemap. See 'geom_treemap_subgroup_border' and 'geom_treemap_subgroup_text' to draw borders around subgroups and label them, respectively. Up to three nested levels of subgrouping are supported, with 'subgroup2' and 'subgroup3' aesthetics and respective 'geom_treemap_subgroup2_border' etc. geoms.

Four layout algorithms are provided. With the default 'squarified' algorithm ('layout = "squarified"'), the priority is ensuring the tiles have an aesthetically pleasing aspect ratio; that is, they are not too narrow or too short. In this algorithm, tile placement proceeds from one corner, placing the tiles in either rows or columns until all the tiles are placed. See Bruls et al. (1999) for the full algorithm.

There are two variants on the 'squarified' algorithm. 'scol' forces tile placement to begin with a column, regardless of the effect on aspect ratio; 'srow' forces tile placement to begin with a row. This will also apply to all subgroups. After the first row or column, the remaining tiles will be placed so as to optimise aspect ratios, as with the default algorithm.

With the 'fixed' layout algorithm ('layout = "fixed"'), the plot area is divided into vertical columns, which are each filled with an equal number of tiles beginning at the starting corner. Unlike the 'squarified' algorithm, with the 'fixed' algorithm the relative positions of the tiles are fixed by their order in the input data frame. This can result in aesthetically unpleasing layouts, but it allows side-by-side comparisons or animations to be created.

All 'treemapify' geoms added to a plot should have the same value for 'layout' and 'start', or they will not share a common layout.

Aesthetics

• area (required)
• alpha
• colour
• fill
• linetype
• subgroup
• subgroup2
• subgroup3

References


See Also

geom_treemap_text, geom_treemap_subgroup_border, geom_treemap_subgroup_text

Examples

```r
ggplot2::ggplot(G20, ggplot2::aes(area = gdp_mil_usd, fill = region)) + geom_treemap()
```

```
geom_treemap_subgroup_border
  'ggplot2' geoms to draw a border around a subgroup of treemap tiles.
```

Description

When `geom_treemap` is used with a `subgroup`, `subgroup2` or `subgroup3` aesthetic to subgroup treemap tiles, `geom_treemap_subgroup_border`, `geom_treemap_subgroup2_border` or `geom_treemap_subgroup3_border` can be used to draw a border around each subgroup at the appropriate level.

Usage

```r
geom_treemap_subgroup_border(mapping = NULL, data = NULL, stat = "identity", position = "identity", na.rm = FALSE, show.legend = NA, inherit.aes = TRUE, fixed = NULL, layout = "squarified", start = "bottomleft", level = "subgroup", ...)
geom_treemap_subgroup2_border(...)
geom_treemap_subgroup3_border(...)
```
geom_treemap_subgroup_border

Arguments

- `mapping, data, stat, position, na.rm, show.legend, inherit.aes, ...`
  - Standard geom arguments as for `ggplot2::geom_rect`.
- `fixed`
  - Deprecated. Use `layout = "fixed"` instead. Will be removed in later versions.
- `layout`
  - The layout algorithm, one of either "squarified" (the default), "scol", "srow" or "fixed". See Details for full details on the different layout algorithms.
- `start`
  - The corner in which to start placing the tiles. One of 'bottomleft' (the default), 'topleft', 'topright' or 'bottomright'.
- `level`
  - One of 'subgroup', 'subgroup2' or 'subgroup3', giving the subgrouping level for which to draw borders. It is recommended to use the aliases 'geom_treemap_subgroup2_border' and 'geom_treemap_subgroup3_border' instead of this argument.

Details

'geom_treemap_subgroup_border' geoms require 'area' and 'subgroup' (or 'subgroup2, 'subgroup3') aesthetics. Several other standard 'ggplot2' aesthetics are supported (see Aesthetics).

Note that 'ggplot2' draws plot layers in the order they are added to the plot. This means that if you add a 'geom_treemap_subgroup_border' layer followed by a 'geom_treemap_subgroup2_border' layer, the second layer will be drawn on top of the first and may hide it.

The 'layout' argument is used to set the treemap layout algorithm. All 'treemapify' geoms added to a plot should have the same value for 'layout' and 'start', or they will not share a common layout (see 'geom_treemap' for details on the layout algorithms).

Aesthetics

- area (required)
- subgroup, subgroup2 or subgroup3 (required)
- colour
- size
- linetype
- alpha

See Also

geom_treemap, geom_treemap_subgroup_text

Examples

```r
ggplot2::ggplot(G20, ggplot2::aes(area = gdp_mil_usd, fill = hdi,
                                    subgroup = hemisphere, subgroup2 = region)) +
  geom_treemap() +
  geom_treemap_subgroup2_border(colour = "white") +
  geom_treemap_subgroup_border()
```
When `geom_treemap` is used with the ‘subgroup’, ‘subgroup2’ or ‘subgroup3’ aesthetic to subgroup treemap tiles, `geom_treemap_subgroup_text`, ‘geom_treemap_subgroup2_text’ or ‘geom_treemap_subgroup3_text’ can be used to add a text label to each subgroup at the appropriate level.

### Usage

```r
gem_treemap_subgroup_text(mapping = NULL, data = NULL,
stat = "identity", position = "identity", na.rm = FALSE,
show.legend = FALSE, inherit.aes = TRUE, padding.x = grid::unit(1, 
"mm"), padding.y = grid::unit(1, "mm"), place = "bottom",
min.size = 4, grow = FALSE, reflow = FALSE, fixed = NULL,
layout = "squarified", start = "bottomleft", level = "subgroup",
...)
```

`geom_treemap_subgroup2_text(...)`

`geom_treemap_subgroup3_text(...)`

### Arguments

- `mapping`, `data`, `stat`, `position`, `na.rm`, `show.legend`, `inherit.aes`,...
  - `Standard geom arguments as for ggplot2::geom_text`.
- `padding.x`, `padding.y`
  - ‘grid::unit’ object, giving horizontal or vertical padding between text and edge of tile. Defaults to 1 mm.
- `place`
  - Where inside the box to place the text. Default is ‘bottom’; other options are ‘topleft’, ‘top’, ‘topright’, etc.
- `min.size`
  - Minimum font size, in points. If provided, text that would need to be shrunk below this size to fit the box will not be drawn. Defaults to 4 pt.
- `grow`
  - If ‘TRUE’, text will be grown as well as shrunk to fill the box.
- `reflow`
  - If ‘TRUE’, text will be reflowed (wrapped) to better fit the box.
- `fixed`
  - Deprecated. Use ‘layout = "fixed"’ instead. Will be removed in later versions.
- `layout`
  - The layout algorithm, one of either "squarified" (the default), "scol", "srow" or "fixed". See Details for full details on the different layout algorithms.
- `start`
  - The corner in which to start placing the tiles. One of ‘bottomleft’ (the default), ‘topleft’, ‘topright’ or ‘bottomright’.
- `level`
  - One of ‘subgroup’, ‘subgroup2’ or ‘subgroup3’, giving the subgrouping level for which to draw text labels. It is recommended to use the aliases ‘geom_treemap_subgroup2_text’ and ‘geom_treemap_subgroup3_text’ instead of this argument.
`geom_treemap_text`

**Details**

`geom_treemap_subgroup_text` geoms require `area`, `label` and `subgroup` (or `subgroup2`, `subgroup3`) aesthetics. Several other standard `ggplot2` aesthetics are supported (see Aesthetics).

`geom_treemap_subgroup_text` geoms use the `ggfittext` package to fit text to the subgroup. All text drawing options available in `ggfittext::geom_fit_text` (growing, reflowing, etc.) are also available here. For full details on how these options work, see the documentation for `ggfittext::geom_fit_text`.

The `layout` argument is used to set the treemap layout algorithm. All `treemapify` geoms added to a plot should have the same value for `layout` and `start`, or they will not share a common layout (see `geom_treemap` for details on the layout algorithms).

**Aesthetics**

- `area` (required)
- `subgroup`, `subgroup2` or `subgroup3` (required; the value of this variable will be the text label)
- `colour`
- `size`
- `alpha`
- `family`
- `fontface`
- `angle`

**See Also**

`geom_treemap`, `geom_treemap_subgroup_border`

**Examples**

```r
library(ggplot2)

ggplot(ggplotR::data(gR0L)) +
  geom_treemap() +
  geom_treemap_subgroup_text(place = "centre", grow = TRUE, alpha = 0.5) +
  geom_treemap_subgroup3_text()
```

---

**Description**

`geom_treemap_text` can be used to add a text label to each tile in a treemap created with `geom_treemap`.
Usage

geom_treemap_text(mapping = NULL, data = NULL, stat = "identity", 
position = "identity", na.rm = FALSE, show.legend = FALSE, 
inherit.aes = TRUE, padding.x = grid::unit(1, "mm"), 
padding.y = grid::unit(1, "mm"), place = "topleft", min.size = 4, 
grow = FALSE, reflow = FALSE, fixed = NULL, 
layout = "squarified", start = "bottomleft", ...)

Arguments

mapping, data, stat, position, na.rm, show.legend, inherit.aes, ...

Standard geom arguments as for 'ggplot2::geom_text'.

padding.x, padding.y

‘grid::unit’ object, giving horizontal or vertical padding between text and edge of tile. Defaults to 1 mm.

place

Where inside the box to place the text. Default is ‘bottom’; other options are ‘topleft’, ‘top’, ‘topright’, etc.

min.size

Minimum font size, in points. If provided, text that would need to be shrunk below this size to fit the box will not be drawn. Defaults to 4 pt.

grow

If ‘TRUE’, text will be grown as well as shrunk to fill the box.

reflow

If ‘TRUE’, text will be reflowed (wrapped) to better fit the box.

fixed

Deprecated. Use ‘layout = "fixed"’ instead. Will be removed in later versions.

layout

The layout algorithm, one of either "squarified" (the default), "scol", "srow" or "fixed". See Details for full details on the different layout algorithms.

start

The corner in which to start placing the tiles. One of ‘bottomleft’ (the default), ‘topleft’, ‘topright’ or ‘bottomright’.

Details

‘geom_treemap_text’ requires ‘area’ and ‘label’ aesthetics. Several other standard ’ggplot2’ aesthetics are supported (see Aesthetics).

‘geom_treemap_text’ uses the ‘ggfittext’ package to fit text to tiles. All text drawing options available in ‘ggfittext::geom_fit_text’ (growing, reflowing, etc.) are also available here. For full details on how these options work, see the documentation for ‘ggfittext::geom_fit_text’.

The ‘layout’ argument is used to set the treemap layout algorithm. All ‘treemapify’ geoms added to a plot should have the same value for ‘layout’ and ‘start’, or they will not share a common layout (see ‘geom_treemap’ for details on the layout algorithms).

Aesthetics

• area (required)
• label (required)
• subgroup, subgroup2 or subgroup3
• colour
• size
treemapify

- alpha
- family
- fontface
- angle

See Also

gem_treemap

Examples

ggplot2::ggplot(G20, ggplot2::aes(area = gdp_mil_usd,
                   fill = econ_classification,
                   label = country)) +

geom_treemap() +
geom_treemap_text()
'squarified' algorithm, with the 'fixed' algorithm the relative positions of the tiles are fixed by their order in the input data frame. This can result in aesthetically unpleasing layouts, but it allows side-by-side comparisons or animations to be created.

'treemapify_fixed' is an alias for 'treemapify(layout = "fixed")'.

Usage

treemapify(data, area, subgroup, subgroup2, subgroup3,
            layout = "squarified", start = "bottomleft", fill = NULL,
            label = NULL, group = NULL, fixed = NULL, xlim = c(0, 1),
            ylim = c(0, 1))

treemapify_fixed("")

Arguments

data A tidy data frame.
area Name of the variable (a column in 'data') to be mapped to the area of treemap tiles.
subgroup, subgroup2, subgroup3 Optionally, names of variables (columns in 'data') by which the tiles should be grouped, at up to three nested levels.
layout The layout algorithm, one of either "squarified" (the default), "scol", "srow" or "fixed". See Details for full details on the different layout algorithms.
start The corner in which to start placing the tiles. One of 'bottomleft' (the default), 'topleft', 'topright' or 'bottomright'.
label, fill Deprecated. Will be removed in later versions.
group Deprecated. Use 'subgroup' instead. Will be removed in later versions.
fixed Deprecated. Use 'layout = "fixed"' instead. Will be removed in later versions.
xlim, ylim The boundaries of the treemap in the x and y dimensions. Must be a numeric vector of length two; both default to 'c(0, 1)'.
... Other arguments to be passed to 'treemapify'.

Details

'treemapify' is for generating a data frame of raw treemap coordinates. If you want to draw a treemap with 'ggplot2', use 'geom_treemap' instead.

References


See Also

geom_treemap
Examples

```
treemapify(G20, area = "gdp_mil_usd")
```
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