# Package ‘brinton’

April 15, 2020

**Type**  Package

**Version**  0.1.6

**Title**  A Graphical EDA Tool

**Description**  An automated graphical exploratory data analysis (EDA) tool that introduces:

a.) `wideplot()` graphics for exploring the structure of a dataset through a grid of variables and graphic types.
b.) `longplot()` graphics, which present the entire catalog of available graphics for representing a particular variable using a grid of graphic types and variations on these types.
c.) `plotup()` function, which presents a particular graphic for a specific variable of a dataset. The `plotup()` function also makes it possible to obtain the code used to generate the graphic, meaning that the user can adjust its properties as needed.

**License**  GPL-3

**Encoding**  UTF-8

**LazyData**  true

**Depends**  ggplot2, gridExtra, rmarkdown, glue

**Imports**  pander, lubridate, tibble, sm, RColorBrewer, forcats, GGally

**RoxygenNote**  7.0.2

**Suggests**  knitr, MASS, hexbin

**VignetteBuilder**  knitr

**SystemRequirements**  Pandoc (>= 1.12.3), web browser

**URL**  https://sciencegraph.github.io/brinton/

**NeedsCompilation**  no

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**R topics documented:**

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**longplot**

*Presents a longplot in a html output.*

**Description**

A longplot is a range of suitable graphics that represent the relationship within the values of one, or a limited number, of variables in a dataset. Each graphic relates the values of all the selected variables and eventually the row number in which they appear.

**Usage**

```r
longplot(data, vars, label = TRUE, dir = tempdir())
```

**Arguments**

<table>
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| data     | Data.frame. Default dataset to use for plot. If not already a data.frame, it should be first coerced to by `as.data.frame()`.
| vars     | Character. A specific variable within the dataset. Future work will allow to include a vector of variables. |
| label    | Logical. If ‘TRUE’ the output includes labels that show the names of the graphics that are being displayed. |
| dir      | Directory in which the files are stored. |

**Details**

In order to present the range of graphics, the user must define a dataset and select at least one variable within it. Future work will include the ability to relate more number and combinations of types of variables.

**Value**

A html file that includes a range of graphics suitable for this particular combination of variables.

**Examples**

```r
if (interactive()) {
  longplot(esoph, "tobgp")
}
```
**plotup**

*Presents a specific graphic explicitly called by name.*

**Description**

In order to present the graphic, the user must define a dataset, at least one variable within this dataset and a compatible type of graphic. Future work will include graphics that involve more number and combinations of types of variables.

**Usage**

```r
plotup(data, vars, diagram, output = "html", dir = tempdir())
```

**Arguments**

- **data**
  - Data.frame. Default dataset to use for plot. If not already a data.frame, it should be first coerced to by `as.data.frame()`.
- **vars**
  - Character. A variable within the dataset.
- **diagram**
  - Character. A specific graphic to be presented within the ones considered by the 'logical', 'ordered', 'factor', 'character', 'datetime' and 'numeric' arguments of the 'wideplot()' function.
- **output**
  - Character. Type of output.
    - 'html': default output is a html webpage.
    - 'plots pane': output in RStudio’s plots pane.
    - 'console': shows the code that produces a particular graphic.
- **dir**
  - Directory in which the files are stored.

**Value**

This function can have three outputs: by default it produces a particular graphic, but it can also be represented into the RStudio’s plots pane, or can return the code to produce it.

**Examples**

```r
if (interactive()) {
  plotup(iris, "Petal.Width", "color heatmap")
}
plotup(iris, "Petal.Width", "color heatmap", output = "console")
```
**wideplot**

*Presents a wideplot in a html output.*

**Description**

A wideplot is a grid of graphics were the graphics within each row corresponds to graphical representations of each one of the variables considered within a given dataset.

**Usage**

```r
wideplot(
  data,  # Data.frame. Default dataset to use for plot. Unquoted. If not already a data.frame, it should be first coerced to by `as.data.frame()`.
  dataclass = NULL,  # Character vector. The types of data to be considered among the following:
    • 'logical'
    • 'ordered'
    • 'factor'
    • 'numeric'
    • 'datetime'
    • 'character'
  logical = NULL,  # Character vector. Graphics for logical variables among the following:
    • 'blank'
    • 'line graph'
    • 'tile plot'
    • 'point graph'
    • 'point-to-point graph'
    • 'linerange graph'
    • 'bar graph'
  ordered = NULL,  #
  factor = NULL,  #
  character = NULL,  #
  datetime = NULL,  #
  numeric = NULL,  #
  group = NULL,  #
  ncol = 7,  #
  label = "FALSE",  #
  dir = tempdir()  #
)
```

**Arguments**

- **data**: Data.frame. Default dataset to use for plot. Unquoted. If not already a data.frame, it should be first coerced to by `as.data.frame()`.
- **dataclass**: Character vector. The types of data to be considered among the following:
  - 'logical'
  - 'ordered'
  - 'factor'
  - 'numeric'
  - 'datetime'
  - 'character'
- **logical**: Character vector. Graphics for logical variables among the following:
  - 'blank'
  - 'line graph'
  - 'tile plot'
  - 'point graph'
  - 'point-to-point graph'
  - 'linerange graph'
  - 'bar graph'
• 'bw bar graph'
• 'color bar graph'
• 'binned heatmap'
• 'bw binned heatmap'
• 'color binned heatmap'

ordered Character vector. Graphics for ordered factor variables among the following:
• 'blank'
• 'line graph'
• 'tile plot'
• 'point graph'
• 'point-to-point graph'
• 'linerange graph'
• 'bar graph'
• 'bw bar graph'
• 'color bar graph'
• 'binned heatmap'
• 'bw binned heatmap'
• 'color binned heatmap'

factor Character vector. Graphics for Character variables among the following:
• 'blank'
• 'line graph'
• 'freq. reordered line graph'
• 'alphab. reordered line graph'
• 'tile plot'
• 'freq. reordered tile plot'
• 'alphab. reordered tile plot'
• 'point graph'
• 'freq. reordered point graph'
• 'alphab. reordered point graph'
• 'binned heatmap'
• 'bw binned heatmap'
• 'color binned heatmap'
• 'freq. reordered binned heatmap'
• 'bw freq. reordered binned heatmap'
• 'color freq. reordered binned heatmap'
• 'alphab. reordered binned heatmap'
• 'bw alphab. reordered binned heatmap'
• 'color alphab. reordered binned heatmap'
• 'point-to-point graph'
• 'freq. reordered point-to-point graph'
• 'alphab. reordered point-to-point graph'
• 'linerange graph'
• 'freq. reordered linerange graph'
• 'alphab. reordered linerange graph'
• 'bar graph'
• 'bw bar graph'
• 'color bar graph'
• 'freq. reordered bar graph'
• 'bw freq. reordered bar graph'
• 'color freq. reordered bar graph'
• 'alphab. reordered bar graph'
• 'bw alphab. reordered bar graph'
• 'color alphab. reordered bar graph'

character Character vector. Graphics for character variables among the following:
• 'blank'
• 'line graph'
• 'freq. reordered line graph'
• 'alphab. reordered line graph'
• 'tile plot'
• 'freq. reordered tile plot'
• 'alphab. reordered tile plot'
• 'point graph'
• 'freq. reordered point graph'
• 'alphab. reordered point graph'
• 'binned heatmap'
• 'bw binned heatmap'
• 'color binned heatmap'
• 'freq. reordered binned heatmap'
• 'bw freq. reordered binned heatmap'
• 'color freq. reordered binned heatmap'
• 'alphab. reordered binned heatmap'
• 'bw alphab. reordered binned heatmap'
• 'color alphab. reordered binned heatmap'
• 'point-to-point graph'
• 'freq. reordered point-to-point graph'
• 'alphab. reordered point-to-point graph'
• 'linerange graph'
• 'freq. reordered linerange graph'
• 'alphab. reordered linerange graph'
• 'bar graph'
• 'bw bar graph'
• 'color bar graph'
• 'freq. reordered bar graph'
• 'bw freq. reordered bar graph'
• 'color freq. reordered bar graph'
• 'alphab. reordered bar graph'
• 'bw alphab. reordered bar graph'
• 'color alphab. reordered bar graph'

datetime  Character vector. Graphics for datetime variables among the following:
• 'blank'
• 'line graph'
• 'stepped line graph'
• 'point graph'
• 'point-to-point graph'
• 'stepped point-to-point graph'
• 'binned heatmap'
• 'bw binned heatmap'
• 'color binned heatmap'
• 'bw heatmap'
• 'color heatmap'

numeric  Character vector. Graphics for numeric variables among the following:
• 'blank'
• 'area graph'
• 'stepped area graph'
• 'bw stepped area graph'
• 'color stepped area graph'
• 'seq. stripe graph'
• 'bw seq. stripe graph'
• 'color seq. stripe graph'
• 'line graph'
• 'stepped line graph'
• 'stripe graph'
• 'bw stripe graph'
• 'color stripe graph'
• 'binned stripe graph'
• 'bw binned stripe graph'
• 'color binned stripe graph'
• 'point graph'
• 'bw point graph'
• 'color point graph'
• 'point graph with trend line'
• 'bw point graph with trend line'
• 'color point graph with trend line'
• 'binned heatmap'
• 'bw binned heatmap'
• 'color binned heatmap'
• 'bw heatmap'
• 'color heatmap'
• 'binned point graph'
• 'bw binned point graph'
• 'color binned point graph'
• 'point-to-point graph'
• 'stepped point-to-point graph'
• 'bar graph'
• 'bw bar graph'
• 'color bar graph'
• 'histogram'
• 'bw histogram'
• 'color histogram'
• 'density plot'
• 'filled density plot'
• 'violin plot'
• 'filled violin plot'
• 'box plot'
• '3 uniaxial'
• 'normal qq plot'
• 'ecdf plot'
• 'dotted ecdf plot'
• 'stepped ecdf plot'

**group**  
Quoted character. Group of prestablished graphics which marks represent:
- 'sequence': the row number of the observations.
- 'scatter': graphics which marks represent individual observations.
- 'bin': observations into a series of intervals.
- 'model': a model built from the observations.
- 'symbol': different statistics through symbols.
- 'GOF': the goodness of fit of a statistical model.
- 'random': random graphics.

**ncol**  
Numeric. Number of columns. An integer between 3 and 7. The fewer columns displayed, the larger the size of the resulting graphics, a feature that is especially useful if the scale labels dwarf the graphics area.

**label**  
Logical. If 'TRUE' the output includes labels that show the names of the graphics that are being displayed.

**dir**  
Directory in which the files are stored.

**Value**
A html file that includes a grid of graphics. The variables of a dataset are first grouped by the type of data, then, each variable is graphically represented into a range of different graphics in one row of the matrix.
Examples

```r
if (interactive()) {
  wideplot(sleep, dataclass = c("factor"),
           factor = c("point graph", "line graph", "tile plot"),
           numeric = c("point graph", "line graph", "stepped line graph"))
}
```
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