Package ‘DemographicTable’

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Type Package
Title Creating Demographic Table
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Description Functions for creating demographic table with simple summary
statistics, with optional comparison(s) over one or more groups.
Numeric variables are summarized in means, standard deviations,
medians, inter-quartile-ranges (IQR), skewness, Shapiro-Wilk
normality test and ranges, and compared using two-sample t-test,
Wilcoxon test, ANOVA and/or Kruskal-Wallis test. Logical and
factor variables are summarized in counts and percentages and
compared using chi-squared test and/or Fisher's exact test.

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R topics documented:

DemographicTable-package ........................................ 2
as_flextable.DemographicTable .................................. 2
class1List .......................................................... 3

1
Create Demographic Table

Description

Functions for creating demographic table with simple summary statistics, with optional comparison(s) over one or more groups. Numeric variables are summarized in means, standard deviations, medians, inter-quartile-ranges (IQR), skewness, Shapiro-Wilk normality test and ranges, and compared using two-sample t-test, Wilcoxon test, ANOVA and/or Kruskal-Wallis test. Logical and factor variables are summarized in counts and percentages and compared using chi-squared test and/or Fisher’s exact test.

Convert DemographicTable to flextable

Description

Convert a DemographicTable to flextable.

Usage

## S3 method for class 'DemographicTable'
as_flextable(x, font.size = 8, caption, ...)

Arguments

x             a DemographicTable
font.size     integer scalar, the font size (default 8). See fontsize
caption       (optional) character scalar, the table caption. See set_caption
...           potential additional parameters, not currently in use

Value

as_flextable.DemographicTable returns a flextable object.

See Also

as_flextable
class1List

Description
The first class of each columns in a recursive object

Usage
class1List(x)

Arguments

x a data.frame or list

Value
class1List returns a list of the first class of each element of the input.

Examples
class1List(esoph)
class1List(lm(Ozone ~ Wind + Temp, data = airquality))

colWidth

Text Width (for flextable)

Description
Determine the text width of screen output

Usage

colWidth(x, linefeed = TRUE)

Arguments

x An R object convertible to data.frame
linefeed see nchar_lf

Value
colWidth returns an integer vector of the print widths of a data.frame not considering the row names.
DemographicTable

**Examples**

```r
head(mtcars)
colWidth(mtcars)
```

---

**Description**

Create a demographic table with simple summary statistics, with optional comparison(s) over one or more groups.

**Usage**

```r
DemographicTable(
  data,
  data.name = substitute(data),
  groups = NULL,
  keep_missing_group = TRUE,
  exclude = NULL,
  exclude_pattern,
  include,
  include_pattern,
  overall = TRUE,
  compare = TRUE,
  ...
)
```

**Arguments**

- `data`: a `data.frame`
- `data.name`: character scalar, or the argument call of `data`. A user-friendly name of the input data.
- `groups`: character scalar or vector, the name(s) of sub-group(s) for which the summary statistics are to be provided. Default `NULL` indicating no sub-groups.
- `keep_missing_group`: logical scalar. If `TRUE` (default), the subjects with missing `group` are put into a new group (`.missing`). If `FALSE`, these subjects are removed from group-wise summary statistics.
- `exclude`: character vector, the name(s) of variable(s) to be excluded. Default `NULL` indicating no variable are to be excluded.
- `exclude_pattern`: (optional) character scalar as regular expression, the pattern of the names of the variable(s) to be excluded.
**DemographicTable**

- **include**: character vector, the name(s) of variable(s) to be included. Default names(data) indicating all variables are to be included.
- **include_pattern**: character scalar as regular expression, the pattern of the names of the variable(s) to be included.
- **overall**: logical scalar. If TRUE (default), a column of overall summary statistics will be provided.
- **compare**: logical scalar. If TRUE (default), comparisons between group(s) will be made.

...potential parameters

**Details**

A demographic table with simple summary statistics, with optional comparison(s) over one or more groups, is created.

- **Numeric** variables are summarized in means, standard deviations, medians, inter-quartile-ranges (IQR), skewness, Shapiro-Wilk normality test and ranges. If group is specified, they are compared using two-sample t-test, Wilcoxon / Mann-Whitney test, one-way ANOVA and/or Kruskal-Wallis test.
- **logical** and **factor** variables are summarized in counts and percentages. If group is specified, they are compared using chi-squared test and/or Fisher exact test.

**Value**

`DemographicTable` returns an object of S3 class 'DemographicTable', which inherits from `matrix`.

**Examples**

```r
DemographicTable(esoph)
DemographicTable(ToothGrowth, groups = 'supp')
DemographicTable(ToothGrowth, groups = 'supp', compare = FALSE)
DemographicTable(warpbreaks, groups = c('wool', 'tension'))
DemographicTable(mtcars, groups = c('vs', 'am'), include = c('mpg', 'cyl', 'disp'))
```

# with missing value
```r
DemographicTable(airquality, groups = 'Month', exclude = 'Day')
```

# write to Word file
```r
library(flextable)
library(officer)
x = read_docx() |> body_add_flextable(value = as_flextable(DemographicTable(esoph)))
(out = file.path(tempdir(), 'demostable.docx'))
print(x, target = out)
```

# system(paste('open', out)) # works on Mac & Windows, but requires Microsoft Word
```r
file.remove(out)
```
nchar_lf  

**Number of Characters Acknowledging Line Feed**

Description

Finds the number of characters, similar to `nchar`, while acknowledging the line feed `\n`.

Usage

```
nchar_lf(x, linefeed = TRUE)
```

Arguments

- `x`  
  An R object convertible to `character`

- `linefeed`  
  logical scalar, whether to recognize the line feed in counting number of characters. Default `TRUE`.

Value

`nchar_lf` returns an integer scalar or vector, the number of characters in each element of the input.

Examples

```
nchar_lf(character())  # 0L
x = c('aa\nb', '', NA, '\n', 'cef\ncd', 'abc')
nchar_lf(x, linefeed = TRUE)
nchar_lf(x, linefeed = FALSE)
nchar_lf(c(TRUE, FALSE, NA))
nchar_lf(c(12, 3, 467))
```

pval_shapiro  

**P-value from modified Shapiro-Wilk Normality Test**

Description

Obtain p-value from Shapiro-Wilk normality test, taking into consideration of several exceptions.

Usage

```
pval_shapiro(x, CLT = FALSE)
```

Arguments

- `x`  
  double vector

- `CLT`  
  logical scalar, whether to allow the use of Central Limit Theorem (default `FALSE`).
### Details

`pval_shapiro` provides a pseudo p-value for the several exceptions of `shapiro.test`, serving as a criteria of whether robust statistics/tests need to be used

- `length(x) < 3L` return 0, robust methods needed
- `length(x) > 5e3L` return 1, no robust method needed (robust methods could be too slow)
- CLT & `length(x) > 30L` return 1, no robust method needed because of the use of Central Limit Theorem
- all x values identical return 0, robust methods needed.
- Otherwise use the p-value from `shapiro.test`

### Value

`pval_shapiro` returns a double scalar.

### Examples

```r
pval_shapiro(rnorm(5))
sapply(with(airquality, split(Ozone, f = Month)), FUN = pval_shapiro)
```

---

### Description

Provide the summary text of an R object

### Usage

`summaryText(x, fmt, ...)`

### Arguments

- `x` : an R object
- `fmt` : see `sprintf`
- `...` : potential parameters

### Value

`summaryText` returns a character scalar
Examples

```r
x = rpois(n = 20L, lambda = 2)
x[sample.int(length(x), 3L)] = NA_integer_
summaryText(x)

# factor
x = state.region
x[2L] = NA_integer_
summaryText(x)

# binary
summaryText(c(TRUE, FALSE, TRUE, NA))
summaryText(c(TRUE, FALSE, TRUE))
summaryText(c(FALSE, FALSE, NA))
summaryText(c(FALSE, FALSE, FALSE))
summaryText(c(NA, NA, NA))
```
Index

* package
  DemographicTable-package, 2

ANOVA, 5
as_flextable, 2
as_flextable.DemographicTable, 2, 2

character, 2, 4–7
class, 3
class1List, 3, 3
colWidth, 3, 3
data.frame, 3, 4
DemographicTable, 2, 4, 5
DemographicTable-package, 2
double, 6, 7

factor, 5
flextable, 2
fontsize, 2

integer, 2, 3, 6

list, 3
logical, 4–6

matrix, 5

nchar, 6
nchar_lf, 3, 6, 6
Numeric, 5

pval_shapiro, 6, 7

recursive, 3
regular expression, 4, 5

set_caption, 2
shapiro.test, 7
sprintf, 7
summaryText, 7, 7

t, 5