

Package ‘tangram’

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Title The Grammar of Tables

Version 0.4

Description Provides an extensible formula system to quickly and easily create production quality tables. The steps of the process are formula parser, statistical content generation from data, to rendering. Each step of the process is separate and user definable thus creating a set of building blocks for highly extensible table generation. A user is not limited by any of the choices of the package creator other than the formula grammar. For example, one could chose to add a different S3 rendering function and output a format not provided in the default package. Or possibly one would rather have Gini coefficients for their statistical content. Routines to achieve New England Journal of Medicine style, Lancet style and Hmisc::summaryM() statistics are provided. The package contains rendering for HTML5, Rmarkdown and an indexing format for use in tracing and tracking are provided.

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'helper-format.R' 'hmisc-cut2.R' 'hmisc-lm.fit.qr.bare.R'
'hmisc-impute.R' 'hmisc-biVar.R' 'render-csv.R'
'render-html5.R' 'render-index.R' 'render-latex-map.R'

'render-latex.R' 'render-rmd.R' 'render-rtf.R'
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<code>+.tangram</code>	<i>Provide a "+" operator for rbind of tangram tables</i>
------------------------	---

Description

The plus operator provides an rbind for tangram tables

Usage

```
## S3 method for class 'tangram'
x + y
```

Arguments

<code>x</code>	left argument for rbind
<code>y</code>	right argument for rbind

Value

A row wise merged tangram object

<code>add_indent</code>	<i>Add indentations to left column row headers</i>
-------------------------	--

Description

Add indentations to left column row headers. Note: will only work on cell_header cells.

Usage

```
add_indent(table, amounts = 2, rows = NULL, columns = NULL)
```

Arguments

table	Output of tangram::tangram()
amounts	numeric; Specifies number of spaces to add. A vector that is either a single value or vector of the same size as the height of the table. If positions is specified then it must be the same length. Defaults to 2, which each pair of spaces converts naturally in rendering to HTML, LaTeX, etc..
rows	numeric; A vector of numeric row numbers for the rows that need to be indented. Defaults to NULL which indents all.
columns	numeric; Column to apply indent to, defaults to 1

Value

the modified table

Examples

```
x <- tangram(drug ~ bili + albumin, pbc)
add_indent(x)
add_indent(x, amounts=10)
add_indent(x, amounts=c(0, 0, 2, 4))
add_indent(x, rows=c(3))
add_indent(x, rows=c(3, 4), amounts=c(4, 2))
```

args_flatten

Flatten variable arguments

Description

Take variable arguments, flatten vectors and lists, but do not flatten cells (which are lists) e.g. args_flatten(NA, list(1,2,3), 4:6, c(7,8,9))

Usage

```
args_flatten(...)
```

Arguments

```
...          variable arguments
```

Value

a list of the arguments, with vectors and lists flattened

<code>as.categorical</code>	<i>Convert data type to a factor if it's not already</i>
-----------------------------	--

Description

Convert data type to a factor if it's not already

Usage

```
as.categorical(x)
```

Arguments

x	Data to convert to factor
---	---------------------------

Value

Data as a factor

Examples

```
as.categorical(1:3)
```

ASTBranch	<i>A left/right branch in an Abstract Syntax Tree. This inherits from ASTNode, and is intended to be a base class as well. Should never be instantiated directly as once again the semantic information is contained in the class name.</i>
-----------	---

Description

A left/right branch in an Abstract Syntax Tree. This inherits from ASTNode, and is intended to be a base class as well. Should never be instantiated directly as once again the semantic information is contained in the class name.

Usage

```
ASTBranch
```

Format

[R6Class](#) object.

Fields

left A pointer to the left node below this one
 right A pointer to the right node below this one

Methods

distribute() Depth first application of distribute() to left and right nodes, then modifies left and right and returns self.
 terms() Returns the node
 string() Returns the string formula of the node
 reduce(data) Given a set of data, perform the logical reduction of the current node.

ASTFunction	<i>A specified function call as an ASTNode</i>
-------------	--

Description

A specified function call as an ASTNode

Usage

ASTFunction

Format

[R6Class](#) object.

Fields

value The name of the function.
 r_expr A string containing the raw r expression from inside the parenthesis

Methods

new(value, r_expr) Create one with the given value and r_expr
 terms() Returns the node
 factors() Returns self as a factor
 distribute() Applies the distributive property to the node, and returns the resulting node.
 string() Returns the string formula of the node
 reduce(data) Given a set of data, perform the logical reduction of the current node.

Examples

```
ASTFunction$new("log", "x+2")$string()
```

ASTMultiply

The multiplication of two terms, as an ASTNode.

Description

The multiplication of two terms, as an ASTNode.

Usage

```
ASTMultiply
```

Format

[R6Class](#) object.

Fields

`left` The AST tree to the left.

`right` The AST tree to the right.

Methods

`new(left, right)` Create addition node of given left and right node.

`terms()` Returns the node as a term vector

`factors()` Returns all terminal nodes under this as a list

`distribute()` Applies the distributive property to the node, and returns the resulting node. This is the actual workhorse of the disributing multiplication across the tree.

`string()` Returns the string formula of the node

`reduce(data)` Given a set of data, perform the logical reduction of the current node.

Examples

```
ASTMultiply$new(ASTVariable$new("x"), ASTVariable$new("y"))$string()
```

ASTNode

A Node in an Abstract Syntax Tree (AST)

Description

This is the root R6 class of any term of the AST which is created when parsing a table formula. This should only be used as a base class as the class information carries the semantic meaning of a given node.

Usage

ASTNode

Format

An object of class R6ClassGenerator of length 24.

Fields

symbol A string which tells what this node in the AST represents.

value A string of additional information contained by the node.

Methods

terms() Returns the node itself

distribute() Applies the distributive property to the node, and returns the resulting node.

string() Returns the string formula of the node

reduce(data) Given a set of data, perform the logical reduction of the current node.

ASTPlus

The addition of two terms, in an ASTNode.

Description

The addition of two terms, in an ASTNode.

Usage

ASTPlus

Format

R6Class object.

Fields

left The AST tree to the left.
 right The AST tree to the right.

Methods

new(left, right) Create addition node of given left and right node.
 terms() Returns the left and right branches terms
 distribute() Applies the distributive property to the node, and returns the resulting node.
 string() Returns the string formula of the node
 reduce(data) Given a set of data, perform the logical reduction of the current node.

Examples

```
ASTPlus$new(ASTVariable$new("x"), ASTVariable$new("y"))$string()
```

ASTTableFormula	<i>The root ASTNode of a formula.</i>
-----------------	---------------------------------------

Description

The root ASTNode of a formula.

Usage

```
ASTTableFormula
```

Format

[R6Class](#) object.

Fields

left The AST tree for the columns.
 right The AST tree for the rows.

Methods

new(left, right) Create addition node of given left and right node.
 terms() Returns the a list of the left hand terms and right hand terms
 distribute() Applies the distributive property to the node, and returns the resulting node. This is the actual workhorse of the disributing multiplication across the tree.
 string() Returns the string representation of the formula
 reduce(data) Given a set of data, perform the logical reduction of the entire AST.

Examples

```
ASTTableFormula$new(ASTVariable$new("x"), ASTVariable$new("y"))$string()
```

 ASTVariable

A Variable in an Abstract Syntax Tree (AST)

Description

This node represents a variable of interest in the AST. A variable's name is recorded in the value field, and must conform to the rules of identifiers in R. This class inherits from [ASTNode](#).

Usage

```
ASTVariable
```

Format

[R6Class](#) object.

Fields

value A string containing the variable identifier

format A format string that is either a string containing a number representing significant digits for output, or a C-style printf string.

type A string that represents the type specifier for that variable

Methods

`new(identifier, format=NA, type=NA)` This method creates an AST node representing a variable of a given identifier. An optional format consisting of a string of a number or a c-style printf string. An option type denoting a forced type cast of that variable.

`terms()` Returns the node

`distribute()` Applies the distributive property to the node, and returns the resulting node.

`string()` Returns the string formula of the node

`name()` Return a human representation of a node

`reduce(data)` Given a set of data, perform the logical reduction of the current node.

Examples

```
ASTVariable$new("x", "2", "Continuous")$string()
```

cbind.tangram	<i>A cbind for generated table tangram objects.</i>
---------------	---

Description

Execute the equivalent of an cbind for generated tables

Usage

```
## S3 method for class 'tangram'
cbind(..., deparse.level = 1)
```

Arguments

...	tangram objects to cbind
deparse.level	numeric; not used

Value

A merged tangram object

cell	<i>Construct a table cell from an object</i>
------	--

Description

Any R object can be used as a cell value. Attributes are used to store additional classes of that cell attached to the object. This is a helper function to attach all the additional attributes to the provided object

Usage

```
cell(x, ...)
```

Arguments

x	R object to attach attributes too
...	Each additional argument becomes an attribute for the object

Details

Certain attributes have special meaning: - 'names' is appended to the front of a value, e.g. "P=" for a p-value. - 'sep' is used to join values, e.g. ", " for a list of values. - 'class' denotes special rendering handling, e.g. generally passed as CSS class to HTML5 - 'reference' a list of reference symbols to put inside the cell - 'row' and 'col' should refer to the row / column if key generation is needed - 'subrow' and 'subcol' further delineate the key value of a cell for key generation

Value

The modified R object

cell.aov	<i>AOV model as cell</i>
----------	--------------------------

Description

Construct a cell from an analysis of variance model

Usage

```
## S3 method for class 'aov'
cell(x, pformat = "%1.3f", ...)
```

Arguments

x	The aov object to turn into a renderable cell
pformat	numeric or character; A formatting directive to be applied to p-values
...	additional specifiers for identifying this cell (see key)

Value

an S3 renderable cell that is an F-statistic

Examples

```
cell(aov(x~y,data.frame(x=rnorm(10), y=rnorm(10))))
```

cell.htest	<i>Construct hypothesis test cell</i>
------------	---------------------------------------

Description

Construct a cell from a hypothesis test

Usage

```
## S3 method for class 'htest'
cell(x, format = 2, pformat = "%1.3f", ...)
```

Arguments

x	The htest object to convert to a rendereable cell
format	numeric or character; A formatting directive applied to statistics
pformat	numeric or character; A formatting directive to be applied to p-values
...	additional specifiers for identifying this cell (see key)

Details

Currently handles cor.test, t.test and chisq.test objects

Value

an S3 rendereable cell that is a hypothesis test

Examples

```
cell(cor.test(rnorm(10), rnorm(10), method="spearman"))
cell(cor.test(rnorm(10), rnorm(10)))
cell(chisq.test(rpois(10,1)))
cell(t.test(rnorm(10), rnorm(10)))
```

cell_chi2

Create an cell_chi2 (S3) object of the given statistic

Description

A cell_chi2 object contains a statistical result of an X^2 -test.

Usage

```
cell_chi2(chi2, df, p, class = NULL, ...)
```

Arguments

chi2	The value of the X^2 statistic
df	degrees of freedom
p	p-value of resulting test
class	character; An optional field for additional S3 classes (e.g. could be used in html rendering for CSS)
...	optional extra information to attach

Value

A cell_chi2 object.

Examples

```
cell_chi2(5.6, 2, 0.06081)
```

cell_estimate	<i>Create a cell_estimate object of the given estimate</i>
---------------	--

Description

A cell_estimate object contains a statistical estimate. It may additionally contain an interval with a low and high of a specified width.

Usage

```
cell_estimate(value, low, high, name = NULL, class = NULL, sep = ", ",
  ...)
```

Arguments

value	The value of the estimate
low	Specifies a lower interval for the estimate.
high	Specifies an upper interval for the estimate.
name	character; An optional name to apply to the value
class	character; additional classes to apply
sep	character; option separator character for the range
...	optional extra information to attach

Value

A cell_estimate object.

Examples

```
cell_estimate(1.0, 0.5, 1.5)
cell_estimate(1.0, 0.5, 1.5, name="one")
```

cell_fraction	<i>Create an cell_fraction (S3) object of the given statistic</i>
---------------	---

Description

A cell_fraction object contains a statistical result of a fraction/percentage.

Usage

```
cell_fraction(numerator, denominator, format = 3, class = NULL, ...)
```

Arguments

numerator	numeric; The value of the numerator
denominator	numeric; The value of the denominator
format	numeric or character; a string formatting directive
class	character; An optional field for additional S3 classes (e.g. could be used in html rendering for CSS)
...	optional extra information to attach

Value

A cell_fraction object.

Examples

```
cell_fraction(1, 4, 0.25, 25)
```

cell_fstat	<i>Create an cell_fstat (S3) object of the given statistic</i>
------------	--

Description

A cell_fstat object contains a statistical result of an F-test.

Usage

```
cell_fstat(f, df1, df2, p, class = NULL, ...)
```

Arguments

f	The value of the f-statistic
df1	1st dimension degrees of freedom
df2	2nd dimension degrees of freedom
p	The p-value of the resulting test
class	character; An optional field for additional S3 classes (e.g. could be used in html rendering for CSS)
...	optional extra information to attach

Value

A cell_fstat object.

Examples

```
cell_fstat(4.0, 10, 20, 0.004039541, reference=1,)
```

cell_header	<i>Create a cell_header object of the given text.</i>
-------------	---

Description

A cell_header object represents a label cell inside a table. It can also contain units.

Usage

```
cell_header(text, units = NULL, class = NULL, ...)
```

Arguments

text	character; The text of the label. May include a subset of LaTeX greek or math.
units	character; An optional field that contains units
class	character; An optional field for additional S3 classes (e.g. could be used in html rendering for CSS)
...	optional extra information to attach

Value

A cell_header object

Examples

```
cell_header("Yahoo")
cell_header("Concentration", "mg/dl")
cell_header("Concentration", "mg/dl", src="A")
```

cell_iqr	<i>Create a interquartile range cell object of the given data</i>
----------	---

Description

Construct a cell which has the 3 interquartile ranges specified.

Usage

```
cell_iqr(x, format = NA, na.rm = TRUE, names = FALSE, type = 8,
msd = FALSE, quant = c(0.25, 0.5, 0.75), ...)
```

Arguments

x	numeric vector whose sample quantiles are wanted. NA and NaN values are not allowed in numeric vectors unless na.rm is TRUE.
format	numeric or character; Significant digits or fmt to pass to sprintf
na.rm	logical; if true, any NA and NaN's are removed from x before the quantiles are computed.
names	logical; if true, the result has a names attribute. Set to FALSE for speedup with many probs.
type	integer; specify algorithm to use in constructing quantile. See quantile for more information.
msd	logical; compute an msd attribute containing mean and standard deviation
quant	numeric; The quantiles to display. Should be an odd length vector, since the center value is highlighted.
...	additional arguments to constructing cell

Value

A cell_quantile object.

Examples

```
require(stats)
cell_iqr(rnorm(100), '3')
```

cell_label

Create an cell_label (S3) object of the given text.

Description

A cell_label object represents a label cell inside a table. It can also contain units.

Usage

```
cell_label(text, units = NULL, class = NULL, ...)
```

Arguments

text	character; The text of the label. May include a subset of LaTeX greek or math.
units	character; An optional field that contains units
class	character; An optional field for additional S3 classes (e.g. could be used in html rendering for CSS)
...	optional extra information to attach

Value

A tangram object

Examples

```
cell_label("Compaction Method")
cell_label("Concentration", "mg/dl")
cell_label("Concentration", "mg/dl", subcol="A")
```

cell_n	<i>Create an cell_n (S3) object of the given statistic</i>
--------	--

Description

A cell_n object contains a statistical result of an X²-test.

Usage

```
cell_n(n, class = NULL, ...)
```

Arguments

n	The value of the X ² statistic
class	character; An optional field for additional S3 classes (e.g. could be used in html rendering for CSS)
...	optional extra information to attach

Value

A cell_n object.

Examples

```
cell_n(20)
```

cell_named_values	<i>Create named value cells</i>
-------------------	---------------------------------

Description

A cell object with additionally contain an interval with a low and high of a specified width.

Usage

```
cell_named_values(values, names, class = NULL, sep = ", ", ...)
```

Arguments

values	vector; to create cell values from
names	character; names to apply to values
class	character; An optional field for additional S3 classes (e.g. could be used in html rendering for CSS)
sep	character; separator to use when rendering
...	additional attributes to attach to cell

Value

A cell object with named values

Examples

```
cell_named_values(1.0, "one")
```

cell_range	<i>Create a cell representing a range</i>
------------	---

Description

Useful for things such as confidence intervals.

Usage

```
cell_range(low, high, class = NULL, sep = ", ", ...)
```

Arguments

low	character or numeric; lower value of range
high	character or numeric; upper value of range
class	character; An optional field for additional S3 classes (e.g. could be used in html rendering for CSS)
sep	character; separator to use when rendering
...	additional attributes to attach to cell

Value

A cell object denoting a range

Examples

```
cell_range(-1.0, 1.0)
```

cell_spearman	<i>Create an cell_spearman (S3) object of the given statistic</i>
---------------	---

Description

A cell_spearman object contains a statistical result of an spearman-test.

Usage

```
cell_spearman(S, rho, p, class = NULL, ...)
```

Arguments

S	The value of the spearman statistic
rho	The rho value of the test
p	p-value of resulting test
class	character; An optional field for additional S3 classes (e.g. could be used in html rendering for CSS)
...	optional extra information to attach

Value

A cell_spearman object.

Examples

```
cell_spearman(20, 0.2, 0.05)
```

cell_studentt	<i>Create an cell_studentt (S3) object of the given statistic</i>
---------------	---

Description

A cell_studentt object contains a statistical result of an t-test.

Usage

```
cell_studentt(t, df, p, class = NULL, ...)
```

Arguments

t	The value of the X^2 statistic
df	degrees of freedom
p	p-value of resulting test
class	character; An optional field for additional S3 classes (e.g. could be used in html rendering for CSS)
...	optional extra information to attach

Value

A cell_studentt object.

Examples

```
cell_studentt(2.0, 20, 0.02963277)
```

cell_subheader	<i>Create a cell_subheader object of the given text.</i>
----------------	--

Description

A cell_subheader object represents a label cell inside a table. It can also contain units.

Usage

```
cell_subheader(text, units = NULL, class = NULL, ...)
```

Arguments

text	character; The text of the label. May include a subset of LaTeX greek or math.
units	character; An optional field that contains units
class	character; An optional field for additional S3 classes (e.g. could be used in html rendering for CSS)
...	optional extra information to attach

Value

A cell_subheader object.

Examples

```
cell_subheader("Concentration")
cell_subheader("Concentration", "mg/dl")
cell_subheader("Concentration", "mg/dl", src="A")
```

cell_transform	<i>Create a function to transform all cells of a table</i>
----------------	--

Description

Given a function that operates on a table cell and returns the modified cell, return a function that given a table applies that function to all cells and returns the modified table.

Usage

```
cell_transform(FUN, ...)
```

Arguments

FUN	function to apply, must return the modified cell
...	additional arguments to pass into function

Value

a table modification function

csv	<i>Generate an csv from a tangram or cell object</i>
-----	--

Description

Given a tangram object create an index representation.

Usage

```
csv(object, ...)  
  
## S3 method for class 'tangram'  
csv(object, file = NULL, sep = ",", ...)  
  
## S3 method for class 'cell_subheader'  
csv(object, ...)  
  
## S3 method for class 'cell_header'  
csv(object, ...)  
  
## S3 method for class 'cell_fstat'  
csv(object, ...)  
  
## S3 method for class 'cell_chi2'  
csv(object, ...)  
  
## S3 method for class 'cell_studentt'  
csv(object, ...)  
  
## Default S3 method:  
csv(object, ...)  
  
## S3 method for class 'table_builder'  
csv(object, ...)
```

Arguments

object	The cell header to render to HTML5
...	additional arguments to renderer. Unused
file	File to write result into
sep	separator to use

Value

A string containing the csv file

custom_css

Return a CSS file as a string

Description

Given a filename, this function will load the file name from the current working directory. If it is not found from the current working directory it will search in the package for a matching filename and load that instead. If an id is specified, that will be prepended to all CSS selectors (TODO: make this substitution more robust). The result is returned as a string.

Usage

```
custom_css(filename, id = NA)
```

Arguments

filename	Name of the CSS file to load
id	CSS id to prepend to all entries

Value

String of possibly modified CSS file

Examples

```
custom_css("lancet.css", "tbl1")
```

del_col

Delete a given column from a table

Description

Given a table, remove the specified column

Usage

```
del_col(table, col)
```

Arguments

table	the table to modify
col	the number of the column to drop

Value

the modified table

del_row	<i>Delete a given row from a table</i>
---------	--

Description

Given a table, remove the specified row

Usage

```
del_row(table, row)
```

Arguments

table	the table to modify
row	the number of the row to drop

Value

the modified table

derive_label	<i>Derive label of AST node.</i>
--------------	----------------------------------

Description

Determine the label of a given AST node. NOTE: Should have data attached via reduce before calling.

Usage

```
derive_label(node)
```

Arguments

node	Abstract syntax tree node.
------	----------------------------

Value

A string with a label for the node

drop_statistics	<i>Drop all statistics columns from a table.</i>
-----------------	--

Description

Delete from a table all columns that contain statistics

Usage

```
drop_statistics(table)
```

Arguments

table the table to remove statistical columns

Value

the modified table

format_guess	<i>Guess the best format for a given set of numerical data</i>
--------------	--

Description

Given a vector of data, default to 3 significant digits or all if maximum is greater than zero

Usage

```
format_guess(x)
```

Arguments

x numeric; basic math and quantile function must work on data passed in

Value

numeric; the digits past the decimal recommended for display

Examples

```
format_guess(rnorm(100))  
format_guess(rnorm(100, sd=1e-6))
```

hmisc_data_type	<i>Determine data type of a vector loosely consistent with Hmisc.</i>
-----------------	---

Description

Determine data type of a vector loosely consistent with Hmisc.

Usage

```
hmisc_data_type(x, category_threshold = NA)
```

Arguments

x	Vector to determine type of
category_threshold	The upper threshold of unique values for which a vector is considered categorical.

Value

One of the following strings: Binomial, Categorical, or Numerical.

Examples

```
hmisc_data_type(c(1,2,3))
hmisc_data_type(factor(c("A","B","C")))
hmisc_data_type(factor(c("A","B","B","A")))
hmisc_data_type(factor(c(TRUE, FALSE, TRUE, FALSE)))
```

hmisc_intercept_cleanup	<i>Cleanup an intercept only model</i>
-------------------------	--

Description

Cleanup an intercept only table that was generated from the hmisc default transform. This drops the statistics column, and modifies the header to eliminate blank space.

Usage

```
hmisc_intercept_cleanup(table)
```

Arguments

table	the table to modify
-------	---------------------

Value

the modified table

hmisc_style	<i>Style Bundle for Hmisc defaults.</i>
-------------	---

Description

List of lists, should contain a "Type" entry with a function to determine type of vector passed in. Next entries are keyed off returned types from function, and represent the type of a row. The returned list should contain the same list of types, and represents the type of a column. Thus it now returns a function to process the intersection of those two types.

Usage

hmisc_style

Format

An object of class list of length 4.

html5	<i>S3 html5 Method function for use on a tangram to generate HTML5</i>
-------	--

Description

S3 html5 Method function for use on a tangram to generate HTML5

Usage

html5(object, id, ...)

Arguments

object	The cell to render to HTML5
id	A unique identifier for traceability in indexing
...	additional arguments to renderer.

html5.cell	<i>Convert an abstract cell object into an HTML5 string</i>
------------	---

Description

Given a cell class create an HTML5 representation.

Usage

```
## S3 method for class 'cell'
html5(object, id, ..., class = NULL)
```

Arguments

object	The cell to render to HTML5
id	A unique identifier for traceability
...	additional arguments to renderer. Unused
class	An additional class attribute for the HTML5 element

Value

A text string rendering of the given cell as a <td> with several 's.

html5.cell_chi2	<i>Convert an abstract cell_chi2 object into an HTML5 string</i>
-----------------	--

Description

Given a cell_chi2 class create an HTML5 representation.

Usage

```
## S3 method for class 'cell_chi2'
html5(object, id, ..., class = NULL)
```

Arguments

object	The cell chi2 to render to HTML5
id	A unique identifier for traceability
...	additional arguments to renderer. Unused
class	An additional class attribute for the HTML5 element

Value

A text string rendering of the given chi2 as a <td> with several 's.

html5.cell_estimate *Convert a cell_estimate object into an HTML5 string*

Description

Given a cell_estimate class create an HTML5 representation.

Usage

```
## S3 method for class 'cell_estimate'
html5(object, id, ..., class = NULL)
```

Arguments

object	The cell estimate to render to HTML5
id	A unique identifier for traceability
...	additional arguments to renderer. Unused
class	An additional class attribute for the HTML5 element

Value

A text string rendering of the given estimate as a <td> with several 's.

html5.cell_fraction *Convert an abstract cell_fraction object into an HTML5 string*

Description

Given a cell_fraction class create an HTML5 representation.

Usage

```
## S3 method for class 'cell_fraction'
html5(object, id, ..., class = NULL)
```

Arguments

object	The cell fraction to render to HTML5
id	A unique identifier for traceability
...	additional arguments to renderer. Unused
class	An additional class attribute for the HTML5 element

Value

A text string rendering of the given fraction as a <td> with several 's.

html5.cell_fstat	<i>Convert a cell_fstat object into an HTML5 string</i>
------------------	---

Description

Given a cell_fstat class create an HTML5 representation.

Usage

```
## S3 method for class 'cell_fstat'
html5(object, id, ..., class = NULL)
```

Arguments

object	The cell fstat to render to HTML5
id	A unique identifier for traceability
...	additional arguments to renderer. Unused
class	An additional class attribute for the HTML5 element

Value

A text string rendering of the given fstat as a <td> with several 's.

html5.cell_header	<i>Convert an abstract cell_header object into an HTML5 string</i>
-------------------	--

Description

Given a cell_header class create an HTML5 representation.

Usage

```
## S3 method for class 'cell_header'
html5(object, id, ..., class = NULL)
```

Arguments

object	The cell subheader to render to HTML5
id	A unique identifier for traceability
...	additional arguments to renderer. Unused
class	additional class attributes for CSS rendering

Value

A text string rendering of the given subheader as a <td> with several 's.

html5.cell_iqr	<i>Convert a cell_iqr object into an HTML5 string</i>
----------------	---

Description

Given a cell_iqr class create an HTML5 representation.

Usage

```
## S3 method for class 'cell_iqr'
html5(object, id, ..., class = NULL)
```

Arguments

object	The cell iqr to render to HTML5
id	A unique identifier for traceability
...	additional arguments to renderer. Unused
class	An additional class attribute for the HTML5 element

Value

A text string rendering of the given quantile as a <td> with several 's.

html5.cell_label	<i>Convert a cell_label object into an HTML5 string</i>
------------------	---

Description

Given a cell_label class create an HTML5 representation.

Usage

```
## S3 method for class 'cell_label'
html5(object, id, ..., class = NULL)
```

Arguments

object	The cell label to render to HTML5
id	A unique identifier for traceability
...	additional arguments to renderer. Unused
class	An additional class attribute for the HTML5 element

Value

A text string rendering of the given label as a <td> with several 's.

html5.cell_n *Convert an abstract cell_n object into an HTML5 string*

Description

Given a cell_n class create an HTML5 representation.

Usage

```
## S3 method for class 'cell_n'
html5(object, id, ..., class = NULL)
```

Arguments

object	The cell n to render to HTML5
id	A unique identifier for traceability
...	additional arguments to renderer. Unused
class	An additional class attribute for the HTML5 element

Value

A text string rendering of the given n as a <td> with several 's.

html5.cell_subheader *Convert an abstract cell_subheader object into an HTML5 string*

Description

Given a cell_subheader class create an HTML5 representation.

Usage

```
## S3 method for class 'cell_subheader'
html5(object, id, ..., class = NULL)
```

Arguments

object	The cell subheader to render to HTML5
id	A unique identifier for traceability
...	additional arguments to renderer. Unused
class	additional class attributes for CSS rendering

Value

A text string rendering of the given subheader as a <td> with several 's.

html5.character	<i>Default conversion to HTML5 for a character cell</i>
-----------------	---

Description

Produces table cell

Usage

```
## S3 method for class 'character'
html5(object, id, ..., class = NA)
```

Arguments

object	The cell to render to HTML5
id	A unique identifier for traceability
...	additional arguments to renderer. Unused
class	An additional class attribute for the HTML5 element

Value

An empty html5 td of the given class

html5.default	<i>Default conversion to HTML5 for an abstract table element</i>
---------------	--

Description

Gives a warning and produces an empty <td></td> cell

Usage

```
## Default S3 method:
html5(object, id, ..., class = NA)
```

Arguments

object	The cell to render to HTML5
id	A unique identifier for traceability
...	additional arguments to renderer. Unused
class	An additional class attribute for the HTML5 element

Value

An empty html5 td of the given class

html5.tangram

Convert a tangram class into an HTML5 string

Description

Given a tangram class, a series of conversion creates an HTML5 representation of the table. It may be an HTML5 fragment or it may be a complete web page.

Usage

```
## S3 method for class 'tangram'
html5(object, id = NA, caption = NA, css = NA,
      fragment = TRUE, inline = NA, footnote = NA, ...)
```

Arguments

object	The cell table to render to HTML5
id	A unique identifier for the table (strongly recommended). If not provided, caption will be used.
caption	A string caption for the table
css	A string that is the href to the css for complete HTML5
fragment	A boolean flag that determines whether a fragment or a complete HTML5 document is generated
inline	A string containing a filename to include as inline CSS. It first searches the drive for the file, if that fails it looks inside the package for a matching css file.
footnote	Any footnotes to include under the table.
...	additional arguments to renderer. Unused

Details

The package includes several css files for styling. At present the following exist: 'hmisc.css', 'lancet.css', 'lancet-stripped.css' and 'nejm.css'

Value

A text string rendering of the given table in HTML5

index	<i>Generate an index from a tangram or cell object</i>
-------	--

Description

Given a tangram object create an index representation.

Usage

```
index(object, ...)
```

Arguments

object	The cell header to render to HTML5
...	additional arguments to renderer. Unused

Value

A matrix or list of strings containing key, source and value

index.cell_label	<i>Generate an index from a label object</i>
------------------	--

Description

Overrides to generate no indexing on labels

Usage

```
## S3 method for class 'cell_label'
index(object, id = "tangram", key.len = 4, ...)
```

Arguments

object	cell; The cell for indexing
id	character; an additional specifier for the object key
key.len	numeric; length of key to generate
...	additional arguments to renderer. Unused

Value

A list of strings containing key, source and value

index.default	<i>Generate an index from a cell object</i>
---------------	---

Description

Given a cell class create an index representation. If no source is specified no index will be generated.

Usage

```
## Default S3 method:
index(object, id = "tangram", name = NULL, key.len = 4,
      ...)
```

Arguments

object	cell; The cell for indexing
id	character; an additional specifier for the object key
name	character; optional names of elements inside object
key.len	numeric; length of generated key
...	additional arguments to renderer. Unused

Value

A list of strings containing key, source and value

index.list	<i>Generate an index from a list object</i>
------------	---

Description

Given a cell class create an index representation. If no source is specified no index will be generated.

Usage

```
## S3 method for class 'list'
index(object, id = "tangram", key.len = 4, ...)
```

Arguments

object	cell; The cell for indexing
id	character; an additional specifier for the object key
key.len	numeric; length of key to generate
...	additional arguments to renderer. Unused

Value

A list of strings containing key, source and value

index.tangram	<i>Generate an an index from a tangram object</i>
---------------	---

Description

Given a tangram class create an index representation.

Usage

```
## S3 method for class 'tangram'
index(object, id = "tangram", key.len = 4, ...)
```

Arguments

object	The tangram for indexing
id	an additional specifier for the object key
key.len	numeric; length of keys generated (affects collision probability)
...	additional arguments to renderer. Unused

Value

A matrix of strings containing key, source and value

insert_row	<i>Insert a row into a tangram table</i>
------------	--

Description

Insert a row into a tangram table. Will fill with empty cells is not enough cells are specified.

Usage

```
insert_row(table, after, ...)
```

Arguments

table	the table to modify
after	numeric; The row to position the new row after. Can be zero for inserting a new first row.
...	Table cells to insert. Cannot be larger than existing table.

Value

the modified table

is.binomial *Determine if a vector is binomial or not*

Description

Determine if a vector is binomial or not

Usage

```
is.binomial(x, threshold = NA)
```

Arguments

x	Vector to determine type of
threshold	The upper threshold of unique values for which a vector is considered categorical.

Value

a Boolean: TRUE / FALSE

Examples

```
is.binomial(c(1,2,3))
is.binomial(factor(c("A","B","C")))
is.binomial(factor(c("A","B","B","A")))
is.binomial(factor(c(TRUE, FALSE, TRUE, FALSE)))
is.binomial(c('M', 'F', 'M', 'F'), 10)
```

is.categorical *Determine if a vector is categorical or not*

Description

Determine if a vector is categorical or not

Usage

```
is.categorical(x, threshold = NA)
```

Arguments

x	Vector to determine type of
threshold	The upper threshold of unique values for which a vector is considered categorical.

Value

A Boolean: TRUE / FALSE

Examples

```
is.categorical(c(1,2,3))
is.categorical(c(rep(1,20), rep(2, 20), rep(3, 20)), threshold=5)
is.categorical(c("A","B","B"))
is.categorical(factor(c("A","B","C")))
is.categorical(factor(c("A","B","B","A")))
is.categorical(factor(c(TRUE, FALSE, TRUE, FALSE)))
```

key	<i>Key derivation helper function</i>
-----	---------------------------------------

Description

This function should generate a string that uniquely identifies a piece of data present in a table. In a report with multiple tables the id is used to preserve uniqueness.

Usage

```
key(x, id)
```

Arguments

x	cell object to derive key for
id	the unique id of the table being keyed

Details

This function relies on the object being keyed having at a minimum character attributes for row and col. Additional specifics for embedded tables are given with subrow and subcol. The row and col are automatically appended when using a table_builder. However the subrow and subcol must be added by the user to a cell of a table.

latex

Render to LaTeX methods for tangram cell objects

Description

Each of these methods will render the cell object as a LaTeX fragment

Usage

```
latex(object, ...)

## Default S3 method:
latex(object, ...)

## S3 method for class 'cell'
latex(object, ...)

## S3 method for class 'cell_label'
latex(object, ...)

## S3 method for class 'cell_n'
latex(object, ...)

## S3 method for class 'cell_header'
latex(object, ...)

## S3 method for class 'cell_subheader'
latex(object, ...)

## S3 method for class 'cell_iqr'
latex(object, ...)

## S3 method for class 'cell_estimate'
latex(object, ...)

## S3 method for class 'cell_fstat'
latex(object, style = "", ...)

## S3 method for class 'cell_fraction'
latex(object, style = "", ...)

## S3 method for class 'cell_chi2'
latex(object, style = "", ...)

## S3 method for class 'cell_studentt'
latex(object, ...)
```

```
## S3 method for class 'cell_spearman'
latex(object, ...)

## S3 method for class 'tangram'
latex(object, caption = "Table", footnote = NULL,
      fragment = TRUE, filename = NULL, append = FALSE, na.blank = TRUE,
      cgroup.just = NULL, arraystretch = 1.2, pct_width = 1,
      placement = "H", style = "", ...)
```

Arguments

object	object; the item to render to latex
...	additional arguments
style	character; can be null or "nejm" for different table styling
caption	character; Caption to display on table
footnote	character; Footnote to include on table
fragment	logical; Is this a complete LaTeX document or just the table fragment
filename	character; filename to write LaTeX into
append	logical; Should the write be an append operation or overwrite
na.blank	logical; Should NA's be displayed as blanks
cgroup.just	character; The text of the column justification used in the table
arraystretch	numeric; The arraystretch parameter used for vertical spacing
pct_width	numeric; a scaling to be applied to the entire table
placement	character; placement directive, defaults to "H"

Value

the LaTeX rendering

Examples

```
## Not run:
latex(cell_label("123"))
latex(cell_iqr(rnorm(20)))
latex(cell_estimate(2.1, 0.8, 3.3))
latex(cell_fraction(45, 137))
tbl <- tangram(drug~bili, pbc)
latex(tbl)

## End(Not run)
```

 nejm_style

Style Bundle for Closer to NEJM style

Description

List of lists, should contain a "Type" entry with a function to determine type of vector passed in. Next entries are keyed off returned types from function, and represent the type of a row. The returned list should contain the same list of types, and represents the type of a column. Thus it now returns a function to process the intersection of those two types.

Usage

```
nejm_style
```

Format

An object of class `list` of length 4.

 Parser

The parser class for generating abstract syntax trees for given table formulas.

Description

The parser class for generating abstract syntax trees for given table formulas.

Usage

```
Parser
```

Format

[R6Class](#) object.

Fields

`input` Storage for input string of a formula

`pos` The current parsing position

`len` The length of the input

Methods

`new()` Create a parser.
`expect(id)` Require the next token parsed to have the specified id and consume it.
`peek()` Return the next token parsed without consuming it.
`eat_whitespace()` Consume any spaces or tabs in input.
`next_token()` Return the next token parsed and consume it.
`format()` Parse a format class and return it's string.
`r_expression()` Parse an R expression class and return it's string.
`factor()` Parse a factor class and return it's AST Node.
`term()` Parse a term class and return it's AST Node.
`expression()` Parse an expression class and return it's AST Node.
`table_formula()` Parse a table formula class and return it's AST Node.
`run(input)` Run the parser on the given input, and return an AST

References

Aho, A. V., Lam, M. S., Sethi, R., and Ullman, J. D. (2006) *Compilers: Principles, Techniques, and Tools*, 2nd edition. Addison Wesley.

Examples

```
Parser$new()$run("col1 + col2 + col3 ~ drug*age+spiders")
```

pbc

Mayo Clinic Primary Biliary Cirrhosis Data

Description

D This data is from the Mayo Clinic trial in primary biliary cirrhosis (PBC) of the liver conducted between 1974 and 1984. A total of 424 PBC patients, referred to Mayo Clinic during that ten-year interval, met eligibility criteria for the randomized placebo controlled trial of the drug D-penicillamine. The first 312 cases in the data set participated in the randomized trial and contain largely complete data. The additional 112 cases did not participate in the clinical trial, but consented to have basic measurements recorded and to be followed for survival. Six of those cases were lost to follow-up shortly after diagnosis, so the data here are on an additional 106 cases as well as the 312 randomized participants.

Usage

pbc

Format

An object of class `data.frame` with 418 rows and 19 columns.

Details

A nearly identical data set found in appendix D of Fleming and Harrington; this version has fewer missing values.

Included for use in example from Hmisc.

pipe.tangram	<i>Provide a " " operator for cbind of tangram tables</i>
--------------	---

Description

The pipe operator provides an cbind for tangram tables

Usage

```
## S3 method for class 'tangram'
x | y
```

Arguments

x	left argument for rbind
y	right argument for rbind

Value

A column wise merged tangram object

print.cell	<i>Print methods for tangram objects</i>
------------	--

Description

Print methods for tangram objects

Usage

```
## S3 method for class 'cell'
print(x, ...)

## S3 method for class 'tangram'
print(x, ...)
```

Arguments

x	object; the item to render
...	additional arguments passed to summary

Value

the text summary

Examples

```
print(cell_label("123"))
print(cell_iqr(rnorm(20)))
print(cell_estimate(2.1, 0.8, 3.3))
print(cell_fraction(45, 137))
print(table_builder() %>%
  row_header("row") %>%
  col_header(1, 2, 3) %>%
  add_col("A", "B", "C"))
print(tangram(drug~bili, pbc))
```

print.table_builder *Print a text summary of a given table_builder*

Description

Print a text summary of a given table_builder

Usage

```
## S3 method for class 'table_builder'
print(x, ...)
```

Arguments

x The table_builder to render to text
... additional arguments, unused at present

Value

A text string rendering of the given table

proc_tab	<i>Tangram transform for proc_tab style summaries via a function</i>
----------	--

Description

Given a function that produces a vector of tangram cells, will generate a table

Usage

```
proc_tab(table, row, column, fun = NULL, overall = FALSE, ...)
```

Arguments

table	The table builder object
row	The row from the abstract syntax tree that parsed the formula
column	The column from the abstract syntax tree that parsed the formula
fun	The function to apply to the broken out categories
overall	Provide a summary of categorical breakdowns
...	additional arguments to pass to fun

rbind.tangram	<i>An rbind for generated tables tangram objects.</i>
---------------	---

Description

Execute the equivalent of an rbind for generated tables

Usage

```
## S3 method for class 'tangram'
rbind(..., deparse.level = 1)
```

Arguments

...	tangram objects to rbind
deparse.level	numeric; not used

Value

A merged tangram object

render_f	<i>Format a vector of provided numeric values</i>
----------	---

Description

Given a vector of data return as strings formatted as requested

Usage

```
render_f(x, format)
```

Arguments

x	numeric; the data to format. Must work with quantile function.
format	numeric or character; If numeric preserve that many position past the decimal, if character pass directly into sprintf as format string

Value

character; formatted values as character strings

Examples

```
render_f(rnorm(5), 3)
render_f(round(rnorm(5), 2), "%010.03f")
```

rmd	<i>Generate an Rmd table entry from a cell object</i>
-----	---

Description

Given a cell object generate the corresponding piece of an Rmd table

Usage

```
rmd(object, key = FALSE, ...)
```

Default S3 method:

```
rmd(object, key = FALSE, ...)
```

S3 method for class 'cell'

```
rmd(object, key = FALSE, ...)
```

S3 method for class 'cell_iqr'

```
rmd(object, key = FALSE, ...)
```

```
## S3 method for class 'cell_estimate'  
rmd(object, key = FALSE, ...)  
  
## S3 method for class 'cell_fstat'  
rmd(object, key = FALSE, ...)  
  
## S3 method for class 'cell_fraction'  
rmd(object, key = FALSE, ...)  
  
## S3 method for class 'cell_chi2'  
rmd(object, key = FALSE, ...)  
  
## S3 method for class 'cell_studentt'  
rmd(object, key = FALSE, ...)  
  
## S3 method for class 'cell_spearman'  
rmd(object, key = FALSE, ...)  
  
## S3 method for class 'cell_n'  
rmd(object, key = FALSE, ...)  
  
## S3 method for class 'tangram'  
rmd(object, key = NULL, append = FALSE, ...)  
  
## S3 method for class 'table_builder'  
rmd(object, key = FALSE, ...)
```

Arguments

object	The cell_fstat for indexing
key	A filename to write key values into. Can be false if no key file is desired.
...	additional arguments to renderer. Unused
append	logical; Should the key file be appended too, or overwritten

Value

A string representation of the table

Examples

```
rmd(tangram(drug ~ bili, pbc))
```

rows	<i>S3 object to return number of rows/cols in object</i>
------	--

Description

Number of rows/cols in provided object

Usage

```
rows(x)

cols(x)

## S3 method for class 'list'
rows(x)

## S3 method for class 'list'
cols(x)

## S3 method for class 'table_builder'
rows(x)

## S3 method for class 'table_builder'
cols(x)
```

Arguments

x	object; object to determine requested count
---	---

rtf	<i>S3 rtf Method function for use on abstract table class</i>
-----	---

Description

S3 rtf Method function for use on abstract table class

Usage

```
rtf(object, id, ...)
```

Arguments

object	The cell to render to RTF
id	A unique identifier for the table (strongly recommended). If not provided, caption will be used.
...	additional arguments to renderer. Unused at present.

Value

A text string rendering of the given table

rtf.cell	<i>Given a cell class create an RTF representation.</i>
----------	---

Description

Given a cell class create an RTF representation.

Usage

```
## S3 method for class 'cell'
rtf(object, id, ...)
```

Arguments

object	The cell to render to RTF
id	A unique identifier for traceability
...	additional arguments to renderer. Unused

Value

An RTF string rendering of the given cell.

rtf.cell_chi2	<i>Convert an abstract cell_chi2 object into an rtf string</i>
---------------	--

Description

Given a cell_chi2 class create an rtf representation.

Usage

```
## S3 method for class 'cell_chi2'
rtf(object, id, ...)
```

Arguments

object	The cell chi2 to render to HTML5
id	A unique identifier for traceability
...	additional arguments to renderer. Unused

Value

A text string rendering of the given chi2 in rtf

rtf.cell_fstat	<i>Convert an abstract cell_fstat object into an RTF string</i>
----------------	---

Description

Given a cell_fstat class create an RTF representation.

Usage

```
## S3 method for class 'cell_fstat'  
rtf(object, id, ...)
```

Arguments

object	The cell fstat to render to RTF
id	A unique identifier for traceability
...	additional arguments to renderer. Unused

Value

A text string rendering of the given fstat as a <td> with several 's.

rtf.cell_header	<i>Convert an abstract cell_header object into an RTF string</i>
-----------------	--

Description

Given a cell_header class create an RTF representation.

Usage

```
## S3 method for class 'cell_header'  
rtf(object, id, ...)
```

Arguments

object	The cell header to render to RTF
id	A unique identifier for traceability
...	additional arguments to renderer. Unused

Value

An RTF string rendering of the given header

rtf.cell_iqr *Convert an abstract cell_iqr object into an RTF string*

Description

Given a cell_quantile class create an RTF representation.

Usage

```
## S3 method for class 'cell_iqr'  
rtf(object, id, ..., point = 9)
```

Arguments

object	The cell quantile to render to RTF
id	A unique identifier for traceability
...	additional arguments to renderer. Unused
point	numeric; The font point size to use in display

Value

An RTF string rendering of the given quantile.

rtf.cell_label *Given a cell_label class create an RTF representation.*

Description

Given a cell_label class create an RTF representation.

Usage

```
## S3 method for class 'cell_label'  
rtf(object, id, ..., point = 18)
```

Arguments

object	The cell label to render to RTF
id	A unique identifier for traceability
...	additional arguments to renderer. Unused
point	size of main font for cell label

Value

An RTF text string rendering of the given label.

rtf.cell_n	<i>Convert an abstract cell_n object into an RTF string</i>
------------	---

Description

Given a cell_n class create an RTF representation.

Usage

```
## S3 method for class 'cell_n'
rtf(object, id, ...)
```

Arguments

object	The cell n to render to RTF
id	A unique identifier for traceability
...	additional arguments to renderer. Unused

Value

An RTF string rendering of the given n.

rtf.cell_subheader	<i>Convert an abstract cell_subheader object into an RTF string</i>
--------------------	---

Description

Given a cell_subheader class create an RTF representation.

Usage

```
## S3 method for class 'cell_subheader'
rtf(object, id, ..., point = 9)
```

Arguments

object	The cell header to render to RTF
id	A unique identifier for traceability
...	additional arguments to renderer. Unused
point	numeric; The font point size to use in display

Value

An RTF string rendering of the given header

rtf.default	<i>Default conversion to RTF for an abstract table element</i>
-------------	--

Description

Gives a warning and produces an empty cell

Usage

```
## Default S3 method:
rtf(object, id, ...)
```

Arguments

object	The cell to render to RTF
id	A unique identifier for traceability
...	additional arguments to renderer. Unused

Value

A RTF string rendering of the given cell

rtf.tangram	<i>Convert a tangram into an RTF string or file</i>
-------------	---

Description

Given a tangram class, a series of conversion creates an rtf representation of the table.

Usage

```
## S3 method for class 'tangram'
rtf(object, id = NA, caption = NA, fragment = FALSE,
     widths = NA, footnote = NA, filename = NA, append = FALSE,
     point = 9, ...)
```

Arguments

object	The cell table to render to RTF
id	A unique identifier for the table (strongly recommended).
caption	A string caption for the table
fragment	A boolean flag that determines whether a fragment or a complete RTF document is generated

widths	RTF requires specified left margin and column widths, this allows user control over these (inches)
footnote	Any footnotes to include under the table.
filename	A filename to write resulting rtf file to
append	A boolean for whether or not to append to given filename
point	Main font point size
...	additional arguments Fto renderer. Unused

Value

A text string rendering of the given table

summarize_chisq	<i>Create a summarization for a categorical row versus a categorical column</i>
-----------------	---

Description

Given a row and column object from the parser apply a chi² test and output the results

Usage

```
summarize_chisq(table, row, column, pformat = NULL, collapse_single = TRUE,
  overall = NULL, test = TRUE, row_percents = FALSE, ...)
```

Arguments

table	The table object to modify
row	The row variable object to use (categorical)
column	The column variable to use (categorical)
pformat	numeric, character or function; A formatting directive to be applied to p-values
collapse_single	logical; default TRUE. Categorical variables with a two values collapse to single row.
overall	logical; Include the overall summary column
test	logical; include statistical test results
row_percents	logical; use denominator across rows instead of columns.
...	absorbs extra parameters. Currently unused.

Value

The modified table object

```
summarize_kruskal_horz
```

Create a summarization for a categorical set of column versus a numerical row

Description

Given a row and column object from the parser apply a Kruskal test and output the results horizontally. 1 X (n + no. categories + test statistic)

Usage

```
summarize_kruskal_horz(table, row, column, pformat = NULL, msd = FALSE,
  quant = c(0.25, 0.5, 0.75), overall = NULL, test = TRUE, ...)
```

Arguments

table	The table object to modify
row	The row variable object to use (numerical)
column	The column variable to use (categorical)
pformat	numeric, character or function; A formatting directive to be applied to p-values
msd	logical; Include mean and standard deviation with quantile statistics
quant	numeric; Vector of quantiles to include. Should be an odd number since the middle value is highlighted on display.
overall	logical; Include overall summary statistics for a categorical column
test	logical; include statistical test results
...	absorbs additional arguments. Unused at present.

Value

The modified table object

```
summarize_kruskal_vert
```

Create a summarization for a categorical row versus a numerical column

Description

Given a row and column object from the parser apply a Kruskal test and output the results vertically (#Categories+1) X (N, Summary, Statistic)

Usage

```
summarize_kruskal_vert(table, row, column, pformat = NULL, test = TRUE, ...)
```

Arguments

table	The table object to modify
row	The row variable object to use (categorical)
column	The column variable to use (numerical)
pformat	numeric, character or function; A formatting directive to be applied to p-values
test	logical; include statistical test results
...	absorbs additional arguments. Unused at present.

Value

The modified table object

summarize_nejm_horz	<i>Create a summarization for a categorical set of column versus a numerical row in NEJM style</i>
---------------------	--

Description

Given a row and column object from the parser apply a Kruskal test and output the results horizontally. 5 X (n + no. categories + test statistic)

Usage

```
summarize_nejm_horz(table, row, column, pformat = NULL, msd = FALSE,
  quant = c(0.25, 0.5, 0.75), overall = NULL, test = TRUE, ...)
```

Arguments

table	The table object to modify
row	The row variable object to use (numerical)
column	The column variable to use (categorical)
pformat	numeric, character or function; A formatting directive to be applied to p-values
msd	logical; Include mean and standard deviation with quantile statistics
quant	numeric; Vector of quantiles to include. Should be an odd number since the middle value is highlighted on display.
overall	logical; Include overall summary statistics for a categorical column
test	logical; include statistical test results
...	absorbs additional arguments. Unused at present.

Value

The modified table object

summarize_spearman	<i>Create a summarization for a numerical row versus a numerical column</i>
--------------------	---

Description

Given a row and column object from the parser apply a Spearman test and output the results in a 1X3 format.

Usage

```
summarize_spearman(table, row, column, pformat = NULL, test = TRUE, ...)
```

Arguments

table	The table object to modify
row	The row variable object to use (numerical)
column	The column variable to use (numerical)
pformat	numeric, character or function; A formatting directive to be applied to p-values
test	logical; include statistical test results
...	absorbs additional arguments. Unused at present.

Value

The modified table object

summary.tangram	<i>The default method for rendering tangram objects A tangram is a summary, so it returns itself. Otherwise convert to a text representation.</i>
-----------------	---

Description

The default method for rendering tangram objects A tangram is a summary, so it returns itself. Otherwise convert to a text representation.

Usage

```
## S3 method for class 'tangram'
summary(object, ...)

## S3 method for class 'table_builder'
summary(object, ...)

## S3 method for class 'cell'
```

```

summary(object, ...)

## S3 method for class 'cell_label'
summary(object, ...)

## S3 method for class 'cell_spearman'
summary(object, ...)

## S3 method for class 'cell_iqr'
summary(object, ...)

## S3 method for class 'cell_range'
summary(object, ...)

## S3 method for class 'cell_estimate'
summary(object, ...)

## S3 method for class 'cell_fraction'
summary(object, ...)

## S3 method for class 'cell_fstat'
summary(object, ...)

## S3 method for class 'cell_chi2'
summary(object, ...)

## S3 method for class 'cell_studentt'
summary(object, ...)

```

Arguments

object	object; the item to render
...	additional arguments passed to summary

Value

the text summary

Examples

```

summary(cell_label("123"))
summary(cell_iqr(rnorm(20)))
summary(cell_estimate(2.1,0.8, 3.3))
summary(cell_fraction(45, 137))
summary(table_builder() %>%
  row_header("row") %>%
  col_header(1,2,3) %>%
  add_col("A", "B", "C"))
summary(tangram(drug~bili, pbc))

```

`table_builder`*Table Construction Toolset*

Description

These functions help build a table. A table can be embedded inside another table as a cell as well. The typical transform functions that provide bundles of functionality utilize this approach and each row column pair are rendered as a cell that is a table and later the whole table is flattened.

Usage`table_builder(row = NA, column = NA, embedded = FALSE)``col_header(table_builder, ..., sub = TRUE)``row_header(table_builder, ..., sub = TRUE)``write_cell(table_builder, x, ...)``home(table_builder)``cursor_up(table_builder, n = 1)``cursor_down(table_builder, n = 1)``cursor_left(table_builder, n = 1)``cursor_right(table_builder, n = 1)``cursor_pos(table_builder, nrow, ncol)``carriage_return(table_builder)``line_feed(table_builder, n = 1)``new_line(table_builder)``new_row(table_builder)``new_col(table_builder)``table_builder_apply(table_builder, X, FUN, ...)``add_col(table_builder, ...)``add_row(table_builder, ...)`

Arguments

row	character; Value to use for indexing
column	character; Value to use for indexing
embedded	logical; is this to be embedded in another table
table_builder	The table builder object to modify
...	object; the elements to add or additional values to pass to FUN
sub	logical; treat as subheader if after first header, defaults to TRUE
x	any; a value to use for a cell in operation
n	integer; Number of positions to move cursor, defaults to 1
nrow	integer; specifies desired row
ncol	integer; specifies desired col
X	list or vector; items to iterate over
FUN	the function to use in iteration

Details

This library is designed to use a core `table_builder` object that is passed from function to function using the pipe `%>%` operator. First create a `table_builder` using the `table_builder()` function and use the operators to build out the table. The row and column given to the `table_builder` are what is used in later construction of an index key. The `table_builder` object contains an item table which is the current table being built.

Column and row headers are attached as attributes to each table constructed are are tables in their own right that should match the proper dimension of the contained table. When later flattening a table of embedded tables, only the left and top most headers are used.

The table builder also has a cursor which maintains the state of where cell items are being written in table construction. It is possible to move the cursor into undefined portions of the table. Therefore it is best to use cursor movement to move in defined rows or columns of information.

Value

the modified `table_builder`

Examples

```
library(magrittr)
table_builder() %>%
col_header("One", "Two", "Three", "Four") %>%
row_header("A", "B", "C") %>%
write_cell("A1") %>%
cursor_right() %>%
add_col("A2", "A3") %>%
home() %>%
new_line() %>%
table_builder_apply(1:3, FUN=function(tb, x) {
  tb %>% write_cell(paste0("B",x)) %>% cursor_right()
```

```

})                                %>%
new_col()                          %>%
add_row(paste0(c("A", "B", "C"), 4)) %>%
cursor_up(2)                        %>%
line_feed()                          %>%
cursor_left(3)                       %>%
add_col(paste0("C", 1:4))

```

table_flatten	<i>Given a tangram object with embedded tables, flattens to a single table.</i>
---------------	---

Description

Flattening function to expanded embedded tables inside table cells.

Usage

```
table_flatten(table)
```

Arguments

table	the table object to flatten
-------	-----------------------------

Value

the flattened table object

tangram	<i>Table creation methods</i>
---------	-------------------------------

Description

The tangram method is the principal method to create tables. It uses R3 method dispatch. If one specifies rows and columns, one gets an empty table of the given size. A formula or character will invoke the parser and process the specified data into a table like `Hmisc::summaryM`. Given an `rms` object it will summarize that model in a table. A `data.frame` is converted directly into a table as well for later rendering. Can create tables from `summary.rms()`, `anova.rms()`, and other `rms` object info to create a single pretty table of model results. The `rms` and `Hmisc` packages are required.

Usage

```

tangram(x, ...)

## S3 method for class 'numeric'
tangram(x, cols, embedded = FALSE, ...)

## S3 method for class 'data.frame'
tangram(x, colheader = NA, ..., quant = seq(0, 1,
  0.25), msd = TRUE, as.character = NULL)

## S3 method for class 'formula'
tangram(x, data, transforms = hmisc_style, after = NA,
  digits = NA, ...)

## S3 method for class 'character'
tangram(x, data, transforms = hmisc_style, after = NA,
  digits = NA, ...)

## S3 method for class 'table'
tangram(x, ...)

## S3 method for class 'tbl_df'
tangram(x, ...)

## S3 method for class 'rms'
tangram(x, data = NULL, short.labels = NULL,
  footnote = NULL, rnd.digits = 2, rnd.stats = rnd.digits, ...)

```

Arguments

x	object; depends on S3 type, could be rows, formula, string of a formula, data.frame or numerical rows, an rms.model
...	addition models or data supplied to table construction routines
cols	numeric; An integer of the number of cols to create
embedded	logical; Will this table be embedded inside another
colheader	character; Use as column headers in final table
quant	numeric; A vector of quantiles to use for summaries
msd	logical; Include mean and standard deviation in numeric summary
as.character	logical; if true data.frames all variables are passed through as.character and no numerical summary is provided.
data	data.frame; data to use for rendering tangram object
transforms	list of lists of functions; that contain the transformation to apply for summarization
after	function or list of functions; one or more functions to further process an abstract table

<code>digits</code>	numeric; default number of digits to use for display of numerics
<code>short.labels</code>	numeric; Named vector of variable labels to replace in interaction rows. Must be in format <code>c("variable name" = "shortened label")</code> .
<code>footnote</code>	character; A string to add to the table as a footnote.
<code>rnd.digits</code>	numeric; Digits to round reference, comparison, result and CI values to. Defaults to 2.
<code>rnd.stats</code>	numeric; Digits to round model LR, R2, etc to. Defaults to <code>rnd.digits</code> .

Value

A tangram object (a table).

Examples

```
tangram(1, 1)
tangram(data.frame(x=1:3, y=c('a', 'b', 'c')))
tangram(drug ~ bili + albumin + protime + sex + age + spiders, pbc)
tangram("drug ~ bili + albumin + stage::Categorical + protime + sex + age + spiders", pbc)
```

Token

A token in the formula grammar

Description

A token in the formula grammar

Usage

Token

Format

[R6Class](#) object.

Fields

`id` The token identifier, E.g. "LPAREN"

`name` Information about the token, useful with IDENTIFIERS.

Methods

`new(id, name="")` Create a new token in the grammar.

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