

Package ‘dibble’

August 7, 2022

Type Package

Title Dimensional Data Frames

Version 0.2.1

Description Provides a 'dibble' that implements data cubes (derived from 'dimensional tibble'), and allows broadcasting by dimensional names.

License MIT + file LICENSE

Encoding UTF-8

Imports dplyr, memoise, pillar, purrr, rlang, tibble, tidyr, tidyselect, vctrs

RoxygenNote 7.2.1

Suggests covr, testthat (>= 3.0.0)

Config/testthat/edition 3

Depends R (>= 2.10)

URL <https://github.com/UchidaMizuki/dibble>,
<https://uchidamizuki.github.io/dibble/>

BugReports <https://github.com/UchidaMizuki/dibble/issues>

NeedsCompilation no

Author Mizuki Uchida [aut, cre]

Maintainer Mizuki Uchida <uchidamizuki@vivaldi.net>

Repository CRAN

Date/Publication 2022-08-07 14:20:02 UTC

R topics documented:

apply	2
as_dibble	3
basic-matrices-arrays	4
broadcast	5
diag	6

dibble	7
dibble_by	8
extremes	8
ifelse	9
is_dibble	10
nrow-ncol	11
row-colnames	12
%*%	13

Index	14
--------------	-----------

apply	<i>Apply functions over array margins</i>
-------	---

Description

Applying a function to margins of a dibble or array, including a matrix.

Usage

```
apply(X, MARGIN, FUN, ...)

## Default S3 method:
apply(X, MARGIN, FUN, ..., simplify = TRUE)

## S3 method for class 'tbl_ddf'
apply(X, MARGIN, FUN, ...)

## S3 method for class 'ddf_col'
apply(X, MARGIN, FUN, ...)
```

Arguments

X	A dibble or array, including a matrix.
MARGIN	An integer or character vector giving the subscripts which the function will be applied over.
FUN	A function to be applied.
...	Optional arguments to FUN.
simplify	A logical indicating whether results should be simplified if possible.

Details

apply() overrides [base::apply\(\)](#) to make it generic. The default method calls the base version.

Value

A dibble if X is a dibble. See [base::apply\(\)](#) for the return value of the default method.

See Also

[base::apply\(\)](#).

Examples

```
x <- array(1:24, 2:4,
           list(axis1 = letters[1:2],
                axis2 = letters[1:3],
                axis3 = letters[1:4]))

apply(x, 2:3, sum)
apply(as_dibble(x), 2:3, sum)

apply(x, c("axis2", "axis3"), sum)
apply(as_dibble(x), c("axis2", "axis3"), sum)
```

as_dibble

Coerce an object to a dibble

Description

as_dibble() turns an object into a dimensional data frame called a dibble.

Usage

```
as_dibble(x, ...)

## Default S3 method:
as_dibble(x, ...)

## S3 method for class 'rowwise_df'
as_dibble(x, ...)

## S3 method for class 'grouped_df'
as_dibble(x, ...)

## S3 method for class 'ddf_col'
as_dibble(x, ...)

## S3 method for class 'tbl_ddf'
as_dibble(x, ...)
```

Arguments

x An object.
... Unused, for extensibility.

Value

A dibble.

basic-matrices-arrays *Basic matrices and arrays*

Description

Create basic matrices and arrays.

Usage

```
eye(x, ...)  
  
## Default S3 method:  
eye(x, y = x, ...)  
  
## S3 method for class 'matrix'  
eye(x, ...)  
  
## S3 method for class 'ddf_col'  
eye(x, ...)  
  
## S3 method for class 'tbl_ddf'  
eye(x, ...)  
  
ones(x, ...)  
  
## Default S3 method:  
ones(x, y = x, ...)  
  
## S3 method for class 'array'  
ones(x, ...)  
  
## S3 method for class 'ddf_col'  
ones(x, ...)  
  
## S3 method for class 'tbl_ddf'  
ones(x, ...)  
  
zeros(x, ...)  
  
## Default S3 method:  
zeros(x, y = x, ...)  
  
## S3 method for class 'array'
```

```

zeros(x, ...)

## S3 method for class 'ddf_col'
zeros(x, ...)

## S3 method for class 'tbl_ddf'
zeros(x, ...)

```

Arguments

x	An object.
...	Other arguments passed on to methods.
y	A scalar integer.

Details

These functions override base functions to make them generic. The default methods call the base versions.

Value

A dibble if x is a dibble. Otherwise, returns a matrix or an array.

broadcast	<i>Broadcast to a new dimension</i>
-----------	-------------------------------------

Description

Broadcasts the dimension of the object to a new dimension.

Usage

```

broadcast(x, dim_names = NULL, ...)

## Default S3 method:
broadcast(x, dim_names = NULL, ...)

## S3 method for class 'ddf_col'
broadcast(x, dim_names, ...)

## S3 method for class 'tbl_ddf'
broadcast(x, dim_names, ...)

```

Arguments

x	A dibble, vector, or array.
dim_names	A character vector or list of dimension names.
...	Unused, for extensibility.

Details

Operations between dibles are automatically broadcasted, but for safety reasons, warnings are issued. `broadcast()` can suppress the warnings if `dim_names` matches the dimension of `x`.

Value

A dibble.

Examples

```
x <- broadcast(1:2,
               list(axis1 = letters[1:2]))
y <- broadcast(1:3,
               list(axis2 = letters[1:3]))
broadcast(x * y, c("axis1", "axis2"))
```

 diag

Matrix diagonals

Description

Extract or replace the diagonal of a matrix, or construct a diagonal matrix.

Usage

```
diag(x, ...)
```

Default S3 method:
`diag(x = 1, nrow, ncol, names, ...)`

S3 method for class 'tbl_ddf'
`diag(x, axes, ...)`

S3 method for class 'ddf_col'
`diag(x, axes, ...)`

`diag(x, ...) <- value`

Default S3 replacement method:
`diag(x, ...) <- value`

S3 replacement method for class 'tbl_ddf'
`diag(x, ...) <- value`

S3 replacement method for class 'ddf_col'
`diag(x, ...) <- value`

Arguments

x	A dibble, matrix, vector or 1D array, or missing.
...	Unused, for extensibility.
nrow, ncol	Optional dimensions for the result when x is not a matrix.
names	(When x is a matrix) logical indicating if the resulting vector, the diagonal of x, should inherit names from <code>dimnames(x)</code> if available.
axes	A character vector of axes.
value	Replacement values.

Details

These functions override base functions to make them generic. The default methods call the base versions.

Value

A dibble if x is a dibble. See `base::diag()` for the return values of the default methods.

dibble	<i>Build a dimensional data frame</i>
--------	---------------------------------------

Description

`dibble()` constructs a dimensional data frame called a dibble.

Usage

```
dibble(..., .dim_names = NULL)
```

Arguments

...	A set of name-measure pairs.
.dim_names	A list of dimension names.

Details

Manipulation functions:

- `mutate()`
- `rename()`
- `select()` & `relocate()`
- `slice()`

Value

A dibble.

dibble_by	<i>Constructs a dibble by one or more variables</i>
-----------	---

Description

dibble_by() constructs a dibble by one or more variables.

Usage

```
dibble_by(x, ..., .names_sep = NULL)
```

Arguments

x	A data frame or a dibble.
...	Variables.
.names_sep	Passed to tidyr::pack().

Value

A dibble.

extremes	<i>Maxima and Minima</i>
----------	--------------------------

Description

Returns the parallel maxima and minima of the input values.

Usage

```
pmax(..., na.rm = FALSE)

## Default S3 method:
pmax(..., na.rm = FALSE)

## S3 method for class 'ddf_col'
pmax(..., na.rm = FALSE)

## S3 method for class 'tbl_ddf'
pmax(..., na.rm = FALSE)

pmin(..., na.rm = FALSE)

## Default S3 method:
pmin(..., na.rm = FALSE)
```



```
## S3 method for class 'ddf_col'  
pmin(..., na.rm = FALSE)  
  
## S3 method for class 'tbl_ddf'  
pmin(..., na.rm = FALSE)
```

Arguments

... Dibbles, numeric or character arguments.
na.rm a logical indicating whether missing values should be removed.

Details

These functions override base functions to make them generic. The default methods call the base versions.

Value

A dibble if ... are dibles. See [base::pmax\(\)](#) and [base::pmin\(\)](#) for the return value of the default method.

See Also

[base::pmax\(\)](#), [base::pmin\(\)](#).

ifelse

Conditional element selection

Description

Selects elements from either yes or no depending on whether test is TRUE or FALSE.

Usage

```
ifelse(test, yes, no, ...)  
  
## Default S3 method:  
ifelse(test, yes, no, ...)  
  
## S3 method for class 'tbl_ddf'  
ifelse(test, yes, no, ...)  
  
## S3 method for class 'ddf_col'  
ifelse(test, yes, no, ...)
```

Arguments

test	An object which can be coerced to logical mode.
yes	Return values for true elements of test.
no	Return values for false elements of test.
...	Unused, for extensibility.

Details

ifelse() overrides `base::ifelse()` to make it generic. The default method calls the base version.

Value

A dibble if test is a dibble. See `base::ifelse()` for the return value of the default method.

See Also

`base::ifelse()`.

is_dibble	<i>Test if the object is a dibble</i>
-----------	---------------------------------------

Description

Test if the object is a dibble

Usage

```
is_dibble(x)
```

Arguments

x	An object.
---	------------

Value

A logical.

nrow-ncol	<i>The number of rows/columns</i>
-----------	-----------------------------------

Description

nrow() and ncol() return the number of rows or columns present in x.

Usage

```
nrow(x, ...)  
  
## Default S3 method:  
nrow(x, ...)  
  
## S3 method for class 'ddf_col'  
nrow(x, ...)  
  
## S3 method for class 'tbl_ddf'  
nrow(x, ...)  
  
ncol(x, ...)  
  
## Default S3 method:  
ncol(x, ...)  
  
## S3 method for class 'ddf_col'  
ncol(x, ...)  
  
## S3 method for class 'tbl_ddf'  
ncol(x, ...)
```

Arguments

x	An object.
...	Other arguments passed on to methods.

Details

These functions override base functions to make them generic. The default methods call the base versions.

Value

An integer or NULL.

row-colnames	<i>Row and column names</i>
--------------	-----------------------------

Description

Retrieve or set the row or column names of a matrix-like object.

Usage

```
rownames(x, ...)  
  
## Default S3 method:  
rownames(x, ...)  
  
## S3 method for class 'ddf_col'  
rownames(x, ...)  
  
## S3 method for class 'tbl_ddf'  
rownames(x, ...)  
  
colnames(x, ...)  
  
## Default S3 method:  
colnames(x, ...)  
  
## S3 method for class 'ddf_col'  
colnames(x, ...)  
  
## S3 method for class 'tbl_ddf'  
colnames(x, ...)
```

Arguments

x	A matrix-like object.
...	Other arguments passed on to methods.

Details

These functions override base functions to make them generic. The default methods call the base versions.

Value

A list of row/column names.

%%

Matrix Multiplication

Description

Multiplies two matrices, if they are conformable.

Usage

x %% y

Arguments

x Numeric or complex dibble, matrices or vectors.
y Numeric or complex dibble, matrices or vectors.

Details

%% overrides [base: :%%](#) to make it generic. The default method calls the base version.

Value

A dibble if x or y is a dibble of a matrix. A scalar numeric if both x and y are dibles of vectors. See [base: :%%](#) for the return value of the default method.

See Also

[base: :%%](#)

Index

`%*%`, 13

`apply`, 2
`as_dibble`, 3

`base::%*%`, 13
`base::apply()`, 2, 3
`base::diag()`, 7
`base::ifelse()`, 10
`base::pmax()`, 9
`base::pmin()`, 9
`basic-matrices-arrays`, 4
`broadcast`, 5

`colnames (row-colnames)`, 12

`diag`, 6
`diag<- (diag)`, 6
`dibble`, 7
`dibble_by`, 8

`extremes`, 8
`eye (basic-matrices-arrays)`, 4

`ifelse`, 9
`is_dibble`, 10

`ncol (nrow-ncol)`, 11
`nrow (nrow-ncol)`, 11
`nrow-ncol`, 11
`nrow.ddf_col (nrow-ncol)`, 11
`nrow.default (nrow-ncol)`, 11
`nrow.tbl_ddf (nrow-ncol)`, 11

`ones (basic-matrices-arrays)`, 4

`pmax (extremes)`, 8
`pmin (extremes)`, 8

`row-colnames`, 12
`rownames (row-colnames)`, 12

`zeros (basic-matrices-arrays)`, 4