

# Package ‘inum’

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**Title** Interval and Enum-Type Representation of Vectors

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**Description** Enum-type representation of vectors and representation of intervals, including a method of coercing variables in data frames.

**Depends** R (>= 3.3.0)

**Imports** stats, libcoin (>= 1.0-0)

**License** GPL-2

**NeedsCompilation** no

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enum *Enumeration-type Representation of Vectors*

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## Description

Elements of a vector are stored as a set of levels and an integer representing the enumeration.

## Usage

enum(x)

**Arguments**

`x` A vector. Currently, methods for factors, logicals, integers, and numeric vectors are implemented.

**Details**

The unique elements of `x` are stored as a `levels` attribute to an integer representing the enumeration. `levels` and `nlevels` methods are available. This is essentially the same as `factor` where the levels can be arbitrary vectors, not just characters.

**Value**

An object of class `enum`. A value of `0` encodes NA.

**See Also**

[factor](#)

**Examples**

```
(ex <- enum(x <- gl(2, 2)))
all.equal(levels(ex)[ex], x)

(ex <- enum(x <- rep(c(TRUE, FALSE), 2)))
all.equal(levels(ex)[ex], x)

(ex <- enum(x <- rep(1:5, 2)))
all.equal(levels(ex)[ex], x)

(ex <- enum(x <- rep(1:5 + .5, 2)))
all.equal(levels(ex)[ex], x)

(ex <- enum(x <- c(NA, rep(1:5 + .5, 2))))
all.equal(c(NA, levels(ex))[unclass(ex) + 1L], x)
```

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interval

*Cut Numeric Vectors into Intervals*

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**Description**

`interval` divides `x` into intervals and, unlike `cut`, represents these as a numeric vector.

**Usage**

```
interval(x, ...)
## S3 method for class 'numeric'
interval(x, breaks = 50, ...)
```

**Arguments**

x	A numeric vector.
breaks	Either a numeric vector of two or more unique cut points or a single number (greater than or equal to 2) giving the number of intervals into which x is to be cut by cut.
...	Additional arguments, currently ignored.

**Details**

This is just a wrapper around cut where the resulting intervals are stored as numeric values for simplified computation.

**Value**

An object of class interval. A value of 0 encodes NA.

**See Also**

[cut](#)

**Examples**

```
(ix <- interval(x <- 0:100/100, breaks = 0:10/10))
(cx <- cut(x, breaks = 0:10/10))

attr(ix, "levels")
levels(ix)
levels(cx)

diag(table(ix, cx))

(ix <- interval(x <- c(NA, 0:100/100), breaks = 0:10/10))
ix[is.na(x)]
unclass(ix)[is.na(x)]
```

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inum

*Coerse Variables in Data Frames to enum or interval*


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**Description**

Represents elements of a data frame as enum or interval.

**Usage**

```
inum(object, nmax = 20, ...)
## S3 method for class 'data.frame'
inum(object, nmax = 20, ignore = NULL,
      total = FALSE, weights = NULL, as.interval = "",
      complete.cases.only = FALSE, meanlevels = FALSE, ...)
```

**Arguments**

<code>object</code>	A data frame.
<code>nmax</code>	Maximal number of categories for each of the numeric variables.
<code>ignore</code>	A character vector of variable names not to be discretised.
<code>total</code>	A logical. TRUE means that a condensed data frame of all variables is returned, FALSE a list of discretised variables.
<code>weights</code>	An optional vector of weights.
<code>as.interval</code>	A character vector of variable names to be converted to <code>interval</code> instead of <code>enum</code> .
<code>complete.cases.only</code>	A logical. TRUE removes all rows with missing values.
<code>meanlevels</code>	A logical. TRUE, the level is the mean of the observations in the corresponding bin. The default FALSE uses the largest observation in the bin.
<code>...</code>	Additional arguments, currently ignored.

**Details**

Each variable in `object` is converted to `enum` or `interval`.

**Value**

An object of class `inum`, basically a list of `enum` or `interval` objects. If `total = TRUE`, an integer vector with a data frame as `levels` attribute is returned. In this case, `0` means NA.

**Examples**

```
data("iris", package = "datasets")
iris[1,1] <- NA
inum(iris, nmax = 5)
inum(iris, nmax = 5, total = TRUE)
inum(iris, nmax = 5, total = TRUE, as.interval = "Sepal.Width",
     complete.cases.only = TRUE)
```

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