Package ‘di’

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Type Package
Title Deficit Index (DI)
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Description A set of utilities for calculating the Deficit (frailty) Index (DI) in gerontological studies.
The deficit index was first proposed by Arnold Mitnitski and Kenneth Rockwood and represents a proxy measure of aging and also can be served as a sensitive predictor of survival. For more information, see (i) "Accumulation of Deficits as a Proxy Measure of Aging" by Arnold B. Mitnitski et al. (2001), The Scientific World Journal 1, <DOI:10.1100/tsw.2001.58>; (ii) "Frailty, fitness and late-life mortality in relation to chronological and biological age" by Arnold B Mitnitski et al. (2001), BMC Geriatrics2002 2(1), <DOI:10.1186/1471-2318-2-1>.

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This function calculates the Deficit Index (DI) and returns results as list: di a column-vector containing deficit indexes for each individual and columns that were used to calculate the di.

### Usage

```r
di(dat, cols = NULL, invert = NULL, rescale = TRUE, age = NULL, rescale.custom = NULL, rescale.avoid = NULL, bins = 7, visible = FALSE)
```

### Arguments

- `dat`: A data frame. Required parameter.
- `cols`: A list of column names. Default: NULL.
- `invert`: A list of columns which have to be inverted. Default: NULL.
- `rescale`: A flag that tell the program to rescale columns if the values a not 0/1. Default: TRUE.
- `age`: A name of column which represents age of a patient. Default: NULL.
- `rescale.custom`: A custom rescaling. See example below. Default: NULL.
- `rescale.avoid`: A set of column names for which rescaling should be avoided. Default: NULL.
- `bins`: A number of bins for plotting the DI against age from a dataset. Default: 7.
- `visible`: A flag to show DI plot (mean DI in a population by age) Default: FALSE

### Value

A list of two: di a column-vector containing deficit indexes for each individual and columns (rescaled if flag rescale was set to TRUE) that were used to calculate the di.

### Examples

```r
library(di)
dd <- data.frame(subj=seq(1:100),
  var1=rbinom(100,1,.5),
  var2=rbinom(100,1,.5),
  var3=rbinom(100,1,.5))
ddi <- di(dd, c("var1", "var2", "var3"))

# Custom rescaling
ddi <- di(dd, c("var1", "var2", "var3"), rescale.custom=c("var1:0.1:0.5"))
ddi
```
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