Package 'ilabelled'

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Type Package

Title Simple Handling of Labelled Data

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Description Simple handling of survey data. Smart handling of meta-information like e.g. variable-labels value-labels and scale-levels. Easy access and validation of meta-information. Useage of value labels and values respectively for subsetting and recoding data.

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Encoding UTF-8

Language en-US

Suggests testthat (>= 3.0.0)

Imports methods, stats

URL https://github.com/clewerenz/ilabelled

BugReports https://github.com/clewerenz/ilabelled/issues

Config/testthat/edition 3

RoxygenNote 7.3.1

Depends R (>= 2.10)

NeedsCompilation yes

Repository CRAN

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R topics documented:

.init *backend for i_labelled*

Description

all arguments are passed from i_labelled

Usage

```
.init(
  x,
  label = NULL,
  labels = NULL,
  na_values = NULL,
  na_range = NULL,
  scale = NULL,
  ...
)
```

Arguments

x	vector
label	variable label
labels	value labels as named vector
na_values	missing values (e.g. c(888, 999))
na_range	range of missing values (e.g. c(-9,-1))
scale	scale level (nominal, ordinal, scale)
...	further attributes passed to class

Value

x as i_labelled object with attributes applied to it

.is_sequential *checks if vector is numeric sequence*

Description

checks if vector is numeric sequence

Usage

```
.is_sequential(x)
```

Arguments

x	vector

Value

T/F

.i_find_in *internal replacement of match function for remove missing values (match is much slower but can handle more data classes)*

Description

description description

Usage

```
.i_find_in(x, y)
```

Arguments

x	vector
y	vector

Value

Vector of T/F values with length of x

.i_in *Match values*

Description

Find matches (return T/F)

Usage

```
.i_in(x, table)
```

Arguments

x	vector or NULL: the values to be matched. Long vectors are supported.
table	vector or NULL: the values to be matched against. Long vectors are not supported.

Value

Vector of T/F values with length of x

.merge_labels *combine old value labels with new value labels*

Description

combine old value labels with new value labels

Usage

```
.merge_labels(old_labs, new_labs)
```

Arguments

old_labs	named vector
new_labs	named vector

Value

Returns names vector of value labels

.valid_label *validate variable label - intern*

Description

run-time-tests for variable label runs internally

Usage

```
.valid_label(x)
```

Arguments

x	vector

Value

T/F

.valid_labels *validate value labels - intern*

Description

contains several run-time-tests for value labels runs internally

Usage

```
.valid_labels(x)
```

Arguments

x	named vector (label = value)

Value

No return value. Aborts process when run-time-tests fail.

.valid_missing *validate missing values/range - intern*

Description

validate missing values/range - intern

Usage

```
.valid_missing(x)
```

Arguments

x	vector

Value

T/F

.valid_scale *validate scale label - intern*

Description

run-time-tests for scale level runs internally

Usage

```
.valid_scale(x)
```

Arguments

x	vector

Value

T/F

as.i_labelled *coerce to i_labelled class*

Description

coerce to i_labelled class

Usage

```
as.i_labelled(x, ...)
```

Arguments

x	vector
...	attributes passed to class

Value

Vector of class i_labelled

grapesingrapes *generic for %in%*

Description

generic for %in%

Usage

```
x %in% table
```

Arguments

x	vector or NULL: the values to be matched. Long vectors are supported.
table	vector or NULL: the values to be matched against. Long vectors are not supported.

Value

T/F

is.i_labelled *check for class i_labelled*

Description

check for class i_labelled

Usage

```
is.i_labelled(x)
```

Arguments

x	vector of class i_labelled

Value

T/F

is_decimal *Check if vector contains decimal values*

Description

Check if vector contains decimal values

Usage

```
is_decimal(x)
```

Arguments

x	numeric vector

Value

T/F

i_assert_labels *Check for required value labels in set of variables*

Description

Check for required value labels in set of variables

Usage

```
i_assert_labels(x, labels, info = NULL, verbose = TRUE)
```

Arguments

x	data.frame
labels	character vector
info	string with info message (purpose of assertion) - optional
verbose	return TRUE when assertion is successful

Value

No return value (exept when verbose = T). Aborts process when test not valid.

i_as_character *as character*

Description

make character from i_labelled

Usage

```
i_as_character(
  x,
  missing_to_na = FALSE,
  require_all_labels = FALSE,
  keep_attributes = FALSE
)
```

Arguments

x	vector
missing_to_na	as missing declared values will become NA
require_all_labels	process will be interrupted, when not all values have valid labels
keep_attributes	should attributes be preserved

Value

Character vector

i_as_factor *as factor*

Description

make factor from i_labelled

Usage

```
i_as_factor(
  x,
  missing_to_na = FALSE,
  require_all_labels = FALSE,
  keep_attributes = FALSE
)
```

Arguments

x	vector
missing_to_na	as missing declared values will become NA
require_all_labels	process will be interrupted, when not all values have valid labels
keep_attributes	should attributes be preserved

Value

Vector of class factor

---

i_copy *copy labels from one variable to another*

Description

copy labels from one variable to another

Usage

```
i_copy(to, from, what = "all", ...)
```

Arguments

to	vector
from	vector
what	character vector describing which labels are copied: 'all' (default), 'label', 'labels', 'na_values', 'na_range'
...	further attributes passed to structure

Value

Returns 'to' with ilabelled attributes copied from 'from'

i_get_label *get variable label*

Description

return variable label when applied to vector return list when applied to data.frame

Usage

```
i_get_label(x)
```

Arguments

x	vector or data.frame

Value

Variable label

i_get_labels *get value labels*

Description

return labels when applied to vector return list when applied to data.frame

Usage

```
i_get_labels(x)
```

Arguments

x	vector or data.frame

Value

Values and value labels as data.frame

i_get_na_range *get missing range*

Description

return missing range when applied to vector return list when applied to data.frame

Usage

```
i_get_na_range(x)
```

Arguments

x	vector or data.frame

Value

Return missing range

i_get_na_values *get missing values*

Description

return missing values when applied to vector return list when applied to data.frame

Usage

```
i_get_na_values(x)
```

Arguments

x	vector or data.frame

Value

Return missing values

i_get_scale *get scale level*

Description

return scale level when applied to vector return list when applied to data.frame

Usage

```
i_get_scale(x)
```

Arguments

x	vector or data.frame

Value

Returns scale level

i_label *set variable label*

Description

set variable label

Usage

```
i_label(x, label)
```

Arguments

x	vector
label	variable label as string or NULL (NULL will remove label)

Value

x with variable label applied

i_labelled *class constructor*

Description

class constructor

Usage

```
i_labelled(
  x,
  label = NULL,
  labels = NULL,
  na_values = NULL,
  na_range = NULL,
  scale = NULL,
  ...
)
```

Arguments

x	vector or data.frame
label	variable label
labels	value labels as named vector (e.g. c("A"=1, "B"=2) or setNames(c(1,2), c("A","B")))
na_values	missing values (e.g. c(888, 999))
na_range	range of missing values as vector length 2 (e.g. c(-9,-1))
scale	scale level (nominal, ordinal, scale)
...	further attributes passed to class

Value

vector or data.frame

i_labels *set value labels*

Description

set value labels

Usage

```
i_labels(x, ..., overwrite = FALSE)
```

Arguments

x	vector
...	set labels for values (e.g. label_of_choice = 1 or "Label of Choice" = 1); remove single label with NULL = value (e.g. NULL = 1); removes all value labels when only NULL (e.g. i_label(x, NULL))
overwrite	should new labels be merged with existing labels or remove existing labels

Value

returns x with value labels applied

---

i_missing_to_na *missing values to NA*

Description

all values declared as missing will be recoded as NA

Usage

```
i_missing_to_na(x, remove_missing_labels = FALSE)
```

Arguments

x	vector or data.frame
remove_missing_labels	remove values labels from values which are declared as missing

Value

Returns x with missing values coerced to NA

---

i_na_range *define missing range*

Description

define which values will be handled as missing values

Usage

```
i_na_range(x, values)
```

Arguments

x	vector
values	vector with missing range e.g. c(-9:-1) or NULL (NULL will remove all missing values)

Value

Returns x with missing range set

---

i_na_values *define missing values*

Description

define which values will be handled as missing values

Usage

```
i_na_values(x, values, sort = TRUE, desc = FALSE)
```

Arguments

x	vector
values	vector with missing values e.g. c(888,999) or NULL (NULL will remove all missing values)
sort	sort values
desc	sort values in descending order

Value

Returns x with missing values set

---

i_print_label *print variable label*

Description

print variable label

Usage

```
i_print_label(x)
```

Arguments

x	vector

Value

No return value. Print variable label to console

---

i_print_labels *print value labels*

Description

print value labels

Usage

```
i_print_labels(x)
```

Arguments

x	vector

Value

No return value. Print labels to console

---

i_print_na_range *print missing range*

Description

print missing range

Usage

```
i_print_na_range(x)
```

Arguments

x	vector

Value

No return value. Print na range to console

i_print_na_values *print missing values*

Description

print missing values

Usage

```
i_print_na_values(x)
```

Arguments

x	vector

Value

No return value. Print na values to console

i_print_scale *print scale level*

Description

print scale level

Usage

```
i_print_scale(x)
```

Arguments

x	vector

Value

No return value. Print scale level to console

`i_recode` *i_recode Function for recoding new variable from origin variable(s).*

Description

Returns a vector object of class i_labelled

Usage

```
i_recode(
  x,
  ...,
  label = NULL,
  na_values = NULL,
  na_range = NULL,
  scale = NULL,
  copy = NULL
)
```

Arguments

`x`	vector
`...`	formula for recoding of values. See examples.
`label`	variable label
`na_values`	a vector with missing values
`na_range`	a vector for missing range
`scale`	scale level (nominal, ordinal, metric)
`copy`	a variable from x. Copy the values of an existing variable before recoding values according to ...

Details

Can be applied to either vector or data.frame. When x is data.frame the formula passed to ... is different from when it is applied to single vector. When function is applied to a data.frame, multiple conditions on multiple variables are possible (e.g when variable X is equal to this, do that; when variable Y is not equal to this, do that, etc.). See examples for further clarification.

You can recode directly via value labels by using

Value

Returns i_labelled vector with values defined by formula and information given to function.

Examples

```
# When applied to a single vector:
# keep in mind that when function is applied to vector, instead of a column use x
myVector <- i_labelled(1:4, labels = c("A" = 1, "B" = 2, "C" = 3, "D" = 4))
i_recode(x = myVector, "AB" = 1 ~ x %in% c("A", "B"), "CD" = 2 ~ x == c(3, 4))

# When applied to data.frame (multiple conditions)
myData <- data.frame(
   V1 = i_labelled(1:3, labels = c("A" = 1, "B" = 2, "C" = 3)),
   V2 = i_labelled(c(2:3,-9))
)
i_recode(x = myData, A = 1 ~ V1 %in% c("A", "B"), 2 ~ "V2" == 3, "C" = 999 ~ V2 == -9)
```

---

i_remove_label *remove variable label*

Description

remove variable label keep other attributes

Usage

```
i_remove_label(x)
```

Arguments

x	vector or data.frame

Value

Returns x without variable label

---

i_remove_labels *remove all value labels*

Description

remove all value labels keep other attributes

Usage

```
i_remove_labels(x)
```

Arguments

x	vector or data.frame

Value

Returns x without value labels

`i_remove_missing_labels` *remove missing labels*

Description

remove values labels from values which are declared as missing

Usage

```
i_remove_missing_labels(x)
```

Arguments

x	vector or data.frame

Value

Returns x without missing labels

`i_remove_na_range` *remove as na range*

Description

remove na range (information which values should be handled as missing) keep other attributes

Usage

```
i_remove_na_range(x)
```

Arguments

x	vector or data.frame

Value

Returns x without na-range

i_remove_na_values *remove as na values*

Description

remove na values (information which values should be handled as missing) keep other attributes

Usage

```
i_remove_na_values(x)
```

Arguments

x	vector or data.frame

Value

Returns x without na-values

i_scale *set scale level*

Description

set scale level

Usage

```
i_scale(x, scale = NULL)
```

Arguments

x	vector
scale	scale level (nominal, ordinal, scale) as string or NULL (NULL will remove scale level)

Value

Returns x with scale label set

i_sort_labels *sort value labels by values or by labels*

Description

sort value labels by values or by labels

Usage

```
i_sort_labels(x, by = "values", decreasing = FALSE)
```

Arguments

x	vector or data.frame
by	either values or labels
decreasing	sort decreasing

Value

Returns x with sorted value labels

i_to_base_class *remove class i_labelled and return base R class*

Description

- when value labels for all values are available will return factor
- when value labels are missing will unclass i_labelled
- remove class i_labelled and return variable as base R class

Usage

```
i_to_base_class(
  x,
  missing_to_na = TRUE,
  as_factor = TRUE,
  keep_attributes = FALSE
)
```

Arguments

x	vector or data.frame
missing_to_na	missing values will become regular NA
as_factor	convert to factor when value labels are available
keep_attributes	should attributes be preserved

Value

Returns x coerced to R base class

`i_unclass` *unclass variables*

Description

unclass variables

Usage

```
i_unclass(x, keep_attributes = FALSE)
```

Arguments

`x`	vector or data.frame
`keep_attributes`	should attributes be preserved

Value

x unclassed

`i_valid_label` *validate variable labels*

Description

returns boolean when applied to vector

returns a named list when applied to data.frame

Usage

```
i_valid_label(x)
```

Arguments

`x`	vector or data.frame

Value

T/F

i_valid_labels *validate value labels*

Description

returns boolean when applied to vector

returns a named list when applied to data.frame

Usage

```
i_valid_labels(x)
```

Arguments

x	vector or data.frame

Value

No return value. Aborts process when run-time-tests fail

print.i_labelled *custom print method for i_labelled*

Description

custom print method for i_labelled

Usage

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

Arguments

x	vector of class i_labelled
...	not used

Value

No return value. Print object data and information to console

`[.i_labelled` *subsetting vectors of class i_labelled*

Description

subsetting vectors of class i_labelled

Usage

```
## S3 method for class 'i_labelled'
x[...]
```

Arguments

`x`	vector of class i_labelled
`...`	not used

Value

Subset of x

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