Package 'extrasteps'

July 22, 2025

Title More Miscellaneous Steps for the 'recipes' Package

Version 0.1.0

Description Contains additional miscellaneous steps for the 'recipes' package. These steps are useful, but doesn't have a good home in other 'recipes' packages or its extensions.

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URL https://github.com/EmilHvitfeldt/extrasteps, https://emilhvitfeldt.github.io/extrasteps/

BugReports https://github.com/EmilHvitfeldt/extrasteps/issues

Depends R (>= 3.6), recipes (>= 1.0.7)

Imports dplyr, generics, magrittr, purrr, rlang, tibble, vctrs

Suggests almanac, ggplot2, modeldata, testthat (>= 3.0.0)

Config/testthat/edition 3

Encoding UTF-8

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NeedsCompilation no

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step_date_after   *Time after Recurrent Date Time Event*

Description

step_date_after() creates a *specification* of a recipe step that will create new columns indicating
the time after an recurrent event.

Usage

```
step_date_after(
  recipe,
  ...,
  role = "predictor",
  trained = FALSE,
  rules = list(),
  transform = "identity",
  columns = NULL,
  skip = FALSE,
  id = rand_id("date_after")
)
```

Arguments

recipe	A recipe object. The step will be added to the sequence of operations for this recipe.
...	One or more selector functions to choose variables for this step. See selections() for more details.
role	Not used by this step since no new variables are created.
trained	A logical to indicate if the quantities for preprocessing have been estimated.
rules	Named list of almanac rules.
transform	A function or character indication a function used oon the resulting variables. See details for allowed names and their functions.
columns	A character string of variables that will be used as inputs. This field is a placeholder and will be populated once recipes::prep.recipe() is used.

skip   A logical. Should the step be skipped when the recipe is baked by bake()?
                    While all operations are baked when prep() is run, some operations may not
                    be able to be conducted on new data (e.g. processing the outcome variable(s)).
                    Care should be taken when using skip = TRUE as it may affect the computations
                    for subsequent operations.

id   A character string that is unique to this step to identify it.

Details

The transform argument can be function that takes a numeric vector and returns a numeric vector
of the same length. It can also be a character vector, below is the supported vector names. Some
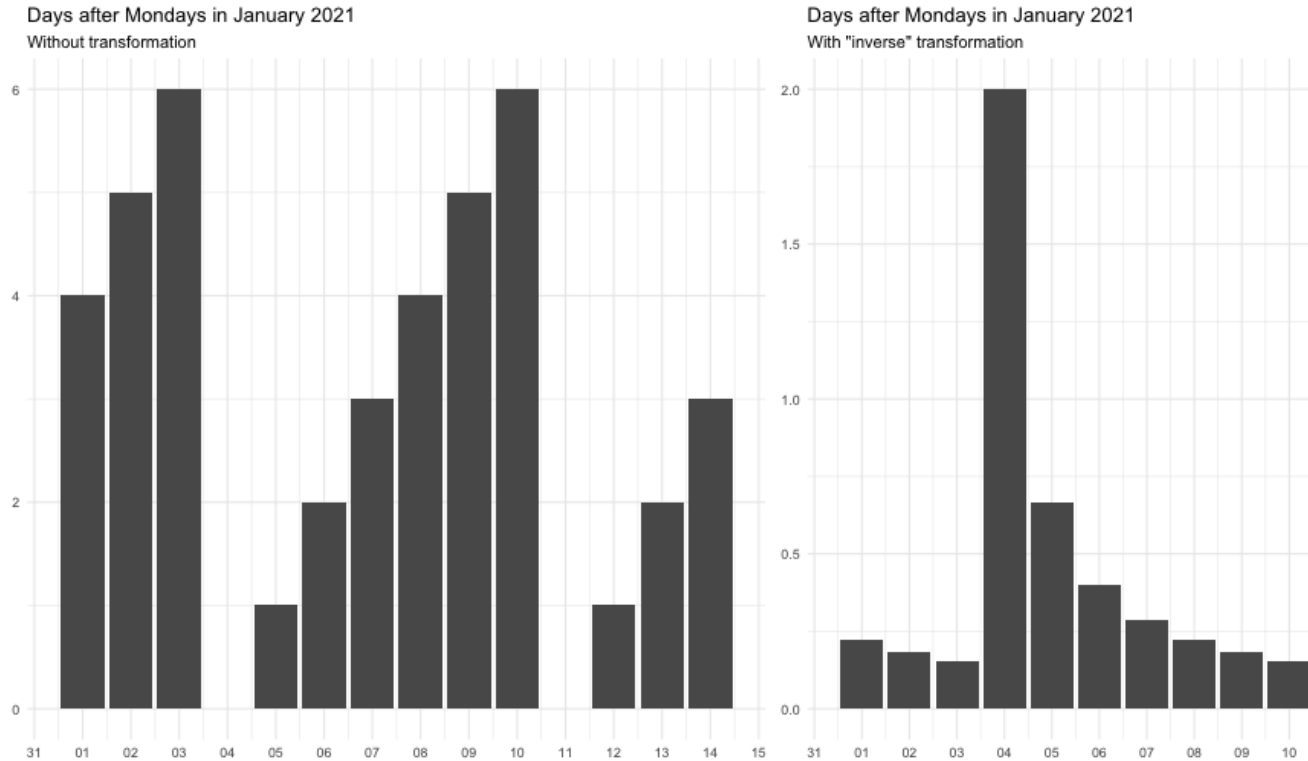functions come with offset to avoid Inf.

```
"identity"
function(x) x

"inverse"
function(x) 1 / (x + 0.5)

"exp"
function(x) exp(x)

"log"
function(x) log(x + 0.5)
```

The effect of transform is illustrated below.

Days after Mondays in January 2021
Without transformation

Days after Mondays in January 2021
With "inverse" transformation

The naming of the resulting variables will be on the form

```
{variable name}_after_{name of rule}
```

Value

An updated version of recipe with the new check added to the sequence of any existing operations.

Examples

```
library(recipes)
library(extrasteps)
library(almanac)
library(modeldata)

data(Chicago)

on_easter <- yearly() %>% recur_on_easter()
on_weekend <- weekly() %>% recur_on_weekends()

rules <- list(easter = on_easter, weekend = on_weekend)

rec_spec <- recipe(ridership ~ date, data = Chicago) %>%
  step_date_after(date, rules = rules)

rec_spec_preped <- prep(rec_spec)
```

```
bake(rec_spec_preped, new_data = NULL)
```

---

step_date_before   *Time before Recurrent Date Time Event*

Description

step_date_before() creates a *specification* of a recipe step that will create new columns indicat-
ing the time before an recurrent event.

Usage

```
step_date_before(
  recipe,
  ...,
  role = "predictor",
  trained = FALSE,
  rules = list(),
  transform = "identity",
  columns = NULL,
  skip = FALSE,
  id = rand_id("date_before")
)
```

Arguments

recipe	A recipe object. The step will be added to the sequence of operations for this recipe.
...	One or more selector functions to choose variables for this step. See [selections()](#) for more details.
role	Not used by this step since no new variables are created.
trained	A logical to indicate if the quantities for preprocessing have been estimated.
rules	Named list of almanac rules.
transform	A function or character indication a function used oon the resulting variables. See details for allowed names and their functions.
columns	A character string of variables that will be used as inputs. This field is a place-holder and will be populated once [recipes::prep.recipe()](#) is used.
skip	A logical. Should the step be skipped when the recipe is baked by [bake()](#)? While all operations are baked when [prep()](#) is run, some operations may not be able to be conducted on new data (e.g. processing the outcome variable(s)). Care should be taken when using skip = TRUE as it may affect the computations for subsequent operations.
id	A character string that is unique to this step to identify it.

Details

The `transform` argument can be function that takes a numeric vector and returns a numeric vector of the same length. It can also be a character vector, below is the supported vector names. Some functions come with offset to avoid `Inf`.
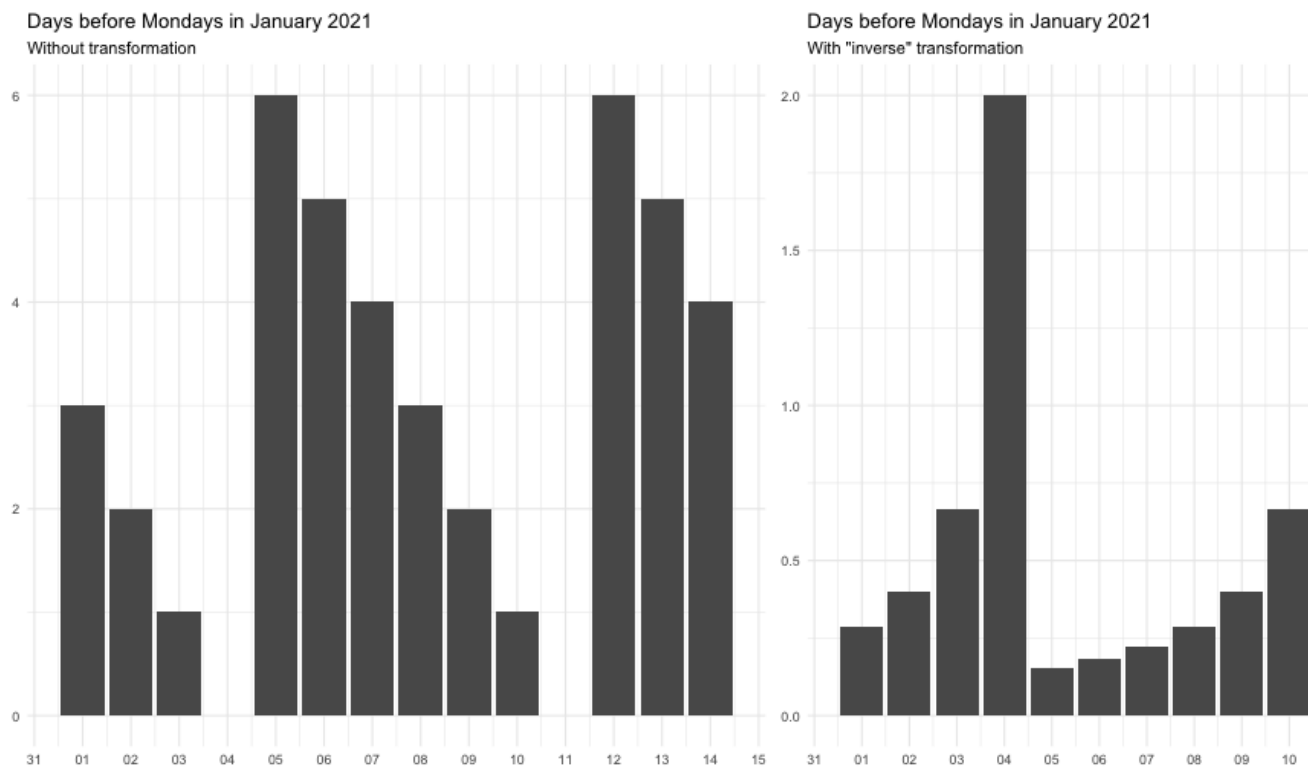
```
"identity"
function(x) x

"inverse"
function(x) 1 / (x + 0.5)

"exp"
function(x) exp(x)

"log"
function(x) log(x + 0.5)
```

The effect of `transform` is illustrated below.

The naming of the resulting variables will be on the form

```
{variable name}_before_{name of rule}
```

Value

An updated version of recipe with the new check added to the sequence of any existing operations.

Examples

```
library(recipes)
library(extrasteps)
library(almanac)
library(modeldata)

data(Chicago)

on_easter <- yearly() %>% recur_on_easter()
on_weekend <- weekly() %>% recur_on_weekends()

rules <- list(easter = on_easter, weekend = on_weekend)

rec_spec <- recipe(ridership ~ date, data = Chicago) %>%
  step_date_before(date, rules = rules)

rec_spec_preped <- prep(rec_spec)

bake(rec_spec_preped, new_data = NULL)
```

---

step_date_nearest   *Time to Nearest Recurrent Date Time Event*

Description

step_date_nearest() creates a *specification* of a recipe step that will create new columns indicating the time to nearest recurrent event.

Usage

```
step_date_nearest(
  recipe,
  ...,
  role = "predictor",
  trained = FALSE,
  rules = list(),
  transform = "identity",
  columns = NULL,
  skip = FALSE,
  id = rand_id("date_nearest")
)
```

Arguments

recipe	A recipe object. The step will be added to the sequence of operations for this recipe.
...	One or more selector functions to choose variables for this step. See [selections()](#) for more details.
role	Not used by this step since no new variables are created.
trained	A logical to indicate if the quantities for preprocessing have been estimated.
rules	Named list of `almanac` rules.
transform	A function or character indication a function used oon the resulting variables. See details for allowed names and their functions.
columns	A character string of variables that will be used as inputs. This field is a place-holder and will be populated once [recipes::prep.recipe()](#) is used.
skip	A logical. Should the step be skipped when the recipe is baked by [bake()](#)? While all operations are baked when [prep()](#) is run, some operations may not be able to be conducted on new data (e.g. processing the outcome variable(s)). Care should be taken when using skip = TRUE as it may affect the computations for subsequent operations.
id	A character string that is unique to this step to identify it.

Details

The `transform` argument can be function that takes a numeric vector and returns a numeric vector of the same length. It can also be a character vector, below is the supported vector names. Some functions come with offset to avoid `Inf`.
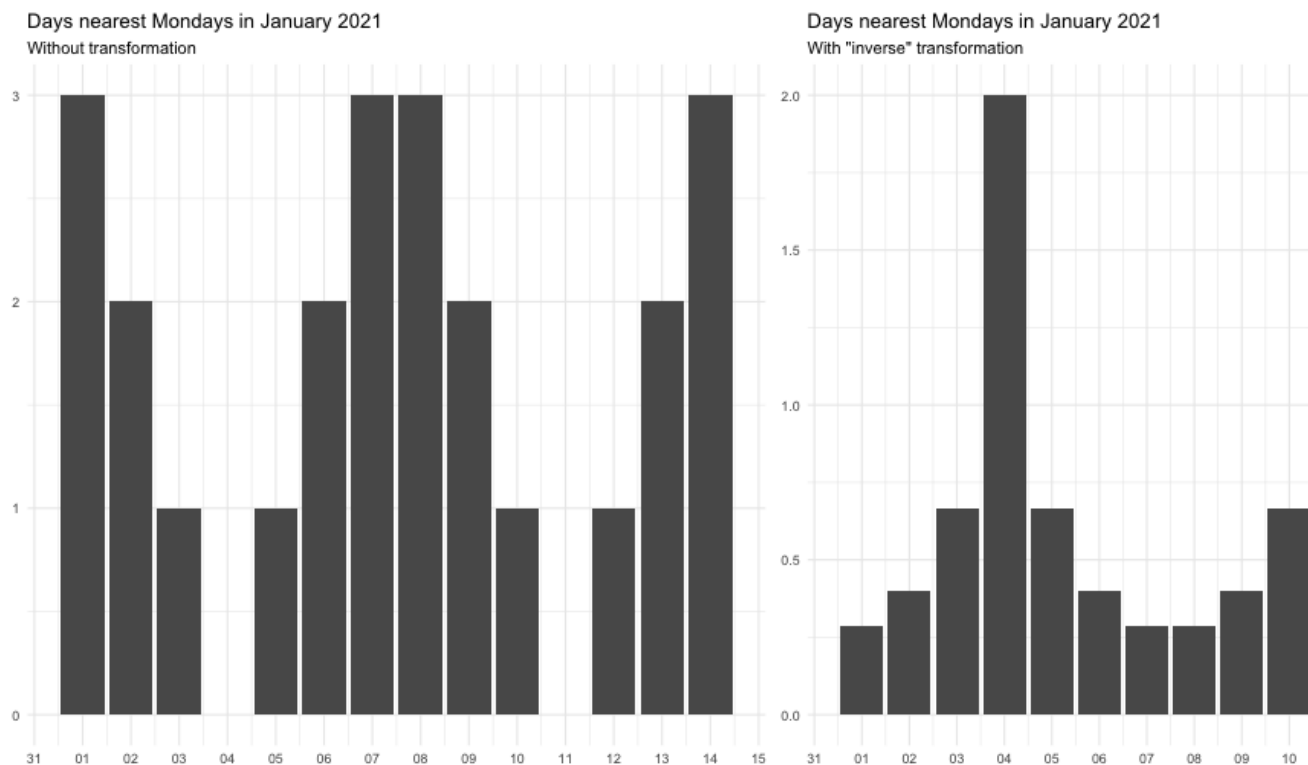
```
"identity"
function(x) x

"inverse"
function(x) 1 / (x + 0.5)

"exp"
function(x) exp(x)

"log"
function(x) log(x + 0.5)
```

The effect of `transform` is illustrated below.

Days nearest Mondays in January 2021
Without transformation

Days nearest Mondays in January 2021
With "inverse" transformation

The naming of the resulting variables will be on the form

```
{variable name}_nearest_{name of rule}
```

Value

An updated version of recipe with the new check added to the sequence of any existing operations.

Examples

```
library(recipes)
library(extrasteps)
library(almanac)
library(modeldata)

data(Chicago)

on_easter <- yearly() %>% recur_on_easter()
on_weekend <- weekly() %>% recur_on_weekends()

rules <- list(easter = on_easter, weekend = on_weekend)

rec_spec <- recipe(ridership ~ date, data = Chicago) %>%
  step_date_nearest(date, rules = rules)

rec_spec_preped <- prep(rec_spec)
```

```
bake(rec_spec_preped, new_data = NULL)
```

---

step_difftime   *difftimearithmic Transformation*

Description

step_difftime() creates a *specification* of a recipe step that will calculate difftimes of the data.

Usage

```
step_difftime(
  recipe,
  ...,
  role = NA,
  trained = FALSE,
  time = NULL,
  tz = NULL,
  unit = "auto",
  columns = NULL,
  skip = FALSE,
  id = rand_id("difftime")
)
```

Arguments

recipe	A recipe object. The step will be added to the sequence of operations for this recipe.
...	One or more selector functions to choose which variables are affected by the step. See [recipes::selections()](#) for more details. For the tidy method, these are not currently used.
role	Not used by this step since no new variables are created.
trained	A logical to indicate if the quantities for preprocessing have been estimated.
time	date-time or date objects. Used for reference. Must match the type of variable.
tz	an optional time zone specification to be used for the conversion, mainly for "POSIXlt" objects.
unit	character string. Units in which the results are desired. Must be one of "auto", "secs", "mins", "hours","days", and "weeks" Defaults to "auto".
columns	A character string of variable names that will be populated (eventually) by the terms argument.
skip	A logical. Should the step be skipped when the recipe is baked by [bake()](#)? While all operations are baked when [prep()](#) is run, some operations may not be able to be conducted on new data (e.g. processing the outcome variable(s)). Care should be taken when using skip = TRUE as it may affect the computations for subsequent operations.
id	A character string that is unique to this step to identify it.

Value

An updated version of `recipe` with the new step added to the sequence of existing steps (if any). For the `tidy` method, a tibble with columns `terms` (the columns that will be affected) and `base`.

Examples

```
library(recipes)
example_date <- data.frame(
  dates = seq(as.Date("2010/1/1"), as.Date("2016/1/1"), by = "quarter")
 )

 example_datetime <- data.frame(
  datetimes = seq(ISOdate(1993,1,1), ISOdate(1993,1,2), by = "hour")
 )

rec <- recipe(~ dates, data = example_date) %>%
  step_difftime(dates, time = as.Date("2010/1/1"))

difftime_obj <- prep(rec)

bake(difftime_obj, new_data = NULL)

recipe(~ dates, data = example_date) %>%
  step_difftime(dates, time = as.Date("2010/1/1"), unit = "weeks") %>%
  prep() %>%
  bake(new_data = NULL)

recipe(~ datetimes, data = example_datetime) %>%
  step_difftime(datetimes, time = ISOdate(1993,1,1), unit = "secs") %>%
  prep() %>%
  bake(new_data = NULL)
```

---

step_encoding_binary   *Perform binary encoding of factor variables*

Description

`step_encoding_binary()` creates a *specification* of a recipe step that will perform binary encoding of factor variables.

Usage

```
step_encoding_binary(
  recipe,
  ...,
  role = NA,
  trained = FALSE,
  res = NULL,
  columns = NULL,
```

```
  keep_original_cols = FALSE,
  skip = FALSE,
  id = rand_id("encoding_binary")
)
```

Arguments

`recipe`	A recipe object. The step will be added to the sequence of operations for this recipe.
`...`	One or more selector functions to choose which variables are affected by the step. See `recipes::selections()` for more details. For the `tidy` method, these are not currently used.
`role`	Not used by this step since no new variables are created.
`trained`	A logical to indicate if the quantities for preprocessing have been estimated.
`res`	A list containing levels of training variables is stored here once this preprocessing step has be trained by `recipes::prep()`.
`columns`	A character string of variable names that will be populated (eventually) by the `terms` argument.
`keep_original_cols`	
	A logical to keep the original variables in the output. Defaults to `FALSE`.
`skip`	A logical. Should the step be skipped when the recipe is baked by `bake()`? While all operations are baked when `prep()` is run, some operations may not be able to be conducted on new data (e.g. processing the outcome variable(s)). Care should be taken when using `skip = TRUE` as it may affect the computations for subsequent operations.
`id`	A character string that is unique to this step to identify it.

Value

An updated version of `recipe` with the new step added to the sequence of existing steps (if any). For the `tidy` method, a tibble with columns `terms` (the columns that will be affected) and `base`.

Examples

```
library(recipes)
library(modeldata)

data(ames)

rec <- recipe(~ Land_Contour + Neighborhood, data = ames) %>%
  step_encoding_binary(all_nominal_predictors()) %>%
  prep()

rec %>%
  bake(new_data = NULL)

tidy(rec, 1)
```

---

step_encoding_frequency

Perform frequency encoding

Description

step_encoding_frequency() creates a *specification* of a recipe step that will perform frequency encoding.

Usage

```
step_encoding_frequency(
  recipe,
  ...,
  role = NA,
  trained = FALSE,
  res = NULL,
  columns = NULL,
  skip = FALSE,
  id = rand_id("encoding_frequency")
)
```

Arguments

recipe	A recipe object. The step will be added to the sequence of operations for this recipe.
...	One or more selector functions to choose which variables are affected by the step. See recipes::selections() for more details. For the tidy method, these are not currently used.
role	Not used by this step since no new variables are created.
trained	A logical to indicate if the quantities for preprocessing have been estimated.
res	A list frequencies of the levels of the training variables is stored here once this preprocessing step has be trained by recipes::prep().
columns	A character string of variable names that will be populated (eventually) by the terms argument.
skip	A logical. Should the step be skipped when the recipe is baked by bake()? While all operations are baked when prep() is run, some operations may not be able to be conducted on new data (e.g. processing the outcome variable(s)). Care should be taken when using skip = TRUE as it may affect the computations for subsequent operations.
id	A character string that is unique to this step to identify it.

Value

An updated version of recipe with the new step added to the sequence of existing steps (if any). For the tidy method, a tibble with columns terms (the columns that will be affected) and base.

Examples

```
library(recipes)
library(modeldata)

data(ames)

rec <- recipe(~ Land_Contour + Neighborhood, data = ames) %>%
  step_encoding_frequency(all_nominal_predictors()) %>%
  prep()

rec %>%
  bake(new_data = NULL)

tidy(rec, 1)
```

---

step_maxabs   *Perform Max Abs Scaling*

Description

step_maxabs() creates a *specification* of a recipe step that will perform Max Abs scaling.

Usage

```
step_maxabs(
  recipe,
  ...,
  role = NA,
  trained = FALSE,
  res = NULL,
  columns = NULL,
  skip = FALSE,
  id = rand_id("maxabs")
)
```

Arguments

recipe   A recipe object. The step will be added to the sequence of operations for this
              recipe.

...   One or more selector functions to choose which variables are affected by the
              step. See recipes::selections() for more details. For the tidy method,
              these are not currently used.

role   Not used by this step since no new variables are created.

trained   A logical to indicate if the quantities for preprocessing have been estimated.

res   A list containing absolute max of training variables is stored here once this pre-
              processing step has be trained by recipes::prep().

columns	A character string of variable names that will be populated (eventually) by the `terms` argument.
skip	A logical. Should the step be skipped when the recipe is baked by bake()? While all operations are baked when prep() is run, some operations may not be able to be conducted on new data (e.g. processing the outcome variable(s)). Care should be taken when using `skip = TRUE` as it may affect the computations for subsequent operations.
id	A character string that is unique to this step to identify it.

Value

An updated version of `recipe` with the new step added to the sequence of existing steps (if any). For the `tidy` method, a tibble with columns `terms` (the columns that will be affected) and `base`.

Examples

```
library(recipes)

rec <- recipe(~., data = mtcars) %>%
  step_maxabs(all_predictors()) %>%
  prep()

rec %>%
  bake(new_data = NULL)

tidy(rec, 1)
```

---

step_minmax   *Perform Min Max Scaling*

Description

`step_minmax()` creates a *specification* of a recipe step that will perform Min Max scaling.

Usage

```
step_minmax(
  recipe,
  ...,
  role = NA,
  trained = FALSE,
  res = NULL,
  columns = NULL,
  skip = FALSE,
  id = rand_id("minmax")
)
```

Arguments

`recipe`	A recipe object. The step will be added to the sequence of operations for this recipe.
`...`	One or more selector functions to choose which variables are affected by the step. See `recipes::selections()` for more details. For the `tidy` method, these are not currently used.
`role`	Not used by this step since no new variables are created.
`trained`	A logical to indicate if the quantities for preprocessing have been estimated.
`res`	A list containing min and max of training variables is stored here once this preprocessing step has be trained by `recipes::prep()`.
`columns`	A character string of variable names that will be populated (eventually) by the `terms` argument.
`skip`	A logical. Should the step be skipped when the recipe is baked by `bake()`? While all operations are baked when `prep()` is run, some operations may not be able to be conducted on new data (e.g. processing the outcome variable(s)). Care should be taken when using `skip = TRUE` as it may affect the computations for subsequent operations.
`id`	A character string that is unique to this step to identify it.

Value

An updated version of `recipe` with the new step added to the sequence of existing steps (if any). For the `tidy` method, a tibble with columns `terms` (the columns that will be affected) and `base`.

Examples

```
library(recipes)

rec <- recipe(~., data = mtcars) %>%
  step_minmax(all_predictors()) %>%
  prep()

rec %>%
  bake(new_data = NULL)

tidy(rec, 1)
```

---

step_robust	*Perform Robust Scaling*

Description

`step_robust()` creates a *specification* of a recipe step that will perform Robust scaling.

Usage

```
step_robust(
  recipe,
  ...,
  role = NA,
  trained = FALSE,
  range = c(0.25, 0.75),
  res = NULL,
  columns = NULL,
  skip = FALSE,
  id = rand_id("robust")
)
```

Arguments

recipe	A recipe object. The step will be added to the sequence of operations for this recipe.
...	One or more selector functions to choose which variables are affected by the step. See `recipes::selections()` for more details. For the tidy method, these are not currently used.
role	Not used by this step since no new variables are created.
trained	A logical to indicate if the quantities for preprocessing have been estimated.
range	A numeric vector with 2 values denoting the lower and upper quantile that is used for scaling. Defaults to `c(0.25, 0.75)`.
res	A list containing the 3 quantiles of training variables is stored here once this preprocessing step has be trained by `recipes::prep()`.
columns	A character string of variable names that will be populated (eventually) by the terms argument.
skip	A logical. Should the step be skipped when the recipe is baked by `bake()`? While all operations are baked when `prep()` is run, some operations may not be able to be conducted on new data (e.g. processing the outcome variable(s)). Care should be taken when using `skip = TRUE` as it may affect the computations for subsequent operations.
id	A character string that is unique to this step to identify it.

Details

The scaling performed by this step is done using the following transformation

$$x_n ew = (x - Q2(x))/(Q3(x) - Q1(x))$$

where `Q2(x)` is the median, `Q3(x)` is the upper quantile (defaults to 0.75) and `Q1(x)` is the lower quantile (defaults to 0.25). The upper and lower quantiles can be changed with the range argument.

Value

An updated version of `recipe` with the new step added to the sequence of existing steps (if any).
For the `tidy` method, a tibble with columns `terms` (the columns that will be affected) and `base`.

Examples

```
library(recipes)

rec <- recipe(~., data = mtcars) %>%
  step_robust(all_predictors()) %>%
  prep()

rec %>%
  bake(new_data = NULL)

tidy(rec, 1)

rec <- recipe(~., data = mtcars) %>%
  step_robust(all_predictors(), range = c(0.1, 0.9)) %>%
  prep()

rec %>%
  bake(new_data = NULL)

tidy(rec, 1)
```

---

step_time_event   *Indicate Recurrent Date Time Event*

Description

`step_time_event()` creates a *specification* of a recipe step that will create new columns indicating
if the date fall on recurrent event.

Usage

```
step_time_event(
  recipe,
  ...,
  role = "predictor",
  trained = FALSE,
  rules = list(),
  columns = NULL,
  keep_original_cols = FALSE,
  skip = FALSE,
  id = rand_id("time_event")
)
```

Arguments

recipe	A recipe object. The step will be added to the sequence of operations for this recipe.
...	One or more selector functions to choose variables for this step. See [selections()](#) for more details.
role	Not used by this step since no new variables are created.
trained	A logical to indicate if the quantities for preprocessing have been estimated.
rules	Named list of almanac rules.
columns	A character string of variables that will be used as inputs. This field is a place-holder and will be populated once [recipes::prep.recipe()](#) is used.
keep_original_cols	
	A logical to keep the original variables in the output. Defaults to TRUE.
skip	A logical. Should the step be skipped when the recipe is baked by [bake()](#)? While all operations are baked when [prep()](#) is run, some operations may not be able to be conducted on new data (e.g. processing the outcome variable(s)). Care should be taken when using skip = TRUE as it may affect the computations for subsequent operations.
id	A character string that is unique to this step to identify it.

Details

Unlike some other steps step_time_event does *not* remove the original date variables by default. Set keep_original_cols to FALSE to remove them.

Value

An updated version of recipe with the new check added to the sequence of any existing operations.

Examples

```
library(recipes)
library(extrasteps)
library(almanac)
library(modeldata)

data(Chicago)

on_easter <- yearly() %>% recur_on_easter()
on_weekend <- weekly() %>% recur_on_weekends()

rules <- list(easter = on_easter, weekend = on_weekend)

rec_spec <- recipe(ridership ~ date, data = Chicago) %>%
  step_time_event(date, rules = rules)

rec_spec_preped <- prep(rec_spec)

bake(rec_spec_preped, new_data = NULL)
```

---

step_unit_normalize   *Perform Unit Normalization*

Description

step_unit_normalize() creates a *specification* of a recipe step that will perform unit normalization by scaling individual samples to have unit norm.

Usage

```
step_unit_normalize(
  recipe,
  ...,
  role = NA,
  trained = FALSE,
  norm = c("l2", "l1", "max"),
  columns = NULL,
  skip = FALSE,
  id = rand_id("unit_normalize")
)
```

Arguments

recipe	A recipe object. The step will be added to the sequence of operations for this recipe.
...	One or more selector functions to choose which variables are affected by the step. See [recipes::selections()](#) for more details. For the tidy method, these are not currently used.
role	Not used by this step since no new variables are created.
trained	A logical to indicate if the quantities for preprocessing have been estimated.
norm	Character denoting which type of normalization to perform. Must be one of "l1", "l2", or ""max".
columns	A character string of variable names that will be populated (eventually) by the terms argument.
skip	A logical. Should the step be skipped when the recipe is baked by [bake()](#)? While all operations are baked when [prep()](#) is run, some operations may not be able to be conducted on new data (e.g. processing the outcome variable(s)). Care should be taken when using skip = TRUE as it may affect the computations for subsequent operations.
id	A character string that is unique to this step to identify it.

Value

An updated version of recipe with the new step added to the sequence of existing steps (if any). For the tidy method, a tibble with columns terms (the columns that will be affected) and base.

Examples

```
library(recipes)

rec <- recipe(~., data = mtcars) %>%
  step_unit_normalize(all_predictors()) %>%
  prep()

rec %>%
  bake(new_data = NULL)

tidy(rec, 1)
```

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