

Package ‘tibblify’

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Title Rectangle Nested Lists

Version 0.4.0

Description A tool to rectangle a nested list, that is to convert it into a 'tibble'. This is done automatically or according to a given specification. A common use case is for nested lists coming from parsing 'JSON' files, or the 'JSON' responses of 'REST' 'APIs'. 'Rectangling' uses the 'vctrs' package, and therefore offers a wide support of vector types.

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URL <https://tibblify.wrangle.zone>,
<https://github.com/wranglezone/tibblify>

BugReports <https://github.com/wranglezone/tibblify/issues>

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Author Jon Harmon [aut, cre] (ORCID: <<https://orcid.org/0000-0003-4781-4346>>),
Maximilian Girlich [aut, cph],
Kirill Müller [ctb]

Maintainer Jon Harmon <jonthegeek@gmail.com>

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formatting *Printing tibblify specifications*

Description

The `print()` and `format()` methods for tibblify specifications provide the code necessary to generate the specification. Function names are color-coded to help visually distinguish different types of collectors.

Usage

```
## S3 method for class 'tib_collector'
print(x, width = NULL, ..., names = NULL)
```

```
## S3 method for class 'tib_scalar'
format(
  x,
  ...,
  .fill = NULL,
  .ptype_inner = NULL,
  .transform = NULL,
  multi_line = FALSE,
  nchar_indent = 0,
```

```
    width = NULL,
    names = FALSE
  )

## S3 method for class 'tib_variant'
format(x, ..., multi_line = FALSE, nchar_indent = 0, width = NULL)

## S3 method for class 'tib_vector'
format(x, ..., multi_line = FALSE, nchar_indent = 0, width = NULL)

## S3 method for class 'tib_unspecified'
format(
  x,
  ...,
  .fill = NULL,
  .ptype_inner = NULL,
  .transform = NULL,
  multi_line = FALSE,
  nchar_indent = 0,
  width = NULL,
  names = FALSE
)

## S3 method for class 'tib_scalar_chr_date'
format(x, ..., multi_line = FALSE, nchar_indent = 0, width = NULL)

## S3 method for class 'tib_vector_chr_date'
format(x, ..., multi_line = FALSE, nchar_indent = 0, width = NULL)

## S3 method for class 'tib_row'
format(x, ..., width = NULL, names = NULL)

## S3 method for class 'tib_df'
format(x, ..., width = NULL, names = NULL)

## S3 method for class 'tib_recursive'
format(x, ..., width = NULL, names = NULL)

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

## S3 method for class 'tspec'
print(x, width = NULL, ..., names = NULL)

## S3 method for class 'tspec_df'
format(x, width = NULL, ..., names = NULL)

## S3 method for class 'tspec_row'
```

```

format(x, width = NULL, ..., names = NULL)

## S3 method for class 'tspec_recursive'
format(x, width = NULL, ..., names = NULL)

## S3 method for class 'tspec_object'
format(x, width = NULL, ..., names = NULL)

```

Arguments

<code>x</code>	(any) The spec to format or print.
<code>width</code>	(integer(1)) The width (in number of characters) of text output to generate.
<code>...</code>	These dots are for future extensions and must be empty.
<code>names</code>	(logical(1)) Should names be printed even if they can be deduced from the spec?
<code>.fill</code>	(vector or NULL) Optionally, a value to use if the field does not exist. Note: this value must match the <code>.ptype_inner</code> of the field (the value <i>before</i> any transformation), not the <code>.ptype</code> .
<code>.ptype_inner</code>	(vector(0)) A prototype of the input field.
<code>.transform</code>	(function or NULL) A function to apply to the whole vector after casting to <code>.ptype_inner</code> .
<code>multi_line</code>	(logical(1)) Should the output be formatted across multiple lines? For example, should each element of even a short list be displayed on its own line?
<code>nchar_indent</code>	(integer(1)) The number of (additional) characters that will be used to indent the output when <code>multi_line = TRUE</code> . Primarily for internal use when formatting is applied recursively.

Value

For `print()` methods, `x` is returned invisibly. `format()` methods return a length-1 character vector.

Examples

```

spec <- tspec_df(
  a = tib_int("a"),
  new_name = tib_chr("b"),
  row = tib_row(
    "row",
    x = tib_int("x")
  )
)
print(spec, names = FALSE)
print(spec, names = TRUE)

```

get_spec	<i>Examine the column specification</i>
----------	---

Description

Examine the column specification

Usage

```
get_spec(x)
```

Arguments

x (data.frame) The data frame to extract a spec from.

Value

A tibblify specification as returned by [tspec_df\(\)](#), [tspec_row\(\)](#), [tspec_object\(\)](#), or [tspec_recursive\(\)](#).

Examples

```
df <- tibblify(list(list(x = 1, y = "a"), list(x = 2)))
get_spec(df)
```

guess_tspec	<i>Guess the tibblify() specification</i>
-------------	---

Description

`guess_tspec()` automatically dispatches to the other `guess_tspec_*()` functions based on the shape of the input. If you are unhappy with its output, calling a specific `guess_tspec_*()` function may yield better results, or at least clearer error messages about why that type isn't supported.

- Use `guess_tspec_df()` if the input is a data frame.
- Use `guess_tspec_object()` if the input is an object (such as a JSON object that has been read into R as a named list).
- Use `guess_tspec_object_list()` if the input is a list of objects (such as a JSON object that has been read into R as a list of named lists).
- Use `guess_tspec_list()` if the input object is a list but you aren't sure how it should be processed.

See `vignette("supported-structures")` for a discussion of the input types supported by `tibblify`.

Usage

```
guess_tspec(  
  x,  
  ...,  
  empty_list_unspecified = FALSE,  
  simplify_list = FALSE,  
  inform_unspecified = should_inform_unspecified(),  
  call = rlang::caller_env()  
)  
  
guess_tspec_df(  
  x,  
  ...,  
  empty_list_unspecified = FALSE,  
  simplify_list = FALSE,  
  inform_unspecified = should_inform_unspecified(),  
  call = rlang::current_call(),  
  arg = rlang::caller_arg(x)  
)  
  
guess_tspec_list(  
  x,  
  ...,  
  empty_list_unspecified = FALSE,  
  simplify_list = FALSE,  
  inform_unspecified = should_inform_unspecified(),  
  arg = caller_arg(x),  
  call = current_call()  
)  
  
guess_tspec_object(  
  x,  
  ...,  
  empty_list_unspecified = FALSE,  
  simplify_list = FALSE,  
  inform_unspecified = should_inform_unspecified(),  
  call = rlang::current_call()  
)  
  
guess_tspec_object_list(  
  x,  
  ...,  
  empty_list_unspecified = FALSE,  
  simplify_list = FALSE,  
  inform_unspecified = should_inform_unspecified(),  
  arg = caller_arg(x),  
  call = current_call()  
)
```

Arguments

`x` (list or data.frame) A nested list or a data frame.
`...` These dots are for future extensions and must be empty.
`empty_list_unspecified` (logical(1)) Treat empty lists as unspecified?
`simplify_list` (logical(1)) Should scalar lists be simplified to vectors?
`inform_unspecified` (logical(1)) Inform about fields whose type could not be determined?
`call` (environment) The environment to use for error messages.
`arg` (character(1)) An argument name. This name will be mentioned in error messages as the input that is at the origin of a problem.

Value

A specification object that can be used in `tibblify()`.

Examples

```
guess_tspec(list(x = 1, y = "a"))
guess_tspec(list(list(x = 1), list(x = 2)))
```

<code>nest_tree</code>	<i>Convert a data frame to a tree</i>
------------------------	---------------------------------------

Description

Recursively nest data frame rows based on parent-child relationships, defined by an id column and a parent column. Children become sub-tibbles of their parent rows. This structure is intended for representing tree-like data, such as organizational charts, file systems, category trees, or any other hierarchical relationships.

Usage

```
nest_tree(x, id_col, parent_col, children_to)
```

Arguments

`x` (data.frame) The data frame to nest.
`id_col` (character(1), integer(1), or symbol) The column that uniquely identifies each observation.
`parent_col` (character(1), integer(1), or symbol) The column that identifies the parent id of each observation. Each value must either be missing (for the root elements) or appear in the `id_col` column.
`children_to` (character(1)) The column name in which to store the children.

Value

A tree-like, recursively nested data frame.

Examples

```
df <- tibble::tibble(
  id = 1:5,
  x = letters[1:5],
  parent = c(NA, NA, 1L, 2L, 4L)
)
df

# Only the root elements are in the top-level tibble.
out <- nest_tree(df, id, parent, "children")
out

# The children of each element are stored in the "children" column.
out$children

# "d" (id 4) is a child of "b" (id 2), and "e" (id 5) is a child of "d"
# (id 4).
out$children[[2]]$children
```

parse_openapi_spec *Parse an OpenAPI spec*

Description**[Experimental]**

The **OpenAPI Initiative** is a **Linux Foundation** project to define an **OpenAPI Specification**, a formal standard for describing HTTP APIs. Use `parse_openapi_spec()` to parse such OpenAPI specs. You can also parse **OpenAPI Schema Objects** (which describe the structure of input and output datatypes) directly with `parse_openapi_schema()`.

Usage

```
parse_openapi_spec(file)

parse_openapi_schema(file)
```

Arguments

file (character(1)) A path to a file, a connection, or literal data.

Value

For `parse_openapi_spec()`, a nested data frame with the columns

- `endpoint` (character) Name of the endpoint.
- `operations` (list) A list of data frames describing that endpoint. See the [Paths Object in the OpenAPI spec](#) for details. All references (`$ref`) in the spec are resolved.

For `parse_openapi_schema()`, a tibblefy spec. All references (`$ref`) in the spec are resolved.

Shortcomings

This implementation is not complete, and there are some known shortcomings:

- We only tibblefy the paths part of the spec, although we also parse the components part in order to resolve references.
- We do not yet support summary or description fields in path item objects.
- We do not yet incorporate parameters defined at the path item level into operation-level parameter parsing. We do, however, parse and include them in the `global_parameters` column of the operations tibble, so they are available even though they are not yet merged into each operation's parameters.
- We do not yet support links in response objects.
- We do not yet support callbacks in operation objects.
- We do not yet support OpenAPI extensions (fields starting with `x-`).
- Our implementation of `oneOf`, `anyOf`, and `allOf` is very basic and may not cover all cases.

Examples

```
file <- '{
  "$schema": "http://json-schema.org/draft-04/schema",
  "title": "Starship",
  "description": "A vehicle.",
  "type": "object",
  "properties": {
    "name": {
      "type": "string",
      "description": "The name of this vehicle. The common name, e.g. Sand Crawler."
    },
    "model": {
      "type": "string",
      "description": "The model or official name of this vehicle."
    },
    "url": {
      "type": "string",
      "format": "uri",
      "description": "The hypermedia URL of this resource."
    },
    "edited": {
      "type": "string",
      "format": "date-time",
```

```

      "description": "the ISO 8601 date format of the time this resource was edited."
    }
  },
  "required": [
    "name",
    "model",
    "edited"
  ]
}'
parse_openapi_schema(file)

# Spec example from
# https://swagger.io/docs/specification/v3_0/basic-structure/
spec_path <- system.file(
  "examples", "openapi", "sample_api.yaml", package = "tibblify"
)
spec <- parse_openapi_spec(spec_path)
spec

```

politicians

Politicians

Description

A dataset containing some basic information about some politicians.

Usage

```
politicians
```

Format

A list of lists.

should_inform_unspecified

Determine whether to inform about unspecified fields in spec

Description

Wrapper around `getOption("tibblify.show_unspecified")` to return TRUE unless the option is explicitly set to FALSE.

Usage

```
should_inform_unspecified()
```

Value

FALSE if the option is set to FALSE, TRUE otherwise.

Examples

```
should_inform_unspecified()
```

tibblify	<i>Rectangle a nested list</i>
----------	--------------------------------

Description

Transform a nested list into a tibble or a list of objects according to a specification.

Usage

```
tibblify(x, spec = NULL, unspecified = NULL)
```

Arguments

x	(list) A nested list.
spec	(tspec) A specification of how to convert x. Generated with tspec_df() , tspec_row() , tspec_object() , tspec_recursive() , or guess_tspec() . If spec is NULL (the default), guess_tspec(x, inform_unspecified = TRUE) will be used to guess the spec.
unspecified	(character(1)) What to do with tib_unspecified() fields. Can be one of <ul style="list-style-type: none"> • "error": Throw an error. • "inform": Inform the user then parse as with tib_variant(). • "drop": Do not parse these fields. • "list": Parse unspecified fields into lists as with tib_variant().

Details

Fields specifically tagged as [tib_unspecified\(\)](#) in the spec (or guessed as such) will be handled according to the `unspecified` argument. Fields that are present in x but not mentioned in the spec are ignored.

Value

Either a tibble or a list, depending on the specification.

See Also

Use [untibblify\(\)](#) to undo the result of [tibblify\(\)](#).

Examples

```

# List of Objects -----
x <- list(
  list(id = 1, name = "Tyrion Lannister"),
  list(id = 2, name = "Victarion Greyjoy")
)
tibblify(x)

# Provide a specification
spec <- tspec_df(
  id = tib_int("id"),
  name = tib_chr("name")
)
tibblify(x, spec)

# Object -----
# Provide a specification for a single object
tibblify(x[[1]], tspec_object(spec))

# Recursive Trees -----
x <- list(
  list(
    id = 1,
    name = "a",
    children = list(
      list(id = 11, name = "aa"),
      list(id = 12, name = "ab", children = list(
        list(id = 121, name = "aba")
      ))
    ))
)
spec <- tspec_recursive(
  tib_int("id"),
  tib_chr("name"),
  .children = "children"
)
out <- tibblify(x, spec)
out
out$children
out$children[[1]]$children[[2]]

```

tib_spec

Create a field specification

Description

Use the `tib_*`() functions to specify how to process the fields of an object.

Usage

```
tib_scalar(  
  .key,  
  .ptype,  
  ...,  
  .required = TRUE,  
  .fill = NULL,  
  .ptype_inner = .ptype,  
  .transform = NULL,  
  key = deprecated(),  
  ptype = deprecated(),  
  required = deprecated(),  
  fill = deprecated(),  
  ptype_inner = deprecated(),  
  transform = deprecated()  
)  
  
tib_vector(  
  .key,  
  .ptype,  
  ...,  
  .required = TRUE,  
  .fill = NULL,  
  .ptype_inner = .ptype,  
  .transform = NULL,  
  .elt_transform = NULL,  
  .input_form = c("vector", "scalar_list", "object"),  
  .values_to = NULL,  
  .names_to = NULL,  
  key = deprecated(),  
  ptype = deprecated(),  
  required = deprecated(),  
  fill = deprecated(),  
  ptype_inner = deprecated(),  
  transform = deprecated(),  
  elt_transform = deprecated(),  
  input_form = deprecated(),  
  values_to = deprecated(),  
  names_to = deprecated()  
)  
  
tib_unspecified(  
  .key,  
  ...,  
  .required = TRUE,  
  key = deprecated(),  
  required = deprecated()  
)
```

```
tib_lgl(  
  .key,  
  ...,  
  .required = TRUE,  
  .fill = NULL,  
  .ptype_inner = logical(),  
  .transform = NULL,  
  key = deprecated(),  
  required = deprecated(),  
  fill = deprecated(),  
  ptype_inner = deprecated(),  
  transform = deprecated()  
)
```

```
tib_int(  
  .key,  
  ...,  
  .required = TRUE,  
  .fill = NULL,  
  .ptype_inner = integer(),  
  .transform = NULL,  
  key = deprecated(),  
  required = deprecated(),  
  fill = deprecated(),  
  ptype_inner = deprecated(),  
  transform = deprecated()  
)
```

```
tib_dbl(  
  .key,  
  ...,  
  .required = TRUE,  
  .fill = NULL,  
  .ptype_inner = double(),  
  .transform = NULL,  
  key = deprecated(),  
  required = deprecated(),  
  fill = deprecated(),  
  ptype_inner = deprecated(),  
  transform = deprecated()  
)
```

```
tib_chr(  
  .key,  
  ...,  
  .required = TRUE,  
  .fill = NULL,
```

```
.ptype_inner = character(),
.transform = NULL,
key = deprecated(),
required = deprecated(),
fill = deprecated(),
ptype_inner = deprecated(),
transform = deprecated()
)

tib_date(
  .key,
  ...,
  .required = TRUE,
  .fill = NULL,
  .ptype_inner = vctrs::new_date(),
  .transform = NULL,
  key = deprecated(),
  required = deprecated(),
  fill = deprecated(),
  ptype_inner = deprecated(),
  transform = deprecated()
)

tib_chr_date(
  .key,
  ...,
  .required = TRUE,
  .fill = NULL,
  .format = "%Y-%m-%d",
  key = deprecated(),
  required = deprecated(),
  fill = deprecated(),
  format = deprecated()
)

tib_lgl_vec(
  .key,
  ...,
  .required = TRUE,
  .fill = NULL,
  .ptype_inner = logical(),
  .transform = NULL,
  .elt_transform = NULL,
  .input_form = c("vector", "scalar_list", "object"),
  .values_to = NULL,
  .names_to = NULL,
  key = deprecated(),
  required = deprecated(),
```

```
    fill = deprecated(),
    ptype_inner = deprecated(),
    transform = deprecated(),
    elt_transform = deprecated(),
    input_form = deprecated(),
    values_to = deprecated(),
    names_to = deprecated()
)

tib_int_vec(
  .key,
  ...,
  .required = TRUE,
  .fill = NULL,
  .ptype_inner = integer(),
  .transform = NULL,
  .elt_transform = NULL,
  .input_form = c("vector", "scalar_list", "object"),
  .values_to = NULL,
  .names_to = NULL,
  key = deprecated(),
  required = deprecated(),
  fill = deprecated(),
  ptype_inner = deprecated(),
  transform = deprecated(),
  elt_transform = deprecated(),
  input_form = deprecated(),
  values_to = deprecated(),
  names_to = deprecated()
)

tib_dbl_vec(
  .key,
  ...,
  .required = TRUE,
  .fill = NULL,
  .ptype_inner = double(),
  .transform = NULL,
  .elt_transform = NULL,
  .input_form = c("vector", "scalar_list", "object"),
  .values_to = NULL,
  .names_to = NULL,
  key = deprecated(),
  required = deprecated(),
  fill = deprecated(),
  ptype_inner = deprecated(),
  transform = deprecated(),
  elt_transform = deprecated(),
```

```
    input_form = deprecated(),
    values_to = deprecated(),
    names_to = deprecated()
  )

tib_chr_vec(
  .key,
  ...,
  .required = TRUE,
  .fill = NULL,
  .ptype_inner = character(),
  .transform = NULL,
  .elt_transform = NULL,
  .input_form = c("vector", "scalar_list", "object"),
  .values_to = NULL,
  .names_to = NULL,
  key = deprecated(),
  required = deprecated(),
  fill = deprecated(),
  ptype_inner = deprecated(),
  transform = deprecated(),
  elt_transform = deprecated(),
  input_form = deprecated(),
  values_to = deprecated(),
  names_to = deprecated()
)

tib_date_vec(
  .key,
  ...,
  .required = TRUE,
  .fill = NULL,
  .ptype_inner = vctrs::new_date(),
  .transform = NULL,
  .elt_transform = NULL,
  .input_form = c("vector", "scalar_list", "object"),
  .values_to = NULL,
  .names_to = NULL,
  key = deprecated(),
  required = deprecated(),
  fill = deprecated(),
  ptype_inner = deprecated(),
  transform = deprecated(),
  elt_transform = deprecated(),
  input_form = deprecated(),
  values_to = deprecated(),
  names_to = deprecated()
)
```

```

tib_chr_date_vec(
  .key,
  ...,
  .required = TRUE,
  .fill = NULL,
  .input_form = c("vector", "scalar_list", "object"),
  .values_to = NULL,
  .names_to = NULL,
  .format = "%Y-%m-%d",
  key = deprecated(),
  required = deprecated(),
  fill = deprecated(),
  input_form = deprecated(),
  values_to = deprecated(),
  names_to = deprecated(),
  format = deprecated()
)

tib_variant(
  .key,
  ...,
  .required = TRUE,
  .fill = NULL,
  .transform = NULL,
  .elt_transform = NULL,
  key = deprecated(),
  required = deprecated(),
  fill = deprecated(),
  transform = deprecated(),
  elt_transform = deprecated()
)

tib_recursive(.key, ..., .children, .children_to = .children, .required = TRUE)

tib_row(.key, ..., .required = TRUE)

tib_df(.key, ..., .required = TRUE, .names_to = NULL)

```

Arguments

`.key, key` (character) The path of names to the field in the object.

`.ptype, ptype` (vector(\emptyset)) A prototype of the desired output type of the field.

`...` These dots are for future extensions and must be empty.

`.required, required` (logical(1)) Throw an error if the field does not exist?

`.fill, fill` (vector or NULL) Optionally, a value to use if the field does not exist. Note: this

	value must match the <code>.ptype_inner</code> of the field (the value <i>before</i> any transformation), not the <code>.ptype</code> .
<code>.ptype_inner</code> , <code>ptype_inner</code>	(vector(0)) A prototype of the input field.
<code>.transform</code> , <code>transform</code>	(function or NULL) A function to apply to the whole vector after casting to <code>.ptype_inner</code> .
<code>.elt_transform</code> , <code>elt_transform</code>	(function or NULL) A function to apply to each element before casting to <code>.ptype_inner</code> .
<code>.input_form</code> , <code>input_form</code>	(character(1)) The structure of the input field. Can be one of: <ul style="list-style-type: none"> • "vector": The field is a vector, e.g. <code>c(1, 2, 3)</code>. • "scalar_list": The field is a list of scalars, e.g. <code>list(1, 2, 3)</code>. • "object": The field is a named list of scalars, e.g. <code>list(a = 1, b = 2, c = 3)</code>.
<code>.values_to</code> , <code>values_to</code>	(character(1) or NULL) For NULL (the default), the field is converted to a <code>.ptype</code> vector. If a string is provided, the field is converted to a tibble and the values go into the specified column.
<code>.names_to</code> , <code>names_to</code>	(character(1) or NULL) What to do with the inner names of the object. Can be one of: <ul style="list-style-type: none"> • NULL: the default. The inner names of the field are not used. • A string: Use only if the input form is "object" or "vector", and <code>.values_to</code> is a string. The inner names of the field will populate the specified column in the field's tibble.
<code>.format</code> , <code>format</code>	(character(1) or NULL) Passed to the <code>format</code> argument of <code>as.Date()</code> .
<code>.children</code>	(character(1)) The name of the field that contains the children.
<code>.children_to</code>	(character(1)) The column name in which to store the children.

Details

There are five families of `tib_*()` functions:

- `tib_scalar(.ptype)`: Cast each instance of the field to a length-one vector of type `.ptype`. Inside `tspec_df()`, this results in a column of the specified `.ptype`.
- `tib_vector(.ptype)`: Cast each instance of the field to an arbitrary length vector of type `.ptype`. Inside `tspec_df()`, this results in a list column of vectors of the specified `.ptype`.
- `tib_variant()`: Cast each instance of the field to a list. Inside `tspec_df()`, this results in a list column of lists.
- `tib_row()`: Cast each instance of the field to a 1-row tibble. Inside `tspec_df()`, this results in a list column of 1-row tibbles.
- `tib_df()`: Cast each instance of the field to a tibble. Inside `tspec_df()`, this results in a list column of tibbles (each of which can have multiple rows).

There are some special shortcuts of `tib_scalar()` and `tib_vector()` for the most common prototypes:

- `logical()`: `tib_lgl()` and `tib_lgl_vec()`
- `integer()`: `tib_int()` and `tib_int_vec()`
- `double()`: `tib_dbl()` and `tib_dbl_vec()`
- `character()`: `tib_chr()` and `tib_chr_vec()`
- Date: `tib_date()` and `tib_date_vec()`

Further, there are special shortcuts for dates encoded as character: `tib_chr_date()` and `tib_chr_date_vec()`.

There are two other `tib_*`() functions for special cases:

- `tib_recursive()`: Cast each instance of the field to a tibble, within which columns can themselves contain the same sorts of tibble, etc. Inside `tspec_df()`, this results in a list column of tibbles, each row of which can itself contain a tibble, etc. This is intended for structures such as a directory tree.
- `tib_unspecified()`: Tag a field in the object as unspecified. The unspecified argument of `tibblify()` controls how such fields are handled. If you are constructing a specification manually (as opposed to using `guess_tspec()`), you should most likely specify such columns with `tib_variant()`, or leave them out of the spec entirely.

Value

A tibblify field collector. This specification can be used with `tspec_df()` or another `tspec_*`() function to specify how to process an object.

Examples

```
tib_int("int")
tib_int("int", .required = FALSE, .fill = 0)

# This is essentially how `tib_chr_date()` is implemented.
tib_scalar(
  "date",
  Sys.Date(),
  .transform = function(x) as.Date(x, format = "%Y-%m-%d")
)

tib_df(
  "data",
  .names_to = "id",
  age = tib_int("age"),
  name = tib_chr("name")
)
```

tspec_combine

Combine multiple specifications

Description

Combine specifications created by `tspec_df()`, `tspec_row()`, or `tspec_object()`. The resulting specification includes all fields from the input specifications.

Usage

```
tspec_combine(...)
```

Arguments

```
... (tspec) Specifications to combine.
```

Details

If a field is specified in multiple input specifications, the field specifications will be combined to produce a single field specification, using the most specific specification for each argument. See the examples for details.

Value

A tibblify specification.

Examples

```
# union of fields
tspec_combine(
  tspec_df(tib_int("a")),
  tspec_df(tib_chr("b"))
)

# unspecified + x -> x
tspec_combine(
  tspec_df(tib_unspecified("a")),
  tspec_df(tib_int("a"))
)

# scalar + vector -> vector
tspec_combine(
  tspec_df(tib_chr("a")),
  tspec_df(tib_chr_vec("a"))
)

# scalar/vector + variant -> variant
tspec_combine(
  tspec_df(tib_chr("a")),
  tspec_df(tib_chr_vec("a")),
  tspec_df(tib_variant("a"))
)
```

 tspec_df

 Create a tibblify specification

Description

Use `tspec_df()` to specify how to convert a list of objects to a tibble. Use `tspec_row()` to specify how to convert an object to a one-row tibble. Use `tspec_object()` to specify how to convert an object to a list.

Usage

```
tspec_df(
  ...,
  .input_form = c("rowmajor", "colmajor"),
  .names_to = NULL,
  .vector_allows_empty_list = FALSE,
  vector_allows_empty_list = deprecated()
)
```

```
tspec_object(
  ...,
  .input_form = c("rowmajor", "colmajor"),
  .vector_allows_empty_list = FALSE,
  vector_allows_empty_list = deprecated()
)
```

```
tspec_row(
  ...,
  .input_form = c("rowmajor", "colmajor"),
  .vector_allows_empty_list = FALSE,
  vector_allows_empty_list = deprecated()
)
```

```
tspec_recursive(
  ...,
  .children,
  .children_to = .children,
  .input_form = c("rowmajor", "colmajor"),
  .vector_allows_empty_list = FALSE,
  vector_allows_empty_list = deprecated()
)
```

Arguments

... (tib_collector or tspec) Column specifications created by `tib_*`() or `tspec_*`(). If the dots are named, the name will be used for the resulting column. Otherwise, the name of the input will be used for the column name.

<code>.input_form</code>	(character(1)) The input form of data-frame-like lists. Can be one of: <ul style="list-style-type: none"> • "rowmajor": The default. The input is a named list of rows. • "colmajor": The input is a named list of columns.
<code>.names_to</code>	(character(1) or NULL) The name of the column in the output which will contain the names of top-level elements of the input named list. If NULL, the default, no name column is created.
<code>.vector_allows_empty_list, vector_allows_empty_list</code>	(logical(1)) Should empty lists for columns with <code>.input_form = "vector"</code> be accepted and treated as empty vectors?
<code>.children</code>	(character(1)) The name of the field that contains the children.
<code>.children_to</code>	(character(1)) The column name in which to store the children.

Details

In column-major format, all fields are required, regardless of the `.required` argument.

Value

A tibblify specification.

Examples

```
tspec_df(
  id = tib_int("id"),
  name = tib_chr("name"),
  aliases = tib_chr_vec("aliases")
)

# Equivalent to
tspec_df(
  tib_int("id"),
  tib_chr("name"),
  tib_chr_vec("aliases")
)

# To create multiple columns of the same type use the bang-bang-bang (~!!!~)
# operator together with `purrr::map()`
tspec_df(
  !!!purrr::map(rlang::set_names(c("id", "age")), tib_int),
  !!!purrr::map(rlang::set_names(c("name", "title")), tib_chr)
)

# The `tspec_*()` functions can also be nested
spec1 <- tspec_object(
  int = tib_int("int"),
  chr = tib_chr("chr")
)
spec2 <- tspec_object(
  int2 = tib_int("int2"),
  chr2 = tib_chr("chr2")
)
```

```
)
tspec_df(spec1, spec2)
```

unnest_tree

Unnest a recursive data frame

Description

Unnest a recursive data frame

Usage

```
unnest_tree(
  x,
  id_col,
  child_col,
  level_to = "level",
  parent_to = "parent",
  ancestors_to = NULL
)
```

Arguments

x	(data.frame) The data frame to unnest.
id_col	(character(1), integer(1), or symbol) The column that uniquely identifies each observation.
child_col	(character(1), integer(1), or symbol) The column that contains the children of an observation. This column must be a list where each element is either NULL or a data frame with the same columns as x.
level_to	(character(1)) The column name ("level" by default) in which to store the level of an observation. Use NULL if you don't need this information.
parent_to	(character(1)) The column name ("parent" by default) in which to store the parent id of an observation. Use NULL if you don't need this information.
ancestors_to	(character(1)) The column name (NULL by default) in which to store the ids of the ancestors of a deeply nested child. Use NULL if you don't need this information.

Value

A "flat" data frame.

Examples

```
df <- tibble(
  id = 1L,
  name = "a",
  children = list(
    tibble(
      id = 11:12,
      name = c("b", "c"),
      children = list(
        NULL,
        tibble(
          id = 121:122,
          name = c("d", "e")
        )
      )
    )
  )
)
df

unnest_tree(
  df,
  id_col = "id",
  child_col = "children",
  level_to = "level",
  parent_to = "parent",
  ancestors_to = "ancestors"
)
```

unpack_tspec

Unpack a tibblify specification

Description

`tidyr::unpack()` makes data wider by expanding `df`-columns into individual columns. Analogously, unpacking a tibblify specification makes a specification which will result in a wider tibble by expanding `tib_row()` specifications into their individual fields.

Usage

```
unpack_tspec(
  spec,
  ...,
  fields = NULL,
  recurse = TRUE,
  names_sep = NULL,
  names_repair = c("unique", "universal", "check_unique", "unique_quiet",
    "universal_quiet"),
  names_clean = NULL
```

```
)
camel_case_to_snake_case(x)
```

Arguments

spec	(tspec) A tibblify specification.
...	These dots are for future extensions and must be empty.
fields	(character or NULL) The fields to unpack. If fields is NULL (default), all fields are unpacked.
recurse	(logical(1)) Should fields inside other fields be unpacked?
names_sep	(character(1) or NULL) If NULL, the default, the inner names of fields are used. If a string, the outer and inner names are pasted together, separated by names_sep.
names_repair	(character(1) or function) Passed to the repair argument of <code>vctrs::vec_as_names()</code> to check that the output data frame has valid names. Must be one of the following options: <ul style="list-style-type: none"> • "unique" (the default) or "unique_quiet": make sure names are unique and not empty, • "universal" or "universal_quiet": make the names unique and syntactic • "check_unique": no name repair, but check they are unique, • a function: apply custom name repair.
names_clean	(function) A one-argument function to clean names after repairing. For example use <code>camel_case_to_snake_case()</code> .
x	(character) CamelCase text to convert to snake_case.

Value

A tibblify spec.

Examples

```
spec <- tspec_df(
  tib_lgl("a"),
  tib_row("x", tib_int("b"), tib_chr("c")),
  tib_row("y", tib_row("z", tib_chr("d")))
)
unpack_tspec(spec)
# only unpack `x`
unpack_tspec(spec, fields = "x")
# do not unpack the fields in `y`
unpack_tspec(spec, recurse = FALSE)
camel_case_to_snake_case(c("ExampleText", "otherTextToConvert"))
```

untibblify	<i>Convert a data frame or object into a nested list</i>
------------	--

Description

Convert a data frame or an object into a nested list. This is the inverse operation of `tibblify()`. See `vignette("supported-structures")` for a description of objects recognized by `tibblify`.

Usage

```
untibblify(x, spec = get_spec(x))
```

Arguments

`x` (data.frame or object) An object to convert into a nested list.

`spec` (tspec) Optional. A spec object which was used to create `x`. Defaults to the spec stored as the `tib_spec` attribute of `x`, if present.

Value

A nested list.

Examples

```
x <- tibble(  
  a = 1:2,  
  b = tibble(  
    x = c("a", "b"),  
    y = c(1.5, 2.5)  
  )  
)  
untibblify(x)
```

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