Package 'cnd'

February 26, 2025

Title Create and Register Conditions

Version 0.1.0

Description An interface for creating new condition generators objects. Generators are special functions that can be saved in registries and linked to other functions. Utilities for documenting your generators, and new conditions is provided for package development.

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BugReports https://github.com/jmbarbone/cnd/issues

URL https://jmbarbone.github.io/cnd/, https://github.com/jmbarbone/cnd

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Contents

`cnd_create_registry` *Create a registration*

Description

This function will create a new object with the name as `name` in the environment where it is called. This is intended to be your package environment, but could potentially be anywhere you want. If an object which is not a `cnd:registry` object is found with the same name, an error will be thrown.

Usage

```
cnd_create_registry(
  registry = get_package(),
  overwrite = FALSE,
  name = ".__CND_REGISTRY__.",
  env = parent.frame()
)
```

Arguments

`registry`	The name of the registry
`overwrite`	When `TRUE` will overwrite
`name`	The name of the registry variable. Default is intended to prevent potential conflicts with other objects.
`env`	The environment to assign the registry to

Details

Crate a new `cnd:registry` to the current environment

Value

a `cnd:registry` object, invisibly

Examples

```
# In most cases, just having the function in your R/ scripts is good enough,
# and you can use `cnd_create_registry()` with its defaults.  The following
# examples are for demonstration purposes:
e <- new.env()
cnd_create_registry("EXAMPLE", env = e)
cnd_create_registry("EXAMPLE", overwrite = TRUE)
```

cnd_document *Document your conditions*

Description

Documents your `conditions()` and `conditions()`

Usage

```
cnd_document(
  package = get_package(),
  registry = package,
  file = file.path("R", paste0(package, "-cnd-conditions.R")),
  cleanup = TRUE
)

cnd_section(fun)
```

Arguments

package	The package to document
registry	The name of the registry
file	The file to save the documentation. This can be a file path, a connection object, or NULL. When file is a path, the directory of the path is searched for files containing # % Generated by cnd: do not edit by hand. These are removed if they are not the same as the generated documentation.
cleanup	If FALSE will not remove files containing # % Generated by cnd: do not edit by hand
fun	The name of a function

Value

- `cnd_document()` Conditional on the file argument:
  - when file is a connection, the connection object
  - when file is a path, the path
  - when file is NULL, a character vector of the documentation
  - if no conditions are found, a warning is thrown and NULL is returned
- `cnd_section()` A character vector of the documentation

conditions

Conditions are generated through the {cnd} package. The following conditions are associated with this function:

`cnd:cnd_document_conditions/warning`

cnd:cnd_document_file/error

cnd:cnd_document_pkg_reg/error

cnd:cnd_generated_cleanup/message

cnd:cnd_generated_write/condition

For more conditions, see: cnd-cnd-conditions

Examples

```
file <- file()
cnd_document("cnd", file = file)
readLines(file)

cnd_section("cnd")
```

---

cnd_exports *Add conditions to functions*

Description

[cnd_exports()] should be used within a package's building environment.

Usage

```
cnd_exports(env = parent.frame())
```

Arguments

env	The package environment

Value

Nothing, called for its side-effects

Examples

```
e <- new.env()
registry <- cnd_create_registry("EXAMPLE", env = e)
local(envir = e, {
  my_fun <- function() NULL
  condition(
    "my_condition",
    package = "example_package",
    exports = "my_fun",
    registry = registry
  )
  cnd_exports()
})
```

```
# conditions are now added to my_fun():
e$my_fun
conditions(e$my_fun)
```

---

cnd_is *is functions for cnd*

Description

is functions for cnd

Usage

```
is_condition(x)

is_cnd_condition(x)

is_cnd_generator(x, type = c("error", "warning", "message", "condition"))

is_conditioned_function(x)
```

Arguments

x	An object
type	A specific type to check

Value

TRUE or FALSE for the test

Examples

```
is_condition(simpleCondition(""))
is_cnd_condition(simpleCondition(""))

con <- condition("is")
is_condition(con)
is_cnd_condition(con)

is_condition(con())
is_cnd_condition(con())

is_cnd_generator(con)

is_conditioned_function(cnd)
```

condition *Conditions*

Description

condition() is used to create a new condition function that itself returns a new condition.

conditions() retrieves all conditions based on search values. The parameters serve as filtering arguments.

Usage

```
condition(
  class,
  message = NULL,
  type = c("condition", "message", "warning", "error"),
  package = get_package(),
  exports = NULL,
  help = NULL,
  registry = package,
  register = !is.null(registry)
)

conditions(
  ...,
  class = NULL,
  type = NULL,
  package = NULL,
  registry = NULL,
  fun = NULL
)

cond(x)

cnd(condition)

conditions(x, ...) <- value

## S3 replacement method for class '`function`'
conditions(x, append = FALSE, ...) <- value

## S3 replacement method for class '`cnd::condition_progenitor`'
conditions(x, ...) <- value
```

Arguments

class	The name of the new class

message	The message to be displayed when the condition is called. When entered as a character vector, the message is collapsed into a single string. Use explicit line returns to generate new lines in output messages. When a function is used and a character vector returned, each element is treated as a new line.
type	The type of condition: error, warning, or message
package	The package to which the condition belongs
exports	The exported functions to be displayed when the condition is called
help	The help message to be displayed for the condition function
registry	The name of the registry to store the condition
register	Controls registration checks
...	Additional arguments passed to methods
fun	if a function is passed, then retrieves the "conditions" attribute
x	An object
condition	A condition_generator object
value	A condition
append	If TRUE, adds to the **conditions** attribute

Details

Conditions

Value

- condition() a condition_generator object
- conditions() a list of condition_generator objects
- cond() A condition_generator object
- cnd() is a wrapper for calling stop(), warning(), or message(); when condition is a type, an error is thrown, and likewise for the other types. When an error isn't thrown, the condition is returned, invisibly.

condition_generator

A condition_generator is an object (a special function) which can be used to create generate a new condition, based on specifications applied in condition(). These functions use ... to absorb extra arguments and contain a special .call parameter. By default, .call captures the parent call from where the condition_generator was created, but users may pass their own call to override this. See call. in conditionCall()

`condition()` conditions

Conditions are generated through the `{cnd}` package. The following conditions are associated with this function:

`cnd:as_character_cnd_error/error` You cannot coerce a condition_generator object to a character. This may have occurred when trying to put a condition function through `stop()` or warning. Instead, call the function first, then pass the result to `stop()` or `warning()`.

For example:

```
# Instead of this
stop(my_condition)

# Do this
stop(my_condition())
```

`cnd:condition_message_generator/error` condition_generator objects are not conditions. You may have made this mistake:

```
x <- condition("my_condition")
conditionMessage(x)
```

Condition generators need to be called first before they can be used as conditions. Try this instead:

```
x <- condition("my_condition")
conditionMessage(x())
```

`cnd:condition_overwrite/warning`

`cnd:invalid_condition/error` The `class`, `exports`, and `help` parameters must be a single character string. If you are passing a function, it must be a valid function.

`cnd:invalid_condition_message/error` Conditions messages are displayed when invoked through `conditionMessage()`. You can set a static message by passing through a `character` vector, or a dynamic message by passing through a `function`. The function should return a `character` vector.

When `message` is not set, a default "there was an error" message is used.

`cnd:match_arg/error` Mostly `match.arg()` but with a custom condition

`cnd:no_package_exports/warning` The `exports` parameter requires a `package`

For more conditions, see: cnd-cnd-conditions

`cnd()` conditions

Conditions are generated through the `{cnd}` package. The following conditions are associated with this function:

`cnd:cond_cnd_class/error` `cnd()` simple calls the appropriate function: `stop()`, `warning()`, or `message()` based on the `type` parameter from `condition()`.

For more conditions, see: cnd-cnd-conditions

See Also

cnd-package

Examples

```
# create a new condition:
cond_bad_value <- condition("bad_value", type = "error")

# use the condition
try(stop(cond_bad_value()))
try(cnd(cond_bad_value()))

# dynamic messages:
cond_class_error <- condition(
  "class_error",
  message = function(x) paste("class cannot be", toString(class(x))),
  type = "error"
)
try(stop(cond_class_error(list())))
```

`format-conditions` *Format conditions*

Description

Formats condition objects

Usage

```
## S3 method for class '`cnd::condition`'
format(x, ..., cli = getOption("cnd.cli.override"))

## S3 method for class '`cnd::condition_generator`'
format(x, ..., cli = getOption("cnd.cli.override"))
```

Arguments

`x`	A condition object
`...`	Not used
`cli`	If `TRUE` will use formatting from cli. Default uses an option, `"cnd.cli.override"`, if available, otherwise checks that `cli` is installed and ansi colors are available.

Value

A `character` vector

Examples

```
format(condition("foo"))
```

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