

Package ‘testthis’

April 12, 2020

Type Package

Title Utils and 'RStudio' Addins to Make Testing Even More Fun

Version 1.1.1

Maintainer Stefan Fleck <stefan.b.fleck@gmail.com>

Description Utility functions and 'RStudio' addins for writing, running and organizing automated tests. Integrates tightly with the packages 'testthat', 'devtools' and 'usethis'. Hotkeys can be assigned to the 'RStudio' addins for running tests in a single file or to switch between a source file and the associated test file. In addition, testthis provides function to manage and run tests in subdirectories of the test/testthat directory.

License MIT + file LICENSE

URL <https://s-fleck.github.io/testthis>

BugReports <https://github.com/s-fleck/testthis/issues>

Imports assertthat, devtools, fs, magrittr, pkgload, rprojroot, stats, stringi, testthat, tools, usethis (>= 0.1.0), utils

Suggests covr, crayon, knitr, rmarkdown, roxygen2 (>= 5.0.0), rstudioapi

Encoding UTF-8

RoxygenNote 7.1.0

NeedsCompilation no

Author Stefan Fleck [aut, cre] (<<https://orcid.org/0000-0003-3344-9851>>)

Repository CRAN

Date/Publication 2020-04-12 06:30:02 UTC

R topics documented:

get_test_coverage	2
open_testfile	2
testthis	3

test_coverage	4
test_index	5
test_skeleton	5
test_subdir	6
test_this	7
use_testdata	8
use_tester	9
use_test_subdir	10

Index	12
--------------	-----------

get_test_coverage	<i>Get Test Coverage</i>
-------------------	--------------------------

Description

Deprecated in favor of [test_coverage\(\)](#)

Usage

```
get_test_coverage(from_tags = TRUE, from_desc = TRUE)
```

Arguments

from_tags, from_desc
see [test_coverage\(\)](#)

open_testfile	<i>Open associated test file</i>
---------------	----------------------------------

Description

If the currently open file in the RStudio editor is called ‘myfun.R’ this opens ‘tests/testthat/test_myfun.R’ in a new tab. This function can also be used to jump back and forth between a script and the associated test file. You can modify this behaviour by putting the comment `## @testfile anotherfile` anywhere in ‘myfun.R’.

Usage

```
open_testfile()
```

testthis	<i>Testthis-package</i>
----------	-------------------------

Description

RStudio adds for several common testing-related tasks during package development, such as switching between a source file and an associated test file, or running unit tests in a single test file (hotkeyable in RStudio!). testthis also provides utility function to manage tests in subdirectories of the test/testthis directory.

Details

For details please refer to the [README](#)

Setting the project path

Testthis uses `usethis::proj_get()` to detect project root of the current working directory. You can override the project root with `usethis::proj_set()`.

Package options

Package options can be set with `options()`. You can add `options()` to your `.Rprofile` to make them permanent across sessions.

`testthis.sep` Default separator to use when creating test files with `test_skeleton()`. Defaults to `_`, must be either `_` or `-`; i.e whether you want your files to be named `test_foofunction.R` or `test-foofunction.R`

`testthis.integration_tests_path`, `testthis.acceptance_tests_path`, `testthis.manual_tests_path`
Default paths used by the functions `testthis::use_integration_tests()`, `testthis::test_integration()`, etc...

Testthis Tags

`test_this` tags are special comments that modify the behaviour of the functions supplied by this package. They are of the form `## @tag <value>`. Please note that only some `test_this` tags really require a `<value>`.

Valid tags for script files in the `/R/` dir (`pkg/R/*.R`)

- `@testfile <filename>`: manually specify associated test file. Should usually start with `test_`. This is used by `test_this()`, `lest_this()` and `open_testfile()`.

Valid tags for test files (`pkg/tests/testthat/test_*.R`)

- `@testing <functionname>`: mark `functionname` as tested. Should usually go next the associated `test_that()` call. This is used by `test_coverage()`.

Author(s)

Maintainer: Stefan Fleck <stefan.b.fleck@gmail.com> ([ORCID](#))

See Also

[usethis::edit_r_profile\(\)](#)

test_coverage	<i>Test coverage of package</i>
---------------	---------------------------------

Description

This determines the test coverage of the target package based on the desc argument of `test_that()` calls. If you require a more comprehensive analysis of test coverage, try the package **covr** instead.

Usage

```
test_coverage(from_tags = TRUE, from_desc = TRUE)
```

Arguments

from_tags	logical scalar. Checks the files in your test directory for testthat tags. Specifically, if you have the comment <code>## @testing myfunction</code> in any of your test files, myfunction will be marked as tested.
from_desc	logical scalar. Checks the desc argument <code>test_that(...)</code> of the tests in your test directory for function names. E.g. if you have a test file that contains <code>test_that("myfunction works", {...})</code> , myfunction will be marked as tested.

Details

`test_coverage` looks in `.covrignore` for functions that should be ignored for coverage analysis (see [usethis::use_covr_ignore\(\)](#))

Value

A `Test_coverage` object. This is a `data.frame` containing the following columns:

- `fun`: Name of the function
- `exp`: Is function exported?
- `s3`: Is function an S3 method?
- `tested`: Do unit tests exist for function?
- `ignore`: Is function listed in `'tests/testthat/_testignore'`?

Examples

```
## Not run:
x <- test_coverage()
as.data.frame(x)

## End(Not run)
```

test_index	<i>Generate an index of all test_that calls</i>
------------	---

Description

Generates an index the desc arguments of all test_that() calls in the tests/testthat directory of a package.

Usage

```
test_index(
  markers = interactive() && requireNamespace("rstudioapi", quietly = TRUE)
)

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

Arguments

markers	logical scalar. If TRUE, new markers are created in the RStudio markers pane. If FALSE, the index is printed to the console instead.
x	a data.frame of subclass "test_index"
...	currently ignored

Value

A test_index data.frame (invisibly if markers == TRUE)

test_skeleton	<i>Create a test skeleton file for the currently open .R file</i>
---------------	---

Description

If the file currently open in the RStudio editor is called my_function.R, this creates the file '/tests/testthat/test_my_fun' and fills it with a basic test skeleton.

Usage

```
test_skeleton(fname = NULL, open = TRUE, sep = options("testthis.sep"))
```

Arguments

fname	character scalar. Target R script file to open. If empty the file currently open in the editor will be used.
open	logical scalar. Should the test file be opened after it is created?
sep	character scalar. Separator between 'test' and 'fname' when constructing the test file name. Should either be "_" or "-" for compatibility with testthat.

Value

NULL (invisibly)

Side effects

Creates an R script file in the file system.

See Also

[usethis::use_test\(\)](#)

test_subdir

Run tests in subdirectories

Description

This is a simple wrapper for [devtools::test\(\)](#), but rather than running the tests in ‘inst/tests/’ or ‘tests/testthat/’, it runs the tests in a subdirectory of that folder. For creating such subdirectories, please also see [use_test_subdir\(\)](#).

Usage

```
test_subdir(subdir, ...)
```

```
test_integration(...)
```

```
test_acceptance(...)
```

```
test_manual(...)
```

```
test_all(...)
```

Arguments

subdir character scalar. subdir of inst/tests/ or tests/testthat that contains the tests

... passed on to [devtools::test\(\)](#)

Value

A [testthat::testthat_results](#) object (invisibly)

Test subdirectory presets

Three preset test subdirs are defined at the moment:

`test_integration()` Integration tests, also called component tests. Put tests here that test if several functions / parts of your program work together as expected. You can create the relevant subdir 'testthat/integration_tests/' with `use_integration_tests()`.

`test_acceptance()` Acceptance tests. This is the highest levels of tests. Put tests here that verifies if your package fulfills the goals/requirements you set out to achieve with your package were met. You can create the relevant subdir 'testthat/acceptance_tests/' with `use_acceptance_tests()`.

`test_manual()` Manual tests. Put tests here that produce output that has to be manually verified, such as: console output, pdf files, plots. It is recommended you collect the output files of such tests in 'tests/testthat/testout'. You can create the relevant subdir with 'testthat/manual_tests/' with `use_manual_tests()`.

You can modify the default paths for manual, acceptance and integration tests by setting the respective options(), but it is recommended to create your own test subdirs instead.

See Also

[use_test_subdir\(\)](#)

test_this

Test this file

Description

Runs testthat tests in a single .R file. If the file currently open in the RStudio editor is called `my_function.R`, `test_this()` calls `testthat::test_file()` on 'tests/testthat/test_my_function.R'. If the filename of the currently open file with starts with `test_` it will call `testthat::test_file()` on the current file.

Usage

```
test_this(...)
```

Arguments

... passed on to `testthat::test_file()`

Details

This is useful in cases where you don't want to run all tests in a package via `devtools::test()` (CTRL+SHIFT+T in RStudio).

Value

NULL (invisibly)

use_testdata	<i>Create testdata folder.</i>
--------------	--------------------------------

Description

Save R objects to separate files ‘tests/testthat/testdata’ in the .rds format.

Usage

```
use_testdata(
  ...,
  subdir = NULL,
  overwrite = FALSE,
  ignore = FALSE,
  compress = TRUE,
  refhook = NULL,
  version = NULL
)

use_testdata_raw(name = NULL)

has_testdata()

read_testdata(infile, subdir = NULL)

find_testdata(..., path = ".", must_exist = FALSE)
```

Arguments

...	R objects to save to the ‘testdata’ dir. If empty, an empty directory is created.
subdir	character scalar. Subdirectory of ‘testdata’ to save to / read from.
overwrite	Logical scalar. Should existing files be overwritten?
ignore	Should the newly created file be added to .Rbuildignore?
compress	a logical specifying whether saving to a named file is to use "gzip" compression, or one of "gzip", "bzip2" or "xz" to indicate the type of compression to be used. Ignored if file is a connection.
refhook	a hook function for handling reference objects.
version	the workspace format version to use. NULL specifies the current default version (3). The only other supported value is 2, the default from R 1.4.0 to R 3.5.0.
name	a character scalar or NULL. Name of the dataset for which to create a script file in ‘testthat/testdata-raw’. If NULL an empty ‘testthat/testdata-raw’ directory is created (if it does not exist already).
infile	rds file to read (must end in .rds, otherwise .rds ending is automatically added)
path	Path of the directory to create, relative to the project.
must_exist	logical scalar. Assert that path specified in ... exists

Value

use_testdata() returns TRUE if object was successfully saved.
 has_testdata() returns TRUE if package has a ‘tests/testthat/testdata’ folder.
 read_testdata() returns a single R object
 find_testdata() returns the normalized path to a file in a in the testdata directory

Side effects

use_testdata() saves an R object to a ‘testdata’ dir in the current package.

See Also

[base::readRDS\(\)](#)

Other infrastructure: [use_test_subdir\(\)](#), [use_tester\(\)](#)

Examples

```
## Not run:
  use_testdata(letters, LETTERS)

## End(Not run)
```

use_tester

Use a tester function

Description

Quickly create an R script that contains a function for running all tests in a predefined directory. This function powers the make_tester option of [use_test_subdir\(\)](#) and you will likely not need to run it manually.

Usage

```
use_tester(
  path,
  ignore = TRUE,
  tester_path = file.path("R", "testthis-testers.R")
)
```

Arguments

path character scalar. Name of the subdirectory of ‘tests/testthat/’ for which to create a tester function.

ignore logical scalar. Add tester_path to ‘.Rbuildignore’?

tester_path logical scalar. Path to the R script file in which to store the tester functions

Value

TRUE on success (invisibly).

See Also

Other infrastructure: [use_test_subdir\(\)](#), [use_testdata\(\)](#)

use_test_subdir	<i>Use test subdirectories</i>
-----------------	--------------------------------

Description

Create a subdir in ‘tests/testthat/’ and optionally an R script containing a helper function to run all tests in that subdir. Useful for separating long-running tests from your unit tests, or storing tests that you do not want to run on CRAN or during R CMD Check. For running tests in ‘tests/testthat/’ subdirectories see [test_subdir\(\)](#).

Usage

```
use_test_subdir(path, make_tester = TRUE, ignore_tester = TRUE)

use_integration_tests()

use_acceptance_tests()

use_manual_tests()
```

Arguments

path	character scalar. Will be processed with base::make.names() to make a syntactically valid name.
make_tester	logical or character scalar. Create an R script with a test helper function. If TRUE an R script file will be placed into the ‘R/’ directory of the current package, containing a function definition for running the tests in path. The file will be named ‘testthis-testers.R’, but you can specify your own name by passing a character scalar to make_tester() . See use_tester() for details.
ignore_tester	logical scalar. Add ‘tester’ file to ‘.Rbuildignore’?

Value

TRUE on success (invisibly).

Test subdirectory presets

Three preset test subdirs are defined at the moment:

`test_integration()` Integration tests, also called component tests. Put tests here that test if several functions / parts of your program work together as expected. You can create the relevant subdir 'testthat/integration_tests/' with `use_integration_tests()`.

`test_acceptance()` Acceptance tests. This is the highest levels of tests. Put tests here that verifies if your package fulfills the goals/requirements you set out to achieve with your package were met. You can create the relevant subdir 'testthat/acceptance_tests/' with `use_acceptance_tests()`.

`test_manual()` Manual tests. Put tests here that produce output that has to be manually verified, such as: console output, pdf files, plots. It is recommended you collect the output files of such tests in 'tests/testthat/testout'. You can create the relevant subdir with 'testthat/manual_tests/' with `use_manual_tests()`.

You can modify the default paths for manual, acceptance and integration tests by setting the respective `options()`, but it is recommended to create your own test subdirs instead.

See Also

[test_subdir\(\)](#)

Other infrastructure: [use_testdata\(\)](#), [use_tester\(\)](#)

Examples

```
## Not run:
use_test_subdir("special_tests", make_tester = TRUE)

## Reload the Package manually...
## Create some tests in tests/testthat/test_special_tests/

test_special_tests()

## End(Not run)
```

Index

`base::make.names()`, [10](#)
`base::readRDS()`, [9](#)

`devtools::test()`, [6](#)

`find_testdata (use_testdata)`, [8](#)

`get_test_coverage`, [2](#)

`has_testdata (use_testdata)`, [8](#)

`open_testfile`, [2](#)
`options()`, [3](#)

`print.test_index (test_index)`, [5](#)

`read_testdata (use_testdata)`, [8](#)

`test_acceptance (test_subdir)`, [6](#)
`test_all (test_subdir)`, [6](#)
`test_coverage`, [4](#)
`test_coverage()`, [2](#)
`test_index`, [5](#)
`test_integration (test_subdir)`, [6](#)
`test_manual (test_subdir)`, [6](#)
`test_skeleton`, [5](#)
`test_subdir`, [6](#)
`test_subdir()`, [10](#), [11](#)
`test_this`, [7](#)
`testthat::test_file()`, [7](#)
`testthat::testthat_results`, [6](#)
`testthis`, [3](#)
`testthis-package (testthis)`, [3](#)

`use_acceptance_tests (use_test_subdir)`,
[10](#)

`use_integration_tests`
`(use_test_subdir)`, [10](#)

`use_manual_tests (use_test_subdir)`, [10](#)
`use_test_subdir`, [9](#), [10](#), [10](#)
`use_test_subdir()`, [6](#), [7](#), [9](#)

`use_testdata`, [8](#), [10](#), [11](#)
`use_testdata_raw (use_testdata)`, [8](#)
`use_tester`, [9](#), [9](#), [11](#)
`use_tester()`, [10](#)
`usethis::edit_r_profile()`, [4](#)
`usethis::proj_get()`, [3](#)
`usethis::proj_set()`, [3](#)
`usethis::use_covr_ignore()`, [4](#)
`usethis::use_test()`, [6](#)