

# Package: genthat (via r-universe)

July 16, 2026

**Type** Package

**Title** A Framework for Unit Tests Generation

**Version** 0.1.8

**URL** <https://github.com/PRL-PRG/genthat>

**BugReports** <https://github.com/PRL-PRG/genthat/issues>

**Description** Generates 'testthat' compatible unit tests by tracing the execution of runnable R code, recording the arguments and return values of function calls, and turning them into reproducible test cases.

**License** GPL (>= 2)

**Depends** R (>= 3.4.0)

**Imports** codetools, covr, digest, dplyr, formatR, magrittr, methods, Rcpp (>= 0.11.3), testthat, tools, utils, withr

**LinkingTo** Rcpp

**Suggests** devtools, knitr, rmarkdown, readr, roxygen2 (>= 5.0.0), stringr, mutator

**Remotes** PRL-PRG/mutator

**LazyData** TRUE

**RoxygenNote** 6.0.1

**VignetteBuilder** knitr

**Config/pak/sysreqs** cmake make libuv1-dev libssl-dev

**Repository** <https://prl-prg.r-universe.dev>

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|                  |                                                                             |
|------------------|-----------------------------------------------------------------------------|
| Copy call traces | <i>Creates a copy of traces captured so far and returns them as R list.</i> |
|------------------|-----------------------------------------------------------------------------|

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Usage

copy\_traces(tracer)

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|----------------------|----------------------------------------------|
| decorate_environment | <i>Decorates functions in an environment</i> |
|----------------------|----------------------------------------------|

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Description

Decorates all symbols form the given environment for which ‘is.function’ is ‘TRUE’.

Usage

```
decorate_environment(env, decorator = get_decorator(),
  record_fun = substitute(genthat:::record_trace), exclude = character())
```

Arguments

|       |                                                                                                                                                                                                                        |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| envir | an environment that shall be decorated or a character scalar that will be resolved using ‘as.environment("package:....")’. In the latter case, the package will also be loaded in the case it has not been loaded yet. |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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|                   |                                  |
|-------------------|----------------------------------|
| decorate_function | <i>Decorates given functions</i> |
|-------------------|----------------------------------|

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**Description**

Given function will be decorated in their defining environment.

**Usage**

```
decorate_function(fun, name = substitute(fun),
  record_fun = substitute(genthat:::record_trace),
  decorator = get_decorator(), env = parent.frame())
```

**Arguments**

|     |                                      |
|-----|--------------------------------------|
| fun | the function that shall be decorated |
|-----|--------------------------------------|

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|                  |                            |
|------------------|----------------------------|
| download_package | <i>Downloads R package</i> |
|------------------|----------------------------|

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**Description**

Downloads R package.

**Usage**

```
download_package(package, destdir, version = NULL,
  repos = getOption("repos"), type = "source", extract = TRUE,
  force = FALSE, quiet = TRUE, ...)
```

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|               |                                             |
|---------------|---------------------------------------------|
| generate_test | <i>Generate test case code from a trace</i> |
|---------------|---------------------------------------------|

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**Description**

Given a genthat trace it generates a corresponding test case

**Usage**

```
generate_test(trace, ...)
```

**Arguments**

|                    |                                                                                                        |
|--------------------|--------------------------------------------------------------------------------------------------------|
| trace              | trace value                                                                                            |
| include_trace_dump | whether to include raw trace at the beginning of the test the trace is formatted using 'str' function. |

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|                    |                                   |
|--------------------|-----------------------------------|
| generate_test_file | <i>generate test from a trace</i> |
|--------------------|-----------------------------------|

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### Description

given a trace, it generates a test and stores it in a file

### Usage

```
generate_test_file(trace, output_dir, ...)
```

### Value

a data frame with the following pkg : chr fun : chr filename : chr (can be NA in which case error must be a chr) error : chr (can be NA in which case code must be NA) elapsed : numeric (can be NA)

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|         |                                                       |
|---------|-------------------------------------------------------|
| genthat | <i>genthat: A framework for unit tests generation</i> |
|---------|-------------------------------------------------------|

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### Description

genthat: A framework for unit tests generation

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|                     |                                        |
|---------------------|----------------------------------------|
| get_package_version | <i>Gets the latest package version</i> |
|---------------------|----------------------------------------|

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### Description

Returns the latest version of a given package that is available in the given repository.

### Usage

```
get_package_version(package, repos = getOption("repos"), type = "source")
```

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|                   |                                                            |
|-------------------|------------------------------------------------------------|
| link_environments | <i>Links the environments of the surrounding functions</i> |
|-------------------|------------------------------------------------------------|

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**Description**

Sets the parent environment of all the functions defined in the given environment 'env' to 'parent'.

**Usage**

```
link_environments(env = parent.frame(), parent = parent.env(env),  
  .fun_filter = is.local_closure)
```

**Arguments**

|        |                                                                   |
|--------|-------------------------------------------------------------------|
| env    | the environment in which to look for functions                    |
| parent | the environment to use as the parent environment of the functions |

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|              |                                   |
|--------------|-----------------------------------|
| Reset traces | <i>Clears the captured traces</i> |
|--------------|-----------------------------------|

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**Usage**

```
reset_traces(tracer)
```

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|                |                                                       |
|----------------|-------------------------------------------------------|
| reset_function | <i>Resets decorated function back to its original</i> |
|----------------|-------------------------------------------------------|

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**Description**

Reverts decorated function back to their state they were before calling 'decorate\_function'.

**Usage**

```
reset_function(fun, name = substitute(fun), decorator = get_decorator(),  
  env = parent.frame())
```

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|              |                                         |
|--------------|-----------------------------------------|
| Store tracer | <i>Stores given trace to the tracer</i> |
|--------------|-----------------------------------------|

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**Usage**

```
store_trace(tracer, trace)
```

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`trace_package`*Decorate all functions from given package and runs package code*

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**Description**

Decorates all functions in a package and then generates test cases based on the code contained in the package examples, vignettes and tests.

**Usage**

```
trace_package(pkgs, files_to_run, output_dir = ".", decorator = "on.exit",
  tracer = "set", action = c("stats", "export", "generate"),
  working_dir = tempfile(pattern = "genthat-trace-"), quiet = TRUE,
  lib_paths = NULL)
```

**Arguments**

|                         |                                                                                        |
|-------------------------|----------------------------------------------------------------------------------------|
| <code>output_dir</code> | the name of the directory where to output traces or NULL if traces should not be saved |
|-------------------------|----------------------------------------------------------------------------------------|

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