

Unit Testing in R

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Options for Unit Testing in R

- ▶ RUnit by Matthias Burger, Klaus Juenemann, and Thomas Koenig.²
- ▶ testthat by Hadley Wickham.³
- ▶ RUnit implements the same syntax as other unit testing implementations in other languages (JUnit, CppUnit, PerlUnit). This tutorial will focus on RUnit (though both are acceptable solutions).

²<https://cran.r-project.org/web/packages/RUnit/index.html>.

³<https://cran.r-project.org/web/packages/testthat/index.html>.

RUnit Documentation and Resources

- ▶ For more detailed explanations and examples, see [the reference manual](#) and [the package vignette](#).
- ▶ For a short walkthrough of RUnit basics, see [this tutorial by John White](#).
- ▶ For other questions, Google is your friend.

Creating Unit Tests

- ▶ Given a package



```
1 checkEquals(target, current, msg,  
2             tolerance = .Machine$double.eps^0.5,  
3             checkNames = TRUE, ...)  
4 checkEqualsNumeric(target, current, msg,  
5                    tolerance = .Machine$double.eps^0.5, ...)  
6 checkIdentical(target, current, msg)  
7 checkTrue(expr, msg)  
8 checkException(expr, msg,  
9               silent = getOption("RUnit")$silent)  
10 DEACTIVATED(msg)
```

Tests Involving Random Numbers

- ▶ Specify the type of random number generator in `defineTestSuite`, and specify `set.seed` in the test function