

Share!

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Hadley Wickham
[@hadleywickham](#)
Chief Scientist, RStudio

1. Git + GitHub
2. License
3. Dependencies
4. Namespace: imports
5. Namespace: exports
6. R CMD check
7. CRAN

Git + GitHub

Use both!

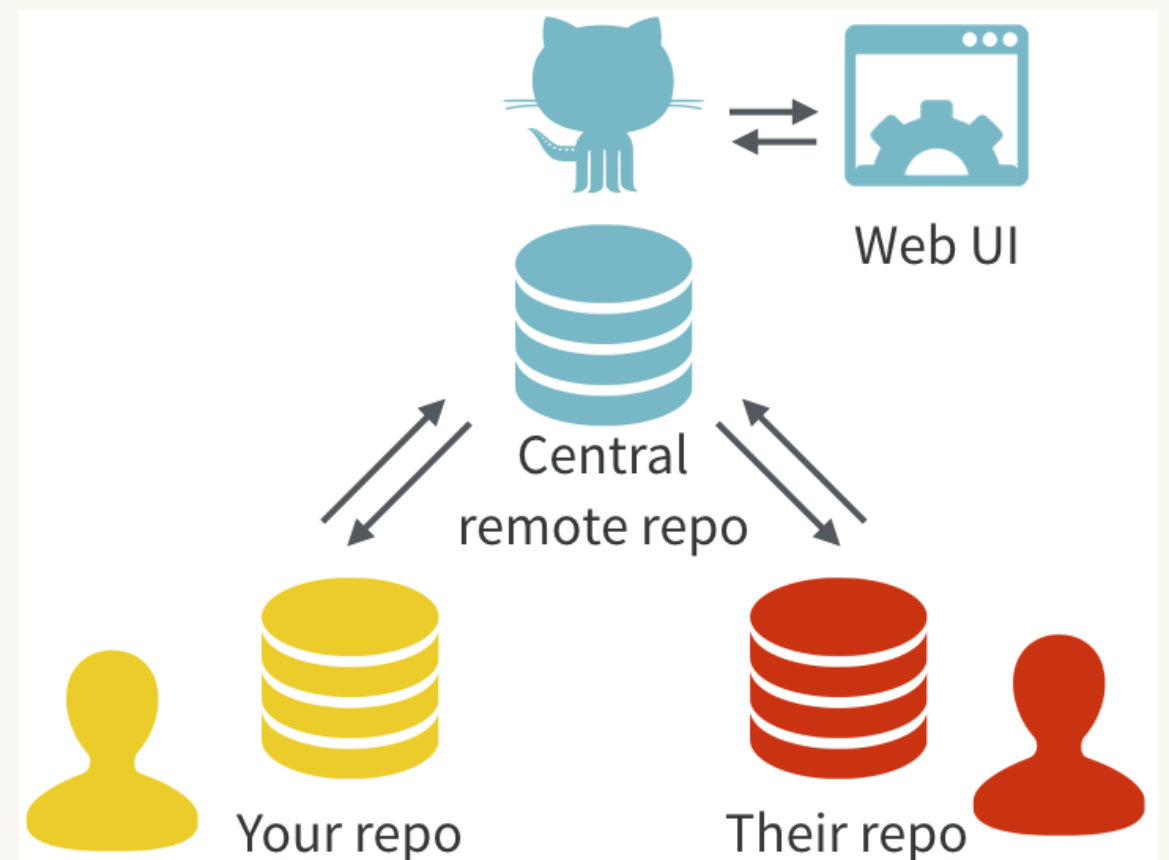
The 🤨💩😱 will pay off



happygitwithr.com

Excuse me, do you have a
moment to talk about
version control?

[https://doi.org/10.7287/
peerj.preprints.3159v2](https://doi.org/10.7287/peerj.preprints.3159v2)



Easy to get started

```
# Activate git
```

```
usethis::use_git()
```

```
# Publish your code online
```

```
usethis::use_github()
```

License

There are three main open source licenses

CC0

“public domain”, best
for data packages

MIT

Free for anyone to
do anything with

GPL

Changes and bundles
must also be GPL

These are gross simplifications!

Use helper to set up

```
usethis::use_cc0_license()
```

```
usethis::use_mit_license()
```

```
usethis::use_gpl_license()
```

You can also make clear that your package isn't open source

DESCRIPTION:

License: file LICENSE

LICENSE:

Proprietary: do not distribute outside of
Widgets Incorporated.

Dependencies



library(xyz)
require(xyz)

Depends:

I need you! 3.0.2) # optional version spec

Imports:

stringr (>= 1.0.0),

lubridate

Suggests:

I like having you around

Depends:

I need you to work) # optional version spec

Imports:

stringr (>= 1.0.0),

lubridate

Suggests:

I need you for development

There are three types of dependency

Imports = required. Installed automatically.

Suggests = optional. Development only; used in vignette or example. **Not** installed automatically.

Depends = basically deprecated for packages.

(Correct uses exist, but beyond the scope of this class)

Use `::` to access functions in imported packages

```
# In DESCRIPTION
```

```
Imports: foo
```

```
# In bar.R
```

```
new_function <- function(x, y, z) {  
  foo::bar(x, y) + z  
}
```


Should check if suggested package available

```
# In DESCRIPTION
```

```
Suggests: foo
```

```
# In bar.R
```

```
new_function <- function(x, y, z) {  
  if (!requireNamespace("foo", quietly = TRUE)) {  
    stop("Need foo! Use install.packages('foo').")  
  }  
  foo::bar(x, y) + z  
}
```

Reasons to use depends instead of imports

This page has been intentionally left blank

```
# use_package() will modify the DESCRIPTION  
# and remind you how to use the function.  
usethis::use_package("ggplot2")  
usethis::use_package("ggplot2", "suggests")
```

Namespace:
imports

You might get tired of using `::` all the time

```
# Or you might want to use an infix function
```

```
`%>%` <- magittr::`%>%`
```

```
col_summary <- function(df, fun) {  
  stopifnot(is.data.frame(df))
```

```
  df %>%
```

```
    purrr::keep(is.numeric) %>%
```

```
    purrr::modify(fun)
```

```
}
```

You can **import** functions into the package

```
#' @importFrom purrr keep modify
#' @importFrom magrittr %>%
col_summary <- function(df, fun) {
  stopifnot(is.data.frame(df))

  df %>%
    keep(is.numeric) %>%
    modify(fun)
}
```

Alternatively, create R/imports.R

```
# Imports belong to the package, not to  
# individual functions, so you might want  
# to recognise this by storing in a central  
# location
```

```
#' @importFrom purrr keep map  
#' @importFrom magrittr %>%
```

NULL

Importing everything from a package seems easy

```
#' @import purrr
col_summary <- function(df, fun) {
  stopifnot(is.data.frame(df))

  df %>%
    keep(is.numeric) %>%
    map_dfc(fun)
}
```


But is dangerous...

```
#' @import foo
#' @import bar

fun <- function(x) {
  fun1(x) + fun2(x)
}
```

```
# Works today
# But next year, bar package adds fun1 function
# Recent ggplot2 release broke ~150 packages
```

Description

NAMESPACE

Makes **package** available

Makes **function** available

Mandatory

Optional
(can use :: instead)

`use_package()`

`#' @importFrom`

Namespace:
exports

A namespace splits functions into two classes

Internal	External
Only for use within package	For use by others
Documentation optional	Must be documented
Easily changed	Changing will break other people's code

The default NAMESPACE exports everything

```
# Generated by roxygen2: fake comment so  
# roxygen2 overwrites silently.  
exportPattern("^^[^\\.].")
```

Better to export function explicitly

```
#' @export
```

```
fun1 <- function(...) {}
```

```
#' @export
```

```
fun2 <- function(...) {}
```

Most important if you're
planning on sharing with others

Export functions that people should use

```
# Don't export internal helpers
```

```
# Defaults for NULL values
```

```
`%||%` <- function(a, b) if (is.null(a)) b else a
```

```
# Remove NULLs from a list
```

```
compact <- function(x) {  
  x[!vapply(x, is.null, logical(1))]  
}
```

R CMD check

Automated checking

Runs automated checks for common problems in R packages.

Useful for local packages, even with some false positives.

If you want to submit to CRAN, you **must** pass R CMD check cleanly.

<http://r-pkgs.had.co.nz/check.html>



To avoid frustration run
early and run often

==> R CMD build rv2

- * checking for file 'rv2/DESCRIPTION' ... OK
- * preparing 'rv2':
- * checking DESCRIPTION meta-information ... OK
- * installing the package to build vignettes
- * creating vignettes ... OK
- * checking for LF line-endings in source and make files
- * checking for empty or unneeded directories
- * building 'rv2_0.1.tar.gz'

==> R CMD check rv2_0.1.tar.gz

- * using log directory '/Users/hadley/Documents/courses/13-devtools/rv2.Rcheck'
- * using R version 3.0.2 (2013-09-25)
- * using platform: x86_64-apple-darwin10.8.0 (64-bit)
- * using session charset: UTF-8
- * checking for file 'rv2/DESCRIPTION' ... OK
- * this is package 'rv2' version '0.1'
- * checking package namespace information ... OK
- * checking package dependencies ... OK
- * checking if this is a source package ... OK
- * checking if there is a namespace ... OK
- * checking for executable files ... OK
- * checking for hidden files and directories ... OK
- * checking for portable file names ... OK

- * checking for sufficient/correct file permissions ... OK
- * checking whether package 'rv2' can be installed ... OK* checking installed package size ... OK
- * checking package directory ... OK
- * checking DESCRIPTION meta-information ... OK
- * checking top-level files ... OK
- * checking for left-over files ... OK
- * checking index information ... OK
- * checking package subdirectories ... OK
- * checking R files for non-ASCII characters ... OK
- * checking R files for syntax errors ... OK
- * checking whether the package can be loaded ... OK
- * checking whether the package can be loaded with stated dependencies ... OK
- * checking whether the package can be unloaded cleanly ... OK
- * checking whether the namespace can be loaded with stated dependencies ... OK
- * checking whether the namespace can be unloaded cleanly ... OK
- * checking loading without being on the library search path ... OK
- * checking dependencies in R code ... OK
- * checking S3 generic/method consistency ... OK
- * checking replacement functions ... OK
- * checking foreign function calls ... OK
- * checking R code for possible problems ... OK
- * checking Rd files ... OK
- * checking Rd metadata ... OK
- * checking Rd cross-references ... OK
- * checking for missing documentation entries ... OK
- * checking for code/documentation mismatches ... OK

- * checking Rd \usage sections ... OK
- * checking Rd contents ... OK
- * checking for unstated dependencies in examples ... OK
- * checking installed files from 'inst/doc' ... OK
- * checking files in 'vignettes' ... OK
- * checking examples ... OK
- * checking for unstated dependencies in tests ... OK
- * checking tests ...
 - Running 'testthat.R' OK
- * checking for unstated dependencies in vignettes ...
OK
- * checking package vignettes in 'inst/doc' ... OK
- * checking running R code from vignettes ...
 - 'c1t.Rmd' ... OK
- OK
- * checking re-building of vignette outputs ... OK
- * checking PDF version of manual ... OK

R CMD check succeeded

Types of problem

ERROR

Must fix!

WARNING

Fix if submitting to CRAN

NOTE

Fix if submitting to CRAN

It is possible to submit with a NOTE, but it's best avoided

	Local	CRAN
ERROR	✓	✓
WARNING		✓
NOTE		✓

```
# Cmd/Ctrl + Shift + E
```

```
devtools::check()
```

```
# If you don't understand an error,
```

```
# google it!
```

If you use git and GitHub

Run R CMD check every time your code changes

```
use_travis()
```

Display which functions are tested

```
use_codecov()
```


CRAN

First submission to CRAN

```
# First check locally
```

```
devtools::check()
```

```
# Then on R-hub
```

```
devtools::check_rhub()
```

```
# Then with CRAN's win-builder
```

```
devtools::check_win_devel()
```

```
# Write submission notes
```

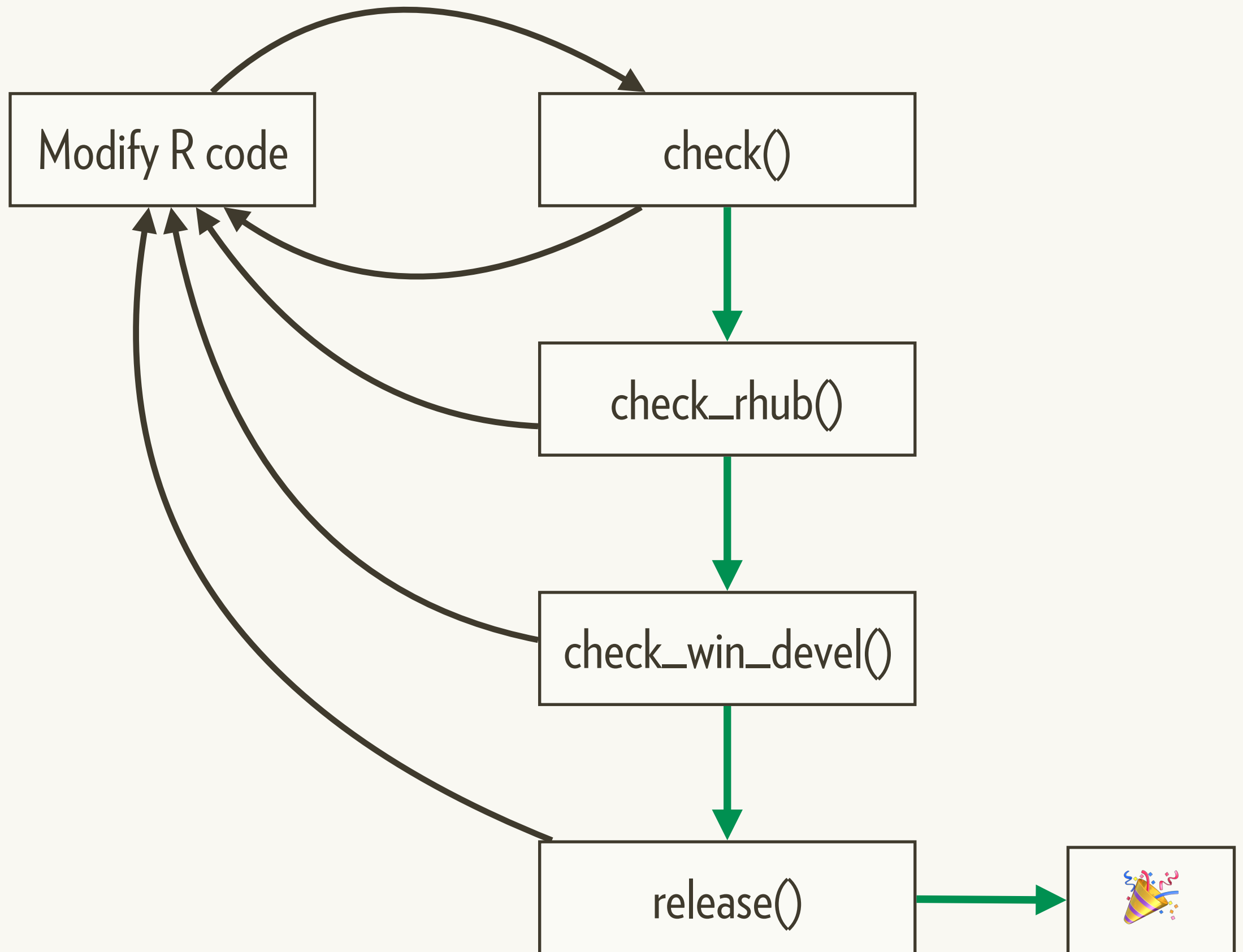
```
usethis::use_cran_comments()
```

```
# Then submit to CRAN
```

```
devtools::release()
```

```
# This asks you questions which you should
```

```
# carefully read and answer
```



cran-comments.md

Goal is to illustrate that you've done your due diligence

Test environments

- * local OS X install (R-release)
- * win-builder (R-release, R-devel)

R CMD check results

0 errors | 0 warnings | 1 note

- * This is a new release.

There's always one note for a new submission

If your submission fails

Do not despair! It happens to everyone, even R-core members.

If it's from the CRAN robot, just fix the problem & resubmit.

If it's from a human, do not respond to the email and do not argue. Instead update cran-comments.md & resubmit.

For resubmission:

This is a resubmission. Compared to the last submission, I have:

- * First change.
- * Second change.
- * Third change

Test environments

- * local OS X install, R 3.2.2
- * win-builder (devel and release)

R CMD check results

...

Subsequent submissions to CRAN

```
# Proceed as before. If you have reverse dependencies  
# you need to also run R CMD check on them, and  
# notify CRAN if you have deliberately broken them.  
# Fortunately the revdepcheck package makes this  
# fairly easy
```

```
install_github("r-lib/revdepcheck")
```

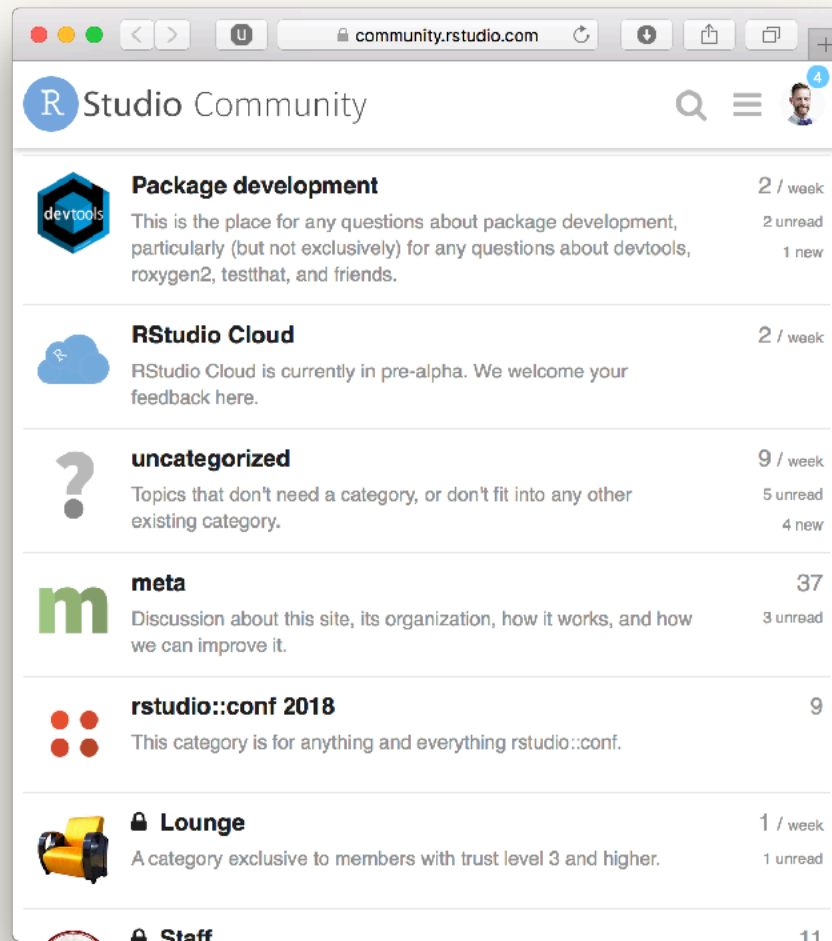
```
use_revdep_check()
```

```
library(revdepcheck)
```

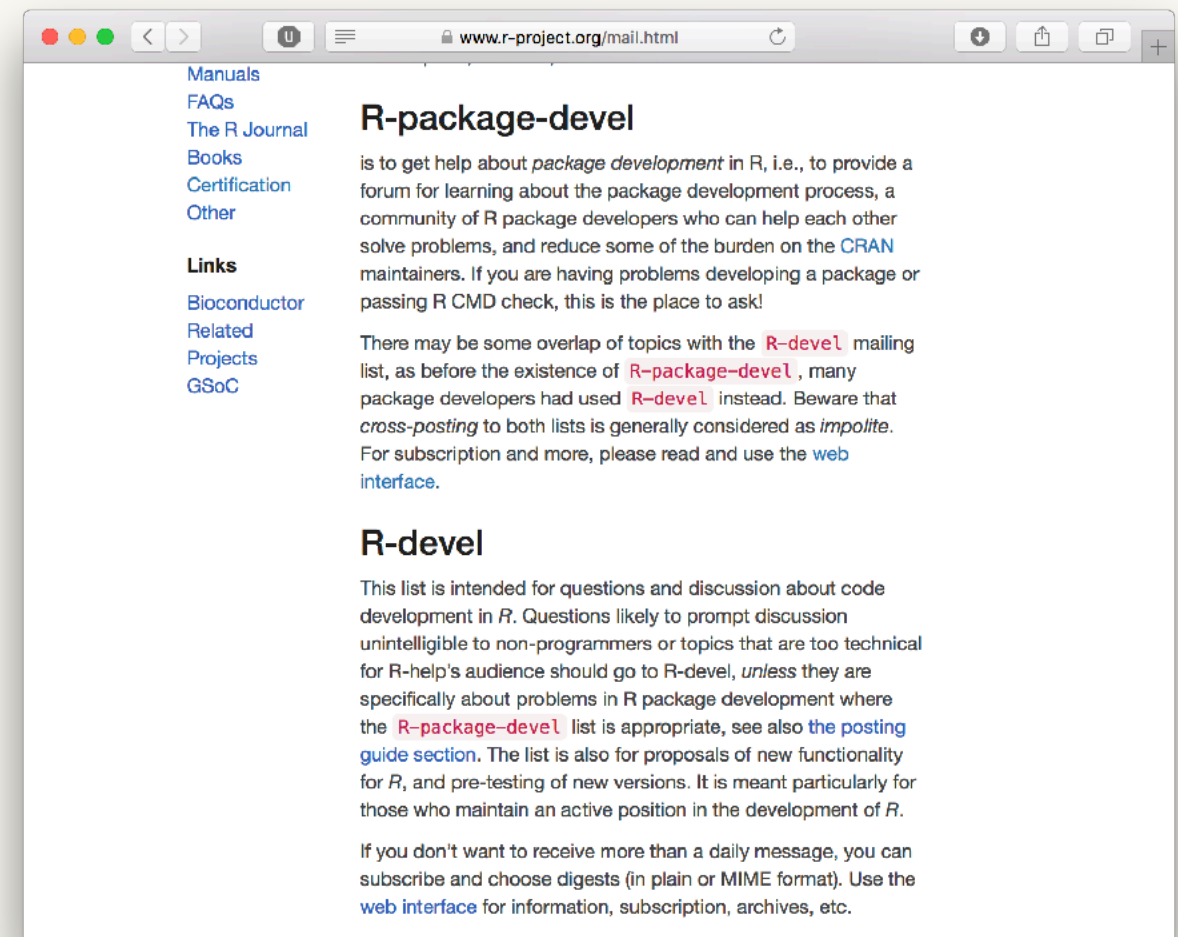
```
revdep_check()
```

```
revdep_report_cran()
```

Learning more

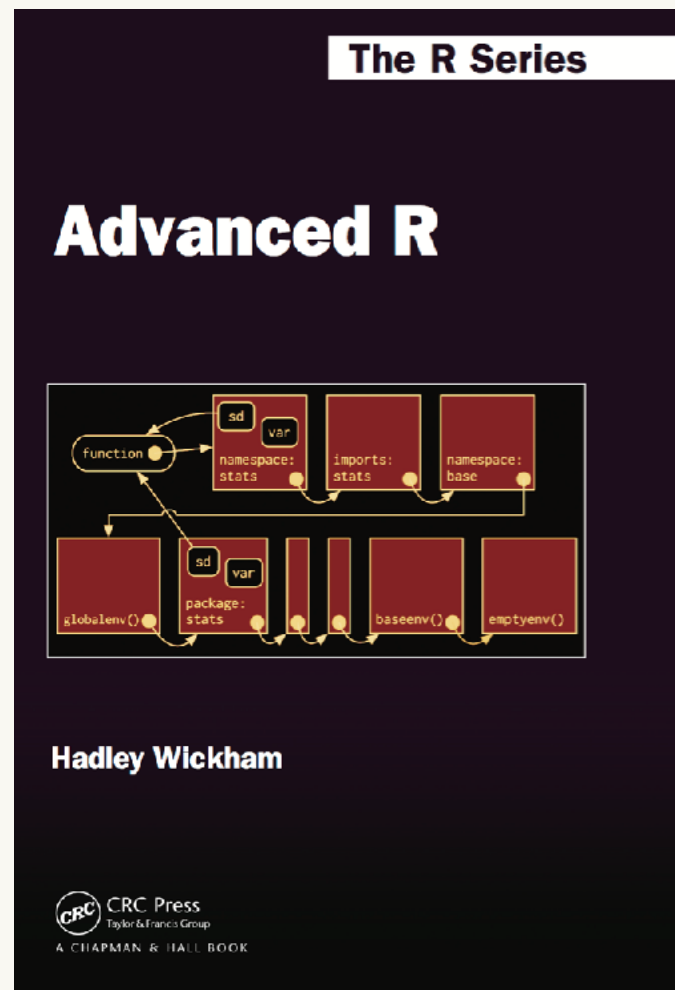


community.rstudio.com



R-package-devel mailing list

More details on many topics in books



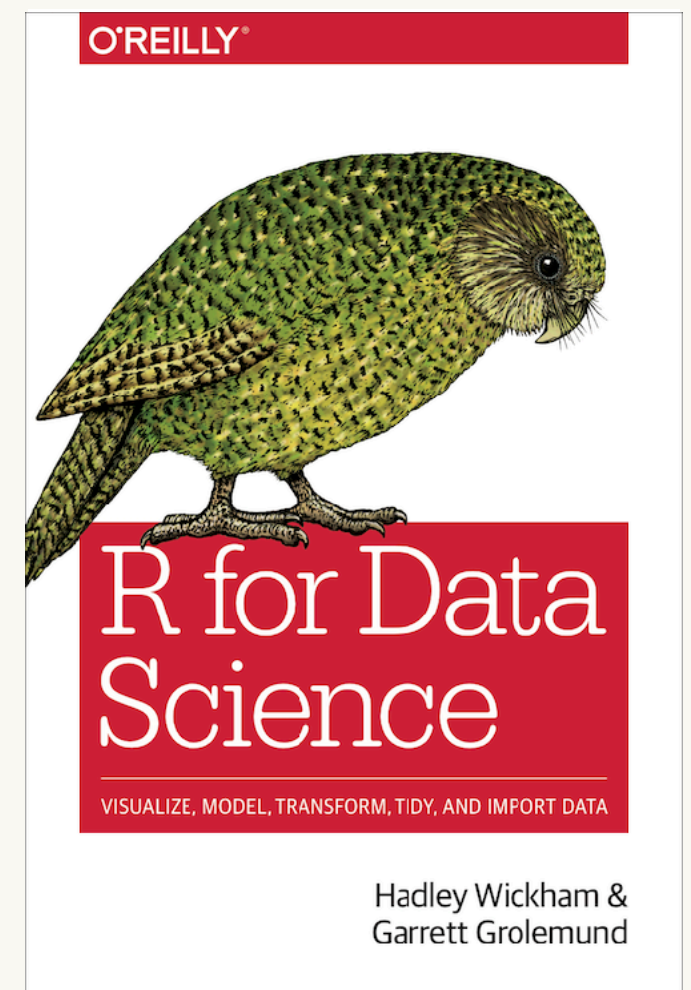
<http://adv-r.hadley.nz/>

<http://amzn.com/1466586966>



<http://r-pkgs.had.co.nz>

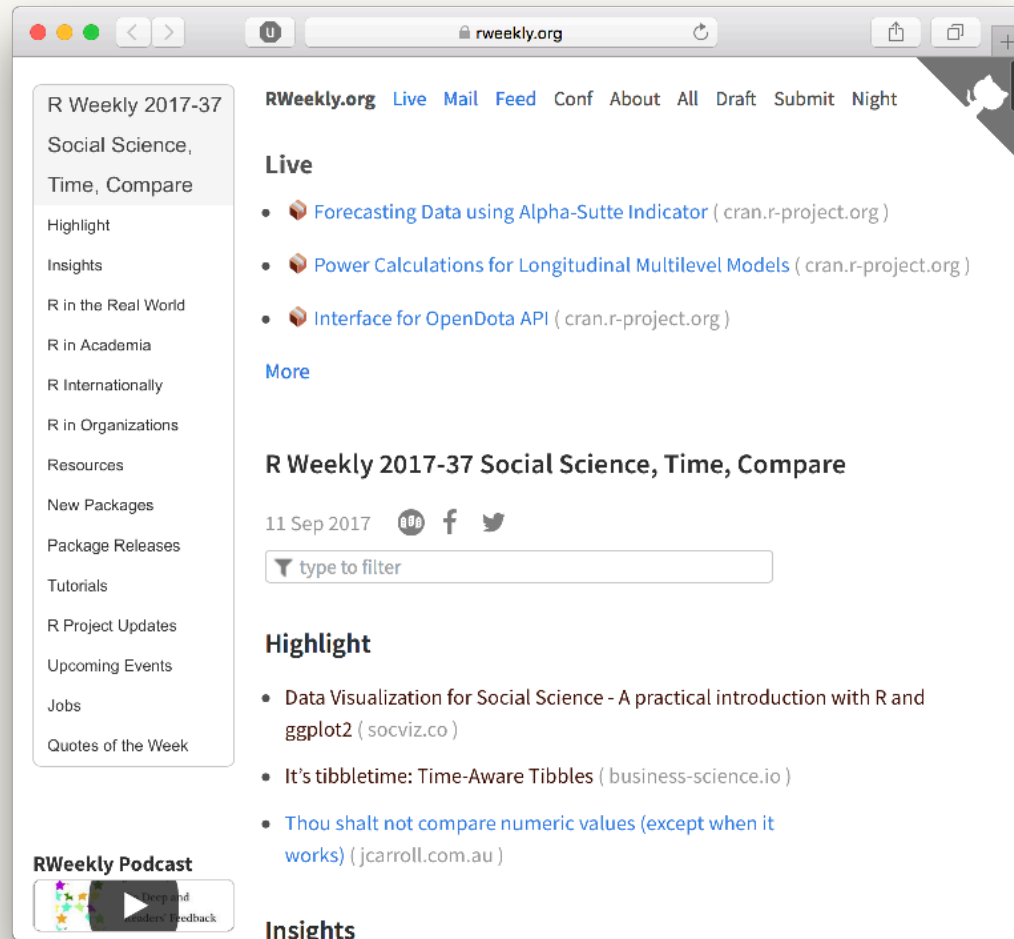
<https://amzn.com/1491910399>



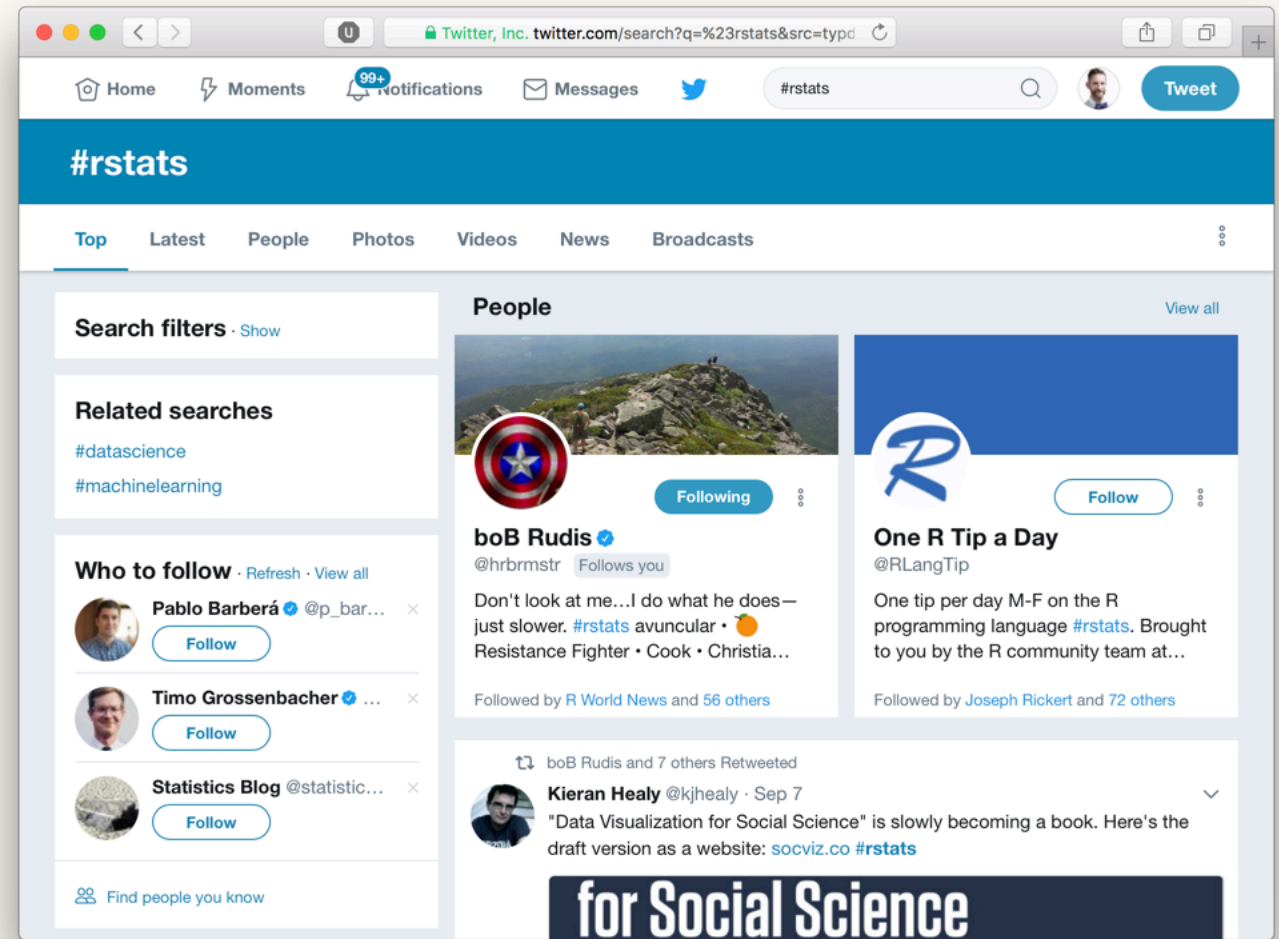
<http://r4ds.had.co.nz>

<https://amzn.com/1491910399>

rweekly.org



#rstats



[r] score:5 is:question closed:no

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