Statistical Computing

Michael Mayer

March 2023

Statistical Computing

Michael Mayer

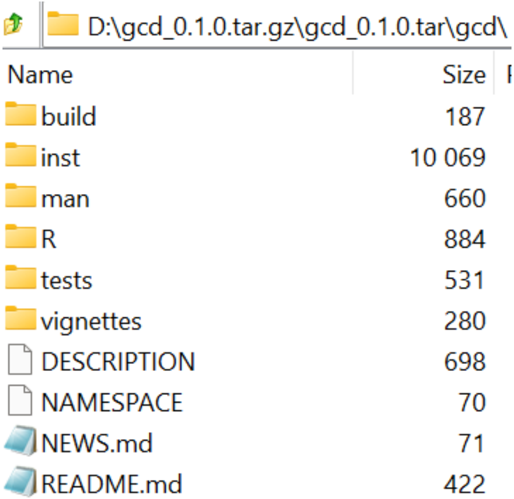
R Packages: Do it yourself

- About 20’000 contributed packages on CRAN
- Many others not on CRAN
- Making the second package is easy

Resources

- Writing extensions: `https://cran.r-project.org/doc/manuals/r-release/R-exts.html`
- R Packages (Hadley Wickham and Jennifer Bryan): `https://r-pkgs.org`

Content of Simple Package “gcd”



D:\gcd_0.1.0.tar.gz\gcd_0.1.0.tar\gcd\

Name	Size
build	187
inst	10 069
man	660
R	884
tests	531
vignettes	280
DESCRIPTION	698
NAMESPACE	70
NEWS.md	71
README.md	422

- R → R code
- man → Help files
- build, inst, vignettes → Vignette
- tests → Unit tests
- Other files?

How to create all this??

1. Put functions into one or more R scripts in folder "R"
2. Document functions with Roxygen

The rest requires three things

- Package "usethis": Cares about content of package
- Package "devtools": Turns content into package
- Software bundle RTools: `https://cran.r-project.org/bin/windows/Rtools`

Example

`https://github.com/mayer79/gcd`

How to Contribute to other Projects?

Github project

- You see issue
- or missing functionality
- or simply a typo

→ open “issue” and wait?

Example

Fix typo in some project

Example Workflow

1. Fork project on Github
2. Clone your fork locally
3. Create “feature” branch
4. Commit changes to this branch and push
5. Open pull request (PR) to original project
6. If not okay, add more commits locally and push
7. When merged, delete feature branch

More Complex Packages?

- What if your package uses other packages like "ggplot2"?
  → Dependency hell, so minimize their use
- What if you use print(), summary() etc.?

Example

Pandemic apero: `https://github.com/mayer79/apero`