

R Package Creation

Creating Well Documented and Reusable Software

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- ▶ Simple workflow - devtools cheatsheet

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- ▶ Simple workflow - devtools cheatsheet
- ▶ A minimal example package utilizing S3 and S4 OOP systems

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- ▶ An R package is essentially a main directory with subdirectories that are organized in a very specific manner

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- ▶ Deliver your work to the world! (PhD Dissertations)

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- ▶ Don't use `package.skeleton()`, this will create way too much extra work for you in the end

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- ▶ Each of these components has a specific use/meaning in an R package

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 - ▶ What packages does the package “depend” on, import, suggest - in general, don’t use depends

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- ▶ Hadley's rule: if I can't remember where a function lives, I need more files, or better names for files

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- ▶ License is important to understand when you want to release your package to others, but we won't delve into that here

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 - ▶ `isNamespaceLoaded("pkg", quietly = TRUE)`

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 - ▶ You may want users to be able to access the log-likelihood, residuals, etc.

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 - ▶ You may want users to be able to access the log-likelihood, residuals, etc.
 - ▶ Export as few functions as necessary to avoid conflicts with existing packages

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 - ▶ I ALWAYS use `namespace::function()` to call functions in a package, i.e. I use imports not depends

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 - ▶ You can also do this with `devtools::create()`, `devtools::check()`, `devtools::build`, `devtools::install()`

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- ▶ R package developers used to have to document our functions manually by reading “Writing R Extensions”, and messing up a lot

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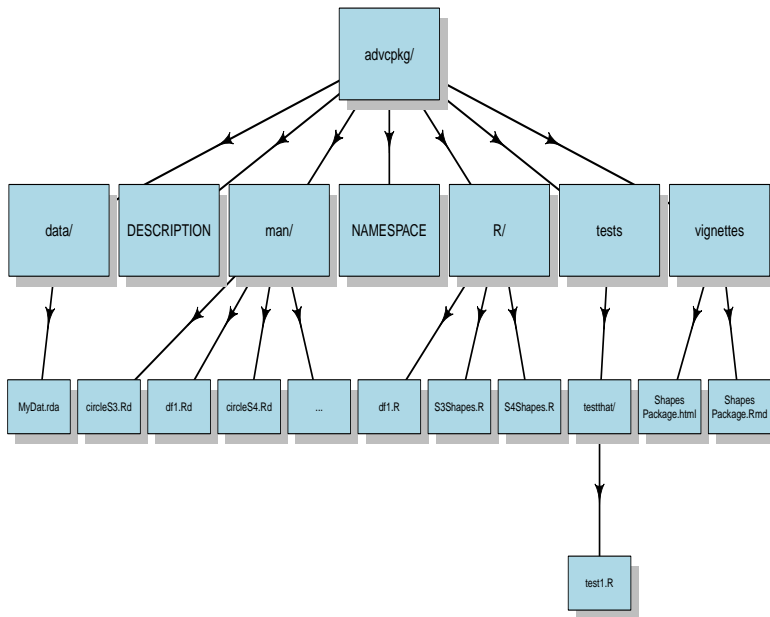
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 - ▶ I suggest reading *R Packages - Data* for more information

Flowchart of overall package structure



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- ▶ Could just place testthat in the imports from description, but not necessary

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- ▶ Your workflow may change from time to time based on your requirements, for instance you may not be in the testing stage yet but are trying to work out kinks from roxygen2

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- ▶ We'll see that different characteristics and functions apply based on the class of the shape

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- ▶ In order to make it easier, it's all done through roxygen2 so you won't have to manually write documentation pages