# R Packages - Cheat sheet

## Libraries

```
library(devtools)
library(testthat)
```
OR

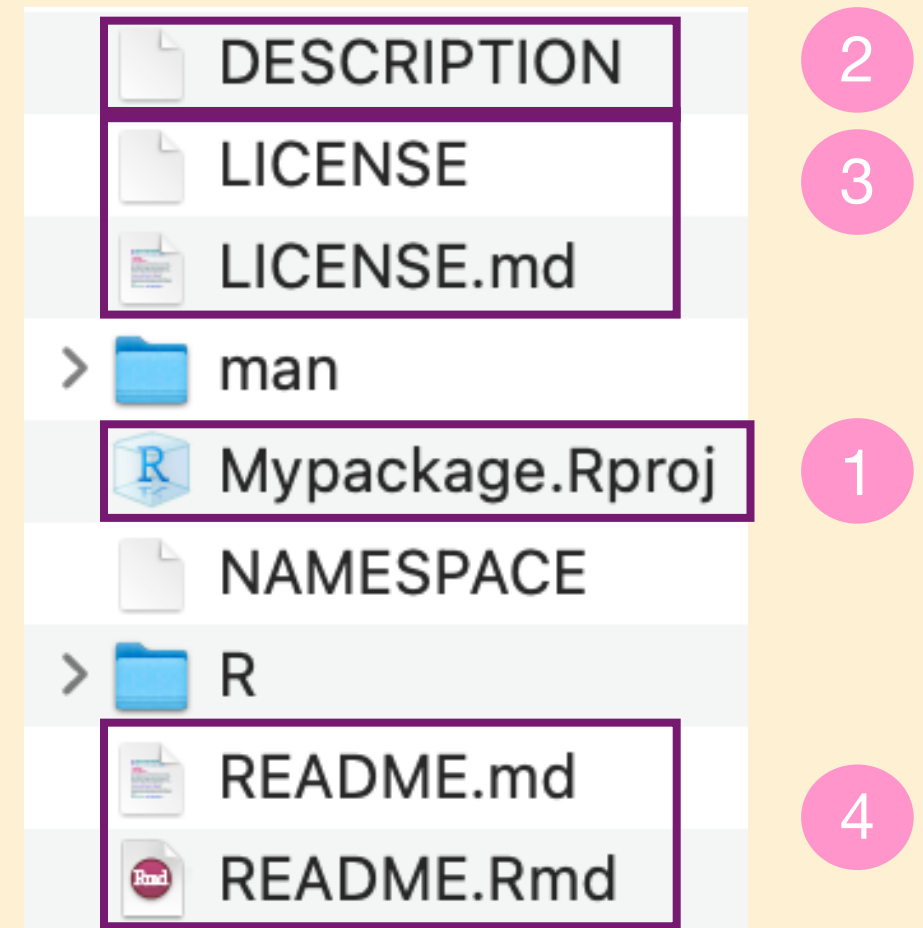For personal start-up configuration with devtools and testthat, write in your `.Rprofile` startup file

```
if (interactive()) {
  suppressMessages(require(devtools))
}
```
Add also testthat

## FIRST SETUP (Do it once)

- Create your package :
  `create_package("path/Mypackage")`
- `Mypackage.Rproj` session is opened ①
- Edit the `DESCRIPTION` file : ②
  - Make yourself the author
  - Write some descriptive text in the TITLE and DESCRIPTION fields
- Choose a license (see https://r-pkgs.org/license.html for details) :
  Ex : `use_mit_licence("Jane Doe")` (Write your name and surname) ③
- Initialize a `README.md` (and fill the fields)
(Optional if your package is only for you without using GitHub)
  `use_readme_rmd()`
  `build_readme()` ④

```
📄 DESCRIPTION        ②
📄 LICENSE            ③
📄 LICENSE.md
> 📁 man
🆁 Mypackage.Rproj    ①
📄 NAMESPACE
> 📁 R
📄 README.md          ④
📄 README.Rmd
```

## WORKING FLOW (Do it cyclically)

Open `Mypackage.Rproj`

### Add a function
`use_r("Afunction")`
The file `Afunction.R` is created

Write functions, write classes, …

### Write the function in the created file `Afunction.R`

If you need to use an fonction from another package to write your actual function, run :
`use_package("package_name")`
➡ This adds the package to the "Imports" section of the DESCRIPTION file.

To call the function, use :
`package_name::thefunctionyouneed()`

⚠ Do not create too many dependencies ! You can also re-write some functions

`load_all()` ➡ Make *Afunction* available in the current session

### Run `install()` if you want :
➡ it installs your package on your computer and you can run
`library(Mypackage)`
to access your package whenever you want !

### `check()`
➡ It checks that the hole package works !
➡ You must correct errors/warnings/ notes if needed

### Write the documentation :
Place the cursor somewhere in the function and then click on :
*Code > Insert R oxygen Skeleton*
Fill the fields. Then run :
`document()`
`load_all()`
➡ You can use *Afunction* and its documentation in the current session !

### Create a unit tests file
`use_testthat()`
`use_test("Afunction")`
Write unit tests in the created file
`test-Afunction.R`
Check all unit tests with `test()`
Or use a shortcut :
`CRTL + SHIFT + T` 🪟 🐧
`CMD + SHIFT + T` 🍎