

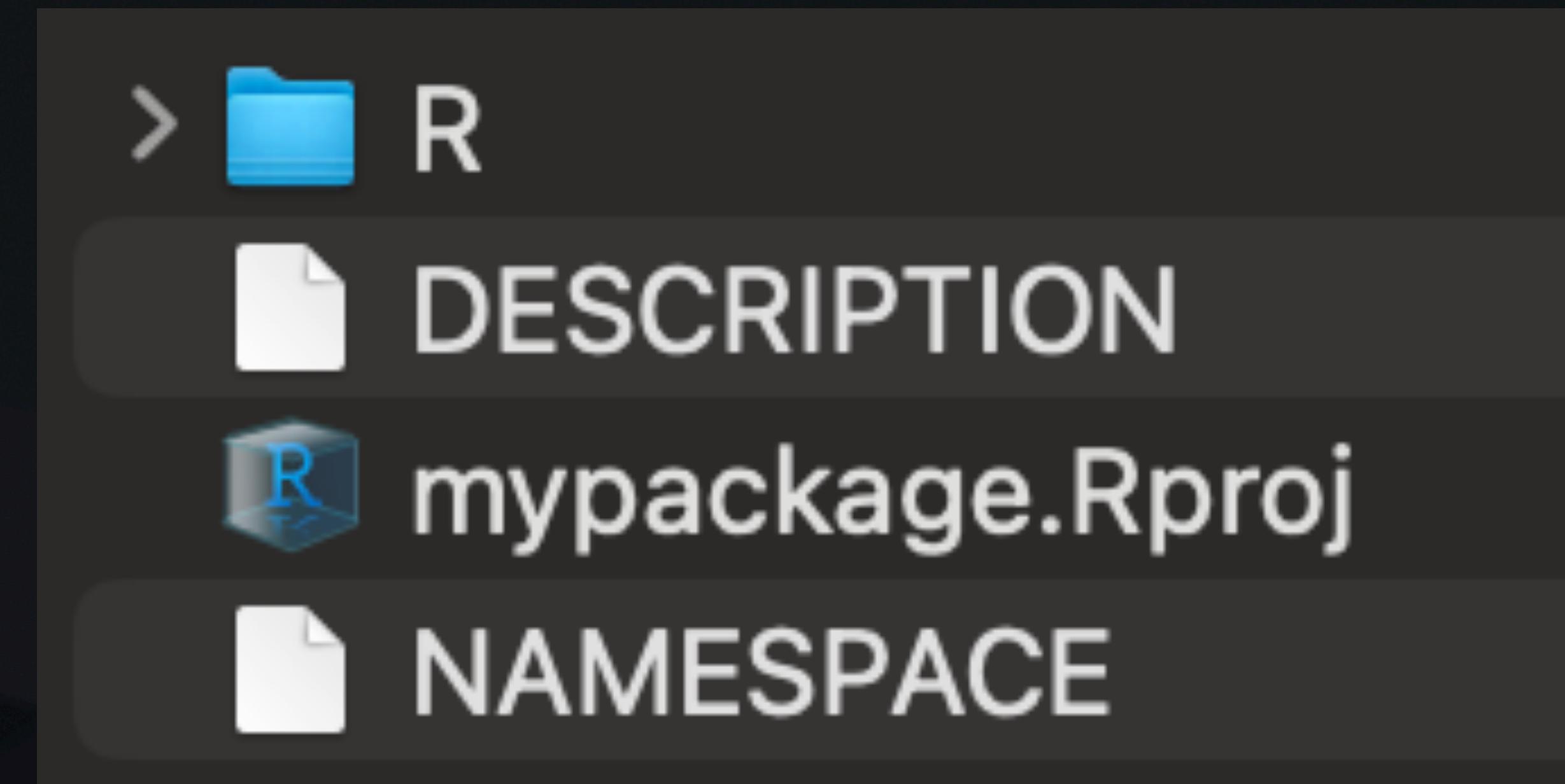
# R packages - What, Why and How?

R in HTA Hackathon 2024, Belfast

Milan Malfait

# What

The absolute minimum



# But why?

- Code sharing / reproducibility
- Convenience
- Conventions, good practices
- It makes you look really cool

How? - What if I told you you can  
create an R package in just 10 minutes



```
library(devtools)
create_package("~/htahackathon2024/stringsplitter")
use_git()

use_r("my-strsplit")
###  Edit R/my-strsplit.R to do something useful

# This is already an MVP!

#  Test drive
load_all()
### Play around with your new function, do some ad-hoc testing

check()

### Write some documentation in roxygen format for your function
### TIP: in RStudio, go to `Code -> Insert Roxygen skeleton` to
### make your life easier

# Generate a beautiful help page
document()

# Make your package reusable (on your own system)
install()
```

```
# BONUS: test and publish
```

```
# 🧪 Add tests!
```

```
use_testthat()
```

```
use_test("my-strsplit")
```

```
# Publish on GitHub
```

```
use_github(organisation = "HTAhackathon2024")
```

```
# 📄 Add a landing page README
```

```
use_readme_rmd()
```

```
# 🚀 Bonus bonus: automated testing and checking! CI/CD
```

```
use_github_action("check-standard")
```

```
# ✨ Set up a fancy website
```

```
use_pkdown()
```

```
use_pkdown_github_pages()
```

# Some good practices

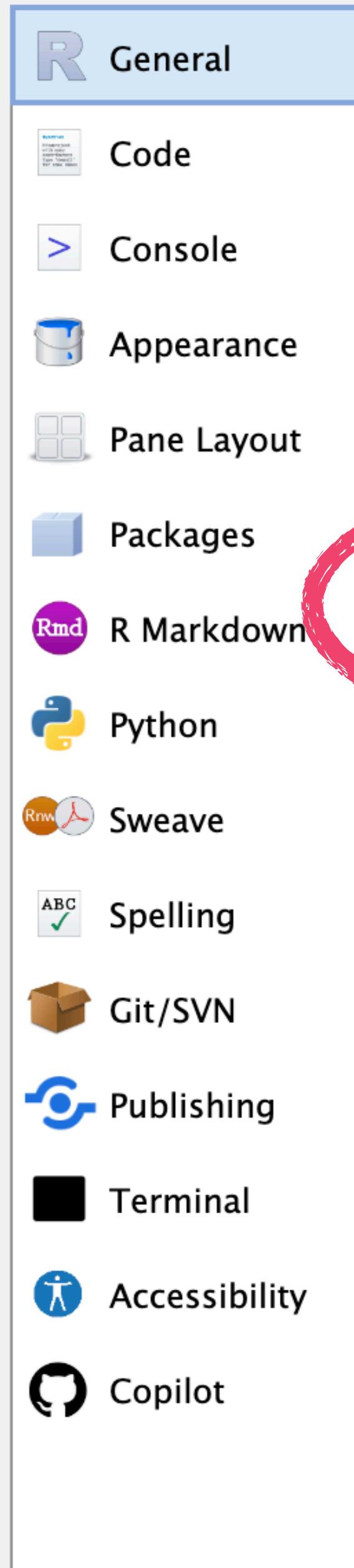
# If the first line of your R script is

```
rm(list = ls())
```

I will come into your office and  
**SET YOUR COMPUTER ON FIRE** 🔥.

Don't trust `rm(list=ls())`

## Options



Basic

Graphics

Advanced

### R Sessions

Default working directory (when not in a project):

~

[Browse...](#)

Restore most recently opened project at startup

Restore previously open source documents at startup

### Workspace

Restore .RData into workspace at startup:

Save workspace to .RData on exit: [Never](#)

### History

Always save history (even when not saving .RData)

Remove duplicate entries in history

### Other

Wrap around when navigating to previous/next tab

Automatically notify me of updates to RStudio

Send automated crash reports to RStudio

[OK](#)

[Cancel](#)

[Apply](#)

**IF YOU LIKED IT, THEN YOU SHOULD HAVE**

**SAVED THE SOURCE FOR IT.**

# If the first line of your R script is

```
setwd("C:\Users\jenny\path\that\only\I\have")
```

I\* will come into your office and  
SET YOUR COMPUTER ON FIRE 🔥.

Creating a package resolves  
most of this!

# Advanced topics

# Debugging



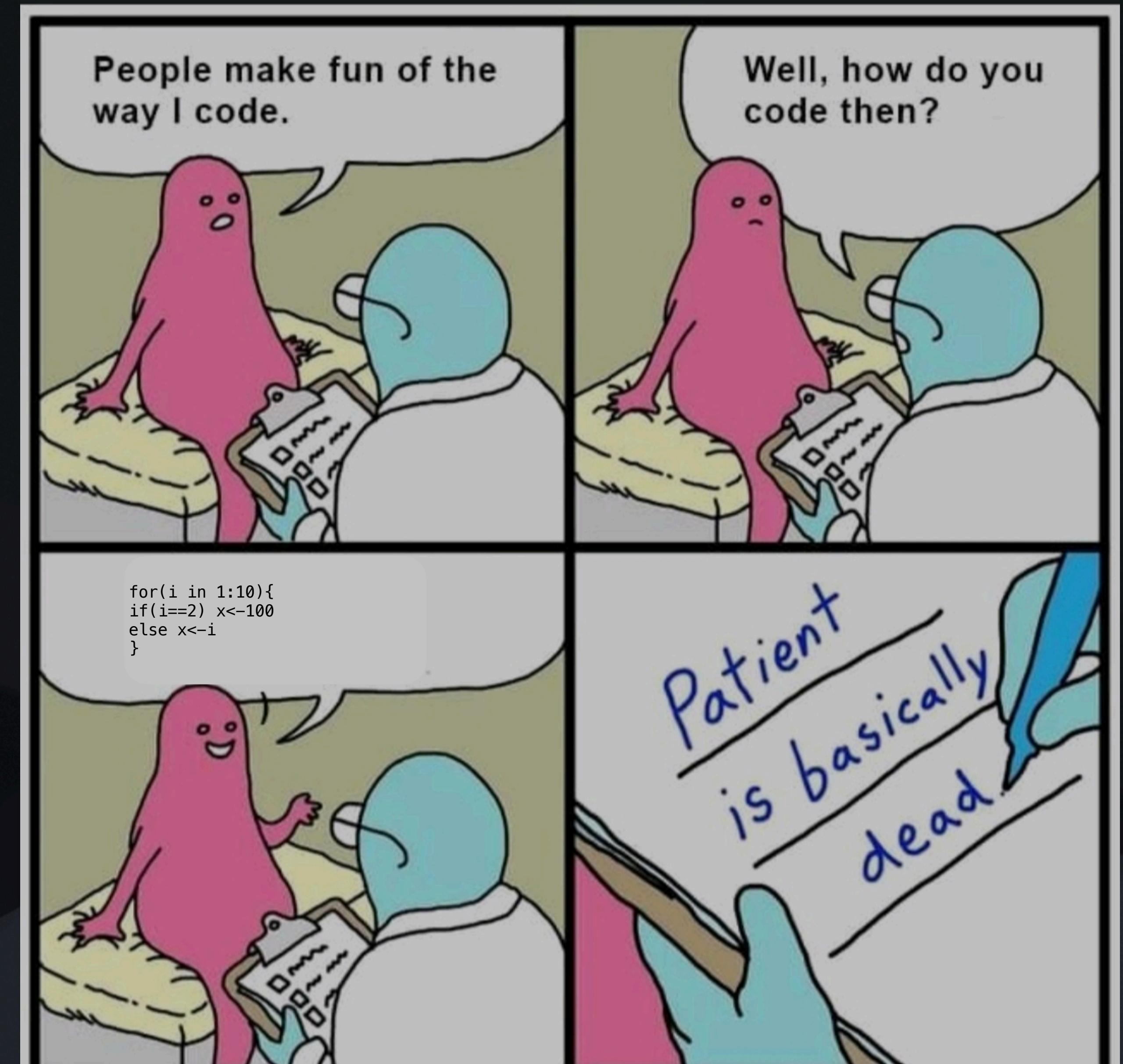
# Debugging

- Use RStudio's built-in features:

<https://support.posit.co/hc/en-us/articles/205612627-Debugging-with-the-RStudio-IDE>

# Code formatting

Because readability is important!



# Do's and don'ts

```
# Don't do this
if(x<100){
  y<-200}
```

```
# Do this instead
if (x < 100) {
  y <- 200
}
```

```
# NEVER use the shorthand versions of TRUE and FALSE
# Why? This is why:
T <- FALSE # this is valid R code
```

<https://github.com/romainfrancois/evil.R/blob/397639f0ba6ddd8b6ff28d455016dacf4d444e73/R/evil.R#L49-L50>

# Resources

- **R Packages** by Hadley Wickham and Jenny Bryan – **The Golden Standard**
- **What They Forgot to Teach you bout R** by Jenny Bryan
- **Tidyverse style guide**
- **“Better packages”** presentation by Maëlle Salmon
- **Advanced R** by Hadley Wickham