Packages & R code

Jan 2019

Charlotte Wickham

@cvwickham

cwickham@gmail.com

cwick.co.nz

Adapted from *Tidy Tools* by Hadley Wickham
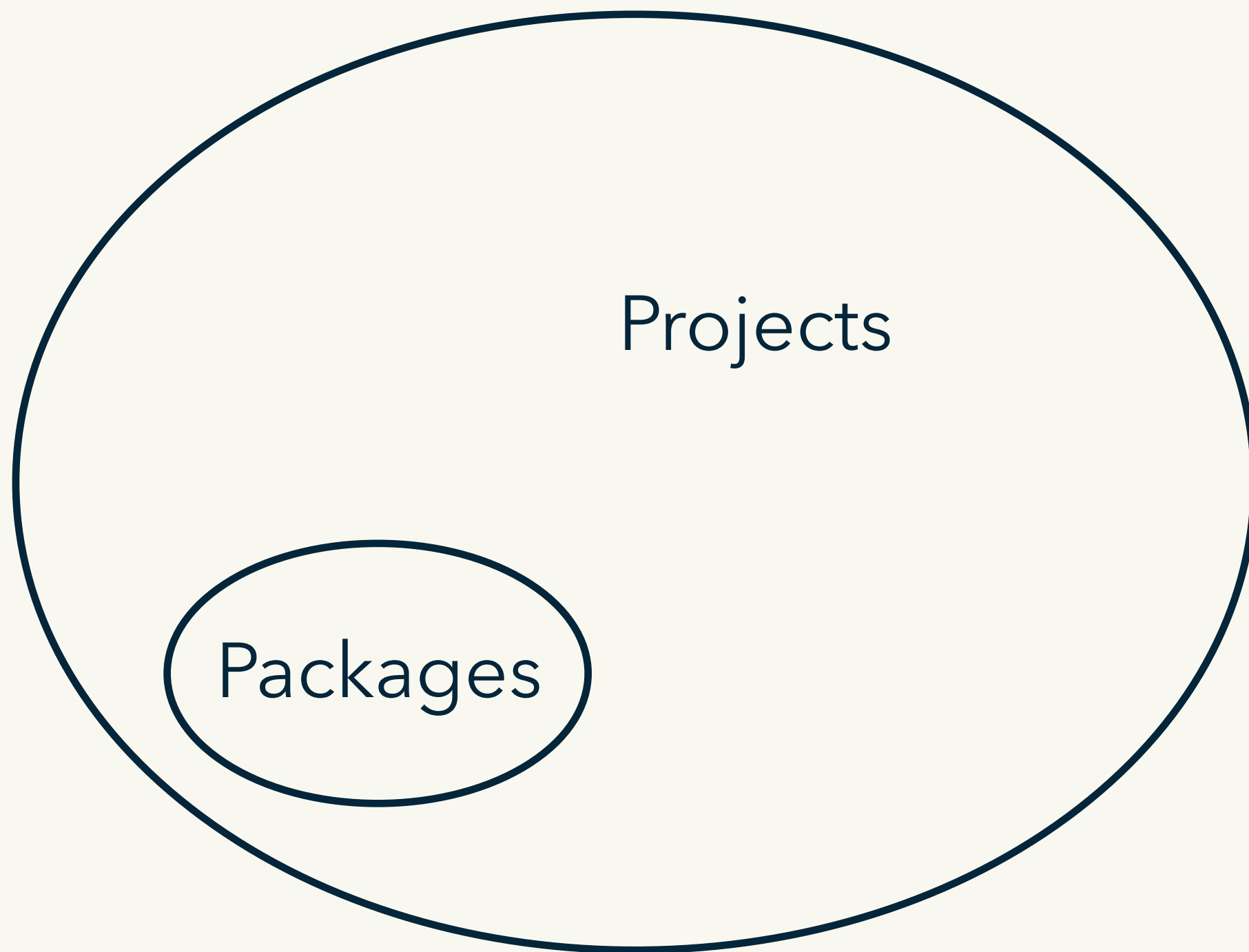
Motivation

A package is a set of conventions that (with the right tools) makes your life easier

"Seriously, it doesn't have to be about sharing your code (although that is an added benefit!). It is about saving yourself time."
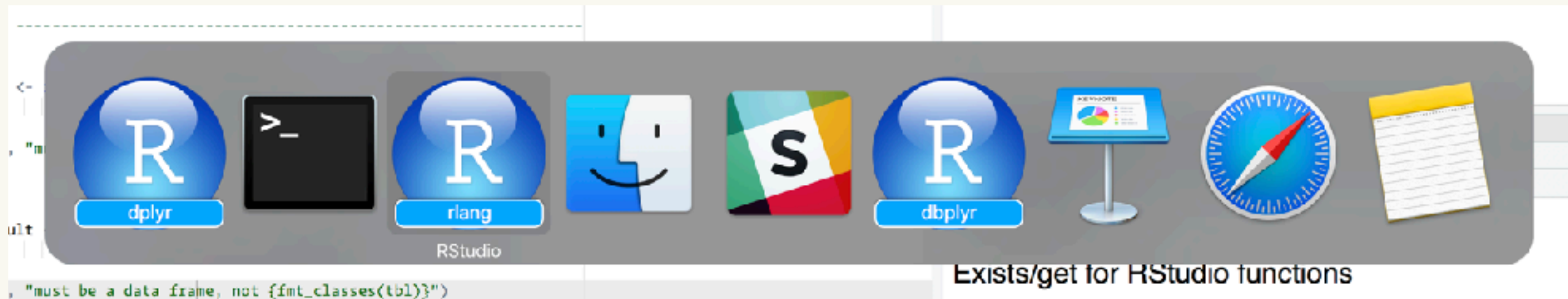
— *Hilary Parker*

RStudio projects

Why use RStudio projects?

3 reasons

Multiple RStudio sessions

Work on multiple projects simultaneously and independently

Manage working directories

If the first line of your R script is

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

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

— *Jenny Bryan*

https://www.tidyverse.org/articles/2017/12/workflow-vs-script/

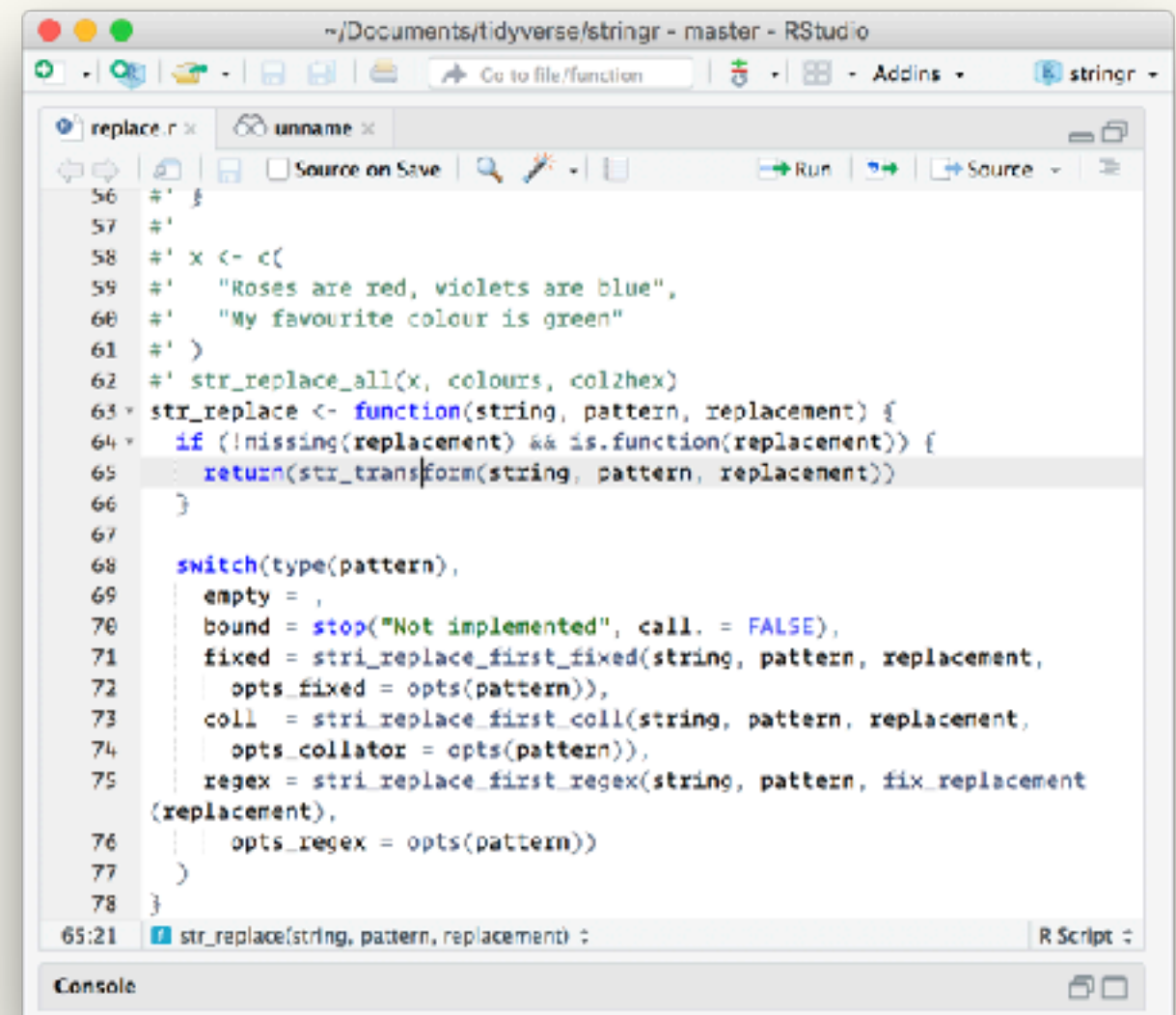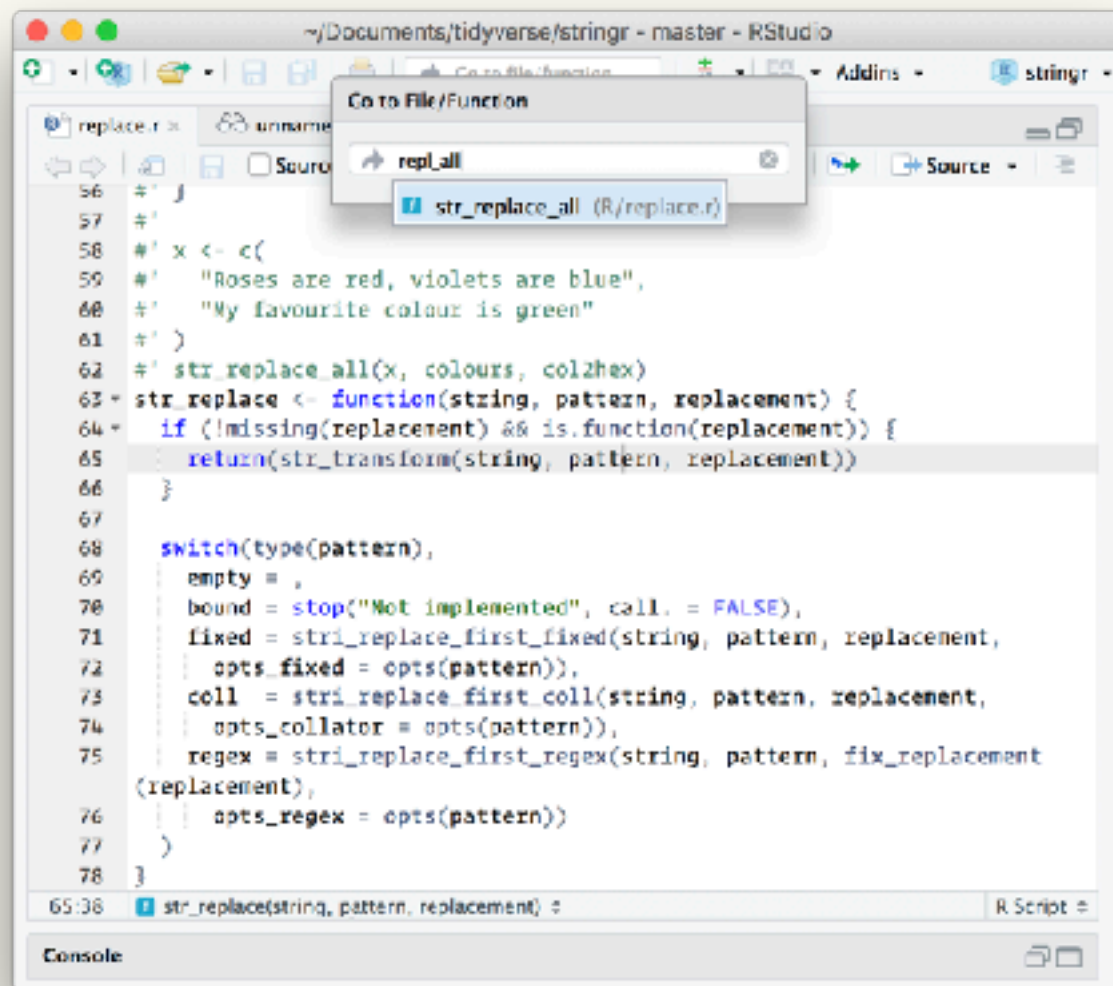# Manage working directories

Double click to open project

`mylittlepony.Rproj`

Enhanced navigation

Ctrl + . = find functions/files

F2 = jump to definition

My first package

package.skeleton()
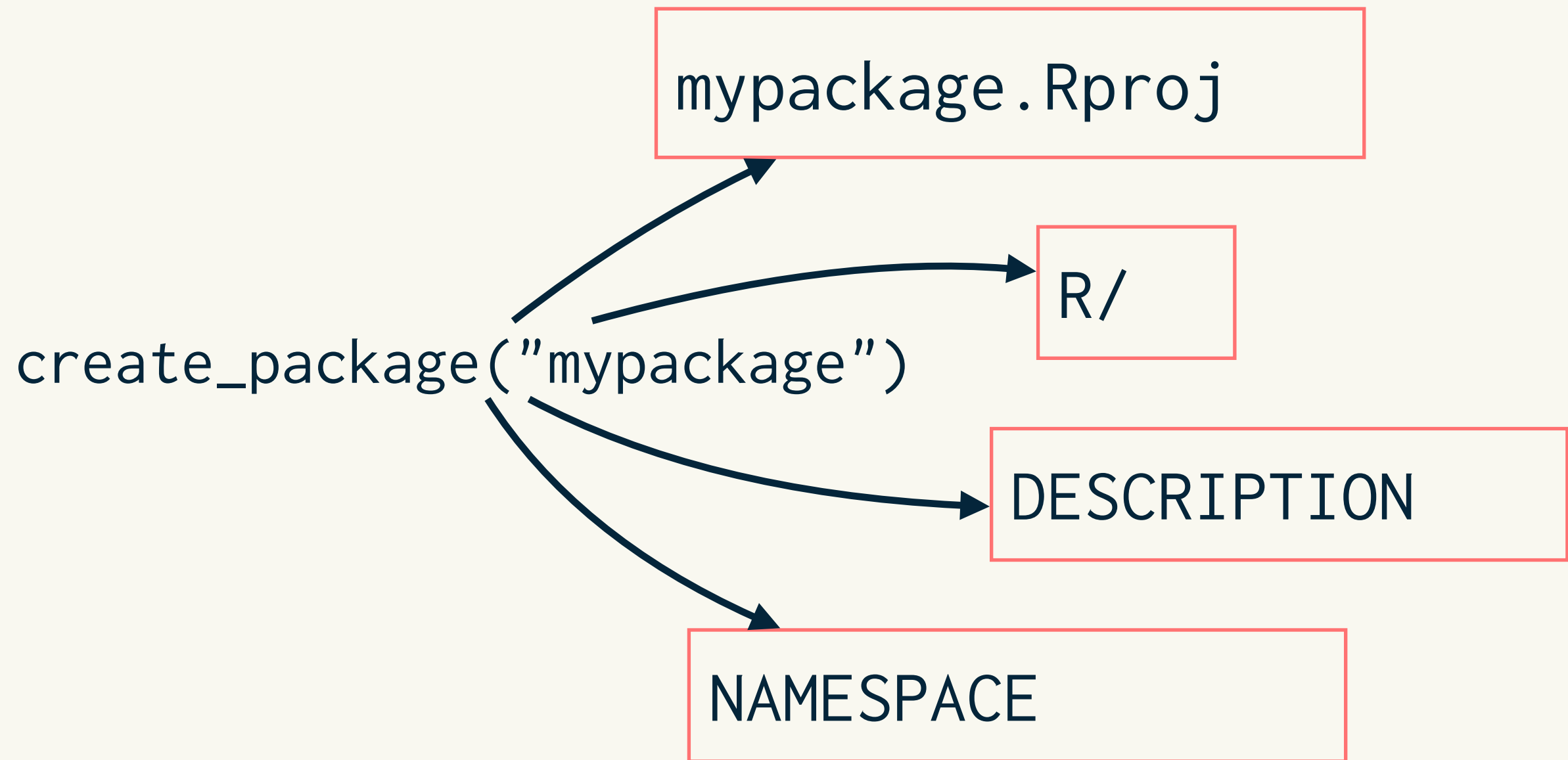
Never use this!

Your turn

```
# Verify that you can create a package with:
usethis::create_package("~/Desktop/mypackage")
```

Omit if you are
on rstudio.cloud

```
# What files and directories are created?


# You can also create new project using RStudio
# but it has some slight differences that will
# cause friction today (but not in general)
```

What happens when we run create_package()?

create_package("mypackage")

mypackage.Rproj

R/

DESCRIPTION

NAMESPACE

Why bother? Improved workflow
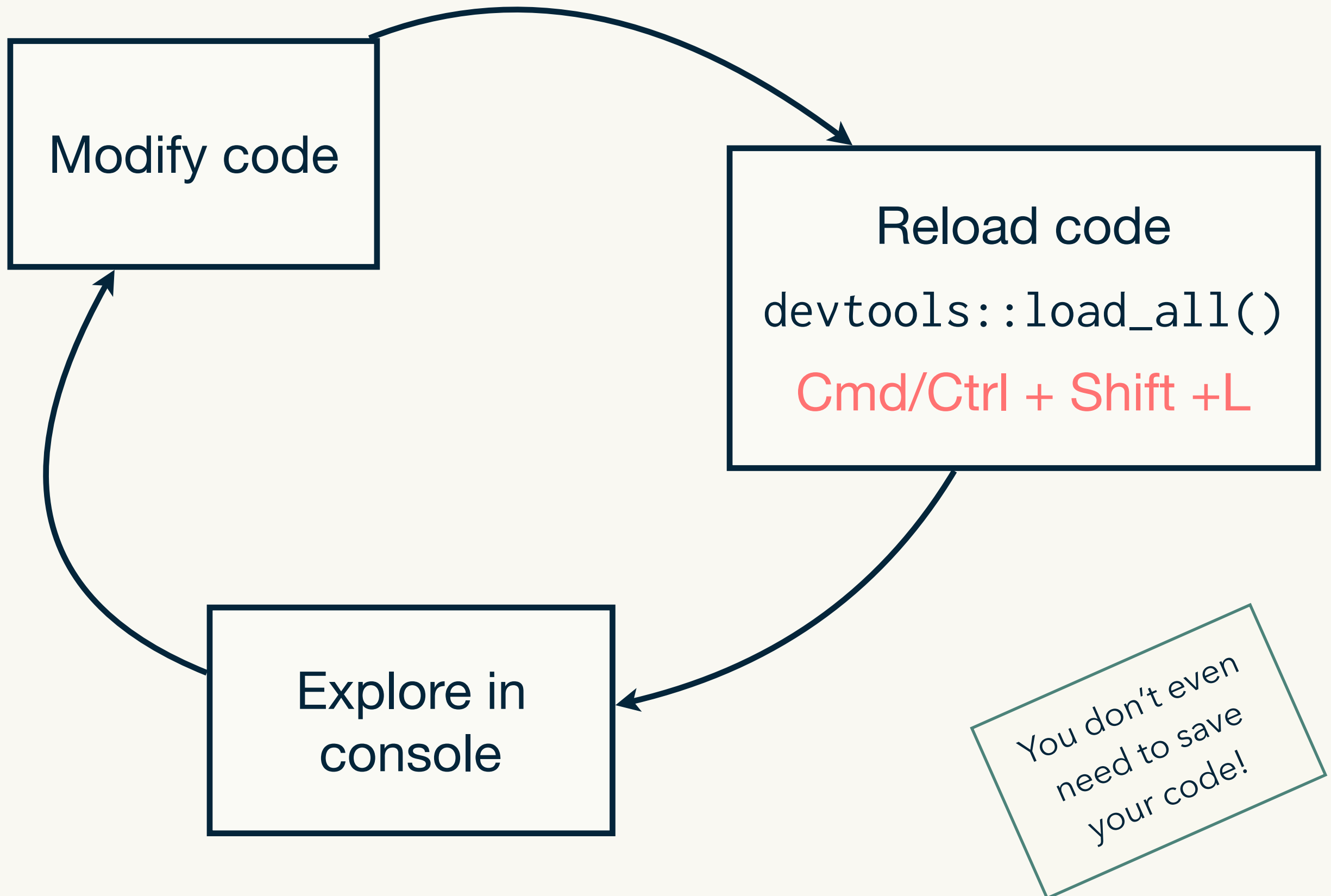
Modify code

Reload code

`devtools::load_all()`

Cmd/Ctrl + Shift +L

Explore in console

You don't even need to save your code!

Jump to rpony() using only the keyboard.

Load all the functions (using a keyboard shortcut), then run rpony(10).

Uhoh! I have forgotten to include Fluttershy in the list of ponies. Add her, reload the code, and verify that your change worked.

What if you need to create a new file?

```r
# There's a usethis helper for that too!
usethis::use_r("file-name")

# Organise files so that related code
# lives together. If you can give a file
# a concise and informative name, it's
# probably about right
```

Your turn

Use usethis::use_r("show") to create a new file

Add a function that prints all ponies in alphabetical order.

Practice using the keyboard shortcuts.

R/RStudio setup

Workflow setup: your .Rprofile

```r
# Setup some code that is run every time
# you start R: usethis::edit_r_profile()

if (interactive()) {
  suppressMessages(require(devtools))
  suppressMessages(require(usethis))
  suppressMessages(require(testthat))
}
```
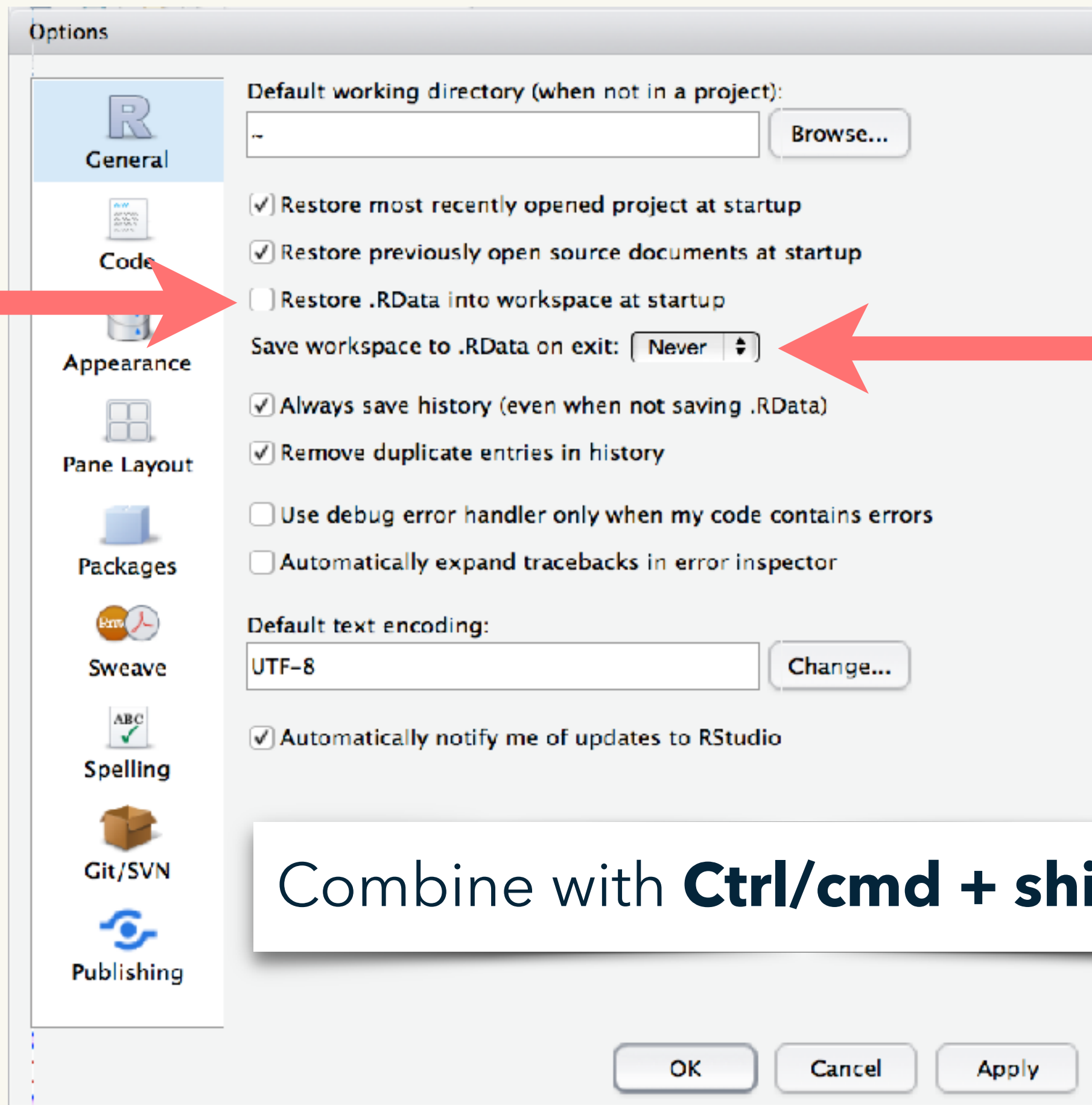
Never include analysis packages here

```r
if (interactive()) {
  suppressMessages(require(ggplot2))
  suppressMessages(require(dplyr))
}
```

While you're in there, also add

```
options(
  warnPartialMatchArgs = TRUE,
  warnPartialMatchDollar = TRUE,
  warnPartialMatchAttr = TRUE
)
```

Options

General

Code

Appearance

Pane Layout

Packages

Sweave

Spelling

Git/SVN

Publishing

Default working directory (when not in a project):

~   Browse...

☑ Restore most recently opened project at startup

☑ Restore previously open source documents at startup

☐ Restore .RData into workspace at startup

Save workspace to .RData on exit: Never ⇕

☑ Always save history (even when not saving .RData)

☑ Remove duplicate entries in history

☐ Use debug error handler only when my code contains errors

☐ Automatically expand tracebacks in error inspector

Default text encoding:

UTF-8   Change...

☑ Automatically notify me of updates to RStudio

Combine with **Ctrl/cmd + shift + F10**

OK   Cancel   Apply

Your turn

Follow the instructions in previous slides and make sure that you're optimally configured.

Read *https://www.tidyverse.org/ articles/2017/12/workflow-vs-script/* for more justification/motivation

Adapted from *Tidy Tools* by Hadley Wickham

This work is licensed as