

I like to move it, move it: Keeping lemurs happy with R

Data Crunch Magic Würzburg

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Outline

- Introduction to R and the Tidyverse
- Documenting code
- Business R
- Discussion
- Next steps

Follow live!

You can follow the presentation with the files available at the git repository



<https://www.moms.com/save-lemurs-madagascar-literacy/>

R & Tidyverse

R & R Studio

- R: free software for (statistics) computing
- R Studio: integrated development environment (IDE) for R
 - syntax highlighting
 - editor with direct code execution
 - access to plots, history, work space

Tidyverse

Packages expand R
basic capabilities



Tidyverse

Packages expand R basic capabilities

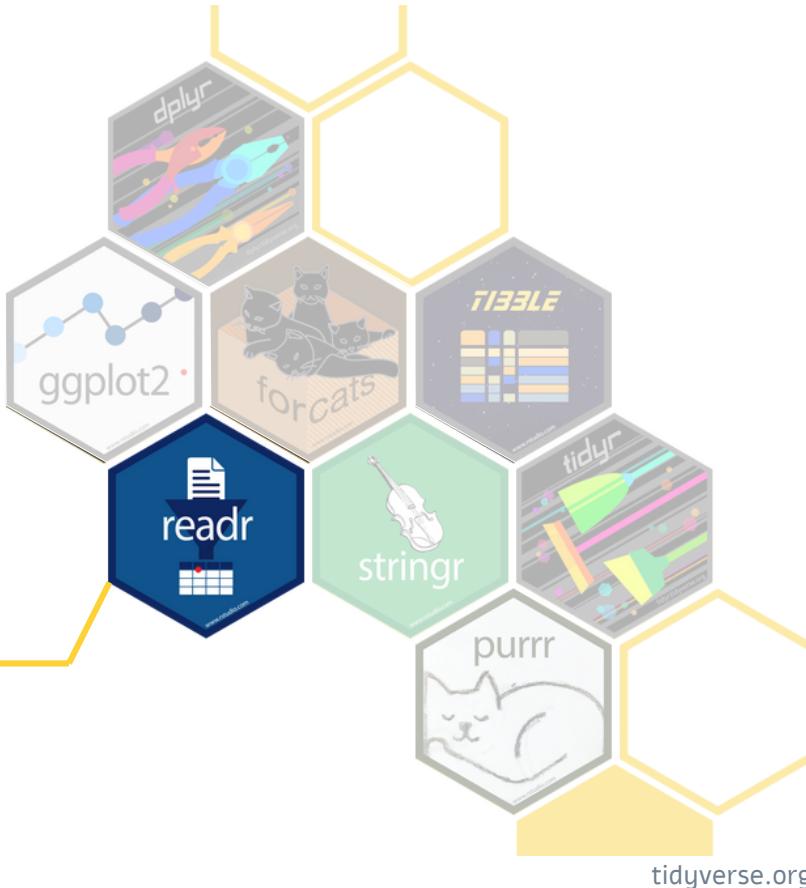


→ Collection of packages for data analysis

Tidyverse



Tidyverse



Tidyverse



Create and manipulate
“tidy” data

Tidyverse

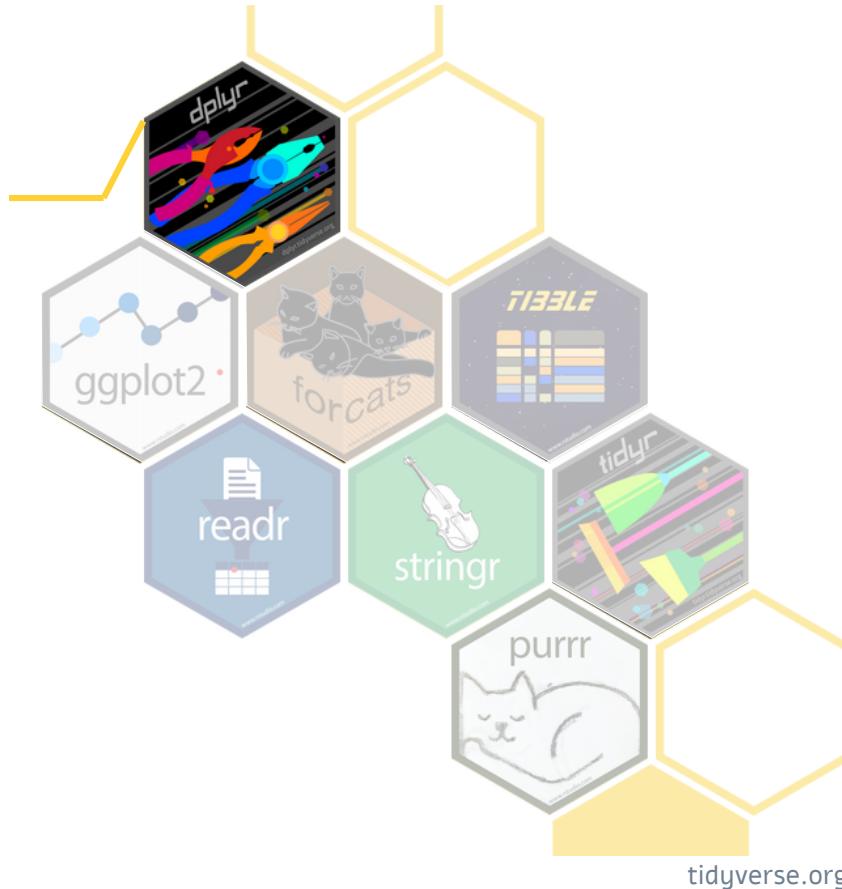
Data manipulation

e.g.

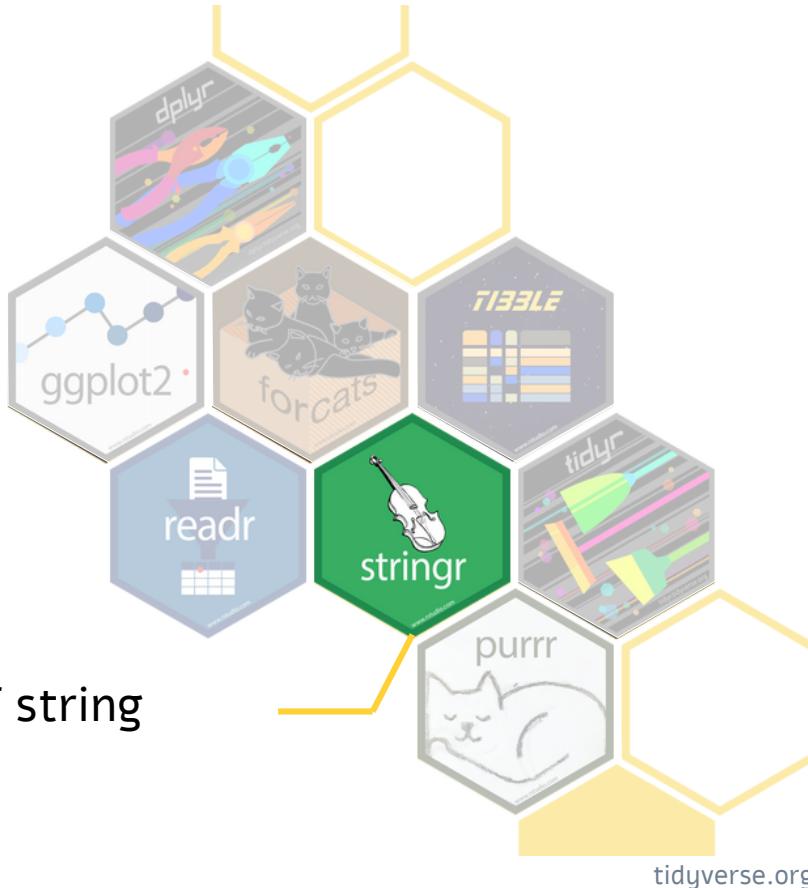
`filter()`

`summarize()`

`mutate()`



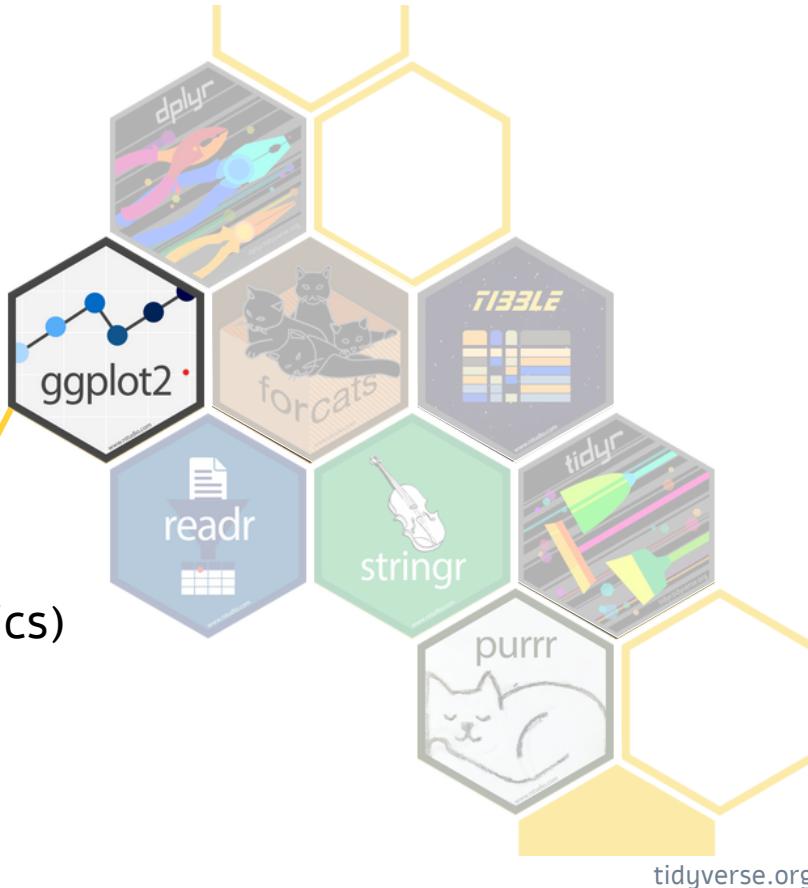
Tidyverse



Manipulation of string
objects

Tidyverse

Scripted data
visualization
(Grammar of Graphics)

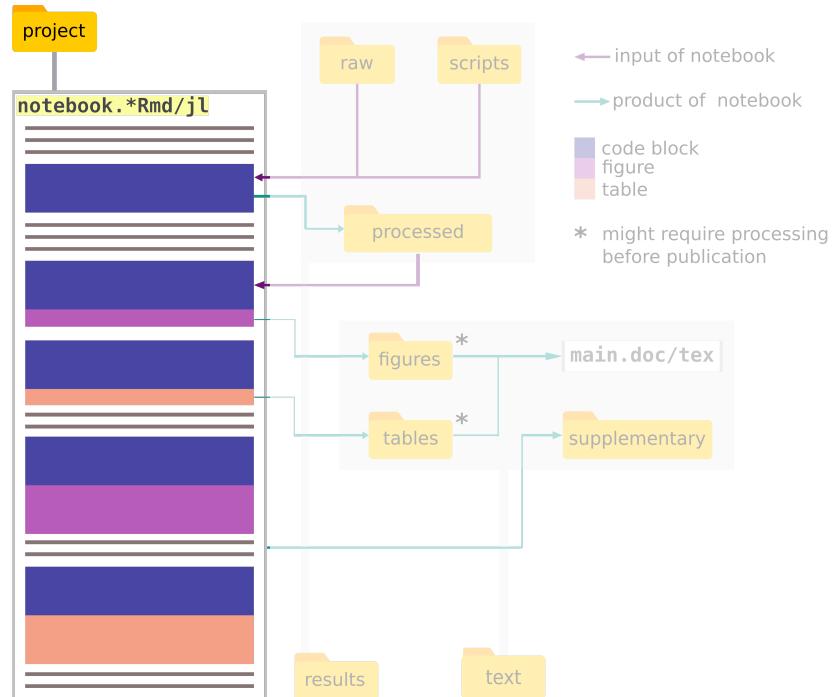


Documenting code

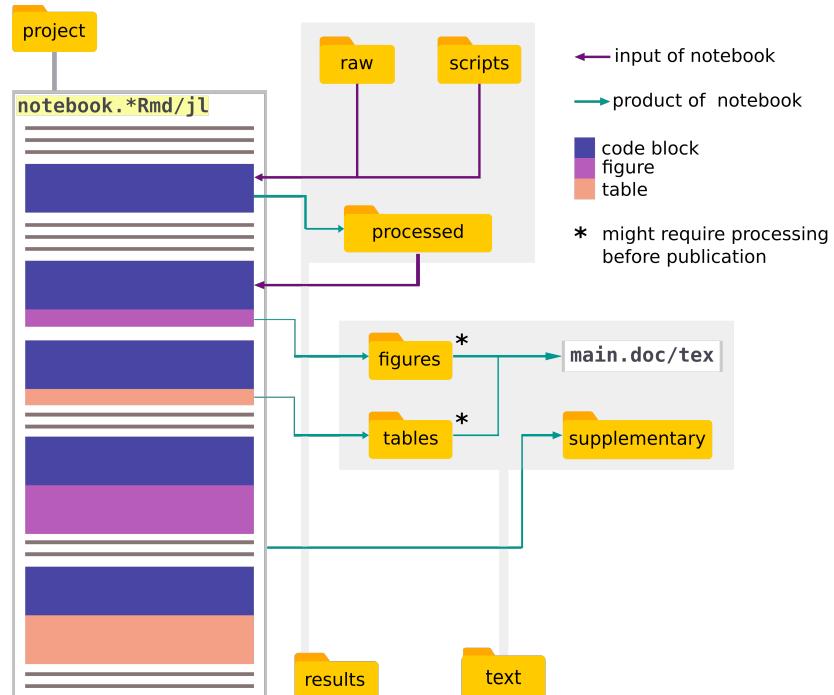
Documenting code

- Time efficiency: re-usable
- Communication
- Scrutiny
- Reproducibility

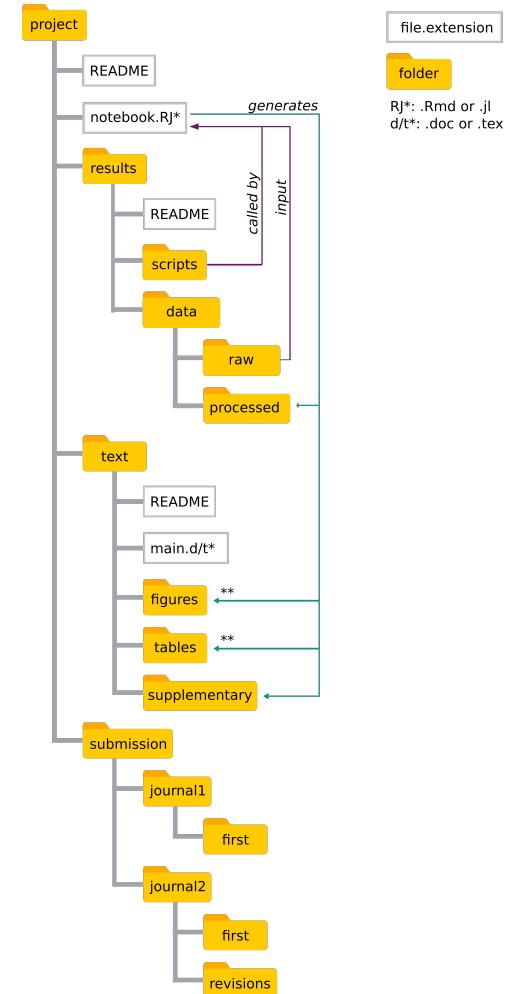
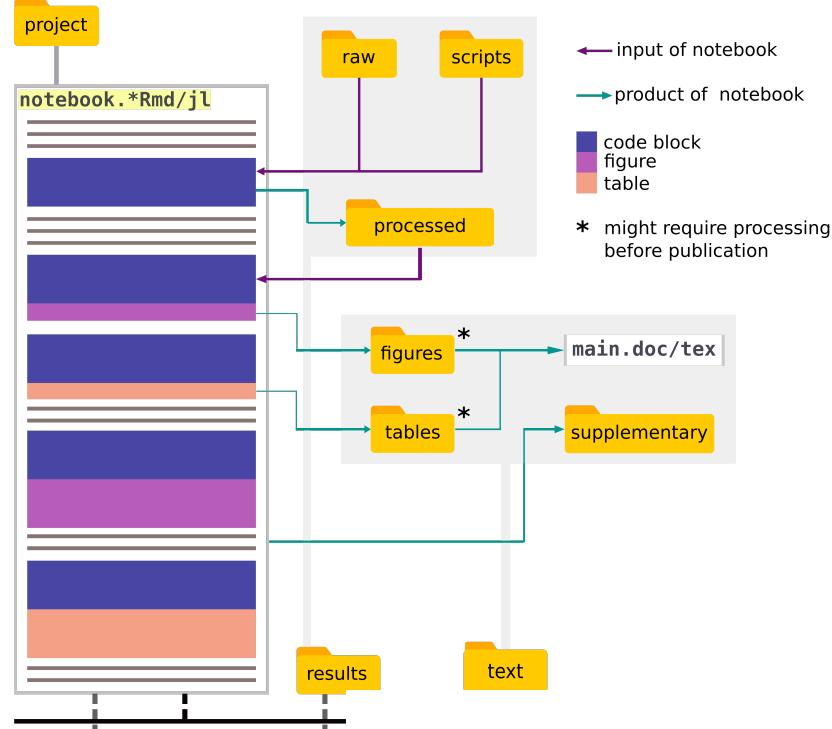
Documenting code



Documenting code



Documenting code



RMarkdown files

Show, don't tell

The lemurs

Who are they



TM & © Dreamworks Animation (2005)



Dorieo, Public domain, via Wikimedia Commons -
https://upload.wikimedia.org/wikipedia/commons/b/be/Ringtailed_lemur_46_-_Bioparc_-_Valencia%2C_Spain.JPG

Who are they

- *Wet-nosed* primates
- Live in trees, active at night
- Eat insects and plants
- 30g – 9kg
- ~100 species



Zehr, S. M. et al. Life history profiles for 27 strepsirrhine primate taxa generated using captive data from the Duke Lemur Center. Sci. Data 1:140019 doi: 10.11013/sdata.2014.19

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Katta család.jpg: Veszprémi ÁllatkertAye-aye at night in the wild in Madagascar.jpg: Frank VassenRed-tailed Sportive Lemur, Kirindy, Madagascar.jpg: Frank VassenDiademed ready to push off.jpg: C. Michael HoganArchaeoindris fontoynonti.jpg: SmokeybjbMicrocebus murinus -Artis Zoo, Amsterdam, Netherlands-8a.jpg: Arjan HaverkampJuvenile Black-and-White Ruffed Lemur, Mantadia, Madagascar.jpg: Frank VassenTwo Brown Lemur, Mantadia, Madagascar.jpg: Frank Vassenderivative work: Maky, CC BY-SA 3.0 <<https://creativecommons.org/licenses/by-sa/3.0/>>, via Wikimedia Commons

Why do we need to keep them happy

- Only native to Madagascar
- World's most endangered animal (IUCN)
- Illegal logging and forest destruction



IUCN Red List of Threatened Species,
species assessors and the authors of
the spatial data., CC BY-SA 3.0, via
Wikimedia Commons

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→ Duke Lemur Center:

Let's see what they have



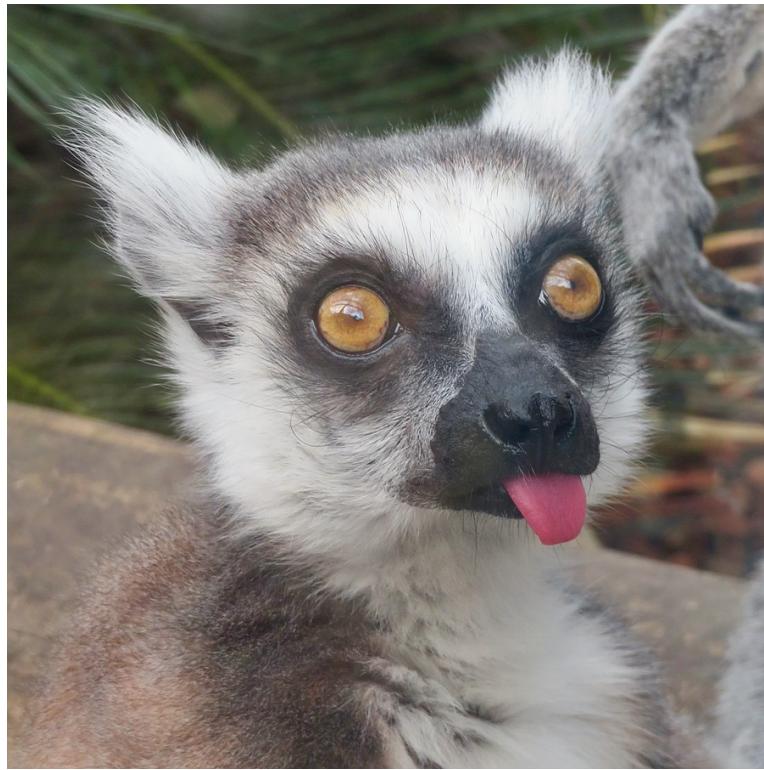
IUCN Red List of Threatened Species,
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R Studio Pro for Business

R Studio Pro for Businesses

Discussion

Any questions?



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https://upload.wikimedia.org/wikipedia/commons/4/47/Lemur_catta_putting_out_tongue.jpg

- Curiosities?
- Inconveniences?
- Alternatives to R?
 - Coming up in the next Data Crunch Events, actually
- Try out some data wrangling for yourself: check the notebook
 - Data Dojo, next week!