



Introduction to R (+)

...because (you) R not alone

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Know your neighbour!

...because (you) R not alone




Founded by Ross Ihaka &
Robert Gentleman

High level language

Interactive &
Programming

A swiss army knife for
statistical tests and
models, **out-of-the box!**



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The Comprehensive R Archive Network

Download and Install R

Precompiled binary distributions of the base system and contributed packages, **Windows and Mac** users most likely want one of these versions of R:

- [Download R for Linux](#)
- [Download R for \(Mac\) OS X](#)
- [Download R for Windows](#)

R is part of many Linux distributions, you should check with your Linux package management system in addition to the link above.

Source Code for all Platforms

Windows and Mac users most likely want to download the precompiled binaries listed in the upper box, not the source code. The sources have to be compiled before you can use them. If you do not know what this means, you probably do not want to do it!

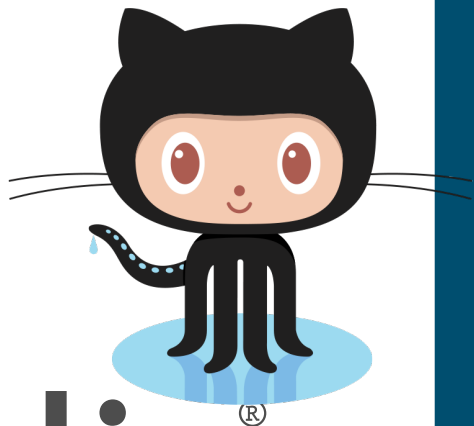
- The latest release (2018-12-20, Eggshell Igloo) [R-3.5.2.tar.gz](#), read [what's new](#) in the latest version.
- Sources of [R alpha and beta releases](#) (daily snapshots, created only in time periods before a planned release).
- Daily snapshots of current patched and development versions are [available here](#). Please read about [new features and bug fixes](#) before filing corresponding feature requests or bug reports.
- Source code of older versions of R is [available here](#).
- Contributed extension [packages](#)

Questions About R

- If you have questions about R like how to download and install the software, or what the license terms are, please read our [answers to frequently asked questions](#) before you send an email.

Download: cran.r-project.org

*“The closer you are to
statistics, research, and data
science, the more you might
prefer R”*

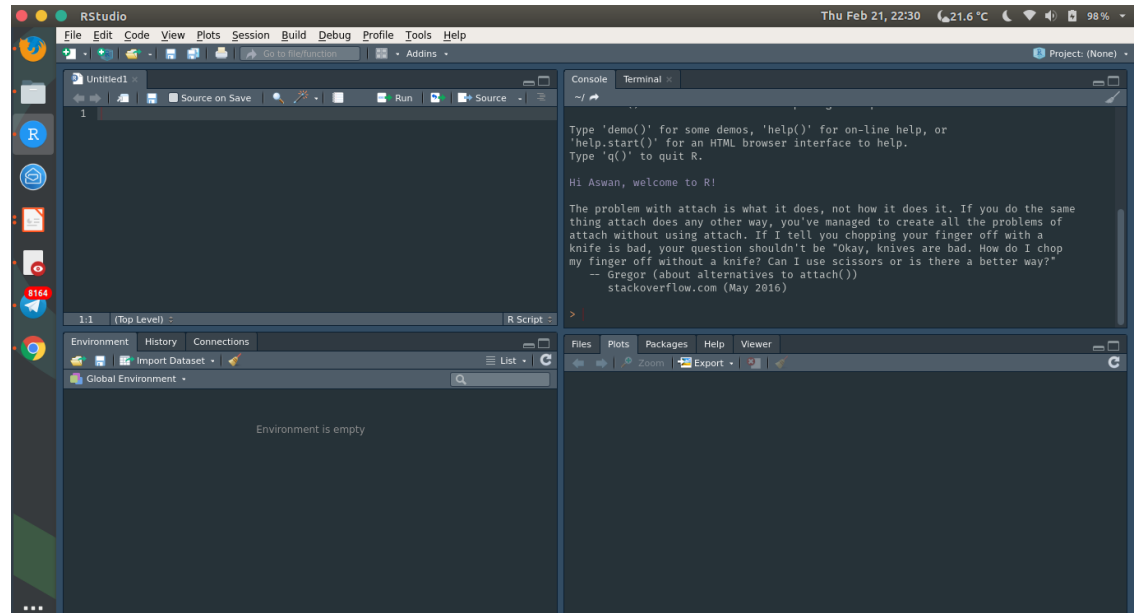


R (+)



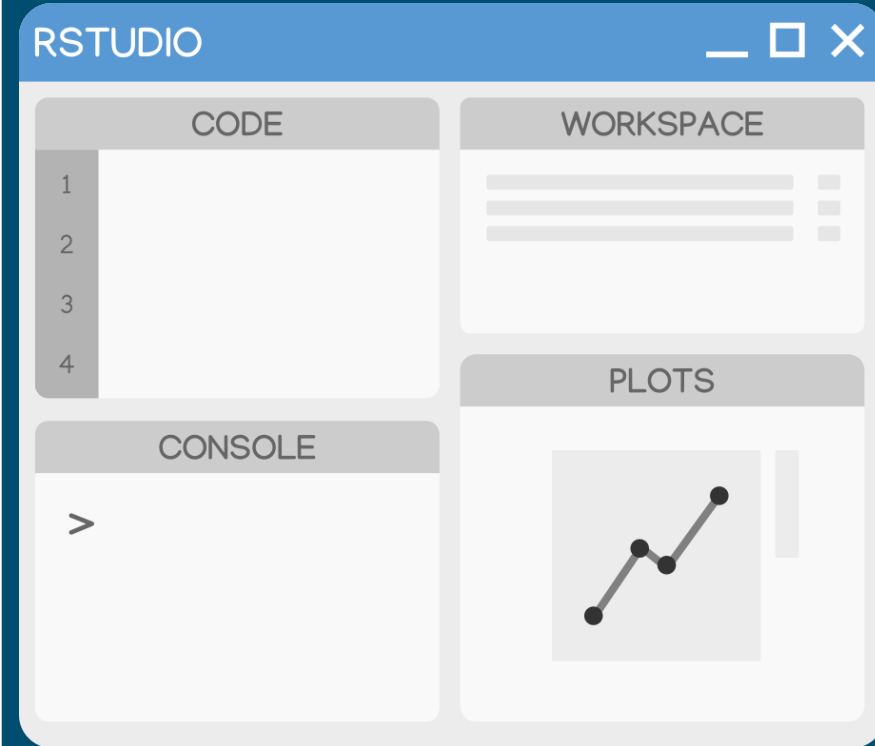
Main features:

- Console
- Syntax-highlighting editor
- Tools for plotting, history, debugging and workspace management



Lets try it out!

play with and set RStudio



- use Projects, not `setwd(...)`
- use script, try to avoid console
- Ctrl+Shift+F10 and Ctrl+Alt+B, not `rm(list=ls())`
- Tab is your friend!
- learn the handy shortcuts
- do not save and load .Rdata
- set up the .Rprofile
- use git!

Reading: happygitwithr.com



git

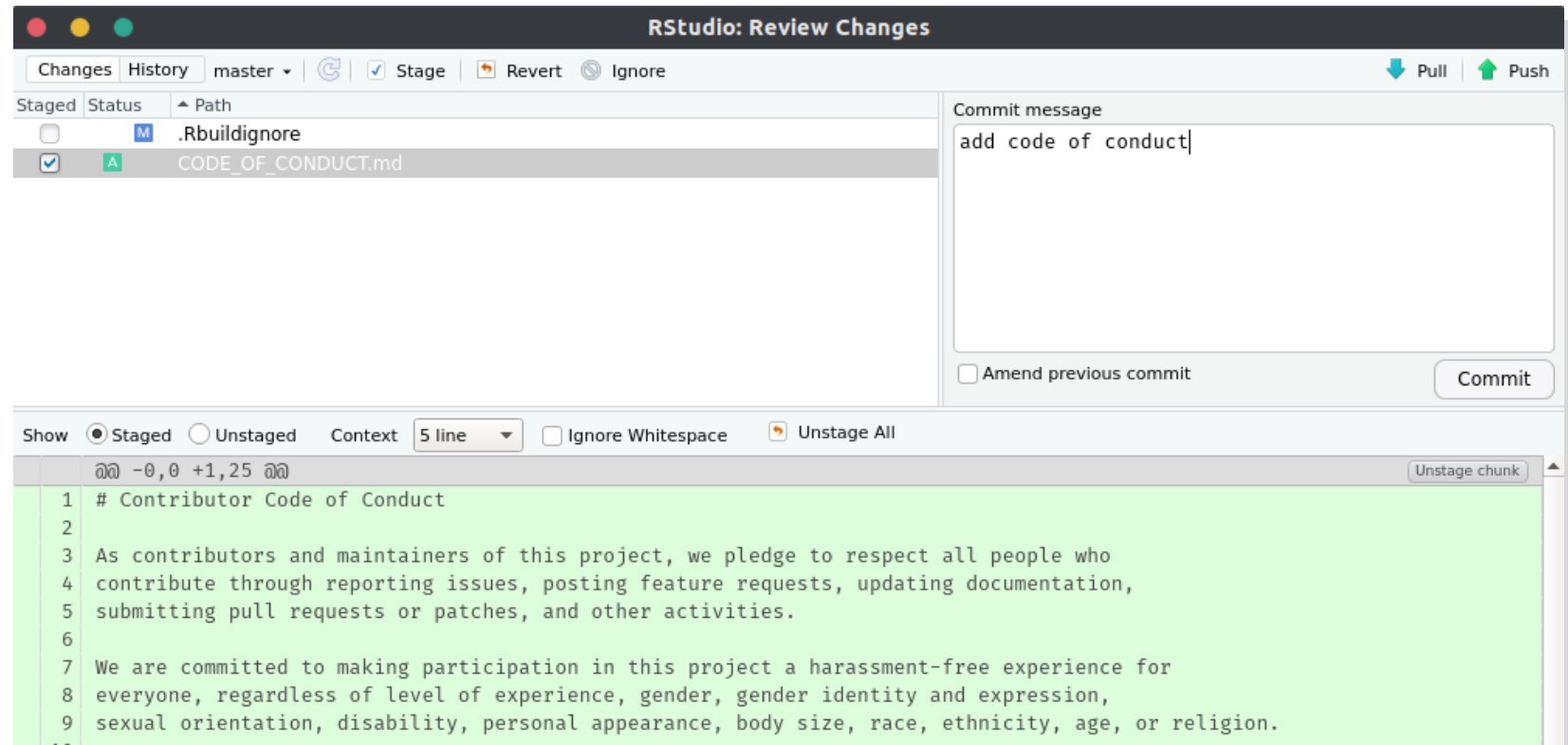
Download: git-scm.com/



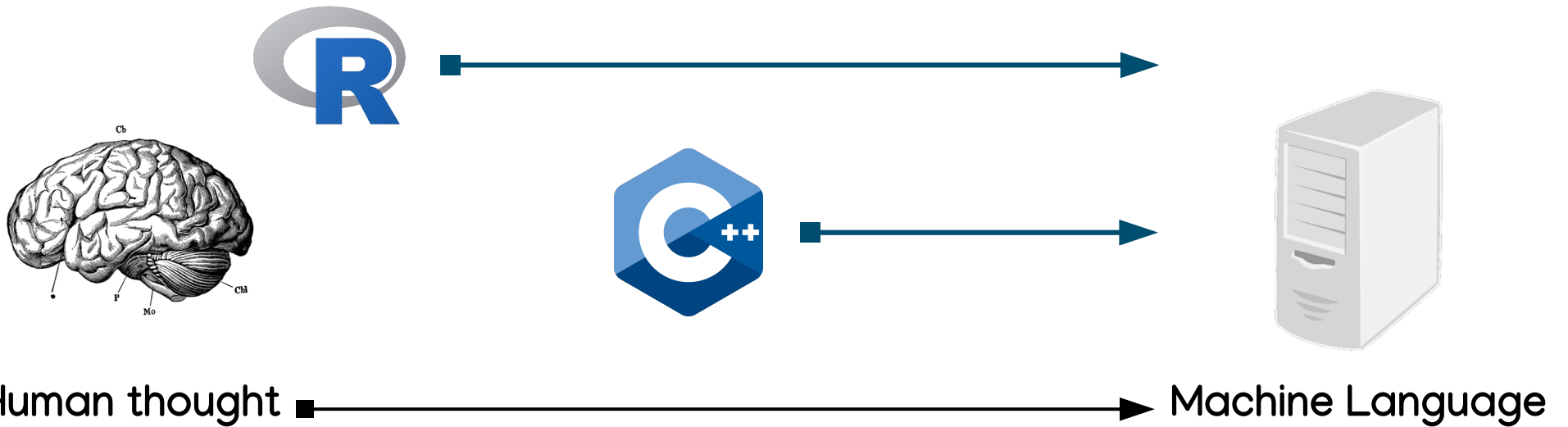
With great codes,
comes great bugs!
– *(not) Uncle Ben*

Keep track of your code with Version Control System

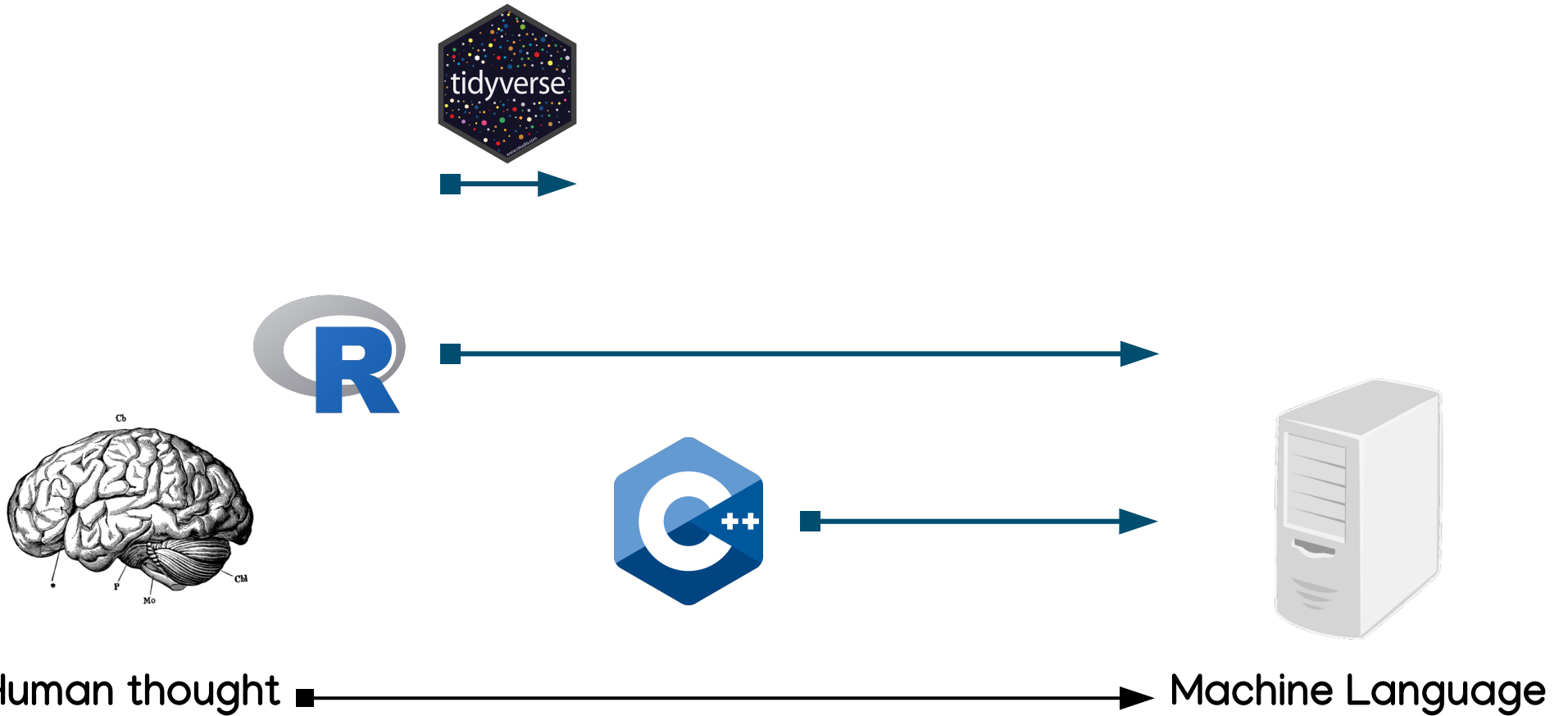
It is available in RStudio!



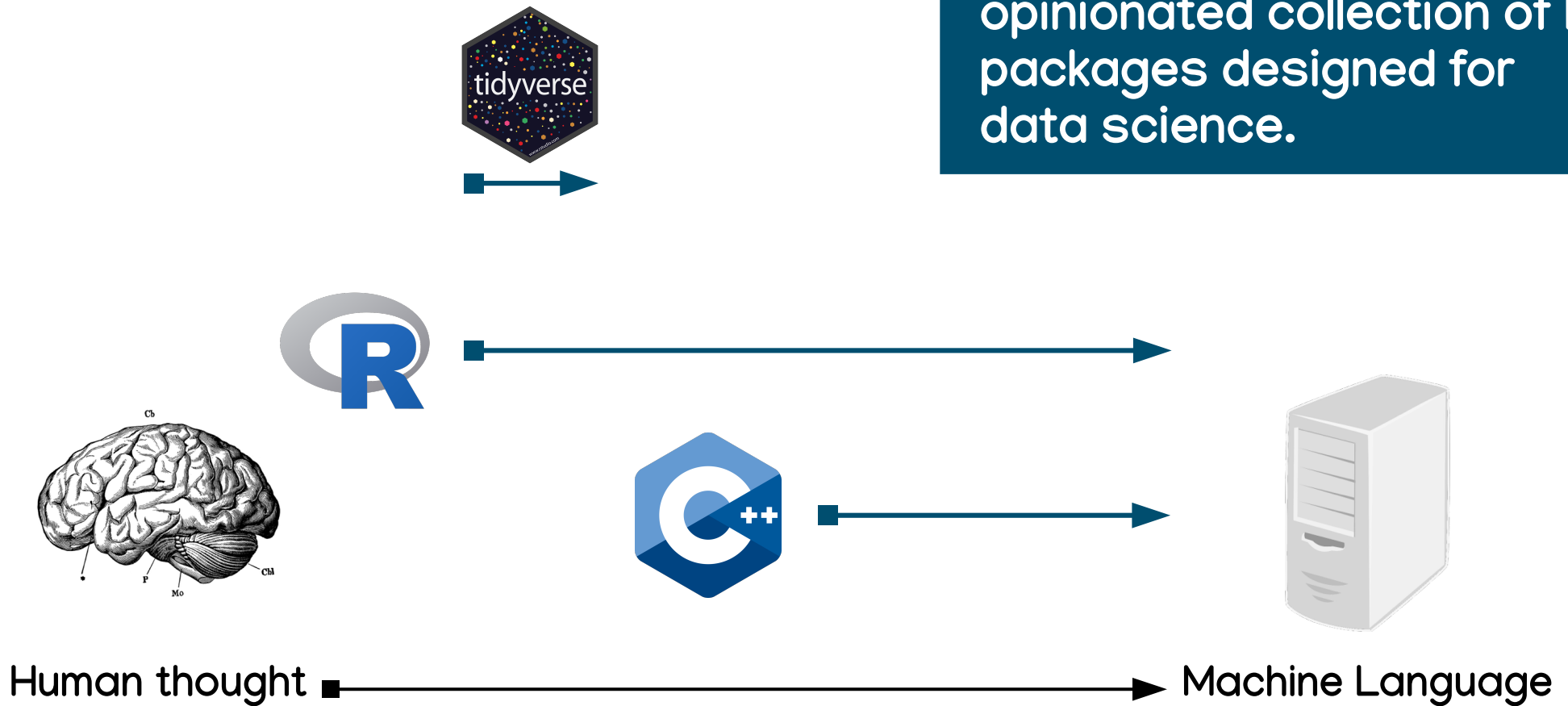
Tidyverse?



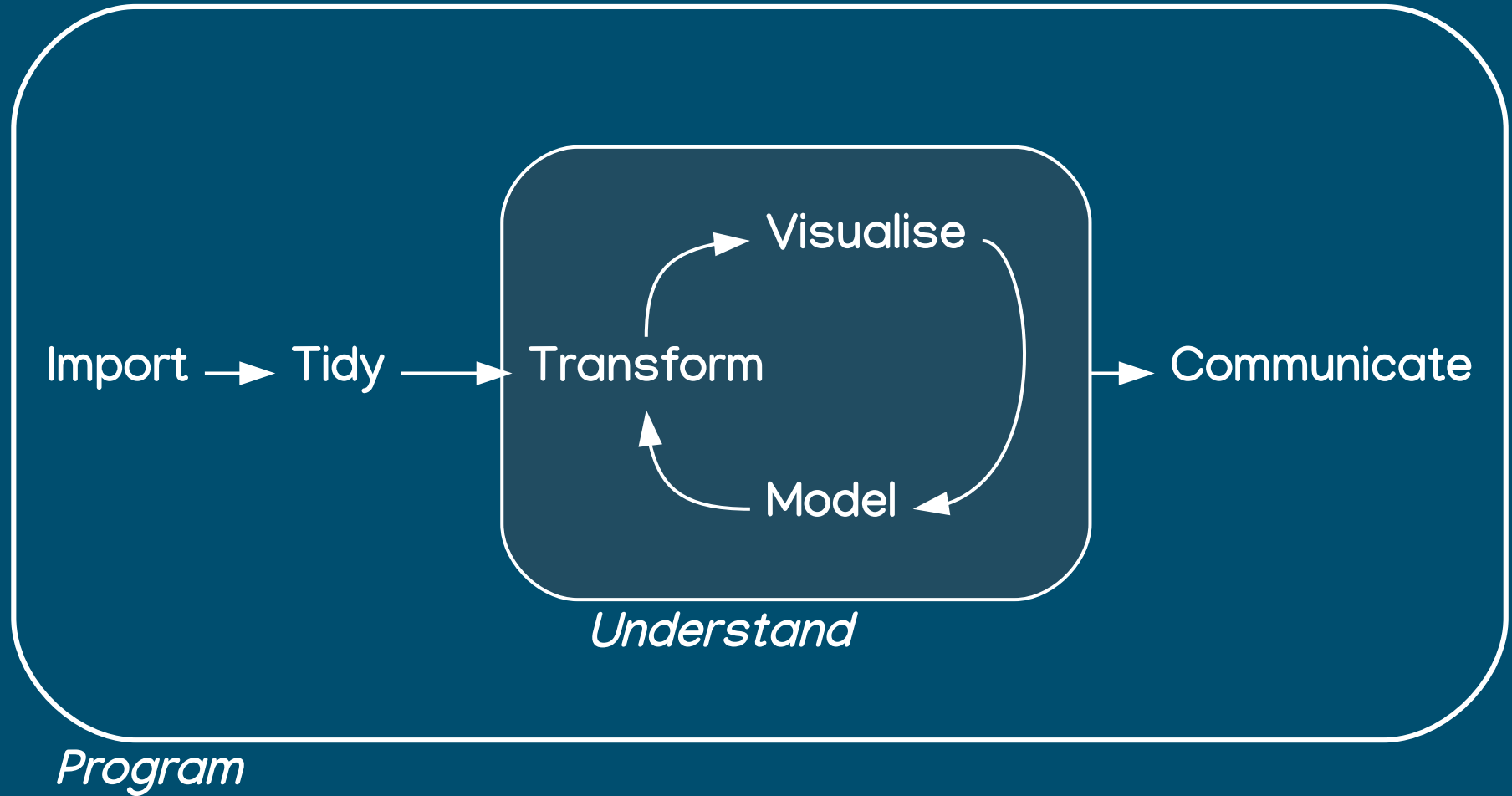
Source: <https://github.com/rstudio-education/arm-workshop-rsc2019>



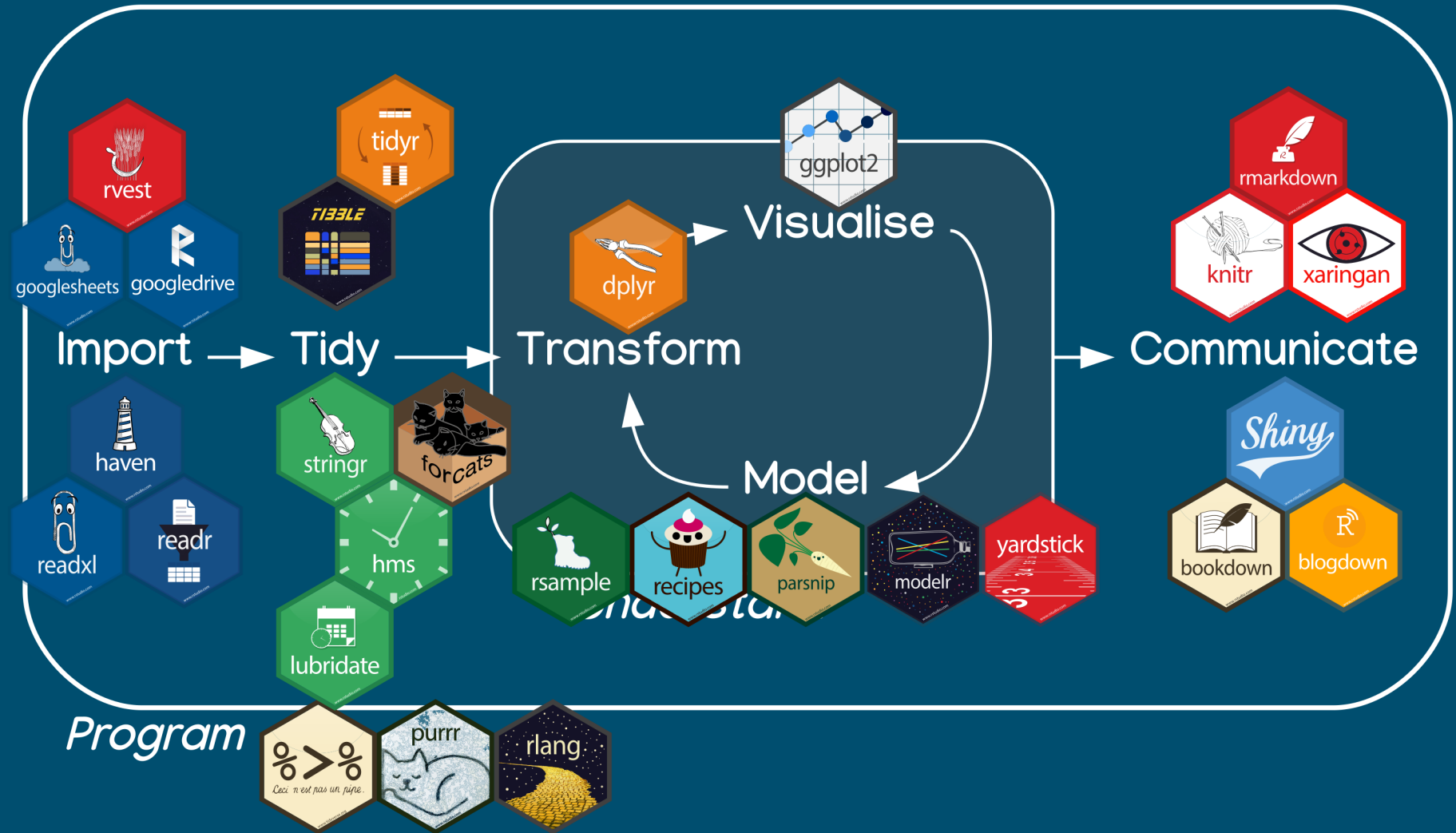
The tidyverse is an opinionated collection of R packages designed for data science.



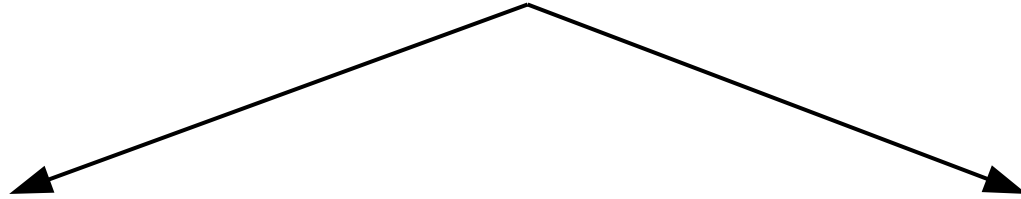
Data science activity



Data science activity using Tidyverse



`any_function(arg1, arg2, arg3, ...)`



`change_the_world(...)`

`calculate_value(...)`

assign. `<-`, `=`, `->`


- arguments are the contexts of a function
- arguments are matched by name, or
- arguments are matched by position, **be careful!**

How to chain?

...because (functions) R not alone



- 
1. diputar
 2. dijilat
 3. dicelupin
 4. dimakan :D

- 
1. `putar(apa)`
 2. `jilat(apa, berapa_kali)`
 3. `celup(apa, ke)`
 4. `makan(apa, output)`

a

```
> oreo_putar <- putar(apa = "oreo")
> oreo_jilat <- jilat(apa = oreo_putar,
                      berapa_kali = 2)
> oreo_celup <- celup(apa = oreo_jilat,
                      ke = "susu")
> makan(apa = oreo_celup,
        output = "kenyang.perut")
```

a

```
> oreo_putar <- putar(apa = "oreo")  
> oreo_jilat <- jilat(apa = oreo_putar,  
                      berapa_kali = 2)  
> oreo_celup <- celup(apa = oreo_jilat,  
                      ke = "susu")  
> makan(apa = oreo_celup,  
        output = "kenyang.perut")
```




```
> makan(  
  celup(  
    jilat(  
      putar(apa = "oreo"),  
      berapa_kali = 2  
    ),  
    ke = "susu"  
  ),  
  output = "kenyang.perut"  
)
```

```
function(arg1, arg2, arg3, ... )
```

```
arg1 %>%  
  function(arg2, arg3, ... )
```

```
function(arg1, arg2, arg3, ... )
```

```
arg2 %>%  
  function(arg1, arg2=., arg3, ... )
```

pipe





```
> putar(apa = "oreo") %>%  
  jilat(berapa_kali = 2) %>%  
  celup(ke = "susu") %>%  
  makan(output = "kenyang.perut")
```

How to plot?

...because (plotting systems) R not alone

base

lattice

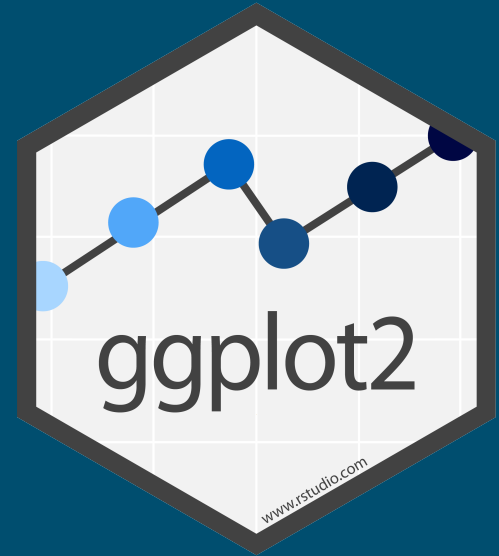
ggplot

```
ggplot(data) +  
  geom_X(mapping=aes(...)) +  
  ...
```

```
ggplot(data, mapping=aes( ... )) +  
  geom_X() +  
  ...
```

```
data %>%  
  ggplot(mapping=aes( ... )) +  
  geom_X() +  
  ...
```

ggplot2



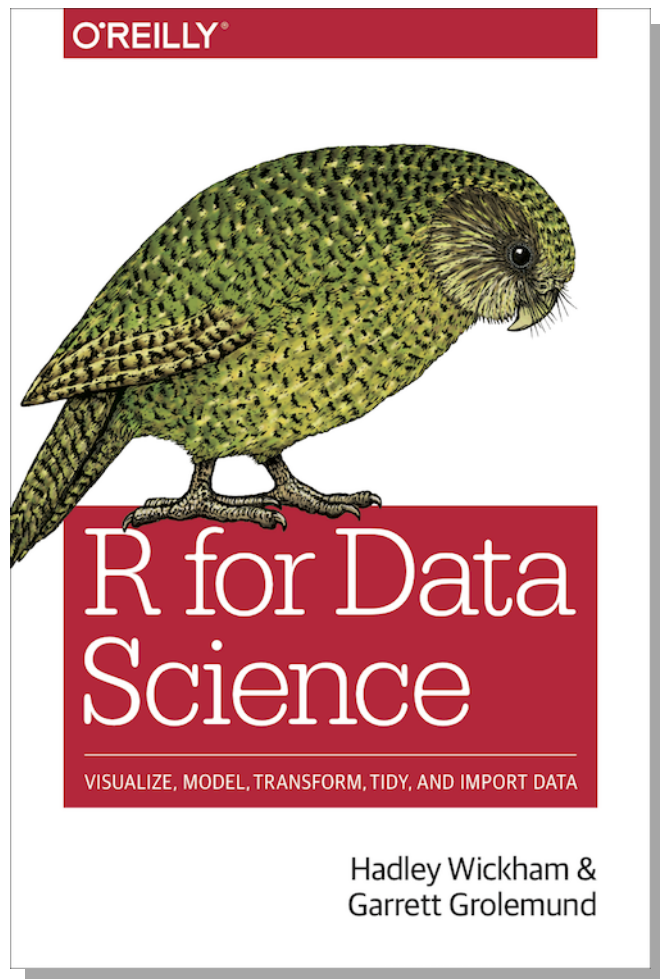
go to github.com/aswansyahputra/my_talk

Let's hand on!

...and have a lot of ~~stress~~ fun!

Next? Have fun!

Need help?



R for Data Science
(r4ds.had.co.nz)

Introduction to Statistical Learning
(www-bcf.usc.edu/~gareth/ISL/)

Online books
(bookdown.org)

```
install.packages("swirl")
```

R Indonesia

Telegram:

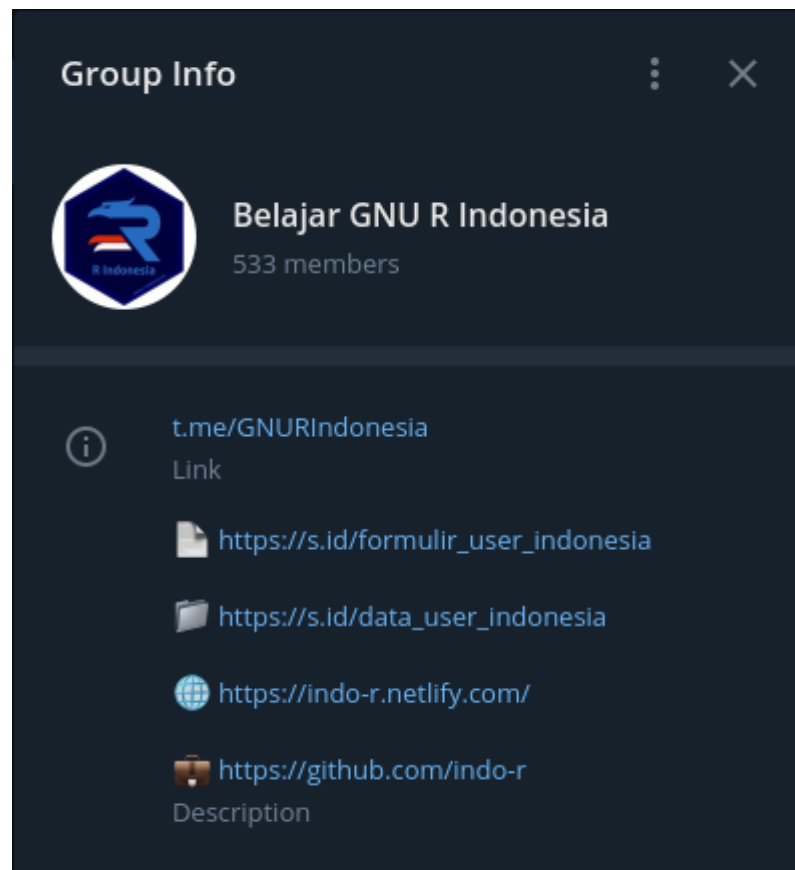
@GNURIndonesia (t.me/GNURIndonesia)

Web:

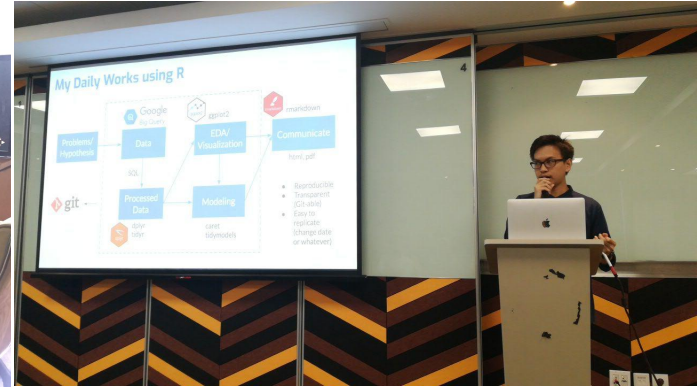
www.r-indonesia.id

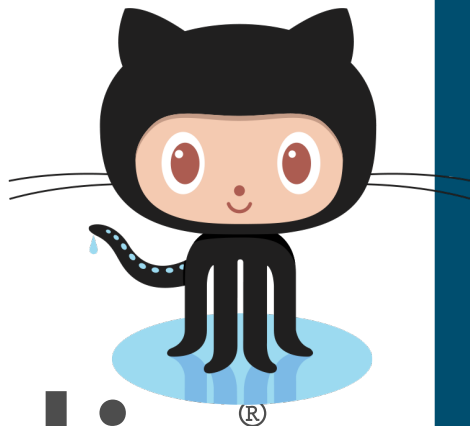
GitHub:

www.github.com/indo-r



R Indonesia





Thanks!

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