



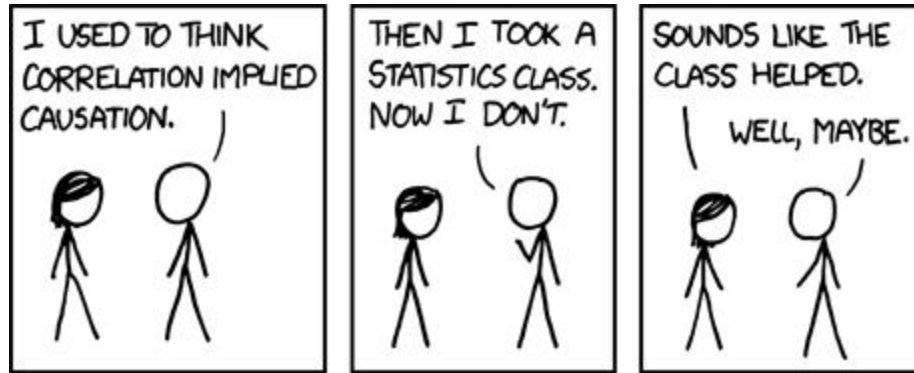
14 JUNE 2018

Herman Teirlinck,
01.05 - Isala Van Diest

What have I done?!?

```
library(RXKCD)
library(dplyr)

searchXKCD("statistics") %>%
  filter(stringr::str_detect(stringr::str_to_lower(title),
    "correlation")) %>%
  pull(num) %>%
  getXKCD()
```

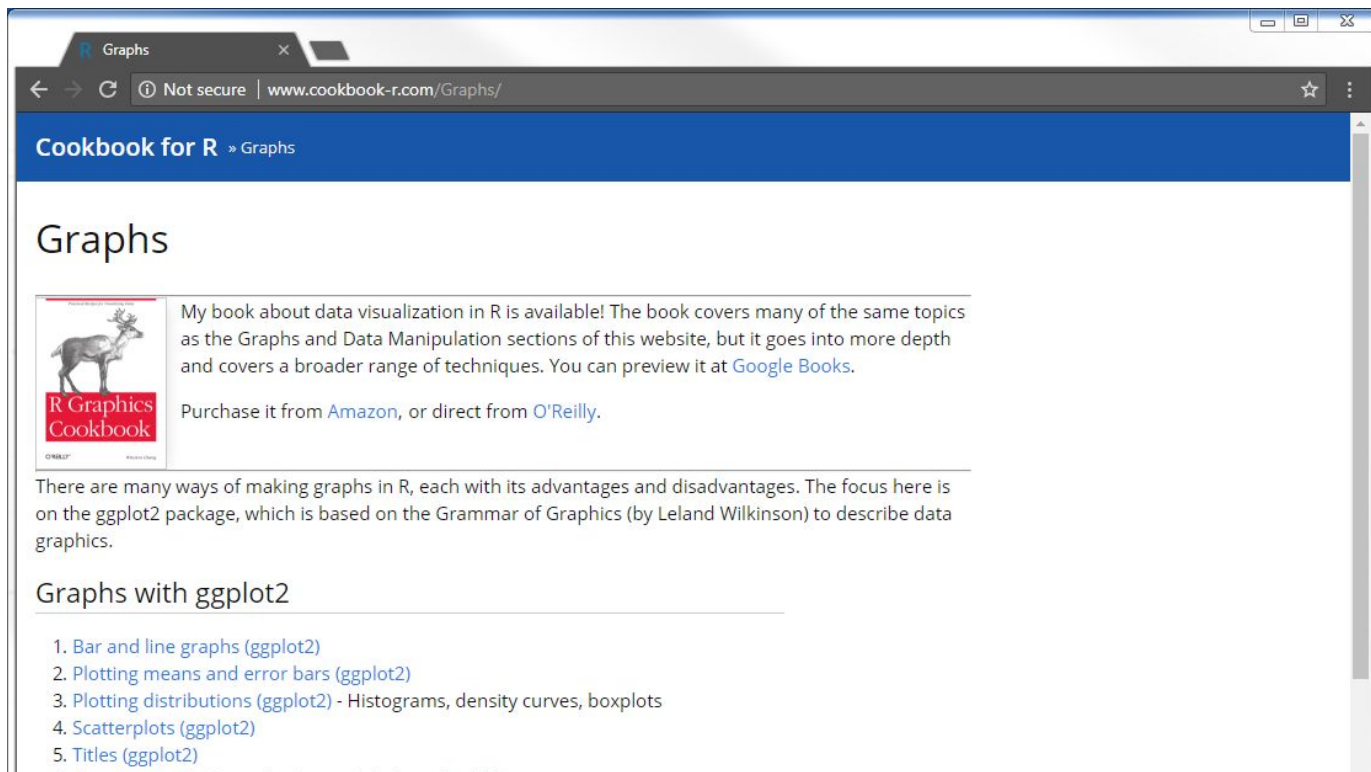


Note:

<https://cran.r-project.org/web/packages/RXKCD/index.html>

Recap last coding club

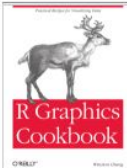
<http://www.cookbook-r.com/Graphs/>



Graphs

Cookbook for R » Graphs

Graphs

 My book about data visualization in R is available! The book covers many of the same topics as the Graphs and Data Manipulation sections of this website, but it goes into more depth and covers a broader range of techniques. You can preview it at [Google Books](#).

Purchase it from [Amazon](#), or direct from [O'Reilly](#).

There are many ways of making graphs in R, each with its advantages and disadvantages. The focus here is on the ggplot2 package, which is based on the Grammar of Graphics (by Leland Wilkinson) to describe data graphics.

Graphs with ggplot2

1. Bar and line graphs (ggplot2)
2. Plotting means and error bars (ggplot2)
3. Plotting distributions (ggplot2) - Histograms, density curves, boxplots
4. Scatterplots (ggplot2)
5. Titles (ggplot2)

<http://www.sthda.com/english/rpkgs/ggpubr/>

The screenshot shows a web browser window displaying the RStudio website page for the 'ggpubr' package. The browser's address bar shows the URL 'www.sthda.com/english/rpkgs/ggpubr/'. The page title is 'ggpubr' with sub-navigation for 'Reference' and 'News'. The main heading is 'ggpubr: 'ggplot2' Based Publication Ready Plots'. Below the heading, there is a paragraph describing the package as an excellent and flexible tool for data visualization in R, created by Hadley Wickham. It mentions that the default plots require some formatting and that the package provides functions for creating and customizing publication-ready plots. A link is provided to find out more. The 'Installation and loading' section includes instructions to install from CRAN and GitHub, with corresponding R code snippets. The 'Distribution' section shows R code for loading the library and creating data. On the right side, there are sections for 'Links' (CRAN download, bug report), 'License' (GPL-2), 'Developers' (Alboukadel Kassambara), and 'Dev status' (build passing, CRAN 0.1.6, 32K/month downloads, 355K downloads).

ggpubr Reference News

ggpubr: 'ggplot2' Based Publication Ready Plots

ggplot2 by Hadley Wickham is an excellent and flexible package for elegant data visualization in R. However the default generated plots requires some formatting before we can send them for publication. Furthermore, to customize a ggplot, the syntax is opaque and this raises the level of difficulty for researchers with no advanced R programming skills.

The 'ggpubr' package provides some easy-to-use functions for creating and customizing 'ggplot2'- based publication ready plots.

Find out more at <http://www.sthda.com/english/rpkgs/ggpubr>.

Installation and loading

- Install from CRAN as follow:

```
install.packages("ggpubr")
```

- Or, install the latest version from GitHub as follow:

```
# Install
if(!require(devtools)) install.packages("devtools")
devtools::install_github("kassambara/ggpubr")
```

Distribution

```
library(ggpubr)
# Create some data format
# .....
set.seed(1234)
```

Links

Download from CRAN at <https://cran.r-project.org/package=ggpubr>

Report a bug at <https://github.com/kassambara/ggpubr/issues>

License

GPL-2

Developers

Alboukadel Kassambara
Author, maintainer

Dev status

build passing

CRAN 0.1.6

downloads 32K/month

downloads 355K



REPORTS

R Markdown Cheat Sheet

learn more at rmarkdown.rstudio.com

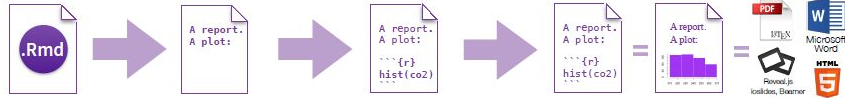
rmarkdown 0.2.50 Updated: 8/14



1. Workflow

R Markdown is a format for writing reproducible, dynamic reports with R. Use it to embed R code and results into slideshows, pdfs, html documents, Word files and more. To make a report:

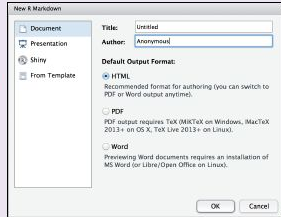
- Open** - Open a file that uses the .Rmd extension.
- Write** - Write content with the easy to use R Markdown syntax
- Embed** - Embed R code that creates output to include in the report
- Render** - Replace R code with its output and transform the report into a slideshow, pdf, html or ms Word file.



2. Open File

Start by saving a text file with the extension .Rmd, or open an RStudio Rmd template

- In the menu bar, click **File ▶ New File ▶ R Markdown...**
- A window will open. Select the class of output you would like to make with your Rmd file
- Select the specific type of output to make with the radio buttons (you can change this later)
- Click OK



4. Choose Output

Write a YAML header that explains what type of document to build from your R Markdown file.

YAML

A YAML header is a set of key: value pairs at the start of your file. Begin and end the header with a line of three dashes (---)

```
---
title: "Untitled"
author: "Anonymous"
output: html_document
---
```

This is the start of my report. The above is metadata saved in a YAML header.

The RStudio template writes the YAML header for you

The output value determines which type of file R will build from your .Rmd file (in Step 6)

- output: **html_document** html file (web page)
- output: **pdf_document** pdf document
- output: **word_document** Microsoft Word .docx
- output: **beamer_presentation** beamer slideshow (pdf)
- output: **ioslides_presentation** ioslides slideshow (html)



3. Markdown

Next, write your report in plain text. Use markdown syntax to describe how to format text in the final report.

syntax

Plain text
End a line with two spaces to start a new paragraph.
italics and *_italics_*
bold and **__bold__**
^{superscript^2^}
~~strikethrough~~
[\[link\]\(www.rstudio.com\)](#)

- # Header 1
- ## Header 2
- ### Header 3
- #### Header 4
- ##### Header 5
- ##### Header 6

endash: --
emdash: ---
ellipsis: ...
inline equation: $\$A = \pi r^2$
image:

horizontal rule (or slide break):

> block quote

- * unordered list
- * item 2
 - + sub-item 1
 - + sub-item 2

1. ordered list
2. item 2
 - + sub-item 1
 - + sub-item 2

Table Header	Second Header
Table Cell	Cell 2
Cell 3	Cell 4

becomes

Plain text
End a line with two spaces to start a new paragraph.
Italics and italics
bold and bold
^{superscript²}
~~strikethrough~~
[link](#)

Header 1

Header 2

Header 3

Header 4

Header 5

Header 6

endash: --
emdash: ---
ellipsis: ...
inline equation: $A = \pi r^2$



horizontal rule (or slide break):

block quote

- unordered list
- item 2
 - sub-item 1
 - sub-item 2

1. ordered list
2. item 2
 - sub-item 1
 - sub-item 2

Table Header	Second Header
Table Cell	Cell 2
Cell 3	Cell 4

Install the package suite:

```
install.packages(c("rmarkdown"  
                  "knitr", "kableExtra"))
```

Load the package suite:

```
library(rmarkdown)  
library(knitr)  
library(kableExtra)
```



Share your snippets during the coding session!

Go to <https://hackmd.io/aaVLiB17Qm-LkBJeSd6iZg> and post your code in between backticks:

For example:

```
```\n\nlibrary(lubridate)\n\nmy_data <- ... \n\n```
```

# The concept

We defined a number of challenges. If you were able to achieve a challenge, add a  to your laptop screen.

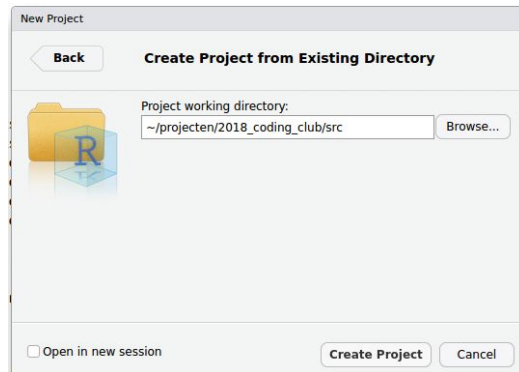
The objective is that **everyone** achieves !

- Someone has more  than you? **Ask for help!**
- Someone has less  than you? **Provide help!**

- Download coding club material and work locally, not in sync with the Google drive



- Create new Rstudio project in the **/src** folder





Using the interface of Rstudio, create an **Rmarkdown** New File, with an **HTML output** format. Save the document and **Knit** it to an HTML page.

Coding club report

*S. Van Hoey*  
4 June 2018

## R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
summary(cars)
```

##	speed	dist
## Min.	: 4.0	Min. : 2.00
## 1st Qu.:	12.0	1st Qu.: 26.00
## Median :	15.0	Median : 36.00
## Mean :	15.4	Mean : 42.98
## 3rd Qu.:	19.0	3rd Qu.: 56.00
## Max. :	25.0	Max. : 120.00

## Including Plots

You can also embed plots, for example:



## A table in two ways...

1. Create a markdown table in markdown itself (no R!)
2. Create a nicely rendered markdown table of the ``head(mtcars)`` Using R and the ``kable`` function. You can also **go crazy** using the [kableExtra](#) package!

# coding\_club

Stijn Van Hoey

June 13, 2018

```
library(dplyr)
library(knitr)
library(kableExtra)
```

## A markdown table

We did not use R to create this table, it is just markdown, as provided in the cheatsheet...

Name	Score
Greg	7
Peter	10
Sep	4

## A table created from data in R

For the next table, we use the `knitr` and the `kableExtra` packages in order to have *nicely* rendered tables:

```
YOUR CODE HERE
```

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21.0	6	160	110	3.90	2.620	16.46	0	1	4	4
Mazda RX4 Wag	21.0	6	160	110	3.90	2.875	17.02	0	1	4	4
Datsun 710	22.8	4	108	93	3.85	2.320	18.61	1	1	4	1
Hornet 4 Drive	21.4	6	258	110	3.08	3.215	19.44	1	0	3	1
Hornet Sportabout	18.7	8	360	175	3.15	3.440	17.02	0	0	3	2
Valiant	18.1	6	225	105	2.76	3.460	20.22	1	0	3	1



Pair up with two...

Shortly discuss a useful trick/function/code example/... that you learnt during a previous coding club\*\* or just *somewhere*.

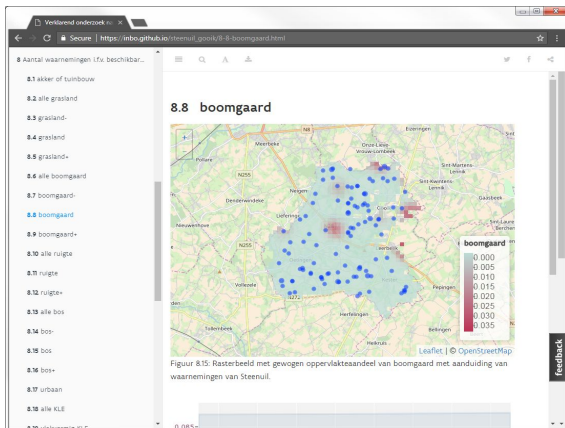
Create a very small tutorial as an Rmarkdown file with HTML output for your future self or colleagues. Make sure the example is self-contained, so it can be rerun by someone else. You can use the [data sets](#) from previous editions.

Upload your Rmd file in the [tutorials folder](#) on google drive.

You want to try something special? See some alternative [format options](#)...

\*\* Need inspiration? Check the hackmds from previous sessions:

- <https://hackmd.io/7Yd3NsCFTwgHbRnHZbhlzq>
- <https://hackmd.io/Di6gnl7OS-mW8taTEezOVo>
- <https://hackmd.io/7iIfz3LMRb-EMrtAfCNlzQ>
- <https://hackmd.io/aPEFORMXSIOeEycsDsSTqw>
- <https://hackmd.io/CcRhOYJcSceqKm8sF05Rgw>
- <https://hackmd.io/aaVLiB17Om-LkBJeSd6iZq>



## REPORTS

2.3 Clone a repo to work locally

Exercise:

1. On your GitHub repository page, copy the repository **HTTPS** url (remember the green button?)
2. In Rstudio, **File** > **New Project...**, select **Version Control**, choose **git**.
3. Provide the repository **HTTPS** link you just copied (the project name will be filled in as well)
4. Browse to desired directory where you will manage your project/code

```
git clone https://github.com:inbo-coursecourse_rstudio_himk23_clone_a_repo_to_work_locally
```

An example of the project setup using an existing Git repository:

## COURSES

Darwin Core mapping

1 Setup

```
setlocale("en_US.UTF-8")
Sys.setlocale("C.UTF8", "en_US.UTF-8")
loadNamespace("sp")
```

## DATA PROCESSING

Using WMS service in R

```
leaflet() %>%
 setView(lng = 4.287618, lat = 50.703819, zoom = 14) %>%
 addTiles(url = "OSM") %>%
 addWMS(layer = "Vegetation",
 options = WMSOptions(format = "image/png", transparent = TRUE))
```

Figure 3: Leaflet map with the potential natural vegetation

## TUTORIALS







Next month no , but  for , , , , ,...

Zaal: Herman Teirlinck - 01.69 - Paul Janssen Datum

Datum: 2018-**08**-21, van 10:00 tot 12:00

*(registration announced via [DG\\_useR@inbo.be](mailto:DG_useR@inbo.be))*