Make your slides with R Markdown

Florian Privé

October 19, 2018

Slides: `bit.ly/rmdslides`

(Adapted with permission from Antoine Bichat's presentation)

R Markdown

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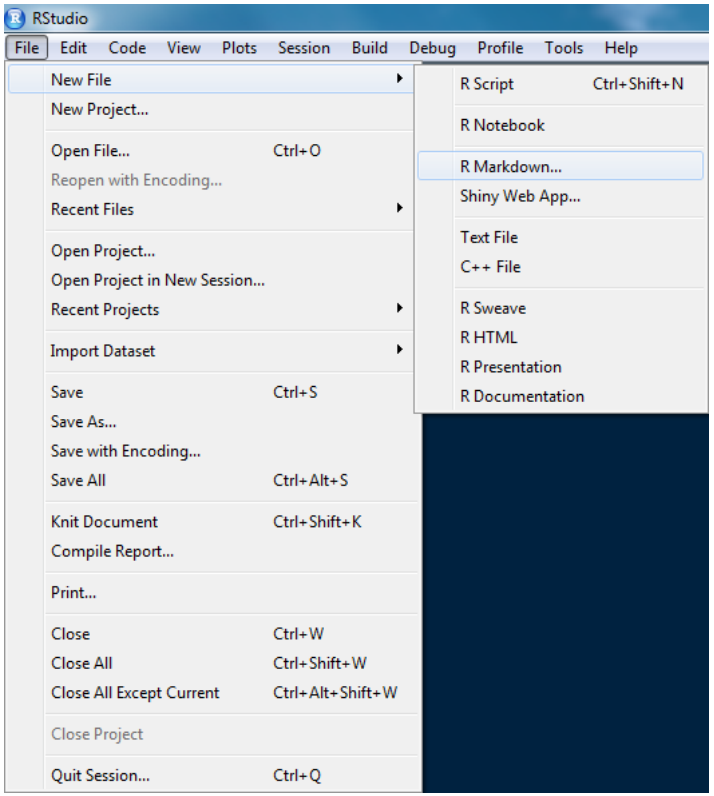
- R Markdown is an extension of the markdown syntax that enables R code to be executed. The extention is typically `.Rmd`.
- {rmarkdown} is an R package that proceses and converts `.Rmd` files into a number of different formats, including HTML or `.pdf`. The core function is `rmarkdown::render()`.

Create a new .Rmd in RStudio



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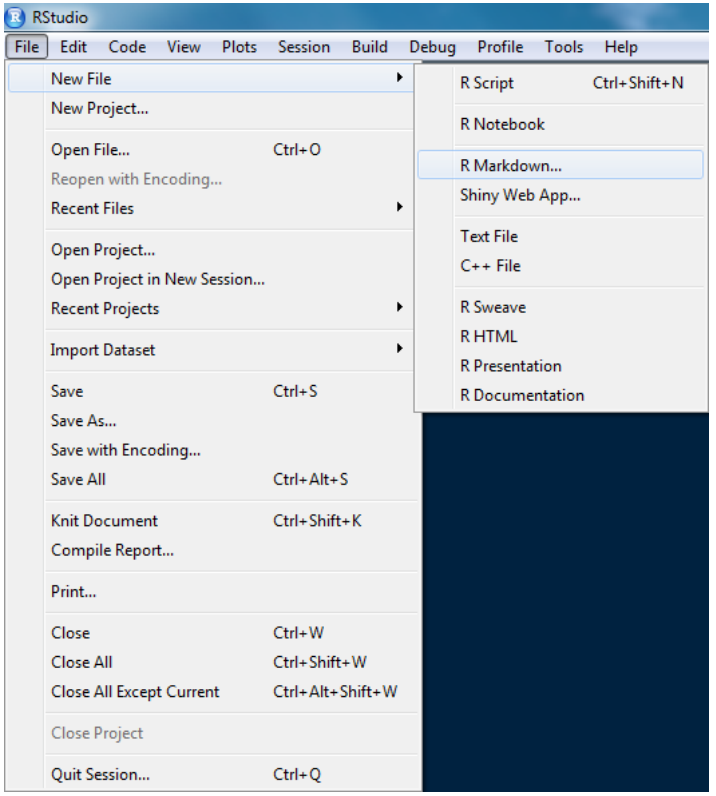

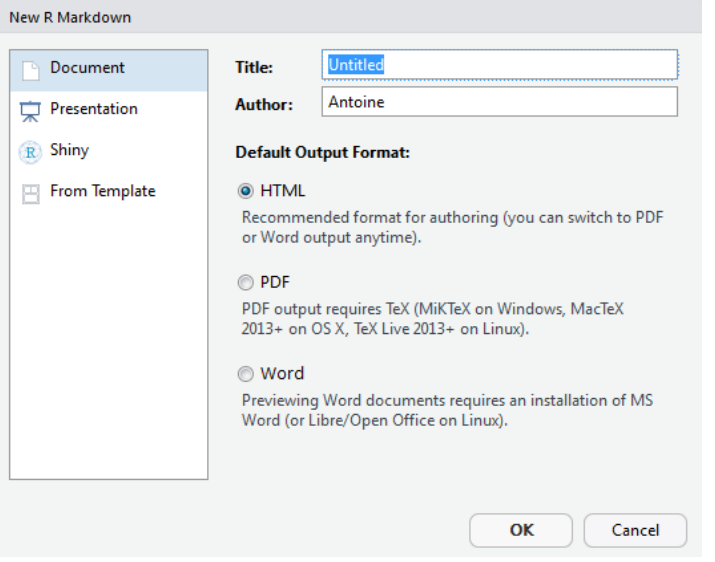

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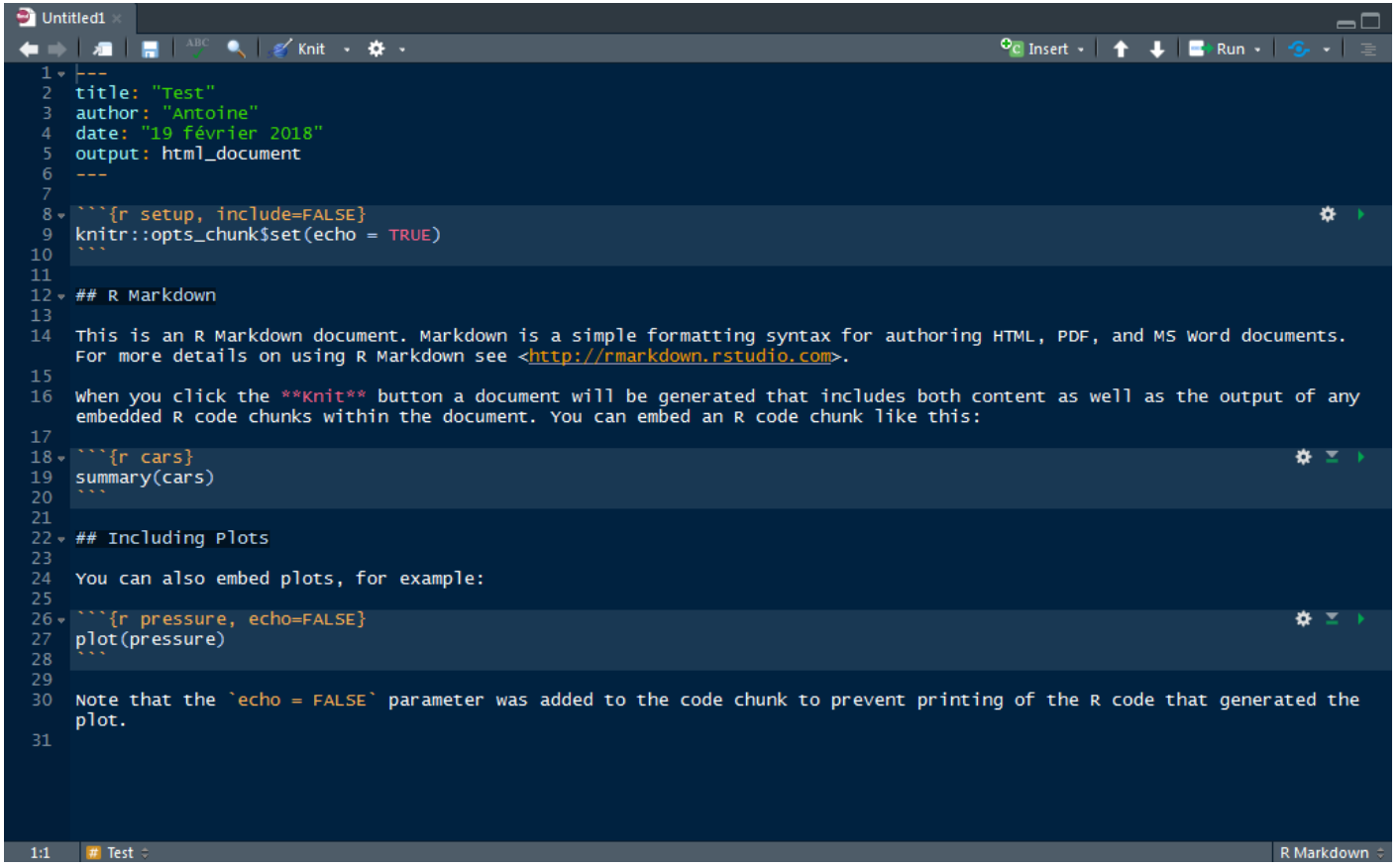
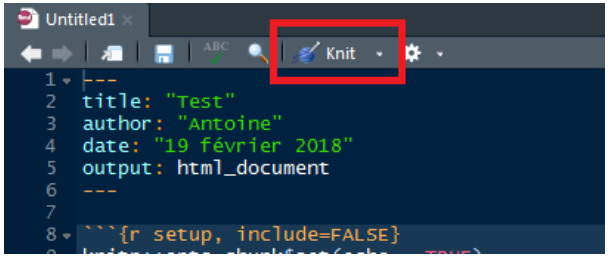

Untitled1
Knit
Insert
Run
---
title: "Test"
author: "Antoine"
date: "19 février 2018"
output: html_document

```{r setup, include=FALSE}
knitr::opts_chunk$set(echo = TRUE)
```
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:
```{r cars}
summary(cars)
```
Including Plots
You can also embed plots, for example:
```{r pressure, echo=FALSE}
plot(pressure)
```
Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.
1:1
Test
R Markdown

Compile `.Rmd`

Use the `Knit` button to produce a HTML file



Shortcut: `Ctrl + Shift + K`

Markdown syntax

Titles and text fonts in Markdown

```
# Big title

## Title

### Small title

_Italic_, *italic*, __bold__, **bold**, and `monospace`
```

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Big title

Title

Small title

Italic, *italic*, **bold**, **bold**, and `monospace`

Lists in Markdown

```
1. This is
2. an ordered
3. list
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```
* This is
* a bullet list
    * with indent
```

- This is
- a bullet list
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- This is
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- You can enumerate only with '`1.`'; it will increment automatically
- You can also use '`-`' or '`+`' instead of '`*`'

More in Markdown

```
> You can insert quotes and $\LaTeX$ expressions
```

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```
$$ \frac{1}{n} \sum_{i=1}^n X_i $$
```

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More in Markdown

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```

$$\frac{1}{n} \sum_{i=1}^n X_i$$

- Make an horizontal line with '`***`'
- Add 4 spaces at the end of your text in order to write to the next
- You can write HTML in Markdown (e.g. use '`<br>`' to get a blank line)

Insert links and pictures

```
[Antoine's personal page](https://abichat.github.io/)
```

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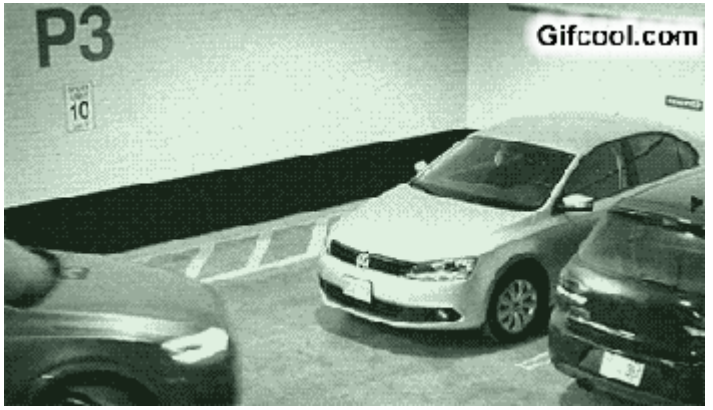
Antoine's personal page

```
![](https://slides.yihui.name/gif/impossible-parking.gif)
```



Insert links and pictures

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[Antoine's personal page](https://abichat.github.io/)
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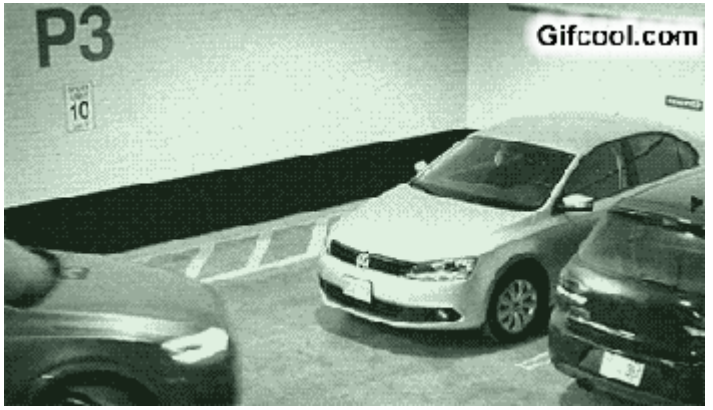
![](https://slides.yihui.name/gif/impossible-parking.gif)
```



It also works directly with HTML syntax:

```
<a href="https://abichat.github.io/">My personal page</a>
```

```
<img src="https://slides.yihui.name/gif/impossible-parking.gif">
```

Code chunks

Basic chunk

```
```{r}
x <- 4
x
```
```

Basic chunk

```
```{r}
x <- 4
x
```
```

```
[1] 4
```

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```{r}
x <- 4
x
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Echo

To display the output of a code chunk but not the underlying R code, you specify the `echo=FALSE` option

```
```{r chunkecho, echo=FALSE}
x <- 5
x
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Basic chunk

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To display the output of a code chunk but not the underlying R code, you specify the `echo=FALSE` option

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x <- 5
x
```
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Eval

To display R code without evaluating it, you specify the `eval=FALSE` chunk option

```
```{r chunkeval, eval=FALSE}
x <- 5
```
```

Figure options (1/2)

```
```{r, fig.align="center", out.width="60%"}
ggplot2::qplot(Sepal.Length, Sepal.Width, data = iris)
```
```

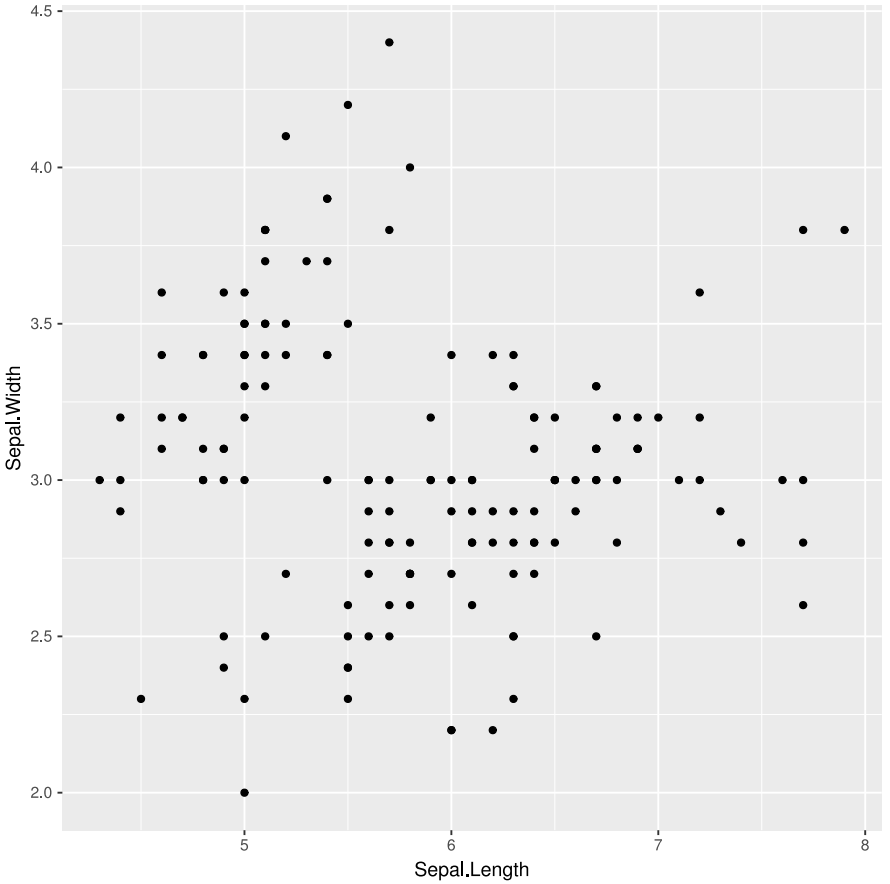
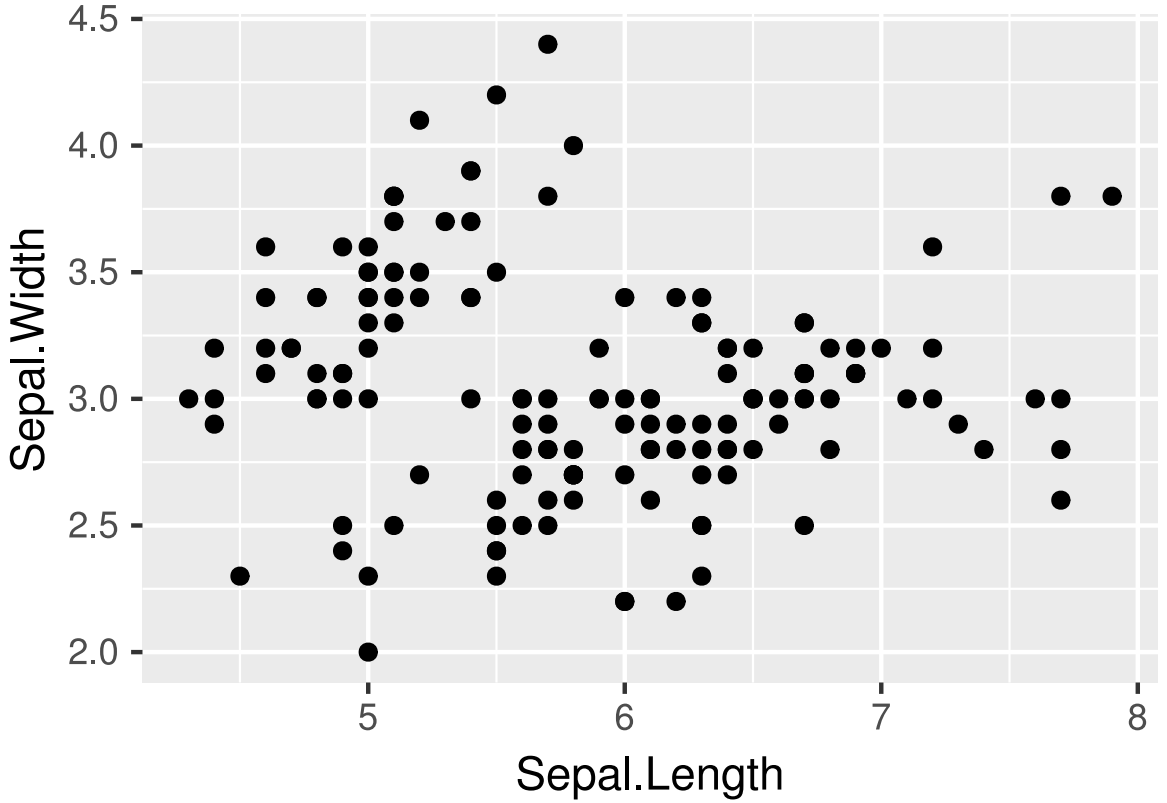


Figure options (2/2)

```
```{r, fig.align="center", out.width="80%", fig.width=4, fig.asp=0.7}
ggplot2::qplot(Sepal.Length, Sepal.Width, data = iris)
```
```



A better way to include pictures

```
```{r betterway, fig.align="center", out.width="80%", echo=FALSE}
knitr::include_graphics(
  "https://slides.yihui.name/gif/impossible-parking.gif")
```
```

A better way to include pictures

```{r betterway, fig.align="center", out.width="80%", echo=FALSE}
knitr::include_graphics(
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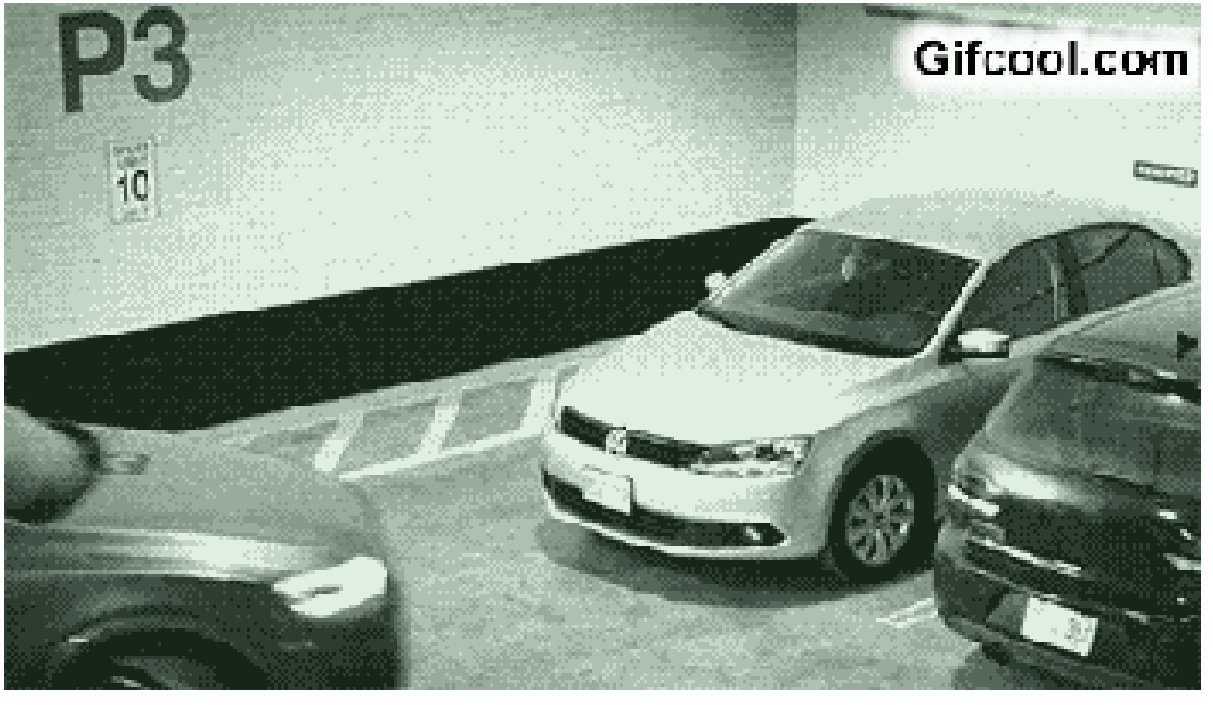

A better way to include pictures

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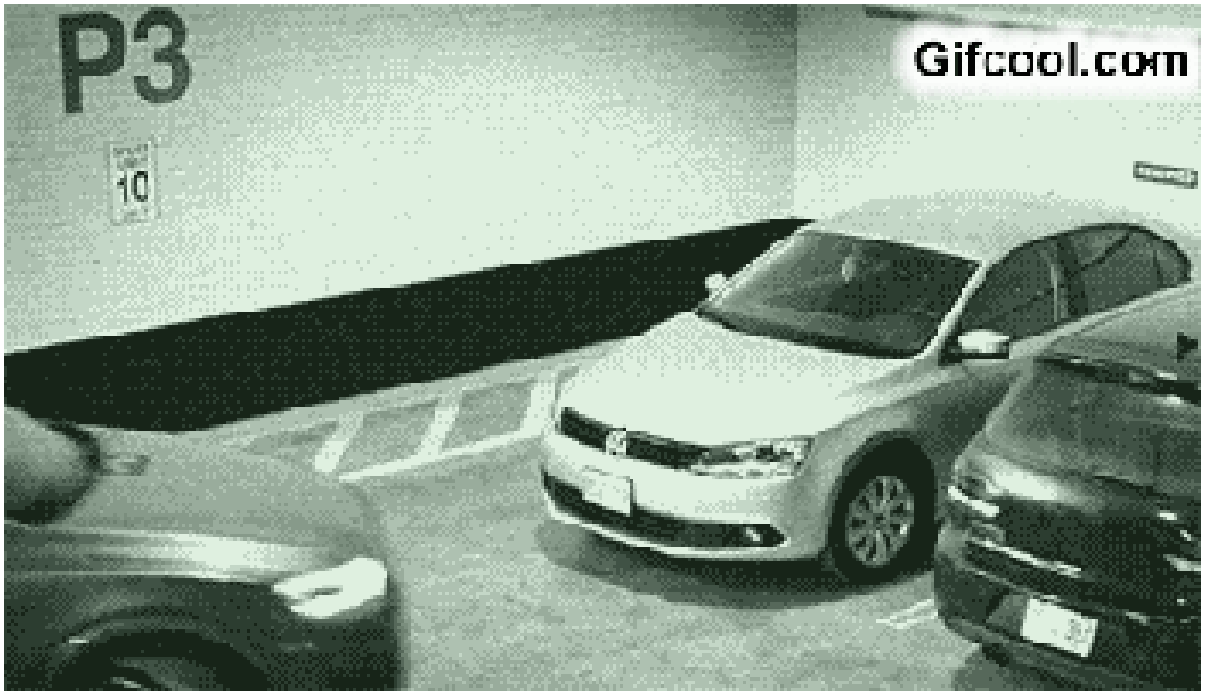

It allows you to use the chunk options for image size.

Include an interactive map with {leaflet}

```
library(leaflet)
leaflet(width = "100%") %>%
  setView(lng = 5.767249, lat = 45.190590, zoom = 12) %>%
  addTiles(options = providerTileOptions(minZoom = 2, maxZoom = 19))
```

Supported languages in chunks

- R
- Python
- Shell
- SQL
- Rcpp
- Stan
- JavaScript and CSS
- Julia
- C and Fortran
- many others...

Formats

Use R Markdown for..

- Reports (analysis, etc) with text, code and results in the same place! With many possible output formats including HTML, PDF, MS Word, etc.
- **Slides**
- Websites
- Books (or even a thesis)

(April session of R in Grenoble)

Slides formats

- ioslides (example)
- slidy (example)
- beamer (pdf)
- powerpoint (ppt)
- **xaringan** / remark.js (example: this presentation!)
- reveal.js

Xaringan

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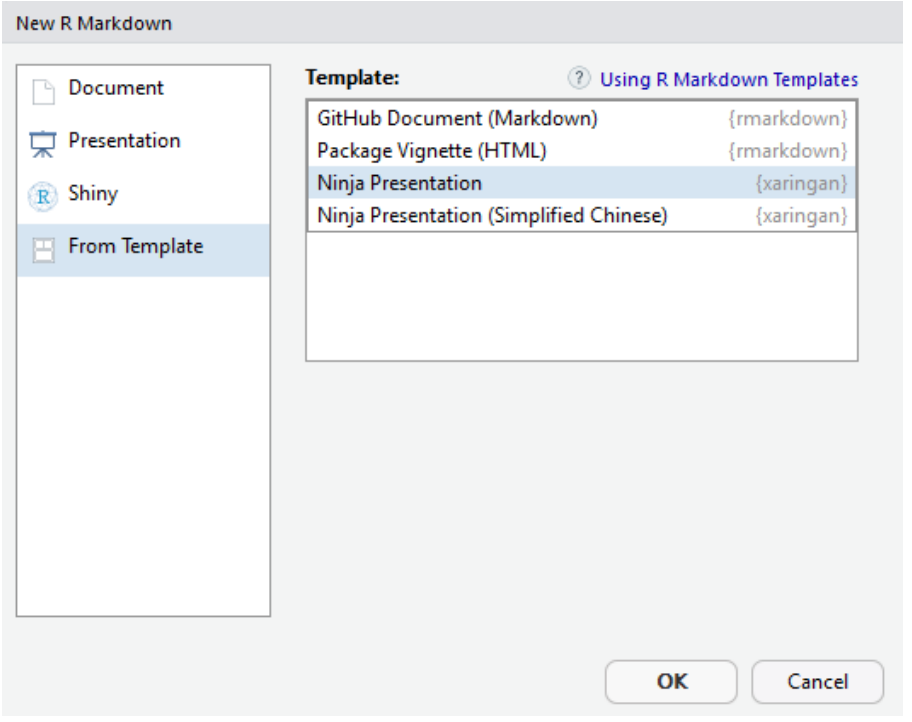

How it works?

The syntax is almost the same as R Markdown

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## How it works?

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Slides are separated by `---`

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````

Tips

You can change slide configuration (for titles) with `class`

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class: middle, center, inverse
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Use `.footnote[Text]` to add a footnote and `.center[Text]` to center text

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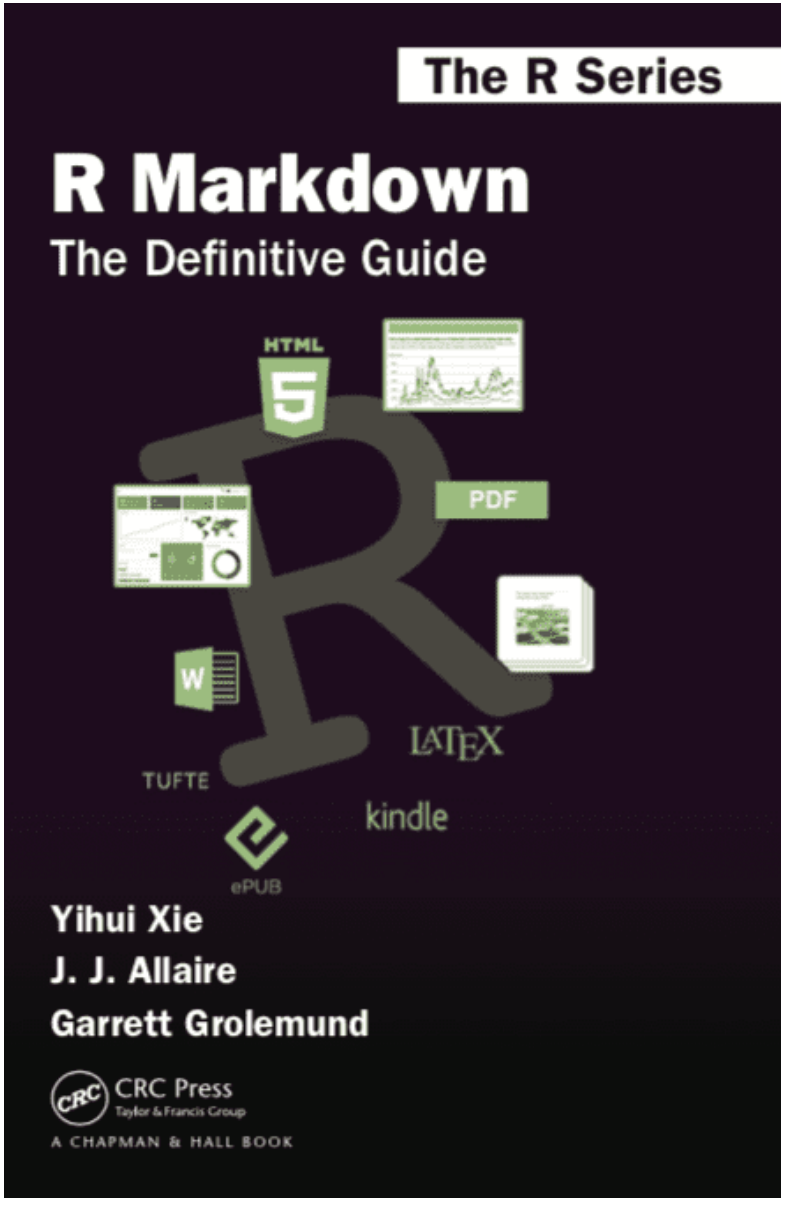
To skip a lign, use the `<br>` HTML tag

Use `.footnote[Text]` to add a footnote and `.center[Text]` to center text

I'm centered

I'm a footnote

References


The R Series
R Markdown
The Definitive Guide
HTML
PDF
LATEX
TUFTE
kindle
ePUB
Yihui Xie
J. J. Allaire
Garrett Grolemund
CRC Press
Taylor & Francis Group
A CHAPMAN & HALL BOOK

Useful materials

- Official website
- Official documentation
- Reference guide
- Cheat sheet
- Xaringan documentation
- Tips for R Markdown
- Tips for making slides
- Embed a File in the HTML Output of R Markdown
- Decouple Code and Output in xaringan slides

Thanks!

Slides: `bit.ly/rmdslides`

 privefl  privefl  F. Privé

Slides created via the R package **xaringan**.