

```
library(dplyr)

rladies_global %>%
  filter(city == 'Berlin')
```



# #3 Hands-on R markdown & friends



1.

# R markdown in a nutshell

Developed by John Gruber (\*1973), Philadelphia, USA  
writer, blog publisher, [UI](#) designer



# Gallery



## An Example R Markdown Document (A Subtitle Would Go Here if This Were a Class)

Steven V. Miller

Department of Political Science



## Tufte Handout

An implementation in R Markdown

JJ Allaire and Yihui Xie

2016-12-27

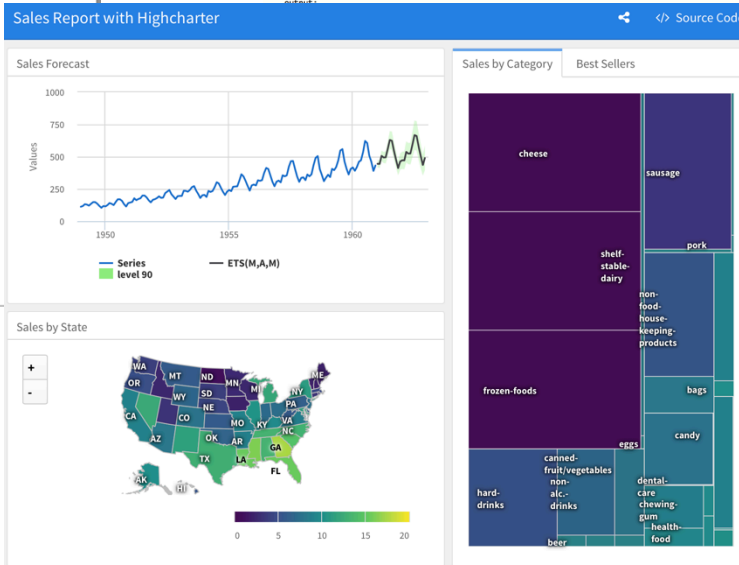
### Introduction

The Tufte handout style is a style that Edward Tufte uses in his books and handouts. Tufte's style is known for its extensive use of sidenotes, tight integration of graphics with text, and well-set typography. This style has been implemented in LaTeX and HTML/CSS<sup>1</sup>, respectively. We have ported both implementations into the **tufte** package. If you want LaTeX/PDF output, you may use the **tufte\_handout** format for handouts, and **tufte\_book** for books. For HTML output, use **tufte\_html**. These formats can be either specified in the YAML metadata at the beginning of an R Markdown document (see an example below), or passed to the `rmarkdown::render()` function. See Allaire et al. (2016) more information about **rmarkdown**.

```
---
title: "An Example Using the Tufte Style"
author: "John Smith"
output:
  tufte::tufte_html
```

<sup>1</sup> See Github repositories [tufte-latex](https://github.com/jjallaire/tufte-latex) and [tufte-css](https://github.com/jjallaire/tufte-css)

Allaire, JJ, Joe Cheng, Yihui Xie, Jonathan McPherson, Winston Chang, Jeff Allen, Hadley Wickham, Aron Atkins, and Rob Hyndman. 2016. *Rmarkdown: Dynamic Documents for R*. <https://CRAN.R-project.org/package=rmarkdown>

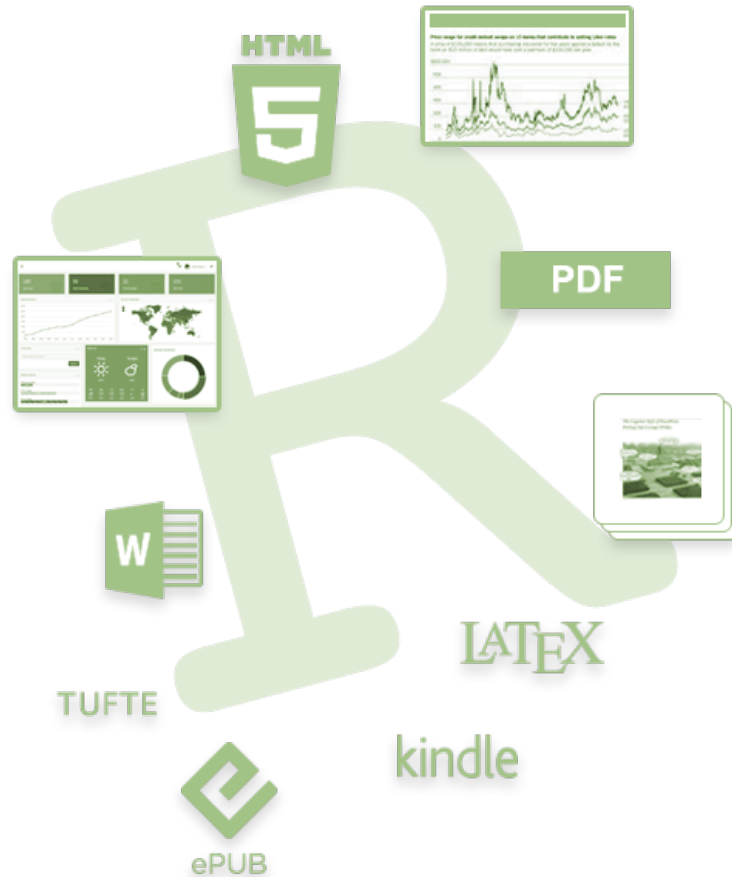


# The principle of R markdown

**R Markdown** is a file format for making dynamic documents with **R**.

An **R Markdown** document is written in **markdown** (an easy-to-write plain text format) and contains chunks of embedded **R** code.

**R Markdown** is a simple formatting syntax for authoring HTML, PDF, and MS Word documents.





# Processing of R markdown file

### Workflow

- Open a new .Rmd file** at File ► New File ► R Markdown. Use the wizard that opens to pre-populate the file with a template
- Write document** by editing template
- Knit document to create report** Use knit button or `render()` to knit
- Preview Output** in IDE window
- Publish** (optional) to web or server
  - Sync publish button to accounts at
    - rpubs.com,
    - shinyapps.io
    - RStudio Connect
  - Reload document
  - Find in document
  - File path to output document
- Examine build log** in R Markdown console
- Use output file** that is saved alongside .Rmd

### .Rmd structure

**YAML Header**  
Optional section of render (e.g. pandoc) options written as key:value pairs (YAML).

- At start of file
- Between lines of ---

**Text**  
Narration formatted with markdown, mixed with:

**Code chunks**  
Chunks of embedded code. Each chunk:

- Begins with `{r}`
- ends with `}`

R Markdown will run the code and append the results to the doc.

It will use the location of the .Rmd file as the **working directory**

The screenshot shows the RStudio interface with several annotations. Arrows point from the workflow steps to specific actions in the software. Step 1 points to the 'File' menu and 'New File' option. Step 2 points to the 'report.Rmd' file being edited. Step 3 points to the 'Knit' button in the top toolbar. Step 4 points to the 'Preview' button. Step 5 points to the 'Publish' button. Step 6 points to the 'Console' window showing the build log. Step 7 points to the 'report.html' file in the file explorer.

```
1 title: "R Markdown"
2 author: "RStudio"
3 output:
4   html_document:
5     toc: TRUE
```

```
{r} cars
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

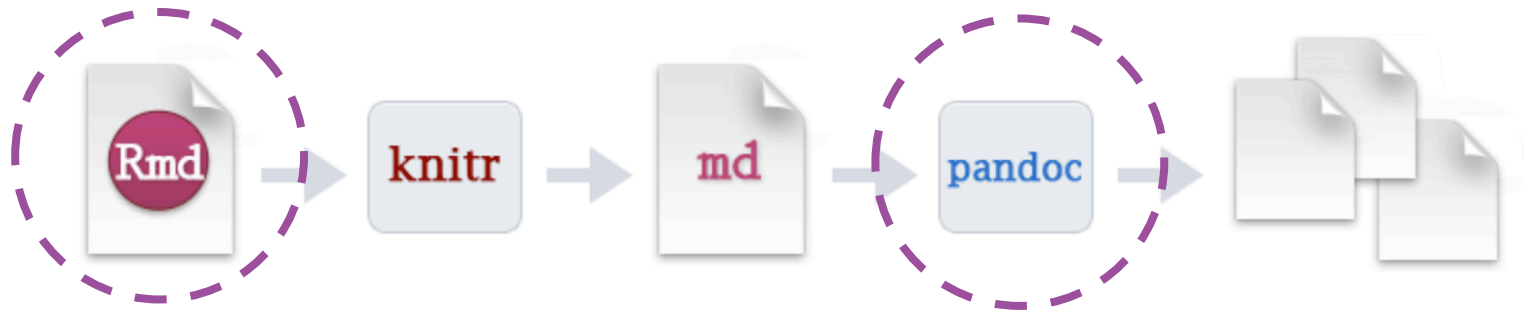
```
> library(rmarkdown)
> render("report.Rmd", output_file = "report.html")
```

### render()

Use `rmarkdown::render()` to render/knit at cmd line. Important args:

- input** - file to render
- output\_format**
- output\_options** - List of render options (as in YAML)
- output\_file**
- output\_dir**
- params** - list of params to use
- envir** - environment to evaluate code chunks in
- encoding** - of input file

# Processing of R markdown file



Part 1 - How to create a  
.Rmd file

Part 2 - How to specify the appearance  
of my output



2.

## Grammar of R markdown

Detailed documentation

<http://rmarkdown.rstudio.com/>

Everything at one glance

[R markdown cheat sheet](#)

[R markdown gallery](#)



# 3.

## Let's get started!

Get to know our GitHub repo and find all required material:

[github.com/rladies/meetup-presentations\\_berlin/](https://github.com/rladies/meetup-presentations_berlin/)

- Download R-Ladies Berlin Git repo
- Copy slides and tutorial material
- Open Rstudio project
- Install R markdown (`install.packages('rmarkdown')`)





## 4. It's your turn!

Create your first R markdown based ioslide presentation! And tell us something about **you**!

**Hint #1** Create a new Rmd-file, have a look at the choice of options

**Hint #2** For the logo at the title slide modify the YAML header

```
output:  
  ioslides_presentation:  
    logo: filename.pdf
```

**Hint #3** Have a look at the R markdown cheat sheet!

### My first ioslides with R markdown

Your name  
20/06/2017

#### I am R-Lady Chrissy

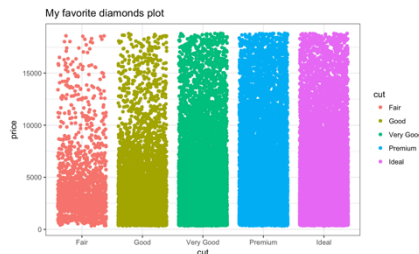
I like R because of it's extreme flexibility and applicability to a broad range of topics.

My favorite R packages are:

- ggplot2
- qplots
- RColorBrewer

2/3




### My favorite diamonds plot



3/3



## We're Chrissy, Hanna & Noa

We recently got together to form the Berlin chapter of R-Ladies. You can follow our activity (and help us spread the word) on   [@RLadiesBerlin](https://www.facebook.com/RLadiesBerlin) and sign up for upcoming events on  [rladies-berlin](https://www.meetup.com/rladies-berlin).