# Reproducible Research – practical

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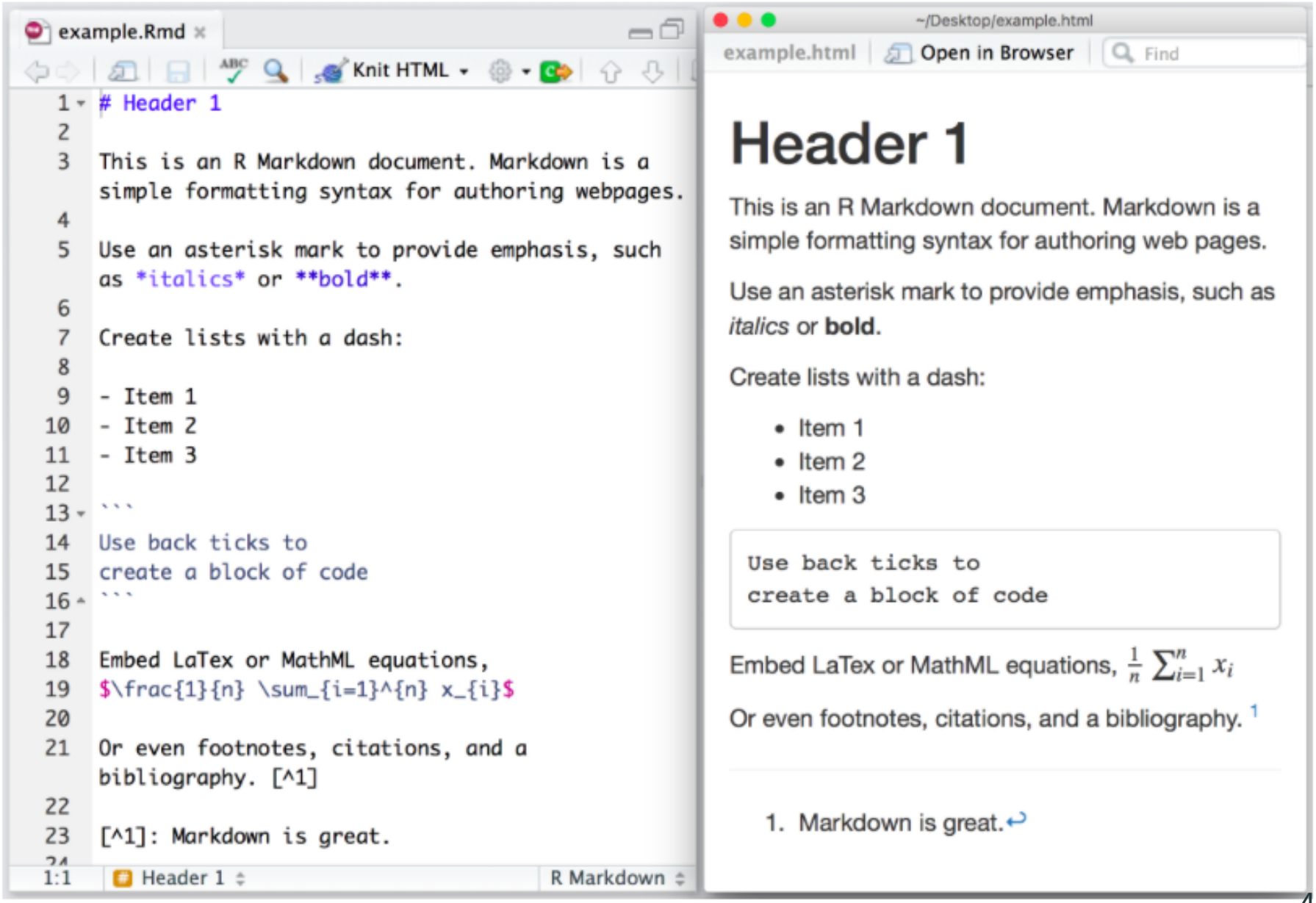
# RMarkdown

# Markdown

**Markdown** is a simple formatting language designed to make authoring content easy for everyone. Rather than write in complex markup code (e.g. HTML or LaTex), you write in plain text

# Markdown


example.Rmd
Knit HTML
# Header 1
This is an R Markdown document. Markdown is a simple formatting syntax for authoring webpages.
Use an asterisk mark to provide emphasis, such as *italics* or **bold**.
Create lists with a dash:
- Item 1
- Item 2
- Item 3
```
Use back ticks to
create a block of code
```
Embed LaTex or MathML equations,
$\frac{1}{n} \sum_{i=1}^{n} x_{i}$
Or even footnotes, citations, and a bibliography. [^1]
[^1]: Markdown is great.
1:1
Header 1
R Markdown
~/Desktop/example.html
example.html
Open in Browser
Find
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Or even footnotes, citations, and a bibliography. 1
1. Markdown is great.

# Markdown

- R Code Chunks can be embedded with the native Markdown syntax for fenced code regions
- R expressions inline by enclosing the expression within a single back-tick
- Inline text `http://rmarkdown.rstudio.com/authoring_basics.html`

# Markdown

chunks.Rmd

Knit HTML | Chunks

```
1  R Code Chunks
2  ==========
3
4  With R Markdown, you can insert R code
   chunks including plots:
5
6  ```{r qplot, fig.width=4, fig.height=3,
   message=FALSE}
7  # quick summary and plot
8  library(ggplot2)
9  summary(cars)
10 qplot(speed, dist, data=cars) +
11       geom_smooth()
12 ```
13
```

RStudio: Preview HTML

Preview: ~/chunks.html | Save As | Publish

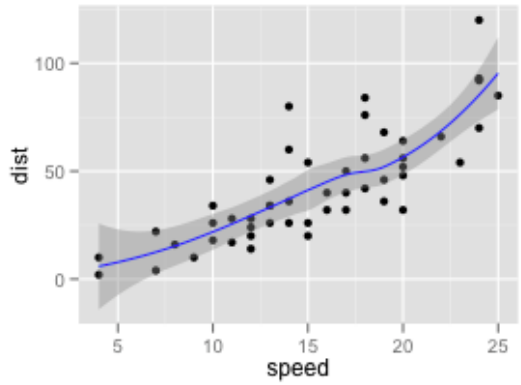
## R Code Chunks

With R Markdown, you can insert R code chunks including plots:

```
# quick summary and plot
library(ggplot2)
summary(cars)
```

```
##      speed           dist
##  Min.   : 4.0   Min.   :  2
##  1st Qu.:12.0   1st Qu.: 26
##  Median :15.0   Median : 36
##  Mean   :15.4   Mean   : 43
##  3rd Qu.:19.0   3rd Qu.: 56
##  Max.   :25.0   Max.   :120
```

```
qplot(speed, dist, data = cars) + geom_smooth()
```



# Exercise 1

GOAL: CREATE A DEFAULT MINIMAL DOCUMENT

- Open RStudio

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- Open RStudio
- Select File $>$ New file $>$ R Markdown

# Exercise 1

GOAL: CREATE A DEFAULT MINIMAL DOCUMENT

- Open RStudio
- Select File > New file > R Markdown
- Create an HTML document

# Exercise 1

Untitled1* | Untitled.Rmd

Knit HTML | Run | Chunks

```
---
title: "Untitled"
author: "Marco Chiapello"
date: "11 June 2016"
output: html_document
---

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}
summary(cars)
```

You can also embed plots, for example:

```{r, echo=FALSE}
plot(cars)
```

Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.
```

Viewer

Publish

# Untitled

*Marco Chiapello*

*11 June 2016*

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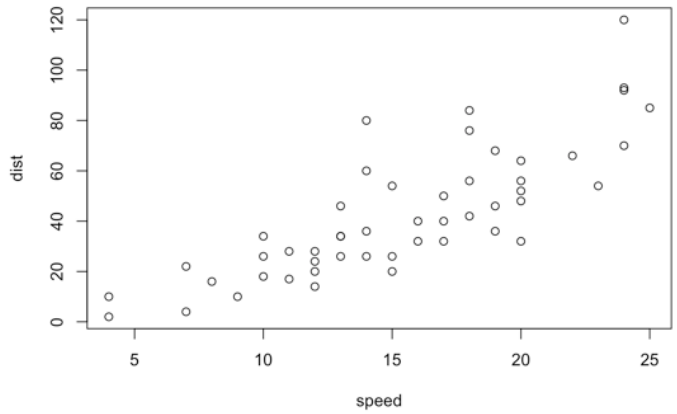
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
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
```

You can also embed plots, for example:



# Exercise 2

GOAL: CREATE A DEFAULT MINIMAL DOCUMENT

- Create a pdf document
- Create a docx document