Reproducible Research – practical

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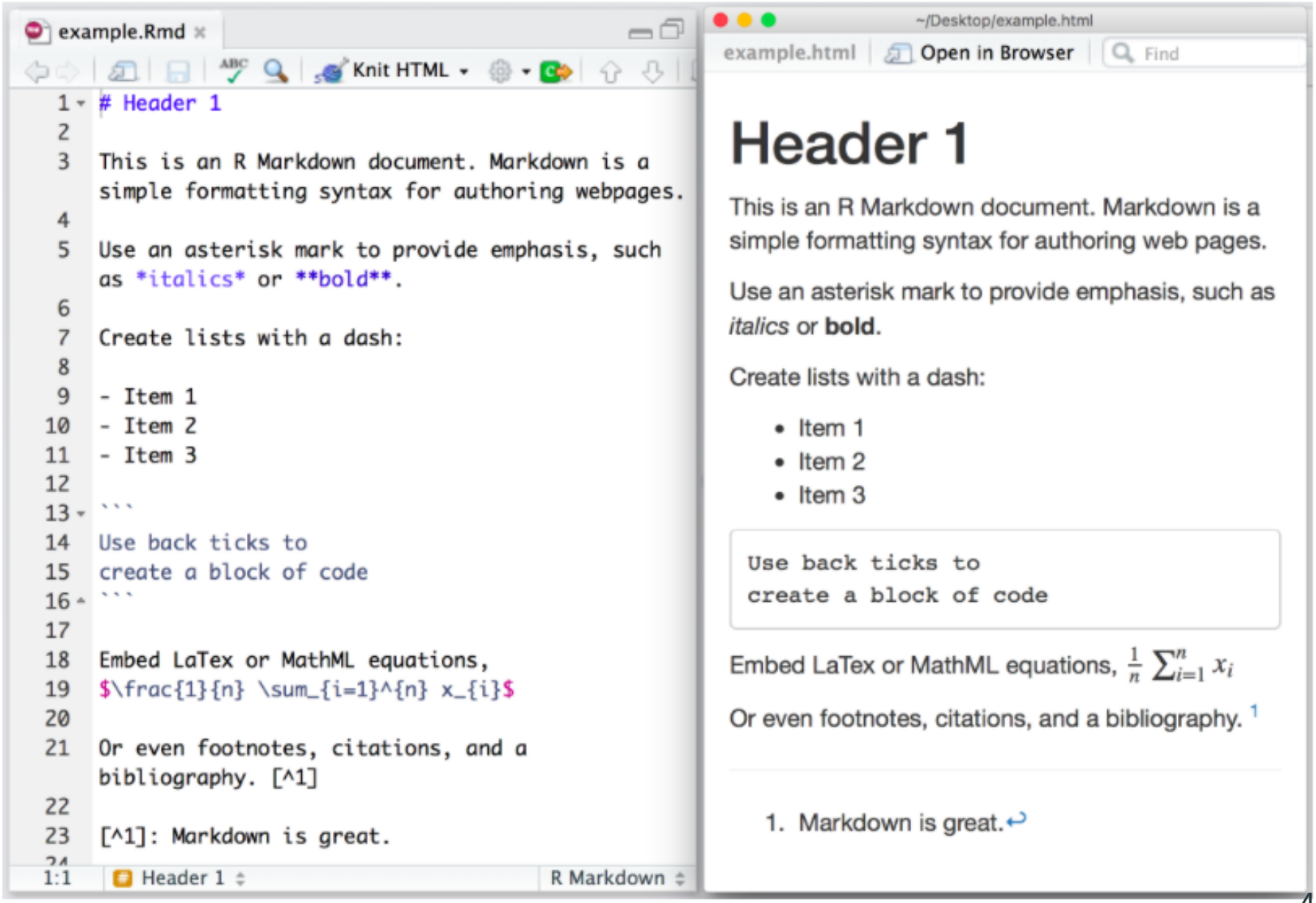
RMarkdown

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
Header 1
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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

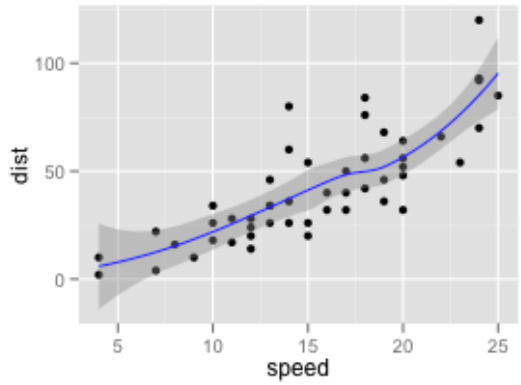
R Code Chunks

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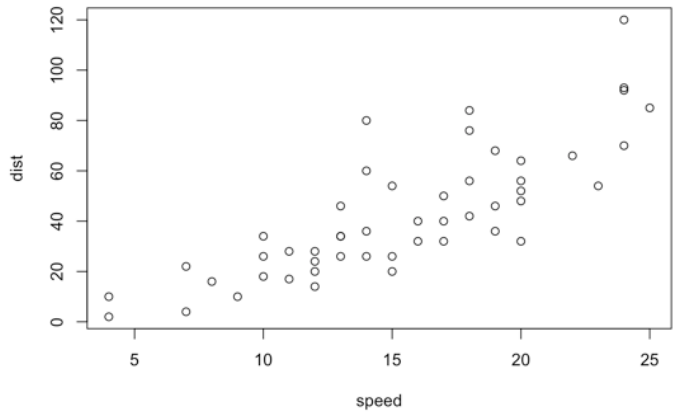
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
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:



RMarkdown elements

-

Exercise 2

GOAL: CREATE A DEFAULT MINIMAL DOCUMENT

- Create a pdf document
- Create a docx document