R: The premier data analysis and visualization platform

https://cran.r-project.org/

The Comprehensive R Archive Network

Download and Install R

Precompiled binary distributions of the base system and contributed packages, **Windows and Mac** users most likely want one of these versions of R:

- Download R for Linux
- Download R for (Mac) OS X
- Download R for Windows

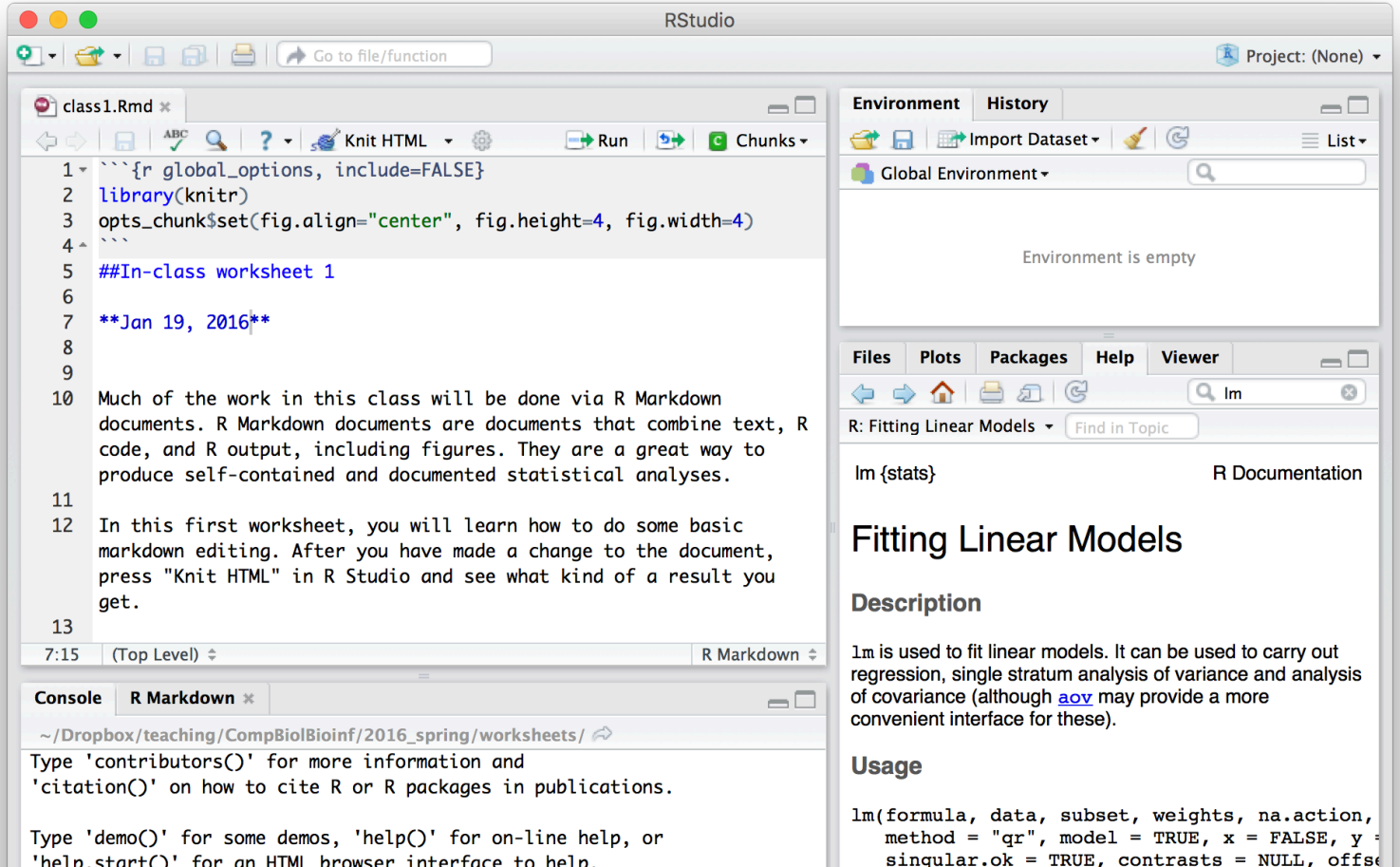
R is part of many Linux distributions, you should check with your Linux package management system in addition to the link above.

Source Code for all Platforms

Windows and Mac users most likely want to download the precompiled binaries listed in the upper

R Studio:
A nice user interface for R

https://www.rstudio.com/products/rstudio/download/



R Markdown:
Writing documents with embedded R code

class1.Rmd

Knit HTML | Run | Chunks

```
16 ----------------------------------------------
17 ## 1. Basic Markdown editing
18 Try out basic R Markdown features, as described
   [here.](http://rmarkdown.rstudio.com/authoring_basics.html) Write some text that
   is bold, and some that is in italics. Make a numbered list and a bulleted list.
   Make a nested list. Try the block-quote feature.
19
20 ## 2. Embedding R code
21
22 R code embedded in R chunks will be executed and the output will be shown.
23 ```{r}
24 # R code goes here
25 x <- 5
26 y <- 7
27 z <- x * y
28 z
29 ```
30
31 Play around with some basic R code. E.g., take the built-in data set `cars`,
   which lists speed and stopping distance for cars from the 1920. Plot speed vs.
   distance, and/or perform a correlation analysis. Then write a few sentences
```

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2. Embedding R code

R code embedded in R chunks will be executed and the output will be shown.

```
# R code goes here
x <- 5
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z <- x * y
z
```
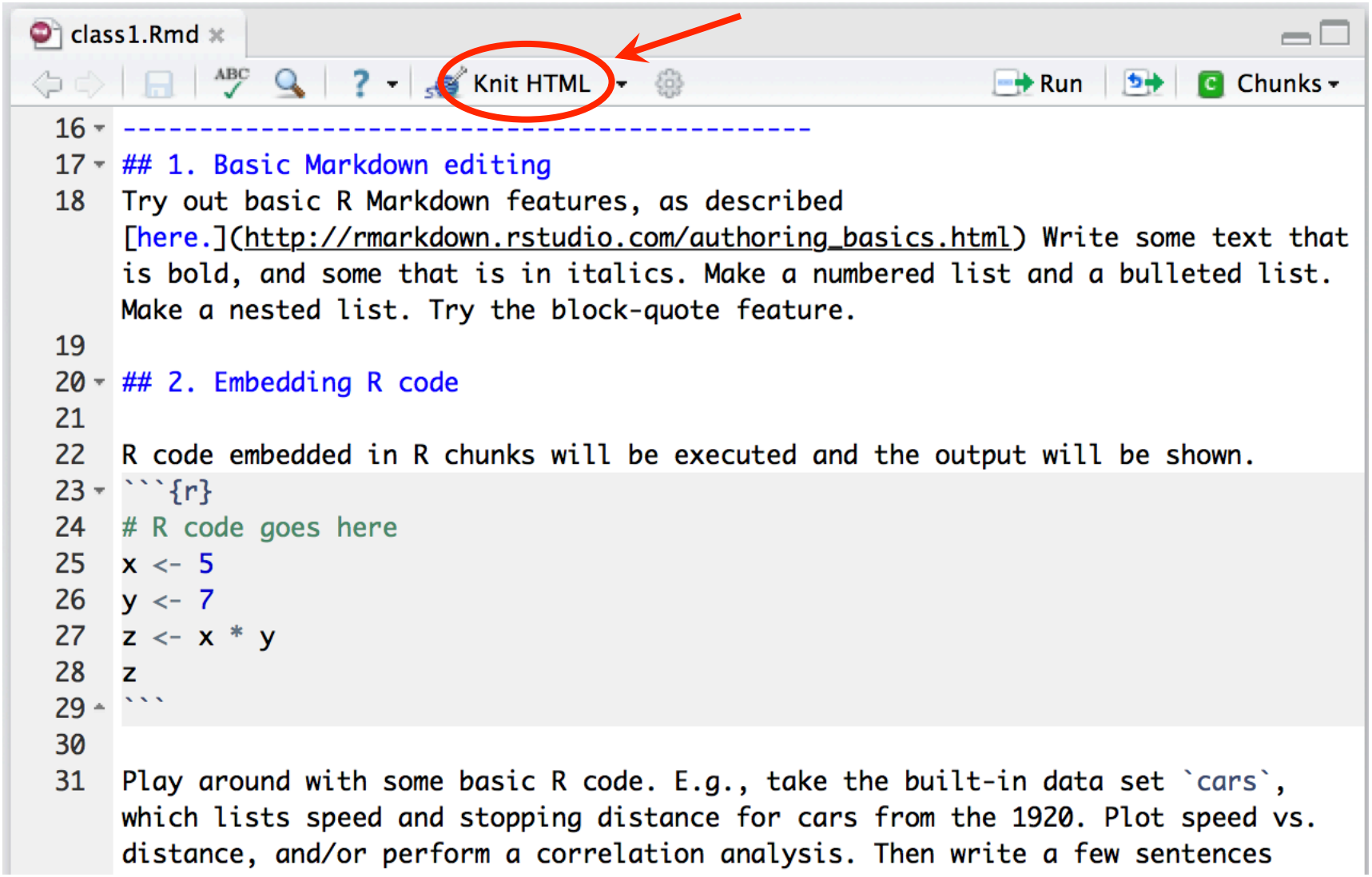
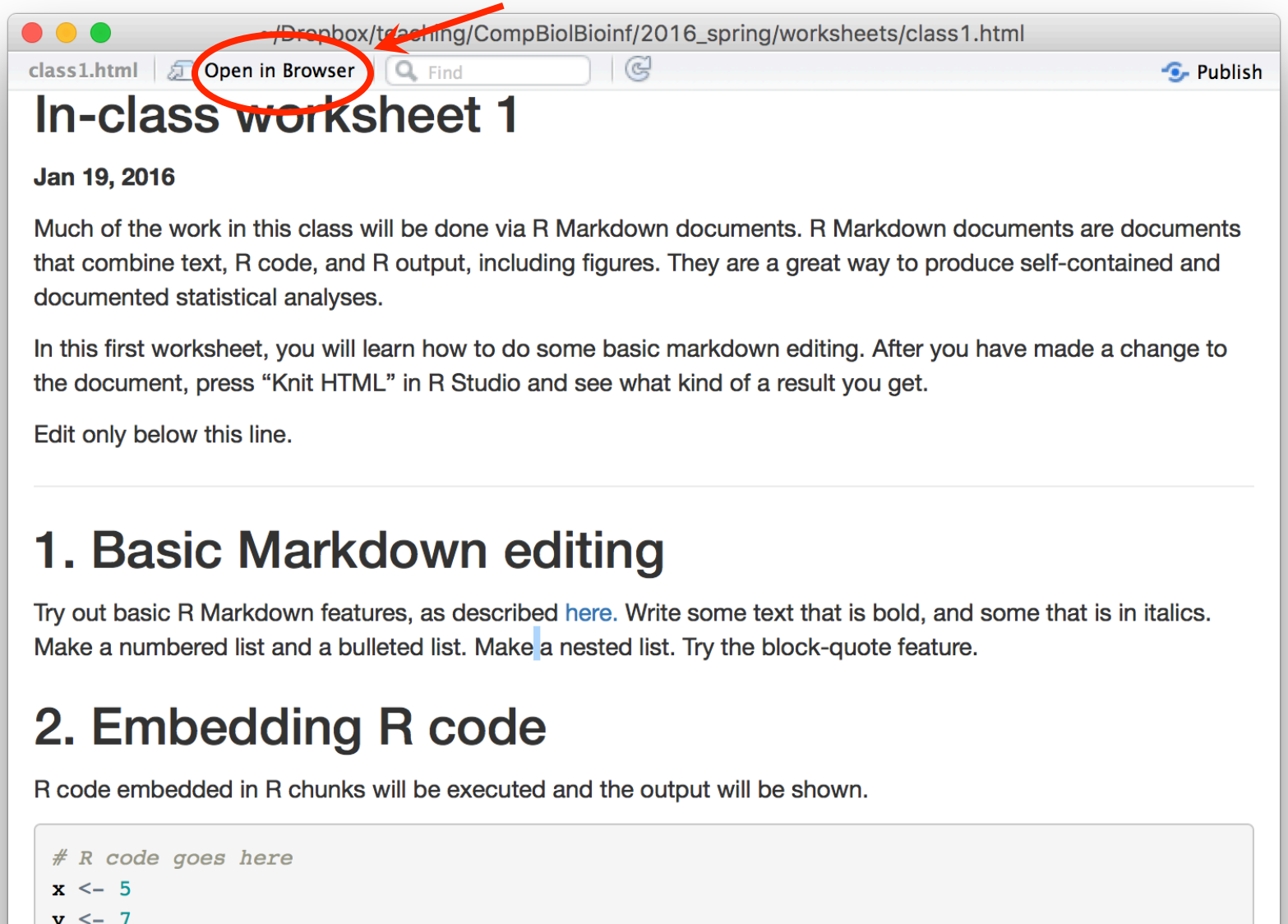

```
## [1] 35
```

Play around with some basic R code. E.g., take the built-in data set `cars`, which lists speed and stopping distance for cars from the 1920. Plot speed vs. distance, and/or perform a correlation analysis. Then write a few sentences describing what you see.

We convert R Markdown to HTML by "knitting" the Markdown file



Convert to pdf: knit to HTML, open in browser, print, save as pdf



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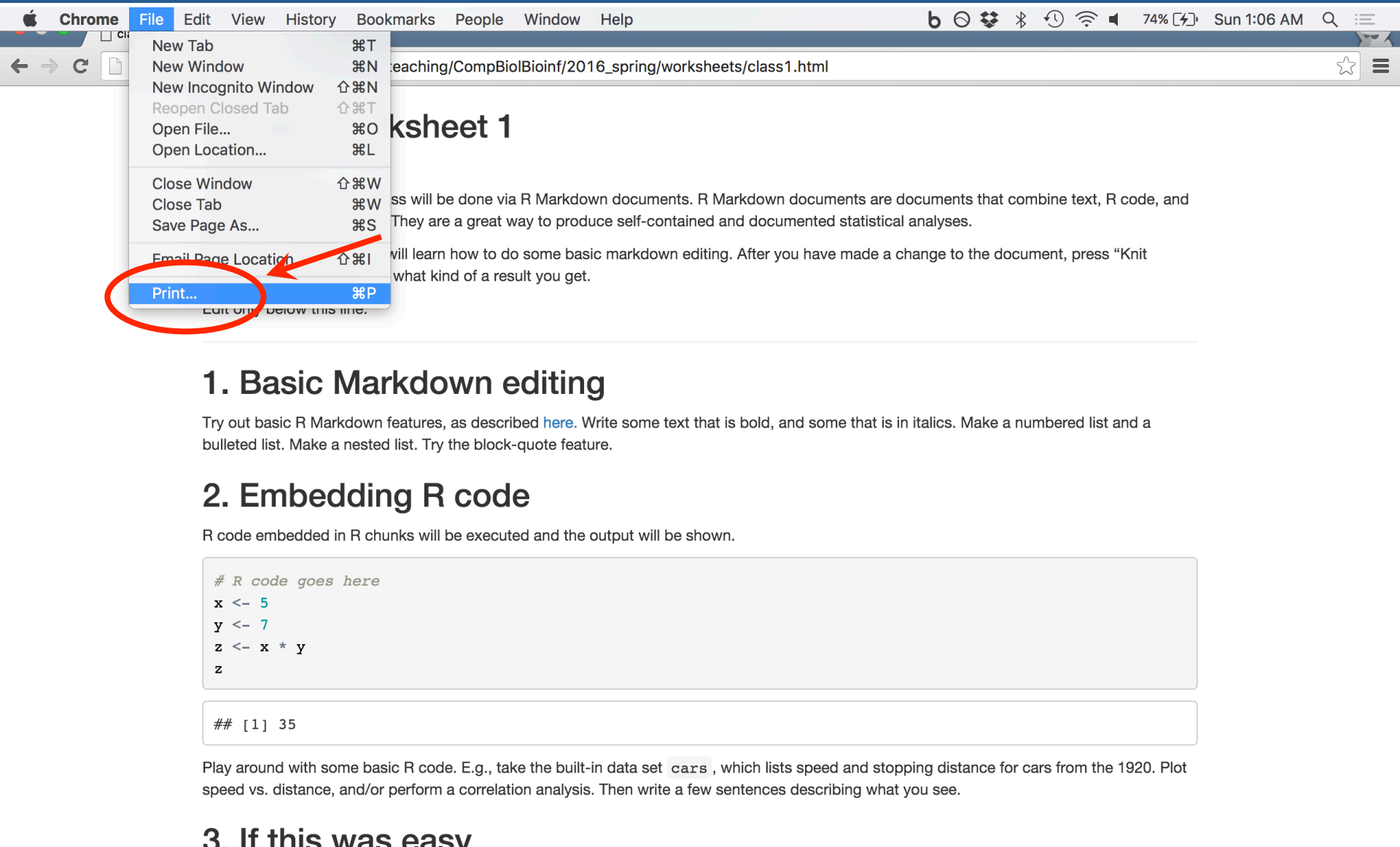

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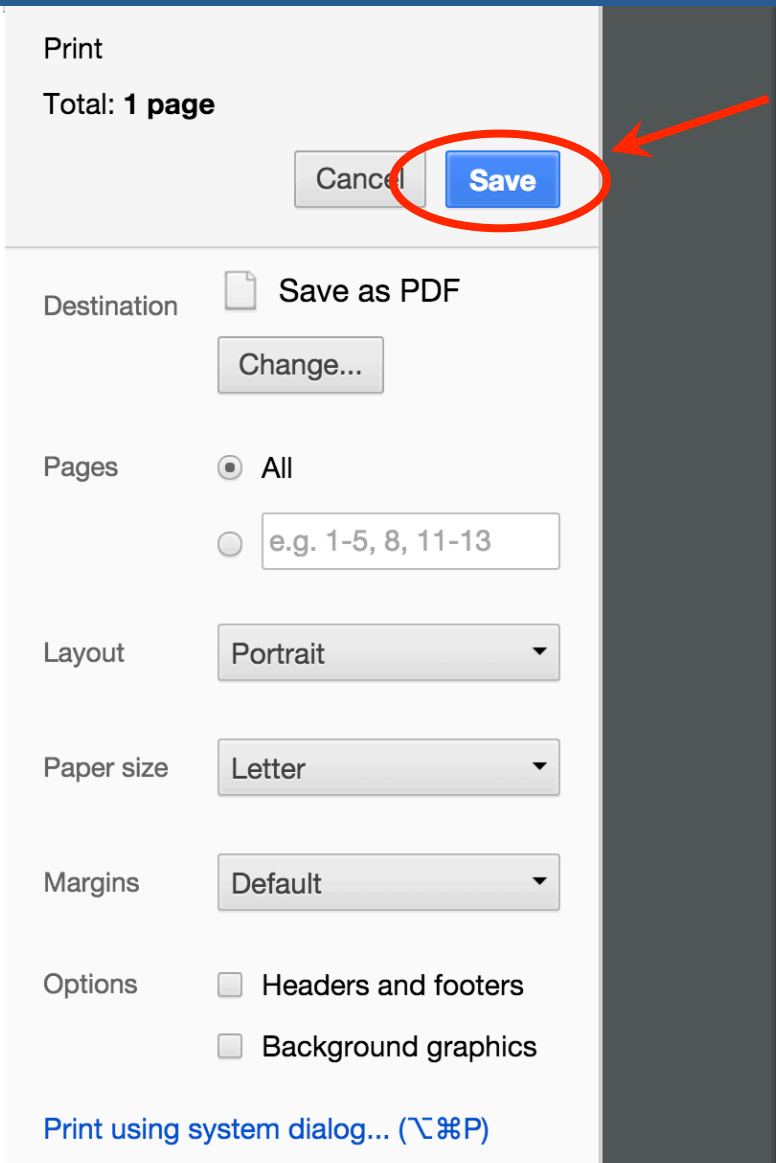

In-class worksheet 1

Jan 19, 2016

Much of the work in this class will be done via R Markdown documents. R Markdown documents are documents that combine text, R code, and R output, including figures. They are a great way to produce self-contained and documented statistical analyses.

In this first worksheet, you will learn how to do some basic markdown editing. After you have made a change to the document, press "Knit HTML" in R Studio and see what kind of a result you get.

Edit only below this line.

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2. Embedding R code

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```
# R code goes here
x <- 5
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## [1] 35
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Play around with some basic R code. E.g., take the built-in data set `cars`, which lists speed and stopping distance for cars from the 1920. Plot speed vs. distance, and/or perform a correlation analysis. Then write a few sentences describing what you see.

3. If this was easy

If this was easy, use Google to find out how to type-set mathematical formulas inside of R markdown.

Markdown basics

http://rmarkdown.rstudio.com/authoring_basics.html

```
normal text

*italics*

**bold**

# Header 1
## Header 2

List:

1. Item 1
2. Item 2
3. Item 3
```

normal text

italics

bold

Header 1

Header 2

List:

1. Item 1
2. Item 2
3. Item 3

Markdown basics

````
Embedded R code will be
evaluated and printed

```{r}
head(cars)
plot(cars$speed, cars$dist)
```
````

Embedded R code will be evaluated and printed

```
head(cars)
```

```
##   speed dist
## 1     4    2
## 2     4   10
## 3     7    4
## 4     7   22
## 5     8   16
## 6     9   10
```

```
plot(cars$speed, cars$dist)
```