431 Project Instructions

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Contents

Chapter 1

Overview

Your final project for this course will result in a portfolio of work related to two studies.

1. [Study 1 - the Class Survey] In the first study, you (sometimes working individually, sometimes in a group of students) will design, administer, analyze and present the results of a survey designed to compare two or three groups of subjects on some *categorical* and *continuous* outcomes we will develop from your initial ideas.
2. [Study 2 - your Data] In the second study, you (working individually) will propose a research question and relevant data of interest to you, and then complete all elements of a data science project designed to create a statistical model for a *quantitative* outcome, then use it for prediction and assess the quality of those predictions.

All materials related to the project will be maintained at https://github.com/THOMASELOVE/431-2018-project where regular updates will be posted throughout the semester.

About This Website

This website contains the Fall 2018 project information for PQHS / CRSP / MPHP 431: Statistical Methods in Biological & Medical Sciences, Section 1.

Working with This Document

1. This document is broken down into multiple sections. Use the table of contents at left to navigate.
2. At the top of the document, you'll see icons which you can click to
    - search the document,
    - change the size, font or color scheme of the page, and
    - download a PDF or EPUB (Kindle-readable) version of the entire document.
3. The document is a work in progress, and will be updated occasionally through the semester. Check the Version information above to verify the last update time.

Course Home Page

The course home page is at https://github.com/THOMASELOVE/431-2018

Questions?

Questions about the project can be directed to **431-help at case dot edu** or to Dr. Love directly.

Chapter 2

Introduction

You can label chapter and section titles using `{#label}` after them, e.g., we can reference Chapter 2. If you do not manually label them, there will be automatic labels anyway, e.g., Chapter **??**.

Figures and tables with captions will be placed in `figure` and `table` environments, respectively.

```
par(mar = c(4, 4, .1, .1))
plot(pressure, type = 'b', pch = 19)
```

Reference a figure by its code chunk label with the `fig:` prefix, e.g., see Figure 2.1. Similarly, you can reference tables generated from `knitr::kable()`, e.g., see Table 2.1.

```
knitr::kable(
  head(iris, 20), caption = 'Here is a nice table!',
  booktabs = TRUE
)
```

You can write citations, too. For example, we are using the **bookdown** package (Xie, 2018) in this sample book, which was built on top of R Markdown and **knitr** (Xie, 2015).

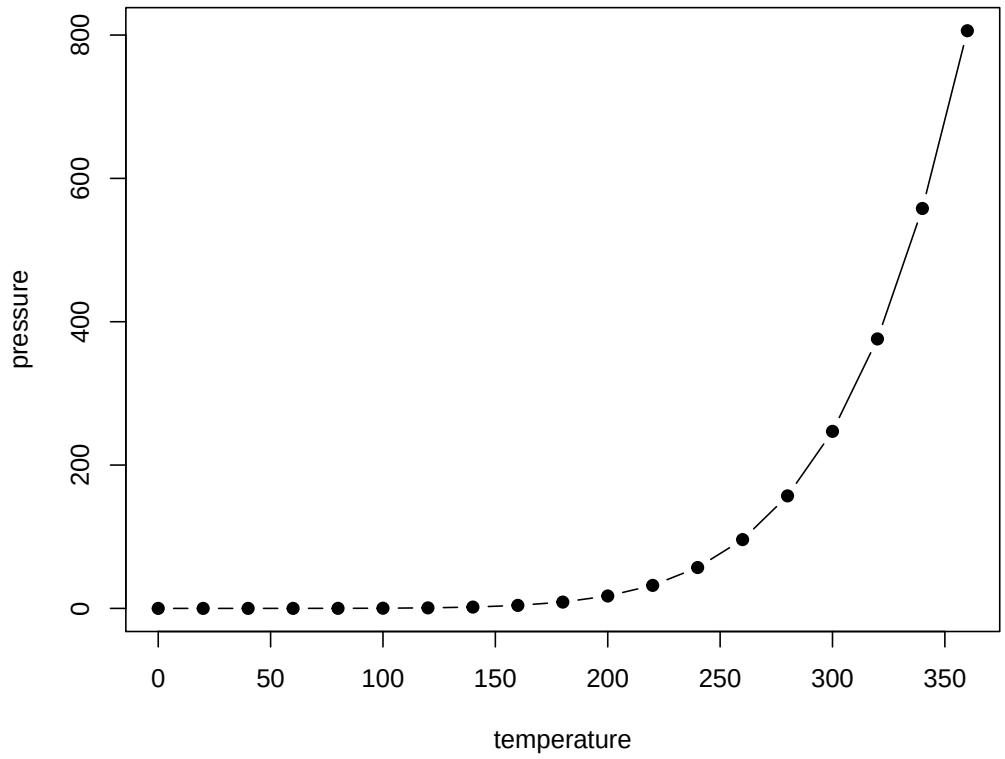

Figure 2.1: Here is a nice figure!

Table 2.1: Here is a nice table!

Sepal.Length	Sepal.Width	Petal.Length	Petal.Width	Species
5.1	3.5	1.4	0.2	setosa
4.9	3.0	1.4	0.2	setosa
4.7	3.2	1.3	0.2	setosa
4.6	3.1	1.5	0.2	setosa
5.0	3.6	1.4	0.2	setosa
5.4	3.9	1.7	0.4	setosa
4.6	3.4	1.4	0.3	setosa
5.0	3.4	1.5	0.2	setosa
4.4	2.9	1.4	0.2	setosa
4.9	3.1	1.5	0.1	setosa
5.4	3.7	1.5	0.2	setosa
4.8	3.4	1.6	0.2	setosa
4.8	3.0	1.4	0.1	setosa
4.3	3.0	1.1	0.1	setosa
5.8	4.0	1.2	0.2	setosa
5.7	4.4	1.5	0.4	setosa
5.4	3.9	1.3	0.4	setosa
5.1	3.5	1.4	0.3	setosa
5.7	3.8	1.7	0.3	setosa
5.1	3.8	1.5	0.3	setosa

Bibliography

Xie, Y. (2015). *Dynamic Documents with R and knitr*. Chapman and Hall/CRC, Boca Raton, Florida, 2nd edition. ISBN 978-1498716963.

Xie, Y. (2018). *bookdown: Authoring Books and Technical Documents with R Markdown*. R package version 0.7.