

Psy 6136: Assignment 1

This is the first assignment for the course. It is ungraded, but I expect you to complete it within the next week or at most two and submit a report to me by email, friendly@yorku.ca. I list the main [Readings](#), and some [Supplements](#) that might be useful. The final section, [Problems](#) lists some exercises from DDAR that you are expected to complete.

Readings

- DDAR, Ch 1 – Ch 2
- Agresti, Ch. 1

Supplements

A (very) short introduction to R, <http://cran.r-project.org/doc/contrib/Torfs+Brauer-Short-R-Intro.pdf> covers the basics of installing R and R Studio, the R Studio window layout, and an overview of R commands, data structures and functions. If you haven't already installed R and R Studio, do so now, and work through some of the examples.

Check out the cheat sheet for R available at R Studio: <https://www.rstudio.com/resources/cheatsheets/> Initially, you'll want the one on the R Studio IDE, but there are many other useful ones. Print a set and get them laminated! [Actually, I'm having copies of these printed for you.]

McNamara & Horton (2017), "Wrangling categorical data in R", <https://doi.org/10.7287/peerj.preprints.3163v2> describe some aspects of data import and tidying specific to categorical data.

The vcdExtra vignette, [Creating and manipulating frequency tables](#) covers a lot of the material from DDAR, Ch 2.

Exercises: Workflow

I recommend that you setup your work in the course as an R Studio project, as described under ["Software" on the course Resources](#) page.

For simple exercises using R, the easiest way to work is to prepare an **R script** with your commands in the R Studio editor panel, save the file, and then use File -> Compile Report (Ctrl+Shift K) to run the script, producing output in HTML, PDF or MS Word format. Here is an [RScript-template.R](#) you can use; it produces this output: [RScript-template.html](#)

This uses the knitr and rmarkdown packages, which allow you to include normal text in the script, in specially formatted R comments. (See: *Render an R script to a report*,

<https://bookdown.org/yihui/rmarkdown-cookbook/spin.html> for details). It is useful to start your script with a header such as the following:

```
#' ---  
#' title: "Assignment 1"  
#' author: "John Smith"  
#' date: "Jan 16, 2015"  
#' ---
```

Inside your script, you can use other such markdown comments to produce section headers (`#'` `#`, `#'` `##`, `#'` `###` for heading levels 1, 2, 3), `**bold**` for **boldface**, etc. such as

```
#' ## Problem 1  
#' Here you can add comments that are treated as normal paragraph  
#' text to describe what you did or what you found
```

You can also use an **R markdown document** (.Rmd) file, which is more suitable if there is more text, explanation than code. This is a plain text file using markdown formatting directly. Here is a template you can use: [RMarkdown-template.Rmd](#). In this format, R code appears in chunks, delimited by backticks: ```` code ```` such as:

```
```{r plot-mpg, fig.height=5, fig.width=5}  
plot(mpg ~ disp, data=mtcars,
 pch=16,
 xlab="Engine displacement",
 ylab="Gas mileage (mpg)")
```
```

There is a `⌘` button in the tool bar to insert a code chunk. Use the knit button (Ctrl-Shift-K) to knit your document.



Problems

These problems don't involve that much R code, but this might be a good opportunity to learn to use .Rmd format.

1. DDAR, Ex 1.1(a), Ex 1.2
2. DDAR, Ex 1.2
3. DDAR: Ex 2.2
4. DDAR: Ex 2.4