Class Notes: Week 1

Orientation to Class Resources

- Most important: DCF Homepage. Bookmark this page so you can get to it easily.
- The FAQ for the course: http://dtkaplan.github.io/DCF-Course-2014/Notes/FAQ.html
- Macalester RStudio Server: . Login with your Macalester email name (e.g. `brosenberg`). The initial password is the last 4 digits of your student ID number. This can be changed. Instructions here

Some examples of contemporary data

Taxicabs and the Shared Economy

A team of mathematicians and engineers has calculated that if taxi riders were willing to share a cab, New York City could reduce the current fleet of 13,500 taxis up to 40 percent. Link to news story and an interactive site with the data.

Medicare Spending

Newspaper article here

Data available here.

DTK notes

Examples from many fields

Infrastructure

RStudio

- Windows, panes, and tabs in RStudio.
- R/Markdown
  - Opening an Rmd file for editing.
  - Saving Rmd files
  - Compiling Rmd to HTML
- Handing in files
  - Upload HTML files to Moodle.
  - Downloading from RStudio server to your desktop so that you can upload them to Moodle.

Creating an Rmd File

Create an Rmd file named `Class-1.Rmd`. Eventually, you will upload your HTML file to Moodle, under In-class, Week 1

Markdown for ...

- Headings, lists, mathematics
- Links, images
- R code chunks

TASK: Create an narrative description of your classes this term. Include links to the Moodle site, links to a relevant Wikipedia (or other) article, and an embedded figure (perhaps from Wikipedia).

Tidy Data

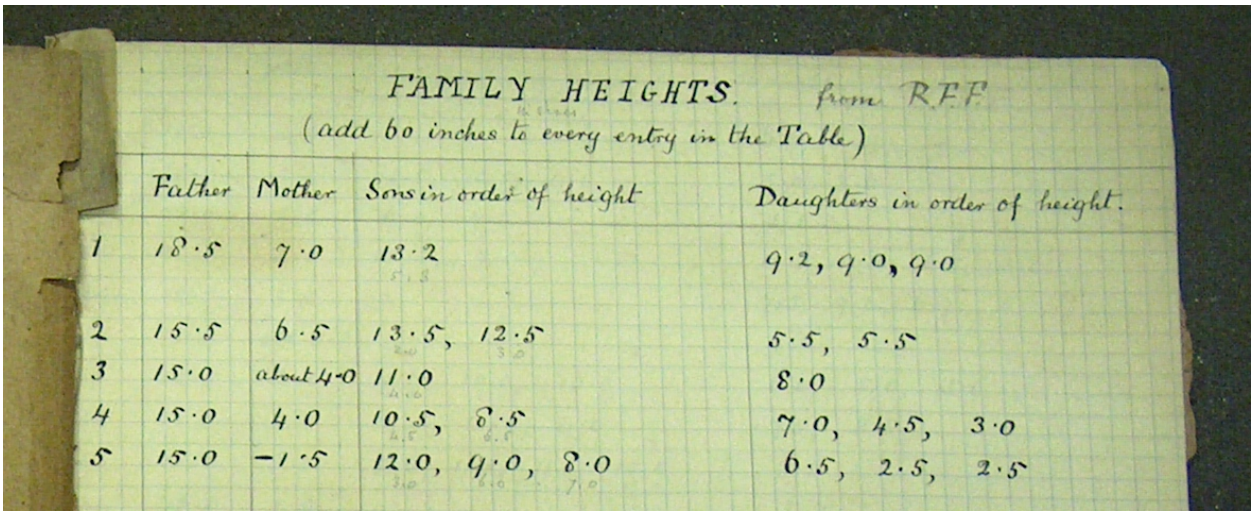
Basics: Cases, Variables, rows, columns, quantitative, categorical

Exercises: Put these into tidy form.

Divide into groups and put your answer to the following in these spreadsheets:Group-1, Group-2, Group-3, Group-4, Group-5, Group-6

Make a separate tab for each table.

Height measurements In the 1880s, Francis Galton started to make a mathematical theory of evolution. Here's part of a page from his lab notebook. Translate it into tidy form.



FAMILY HEIGHTS. from R.F.F.

(add 60 inches to every entry in the Table)

	Father	Mother	Sons in order of height	Daughters in order of height.
1	18·5	7·0	13·2	9·2, 9·0, 9·0
2	15·5	6·5	13·5, 12·5	5·5, 5·5
3	15·0	about 4·0	11·0	8·0
4	15·0	4·0	10·5, 8·5	7·0, 4·5, 3·0
5	15·0	−1·5	12·0, 9·0, 8·0	6·5, 2·5, 2·5

Marital status in the US armed forces Here's the original, untidy spreadsheet.

Back to your Week-1 Document

1. Add in answers to the above two questions, along with links to your group's spreadsheet.
2. Add in answers to the Week-1 drill problems

When done, upload it to Moodle, under In-class, Week 1.

The assignment document for next week

Start on Assignment 1.

- Create an Rmd document named `AssignmentOne-XXX.Rmd` (where `XXX` is your initials).
- Eventually, by class next week, you'll hand it in on Moodle, Week-1 Assignment hand in site.