Stats 401 Lab 5

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Announcements

- Homework 4 is due today
- Quiz 1 is today
- We will begin in 20 minutes
- length of quiz: 40 minutes
- Quick R review before quiz

Interacting with R-studio

There are two ways to interact with R-Studio

- ▶ Console (the bottom left panel)
    - ▶ this is where R shows the results of any command
    - ▶ directly type commands here
    - ▶ commands typed here are forgotten upon closing R-Studio
- ▶ Script editor
    - ▶ type commands here and save the script, that way you have a record of what you did
    - ▶ select commands to run (by highlighting the relevant lines) and hit 'ctrl+enter'

Console vs Scripts in R-Studio

So, it might be better to write R-scripts for homework solutions etc so that

- you do not need to scroll to find previous commands
- you can refer back to the code at later stages

Shortcuts/ useful features to know

- Console
  - Use the 'up arrow' to get the last expression typed
  - type Last.Value to get the value of the last evaluated expression
  - Press Esc to stop evaluating the current expression
- Script editor
  - To start a new script, click File> New Script
  - Use # to write a comment. There is no block commenting in R.
  - If you type more than one expression on the same line, use semicolons (;) between the commands

Working Directory

- This is the directory you are currently working in. When we load datasets into R by simply specifying the file name (without file path), this is where R looks for the file.
- When we load/save datasets or save graphs, to avoid typing the path every time we can specify a working directory.
- To set the working directory click File > Change dir... or type setwd(file path)

Workspace

- ▶ The workspace is where all the objects you create during a session are located.

- ▶ When you close R you will be prompted to "Save workspace image?" If you say yes, the next time you open R from the same working directory the workspace will be restored, that is, all of the objects you created during your last session will still be available.

- ▶ *Note: Depending on what you are working on, it is usually wiser to write a script and then run the entire script with each new session. This way you know exactly what objects you have created; sometimes lingering objects can cause errors in programs (maybe something you typed in the console at some point but have forgotten about).*
  If a particular object is very important then save it to a file.

Managing the Workspace

- To list all the variables created during your session: ls()
- To see what libraries and dataframes have been loaded: search()
- To remove an object: rm(*object names*)
- To remove all objects: rm(list=ls())

Small example

```r
# Calculate the mean and median of 1,2,3,4,5
x <- c(1,2,3,4,5) # Store the vector
mu = mean(x)
md = median(x)

# See all the stored variables
ls()
```

```
## [1] "md" "mu" "x"
```

```r
# Remove the mean and the median and check if they
# were removed successfully
rm(mu,md); ls()
```

```
## [1] "x"
```

Working example

Let's write a short R-script together!

Quiz 1

- Duration: 40 minutes.
- Scratch paper is available (raise your hand if you want any)
- ALL THE BEST!