About R, RStudio, R Markdown, and Dropbox for Stat 535
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What is R? R is a computer language and software package for statistics, for statistical visualizations of data, and for statistical programming. It is powerful, it is open source, it is free, and it is used by tens of thousands of people every day in diverse applications of statistics. Its only drawback is that it does not have a graphical user interface like the expensive competitors SAS or SPSS, so the learning curve is steep. Nevertheless, the integrated development environment called RStudio does make R easier to use (RStudio is also open source and free!).

In this class, we are going to extensively use R and RStudio (and later also Python). The purpose is to introduce you to an increasingly important software package for data science. Many job advertisements today ask for knowledge of R (and Python).

R and RStudio are available on all campus computers through the AppsAnywhere setup.

For this class, you will also need to automatically back up your work. I recommend using Dropbox with a synced folder on your desktop.

If you have a laptop computer, or a desktop computer at home, please do the following steps to install all the software on your computer.

Step 0: If you are a Windows user, determine if your system is 32-bit or 64-bit. Here is a site for Windows 10 users that explains how to check if you have a 32-bit or a 64-bit system.

```
https:
//support.microsoft.com/en-us/help/13443/windows-which-operating-system
```

Step 1: Download and install base R for your particular operating system (look for your operating system). Base R is sufficient for our course. As of May 3, 2019, the latest version was 3.6.0.

```
http://cran.at.r-project.org
```

Step 2: Download and install RStudio.

> `https://www.rstudio.com/products/rstudio/download/#download`

Step 3: Watch the official RStudio video. Scroll down on the following page to find the video.

> `https://www.rstudio.com/products/RStudio/`

Step 4: Confirm it is working. Open RStudio, and in the console type 2+2 and press enter.

Step 5: Create a free Dropbox Basic account.

> `https://www.dropbox.com/register`

Step 6: In your free Dropbox Basic account in your browser online, create a folder `Stats535`. Then download and install the Dropbox app at the top right of this page.

> `https://www.dropbox.com/register`

Follow the instructions, and after install is complete, sync the folder `Stats535` to your desktop or MyDocuments. If you run into problems, more detailed instructions for Windows users are at the link below. Mac and Linux users can find similar sites.

> `https://www.windowscentral.com/how-sync-your-dropbox-folders-windows-10`

Step 7: Now that you have a synced folder that automatically backs up your work, let's do something with R Markdown. Watch the official RMarkdown video at the website below.

```
https://rmarkdown.rstudio.com/lesson-1.html
```

Step 8: In RStudio, in the console, type `install.packages("rmarkdown")` and press enter. For this you should be connected to the internet.

Step 9: Let's create and knit an R Markdown file to see if it worked. In RStudio, go to `File-> New File -> R Markdown`. Click `OK` for defaults. The file opens. Save it to your `Stats535` folder with the filename Test. Click the blue `knit` button and wait. If an html file opens, congratulations you've knitted your first Rmd file!!! Finally, read the html file, and read the Rmd file in RStudio and think about the correspondences.
If it didn't work for you, let's try to fix it with classmates and Professor Fiore.

Step 10: Read the following three lessons about RMarkdown.

```
https://rmarkdown.rstudio.com/lesson-1.html

https://rmarkdown.rstudio.com/lesson-2.html

https://rmarkdown.rstudio.com/lesson-3.html
```