More R Markdown

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## R Markdown Coding Tips

Markdown is an easy to use format for writing reports. It resembles what you naturally write every time you compose an email. In fact, you may have already used markdown without realizing it. These websites all rely on markdown formatting

* [Github](https://github.com/)
* [StackOverflow](https://stackoverflow.com/)
* [Reddit](https://www.reddit.com/)

### Chunks of Code

It is always a good idea to include titles for your chunks of R code. This allows other users to quickly find the code you may be referencing when working with other developers. Additionally, within each chunk of code, there is a number of options for how your code will be handled when you knit a file. These are can be included in “{r }” where you include the title.

**Options include:**

* **eval = FALSE** prevents the code from being evaluate (not run and no output created). This is useful if you want to stop a chunk of code from running but you will probably not use this in the course.
* **include = FALSE** runs the code, but doesn’t show the code or results in the final document. Use for setup code that you don’t want cluttering your report.
* **echo = FALSE** prevents code (but not results) from appearing in the finished report. Useful when presenting to management so the code doesn’t show on report.
* **message = FALSE** or **warning = FALSE** prevents messages or warnings from appearing in the output file.
* **results = ‘hide’** hides printed output.
* **fig.show = ‘hide’** hides plots.
* **error = TRUE** causes the render to continue even if the code returns an error (rarely used).

**While these are useful options, most of the time for this class I would like to see your code and results so please use these options sparingly**

### Packages and Data Imports in R

A few tips when working with packages in Markdown include:

* Don’t install a package in your Markdown file. This will install the package everytime the file is knit. To load new packages, do this in the console outside of the Markdown file.
* If a new package does need to be installed, include this in the comments at the top of your R Markdown file.
* You only need to load the library once in the Markdown file. So, if you are using tidyverse, you will only have library(tidyverse) included once at the beginning.
* When you load some packages, they actually have multiple packages included in the load. For example, when you load tidyverse, this will load ggplot2, dplyr, tidyr, readr, etc.

### Examples

For this project, we will be using the tidyverse which you just installed in a previous assignment. Remember that when you load a package in R, it will remain loaded throughout the program (you don’t need to continually load the package).

Below is an example of loading the package and importing the data:

library(tidyverse)

## ── Attaching core tidyverse packages ──────────────────────── tidyverse 2.0.0 ──  
## ✔ dplyr 1.1.4 ✔ readr 2.1.5  
## ✔ forcats 1.0.0 ✔ stringr 1.5.1  
## ✔ ggplot2 3.5.0 ✔ tibble 3.2.1  
## ✔ lubridate 1.9.3 ✔ tidyr 1.3.1  
## ✔ purrr 1.0.2   
## ── Conflicts ────────────────────────────────────────── tidyverse\_conflicts() ──  
## ✖ dplyr::filter() masks stats::filter()  
## ✖ dplyr::lag() masks stats::lag()  
## ℹ Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors

library(readr)  
US\_Pop <- read\_csv("US\_Population.csv")

## Rows: 57 Columns: 67  
## ── Column specification ────────────────────────────────────────────────────────  
## Delimiter: ","  
## chr (36): SUMLEV, REGION, DIVISION, STATE, NAME, NRANK\_ESTBASE2010, NRANK\_PO...  
## dbl (31): ESTIMATESBASE2010, POPESTIMATE2010, POPESTIMATE2011, POPESTIMATE20...  
##   
## ℹ Use `spec()` to retrieve the full column specification for this data.  
## ℹ Specify the column types or set `show\_col\_types = FALSE` to quiet this message.

summary(cars)

## speed dist   
## Min. : 4.0 Min. : 2.00   
## 1st Qu.:12.0 1st Qu.: 26.00   
## Median :15.0 Median : 36.00   
## Mean :15.4 Mean : 42.98   
## 3rd Qu.:19.0 3rd Qu.: 56.00   
## Max. :25.0 Max. :120.00

## Including Plots

You can also embed plots, for example:



Note that the echo = FALSE parameter was added to the code chunk to prevent printing of the R code that generated the plot.