Skill Task 1
R Markdown, File Paths with `here()`

PS 811: Statistical Computing

Due February 14, 2020

Setup

Download the `CAFE.csv` data from Canvas. Save it to your `data` folder inside of your **class "project" folder.**

In your project "root" (the top of your project), create a folder for skills assignments. You can call it `skills`.

Create a new R Markdown file (File > New File > R Markdown). Set it up for PDF output, and call it `skills-1.Rmd`. Save it in the `skills` folder.

Running R Code

An R Markdown document isn't the same as a regular R file, but it can run R inside of "code chunks." Begin a new R code chunk. (You can type out the chunk syntax manually, use the menu buttons, or search for the keyboard shortcut using the "Help" tab!)

Practice running some basic R code inside the chunk. Create two variables called `first` and `last` that contain your first and last name, respectively. Since these objects contain *character data* (a.k.a. "strings"), the character data must be put in quotes. See the example below:

```r
# Notice the difference between dog and "dog"

dog # if unquoted, R thinks this is an object called `dog`.
    # If there is no `dog` object, you get an error.

"dog" # Whereas this is a piece of character data.
      # R recognizes this as text.
```

Then use the `c()` function to combine your first and last name objects into one vector. Here's how it looks for me.

```
c(first, last)
```

```
## [1] "Michael"     "DeCrescenzo"
```

Since c() creates vectors (and we will use a lot of vectors), we will use a lot of c().

Import data using `here()`

We saw in lecture that projects have an *intentional* organizational structure. We take advantage of this structure and build safe file paths using the here package.

In a new code chunk, attach the here and tidyverse packages[1] Notice that you when load here, it tells you where here() is. It should be your project root. Here is what mine shows.

```
library("here")
```

```
## here() starts at /Users/michaeldecrescenzo/Box Sync/teaching/811-computing-s20
```

In another new code chunk, use the read_csv() function to import the data from CAFE.csv. Specify the path to this file by coming the here() function with the appropriate folder and file names.[2] The object won't save unless you assign the results of read_csv() to an object name.

This dataset describes U.S. senators' votes on a fuel efficiency bill and their campaign contributions from individuals who work for automobile manufacturers.[3] We will use it for some examples this semester.

Once the object is saved, you should be able to preview it in the console by running a command containing only the object name. Do this, and make a note in your Rmd file of how many rows (observations) and columns (variables) are in the full data set.

Knit to PDF

When you are done, "knit" (a.k.a. "render") your R Markdown document to PDF.

Upload both your .Rmd and PDF files to Canvas. Because we used a robust project-oriented workflow, I should be able to run your .Rmd file and produce identical PDF output :)

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[1]Using the library() function. Some advice: do *not* set cache = TRUE on a code chunk that loads packages.
[2]Hint: consult the example project for guidance building a file pathway using here().
[3]Learn more here: https://vincentarelbundock.github.io/Rdatasets/doc/Stat2Data/CAFE.html