

SOC 4650/5650: Exercise 02b - Plotting and Reproducible Examples

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Directions

Use the same notebook from the prior exercise and continue adding to it!

Installing Dependencies in RStudio

1. Install reprex:

```
install.packages("reprex")
```

2. Install stlData if you have not done so already:

```
install.packages("devtools")  
devtools::install_github("chris-prener/stlData")
```

Loading Packages and Assigning Data to Objects

3. Open the Lecture Prep 02 notebook and add a fourth second-level heading that looks like this:

```
## Load Data
```

4. Add some introductory text on the next line:

```
The following code loads the data package and assigns  
our data to a data frame in our global environment:
```

5. Add a new code chunk named data-load that contains the following code and execute it:

```
```{r data-load}  
library(stlData) # data source
leadData <- stlLead
```
```

Viewing Data Objects

6. Create a spreadsheet-like view of your data by entering the following function into the *console*:

```
View(leadData)
```

Creating Your First Plot

7. In the Lecture Prep 02 notebook, add a fifth second-level heading followed by a third-level heading:

```
## Part 1
### Question 1
```

8. Add some introductory text on the next line that includes back-ticks around the word `pctElevated`:

```
The first question in this assignment asks for a
histogram if the 'pctElevated' variable.
```

9. Add a new code chunk named `data-load` that contains the following code and execute it:

```
```{r lead-plot-01}
ggplot() +
 geom_histogram(leadData, mapping = aes(pctElevated))
```
```

10. Add a interpretation to your narrative text below the plot:

```
We can see that the bulk of the census tracts have
elevated blood lead level rates of between three and
ten percent, but there are some tracts where nearly
a quarter of children have elevated rates.
```

Saving Plots

11. In the Lecture Prep 02 notebook, add a another third-level heading along with the following narrative:

```
### Question 2
Next, we want to save our plot using the 'ggsave()'
function:
```

12. Add a new subdirectory to your project named results.
13. Add a new code chunk named data-load that contains the following code and execute it:

```
```{r save-plot-01}
ggsave("results/leadHistogram.png")
```
```

Knitting, Committing, and Pushing

14. Save your document and be sure that the .nb.html file is updated.
15. **Knit** your document to produce the GitHub output.
16. Open GitHub Desktop, **commit** the change, and **push** it to GitHub.com
17. Open the LP-02 subdirectory on GitHub.com and check out how each of the different files appears on the website.

Reproducible Examples

18. In RStudio, go to File > New File > R Script
19. Copy the following syntax into the script from your notebook:

```
library(ggplot2) # creating plots
library(stlData) # data source

leadData <- stlLead

ggplot() +
  geom_histogram(leadData, mapping = aes(pctElevated))
```

20. Highlight this entire set of code, and copy it to your system's clipboard.
21. In the *console*, open the `reprex` package the execute the `reprex()` function:

```
library(reprex)
reprex()
```

22. Once the output appears in the viewer, open up Slack and create a direct message with both Brandon and Chris. In the message composition field, paste the reproducible example. Delete the `![](` before the link the the parenthesis afterward.
23. On the line with the initial set of backticks, delete the character `r`.
24. Above the initial set of backticks, compose a quick question inquiring about the warning message you received the `binwidth`.
25. Send the message!