**PORTFOLIO EXERCISE 2**

**Instructions**

1. Upload your Shiny application as a .zip file on Canvas. Details given below.
2. Upload your write-up as a PDF document on Canvas.
3. Simultaneously attach your PDF within the portfolio folder on Piazza. This is how submissions will be shared for peer reviews.
4. Write-ups should not exceed 500 words (not counting code).

**Description**

The portfolio exercises are opportunities for you to design and share visualization without the constraints of in-class exercises. In the second portfolio assignment, we will use shiny to create an interactive visualization and prepare a brief discussion on a topic that is interesting to you. You may continue to use the same dataset as in Project Portfolio 1, or you may choose a new dataset. As before, you may choose data from public sites ([TidyTuesdays](https://github.com/rfordatascience/tidytuesday), [Data is Plural](https://www.data-is-plural.com/archive/), [Kaggle Datasets](https://www.kaggle.com/datasets), [Google Dataset Search](https://datasetsearch.research.google.com/), [Data.Gov](https://www.data.gov/), [Madison Open Data](https://data-cityofmadison.opendata.arcgis.com/), [Bioconductor Datasets](https://bioconductor.org/packages/release/data/experiment/), [Awesome Public Data](https://github.com/awesomedata/awesome-public-datasets)), or you may generate and download data about your own life, taken from an app that you use regularly.

Once you have identified a dataset, you will use the shiny package to create a publication-quality interactive visualization. The application should implement at least two types of dynamic queries, either through UI or graphical inputs. The application should be annotated with text to provide context, so that the application is understandable to users who are not necessarily familiar with the dataset. If the interface’s inputs are not immediately intuitive, instructions should be given. Code implementing this application should be modular, with reactive expressions used to minimize duplication and functions defined to externalize complex logic.

Prepare a discussion of your visualization and the process used to create it. You should address the following components,

* What are some interesting facts that you learned through the visualization. Provide at least one unexpected finding.
* How did you create the interface? Were there any data preparation steps? What guided the style customizations and interface layout that you used.
* What is the reactive graph structure of your application?

To support reproducibility, combine your application code and input dataset as a zipped archive. The TAs should be able to run your app by running runApp(“your\_zipfile.zip”). For example, zipping any of the example apps from the course notes would allow it to be run in this way. This is described in detail in the fourth section on this [guide](https://shiny.rstudio.com/articles/deployment-local.html). Alternatively, if you wish, you may host your application online, using [shinyapps.io](https://www.shinyapps.io/) or [rpubs](https://rpubs.com/), for example.

At the end of the course, I will ask you to choose your favorite submission from the portfolio exercises to include within a publicly visible end-of-course book / website. You will have a chance to revise your submission based on peer reviews before it is included in these.

**Rubric**

Discussion Quality [4 pts]: The write-up is clear and engaging.

Design Choices [4 points]: The visual interface is easy to use, appropriately annotated, and supports meaningful dynamic queries.

Creativity [4 points]: The submission reflects creativity in the data used and questions explored.

Code Useability [3 points]: The code to generate the figures is readable and can be run easily.