Assignment 1

KINESIOL 736 - Scientific Computing for Reproducible Science

Instructions

If not already done, please go to https://quarto.org/docs/get-started/ to download quarto and then install to your machine.

Complete the following exercises using the provided file (`hw-1_notebook.qmd`) on Avenue. This is a quarto document. It will allow you to mix text and code within the same document and then render (i.e., compile) to a `.pdf` file using the Render button at the top. Alternatively, you can use the keyboard shortcut for rendering: - on Mac, this is CMD+SHIFT+K - on Windows and Linux, this is CTRL+SHIFT+K

1. Install the `babynames` package.

2. How many variables and observations does this package contain?

3. Create a data dictionary for each of the variables that includes the variable name, data type, and a description.

4. What is the range of years covered in `babynames`?

5. Create an object from the `babynames` package that does not include the variable `n`.

6. What is one reason for not including `n`, but keeping the variable `prop`?

7. Using the object created in Question 5, what was the most popular name for both sexes in: a) the 2nd millennium? and b) the 3rd millennium?

8. What were the most popular names beginning with the letters Q, V, and X between 2000 and 2012?

9. Create a new object that retains all the variables of the `babynames` package, but create a new column that contains the decade each year is a part of named `decade`.

10. What is the mean and median number of female and male babies in each decade?

11. In which decade(s) and year(s), was:

    a) your name the most popular?
    b) your supervisor's name the most popular?
    c) Mike's kids' names, Jack and Scott, the most popular?

Submission guidelines

Your assignment should be submitted as a .pdf file and must include your last name, first initial, and student ID using the following format: `hw-1_last-initial_ID.pdf`. I would submit an assignment named: `hw-1_carter-m_3351871.pdf`.

This assignment is due **Monday September 30 at 5 pm EST**. If you have any questions, please come and see me or email me to set up an appointment.