

Practice with documentation

Here are a set of challenges to gain additional experience working with RMarkdown or Jupyter Notebooks. The first to are repeated from lecture on Monday, but 3 and 4 are new.

1. Make a short “How to” document describing the process and showing the code and results for creating and filling a 4x4 dataframe with the numbers 1 to 16.
2. Make another “How to” document describing the process and showing the code and results for creating a scatter plot of a random set of 20 numbers between 0 and 50 (\mathbf{x}) and a second set of 20 numbers (\mathbf{y}) that are linearly related to x with a slope of 5 and an intercept of 20 with normally distributed error (standard deviation of 5).
3. Use RMarkdown or a Jupyter Notebook to write two exam questions and the answers for the final exam in this course. These could be a request for code that completes a particular task, example code that contains errors and must be debugged, or example code that the functionality or end product must be described. Email the `*.rmd` or `*.ipynb` file to Stuart (sjones20@nd.edu). Some of these questions may in fact be used on your final!
4. Take the script you submitted last Friday that you used to generate three figures that would be used in a lesson about density-dependent growth and embed that in a pdf handout or Jupyter Notebook that provides an introductory description of the basics of density-dependent growth, including a differential equation, and then describes the effect of each parameter on population dynamics of a population, including the code and figures you generated last week.