
Homework for Lecture 6: RMarkdown

The following homework assignment should be completed as an RMarkdown document. Please submit both the knitted Word document (.docx) and the original .Rmd file to Canvas. Only show your working code in the code chunks, and place your comments/explanations in the written “white space” of the RMarkdown document. You may discuss the assignment with your classmates, but your write-up and work should be done independently of your classmates. The use of AI is considered a violation of academic policy for this assignment. When in doubt, ask me what is and is not allowed.

Answer the following questions in your RMarkdown document. When you run code, make sure you explain what you are doing and what the output is telling us. Your code should go in the grey code chunks, and your explanations should go outside of the chunks in the white space of the document.

1. Create a header called *# Exercise 1*. Then answer the following question. Make sure you explain the code you are using, what the output is showing us, and whether the result makes sense.

- (a) Pick 5 different study places on campus. Create a random sample of 50 values using these study place names and save it to a vector named after your first name. Display the vector. Then convert this vector to a factor and display the factor vector.

In the written space below your code chunk, explain:

- what the original vector shows,
- what changed when you converted it to a factor,
- and why a factor is a reasonable way to store this type of data.

2. Create a header called *# Exercise 2*. Then answer the following question. Make sure you explain the code you are using, what the output is showing us, and whether the result makes sense.

- (a) List 5 different cities you have traveled to or would like to travel to. Create a random sample of 30 values using these cities and save it to a vector named after your last name. Display the vector. Then convert this vector to an ordered factor based on your personal ranking of the cities from least favorite to favorite. Display this new ordered factor vector.

In the written space below your code chunk, explain:

- how you ordered the cities,
- what makes this an ordered factor instead of a regular factor,
- and what the output tells us.

3. Create a header called *# Final Reflection*. In 3–5 complete sentences, explain how RMarkdown helps someone communicate data analysis more clearly than only copying and pasting code from the R console.