
Homework for Lecture 5: More R

The following homework assignment should be completed in the R console, and your code/outputs should then be copied to a text or Word document for submission. Please do not delete any errors that you make, as I would like to see your process in answering the questions. 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. When you run code, make sure you explain what you are doing and what the output is telling us. Also make sure the output makes sense. This can be done with a comment *# Like this*.

1. Create a comment *# Exercise 1: Your Name*. Then answer the following questions:
 - (a) Using the **letters** vector that we used in class, spell your first name with a single line of code.
 - (b) Create a sequence that goes from 0 to 10 and counts by 0.25.
 - (c) Songs often have repeated lines or phrases. Find a short, appropriate repeated phrase from a song, or create your own appropriate repeated phrase, and then use the **rep()** function to repeat this phrase several times.
 - (d) Manually break the phrase you selected in the previous question into individual words in a vector. For example:

```
c("Won't", "you", "take", "me", "to", "Funkytown")
```

Then use the **sample()** function on this character vector to obtain 25 random selections of the words in your phrase.
2. Create a comment *# Exercise 2: Your Name*. Then answer the following questions using the **precip** dataset in R, which contains average annual precipitation amounts for cities around the United States.
 - (a) Display all of the cities starting with the letter C.
 - (b) Display all of the cities that end with the word City.
 - (c) Display all of the cities that contain either “ne” or “re”.
 - (d) Display all of the cities that have between 20 and 35 inches of precipitation per year.
 - (e) Display all of the cities that have less than 12 inches of precipitation or between 33 and 37 inches of precipitation.
 - (f) Determine if any of the values are less than 5 inches of precipitation.
 - (g) Determine if all of the values are between 5 inches and 60 inches of precipitation.