LA.1: Installing R and RStudio (10 points)

Contents

R is the programming language and environment that we will be using for statistical analysis. It is open-source. For more information on R, you can visit the R Project for Statistical Computing. RStudio is the program through which we will be using R. You will need to download and install both R and RStudio.

This assignment has two (2) parts.

Part I

Follow the instructions below to download and install R and RStudio. You should also watch this video explaining R and RStudio and how to install both pieces of software.

Once you have R and RStudio installed, create a working directory (this can be anywhere on your computer that you choose, you just need to know where it is [e.g., in your Documents folder]) for COMM 3710 and take a screenshot of your working directory. Next, open RStudio and take a screenshot of the program.

Submit a single PDF document that contains the three (3) screenshots on Canvas.

1. **RStudio screenshot (see example below)**
2. **COMM 3710 working directory screenshot (see example below)**
3. **Screenshot of your R commands**

Download and Install R

- Open a web browser and navigate to https://cran.r-project.org.
- Download the appropriate file for your operating system (e.g., Mac OS X, Windows, or Linux).
- Install R by double-clicking on the downloaded file. During installation, select the default settings when prompted.

Download and Install RStudio

- Open a web browser and navigate to https://rstudio.com/products/rstudio/download/.
- Download the free version of RStudio that corresponds to your operating system (e.g., Mac OS X, Windows, Linux).
- Install RStudio by double-clicking on the downloaded file.
  - *Note*: If you are using Mac OS X, double-click the downloaded file, then drag the RStudio icon into your `Applications` folder.
  - When you are done, eject the "drive" that you downloaded by dragging it to the `Trash`.
- Watch this video to learn how to navigate RStudio.
- Take a screenshot of RStudio for LA.1.

Set Preferences in RStudio

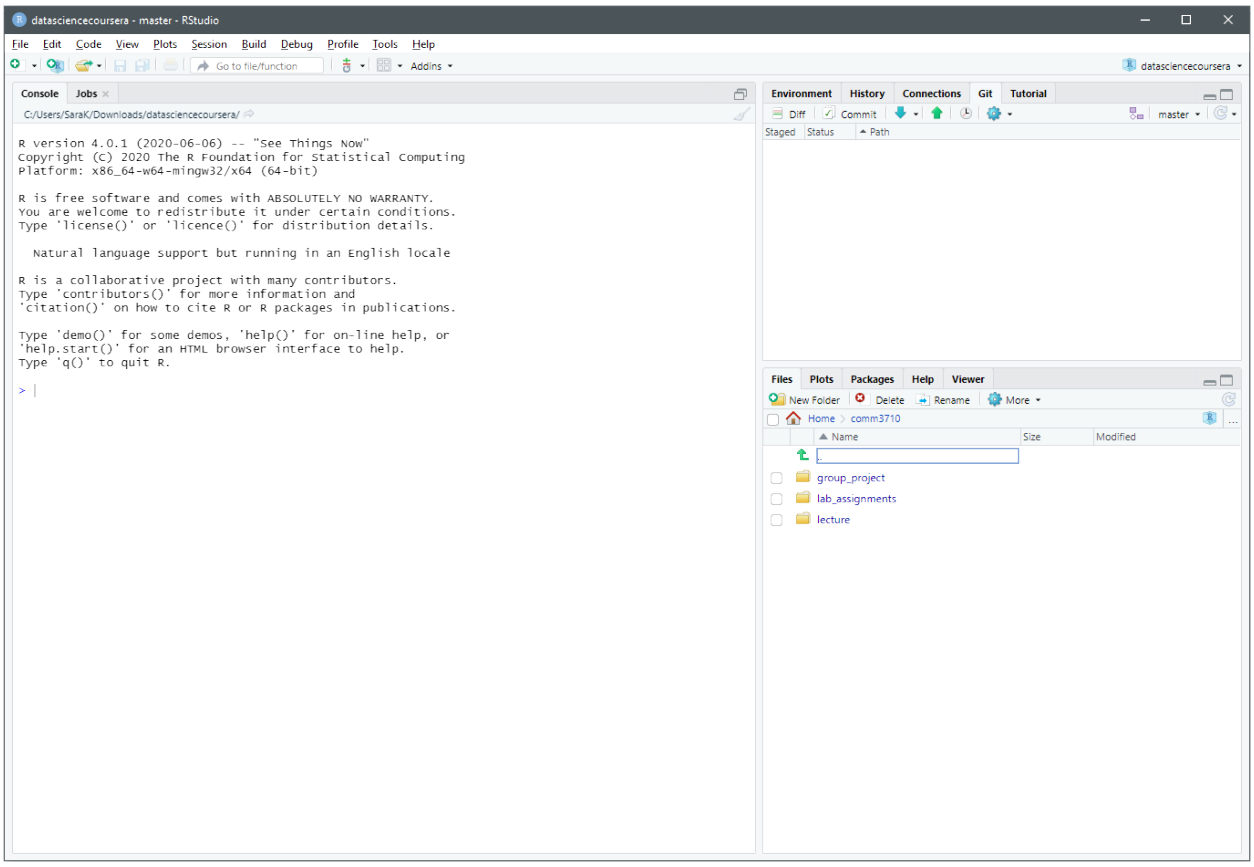
- Open RStudio. Click on `Tools` and navigate to `Global Options...`.
- Uncheck the box next to `Restore .RData into workspace at startup`.
- Where it says `Save workspace to .RData on exit:`, select `Never`.
- Click `Apply` and `OK` to exit.
- These settings ensure that R does not carry forward objects (such as data) that you were working on in a prior assignment to a new assignment.
- Make a habit of *completely* shutting down RStudio when you are done working. This will clear the "Environment," which is a good thing.

Organize Your Working Directory

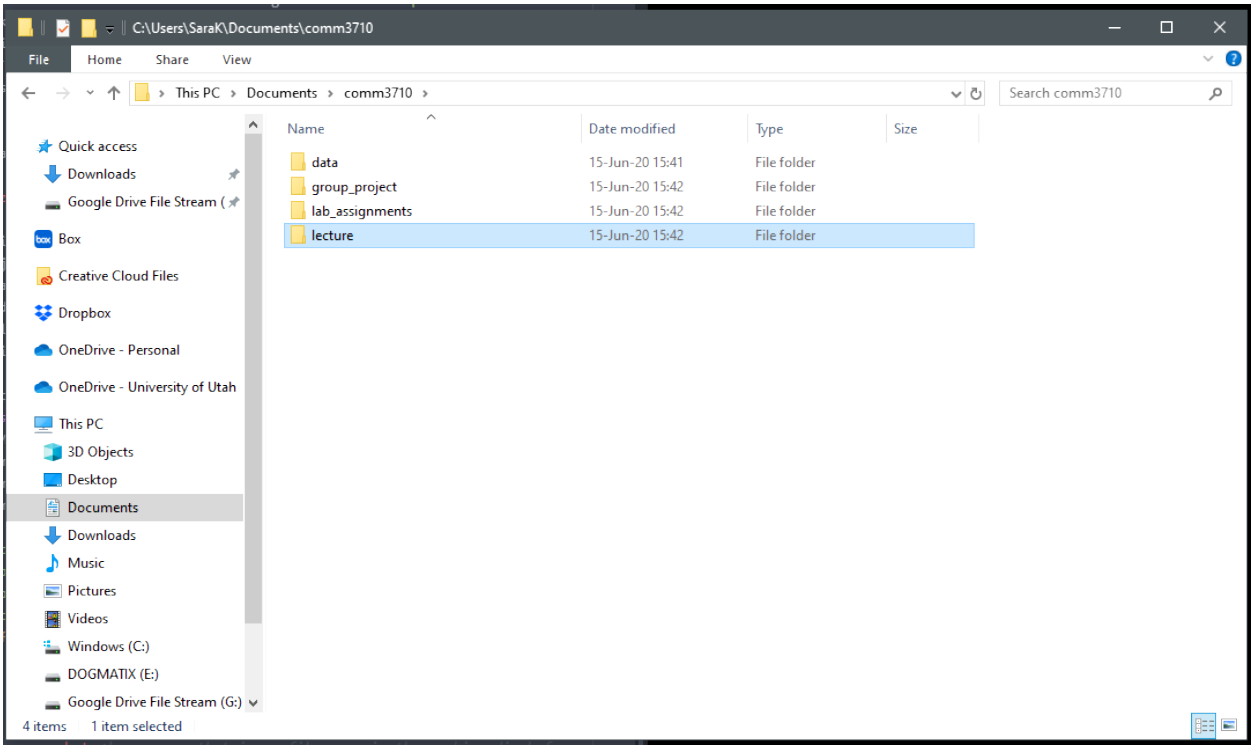
- A working directory is a computer folder that contains all your materials related to a project (e.g., this course).
- Using a consistent folder structure across your projects will help keep things organized, and will also make it easy to find/file things in the future. This can be especially helpful when you have multiple projects. In general, you may create directories (folders) for **scripts**, **data**, and **documents**.
- Set up a working directory. Choose a naming convention for your class folder and stick with it. Some recommendations (*Note: While the options below look similar, R is case-sensitive, i.e., the folder names below are not the same!*):
  - COMM3710
  - comm3710
  - comm_3710
  - Comm3710
- Create four subfolders in your working directory:
  1. `lecture` to store notes and documents related to lecture content.
  2. `lab_assignments` to store your lab assignments.
  3. `group_project` for assignments related to your group project.
  4. `data` for storing data files.
- **All files related to this course should be stored in this working directory**.
- Take a screenshot of your working directory for LA.1.

Sample screenshots

RStudio



COMM 3710 working directory



Part II

Read the R help guide (especially Sections 2.1 - 2.3). Then, follow these following steps to answer the question.

1. Create an object that represents the outcome of `2 x 5`, and assign a name of your choice to this object.

2. Create a second object that represents the outcome of `45 - 5`, and assign a name of your choice to this object.

3. Create a third object that represents the *product* of the first two objects, and assign a name of your choice to this object.

4. Answer the following question: What is the value of the third object?

Submit a screenshot of the R commands that you used to arrive at your answer to Question 4. This screenshot should include all three objects from Questions 1-3 and the answer to Question 4.