The following instruction are designed to set up your computer properly for the GGPlot Animation Workshop on February 4, 2021. If you have any issues or just general questions, please contact Charlie Belinsky at belinsky@msu.edu at least a few days ***before the workshop***. We will not have time to troubleshoot installation during the workshop.

These instructions have been tested on Windows 10 and Mac Catalina (10.15.X). They have not been tested on Mac Big Sur (11.1.X).

There are four parts to the installation:

1) Downloading the files needed to test the installation
2) Installing the newest versions of R and RStudio
3) Installing the necessary R packages
4) Executing the downloaded R file to create an animated gif and a video (mp4) file.

Part I: Download and extract the test files

Download the files needed to test the installation.

- The files are in a zip folder called ***PreWorkshop*** here: https://github.com/QFCatMSU/Preworkshop-Material/archive/master.zip

Extract (unzip) all the files in the zip folder to the same location.

- Windows: right-click the zip folder and choose ***Extract All…***
- Mac: double-clicking the zip folder will extract the files to the same folder

There are four files in the ***PreWorkshop*** zip folder:

1. ***Instructions.pdf***: a copy of this document containing setup and testing instructions
2. ***PreWorkshop-Example.R***: script file that creates an animation
3. ***LansingNOAA2016-3.csv***: data frame used in the script file
4. ***PreWorkshop.Rproj***: an RStudio Projects link

Part II: Install R and RStudio

Install or update to the newest version of R.
You need to at least have version **3.6.X.**

- Windows: https://cran.r-project.org/bin/windows/base/
- Mac: https://cran.r-project.org/bin/macosx/

Install or update to the newest version of RStudio.
You need to have at least version **1.3.X**: https://rstudio.com/products/rstudio/download/#download

Part III: Install R packages

Run (double-click) the ***PreWorkshop.Rproj*** file – it will open in RStudio

In RStudio:

1) Click on the ***Files*** tab (bottom-right frame) and click on ***PreWorkshop-Example.R***
    - ***PreWorkshopExample.R*** will open in an editor window in the top-left frame
2) The editor window will display a message if you do not have all the packages required for the script (in this case: ***ggplot2***, ***gganimate***, ***av***, ***gifski***, and ***transformr***).
    - Click ***Install*** to install the packages (this will take a while).
    - Alternatively, you can install these packages by copying/pasting:
      install.packages(c("ggplot2", "gganimate", "av", "gifski", "transformr"))
      into the ***Console*** window (bottom left).

Restart RStudio (this is needed after you install ***av*** and ***gifski***)

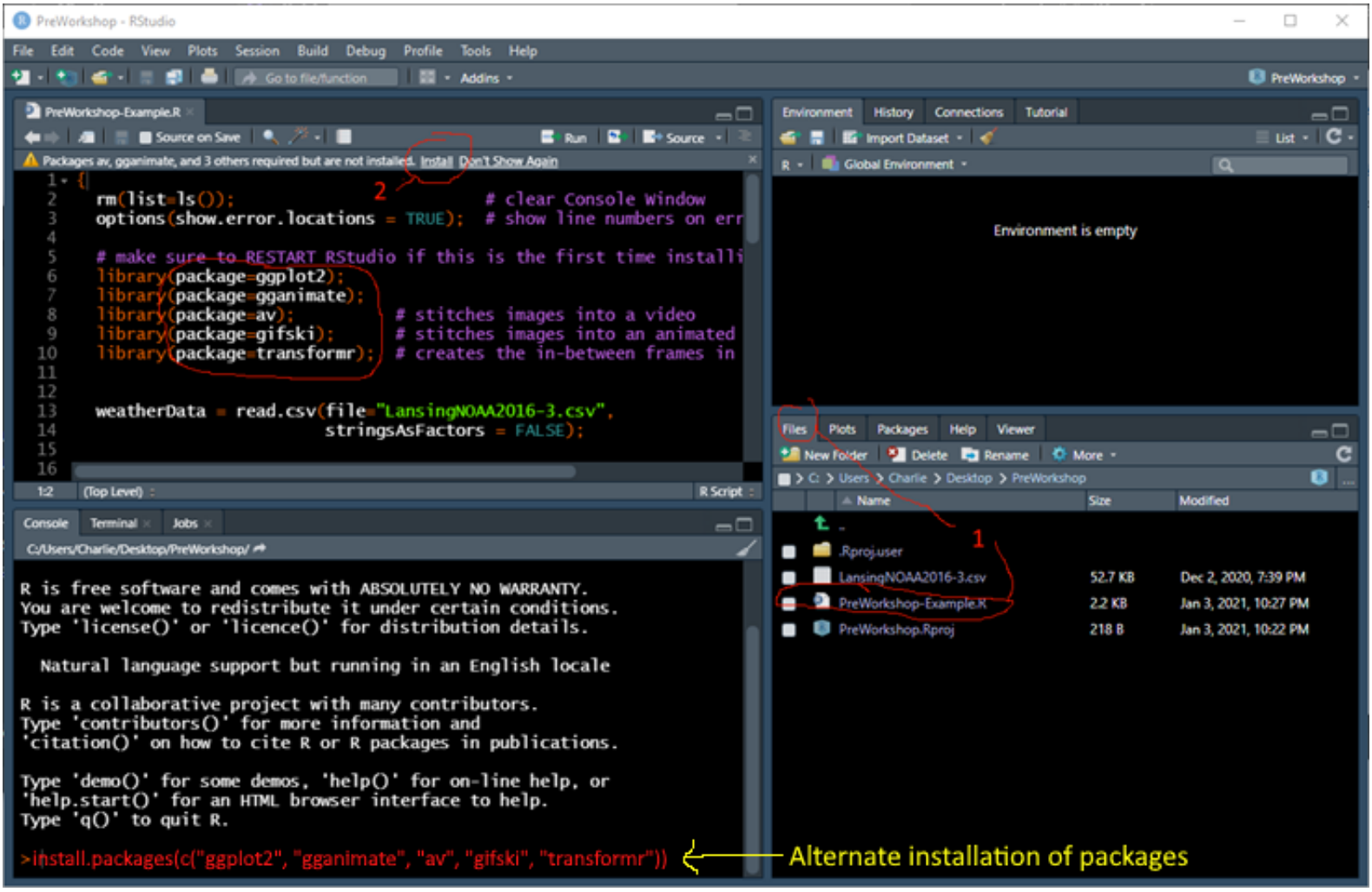

Image for the instructions in Part II

Part IV: Create an animated gif and a video

Reopen the ***PreWorkshop.Rproj*** file in RStudio.

1) Click on the ***File*** tab (bottom-right frame) and click on ***PreWorkshop-Example.R***
2) Click ***Source*** to execute the code in ***PreWorkshop-Example.R***. The execution will take a minute or two.
3) Click on the ***Viewer*** tab (bottom-right frame) and make sure an animation is running.
4) In the ***Files*** tab there should be two new files: ***anim_example.gif*** and ***anim_example.mp4***
5) Click on ***anim_example.gif*** – this should open a *Humidity vs Temp* animated gif file
    - On a Mac, this opens a ***Preview*** that shows the static frames of the animation – this is fine. If you want to see the frames animated, you need to right-click on ***anim_example.gif*** in a ***Finder*** window and choose ***Quick Look***
6) Click on ***anim_example.mp4*** – this should open a *Humidity vs Temp* video

If you can see the animated gif and mp4 video, then you are all set for the workshop!

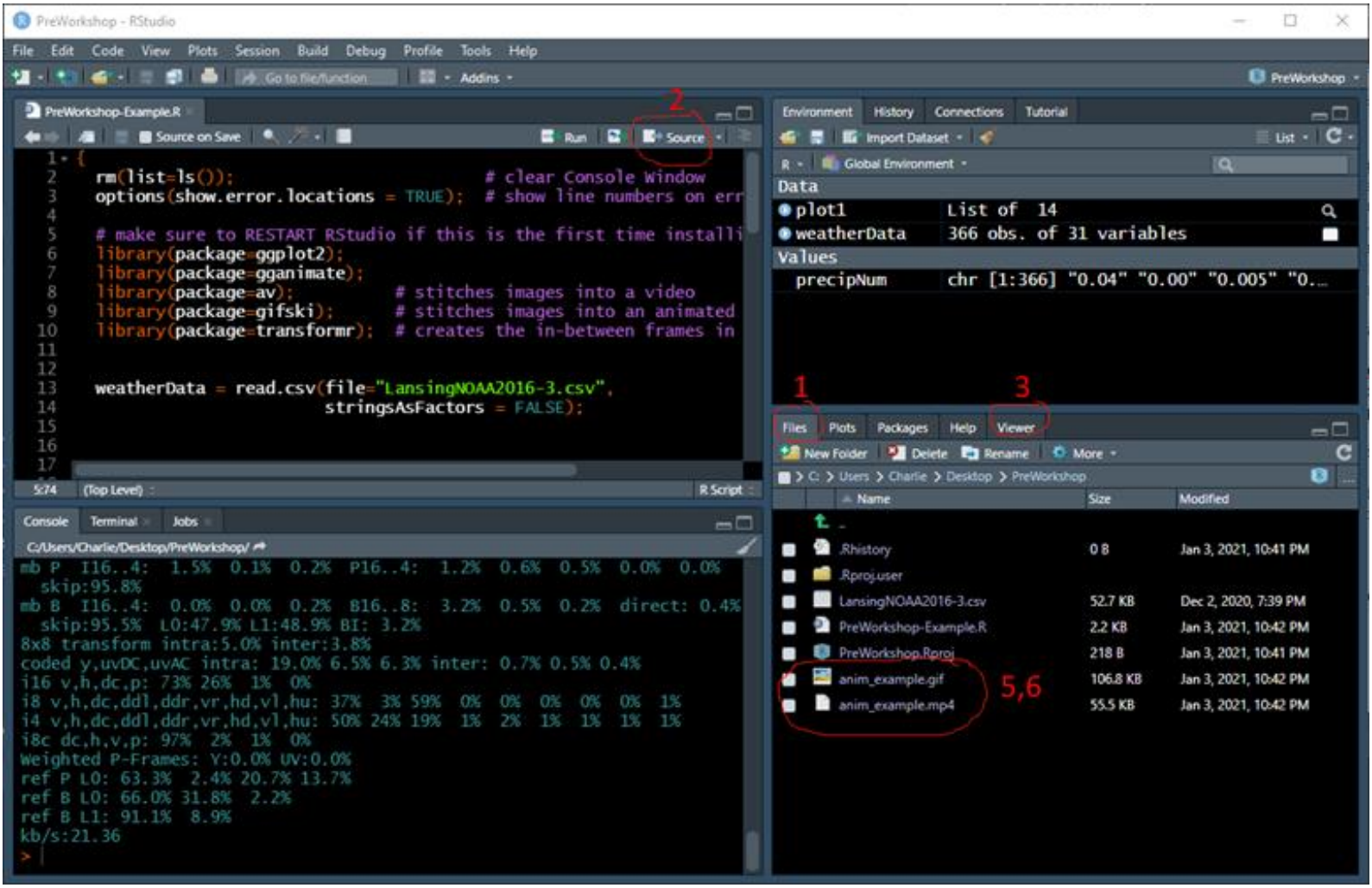

Image for the instructions in Part III