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, 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 files in this zip folder – unzip all files to the same folder:
1) ***Instructions.pdf***: 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

There are three parts to the installation:
1) Installing the newest versions of R and RStudio
2) Installing the necessary R packages
3) Executing the R file which will create the animated gif and video files.

Part I: Install R and RStudio

Install or update to the newest version of R.
You need to at least have version **3.6.X**, but it is recommended to have version **4.0.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 II: Install R packages

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

In RStudio:
1) Click on the **File** 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**)
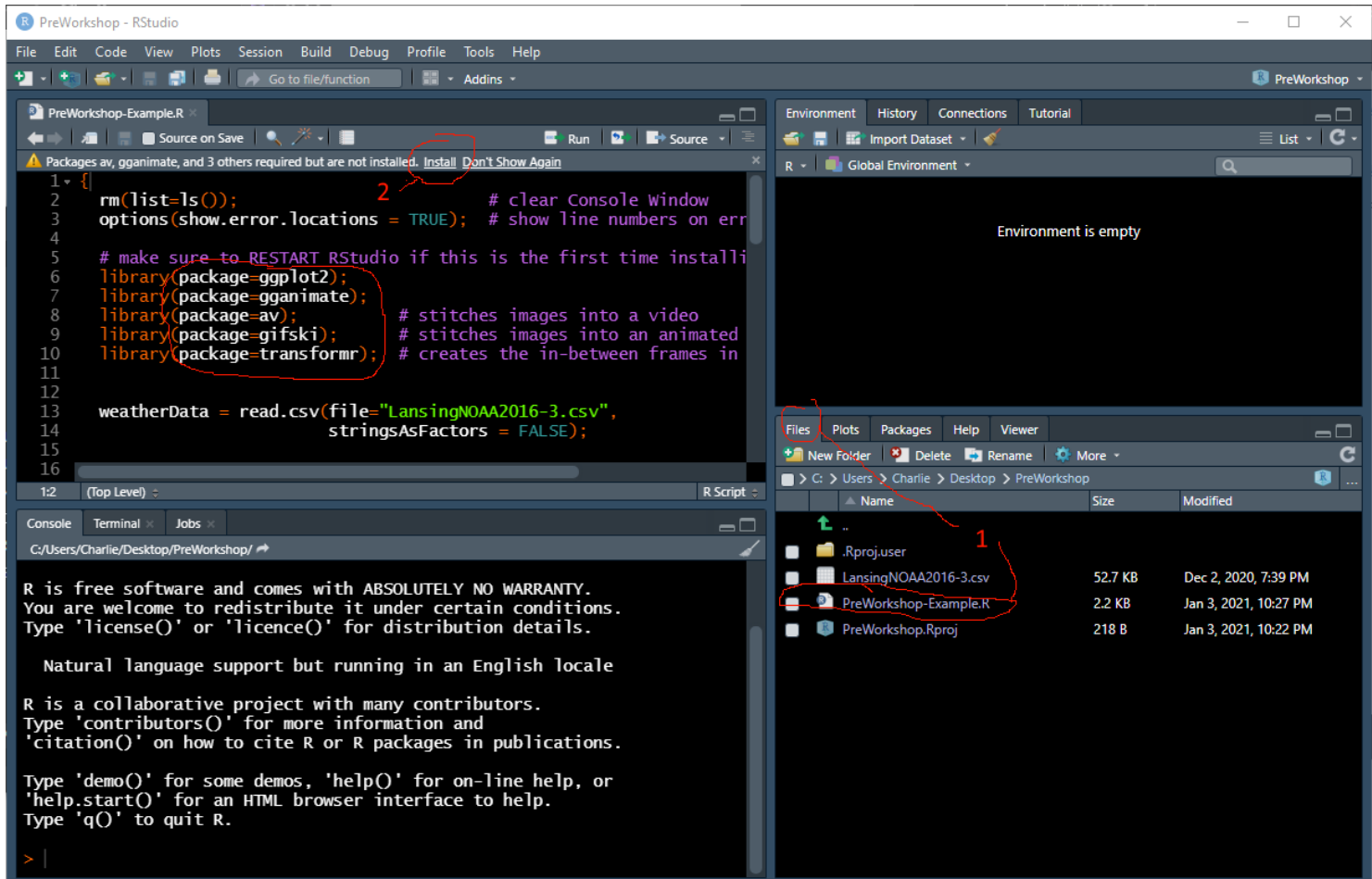

Image for the instructions in Part II

Part III: Create an animated gif and a video

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

1) Click **Source** to execute the code. The execution will take a minute or two.
2) Click on the **Viewer** tab (bottom-right frame) and make sure an animation is running.
3) Click on **Files** tab
   - there should be two new files: **anim_example.gif** and **anim_example.mp4**
4) 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**
5) Click on **anim_example.mp4** – this should open a *Humidity vs Temp* video

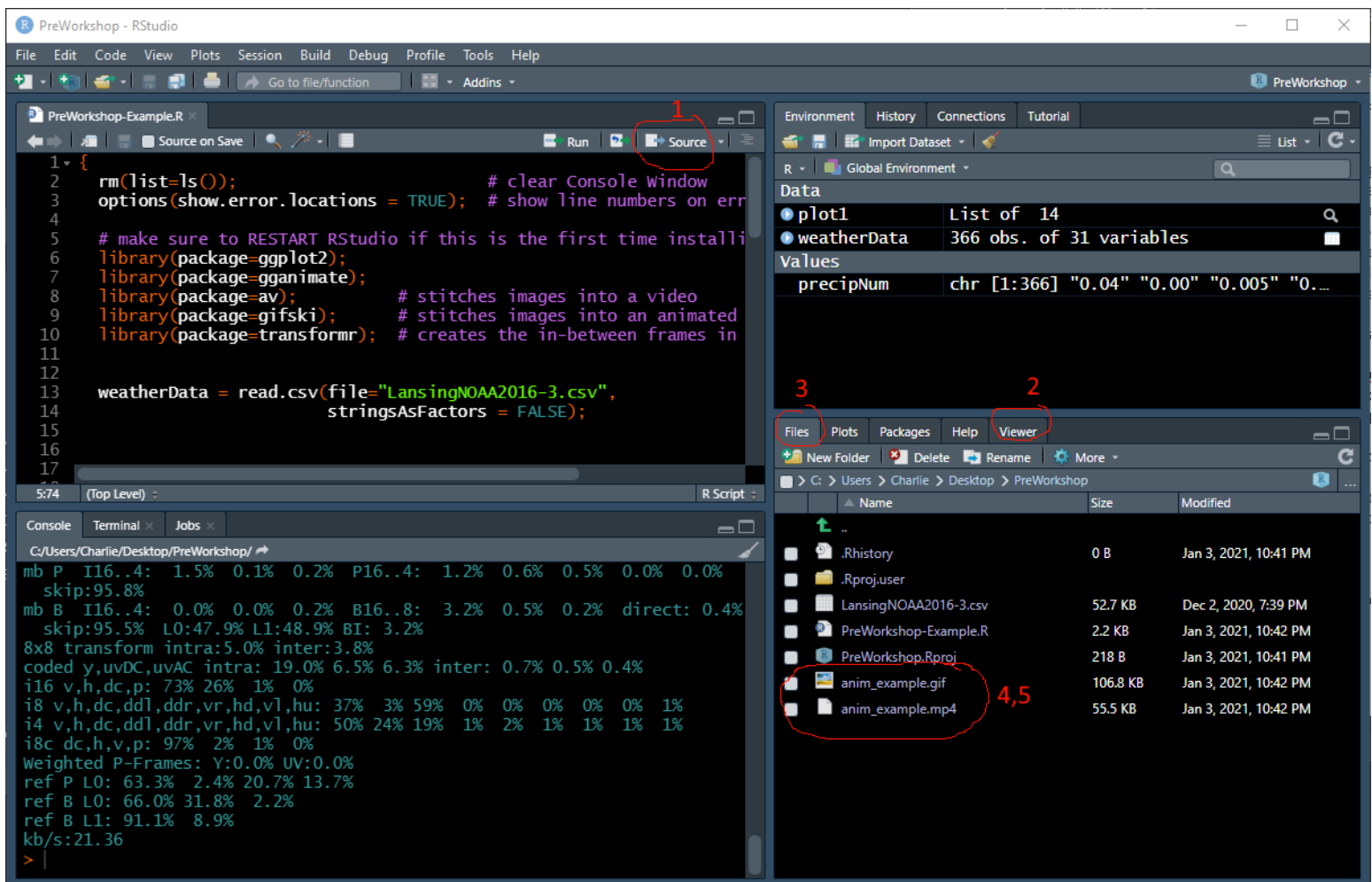**If you can see the animated gif and mp4 video, then you are all set for the workshop**!

Image for the instructions in Part III