Using R and RStudio Locally

Ecological Systems Modeling (Winter 2024)

This procedure is OPTIONAL

You can complete all lab assignments on Jupyter Hub. Thus, there's no need to follow steps in this document unless you really want to work on a local installation of R and RStudio (e.g., if you have a spotty internet connection and therefore have issues with connecting to Jupyter Hub). Be warned that using a local machine will be more laborious because you'll have to download and re-upload documents, and also potentially deal with issues related to your own installations of R and RStudio.

NOTE: Keep the same folder structure and names

Make sure that you follow the exact same folder structure used on Jupyter Hub. In other words, a `Labs` folder that contains an R project called `Labs.proj` is required. Don't change the names of any of the folders or files associated with assignments.

Steps

1. Download R and RStudio

Go to `https://posit.co/download/rstudio-desktop` and follow the instructions.

2. Download required R packages

The R packages needed for each assignment will be at the top of the R Markdown file. Install the package using the `install_packages()` function in R. For example:

```r
# To install the "here" package
install.packages("here")
```
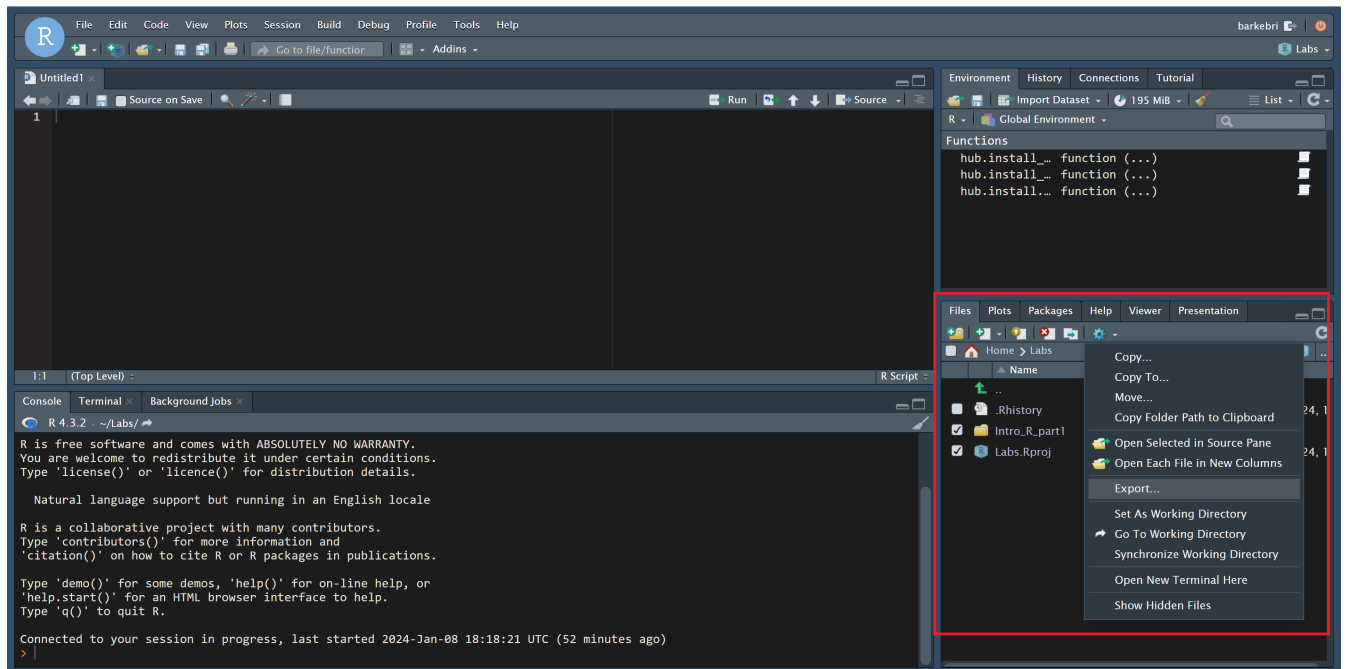
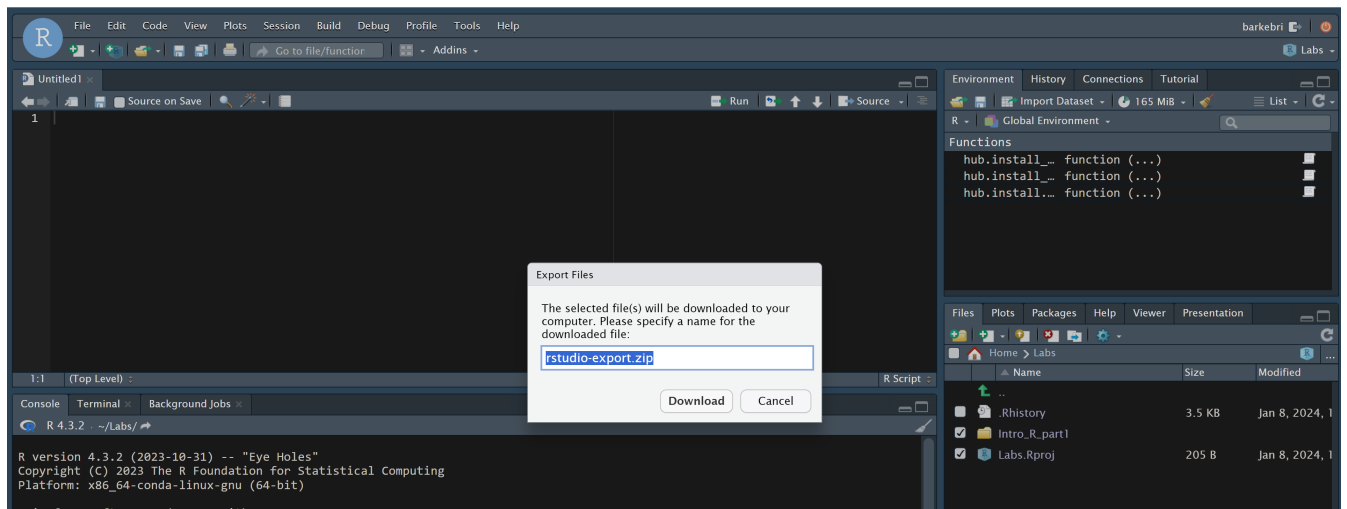## 3. Download folders with lab assignments/tutorials

3a. Method 1: RStudio

This method is recommended (it's easier than Method 2, below).

1. On Jupyter Hub, log in to RStudio.

2. Click on the check boxes of the folders or files that you want to download in the Files/Plots/etc. pane (bottom-right).

3. Click on on the blue gear in the top left corner of the Files/Plots/etc. pane.
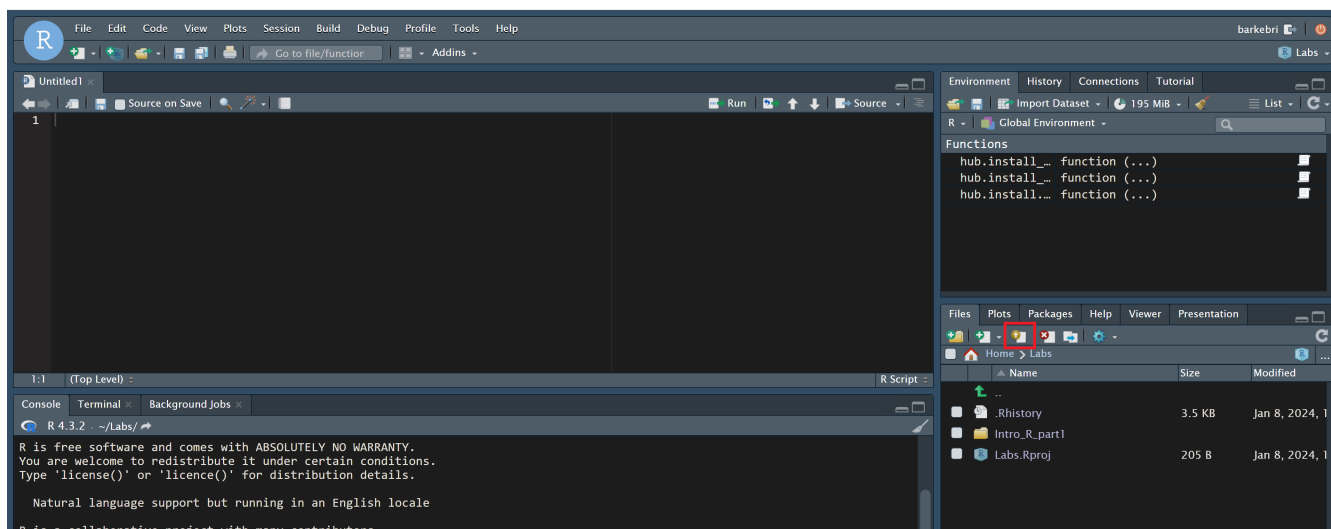
4. Click `Export`.

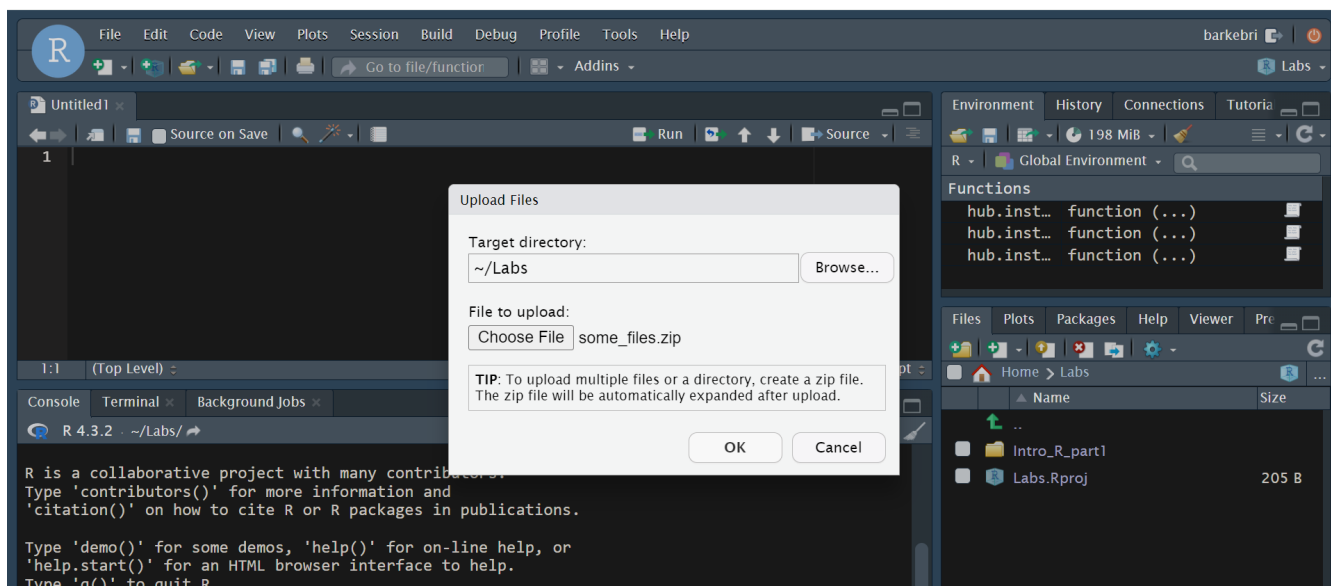

5. Save the zipped contents to your computer.

6. Upload completed documents.

When you're done with your assignment, upload your completed documents using the upload button in the Files/Plots/etc. pane (see red box in below screenshot).
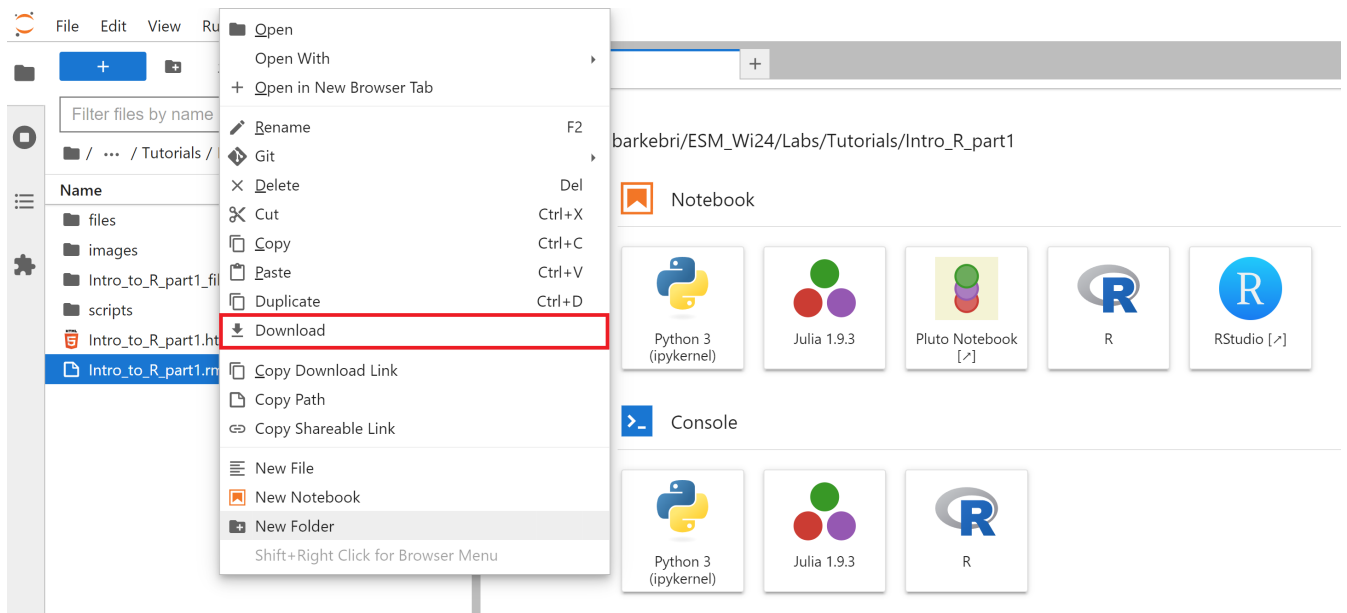
You'll have to upload a zipped file if you want to upload multiple files at a single time. RStudio will automatically unzip them. Here I have selected a zip file named `some_files.zip`.
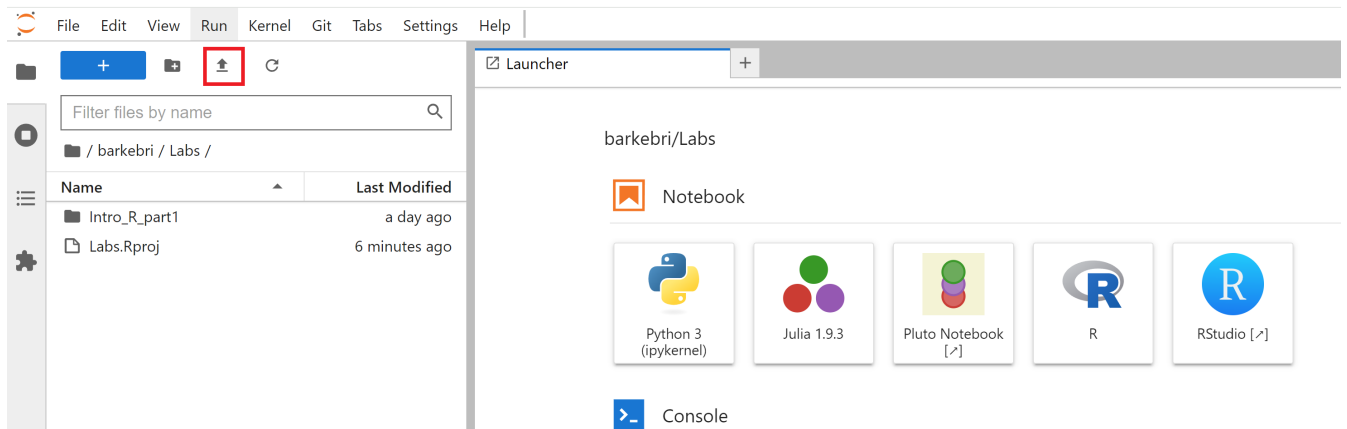

3b. Method 2: Jupyter Hub

This method is not recommended unless you are somewhat familiar with the Terminal and command line arguments such as `zip`, `unzip` and `mv`.
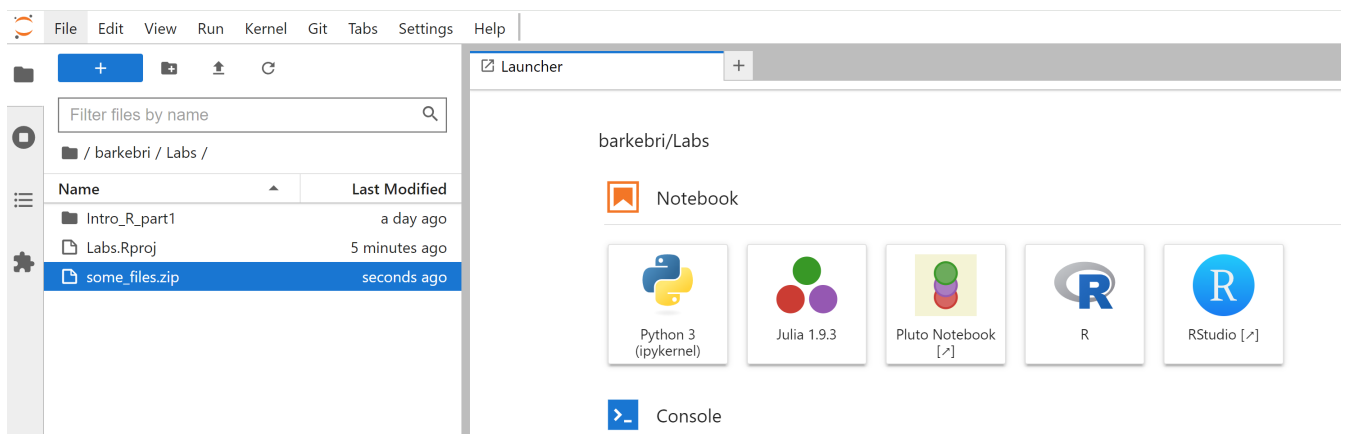
1. There doesn't appear to be an easy way to download multiple files at once in Jupyter Hub, unless you created a zipped file using the Terminal. To download an individual file, click on the file and then `Download`.
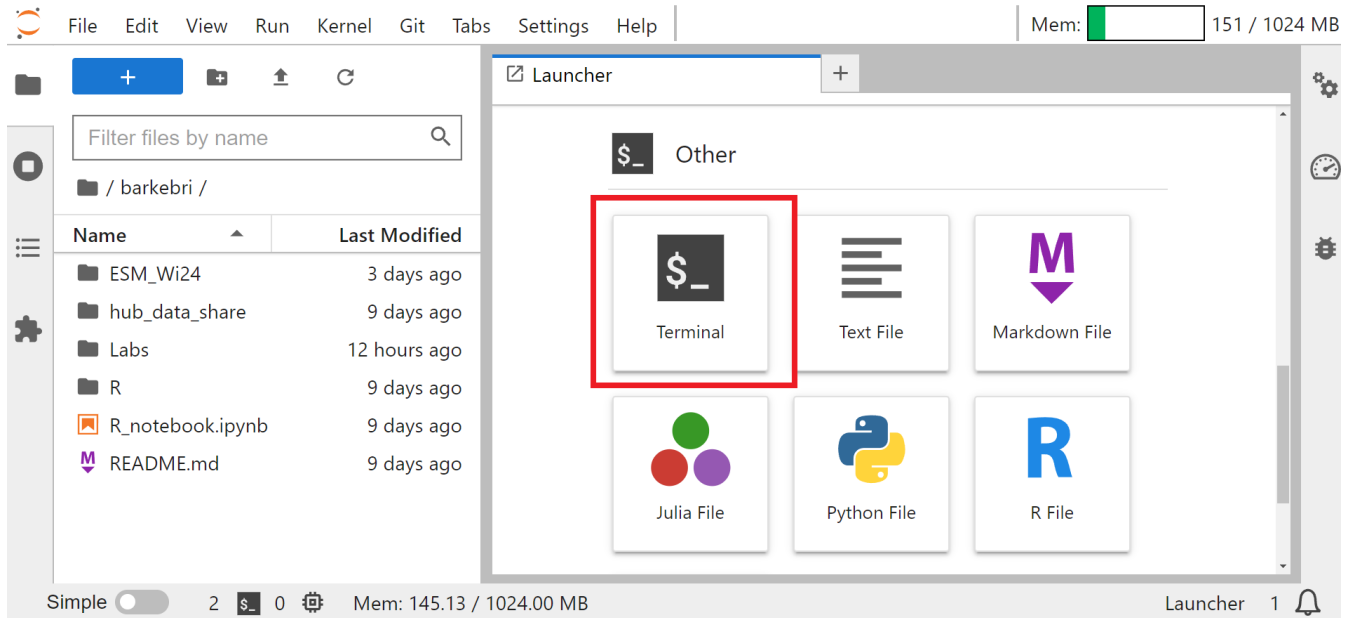
2. Upload your completed assignment and any other associated files using the upload button (upward facing arrow) in the upper-left corner of Jupyter Hub (see red box in screenshot below).

As with RStudio, you can only upload a single file at a time, so you'll need to upload a zipped file if you want to upload multiple files at a single time. Below shows an upload of `some_files.zip` to the `Labs` folder in my home directory.

3. In the `Launcher` tab, scroll down to the `Other` section and click on `Terminal`.

4. In the Terminal, type `unzip filename` (replace "filename" with the real file name). If you uploaded the file to wrong directory, you can use `mv` to put files in the right place (e.g., `mv filename ~/Labs/`).