Pre-workshop Installation Instructions

Contents borrowed and modified from UVA's Data Science Essentials in R series

Before the first session

To participate in the R workshop, please bring a laptop with R and RStudio installed. We recommend that you have the latest version of R (3.6.*), the `tidyverse` package (1.2), the `learnr` package (0.9), and the `here` package (0.1). You will then need to use the `remotes` package to download the `workr` package we developed for our workshop tutorials. You need to have RStudio installed, but it is less crucial that you are using the most recent version (1.2).

Do you already have R and RStudio installed?

- No - follow the instructions for "I do not have R installed"
- Yes - follow the instructions for "I have R installed"

"I do not have R installed"

You should install R, RStudio, `tidyverse`, `learnr`, and `here`.

Installing R

Windows:

1. Go to https://cloud.r-project.org/bin/windows/base/
2. Click the "Download R 3.6.1 for Windows" link. (Or whatever the newest version is)
3. When the file finishes downloading, double-click to install. You should be able to click "Next" to all dialogs to finish the installation.

Mac:

1. Go to https://cloud.r-project.org/bin/macosx/
2. Click the link "R-3.6.1.pkg"
3. When the file finishes downloading, double-click to install. You should be able to click "Next" to all dialogs to finish the installation.

Linux: For any adventurous Linux users in our group follow this guide (https://github.com/duckmayr/install-update-r-on-linux) to install/upgrade to the most recent version of R on Ubuntu (18.04) or Mint (19).

Installing RStudio

1. Go to the RStudio download page.
2. Under "Installers for Supported Platforms" select the appropriate installer for your operating system
3. When the file finishes downloading, double-click to install. You should be able to click "Next" to all dialogs to finish the installation.

Installing packages

Skip ahead to the **Installing and updating packages** section for instructions on how to install the necessary packages for our workshop.

"I have R installed"

The workshops run more smoothly when everyone is using the same version of R, `tidyverse`, and `learnr`. Please update R, `tidyverse`, and `learnr` if necessary (and less crucially, RStudio).

Verify R version

Open RStudio. At the top of the Console you will see session info. The first line tells you which version of R you are using. If RStudio is already open and you're deep in a session, type `R.version.string` in the console and enter to print out the R version.

Do you have R version 3.6.* installed?

- No - follow the instructions for "Updating R"
- Yes - Great! Do you have `tidyverse`, `learnr`, and `here` installed?
  - No or I don't know - See "Installing `tidyverse`"
  - Yes - Great! Go to Go to Tools > Check for Package Updates. If there's an update available for `tidyverse`, install it.

Updating R/RStudio

Windows To update R on Windows, try using the package `installr` (only for Windows).

1. Install and load installr:

```
install.packages("installr")
library(installr)
```

2. Call `updateR()` function. This will start the updating process of your R installation by: "finding the latest R version, downloading it, running the installer, deleting the installation file, copy and updating old packages to the new R installation."

3. From within RStudio, go to Help > Check for Updates to install newer version of RStudio (if available, optional).

Mac On Mac, you can simply download and install the newest version of R. When you restart RStudio, it will use the updated version of R.

1. Go to https://cloud.r-project.org/bin/macosx/

2. Click the link "R-3.6.1.pkg" (or whatever the latest version is)
3. When the file finishes downloading, double-click to install. You should be able to click "Next" to all dialogs to finish the installation.

4. From within RStudio, go to Help > Check for Updates to install newer version of RStudio (if available, optional).

Linux: Again, for any adventurous Linux users in our group follow this guide (https://github.com/duckmayr/install-update-r-on-linux) to install/upgrade to the most recent version of R on Ubuntu (18.04) or Mint (19).

Installing and updating packages

Installing `tidyverse`, `learnr`, and `here`

1. Open RStudio
2. Go to `Tools` > `Install Packages`
3. Enter `tidyverse`
4. Select `Install`

Follow the same protocol for installing the rest of the packages, but replace `tidyverse` with the package names. Alternatively, you can install packages by running the command `install.packages()` in your console. You can install multiple packages as once by combining package names into a vector as follows:

```
install.packages(c("tidyverse","learnr", "here"))
```

Installing `workr` using the 'remotes" package

While there are many useful packages hosted on the CRAN (the global repository of R packages queried using `install.packages()`), you may be interested in using packages that are still in development. Many of these packages are shared on GitHub and can be downloaded using `install_github()`, a function of the `remotes` package. Below is an example of how to install the `workr` package using `remotes`.

```
install.packages("remotes")
remotes::install_github("connor-french/workr")
## If it asks to install or update packages, be sure to select "CRAN packages only"
```

Including `remotes::` before `install_github()` allows you to call the function without having to load the entire library. However, if you are planning to use additional functions from the `remotes` package you may want to fully load the package (`library(remotes)`–> `install_github()`)

Check for package updates

If you already have all packages installed you can check for updates to CRAN packages using the `update.packages()` command or by going to `Tools`–> `Check for Package Updates`. Packages installed from GitHub can be updated using `remotes` with the `update_packages()` command. For example, to check for updates to one of our tutorials, be sure to run `remotes::update_packages(workr)` before you begin.