

# 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 `devtools` 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 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 `devtools` 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 `devtools` package. Below is an example of how to install the `workr` package using `devtools`.

```
install.packages("devtools")
devtools::install_github("https://github.com/natalieoshea/workr.git")
## If it asks to install or update packages, be sure to select "CRAN packages only"
```

Including `devtools::` 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 `devtools` package you may want to fully load the package (`library(devtools)-> 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 `devtools` with the `update_packages()` command. For example, to check for updates to one of our tutorials, be sure to run `devtools::update_packages(workr)` before you begin.