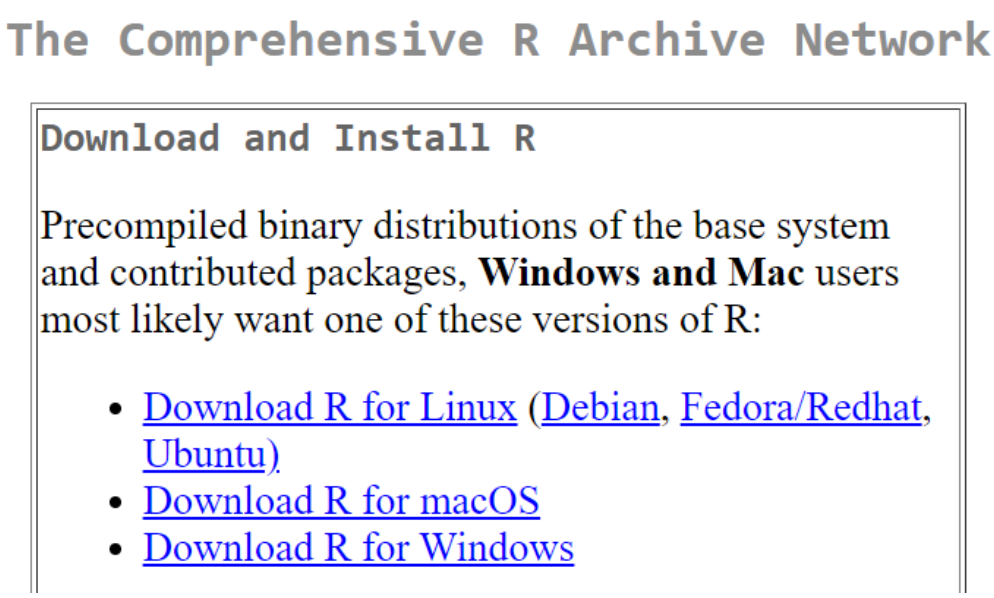
R Technical Setup

You will want R (the computing software) and Rstudio (the interactive interface).
Both are available for free online. We'll also install a few add-on packages.

1) **Install R**

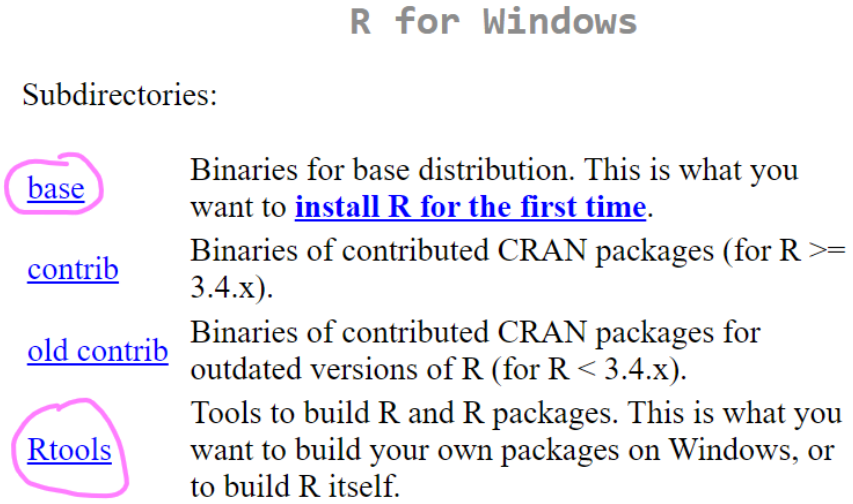
A) Go to https://cran.r-project.org/ and select your operating system.



If given a choice, it's probably a good idea to choose 64-bit versions.

It's also a good idea to let R install into its default folder location.
This will make it easier for Rstudio to find your installation later in this process.

B) From your system-page, follow the instructions
i) on **WIndows**, install **base** and also install **Rtools**



ii) on a **Mac**, install whichever **latest release** is appropriate for your machine

Latest release:

For Apple silicon (M1/M2) Macs:
R-4.3.2-arm64.pkg
SHA1-hash: 763be9944ad00ed405972c73e9960ce4e55399d4
(ca. 92MB, notarized and signed)

For older Intel Macs:
R-4.3.2-x86_64.pkg
SHA1-hash: 3d68ea6698add258bd7a4a5950152f4072eee8b2
(ca. 94MB, notarized and signed)

R 4.3.2 binary for macOS 11 (**Big Sur**) and higher, signed and notarized packages.

Contains R 4.3.2 framework, R.app GUI 1.80, Tcl/Tk 8.6.12 X11 libraries and Texinfo 6.8. The latter two components are optional and can be ommitted when choosing "custom install", they are only needed if you want to use the `tcltk` R package or build package documentation from sources.

2) Download and install **Rstudio**. Start at this site https://posit.co/download/rstudio-desktop/
Select the file appropriate for your machine.

- It may show you a nice large option.
- If not, scroll to the next section to find your system.

2: Install RStudio

DOWNLOAD RSTUDIO DESKTOP FOR WINDOWS

Size: 215.66 MB | SHA-256: D3C03C42 | Version: 2023.12.1+402 | Released: 2024-01-29

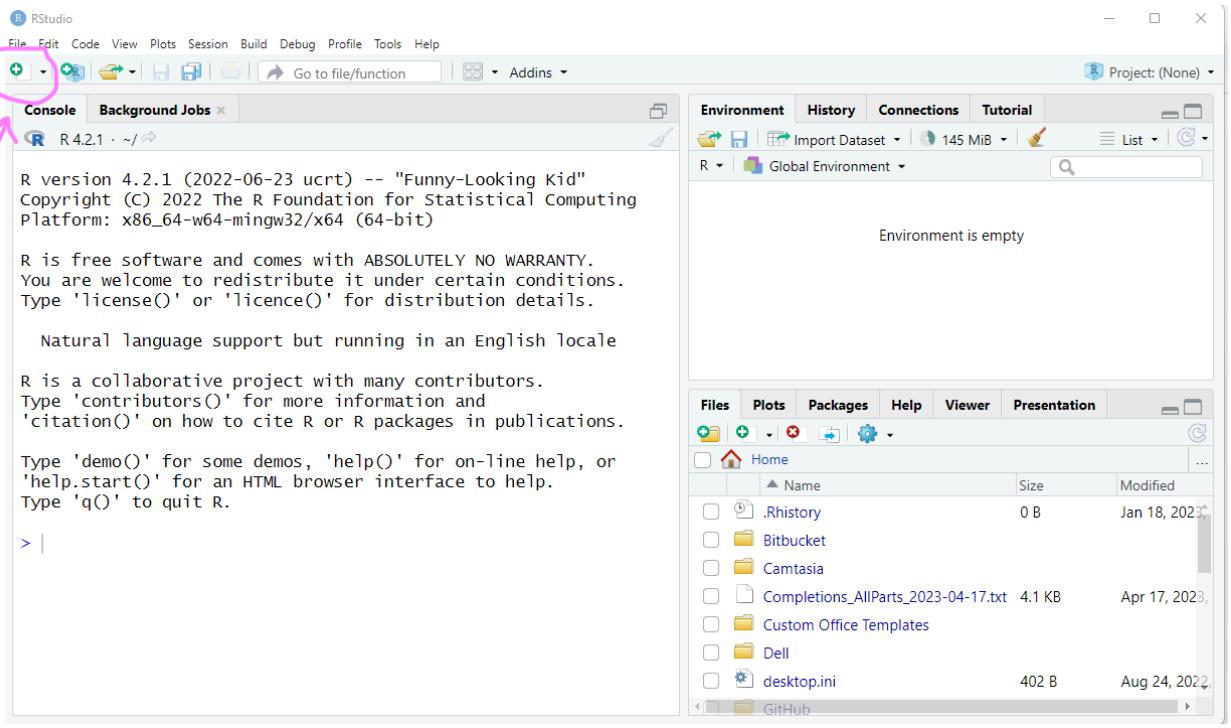
OS	Download	Size	SHA-256
Windows 10/11	RSTUDIO-2023.12.1-402.EXE	215.66 MB	D3C03C42
macOS 12+	RSTUDIO-2023.12.1-402.DMG	382.66 MB	C8D9185D
Ubuntu 20/Debian 11	RSTUDIO-2023.12.1-402-AMD64.DEB	149.27 MB	81F221BE

3) Locate and open Rstudio from your list of programs, start menu etc.

The first time it loads, it may ask you to associate a version of R with it. Select the version (probably 64-bit) that you installed.

4) Install additional packages

A) Create a new, blank R script by clicking the button in the upper-right corner and selecting the first option: **R script**



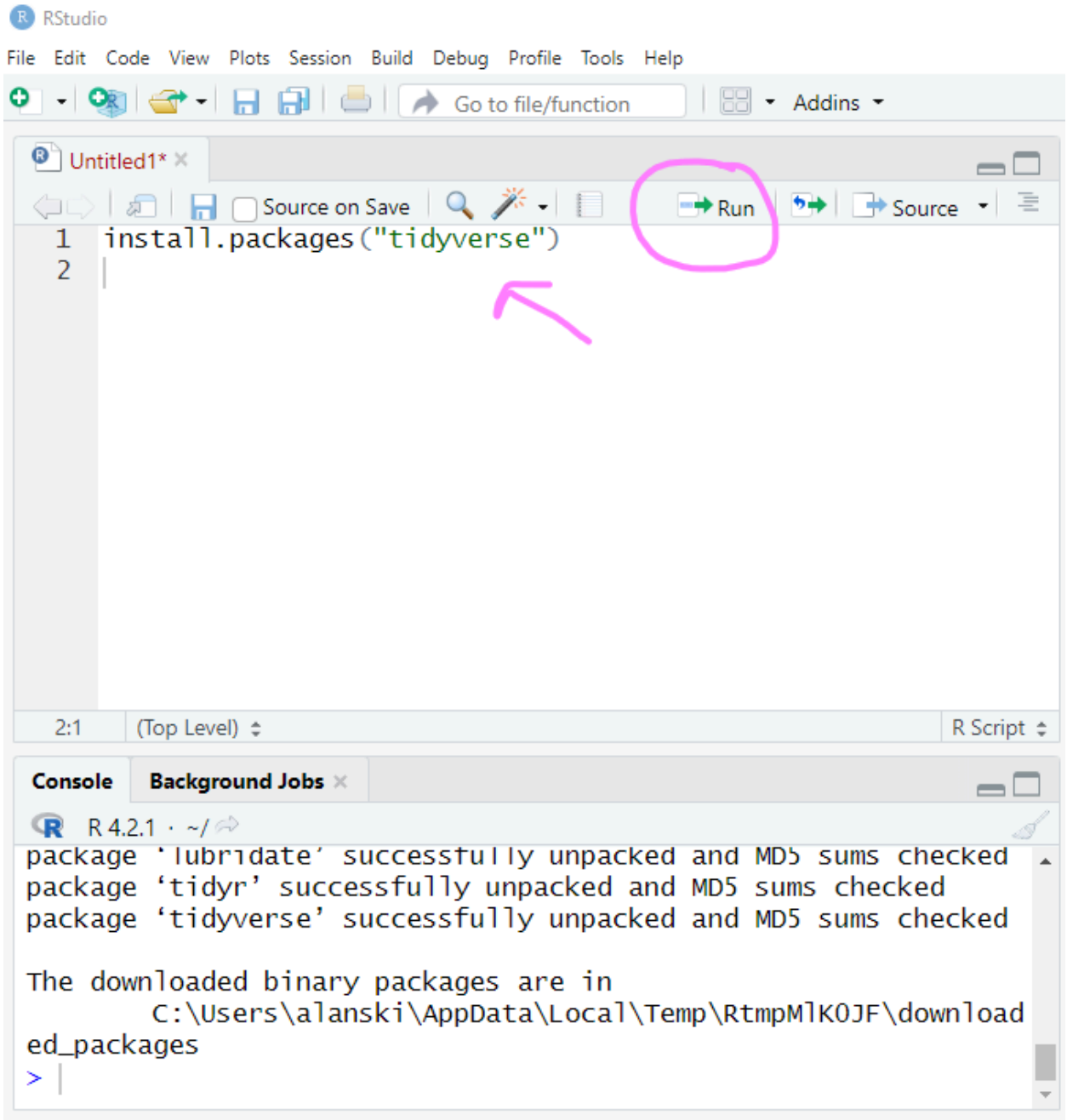
B) Copy and paste the code below into the script. Your pasted version should start at the left edge of the file (delete any leading spaces). This is one-time R code.

```
install.packages("tidyverse")
```

C) Then click the **run** button.

You will see a ton of output in the **Console** area at the bottom, including red text. This is just informational messaging from R and can be ignored.

(Pictures for B and C on the next page)



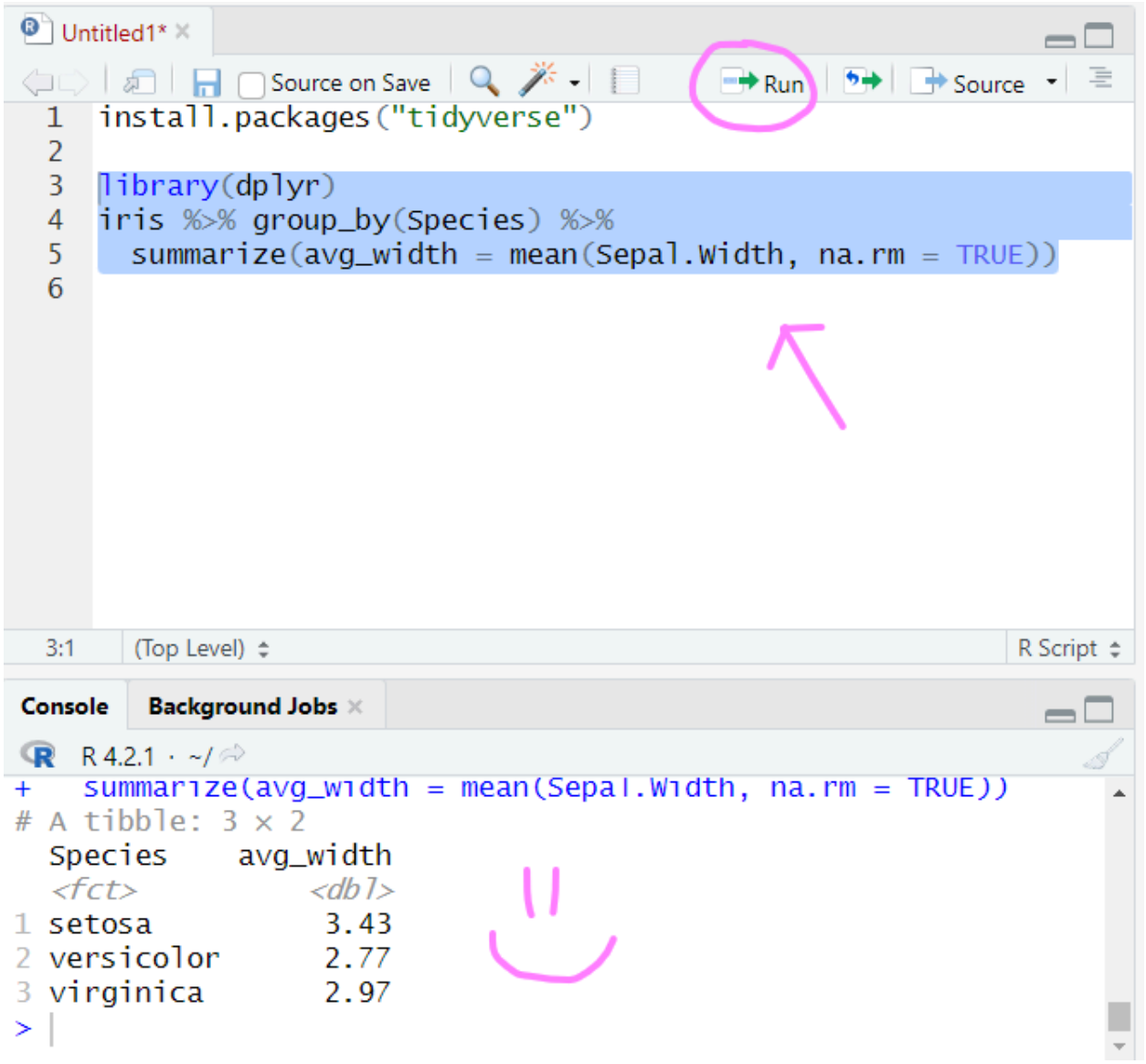
D) Test your installation.

Copy and paste the code provided below.

Highlight the new code and click the Run button again.

You should see a small table of data in your Console area if it works.

```
library(dplyr)
iris %>% group_by(Species) %>%
      summarize(avg_width = mean(Sepal.Width, na.rm = TRUE))
```



E) Copy, paste, highlight, and run the code below for a few more "bonus" installs.
If you have any error messages, they won't affect your participation in the workshop.

```
install.packages("svDialogs")
install.packages("IPEDSuploadables")
```

F) You're done for now! You can close Rstudio.
If asked, you do not need to save this startup file.

G) If you want to learn more about this interface and the basics of using R (optional)
Try this introductory tutorial https://datacarpentry.org/r-socialsci/.
We will cover some of these tutorial topics in our session.

For more R resources, check the next page.

Additional R resources

Data Carpentry: Online tutorials for getting started with the basics of R.
You can follow along in your own installation: https://datacarpentry.org/r-socialsci/

Wickham, H., Çetinkaya-Rundel, M., & Grolemund, G. (2023). *R for Data Science Import, tidy, transform, visualize, and model data*. O'Reilly. Online version may be found at: https://r4ds.had.co.nz/

Related resources:

Slack support group and book club information for anyone: https://rfordatasci.com/

Slack support group and local organizations for women: https://rladies.org/

Chang, W. (2024) *R Graphics Cookbook: Practical Recipes for Visualizing Data.* O'Reilly Online version may be found at: https://r-graphics.org/

Silge, J. & Robinson, D. (2017). *Text Mining with R.* O'Reilly. Online version may be found at: https://www.tidytextmining.com/

Kuhn, M. & Johnson, K. (2013). *Applied Predictive Modeling*. Springer.

Xie, Y., Allaire, J. & Grolemund, G. (2019) *R Markdown: The Definitive Guide*. CRC Press. Online version may be found at: https://bookdown.org/yihui/rmarkdown/

R Markdown from Posit latest version Quarto - https://quarto.org/docs/get-started/hello/rstudio.html

Posit - Support community that maintains RStudio, Quarto and various other R libraries. https://posit.co/