

STATLAB ACADEMY / BEGINNER SETUP GUIDE

Getting Started with R

Install R, RStudio, and Run Your First Analysis

LEVEL	TIME	PREREQUISITES
Beginner	20-30 minutes	None

Module 0 prepares you to use R on your own computer. You will install R and RStudio in the correct order, verify the setup, add essential packages, import a real STATLAB dataset, and learn a browser-based alternative.

This guide accompanies the bilingual STATLAB website module. R code, package names, filenames, and processor identifiers stay in English so they can be entered exactly as shown.

Learning outcomes

- Explain the difference between R and RStudio.
- Install the correct R and RStudio editions for Windows or macOS.
- Verify R, install and load packages, and collect diagnostic information.
- Import and inspect `canada_macro_monthly.csv`.
- Use Posit Cloud and correct common setup problems safely.

1. Understanding R and RStudio

R is the programming language and statistical engine. RStudio Desktop is the interface used to write code, run commands, view data, and create graphs. RStudio does not replace R: it sends instructions to R and organizes the results.

- R performs calculations and statistical work.
- RStudio provides the Console, script editor, data viewer, plots, and project tools.
- Both R and the open-source edition of RStudio Desktop are free.
- Download only from the official links in this guide.

INSTALL IN THIS ORDER:

1. Install R
2. Install RStudio Desktop
3. Open RStudio and test the installation

2. Windows installation

- 1 Open the official R for Windows page and download the current stable version.
- 2 Open the downloaded .exe file and retain the default settings unless your institution requires otherwise.
- 3 After R is installed, open the official RStudio Desktop download page.
- 4 Select the free open-source Windows installer and complete the installation.
- 5 Open RStudio from the Windows Start menu.

[Download R for Windows](#)

[Download RStudio Desktop](#)

Do not install RStudio by itself. RStudio needs R to perform calculations.

3. macOS installation

- 1 Open Apple Menu > About This Mac.
- 2 Identify Apple silicon, such as an M-series processor, or an older Intel processor.
- 3 Open the official R for macOS page.
- 4 Choose arm64 for Apple silicon or x86_64 for an Intel Mac.
- 5 Download and open the appropriate .pkg file, then complete the R installation.
- 6 Download the free macOS version of RStudio Desktop, install it, and open it from Applications.

[Download R for macOS](#)

[Download RStudio Desktop](#)

Selecting the wrong processor version may prevent R from opening. Check About This Mac before downloading.

4. Verify R and install packages

Open RStudio and locate the Console. Enter:

```
R.version.string  
2 + 2
```

The exact version text varies. A version result and [1] 4 confirm that R is responding.

```
sessionInfo()
```

This diagnostic reports your R version, operating system, and attached packages. Copy it when requesting technical support.

Packages extend R

```
install.packages(c("dplyr", "ggplot2"))
```

Run `install.packages()` only once on each computer, or when a package needs to be updated. Installation requires an internet connection.

```
library(dplyr)  
library(ggplot2)
```

Run `library()` at the beginning of a new R session when the script needs that package. These local installation commands are intentionally not run automatically by the STATLAB website.

5. Open and analyze STATLAB data

- 1 Download `canada_macro_monthly.csv` from STATLAB Data Resources.
- 2 If it is inside a ZIP archive, extract the ZIP first.
- 3 Open RStudio and run the import command below.
- 4 Select `canada_macro_monthly.csv` in the file-selection window.

```
macro <- read.csv(file.choose())
```

```
View(macro)  
head(macro)  
str(macro)  
summary(macro)
```

- `View(macro)` opens a spreadsheet-style viewer.
- `head(macro)` displays the first six observations.
- `str(macro)` identifies variables and data types.
- `summary(macro)` calculates basic summaries.

Inspect columns before analysis

```
names(macro)
```

Consult the dataset dictionary before selecting variables. The maintained file confirms the columns date and inflation_yoy_percent, so this example is valid:

```
macro$date <- as.Date(macro$date)
plot(macro$date, macro$inflation_yoy_percent,
     type = "l",
     main = "Canadian inflation over time",
     xlab = "Date", ylab = "Year-over-year inflation (%)")
```

Do not run scripts or data files from inside a compressed ZIP preview. Extract the archive first.

6. Posit Cloud

Posit Cloud runs RStudio in a web browser. It is useful for Chromebooks, shared computers, or devices on which software installation is restricted.

Open Posit Cloud

- 1 Create or sign in to an account.
- 2 Create a new RStudio project.
- 3 Upload the STATLAB CSV or extracted course files.
- 4 Install required packages once within that project.
- 5 Run the same R commands used in this module.

Common setup problems

RStudio cannot find R	Close RStudio, install R, reopen RStudio, and restart the computer if necessary.
There is no package called...	Run <code>install.packages(c("dplyr", "ggplot2"))</code> and try again.
Downloaded data cannot be found	Extract the ZIP and use <code>file.choose()</code> to select the CSV manually.
Code was entered but nothing happened	Put the cursor on the line and press <code>Ctrl + Enter</code> on Windows or <code>Command + Enter</code> on macOS.
Permission prevents installation	Use Posit Cloud or contact institutional IT. Do not bypass administrator restrictions.
RStudio opens but code errors	Run <code>sessionInfo()</code> and copy the output when requesting technical support.

Completion checklist

- ☐ R is installed, or I have access to Posit Cloud.
- ☐ RStudio opens successfully.
- ☐ `2 + 2` returns `[1] 4`.
- ☐ I can install and load `dplyr` and `ggplot2`.
- ☐ I can download and select a STATLAB CSV file.
- ☐ I can run `head()`, `str()`, and `summary()`.
- ☐ I know where to find troubleshooting assistance.

Continue to Introduction to R on STATLAB Academy when you are ready. The checklist does not block access.

Official web module: <https://statistics.safavim.com/en/modules/getting-started-with-r>

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