Installation Guide: R & RStudio

A Step-by-Step Setup Guide for Data Analysis and Statistical Computing

This document provides clear, step-by-step instructions for downloading, installing, and configuring **R** and **RStudio Desktop**. R is the core statistical programming environment, while RStudio is the standard Integrated Development Environment (IDE) that makes working with R intuitive and efficient.

> **Important Installation Sequence**
>
> Always download and install **R** *before* installing **RStudio**. RStudio acts as a visual interface for R; it will not function properly if it cannot detect an existing core installation of R on your system.

Phase 1: Download and Install R

R is managed by the Comprehensive R Archive Network (CRAN). Follow the instructions specific to your operating system below:

For Microsoft Windows:

1. Open your web browser and navigate to official CRAN website: `https://cran.r-project.org`
2. Click on the link that reads **"Download R for Windows"**.
3. Click on the sub-directory link labeled **"base"**.
4. Click the download link at the top of the page, which typically reads **"Download R X.X.X for Windows"** (where X.X.X represents the latest stable version number).
5. Once the executable setup file (`.exe`) finishes downloading, locate it in your Downloads folder and double-click to run it.
6. Select your preferred language, then click **Next** through the license terms and default directory choices.
7. On the *Startup Options* screen, select **"No (accept defaults)"** and click **Next**.
8. Follow the remaining prompts, keeping all default checkmarks active, and click **Finish** to complete the setup.

For macOS:

1. Navigate to the CRAN website: `https://cran.r-project.org`
2. Click on the link that reads **"Download R for macOS"**.
3. Under the "Latest release" section, choose the correct package file (`.pkg`) based on your Mac's hardware:
   - If you have a newer Apple Silicon Mac (M1, M2, M3, etc.), download the **arm64** package.
   - If you have an older Intel-based Mac, download the **x86_64** package.
4. Once downloaded, double-click the `.pkg` file to open the native macOS installer wizard.

5. Click through the introduction, read and agree to the software license agreement, select your target hard drive, and click **Install**.
6. Provide your macOS user password or Touch ID when prompted to authorize installation, then wait for the confirmation screen.

Phase 2: Download and Install RStudio Desktop

With R successfully installed on your machine, you can now proceed to install the RStudio IDE user interface:

1. Open your browser and visit the official Posit website:
   `https://posit.co/download/rstudio-desktop/`
2. Scroll down slightly to the split column layout. Under "Step 2: Install RStudio", click the prominent button labeled **"DOWNLOAD RSTUDIO DESKTOP FOR WINDOWS"** (or the relevant operating system variant detected by your browser).
3. If your operating system is not automatically detected, scroll further down to the "All Installers" table and download the installer built specifically for your platform (Windows 10/11, macOS 12+, or your respective Linux distribution).
4. Execute the downloaded installation package:
   - **Windows (`.exe`):** Follow the setup wizard prompts, clicking **Next** to accept default settings and the standard install location, then click **Install**.
   - **macOS (`.dmg`):** Double-click the disk image file. In the window that opens, click and drag the **RStudio icon** directly into your **Applications folder** shortcut.

Phase 3: Verifying Your Installation

To verify that both components are correctly integrated, perform the following verification check:

1. Locate and open the **RStudio** application from your Start Menu (Windows) or Applications folder (macOS). Do *not* open the standalone R console application.
2. Look at the largest panel on the left side of the screen, which is the **Console** pane.
3. At the top of the Console, you should see text displaying the exact version of R currently running (e.g., `R version 4.x.x (2026-xx-xx) -- "Nickname"`). This confirms RStudio has successfully detected your underlying R engine.
4. To test execution, type the following simple command at the blinking prompt (`>`) and press `Enter` (or `Return`):
   `print("R environment is fully functional!")`
5. If the console outputs the string correctly beneath your line of code, your analytics environment is ready for data loading, manipulation, and modeling.

Next Steps for Scientific Analytics

To get started with specific structural modeling or specialized data workflows (such as analyzing commercial fishing fleet catch/effort data or running biological population dynamics like the Schaefer model), it is highly recommended to install the `tidyverse` package ecosystem. Type `install.packages("tidyverse")` into your console to get started.