



Hands-on Lab: Download & Install R and RStudio

Estimated time needed: 15 minutes

Multiple programmers are moving towards data science, and in this process, R and RStudio play an essential role. So in this lab, you will understand how to install R and RStudio.

Objectives

- Download and Install R
- Download and Install RStudio

Overview of R and RStudio

There are several cloud based data science tools that make team collaboration accessible. At times it is useful to work directly on your desktop.

R is a command-line interface; there are several graphical front-ends available. RStudio is an IDE (integrated development environment) for R. It includes the environmental tab, which shows the generated variables. In the history tab, you can see the commands used since starting, and there are other tabs such as files, plots, packages, help, and viewer. It has binaries available for major platforms, including Windows, Linux, and MacOS. This lab includes instructions for downloading and installing R and RStudio on Windows. Mac OS users can download the appropriate .pkg file from <https://cran.r-project.org/bin/macosx/> and follow the instructions.

Exercise 1: Download & Install R on Windows

Step 1: The **latest version** of R can be downloaded by clicking the link.

Windows: <https://cran.r-project.org/bin/windows/base/>



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R-4.2.0 for Windows

[Download R-4.2.0 for Windows](#) (79 megabytes, 64 bit)



Click here to download

[README on the Windows binary distribution](#)

[New features in this version](#)

This build requires UCRT, which is part of Windows since Windows 10 and Windows Server 2016. On older systems, UCRT has to be installed manually.

If you want to double-check that the package you have downloaded matches the package distributed by CRAN, you can compare the [md5sum](#) of the file with the one on the CRAN server.

Frequently asked questions

- [Does R run under my version of Windows?](#)
- [How do I update packages in my previous version of R?](#)

Please see the [R FAQ](#) for general information about R and the [R Windows FAQ](#) for Windows-specific information.

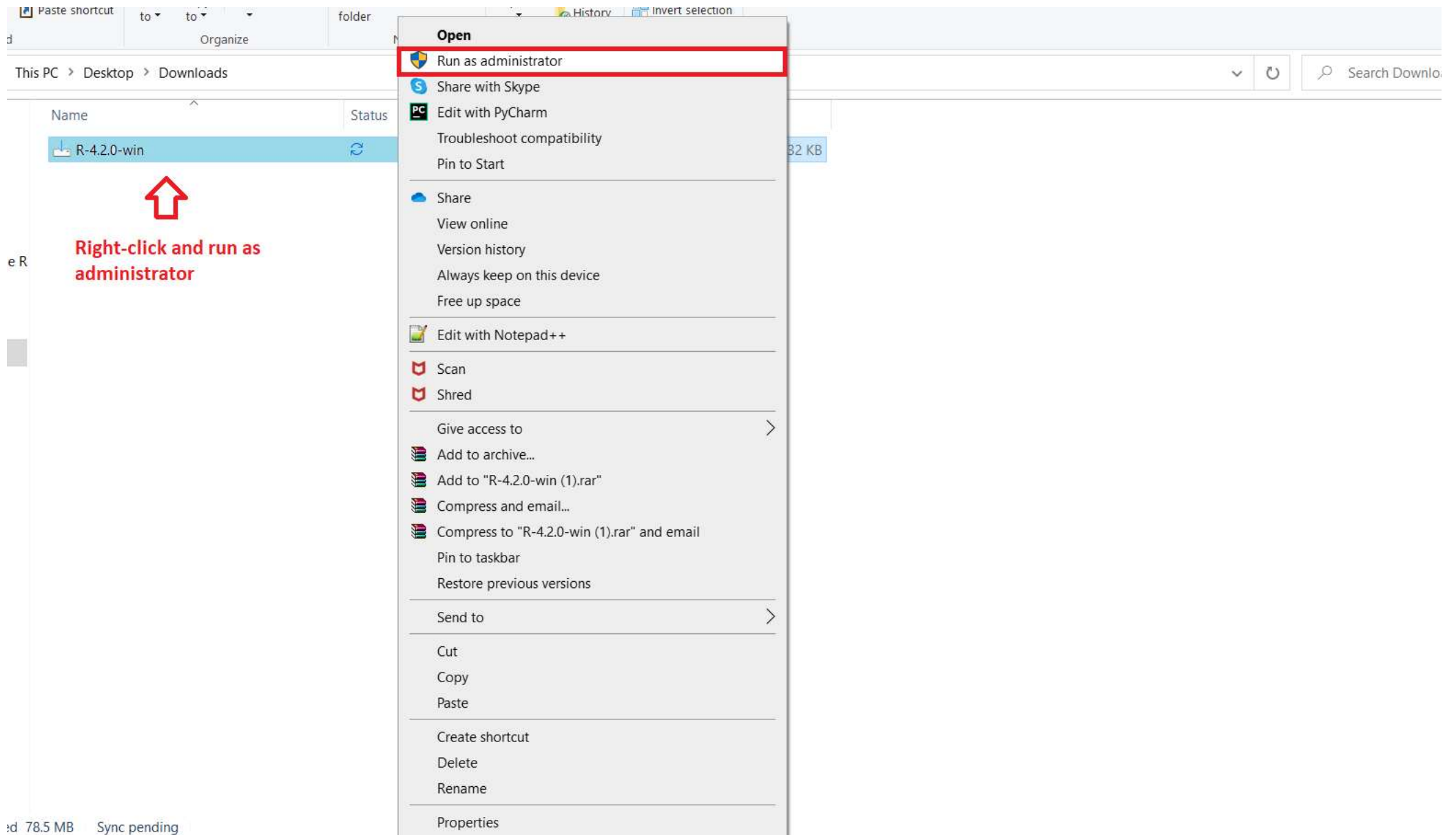
Other builds

- Patches to this release are incorporated in the [r-patched snapshot build](#).
- A build of the development version (which will eventually become the next major release of R) is available in the [r-devel snapshot build](#).
- [Previous releases](#)

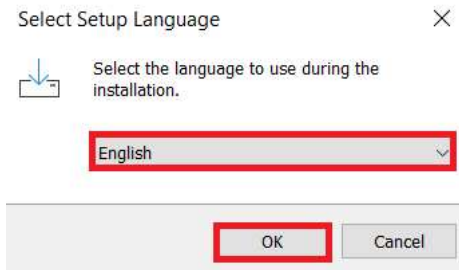
Note to webmasters: A stable link which will redirect to the current Windows binary release is <http://<CRAN MIRROR>/bin/windows/base/release.html>.

Last change: 2022-04-22

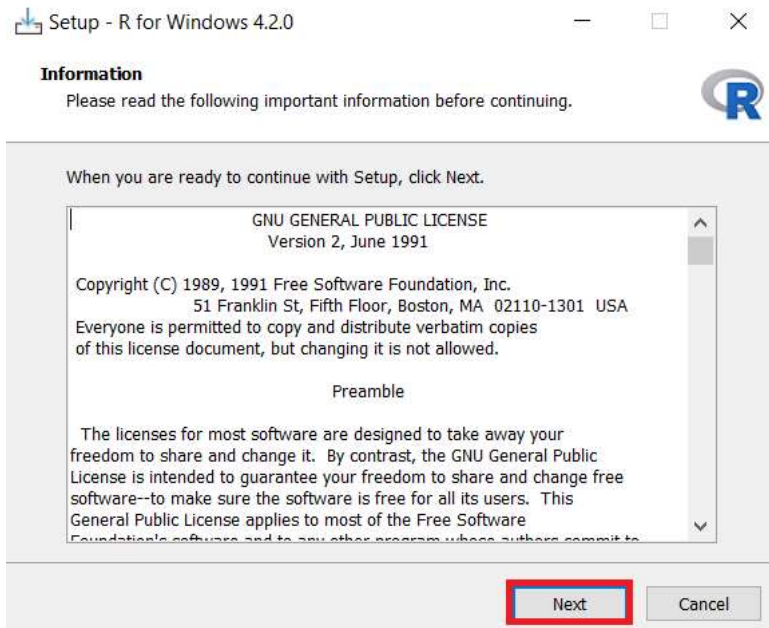
Step 2: Once the download completes, **right-click** the downloaded file, and click **Run as administrator**.



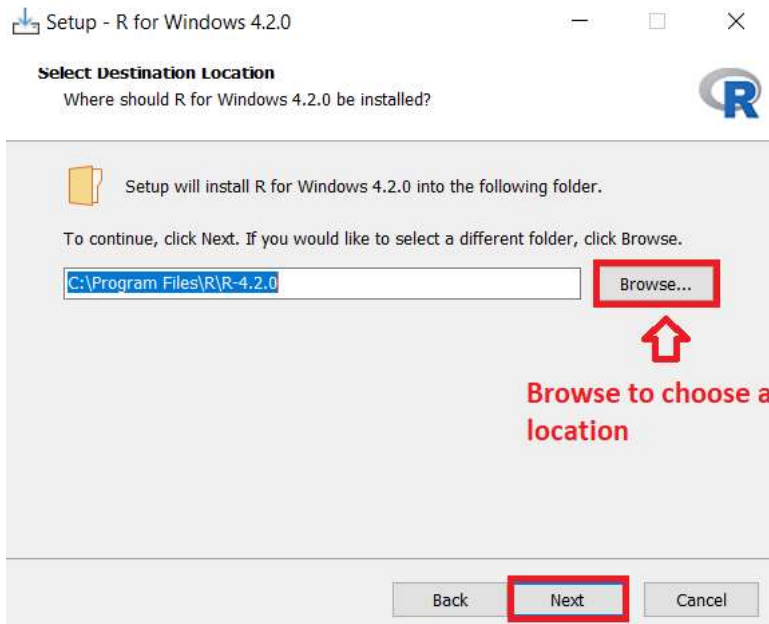
Step 3: Select your preferred installation **language**, and click **OK**.



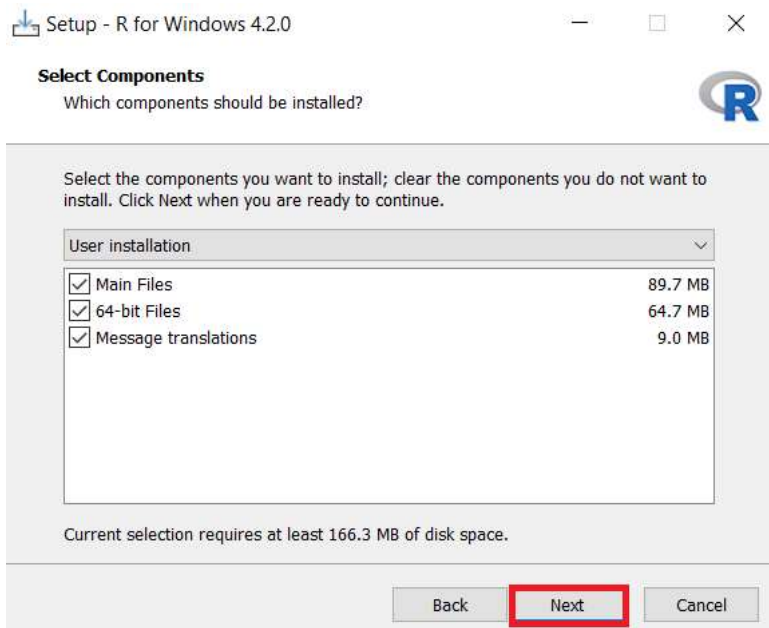
Step 4: Read and accept the license and click **Next**.



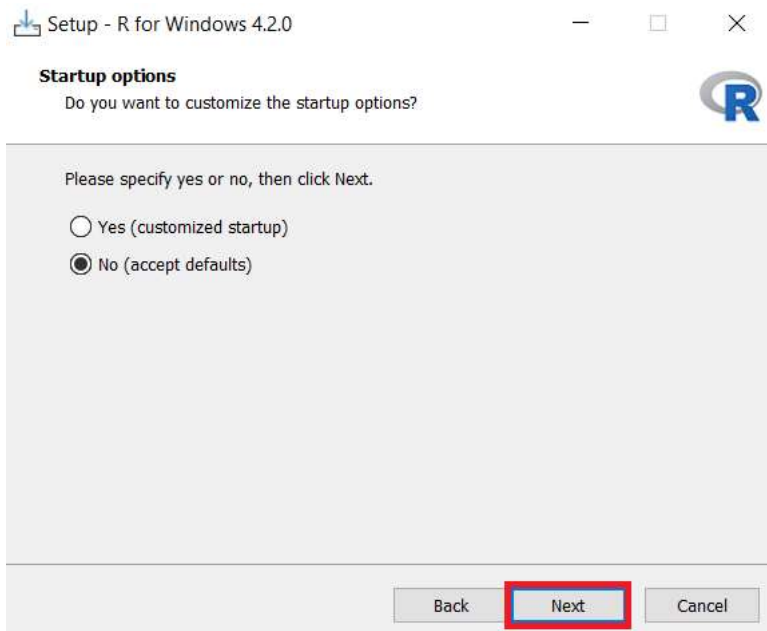
Step 5: Select the **Folder** where you would like to install R, or use the **Default** location, and click **Next**.



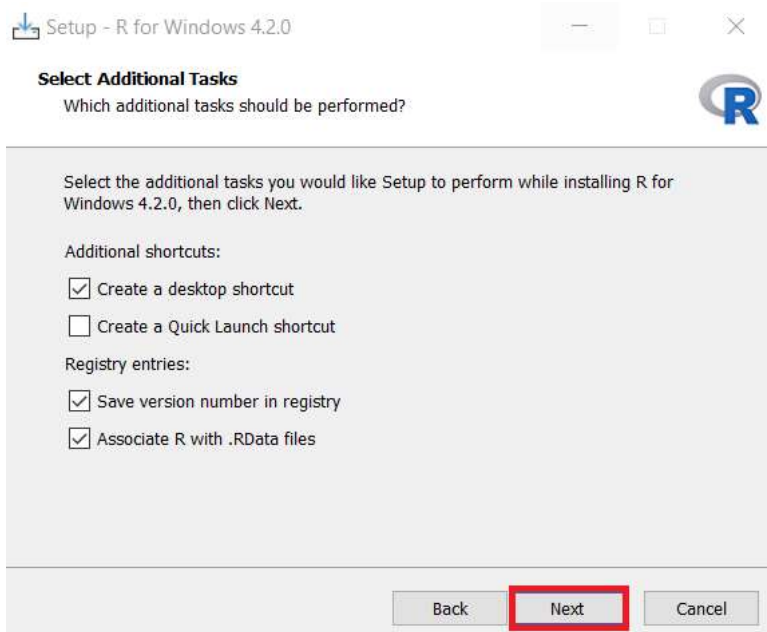
Step 6: Select the **Components** you want to install and click **Next**.



Step 7: In the **Startup options**, select the **Default** option and click **Next**.



Step 8: In the **Select Additional Tasks** window, retain **Default** and click **Next**.



Step 9: Once installation is successful, click **Finish** to close the setup.

Exercise 2: Download & Install RStudio

Step 1: Use the link below to download **RStudio Desktop** on your local machine.

Link for Download RStudio for windows and mac: <https://posit.co/download/rstudio-desktop/>

Step 2: Click **Download RStudio desktop For Windows**, and your download will start.

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RStudio Desktop

Used by millions of people weekly, the RStudio integrated development environment (IDE) is a set of tools built to help you be more productive with R and Python.

1: Install R

RStudio requires R 3.3.0+. Choose a version of R that matches your computer's operating system.

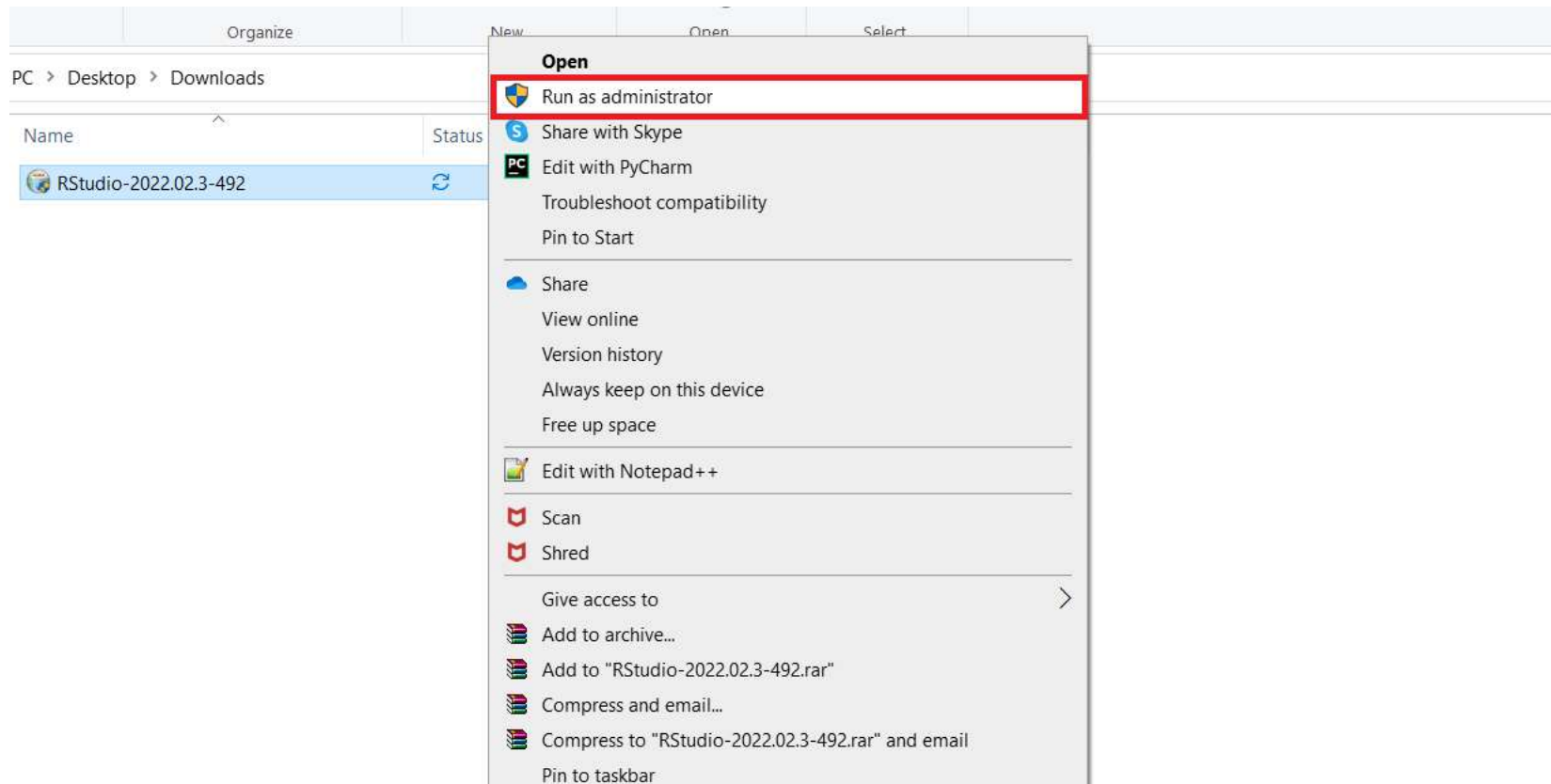
DOWNLOAD AND INSTALL R

2: Install RStudio

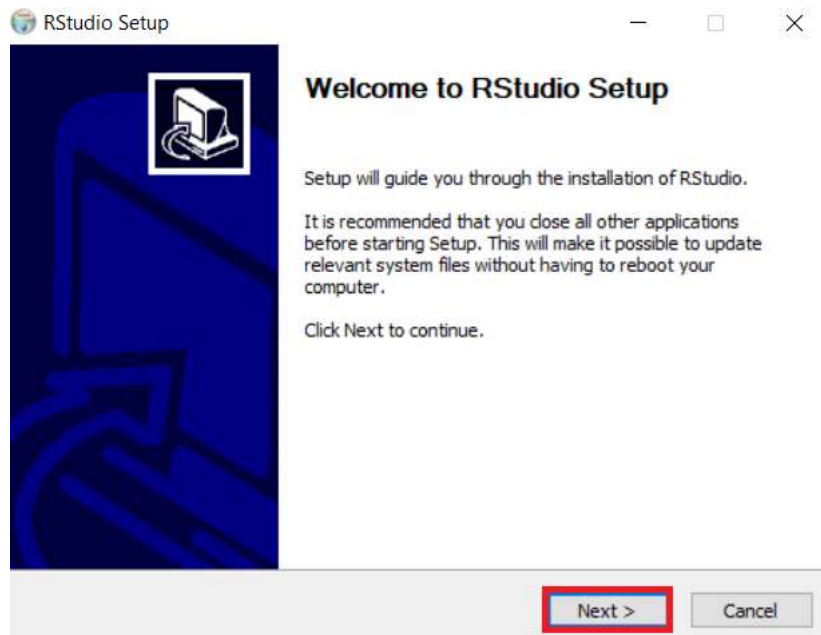
DOWNLOAD RSTUDIO DESKTOP FOR WINDOWS

Size: 202.77 MB | [SHA-256: FD8EA4B4](#) | Version: 2022.12.0+353 | Released: 2022-12-15

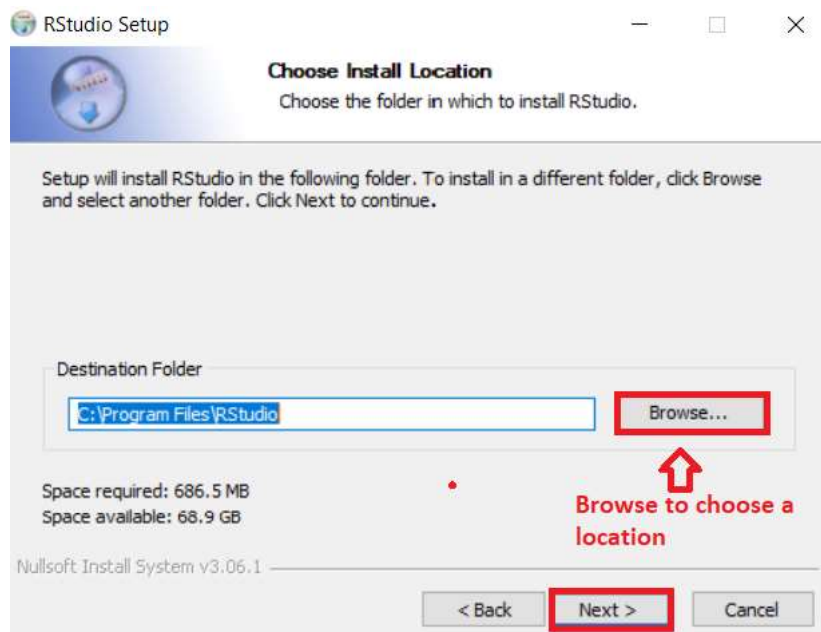
Step 3: Once the download completes, **right-click** the setup file, and click **Run as administrator**.



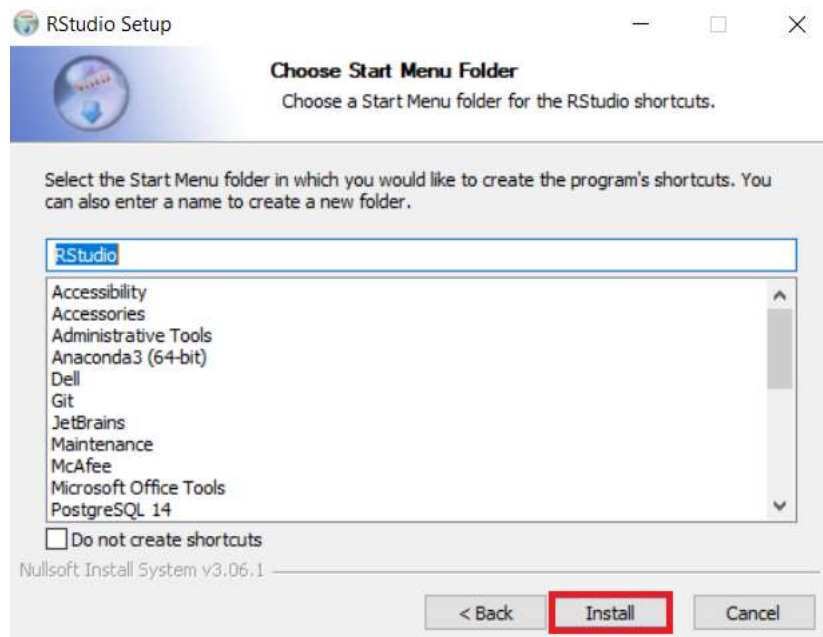
Step 4: In the RStudio setup window, click **Next**.



Step 5: Select the folder where you would like to install RStudio, or retain the **Default** installation location and click **Next**.



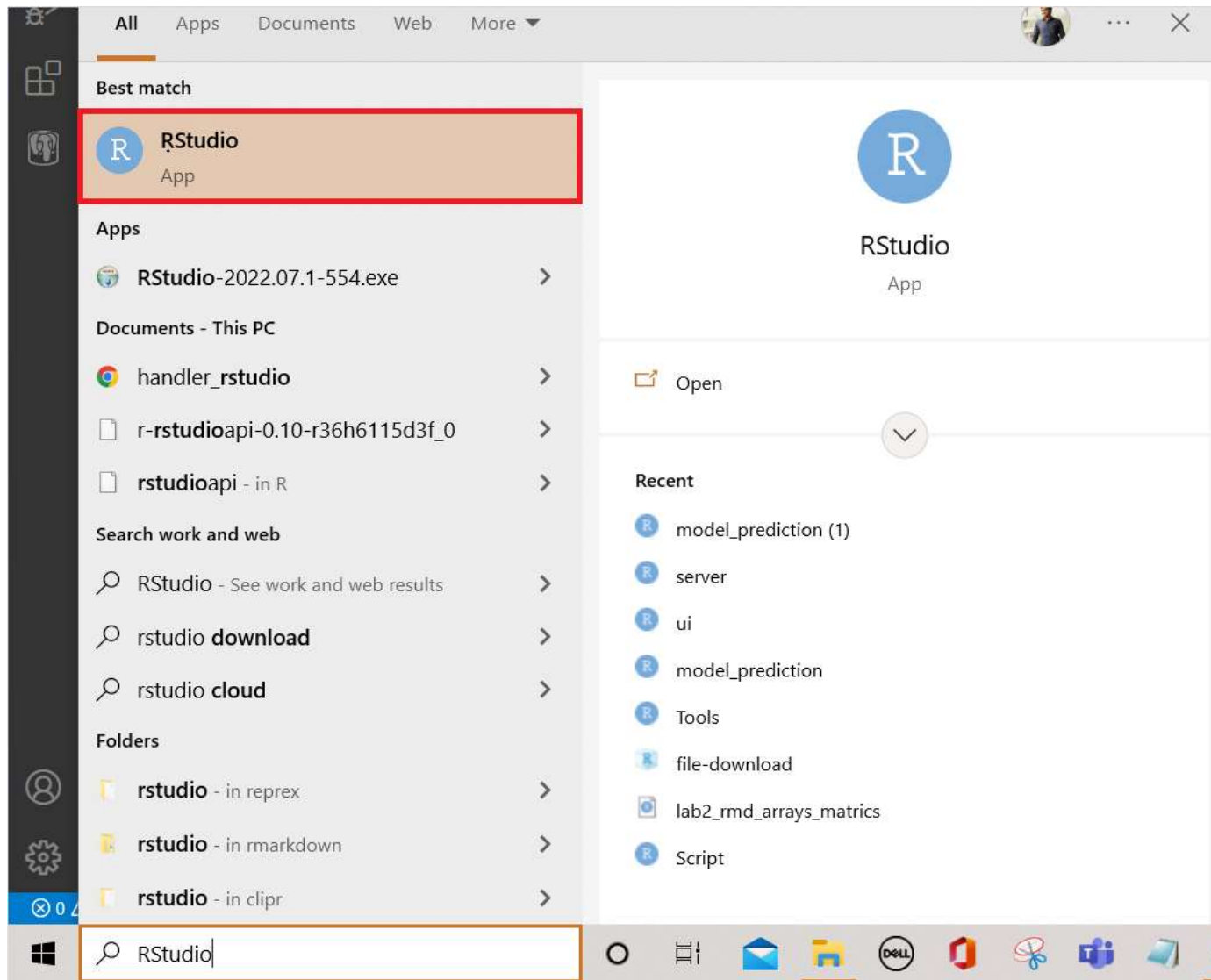
Step 6: In the Start menu window, click **Install** to install RStudio.



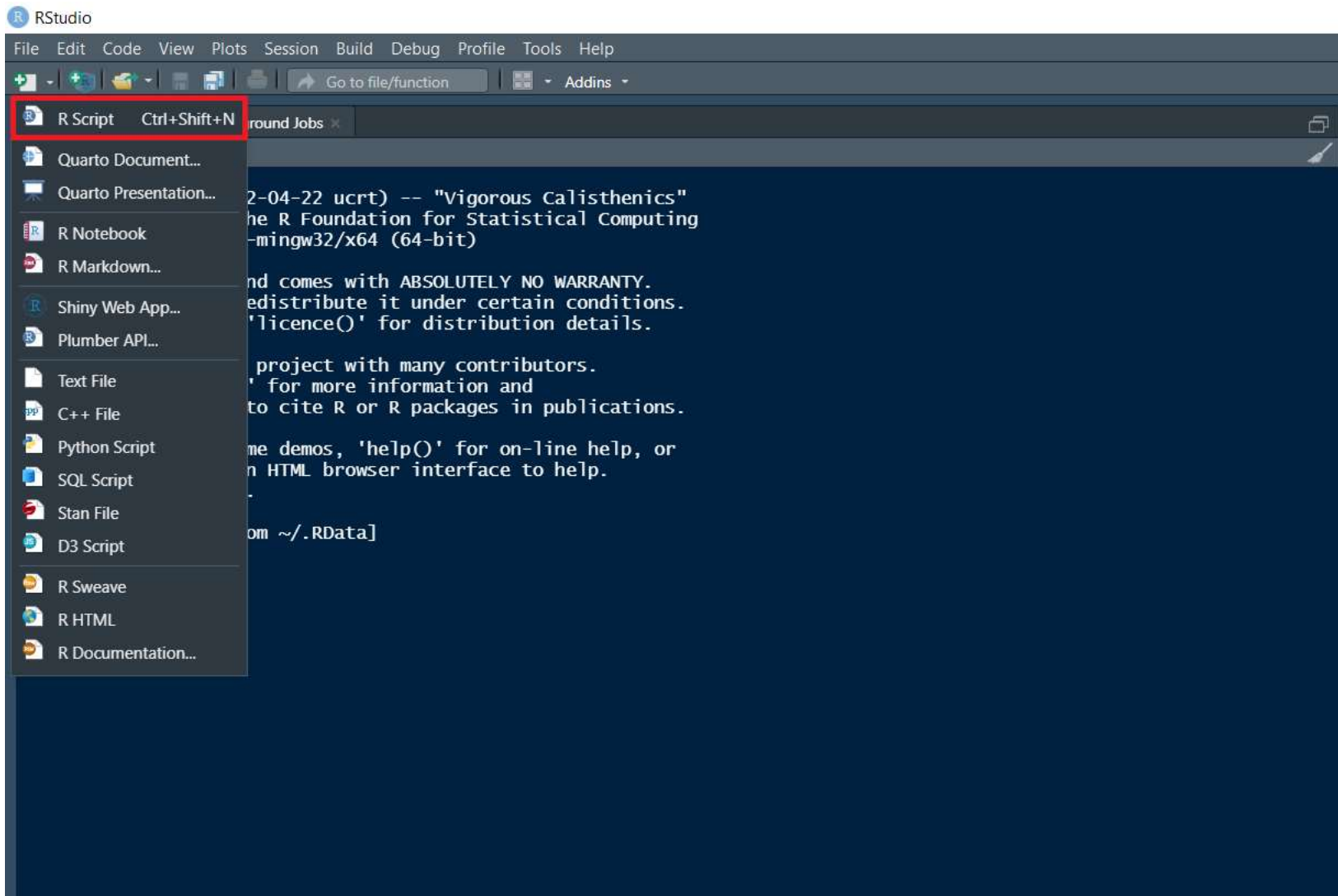
Step 7: Once installation completes, click **Finish** to close the window.

Exercise 3: Execute R code in RStudio

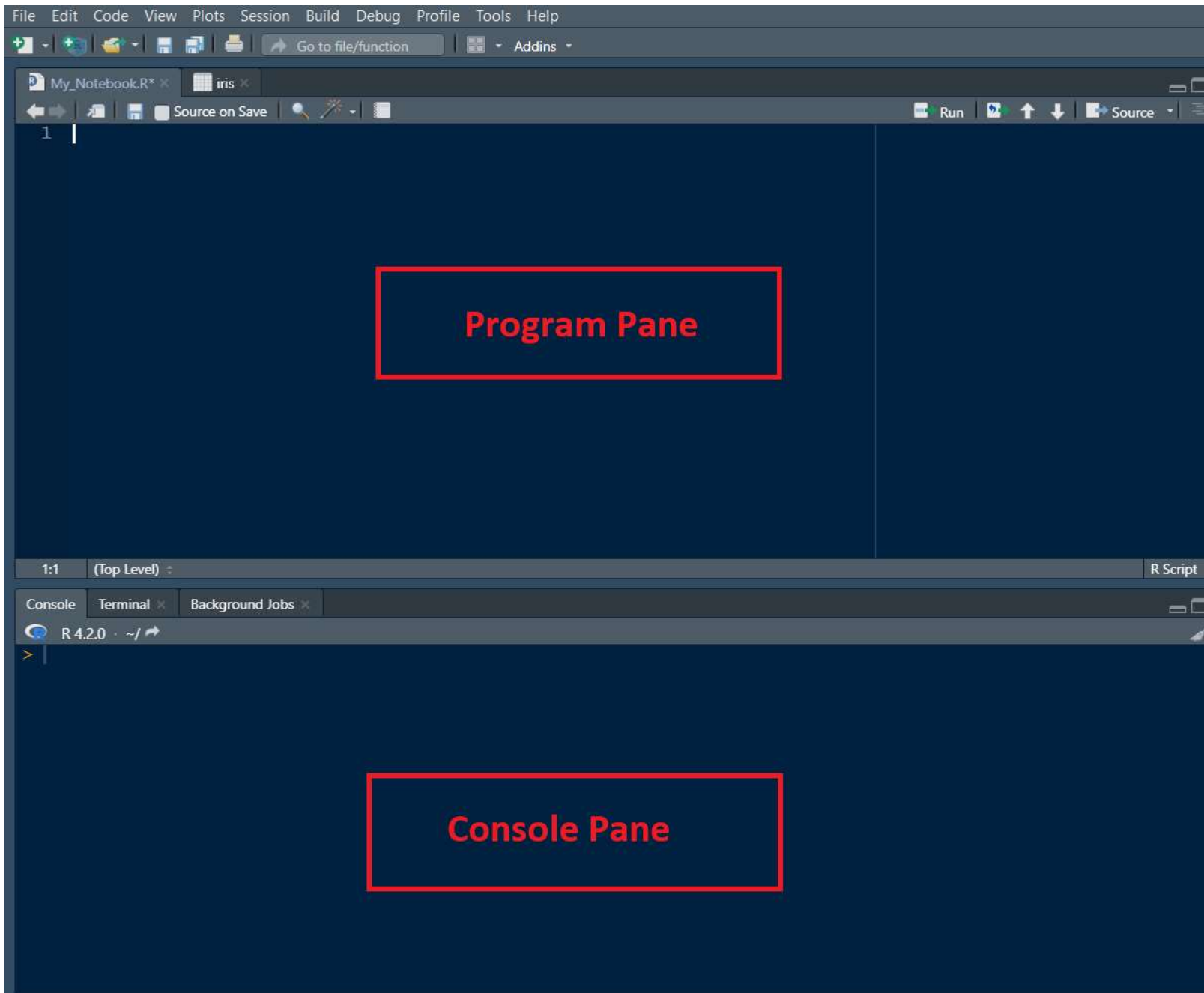
1. Open **RStudio** from the Windows start menu.



2. Click the **plus** symbol on the top left and select **R Script**.



3. An **untitled** R Script panel opens. It would look as follows.



4. Now, load the **iris** dataset. Enter the following **lines** into the **Editor window** which appears. Next, select all of them. Then click the **Run icon** just above the Editor window.

1. 1
2. 2

3. 3

```
1. library(datasets)
2. data(iris)
3. View(iris)
```

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► Output

5. You are taken directly to the data view tab to inspect your dataset. You can see five columns in this data set, the first four are floating point, and the last one is the label of the data type string, which contains the category value of your data set. You can see that there are total of 150 entries.

The screenshot displays the RStudio environment with the following components:

- Menu Bar:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Toolbar:** Includes icons for file operations and a search bar with the text "Go to file/function".
- Source Editor:** Shows the file "iris" with a search bar and a "Filter" button. The data is displayed in a table with 150 rows and 5 columns: Sepal.Length, Sepal.Width, Petal.Length, Petal.Width, and Species. The first 14 rows are visible, showing values for the first four columns and the 'setosa' species label.
- Environment Panel:** Located on the right, it shows the "Global Environment" with 106 MiB of memory used. Under the "Data" tab, the "iris" dataset is listed with 150 observations. A summary of the dataset is provided: \$ Sepal.Length: num 5.1 4.9, \$ Sepal.Width: num 3.5 3.3, \$ Petal.Length: num 1.4 1.4, \$ Petal.Width: num 0.2 0.2, and \$ Species: Factor w/ 3 T.
- Values Panel:** Shows the dimensions of the data: x = 5 and y = 25.
- Functions Panel:** Lists available functions for the dataset.
- Console:** At the bottom, it shows the R prompt with the commands: > library(datasets), > data(iris), > View(iris), and > |.
- Background Jobs Panel:** Shows the status of background jobs.
- Files Panel:** Located on the far right, it shows the file explorer with a list of files and folders, including .RData, .Rhistory, Cap_shiny13-06-2022, capston_With_R, capstone_one, Cognos_Issues.xlsx, Custom Office Templates, Database1.accdb, Dell, desktop.ini, and Downloads - Shortcut Ink.

6. Now let's find how many **different species** are present in the data set. Type the following command in the **Editor window** and **click Run**.

1. 1

1. `unique(iris$Species)`

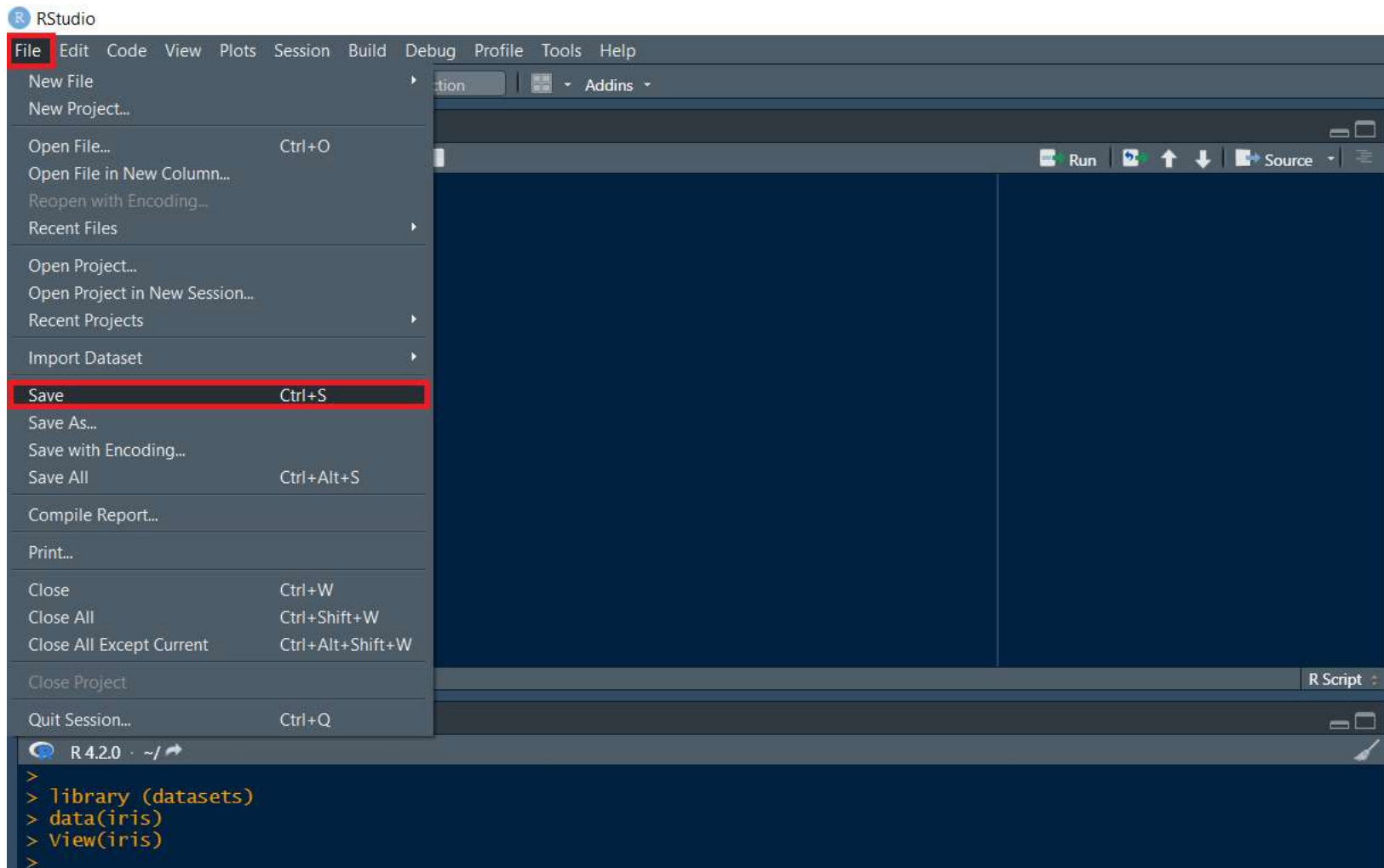
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► Output

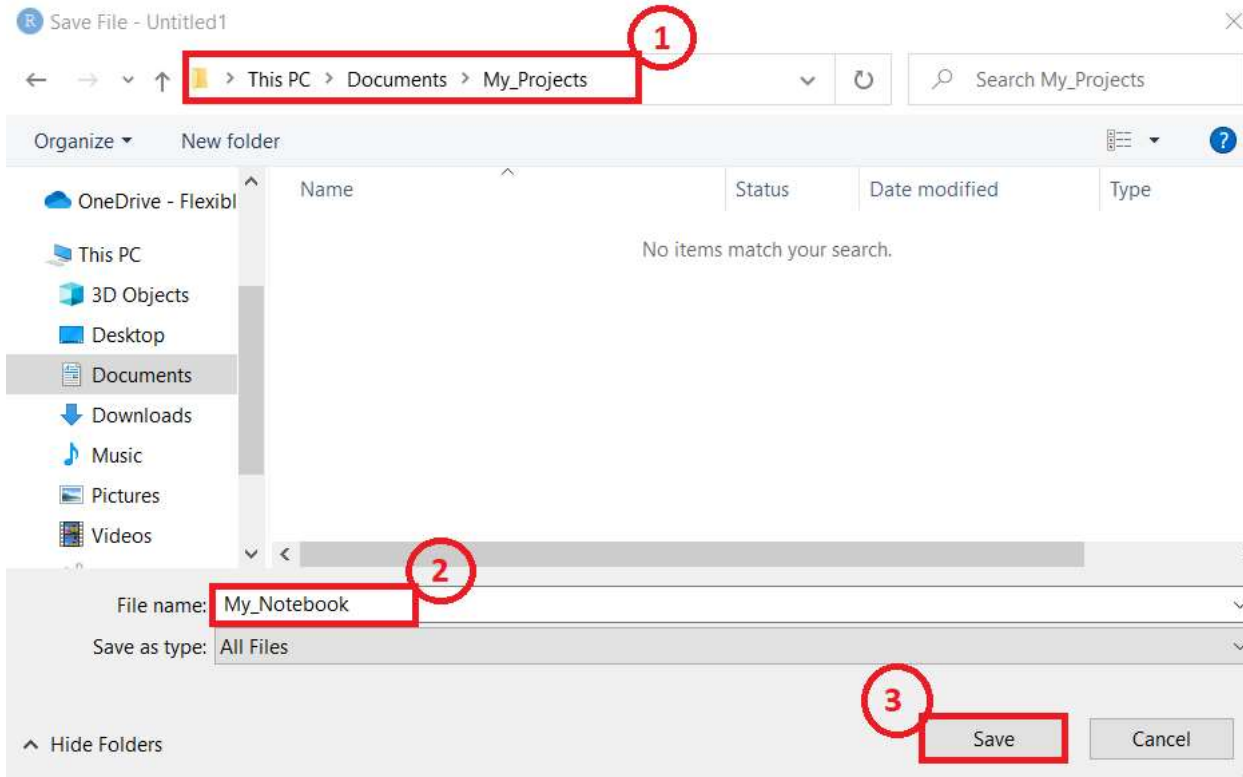
***Note:** In the Console window at the bottom, you will see the result of the executed command and know that only three different species are present in the data set.*

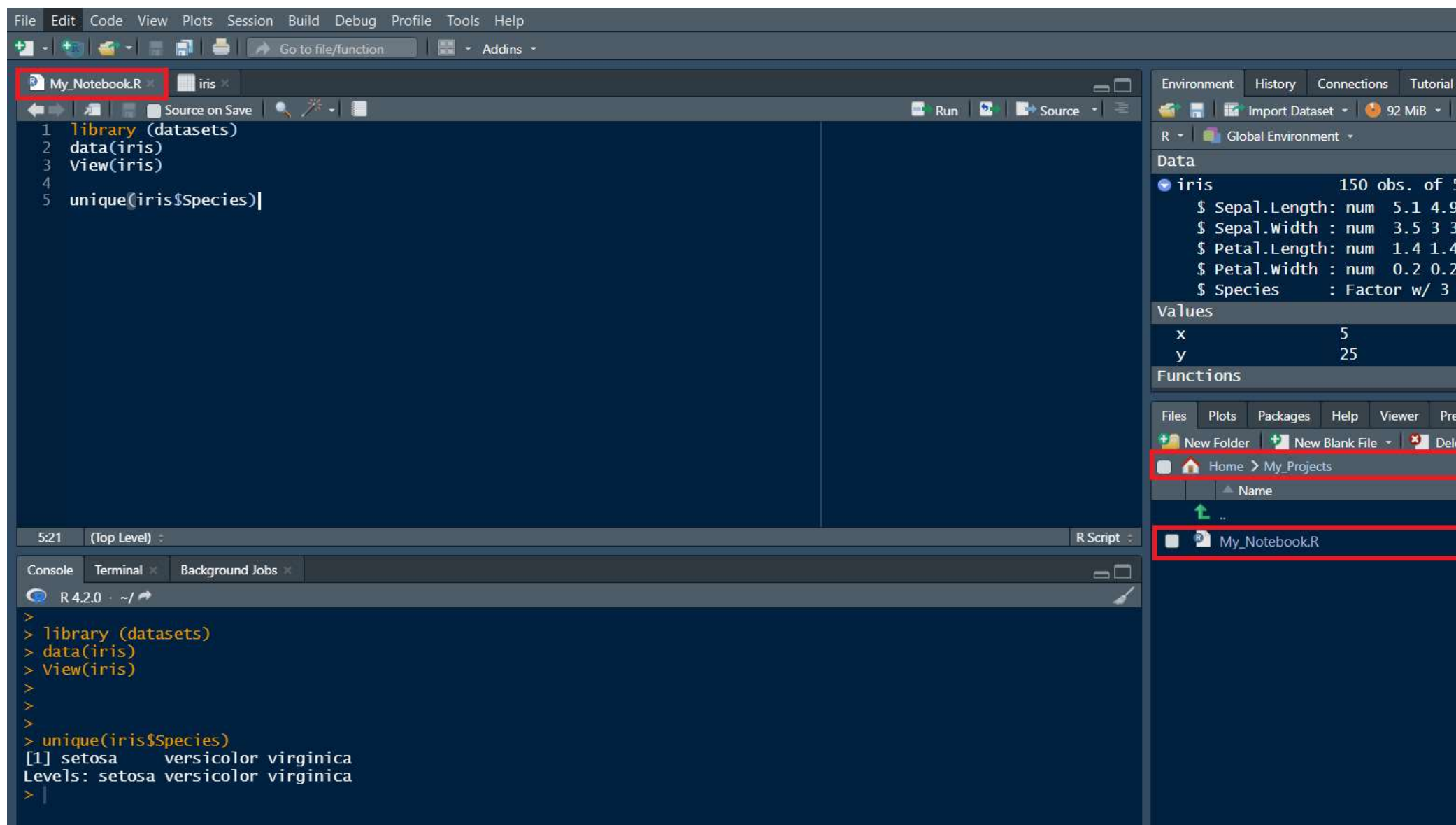
7. **Save & provide a name to your Notebook.**

- To save the notebook, click **Save** or **Save as** in the **File** menu.



- Select the working folder to rename your notebook to ***My Notebook***.





Congratulations! In this document, you have learned how to download and install R and RStudio on your local machine. You also created a R notebook and saved it.

Author(s)

[D.M.Naidu](#)

Change Log

Date (YYYY-MM-DD) Version Changed By Change Description			
2022-12-27	0.2	Steve Hord	QA pass
2022-06-17	0.1	D.M.N	Created Initial Version

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