

R installation

Data Management
Fall & Winter 2019
Osaka U

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Outline

- Install R
- Install RStudio
- Install Git
- Install IRkernel
- Appendix
 - How to RStudio
 - Update R
 - Update RStudio

Install R



CRAN

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The Comprehensive R Archive Network

Download and Install R

Precompiled binary distributions of the base system and contributed packages, **Windows and Mac** users most likely want one of these versions of R:

- [Download R for Linux](#)
- [Download R for \(Mac\) OS X](#)
- [Download R for Windows](#)

R is part of many Linux distributions, you should check with your Linux package management system in addition to the link above.

Source Code for all Platforms

Windows and Mac users most likely want to download the precompiled binaries listed in the upper box, not the source code. The sources have to be compiled before you can use them. If you do not know what this means, you probably do not want to do it!

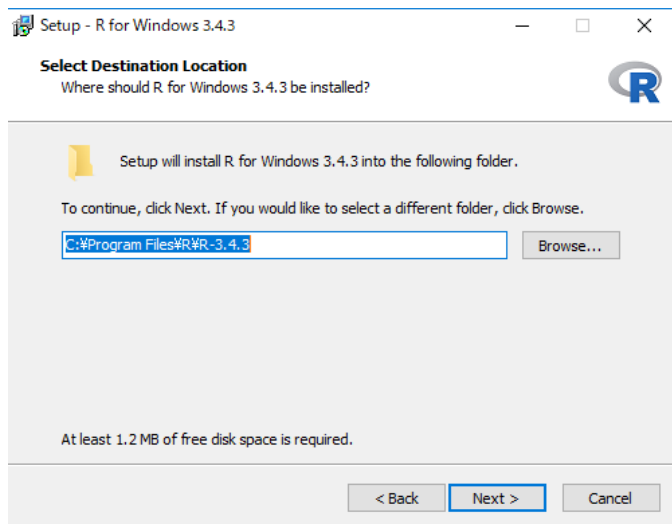
- The latest release (2017-11-30, Kite-Eating Tree) [R-3.4.3.tar.gz](#), read [what's new](#) in the latest version.
- Sources of [R alpha and beta releases](#) (daily snapshots, created only in time periods before a planned release).
- Daily snapshots of current patched and development versions are [available here](#). Please read about [new features and bug fixes](#) before filing corresponding feature requests or bug reports.
- Source code of older versions of R is [available here](#).
- Contributed extension [packages](#)

Questions About R

- If you have questions about R like how to download and install the software, or what the license terms are, please read our [answers to frequently asked questions](#) before you send an email.

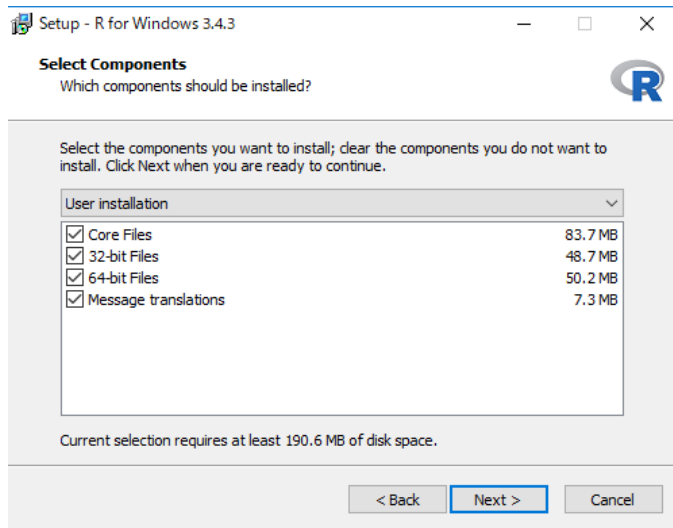
Go to [CRAN](#) → Download & Install

Install R (cont)



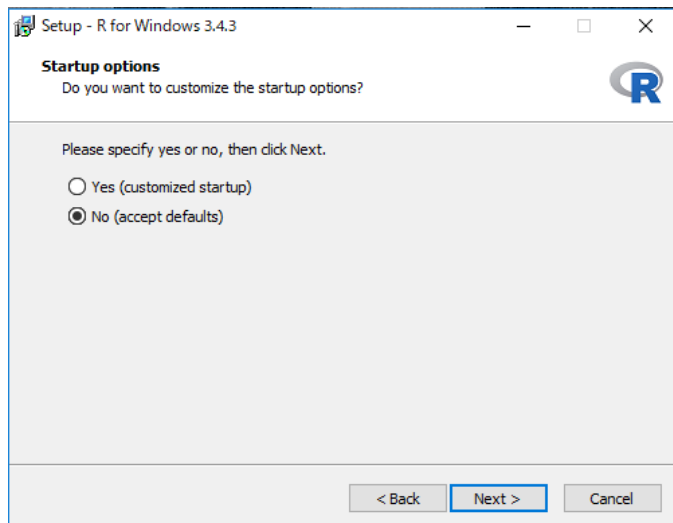
Click Next. Please remember the location where you install R

Install R (cont)



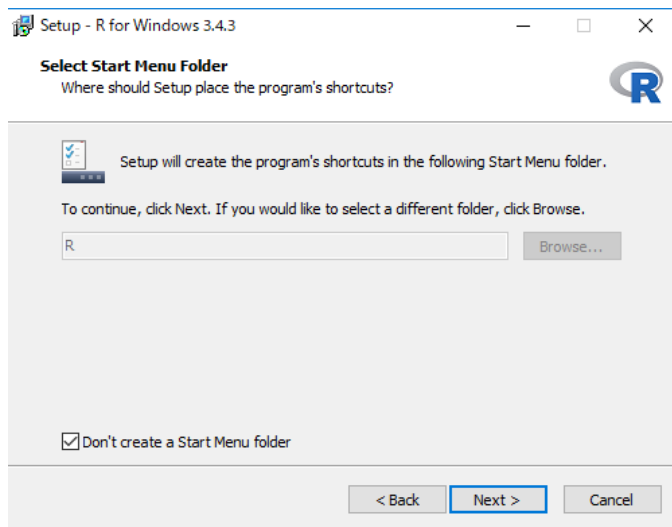
Click Next

Install R (cont)



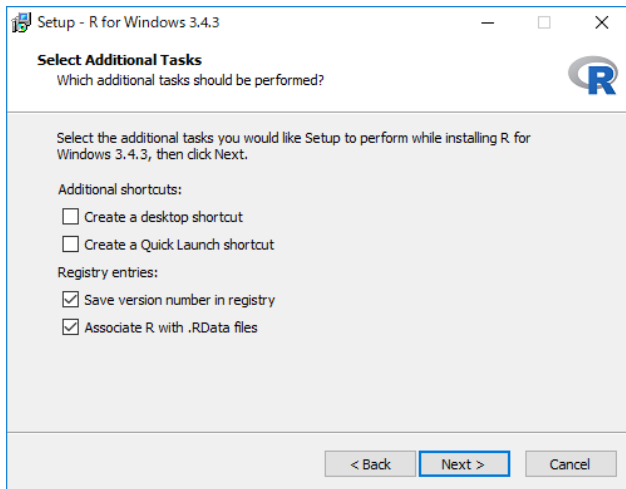
Click Next

Install R (cont)



Create a Start Menu folder? → No, unless you want it

Install R (cont)



Make sure that both entries at the bottom are checked. Create a shortcut? →
No, unless you want it

Install RStudio

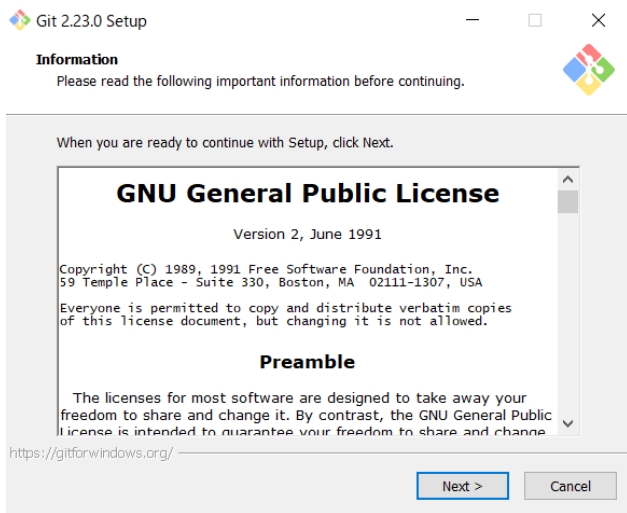
- RStudio is very popular among R users
- Download an installer from [RStudio Desktop](#) and install it

Install Git

Download an installer from [this site](#)

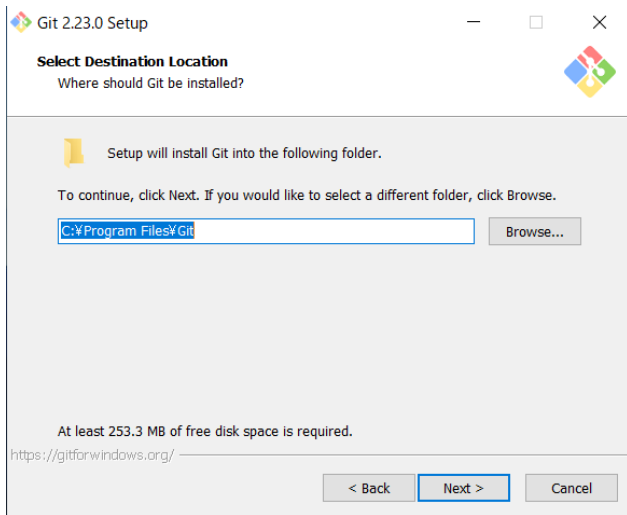
- (The following instruction is mainly for Windows users. For Mac users, see the above website or [Homebrew](#))

Install Git (cont.)



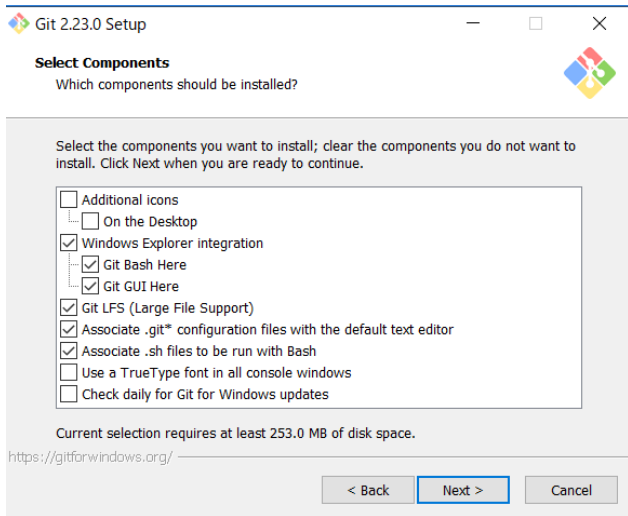
Click next

Install Git (cont.)



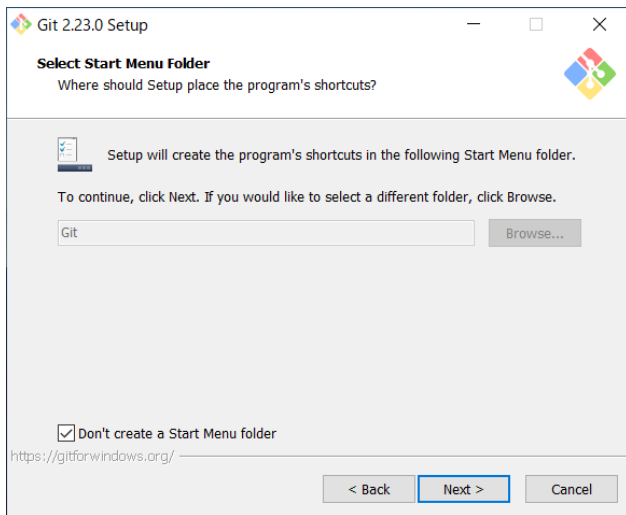
Click next

Install Git (cont.)



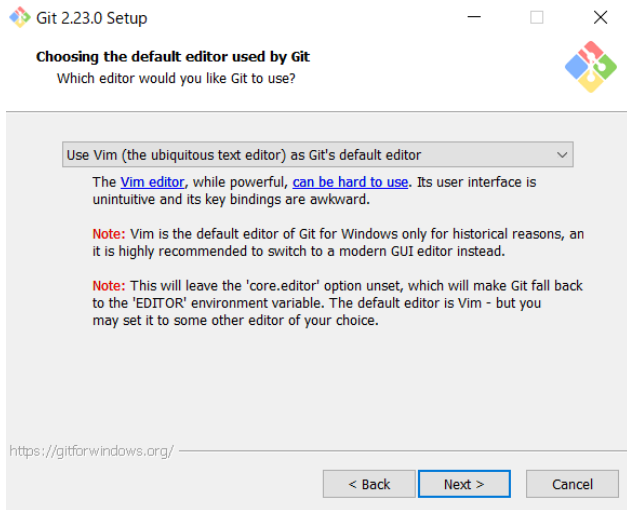
Click next

Install Git (cont.)



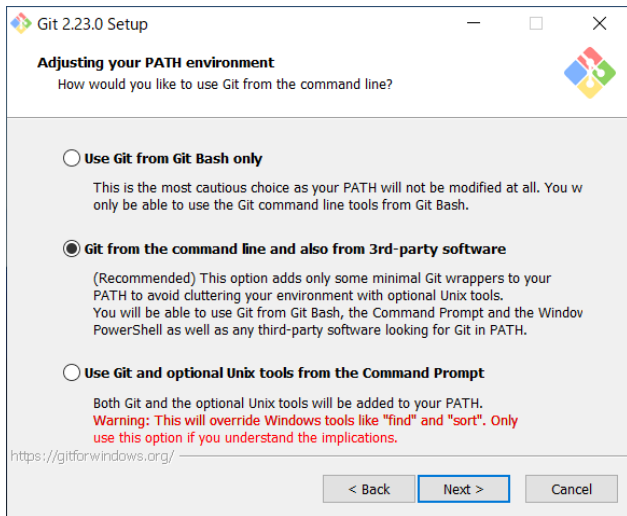
Create a Start Menu folder? → No, unless you want it

Install Git (cont.)



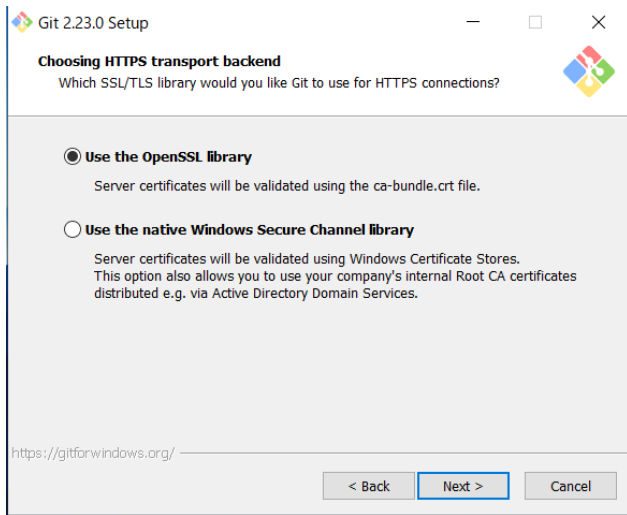
Click next (or choose your editor)

Install Git (cont.)



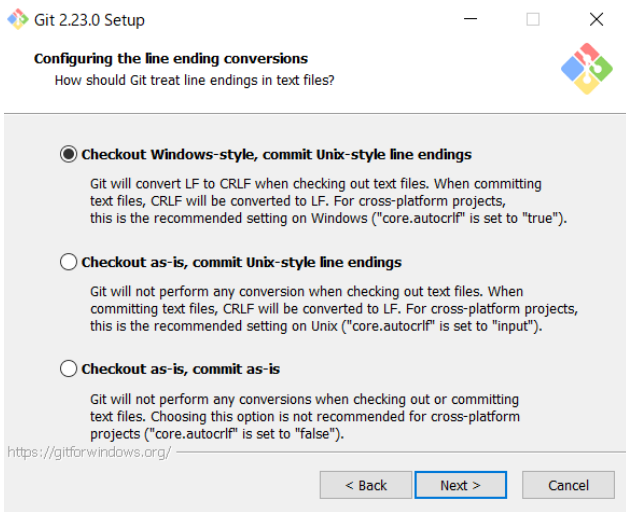
Click next

Install Git (cont.)



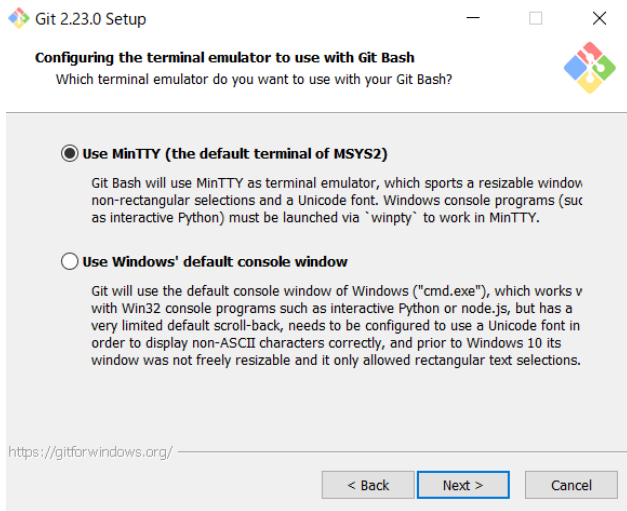
Click next

Install Git (cont.)



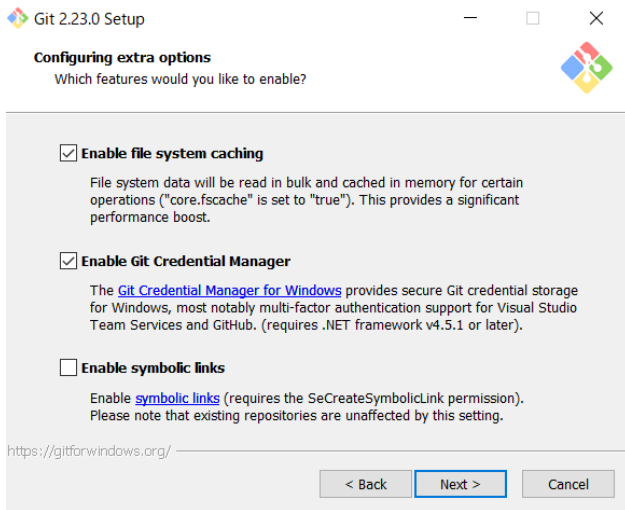
Click next

Install Git (cont.)



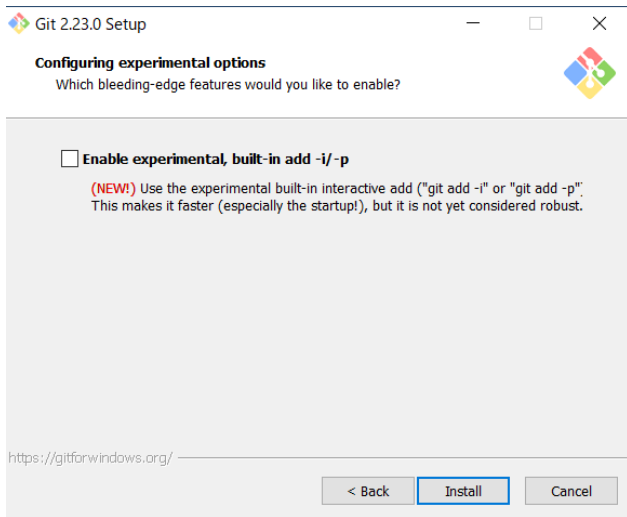
Click next

Install Git (cont.)



Click next

Install Git (cont.)



Click install → Done!

Install IRkernel

- Let's install IRkernel for running R in Jupyter Notebook
- Go to the folder where you have installed R (e.g., C:/Program Files/R/R-3.6.1)
- Go to bin/x64 (for Win 64bit version)
- Double-click Rgui.exe
- Type the following lines one-by-one:

```
install.packages(c('repr', 'IRdisplay', 'evaluate', 'crayon',  
  'pbdZMQ', 'devtools', 'uuid', 'digest'))  
devtools::install_github('IRkernel/IRkernel', force = TRUE)  
IRkernel::installspec()
```

- Start Jupyter Notebook
- Click "New" to see that R also appears in the list

Install essential R packages

```
コマンドプロンプト - conda install -c r r-essentials

r-source tools: 0.1.6-r342hf2b6fa4_0 r
r-spatial: 7.3-11-r342h4ae3a6f_4 r
r-stringi: 1.1.5-r342h5c541a4_0 r
r-survival: 1.2.0-r342hdf0379_0 r
r-tibble: 2.4.1-r342hfc391e4_0 r
r-tidyr: 1.3.4-r342he0bf074_0 r
r-tidyrselect: 0.7.1-r342h21c905_0 r
r-tidyrverse: 0.2.2-r342he470468_0 r
r-timedate: 1.1.1-r342h741f8bf_0 r
r-ttr: 3012.100-r342h41e599f_4 r
r-uuid: 0.23.2-r342h5f7293a_0 r
r-viridislite: 0.1.2-r342h335752_4 r
r-withr: 2.0.0-r342h8fbad64_0 r
r-xml2: 1.1.1-r342hfdffae7_0 r
r-xtable: 1.8.2-r342h4a454df_0 r
r-xts: 0.10.0-r342h3b3a6c0_4 r
r-yaml: 2.1.14-r342h7224439_0 r
r-zoo: 1.8.0-r342h16060a3_0 r

Proceed ([y]/n)? y

Downloading and Extracting Packages
r-ipyred 0.9.6: ##### 100%
r-tidyr 0.7.1: ##### 100%
r-randomforest 4.6-12: ##### 100%
r-htmltools 0.3.6: ##### 100%
m2w64-libosgs 1.3.2: ##### 100%
r-hms 0.3: ##### 0%
```

- In Command Prompt/Terminal, type:

```
conda install -c r r-essentials
```

(If “conda” does not work, try “pip” or “pip3”)

- When “Proceed ([y]/n)?” shows up, type y (means yes) and press Enter.

Installation takes a bit of time

Summary

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- Install RStudio
- Install Git
- Install IRkernel
- Appendix
 - How to RStudio
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References: R

Online sources:

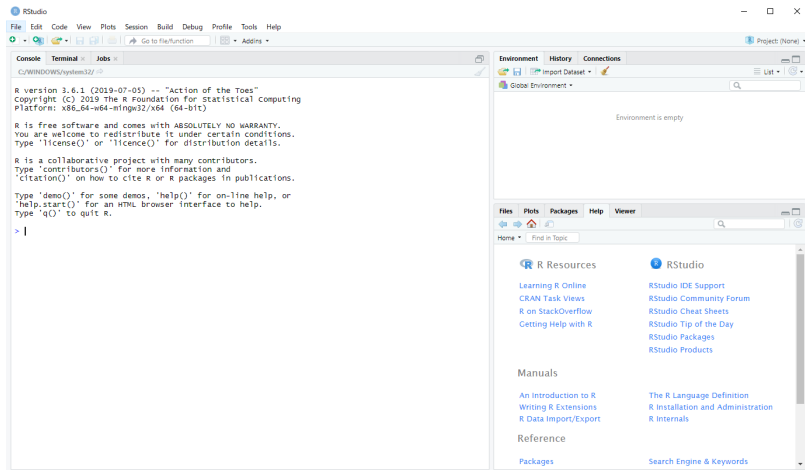
- DataCamp (some courses are free): [\(English\)](#)
- Tidyverse (a useful collection of packages for data analysts): [\(English\)](#)
- #rstat community on Twitter
- R-Ladies [\(English\)](#)

Books:

- *R for Data Science* [\(web\)](#)

Appendix

How to use RStudio



- Write your commands in Console or write an R script
- Data, help files, and outputs (e.g., figures) show up on the right-hand side of the screen

Run an R script in RStudio

- Click the plus sign at the top of the screen (left one). Choose “R Script”. This opens up a new R script
- In the script, type:

```
hp <- mtcars$hp  
mpg <- mtcars$mpg  
plot(hp, mpg)
```

- To run part of the script, select only lines that you want to execute, then press “Run” at the top of the screen or press “Ctrl + Enter”
 - To run the entire script, you can also use “Ctrl + Shift + Enter” without selecting lines or “Source with Echo” under “Source”

Run R scripts in RStudio (cont.)

- Difference between “Run” and “Source”:

“The difference between running lines from a selection and invoking Source is that when running a selection all lines are inserted directly into the console whereas for Source the file is saved to a temporary location and then sourced into the console from there (thereby creating less clutter in the console).” ([Web source](#))
- Difference between “Source” and “Source with Echo”:

The latter shows outputs in console while the former does not

Update R

- Go to the folder where you have installed R (e.g., C:/Program Files/R/R-3.6.1)
- Go to bin/x64 (for Win 64bit version)
- Double-click Rgui.exe
- Type the following lines one-by-one:

```
install.packages('installr')  
library(installr)  
updateR()
```

Update RStudio

- Launch RStudio
- Click “Help”, then “Check for Updates”