R & RStudio Installation

Pilsung Kang
School of Industrial Management Engineering
Korea University

AGENDA

01 R Installation

02 RStudio Installation

DSBA
Data Science & Business Analytics

Install R

- For Windows
  - ✓ http://www.r-project.org
  - ✓ Download 'R base' file: the latest version is 4.0.2 for windows

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CRAN

R Project

About R
Logo
Contributors
What's New?
Reporting Bugs
Conferences
Search
Get Involved: Mailing Lists
Developer Pages
R Blog

The R Project for Statistical Computing

Getting Started

R is a free software environment for statistical computing and graphics. It compiles and runs on a wide variety of UNIX platforms, Windows and MacOS. To **download R**, please choose your preferred CRAN mirror.

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.

News

- **R version 4.0.2 (Taking Off Again)** has been released on 2020-06-22.
- useR! 2020 in Saint Louis has been cancelled. The European hub planned in Munich will not be an in-person conference. Both organizing committees are working on the best course of action.
- **R version 3.6.3 (Holding the Windsock)** has been released on 2020-02-29.
- You can support the R Foundation with a renewable subscription as a supporting member

Install R

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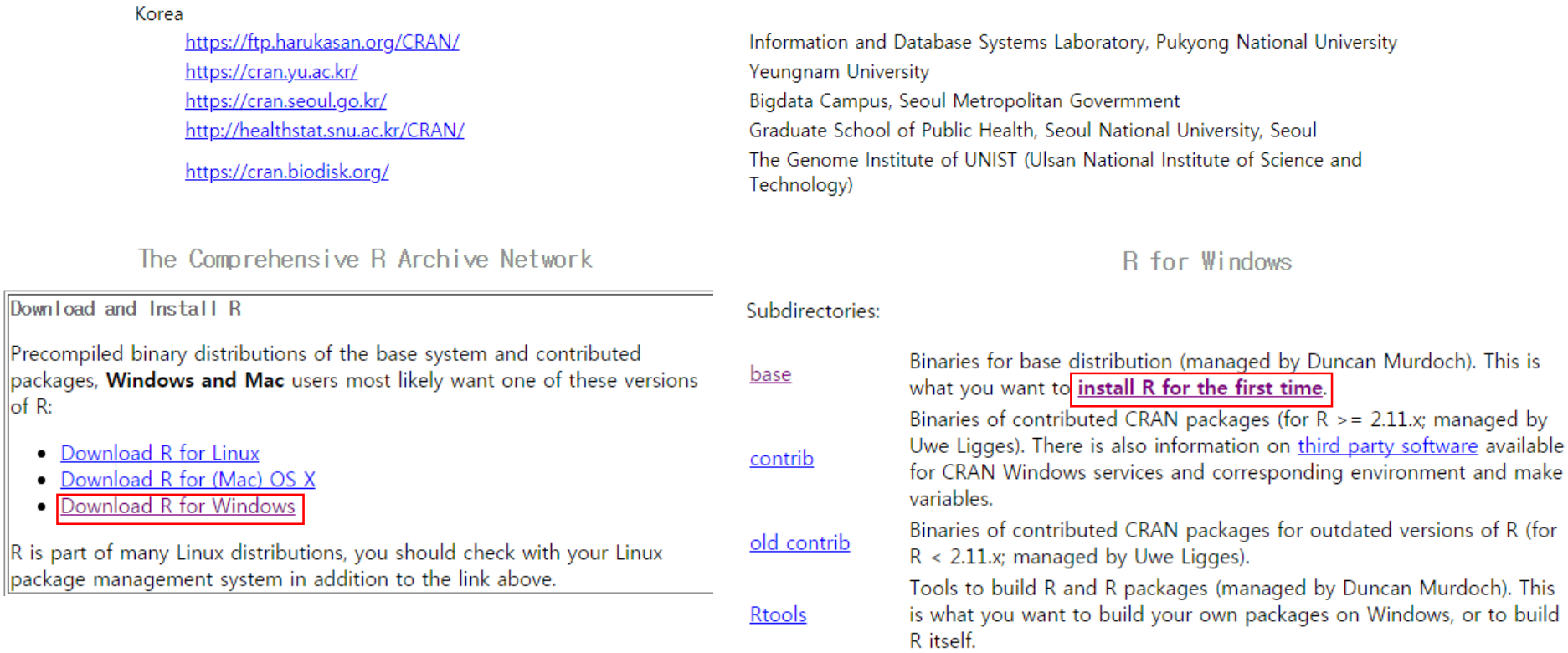


Korea

https://ftp.harukasan.org/CRAN/ — Information and Database Systems Laboratory, Pukyong National University
https://cran.yu.ac.kr/ — Yeungnam University
https://cran.seoul.go.kr/ — Bigdata Campus, Seoul Metropolitan Govermment
http://healthstat.snu.ac.kr/CRAN/ — Graduate School of Public Health, Seoul National University, Seoul
https://cran.biodisk.org/ — The Genome Institute of UNIST (Ulsan National Institute of Science and Technology)

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.

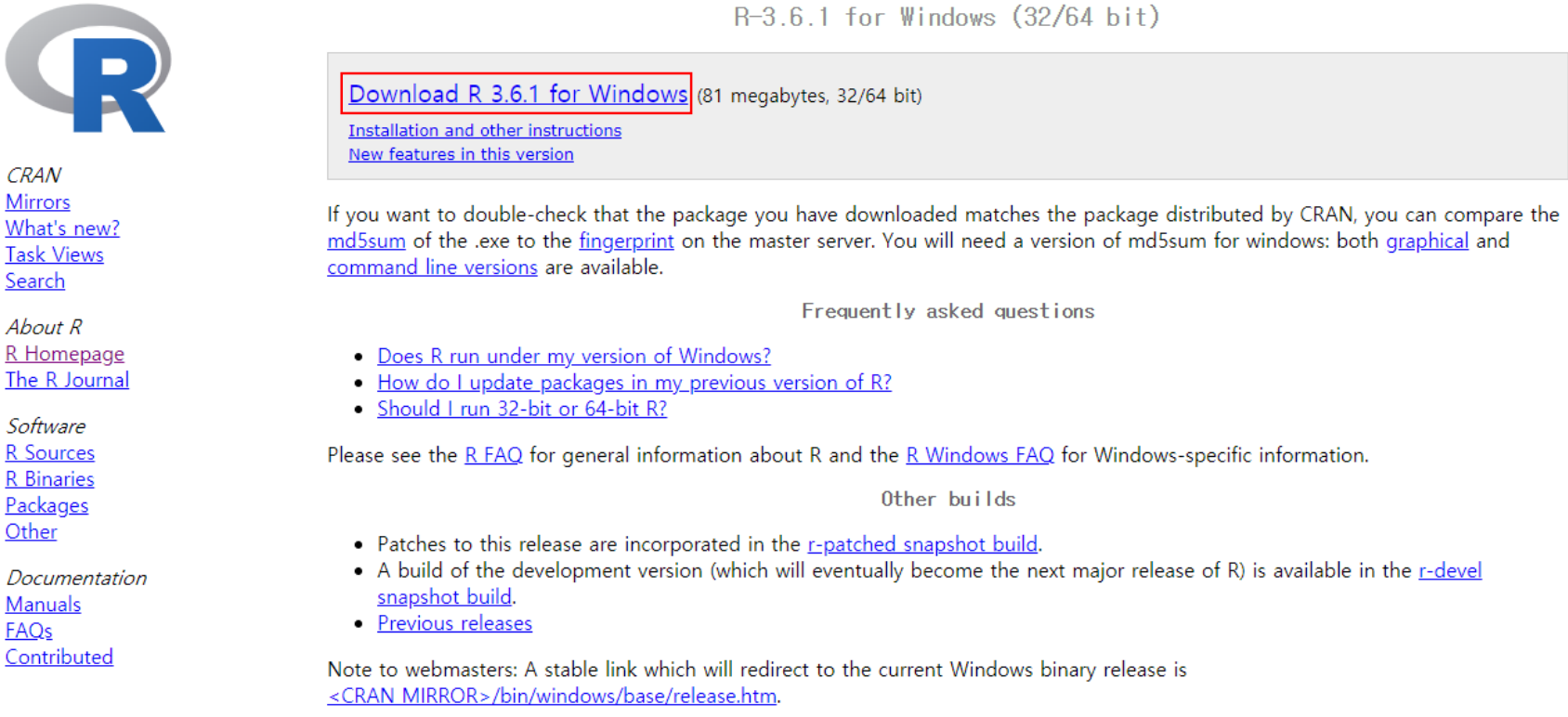
R for Windows

Subdirectories:

base	Binaries for base distribution (managed by Duncan Murdoch). This is what you want to **install R for the first time**.
contrib	Binaries of contributed CRAN packages (for R >= 2.11.x; managed by Uwe Ligges). There is also information on third party software available for CRAN Windows services and corresponding environment and make variables.
old contrib	Binaries of contributed CRAN packages for outdated versions of R (for R < 2.11.x; managed by Uwe Ligges).
Rtools	Tools to build R and R packages (managed by Duncan Murdoch). This is what you want to build your own packages on Windows, or to build R itself.

Install R

- For Windows
  - ✓ http://www.r-project.org
  - ✓ Download 'R base' file: the latest version is 4.0.2 for windows



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The R Journal

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R Binaries
Packages
Other

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R-3.6.1 for Windows (32/64 bit)

Download R 3.6.1 for Windows (81 megabytes, 32/64 bit)
Installation and other instructions
New features in this version

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 .exe to the fingerprint on the master server. You will need a version of md5sum for windows: both graphical and command line versions are available.

Frequently asked questions

- Does R run under my version of Windows?
- How do I update packages in my previous version of R?
- Should I run 32-bit or 64-bit R?

Please see the R FAQ for general information about R and the R Windows FAQ for Windows-specific information.

Other builds

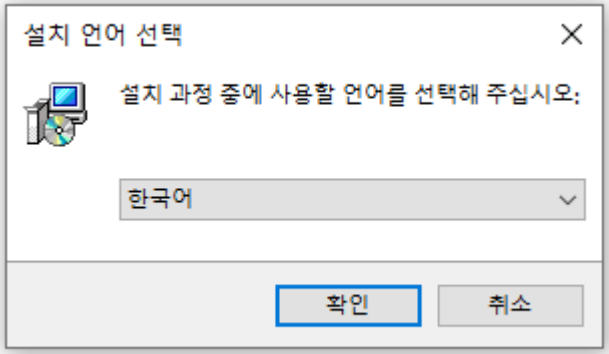
- Patches to this release are incorporated in the r-patched snapshot build.
- A build of the development version (which will eventually become the next major release of R) is available in the r-devel snapshot build.
- Previous releases

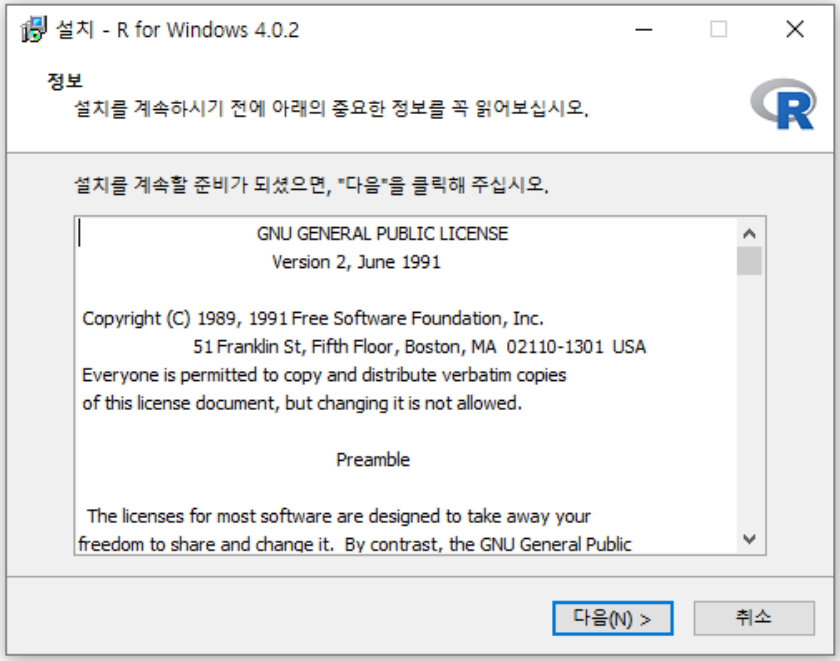
Note to webmasters: A stable link which will redirect to the current Windows binary release is <CRAN MIRROR>/bin/windows/base/release.htm.

Last change: 2019-07-05

Install R

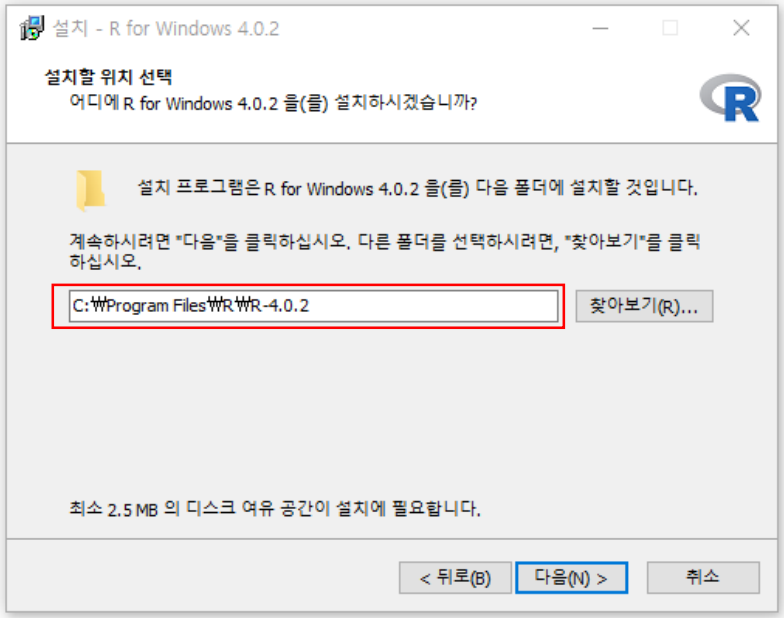
- Run R-4.0.2-win.exe
  - ✓ If you use other OS (Mac or Linux) use the corresponding file
- Select your preferred language
- Read the license and click next

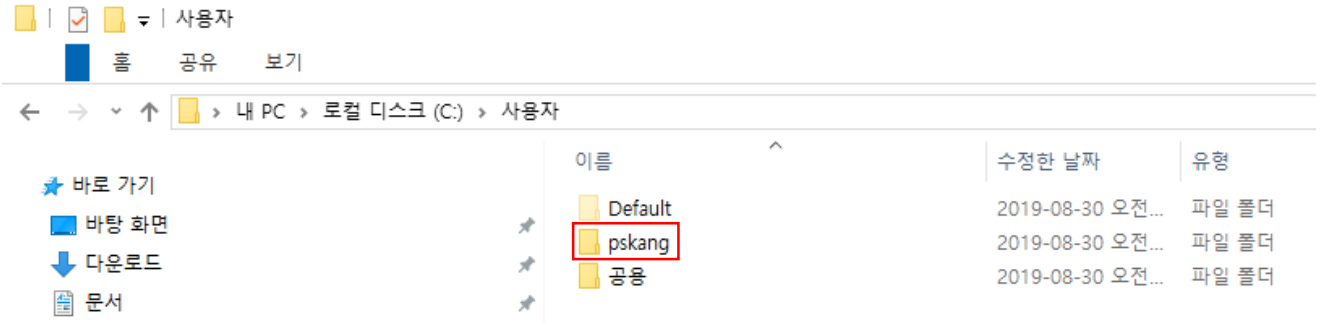




Install R

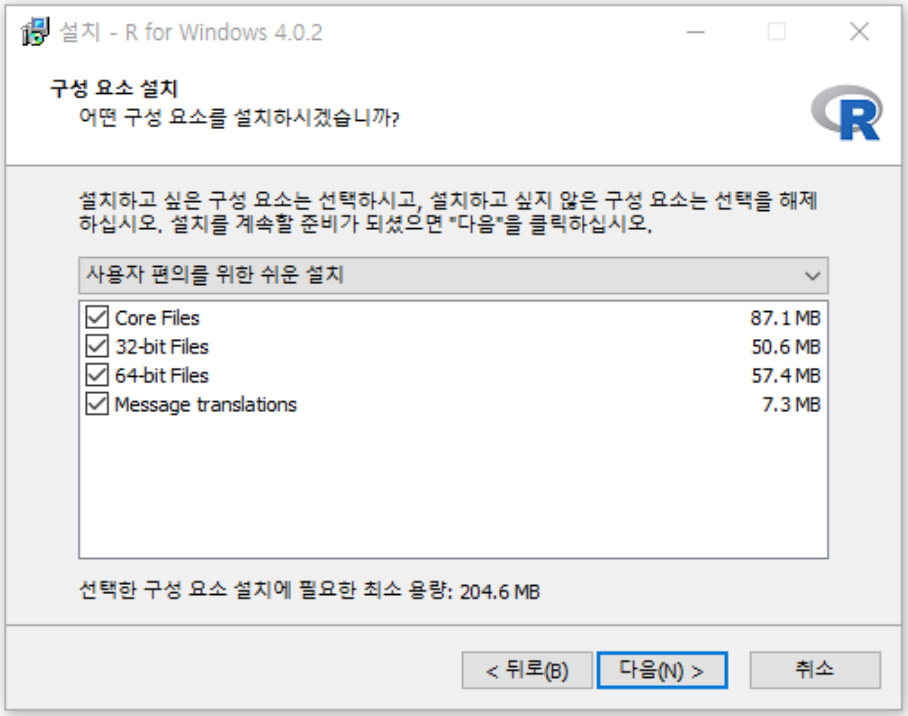
- Select the installation folder
  - ✓ (Caution!) User name and installation folder must be English Alphabets, not 한글

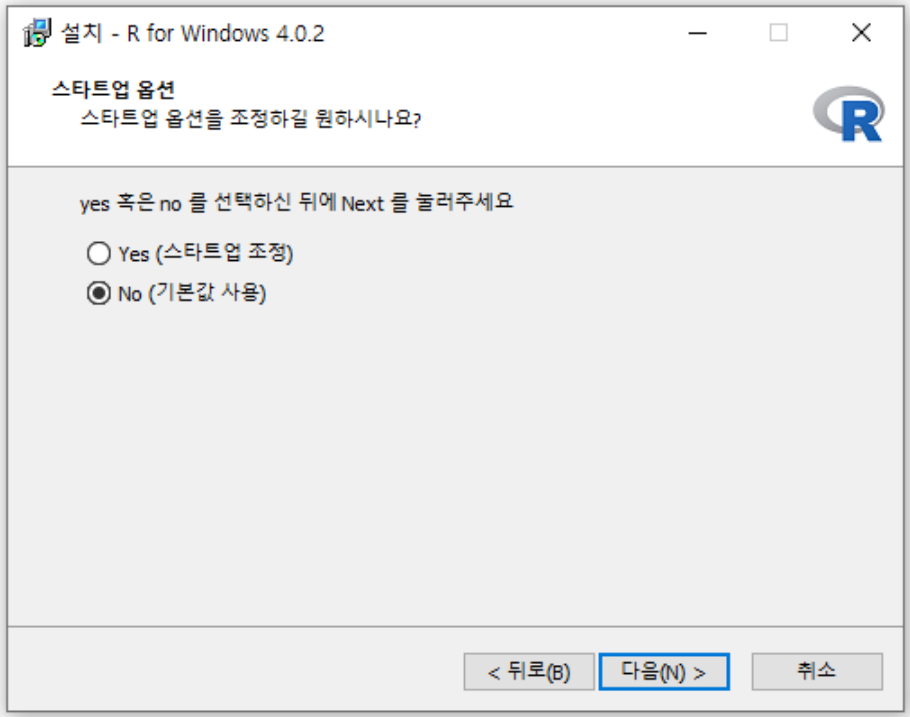




Install R

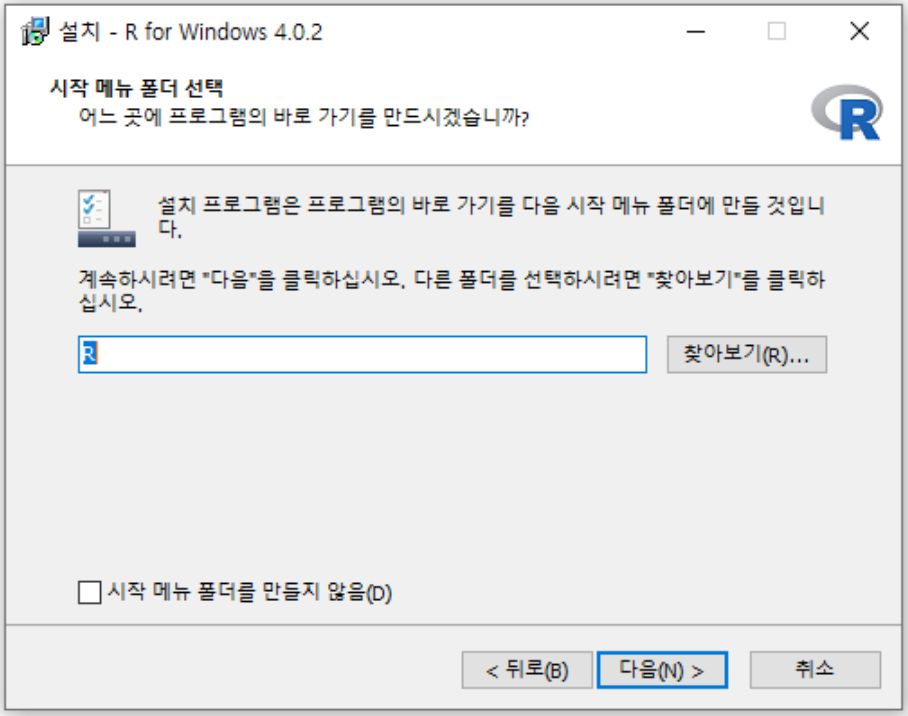
- Check all components and do not change the startup options (recommended)

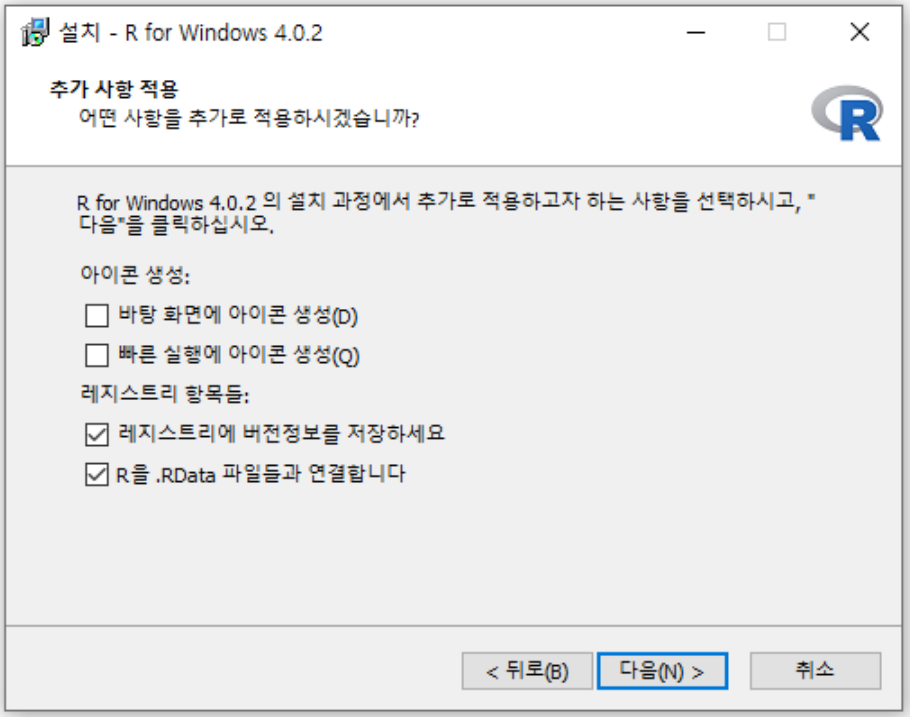




Install R

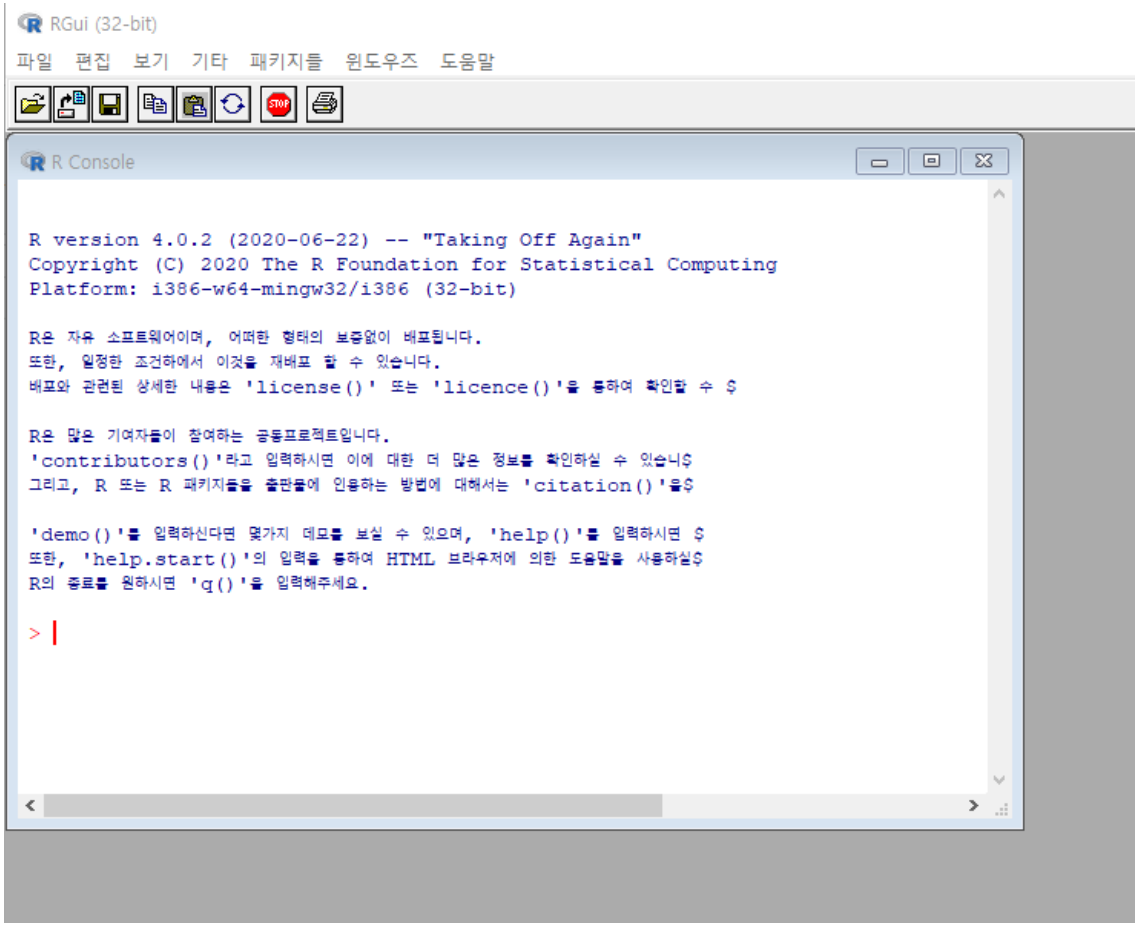
- Set the Start Menu folder and Create icons





Install R

- Complete installation and check whether R is properly installed
  - ✓ Windows → Search → type "R i386" → Click the application
  - ✓ You will see



AGENDA

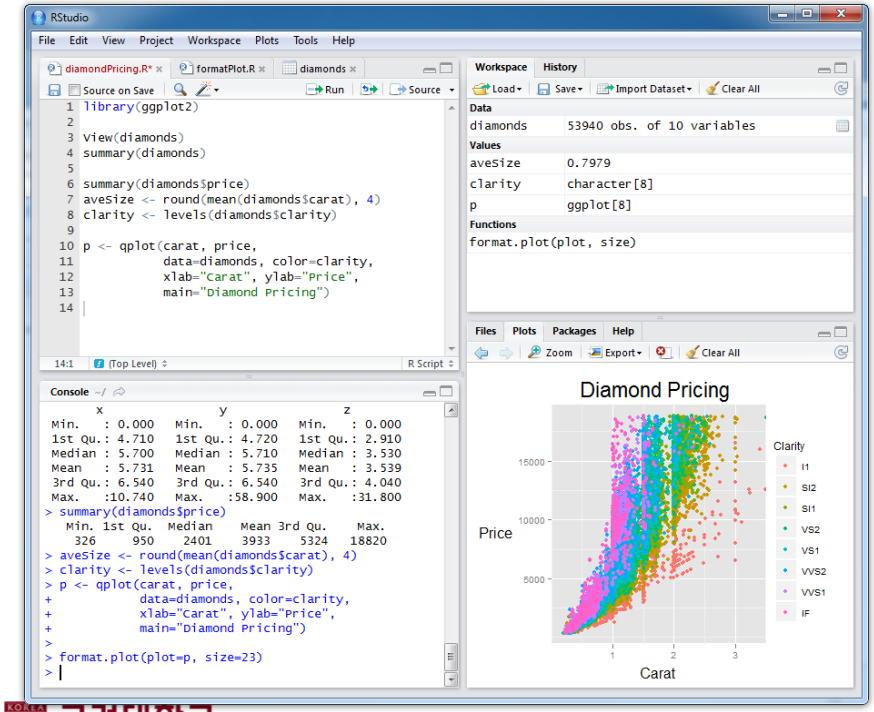
01 R Installation

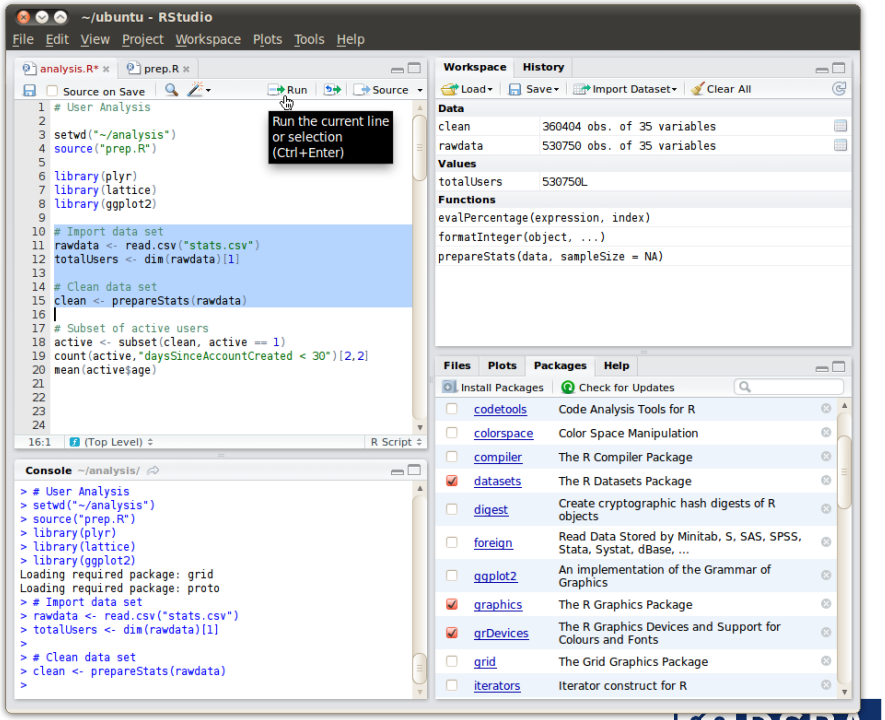
02 RStudio Installation

DSBA
Data Science & Business Analytics

Install RStudio

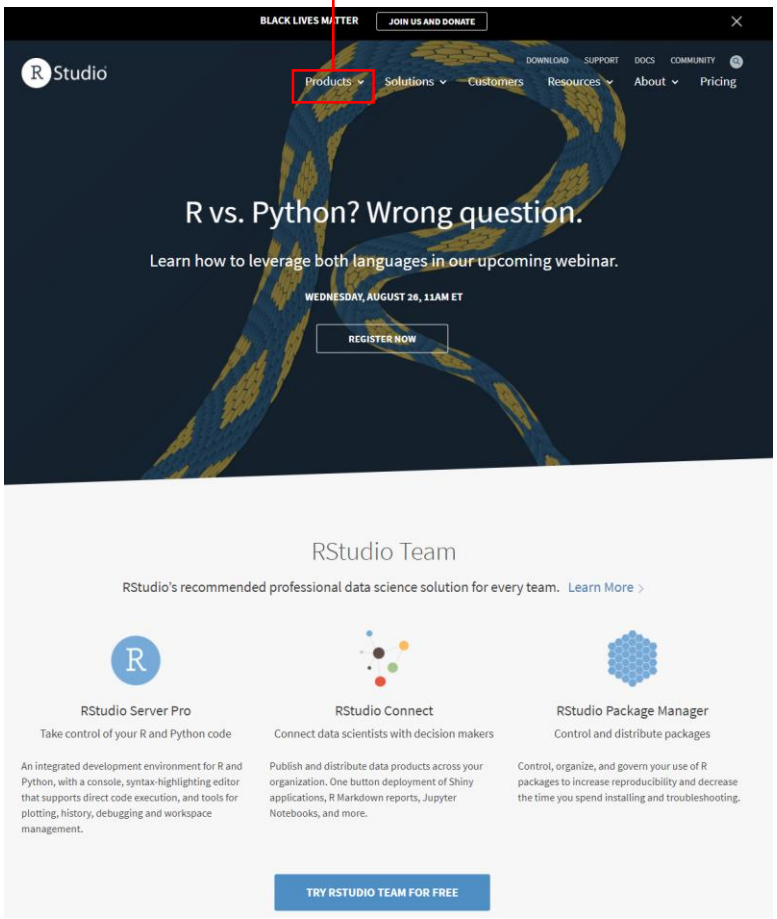
- RStudio
  - ✓A free and open source integrated development environment (IDE) for R
    - Available OS: Windows, Mac, or Linux
    - Can run it over the web using RStudio Server

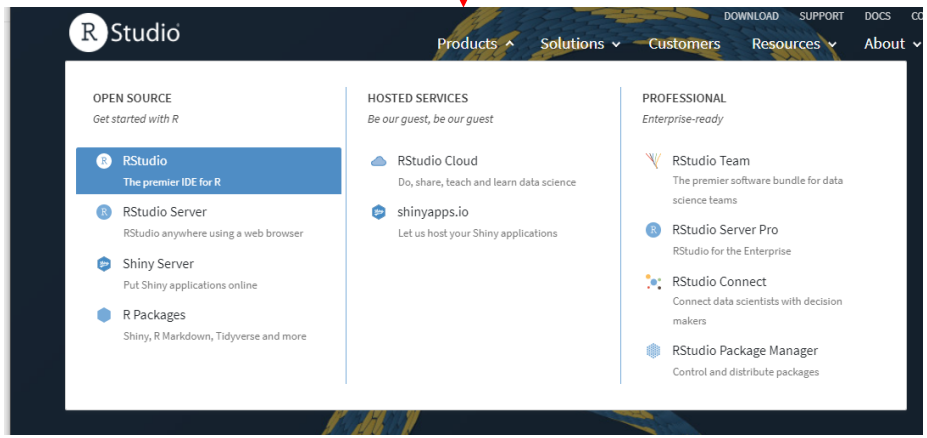




Install RStudio

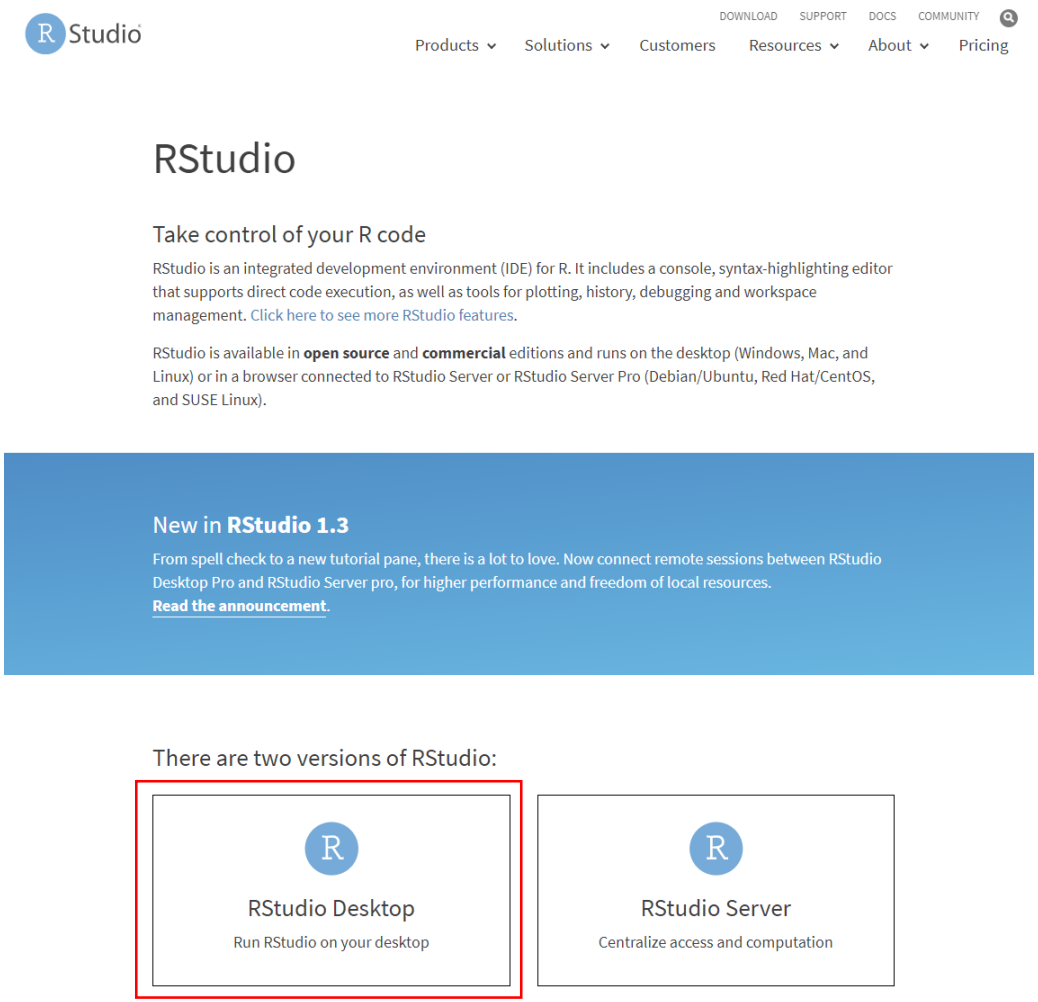
- RStudio
  - ✓ https://www.rstudio.com/





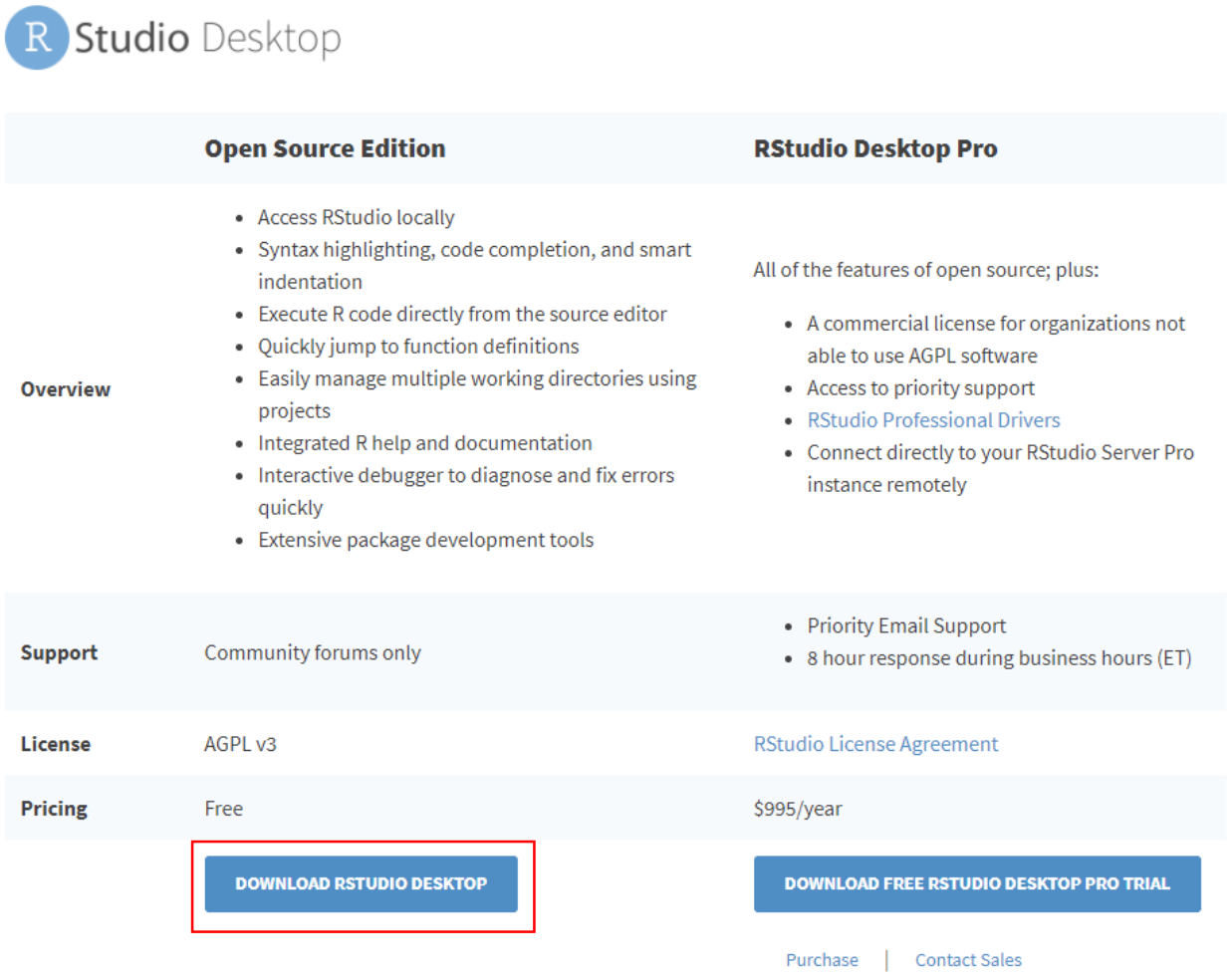
Install RStudio

- Download RStudio Desktop



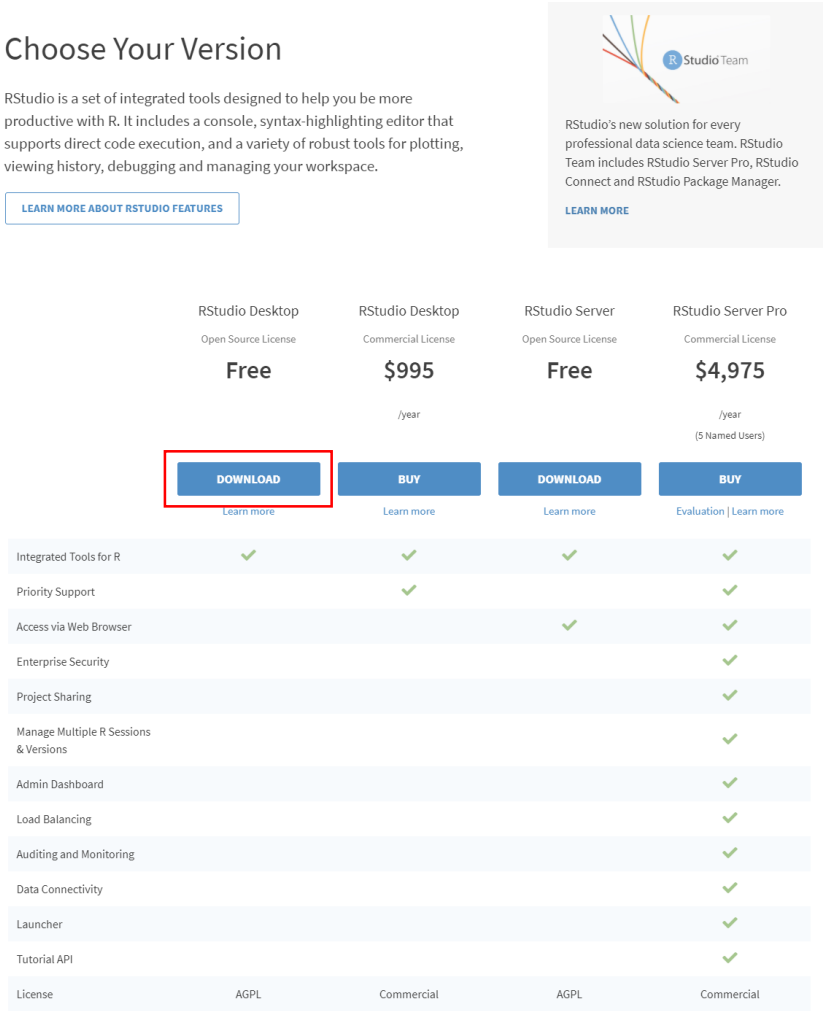
Install RStudio

- Choose RStudio Desktop FREE version



Install RStudio

- Choose RStudio Desktop FREE version



Install RStudio

- Choose RStudio Desktop FREE version

RStudio Desktop 1.3.1073 - Release Notes

1. Install R. RStudio requires R 3.0.1+.

2. Download RStudio Desktop. Recommended for your system:

DOWNLOAD RSTUDIO FOR WINDOWS
1.3.1073 | 171.62MB

Requires Windows 10/8/7 (64-bit)

All Installers

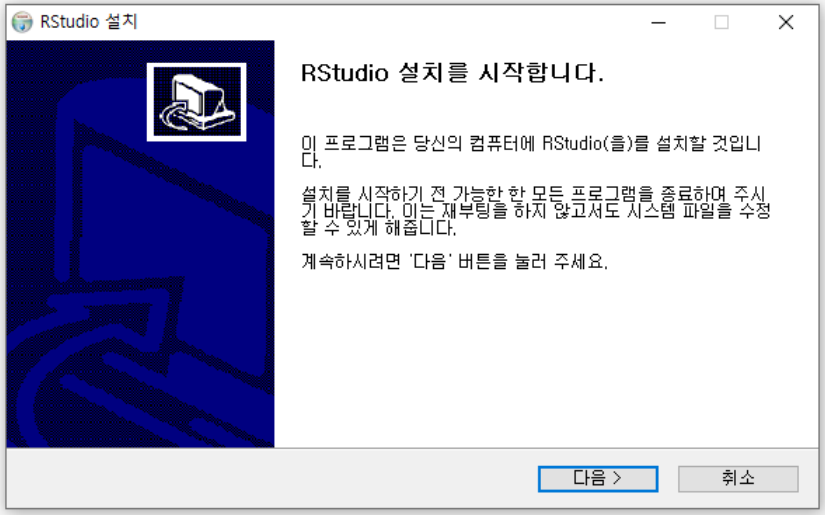
Linux users may need to import RStudio's public code-signing key prior to installation, depending on the operating system's security policy.

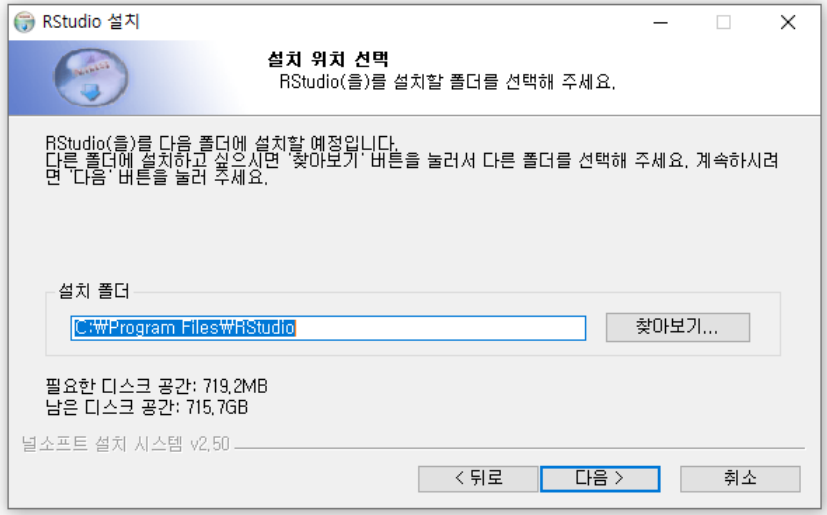
RStudio requires a 64-bit operating system. If you are on a 32 bit system, you can use an older version of RStudio.

OS	Download	Size	SHA-256
Windows 10/8/7	RStudio-1.3.1073.exe	171.62 MB	2fea472a
macOS 10.13+	RStudio-1.3.1073.dmg	148.66 MB	0878b305
Ubuntu 16	rstudio-1.3.1073-amd64.deb	124.07 MB	6d71c5ff
Ubuntu 18/Debian 10	rstudio-1.3.1073-amd64.deb	126.78 MB	86be9352
Fedora 19/Red Hat 7	rstudio-1.3.1073-x86_64.rpm	146.95 MB	01abb3d8
Fedora 28/Red Hat 8	rstudio-1.3.1073-x86_64.rpm	151.04 MB	4b4e4878
Debian 9	rstudio-1.3.1073-amd64.deb	126.98 MB	0226bbc2
SLES/OpenSUSE 12	rstudio-1.3.1073-x86_64.rpm	119.43 MB	7c1a6f2c
OpenSUSE 15	rstudio-1.3.1073-x86_64.rpm	128.39 MB	29078f11

Install RStudio

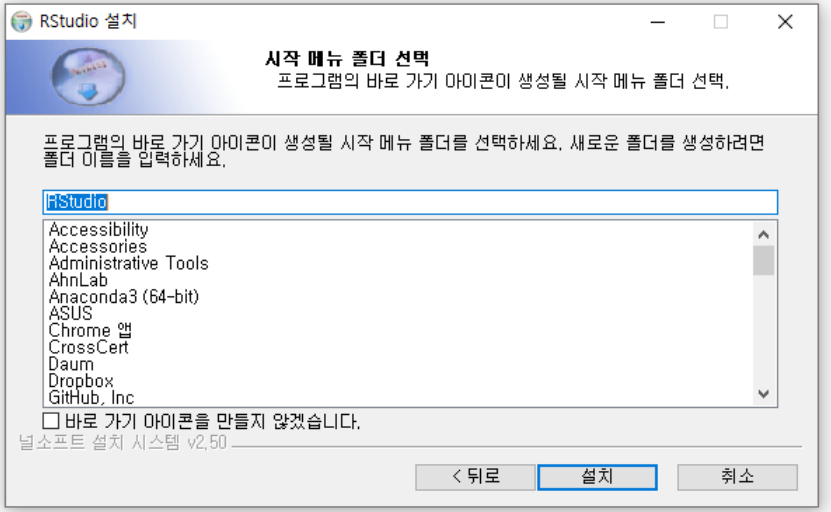
- Run "Rstudio-1.3.1073.exe" file (If possible, as an administrator)
  - ✓ Click next
  - ✓ Set the installation folder

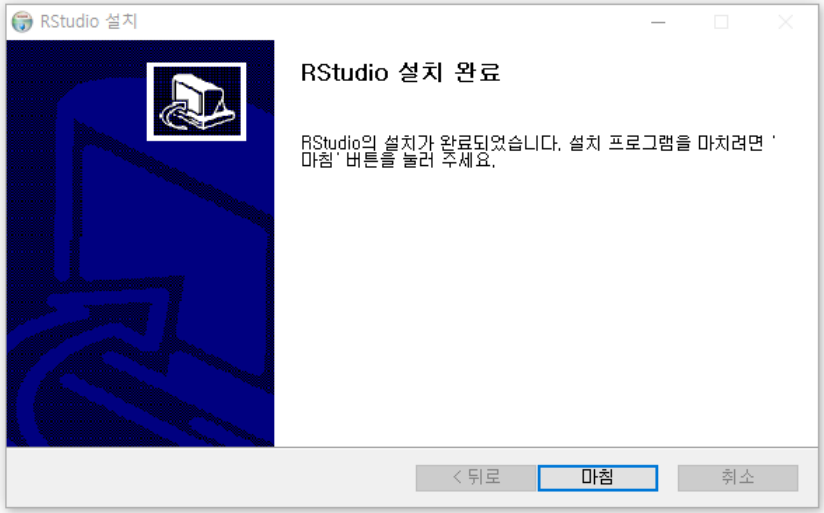


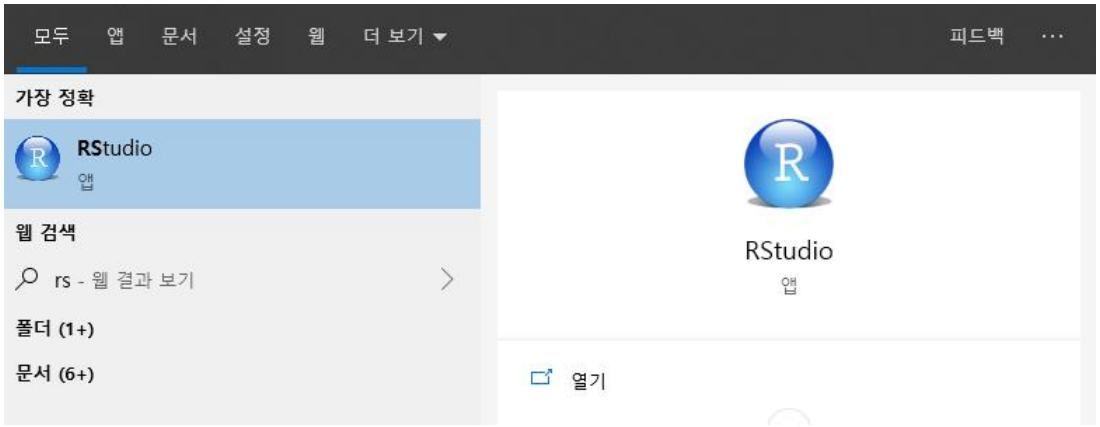


Install RStudio

- Choose the Start Menu folder and complete installation

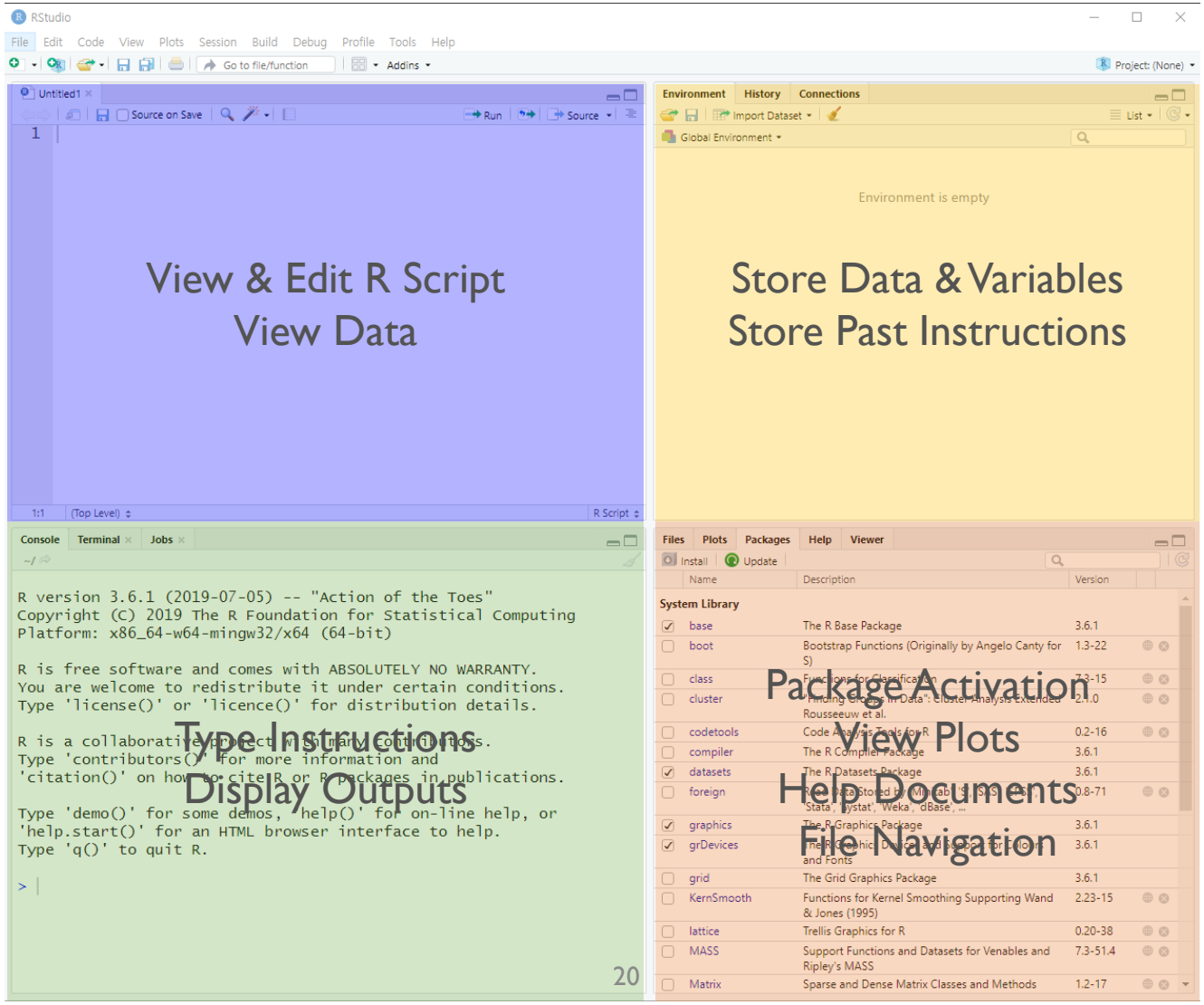






Install RStudio

- Run RStudio

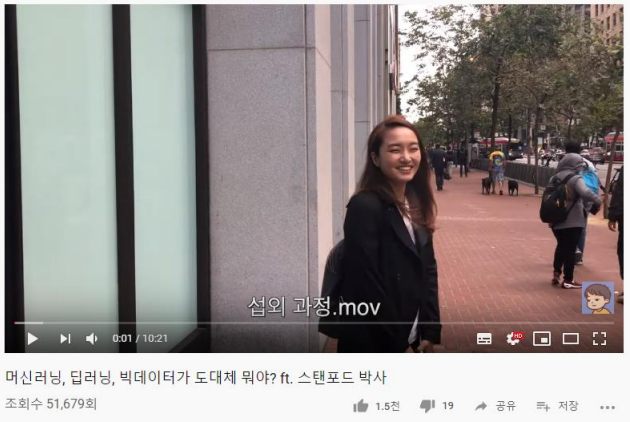


The Three Sexy Skills of Data Geeks

- Statistics (Studying)
  - ✓ The most important skill and the hardest to learn
  - ✓ Deep and rigorous discipline and actively progressing
- Data Munging (Suffering)
  - ✓ The painful process of cleaning, parsing, and proofing one's data before it's suitable for analysis
  - ✓ Real world data is messy!!
- Visualization (Storytelling)
  - ✓ exploratory data visualizations: intended to facilitate a data analyst's understanding of the data
  - ✓ communicate to a wider audience, whose goal is to visually advocate for a hypothesis

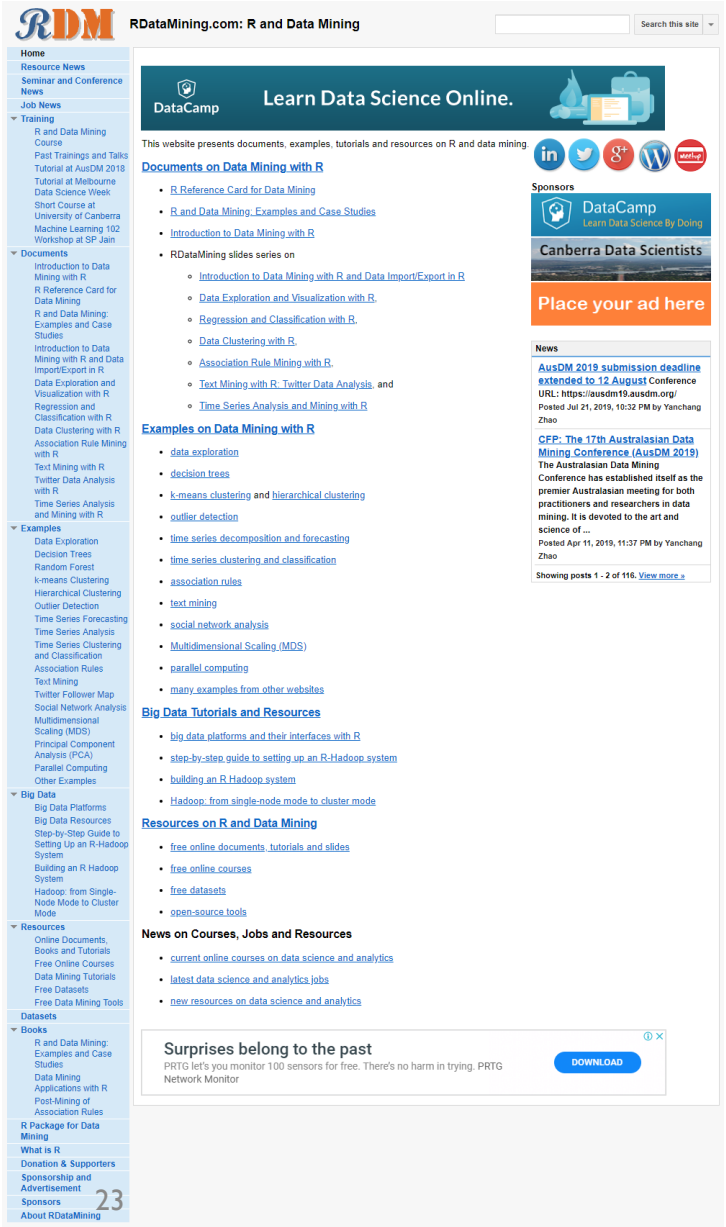
Reading List

- Reading list 1: A very short history of data science
  - ✓ https://www.forbes.com/sites/gilpress/2013/05/28/a-very-short-history-of-data-science/#5376e6a655cf
- Watch List 1 & 2
  - ✓ 머신러닝, 딥러닝, 빅데이터가 도대체 뭐야?
    - https://www.youtube.com/watch?v=-tmypCjhfkE&t=2s
  - ✓ 인공지능 (머신러닝) 직장 취업 어떻게 해요?
    - https://www.youtube.com/watch?v=PX4Kzoxdbgo



References

- R Datamining
  - ✓ http://www.rdatamining.com



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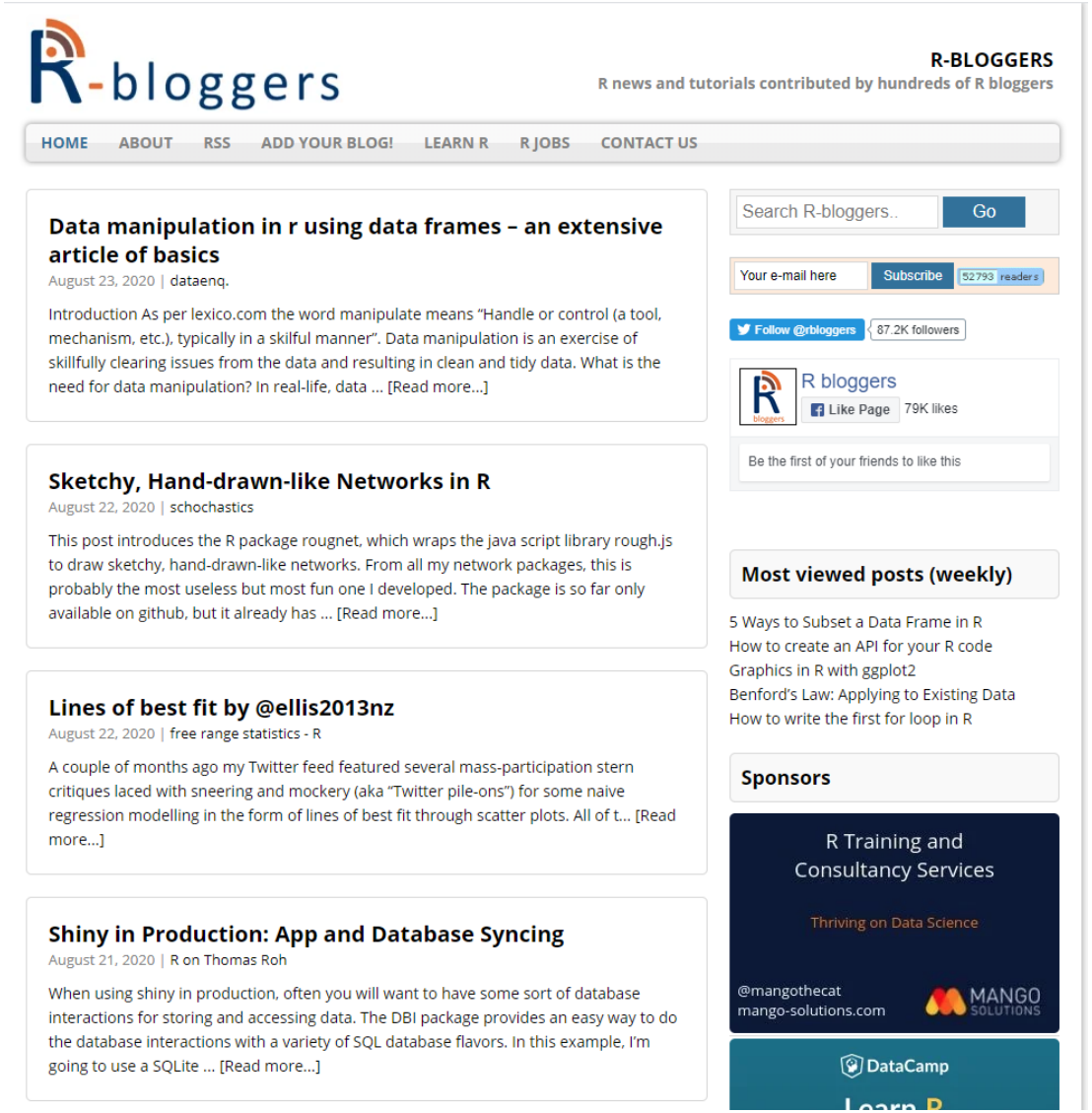
DSBA Data Science & Business Analytics

References

- R Bloggers
  - ✓ http://r-bloggers.com



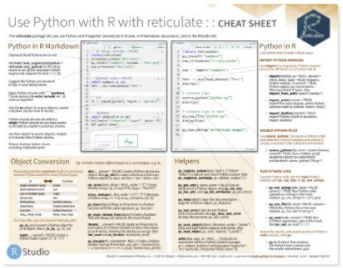
References

- RStudio Cheat Sheet
  - ✓ https://rstudio.com/resources/cheatsheets/

Python with R and Reticulate Cheatsheet

The reticulate package provides a comprehensive set of tools for interoperability between Python and R. With reticulate, you can call Python from R in a variety of ways including importing Python modules into R scripts, writing R Markdown Python chunks, sourcing Python scripts, and using Python interactively within the RStudio IDE. This cheatsheet will remind you how. Updated March 19.

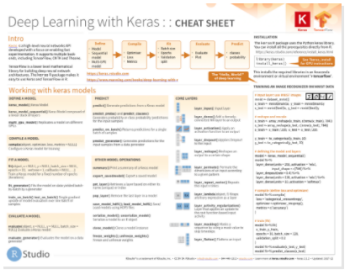
DOWNLOAD



Deep Learning with Keras Cheatsheet

Keras is a high-level neural networks API developed with a focus on enabling fast experimentation. Keras supports both convolution based networks and recurrent networks (as well as combinations of the two), runs seamlessly on both CPU and GPU devices, and is capable of running on top of multiple back-ends including TensorFlow, CNTK, and Theano. Updated December 17.

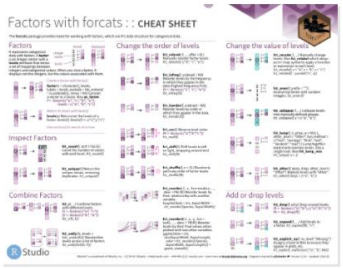
DOWNLOAD



Factors with forcats Cheatsheet

Factors are R's data structure for categorical data. The forcats package makes it easy to work with factors. This cheatsheet reminds you how to make factors, reorder their levels, recode their values, and more. Updated February 19.

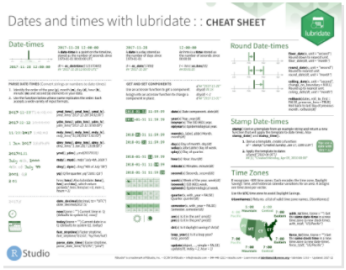
DOWNLOAD



Dates and Times Cheatsheet

Lubridate makes it easier to work with dates and times in R. This lubridate cheatsheet covers how to round dates, work with time zones, extract elements of a date or time, parse dates into R and more. The back of the cheatsheet describes lubridate's three timespan classes: periods, durations, and intervals; and explains how to do math with date-times. Updated December 17.

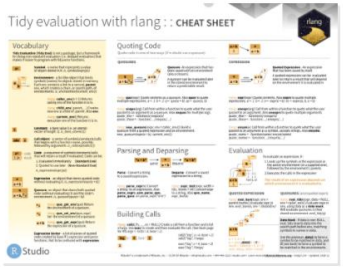
DOWNLOAD



Tidy Evaluation with rlang Cheatsheet

Tidy Evaluation (Tidy Eval) is a framework for doing non-standard evaluation in R that makes it easier to program with tidyverse functions. Non-standard evaluation, better thought of as "delayed evaluation," lets you capture a user's R code to run later in a new environment or against a new data frame. The tidy evaluation framework is implemented by the rlang package and used by functions throughout the tidyverse. Updated November 18.

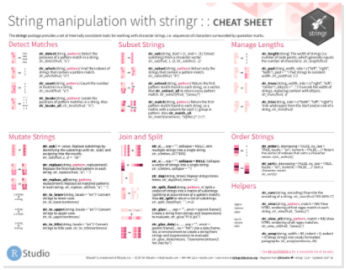
DOWNLOAD



Work with Strings Cheatsheet

The stringr package provides an easy to use toolkit for working with strings, i.e. character data, in R. This cheatsheet guides you through stringr's functions for manipulating strings. The back page provides a concise reference to *regular expresssions*, a mini-language for describing, finding, and matching patterns in strings. Updated October 17.

DOWNLOAD



ANY
questions ?