

These materials adapted by Amelia McNamara from the RStudio CC BY-SA materials Introduction to R (2014) and Master the Tidyverse (2017).

Introduction to R & RStudio:

deck 11: Going Forward

Amelia McNamara

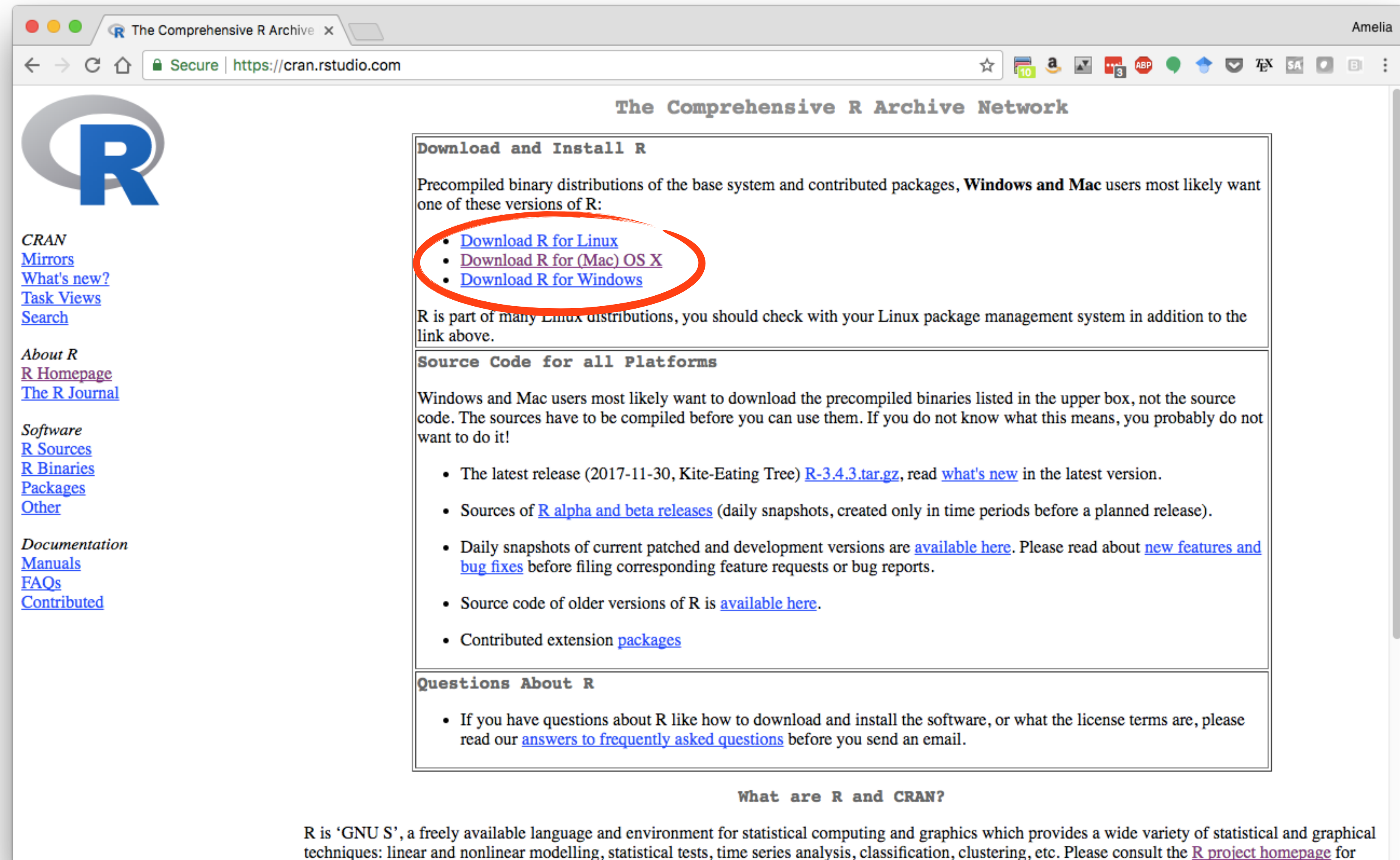
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Installing
locally

First, you will need to install R (the programming language).

1. Go to <https://cran.rstudio.com/>
2. Select your operating system

A screenshot of a web browser showing the CRAN (Comprehensive R Archive Network) website. The browser's address bar shows 'https://cran.rstudio.com/'. The page has a sidebar on the left with links like 'CRAN', 'Mirrors', 'What's new?', 'Task Views', 'Search', 'About R', 'R Homepage', 'The R Journal', 'Software', 'R Sources', 'R Binaries', 'Packages', 'Other', 'Documentation', 'Manuals', 'FAQs', and 'Contributed'. The main content area is titled 'The Comprehensive R Archive Network' and contains several sections: 'Download and Install R' (with a red circle around the download links), 'Source Code for all Platforms', 'Questions About R', and 'What are R and CRAN?'. The 'Download and Install R' section lists three links: 'Download R for Linux', 'Download R for (Mac) OS X', and 'Download R for Windows'. The 'Source Code for all Platforms' section lists several links for downloading source code. The 'Questions About R' section provides a link to 'answers to frequently asked questions'. The 'What are R and CRAN?' section explains that R is 'GNU S', a freely available language and environment for statistical computing and graphics.

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

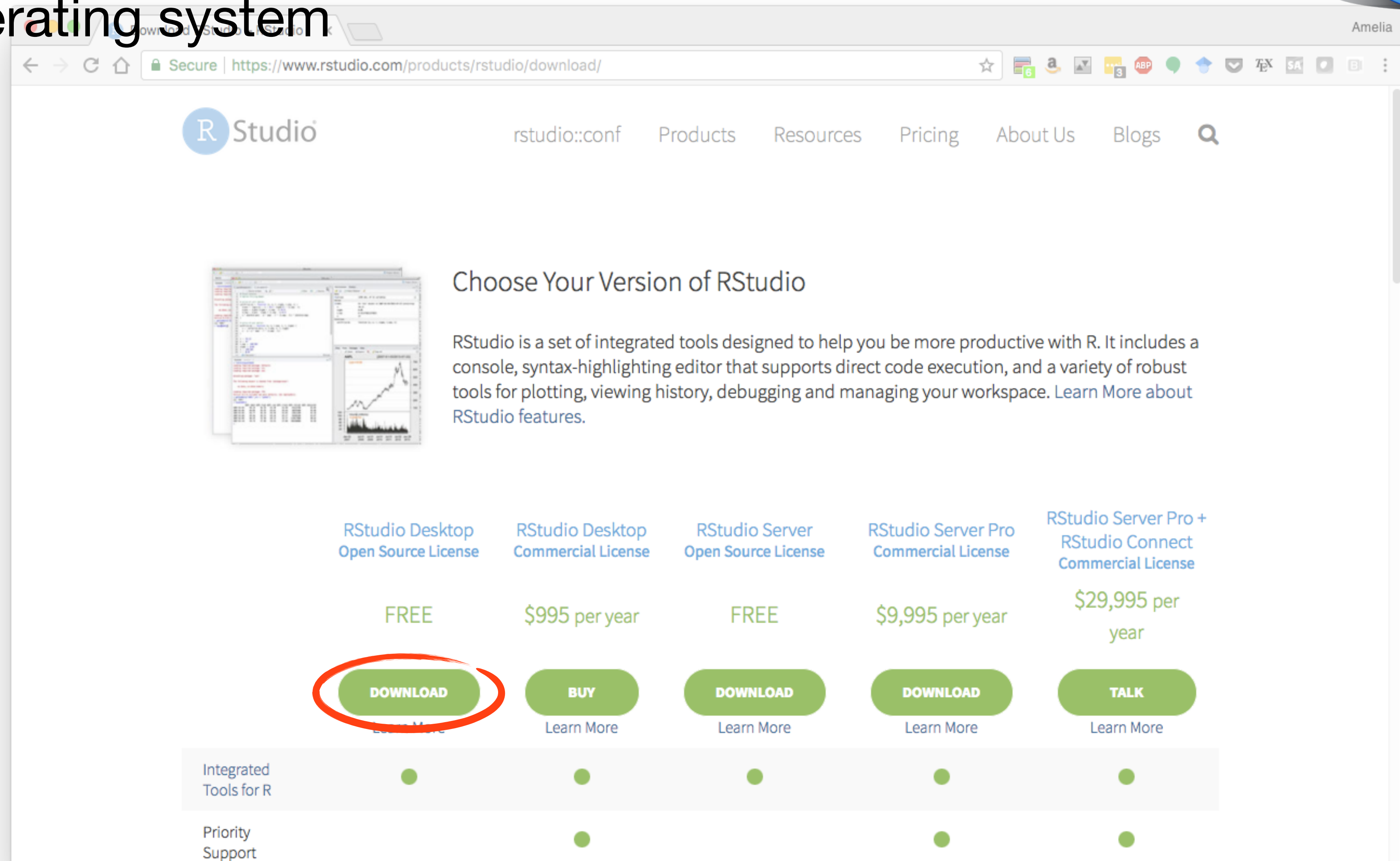
- If you have questions about R like how to download and install the software, or what the license terms are, please read our [answers to frequently asked questions](#) before you send an email.

What are R and CRAN?

R is 'GNU S', a freely available language and environment for statistical computing and graphics which provides a wide variety of statistical and graphical techniques: linear and nonlinear modelling, statistical tests, time series analysis, classification, clustering, etc. Please consult the [R project homepage](#) for

Then, install RStudio (the application).

1. Go to <https://www.rstudio.com/products/rstudio/download/>
2. Select RStudio desktop
3. Select your operating system

A screenshot of the RStudio website's download page. The browser address bar shows 'https://www.rstudio.com/products/rstudio/download/'. The page features the RStudio logo and navigation links. A section titled 'Choose Your Version of RStudio' includes a description of the software and a 'Learn More' link. Below this, five product options are listed in columns: 'RStudio Desktop Open Source License' (FREE), 'RStudio Desktop Commercial License' (\$995 per year), 'RStudio Server Open Source License' (FREE), 'RStudio Server Pro Commercial License' (\$9,995 per year), and 'RStudio Server Pro + RStudio Connect Commercial License' (\$29,995 per year). Each column has a green button: 'DOWNLOAD' for the first three, 'BUY' for the second, and 'TALK' for the last. The first 'DOWNLOAD' button is circled in red. At the bottom, a table indicates features like 'Integrated Tools for R' and 'Priority Support' with green dots for availability.

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RStudio Desktop 1.1.419 — Release Notes

RStudio requires R 3.0.1+. If you don't already have R, download it [here](#).

Installers for Supported Platforms

Installers	Size	Date	MD5
RStudio 1.1.419 - Windows Vista/7/8/10	85.8 MB	2018-01-24	7f71f68fb45a6c8d3d2898096ca6fe91
RStudio 1.1.419 - Mac OS X 10.6+ (64-bit)	74.5 MB	2018-01-24	92f16f2d5b95e178a78fab1a0e606e3d
RStudio 1.1.419 - Ubuntu 12.04-15.10/Debian 8 (32-bit)	89.3 MB	2018-01-24	12bf107ef92b2fcab418263519b4bf6d
RStudio 1.1.419 - Ubuntu 12.04-15.10/Debian 8 (64-bit)	97.4 MB	2018-01-24	830f5e5954e802d1b93515c8dffcea05
RStudio 1.1.419 - Ubuntu 16.04+/Debian 9+ (64-bit)	64.9 MB	2018-01-24	a090284b0401c7d8bbc474f227342932
RStudio 1.1.419 - Fedora 19+/RedHat 7+/openSUSE 13.1+ (32-bit)	88.1 MB	2018-01-24	4b6949c0f55d7d1f1c741a19aa089064
RStudio 1.1.419 - Fedora 19+/RedHat 7+/openSUSE 13.1+ (64-bit)	90.6 MB	2018-01-24	f660a6d2f2540a7bb2a823cadb8f9bbd

Zip/Tarballs

Zip/tar archives	Size	Date	MD5
RStudio 1.1.419 - Windows Vista/7/8/10	122.9 MB	2018-01-24	18fec780a05560df2b50af6c7c883649
RStudio 1.1.419 - Ubuntu 12.04-15.10/Debian 8 (32-bit)	90 MB	2018-01-24	df8a98b238b98e13eba09d3f19e4cce4
RStudio 1.1.419 - Ubuntu 12.04-15.10/Debian 8 (64-bit)	98.3 MB	2018-01-24	9a862b426123d88b2009ad2ade382b17
RStudio 1.1.419 - Fedora 19+/RedHat 7+/openSUSE 13.1+ (32-bit)	88.8 MB	2018-01-24	49be9e9eee1b040a107886e52fd9aacb
RStudio 1.1.419 - Fedora 19+/RedHat 7+/openSUSE 13.1+ (64-bit)	91.4 MB	2018-01-24	8f1d1f7616f295780816cc6e7d027d5b

Source Code

A tarball containing source code for RStudio v1.1.419 can be downloaded from [here](#)

Installing packages

Shortcut to install

- [ggplot2](#), for data visualisation.
- [dplyr](#), for data manipulation.
- [tidyr](#), for data tidying.
- [readr](#), for data import.
- [purrr](#), for functional programming.
- [tibble](#), for tibbles, a modern re-imagining of data frames.

And more

```
install.packages(c("tidyverse", "fivethirtyeight",  
"babynames", "nycflights13", "skimr"))
```


Getting our
code

RStudio Cloud

Secure | <https://rstudio.cloud/project/13632>

Your Workspace / Intro to R & RStudio (day 2)

Amelia McNamara

File Edit Code View Plots Session Build Debug Profile Tools Help

Go to file/function Addins R 3.4.2

nimbus x GSS x GSS1 x band x

Filter

	Year	ID	LaborStatus	MaritalStatus	NumChildren	Age	HighestSchoolCompleted	Sex
1	2014	1	Working fulltime	Divorced	0	53.000000		16
2	2014	2	Working fulltime	Married	0	26.000000		16
3	2014	3	Unempl, laid off	Divorced	1	59.000000		13
4	2014	4	Working parttime	Married	2	56.000000		16
5	2014	5	Retired	Married	3	74.000000		17
6	2014	6	Working fulltime	Married	1	56.000000		17
7	2014	7	No answer	Married	2	63.000000		12
8	2014	8	Working fulltime	Married	2	74.000000		17

Showing 1 to 8 of 2,540 entries

Environment History Connections

Global Environment

band	3 obs. of 2 variables
GSS	2540 obs. of 15 variables
GSS1	2540 obs. of 15 variables
nimbus	18963 obs. of 4 variables

Files Plots Packages Help Viewer

New Folder Upload Delete Rename More

- Home
 - project
 - R

Copy...
Copy To...
Move...
Export...
Set As Working Directory
Go To Working Directory

```
The downloaded source packages are in
  '/tmp/RtmpbwU0xs/downloaded_packages'
> library(readr)
> band <- read_csv("project/data/band.csv")
Parsed with column specification:
cols(
  name = col_character(),
  band = col_character()
)
> View(band)
>
```

You can export an entire directory from RStudio cloud

Or, download another clean version from <https://github.com/AmeliaMN/IntroToR>

The screenshot shows the GitHub repository page for `AmeliaMN / IntroToR`. The repository is titled "Materials for 2018 rstudio::conf shortcourse, Introduction to R & RStudio". It has 3 commits, 1 branch, 0 releases, and 1 contributor. The "Clone or download" button is highlighted with a red circle, and the "Download ZIP" button in the dropdown menu is also highlighted with a red circle. The repository contains a folder named `Day1` (created by tidy), a file named `.gitignore` (created by day 1), and a file named `README.md` (created by create README). The README file is open, showing the text: "This is the repo for the two-day short course, 'Introduction to R & RStudio' given at rstudio::conf(2018) in Jan 2018." Below the README, there is a section titled "Instructor Info" with the name "Amelia McNamara".

AmeliaMN / IntroToR

Materials for 2018 rstudio::conf shortcourse, Introduction to R & RStudio

3 commits 1 branch 0 releases 1 contributor

Branch: master New pull request Create new file Upload files Find file Clone or download

AmeliaMN tidy

File	Author
Day1	tidy
.gitignore	day 1
README.md	create README

README.md

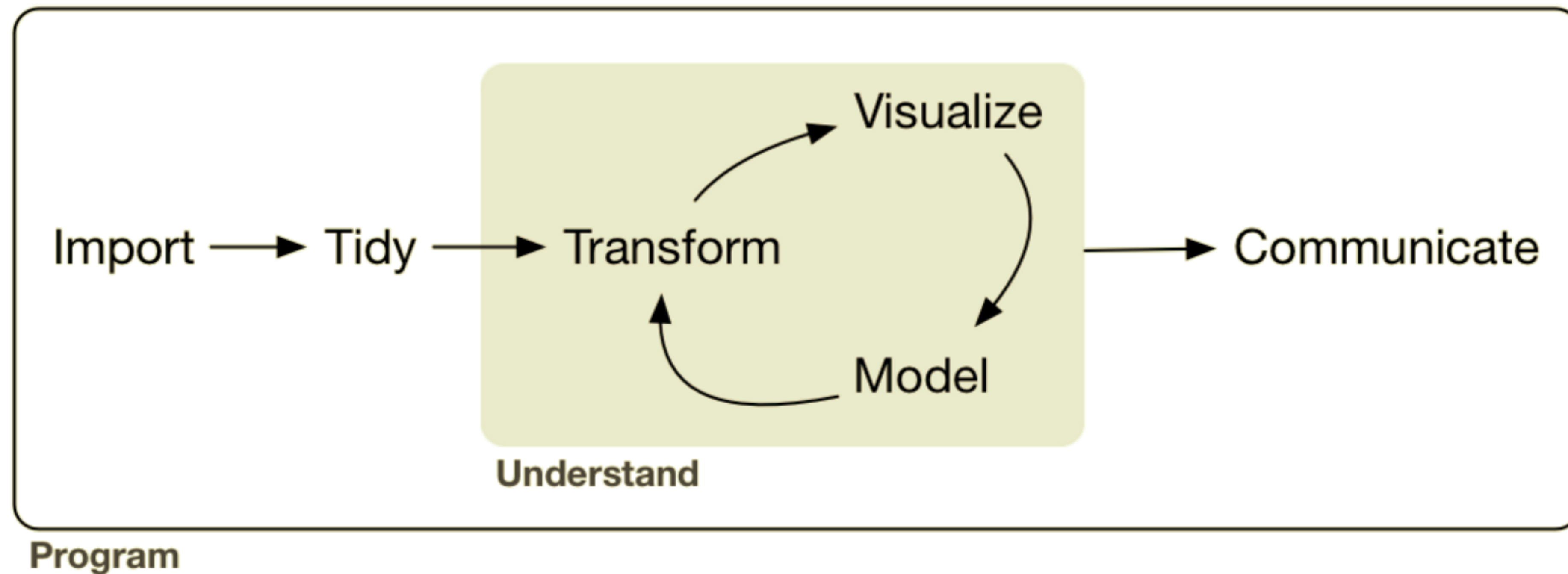
This is the repo for the two-day short course, "Introduction to R & RStudio" given at rstudio::conf(2018) in Jan 2018.

Instructor Info

Amelia McNamara

<https://github.com/AmeliaMN/IntroToR/archive/master.zip>

More
packages



From *R for Data Science* by Hadley Wickham and Garrett Grolemund.

You are probably going to want to explore many more packages than we discussed. In particular:

- If you have categorical data, especially if you want it to appear in an ordered way, you should explore `forcats`
- If you need to work with character strings, and pull pieces of text out, see `stringr`
- For easier-to-work with date/time data, use `lubridate`

Getting help

- We've seen the R help functions `?` and `help()`
- Google, putting in R as a search term (Google recognizes it now!)
- Search on <http://stackoverflow.com/> (add keywords like tidyverse)
- Ask a question of someone near you physically (there are R meetups in many major cities, as well as R-ladies meetups).
- Ask a question on the internet
 - <https://community.rstudio.com/> is intentionally friendly to beginners!
 - Asking on <http://stackoverflow.com/> is perhaps an intermediate skill
 - I don't recommend asking on R-help
- Ask an expert— you can email me at amcnamara@smith.edu



Thanks to my fantastic TAs



Katie Leap



Kelly O'Briant

[@b23kelly](#) [@RLadiesDC](#)

Thank you!

<http://bit.ly/day2Feedback>