

Chapter 5: Additional Resources

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Obviously we have only just scratched the surface on what we can do with R! But hopefully, you will now know:

- what R is and why it is useful
- how to create new variables and dataframes
- how to import data from .csv files
- how to create subsets using `select()`, `filter()`, and `omit.na()`
- how to summarise data
- how to produce APA-formatted visualisations for different data types

This is only the beginning!

If you are keen to continue to develop your coding skills, there are tonnes of resources available, many of which are free!

Stack Overflow

Stack Overflow is a fantastic forum where the coding community come together to ask and answer questions about anything coding-related. People using all different coding languages use the site, but it is especially useful for R! Any data analyst or data scientist will probably tell you that Stack Overflow is their most frequently visited site when coding and probably always has a tab open! Simply Google a question related to your issue and you will most likely find the answer has already been asked (and answered) on Stack Overflow. Remember, coding is not about memorising code, it is understanding the syntax and knowing what to Google!

R Package Documentation

Every package developed for R has its own documentation to help you understand how to use it. As R is open-source, the quality of this documentation can vary widely. Generally, though, it is super useful and provides some good examples too!

You can access R documentation by using trusty Google or visiting the CRAN website (<https://cran.r-project.org/>), navigating to packages, finding the package, and clicking on the .pdf documentation.

ggplot2: Create Elegant Data Visualisations Using the Grammar of Graphics

A system for 'declaratively' creating graphics, based on "The Grammar of Graphics". You provide the data, tell 'ggplot2' how to map variables to aesthetics, what graphical primitives to use, and it takes care of the details.

Version: 3.4.0
 Depends: R (≥ 3.3)
 Imports: [cli](#), [glue](#), [grDevices](#), [grid](#), [gtable](#) (≥ 0.1.1), [isoband](#), [lifecycle](#) (> 1.0.1), [MASS](#), [mgcv](#), [rlang](#) (≥ 1.0.0), [scales](#) (≥ 1.2.0), [stats](#), [tibble](#), [vctrs](#) (≥ 0.5.0), [withr](#) (≥ 2.5.0)
 Suggests: [covr](#), [dplyr](#), [ggplot2movies](#), [hexbin](#), [Hmisc](#), [knitr](#), [lattice](#), [mapproj](#), [maps](#), [maptools](#), [multcomp](#), [munsell](#), [nlme](#), [profsvis](#), [quantreg](#), [ragg](#), [RColorBrewer](#), [rgeos](#), [rmarkdown](#), [rpart](#), [sf](#) (≥ 0.7-3), [svglite](#) (≥ 1.2.0.9001), [testthat](#) (≥ 3.1.2), [vdiffr](#) (≥ 1.0.0), [xml2](#)
 Enhances: [sp](#)
 Published: 2022-11-04
 Author: Hadley Wickham [aut], Winston Chang [aut], Lionel Henry [aut], Thomas Lin Pedersen [aut, cre], Kohske Takahashi [aut], Claus Wilke [aut], Kara Woo [aut], Hiroaki Yutani [aut], Dewey Dunnington [aut], RStudio [cph, fnd]
 Maintainer: Thomas Lin Pedersen <thomas.pedersen@rstudio.com>
 BugReports: <https://github.com/tidyverse/ggplot2/issues>
 License: MIT + file LICENSE
 URL: <https://ggplot2.tidyverse.org>, <https://github.com/tidyverse/ggplot2>
 NeedsCompilation: no
 Citation: [ggplot2 citation info](#)
 Materials: [README NEWS](#)
 In views: [Phylogenetics](#), [Spatial](#), [TeachingStatistics](#)
 CRAN checks: [ggplot2 results](#)
 Documentation:
 Reference manual: [ggplot2.pdf](#)
 Vignettes: [Extending ggplot2](#)

Package 'ggplot2'
 November 4, 2022

Version 3.4.0
 Title Create Elegant Data Visualisations Using the Grammar of Graphics
 Description A system for 'declaratively' creating graphics, based on "The Grammar of Graphics". You provide the data, tell 'ggplot2' how to map variables to aesthetics, what graphical primitives to use, and it takes care of the details.
 License MIT + file LICENSE
 URL <https://ggplot2.tidyverse.org>,
<https://github.com/tidyverse/ggplot2>
 BugReports <https://github.com/tidyverse/ggplot2/issues>
 Depends R (≥ 3.3)
 Imports cli, glue, grDevices, grid, gtable (≥ 0.1.1), isoband, lifecycle (≥ 1.0.1), MASS, mgcv, rlang (≥ 1.0.0), scales (≥ 1.2.0), stats, tibble, vctrs (≥ 0.5.0), withr (≥ 2.5.0)
 Suggests covr, dplyr, ggplot2movies, hexbin, Hmisc, knitr, lattice, mapproj, maps, maptools, multcomp, munsell, nlme, profsvis, quantreg, ragg, RColorBrewer, rgeos, rmarkdown, rpart, sf (≥ 0.7-3), svglite (≥ 1.2.0.9001), testthat (≥ 3.1.2), vdiffr (≥ 1.0.0), xml2
 Enhances sp
 VignetteBuilder knitr
 Config/Needs/website ggtxt, tidy, forcats, tidyverse/tidytemplate
 Config/testthat/edition 3
 Encoding UTF-8
 LazyData true
 RoxygenNote 7.2.1
 Collate 'ggproto.r' 'ggplot-global.R' 'aaa-*r*'
 'aes-colour-fill-alpha-*r*' 'aes-evaluation-*r*'
 'aes-group-order-*r*' 'aes-linetype-size-shape-*r*'
 'aes-position-*r*' 'comput-plot.R' 'utilities-*r*' 'aes-*r*'
 1

Alternatively, you can run `help(package_name)` in the console. This will appear in the bottom right window of RStudio within "Help".

Cheatsheets have also been created by experts for some of the most common packages. They can be accessed online <https://posit.co/resources/cheatsheets/>

Books / Online Books

Discovering Statistics Using R: Andy Field

R for Data Science: Hadley Wickham & Garret Golemund This can also be access for free here: <https://r4ds.had.co.nz/>

R Cookbook: James Long & Paul Teetor This can also be access for free here: <https://rc2e.com/>

Online courses

There are thousands of courses available for you to do some real hands on training with real data. Here are some examples. Some are free or have free trials, while some are paid:

- DataCamp (we have access to all content for free on an education account - let me know if you would like adding to it!)
- Coursera
- LinkedIn learning
- Codecademy
- YouTube

Twitter

There is a huge R community on Twitter which, like StackOverflow, people use to ask and answer questions and share tips, tricks and new packages. Also following hashtags like `#tidytuesday` `#rstats` `#datascience` is pretty useful!

Some accounts I would recommend following:

- @RLangTip
- @rfunctionaday
- @Rbloggers
- @RLadiesGlobal
- @hadleywickham (the brains behind ggplot and the tidyverse!)