

Data Visualization with R

R Markdown tutorial

Ariane Ducellier

University of Washington - Fall 2023

Installing R and RStudio

Install the latest version of R from the CRAN website:
<https://cran.r-project.org/>

Install the latest version of RStudio from
<https://posit.co/download/rstudio-desktop/>

Open RStudio and Go to File > New File > R Markdown

RStudio interface

The screenshot displays the RStudio interface with the following components:

- Source Editor:** Contains an R Markdown document titled "R Markdown tutorial". The document includes a YAML header with title, author, date, and output format, followed by R code for setting up the document and a section titled "R Markdown".
- Environment Pane:** Shows the "Global Environment" with a data frame named "mtcars" containing 32 observations of 11 variables. The variables and their data types are listed.
- Files Pane:** Shows the "read.csv" file in the "R Documentation" folder.
- Console:** Displays the R version (4.2.3), copyright information, platform details, and the R license text.

Environment Pane Data:

\$ mpg :	num	21	21	22.8	21.4	18.7	18.1	14.3	24.4	22.8	19.2 ...
\$ cyl :	num	6	6	4	6	8	6	8	4	4	6 ...
\$ disp :	num	160	160	108	258	360	...	...	...	...	...
\$ hp :	num	110	110	93	110	175	105	245	62	95	123 ...
\$ drat :	num	3.9	3.9	3.85	3.08	3.15	2.76	3.21	3.69	3.92	3.92 ...
\$ wt :	num	2.62	2.88	2.32	3.21	3.44	...	...	...	...	...

Console Output:

```
R version 4.2.3 (2023-03-15) -- "Shortstop Beagle"
Copyright (C) 2023 The R Foundation for Statistical Computing
Platform: x86_64-apple-darwin17.0 (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

Natural language support but running in an English locale

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.
```

Rmd file structure

YAML header:

```
---  
title: "R Markdown tutorial"  
author: "Ariane Ducellier"  
date: "8/29/2023"  
output: pdf_document  
---
```

R code chunks:

```
```{r cars}  
summary(cars)
```
```

Markdown text:

```
## R Markdown
```

```
This is an R Markdown document.
```

Main options for R chunk options

```
““{r chunk_name, options}  
R code  
““
```

- `include = FALSE` - No code and no results.
- `echo = FALSE` - No code.
- `message = FALSE` - No messages generated by the code.
- `warning = FALSE` - No warnings generated by the code.
- `fig.cap = "..."` - Caption for graphical results.

Basic Markdown syntax

```
_Italic text_  
**Bold text**  
# Header one  
## Header two  
### Header three  
[R Markdown] (https://rmarkdown.rstudio.com)  
![RStudio interface] (RMarkdown.png)  
> "A quote"  
* List item 1  
* List item 2  
1. Ordered list item 1  
2. Ordered list item 2  
Line 1 followed by two spaces  
Line 2
```

Markdown tutorial: <https://www.markdowntutorial.com/>

R Markdown tutorial:

<https://rmarkdown.rstudio.com/lesson-1.html>