

Data Visualization with R

R Markdown tutorial

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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 IDE interface. The main editor window shows an R Markdown file named 'RMarkdown.Rmd'. The code includes a YAML header with title, author, date, and output format, followed by R setup options and a title comment. The body text describes R Markdown and provides instructions on how to generate a document. The console at the bottom shows the R version and platform information, along with the license and natural language support details. The environment pane on the right shows the 'Data' tab with a list of variables and their values, and the 'Files' tab with a list of files and folders.

```
1 ---
2 title: "R Markdown tutorial"
3 author: "Ariane Ducellier"
4 date: "8/29/2023"
5 output: pdf_document
6 ---
7
8 ```{r setup, include=FALSE}
9 knitr::opts_chunk$set(echo = TRUE)
10 ```
11
12 ## R Markdown
13
14 This is an R Markdown document. Markdown is a simple formatting syntax for
15 authoring HTML, PDF, and MS Word documents. For more details on using R Markdown
16 see <http://rmarkdown.rstudio.com>.
17
18 When you click the **Knit** button a document will be generated that includes
19 the content of this document and the output of the embedded R code chunks in
20 the output file.
21
22 R Markdown tutorial
```

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.

Environment: History Connections Tutorial

Global Environment

Data

mtcars 32 obs. of 11 variables

\$ 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	...	...	...	...	...

Files Plots Packages Help Viewer

R: Data Input Find in Topic

read.table (utils) R Documentation

Data Input

Description

Reads a file in table format and creates a data frame from it, with cases corresponding to lines and variables to fields in the file.

Usage

```
read.table(file, header = FALSE, sep = "", quote = "\"",
  dec = ".", numerals = c("allow.loss", "warn.loss", "no.
  row.names, col.names, as.is = !stringsAsFactors,
  na.strings = "NA", colClasses = NA, nrows = -1,
  skip = 0, check.names = TRUE, fill = !blank.lines.skip,
  strip.white = FALSE, blank.lines.skip = TRUE,
  comment.char = "#").
```

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>