

STAT 451 - Visualizing Data - Autumn 2025

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Tutorial R Markdown

By default, these lines are included when you create a new R Markdown document. “echo=TRUE” means that your code will be included by default in the final knitted document. As this specific chunk uses the option “include=FALSE”, it will be evaluated, but neither the code nor its output will be displayed.

Below are some examples of R chunks that are included in your new R Markdown document. Note the difference between the first chunk that uses the default “echo=TRUE” to print both the code and the output, and the second chunk that uses the option “echo=FALSE” to hide the code but show the output (here the plot).

R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see <http://rmarkdown.rstudio.com>.

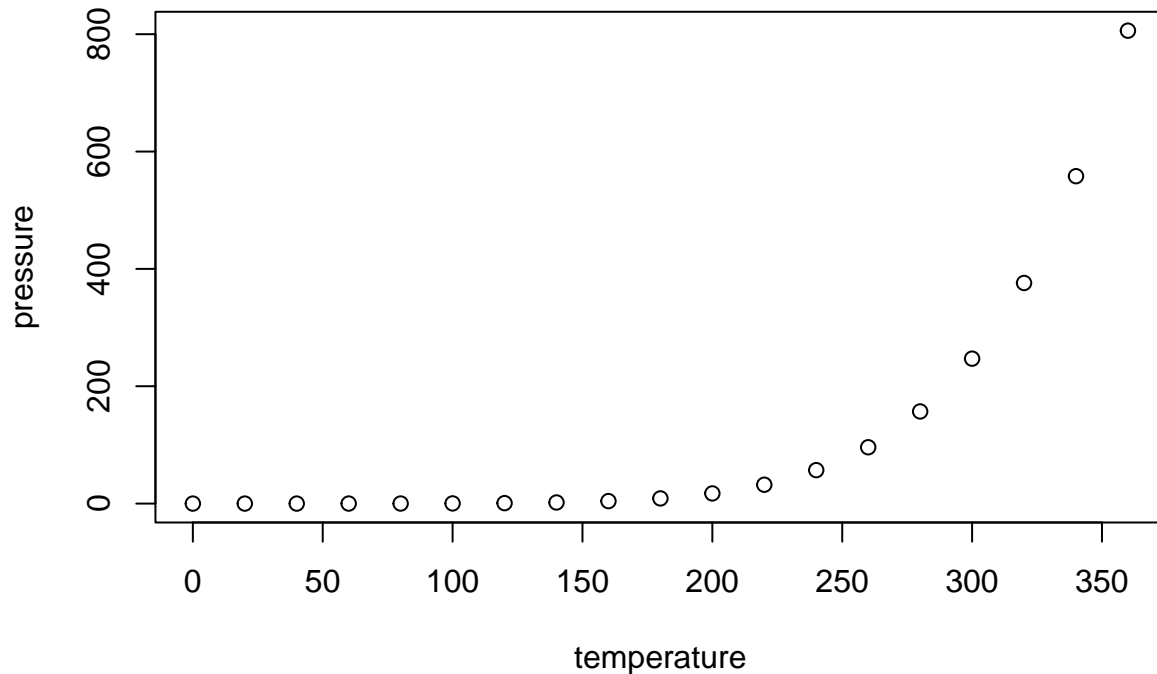
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
summary(cars)
```

```
##      speed      dist
##  Min.   : 4.0    Min.   : 2.00
## 1st Qu.:12.0    1st Qu.: 26.00
##  Median :15.0    Median : 36.00
##   Mean  :15.4    Mean   : 42.98
## 3rd Qu.:19.0    3rd Qu.: 56.00
##   Max.  :25.0    Max.    :120.00
```

Including Plots

You can also embed plots, for example:



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing of the R code that generated the plot.

Quick Markdown tutorial

Let us now look at the most used syntax to write text in R Markdown format.

Italic text

Bold text

Header one

Header two

Header three

Link to a website: R Markdown

“A quote”

- List item 1
 - List item 2
1. Ordered list item 1
 2. Ordered list item 2

Line 1 followed by at least two spaces to break the line

Line 2

$$x = \frac{y}{z}$$

We can also save the result of some computation and include it in the text later.

```
result <- 2 + 4
```

Here is the result: 6.

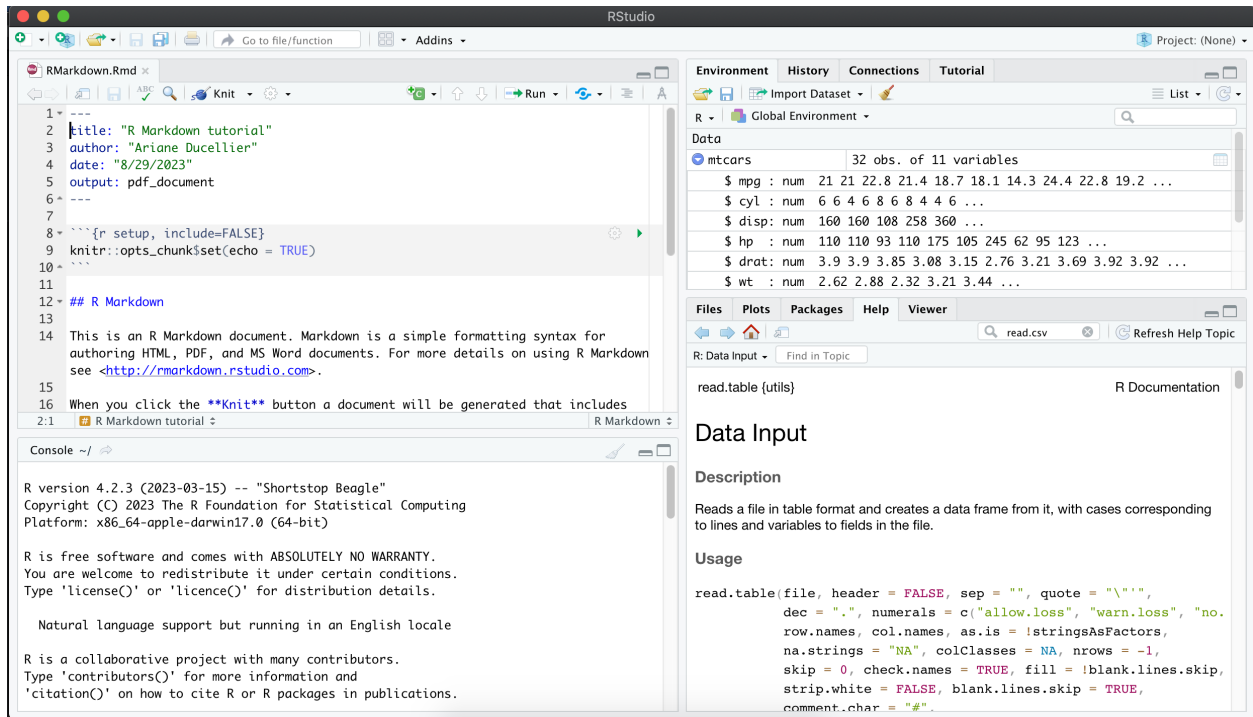


Figure 1: Caption for a figure: RStudio interface

It is also possible to include tables displaying the content of a dataframe.

```
library(knitr)
kable(mtcars[1:5], caption="A knitr table")
```

Table 1: A knitr table

	mpg	cyl	disp	hp	drat
Mazda RX4	21.0	6	160.0	110	3.90
Mazda RX4 Wag	21.0	6	160.0	110	3.90
Datsun 710	22.8	4	108.0	93	3.85
Hornet 4 Drive	21.4	6	258.0	110	3.08
Hornet Sportabout	18.7	8	360.0	175	3.15
Valiant	18.1	6	225.0	105	2.76
Duster 360	14.3	8	360.0	245	3.21
Merc 240D	24.4	4	146.7	62	3.69
Merc 230	22.8	4	140.8	95	3.92
Merc 280	19.2	6	167.6	123	3.92
Merc 280C	17.8	6	167.6	123	3.92
Merc 450SE	16.4	8	275.8	180	3.07
Merc 450SL	17.3	8	275.8	180	3.07
Merc 450SLC	15.2	8	275.8	180	3.07
Cadillac Fleetwood	10.4	8	472.0	205	2.93
Lincoln Continental	10.4	8	460.0	215	3.00
Chrysler Imperial	14.7	8	440.0	230	3.23
Fiat 128	32.4	4	78.7	66	4.08
Honda Civic	30.4	4	75.7	52	4.93
Toyota Corolla	33.9	4	71.1	65	4.22

	mpg	cyl	disp	hp	drat
Toyota Corona	21.5	4	120.1	97	3.70
Dodge Challenger	15.5	8	318.0	150	2.76
AMC Javelin	15.2	8	304.0	150	3.15
Camaro Z28	13.3	8	350.0	245	3.73
Pontiac Firebird	19.2	8	400.0	175	3.08
Fiat X1-9	27.3	4	79.0	66	4.08
Porsche 914-2	26.0	4	120.3	91	4.43
Lotus Europa	30.4	4	95.1	113	3.77
Ford Pantera L	15.8	8	351.0	264	4.22
Ferrari Dino	19.7	6	145.0	175	3.62
Maserati Bora	15.0	8	301.0	335	3.54
Volvo 142E	21.4	4	121.0	109	4.11