

# R Markdown

**Tutorial:** <http://rmarkdown.rstudio.com/index.html>

**Cheatsheet:** <http://www.rstudio.com/wp-content/uploads/2016/03/rmarkdown-cheatsheet-2.0.pdf>

**Reference Guide:** <https://www.rstudio.com/wp-content/uploads/2015/03/rmarkdown-reference.pdf>

---

## Code Chunks

To create a simple code chunk, you can use:

- keyboard shortcuts
  - Windows: CTL+ALT+i
  - Mac: Cmd+Option+i
- Insert from toolbar
- type in by hand

This chunk executes and shows the command:

```
z <- 1
```

The code in this chunk is not visible, but the result is:

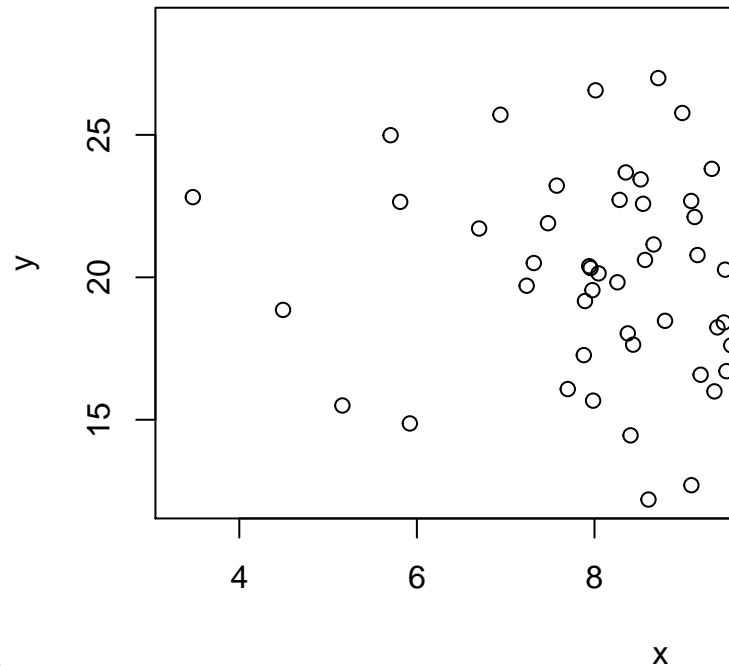
```
## [1] 5
```

The code and result are visible from this chunk:

```
print(z)
```

```
## [1] 5
```

Neither the code nor result is visible from this chunk, but the code is still run:



The plot above shows that this code and the code above was run.

This code is visible, but is never run:

```
z <- 250
print(z)
```

We can see that `z` has the same value as when first set:

```
print(z)
```

```
## [1] 5
```

The comment character can be changed (or eliminated), and a console prompt shown:

```
> a <- 4
> b <- 8
> # Here is the result
> a + b ^ 2
```

```
[1] 68
```

Defaults can be changed by setting options to `knitr::opts_chunk$set`:

```
knitr::opts_chunk$set(comment = "*", echo = FALSE)
```

```
* [1] 30
```

If you are creating a computationally-intensive document, you should cache the results of your chunks:

When chunks are cached, it can be good to name them:

```
* 0.4990063
```

Full list of knitr chunk options: <https://yihui.name/knitr/options/#other-chunk-options>

---

## Inline Code

Code can be placed inline so that results are embedded directly in the text. For instance,  $a * b ^ 2 = 256$ . Multiple steps can be done in chunks, then results embedded inline:

For  $p = 0.6$ , the  $\text{odds}(p) = 1.5$ , and the  $\text{log-odds}(p) = 0.405$ .

---

## Markdown Formatting Syntax

This is a sentence. There is one space following this sentence. The third sentence ends up here.

This is another sentence. If I follow this sentence with two spaces, the third sentence will be a new paragraph. Like this.

Text can be *italics* or **bold** or ***italics-bold***.

Text can have<sup>superscripts</sup> and<sub>subscripts</sub>.

See cheatsheet and reference guide for other formatting syntax.

---

## Tables

You can use the vertical separators (i.e., pipe, “|”) and horizontal separator (i.e., dash, “-”) to create tables. It doesn’t have to be neatly aligned as in the examples:

Header 1	Header 2
Row1, Col1	Row1, Col2
Row2, Col1	Row2, Col2

Here are example default tables for a `data.frame` using `knitr`, `xtable`, and `pander`:

Table 2: From knitr

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21.0	6	160	110	3.90	2.620	16.46	0	1	4	4
Mazda RX4 Wag	21.0	6	160	110	3.90	2.875	17.02	0	1	4	4
Datsun 710	22.8	4	108	93	3.85	2.320	18.61	1	1	4	1
Hornet 4 Drive	21.4	6	258	110	3.08	3.215	19.44	1	0	3	1
Hornet Sportabout	18.7	8	360	175	3.15	3.440	17.02	0	0	3	2

	mpg	cyl	disp	hp	drat	wt	qsec	vs	am	gear	carb
Mazda RX4	21.00	6.00	160.00	110.00	3.90	2.62	16.46	0.00	1.00	4.00	4.00
Mazda RX4 Wag	21.00	6.00	160.00	110.00	3.90	2.88	17.02	0.00	1.00	4.00	4.00
Datsun 710	22.80	4.00	108.00	93.00	3.85	2.32	18.61	1.00	1.00	4.00	1.00
Hornet 4 Drive	21.40	6.00	258.00	110.00	3.08	3.21	19.44	1.00	0.00	3.00	1.00
Hornet Sportabout	18.70	8.00	360.00	175.00	3.15	3.44	17.02	0.00	0.00	3.00	2.00

Table 3: From xtable

Table 4: From pander (continued below)

	mpg	cyl	disp	hp	drat	wt	qsec	vs
<b>Mazda RX4</b>	21	6	160	110	3.9	2.62	16.46	0
<b>Mazda RX4 Wag</b>	21	6	160	110	3.9	2.875	17.02	0
<b>Datsun 710</b>	22.8	4	108	93	3.85	2.32	18.61	1
<b>Hornet 4 Drive</b>	21.4	6	258	110	3.08	3.215	19.44	1
<b>Hornet Sportabout</b>	18.7	8	360	175	3.15	3.44	17.02	0

	am	gear	carb
<b>Mazda RX4</b>	1	4	4
<b>Mazda RX4 Wag</b>	1	4	4
<b>Datsun 710</b>	1	4	1
<b>Hornet 4 Drive</b>	0	3	1
<b>Hornet Sportabout</b>	0	3	2

## Output Formats

<http://rmarkdown.rstudio.com/lesson-9.html>

---

## Notebooks

[http://rmarkdown.rstudio.com/r\\_notebooks.html](http://rmarkdown.rstudio.com/r_notebooks.html)

- Change output format to `html_notebook`.
- When previewed, will create special `.nb.html` file that has controls for hiding code.
- Only one line at a time is sent to console and output from notebook chunks appear beneath the chunk.