

quarto

What is `quarto`?

- Open-source document format and computational notebook system.
- Integrates Markdown for text and code execution in R (and other languages!)
- Easily generate and re-generate a quarto document to produce a professional-looking document

Why not R Markdown?

Only because quarto is newer and more featured!

- Anything you already know how to do in R Markdown you can do in quarto, and more!¹
- All of these slides, website, etc. are all made in quarto.
- If you know and love R Markdown, by all means keep using it!

1. Slight caveat about a bug that we will see later...

Quarto basics

```
1 # My title
2
3 Some text
4
5 Some italic text
6
7 Some bold text
8
9
10 ```{r}
11 x <- 3
12 x
13 ```
```

Quarto basics

My title

Some text

Some *italic text*

Some **bold text**

```
1 x <- 3
2 x
```

```
[1] 3
```

Chunk options

Some of the ones I find myself using most often:

```
1  ```{r}
2  #| eval: false
3  #| error: true
4  #| cache: true
5  #| warning: false
6  #| message: false
7  x <- 3
8  ```
```

Also `echo` (can't include above because it conflicts with my slide options!)

Chunks can produce figures or tables

```
1 ```{r}
2 #| label: tbl-one
3 #| tbl-cap: "This is a great table"
4 knitr::kable(mtcars)
5 ```
```

Table 1: This is a great table

| | mpg | cyl | disp | hp | drat | wt | qsec |
|-------------------|------|-----|-------|-----|------|-------|-------|
| Mazda RX4 | 21.0 | 6 | 160.0 | 110 | 3.90 | 2.620 | 16.46 |
| Mazda RX4 Wag | 21.0 | 6 | 160.0 | 110 | 3.90 | 2.875 | 17.02 |
| Datsun 710 | 22.8 | 4 | 108.0 | 93 | 3.85 | 2.320 | 18.61 |
| Hornet 4 Drive | 21.4 | 6 | 258.0 | 110 | 3.08 | 3.215 | 19.44 |

| | mpg | cyl | disp | hp | drat | wt | qsec |
|-------------|------|-----|-------|-----|------|-------|-------|
| Hornet | 18.7 | 8 | 360.0 | 175 | 3.15 | 3.440 | 17.05 |
| Sportabout | | | | | | | |
| Valiant | 18.1 | 6 | 225.0 | 105 | 2.76 | 3.460 | 20.21 |
| Duster 360 | 14.3 | 8 | 360.0 | 245 | 3.21 | 3.570 | 15.84 |
| Merc 240D | 24.4 | 4 | 146.7 | 62 | 3.69 | 3.190 | 20.01 |
| Merc 230 | 22.8 | 4 | 140.8 | 95 | 3.92 | 3.150 | 22.90 |
| Merc 280 | 19.2 | 6 | 167.6 | 123 | 3.92 | 3.440 | 18.30 |
| Merc 280C | 17.8 | 6 | 167.6 | 123 | 3.92 | 3.440 | 18.90 |
| Merc 450SE | 16.4 | 8 | 275.8 | 180 | 3.07 | 4.070 | 17.40 |
| Merc 450SL | 17.3 | 8 | 275.8 | 180 | 3.07 | 3.730 | 17.60 |
| Merc 450SLC | 15.2 | 8 | 275.8 | 180 | 3.07 | 3.780 | 18.00 |

| | mpg | cyl | disp | hp | drat | wt | qsec |
|------------------------|------|-----|-------|-----|------|-------|-------|
| Cadillac Fleetwood | 10.4 | 8 | 472.0 | 205 | 2.93 | 5.250 | 17.98 |
| Lincoln Continental | 10.4 | 8 | 460.0 | 215 | 3.00 | 5.424 | 17.82 |
| Chrysler Imperial | 14.7 | 8 | 440.0 | 230 | 3.23 | 5.345 | 17.42 |
| Fiat 128 | 32.4 | 4 | 78.7 | 66 | 4.08 | 2.200 | 19.44 |
| Honda Civic | 30.4 | 4 | 75.7 | 52 | 4.93 | 1.615 | 18.52 |
| Toyota Corolla | 33.9 | 4 | 71.1 | 65 | 4.22 | 1.835 | 19.90 |

| | mpg | cyl | disp | hp | drat | wt | qsec |
|------------------|------|-----|-------|-----|------|-------|-------|
| Toyota Corona | 21.5 | 4 | 120.1 | 97 | 3.70 | 2.465 | 20.01 |
| Dodge Challenger | 15.5 | 8 | 318.0 | 150 | 2.76 | 3.520 | 16.87 |
| AMC Javelin | 15.2 | 8 | 304.0 | 150 | 3.15 | 3.435 | 17.30 |
| Camaro Z28 | 13.3 | 8 | 350.0 | 245 | 3.73 | 3.840 | 15.41 |
| Pontiac Firebird | 19.2 | 8 | 400.0 | 175 | 3.08 | 3.845 | 17.05 |
| Fiat X1-9 | 27.3 | 4 | 79.0 | 66 | 4.08 | 1.935 | 18.90 |
| Porsche 914-2 | 26.0 | 4 | 120.3 | 91 | 4.43 | 2.140 | 16.70 |

| | mpg | cyl | disp | hp | drat | wt | qsec |
|----------------|------|-----|-------|-----|------|-------|-------|
| Lotus Europa | 30.4 | 4 | 95.1 | 113 | 3.77 | 1.513 | 16.99 |
| Ford Pantera L | 15.8 | 8 | 351.0 | 264 | 4.22 | 3.170 | 14.50 |
| Ferrari Dino | 19.7 | 6 | 145.0 | 175 | 3.62 | 2.770 | 15.50 |
| Maserati Bora | 15.0 | 8 | 301.0 | 335 | 3.54 | 3.570 | 14.60 |
| Volvo 142E | 21.4 | 4 | 121.0 | 109 | 4.11 | 2.780 | 18.60 |

Chunks can produce figures or tables

```
1 ```{r}
2 #| label: fig-hist
3 #| fig-cap: "This is a histogram"
4 hist(rnorm(100))
5 ```
```

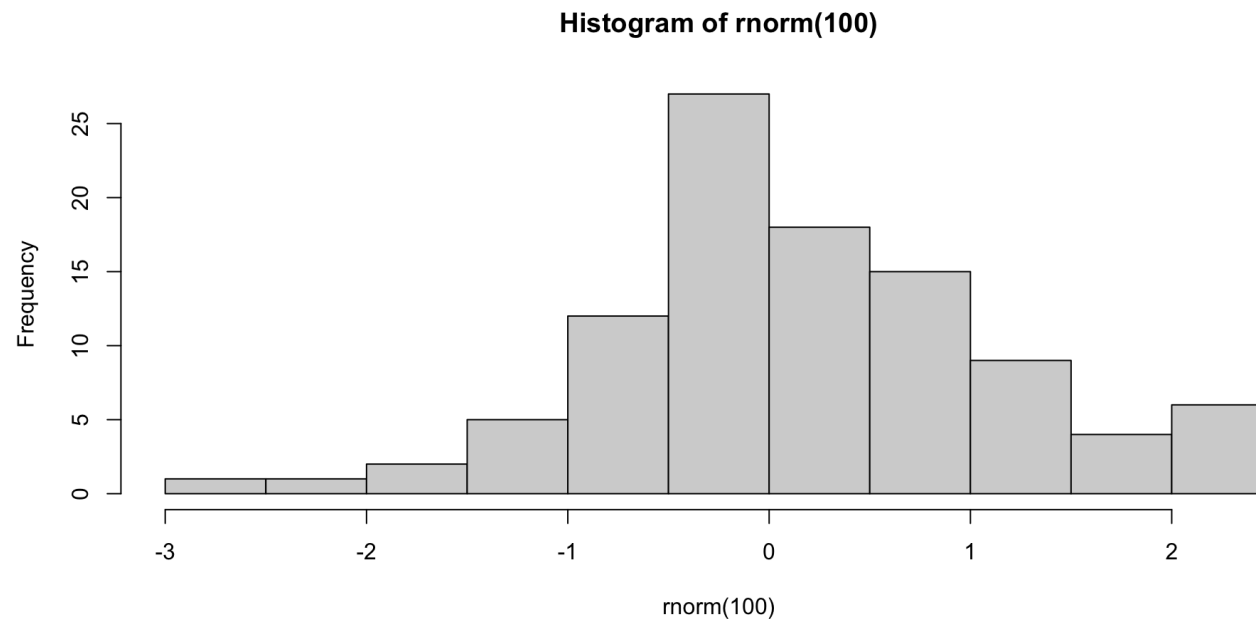


Figure 1: This is a histogram

Cross-referencing

You can then refer to those with `@tbl-one` and `@fig-hist` and the Table and Figure ordering will be correct (and linked)

```
@fig-hist contains a histogram and @tbl-one a table.
```

gets printed as:

Figure 1 contains a histogram and Table 1 a table.

Inline R

I often create a list of stats that I want to report in a manuscript:

```
1 stats <- list(n = nrow(data),  
2               mean_age = mean(data$age))
```

I can then print these numbers in the text with:

There were ``r stats$n`` participants with a mean age of ``r stats$mean_age``.

which turns into:

There were 1123 participants with a mean age of 43.5.

Conclusion

There are ~1 billion other features to know about quarto.

The [website](#) is an amazing resource.

Additional resources for R Markdown will have a lot of overlap

- [The Definitive Guide to R Markdown](#)
- [The R Markdown Cookbook](#)

