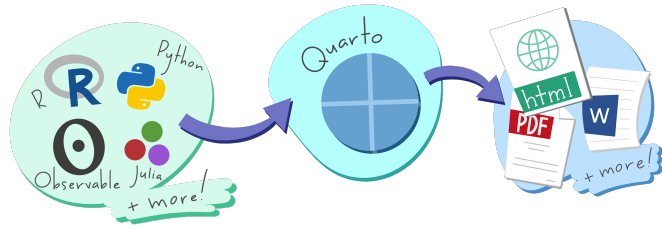


# Publish and Share with Quarto : : CHEATSHEET

quarto



## Author

### WRITE AND CODE IN PLAIN TEXT

Author documents as .qmd files or Jupyter notebooks. Write in a rich Markdown syntax.

## Render

### GENERATE DOCUMENTS, PRESENTATIONS AND MORE

Produce HTML, PDF, MS Word reveal.js, MS Powerpoint, Beamer Websites, blogs, books...

## Publish

### SHARE YOUR WORK WITH THE WORLD

Quickly deploy to GitHub Pages, Netlify, Quarto Pub, Posit Cloud, or Posit Connect

## Author

### SOURCE FILE: hello.qmd

```
---
title: "Hello, Penguins"
format: html
execute:
  echo: false
---

## Meet the penguins

The `penguins` data contain
from three islands in the P

The three species of penguin have quite distinct
distributions of physical dimensions (@fig-penguins).

```{r}
#| label: fig-penguins
#| fig-cap: "Dimensions of penguins a
#| warning: false
library(tidyverse, quietly = TRUE)
library(palmerpenguins)
penguins |>
  ggplot(aes(x = flipper_length_mm, y = bill_length_mm)) +
  geom_point(aes(color = species)) +
  scale_color_manual(
    values = c("darkorange", "purple", "cyan4")) +
```

Set format(s) and options  
Use YAML Syntax

## Write with **Markdown**  
RStudio: Help > Markdown Quick Reference  
Use Visual Editor

Include code  
R, Python, Julia, Observable,  
or any language with a  
Jupyter kernel

### USE A TOOL WITH A RICH EDITING EXPERIENCE

RStudio Visual Studio Code + Quarto extension

Run code cells as you write

Render with a button or keyboard shortcut

Edit Quarto documents with a Visual Editor

### OR ANY TEXT EDITOR

Quarto documents (.qmd) can be edited in any tool that edits text.

Apply formatting in Visual Editor. Saved as Markdown in source.

Insert elements like code cells, cross references, and more.

Normal B I </> :≡ 1/3 ⇄ 🖼️ Format Insert Table

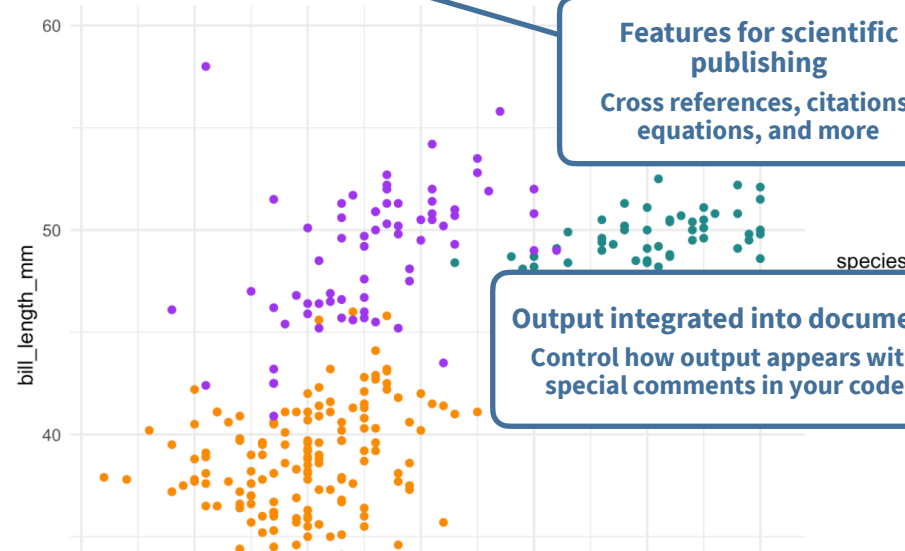
## Render

### RENDERED OUTPUT: hello.html

### Hello, Penguins

#### Meet the penguins

The three species of penguins have quite distinct distributions of physical dimensions (Figure 1).



Features for scientific publishing  
Cross references, citations, equations, and more

Output integrated into document  
Control how output appears with special comments in your code

Save, then render to preview the document output.

Terminal  
quarto preview hello.qmd

R Visual Studio Code Use Render button

The resulting HTML/PDF/MS Word/etc. document will be created and saved in the same directory as the source .qmd file.

### BEHIND THE SCENES

When you render a document, Quarto:

1. Runs the code and embeds results and text into an .md file with: **Knitr**, if any {r} cells or, **Jupyter**, if any other cells.
2. Converts the .md file into the output format with Pandoc.

### GET QUARTO

<https://quarto.org/docs/download/>

Or use version **bundled with RStudio**

### GET STARTED

<https://quarto.org/docs/get-started/>

## Publish

### Terminal

quarto publish {venue} hello.qmd

{venue}: quarto-pub, connect, gh-pages, netlify, confluence, **V1.4** posit-cloud

R Use Publish button

Quarto Pub

Free publishing service for Quarto content.

posit Cloud

Cloud-hosted, control access to project and output.

posit Connect

Org-hosted, control access, schedule updates.

## Quarto Projects

### CREATE WEBSITES, BOOKS, AND MORE

A directory of Quarto documents + a configuration file (\_quarto.yml)

See examples at <https://quarto.org/docs/gallery/>

Get started from the command line:

### Terminal

quarto create project {type}

{type}: default, website, blog, book, confluence, **V1.4** manuscript

R Use File > New Project

Artwork from "Hello, Quarto" keynote by Julia Lowndes and Mine Çetinkaya-Rundel, presented at RStudio Conference 2022. Illustrated by Allison Horst.

# Include Code

## CODE CELLS

Code cells start with ````{language}` and end with `````.

  Use **Insert Code Chunk/Cell**

```
```{r}
#| label: chunk-id
library(tidyverse)
```

```{python}
#| label: chunk-id
import pandas as pd
```
```

Other languages: `{julia}`, `{ojs}`

Add code cell options with `#|` comments.

Cell options control **execution**, figures, tables, layout and more. See them all at:  
<https://quarto.org/docs/reference/cells>

## EXECUTION OPTIONS

### OPTION DEFAULT EFFECTS

|                |       |                                                                     |
|----------------|-------|---------------------------------------------------------------------|
| <b>echo</b>    | true  | false: hide code<br>fenced: include code cell syntax                |
| <b>eval</b>    | true  | false: don't run code                                               |
| <b>include</b> | true  | false: don't include code or results                                |
| <b>output</b>  | true  | false: don't include results<br>asis: treat results as raw markdown |
| <b>warning</b> | true  | false: don't include warnings in output                             |
| <b>error</b>   | false | true: include error in output and<br>continue with render           |

Set execution options the **cell level**:

```
```{r}
#| echo: false
```

```{python}
#| echo: false
```
```

Or, **globally** in the YAML header with the **execute** option:

```
---
execute:
  echo: false
---
```

**Set options in code cells with `#|` comments and YAML syntax:**  
key: value

## INLINE CODE

Use computed values directly in text sections. Code is evaluated at render and results appear as text.

**KNITR** **JUPYTER** **V1.4** **OUTPUT**  
Value is ``r 2 + 2``. Value is ``{python} 2 + 2``. Value is 4.

# Set Format and Options

## SET FORMAT OPTIONS

```
---
title: "My Document"
format:
  html:
    code-fold: true
    toc: true
---
```

Indent format 2 spaces  
Indent options 4 spaces

Common formats: **html**, **pdf**, **docx**, **odt**, **rtf**, **gfm**, **pptx**, **revealjs**, **beamer**

Render **all** formats:

```
Terminal
quarto render hello.qmd
```

Render a **specific** format:

```
Terminal
quarto render hello.qmd --to pdf
```

## MULTIPLE FORMATS

```
---
title: "My Document"
toc: true
format:
  html:
    code-fold: true
  pdf: default
---
```

Top-level options apply to all formats

## OPTION

Nav

Style

LaTeX

Code

Figures

html/revealjs  
pdf/beamer  
docx/pptx

## DESCRIPTION

|                              |       |                                                                                                                       |
|------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------|
| <b>toc</b>                   | X X X | Add a table of contents (true or false)                                                                               |
| <b>toc-depth</b>             | X X X | Lowest level of headings to add to table of contents (e.g. 2, 3)                                                      |
| <b>anchor-sections</b>       | X     | Show section anchors on mouse hover (true or false)                                                                   |
| <b>highlight-style</b>       | X X X | Syntax highlighting theme (e.g. arrow, pygments, kate, zenburn)                                                       |
| <b>mainfont, monofont</b>    | X X   | Font name. HTML: sets CSS font-family; LaTeX: via fontspec package                                                    |
| <b>theme</b>                 | X     | Bootstrap theme name (e.g. cosmo, darkly, solar etc.)                                                                 |
| <b>css</b>                   | X     | CSS or SCSS file to use to style the document (e.g. "style.css")                                                      |
| <b>reference-doc</b>         | X     | docx/pptx file containing template styles (e.g. file.docx, file.pptx)                                                 |
| <b>include-in-header</b>     | X X   | Files of content to include in header of output document, also <b>include-before-body</b> , <b>include-after-body</b> |
| <b>keep-md</b>               | X X X | Keep intermediate markdown (true or false), also <b>keep-ipynb</b> , <b>keep-tex</b>                                  |
| <b>documentclass</b>         | X     | LaTeX document class, set document class options with <b>classoption</b>                                              |
| <b>pdf-engine</b>            | X     | LaTeX engine to produce PDF output (xelatex, pdflatex, lualatex)                                                      |
| <b>cite-method</b>           | X     | Method used to format citations (citeproc, natbib, biblatex)                                                          |
| <b>code-fold</b>             | X     | Let readers toggle the display of R code (false, true, or show)                                                       |
| <b>code-tools</b>            | X     | Add menu for hiding, showing, and downloading code (true or false)                                                    |
| <b>code-overflow</b>         | X     | Display of wide code (scroll, or wrap)                                                                                |
| <b>fig-align</b>             | X X / | Alignment of figures (default, left, right, or center)                                                                |
| <b>fig-width, fig-height</b> | X X X | Default width and height for figures in inches                                                                        |
| <b>fig-format</b>            | X X X | Format for Matplotlib or R figures (retina, png, jpeg, svg, or pdf)                                                   |

Visit <https://quarto.org/docs/reference/> to see **all options** by format

Also use in code cells  
↓  
✓  
✓  
✓  
Knitr

# Add Content

## FIGURES

### MARKDOWN

```
![CAP](image.png){#fig-LABEL fig-alt="ALT"}
```

### COMPUTATION

```
```{python}
#| label: fig-LABEL
#| fig-cap: CAP
#| fig-alt: ALT
{{ plot code here }}
```
```

Or {r}

## CROSS REFERENCES

- Add labels**  
Code cell: add option `label: prefix-LABEL`  
Markdown: add attribute `#prefix-LABEL`
- Add references** @prefix-LABEL, e.g.

You can see in **@fig-scatterplot**, that...

| Prefix | Renderers | Prefix | Renderers  |
|--------|-----------|--------|------------|
| fig-   | Figure 1  | eq-    | Equation 1 |
| tbl-   | Table 1   | sec-   | Section 1  |

## TABLES

### MARKDOWN

```
|object| radius|
|:-----|:-----|
|Sun   | 696000|
|Earth | 6371|

: CAPTION {#tbl-LABEL}
```

  Use **Insert Table** in the **Visual Editor**

**COMPUTATION** Output a Markdown table or an HTML table from your code

### KNITR

Use `knitr::kable()` to produce Markdown:

```
```{r}
#| label: tbl-LABEL
#| tbl-cap: CAPTION
knitr::kable(head(cars))
```
```

Also see the R packages: `gt`, `flextable`, `kableExtra`.

**JUPYTER** Add Markdown ( ) to Markdown output:

```
```{python}
#| label: tbl-LABEL
#| tbl-cap: CAPTION
import pandas as pd, tabulate
from IPython.display import Markdown
df = pd.DataFrame({"A": [1, 2],
                  "B": [1, 2]})
Markdown(df.to_markdown(index=False))
```
```

## CITATIONS

- Add a bibliography **file** to the YAML header:

```
---
bibliography: references.bib
---
```

- Add citations: `[@citation]`, or `@citation`

  Use **Insert Citations** dialog in the **Visual Editor**

Build your bibliography file from your Zotero library, DOI, Crossref, DataCite, or PubMed





## CALLOUTS

 tip

```
::: {.callout-tip}
## Title
```

Text  
:::

Instead of **tip** use one of:  
note, caution, warning, or important.

 note  warning  
 caution  important

## SHORTCODES

```
{{< include _file.qmd >}}
{{< embed file.ipynb#id >}}
{{< video video.mp4 >}}
```