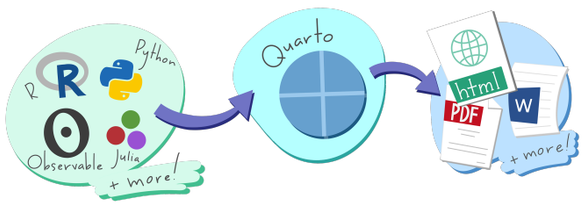
Publish and Share with Quarto : : **CHEATSHEET**



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

GET QUARTO

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

Or use version **bundled with RStudio**

GET STARTED

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

Author

SOURCE FILE: hello.qmd

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

## Meet the penguins

The `penguins` data contains size m
the Palmer Archipelago, Antarctica.

The three species of penguins have
dimensions (@fig-penguins).

```{r}
#| label: fig-penguins
#| fig-cap: "Dimensions of penguins across three
#| 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.

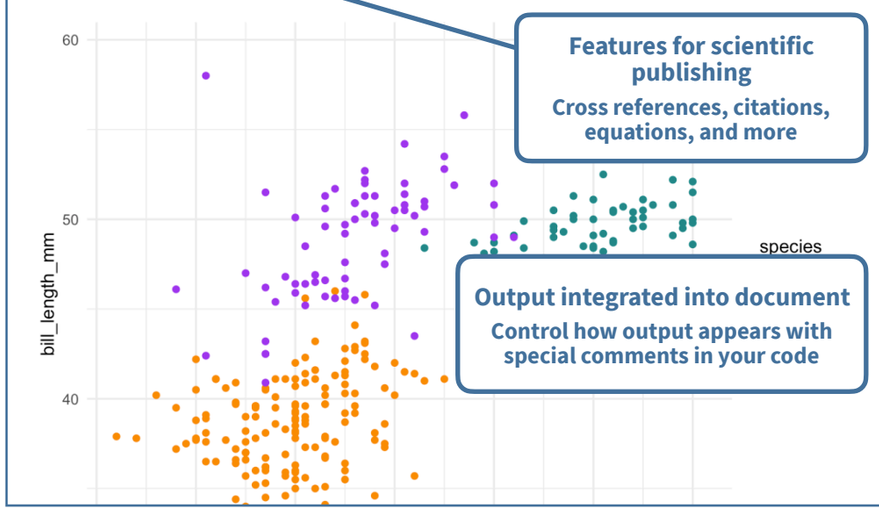
Render

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
```

Use **Render** button

Use **Preview** 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.

Publish

Terminal
```
quarto publish {venue} hello.qmd
```

{venue}: quarto-pub, connect, gh-pages, netlify, confluence, posit-cloud

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, manuscript

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

Set execution options at 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	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 options 4 spaces

Indent format 2 spaces

MULTIPLE FORMATS

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

Top-level options apply to all formats

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
```

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

Also use in code cells

Knitr

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

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

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

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

Prefix	Renders	Prefix	Renders
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

1. Add a bibliography **file** to the YAML header:

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

2. 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 >}}