Your Book Title

Your Name

Last updated: 2026-05-19

Contents

Welcome

This is a Quarto book template that you can use to create your own book.

About this book

This book is built with Quarto[1], an open-source scientific and technical publishing system. You can use Quarto to create books, websites, blogs, presentations, and more from markdown files.

Getting Started

To use this template:

1. **Update the configuration**: Edit `_quarto.yml` to change the book title, author, repository URL, and chapters.
2. **Add your content**: Create new `.qmd` files for each chapter and add them to the `chapters` list in `_quarto.yml`.
3. **Customize the style**: Modify `styles.css` to change the appearance of your book.
4. **Add references**: Update `references.bib` with your citations.

Building the book

To render the book locally:

```
quarto render
```

To preview the book with live reload:

```
quarto preview
```

The rendered output will be in the `docs/` directory, which can be published to GitHub Pages.

[1] https://quarto.org/

Publishing to GitHub Pages

This template includes a GitHub Actions workflow that automatically builds and publishes your book to GitHub Pages when you push to the main branch.

To enable GitHub Pages:

1. Go to your repository settings
2. Navigate to "Pages" in the left sidebar
3. Under "Build and deployment", set Source to "GitHub Actions"
4. Push your changes to the main branch
5. The workflow will automatically build and deploy your book

Your book will be available at `https://YOUR-USERNAME.github.io/YOUR-REPO/`

License

Add your license information here.

1 Chapter 1: Introduction

This is the first chapter of your book. Replace this content with your own.

1.1 Section 1.1

Add your content here.

1.1.1 Subsection 1.1.1

You can include:

- **Lists** like this one
- *Italic* and **bold** text
- `Code snippets`
- Links: Quarto Documentation[1]

1.2 Section 1.2

You can also include code blocks:

```
# Example Python code
def hello_world():
    print("Hello, World!")

hello_world()
```

Or R code:

```
# Example R code
library(ggplot2)

ggplot(mtcars, aes(x = wt, y = mpg)) +
  geom_point() +
  theme_minimal()
```

1.3 Section 1.3

Include citations using `@citationkey` format, which references entries in your `references.bib` file.

[1] https://quarto.org/

2 Chapter 2: Advanced Topics

This is the second chapter. Continue building your book with more chapters.

2.1 Mathematical Equations

You can include mathematical equations using LaTeX syntax:

Inline equation: $E = mc^2$

Display equation:

$$\int_{-\infty}^{\infty} e^{-x^2} dx = \sqrt{\pi}$$

2.2 Custom Macros

This book uses the `d-morrison/macros`[1] submodule to provide convenient LaTeX shorthand for statistical and mathematical notation.

2.2.1 Probability and Distributions

The normal distribution $\mathrm{N}(\mu,)$ can be written using macros as `$\Normal\paren{\m, \ss}$`, where `\m` expands to μ and `\ss` expands to σ^2.

A random variable $X \sim \mathrm{N}(\mu, \sigma^2)$ has expectation $\mathrm{E}_X = \mu$ and variance $\mathrm{Var}(X) = \sigma^2$.

2.2.2 Regression Notation

In linear regression, we estimate $\vec{\beta}$ using ordinary least squares. The fitted values are $\hat{y} = \mathbf{X}\hat{\beta}$, where $\hat{\beta} = (\mathbf{X}'\mathbf{X})^{-1}\mathbf{X}'\tilde{y}$.

The standard error of $\hat{\beta}$ is $\widehat{\mathrm{se}}\left(\hat{\beta}\right) = \hat{\sigma}\sqrt{(\mathbf{X}'\mathbf{X})^{-1}}$.

2.2.3 Likelihood and Estimation

The log-likelihood function $\ell()$ is maximized at the MLE $\hat{\theta}_{\mathrm{ML}}$.

The score function is $\ell'() = \frac{\partial}{\partial}\ell()$ and the observed information is $I() = -\ell''()$.

[1] https://github.com/d-morrison/macros

2.2.4 Logistic Regression

The logit link function is $\text{logit}\{\pi\} = \log(\frac{\pi}{1-\pi})$ and its inverse is $\text{expit}\{\eta\} = \frac{e^{\eta}}{1+e^{\eta}}$.

2.3 Tables

Table 2.1: Example table caption

Column 1	Column 2	Column 3
Data 1	Data 2	Data 3
Data 4	Data 5	Data 6

2.4 Figures

You can include images by placing them in the `images/` directory:

```
![Example image caption](images/your-image.png){#fig-example}
```

Then reference the figure in text using `@fig-example`.

2.5 Callouts

Note

This is a note callout. Use it to highlight important information.

Tip

This is a tip callout. Share helpful suggestions with your readers.

Warning

This is a warning callout. Alert readers to potential issues.

Important

This is an important callout. Emphasize critical information.

References

Document Generation Metadata

This document was generated from the following git commit:

- **Branch:** claude/include-branch-ruleset
- **Commit:** b39056e
- **Full commit hash:** b39056e42c838de513d31bf62e10f5eaf0a03a73
- **Commit date:** 2026-05-19 07:58:01 +0000

When transferring edits from this document back to the Quarto source files, use this commit information to set up the PR correctly and account for any commits that have been added since this document was generated.