

Building a Personal Website using Quarto and blogdown

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Guest lecture - R workshop

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Front matters

- For this workshop we assume you know R and Rstudio.
- In this tutorial, we will
 1. introduce Quarto and how to build a simple personal website using Quarto and hosting the page on **GitHub**
 2. introduce blogdown with a live-demo to build a quick blogdown template website and deploy it on **netlify**
- Let's start with a 15 mins **tutorial on markdown**

What is Quarto?

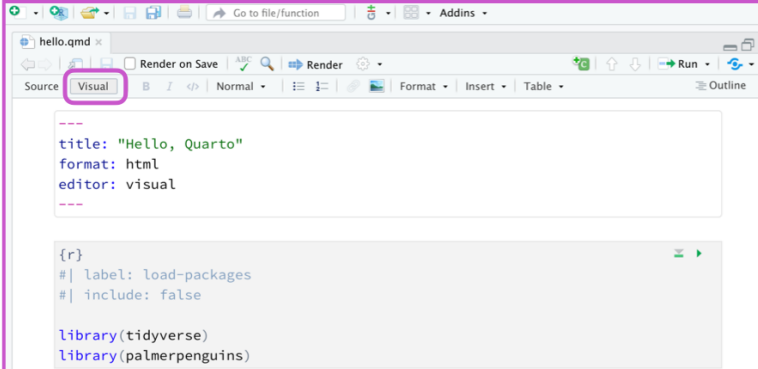
Quarto is an open-source scientific and technical publishing system built on **Pandoc**

Quarto is the **next generation of RMarkown**.

Publish high-quality articles, **reports**, **presentations**, **websites**, blogs, and **books** in HTML, PDF, MS Word, ePub, and more.

Quarto can author documents in plain text formats (**rmarkdown**, **markdown**) or mixed formats (**Jupyter notebook**) - **more than just Rmarkdown!**

What is Quarto?



```
---
title: "Hello, Quarto"
format: html
editor: visual
---

{r}
#| label: load-packages
#| include: false


library(tidyverse)
library(palmerpenguins)
```

Meet Quarto

Quarto enables you to weave together content and executable code into a finished document. To learn more about Quarto see <https://quarto.org>.

Meet the penguins

The `penguins` data from the `palmerpenguins` package contains size measurements for `r` `nrow(penguins)` penguins from three species observed on three islands in the Palmer Archipelago, Antarctica.

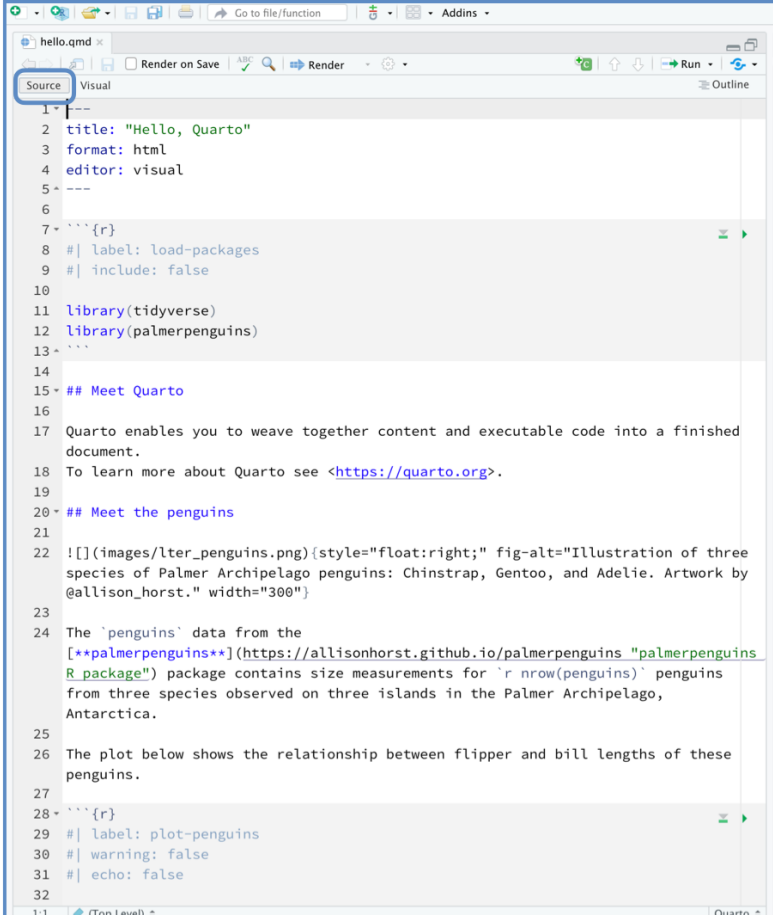


The plot below shows the relationship between flipper and bill lengths of these penguins.

```
{r}
#| label: plot-penguins
#| warning: false
#| echo: false

ggplot(penguins,
  aes(x = flipper_length_mm, y = bill_length_mm)) +
  geom_point(aes(color = species, shape = species)) +
```

(Top Level) ▾ Quarto ▾



```
1 ---
2 title: "Hello, Quarto"
3 format: html
4 editor: visual
5 ---
6
7 ```{r}
8 #| label: load-packages
9 #| include: false
10
11 library(tidyverse)
12 library(palmerpenguins)
13 ```
14
15 ## Meet Quarto
16
17 Quarto enables you to weave together content and executable code into a finished
18 document.
19 To learn more about Quarto see <https://quarto.org>.
20
21 ## Meet the penguins
22
23 {style="float:right;" fig-alt="Illustration of three
24 species of Palmer Archipelago penguins: Chinstrap, Gentoo, and Adelie. Artwork by
25 @allison_horst." width="300"}
26
27 The 'penguins' data from the
28 [**palmerpenguins**] (https://allisonhorst.github.io/palmerpenguins "palmerpenguins
29 R package") package contains size measurements for r nrow(penguins) penguins
30 from three species observed on three islands in the Palmer Archipelago,
31 Antarctica.
32
33 The plot below shows the relationship between flipper and bill lengths of these
34 penguins.
35
36 ```{r}
37 #| label: plot-penguins
38 #| warning: false
39 #| echo: false
40
41 ggplot(penguins,
42   aes(x = flipper_length_mm, y = bill_length_mm)) +
43   geom_point(aes(color = species, shape = species)) +
```

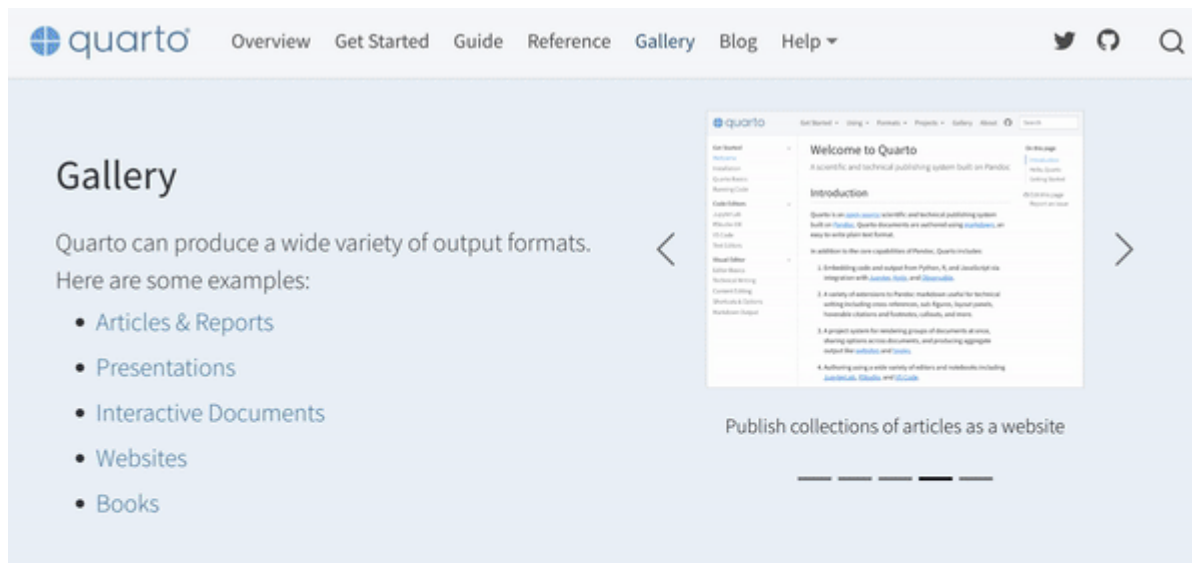
1:1 (Top Level) ▾ Quarto ▾

List of Quarto formats

- Basic documents in html, pdf, docx
- Presentations in beamer, pptx, and revealjs (html slides)
- **Websites & Blogs** in **Quarto Website** and **Quarto Blogs**

Quarto > RMarkdown

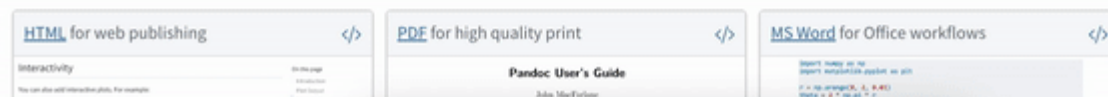
Quarto is a one-stop-shop that renders multiple output formats!



The screenshot shows the Quarto website's 'Gallery' page. The header includes the Quarto logo and navigation links: Overview, Get Started, Guide, Reference, Gallery, Blog, and Help. The main heading is 'Gallery', followed by the text 'Quarto can produce a wide variety of output formats. Here are some examples:'. Below this is a list of output formats: Articles & Reports, Presentations, Interactive Documents, Websites, and Books. To the right, there is a preview of a Quarto document titled 'Welcome to Quarto', which is a scientific and technical publishing system built on Pandoc. The preview shows an introduction and a list of features. Below the preview, it says 'Publish collections of articles as a website'.

Articles & Reports

Write a single markdown file and create output in a variety of formats.



The screenshot shows three examples of output formats from the Quarto website. Each example is a card with a title, a description, and a 'View this page' link. The first card is titled 'HTML for web publishing' and shows a preview of an interactive document. The second card is titled 'PDF for high quality print' and shows a preview of a PDF document titled 'Pandoc User's Guide'. The third card is titled 'MS Word for Office workflows' and shows a preview of a Word document.

Building Websites with Quarto



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Why not WordPress, Medium etc

- **Minimum Rmarkdown support**
- no ads, no login/password, no cost!
- fast building!

Quarto websites

Convenient: Documents published as part of a website share navigational elements, rendering options, and visual style.

Features: Website navigation through a global navbar, a sidebar with links, or both. You can also enable full text search for websites.

Example website: <https://kuan-liu.github.io/biostat3/>

Host: can be published to a wide variety of destinations including **GitHub Pages**, **Netlify**, **RStudio Connect**, etc.

Getting started

- Be sure that you have installed the **Quarto** package

```
install.packages("quarto")
```

- Create a website

```
quarto create-project MySiteName --type website
```

- create a blog

```
quarto create-project MyBlogName --type website:blog
```

- or use RStudio > New Project > New Quarto Blog

Try this - create Quarto website project

- Create a new RStudio project and select a new directory and Quarto website
- specify directory name with your GitHub account name plus **.github.io**, e.g., Kuan-Liu.github.io
- Explore the directory

Navigation & Structure

- `_quarto.yml`, website configuration file
 - provides website options such as website theme, navigation bar.
- `index.qmd`, home page of the website
- `about.qmd`, the about page of the website
- `styles.css`, Custom CSS for website (for advanced coder)

Rendering posts and building website

- On a specific post, Render with RStudio > Render
- Build tab > Render/Preview Website (try)

These will preview the entire website

- "Freeze" is a feature to specify which file you would like to render at each built (fast & efficient building).

execute:

```
freeze: auto # re-render only when source changes
```

- Add `freeze: auto` to the `_quarto.yml` file

Themes

- My favourite two new themes: Zephyr and Quartz
 - A list of build-in themes:
<https://quarto.org/docs/websites/website-blog.html#themes>
- To change theme, modify the bottom of your website's `_quarto.yml`

```
format:  
  html:  
    theme: Zephyr
```

About page templates

- list of themes:

<https://quarto.org/docs/websites/website-about.html>

jolla



Finley Malloc

Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Ut interdum in dolor quis accumsan. Suspendisse sed nisi sollicitudin, suscipit turpis quis, molestie ipsum. Phasellus ante ante, vehicula a porta quis, venenatis non magna.



trestles



Finley Malloc



Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Ut interdum in dolor quis accumsan. Suspendisse sed nisi sollicitudin, suscipit turpis quis, molestie ipsum. Phasellus ante ante, vehicula a porta quis, venenatis non magna.

Education

University of California, San Diego | San Diego, CA

PhD in Mathematics | Sep 2011 - June 2015

Macalester College | St. Paul MA

B.A in Economics | Sep 2007 - June 2011

Experience

Wengo Analytics | Head Data Scientist | April 2018 - present

GeoScience | Chief Analyst | Spet 2012 - April 2018

Try this - customize the about page

- create a subfolder in your working directory called "images" and put a thumbnail photo in this folder (for example, HDWG.jpg).
- now updating the about page title section with

```
about:
  template: jolla
  image: images/HDWG.jpg
  links:
    - icon: twitter
      text: twitter
      href: https://twitter.com/
    - icon: github
      text: Github
      href: https://github.com/
```


Home page

- The home (landing) page for this website by default is generated following the `index.qmd` file
- We might want to feature about page as the landing page
 - simply rename the qmd files `about.qmd` to `index.qmd`
 - and rename `index.qmd` to another tab of your website, for example publication or research

Try this - Adding icons to social account

- You can add links to GitHub, Twitter, Google Scholar on the navigation bar with icon by updating the config file, `_quarto.yml`

```
navbar:  
  right:  
    - href: index.qmd  
      text: Home  
    - icon: github  
      href: https://github.com/my_user_name  
    - icon: twitter  
      href: https://twitter.com/my_user_name
```

Blog posts

- you can add a quarto page to host blog posts by creating a `blog.qmd` file where you will display your blog posts in a listing.

The MockUp

Blog Resources About      

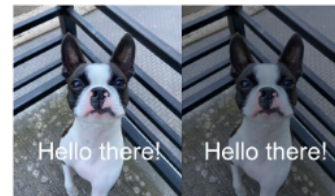
Want to support my blog? 

Order By

2022-06-22
3 min

Add a semi-transparent overlay to an image with {magick}

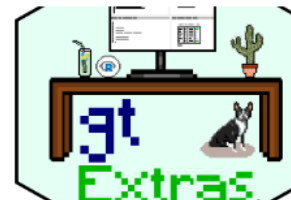
Because who has time for CSS and gradients?



2022-06-13
13 min

Beautiful tables in R with gtExtras

Merging static tables with graphics is a powerful combo



2022-04-18
4 min

Adding session info to blog posts

A snapshot of your code state



Categories

All (37)
API (1)
Automation (1)
Community (1)
JSON (2)
NFL (12)
SQL (1)
TidyTuesday (4)
blog (1)
crosstalk (1)
data cleaning (1)
data visualization (9)
distill (1)
espnscraper (3)
functions (1)
ggplot2 (7)
gt (6)
joins (1)
magick (4)
meta (6)
nfl (1)
nflfastR (1)
nflscrapR (1)


Listing


- There are three types of listing displays: default, table, and grid

- Grid

Listing Example

⌵ Order By ▾


 Filter



Post With Code

This is a post with executable code.

HARLOW MALLOC 2/8/2022



Welcome To My Blog

This is the first post in a Quarto blog. Welcome!

TRISTAN O'MALLEY 2/5/2022

- Table

Listing Example

Date	Title	Author
2/8/2022	Post With Code	Harlow Malloc
2/5/2022	Welcome To My Blog	Tristan O'Malley

Try this - creating a blog post

1. create blog.qmd and specify in the title section

```
title: my blogs
listing:
  contents: posts
  sort: "date desc"
  type: default
  categories: true
---
```

1. create a sub folder name it "posts", under "posts" create another sub folder name it "blog1"

Writing a post

1. inside blog1 folder try Blank File > Quarto document and name it index.qmd (**example**).
 - **This index.qmd will host content of your blog!**
2. specify in the title section of blog1/index.qmd

```
title: "My first post with R"
description: "you can post a summary description"
author: "Kuan"
date: "11/20/2023"
categories:
  - R code
---
```

Publishing - GitHub

- Use **GitHub Pages** when the source code for your document or site is hosted on GitHub repo.
- make sure to render your site (html files) in the docs folder
 - in `_quarto.yml` specify `output-dir: docs`
- **Try this:**
 1. Build your website and push to GitHub repo
github_account.github.io
 2. go to settings of the repo and select page. Specify Branch master and /docs and save!
 3. Your site should be live at
https://github_account.github.io.

Try this - publishing your website on GitHub

- You can fork or download codes to build the **template Quarto website** I made for this tutorial at **<https://github.com/Kuan-Liu/Kuan-Liu.github.io>**.

Building Websites with blogdown



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What is blogdown?

- An R package for building website using R Markdown and Hugo
 - building website via Hugo using Rmarkdown
- Hugo
 - no cost, open-source, and easy to install
 - tons of features for fancy customization if you are familiar with css (Cascading Style Sheets)
 - example website: <https://www.kuan-liu.com/>
- blogdown book: <https://bookdown.org/yihui/blogdown/>

Getting started

- Be sure that you have installed the **blogdown** package

```
install.packages("blogdown")
blogdown::install_hugo(version="0.86.0")
blogdown::hugo_version()
# if you have multiple version of hugo, you can
# options(blogdown.hugo.version = '0.86.0')
```

- list of Hugo themes: <https://themes.gohugo.io/>
 - for my personal website I used the **hello-friend-ng** theme
 - go to <https://themes.gohugo.io/> and take a quick look at all the amazing Hugo theme templates

Try this - create a new blogdown project

- create a new project, select website using blogdown, specify Hugo theme hugo-aperro/hugo-aperro
- developed by the awesome **Alison Hill**

New Project Wizard

[Back](#) **Create a new website using Hugo and blogdown**

Directory name:

Create project as subdirectory of:
 [Browse...](#)

Hugo theme:

☒ Convert the site config file to YAML
☒ Convert all post metadata to YAML
☒ Add sample blog posts
☒ Add the example site from the theme

☐ Keep empty directories
☒ Create netlify.toml
☒ Create .Rprofile
☒ Install Hugo if not installed

☐ Open in new session

[Create Project](#) [Cancel](#)

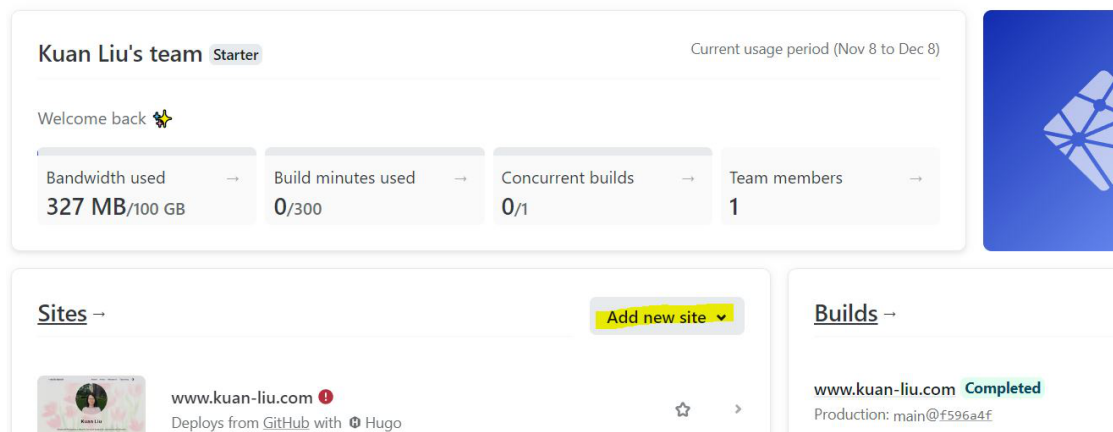
Try this - building website

- explore the project structure
- try Knit the website
- subfolder *content* contents all markdown files or rmarkdown files for your website
- More resources



Publishing on Netlify

- create and upload repo on GitHub via GitHub desktop
- log in to your netlify account via GitHub!
- select add new site > import an existing project > connect to GitHub > select repo
- update domains names



The screenshot shows the Netlify dashboard for 'Kuan Liu's team' with a 'Starter' plan. The current usage period is from Nov 8 to Dec 8. A welcome message is followed by a summary of usage: Bandwidth used (327 MB/100 GB), Build minutes used (0/300), Concurrent builds (0/1), and Team members (1). Below this, the 'Sites' section shows a single site 'www.kuan-liu.com' which is deployed from GitHub using Hugo. The 'Builds' section shows a completed production build for the same site.


Kuan Liu's team Starter

Current usage period (Nov 8 to Dec 8)

Welcome back 🌟

Bandwidth used →	Build minutes used →	Concurrent builds →	Team members →
327 MB/100 GB	0/300	0/1	1

Sites → **Add new site** ▼

	www.kuan-liu.com 🔴 Deploys from GitHub with Hugo	☆ >
---	---	-----

Builds →

www.kuan-liu.com Completed Production: main@f596a4f
--

Live demo - publishing website on Netlify

Acknowledgement

- "Permanent link" to the slides at https://kuan-liu.github.io/Quarto_website_workshop/
- Credit: This template and tutorial is created based on Tom Mock, Yihui Xie, and Alison Hill's work

Thank you! 🥂

- Free feel to reach me at [kuan.liu at utoronto.ca](mailto:kuan.liu@utoronto.ca) ❤️
- Materials for this workshop
 - online slides
 - Quarto template personal page repo
 - Quarto template personal page

