

# Introduction to literate programming with Quarto

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## Key terms

**.qmd file**- the file format of a Quarto document

**YAML header**- controls the 'settings,' located at the top of the document

**Code chunks**- sections of the document that contain code **Markdown text**- written content of the document using text and formatting

**Rendering**- process of running code and combining text to create a final output

**Authoring**- process of writing and structuring the document

## Setting up Quarto

In **RStudio**, follow these steps:

1. Select **File**
2. Select **New File**
3. Select **Quarto Document**
4. Customize settings
5. Hit **Create**

## Markdown text formatting

To **format text**, here are some keyboard shortcuts:

**\*\*bold\*\*** → **bold**

**\*italic\*** → *italic*

**~~strikethrough~~** → ~~strikethrough~~

**`inline code`** → `inline code`

**– bullet point** → • bullet point

## Inserting callout boxes

Insert **callout boxes** by following the formats below:

Important

```
::: callout-important
## Title
```

Text

```
:::
```

Tip

Use “`::: callout-tip`” instead for a **callout-tip box**

Note

Use “`::: callout-note`” instead for a **callout-note box**

## Code chunks

To insert **code chunks**:

```
{r}
1 + 2
```

- Start with 3 back ticks ``` and {r}
- Enter code (Example: “1 + 2”)
- End with 3 back ticks ```  
**OR**
- Keyboard shortcuts:  
Ctrl + Alt + I (Windows/Linux)  
Cmd + Option + I (Mac)

Here are some **code display settings** that can be added to the YAML header:

- **code-fold: true/false**  
controls whether code is collapsible by reader
- **code-tools: true/false**  
adds or removes the functions “show code” and “copy”
- **echo: true/false**  
controls whether or not code is shown at all

## Inserting links

- Link with title: [title](link)
- Link without title: <https://link>

## Inserting images

- Image by itself with no caption:  
``
- Image with a caption below it:  
`![caption](path/image.png)`
- Image that redirects you to a link:  
`![caption](path/image.png)](link)`

## Columns

Change the layout of sections by following these steps for **columns**:

1. Start with `::: columns`
2. Begin 1<sup>st</sup> column with `::: column`
3. Add content and end with `:::`
4. Begin new column with `::: column`
5. Add content and end with `:::`
6. End entire section with `::: columns`

```
::: columns
::: column
item 1
:::
::: column
item 2
:::
::: columns
```

Here is an example of what it would look like.

## Citations with Zotero

**Zotero** is a free reference management tool you can use to insert citations in by doing the following:

1. Open **Zotero** on your device
  2. In RStudio, switch to the “Visual Editor” mode
  3. In the YAML header, add:  
`bibliography: references.bib`
  4. Press the “Insert” button in the toolbar at the top
  5. Select “Citation” from the drop down options
  6. Choose the citation from the **Zotero Library** folders
  7. Click “Insert”
- For **in-text citations**, check the box that says “In-text” after Step 6.
  - A **bibliography** is generated at the end of the document.

## Publishing

**Publishing** involves sharing and making your Quarto document accessible. One of the ways is publishing to **GitHub** using **GitHub Pages**. Here's how:

1. Use “Terminals Options” to set new Terminals on the RStudio interface to open with Git Bash then open a new Terminal
2. In the YAML header, include:  
`project:`  
`type: website`  
`output-dir: docs`
3. In the new Terminal, change directory to path of main folder
4. Make a `_quarto.yml` file
5. Add a `.nojekyll` file
6. Render to generate the HTML in the `docs/` folder
7. Initialize Git
8. Rename “master” to “main”
9. In **GitHub**, create a new repo
10. In Terminal, connect to local project
11. Render your site
12. Commit and push it to **GitHub**
13. In your repo Settings, click **Pages**
14. Change “none” to “main”
15. Change “/root” to “/docs”
16. Click Save