

Create and publish webpages using Quarto

NM2207: Computational Media Literacy

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**Faculty of Arts
& Social Sciences**

What is Quarto?

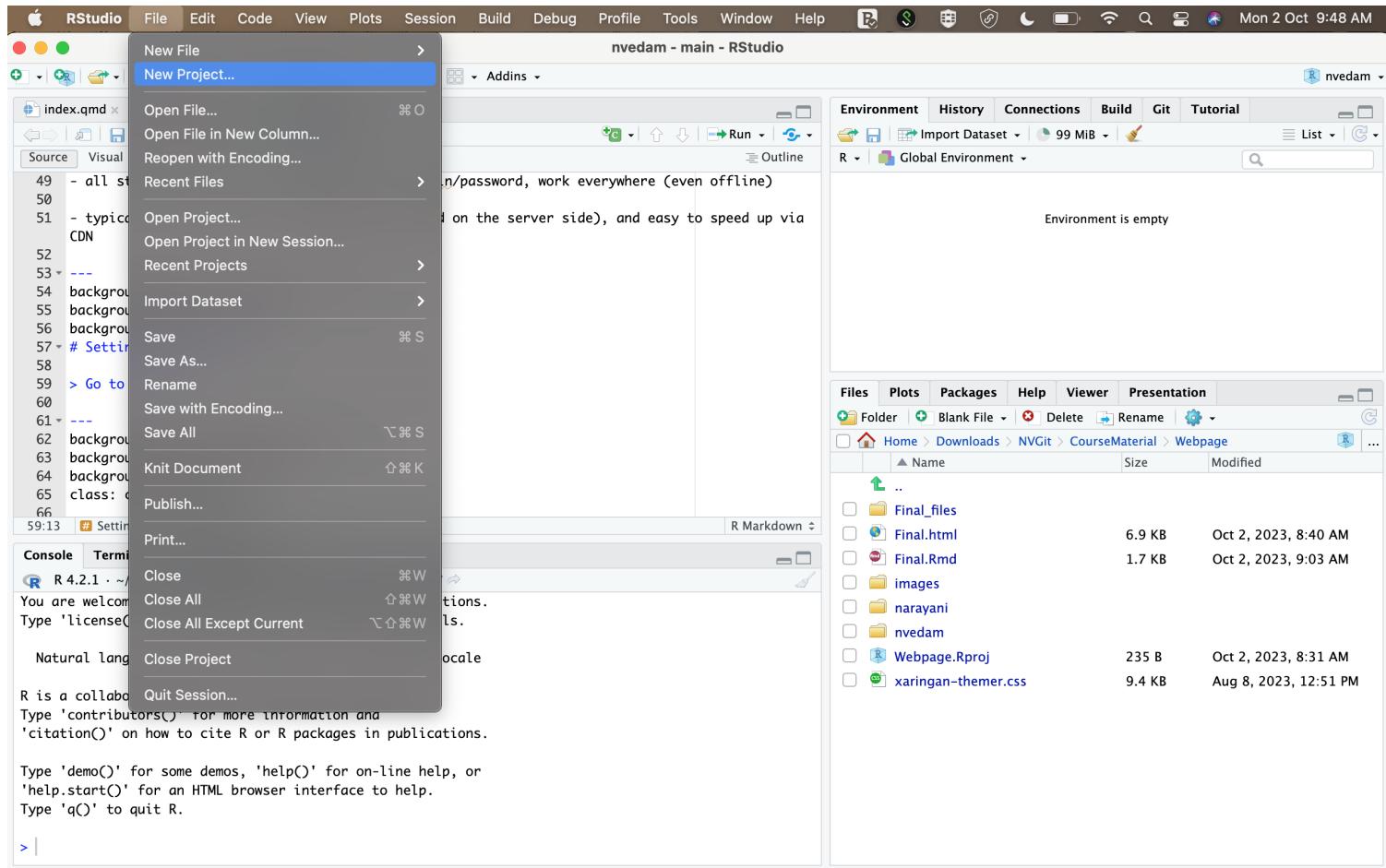
- | It is an open-source scientific and technical publishing system built on Pandoc
- A Quarto document i.e. a `.qmd` is a plain text file, like a `.rmd`, that can be rendered to many different formats,
 - HTML reports and websites
 - PDF reports
 - MS Office (Word, Powerpoint)
 - Presentations (Powerpoint, Beamer, revealjs)
 - Books
- What changes?
 - Nothing for R Markdown users
 - You just render the output using Quarto
- You can learn more about Quarto [here](#)

Why not WordPress, Tumblr, Medium.com, Blogger.com, etc?

- No R Markdown support (even math support is often nonexistent or awkward)
- Huge benefits of static websites compared to dynamic websites
- all static files, no PHP or databases, no login/password, work everywhere (even offline)
- typically fast to visit (no computation needed on the server side), and easy to speed up via CDN

Setting up your project

| File --> New Project



The screenshot shows the RStudio interface with the 'File' menu open. The 'New Project...' option is highlighted. The main workspace shows an R Markdown document titled 'index.qmd'. The 'Files' panel on the right displays a directory structure for a project named 'nvedam' located in 'Downloads/NVGit/CourseMaterial/Webpage'. The directory contains files like 'Final_files', 'Final.html', 'Final.Rmd', 'images', 'narayani', 'nvedam', 'Webpage.Rproj', and 'xaringan-themer.css'.

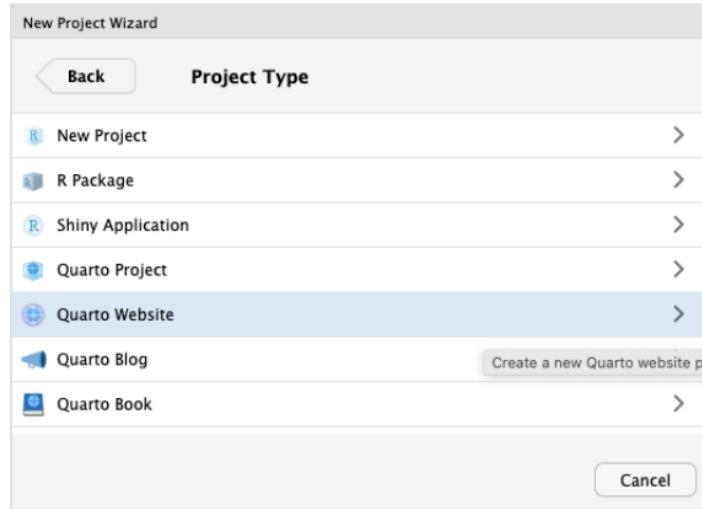
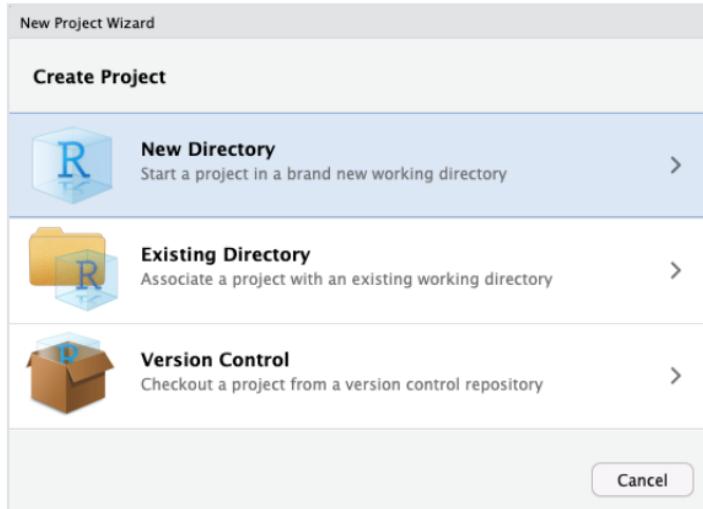
```

Final_files
Final.html
Final.Rmd
images
narayani
nvedam
Webpage.Rproj
xaringan-themer.css

```

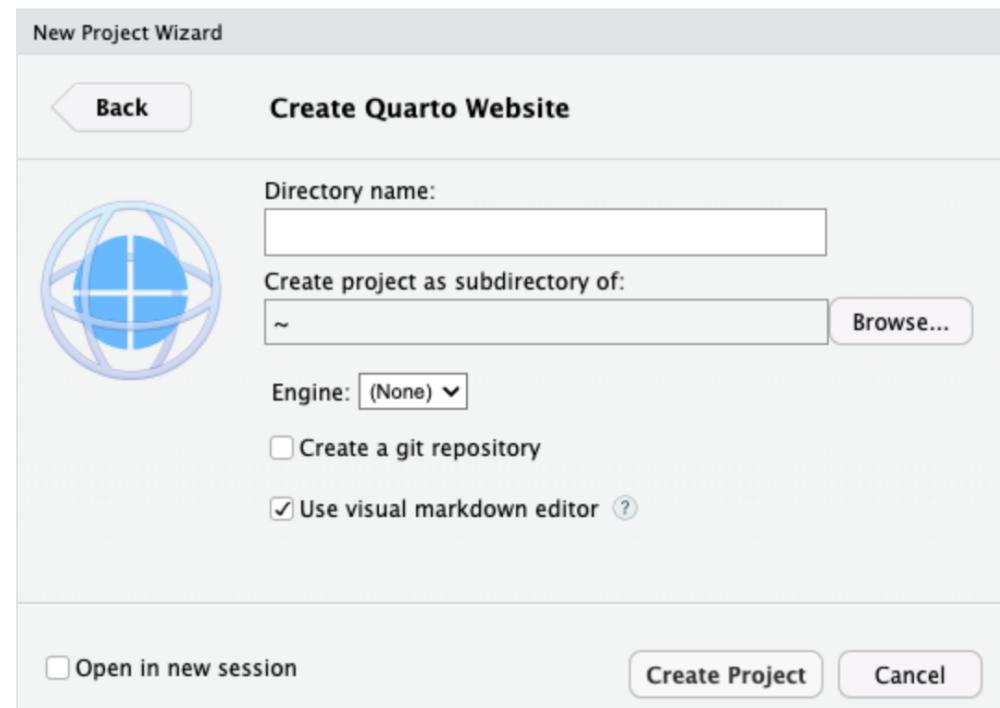
Setting up your project

New Directory --> Quarto Website



Setting up your project

- Provide the name of your directory.
- While doing so, you may want to name the folder after the address you want for your webpage, it should be, **githubusername.github.io**
- If you do not name it after your github username, you will not be able to publish your webpage
- Because we will be hosting the webpage using github pages



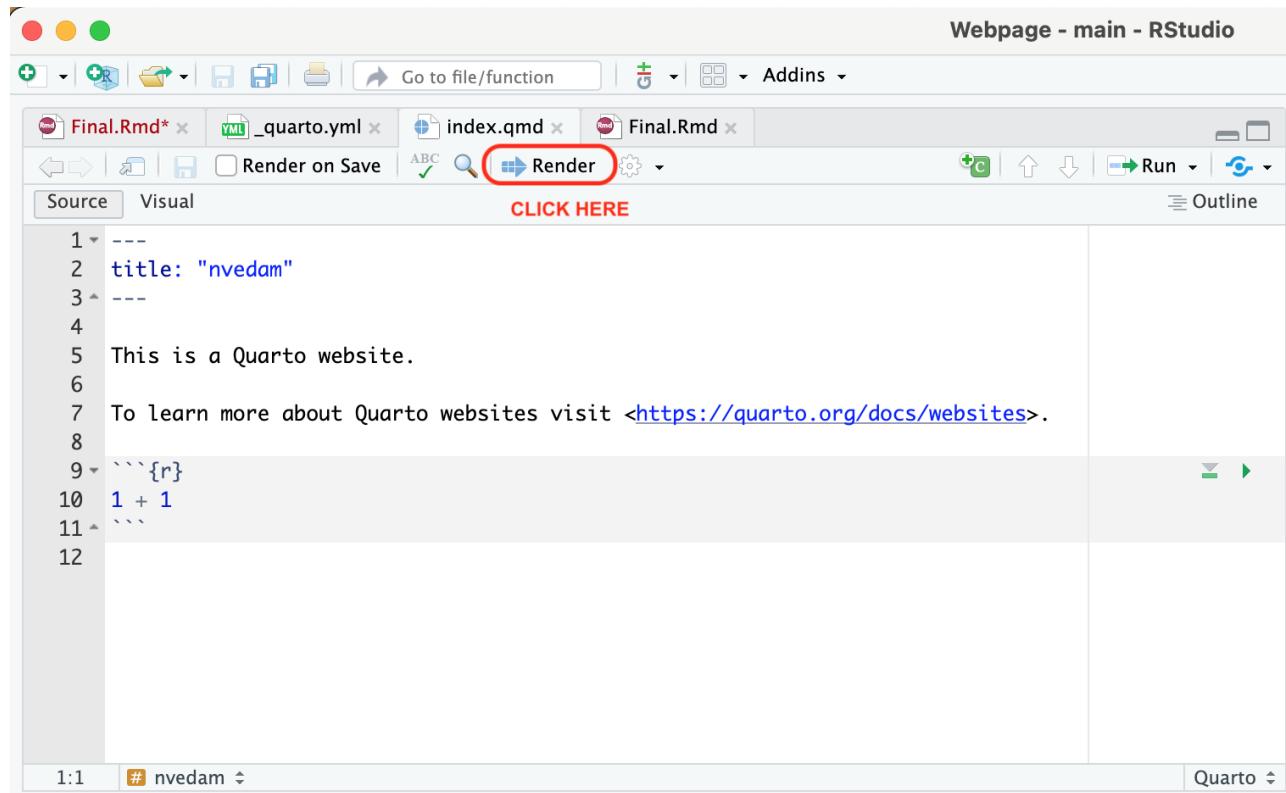
Quarto files

Once you set-up your project, the following files will be generated automatically

File	Description
<code>_quarto.yml</code>	Quarto project file.
<code>index.qmd</code>	Blog home page.
<code>about.qmd</code>	Blog about page.
<code>posts/</code>	Directory containing posts
<code>posts/_metadata.yml</code>	Shared options for <code>posts</code>
<code>styles.css</code>	Custom CSS for website

Setting up your project

Once the sample `index.qmd` file opens, click on Render in the toolbar to preview the webpage



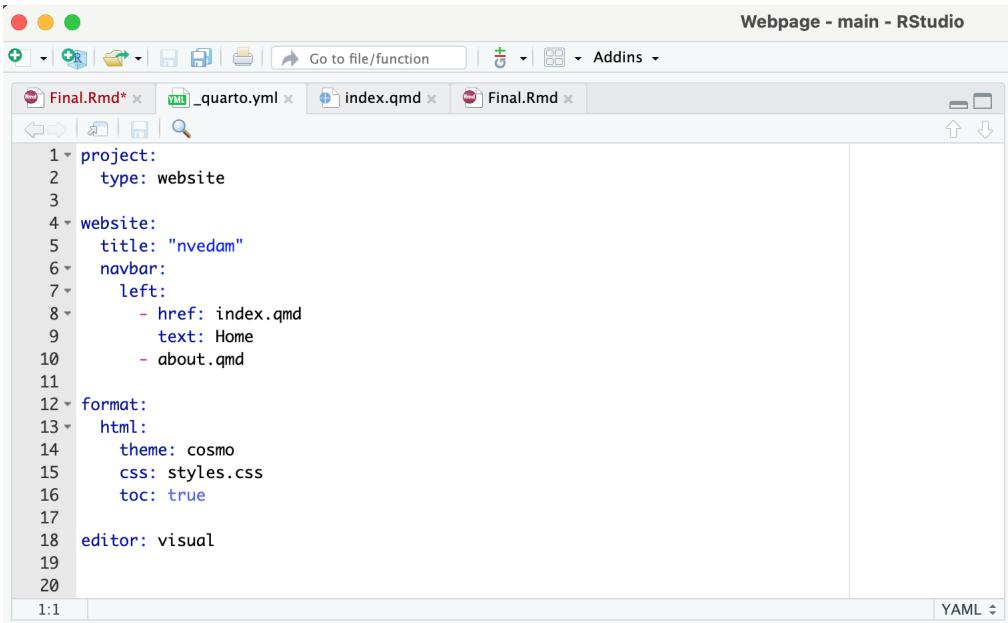
The screenshot shows the RStudio interface with a Quarto project open. The title bar says "Webpage - main - RStudio". The toolbar includes standard Mac OS X window controls, a file menu, a "Go to file/function" search bar, and an "Addins" dropdown. Below the toolbar, there are tabs for "Final.Rmd*", "YML _quarto.yml", "index.qmd" (which is the active tab), and "Final.Rmd". The status bar at the bottom shows "1:1" and "nvedam". The main pane displays the following Quarto code:

```
1 ---  
2 title: "nvedam"  
3 ---  
4  
5 This is a Quarto website.  
6  
7 To learn more about Quarto websites visit <https://quarto.org/docs/websites>.  
8  
9 `r{r}  
10 1 + 1  
11`
```

The "Render" button in the toolbar is circled in red, and the text "CLICK HERE" is overlaid in red below it.

Config files

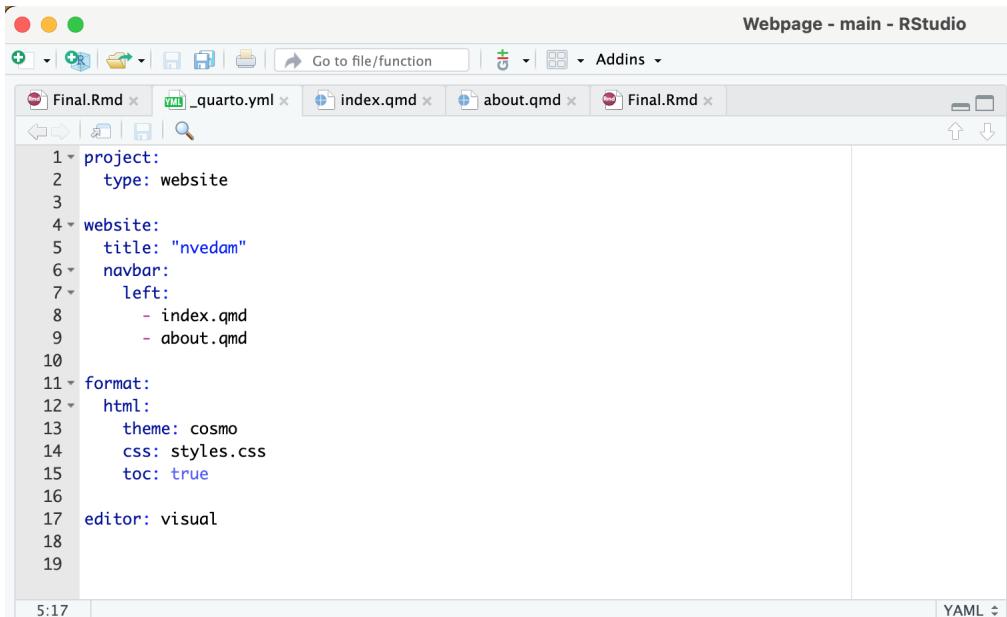
- Every website has a `.yml` file
- This is the config file
- All the website settings can be incorporated in this file



```
1 * project:
2   type: website
3
4 * website:
5   title: "nvedam"
6   navbar:
7     left:
8       - href: index.qmd
9         text: Home
10      - about.qmd
11
12 * format:
13   html:
14     theme: cosmo
15     css: styles.css
16     toc: true
17
18 editor: visual
19
20
```

Config files: Navigation bar

- navbar under `website` is used to add a top navigation bar to a website
- `left` indicates the position of the navigation options
- The two `.qmd` files - index and about - are markdown files for each tab you want in your webpage
- By default, the `title` assigned in each of these files will automatically show as the name of these tabs



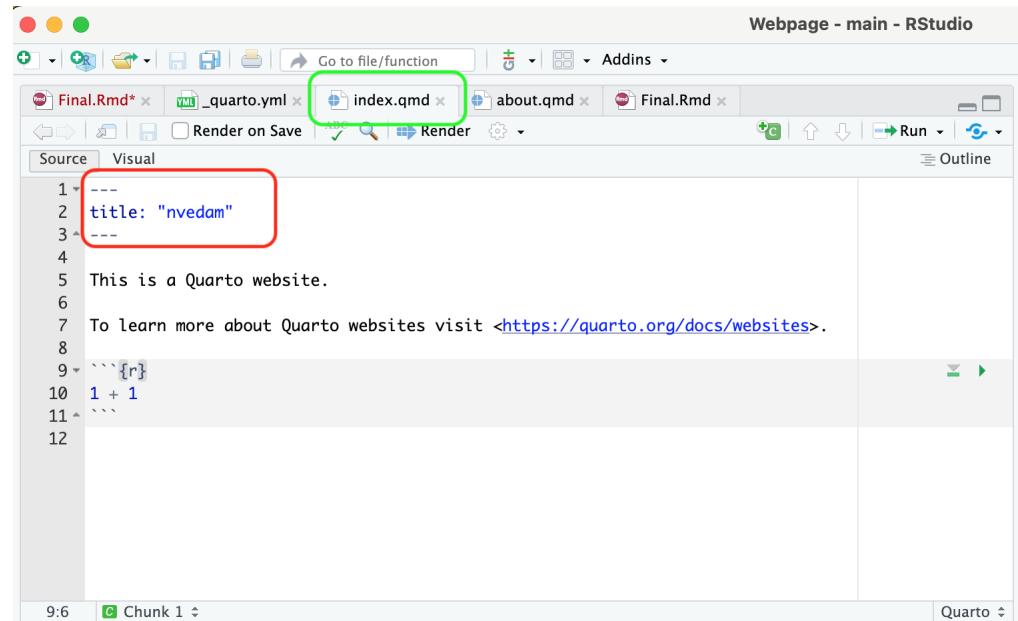
The screenshot shows the RStudio interface with the title "Webpage - main - RStudio". The code editor displays the `_quarto.yml` configuration file. The code is as follows:

```
1 project:
2   type: website
3
4 website:
5   title: "nvedam"
6   navbar:
7     left:
8       - index.qmd
9       - about.qmd
10
11 format:
12   html:
13     theme: cosmo
14     css: styles.css
15     toc: true
16
17 editor: visual
18
19
```

The code editor has syntax highlighting for YAML, with blue for keywords like `project`, `type`, `website`, etc., and red for errors. The status bar at the bottom shows "5:17" and "YAML".

Config files: Navigation bar

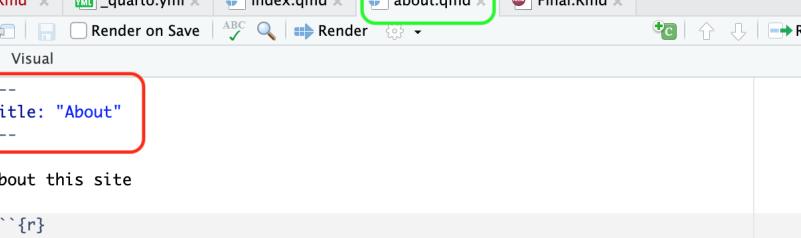
- Accordingly, **the tab to the index page** is named, "nvedam"



```
1 ---  
2 title: "nvedam"  
3 ---  
4  
5 This is a Quarto website.  
6  
7 To learn more about Quarto websites visit <https://quarto.org/docs/websites>.  
8  
9 ````{r}  
10 1 + 1  
11 ````  
12
```

Config files: Navigation bar

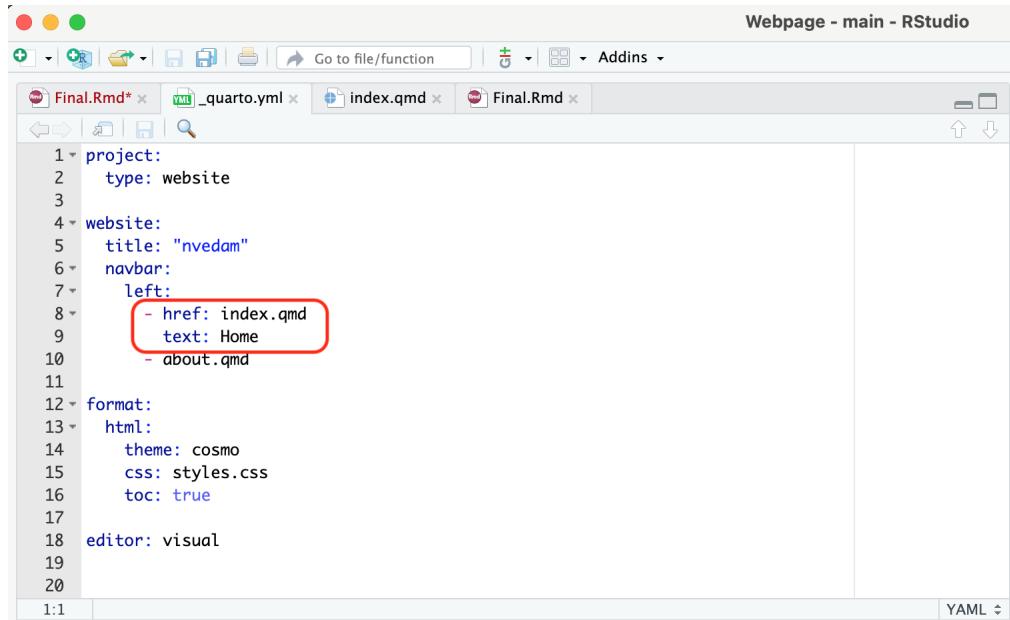
- Accordingly, the **tab to the about page** is named, "About"



```
1 |---  
2 title: "About"  
3 ---  
4  
5 About this site  
6  
7 ````{r}  
8 1 + 1  
9 ````  
10
```

Config files: Navigation bar

- If you want to change the name of these tabs in the navigation menu,
 - Use `href:` to hyperlink the file
 - Use `text:` to change the name of the tab
- Try the navigation options listed [here](#) to customise your navigation bar



```
Webpage - main - RStudio
Final.Rmd* _quarto.yml index.qmd Final.Rmd
project:
  type: website
  title: "nvedam"
  navbar:
    left:
      - href: index.qmd
        text: Home
      - about.qmd
  format:
    html:
      theme: cosmo
      css: styles.css
      toc: true
    editor: visual
```

The screenshot shows the RStudio interface with the '_quarto.yml' file open. The 'navbar' section is highlighted with a red box, specifically the part where 'index.qmd' is set as the href and 'Home' is set as the text. The RStudio status bar at the bottom right indicates 'YAML'.

Config files: Themes

- You can suit the theme of your webpage to your liking
- The available themes are [here](#)
- The default theme ([can be seen here](#)) is cosmo
- I have changed it to cyborg from the list in the webpage

Webpage - main - RStudio

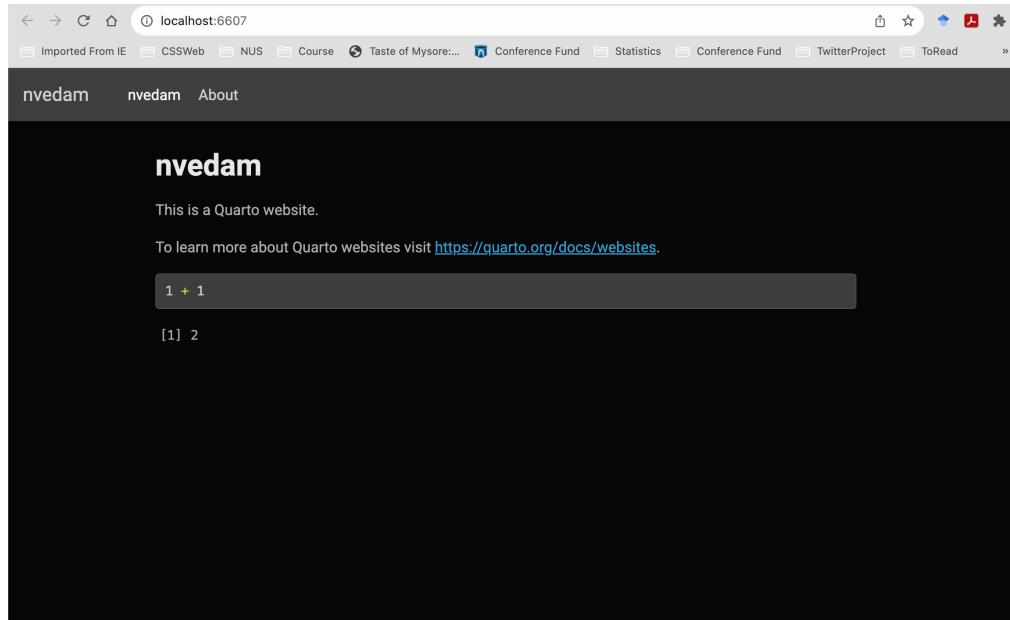
```

Final.Rmd* _quarto.yml index.qmd about.qmd Final.Rmd*
Go to file/function Addins

1 project:
2   type: website
3
4 website:
5   title: "nvedam"
6   navbar:
7     left:
8       - index.qmd
9       - about.qmd
10
11 format:
12   html:
13     theme: cyborg
14     css: styles.css
15     toc: true
16
17 editor: visual
18
19

```

13:12 YAML



Output with new theme

Config files: Title

- You can change the `title:` on your webpage
- The original title (**can be seen here**) is nvedam
- I have changed it to Hello now

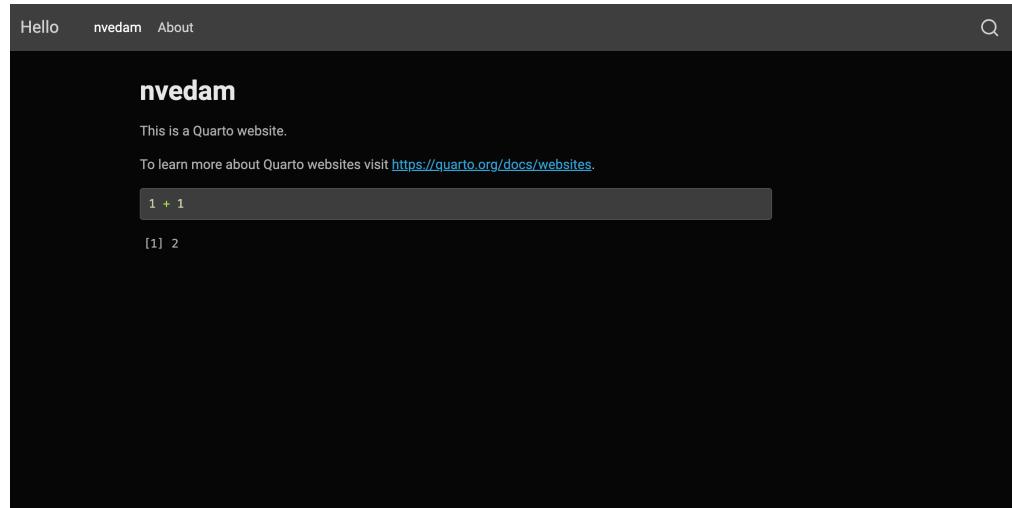
Webpage - main - RStudio

```

1 project:
2   type: website
3
4 website:
5   title: "Hello"
6   navbar:
7     left:
8       - index.qmd
9       - about.qmd
10
11 format:
12   html:
13     theme: cyborg
14     css: styles.css
15     toc: true
16
17 editor: visual
18
19

```

5:16 YAML



Output with new title

.qmd files: Text formatting

- They are the same as your `.Rmd` file
- You can insert content here like you did for all your code-alongs and challenges
- Some text formatting options are in the table

Markdown syntax	Output
<code>*italics*</code>	<i>italics</i>
<code>**bold**</code>	bold
<code>superscript^2^</code>	$\text{superscript}^2^$
<code>subscript~2~</code>	$\text{subscript}~2~$
<code>~~strikethrough~~</code>	strikethrough
<code>verbatim code</code>	verbatim code

.qmd files: Text formatting

- Headings for your page can be formatted using the syntax in the table
- More Markdown syntax can be found [here](#)

Markdown Syntax	Output
# Header 1	Header 1
## Header 2	Header 2
### Header 3	Header 3
#### Header 4	Header 4
##### Header 5	Header 5
###### Header 6	Header 6

.qmd file: Code

Enclose code snippets within `````

```
{r}
#| out.width: "80%"
#| label: fig-airquality
#| fig-cap: Temperature and ozone level.
#| warning: false
#| eval: FALSE

library(tidyverse)

ggplot(airquality, aes(Temp, Ozone)) +
  geom_point() +
  geom_smooth(method = "loess")
```

.qmd file: Images

Use the code below to insert the image

```
![alt text for screen readers](/path/to/image.png "Text to show on mouseover")
```

Alternately, you can also use this code enclosed within `````

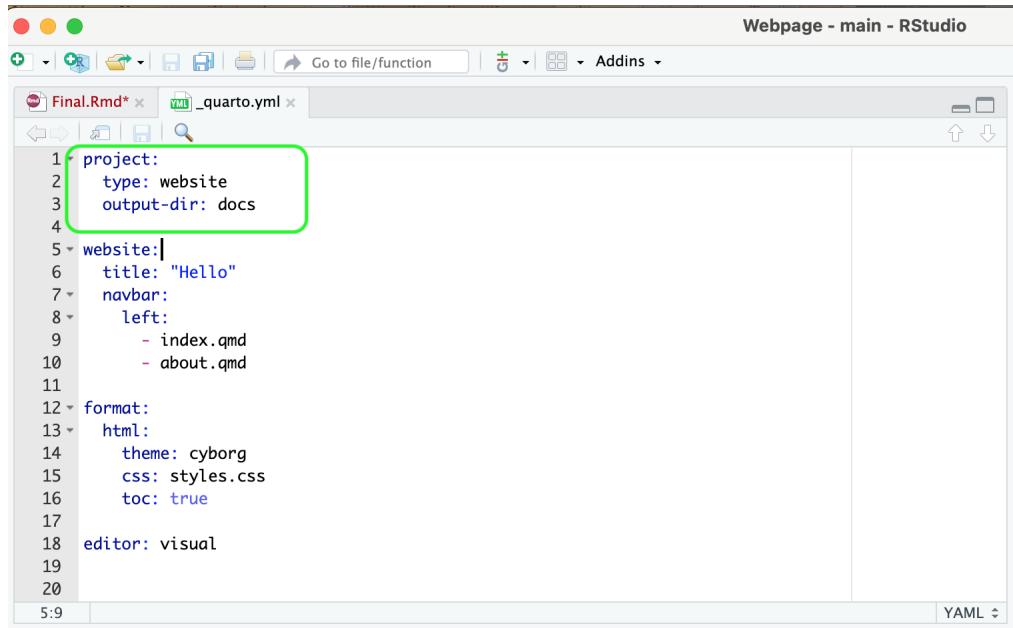
```
{r}
#| eval=FALSE
#| out.width="100%"

knitr:::include_graphics("path_to_fig")
```

More markdown basics can be found [here](#)

Publish your webpage

- Add `output-dir: docs` in the `.yml` file as shown in the Figure beside
- Once again, make sure that you have named your folder as
- Commit and push your folder to Github using your Github Desktop client
- Wait for a few minutes before accessing your webpage at, <https://githubusername.github.io>
- More instructions to publish using Github pages can be found [here](#)
 - Make sure you select "User or organization site"



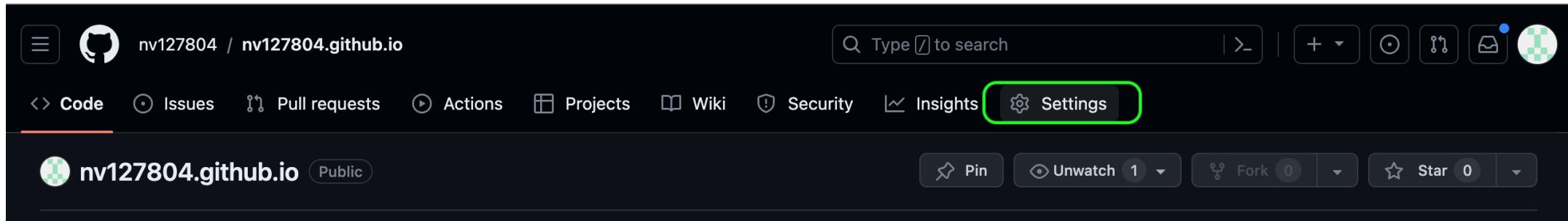
The screenshot shows the RStudio interface with the title bar "Webpage - main - RStudio". In the center, there is a code editor window with two tabs: "Final.Rmd*" and "YAML _quarto.yml". The "YAML _quarto.yml" tab is active, displaying the following YAML configuration:

```
project:
  type: website
  output-dir: docs
website:
  title: "Hello"
  navbar:
    left:
      - index.qmd
      - about.qmd
format:
  html:
    theme: cyborg
    css: styles.css
    toc: true
editor: visual
```

A green rectangular box highlights the first three lines of the YAML code, specifically the `project:` key and its associated values.

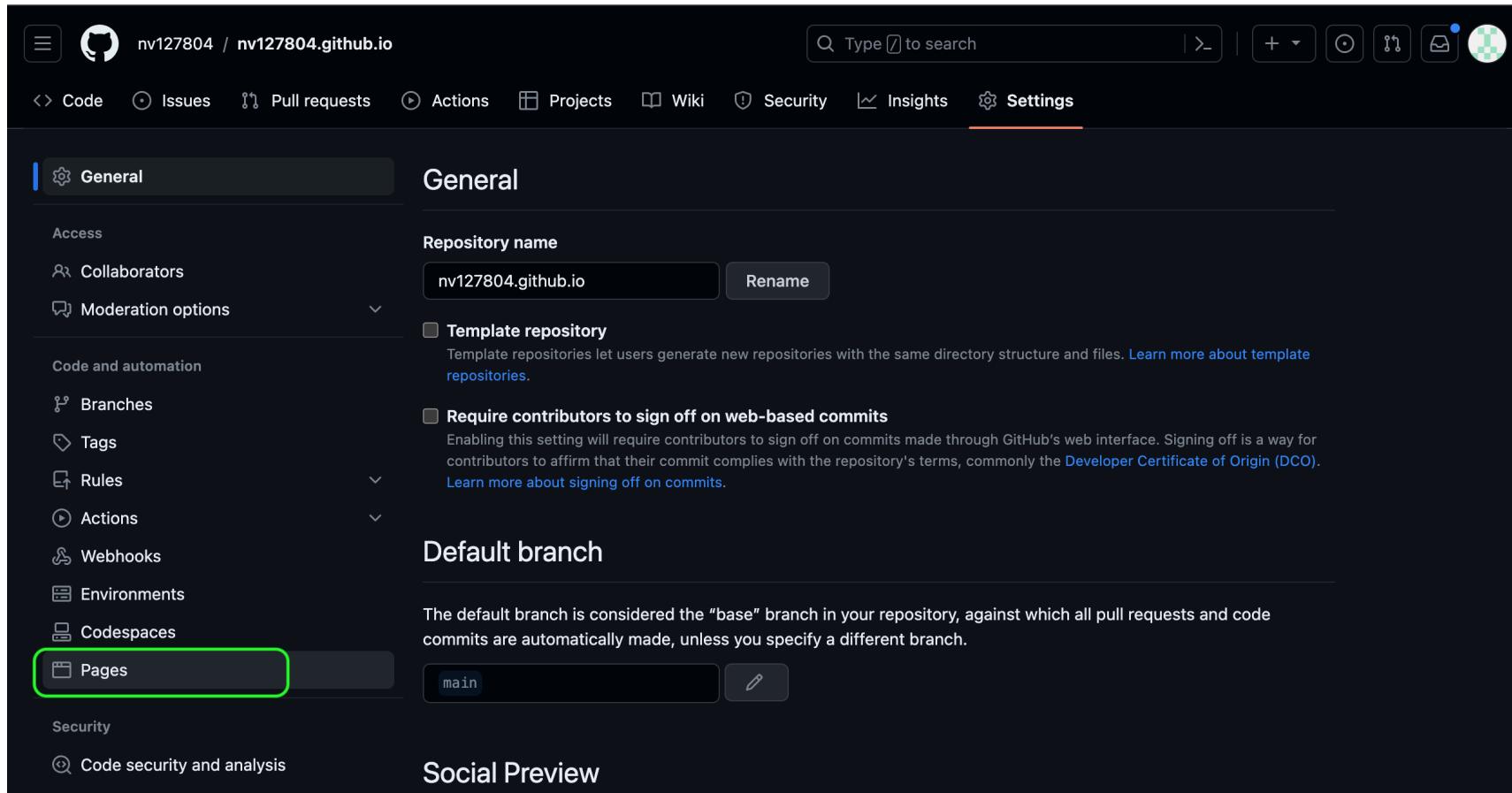
Publish your webpage

| Github.com -> githubusername.github.io repository -> Settings



Publish your webpage

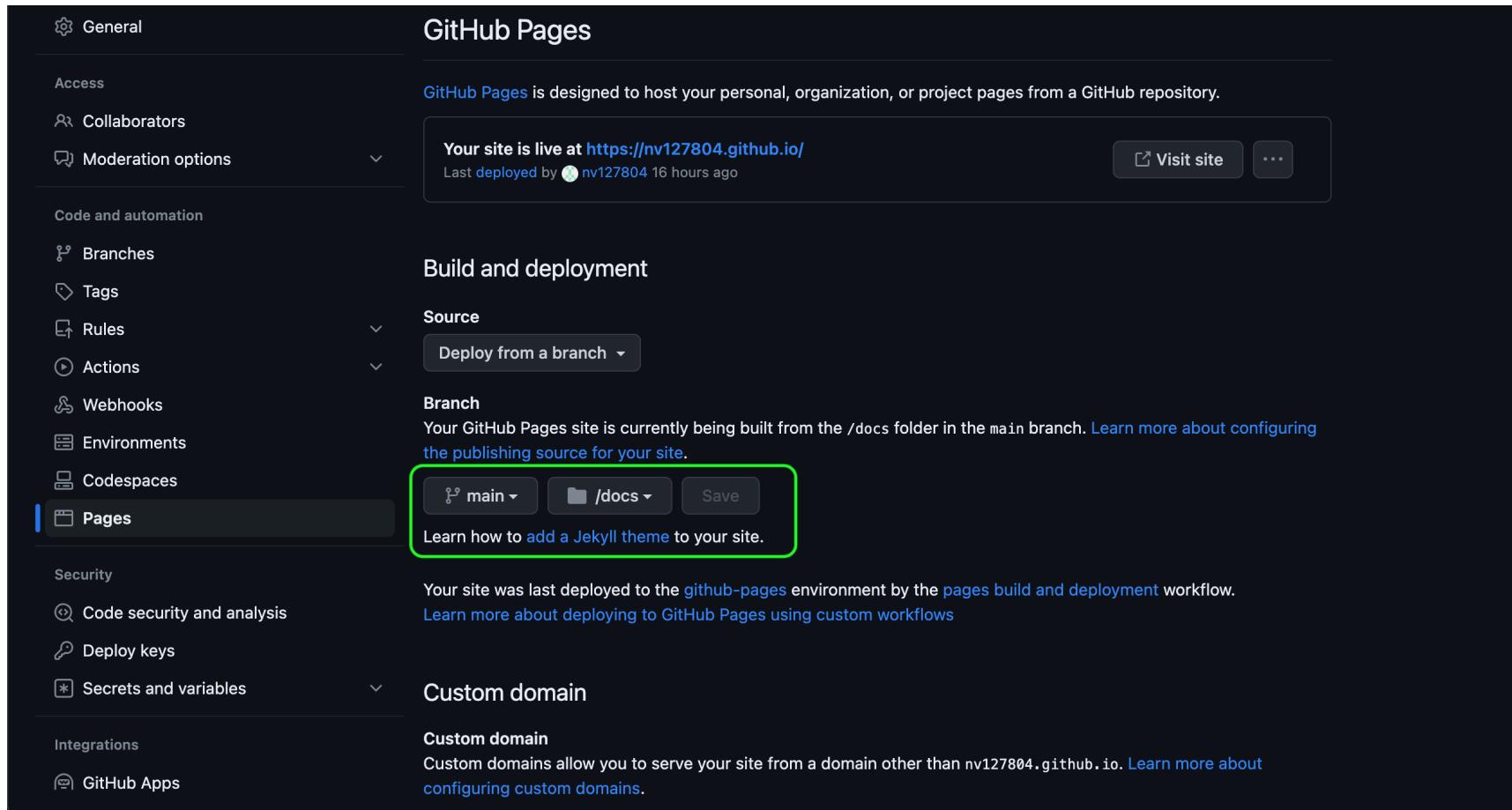
Pick pages from the Toolbar on the left side



The screenshot shows the GitHub repository settings page for 'nv127804 / nv127804.github.io'. The 'Settings' tab is selected. On the left, a sidebar lists various repository settings: General, Access, Collaborators, Moderation options, Code and automation (Branches, Tags, Rules, Actions, Webhooks, Environments, Codespaces, Pages), Security, and Code security and analysis. The 'Pages' option is highlighted with a green border. The main content area is titled 'General' and contains fields for 'Repository name' (nv127804.github.io) and 'Rename'. It also includes sections for 'Template repository' and 'Require contributors to sign off on web-based commits'. Below this is the 'Default branch' section, which explains the 'base' branch and shows 'main' as the current branch. At the bottom, there is a 'Social Preview' section.

Publish your webpage

Set the branch to main and folder to docs as shown in the figure



The screenshot shows the GitHub Pages settings page for a repository. The left sidebar has a dark theme with the following sections and their current state:

- General**: Selected.
- Access**: Unselected.
- Collaborators**: Unselected.
- Moderation options**: Unselected.
- Code and automation**: Selected.
- Branches**: Under "Code and automation", "main" is selected.
- Tags**: Under "Code and automation".
- Rules**: Under "Code and automation".
- Actions**: Under "Code and automation".
- Webhooks**: Under "Code and automation".
- Environments**: Under "Code and automation".
- Codespaces**: Under "Code and automation".
- Pages**: Selected.
- Security**: Unselected.
- Code security and analysis**: Unselected.
- Deploy keys**: Unselected.
- Secrets and variables**: Unselected.
- Integrations**: Unselected.
- GitHub Apps**: Unselected.

The main content area is titled "GitHub Pages" and contains the following information:

- A message: "GitHub Pages is designed to host your personal, organization, or project pages from a GitHub repository."
- A status message: "Your site is live at <https://nv127804.github.io/>" (Last deployed by nv127804 16 hours ago) with "Visit site" and "..." buttons.
- A "Build and deployment" section with a "Source" dropdown set to "Deploy from a branch".
- A "Branch" section stating "Your GitHub Pages site is currently being built from the /docs folder in the main branch." It includes a link to "Learn more about configuring the publishing source for your site." Below this, there are three buttons: "main" (selected), "/docs" (with a dropdown arrow), and "Save".
- A note: "Learn how to add a Jekyll theme to your site."
- Deployment details: "Your site was last deployed to the github-pages environment by the pages build and deployment workflow." and "Learn more about deploying to GitHub Pages using custom workflows".
- A "Custom domain" section with the note: "Custom domains allow you to serve your site from a domain other than nv127804.github.io. Learn more about configuring custom domains."

Publish your webpage

A typical personal webpage layout that you could use in your CV could contain,

- A tab describing yourself
- A tab with all the courses you have taken so far - it is always good that you update your projects and such details so that a prospective recruiter can see it
- Specific to this course, you can add a tab with your final project
- Here, each tab is a separate `.qmd` file like `index.qmd` and `about.qmd` in the example

Thanks!

Slides created via the  packages:

xaringan
gadenbuie/xaringanthemer.



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