R1: Static Site Generators

6.1040 Fall 2024

9/5/2024
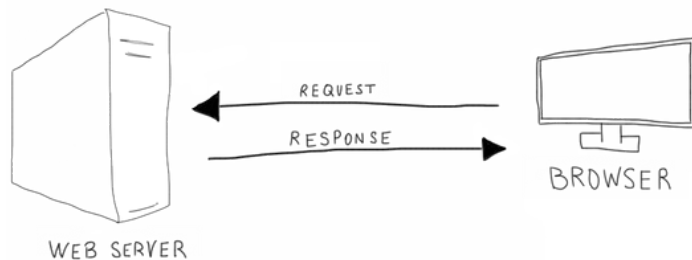
Roadmap

1. Introductions
2. What are Static Site Generators and VitePress?
3. VitePress concepts + Demo
4. Partner Exercise!

Static Sites

- Website where every user sees the same site and only site owners can modify the site

- Ways to build:
  - HTML + CSS from scratch
  - Website Builders (Wix, Squarespace, etc)
  - **Static Site Generators**

Why do we need yet another way to make static sites? What's wrong with the other ways?

REQUEST

RESPONSE

WEB SERVER

BROWSER

STATIC WEBSITE

Static Site Generators

- Tools for building static sites
- Ex: the class website (built using Jekyll), and many other documentation websites
- **VitePress**: the SSG we'll be using in 6.1040

Why VitePress in 6.1040?

- Uses Vue.js and Node.js, frameworks we use in the class
- Well supported and frequently updated
- Styles can be customized with custom CSS and Vue

VitePress: Key Concepts + Demo

- Key Concepts:
  - Markdown
  - Frontmatter
  - Layouts
  - Collections
- Follow along with your own repo!
  - **cd your-repo-path**
  - **npm run docs:dev**
  - Navigate to **localhost:5173** or wherever your local repo is running

Markdown

- A simple markup language that allows you to customize text with italics, bold text, numbered lists, images, links, etc. **without needing HTML**
  - Can still use HTML if something is not supported in MD
- Markdown Guide/cheat sheet

Element	Markdown Syntax

Heading	`# H1`
	`## H2`
	`### H3`

Bold	`**bold text**`
Italic	`*italicized text*`
Blockquote	`> blockquote`

Ordered List	`1. First item`
	`2. Second item`
	`3. Third item`

Unordered List	`- First item`
	`- Second item`
	`- Third item`

Front matter

- The metadata about a page
- Lies at the top of the markdown file
- Formatted in between 2 dashed lines

```
1    ---
2    title: Blog 1
3    layout: doc
4    ---
5
6    # Blog 1
7
8    Write some cool stuff here!
9
```
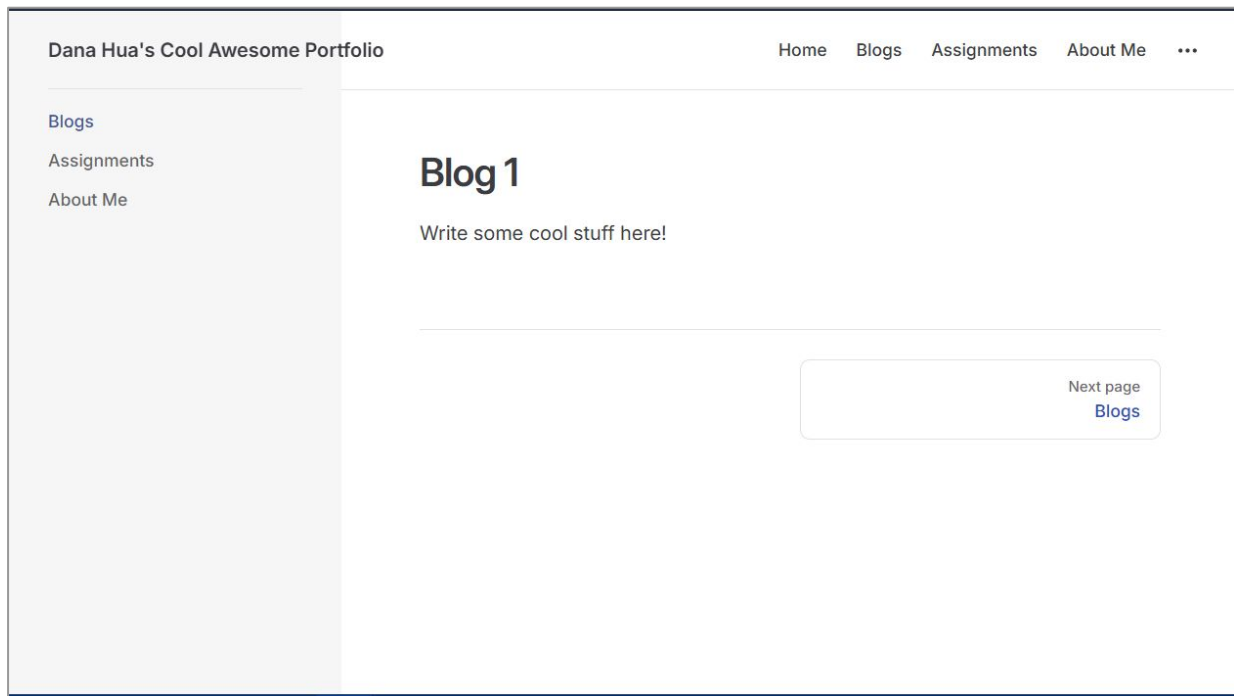
Front matter

Content

Layout

- Represents a certain way of generating a page
- VitePress has 3 layouts by default
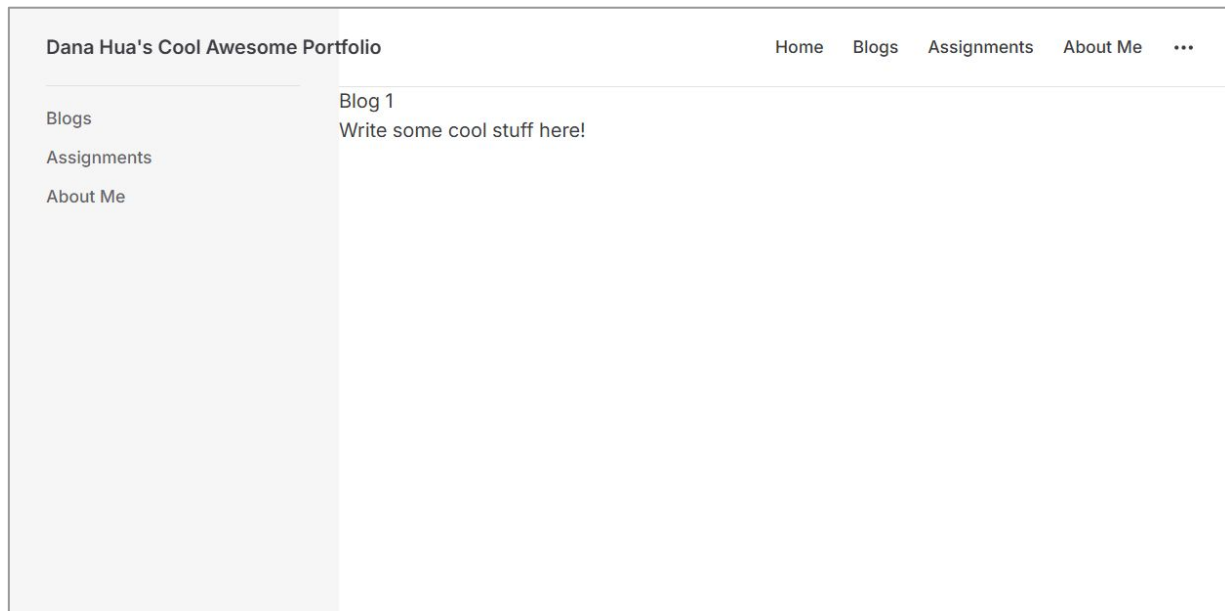   - **doc**
    - **page**
    - **home**

Layout: doc

- Menu
- Next/Previous page
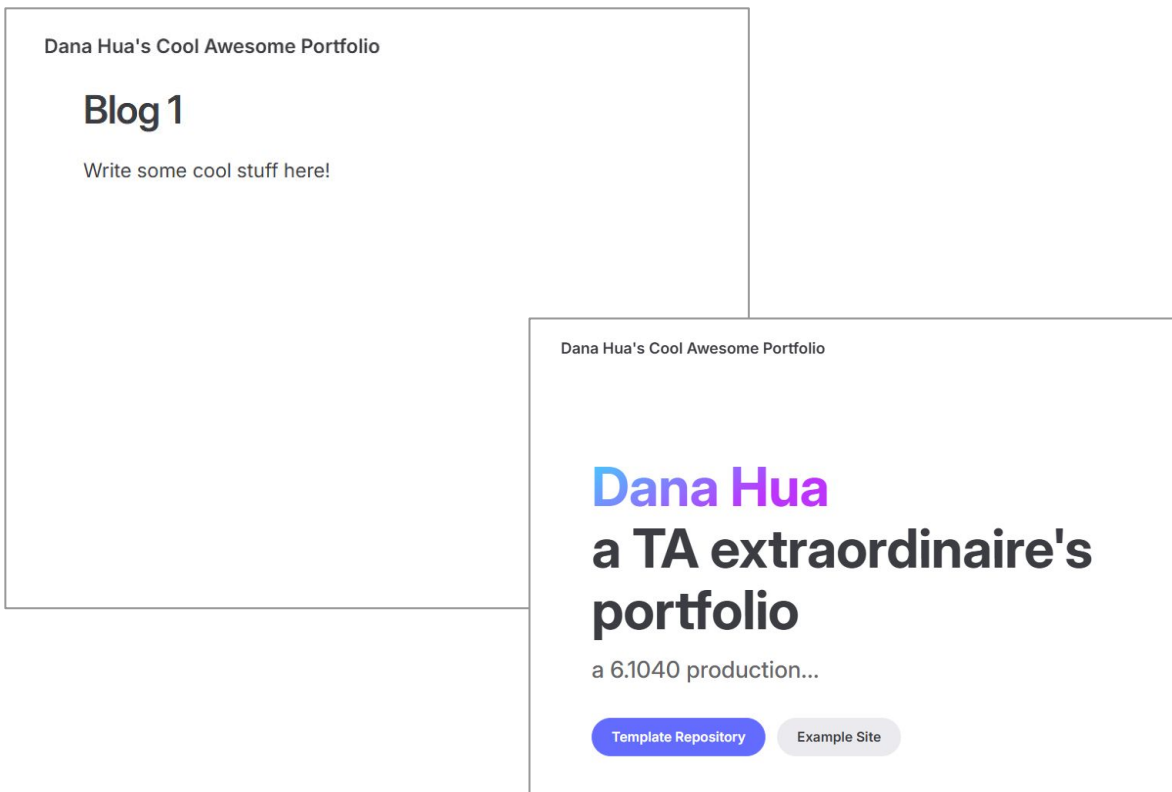- Styled to look like a document

Layout: page

- Menu
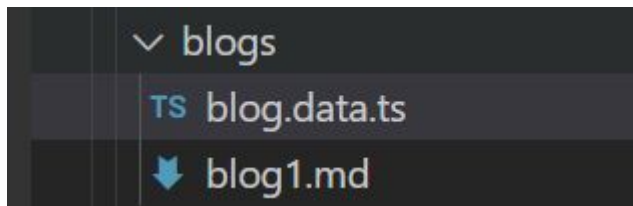- No automatic styling; add your own

Layout: home

- No menu
- Homepage styling
- Can add extra features (like the buttons)

Dana Hua's Cool Awesome Portfolio

Blog 1

Write some cool stuff here!

Dana Hua's Cool Awesome Portfolio

Dana Hua
a TA extraordinaire's portfolio

a 6.1040 production...

Template Repository   Example Site

Collections

- A collection is a number of files that are treated as a set
- In VitePress, you put all files of a collection into one directory, and add an export file
- **Example**: the blogs folder in your repo

```
∨ blogs
  TS blog.data.ts
  ⬇ blog1.md
```

```
TS blog.data.ts ✕

dhua-portfolio > docs > blogs > TS blog.data.ts > ...
  1    import { createContentLoader } from "vitepress";
  2
  3    export default createContentLoader("blogs/*.md");
  4
```

Exercise: Adding an about me page

1. Find a partner and introduce yourself!
2. Work together to add an about me page to your site (each partner should make a page for themselves)
   a. **Step 1**: create a new file, `about.md` and navigate to `/about.html` on your site
   b. **Step 2**: add a bio (who you are, where you're from, and what you're looking forward to in 6.1040)
   c. **Step 3**: add a profile picture to your page
   d. **Step 4**: add a link to your About Me page to the navbar/menu

Further Customization

- Further customization can be done by writing additional **Vue** or **CSS**
- You can try playing around with this in a few weeks after learning **HTML** + **CSS**!

Resources

- https://61040-fa24.github.io/pages/site-builders.html
- https://www.markdownguide.org/
- https://vitepress.dev/