Michael Diedrick
Jozi Schneider

How hard is it to bring a professional level, sustainable, advanced CMS to market?

Slides URL: byte.dev/fosdem

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Jozi Schneider

Greetings et Salutations!

Slides URL: byte.dev/fosdem

1. About Us
2. Project Manifesto
3. Parts of a Web Application
4. Parts of a CMS
5. Roadmap and Timeline
6. Case in Point: Signup
7. Totals

Jozi
Michael
Travis
Sonal

Ryan

Happy
Client
byte

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Project Manifesto

Every project needs a scope, but also needs an ethos including a list of things that it will NOT do.

1. Data Rules
2. Build Rules
3. Functionality Rules
4. Multiplication Factors

Project Manifesto: Data Rules

Data must be grokkable at every level and easy in/out.

1. Use a GUI for view / edit (like Sequel Pro)
2. Make it easy to export or switch databases
3. Make the DB itself simple - don't use database for stored procedures or forced relationships / cascading, instead use software
4. Use denormalized data and interface (vs extra tables)
5. ORMs are an abstraction too deep – SQL works!

Project Manifesto: Build Rules

Programming is too complicated already.

1. Does Sass/Less save time? No, skip it.
2. Does Typescript give magical powers? No, skip it.
3. Does TDD work at small scale? No, skip it.
4. Do you need a build step, even? No, skip it.

Then define the tools and frameworks you should use.

Project Manifesto: Functionality Rules

We as programmers like new and shiny. Don't (yet).

1. Should you build a billing system? Not yet.
2. Should you use websockets for live updates? No.
3. Should you build enterprise features? Not yet.
4. What about chat? Not until you need it.
5. What about administrator workflows / approvals? No.

We want to imagine a big future, but not build it until it's clearly next. We'll probably rebuild by then anyway.

Project Manifesto: Multiplication Factors

We added dark mode: 2 modes
We added builder mode: 2 modes
We added super admin mode: 2 modes

Now we have 2 x 2 x 2 tests for any interface change.

Mo modes, mo problems.

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Parts of a Web Application

1. Defining CI/CD
2. Interfaces
3. Data interfaces
4. Users accounts
5. Performance

Parts of a Web Application: Defining CI/CD

1. Hosting, Staging
2. Proofs of concept and experiments
3. Process, language styles for version control
4. Data backup / restore
5. Build / deploy process

Parts of a Web Application: Interfaces

1. Front end frameworks (like Vue)
2. Component libraries (like Quasar)
3. Design system (from brand)
4. Overall systems for z-index, animation, build
5. Notifications, modals for errors & successes

Parts of a Web Application: Data interfaces

1. API architecture
2. Live data via websockets, long polling, etc.
3. Data synching and offline management

Parts of a Web Application: User Accounts

1. Login / logout / lost pw / 2FA / banning, etc.
2. Cookies, other auto-login systems
3. Billing / subscriptions

Parts of a Web Application: Performance

1. Error tracking
2. Error management (warning, bugs, notices, etc.)
3. Server processing time and time reporting

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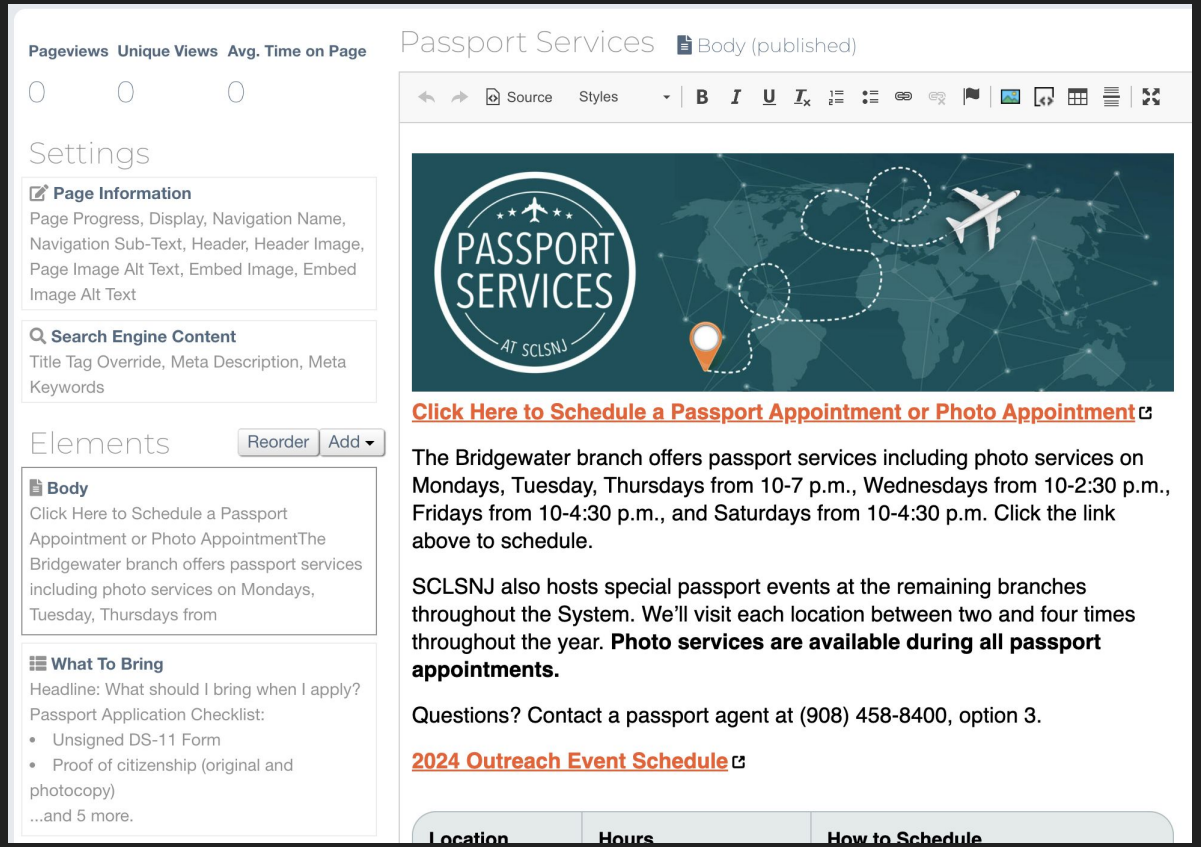
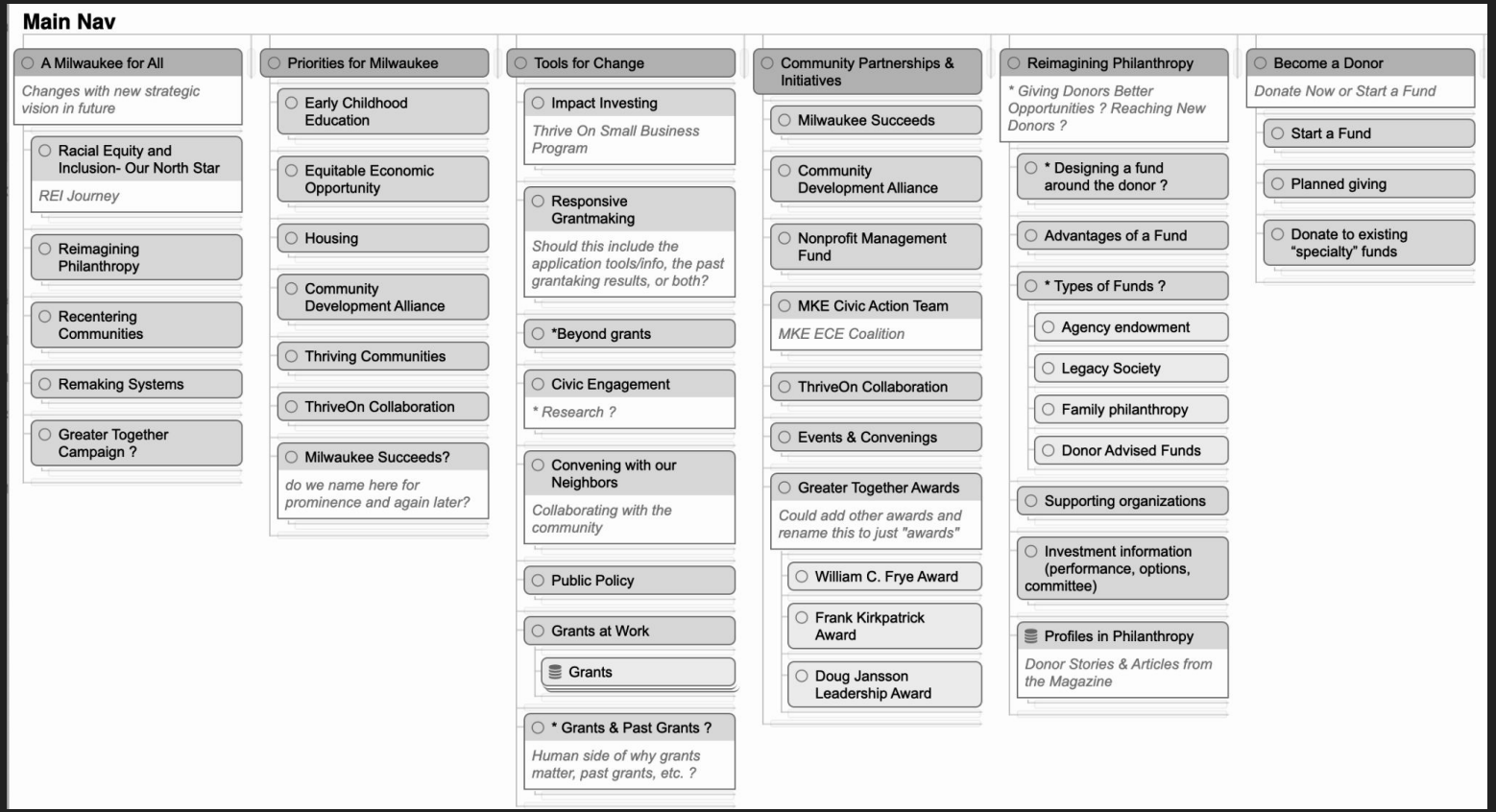
Parts of a CMS

1. Page management (pages and page elements)
2. Navigation management (hierarchical data)
3. Digital Asset Manager
4. Buckets (content on many pages)
5. Data Sources (for events, campaigns, etc.)
6. Themes
7. Settings
8. Admin accounts, processes
9. Search indexes, systems (front and back end)
10. Dashboards and specialized tools

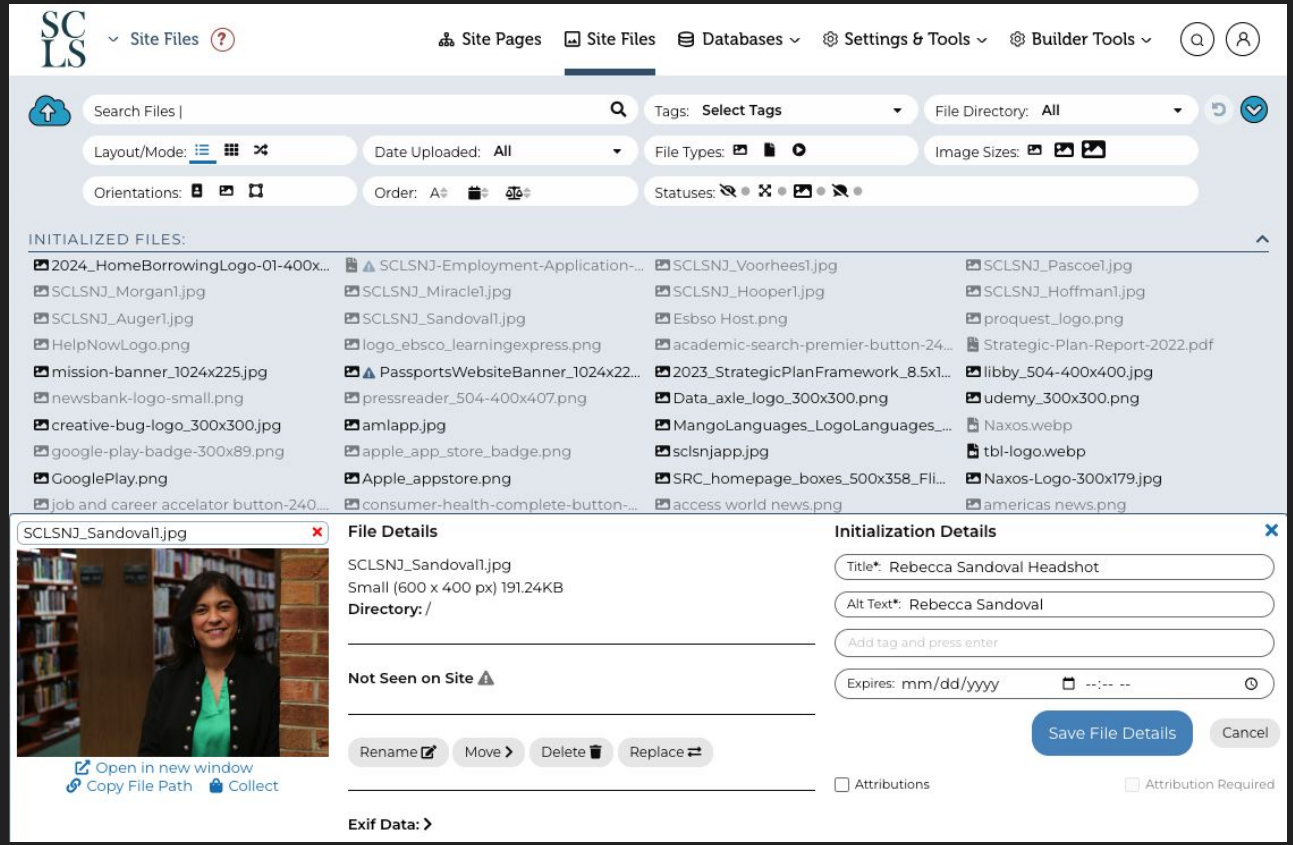
Parts of a CMS: Page Management



Parts of a CMS: Navigation Management



Parts of a CMS: Digital Asset Manager



Parts of a CMS: Buckets

Dr. Seuss Book Readings

Hey, take a look at the earthlings. Goodbye! Yeah, but your scientists were so preoccupied with whether or not they...

Read Blog Post

An Adult-Themed Post

A short lil post about something for adults

Read Blog Post

See All Blogs

Recent Blogs

Save Bucket | Preview

Name: Recent Blogs

Page Regions

All Pages	Home Page	Secondary Landing Pages
☐ Overlay	☐ Left Column	☐ Bottom Left Column
☐ Header Hours	☐ Quicklinks	☐ Bottom Right Column
☐ Header Social Icons	☐ Right Column	☐ Below Page Content
☐ Footer Contact Bar	☐ Top Right Column	
☐ Left Footer	☐ Home Before Podcast Section	
	☐ Home After Podcast Section	
	☐ Home Bottom	

All Pages (Except Home)	Kids page
☑ Right Sidebar	☐ Kids Sidebar

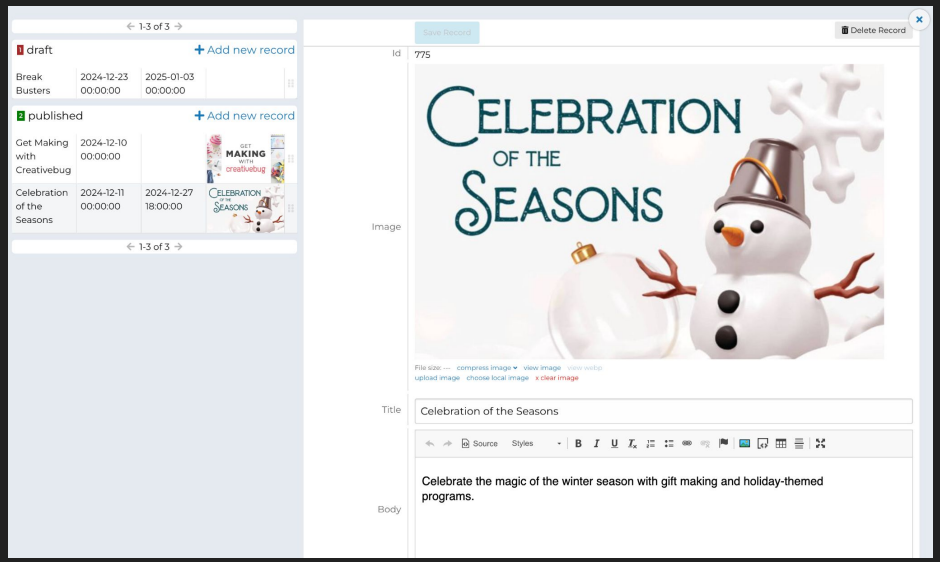
Title:

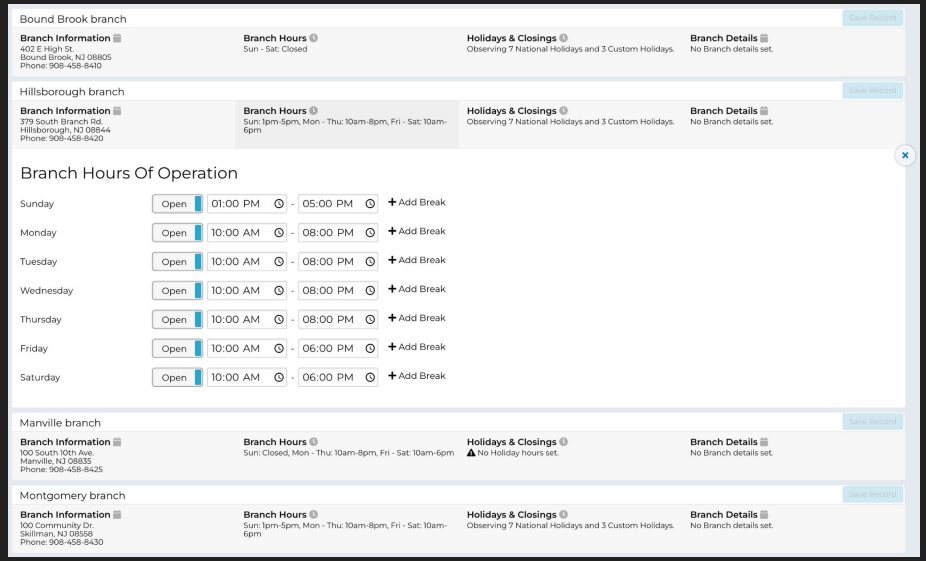
☑ Show bucket at all times

☑ Show bucket on all pages

Delete Bucket | Save Bucket

Parts of a CMS: Data Sources

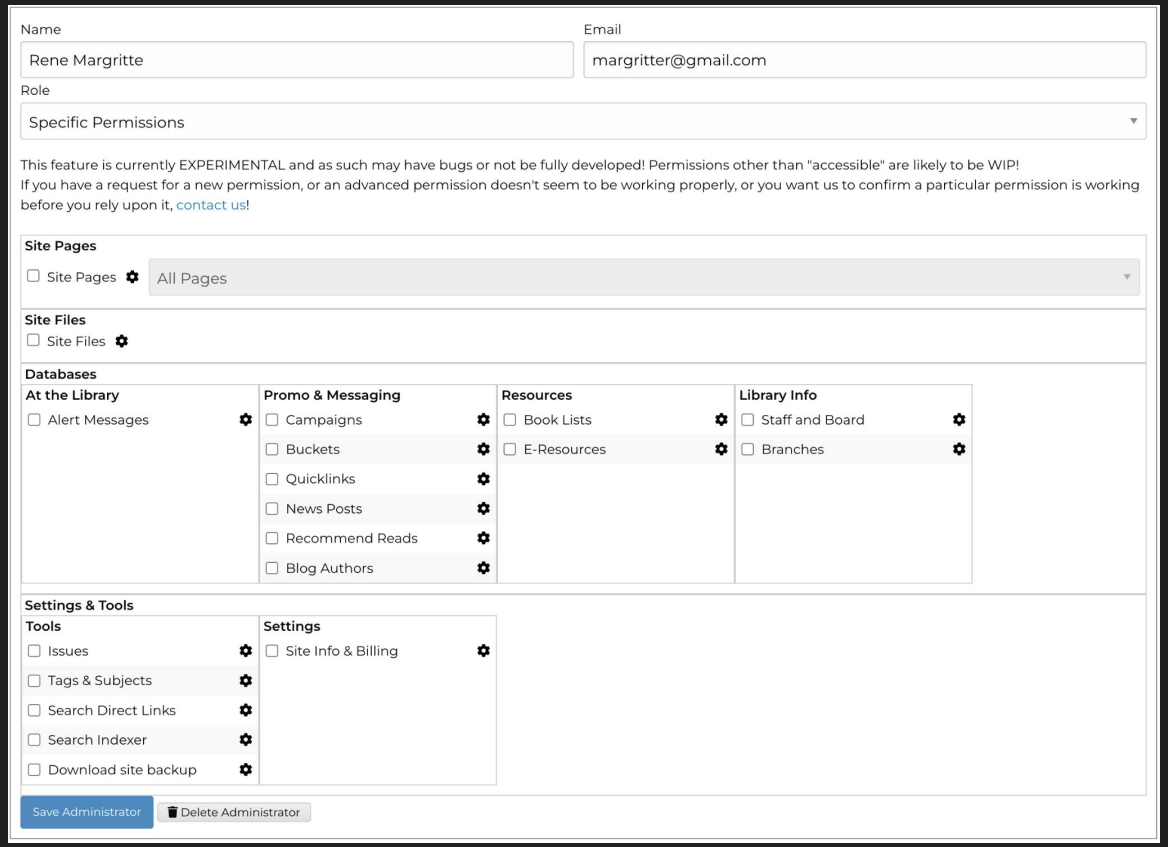




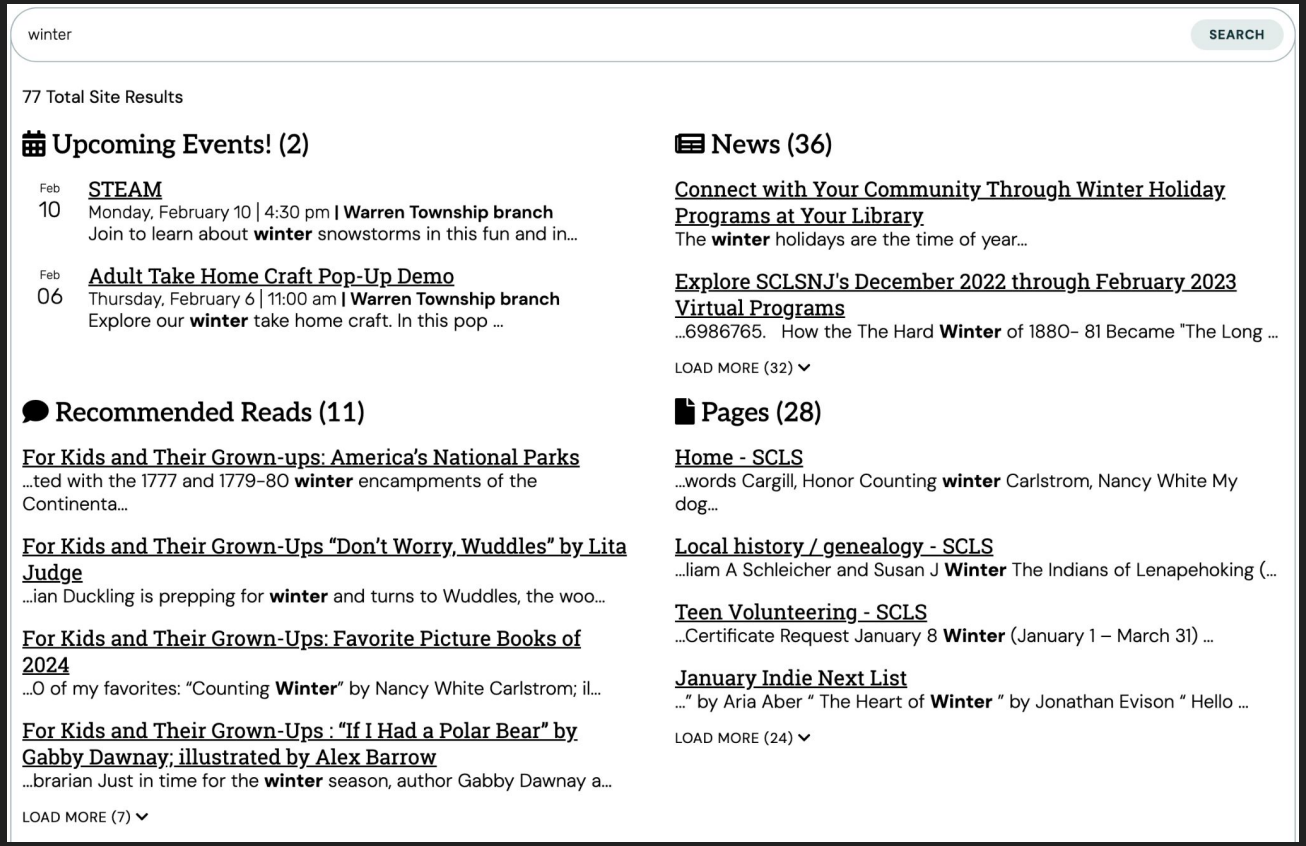
Parts of a CMS: Themes

Parts of a CMS: Settings

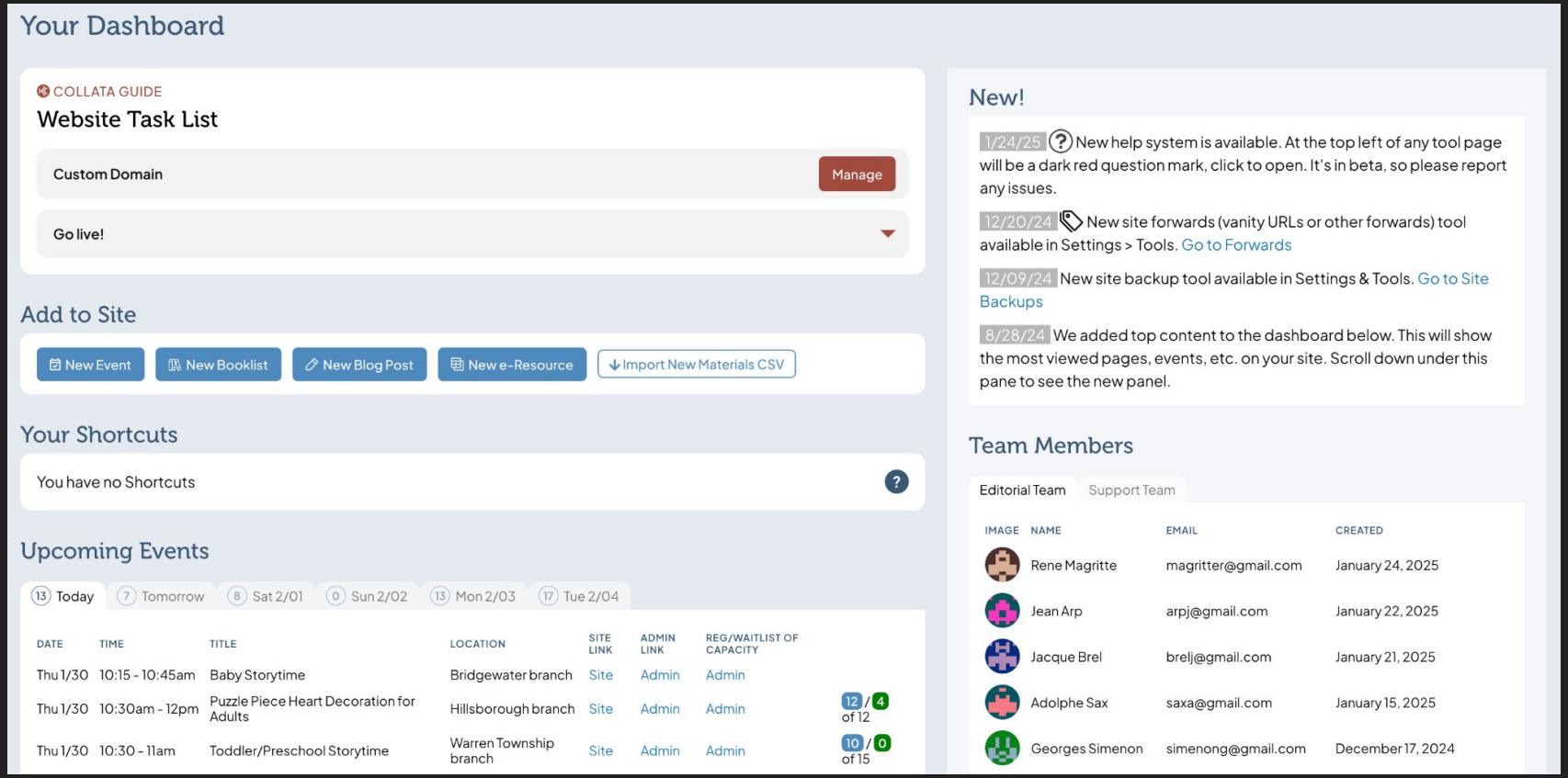
Parts of a CMS: Admin Accounts



Parts of a CMS: Search Indexes



Parts of a CMS: Dashboards & Special Tools



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Roadmap & Timeline

7/25/24

2020

TASKS

- Idea Development ✓
- Schema Modeling ✓
- Information Architecture ✓
- Full Twig FE ✓

2021

TASKS

- Import Live Sites ✓
- API Development ✓
- Internal Documentation ✓
- Brand ✓
- Build ✓

2022

TASKS

- Custom Tools ✓
- FE Data Modeling ✓
- Issues System ✓
- Server/git/Github ✓
- Standalone POC ✓

2023

TASKS

- Collata Website ✓
- Signup Process ✓
- Signup Sitemaps ✓
- Signup Live ✓
- Functiona Testing ✓

2024

TASKS

- 3 Distinct FE Themes
- Site Editor v4
- Documentation

2025

TASKS

- Full Mobile
- Issues v2
- Standalone
- Standalone Migration
- Standalone Open Source Site
- Full Commerce
- Spaces Commerce?
- Marketing

2026

TASKS

- Standalone Migration
- Full Commerce
- Spaces Commerce?
- SSO?
- Export Publishing?
- Design System?

Roadmap & Timeline: 2020

1. Idea Development ✓
2. Schema Modeling ✓
3. Information Architecture ✓
4. Full Twig Front End ✓

Deliverable: Proofs of Concept

Roadmap & Timeline: 2021

1. Import Live Sites (data checks) ✓
2. API Development ✓
3. Internal Documentation ✓
4. Branding ✓
5. Build System ✓

Deliverable: Beta Sites

Roadmap & Timeline: 2022

1. Custom Site Tools ✓
2. Front End Data Modeling ✓
3. Issues System ✓
4. Server/git/Github ✓
5. Standalone Open Source POC ✓

Deliverable: First Production Site Live

Roadmap & Timeline: 2023

1. Collata Website ✓
2. Signup Process ✓
3. Signup Sitemaps ✓
4. Signup ✓
5. Functional Testing ✓

Deliverable: Second Production Site Live

Roadmap & Timeline: 2024

1. 3 Distinct Front End Themes
2. New Page Editor Design
3. Documentation
4. GCSV Export and Import System

Deliverable: Sign up live; Third and forth site live

Roadmap & Timeline: 2025

1. Full Mobile
2. Issues v2
3. Standalone and Standalone Migration
4. Open Source Site
5. Marketing

Deliverable: Fifth Site Live; Open Source Released

Roadmap & Timeline: 2026

1. Standalone Migration
2. Full Commerce
3. Export Publishing
4. Design System

Deliverable: ???

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Case in Point: Signup

Purpose:

Actually create the site, configs, create administration accounts, create the site map, load branch information, choose a theme, etc.

Case in Point: Signup

Process:

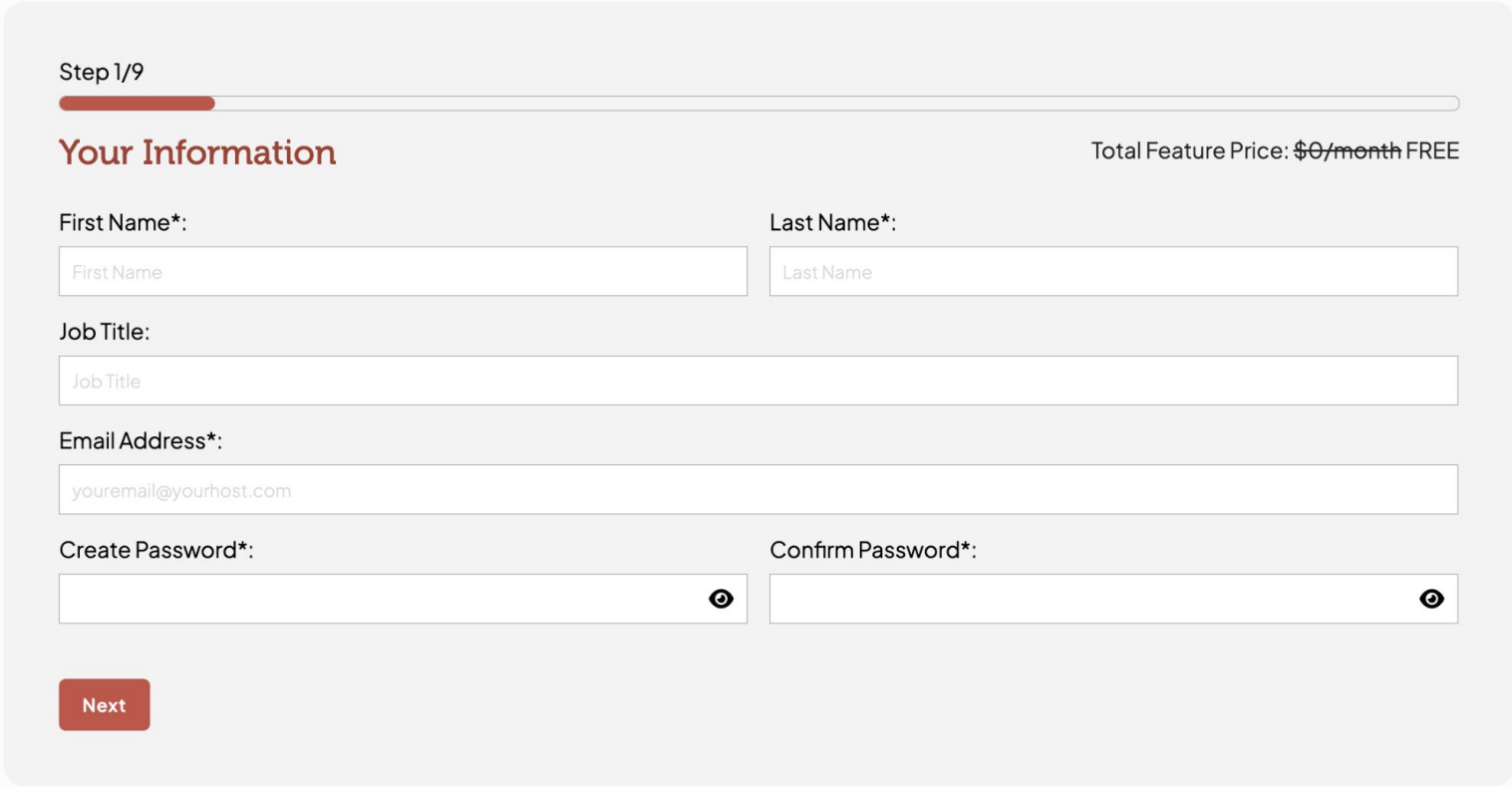
1. Wireframe and design signup process (1 month)
2. HTML/CSS, JS (Vue application) (1 month)
3. Signup API (2 months)
4. Testing/Tuning (1 month)

Case in Point: Signup

Process:

1. Wireframe and design signup process (1 month)
2. HTML/CSS, JS (Vue application) (1 month)
3. Signup API (2 months)
4. Testing/Tuning (1 month)
5. Scope expansion (!)
6. Scope expansion (!!)
7. Scope expansion (!!!!)
8. Scope expansion (!)
9. Scope expansion (!!!!)

Case in Point: Signup



Case in Point: Signup

Step 2/9

About the Library/Org.

Total Feature Price: ~~$0/month~~ FREE

Library/Org. Name*:

Library/Org. Name

Staging URL*:

staging-url .digitalbranch.org

Library Service Population*:

select...

Social Media: URL:

Facebook URL

Add a social presence

Previous Next

Case in Point: Signup

Step 3/9

Branches

Total Feature Price: ~~$18/month~~ FREE

Main Branch:

Name: Library name

Address: Address

City: City

Zip: Zip

Phone Number: (123) 456-7890

Base Hours (edits such as special/summer hours, holidays, and split hours will be available to manage after signing up):

		Opens At*:		Closes At*:
Sunday	closed	--:-- --	-	--:-- --
Monday	closed	--:-- --	-	--:-- --
Tuesday	closed	--:-- --	-	--:-- --
Wednesday	closed	--:-- --	-	--:-- --
Thursday	closed	--:-- --	-	--:-- --

Case in Point: Signup

Step 4/9

Library Features

Total Feature Price: ~~$18/month~~ FREE

Catalog (ILS) URL (for site links) *:

https://ils.mylibrary.org

ILS Public Name (for site links)*:

Our Library Catalog

ILS Vendor*:

Vendor Name

Previous Next

Case in Point: Signup

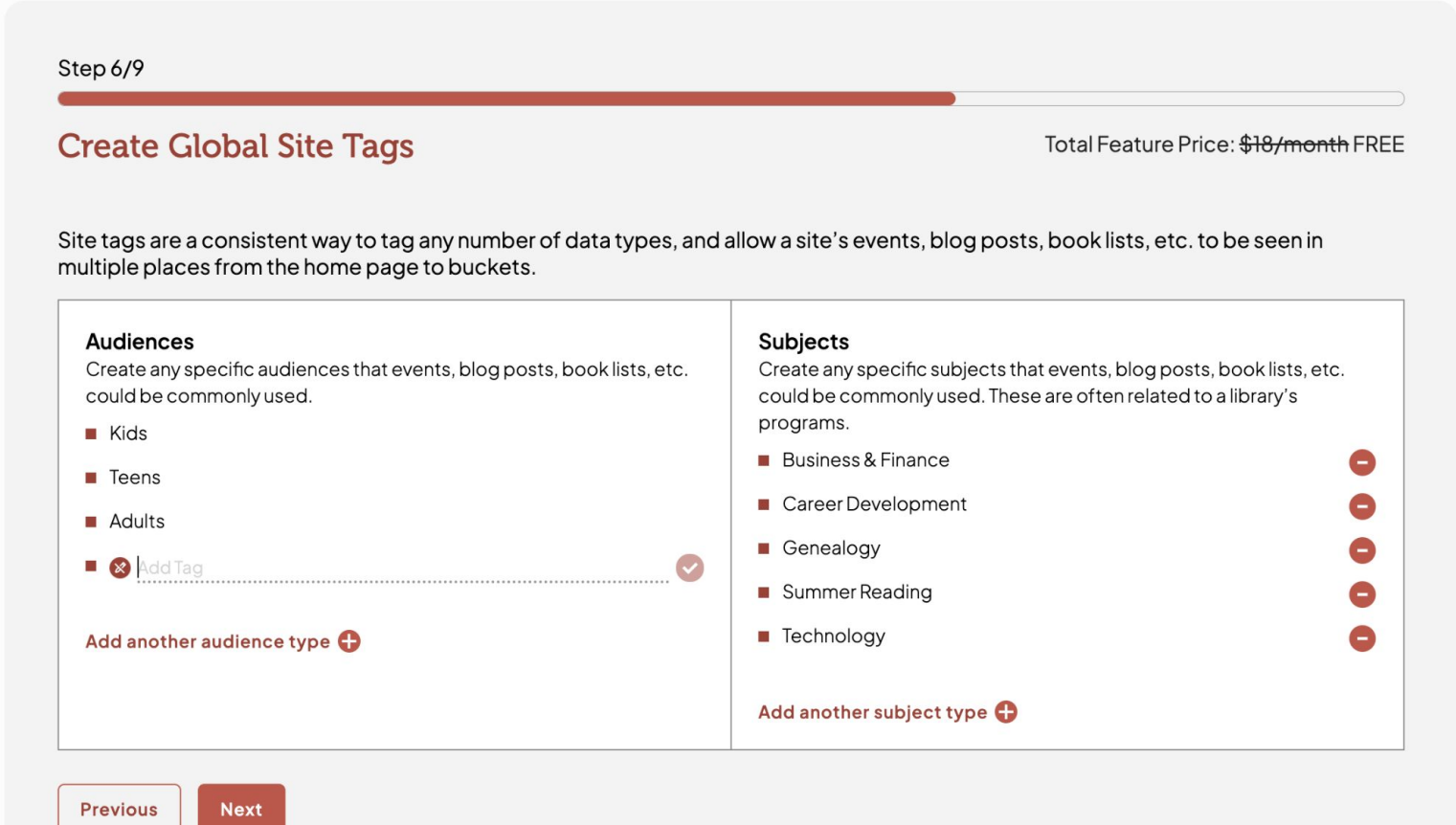
Step 5/9

Website Features

Total Feature Price: ~~$18/month~~ FREE

- [ ] **Custom Domain** - *$10/month*
  Bring your own domain and we'll manage the security certificates. (Otherwise use the yourname.digitalbranch.org staging name.)
- [ ] **Blogs** - *$5/month*
  Blogs (or news) are an explorable and taggable yet ephemeral way to communicate programs and events, and have can be added to other pages and tools.
- [ ] **Book Lists** - *$5/month*
  Create book lists around audiences, interests, librarian favorites, etc. Can be books, e-books, DVDs and other non-book materials.
- [ ] **Events** - *$10/month*
  Events, including events calendar with list and month view, individual event pages, start and end dates and more.
- [ ] **Meeting and Minutes Manager** - *$5/month*
  Have a simple, clear database of meetings, meeting minutes, youtube or other video/audio embeds and other documents related to each meeting.
- [ ] **Event Registrations** - *$25/month*
  Event reservations including wait lists, maximum spaces, reservation guests, event notifications via email, event lists and actions and more.
- [ ] **Site Users** - *$5/month*
  User accounts to allow people to see their and previous events registrations or space reservations. (Requires Event Registrations or Space Reservations)
- [ ] **Spaces** - *$5/month*
  Describe and Display special spaces within your library
- [ ] **Space Reservations** - *$25/month*
  Full space reservations system, including space hours, min/max
- [ ] **Staff and Board** - *$5/month*
  Allows for staff and board database.
- [ ] **Podcasts** - *$5/month*
  Load from your podcast provider's RSS feed for an on-site embed, and include in site
- [ ] **Eresources** - *$5/month*
  Dynamic List of Eresources the library provides, including an explorable interface, search

Case in Point: Signup



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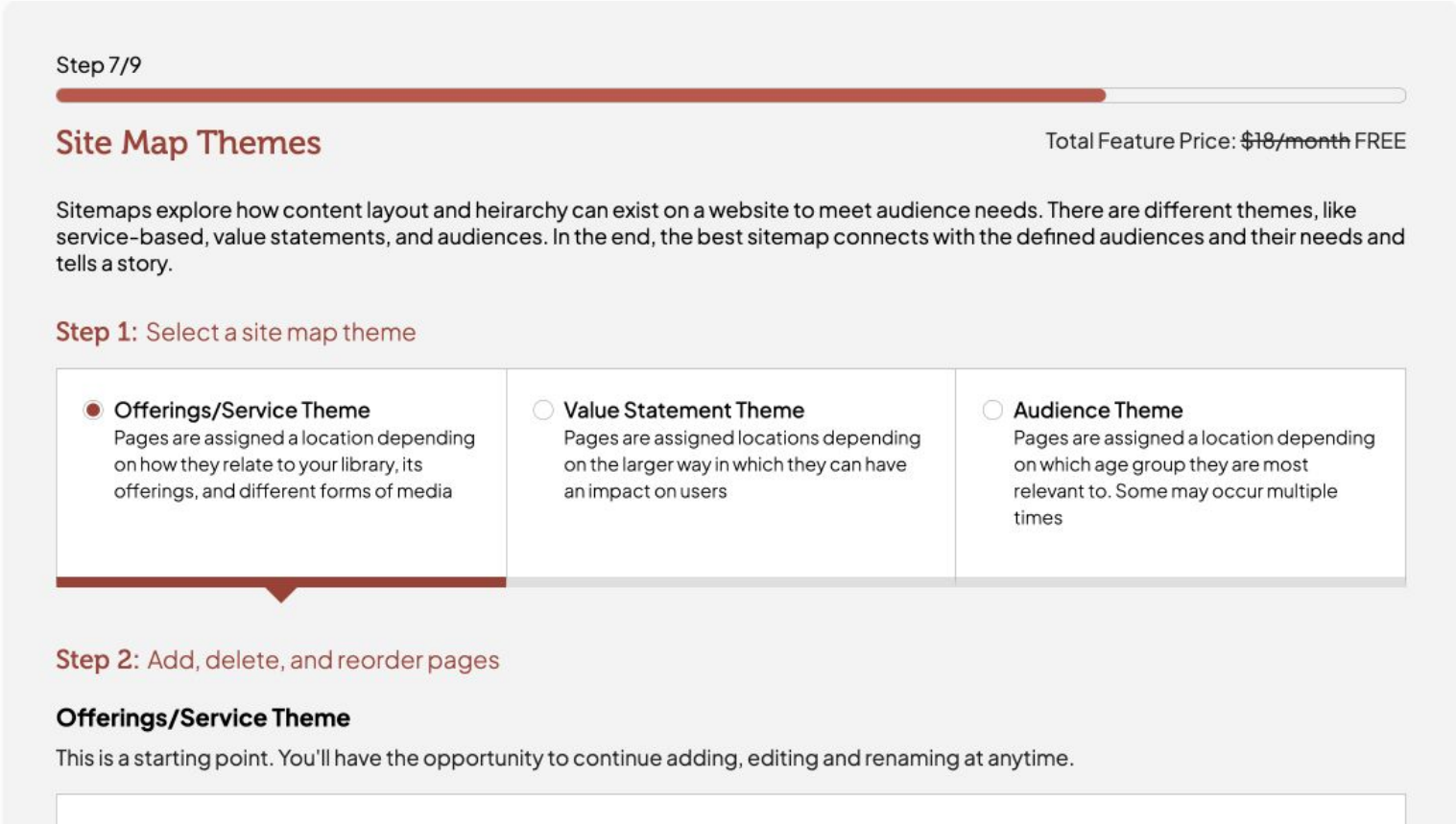

offerings, and different forms of media

an impact on users

relevant to. Some may occur multiple times

Step 2: Add, delete, and reorder pages

Offerings/Service Theme

This is a starting point. You'll have the opportunity to continue adding, editing and renaming at anytime.

Main Navigation

The main navigation tells a story and ends with actions

- Books & Media
  - Books & eBooks
  - Interlibrary Loan
  - Digital Magazines & Newspapers
  - Suggest a Title
  - Book Lists
  - Pathfinder Pages
- Watch & Listen

Utility Navigation

The utility navigation goes above the main navigation and should be indexable and useful

- Account Overview
  - Password Reset
  - Manage Registrations
  - Manage Reservations
- Get a Library Card
- Catalog
- About Us
  - Mission & Vision

Footer Navigation

The footer will display the full site map for easy searching and house other useful links

- Privacy Policy

Add another section

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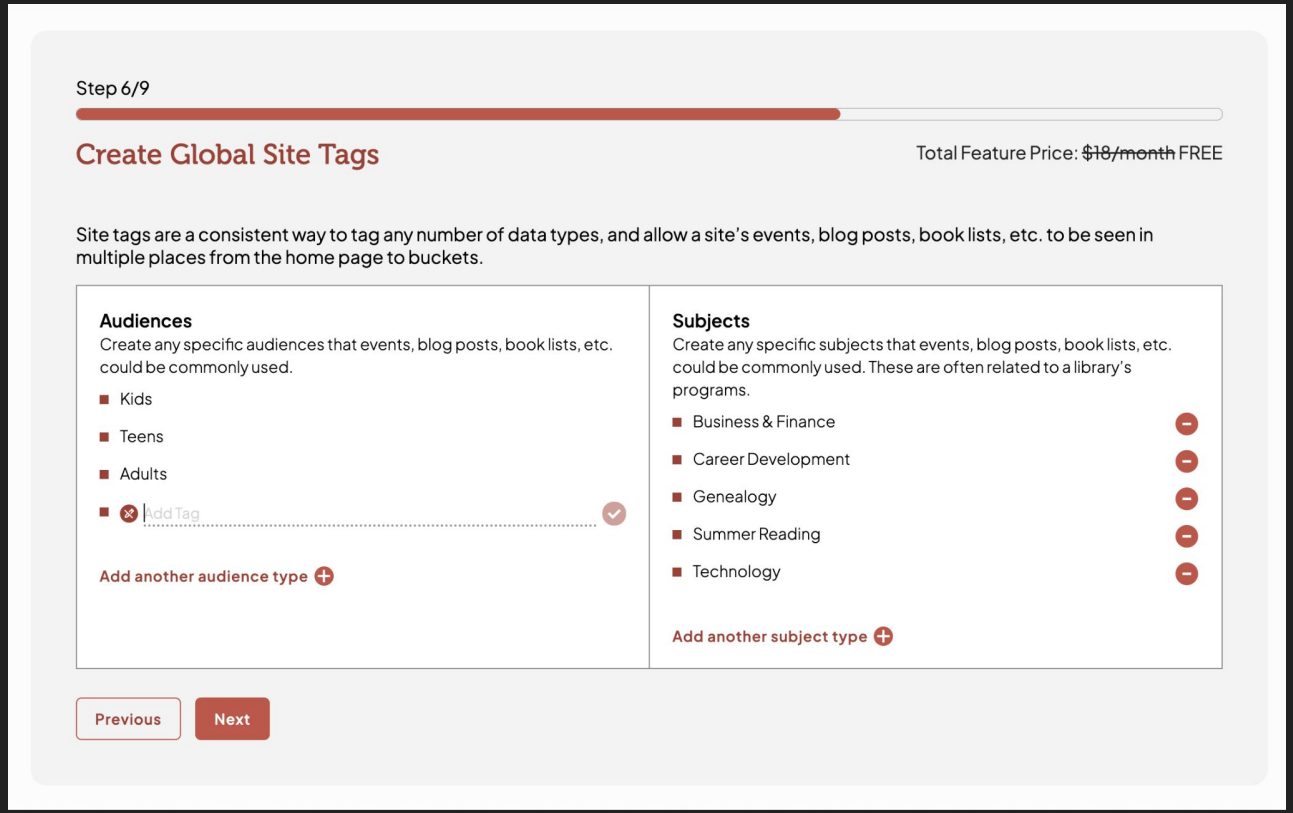
7. Difficulty (Time Totals)

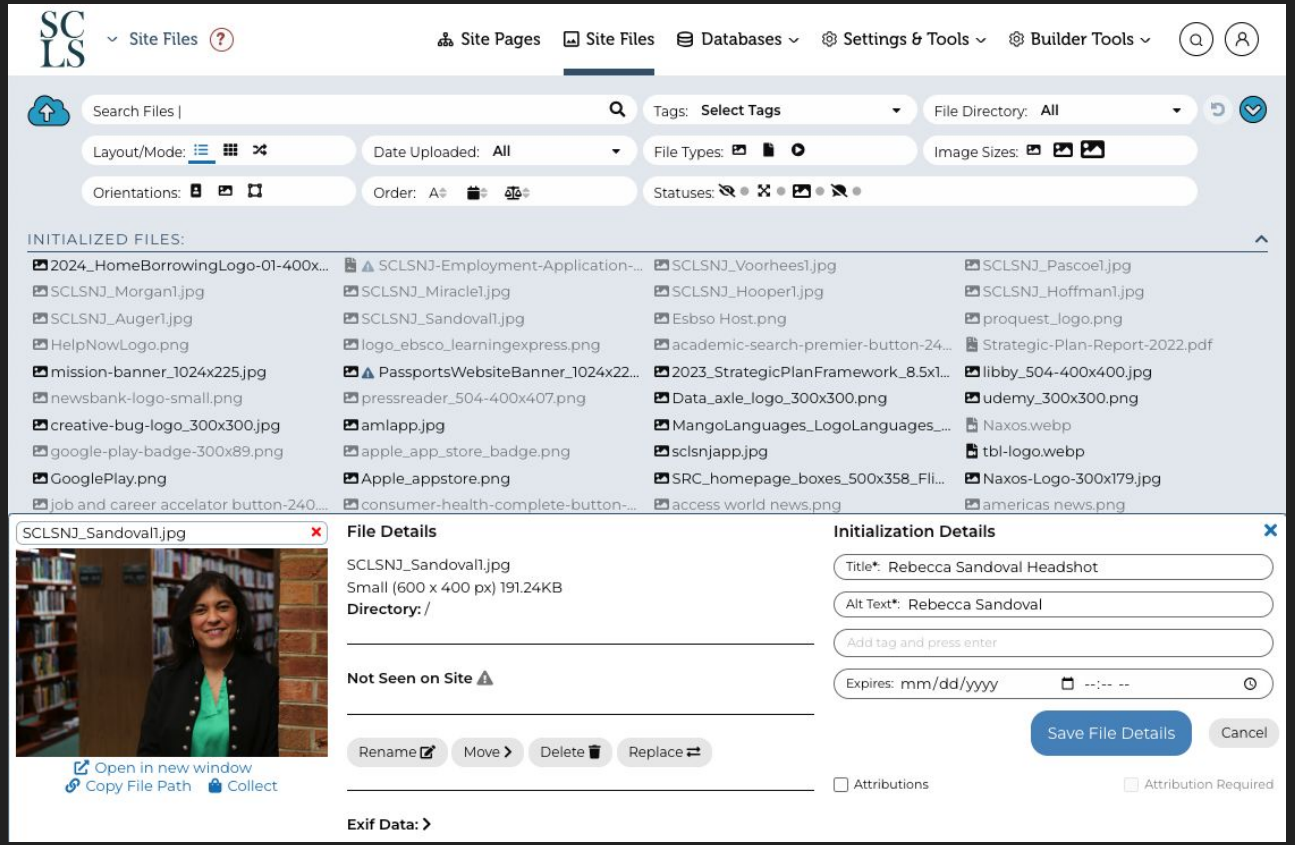
Difficulty (Time Totals By Feature)



Signup

5 Months

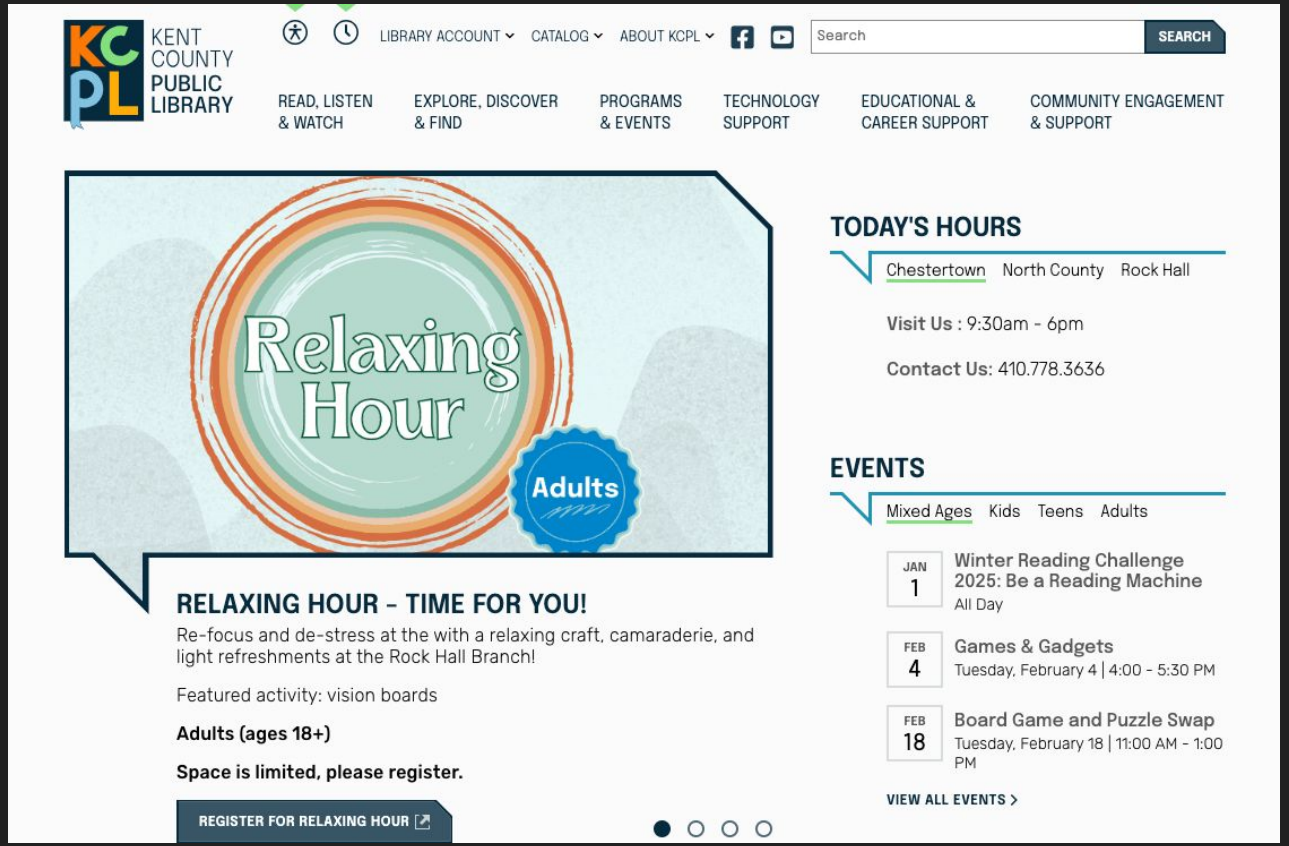
Difficulty (Time Totals By Feature)



Digital Asset Manager

6 Months

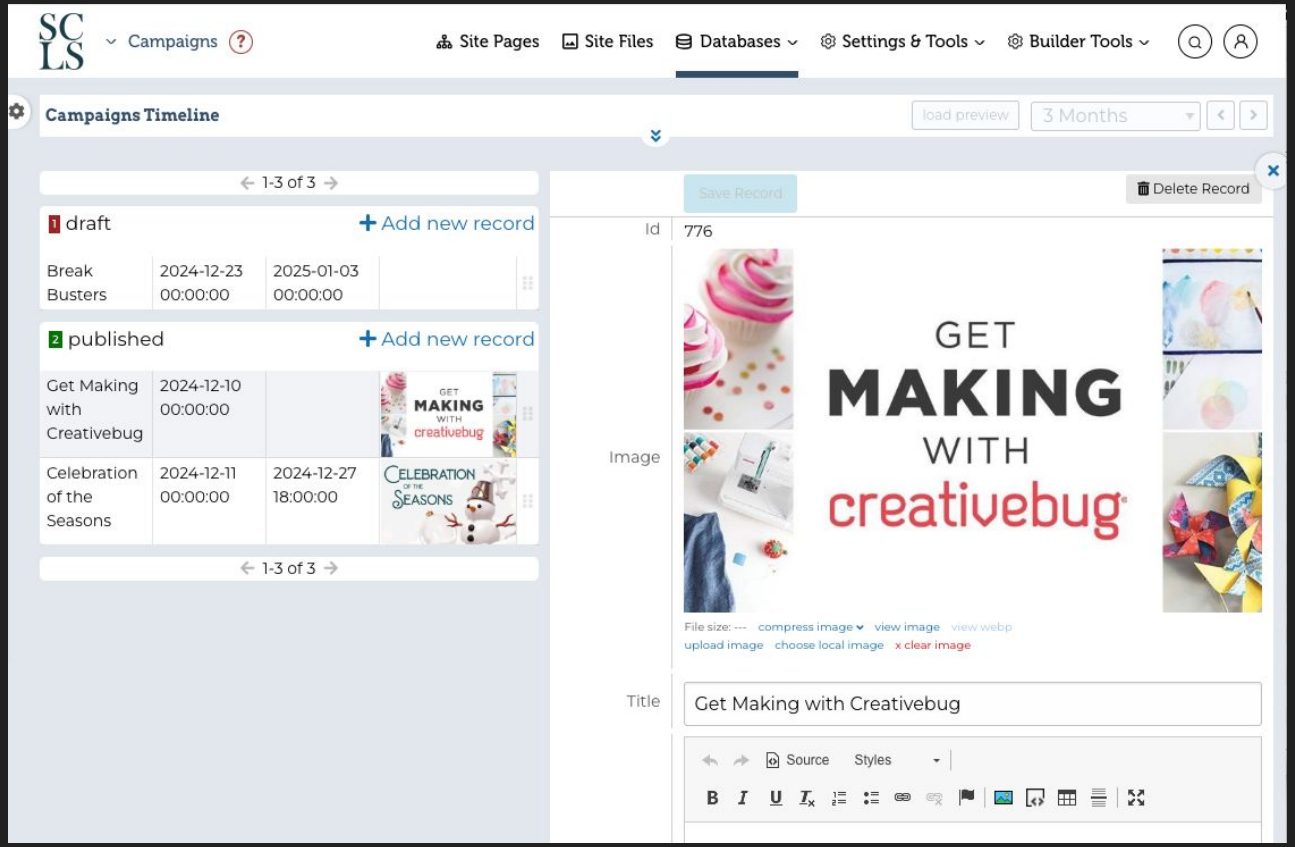
Difficulty (Time Totals By Feature)



Front End

12 Months

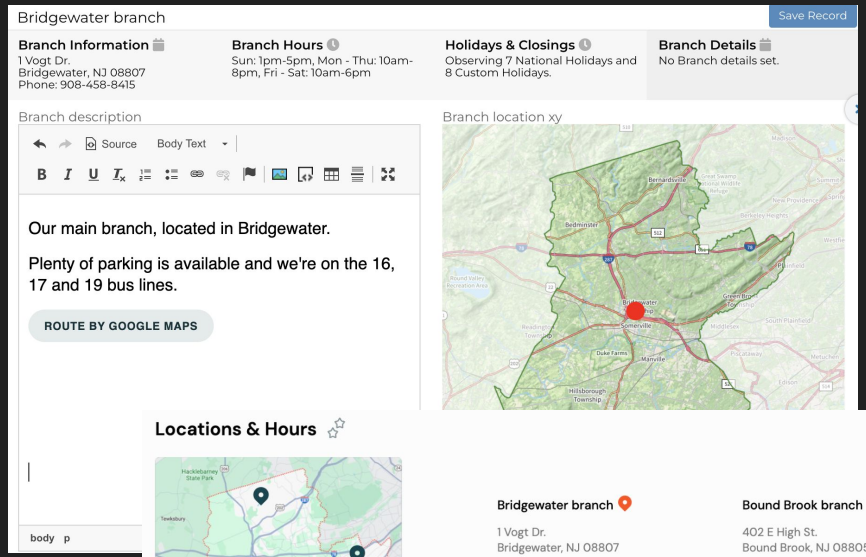
Difficulty (Time Totals By Feature)

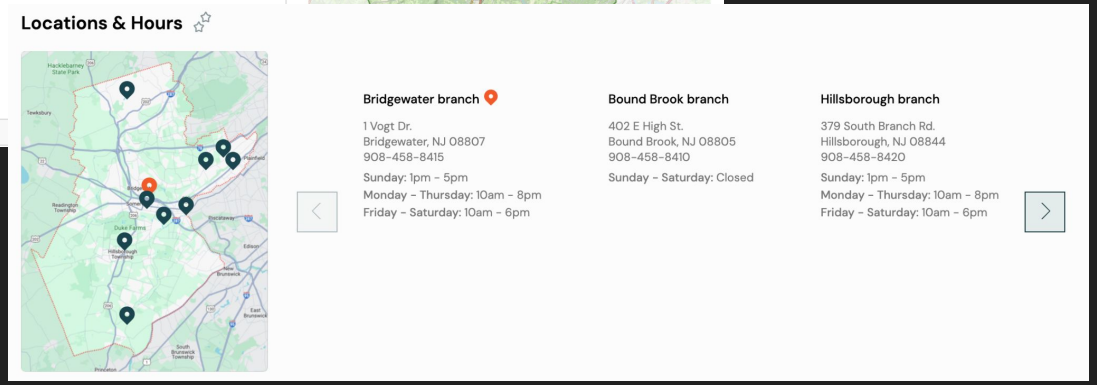


Data Editors

16 Months

Difficulty (Time Totals By Feature)





Branches Map

3.5 hours

(usable by any data source)

Difficulty (Time Totals By Feature)

Success!

- Being able to fulfill any client / internal requests
- Adding substantial updates in a day or two
- Letting experimentation and new ideas drive product