

Wayfinder

Showcase



Introduction

The Team



Matthew Logan
Team + Backend Lead



Dallas Richmond
Frontend Lead



Tyler Maloney
Frontend Developer

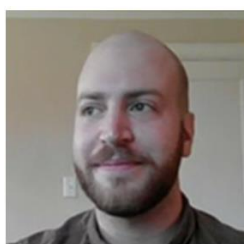
IMB



Meghan
SCRUM Coach



Adam
DevOps Mentor



Jesse
UX Designer



Robert
Product Owner

What Is Capstone?

Capstone provides a learning opportunity to produce a “proof of concept” that contributes to the knowledge and understanding within the IMB through the adoption of Full Stack and DevOps best practices

Matthew



Team Position:

Team Lead, Backend Developer

What were you doing before this?

Previously a red seal chef of 8 years in Victoria, BC.



What contribution are you most proud of?

Creating the API and using TypeScript as our development language.

Thoughts on the product you've built together.

It was a great opportunity to work collaboratively with my peers, and onboard with CITZ IMB.

Dallas



Team Position:
Lead frontend developer

What were you doing before this?
Pursuing a bachelor's degree in Astronomy and Physics.



What contribution are you most proud of?
Implementing and maintaining Wayfinder's State management.

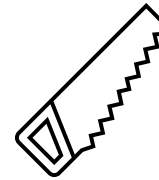
Thoughts on the product you've built together.
I'm extremely happy with how much progress we made in such a short amount of time.

Tyler



Team Position:
Frontend Developer.

What were you doing before this?
Woodworking for Brent Comber Originals.



What contribution are you most proud of?
The mapping component, and the extracted tile-set it serves to users.

Thoughts on the product you've built together.
I am over the moon! The process of developing a full app has been an incredible boon to our collective knowledge set.

The Process



How was the team selected?



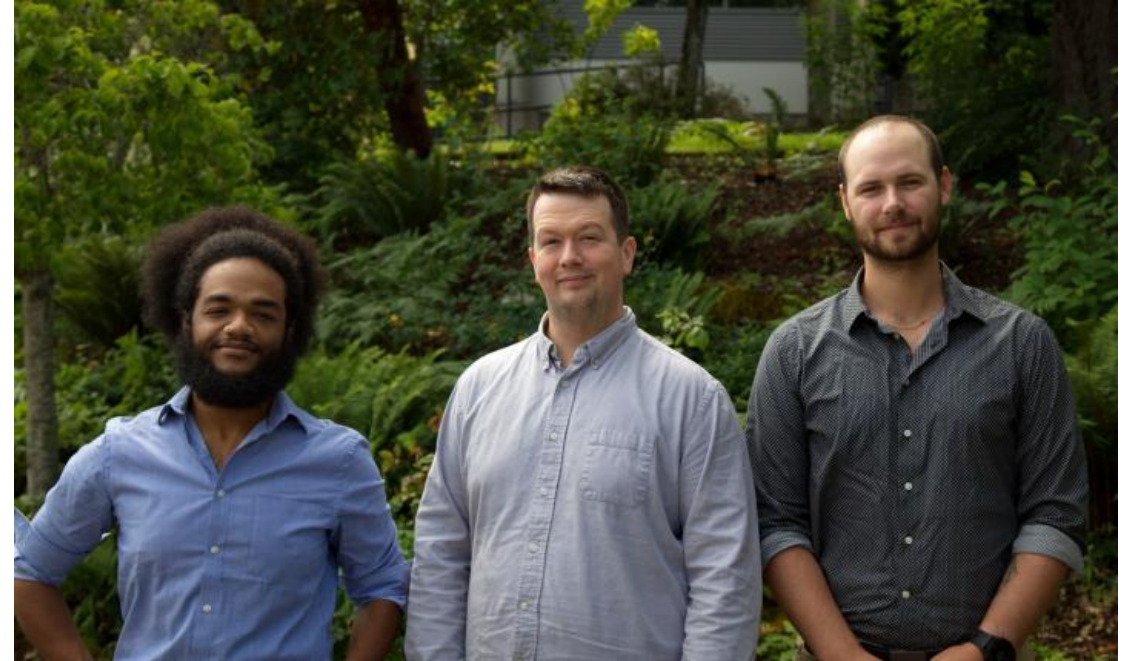
What is Capstone?



How did we choose the project?



How did you balance work & life?



*As a team of College students
We want to grow in-demand skills
So that we can we can showcase ourselves to employers*

Considerations

App Foundation	<ul style="list-style-type: none">- Developing our way of work (Team Contract)- Data driven decision making- Mobile Development Issues (Battery / Device CPU)
User Experience	<ul style="list-style-type: none">- Reducing Cognitive Load (Thank you Todd and SDPR)- Guiding Citizens to Services & Locations (Extensible, Scalable)- Providing a trusted source of information- Let users submit feedback- Allowing Users to report events as they're happening- Respecting user's privacy- Taking the experience with you (Accessibility)
Analytics	<ul style="list-style-type: none">- Providing usage insights- Guiding development and focus- Find service deserts- Protecting user privacy (Authentication / Anonymity)

*"As a Wayfinder App User
I want to find the services nearest to me
So that I can get the assistance I need"*

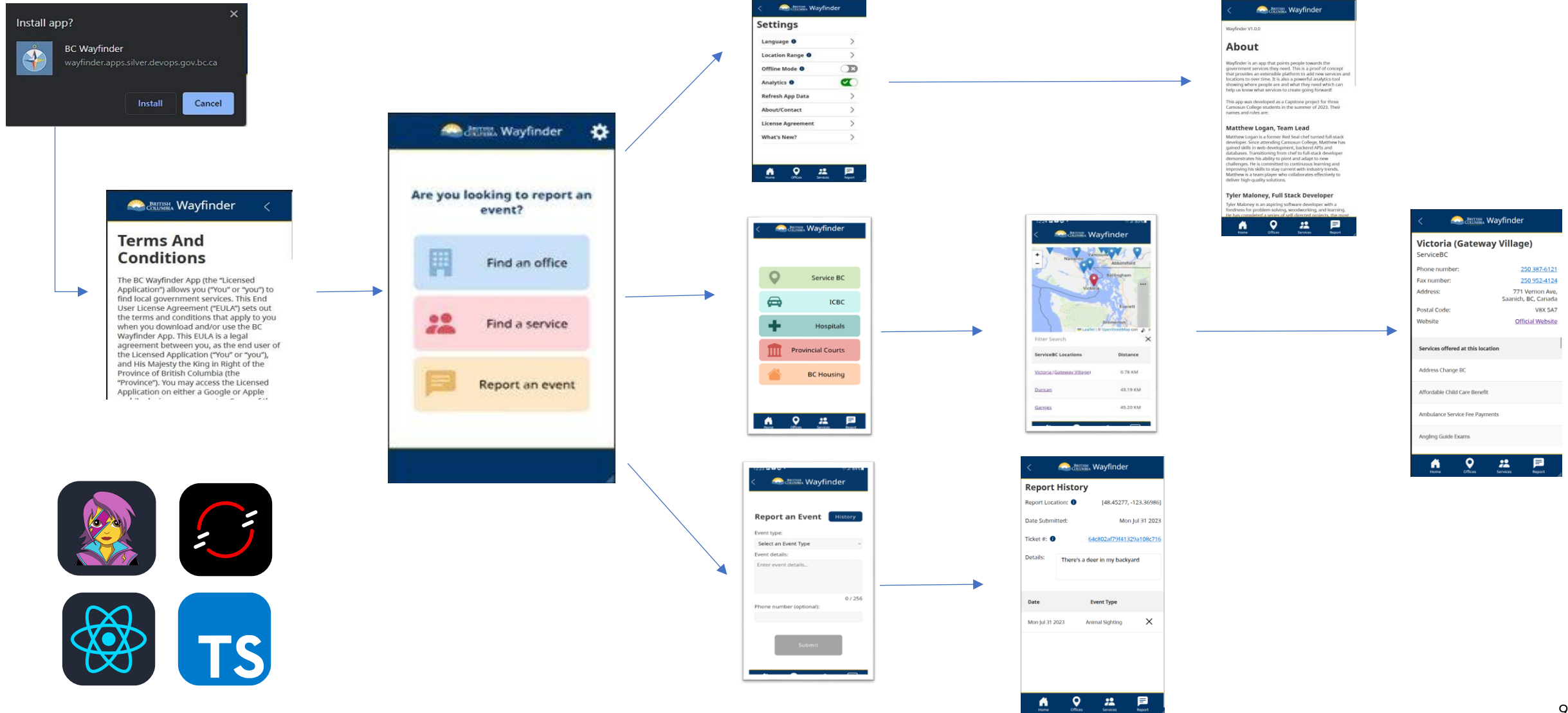


App Foundation

Goals	Team Outcomes	Objectives	Achieved by...
Create a useful app	Adopt design system thinking	Understand the User Journey	User Stories
		Build for Accessibility	Iterative Features
Produce a high- quality product	Adopt Agile	Manage Workload	Correctly sized tickets
	Adopt Engineering Approach	Utilize Decision Logs	Selecting the right Frameworks
Ensure high productivity development	Adopt DevOps	Benefits of Containerization	Deployment Pipelines

Value	Lens	Method
Locations (online/offline)	Coordinates	Cellular, GPS
Offices	Maps	Tiles
Services	Information	JSON
Reporting	Events	Analytics

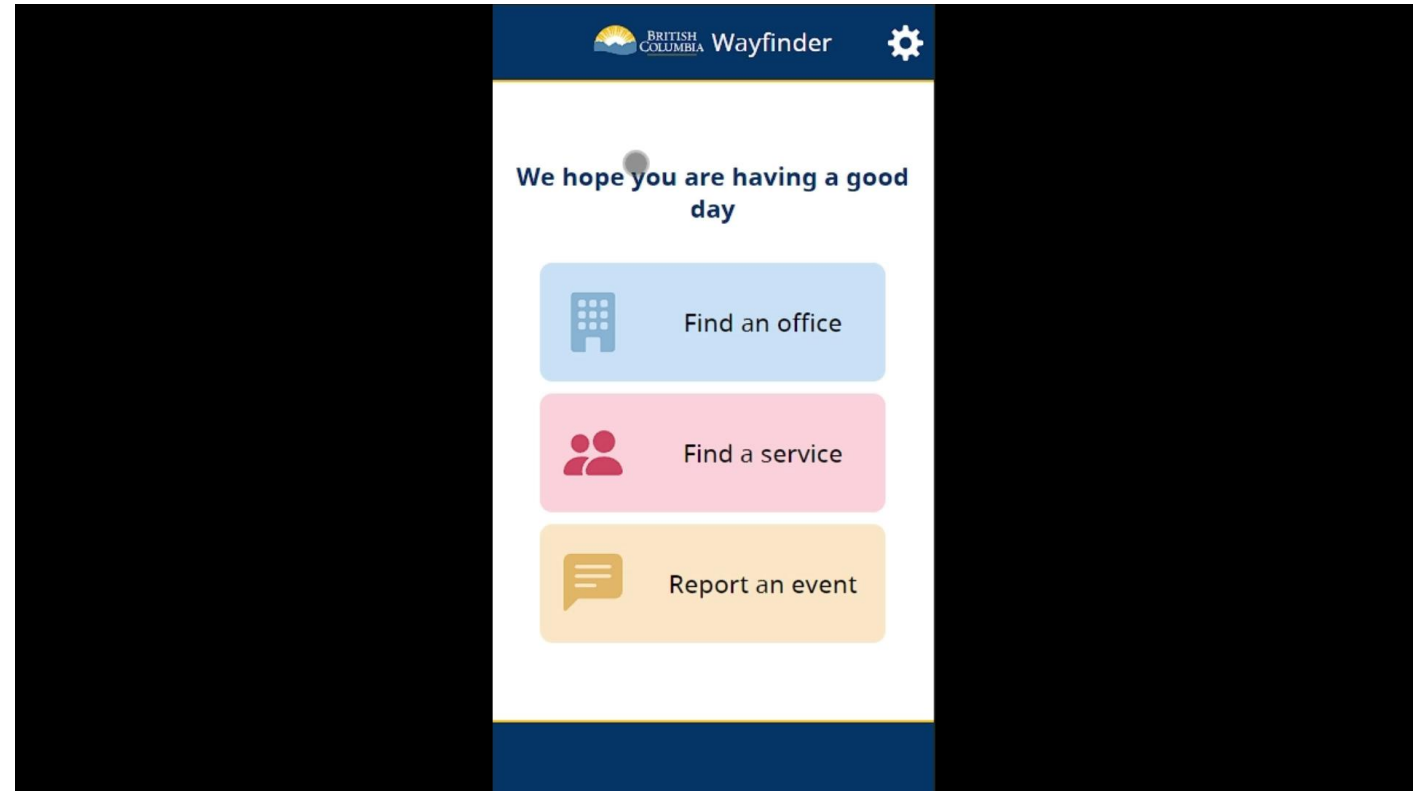
User Experience



Find a Location

Features:

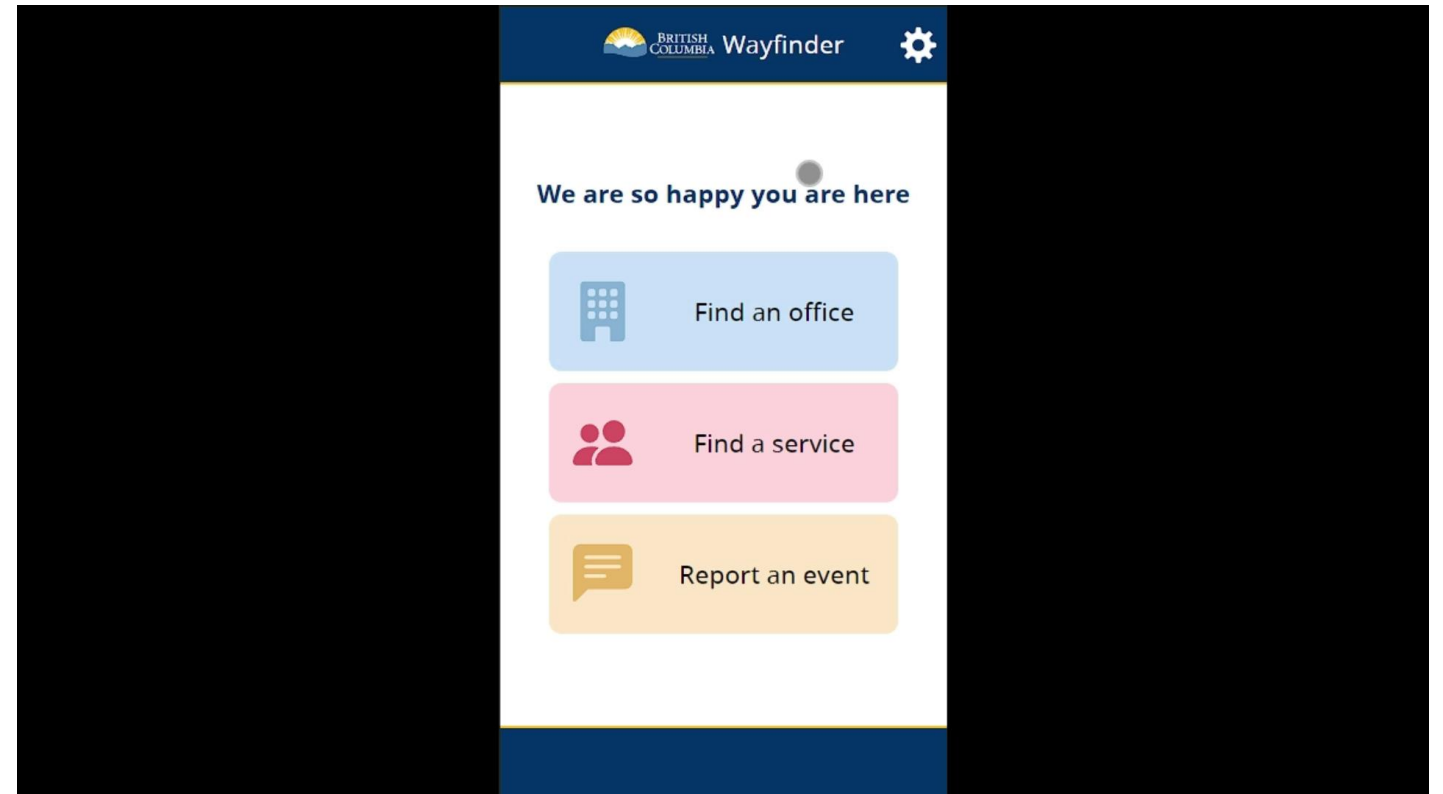
- Visualizes office location data
- Sorts listed office locations by distance
- Pre-filtered to reduce CPU cycles



Find a Service

Features:

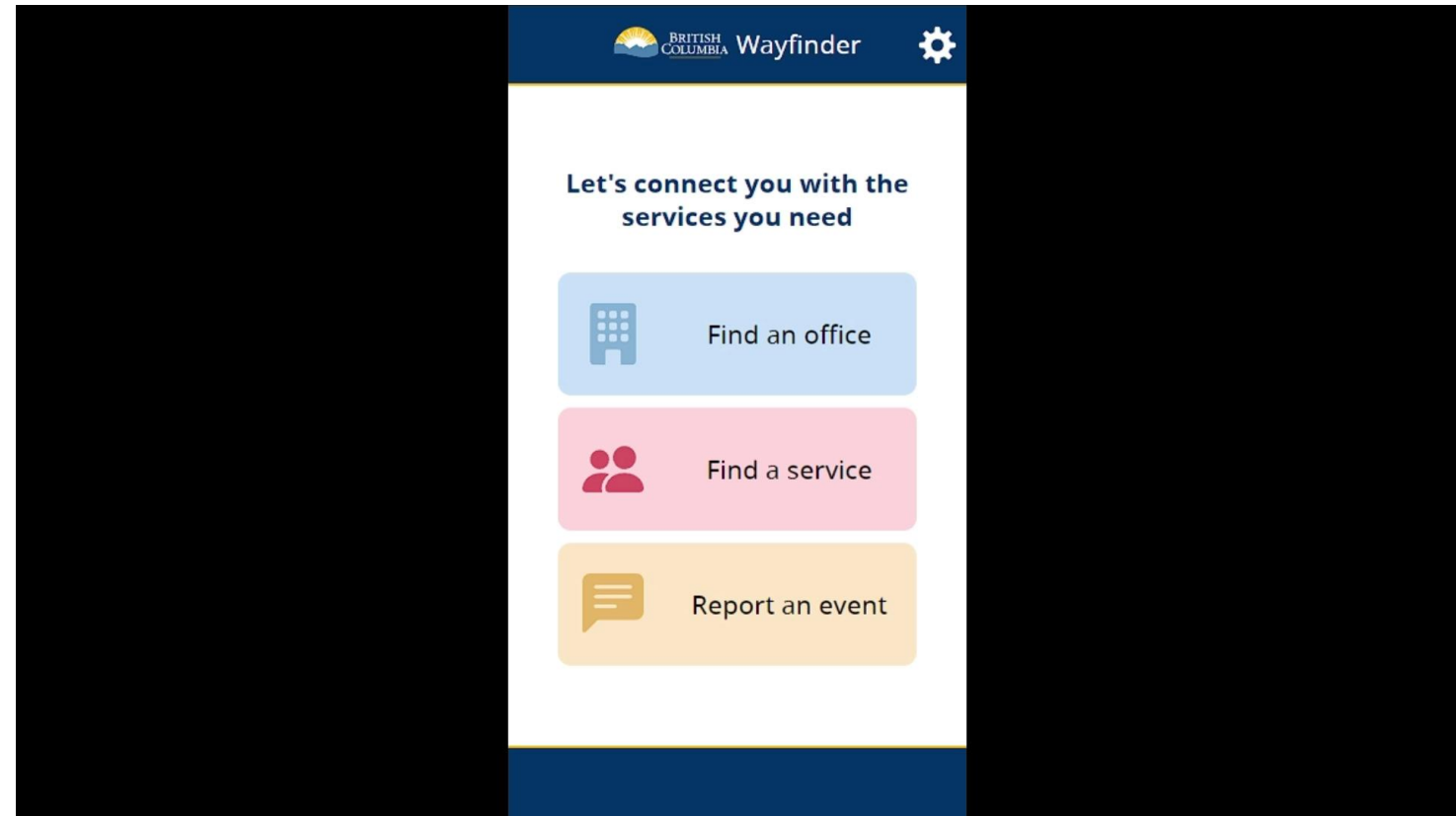
- Visualizes offices where the specified service is offered
- Provides a list of all services



Report an Event

Features:

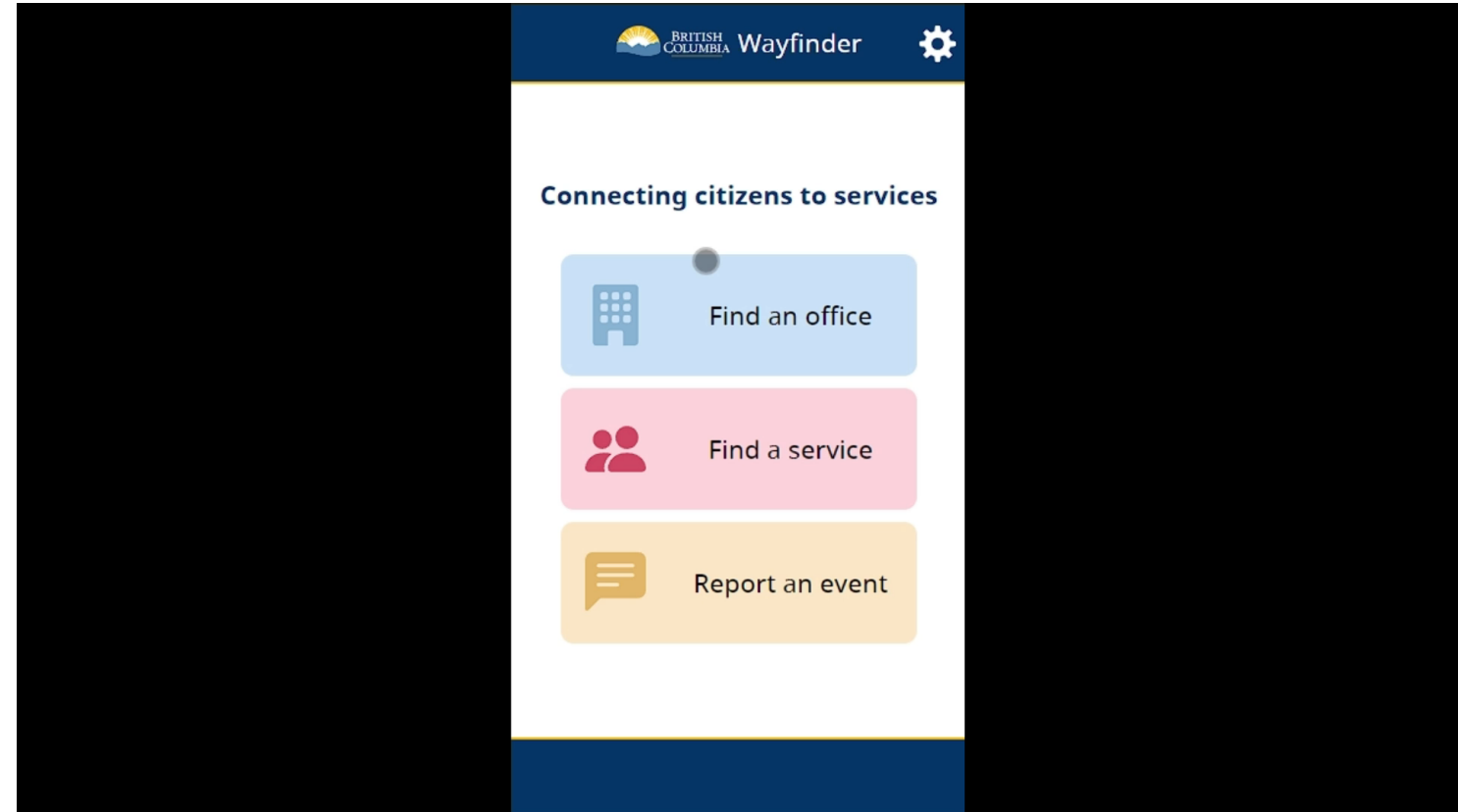
- Allows user to report witnessed events
- Offers form validation
- Leverages user location to assist report accuracy



Settings

Features:

- Allows user to customize their experience
- Similar feel to a native application
- Tooltips provide additional information



Working with Map Data

Online Layer

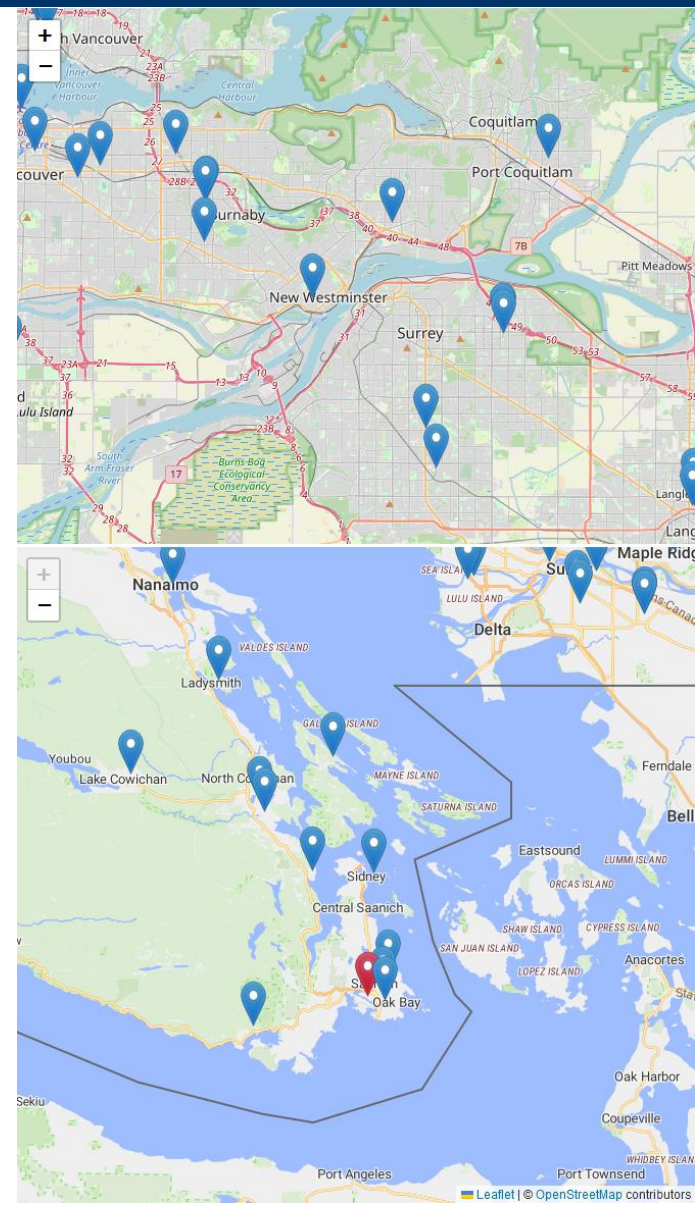
- Served from a public-use tile server
- Tiles are not cached from this source (limitations of public server)
- Allows the highest level of zoom, offering more detail

Offline Layer

- Saved to the browser/PWA cache on install
- Offers a lower level of zoom due to size constraints
- Manually styled and extracted from larger set

Routing

- Requires significant dedicated server resources
- Routing file is not typically stored to device, but served from a network
- Routing file is between 5GB to 250GB, outside PWA storage constraints



Under the Hood

Service-Worker

- Acts as intermediary between browser and network
- Saves site assets to cache
- Replaces saved assets with updated assets

Mapping Component

- Displays a series of map tiles
- Works both online and offline
- Offline map excerpt is minified

Local Storage

- Saves Application data and state
- Stores deferred reports and analytics
- Installation detection



Under the Hood

The screenshot shows a web browser window with the URL `wayfinder.apps.silver.devops.gov.bc.ca`. The page displays the "Terms and Conditions" for the BC Wayfinder App. The right-hand side of the image shows the Chrome DevTools Application panel, which is open to the "Storage" tab. The panel displays the following information:








- Storage Usage:** 38.1 MB used out of 153148 MB storage quota.
- Storage Breakdown:**
 - Cache storage: 37.8 MB
 - Service Workers: 292 kB
 - Total:** 38.1 MB
- Application Settings:**
 - ☒ Unregister service workers
 - ☒ Local and session storage
 - ☒ IndexedDB
 - ☒ Web SQL
 - ☒ Cookies

At the bottom of the DevTools panel, there is a "What's New" section with the following updates:

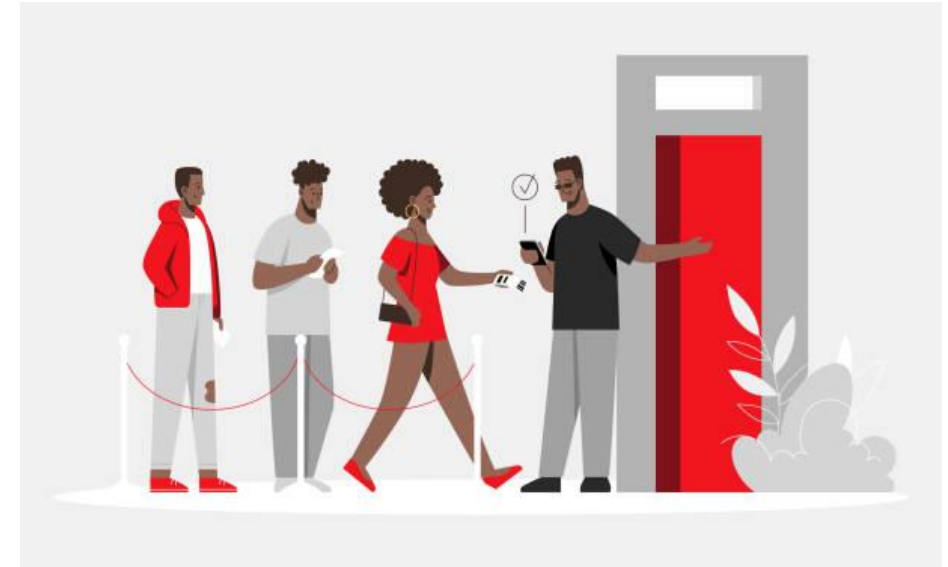
- New CSS subgrid badge:** Enable the subgrid badge to inspect and debug nested grid in the Elements panel.
- Ignore content scripts by default:** The debugger will automatically ignore content scripts injected by extensions.
- Shortcut to set conditional breakpoints**

A large blue badge with the text "new 115" and a Chrome logo is also visible in the bottom right corner of the DevTools panel.

API

Account	Analytics	Health
Create Account 	Get Analytics 	Health Checks
Delete Account 	Receive Analytics	
Update Password 		
Create Admin 		
Locations	Reports	
Get Locations	Get Reports 	
Get Updated Locations 	Receive Reports	
Update Location Data		

*As a Wayfinder app user
I want the most recent information
So that I'm directed to the correct location*



Location Data

/locations

- Sending Seed Data
- Sending *New* Data
- Updating Stored Data



The ETL Process Explained



Analytics

Answering the questions

Who	is using our Application?
What	are users using the application for?
Where	is the application being used? Are there services near them?
When	When is the app being used? Weekends? Days? Nights?
Why	are users using our application?
How	is the app being used? Are users customizing their experiences?



*As a data analyst
I want useful analytic data
To help guide future decision making*

A Demo with PowerBI

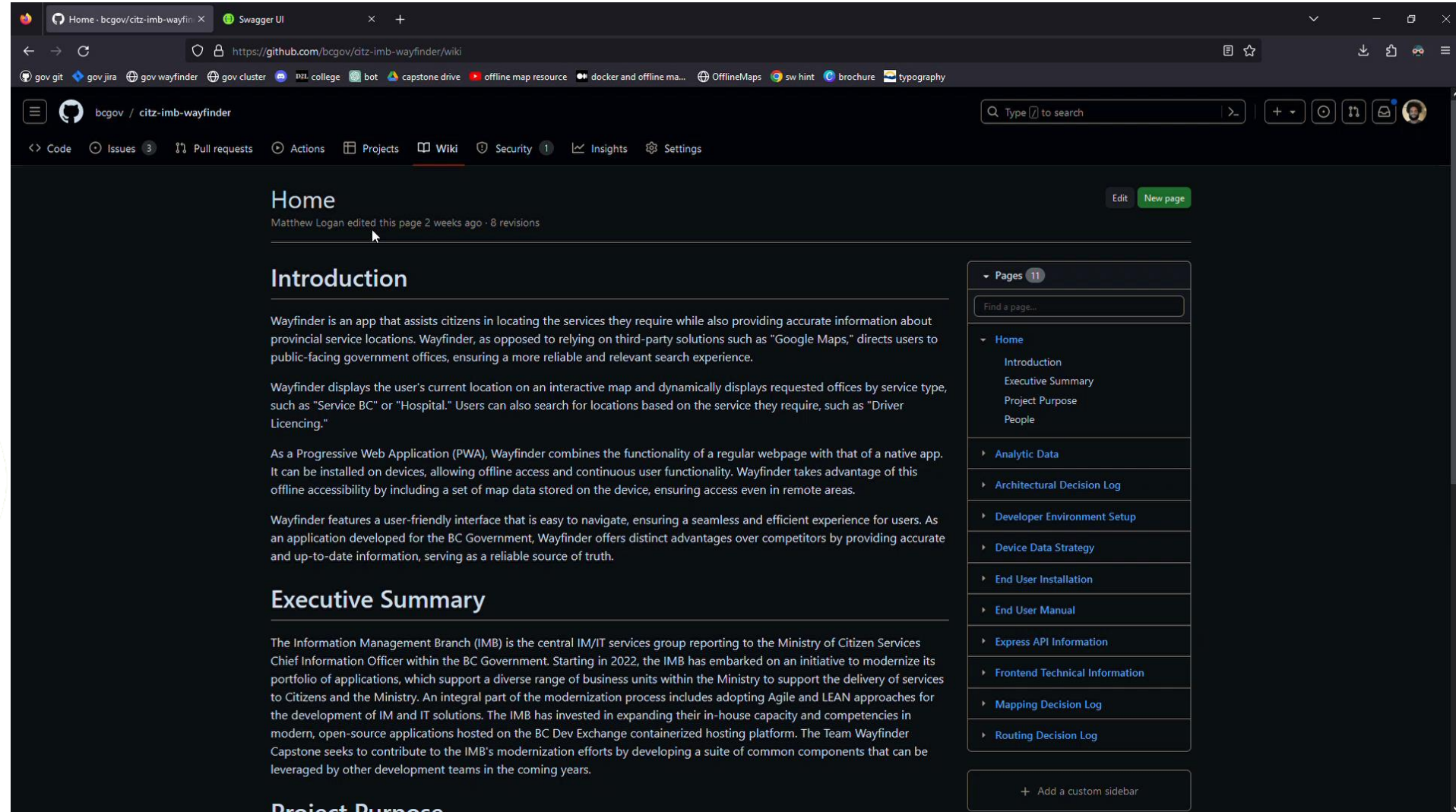


Documentation, Documentation, Documentation...

```
/**
 * @desc    Takes all SingleLoca
 *           list of alphabetical
 *           application to seed
 * @summary GET method sends see
 * @example {
 *           "serviceBCLocatio
 *           "allServices": ["
 *           "updateArr": [Upd
 *           }
 * @returns {responseObject} Arr
 */
```



*As a Wayfinder App Developer
I want meaningful documentation
So that I can understand the tool
I'm working with*

A screenshot of a web browser displaying the GitHub Wiki page for the 'bcgov/citz-imb-wayfinder' repository. The browser's address bar shows the URL 'https://github.com/bcgov/citz-imb-wayfinder/wiki'. The page has a dark theme. At the top, there's a navigation bar with links for 'Code', 'Issues', 'Pull requests', 'Actions', 'Projects', 'Wiki' (which is highlighted), 'Security', 'Insights', and 'Settings'. Below this, the page title is 'Home', with a note that 'Matthew Logan edited this page 2 weeks ago · 8 revisions'. The main content area is titled 'Introduction' and contains three paragraphs of text describing the Wayfinder app. To the right of the main content is a sidebar with a search bar and a list of 11 pages: 'Home', 'Introduction', 'Executive Summary', 'Project Purpose', 'People', 'Analytic Data', 'Architectural Decision Log', 'Developer Environment Setup', 'Device Data Strategy', 'End User Installation', 'End User Manual', 'Express API Information', 'Frontend Technical Information', 'Mapping Decision Log', and 'Routing Decision Log'. At the bottom of the sidebar is a button that says '+ Add a custom sidebar'.

Lessons Learned

- Collaboration
- Value of Code Reviews
- Jira
- Agile Methodologies
- Mapping data is difficult to source
- Working with Docker
- How to deploy to OpenShift
- GitHub Branch Management strategy
- Utilizing PowerBI



Audience Participation

Questions ?

- *How did you make that?*
- *Did you consider doing _____?*
- *Could you clarify what you said about ____ ?*
- *Can I see a demonstration of _____ feature?*
- *What's a Schema?*

Feedback?

- *I really like how you made that work!*
- *That's a great consideration for _____!*



*As a Wayfinder Showcase Participant
I want to ask questions
To deepen my knowledge of the application*



Matthew
Logan

Dallas
Richmond

Tyler
Maloney

QR code below links to
our application!



Thank You, from Team Wayfinder!

Contact us : wayfinderdevelopers@gmail.com

Application URL : wayfinder.apps.silver.devops.gov.bc.ca/