

Group 011-6

# Map Mosaic Travel Tracker

Every Journey, One Beautiful Story.



**Chandler Farnsworth**  
chandlerfarnsworth



**Jevan Wiltz**  
Wiltzjevan



**Ben Grumbles**  
bengrumbles



**Jonny Sainbayar**  
jsainbayar



**Treyanna Brown**  
TreyannaBrown



**Juliana Garcia-Gallo**  
Julianag10

# OUR TEAM

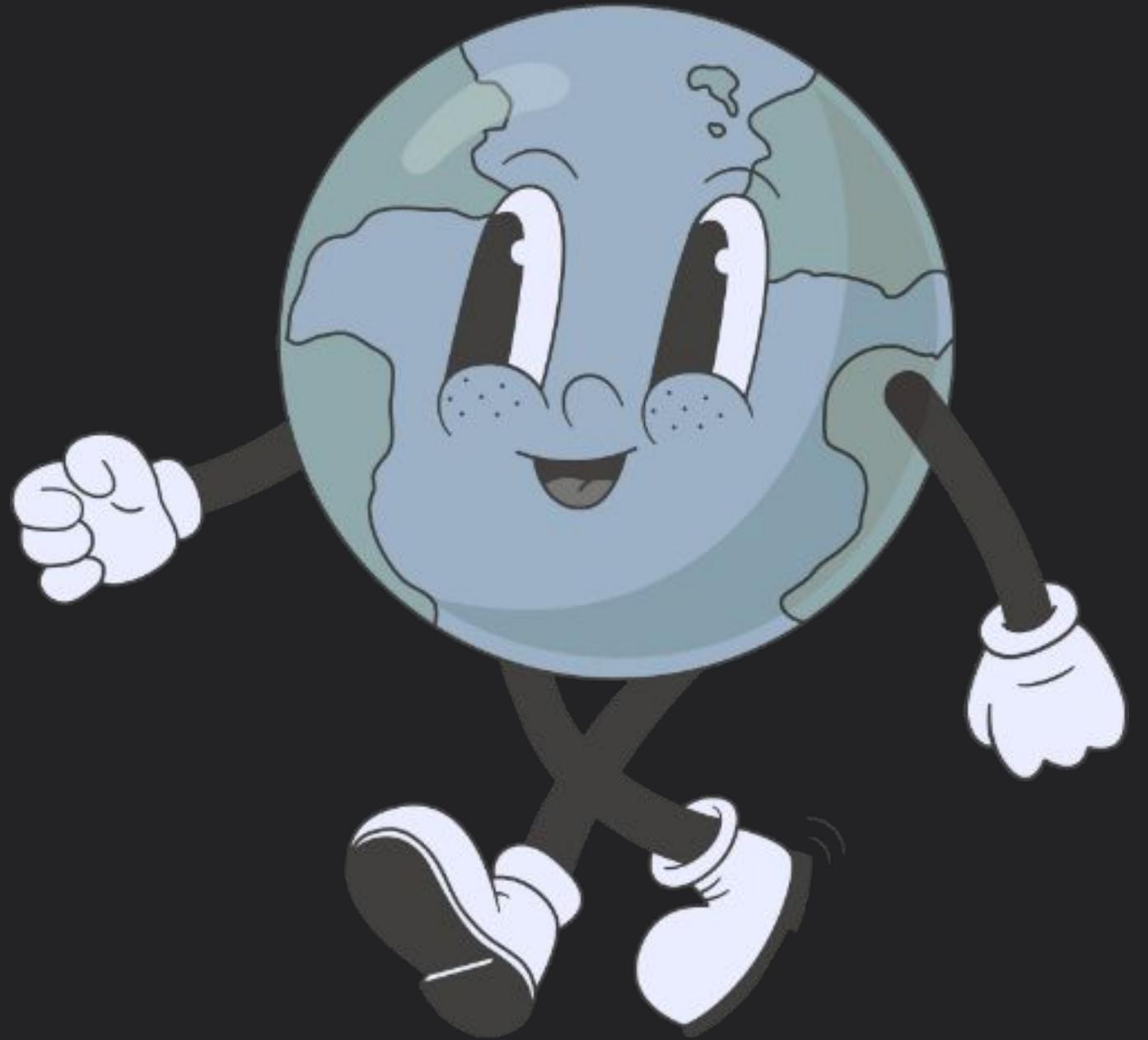
01 INTRODUCTION

02 TOOLS & DEVELOPMENT

03 DEMO

04 CHALLENGES & ENHANCEMENTS

OVERVIEW



# INTRODUCTION

01

“

To redefine travel tracking by  
turning maps into  
personalized mosaics of  
memories...

”

# The Online “Logbook”

## Goal 2

### Goal 1

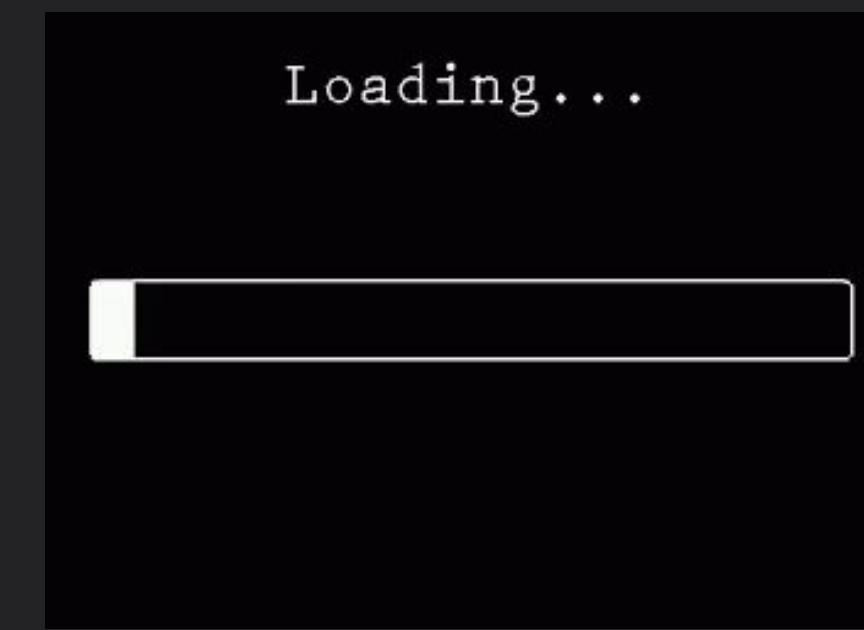


Ever wanted a way to display  
and show off your worldly  
journeys?



A way to have the same entries  
you wrote in your notebook  
saved with a memorable photo  
to remind you?

### Goal 3



All wrapped up in a single web  
link you can share with friends  
and family, curious about your  
whereabouts?

# Perfect Solution!

## Introducing Map Mosaic!

Pair journal entries with memorable photos.

The screenshot shows the 'My Trips' section of the Map Mosaic app. It features a header with 'Home', 'Trips', 'About Us', and a user profile for 'Chip'. Below the header, there's a search bar and a 'New Trip' button. The main content area is titled 'My Trips' and displays three travel entries:

- Hiking the Rockies**: Located in Estes Park, Larimer County, Colorado, United States. Last updated on August 10, 2024 (8 months ago). Description: An incredible escape to the Rocky Mountains with fresh air, wild trails, and breathtaking views. Includes a 'View' button.
- Cultural Journey in Kyoto**: Located in Kyoto, Kyoto Prefecture, Japan. Last updated on June 18, 2024 (10 months ago). Description: Temples, gardens, and traditional cuisine. Kyoto was like stepping back in time. Includes a 'View' button.
- Coastal Adventures in Cape Town**: Located in Cape Town, City of Cape Town, Western Cape, 8001, South Africa. Last updated on November 2, 2023 (a year ago). Description: Table Mountain views, penguins at Boulders Beach, and some of the best sunsets I've seen. Includes a 'View' button.

The screenshot shows the homepage of the Map Mosaic app. The title 'Welcome to Map Mosaic' is displayed prominently. A search bar at the top allows users to 'Search for a country...' and a 'New Trip' button is available. The main feature is a world map where specific locations have been marked with circular icons, indicating completed trips. The map includes labels for countries and major cities.

Bring your adventures to life!

# DEVELOPMENT

02

The collage displays six screenshots of the Map Mosaic mobile application:

- California Information:** Shows a detailed view of Mariposa County, California, featuring a waterfall and a descriptive text about Bridalveil Fall.
- Home page:** Displays a large globe icon with navigation controls.
- Login Page:** A sign-in form with fields for Email and Password, and a "Sign In" button.
- Registration Page:** A create account form with fields for Email, Password, and Re-enter Password, and a "Join Map Mosaic!" button.
- Profile Page:** Shows account information, stats, and a recent trip summary for "George".
- My Trips:** A grid of trip thumbnails for California, Colorado, Florida, Tennessee, and Texas, each with a "View More" button.

# Project Management

## Github

Central platform for pushing code, reviewing commits, and managing branches. GitHub

Projects was integrated with our repository for streamlined collaboration.



The screenshot shows a GitHub Projects board for the 'MapMosaic' project. The board has four columns: 'Ice Box' (0 items), 'Todo' (0 items, description: 'This item hasn't been started'), 'In Progress' (1 item, description: 'This is actively being worked on'), and 'Done' (23 items, last item: 'MapMosaic #32 Adjust the trips for h interactive.'). A tooltip for an item in the 'In Progress' column suggests 'Potentially introduce gamification?'. The top navigation bar includes 'View 1', 'New view', 'Filter by keyword or by field', 'Add status update', 'Discard', and 'Save' buttons.

## Figma

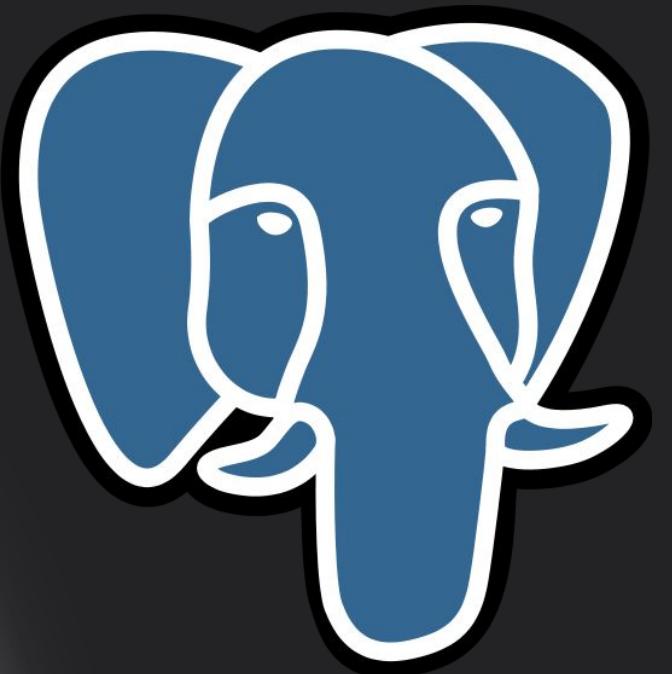
Mainstream method for setting our use case diagrams and wireframes for project prototyping.



# IDE & Data

## PostgreSQL

Used pg-promise as our PostgreSQL client. Enabled trip data storage and user management.



## VS Code

Main dev. environment providing collaborative features, debugging, and plugin support for handlebars and Node.js. Would highly recommend for other projects.



# Node.js

Handled logic, routing, API responses, authentication, and session management.



# Application n' Framework



# express

# Express

Built RESTful routes, sessions, and handled API request logic.





## Render

Deployed the full-stack app with live URL, automatic updates on push to main.



# Deployment & Testing

## Chai

Used for test assertions on API responses and error handling.



## Nodemon/Nodemailer & Muelter

Automatically reloaded the server during development after file changes; provided backend functionality to send emails (e.g., registration confirmations).

Handled image/file uploads for user trip logs or profile photos (if used).



## UI & Frontend/Backend

### HTML/Handlebars/Select2 /FontAwesome

Provided icons for visual cues and enhanced dropdowns for selecting countries/states with search and tagging features



# External Dependencies

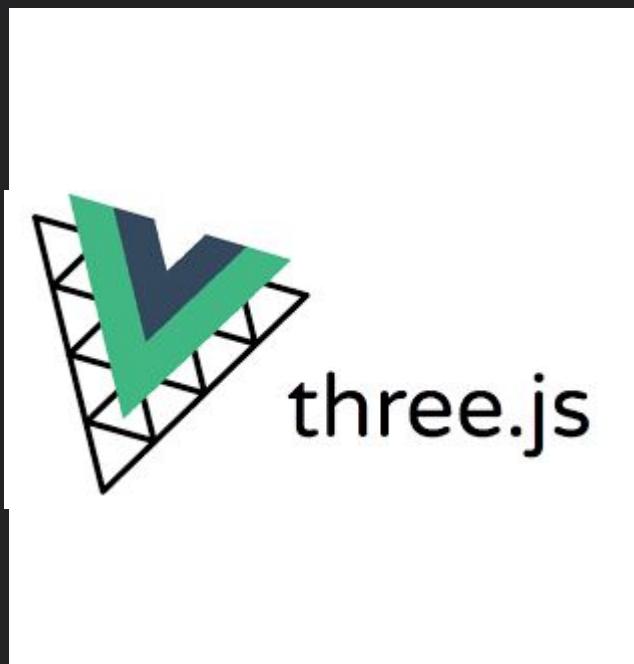
No. 01



Rendered an interactive 3D globe, allowing users to place markers and view locations.



No. 02



Enabled 3D globe animation and performance-optimized visual effects.



No. 03



Made HTTP requests (e.g., geocoding, API calls) from the frontend and backend.



No. 04



Handled timestamp formatting for trip entries and user-created events.



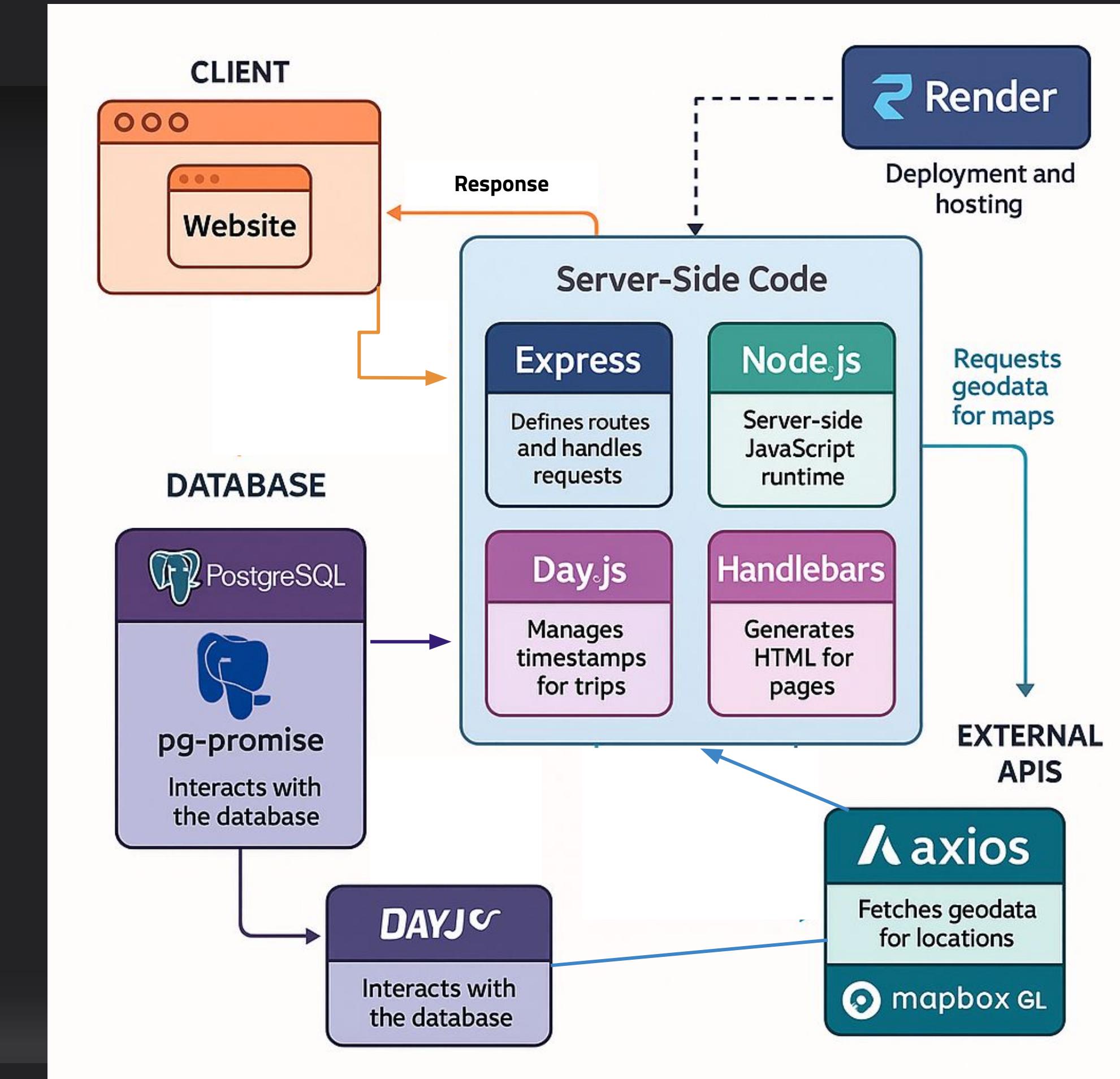
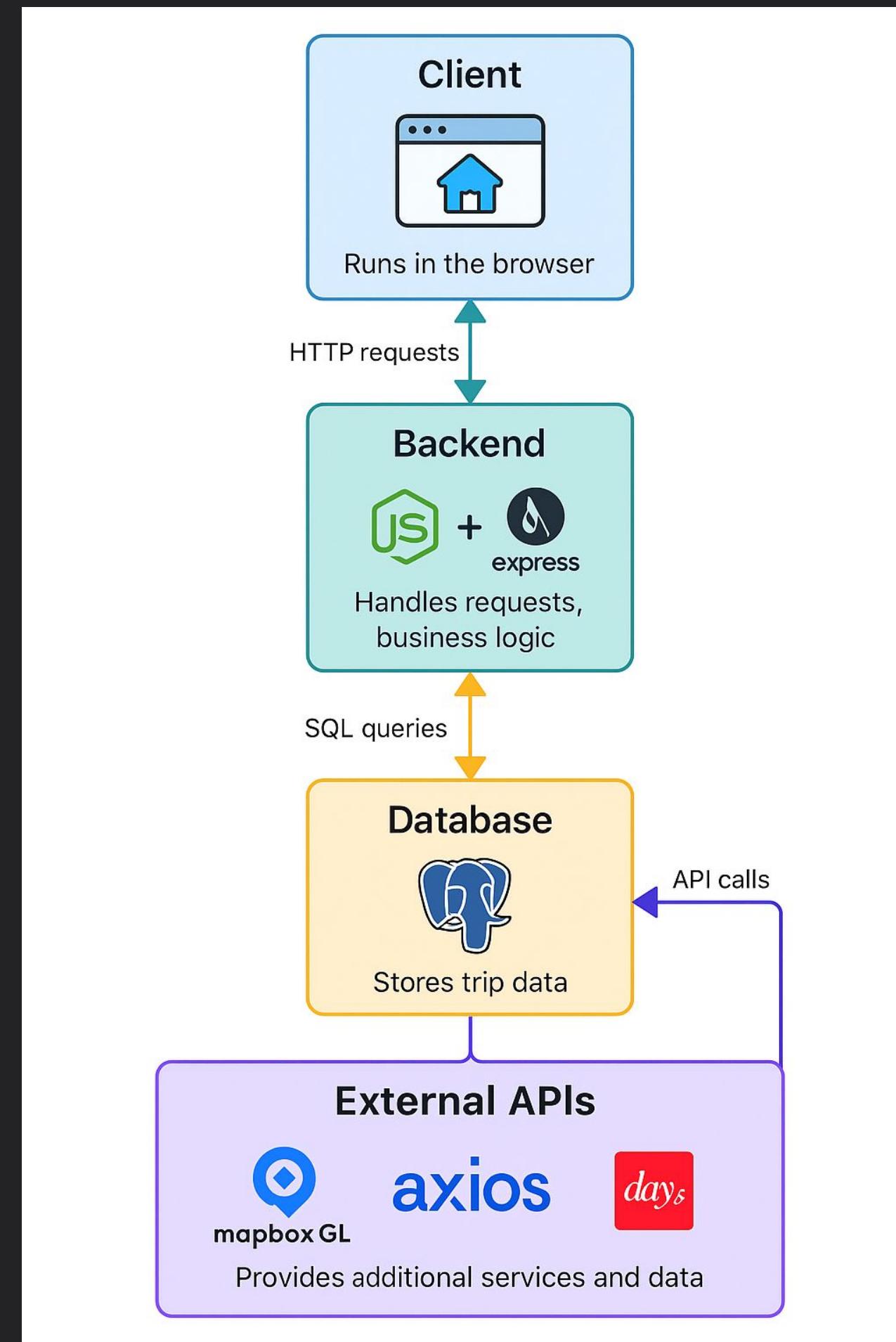
Branch
main
globe_work
globechan
Lab-11-Testing
patch-1
Active branches
FooterContactPage
globe_work
globechan
sortingtrips
headandfoot

# ...AND MORE!!

**A** **AGILE:** A project in which our team has continuously evaluated and processed tasks; including abandoning plans/tools to develop improved models (i.e. the globe)

**I** **ITERATIVE:** At all times, our developers were pushing and pulling changes made by one another unanimously through branches established against the main.

**M** **MAINTAINED:** Constantly reviewing with one another and building ideas through paired programming over several goals (i.e. globe iteration, user data manipulation, etc)



03



DEMO

# OUR WEBSITE

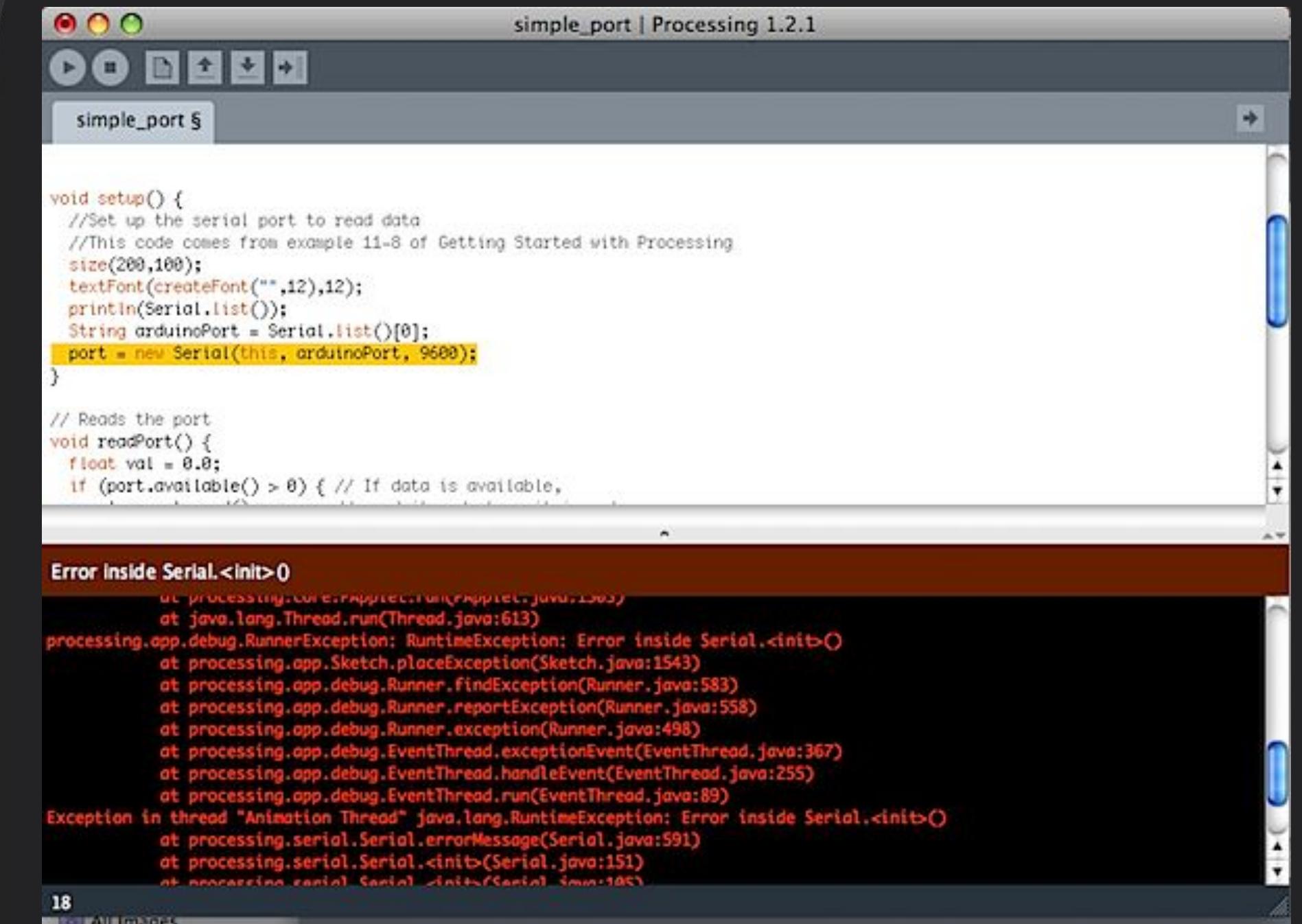
mapmosaic.onrender.com



<https://github.com/WiltzJevan/MapMosaic>

# CHALLENGES & ENHANCEMENTS

04



The screenshot shows the Processing 1.2.1 IDE interface with a sketch titled "simple\_port". The code in the editor is as follows:

```
void setup() {
    //Set up the serial port to read data
    //This code comes from example 11-8 of Getting Started with Processing
    size(200,100);
    textFont(createFont("",12),12);
    println(Serial.list());
    String arduinoPort = Serial.list()[0];
    port = new Serial(this, arduinoPort, 9600);
}

// Reads the port
void readPort() {
    float val = 0.0;
    if (port.available() > 0) { // If data is available,
```

A red error bar highlights the line of code where the exception occurs:

```
port = new Serial(this, arduinoPort, 9600);
```

The error message displayed is:

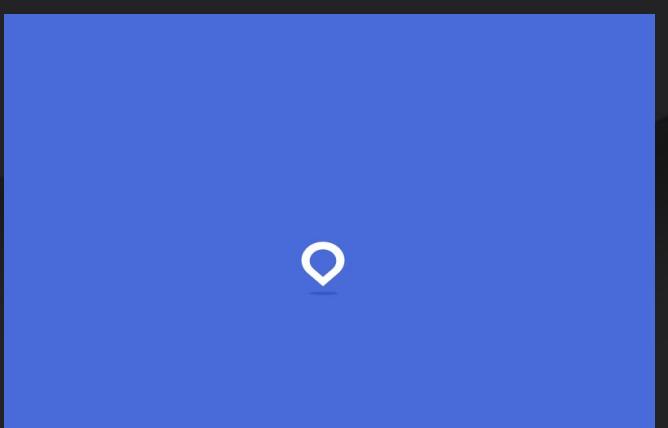
Error inside Serial.<init>()

```
at processing.core.PApplet.createSerial(PApplet.java:1993)
at java.lang.Thread.run(Thread.java:613)
processing.app.debug.RunnerException: RuntimeException: Error inside Serial.<init>()
at processing.app.Sketch.placeException(Sketch.java:1543)
at processing.app.debug.Runner.findException(Runner.java:583)
at processing.app.debug.Runner.reportException(Runner.java:558)
at processing.app.debug.Runner.exception(Runner.java:498)
at processing.app.debug.EventQueue.exceptionEvent(EventQueue.java:367)
at processing.app.debug.EventQueue.handleEvent(EventQueue.java:255)
at processing.app.debug.EventQueue.run(EventQueue.java:89)
Exception in thread "Animation Thread" java.lang.RuntimeException: Error inside Serial.<init>()
at processing.serial.Serial.errorMessage(Serial.java:591)
at processing.serial.Serial.<init>(Serial.java:151)
at processing.serial.Serial.<init>(Serial.java:105)
```

The status bar at the bottom of the IDE shows the number 18.

# Mapbox

Mapbox allowed us to have a 3d globe on the homepage and was a lot more susceptible to change and customization! This is also more geared towards apps and had features more attuned to what we needed.

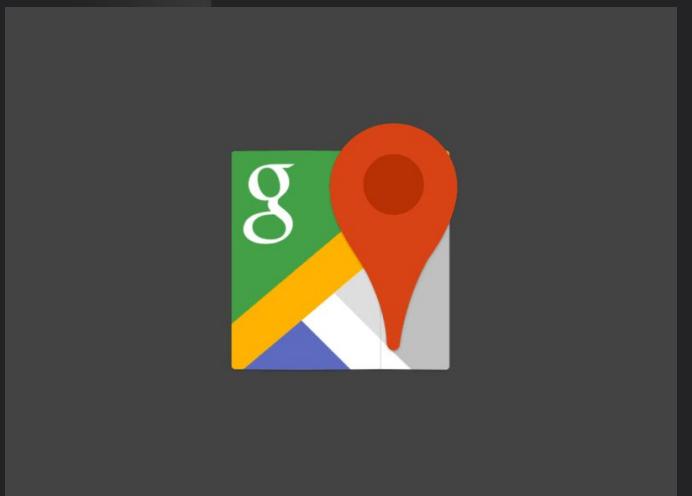


# Choosing the right API

vs.

## Google Maps

Google's Api is great however it isn't as customizable and doesn't have a great 3D globe application. It is great for things like street view imagery, which isn't what we were focused on.



# Lessons & Updates

**Biggest problems is working with external APIs (i.e.  
globe development)!!!**

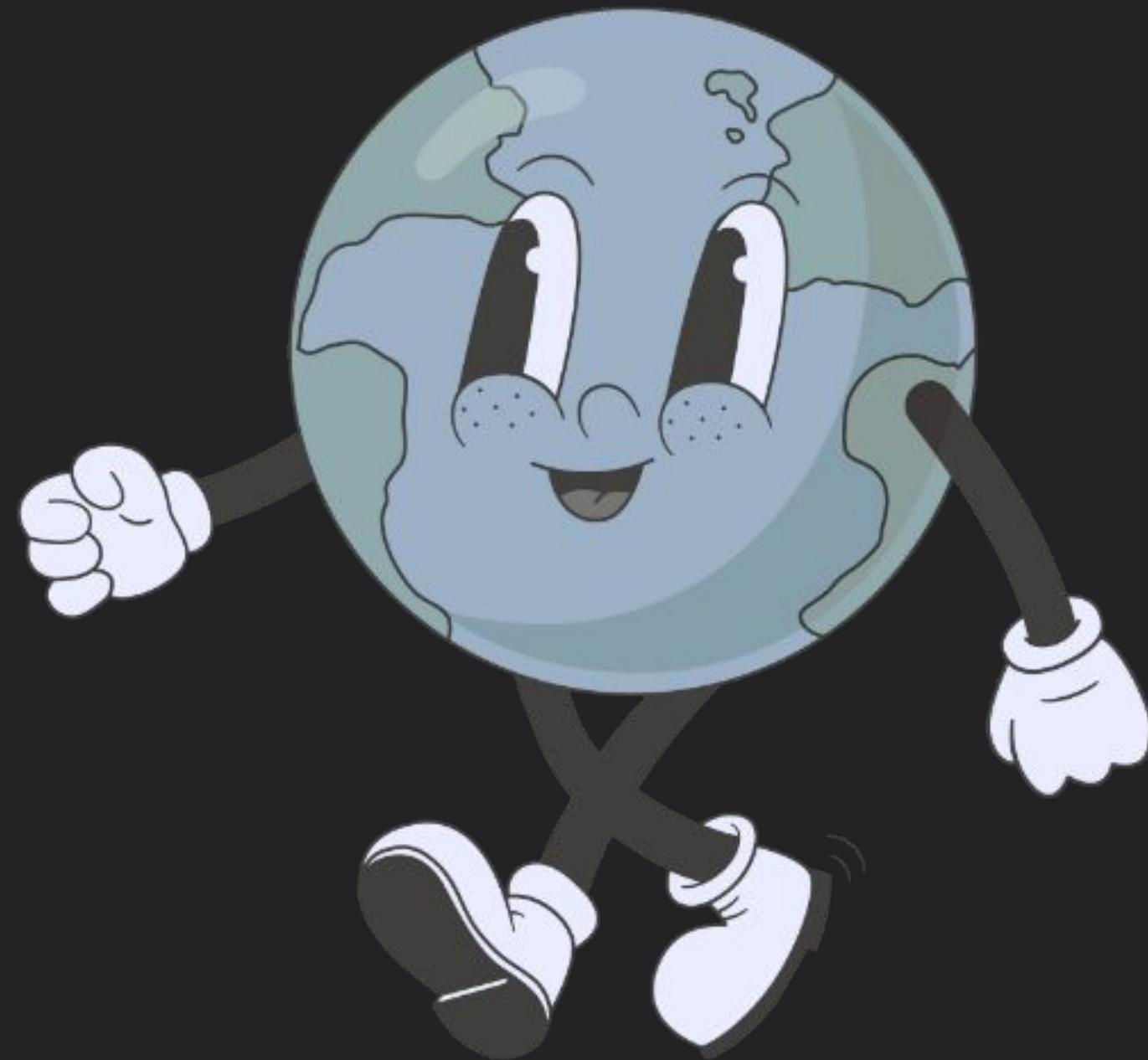
Goals to add:

1. **“Excursions”** - What if the user could link these trips of theirs into one big journey brochure for another to possibly use?
2. **Gamification** - What about developing a more interactive website to buy users into wanting to travel and record their trips?
3. **Offline Mobility** - Putting the travel in travel app: what if users could access the tracker offline? What if it had its own database for geographical information?

Downloading



# ANY QUESTIONS?



Julianna and Johnny Slides #1-7

Chandler #8-9

Ben #10

Jevan #11

Johnny Render #12 - Chai Ben & Jevan

Chandler #13, Johnny Nodemailer

Chandler #14

Ben #15

Treyanna Demo

Jevan & Chandler #19-20

Julianna #21-22