Map Mosaic Report

Project Title: Map Mosaic

Contributors:

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Project Description

Map Mosaic is an innovative travel application designed to help users document and explore every U.S. state and other countries they visit. Through a user-friendly interface, travelers can log the states they've been to and access pertinent information about each location, including when they visited and personal notes. By integrating the API data source Map Box, Map Mosaic enhances travel experiences by providing rich, location-based content. The app serves not only as a digital travel journal but also as a personalized reference tool, keeping users connected to their past journeys. Our interface allows users to go back and edit these trips they have taken to add or change information. Users can range from travel enthusiasts, students, and families who want to document their journeys. Whether you're a frequent traveler mapping out your adventures or someone exploring states for the first time, Map Mosaic simplifies the process of tracking and recalling your experiences. The application is designed with accessibility in mind, ensuring it is user-friendly for people of all ages and technical backgrounds. Features like simple navigation, clear visual elements, and responsive design will make the app approachable and convenient. Map Mosaic is perfect for those who want to remember their travels in a fun way!

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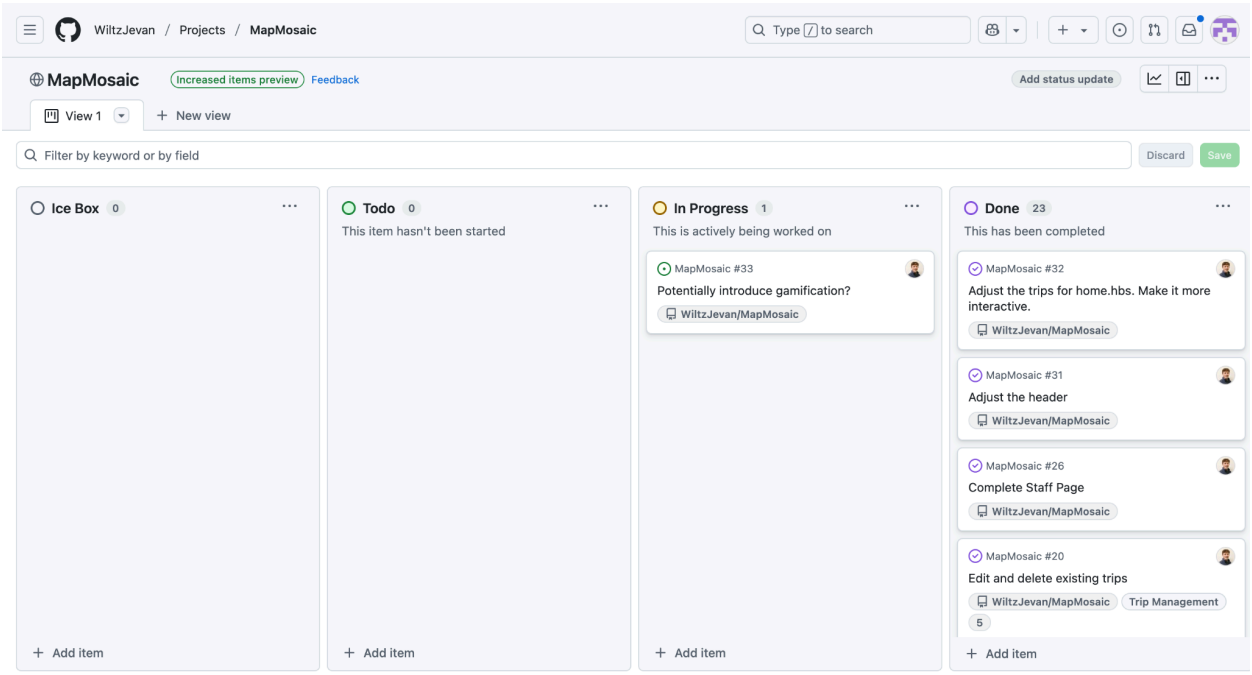
Project Tracker:

The link below leads to our git project board we used as our project tracker.

https://github.com/users/WiltzJevan/projects/2

The image below shows our project board upon completion of the website.



Video of Application:

The link below leads to a video demonstration of our application.

Map Mosaic Demo Video .mov

VCS:

The link below leads to our git repository.

https://github.com/WiltzJevan/MapMosaic

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Contributions:

Jevan's Contribution:

I focused on initial backend setup, globe rendition, and later-stage debugging and presentation prep. I began by establishing our GitHub repository and organizing the core directory structure, including tools for environment management. I led early attempts to build a 3D globe on the homepage using Google Maps API, which didn't support full 3D interaction. I then explored Three.js before we transitioned to Mapbox GL, where I reviewed then aided re-integration by rebasing feature branches and helping ensure the main branch reflected the latest stable build. Afterward, I shifted to minor debugging and co-developing our final presentation materials.

Treyanna's Contribution:

I completed work on the profile page, FAQ page, and troubleshooting. I coded a profile page, which was changed, however I coded the backend that tracks and displays the amount of trips taken, the number of countries visited, and the number of states you have been to. I made an FAQ page allowing our users to answer some of the most asked questions about our website. I also fixed some bugs like the routing of the register button to take you directly to the login page. Lastly, I have laid out and written the majority of this report and our slides presentation!

Ben's Contribution:

I made a basic layout with a navigation bar and several different pages, along with JavaScript routes to navigate these pages. I built user authentication, allowing users to create accounts, hashing their passwords, and storing this information in the database so they could log in later. I worked on allowing users to upload their trips with a name, description, coordinates, and a time stamp. This allowed users to search their trips using exact coordinates. Users could also enter the date using a calendar dropdown, and view trips sorted by recency. I also wrote test cases for registration and the profile page using mocha and chai.

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Chandler's Contribution:

I designed the site's visual theme and implemented consistent UI/UX styling across all pages using CSS, modal systems, and glowing animations. I developed the full trip functionality - including create, edit, view, and delete - using Multer for image uploads and Mapbox's Geocoding API to autofill locations from user input. I built the 3D globe integration via Mapbox GL to visualize trips interactively. Using Day.js, I formatted relative timestamps and added trip sorting and filtering controls. I also implemented password editing and used Axios for smooth client-server communication across forms.

Johnny's Contribution:

I designed and implemented a footer that includes clearly labeled navigation buttons to key pages such as the Home, Trips, FAQ, Contact, and About Us pages. I additionally contributed towards implementing the Contact page which allows users to enter their name, email address, and a message. When submitted, the form uses Nodemailer to send the message directly to our team email, which allows for easier communication and feedback. I was also responsible for deploying the website using Render. This involved setting up the hosting environment, doing general configurations, and generally just making sure that the site was live and responsive.

Juliana's Contribution:

I implemented the about us page including the backend and front end. For the front end of the about us page I added a section for our mission statement, a section for cards for each group member along with drawings of each group member and a description . I also implemented a donation section with a visual of all donations to reach a goal and created a pop up module for putting in card information so that users could donate in amounts of as little as $1 or $5, to any custom amount. I also redesigned and organized the nav bar making it more user friendly and easier to navigate, which also included adding a profile drop down.

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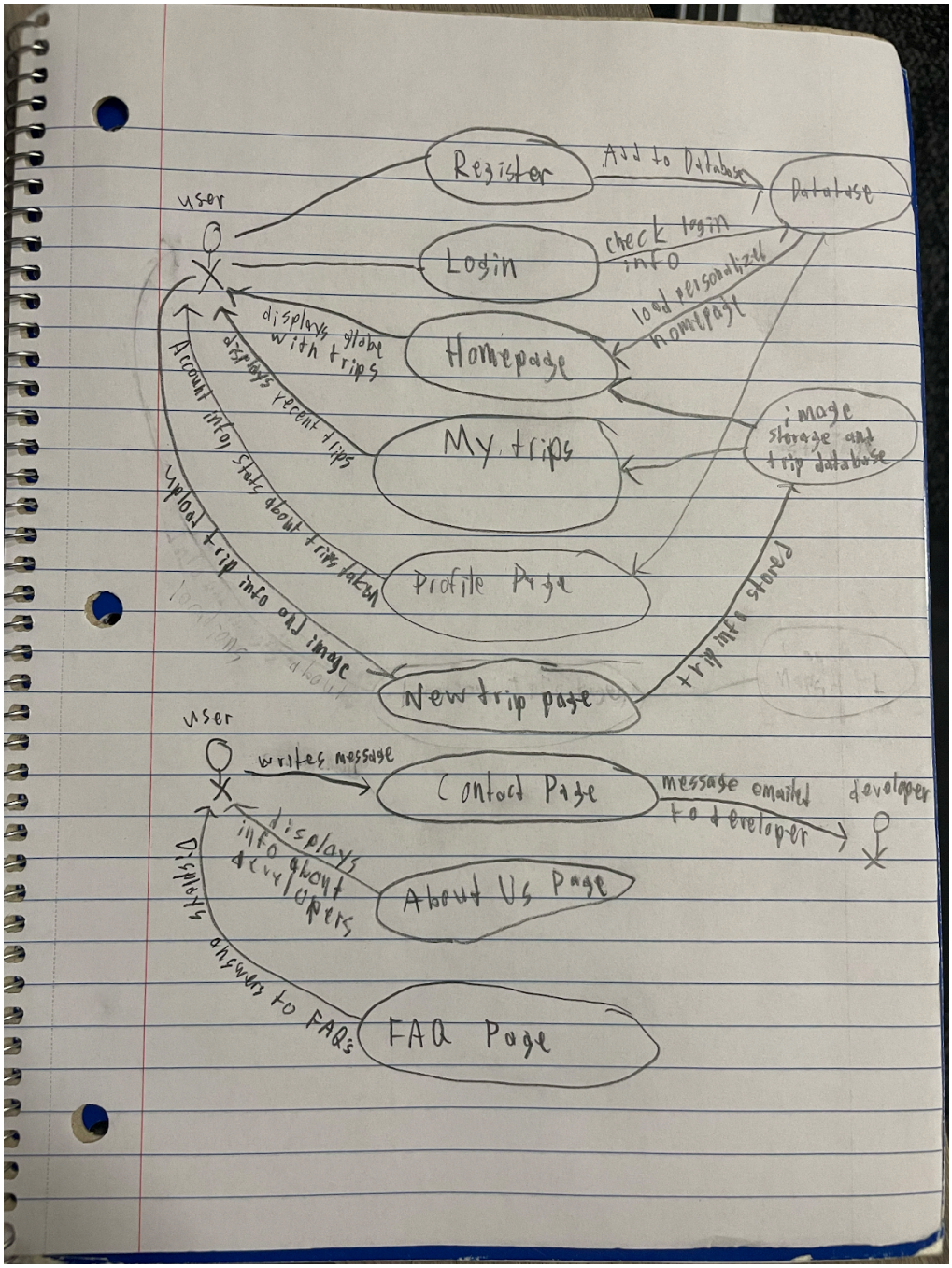
Use Case Diagrams and Wireframes:

We completed our use case diagrams and wireframes on Figma, provided by the link below.

https://www.figma.com/design/lbSJwkm3GM3cYsSh6KSdlL/Wireframe-of-MapMosaic?node-id=0-1&p=f&t=WeaR9GaVsOwcQJZ2-0

Use Case Diagram:



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Test Results:

We wrote two test cases for the /register route, two test cases for the /profile route, and 2 test cases for the /globe route. The test cases for /register include a positive test case that passes a valid username and password, expecting a 200 return code and a message that reads “Success.” The negative test case passes an invalid username, expecting a return code of 400 and a message of “Fail.” The test cases for /profile test what happens when the user is logged in or logged out. If the user is logged in, the profile page should be rendered and return a status code of 200. If the user isn’t logged in, the site should redirect to the login page. On the other hand, for the /globe test cases, as they were designed for the initial API (Google Maps), they passed in positive return value - indicating that the map would return properly with the required data to the frontend of the homepage. However, as the API did not fully fit our requirements for the website, they were moved on another branch (globe_work) and pocketed as a backup option in the event we did not find a working version for the globe in time. Luckily we did in the form of MapboxGL, which there are no test cases for that at this moment.

Deployment:

The link below leads to our live website!
https://mapmosaic.onrender.com