Campus Parking Finder

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Project Description

The CU parking website is outdated, difficult to navigate, and confusing. The map itself does not provide data on how full parking lots are, nor does it support pay-to-park areas. Additionally, there are often times when users may need to park for just a couple of minutes, but with no information on where the parking enforcement are, they risk getting a ticket.

Finding a parking space on a university campus is notoriously difficult and overwhelming, resulting in wasted fuel, tardiness and stress. Our website addresses these issues by providing a real-time, user-reported map displaying available parking spots on campus.

Our website relies heavily on the power of community contribution. Users will act as active participants, rather than passive observers; they can report whether or not the parking space is full so they can save time for the other drivers. Parking spots are marked using polygon shapes, which makes it easier for users to make sense of how the parking spots look like. Capacity of the parking spots can be seen by clicking on the shapes.
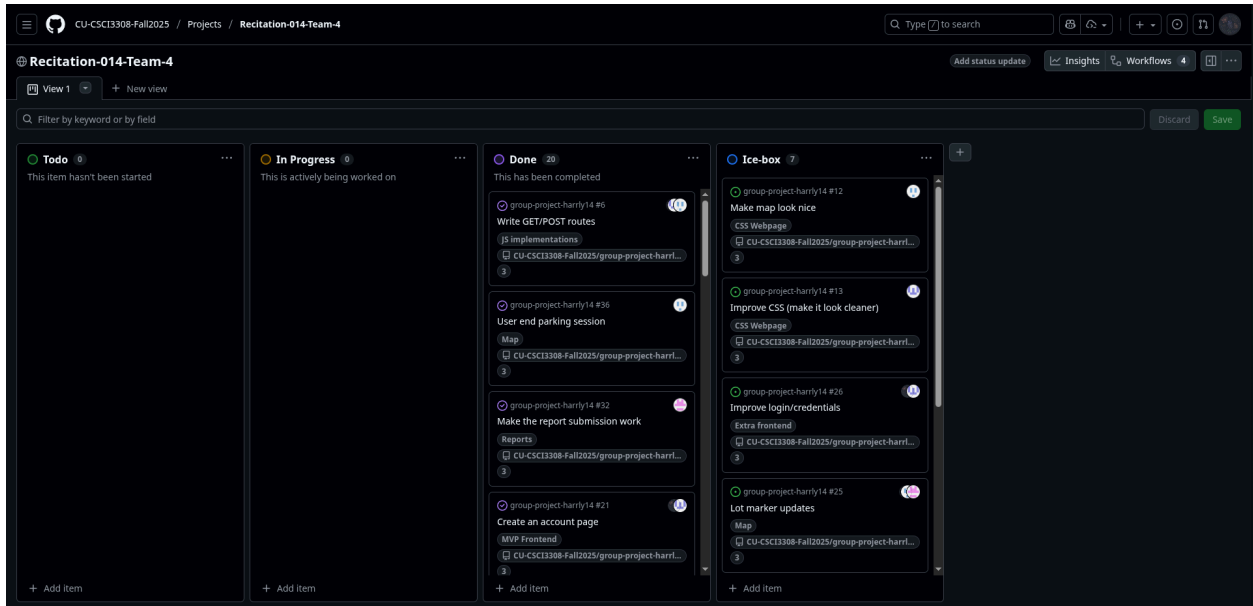
To prevent spam and maintain data integrity, authentication is required to make a report, start a parking session and log parking enforcement sightings.

VCS (repo)

https://github.com/CU-CSCI3308-Fall2025/group-project-harrly14

Project Tracker - GitHub project board

https://github.com/orgs/CU-CSCI3308-Fall2025/projects/16

Video

[Project Demo](#)

Contributions

Sully:
I worked mostly on the infrastructure of our project, focusing on the Docker, NPM, and Render implementations. I also contributed to the structure and seed data of the database, including creating polygons so that parking lots can be displayed on the map

Xander:
I worked on the user report functionality to allow users to add reports to the map, as well as the backend logic to cleanup the reports database and prevent users from creating too many reports. I also got the Google Maps API key and made sure it was correctly passed to the Google Maps platform when using the protected routes.

Carys:
I worked on the start/end parking session button, making sure that the user cannot start more than one parking session at a time - the button changes to end parking session if the user has a session active, and this carries over even if a user logs out and then logs back in again - and that when the user presses the button it updates the lot occupancy in real time on the map for others to see. I also worked setting up the map and dealt with the Google Cloud Platform they use for all of their API's.
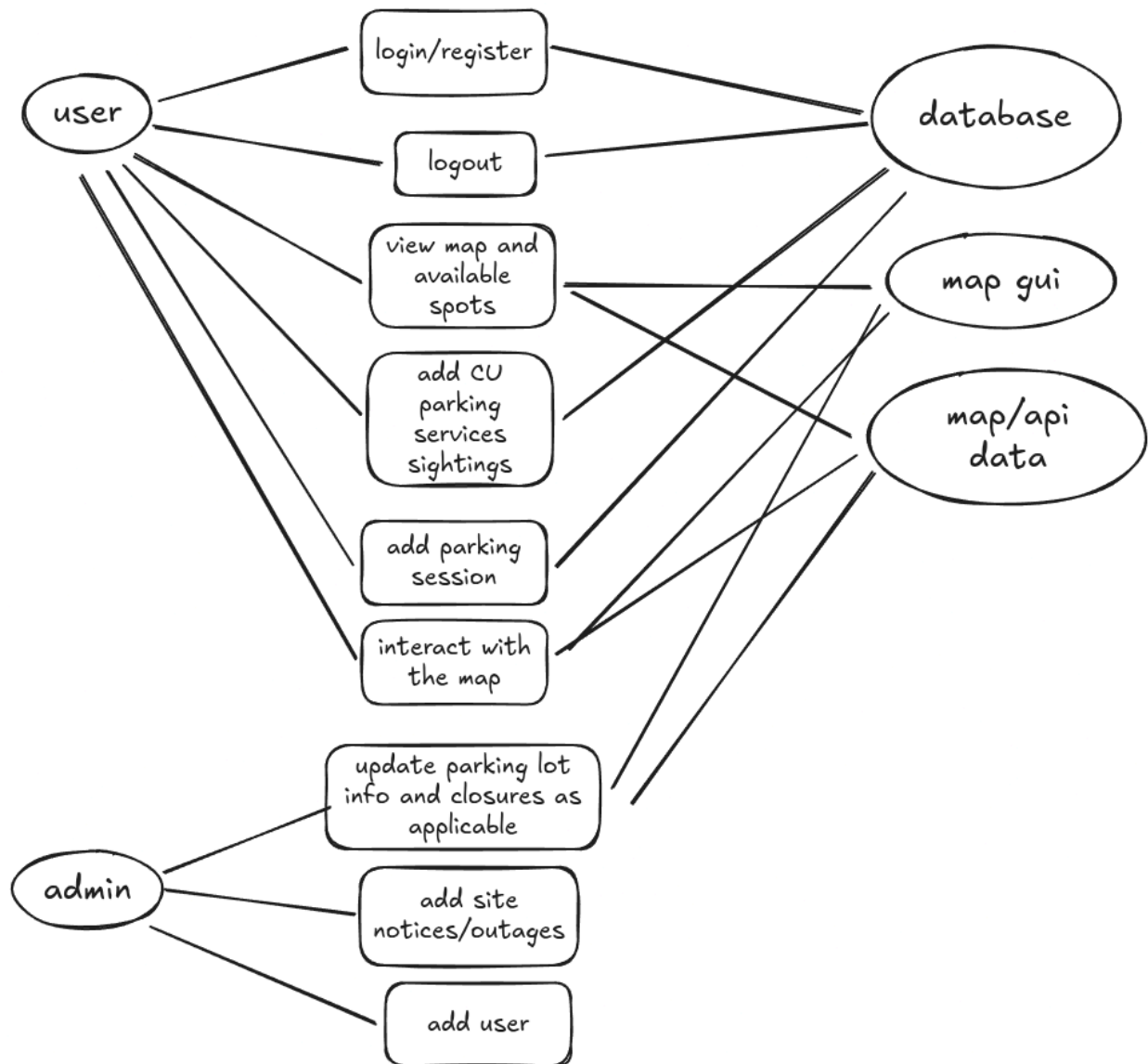
Donna:
I worked on the authentication part of the project, such as register, login, and account page. The account page is made so that the user can see their account details and can also change them. I worked on CSS so that the website looks "prettier". I also took the role of debugger to debug some of the small bugs.

Wireframes
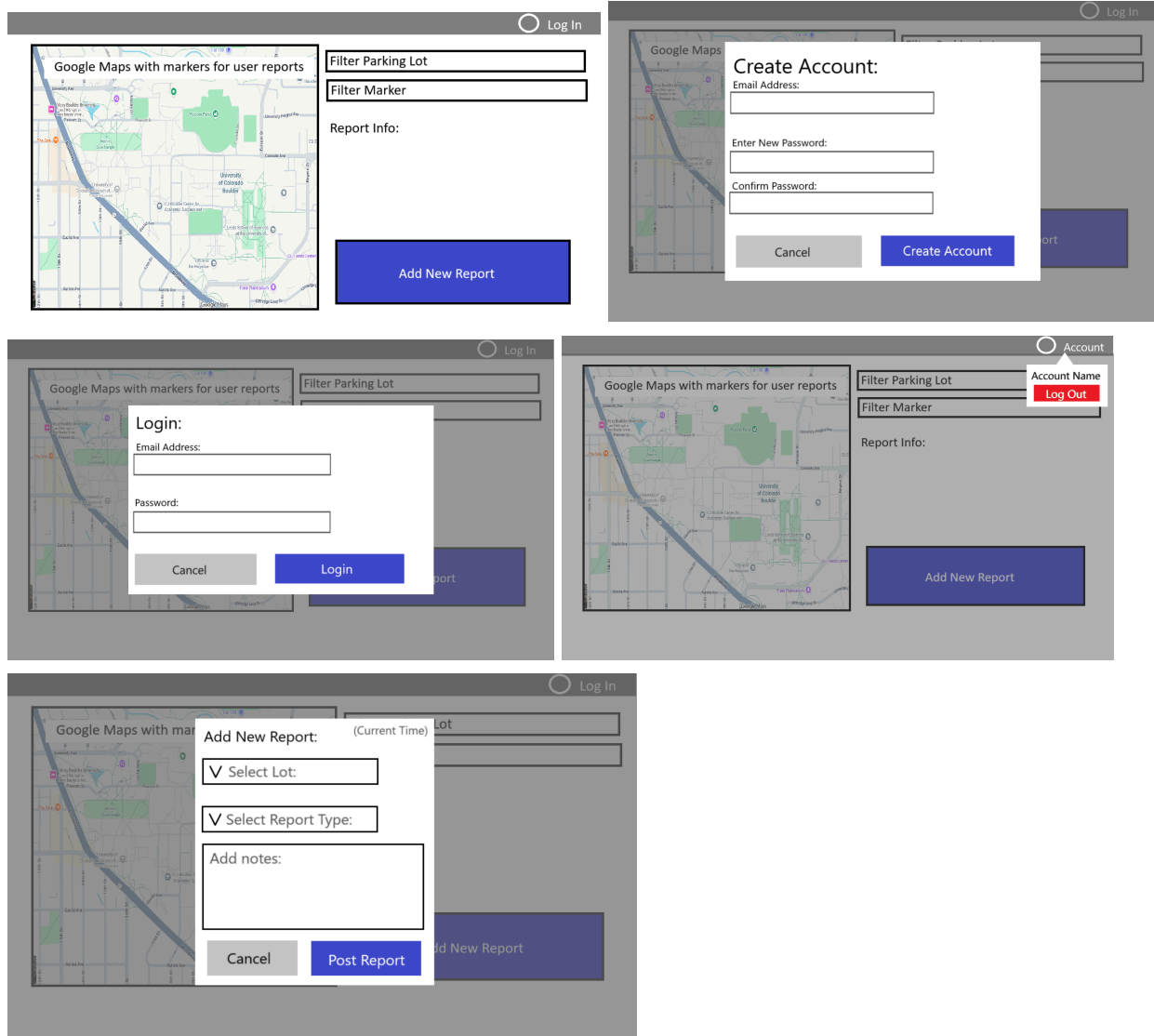
Use Case Diagram

Test results

[UAT document](#)

We conducted user acceptance testing as outlined in our Lab 10 UAT plan. All major scenarios were tested by real users, including report submission, map navigation, authentication, and session management. The following feedback was given:

- Usability of report submission: Testers liked the "submit report" button and thought that it was intuitive and logical. Users quickly understood how to see reports and other parking lot data. The requirement for authentication to submit a report was understood as a necessary step.
- Map responsiveness and clarity: Users also highlighted the responsiveness and clarity of the map. The map was confirmed to load quickly, and the visual clarity of the polygonal lot markers made locating a space straightforward.
- Starting a parking session: While users were able to figure out how to start and end a parking session, they were confused at first about selecting a lot from the sidebar menu instead of just clicking on a lot on the map
- Persistence and reliability: Feedback confirmed the reliability of the application, with the state of a user's active parking session correctly persisting even if the user logged out and subsequently logged back in.

Deployment

https://parking-app-okza.onrender.com/