CU Marketplace Project Report:

Contributors: Ben Baumert, Ben Snyder, Michael Jervis, Connor Collier

Project Description:

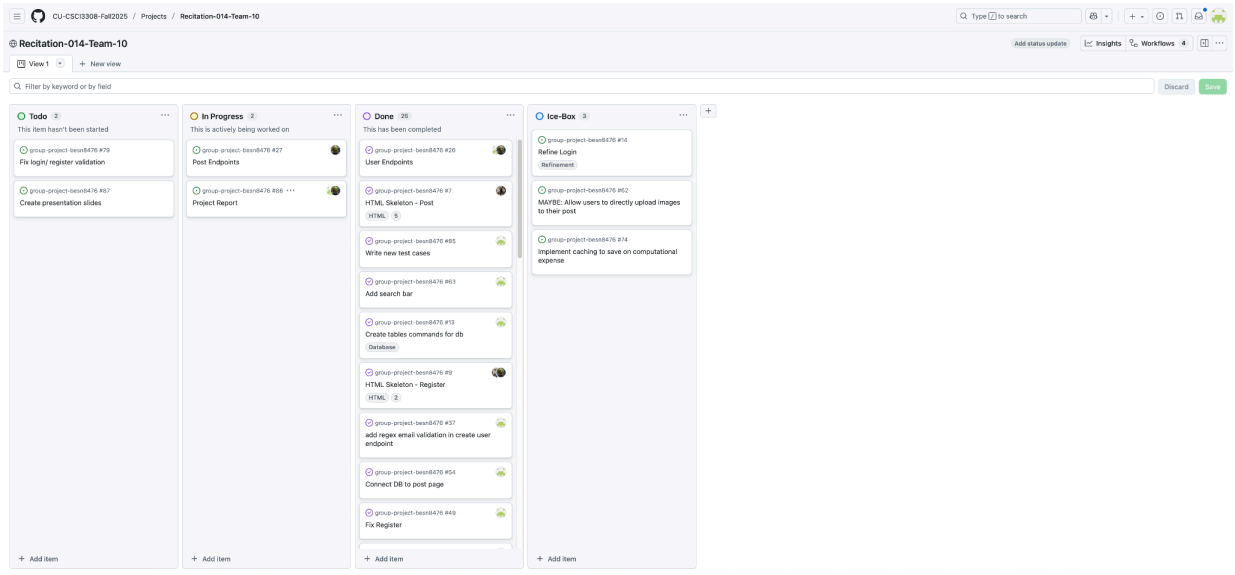
This project was aimed at creating a simplified online market platform among the students of the University of Colorado Boulder to sell and purchase the items that they do not need anymore. Several students end up amassing additional items at the end of a semester or when switching dorms or apartments, and the current tools, such as Facebook Marketplace usually seem too general, lifeless, or overwhelmed with posts not created by students themselves. As a solution to this, we developed a platform that is similar to Facebook Marketplace but specific to the needs of CU students because it must have an email address of colorado.edu in order to register. This makes sure that all the users are members of the CU community which makes the environment safer and more trustworthy.

Registered students have an easy time making posts and selling items. All the listings contain major details like a picture of the object, a descriptive title, price, condition, location, and a written description to make potential buyers aware of them. Users are also able to leave contact information to ensure interested buyers can contact them using the most effective and efficient method.

Once a post is created, it would be read by all other users, who would be able to browse through listings, read item details, and get in touch with sellers. Also, the platform is easy, well organized, and intuitive to use, since every user can access their own MyAccount page where they can view, edit, manage, or remove their active posts.

Project Tracker:

https://github.com/orgs/CU-CSCI3308-Fall2025/projects/23/views/1



Video Link:
https://www.youtube.com/watch?v=wwoY5a0E2Q4

Github Repository Link:
https://github.com/CU-CSCI3308-Fall2025/group-project-besn8476

Contributions:
Ben Snyder:

I contributed heavily to both the backend and frontend integration of our project. I wrote the test cases, built the search bar, and designed the database tables. I implemented category routes, half of the user endpoints, and created the seed file. I connected the backend endpoints to the frontend and ensured that data flowed smoothly across the entire application. On the UI side, I built the modal for viewing individual posts and developed the MyAccount page. I also deployed the full site and ensured everything worked in production.

Ben Baumert:

I largely contributed to the back end of our site, creating half of the API endpoints. I worked with Ben S. at the beginning of our project to plan out needed endpoints to ensure a plan was made for API integration. I created the Discord server for communication and added channels/pins as needed. I made a few small changes to the databases as issues came up, but the building of the database was largely done by Ben S. I checked a multitude of merge commits to ensure the stability of our site, including doing integration testing once features were implemented. I was responsible for creating our release notes that documented our changes.

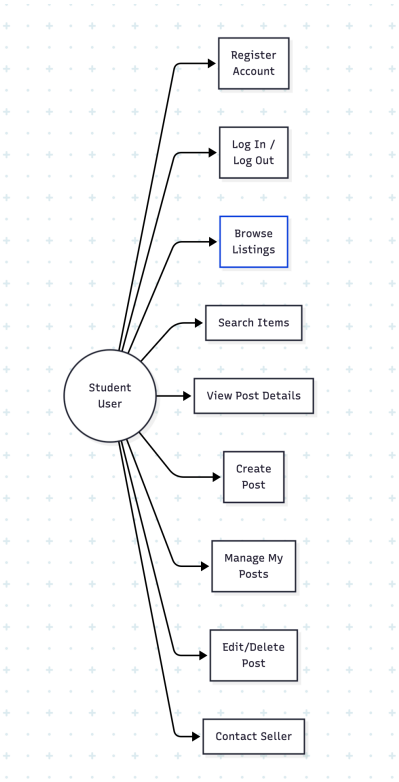
Connor Collier:

I worked on the front end of our site, building the handlebars files used in the project and made sure Handlebars worked when we were having major problems with it. I added several routes to the site, including /login and I made sure the nav bar had the correct links on it. I created the modal that allowed users to create posts and generally did a lot of front end bug fixing.

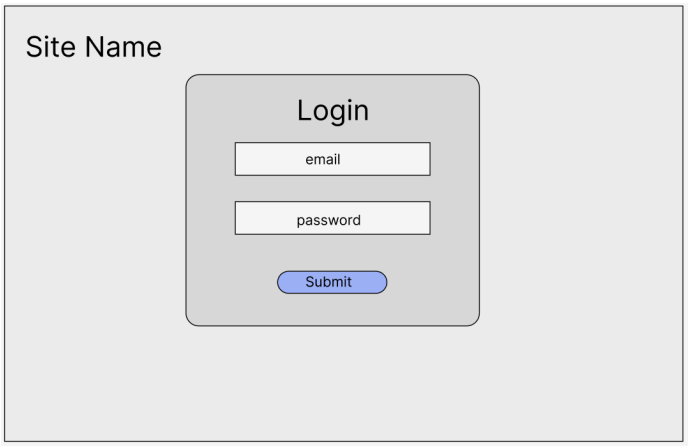
Michael Jervis:

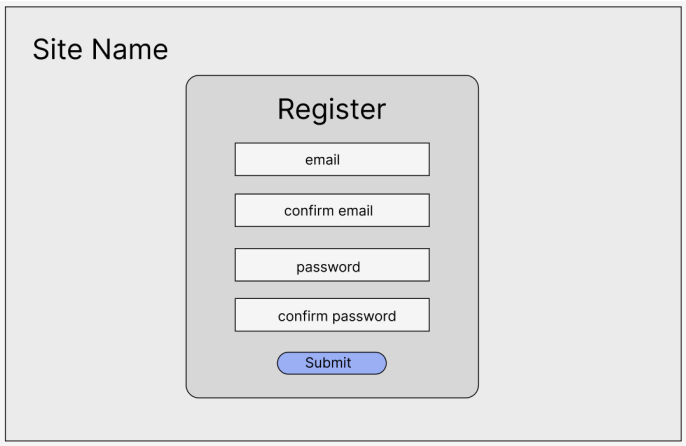
I contributed to the front end of our project by redesigning the CU-themed home, login, register, and post pages, and by implementing the modal for viewing post details. I fixed numerous UI issues, updated Handlebars templates, and ensured the frontend correctly connected to the backend data by updating templates and fixing rendering errors in Handlebars. I also handled some Git tasks such as resolving merge conflicts, trying to ensure smooth integration across branches. I focused on improving usability, correcting UI bugs, and maintaining project stability as new features were added.

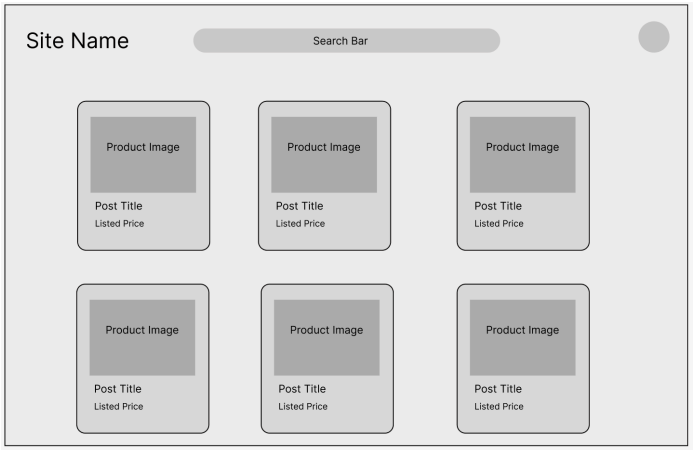
Use Case Diagram:
(made with mermaid on mermaidchart.com)

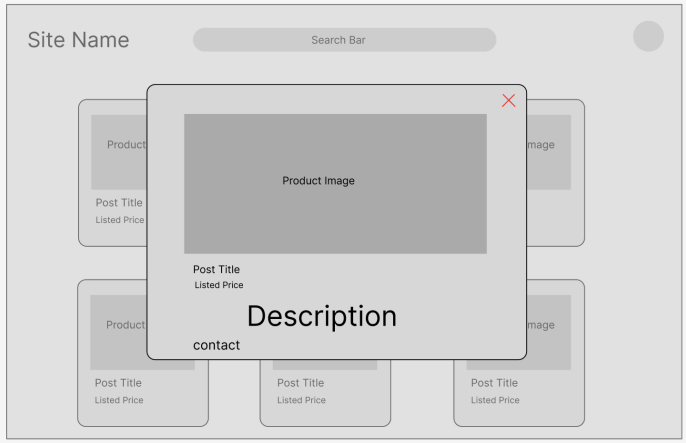


Wireframes:









Test Results:

Use Case 1 – User Registration

What were the users doing?

Users attempted to register new accounts using the signup page by entering a username, password, and email address.

What was the user's reasoning for their actions?

Users assumed the registration process was similar to other web applications and expected general email addresses to be accepted.

Was their behavior consistent with the use case?

Yes. All users followed the intended workflow by attempting to create an account using the provided registration form.

Deviation and Reason

Several users initially attempted to register using non-@colorado.edu email addresses. This occurred because users were not immediately aware that the platform is restricted to CU Boulder students.

Changes Made

A clearer validation message was added below the email input field specifying that only @colorado.edu emails are allowed. After this change, users successfully registered without confusion.

Test Result

The registration feature successfully validated inputs, enforced CU email restrictions, prevented duplicates, and redirected users upon successful registration. All automated test cases for registration passed.

Use Case 2 – User Login

What were the users doing?

Users attempted to log in using correct and incorrect credentials.

What was the user's reasoning for their actions?

Users expected immediate access to the marketplace after entering valid credentials.

Was their behavior consistent with the use case?

Yes. Users followed the correct login process using the login form.

Deviation and Reason

Some users attempted multiple incorrect passwords, expecting a retry counter or password visibility toggle. A few users did not immediately see the login error message because the page re-rendered without changing routes.

Changes Made

The error message styling was updated to be more prominent so users could clearly see when authentication failed.

Test Result

Valid logins consistently redirected users to the homepage while invalid credentials rendered an error message. All login test cases passed successfully.

Use Case 3 – Creating a Marketplace Post

What were the users doing?

Users attempted to create new marketplace listings by filling in post details and submitting the post form.

What was the user's reasoning for their actions?

Users expected that leaving certain fields blank would be allowed or that the application would guide them with inline feedback.

Was their behavior consistent with the use case?

Mostly yes. Users followed the correct workflow for creating a post.

Deviation and Reason

Some users attempted to submit posts without filling in required fields. This happened because the form did not initially indicate which fields were required.

Changes Made

Client-side required-field validation was added to prevent incomplete submissions.

Test Result

After validation improvements, all posts created with valid input were successfully stored and displayed. Functional post creation was confirmed during testing.

Use Case 4 – Browsing Listings & Viewing Item Details

What were the users doing?

Users browsed available listings, used the search bar, and attempted to view item details using the modal.

What was the user's reasoning for their actions?

Users expected the browsing experience to match standard marketplace platforms where clicking a listing opens the details.

Was their behavior consistent with the use case?

Yes. Users followed the correct browsing and interaction flow.

Deviation and Reason

Some users initially clicked on the listing image instead of the “View Details” button, expecting the modal to open automatically.

Changes Made

The entire listing card was made clickable to open the item details modal.

Test Result

Listings displayed correctly, search filtering worked as intended, and the modal reliably loaded item details after interaction improvements.

Deployment:
https://the-cu-marketplace.onrender.com/