MICHIGAN STATE UNIVERSITY

Project Plan Presentation

Ally Offers Ecosystem

The Capstone Experience

Team Ally

Winnie Yang
Charles Kellogg
Jered Brophy
Aesha Ray
Jack Cruz
Kainan Chen

Department of Computer Science and Engineering
Michigan State University

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From Students…
…to Professionals

Project Sponsor Overview

- Headquartered in Detroit, Michigan
- One of the largest banks in the country, close to $200 billion in assets and 11 million customers
- Provides financial services including car finance, online banking, corporate lending, vehicle insurance, mortgage loans
- Committed to connecting and supporting their communities
  - Made more than $900 million in community development loans and investments
  - Donated over $1 million in grants to nonprofit organizations
  - Committed to invest $3.7 billion in communities over a three-year period

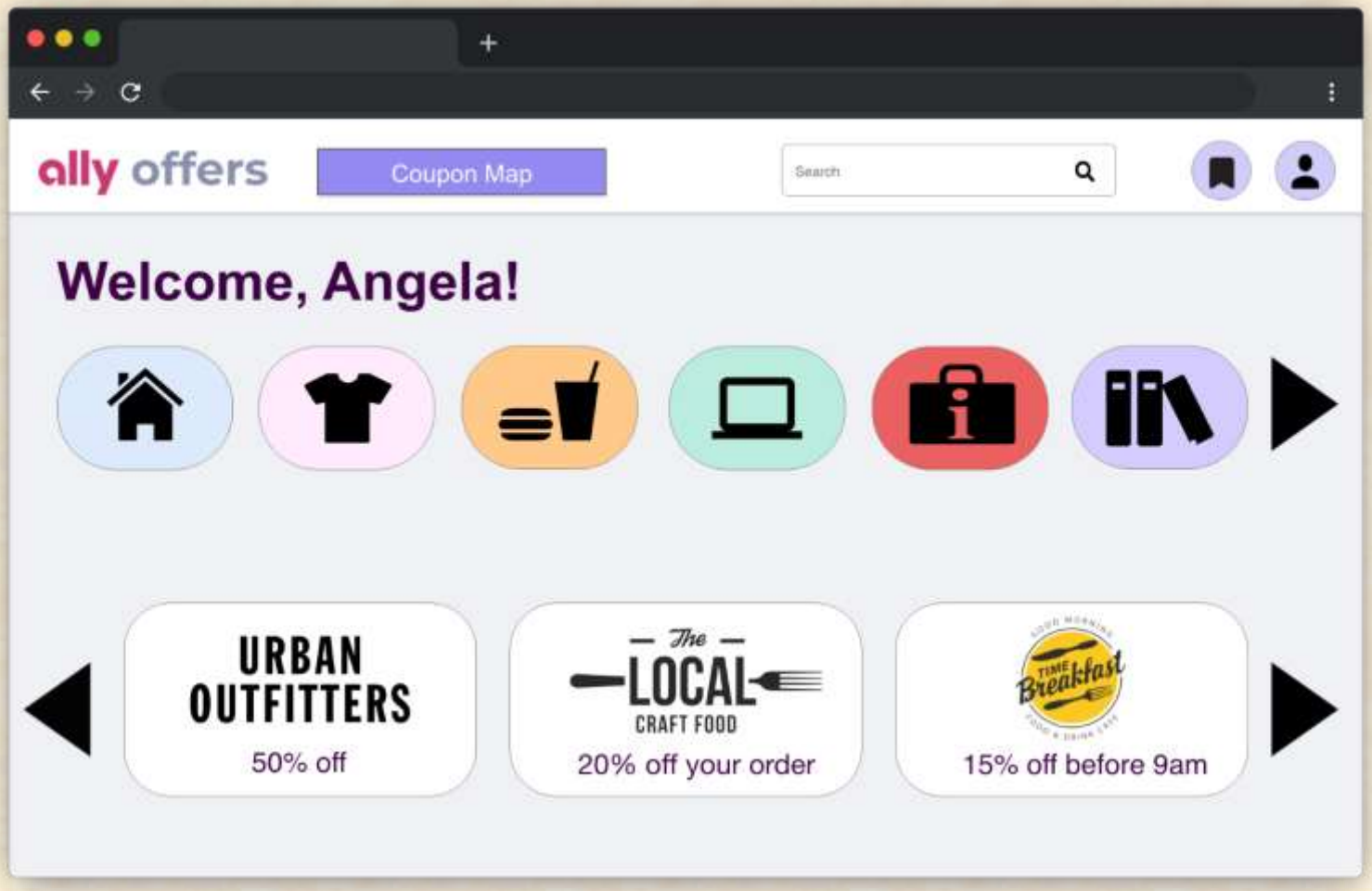
Project Functional Specifications

- Small businesses have the struggle of advertising their brand and gaining traffic in their stores
- “Ally Offers Ecosystem” allows for qualified businesses to register and upload deals to Ally’s customers
- Ally will seamlessly connect their customers on one platform
- Business side: user can add, update, and delete offers, view analytics
- Customer side: many categories of products to choose from, save deals, access a map view that will show the nearest business

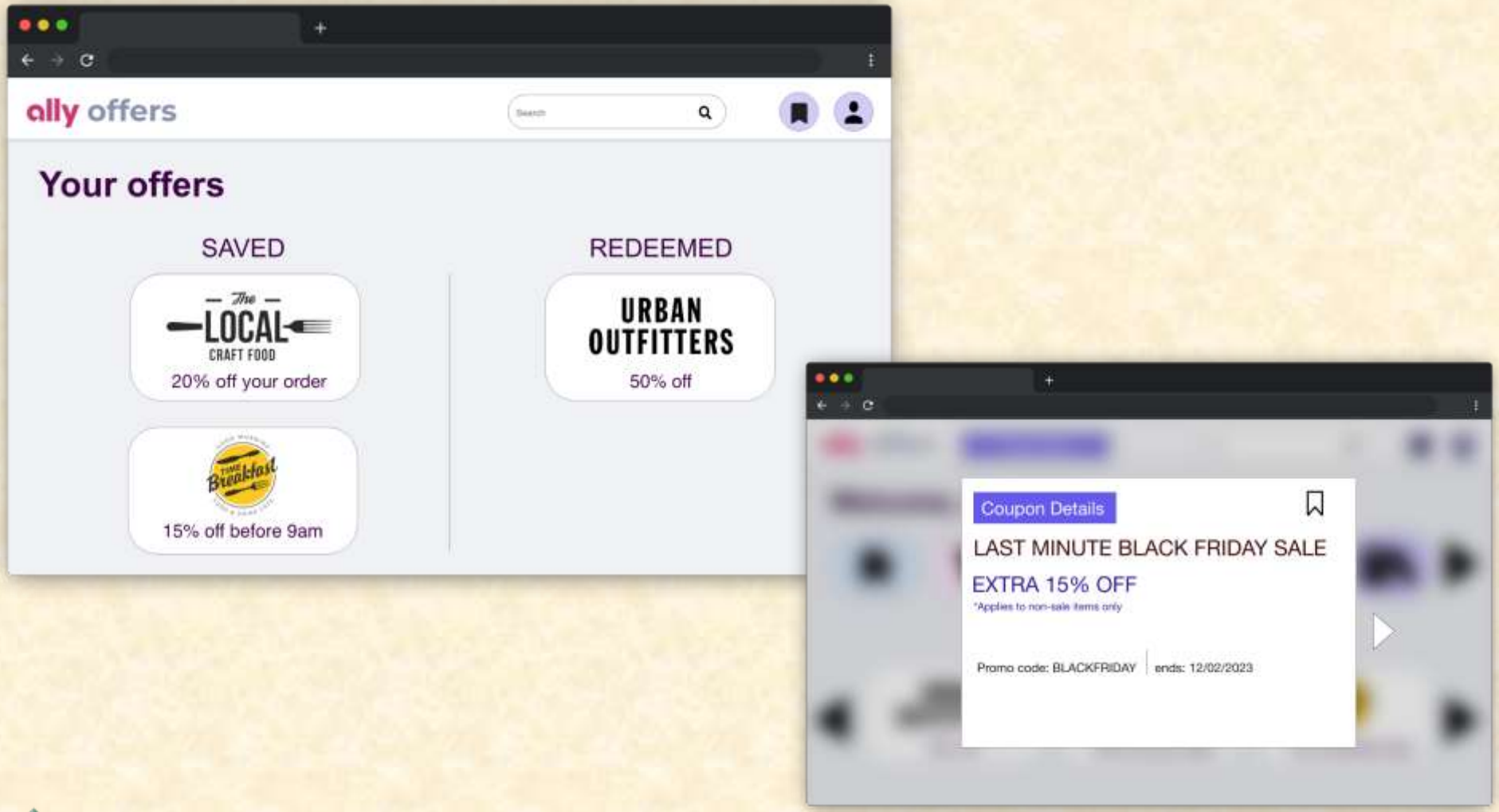
Project Design Specifications

- The customer dashboard
  - Customers can browse, save, use, and learn more about offers
  - Categories of coupons and businesses to shop from saving time and money
  - Carousel view of the coupons in the business dashboard
  - Map view of offers near the customer based on personalized filters
- The business dashboard
  - Calendar view of ongoing offers
  - Analytics for businesses to observe their offers' success and how to improve promotions
  - Upload/edit page allowing businesses to refine promotions and deals

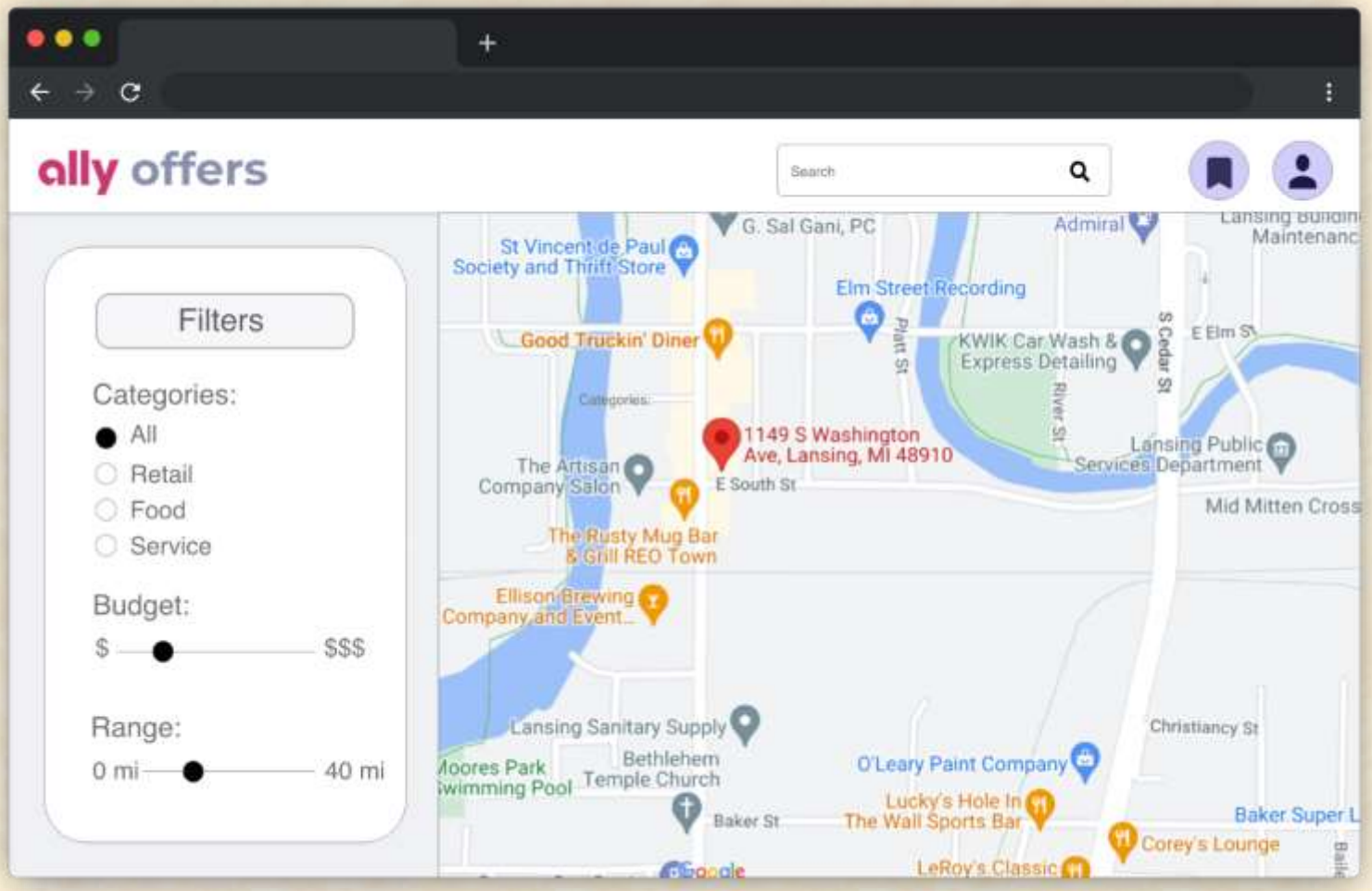
Screen Mockup: Customer Home Page



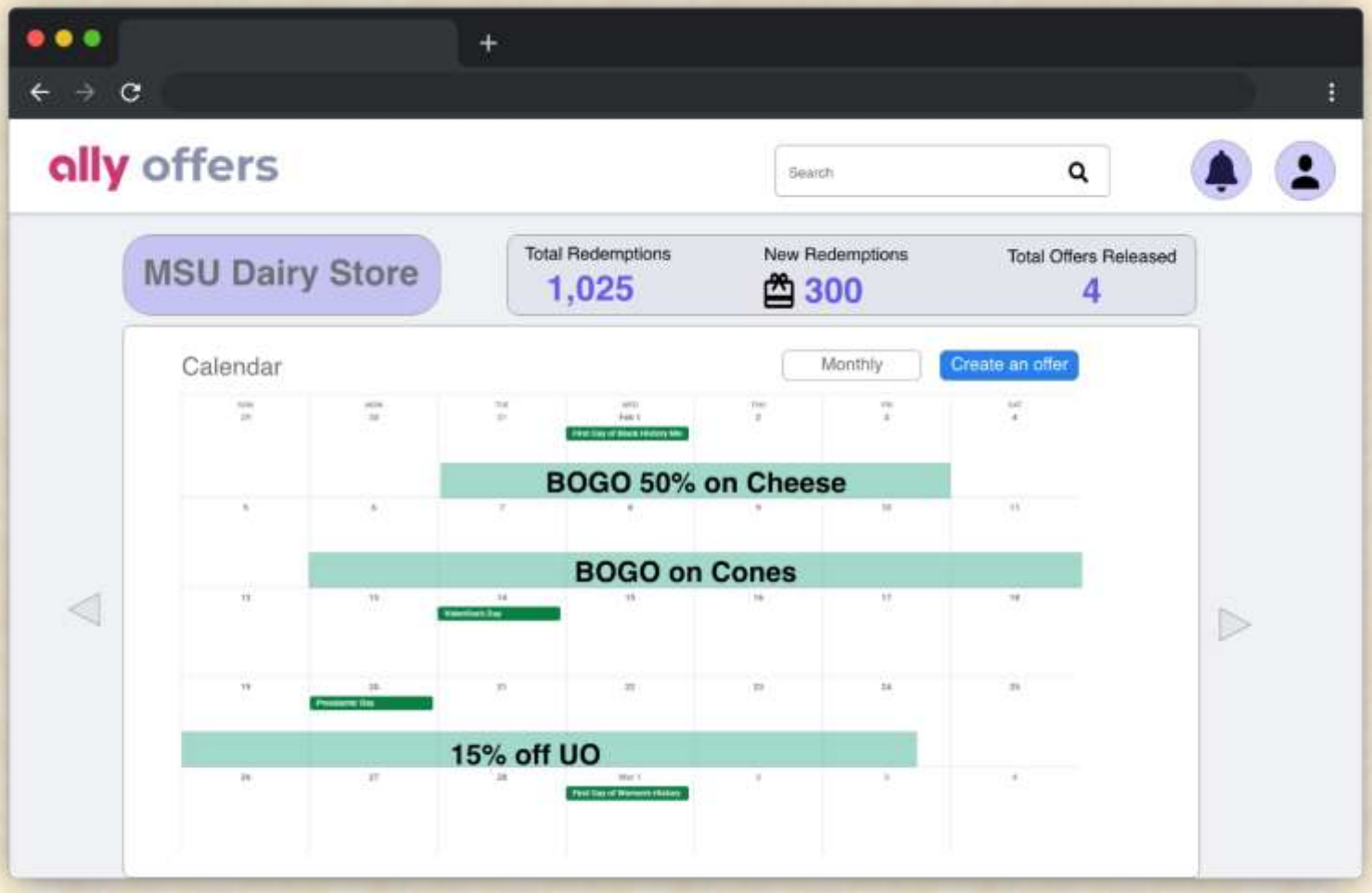
Screen Mockup: Customer Bookmark Page



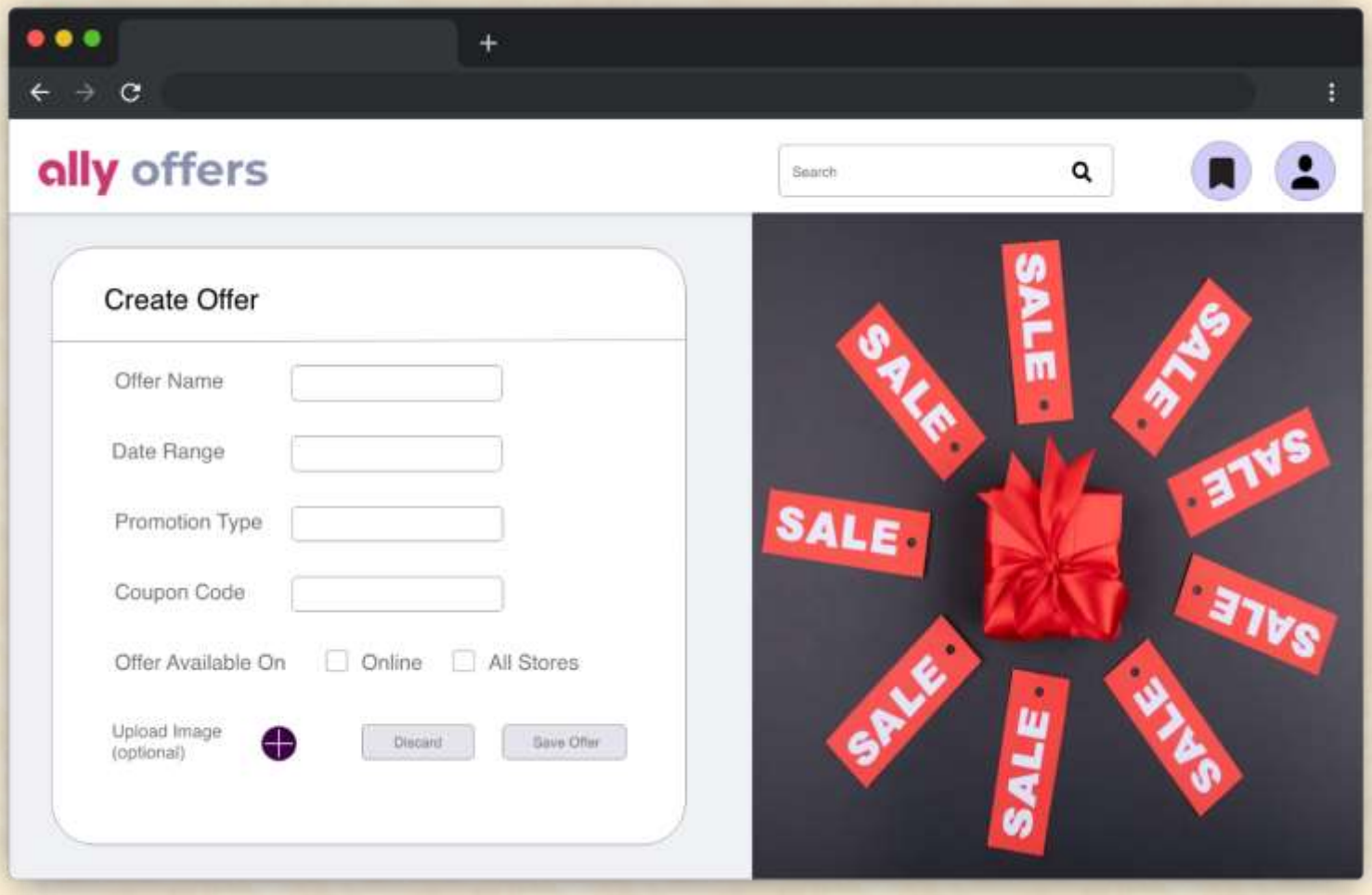
Screen Mockup: Customer Map Page



Screen Mockup: Business Home Page



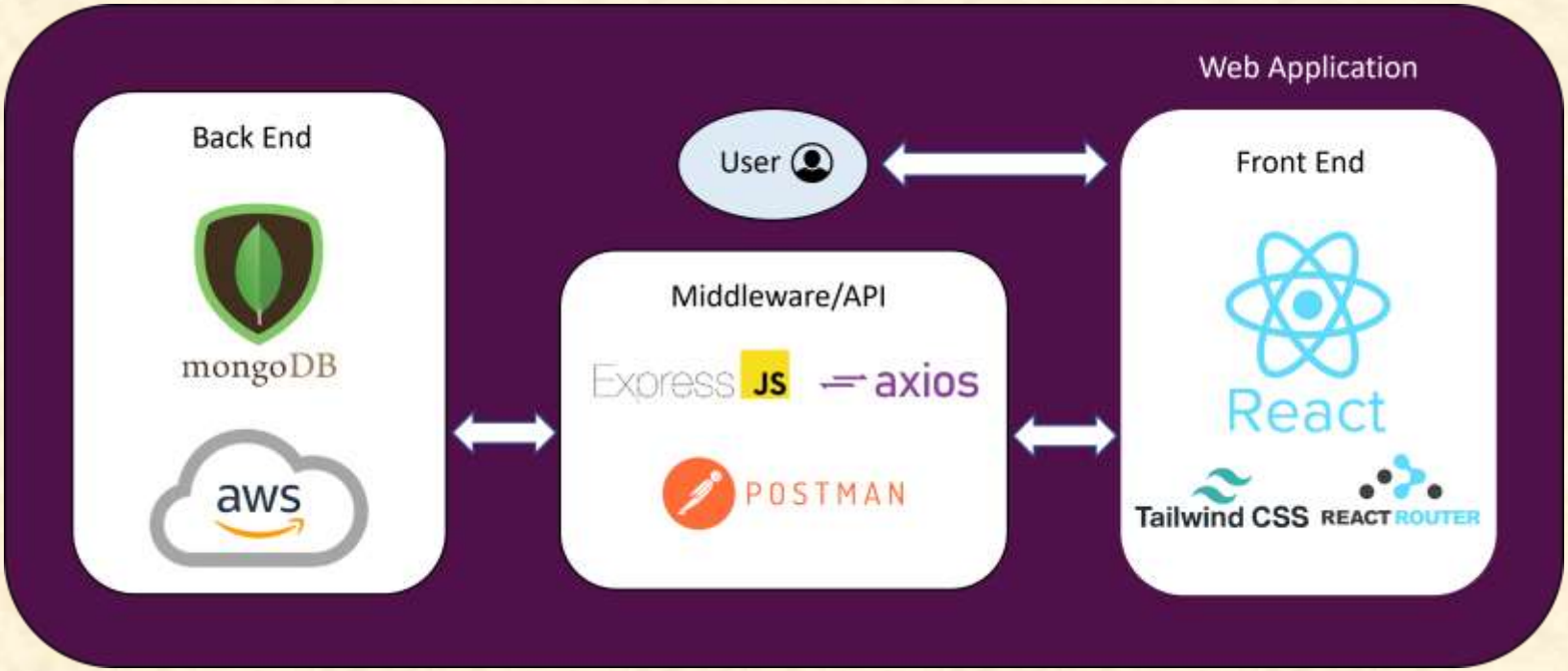
Screen Mockup: Business Create Offer Page



Project Technical Specifications

- “Ally offers Ecosystem” is a web application built on
  - React, VS Code, JavaScript, and Node.js
- Front end: Tailwind and React Router
- Middleware: Express, Postman and Axios
- Backend: AWS and MongoDB

Project System Architecture



Project System Components

- Hardware Platforms
  - Amazon Web Services
- Software Platforms / Technologies
  - React
  - Tailwind
  - Express
  - MongoDB

Project Risks

- Risk 1
  - **Description:** Using machine learning, we must be able to determine what a customer tends to go for with promotions. With machine learning we can suggest what the customer tends to enjoy
  - **Mitigation:** Work towards a prototype with the expected functionality. By creating prototypes and working through our issues and questions with our client, we will be able to add machine learning aspects to our application
- Risk 2
  - **Description:** We must determine how to connect business promotions to customers. We must figure out the best route to take with all the information we could gather and how to use the data to promote customer specific deals that differ based on the customer
  - **Mitigation:** Through geo-location, previous promotions saved/used by a customer, and the implementation of machine learning we will need to test distinct parts of this data to determine which variable is the most important for finding customer specific promotions
- Risk 3
  - **Description:** Through geo-location, we must decide on the sweet spot for choosing the specific distance to base our recommendations on. To break this down further, determining calculations we must do to achieve this distance
  - **Mitigation:** We plan to run lots of tests to determine our expected best distance to use for recommendations. On top of this, we plan to add an option for the customer to pick the distance they would prefer specific to them
- Risk 4
  - **Description:** We plan to use information from customers' previous uses of promotions to help recommend new deals. We must find the best way to gather customer activity, and what parts of their activity can be used to help us promote deals. Furthermore, what of this customer activity can we incorporate with machine learning
  - **Mitigation:** We plan to gather data including; what coupons have been saved and used previously by customers, what type of promotions tend to be the most successful from a business standpoint, and how many deals would be the ideal number to promote

Questions?