Improving Yelp's Review System

Akash Navneeth, Samuel Tiburcio, Derek Kim, Jacob Giboney, & Rashel Osorto

Naveen Jindal School of Management, The University of Texas at Dallas

ITSS 4300: Systems Analysis and Design

Professor Taimur Khan

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Executive Summary

In a world where technology is behind most people's activities, the restaurant review is no exception. One such restaurant review system that has going out of phase due to increasing competition from other newer systems, is Yelp. In this project proposal, the team dives deep into understanding how to bring change to Yelp's current system to bring Yelp up to speed with its competition. The team has put together a comprehensive set of system requirements to implement a Smart-Pricing feature and a newer Yelp Rewards conjoined system to improve Yelp.

Project Proposal

Problem Statement

Nowadays, people eat out at restaurants, but before most do and venture out to visit new restaurants in new places, people will oftentimes resort to reading reviews of restaurants and examine the various restaurants' prices. One such restaurant review website is Yelp. Yelp, however, needs to change with the demand for restaurant reviews due to its limited capabilities. As such, the team has devised two strategies to up Yelp's growth opportunities in the restaurant-review category of the review business to step up its game with growing competition. The problem that the team is looking to help Yelp grow its business model is to first introduce a Smart-Pricing feature that will provide customers with more accurate pricing information so customers can make more informed decisions about their restaurant and meal options. In conjunction with the Smart-Pricing feature, team wants to introduce a Yelp Rewards system in which restaurant customers can share their restaurant experiences as well as detailed pricing information of the meals that they had during their restaurant experience. By implementing these two conjoined features, the team hopes that Yelp's review system can immensely improve to resolve some of the flaws in the Yelp's current system.

Business Justification

Reviews from customers are valuable input to the business. Through customer reviews, business owners can devise strategies to achieve business goals. Yelp's mission is to connect people with businesses. With that being said, our mission is to bring assurance to customers that the reviews given to a restaurant are accurate. A common false or inaccurate review is pricing. Yelp currently has a pricing feature, but it's only shown through dollar signs. This current system does not provide accurate information to the users. Our goal is to create a smart pricing feature that provides a more accurate representation of the restaurant's average cost per visit. Creating this system not only allows users to have accurate information, but it also shows the business how much, on average, their customers spend. Businesses can create business strategies with that information, which could lead to profits and an established customer base. In addition to this smart pricing feature, we want to incentivize users to submit pricing information. With that being said, we also want to add a rewards system. The rewards system will give points to users who provide verified and accurate information to the smart pricing feature. In exchange for points, the users can redeem gift cards and discounts in select restaurants.

Project Scope

- The project will be designed for business use
- The system will be for users of the Yelp application and Yelp's business partners
- The project aims to add value to the restaurant reviewing process for new and current customers
- The project aims to add value to potential business partners
- The project will add software features to the current review infrastructure
- The project features will be extended features from currently operating use cases
- The project aims to establish new incentives for using the yelp system

These new system features aim to add value to the current yelp system. This will be achieved by adding incentives for users to write reviews which increases the value of the platform and its data. Value is also added directly to users through a rewards system, which will also add value for potential business partners. The new proposed features should also improve the quality of data stored by the yelp system. The new features are intended to be utilized primarily by users of the yelp system although businesses also interact with the system in a secondary role. The scope of the project is limited to the two new features and how they fit into the current system and use cases.

Functional and Non-Functional Requirements

Functional Requirements	Nonfunctional Requirements
The app will show accurate pricing	The pricing will load within 24 hours from the visit
The app will provide rewards	The rewards will appear 5 seconds after the receipt it scanned
The app will have the rewards tied up with the customer's account	The app will ask for log in credentials
Customer can access the app on their phone	The app will be compatible with IOS 14.0 or Android 10 and later
The app will store the restaurants and customer data	Customer data will be encrypted using industry standard technology

Expected Value

The value that would be gained by implementing a smart-pricing and reward system is an increase in users, consumer trust, and relationship growth. By creating a system that reflects accurate business prices, consumers can make more efficient decisions that would save them time and money. Providing a reward system creates an incentive for yelpers to share business information. These features will directly increase the number of consumers using yelp to get information and participants that want to help the yelp community. The trust of consumers is created by accurate restaurant prices. This will enforce the concept of reliability by creating a place that consumers can reference to find a single source for reviews, prices, and relevant businesses. Relationships are promoted with these features by a reward system that includes and incentives people to participate more with Yelp. Businesses gain a source to advertise digitally to gain more relevancy and support, which could lead to more businesses wanting to work with Yelp.

Constraints

The constraints in the project are that the cost and people involved in accomplishing the rewards system are undefined. The staff and employees necessary to create the code, user interface, and testing for the features can not be measured. The cost for the project would be an ongoing task and would constantly increase as time continues. The time required to accomplish the deliverables and milestones to implementing a smart-pricing and reward system is dependent on the qualifications and number of people that would be allocated to the project development. Another constraint is the success and participation of users in the smart-pricing program. The smart-pricing feature is dependent on the active participation of users to get accurate menu prices at restaurants, however, if there are few users participating in the program, then consumers do not gain value from the feature. The reward system would work by allowing consumers to get gift cards for their participation in providing accurate restaurant prices, but abuse of the system is a risk. Such as if the owner of the restaurant posts their own prices and constantly updates their prices to make them seem like an active participant in the smart-pricing program. Meaning some sort of increment, reward cap, or restrictions are necessary to prevent abuse of the system. The rewards available would need to be appealing and versatile, so providing gift card options that could make everyone happy could be an obstacle.

Work Breakdown Structure (WBS)

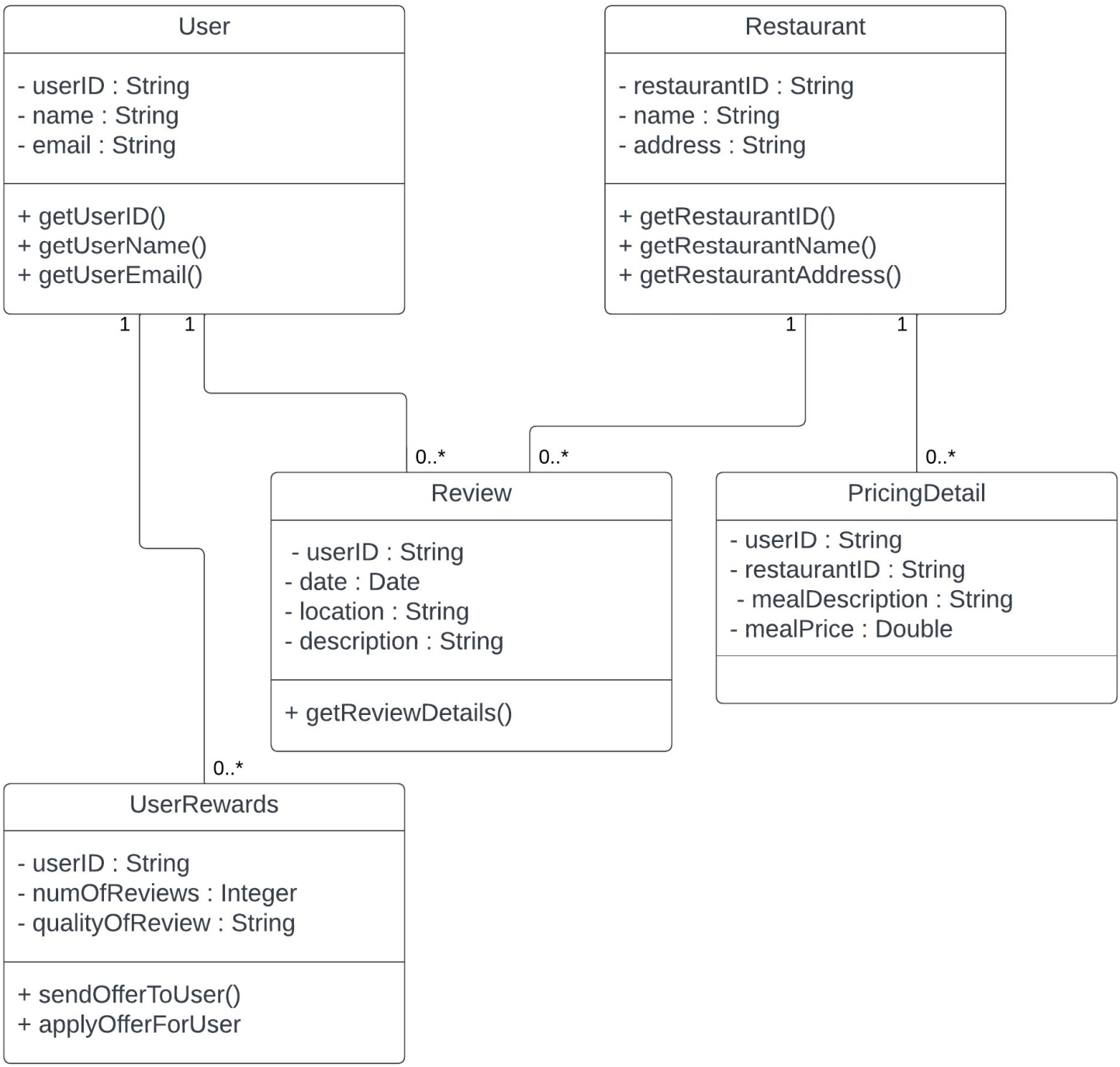
Task	Predecessor	Effort (Days)	Start	End	Resources
1.0 MS I					
1.1 Gather Ideas		0	09/13/22	09/13/22	Akash, Derek, Jacob, Samuel, & Rashel
1.2 Write Project Memo	1.1	2	09/13/22	09/15/22	Akash, Derek, Jacob, Samuel, & Rashel
1.3 Review Memo	1.2	4	09/15/22	09/19/22	Akash, Derek, Jacob, Samuel, & Rashel
1.4 Submit Memo	1.3	1	09/19/22	09/20/22	Akash
2.0 MS II					
2.1 Write Project Memo		6	10/11/22	10/17/22	Akash, Derek, Jacob, Samuel, & Rashel
2.2 Create Project Schedule		3	10/11/22	10/14/22	Akash
2.3 Create & Update MoMs		3	10/11/22	10/14/22	Samuel
2.4 Develop Use-Cases		6	10/11/22	10/17/22	Jacob & Rashel

2.5 Write Use-Case Descriptions	2.4	6	10/11/22	10/17/22	Jacob & Rashel
2.6 Review & Submit Documents	2.1, 2.2, 2.3, 2.4, & 2.5	1	10/17/22	10/18/22	Akash
3.0 MS III					
3.1 Class Diagrams		5	11/1/22	11/6/22	Akash
3.2 Sequence Diagrams		5	11/1/22	11/6/22	Derek
3.3 Communication Diagrams		5	11/1/22	11/6/22	Samuel
3.4 User Interface		5	11/1/22	11/6/22	Jacob & Rashel
3.5 Review & Submit Documents		1	11/7/22	11/8/22	Akash
4.0 MS IV					
4.1 Compile Project Documents		0	11/8/22	11/8/22	Akash, Derek, Jacob, Samuel, & Rashel
4.2 Review Documents		0	11/8/22	11/8/22	Akash, Derek, Jacob, Samuel, & Rashel

4.3 Presentation Prep	**4.2**	**3**	**11/8/22**	**11/11/22**	**Akash, Derek, Jacob, Samuel, & Rashel**
4.4 Presentation Dry-Run	**4.3**	**0**	**11/11/22**	**11/11/22**	**Akash, Derek, Jacob, Samuel, & Rashel**
4.5 Submit Project	**4.2, 4.4**	**1**	**11/14/22**	**11/15/22**	**Akash**

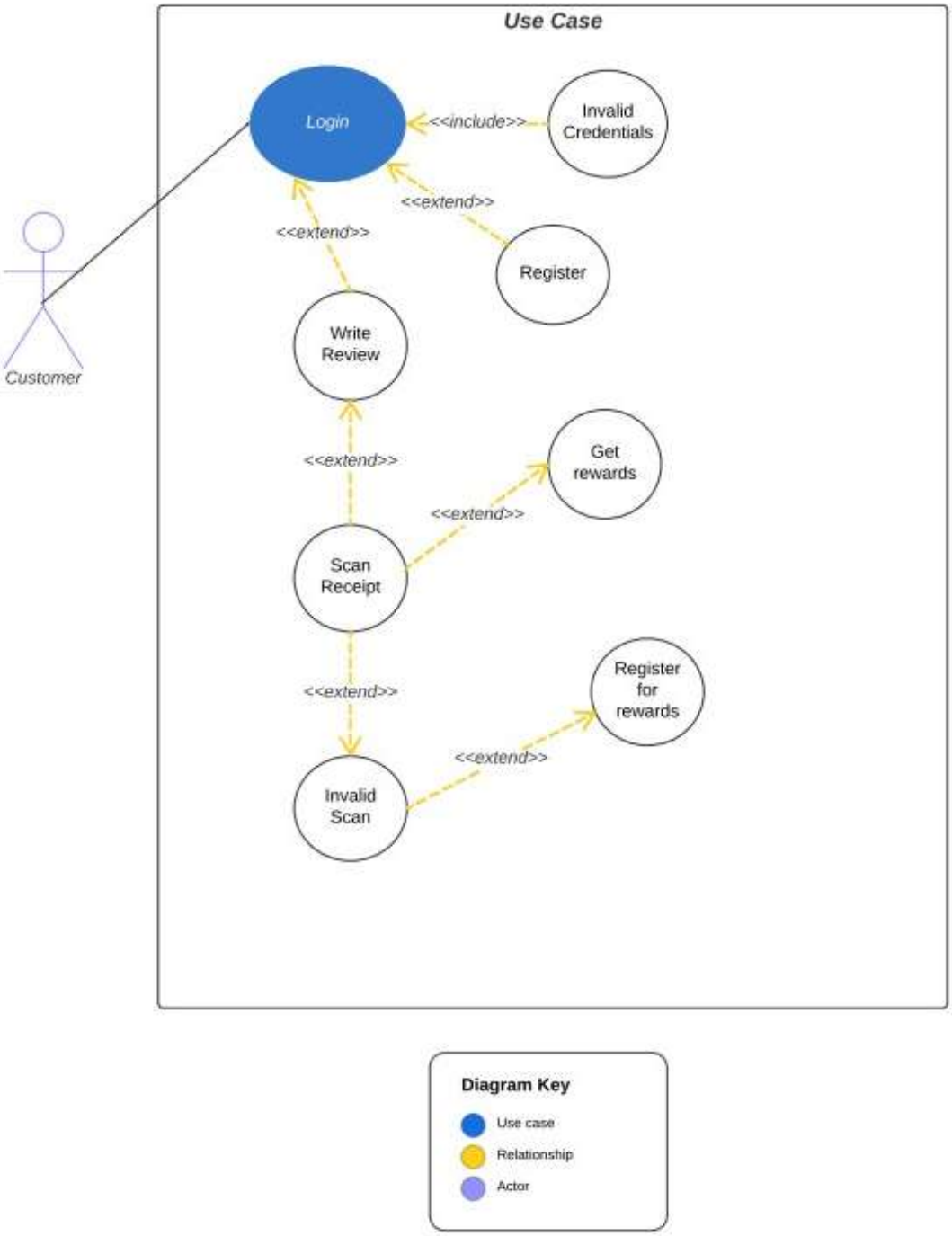
Structural Diagrams

Class Diagram



Use Cases

Use-Case Diagram



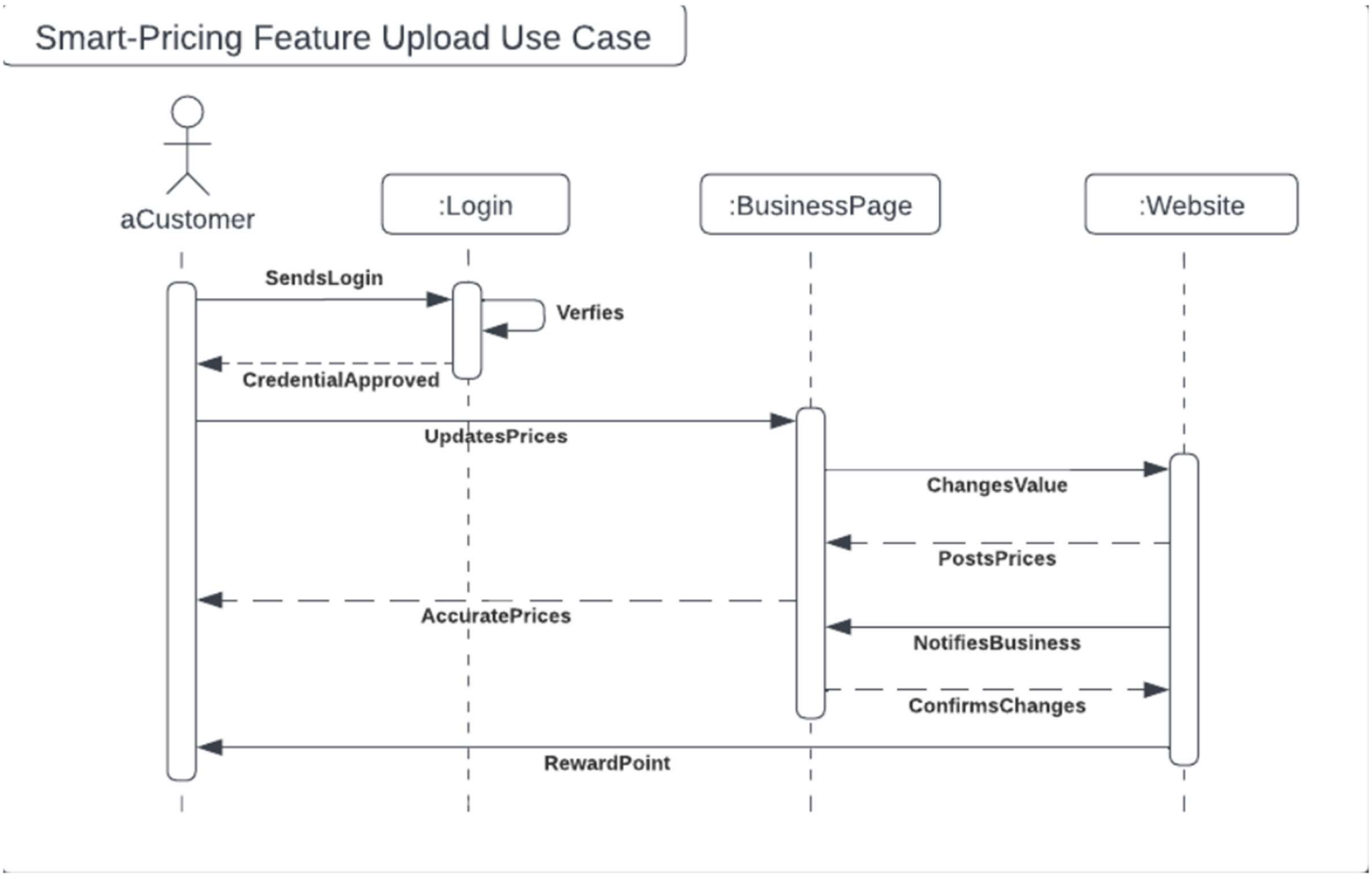
Use Case Descriptions

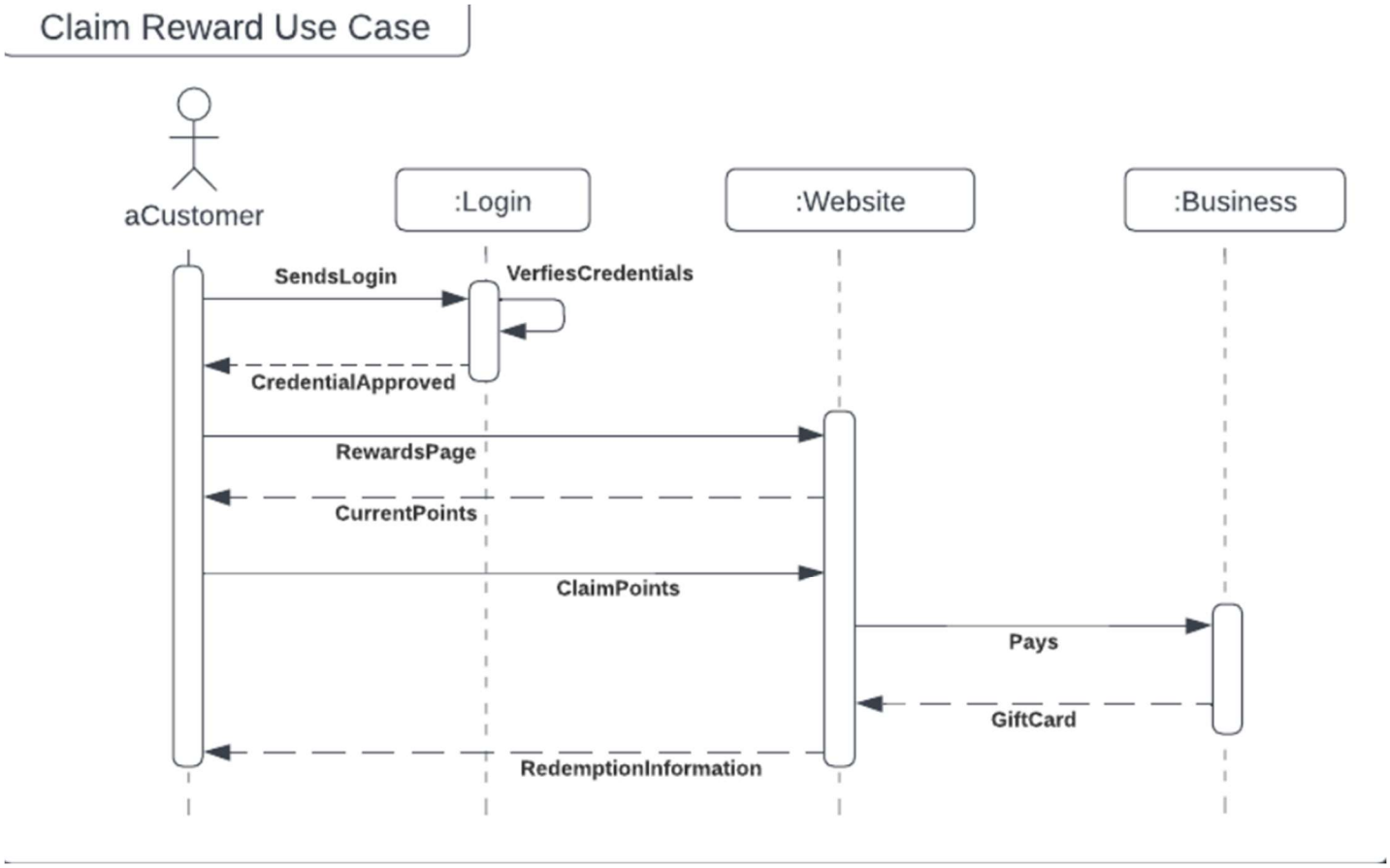
Use Case Name: Smart Pricing	ID: 2	Importance level: High
Primary Actor: User	**Use Case Type: Essiential / Internal**	
Stakeholder & Interests:		
User writes review for resteraunt and inputs pricing data		
Brief Description: This use case describes how a customer writes a review and utlizes our smart pricing data collection feature		
Trigger: User wants to write a review		
Subflow: Invaid Scan		
Normal flow of events: **1.)** User logins into the application **2.)** User starts the review writing process **3.)** User scans in receipt **4.)** User enters purchase data **5.)** User writes a review **6.)** User submits a review **7.)** Review posted & pricing information is updated		
Alternate flow: **1a.)** invalid credentials **1.)** re-enter username & password **2.)** Prompted to register if failed again		

Use Case Name: redeem rewards	ID: 3	Importance level: High
Primary Actor: User	**Use Case Type: Essiential / Internal**	
Stakeholder & Interests:		
User claims rewards for entering pricing data with review		
Brief Description: This use case describes how a customer can claim rewards in in return for writing reviews with pricing data included		
Trigger: User wants to claim rewards from review		
Subflow: None		
Normal flow of events: **1.)** User submits a review with pricing details **2.)** User clicks claim rewards **3.)** rewards points are added to the user's account		
Alternate flow: none		

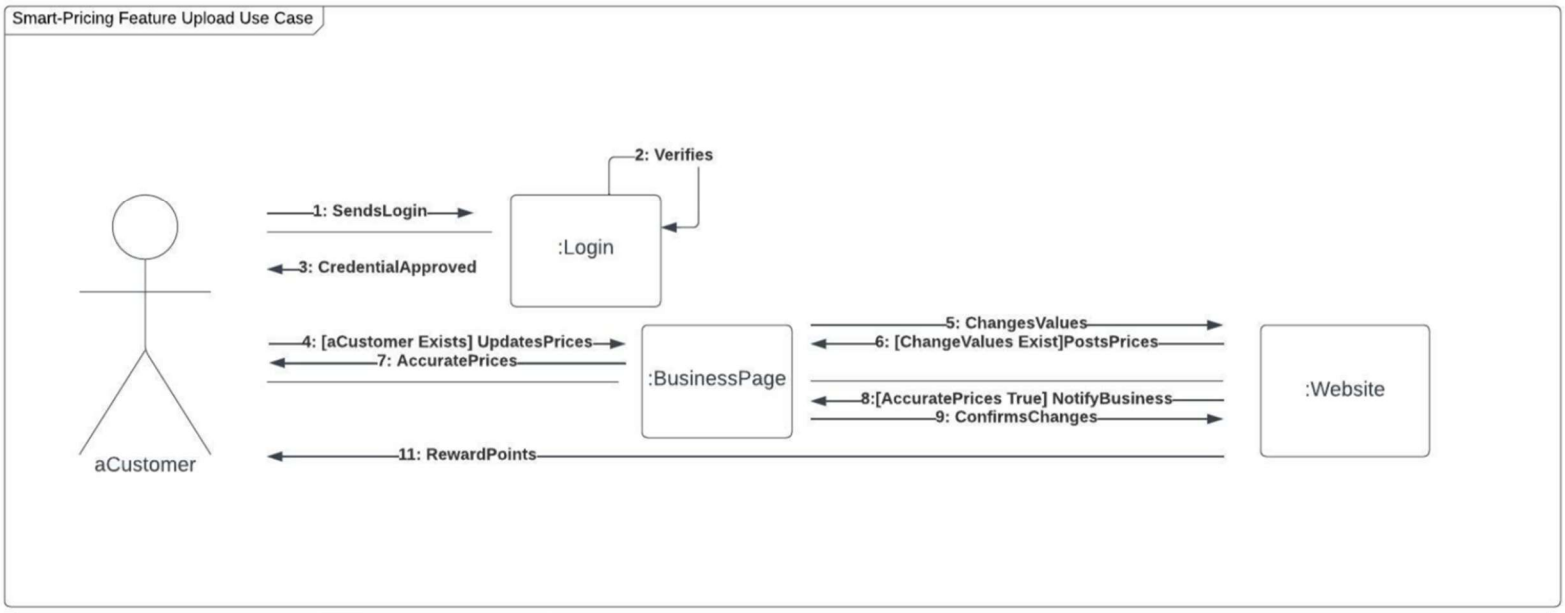
Behavioral Diagrams

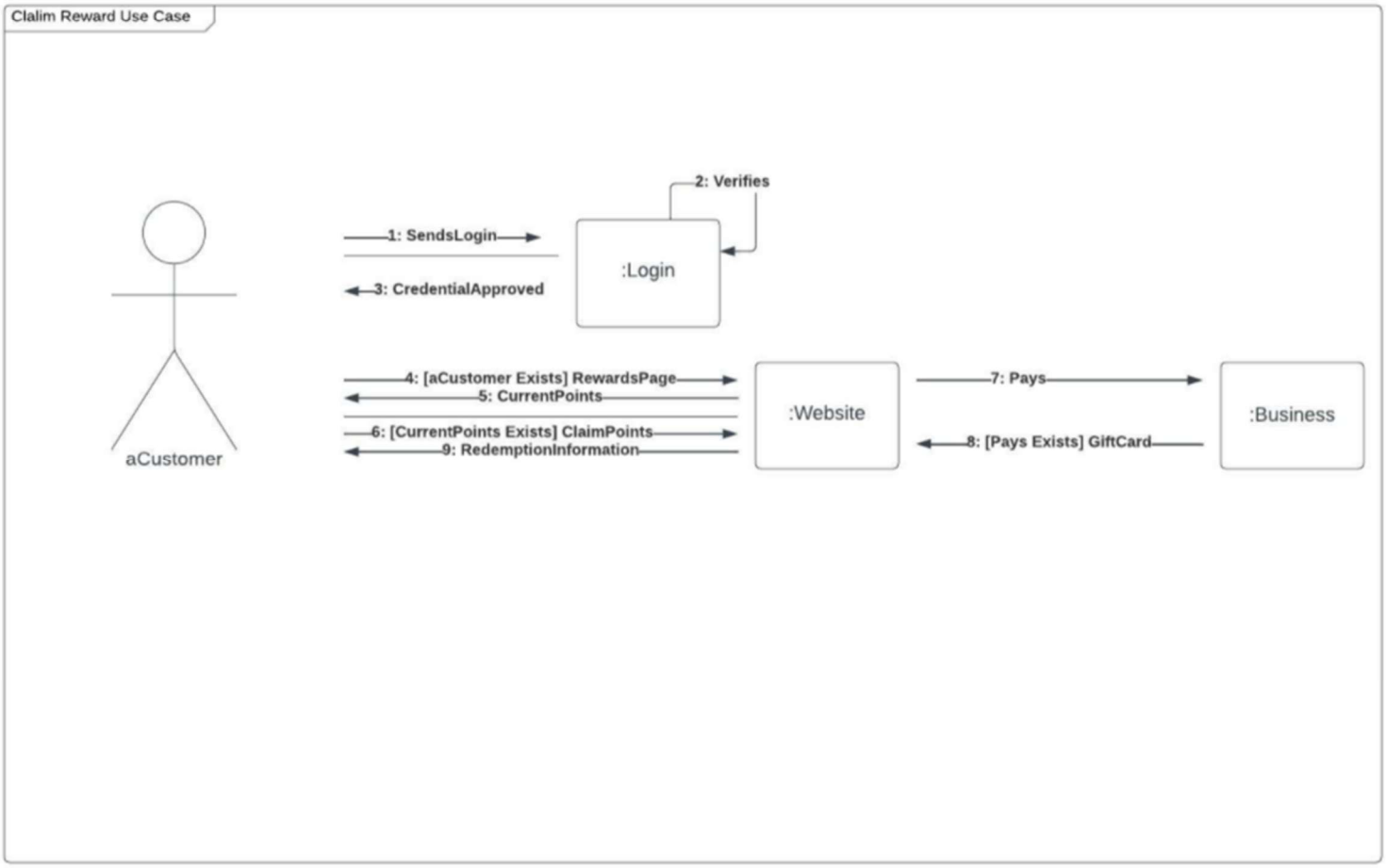
Sequence Diagrams




Claim Reward Use Case
aCustomer
:Login
:Website
:Business
SendsLogin
VerfiesCredentials
CredentialApproved
RewardsPage
CurrentPoints
ClaimPoints
Pays
GiftCard
RedemptionInformation

Communication Diagrams

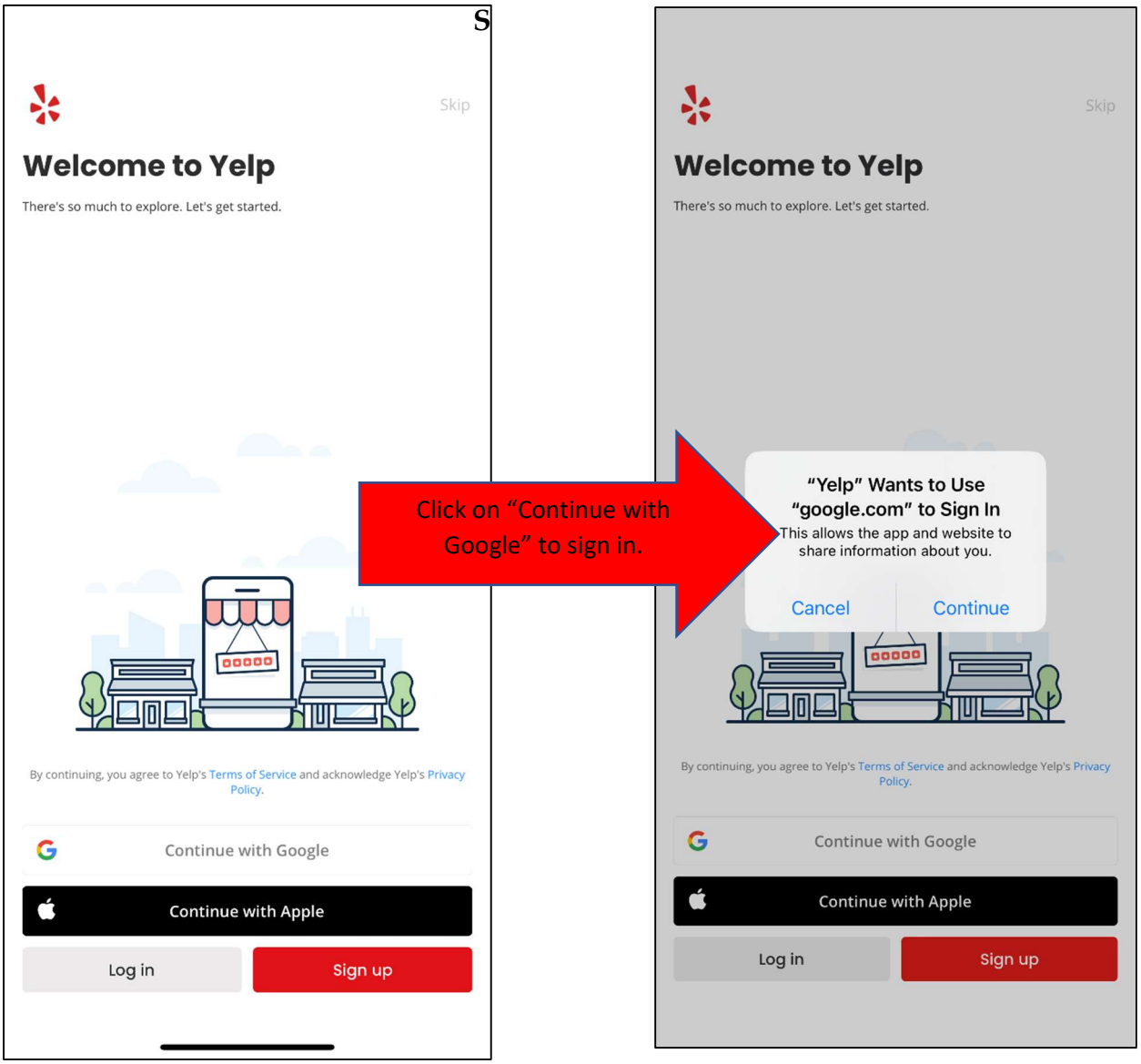


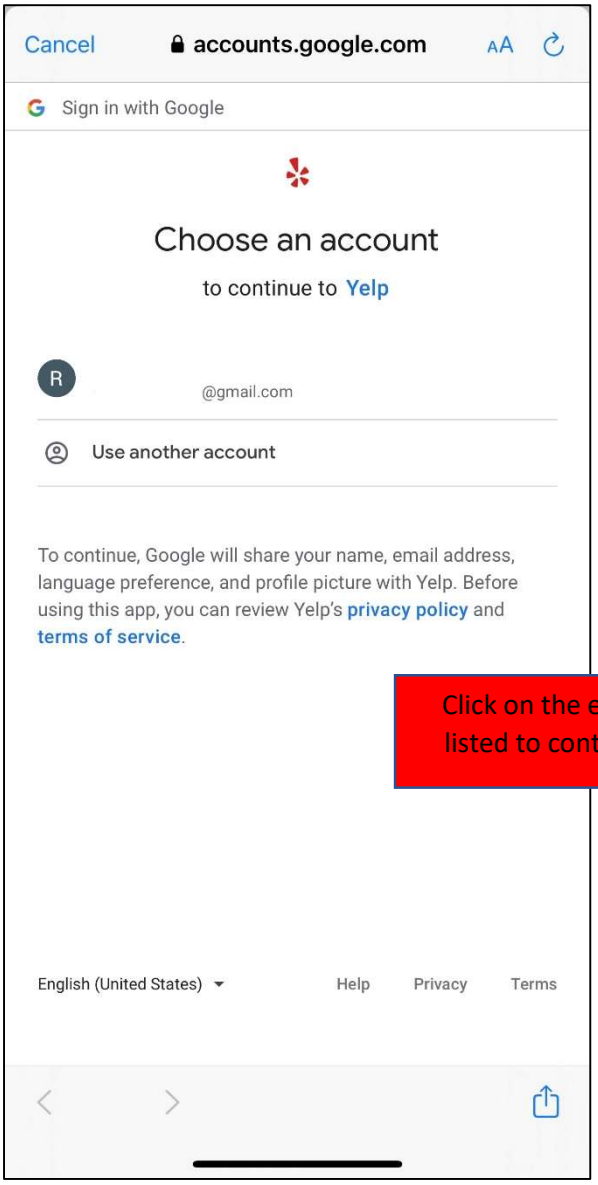


Design Documents

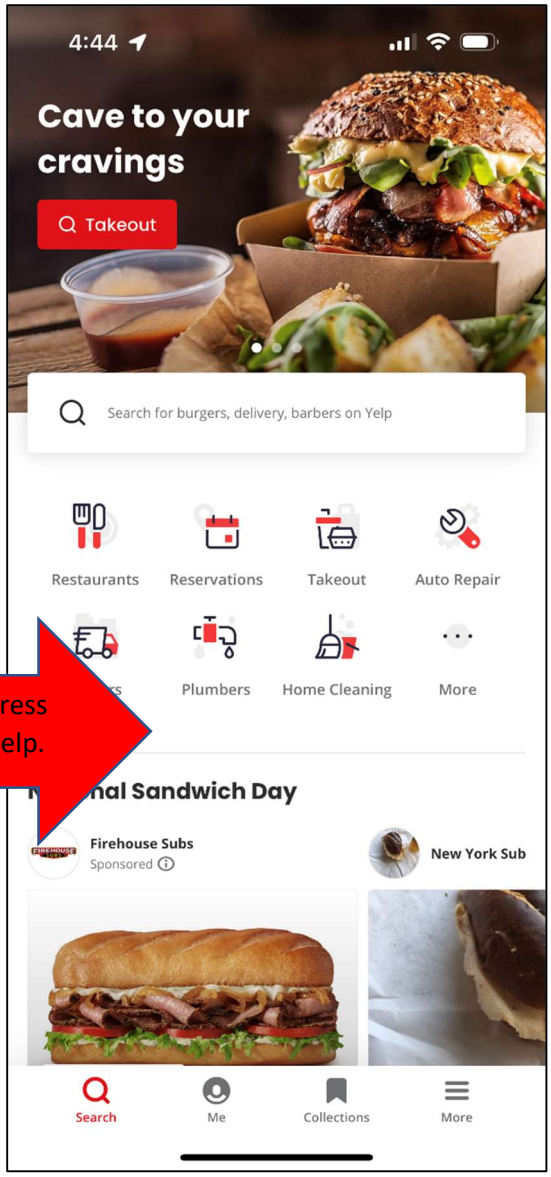
User Interface Design

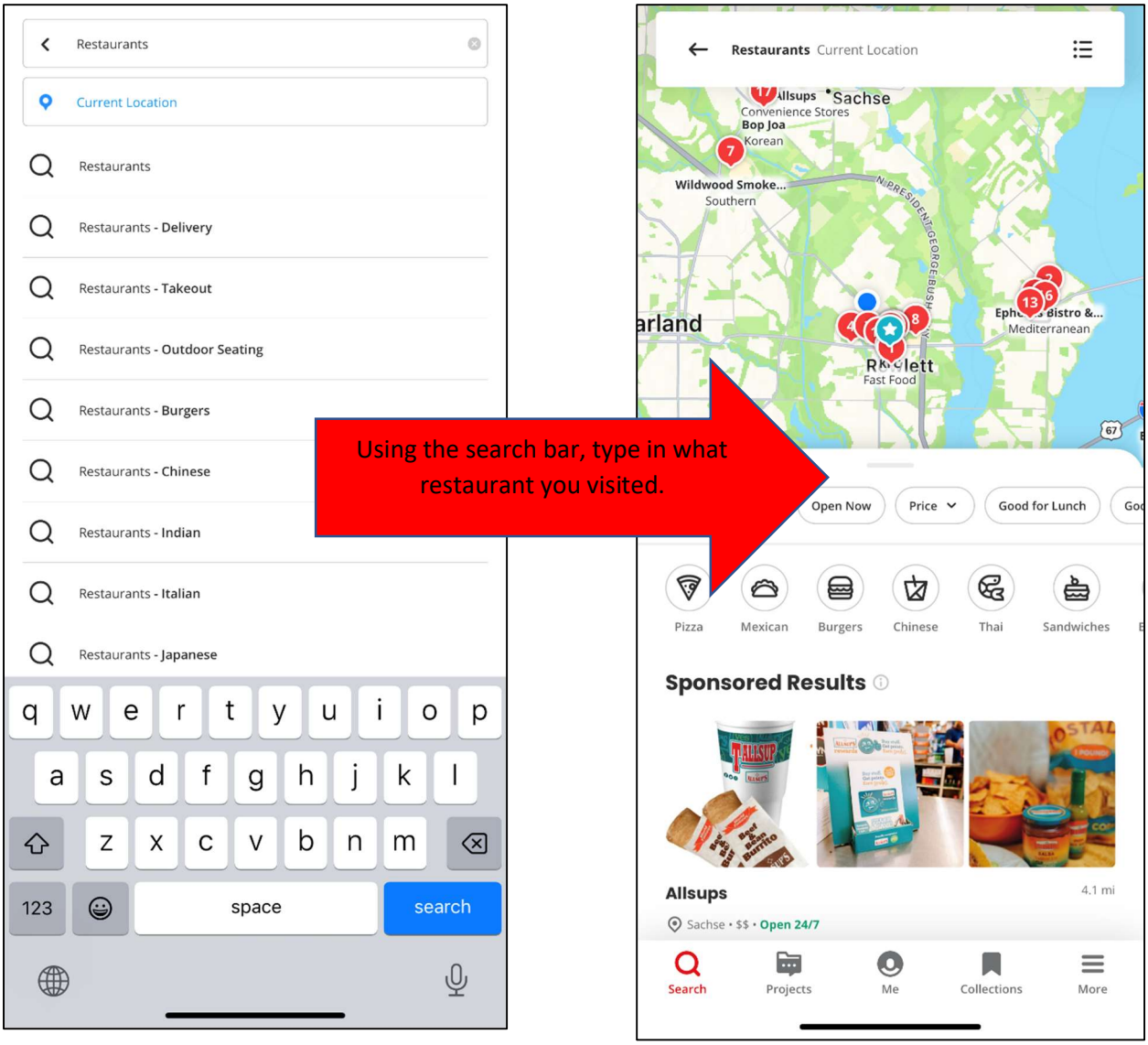
S

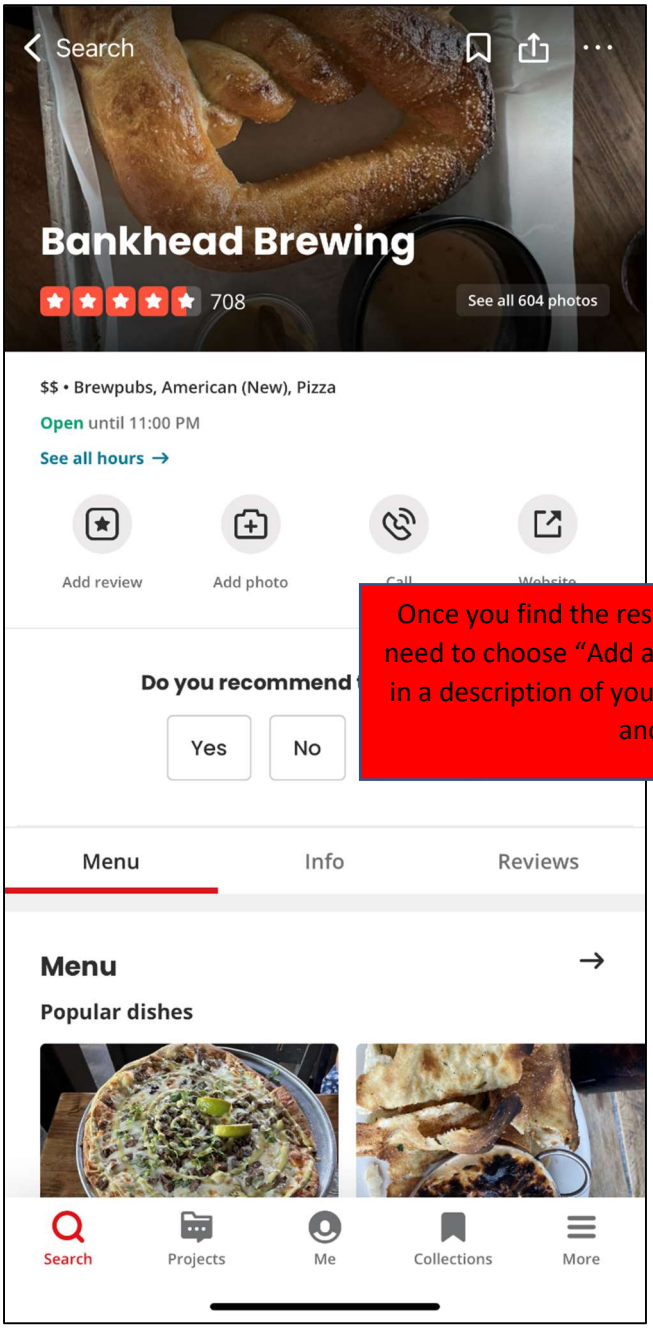




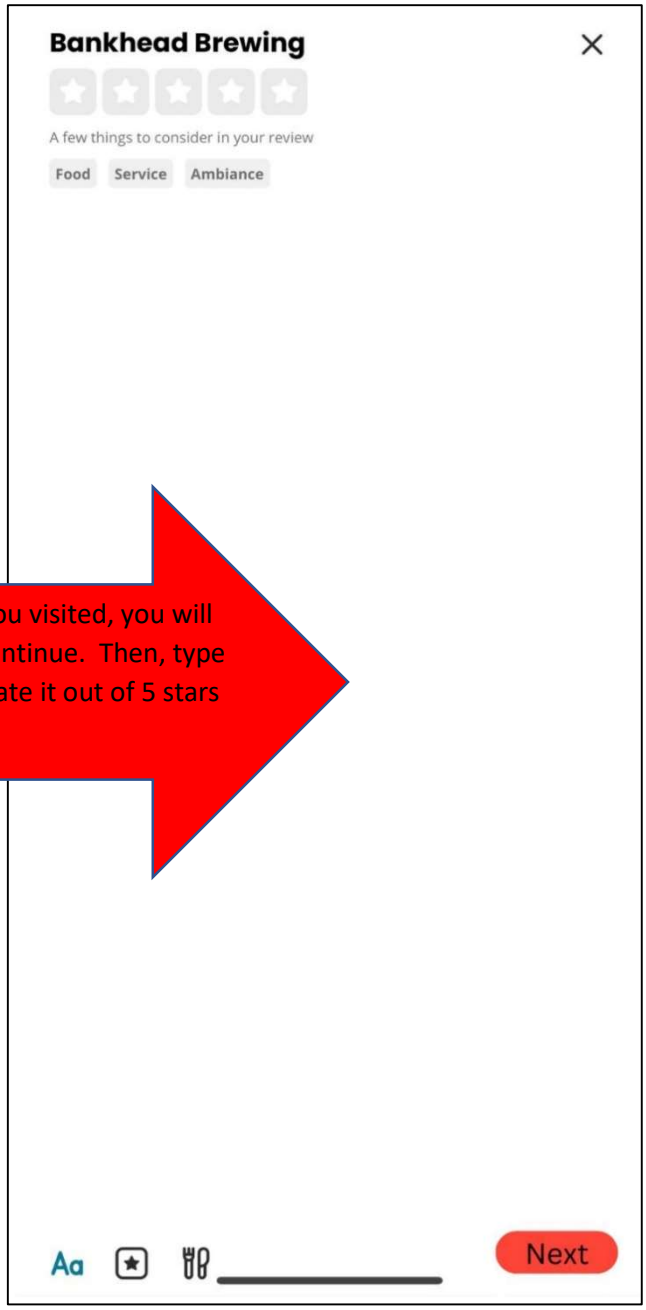
Click on the email address listed to continue to Yelp.

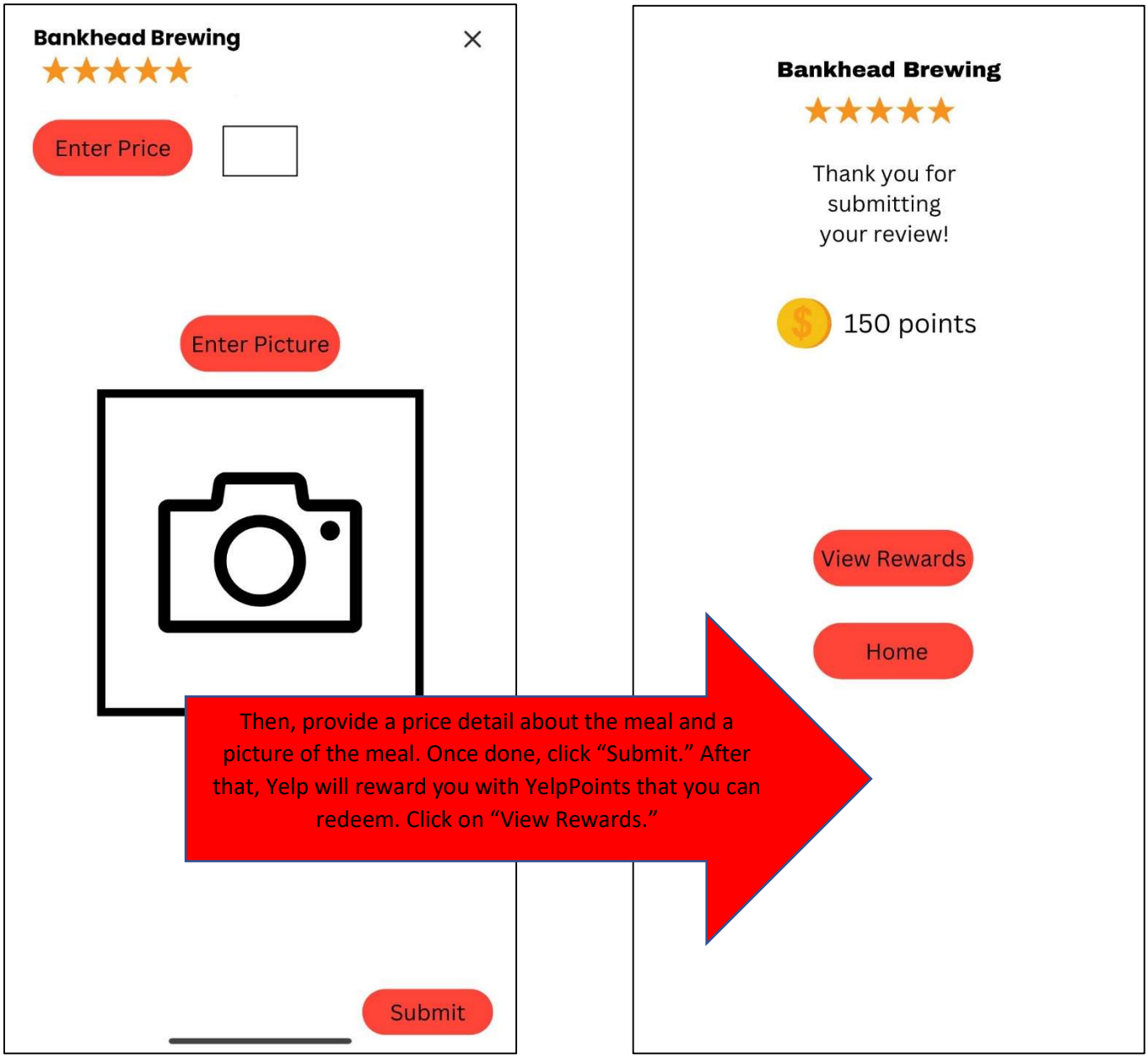


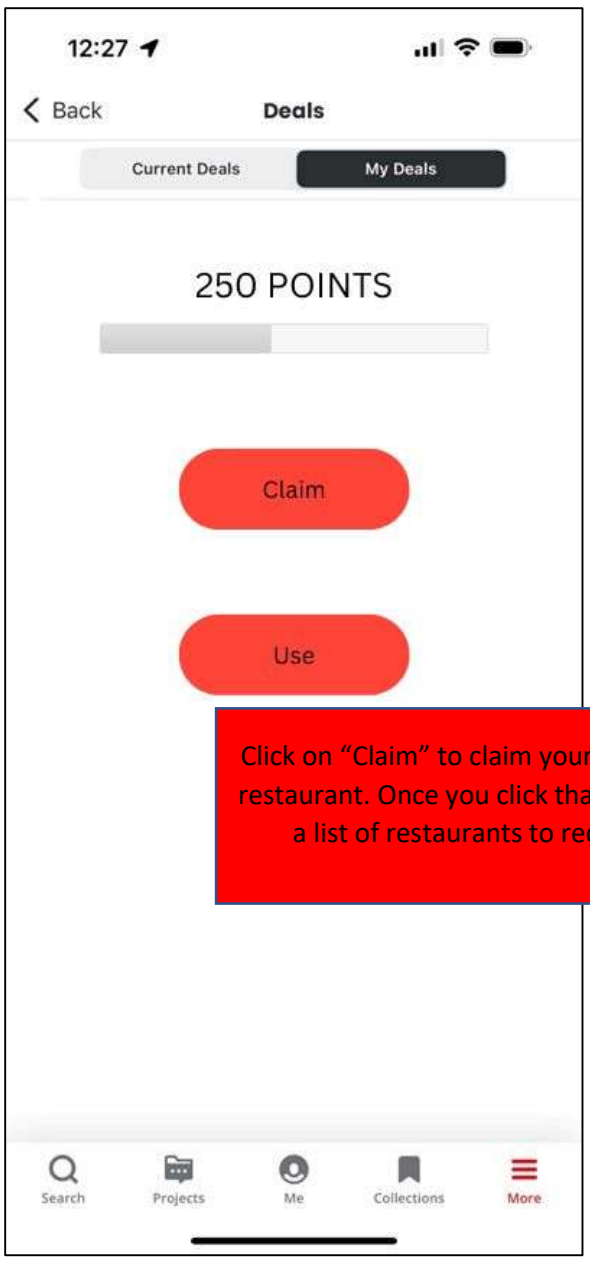

Restaurants
Current Location
Restaurants
Restaurants - Delivery
Restaurants - Takeout
Restaurants - Outdoor Seating
Restaurants - Burgers
Restaurants - Chinese
Restaurants - Indian
Restaurants - Italian
Restaurants - Japanese
space
search
Using the search bar, type in what restaurant you visited.
Restaurants Current Location
Allsups
Convenience Stores
Bop Joa
Korean
Wildwood Smoke...
Southern
Fast Food
Mediterranean
Open Now
Price
Good for Lunch
Pizza
Mexican
Burgers
Chinese
Thai
Sandwiches
Sponsored Results
Allsups
4.1 mi
Sachse • $$ • Open 24/7
Search
Projects
Me
Collections
More

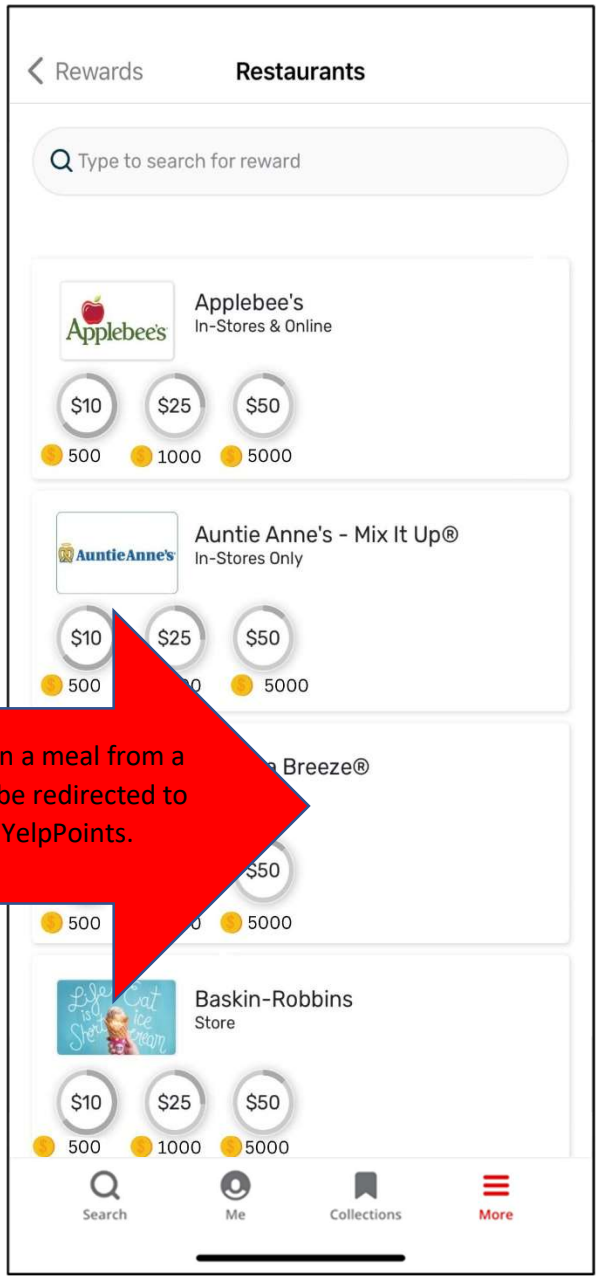


Once you find the restaurant that you visited, you will need to choose "Add a Review" to continue. Then, type in a description of your review and rate it out of 5 stars and click "Next."




Bankhead Brewing
Enter Price
Enter Picture
Submit
Then, provide a price detail about the meal and a picture of the meal. Once done, click “Submit.” After that, Yelp will reward you with YelpPoints that you can redeem. Click on “View Rewards.”
Bankhead Brewing
Thank you for submitting your review!
150 points
View Rewards
Home





Click on “Claim” to claim your rewards on a meal from a restaurant. Once you click that, you will be redirected to a list of restaurants to redeem your YelpPoints.

Project Management Documents

Meeting Minutes

09/13/2022

- Discussed different ecommerce companies and concluded that we will improve Yelp to provide accurate pricing and we also want to implement a rewards system so that customers can be rewarded by providing verified reviews.
    - Ideas Include:
        - SmartPricing Feature
        - Yelp Rewards Program

10/11/2022

- One use case diagram for the whole system
- Core features are use cases in the diagram
- Create excel sheet with milestone dates and tasks assigned to team members. (This is for the project schedule.)
- Two specific improvements: SmartPricing and Rewards system
- Open up other milestones to create a detailed project schedule.
- Everyone will be working on part 1 of milestone 2.
- Akash is in charge of creating the project schedule on excel, Jacob and Rashel are in charge of completing the use case diagrams (Jacob paper draft, Rashel transferring to computer), Samuel is in charge of meeting minutes.

- For Milestone 3, Rashel and Jacob are doing UI together, Derek will do sequence, Akash will do Class diagrams, and Sam will do communication diagrams.
- Meeting on Friday 10/14 @ 2 p.m. to discuss and complete part 1 of milestone 2

10/14/2022

- Derek has elected to do Expected Value and Constraints portion of milestone 2.
- Rasehel will be doing the function and non-functional requirements portion.
- Jacob will be doing project scope.
- Sam will be doing Business Justification.
- Akash finished the executive summary and problem statement prior to today's meeting.
- Try to finish milestone portions by Monday so Akash can do a final review before submitting on Tuesday.

11/01/2022

- Discussing who is working on which deliverables for milestone #3
- Working on first drafts for the deliverables for the milestone
- Discussed class diagram component with Prof. Khan
- Reviewing example material
- Broken down work for UI (Jacob & Rashel)
- Working on drafting class diagrams (Akash)
- Working on drafting sequence diagram (Derek)

- Sam was out of office for some personal emergency

11/08/2022

- Recording on Friday before 4 p.m. Decided on 2 p.m.
- Shared PowerPoint slides.
- 1 class diagram, 1 use case diagram, and one 1 sequence diagram
- Finish presentation slides before meeting on Friday.
- Assigned parts of the presentation to respective members:
    - Akash: Intro, Problem Statement
    - Sam: Business Justification, Scope
    - Rashel: Functional and Nonfunctional Requirements, Use Case Diagram
    - Derek: Expected Values, Constraints
    - Jacob: Class diagram, Sequence Diagram