SW Engineering CSC 648-848 Spring 2023

Hungry Gator Application

March 20, 2023

Milestone 2

Team 5

Student Name	**Email**
Maliah Chin	mchin4@sfsu.edu
Hajime Miyazaki	hmiyazaki@sfsu.edu
Mario Leyva Moreno	mleyvamoreno@mail.sfsu.edu
Scott Nguyen	snguyen23@mail.sfsu.edu
Aneida Guadalupe Blanco Palacio	ablancopalacio@mail.sfsu.edu

History Table

Date Submitted	**Date Revised**
3/31/2023	

1. Executive Summary:

College can be stressful for many students. As they are constantly on the move getting ready for the next class or studying all night for exams, they may not have the time to go out and buy groceries to cook, or buy food from their local restaurant. To make life easier for SFSU students, staff, and faculty, we have created the Hungry Gator application which is designed to deliver food anywhere on campus. This application is especially convenient for SFSU faculty and staff, who are constantly working in their offices, attending meetings, and teaching multiple courses with minimal breaks. Our application will ensure that food is delivered directly to them at a specific location on campus, so that they may not be inconvenienced to go out and buy food when dealing with time constraints. Another key advantage of our application compared to other food delivery apps, is that we are constantly providing discount opportunities and minimal delivery fees in order to make food more affordable for college students. Students often have to incur various expenses due to high tuition costs and materials required for various courses, so it is our goal to make an already expensive service as affordable as possible to members of SFSU. In addition to these features, our users will also have quick access to some of the best local and big restaurant chains in the area, and avoid dealing with delivery delays by receiving live updates on delivery times, which will help the user report any issues in a timely manner.

The Hungry Gator application provides an exclusive membership program to SFSU students, faculty, and staff, which will activate upon user registration. Users will receive exclusive discounts and reduced delivery fees on select restaurants, which will help make food more affordable and convenient for our users. Our application also supports on-site delivery, a service that ensures food is delivered anywhere on campus by providing a digital map of the campus to delivery drivers. This will help drivers pinpoint an exact location on campus and ensure fast delivery times. This also helps the user track their orders and avoid communication issues with drivers about being unable to find the dropoff location, since drivers will be guided directly to your specific location on the map. Our application is also unique in terms of what is available since our goal is to get food delivered as quickly as possible to our users. The application will not show restaurants out of range and will prioritize the restaurants that are closest to the SFSU campus.

Our team is composed of individuals from various backgrounds who have come together to deliver a reliable service to our users. Our team is composed of a team lead who organizes tasks and provides design plans for the team to follow. We also have a github master who keeps track of our product's github page and ensures that all aspects of our application are up to date and ready for launch. The back-end developer is responsible for authenticating user accounts and managing our team's database where user data is safely secured. Finally, we have front-end leads who are responsible for providing a reliable user interface where users can easily interact with our application.

2. List of Main Data Items and Entities:

Entity:

1. Unregistered Users
    - Searching/browsing for restaurants.
    - Able to register for an account using a valid SFSU email.
2. Registered Users
    - Ordering food and applying discount codes.
    - Selecting dropoff location on any purchase.
    - Editing user profile.
    - Associated with one SFSU email.
3. Admin
    - Manages the application's database.
    - Approves posts and assists users with registering.
4. Restaurant Owner (Restaurant)
    - Registering their restaurant on the site and posting images of their dishes.
5. Delivery Driver
    - In charge of delivering food.

Main data items:

1. Restaurant
    - Contains the restaurant name, restaurant location, restaurant thumbnail, and restaurant category.

    1.a Restaurant Location
        - Contains the address, city, state, zip code, and country where the restaurant is located.
2. Food Dish
    - Contains the name, price, and image of each dish relevant to a particular restaurant.
    - A short description of the dish (optional).
3. Order
    - An order is associated with one user.
    - Contains the order name (person who made the order), the address of the drop-off location, and the status of each order.
    - Orders can be approved and canceled by delivery drivers.
4. Account
    - Account is associated with one user.
    - For students, staff, and faculty, each account contains the first and last name of the user, a valid SFSU email, and password.

5. Discount or Promotion
    - Visible to any registered user.
    - Applicable to any order via a discount code.
6. Delivery Information
    - Contains the delivery address and name of the user who placed the order.
7. Driver Information
    - Contains the driver's name, email, phone number, vehicle type, driver's license number, and password.

3. Functional Requirements - prioritized:

- **Priority 1:**
    1. Unregistered Users
        1.1 Unregistered users shall be able to make an account.
        1.2 Unregistered users shall be able to search/browse for a restaurant.
        1.3 Unregistered users shall be able to view search results.
        1.4 Unregistered users shall be able to filter results by category.

    2. Registered Users
        2.1 Registered users shall inherit all priority 1 unregistered user functionality.
        2.2 A registered user shall be associated with one account.
        2.3 A registered user shall be able to purchase food.
        2.4 A registered user shall be able to track their order.
        2.5 A registered user shall be able to select drop off location on campus.

    3. Admin
        3.1 Admin shall be responsible for verifying and authentic user accounts.
        3.2 Admin shall be responsible for storing encrypted user data in the database.
        3.3 Admin shall be required to approve all restaurant posts before they go live on the application.
        3.4 Admin shall be responsible for providing live feedback to users about incorrect account details.

    4. Restaurant Owner
        4.1 A restaurant owner shall be able to register their restaurant on the app and wait up to 24 hours for admin approval.
        4.2 A restaurant owner shall be able to post a menu of their dishes on the app for users to see.

    5. Delivery Driver
        5.1 A delivery driver shall be required to register to apply for the job.

- **Priority 2:**
    1. Unregistered Users
       1.1 An unregistered user shall be able to filter search results by price and delivery time.
       1.2 An unregistered user shall have access to user ratings and reviews (read-only).

    2. Registered Users
       2.1 A registered user shall inherit all priority 2 unregistered user functionality.
       2.2 A registered user shall be able to see discount deals on select restaurants.
       2.3 A registered user shall be able to write reviews on restaurants.
       2.4 A registered user shall be able to rate their food or delivery service.

    3. Admin
       3.1 The admin shall be responsible for managing customer reviews and messages.
       3.2 The admin shall be responsible for retrieving requested user data for registered users.

    4. Delivery Driver
       4.1 A delivery driver shall receive delivery orders and a digital map of the SFSU campus.

    5. Discounts or Promotions
       5.1 Student discounts shall be applied to students with a valid student ID.
       5.2 All other discounts/promotions shall be applied to anyone with a verified SFSU email.

- **Priority 3:**
    1. Registered Users
       1.1 A registered user shall be able to see their order history.
       1.2 A registered user shall be able to edit their user profile.
       1.3 Registered users shall be able to add money to their gator cards for purchasing (conceptual idea).

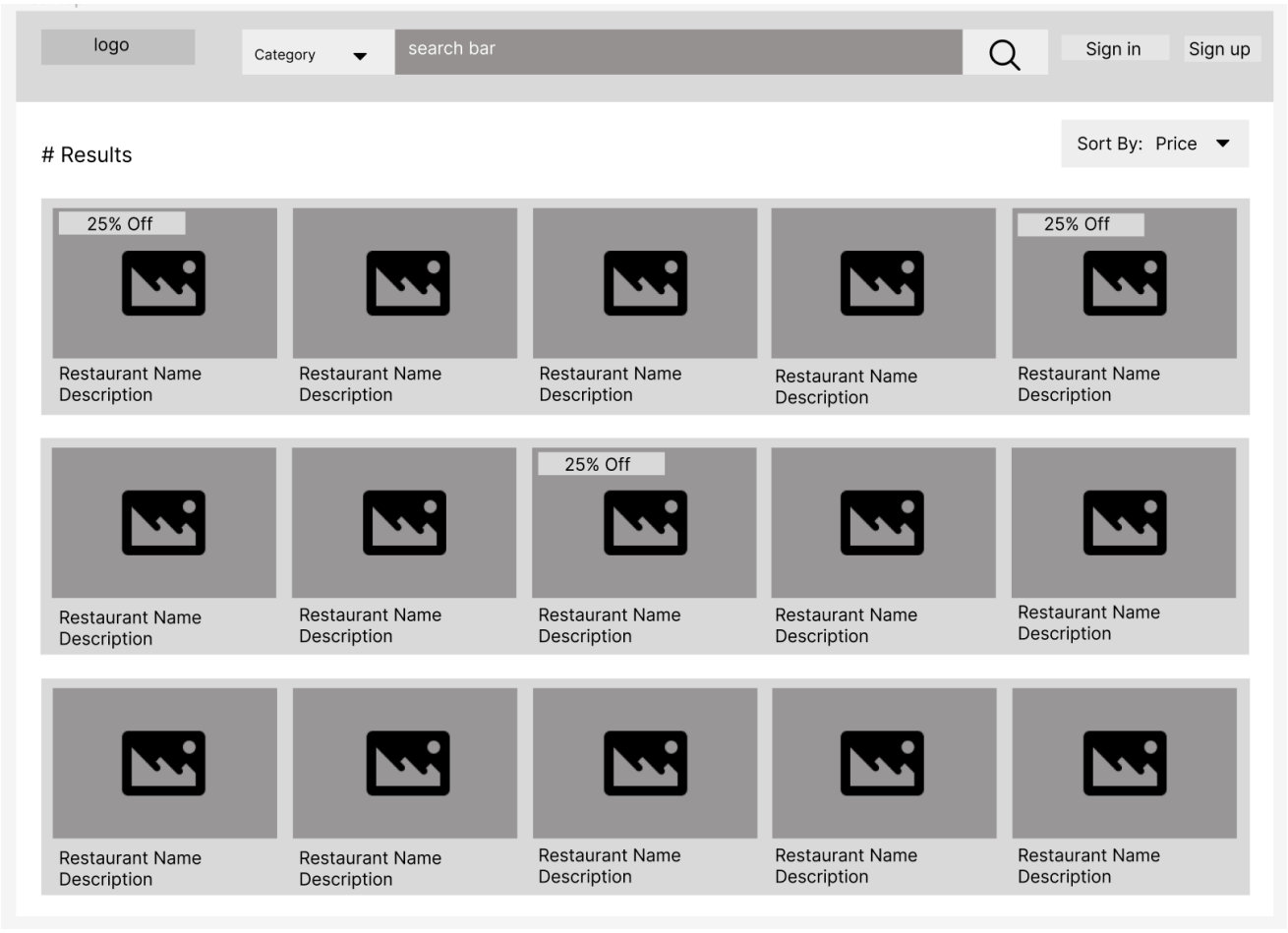
    2. Admin
       2.1 The admin shall be responsible for providing feedback to users about incorrect search details and suggest closest terms.

4. UI Storyboards for each main use case:

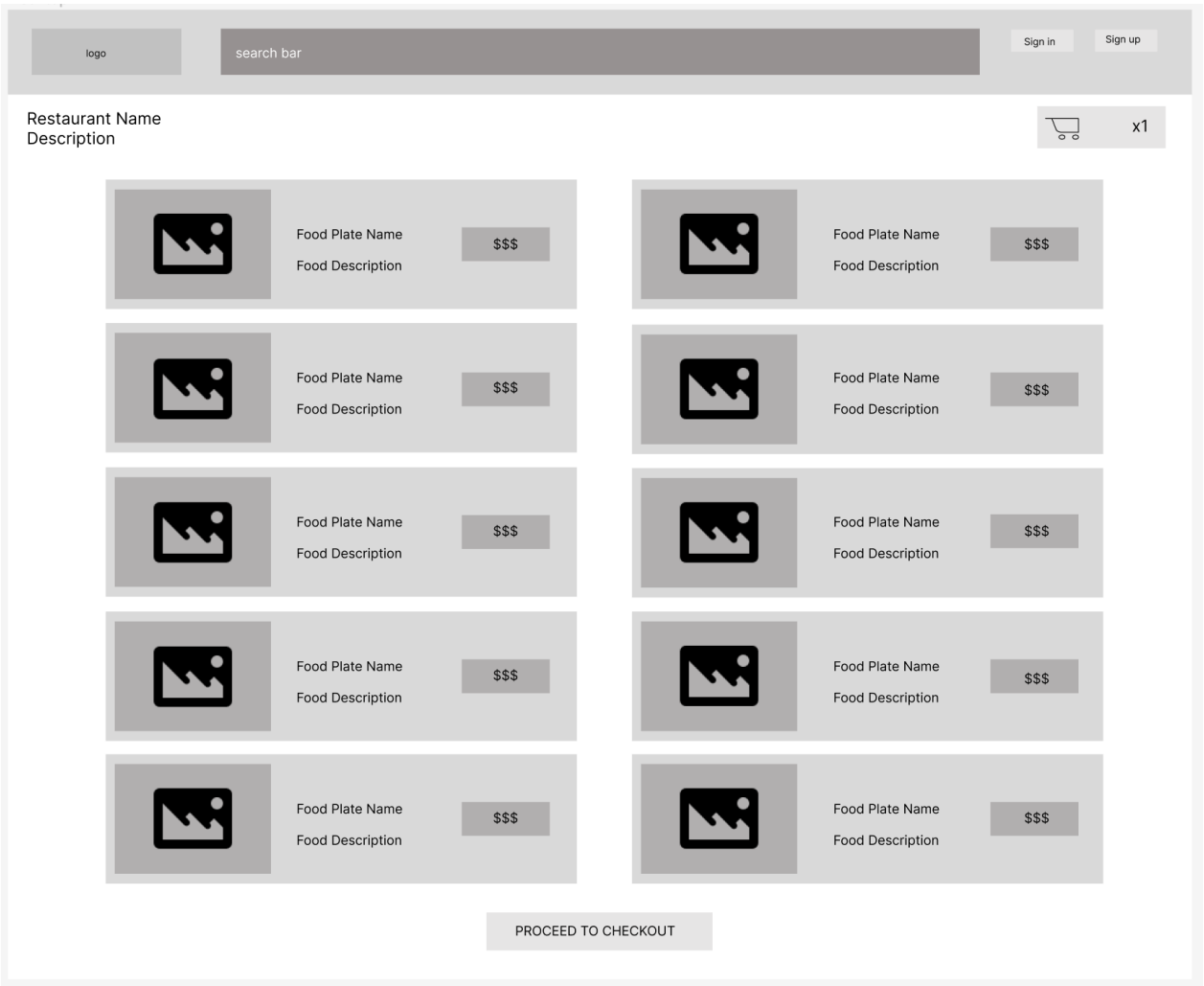
1. Student Case:

Jasmine is a SFSU student who has been busy all evening studying hard for her midterms. As the night progresses, Jasmine realizes that it's time to eat but she fears she doesn't have enough time to go pickup anything for dinner. Luckily, she heard about this new web application, Hungry Gators, that has been created specifically for SFSU students. **(1)** Jasmine opens her laptop and enters the link for Hungry Gators. She then notices all of the appetizing pictures that inspire her to find a meal for the evening. Since she is on a budget, she sorts by price and browses through the list of Italian restaurants. She finds something yummy and even notices that there is a special student discount. **(2)** Jasmine adds her food to her cart and continues to check out. **(3)** Prior to placing her order, she is taken to the sign up page where she is prompted to sign up using her SFSU email. **(4)** Since she is a student, the chosen discount has been applied. She notices that there is a special function that allows for her food to get delivered directly to her dorm, so she enters her location. Jasmine then gets back to her books and waits for the speedy delivery.

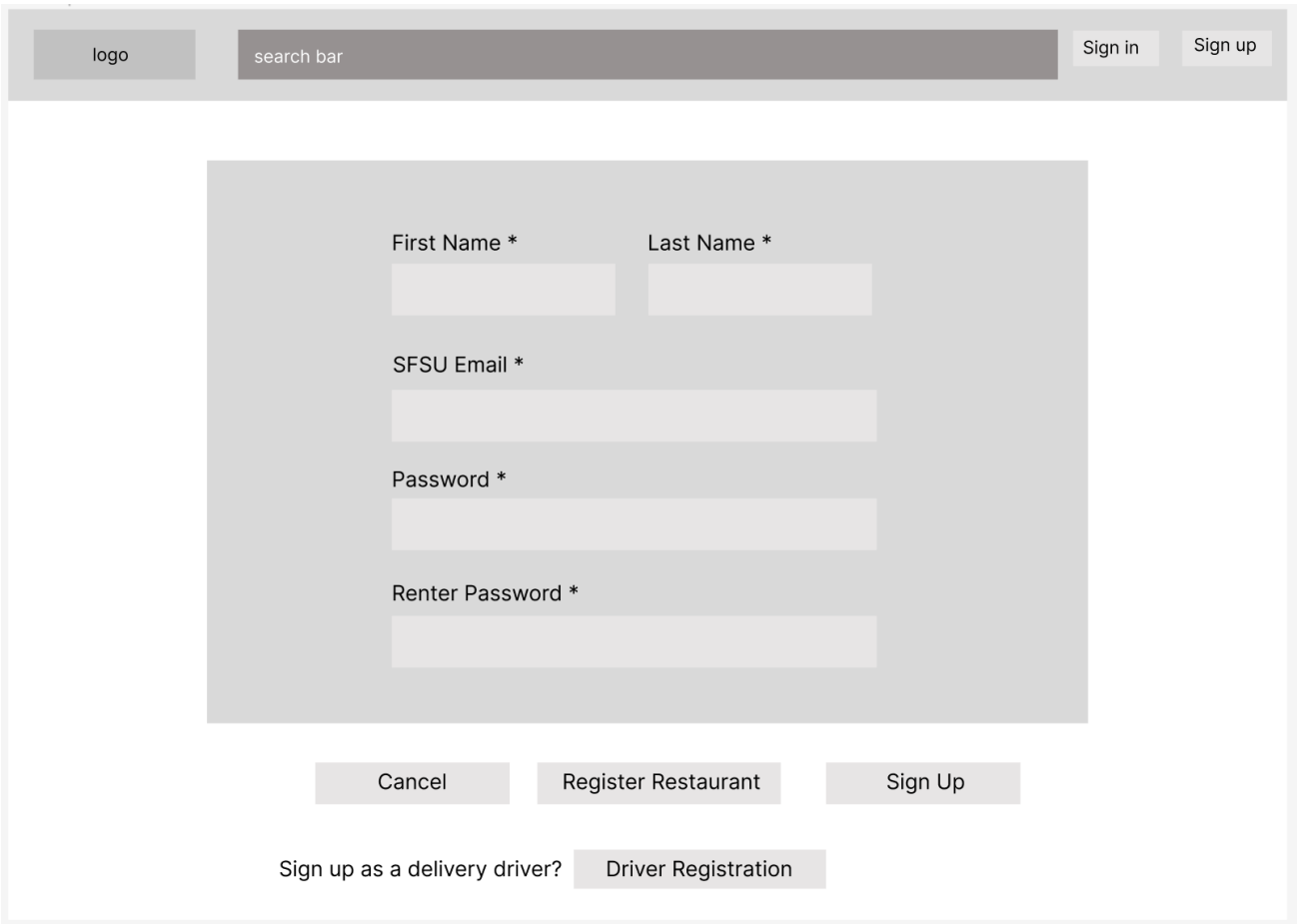
(1)



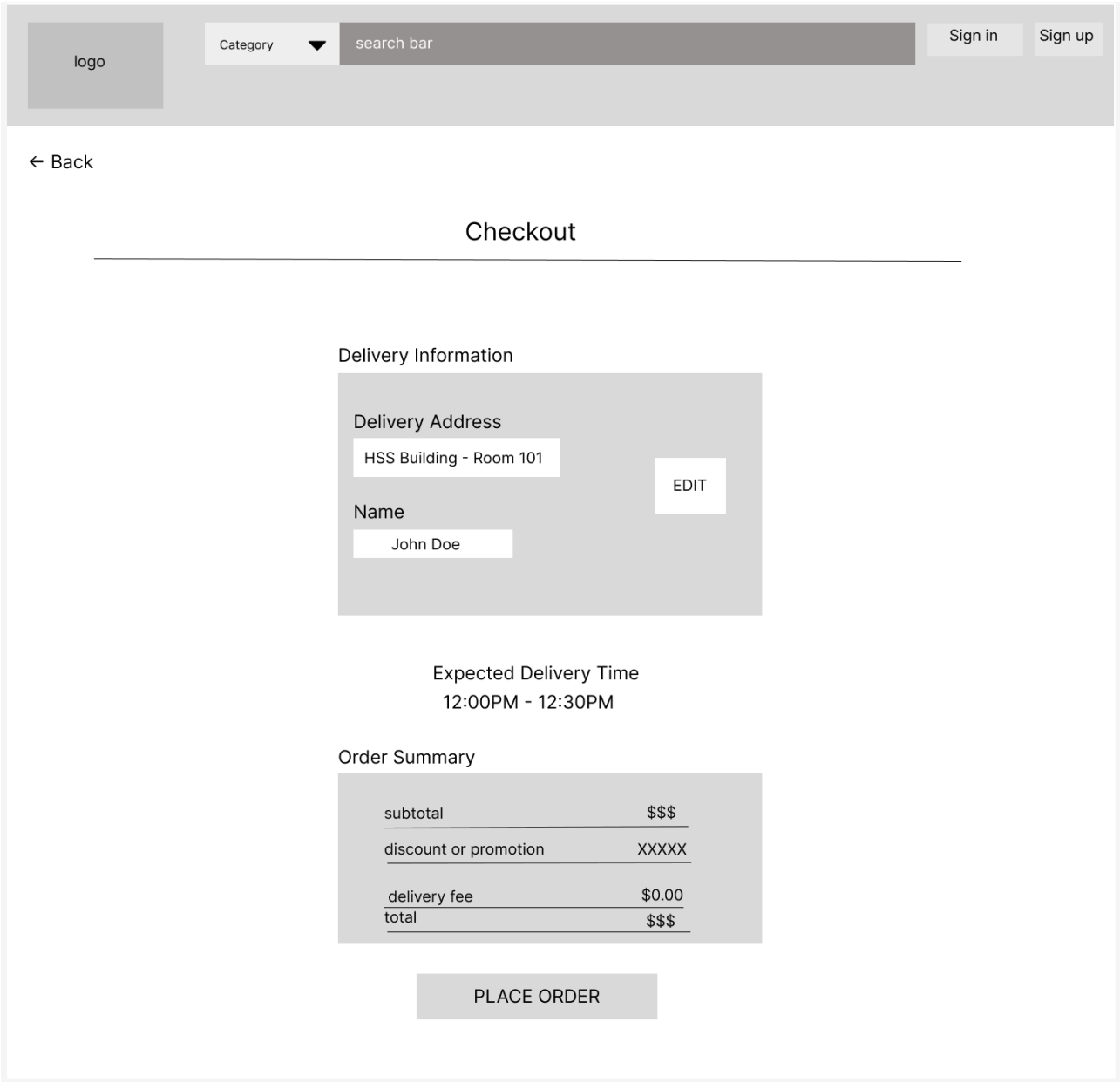
(2)


logo
search bar
Sign in
Sign up
Restaurant Name
Description
x1
Food Plate Name
Food Description
$$$
PROCEED TO CHECKOUT

(3)


logo
search bar
Sign in
Sign up
First Name *
Last Name *
SFSU Email *
Password *
Renter Password *
Cancel
Register Restaurant
Sign Up
Sign up as a delivery driver?
Driver Registration

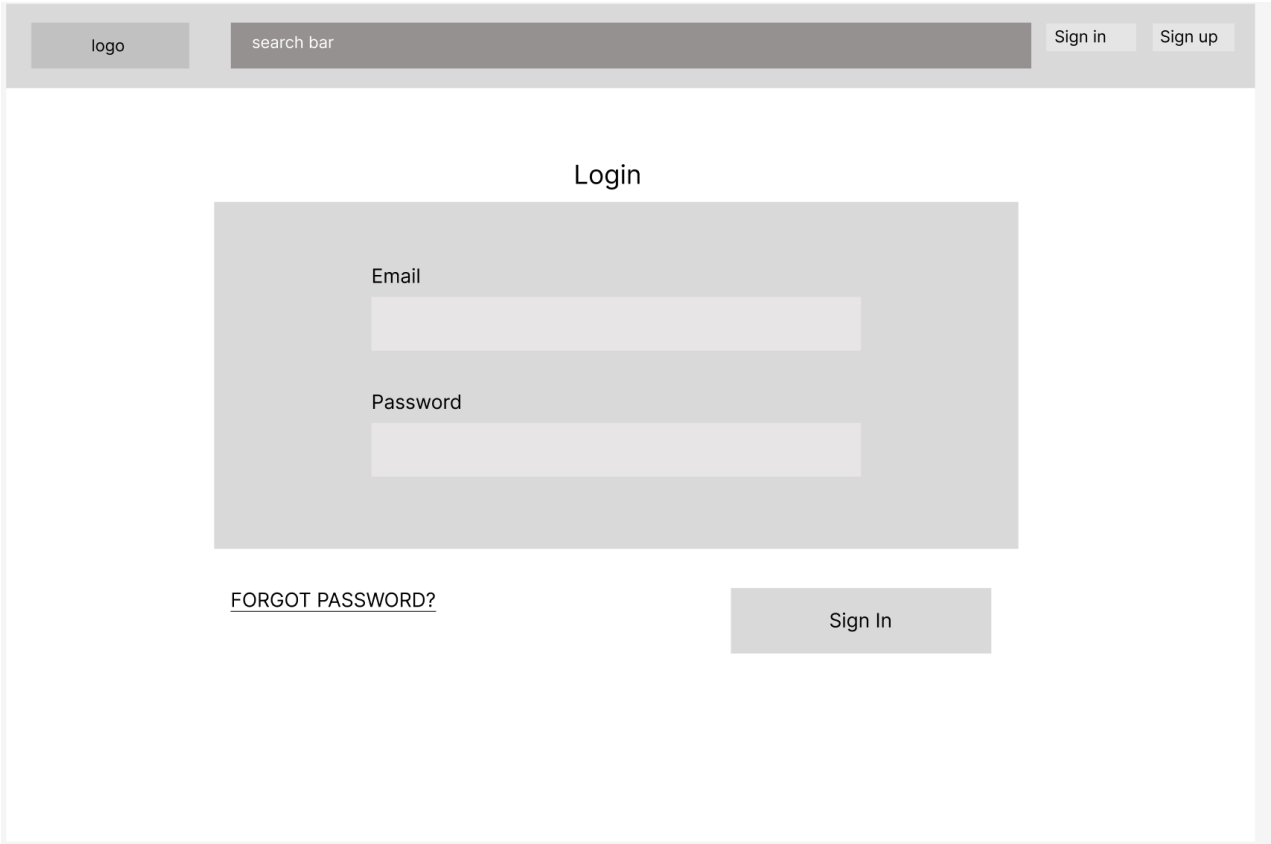
(4)


logo
Category
search bar
Sign in
Sign up
← Back
Checkout
Delivery Information
Delivery Address
HSS Building - Room 101
EDIT
Name
John Doe
Expected Delivery Time
12:00PM - 12:30PM
Order Summary
subtotal
$$$
discount or promotion
XXXXX
delivery fee
$0.00
total
$$$
PLACE ORDER

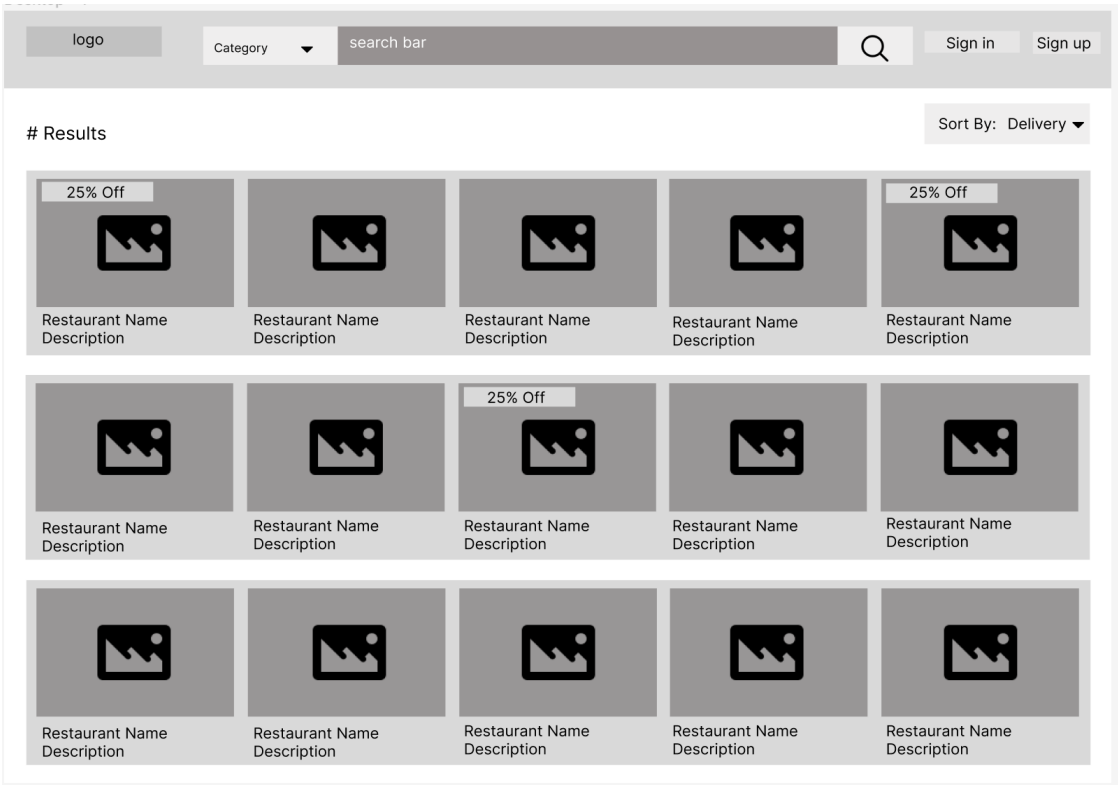
2. Professor/Staff Case:

Manuel is an undergraduate advisor and professor at SFSU. His responsibilities as an undergraduate advisor include meeting with students at specific times and assisting in the overall academic progress of students at SFSU. In addition to his staff responsibilities, he is also teaching several courses throughout the day. Due to his busy schedule, he finds it nearly impossible to enjoy his lunch and doesn't always prepare his own meals for the day. After hearing about the Hungry Gator application through one of his colleagues, Manuel decided to download the application and create an account. Hesitant to use the application for the first time despite having an account, he decided to give it a try due to a busy afternoon where he had very little time to go out and buy food himself. **(1)** He signed in using the login page and **(2)** browsed through the list of Indian restaurants. Due to time constraints, he sorted the results by delivery time and was delighted to find his favorite local Indian restaurant. **(3)** He finds his favorite dish and proceeds to the checkout page. **(4)** At checkout, he fills out the delivery information and was even surprised by the option to have it delivered directly to his office. Manuel was happy with his purchase and was even given a membership discount for being registered with an SFSU email.

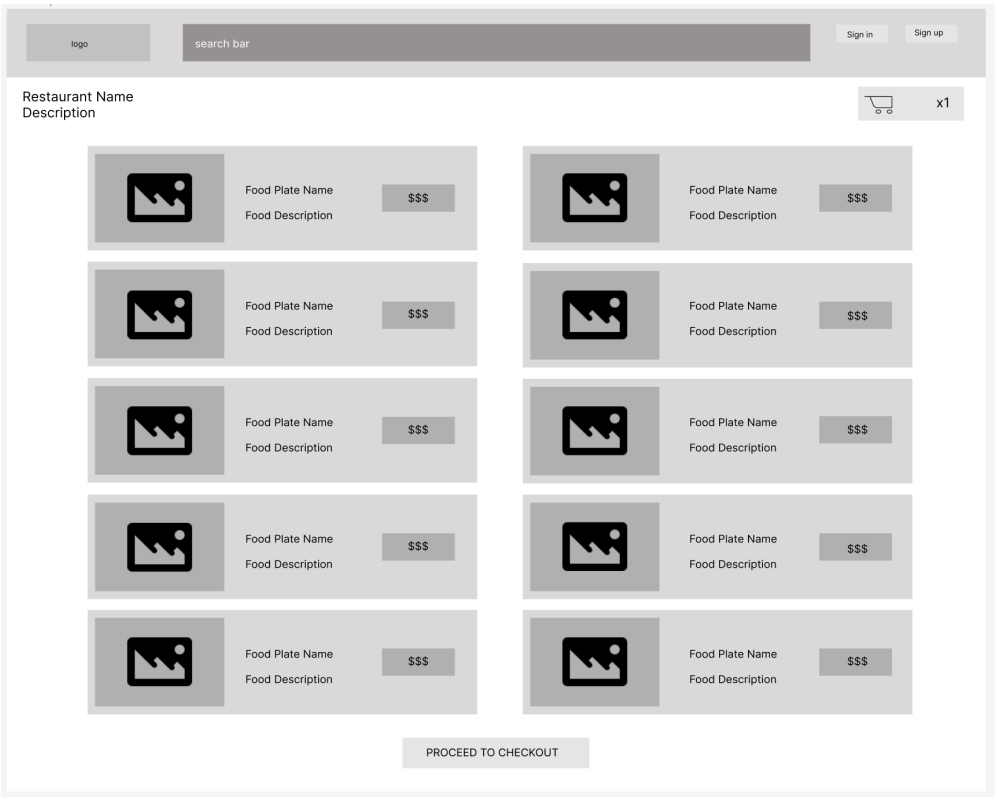
(1)



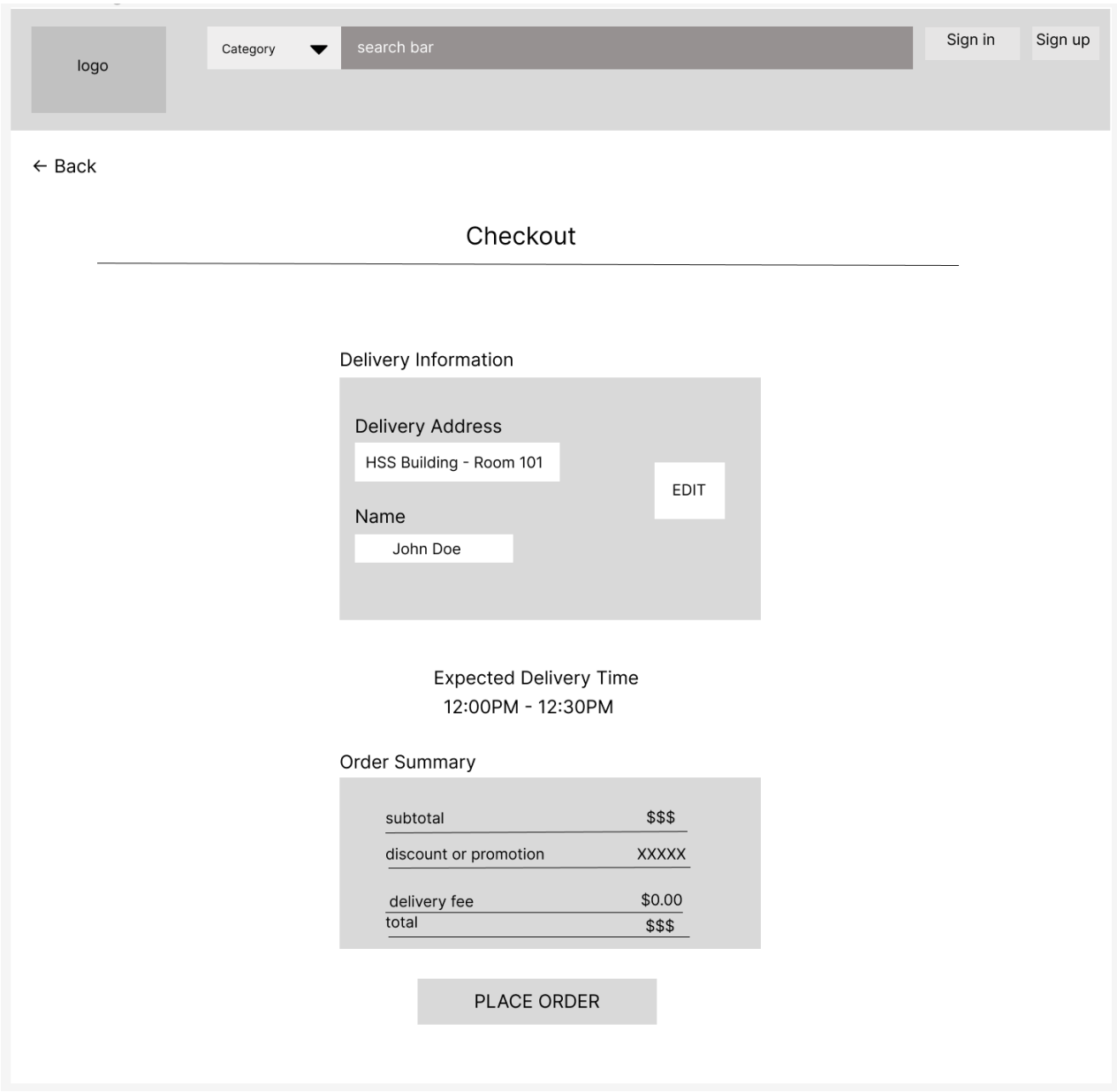
(2)


logo
Category
search bar
Sign in
Sign up
Results
Sort By: Delivery
25% Off
Restaurant Name
Description
25% Off
Restaurant Name
Description
25% Off
Restaurant Name
Description

(3)


logo
search bar
Sign in
Sign up
Restaurant Name
Description
x1
Food Plate Name
Food Description
$$$
PROCEED TO CHECKOUT

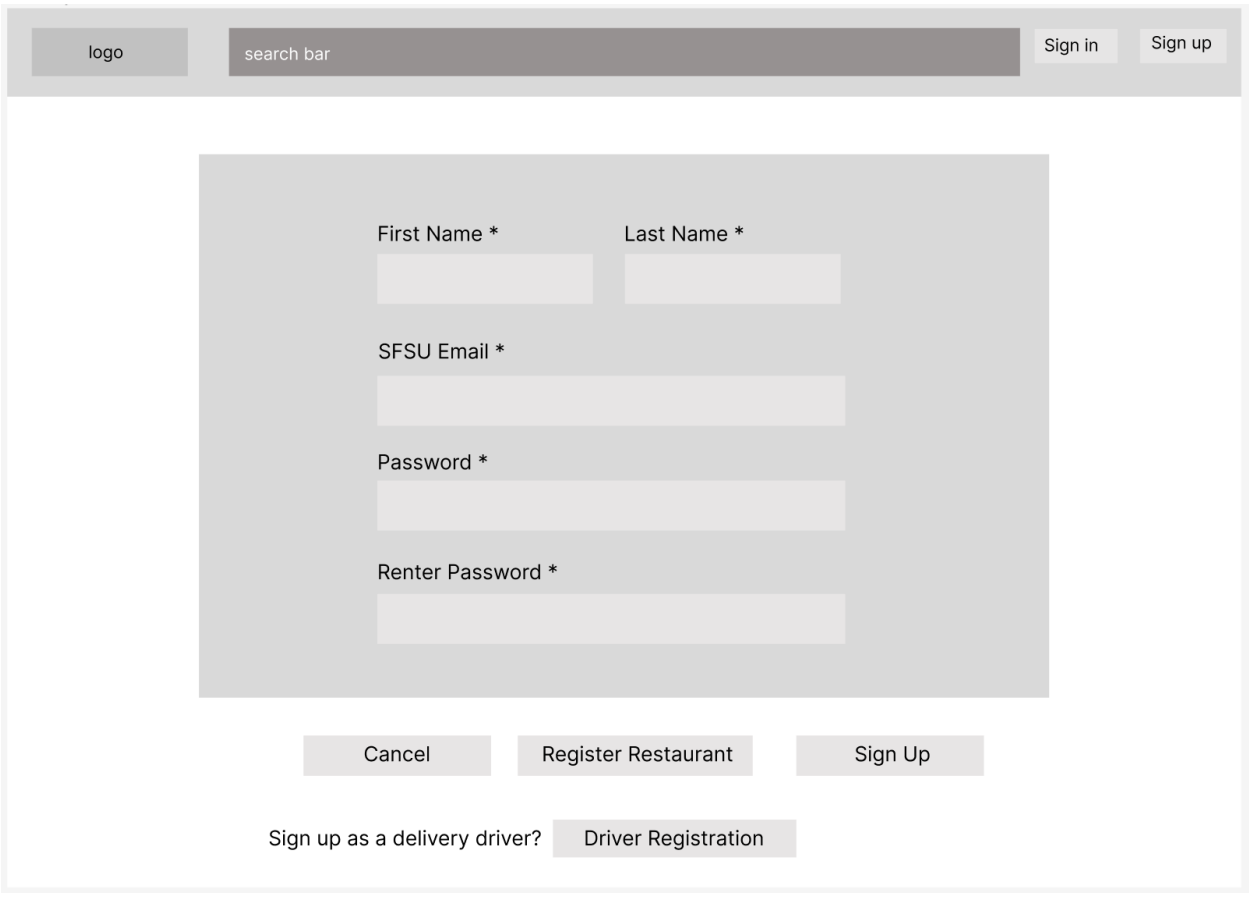
(4)


logo
Category
search bar
Sign in
Sign up
← Back
Checkout
Delivery Information
Delivery Address
HSS Building - Room 101
EDIT
Name
John Doe
Expected Delivery Time
12:00PM - 12:30PM
Order Summary
subtotal
$$$
discount or promotion
XXXXX
delivery fee
$0.00
total
$$$
PLACE ORDER

3. Restaurant Owner:

Tina is a local restaurant owner who works near SFSU. She has a cafe that has opened up recently and has been looking for a new opportunity to expand her business. A new web app has come across her radar that has peaked her interest, called the Hungry Gator. Tina's full schedule makes it difficult for her to learn new apps, but the simple layout of Hungry Gator offers her a quick way to grow her audience. **(1)** She opens Hungry Gator and looks for the registration button for restaurants. **(2)** She clicks on the button and is greeted with a form that asks for her basic information. Because Tina knows that the SFSU campus is bustling with business, she fills out the section for special offers aimed towards the students. **(3)** She is also excited to upload photos that showcase her best snacks. (**4)** Tina then completes the form and submits the request. A message that the form has been submitted and that it may take up to 24 hours for the form to be accepted appears and Tina acknowledges the information. Happy to have a chance to give back to students and create a new branch of business, Tina waits for her approval.

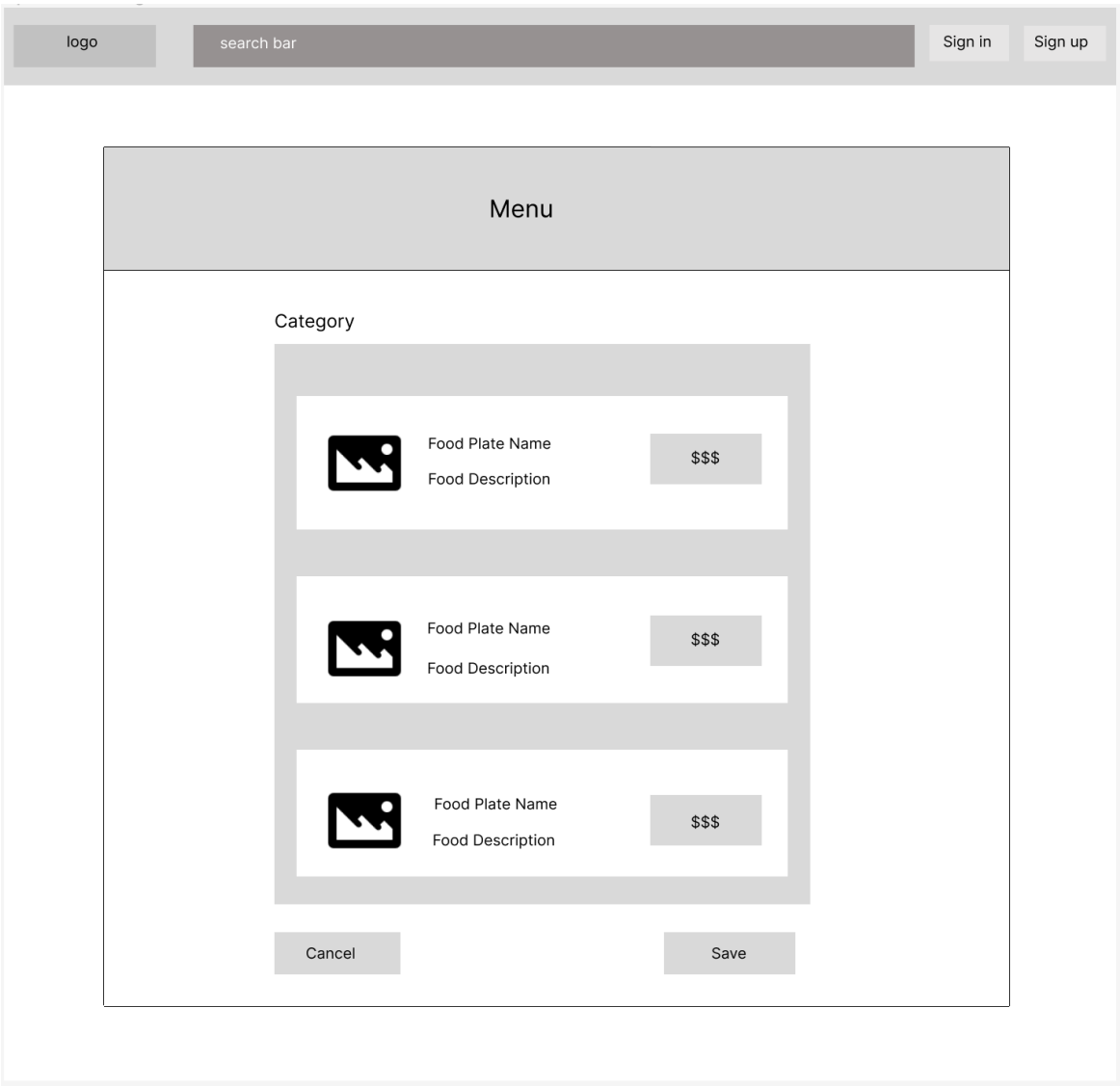
(1)



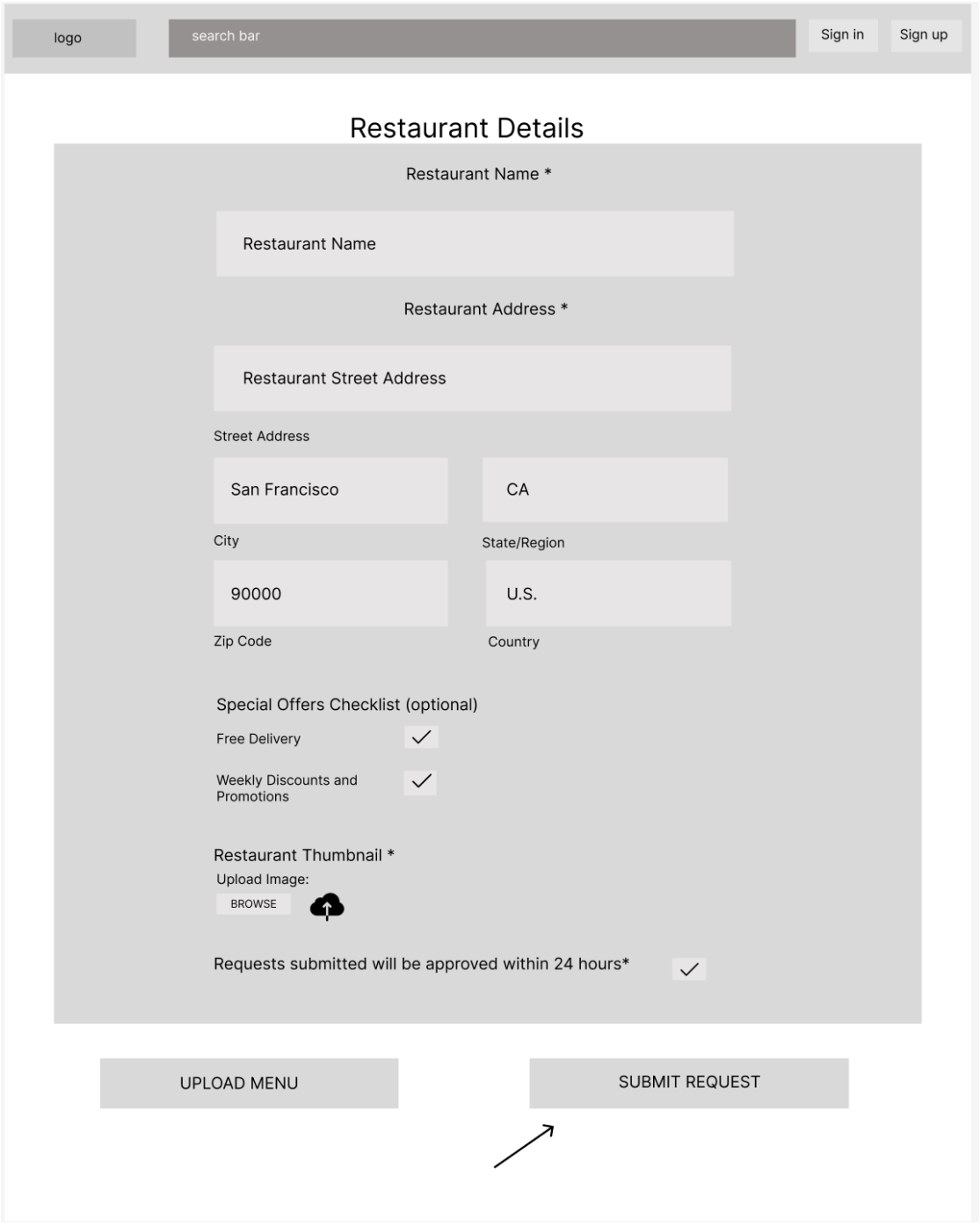
(2)


logo
search bar
Sign in
Sign up
Restaurant Details
Restaurant Name *
Restaurant Address *
Street Address
City
State/Region
Zip Code
Country
Special Offers Checklist (optional)
Free Delivery
Weekly Discounts and Promotions
Restaurant Thumbnail *
Upload Image:
BROWSE
Requests submitted will be approved within 24 hours*
UPLOAD MENU
SUBMIT REQUEST

(3)


logo
search bar
Sign in
Sign up
Menu
Category
Food Plate Name
Food Description
$$$
Food Plate Name
Food Description
$$$
Food Plate Name
Food Description
$$$
Cancel
Save

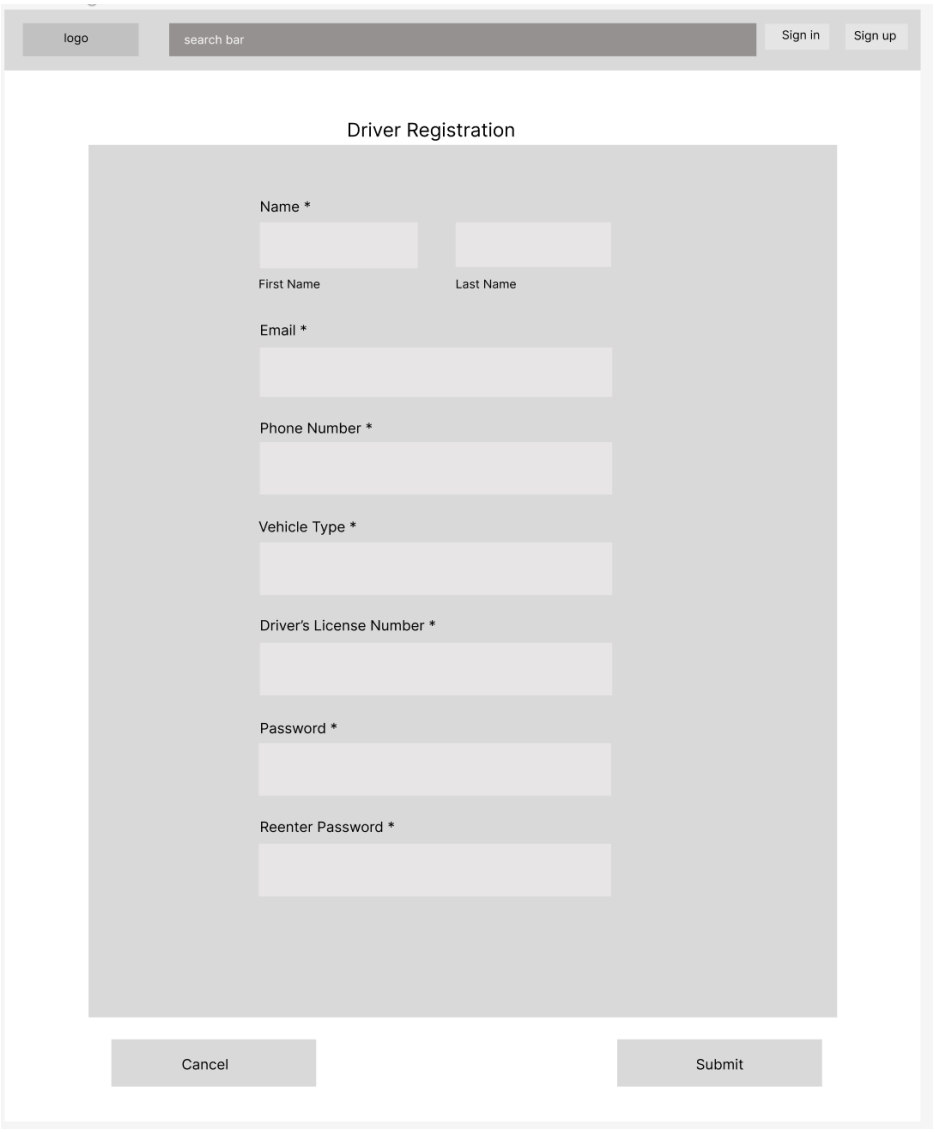
(4)


logo
search bar
Sign in
Sign up
Restaurant Details
Restaurant Name *
Restaurant Name
Restaurant Address *
Restaurant Street Address
Street Address
San Francisco
City
CA
State/Region
90000
Zip Code
U.S.
Country
Special Offers Checklist (optional)
Free Delivery
Weekly Discounts and Promotions
Restaurant Thumbnail *
Upload Image:
BROWSE
Requests submitted will be approved within 24 hours*
UPLOAD MENU
SUBMIT REQUEST

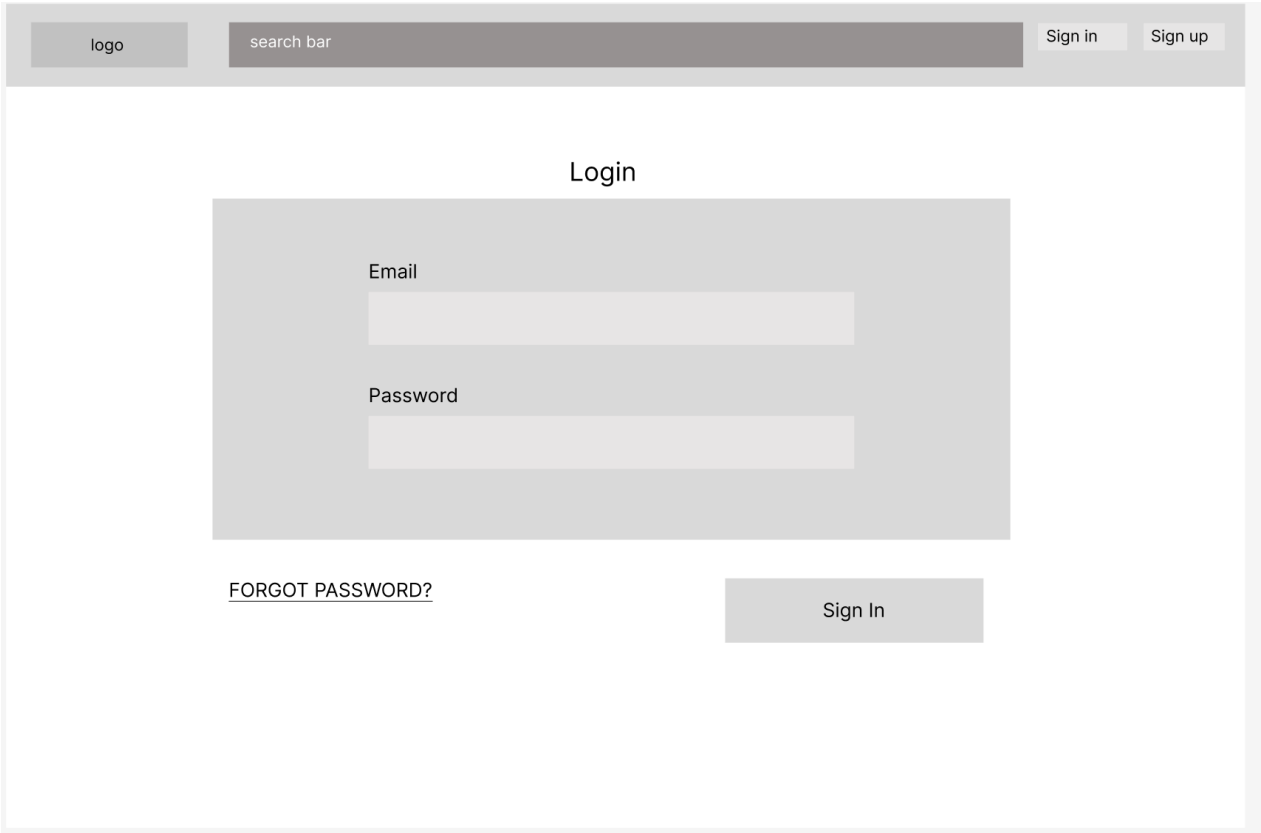
4. Delivery Driver:

Lucas is an SFSU student who wants a job that is flexible with his schedule as a student. Friends convinced him to apply for Hungry Gator. He opens a browser in his laptop and enters the link for the website. **(1)** He finds the sign up page for delivery drivers and begins filling out the application. After being approved for the job, **(2)** he signs in. **(3)** He is then shown various orders that instantly pop up in his phone and he can decide which one to take. He notices that there is a map provided for on campus deliveries in the order information, which will prevent him from getting lost. Being able to decide when to work gives him peace of mind about having time to do his assignments and attending classes. Besides being able to fit in his job at Hungry Gator in his busy schedule, Lucas feels safe making deliveries since the app gives him the choice of meeting up at a secure point on campus.

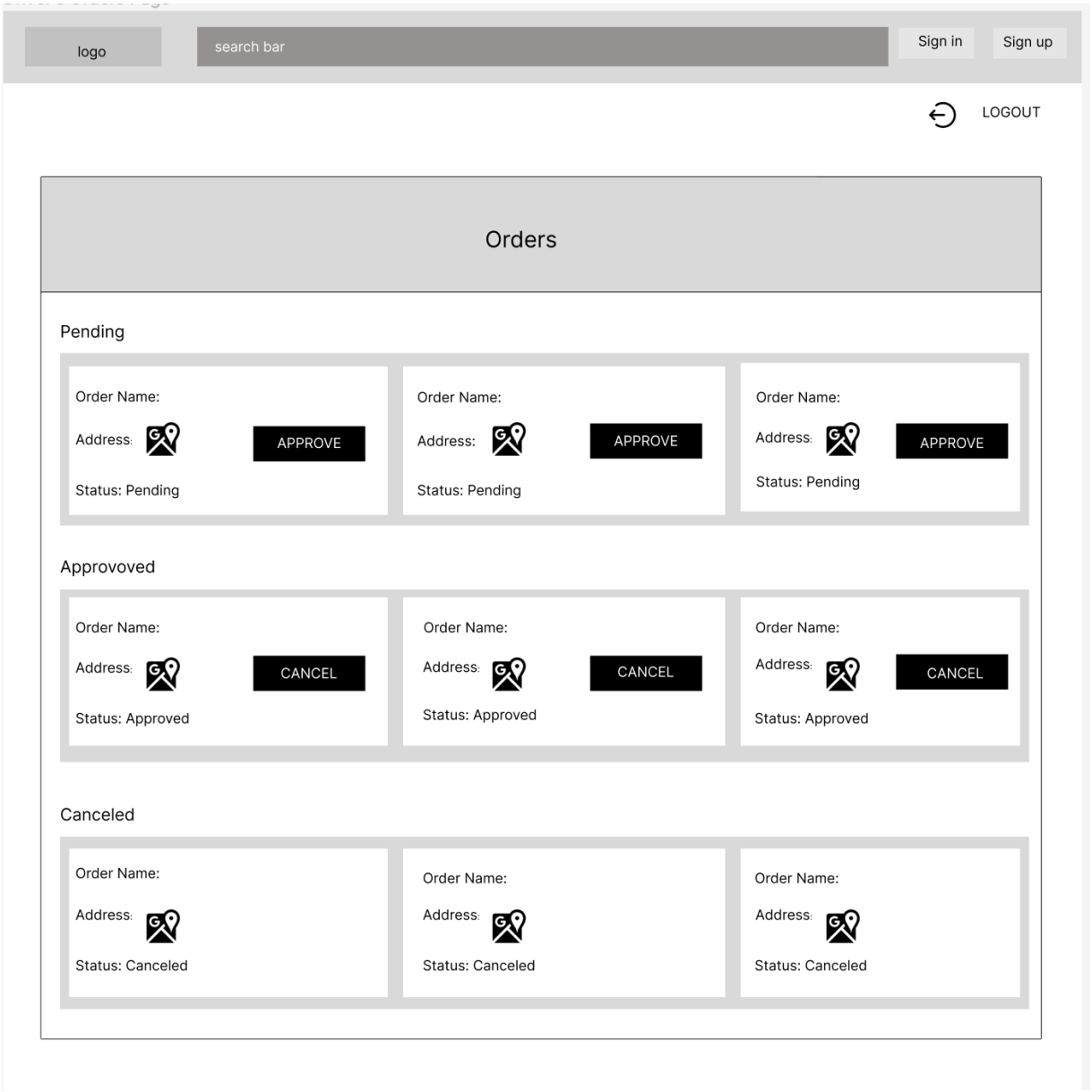
(1)



(2)


logo
search bar
Sign in
Sign up
Login
Email
Password
FORGOT PASSWORD?
Sign In

(3)



5. High level Architecture, Database Organization summary only:

- DB Organization:
    1. Account
        - Account ID
        - First Name
        - Last Name
        - Email
        - Password

2. Restaurant
    - Restaurant ID
    - Restaurant Name
    - Restaurant Address
    - Restaurant Thumbnail (pointer to BLOB)
    - Restaurant Category
3. Food Dish
    - Food Dish ID
    - Food Name
    - Food Price
    - Food Image (pointer to BLOB)
    - Food Description (optional)
4. Order
    - Order ID
    - Delivery Address
    - Order Status
5. Driver Info
    - Account ID
    - Name
    - Email
    - Phone Number
    - Vehicle Type
    - License ID
    - Password
6. Media
    - Media ID
    - Title
    - Category

- Media Storage:
  We will store any needed images, video, and audio in DB BLOBS. This may prove to be the best option for storing large chunks of data that we can store and reference within the database when needed. For example, we may want to include images of restaurants and food dishes, but we cannot include the raw data in the tables. Therefore, we can reference a media object that contains a pointer to the BLOB in order to view the requested data. For media we will use common formats like MP4, which can handle both video and audio types, and PNG for images. For GPS, we will use the most common formats like Decimal Degrees (DD) to keep track of the coordinates.

- Search/filter architecture and implementation:
  For searching, we will use SQL to organize items for the user using a sorting algorithm that will show results based on how recently each item was created in the database. This is easier to maintain and understand since we know the behavior of search results and how the results will be displayed to the user. In order to implement this, we need to reference one or more columns from the Restaurant table to sort these items based on the user search. We will do this using the LIKE operator in MySQL to match items to a specific set of characters that form a pattern for searching. For example, if the user is interested in searching for a specific category of restaurants like Italian, we may want to use the restaurant category and the LIKE operator to select the items in the restaurant table that match the term 'Italian%'. This will return all relevant results and can be used in tandem with other SQL to sort/filter items in a specific way (i.e., by price or delivery time).

- Some non-trivial algorithms to implement may include a rating/ranking system where the user is able to sort results by rating.

6. Risks:

Skill risks: Team has limited knowledge of Bootstrap, will outsource to appropriate resources to acquire the skill.

Team is new to API for google maps, outsourcing to appropriate resources and learning how to use API's will help us acquire the skill.

Schedule risks: Team is made of students with heavy schedules which can compromise lower priority tasks due to approaching finals season. In order to resolve the issue, we may have to reduce our scope.

Technical risks: Virtual machine and connections to server has proven to be a difficult task, messaging the CTO and understanding the problem will help us solve this risk.

Teamwork risks: Team needs to have more frequent meetings to discuss project goals and any issues that may arise to resolve them in a timely manner. To resolve this, we will use our preferred method of communication to set up meetings that work for all team members.

7. Project Management:

In the milestones accomplished so far, including milestone 2, the group had a set list of responsibilities that corresponded to their role in the team. If an issue were to surface, our communication to the appropriate outlet has proven to be a great source of resolving the problems. For further revisions of the project as a whole as well as this document, we plan to keep this milestone as a living document using the revisions table as a log of our edits. This document will serve as a template and resource to look back on, in order to keep track of our priorities and our progress. Our next step is to work on our Vertical SW Prototype. As we move forward, we plan to use Bootstrap, study the google map API's, and learn about our database to server connections. To ensure the team is on the same page, we will attend weekly meetings. We also plan to have a day to do a code walkthrough where each end of the SW development team explains their code and how to use it. To reinforce our accessibility of the product, we also plan to have members of the team test the important functions. This allows us to have a fresh set of eyes on what we can use to improve user experience. By expanding our skill set and implanting the lessons learned in class, we will be able to efficiently manage the upcoming milestones.