

Milestone Three

SW Engineering CSC648/848 Spring 2019

Team 04

04/23/2020

SFStateEats

Team Members

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Milestone 2 Version History

Milestone Version	Date
Milestone 3 Version 1	04/23/2020
Milestone 2 Version 2	04/09/2020
Milestone 2 Version 1	03/22/2020
Milestone 1 Version 2	03/10/2020
Milestone 1 Version 1	02/24/2020

Section 1: Data Definitions V3

System Administrator

Description

Account for those users who are employed or trusted by the application owners. These accounts have access to moderator tools that no other account has access to. This may include the ability to remove reviews or change business information.

Restrictions

- Due to the fact that these accounts are not public, system administrators do not have any data items related to public profiles. This includes: profile picture, description, date of birth, reviews, ratings, etc.

Sub-Data Items

- Email
- Username
- Password

Registered User

Description

A user who uses the website and has created an account. This allows them to access features that an unregistered user may not have.

Restrictions

- Registered users shall not be younger than 13 years old.
- Registered users shall use an email that is not already in use in the application.

Sub-Data Items

- Email
- Username
- Password
- Profile Picture (Photo)
- Date of Birth

Registered Business Owner

Description

A user who owns a business that is listed on SFStateEats. This account has access to features relating to business pages that other users do not.

Restrictions

- Registered business owners shall be older than 13 years old.
- Registered business owners shall use an email that is not already in use in the application.
- Registered business owner's phone number shall not be public.
- Registered business owner's addresses shall not be public.

Sub-Data Items

- Email
- Username
- Password
- Phone Number
- Address

Restaurant

Description

An entity that contains all the information about a restaurant. This will be the page that has reviews, menus, hours, map, and location

Restrictions

- Restaurant shall not be listed unless it has been verified by a system administrator.
- Restaurants shall not upload more than 15 photos.
- Restaurant shall be located on campus.

Sub-Data Items

- Description
- Photo
- Review
- Menu
- Hours
- Address

Review

Description

A data item relating to restaurants. Reviews can be left by registered users and can be seen by any user. Reviews may include a section of text, photos, and ratings. A review consists of 3 parts, and may also include photos if the user wishes.

Restrictions

- A review shall have at most 3 photos uploaded.
- A review shall not require all sub data items to be filled out, as long as one of them is. For instance, if a user wants to only leave a text review, reaction/rating/photos may be left blank to achieve that.

Sub-Data Items

- Review Text
- Rating
- Photo

Menu

Description

A data item relating to restaurants. Restaurants may have a menu. A menu lists all of the items that the restaurant offers.

Restrictions

- A restaurant shall have at most 1 menu.

Sub-Data Items

- Menu Item

Menu Item

Description

A data item relating to a menu. A menu can have multiple menu items. Menu items are the individual items that a restaurant offers.

Restrictions

- A menu item shall have at most 1 photo.
- A menu item shall have an item name.
- A menu item shall have a price.

Sub-Data Items

- Description
- Price
- Photo
- Item Name

Item Name

Description

A data item relating to menu item. Every item on a menu must have a name. This is the text data for that name.

Restrictions

- An item name shall have at least 1 character.
- An item name shall have at most 50 characters.
- An item name shall not contain an emojis.

Sub-Data Items

- None

Price

Description

A data item relating to menu item. Every item on a menu must have a price.
This is the numerical data for price.

Restrictions

- A price shall be denoted in USD.
- A price shall not be null.

Sub-Data Items

- None

Address

Description

A data item relating to restaurants. An address will be written information regarding where the restaurant can be found.

Restrictions

- An address shall only consist of text.
- An address shall have at most 100 characters.
- An address shall not have any emojis.

Sub-Data Items

- None

Email

Description

An email will be a stored piece of information that allows for contact, verification, and login for the user's of the application.

Restrictions

- An email shall contain only characters.
- An email shall not be longer than 50 characters.
- An email shall have an @ symbol, and end with a valid extension.
- An email shall not contain any emojis.

Sub-Data Items

- None

Username

Description

A username will be a stored piece of information that allows for distinction and login for the user's of the application.

Restrictions

- A username shall contain only characters.
- A username shall not be longer than 25 characters.
- A username shall not contain any emojis.
- A username shall be unique.

Sub-Data Items

- None

Password

Description

A password will be a stored piece of information that allows for account login validation for the user's of the application.

Restrictions

- A password shall contain only characters.
- A password shall not be longer than 250 characters.
- A password shall not be shorter than 8 characters.
- A password shall not contain any emojis.
- A password shall contain at least 1 number, 1 uppercase letter, 1 special character, and 1 lowercase letter.
- A password shall be encrypted when stored.

Sub-Data Items

- None

Photo

Description

A photo will be a stored piece of media. Photos have many uses such as profile pictures, restaurant photos, and review photos.

Restrictions

- A photo shall not have a file size larger than 2MB.
- A photo shall not have dimensions larger than 1920 x 1080 pixels.
- A photo must be in one of the following formats: .JPG, .JPEG, .PNG, .HEIC.

Sub-Data Items

- None

Date of Birth

Description

A date of birth will be a text piece of data. It shall be used for verification of age when creating an account.

Restrictions

- A date of birth shall follow the MM-DD-YYYY format.
- A date of birth shall have exactly 8 positive numeric characters.
- A date of birth shall have a year greater than 1900.
- A date of birth shall have a day greater than 0 and less than 32.
- A date of birth shall have a month greater than 0 and less than 13.

Sub-Data Items

- None

Description

Description

A description will be a text piece of data. It shall be used for describing various entities on the application.

Restrictions

- A description shall contain no emojis.
- A description shall be no longer than 500 characters.

Sub-Data Items

- None

Phone Number

Description

A phone number will be a text piece of data. It shall be used to have contact information for various users of the application.

Restrictions

- A phone number shall follow the (###)###-#### format.
- A phone number shall have exactly 10 positive numeric characters.
- A phone number shall not have any negative numbers.

Sub-Data Items

- None

Hour

Description

An hour will be a text piece of data. It shall be used by restaurants to display the operating hours in which they are open to the public.

Restrictions

- An hour shall follow the “DAY” HH:MM “AM/PM” format.
- The “DAY” string shall exactly match one of the seven days of the week.
- The “AM/PM” string shall exactly match either “AM” or “PM”.
- The HH:MM shall contain only exactly 4 positive numeric values.

Sub-Data Items

- None

Review Text

Description

A review text shall be a text piece of data. It shall be used when a registered user leaves a review for a restaurant.

Restrictions

- A review text shall contain no emojis.
- A review text shall be no longer than 2500 characters.

Sub-Data Items

- None

Rating

Description

A rating is a score created when a registered user rates his experience. This rating is from 0-5, 0 being the worst, and 5 being the best. This rating can then be aggregated and displayed visually.

Restrictions

- A rating shall be a number between 0 and 5, inclusive.

Sub-Data Items

- None

Section 2: Functional Requirements V3

Priority One

User

1. New users shall be able to create an account.
2. Users shall be able to login into their account.
 - 2.1. A user shall only be logged in to one session at any given time.
3. Users shall be able to rate restaurants on campus.
 - 3.1. A user shall only rate a restaurant once.
 - 3.2. A user shall only rate a restaurant if they are reviewing it.
4. Users shall be able to rate an event on campus.
 - 4.1. A user shall only rate an event once.
 - 4.2. A user shall only rate an event if they are reviewing it.
5. Users shall be able to write reviews.
 - 5.1. A user shall be able to write a review only once per restaurant.
 - 5.2. A user shall be logged in to write a review.
6. Users shall be able to view reviews.
8. Users shall be able to see the menu for each restaurant.
9. Users shall be able to see the price for each item on the menu.
10. Users shall be able to see the address of the restaurant on the profile page.
 - 10.1. An address shall be a text description of where the restaurant is located on campus.
15. Users shall be able to see hours of business for each restaurant.
 - 15.1. Hours shall be updated for holidays and special occasions.
 - 15.2. Hours shall be formatted using the HH:MM format.
16. Users shall be able to apply filters to their search.
 - 16.1. A user shall be able to choose from one or many of the following filters:
 - 16.1.1. Recommendation
 - 16.1.2. Rating
 - 16.1.3. Reviews
 - 16.1.4. Price
 - 16.1.5. Hours
 - 16.1.6. Address / Distance
 - 16.1.7. Categories
 - 16.1.8. Payment Methods
17. Users shall be able to flag a review as inappropriate for the application.
 - 17.1. A user can only flag 10 reviews per day.
 - 17.2. The amount of flags a review has shall not be public.
18. Users shall be able to sort reviews by date.
 - 18.1. Users shall be able to sort by newest, oldest or specific date.

- 19. Users shall be able to sort reviews by popularity.
 - 19.1. A review's popularity is based on the number of positive reactions a review has.
 - 19.2. A user shall be able to sort popularity by most popular or least popular.
- 20. Users shall be able to delete a review they have written.
 - 20.1. A review can only be deleted within a specified (24 hours) time frame.
- 22. Users shall be able to see all reviews they have written.
- 23. Users shall be able to see all reviews another user has written.
- 28. Users will be able to see a visual representation of the ratings.
 - 28.1. The visual representation shall use a star format.
 - 28.2. A rating shall be on a scale from 0-5, in half increments.
- 29. Users shall be able to reply to other user's reviews.
 - 29.1. A reply shall have the option to be a reaction.
 - 29.2. A reply shall have the option to be text.
 - 29.3. A reply shall have the option to be rating.
 - 29.4. A text reply shall have a maximum of 500 characters.

Business

- 30. New business owners shall be able to register a business account.
 - 30.1. A business shall be verified by a system administrator.
 - 30.2. Business account verification shall take up to 3 business days.
 - 30.3. Business account verification shall require additional details (proof of ownership, etc).
- 31. Business owners shall be able to login into their account.
 - 31.1. A business account shall only be logged in to one session at any given time.
- 32. Business owners shall be able to add their restaurant to the website.
 - 32.1. A new restaurant shall be verified by a system administrator.
 - 32.2. New restaurant verification shall take up to 3 business days.
 - 32.3. New restaurant verification shall require additional details (proof of ownership, etc).
- 33. Business owners shall be able to create a menu for their restaurant.
 - 33.1. A menu shall have the option for subsections.
 - 33.2. All menu items shall be required to have a price
 - 33.3. A menu item shall have the option to have categories.
- 34. Business owners shall be able to upload photos of their restaurant.
 - 34.1. A restaurant shall have at most 15 pictures uploaded.
- 36. Business owners shall be able to write descriptions of their restaurant on the profile page.
 - 36.1. Restaurant descriptions shall be at most 500 characters.
- 38. Business owners shall be able to change prices on the menu.
- 39. Business owners shall be able to change hours of the restaurant.

- 41. Business owners shall be able to flag a review as inappropriate for the website.
 - 41.1. A review flagged by a business shall have more weight than flags by users.
 - 41.2. A business can only flag 25 reviews per day.
 - 41.3. The amount of flags a review has shall not be public.
- 42. Business owners shall be able to request removal of their restaurant from the website.
 - 42.1. A request for deletion shall be required to have an explanation.
 - 42.2. A request for deletion shall be verified by the system administrator.
- 71. Business owners shall be able to upload photos of each item on the menu.
 - 71.1. A menu item shall only have 1 picture uploaded

Restaurant

- 44. The restaurant profile page shall display photos.
 - 44.1. Photos shall not be inappropriate.
- 45. The restaurant profile page shall display ratings.
- 46. The restaurant profile page shall display tags.
 - 46.1. Restaurant shall display at most 10 tags.
- 47. The restaurant profile page shall display a description.
 - 47.1. Description shall not contain any emojis or inappropriate language.
- 48. The restaurant profile page shall display address.
- 49. The restaurant profile page shall display a menu.
- 50. The restaurant profile page shall display hours.
- 51. The restaurant profile page shall display reviews.
- 52. The restaurant profile page shall display the owner.
 - 52.1. Restaurant owners shall decide if the restaurant displays the owner's account.
- 53. The restaurant profile page shall display phone numbers.
 - 53.1. A restaurant shall have at most 2 phone numbers.
 - 53.2. A business owner shall not have the same phone number as a restaurant phone number.
- 58. The restaurant profile page shall display the various payment methods the restaurant accepts.
 - 58.1. Payment methods shall be updated as systems change.

System Admin

- 60. System Administrators shall have the privilege to ban any users from the website for misuse.
 - 60.1. A ban shall be required to have a reason logged.
- 61. System Administrators shall have the privilege to delete restaurants from the platform.

- 61.1. A deletion shall be required to have a reason logged if the deletion was in result of a ban.
 - 61.2. A deletion may also happen as a result of a restaurant removal request ticket.
- 62. System Administrators shall have the privilege to add restaurants to the platform.
 - 62.1. All restaurants added to the platform shall have relevant documents for proof of ownership.
- 63. System Administrators shall have the privilege to change restaurant information.
- 64. System Administrators shall have the privilege to verify new business accounts.
 - 64.1. New business accounts shall undergo review.
- 65. System Administrators shall have the privilege to delete reviews from the platform.
 - 65.1. A review that receives too many flags shall open a ticket for further investigation.
 - 65.2. A review that is removed shall be required to have a reason logged.

System

- 70. The system shall show new restaurants on the main page.
 - 70.1. New restaurants shall be determined based on when they were approved on the platform.

Priority Two

User

- 10. Users shall be able to see all the businesses that are involved in the farmers market.
 - 10.1. Businesses involved in the farmer's market shall have a special restaurant tag.
- 11. Users shall be able to see the map locations of each restaurant on campus.
 - 11.1. Map location shall be based on Google API.
 - 11.2. Map shall be able to pan and zoom.
 - 11.3. Map shall provide GPS like directions to restaurants.
- 21. Users shall be able to edit a review they have written.
 - 21.1. A review shall only be able to be edited within a certain time frame (2 hours).
 - 21.2. A review shall display to all users that it has been edited.
 - 21.3. A review shall only be edited at most 3 times.
- 25. Users shall be able to share restaurant information and profiles to each other.
 - 25.1. Share shall be done over via a direct link to the restaurant.
- 7. Users should be able to post pictures in their reviews.
 - 7.1. A user shall upload a maximum of 3 images per review.

Business

- 35. Business owners shall be able to tag their restaurant into categories.
 - 35.1. A restaurant shall have at most 15 tags.
- 37. Business owners shall be able to upload an approved health score.
 - 37.1. A health score shall be uploaded as an image for verification.
 - 37.2. Health score image shall contain all information required for proof validity.
- 40. Business owners shall be able to petition for a change of owner.
 - 40.1. Petitions for change of owner shall be required to have a reason.
 - 40.2. New business owner must have either a verified business account or a new business account under review.

Restaurant

- 56. The restaurant profile page will show any nutritional facts of the menu items.
- 57. The restaurant profile page shall show the customers if they serve halal, vegan, vegetarian, and non-vegetarian meals.
 - 57.1. These options shall be categorized as tags and appear in filters.

System

- 69. The system shall show recent reviews on the main page.

Priority Three

User

- 13. Users shall be able to check-in to restaurants.
 - 13.1. Check-in shall not use GPS for verification.
- 14. Users shall be able to see busy times for restaurants.
 - 14.1. Busy times shall be calculated based on check-in's.
- 26. Users will be able to connect their facebook and instagram to their accounts.
 - 26.1. Connections allow for users to share links directly to their social media feeds.
- 27. Users will be able to login with their sfsu id that is linked to ilearn.
 - 27.1. User ID and password shall be identical to the university login.
- 29. Users who are visually impaired will be able to use an automated system (such as voice commands) to navigate through the app.
 - 29.1. Websites shall use standard disability formats for this.

Business

- 43. Business owners shall be able to see a chart of how their restaurant is doing.
 - 43.1. Charts shall display information such as check-in's, positive reviews versus negative reviews, etc.

Restaurant

- 54. The restaurant profile page shall display the option to order online.
- 55. The restaurant profile page shall display an option to pick up the order.

System Admin

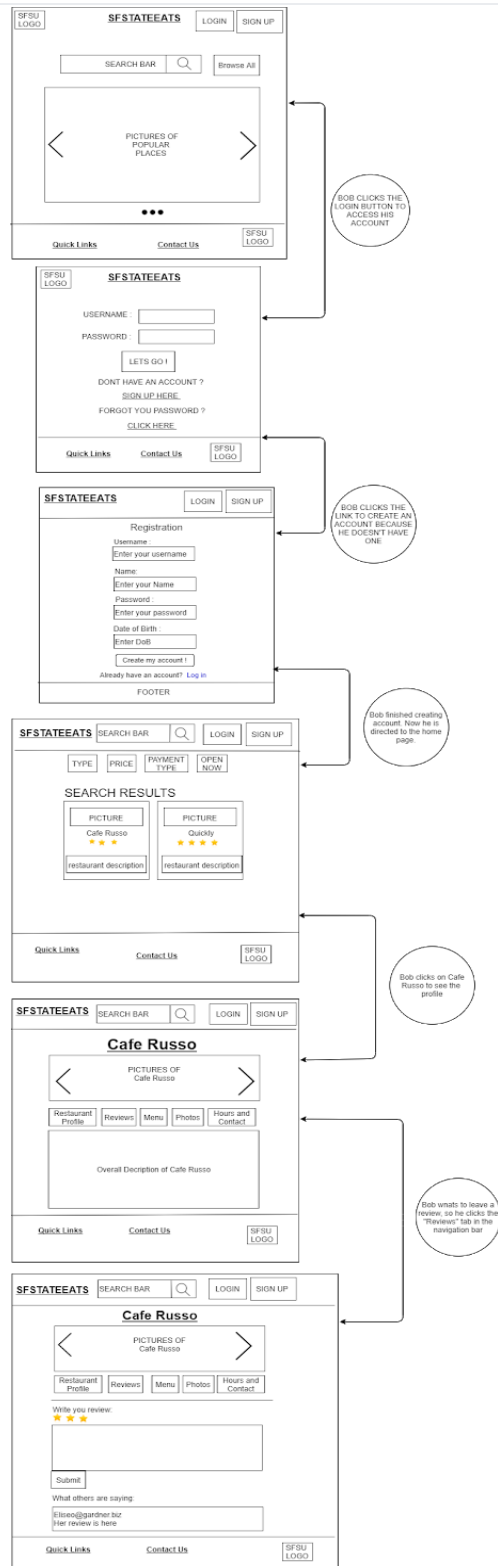
- 66. System Administrators shall be able to cancel orders placed at the customer's request.
 - 66.1. Customer cancellation requests shall be required to have a reason for cancelation.
- 67. System Administrators shall be able to refund the customer if the order is not what they wanted.

System

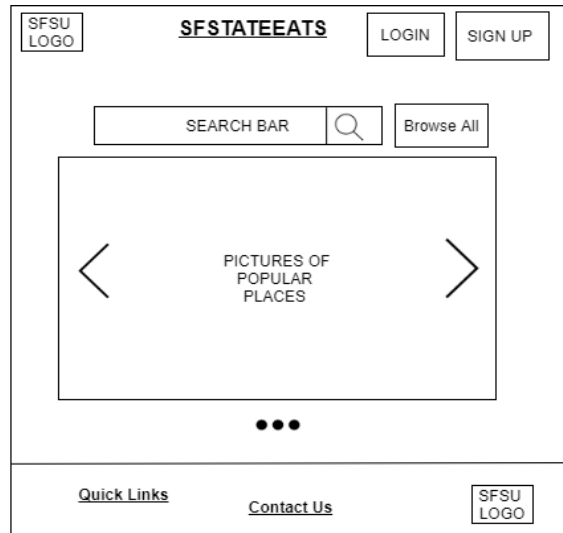
- 68. The system shall show trending restaurants on the main page.
 - 68.1. Trending restaurants are based on check-in's and new positive reviews.
 - 68.2. Trending restaurants are updated every 3 days.
 - 68.3. Display new reviews on the page.

Section 3: Wireframes Based on your Mockups/Storyboards V2 (detailed)

WireFrame for Use Case 1

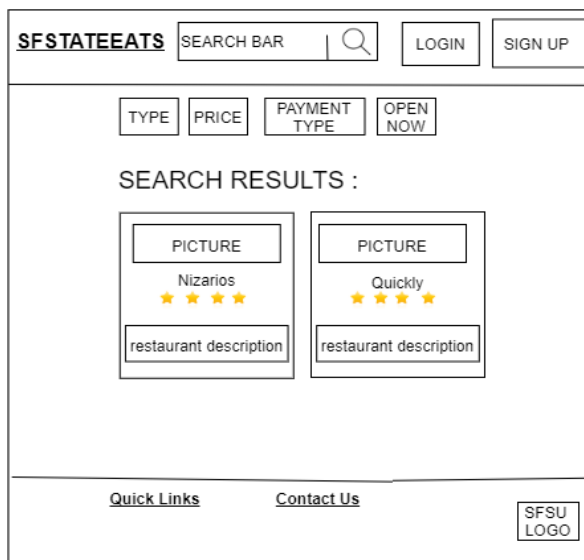


WireFrame for Use Case 2



Alice opens the SFSTATEEATS website. Since she is already logged into her account, she is directed to the home page. Alice wants to see all the restaurants on the website, so she clicks the "Browse All" button.

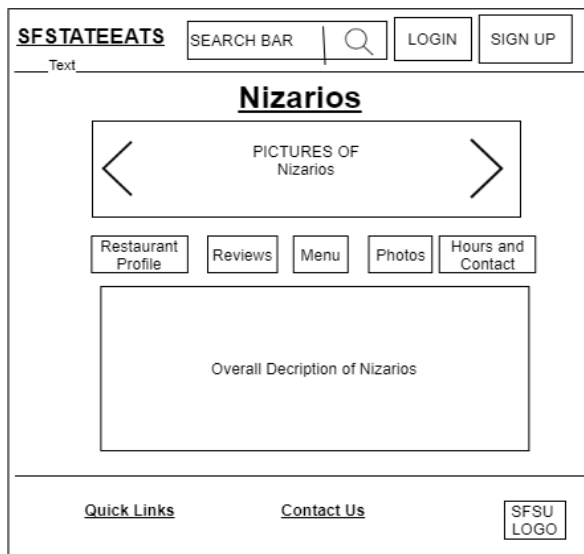
Next, Alice chooses the filters that sorts the restaurants from lowest to highest price



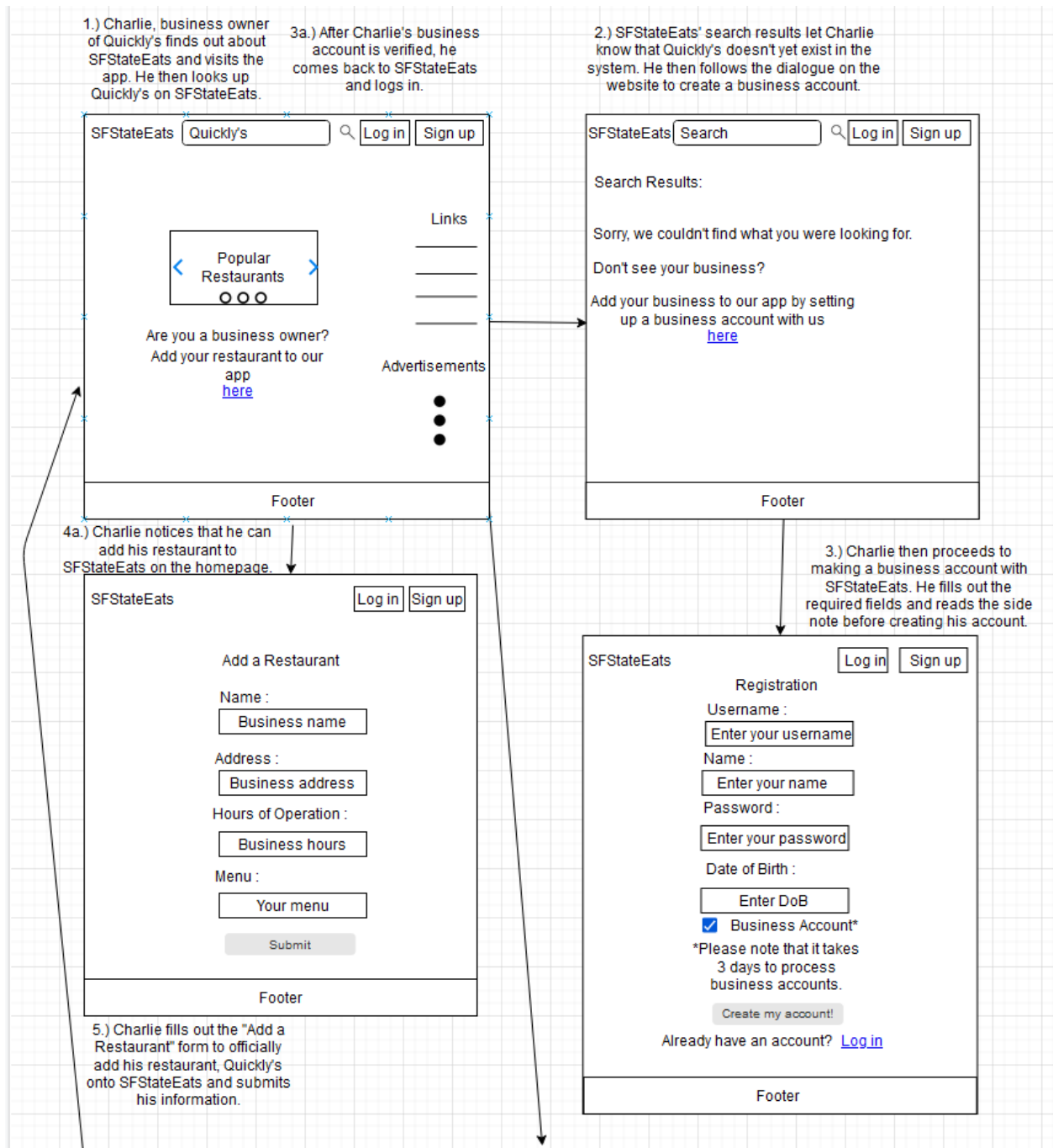
Alice browses through all the restaurant results and chooses the Nizario's Pizza restaurant.

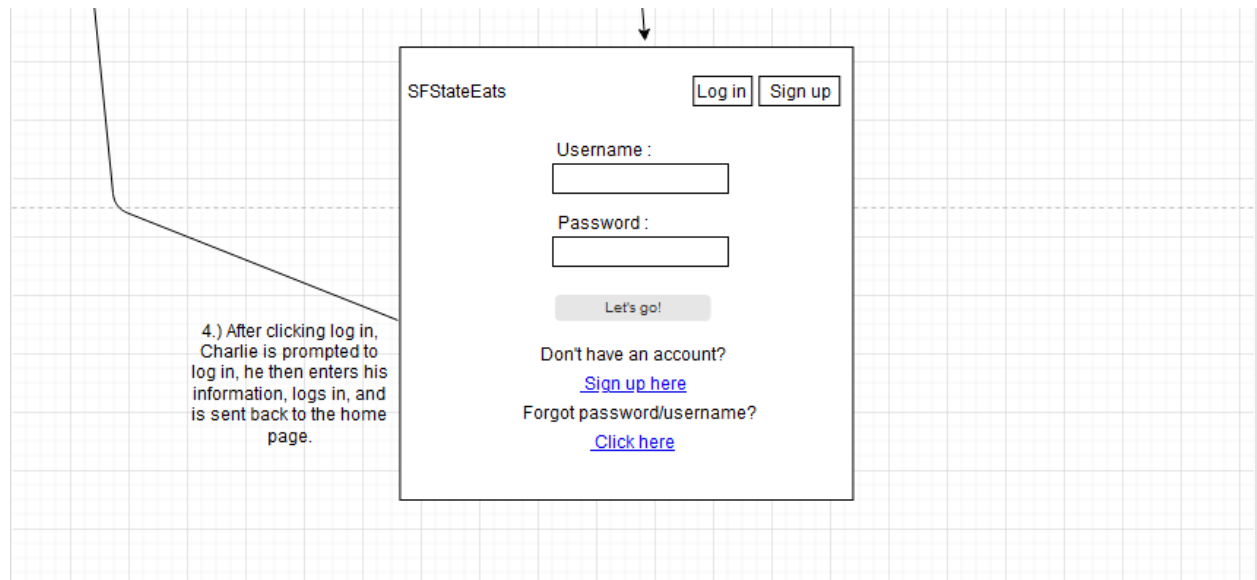
Alice also sees the location of the restaurant, Ceasar Chavez Student Center.

The ratings are presented for Alice.

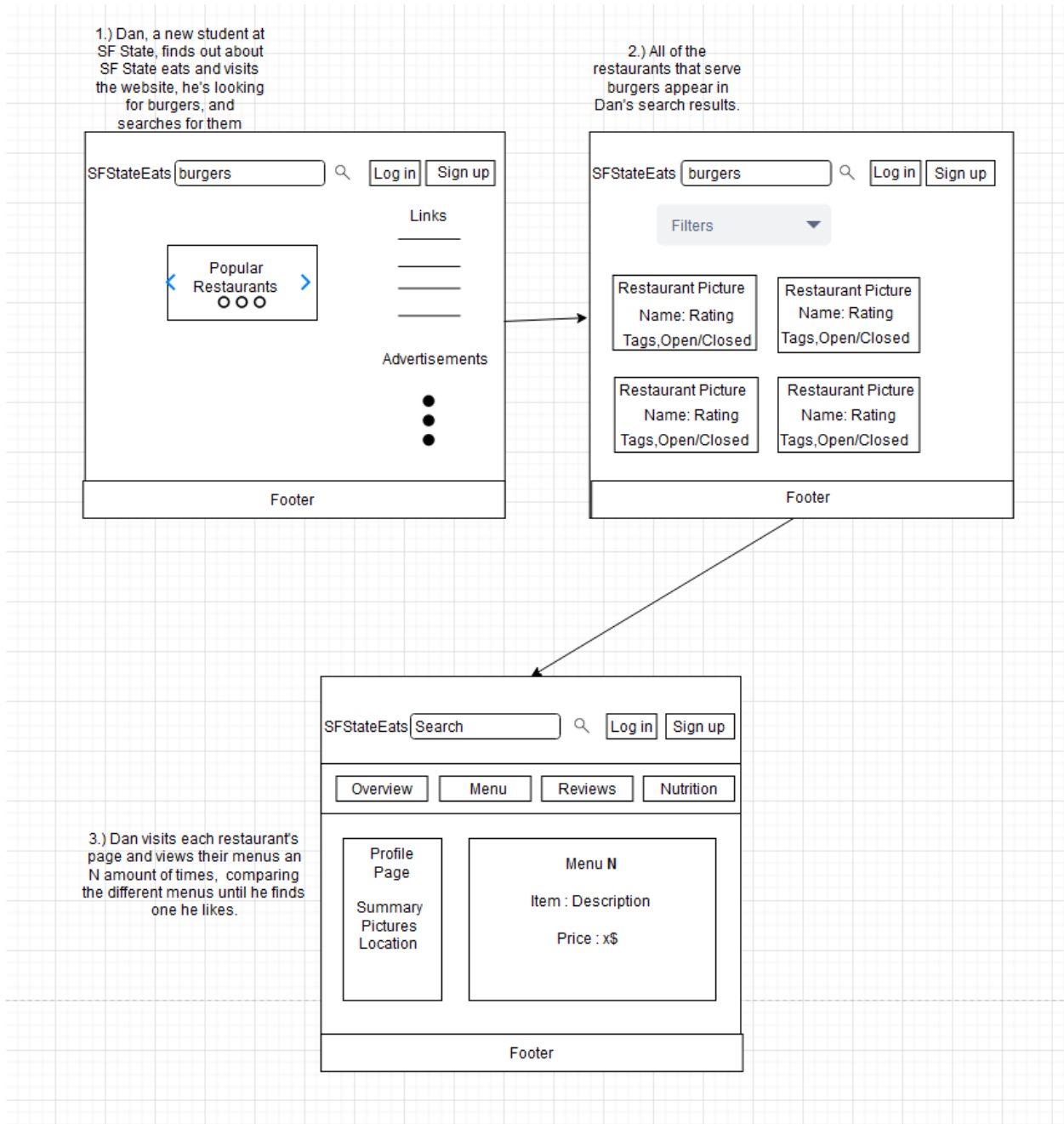


WireFrame for Use Case 3





WireFrame for Use Case 4



WireFrame for Use Case 5

SFStateEats

User

< Pic >

— — —

Footer

Send a ticket

Charlie wants to send a ticket to sysadmin to update Quickly's owner to the new owner, Jim.

User

Example file input

Choose File

No file chosen

Submit

Charlie enters the details and upload necessary documents

Admin Board

Inbox

The sysadmin sees Charlie's message in the admin dashboard

Quickly

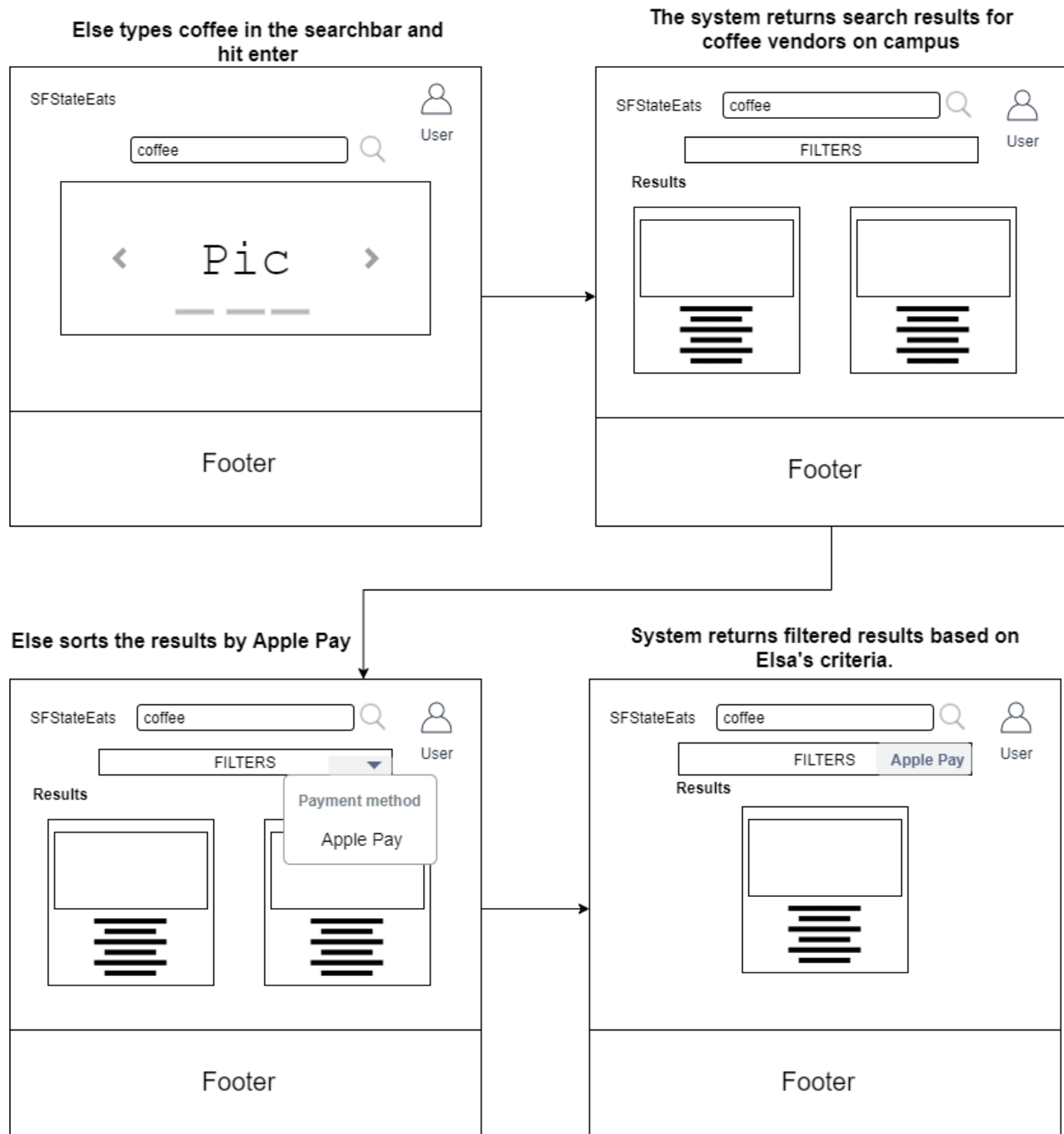
< Pic >

Overview

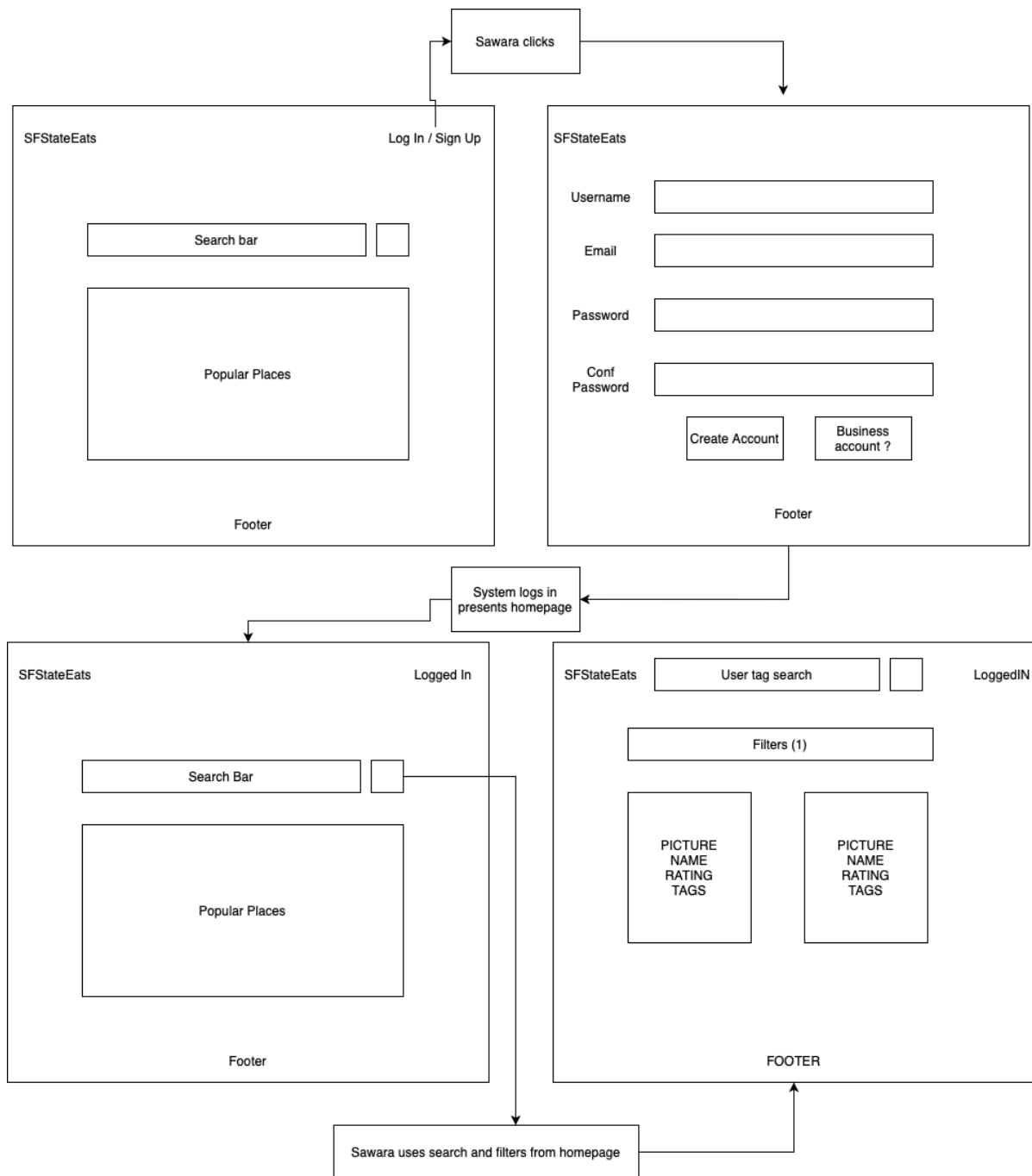
Business Owner
Jim

The sysadmin updates Quickly page to reflect new updated info

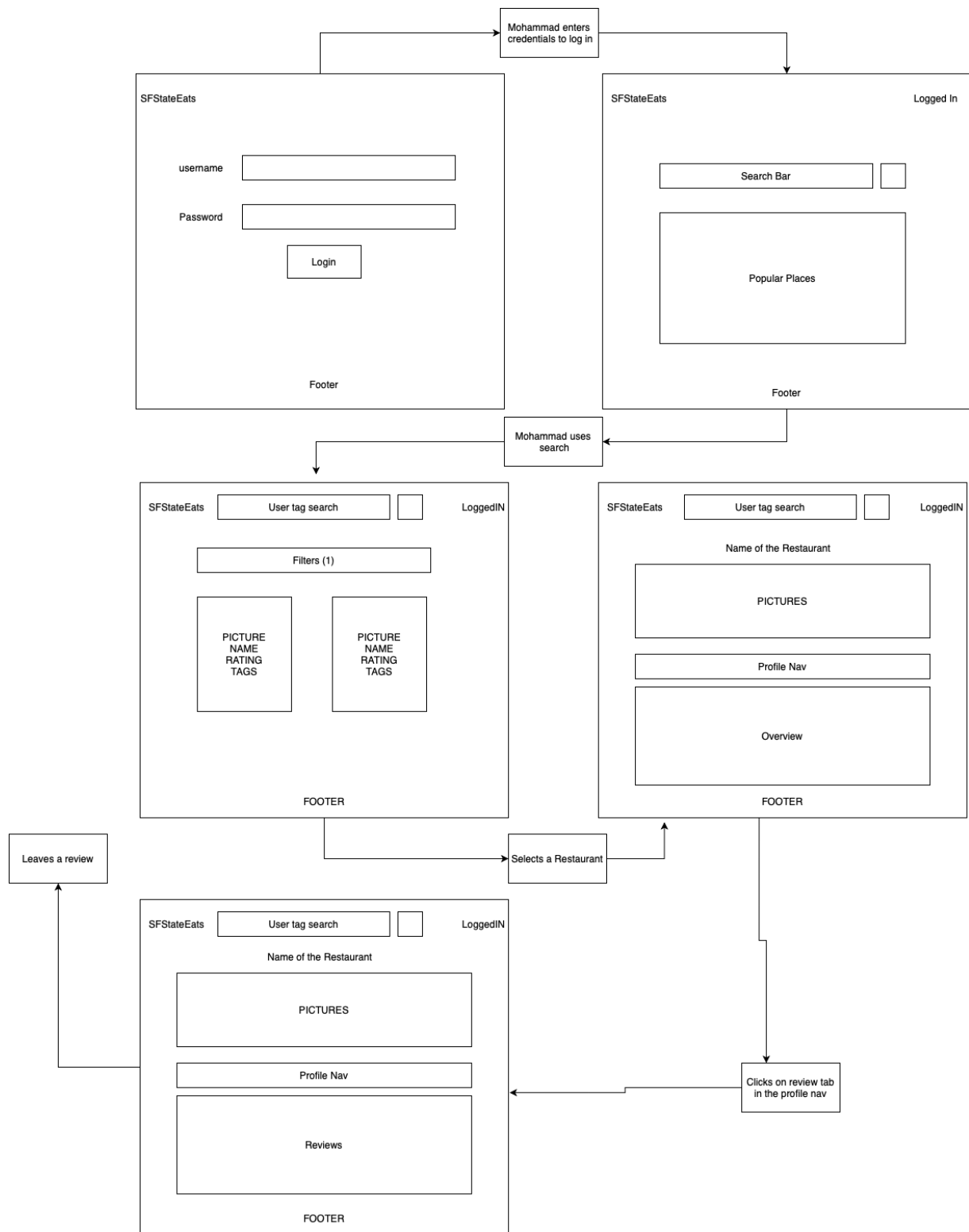
WireFrame for Use Case 6



WireFrame for Use Case 7

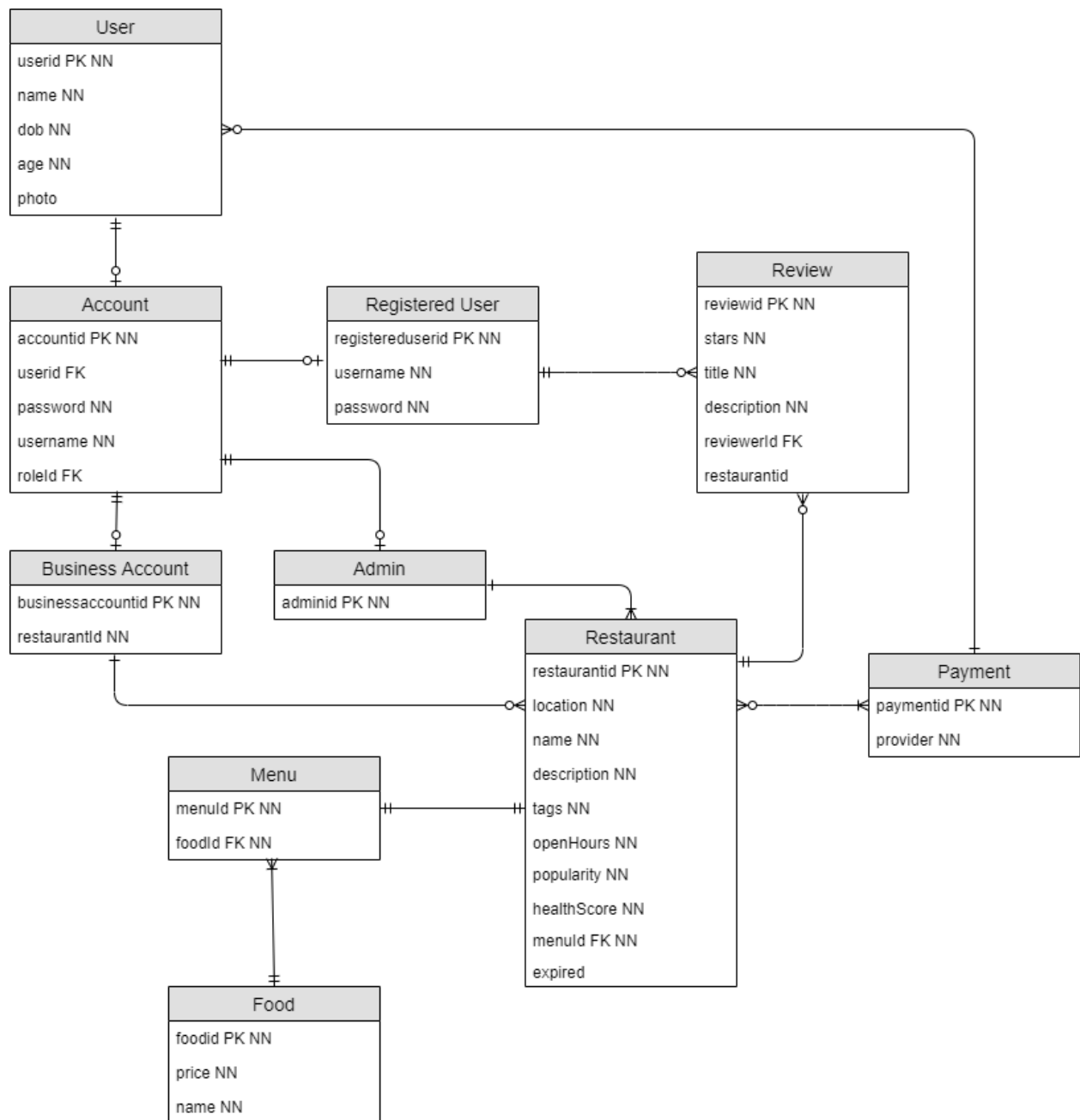


WireFrame for Use Case 8



Section 4: High level database architecture and organization V2

Database Model

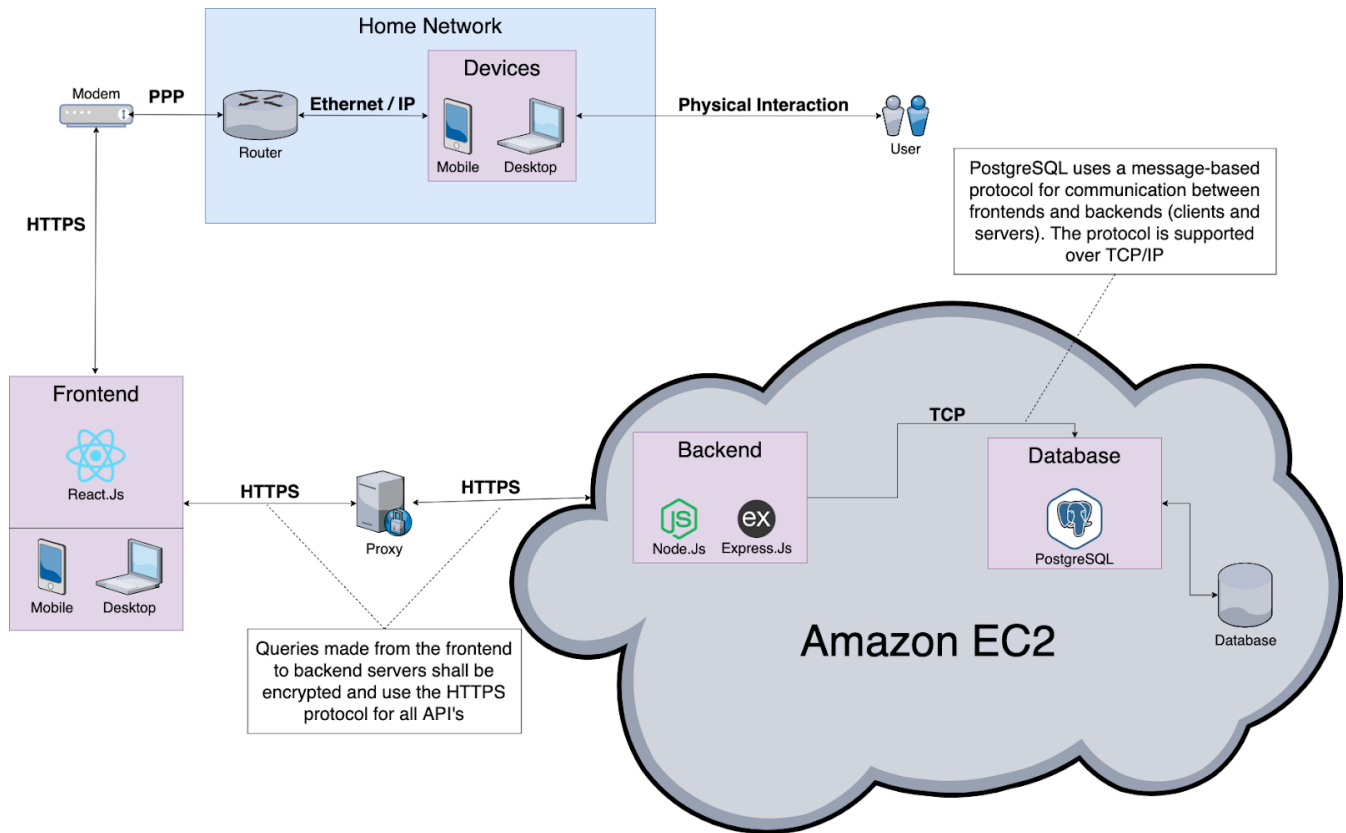


```

classDiagram
    class User {
        <<Class>>
        -UserID: int
        -Photo: Image
        -FirstName: String
        -LastName: String
        -Age: String
    }
    class Account {
        <<Class>>
        -AccountID: int
        -UserID: int
        -roleID: int
        -Username: String
        -Password: String
        +SetPassword()
        +SetUsername()
    }
    class Admin {
        <<SubClass>>
        -adminID: int
        +ApproveRestaurant(Restaurant: Restaurant)
        +DeclineRestaurant(Restaurant: Restaurant)
        +TransferRestaurant(fromID: int, toID: int, restaurantID: int)
        +AcceptBusinessAccount(accountID: int)
        +BanAccount(accountID: int)
    }
    class BusinessAccount {
        <<SubClass>>
        -BusinessAccountID: int
        -restaurantID: int
        +AddRestaurant(Restaurant: Restaurant)
        +DeleteRestaurant(Restaurant: Restaurant)
        +CreateMenu(Menu: Menu)
        +ModifyMenu(Menu: Menu)
        +FlagReview(Review: Review)
        +ChangeOwnerTo(toID: int)
    }
    class RegisteredUser {
        <<SubClass>>
        -RegisteredUserID: int
        +SetReview(Review: Review, Restaurant: Restaurant)
    }
    class Menu {
        <<Class>>
        -MenuID: int
        -FoodID: [int]
        +AddFood()
        +DeleteFood()
        +EditFood()
    }
    class Restaurant {
        <<Class>>
        -RestaurantID: int
        -MenuID: int
        -Location: String
        -Name: String
        -Tags: [String]
        -Description: String
        -OpenHours: String
        -Popularity: int
        -HealthScore: int
        +CreateRestaurant()
        +EditRestaurant()
    }
    class Food {
        <<Class>>
        -FoodID: int
        -Price: int
        -Name: String
        +CreateFood()
        +ChangePrice()
        +ChangeName()
    }
    class Review {
        <<Class>>
        -ReviewID: int
        -ReviewerID: int
        -Stars: int
        -Title: String
        -Description: String
        +AddReview()
        +DeleteReview()
        +EditReview()
    }
    class Payment {
        <<Class>>
        -PaymentID: int
        -Provider: String
    }

    User <|-- Account
    Account <|-- Admin
    Account <|-- BusinessAccount
    Account <|-- RegisteredUser
    Menu *-- Food
    Restaurant *-- Review
    Restaurant *-- Payment
    User --> Account : 1..*
    Account --> BusinessAccount : 0..1
    Account --> RegisteredUser : 1..*
    BusinessAccount --> Restaurant : 0..1
    RegisteredUser --> Restaurant : 0..1
    Restaurant --> Review : 1..*
    Review --> Payment : 1..*
    Food --> Menu : 1..*
  
```

Network Diagram



Deployment Diagram

