

SW Engineering CSC648/848 Spring 2021
“Zooble”
Section 04 Team 2

Team Lead: Edgar Catalan
Team Lead Email: ecatalan@mail.sfsu.edu
Frontend Lead: Cameron Harte
Backend Lead: Em Powers
Additional Members: Daniel Simpson, Wenjie Ye,
Sabrina Dang, Wameedh Mohammed Ali

Milestone 5
Due Date: 05/20/2021

URL: <https://www.zooble.link>

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Milestone/Version	Date
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M4 V1	5/13/2021
M3 V2	5/3/2021
M3 V1	4/22/2021
M2 V2	4/5/2021
M2 V1	4/1/2021

M1 V2	3/20/2021
M1 V1	3/5/2021

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Section II: Product Summary

Product Name: Zooble

List of Functional Commitments:(needs modification)

1. General Users
 - a. General Users can search for Registered Users (businesses, shelters, pets, pet owners) and can use their location to find businesses, shelters, and adoptable pets near them.
 - b. General Users can view profiles of Registered Users.
 - c. General Users can create an Account
2. Registered Users
 - a. Registered Users can create a User Profile and profiles for their pets.
 - b. Registered Users can make edits to their profile
 - c. Registered Users can make posts and photo posts to their feed that will be seen by Registered Users following them
 - d. Registered Users can follow other Registered Users and like other Registered User's Posts
3. Registered Business
 - a. Registered Business profile can be viewed by a registered user
 - b. Shall inherit all the functionality of a registered user
4. Registered Shelter
 - a. Registered Shelters can create a Shelter Profile and profiles for pets.
 - b. Shall inherit all the functionality of a registered user
5. Profile
 - a. Can display photos posted by the registered user that owns the profile
 - b. Profiles shall display followers
 - c. Profiles shall display the pets owned by the profile owner
6. Pet Profile
 - a. Pet profiles can be edited by the registered pet owner or registered shelter that owns the pet.
7. Registered Business Profile
 - a. Registered Business Profiles shall inherit the functionality of Profiles
 - b. Registered Business Profiles can provide Business Info (Business Hours, Address, Phone Number)

- c. Registered Business Profiles can be viewed by all users
 - d. A Registered Business Profile can be edited by the Registered User who created it.
8. Registered Shelter Profile
- a. Registered Shelter Profiles can provide Business Info (Business Hours, Address, Phone Number)
 - b. Registered Shelters shall display the Pets that reside at the Registered Shelter.
9. Posts
- a. Posts shall display text and/or images.
 - b. Posts shall be able to be liked by Registered Users.
 - c. Posts can be commented on by Registered Users
10. Comments
- a. Comments shall display the Display Name of the Registered User who posted the comment
 - b. Comments shall direct Registered Users to the Profile of Registered User who posted the comment
 - c. Comments shall show the time they were posted
11. Messages
- a. Messages can be sent from a Registered User to another Registered User
 - b. Messages shall allow Registered Users to view the sent time and display name of the user
12. Followers
- a. Registered Users are able to see a list of Registered Users that they are followed by
13. Following
- a. Registered Users are able to see a list of the Registered Users that they are following.
14. Search
- a. Users can search businesses, shelters, pets owned by shelters, and pet owners by display name.
 - b. Users can search for businesses, shelters, and pets owned by shelters by their address.
 - c. Users can search for businesses, shelters, and pets, by business category, available types of pets, and pet type or cat/dog breed respectively
15. Feed
- a. The Feed shall display the posts of the Registered Users that a Registered User is following

- b. The Feed shall display posts sorted by time posted by most recent to least recent

16. Map Search

- a. Map Search will display the locations of Registered Businesses, Registered Shelters and adoptable pets.
- b. Map Search will allow users to filter results for Pets, Registered Businesses, and Registered Shelters by their attributes:
 - i. Pet Type, Color, Size, Age, Breed (if cat or dog).
 - ii. Business Type
 - iii. Shelter's available type of pets

Unique Feature:

Our website combines the functionality of a social media website with pet search tools and business directories. Although there are many websites that encapsulate one or even two of these functionalities, our website is the only one that combines all three to create a pet-focussed hub for shelters, businesses, and pet owners to make connections and grow their businesses. However its singular unique feature is a search function that allows Pet Owners to view businesses, shelters, and adoptable pets near them on a map, which is a feature that is completely unique across all competitors.

Website URL:

<https://www.zooble.link>

Section III: Milestone Documents

M1V2:

SW Engineering CSC648/848 Spring 2021
“Zooble”
Section 04 Team 2

Team Lead: Edgar Catalan
Team Lead Email: ecatalan@mail.sfsu.edu
Frontend Lead: Cameron Harte
Backend Lead: Em Powers
Github Master: Daniel Simpson
Additional Members: Wenjie Ye,
Sabrina Dang, Wameedh Mohammed Ali

Milestone 1
Due Date: 03/05/2021

GitHub Repository:

<https://github.com/CSC-648-SFSU/csc648-04-sp21-Team02>

Milestone/Version	Date
M1V1	3/05/21
M1V2	3/15/21

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Section I: Executive Summary

The advent of social media has ushered us into a more interconnected world. There are a ton of sites online to find services and connect with others that **people** use daily, but our four-legged, feathered, and finned friends have been left behind. Enter Zooble.

The purpose of this site is to create an all-in-one social media and pet services directory platform geared towards pet owners and businesses around the United States. In creating this application, our vision is to bring together convenience and usability by combining features both users and businesses want in one place.

Users will be able to find local dog parks/shelters/businesses, create accounts for their pets, post images, message other users, and more. We want to create a convenient space where animal lovers can interact with one another and showcase their pets.

Business owners will be able to showcase their businesses and post content to attract potential customers or advertise special events/deals. Registered pet owners on the site will, in turn, be

allowed to rate and review these businesses, which allows businesses the opportunity to improve their services to grow their customer base, and for other pet owners to find the perfect

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provider for the services they need.

Other websites may offer information on different services such as grooming, posting pet pictures, or finding dog parks. Zooble acts as a hub for accessing information on pet service providers and also functions as a social media network for pet owners.

Section II: Use Cases

Actors:

1. Mary (Registered Pet Owner)

- a. Characteristics: Wealthy older lady, already has dogs and various other animals that she loves
- b. Goals: Mary wants to Connect with and socialize with other pet-lovers like her. She wants to share images of her beloved pets with others and find ways to pamper her pets.
- c. Skills: Mary is very personable and sociable. She is also eager to learn about using social media.
- d. Pain Points: Despite being eager to learn about them, she is not so experienced or skilled with social networks or technology in general.

2. Dave (Registered Pet Owner)

- a. Characteristics: Dave is a younger man living in an apartment in a big city, who just adopted a German Shepard after moving to the city a month ago. He is a first-time pet owner.
- b. Goals: Dave wants to find resources related to first-time dog-ownership that would help him house train his German Shepard. He also wants to meet new people in the city.
- c. Skills: Dave is smart, resourceful, and very tech-literate
- d. Pain Points: Dave is very inexperienced with dogs. He is also somewhat introverted and lacks social skills.

3. Sarah (General User)

- a. Characteristics: Sarah is a businesswoman with a dog, and has to travel across the world for work frequently.
- b. Goals: Sarah wants to be able to find pet sitters or kennels on short notice.
- c. Skills: Sarah is very observant, intelligent, and organized.
- d. Pain Points: Sarah is somewhat impatient because of her busy lifestyle and somewhat cautious of online-only businesses/services.

4. John (Admin)

- a. Characteristics: John is the sole administrator of a new website for a startup.

- b. Goals: John wants to keep the website running well. He also wants to facilitate connections between users in a safe manner and grow the user base.

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- c. Skills: John is very tech-literate, is a good leader, and is a good problem solver/critical thinker.
- d. Pain Points: John has a full-time job, and can't dedicate too much time to moderating the website.

5. Bob (General User)

- a. Characteristics: Middle-aged man who has lived in his city for a long time. The dog recently passed away.
- b. Goals: Find a new companion.
- c. Skills: Experienced in working with animals.

Despite being somewhat older, he is still tech and social media literate.

- d. Pain Points: Bob is stubborn and old-fashioned. Doesn't see the appeal of using a website to find pets and is skeptical of its utility.

6. Susan (General User)

- a. Characteristics: Susan is the middle-aged owner of Paw Spa, a small mom-and-pop pet grooming service that is struggling with the business.
- b. Goals: Increase visibility of her business and find more customers.
- c. Skills: Susan has integrity and kindness that allows her to connect with customers and build relationships.
- d. Pain Points: Susan has never set up any form of social media advertisement or integration before.

7. Ian (General User)

- a. Characteristics: Ian is a senior man and has a 22-year-old cat named Michael. Since Michael is nearing the end of his life, Ian feels like he hasn't taken and uploaded many pictures of his cat.
- b. Goals: Ian wants to create a social media account for his senior cat and post tons of pictures for memories.
- c. Skills: Ian has the ability and willpower to learn new things.
- d. Pain Points: Ian has only used the web to search for things in the search bar and use the default home page of web browsers. He has never made an online account for anything. He will not know how to navigate a social media website instinctively.

8. Cameron (Registered Pet Owner)

- a. Characteristics: Cameron is a photographer and enjoys posting pictures of his pet on Instagram. He enjoys seeing other people's pictures and socializing with them
- b. Goals: In our application, Cameron is able to share pictures and find services for his pet more easily. He is looking for a community of pet lovers who share each other's interests.

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- c. Skills: Is a creative photographer and wants to share his pictures with others in a different way
- d. Pain Points: Cameron is a passionate photographer and wants to share his pictures and find services for his pet at the same time.

9. Booming Poodle Grooming (Registered Business)

- a. Characteristics: Booming Poodle Grooming caters to all dogs and cats. They are a family-owned business that has been going strong for about 15 years.
- b. Goals: Booming Poodle Grooming specializes in grooming pets even with the most unruly coats.
- c. Skills: Equipped with the right equipment to safely groom the pets. Offers a variety of services (e.g. bathing/shower, fur trimming, nail trimming, etc.)
- d. Pain Points: Since this is a family-owned business they are not open 7 days a week. They are only open 5 days a week.

10. Burgdale Pet Shelter(Registered Shelter)

- a. Characteristics: Burgdale Pet Shelter is a new pet shelter in the city of Burgdale that has a small population of various pets
- b. Goals: Burgdale Pet Shelter wants to find new ways to boost business using the internet
- c. Skills: Burgdale Pet Shelter has young employees who know how to use social media, and offers high-quality service/care to

customers and their population of pets at the shelter.

- d. Pain Points: Burgdale Pet Shelter does not have the resources to do traditional online advertising or hire a specialized social media manager

11. Alex (Registered Pet Owner)

- a. Characteristics: Alex is a 23-year-old woman who has just graduated college. She has a new 5-month-old

- kitten. She is a first-time pet owner.
- Goals: Alex wants to be able to post images of her new furry friend. She also wants to be able to message fellow pet owners to ask them for advice on her pet.
 - Skills: Being a recent college grad Alex is able to navigate through most sites with ease. She is great at communicating online with others.
 - Pain Points: Alex uses Instagram and Facebook often, she expects the pet social media website to be set up the same.

12.Tom (Registered Pet Owner)

- Characteristics: Tom is a 33-year-old man who is a dog trainer and owns several dogs, including a German Shepard
- Goals: He loves helping new dog owners have the healthiest relationships with their pets.
- Skills: Tom is confident and outgoing. He is very patient and knowledgeable about dogs.
- Pain Points: Tom loves to help dog owners, but sometimes feels like doesn't have an outlet to do so or has a broad reach.

13. Joey (Registered Pet Owner)

- Characteristics: Joey is an outgoing 23-year-old man who has had 3 pet cats and a German Shepherd for years.
- Goals: Joey wants to post lots of images of his pets. He also loves to chat with new pet owners and is willing to give lots of advice on keeping pets happy and healthy.
- Skills: Joey is tech-savvy and can figure out how to navigate different websites in a short amount of time. Joey is a long-time pet owner and is very knowledgeable.
- Pain Points: Joey loves to give advice, but ends up giving unwanted advice to many people.

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Use Cases:

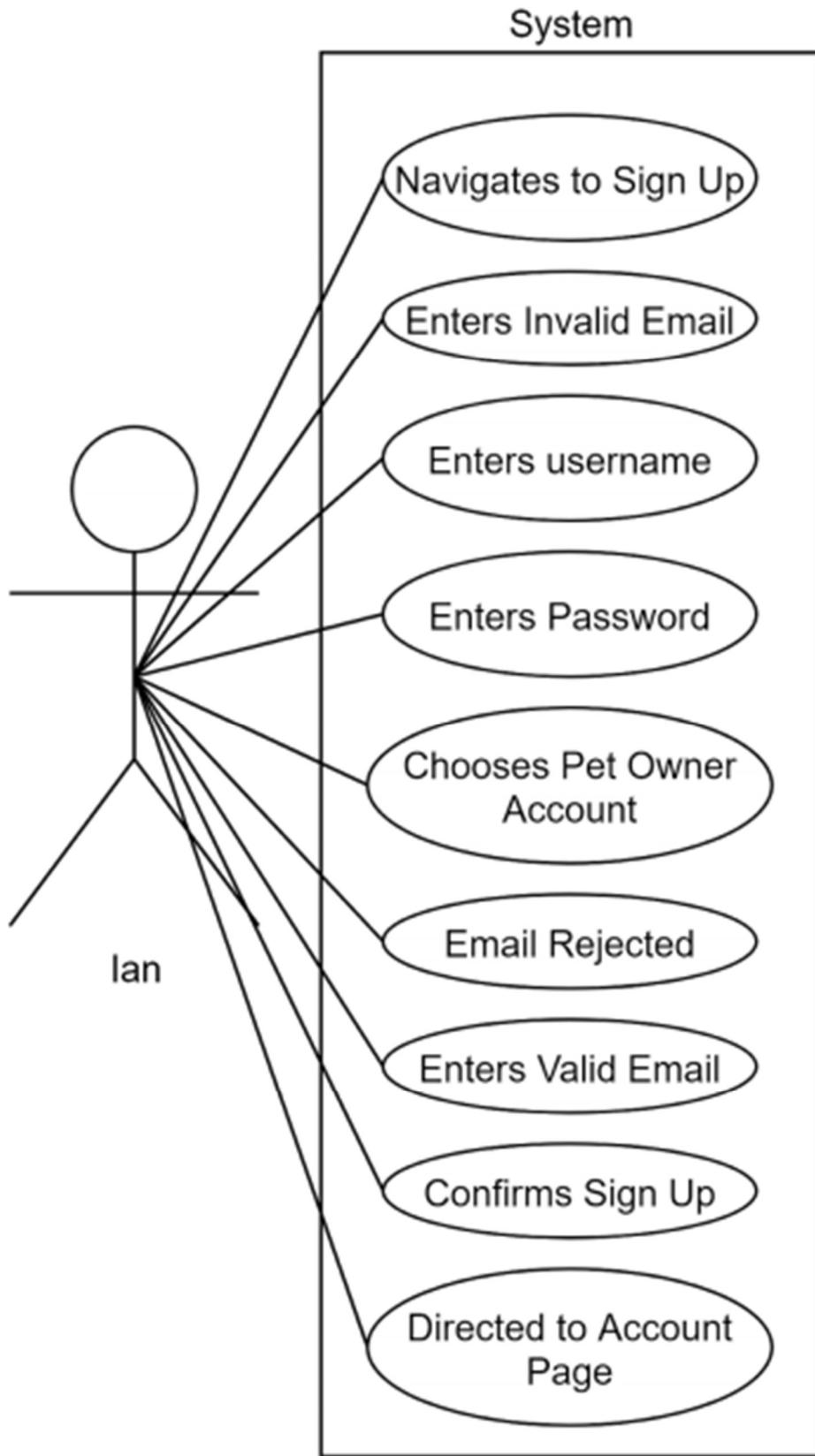
Use Case #1

Title:	Account Creation
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Actors:	Ian (General User)
Description:	<p>Ian wants to be able to post images of his cat named Michael on the website. To be able to post images Ian has to be a registered user.</p> <p>On the registration page, it requires Ian to put in some data (e.g. email, username, password) in order to create the account. Ian enters the data and chooses to sign up as a pet owner, but the system informs the user that the email entered is invalid and not the correct format. It will prompt Ian to re-enter the email again. Ian must have fat-fingered a key entering his email. Ian re-enters the email and the system re-validates it. The account was successfully created for Ian and his new account is ready to use! He is directed to their "blank" account page where he can add a pet account for his dear pet Michael.</p>

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Diagram #1:

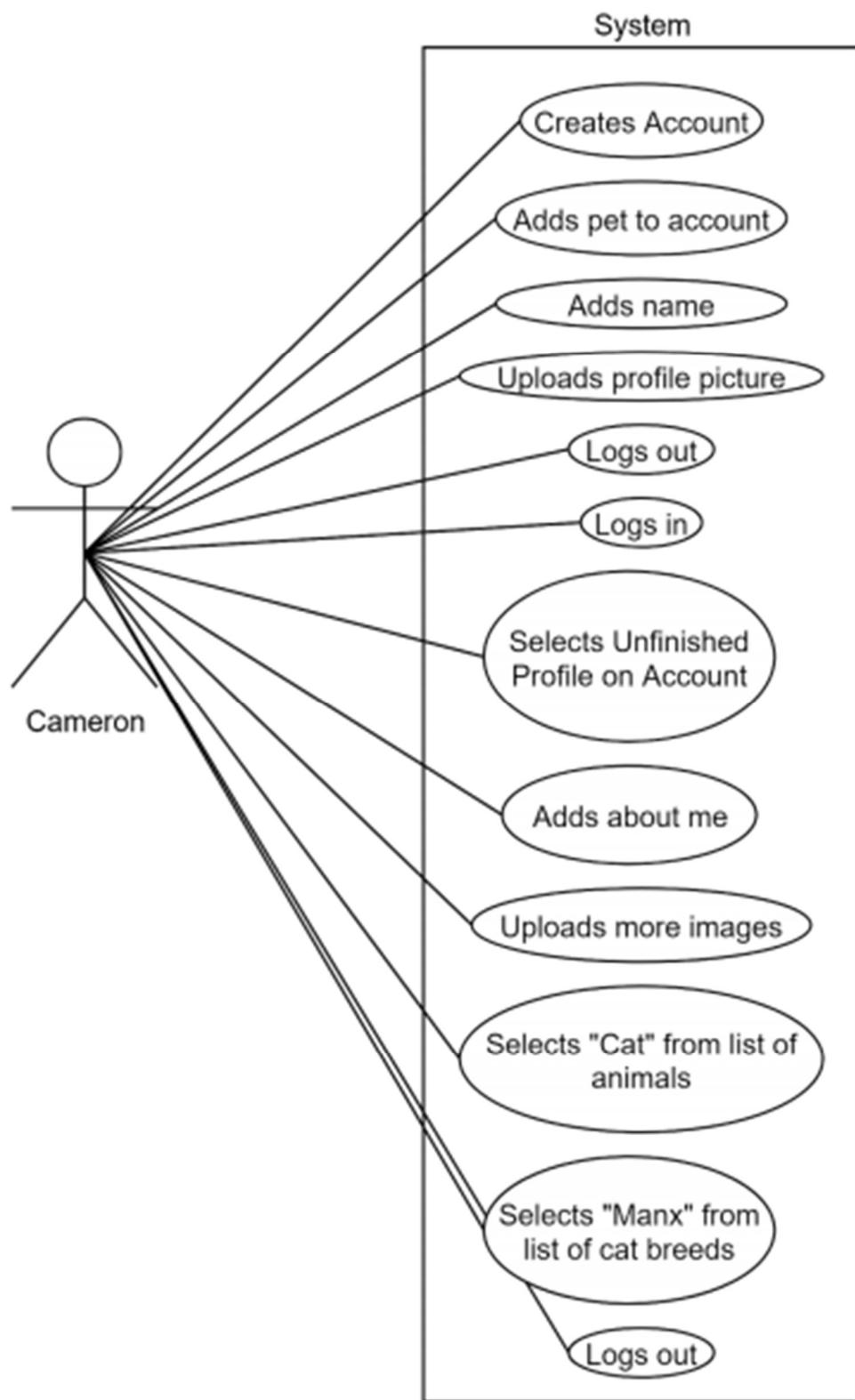


Use Case #2

Title:	Pet Profile Creation
Actors:	Cameron (Registered Pet Owner)
Description:	<p>Cameron is huge on photography and takes tons of pictures of his cat. He had just created his account on the website. He wants to be able to add pictures of his dear cat named Yoshi.</p> <p>Cameron is able to add a new pet to his account. He enters the name Yoshi and adds a profile picture. It is late at night so he decides to resume the process tomorrow. The next day, he logs in and navigates to the unfinished profile of Yoshi on his account to add content to the about me, and adds several images. He also selects "Cat" for a type of pet and then is able to select "Manx" for the breed.</p>

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Diagram #2:

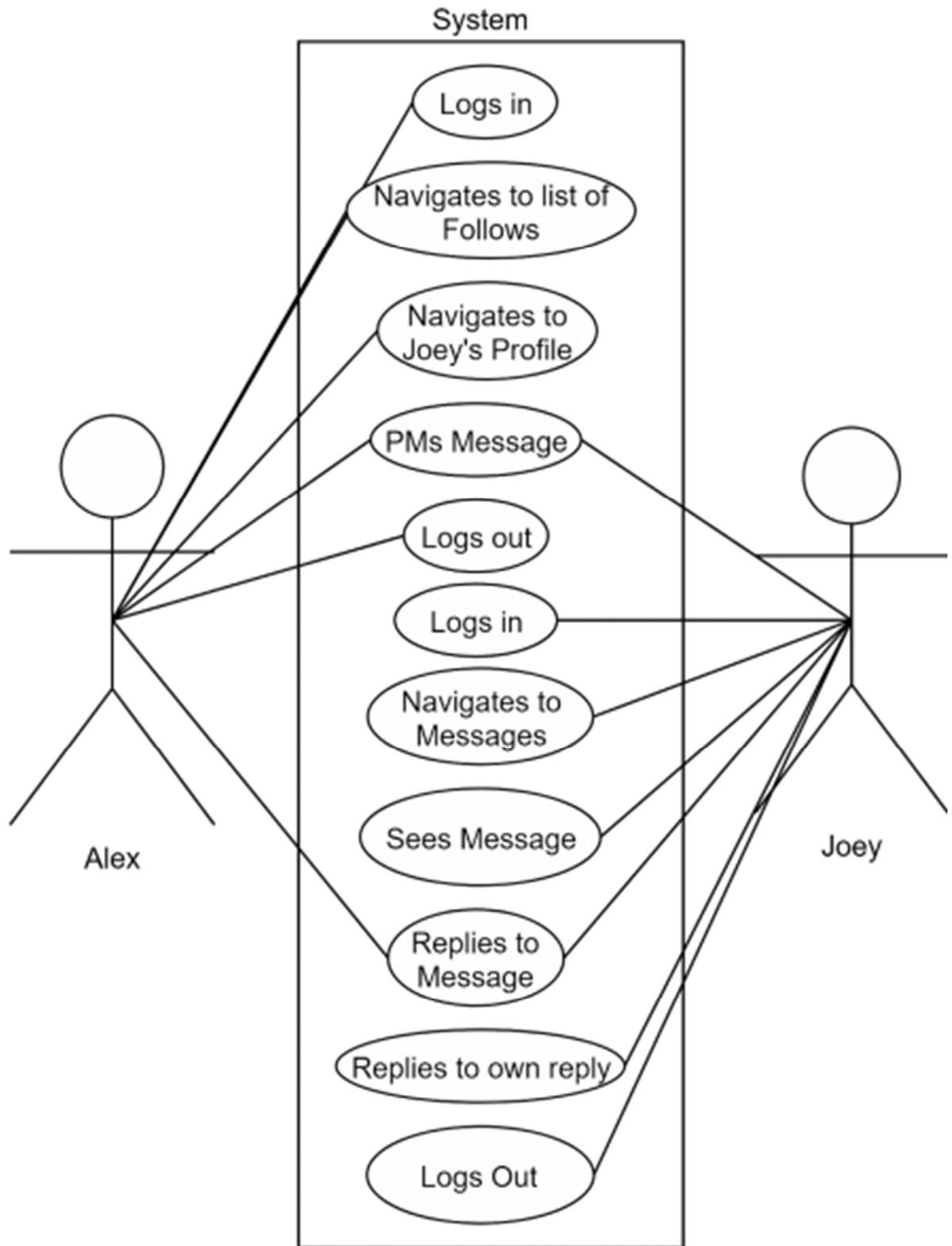


Use Case #3

Title:	Send Private Messages
Actors:	Alex (Registered Pet Owner), Joey (Registered Pet Owner)
Description:	<p>Alex is a registered user and has all her pet profiles set up on her account. She wants to quickly message her online friend Joey and set up a playday at a local park nearby. She also wants to ask Joey for advice on her new kitten.</p> <p>Alex navigates to Joey's Profile through her list of followed users. On Joey's profile page, she decides to message him. She writes a message with the subject line "Let's make a playdate?" and sends it to Joey.</p> <p>Joey receives the message on his account. He is able to send messages back giving her a confirmation on the playdate and also more advice on her new kitten. Joey decides to reply to his own reply through the message thread stored in his messages since he cannot fit all of his advice in that one moment.</p>

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Diagram #3:

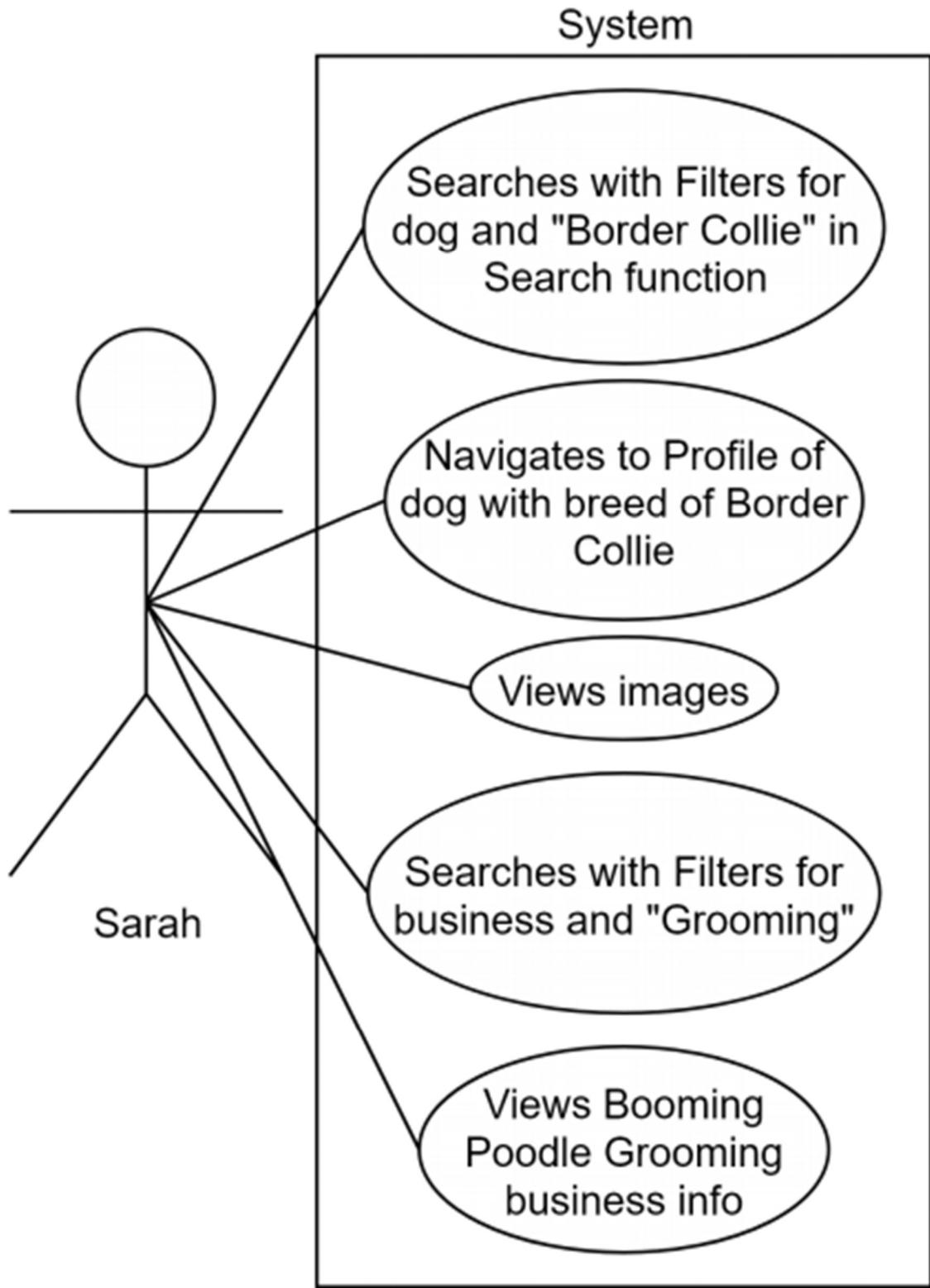


Use Case #4

Title:	Exploring the Application without Account
Actors:	Sarah (General User), Booming Poodle Grooming (Registered Business)
Description:	<p>Sarah is a pet owner and has heard about a new social media geared towards pets. She wants to explore the app but doesn't necessarily know it well enough to be driven to create an account.</p> <p>Sarah is a recent big fan of the Border Collie breed and wants to look at some cute pictures. She uses the search function to find dogs with the breed of "Border Collie". She sees the profile picture of an especially cute dog named Sasha. She views her profile that has tons of beautiful images.</p> <p>After that, Sarah decides it is time to look for a groomer for her Samoyed Lyla. She searches for "grooming" with the search function, indicating that she is looking for businesses. She looks through the list of registered businesses matching the query and finds the business named Booming Poodle Grooming. She views the business page to find out their opening hours. She notices they are not open on Sunday. She makes plans to visit them on Monday.</p>

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Diagram #4:

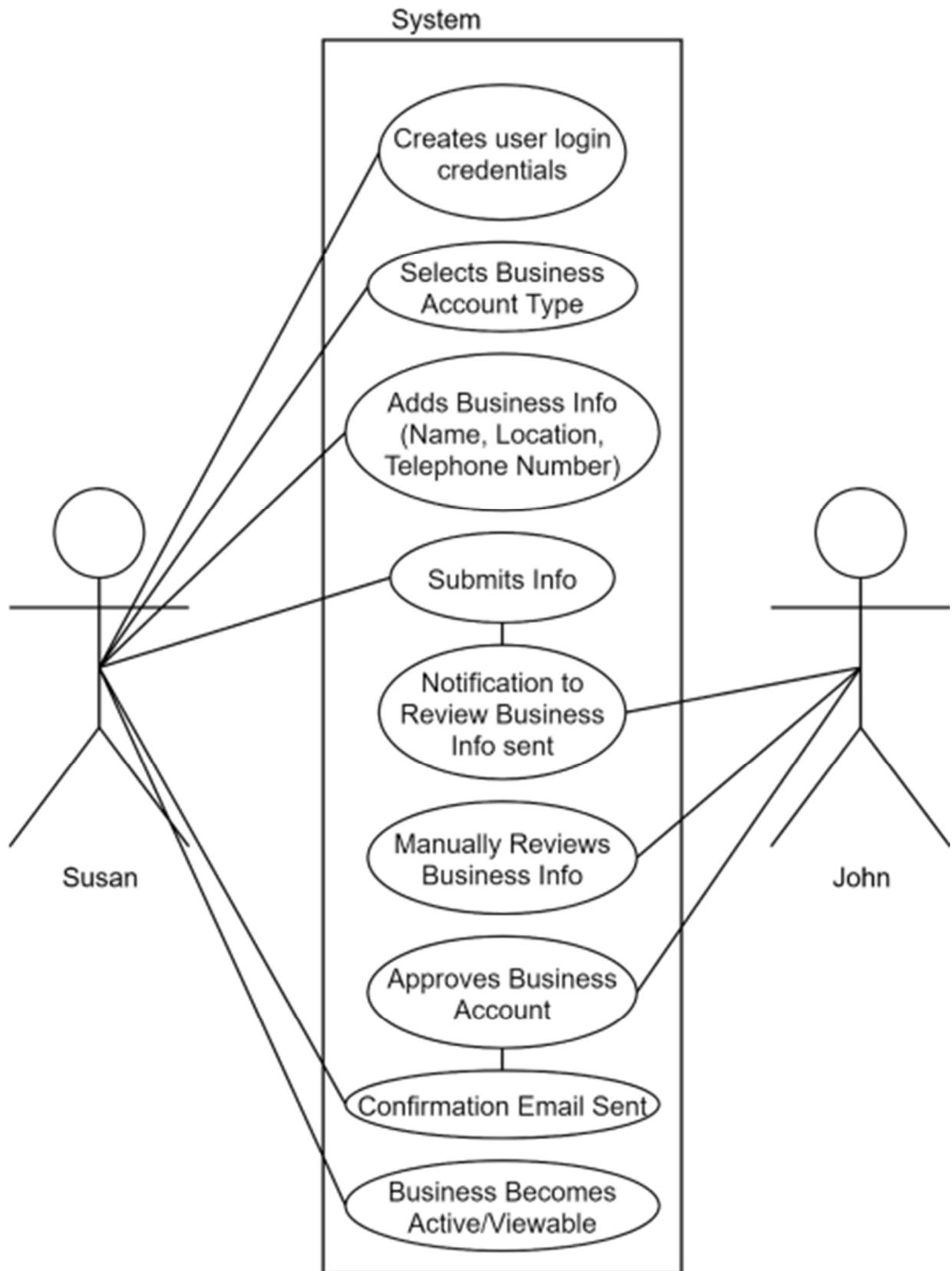


Use Case #5

Title:	Adding a Business Account
Actors:	Susan (General User), Paw Spa (Business), John(Admin)
Description:	<p>Susan is a business owner looking to expand her business's reach by adding her business information and pictures onto Zooble.</p> <p>Susan goes to the registration page and chooses what account type she would like to make. Susan selects a Business Account and creates user login credentials(username, and password). She then is required to add her business information to her account. She inputs a business name, category, address, telephone number, hours, pictures, and about section. After adding this required information and content, a notification is sent by the system to John, an admin. He reviews the information, verifying that the information is accurate and that the business actually exists. After approving the business, an automated email is sent to Susan by the system and her business profile is now viewable on the website for all users.</p>

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Diagram #5:

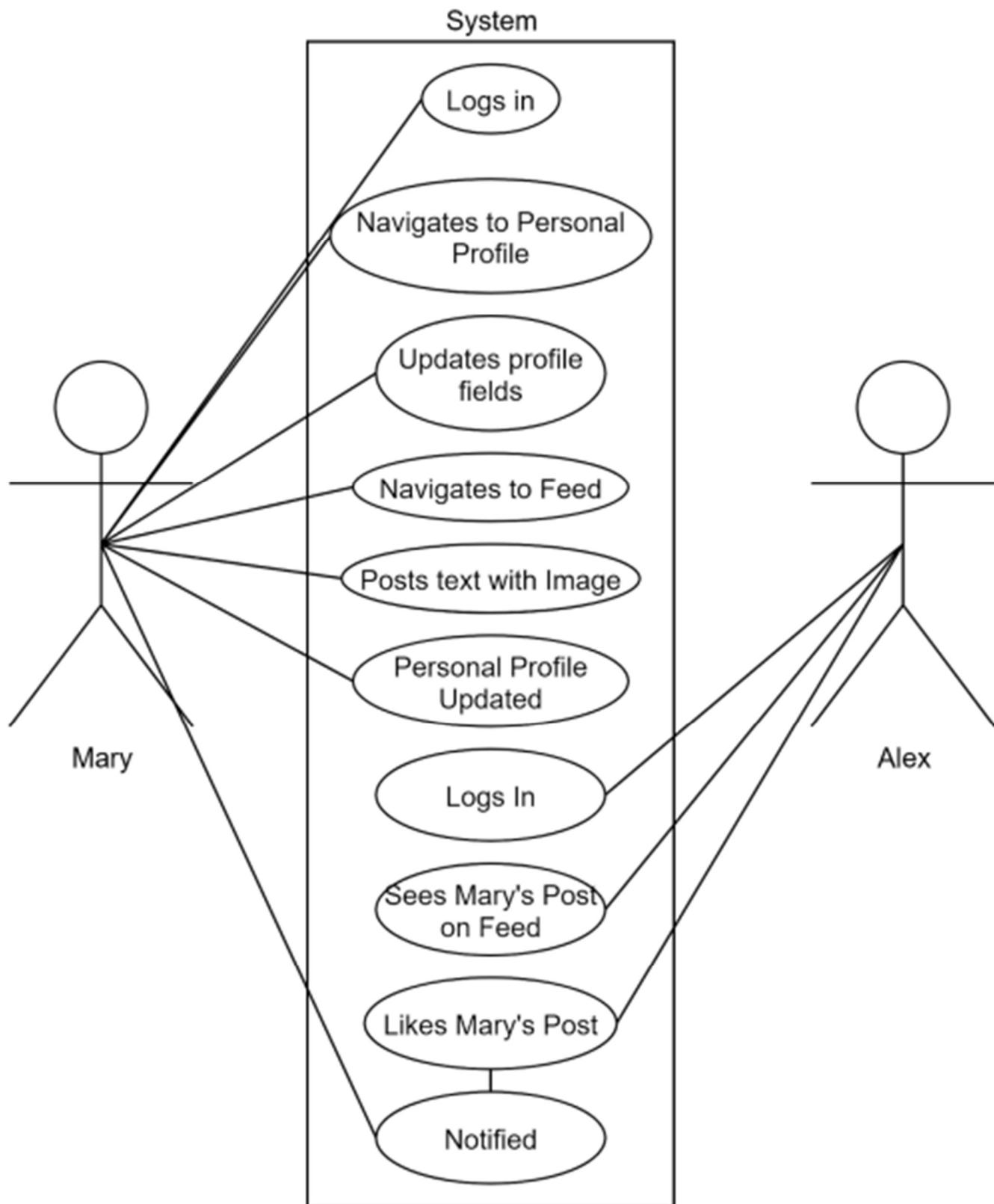


Use Case #6

Use Case Title	Editing Profile
Actors	Mary (Registered Pet Owner), Alex (Registered Pet Owner)
Description	<p>Mary is a registered user who wants to update her personal profile and add more information to it after creating an account as a result of getting a new puppy a few weeks ago.</p> <p>She navigates to her own profile page and is able to access and update each field. She adds a longer about me and updates her profile picture.</p> <p>She then navigates to her feed and makes a post giving a quick update on what's going on in her life for her and her dog to several followers, with a picture of her with her now a much bigger puppy. She navigates to her profile before logging out and sees that the post is now visible and linked on her profile. She also receives a notification that Alex has liked her post.</p>

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Diagram #6:

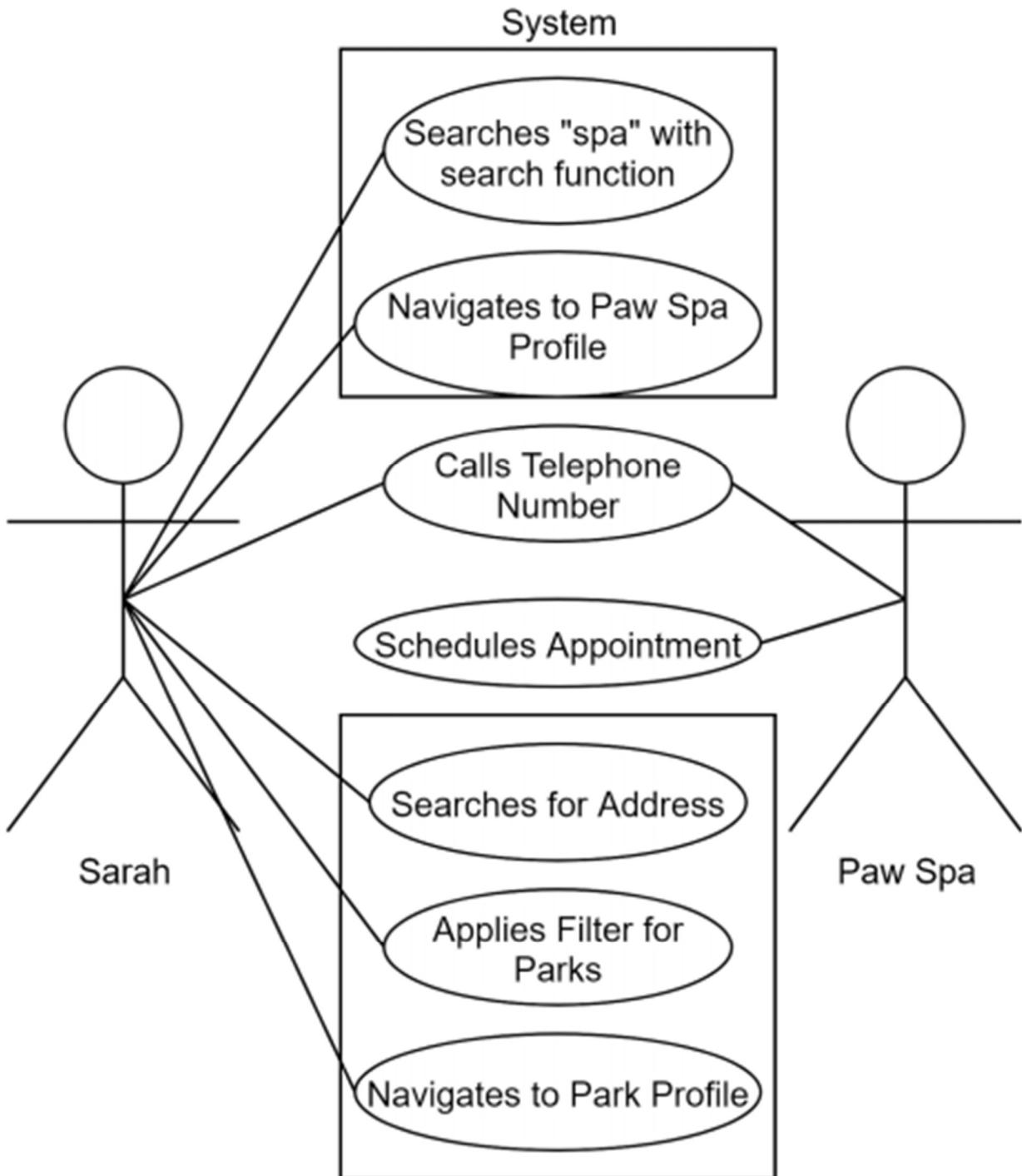


Use Case #7

Use Case Title	General User looking for Business/Park
Actors	Sarah (General User), Paw Spa (Registered Business)
Description	<p>Sarah is visiting family this weekend, but she desperately needs to find someone to groom and bathe her dirty and unruly Samoyed, Lyla.</p> <p>She goes to the website and on the homepage, she sees the search tool. She searches for the word "spa" and the Paw Spa business profile shows up. Sarah calls the business phone number on the profile to make an appointment and uses the address to make plans to visit their business.</p> <p>She also needs to find a dog park to walk her dog in the area that she is visiting. She uses the same search functionality to search for parks, but this time manually enters the address of her parent's house and then filters for parks only. She sees a park that a user in that area added and makes plans to visit it that weekend.</p>

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Diagram #7:



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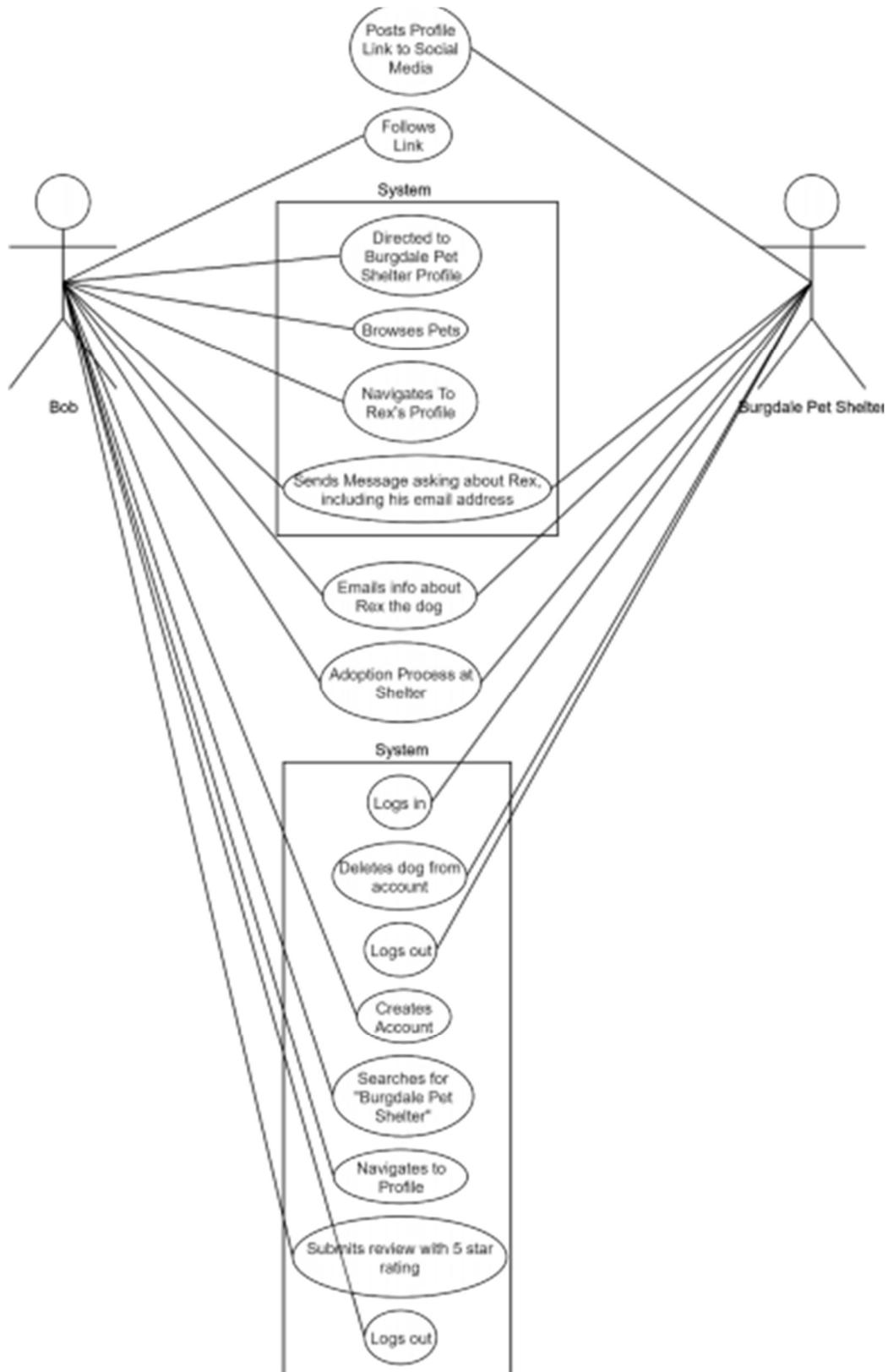
Use Case #8

Use Case Title	Guest adopts new dog from shelter
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Actors	Bob (General User), Burgdale Pet Shelter(Registered Business)
Description	Bob is looking for a new dog. Bob was recommended to Burgdale pet shelter by his friend. Burgdale shelter's social media linked their profile on their Twitter. Tyler follows the link and is able to see their about page, pictures from the shelter, and browse/inquire about specific animals at the shelter. Bob sends a PM to the shelter about a dog named Rex. The shelter provides more info about the animals to Tyler via email. When Tyler eventually chooses a new companion and arranges to adopt Rex at Burgdale Pet Shelter, the pet shelter deletes Rex's profile from their account. Tyler is so happy with the experience he creates an account to write a 5-star review for Burgdale Pet Shelter.

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Diagram #8:

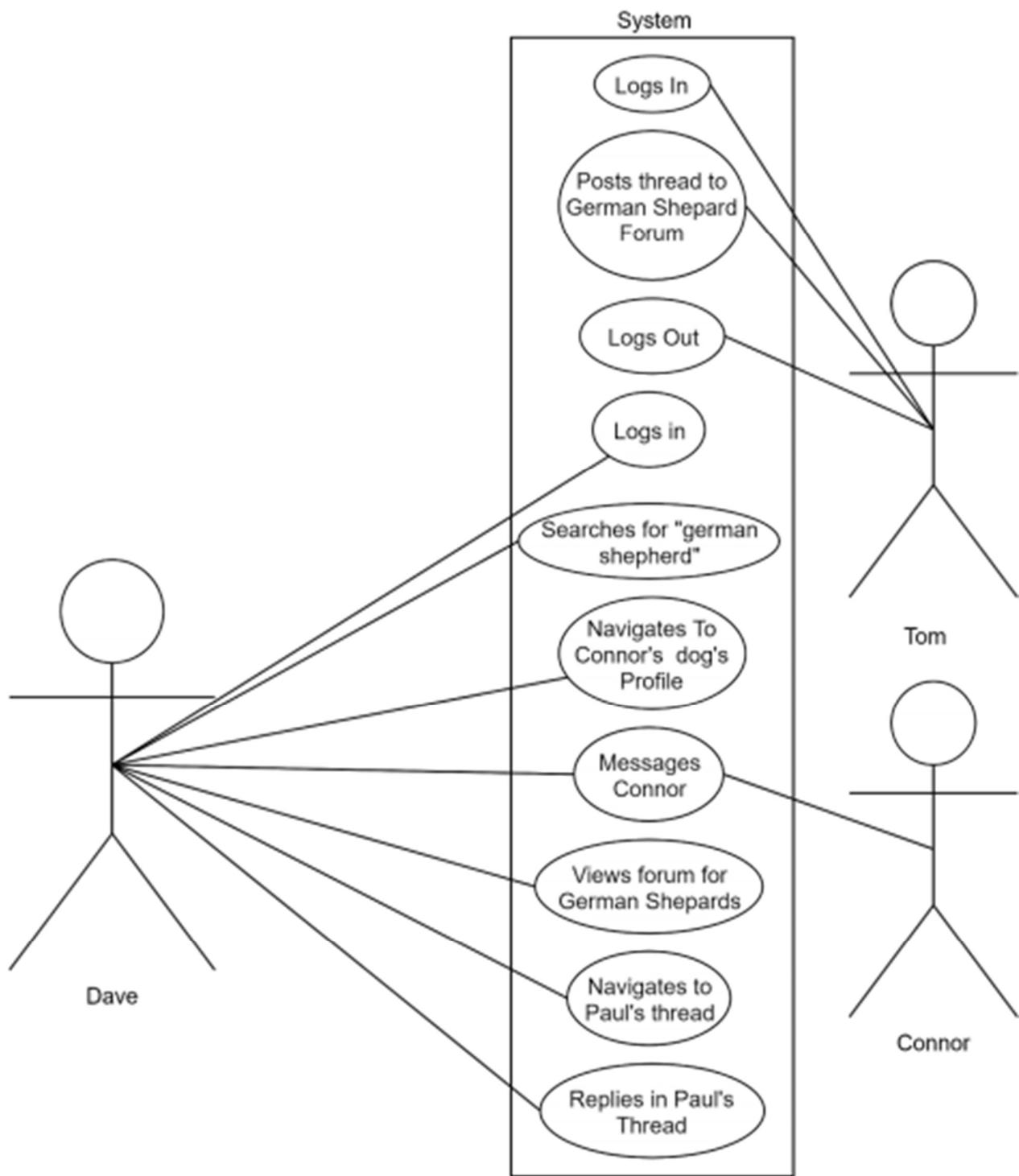


Use Case #9

Use Case Title	New Pet Owner Seeks Advice
Actors	Dave (Registered Pet Owner), Joey (Registered Pet Owner), Tom (Registered Pet Owner)
Description	Dave is an excited pet owner who recently got his first dog, a rambunctious german shepherd. Dave sets up a new profile for his new dog. During the next few weeks, Dave is having trouble training the dog and getting him to behave. Dave logs back on to the website and searches for other German Shepherds. He messages one named Joey after seeing his dog's profile in the search results and who appears to be online. Unfortunately, Joey doesn't respond. He also sees the link to breed-specific forums available through Connor's dog's profile. He is able to be taken directly to the German Shepherd forum. Luckily an experienced German Shepherd owner named Tom had just made a thread with helpful tips for new German Shepherd owners. After reading through the posts in the thread and trying his advice, he thanks Paul in a post to that thread.

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Diagram #9:



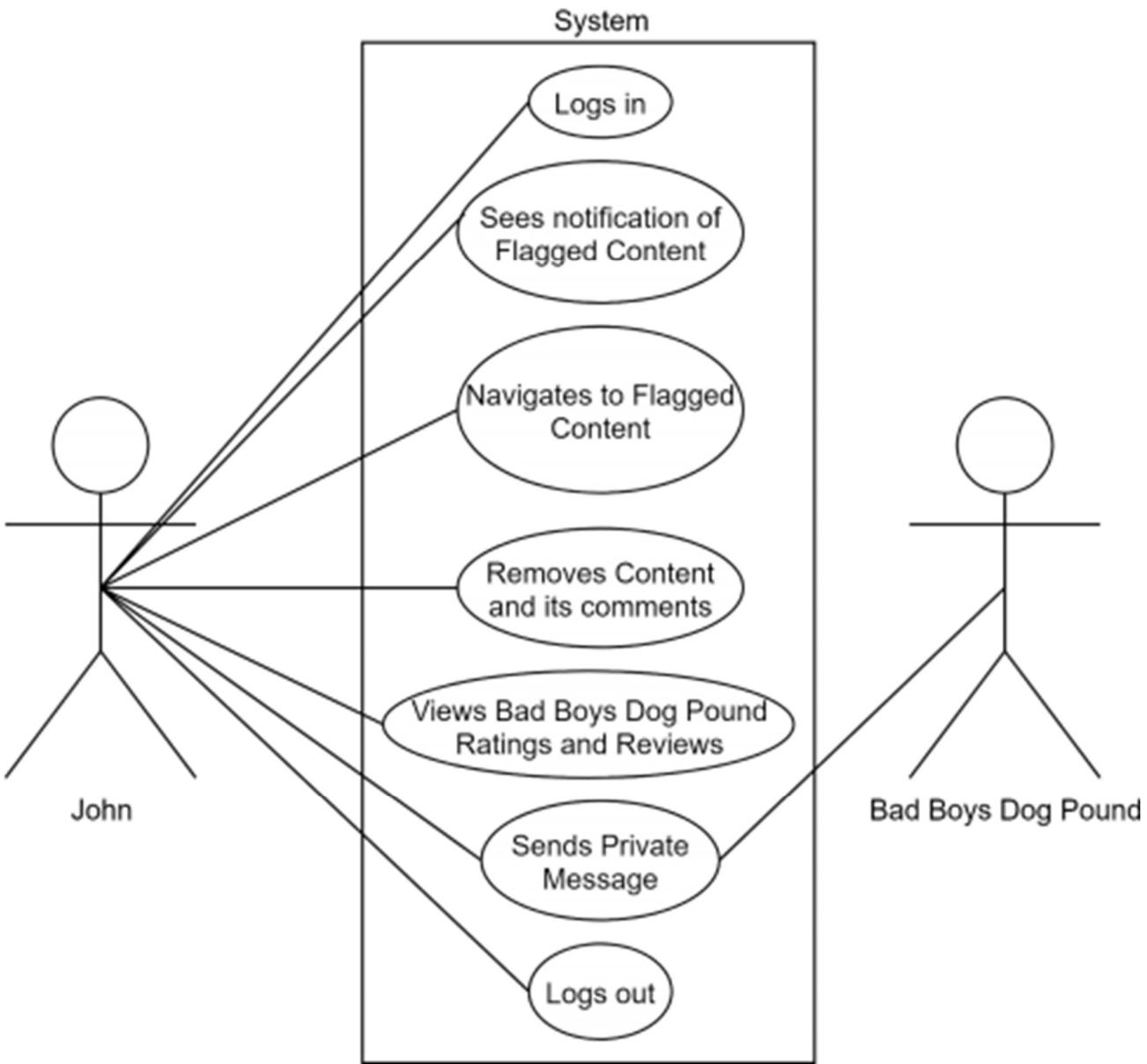
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Use Case #10

Use Case Title	Administrator Removing Inappropriate Content
Actors	John (Admin), Bad Boys Dog Pound (Registered Business)
Description	John logs on with his administrator credentials. He sees a notification that a post by a registered business by the name of Bad Boys Dog Pound has been flagged by other users of the website. John navigates directly to the post through the notification. John reviews the post, deeming it harmful, and removing the post, which removes all its associated comments as well. After also seeing their average rating by users is very low and reviews are mostly negative. John sends a private message to the business informing them of the reason for the removal and warning of a possible ban of the account.

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Diagram #10:



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Section III: List of Main Entities

1. General User

- a. A general user is any user browsing the website, whether registered or unregistered.

2. Account

- a. An account is an entity that will be created by the system on user sign-up and will contain user information.

3. Registered User

- a. A registered user is a general user that has created an account and can be a pet owner, pet business, pet shelter, or admin.

4. Admin

- a. An admin is a registered user who moderates the site with elevated privileges, reviewing flagged content, removing content not compliant with site terms and conditions, and messaging or banning problematic users.

5. Registered Business

- a. A registered business is a registered user who indicates that they're representing a business upon sign up.
- b. A registered business shall have business information viewable/searchable by general users.

6. Registered Shelter

- a. A registered shelter is a registered user who indicates that they're representing a shelter upon sign up.
- b. A registered shelter shall have pets and pet profiles, as well as business information viewable/searchable by general users.

7. Registered Pet Owner

- a. A registered pet owner is a registered user who indicates that they're representing a pet owner upon sign up.
- b. A registered pet owner shall have pets and pet profiles

8. Pet

- a. A pet is created when a registered pet owner or registered pet shelter chooses to add a pet to their account.
- b. A pet will have identifying attributes about them assigned by their owner, which are displayed in their profile and filterable when a general user searches through pets

9. Profile

- a. A profile is created when a general user creates an account.
- b. Profiles will display user images and information and will act as a conduit for users to interact with one another through private messages and post/image interaction.

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10. Pet Profile

- a. Pet Profiles are entities that display the information/images associated with a pet entity by the registered pet owner or pet shelter owner acting as its owner.

11. Registered Pet Owner Profile

- a. Registered Pet Owner Profiles are entities that display the owner information/images associated with a registered pet owner and links to pets owned by a registered pet owner

12. Registered Business Profile

- a. Registered Business Profiles are entities that display the business information/images associated with a registered business

13. Registered Shelter Profile

- a. Registered Shelter Profiles are entities that display the business information/images associated with a registered shelter, and links to pets sheltered at a registered shelter

14. Posts

- a. Posts are entities created by registered users which are viewable by registered users, which contain text and/or photos.

15. Comment

- a. Comments are texts created by registered users that are posted as responses/replies to posts created by registered users.

16. Photo

- a. Photos are images uploaded by registered users and submitted as posts or used as profile pictures.

17. Review

- a. Reviews are entities submitted by registered pet owners to record their experiences at/with pet shelters, businesses, and with registered users choosing to be pet sitters, whether online or in-person, which will be visible through those entity's profiles.
- b. Reviews are accompanied by a rating.

18. Rating

- a. Ratings are entities submitted by registered pet owners to quickly record their satisfaction with experiences at/with pet shelters, businesses, and pet sitters, whether online or in-person, which will be visible on those entity's profiles.

19. Message

- a. A message will have subject and body text and will be sent from registered users of any type to registered users of any type.

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20. Likes

- a. Likes are entities used by registered users to demonstrate a reaction to a registered user's posts or comments.

21. Follows

- a. Following a user indicates that the user who followed will be able to see posts from the followed user on their feed.

22. Feed

- a. This entity allows a user to view/interact with all the recent posts of the accounts they are following.

23. Park

- a. Parks are entities that are created by registered pet owners to represent a real-world park at a given location.

24. Park Profile

- a. Park Profiles are entities that display the park information/images that are edited/uploaded by registered pet owners.

25. Forum

- a. Forums are a collection of posts by registered users separated by topic, and into Forum Threads

26. Forum Thread

- a. Forum threads are created by any user, and are continuous sequences of posts and replies located in an encompassing forum.

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Section IV: Initial List of Functional Requirements

1. General User

- a. General Users shall be able to browse registered businesses
- b. General Users shall be able to browse registered shelters
- c. General Users shall be able to browse the pet profiles of registered users.
- d. General Users shall be able to send a private message to registered businesses
- e. General Users shall be able to send a private message to registered shelters
- f. General Users shall be able to receive correspondence at an email address provided by them
- g. General Users shall be able to search for and browse registered businesses
- h. General Users shall be able to search for and browse pets
- i. General Users shall be able to search for and browse registered shelters
- j. General Users shall be able to use search filtering
- k. General Users can choose to share their location
- l. General Users shall be able to create an account

2. Account:

- a. An account shall have a unique account id
- b. An account shall be linked and belong to a registered user
- c. An account shall have a unique email
- d. An account shall have a unique username
- e. An account shall have a password
- f. An account shall have a created date
- g. An account shall have a user date of birth

- h. An account shall have a user age
- i. An account shall have a display name

3. Registered User:

- a. Registered Users shall be able to log in to the website
- b. Registered Users shall be able to log out of the website
- c. Registered Users shall have a profile
- d. Registered Users shall have a profile picture
- e. Registered Users shall be able to edit their profile picture
- f. Registered Users shall have an about me
- g. Registered Users shall be able to edit their about-me
- h. Registered Users shall be able to post text posts
- i. Registered Users shall be able to edit their text posts
- j. Registered Users shall be able to post photos

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- k. Registered Users shall be able to post under their own display name l.
- Registered Users shall be able to private message other registered users m.
- Registered Users shall be able to follow other registered users n.
- Registered Users shall be able to be followed by other registered users o.
- Registered Users shall receive notification(s) when they receive a private message(s)
- p. Registered Users shall be able to search for registered user's profiles
- q. Registered Users shall be able to browse registered user's profiles r.
- Registered Users shall be able to search for registered businesses s.
- Registered users shall be able to browse registered businesses t.
- Registered Users shall be able to search for pets
- u. Registered users shall be able to browse pets
- v. Registered Users shall be able to search for registered shelters
- w. Registered Users shall be able to browse registered shelters x.
- Registered Users shall be able to use search filtering
- y. Registered Users can choose to share their location
- z. Registered Users shall have an online status
- aa. Registered Users shall have a banned status
- bb. Registered Users shall be filterable by their attributes

4. Admin

- a. Admin shall be a registered user
- b. Admin shall be able to ban registered users
- c. Admin shall be able to remove photos posted by registered users
- d. Admin shall be able to browse registered user profiles
- e. Admin shall be able to delete posts
- f. Admin shall be able to delete comments from posts
- g. Admin shall be able to remove registered users

- h. Admin shall be able to reactivate banned users
- i. Admin shall be able to message registered users
- j. Admin shall be able to approve Registered Businesses for use of the site
- k. Admin shall be able to approve Registered Shelters for use of the site **5.**

Registered Business

- a. Registered Businesses are registered users
- b. Registered Businesses shall have business address(es)
- c. Registered Businesses shall have business hours
- d. Registered Businesses shall have an average rating
- e. Registered Businesses shall have a business category
- f. Registered Businesses shall have reviews submitted by registered pet owners

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- g. Registered Businesses shall have ratings submitted by registered pet owners

6. Registered Shelter

- a. Registered Shelters are registered users
- b. Registered Shelters shall have pets
- c. Registered Shelters shall be able to add pets to their account.
- d. Registered Shelters shall be able to delete pets from their account
- e. Registered Shelters shall be able to edit the profiles of their pet(s)
- f. Registered Shelters shall be able to post under the name of their pets
- g. Registered Shelters shall have business address(es)
- h. Registered Shelters shall have business hours
- i. Registered Shelters shall have an average rating
- j. Registered Shelters shall have reviews submitted by registered pet owners
- k. Registered Shelters shall have ratings submitted by registered pet owners

7. Registered Pet Owner

- a. Registered Pet Owners are registered users
- b. Registered Pet Owners shall have pets
- c. Registered Pet Owners shall be able to add pets to their account
- d. Registered Pet Owners shall be able to delete pets from their account
- e. Registered Pet Owners shall be able to edit the profiles of their pet(s)
- f. Registered Pet Owners shall be able to post under the name of their pets
- g. Registered Pet Owners shall be able to register as available to pet sit
- h. Registered Pet Owners shall be able to write reviews for registered Businesses/Shelters
- i. Registered Pet Owners shall be able to give ratings to registered Businesses/Shelters

8. Pet

- a. Pets shall have a profile picture
- b. Pets shall have names
- c. Pet's profile pictures shall be able to be edited.
- d. Pets shall have a unique id number associated with them
- e. Pets shall have an animal type associated with them
- f. Pets shall optionally have a breed/species associated with them g. Pets shall have an adoption status (Adopted or Seeking Adoption) h. Pets shall be able to be marked as missing pets by their owners i. Pets shall have to be able to have a place of adoption associated with them
- j. Pets shall have an online status that is the same as their owner's online status

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- k. Pets shall be filterable by their attributes

9. Profile

- a. Profiles shall contain a profile picture
- b. Profiles shall contain photos posted by the registered user it belongs to
- c. Profiles shall display an about me
- d. Profiles shall provide a way for the browsing registered user to initiate private message conversations with the profile's affiliated, registered user e. Profiles shall contain recent Posts

10. Pet Profile

- a. Pet Profiles are profiles
- b. Pet Profiles shall provide a link to the registered pet owner or pet shelter that owns the pet
- c. Pet Profiles shall display adoption status
- d. Pet Profiles shall display if the pet is missing
- e. Pet Profiles shall display siblings(adopted) or housemates(seeking adoption) dependent on the adoption status
- f. Pet Profiles shall be searchable by all users
- g. Pet Profiles shall be viewable by all users
- h. Pet Profiles of pets adopted from registered pet shelters can link to that pet shelter on the profile

11. Registered Pet Owner Profile

- a. Registered Pet Owner profiles are profiles
- b. Registered Pet Owner profiles shall indicate pet sitting availability c. Registered Pet Owner profiles shall provide links to pet profiles of pets owned by the registered pet owner

12. Registered Business Profile

- a. Registered Business Profiles are profiles

- b. Registered Business Profiles shall have contact details
- c. Registered Business Profiles shall provide a way for registered pet owners to access Registered Business reviews
- d. Registered Business Profiles shall provide a way for registered pet owners to access Registered Business ratings
- e. Registered Business Profiles shall be searchable by general users f. Registered Business Profiles shall be searchable by registered users g. Registered Business Profiles shall be viewable by general users h. Registered Business Profiles shall be viewable by registered users

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13. Registered Shelter Profile

- a. Registered Shelter Profiles are profiles
- b. Registered Shelter Profiles shall have contact details
- c. Registered Shelter Profiles shall provide a way for registered pet owners to view reviews
- d. Registered Shelter Profiles shall provide a way for registered pet owners to view ratings
- e. Registered Shelter Profiles shall be searchable by general users f. Registered Shelter Profiles shall be viewable by general users g. Registered Shelter Profiles shall be searchable by registered users h. Registered Shelter Profiles shall be viewable by registered users i. Registered Shelter profiles shall provide links to pet profiles of pets housed by the registered shelter

14. Posts

- a. Posts shall be able to be edited by the registered users who created them
- b. Posts shall be able to be liked by registered users
- c. Posts shall be able to be shared by registered users
- d. Posts shall be able to have comments
- e. Posts shall have a post creation date
- f. Posts shall be able to be saved by registered users
- g. Posts shall be able to be deleted by the registered user who created them
- h. Posts shall have a consistent font
- i. Posts shall have consistent font size

15. Comments

- a. Comments shall be able to be posted as replies to posts, by registered users
- b. Comments shall be able to be liked
- c. Comments shall be able to be replied to
- d. Comments shall be able to be deleted by the user who posted it/them

- e. Comments shall be able to be edited
- f. Comments shall have a creation date

16.Photos

- a. Photos shall have a default/predetermined max frame size
- b. Photos shall be cropped to fit the website dimensions
- c. Photos shall be viewable at full size
- d. Photos shall have a photo type (e.g. jpg, png)

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17.Reviews

- a. Reviews shall require ratings
- b. Reviews shall have a title
- c. Reviews shall have a body
- d. Reviews shall be viewed by users (registered, general)
- e. Reviews shall be able to be edited after submission by their author
- f. Reviews shall have a creation and last edited date
- g. Reviews shall have an author (the display name of the registered pet owner who wrote them)
- h. Reviews shall only be given to businesses/shelters once per registered pet owner

18.Ratings

- a. Ratings shall be represented on a 1-5 star scale
- b. Ratings shall be able to be edited by the registered user who gave the rating
- c. Ratings shall only be given to businesses/shelters once per registered pet owner

19.Messages

- a. Messages shall be sent from registered user to registered user
- b. Messages shall be viewable by the registered user it was sent to
- c. Messages shall be viewable by the registered user it was sent by
- d. Messages can be sent from general users to registered shelters with their replies being sent to the general user's given email address.
- e. Messages can be sent from general users to registered businesses with their replies being sent to the general user's given email address.
- f. Messages can be replied to
- g. Messages shall have a sent time associated with them.
- h. Messages will have the display name of the user associated with them
- i. Messages will have a subject section
- j. Messages will have a body section
- k. Messages shall have a consistent font

I. Messages shall have a consistent font size

20. Likes

- a. Likes shall be saved
- b. Likes shall have timestamps
- c. Likes shall be assigned to a post
- d. Likes can be given to posts once per registered user
- e. Liked posts shall be able to be viewed by the registered users who liked them

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21. Follows

- a. Registered Users can follow registered users
- b. Registered Users can unfollow registered users
- c. Registered Users can view their follows
- d. Registered Users can view their followers
- e. Posts from followed users will show up on a registered users feed

22. Feed

- a. Feed shall have posts
- b. Feed shall prioritize the most liked posts of the current day

23. Park

- a. Parks shall have reviews submitted by registered pet owners
- b. Parks shall have ratings submitted by registered pet owners
- c. Parks shall have an average rating
- d. Parks shall be created by users
- e. Parks shall be edited by user(s)
- f. Parks shall be filterable by their attributes

24. Park Profile

- a. Park Profiles shall have photos
- b. Park Profiles shall have an address
- c. Park Profiles shall have hours
- d. Park Profiles shall have an about section
- e. Park Profiles shall provide a way for registered pet owners to view reviews
- f. Park Profiles shall provide a way for registered pet owners to view ratings
- g. Park Profiles shall be searchable by general users
- h. Park Profiles shall be searchable by registered users
- i. Park Profiles shall be viewable by general users
- j. Park Profiles shall be viewable by registered users

25. Forum

- a. Forums shall have a pet type or breed associated with them
- b. Forums shall have forum threads
- c. Forums shall have posts

- d. Forums shall be viewable and searchable by general users

26. Forum Thread

- a. Forum Threads shall have a title
- b. Forum Threads shall have a creator
- c. Forum Threads shall have posts

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Section V: List of Non-Functional Requirements

- 1. Performance Requirements (speed, accuracy, latency, delay....):**
 - a. Page load times for user visible content on all pages shall be kept under 4 seconds on desktop and mobile browsers
 - b. Time to first byte for all website pages shall be kept under 1.5 seconds on desktop and mobile browsers
 - c. All website pages shall make less than 75 requests on desktop and mobile browsers
 - d. Web page size for all pages shall be kept under 1.5 MB

2. Security Requirements:

- a. User credentials are checked against the database when a user tries to login
- b. Token in local storage authenticates if a user is logged in order to post, comment, delete, and send messages, or access protected routes
- c. Token in local storage authenticates what type of user is logged in to dictate the appearance/functionality of profiles and other sections of the site
- d. Passwords are encrypted when stored in the DB and decrypted when necessary, such as to check against login credentials
- e. External communications between the database and clients shall be encrypted and decrypted when necessary
- f. All passwords shall be at least 8 characters
- g. All passwords shall be a mix of upper and lower-case letters and numbers.
- h. Fault tolerance shall be achieved by hosting the website and database instances in multiple isolated data centers across multiple availability zones in the western United States
- i. The website database shall be hosted on a private network in Amazon Web Services, and only accessible by the website server

3. Storage:

- a. An account page description will have a limit of 280 CHAR
- b. An account username will have a limit of 15 CHAR
- c. A display name will have a limit of 50 characters

- d. A post by a user will have a limit of 280 CHAR
- e. Comments by users will have a limit of 280 CHAR
- f. Photos shall be compressed for storage purposes.
- g. User uploaded image content shall be uploaded to a secure Amazon S3 storage bucket

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- h. User uploaded image content shall be downloaded from a secure Amazon S3 storage bucket

4. Privacy (What's collected, how it's used)

- a. The site shall disclose what privacy information it collects from users
- b. The site shall disclose how users' information is utilized
- c. The site shall display a Privacy Policy during account creation that outlines the collection and utilization of user data
- d. A pet owner can choose to share their location with the website to access certain functionality
- e. A pet owner's location data is not visible/shared to any other user f. A registered business must provide a business address on sign up but this information is not shared with any parties outside of the site
- g. A registered shelter must provide a business address on sign up but this information is not shared with any parties outside of the site
- h. Moderators can remove any content from display on the website that is deemed in violation of other user's privacy or safety.
- i. All users shall be able to delete their account, deleting all linked information from the database

5. Legal Requirements (Licensing):

- a. Privacy information and intellectual property rights shall be audited b. When users post content to the site, it remains their intellectual property c. A licensing agreement regarding the use and redistribution of the website shall be readily available
- d. The content of the site shall be protected by copyright that prohibits commercial use without permission. Noncommercial use is acceptable **6.**

Scalability

- a. The website shall work as intended under the stress of 1, 100, 1,000, and 10,000 users with negligible differences in performance
- b. The website shall be able to keep pace with an expanding user base, and will maintain storage space and rapid processing speeds
- c. The website shall be able to keep the time between failures to a minimum under the stress of 1, 100, 1,000, and 10,000 users
- d. The complexity of database queries shall keep pace with an increasing number of visitors/users

7. Capability

- a. The website shall work as intended under the stress of up to 10,000 users using the site at once

8. Media Content

- a. The website shall support upload of image files of the .png, .jpeg, .jpg image formats

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- b. The website shall support display of user uploaded image files of the .png, .jpeg, and .jpg image formats

9. Usability

- a. The website shall retain full functionality on mobile, tablet, and laptop/desktop screen sizes.
- b. The website shall be verified to have easily readable text and usable interface elements at mobile screen resolutions from 540 x 960 to 1644 x 3840
- c. The website shall be verified to have easily readable text and usable interface elements at desktop screen resolutions from 1024 x 768 to 3840 x 2160
- d. The website shall use a simple user interface to reduce user confusion and promote ease of use
- e. The website shall have an onboarding process that will guide users through the process of creating user profile when they first sign up f. The website shall have an onboarding process for each page that a user navigates to for the first time
- g. The website shall draw inspiration in interface layout from popular social media platforms like Facebook, Instagram and Twitter to accelerate user onboarding
- h. The website shall have a logical page flow so user navigation is intuitive
- i. The website shall assist user's productivity on the site by maximizing information displayed on screen
- j. The website shall allow users to modify and delete information on their account
- k. When icons are used in the site's interface, they will be chosen or designed to be simple for users to understand

10. Monetization

- a. Registered Users shall be able to create accounts and have a profile displayed on the website for free
- b. Registered Shelters shall be able to create an account and have a profile displayed on the website for free
- c. Registered Businesses shall be able to create an account and have a

- profile displayed on the website for free
- d. Registered Businesses shall be able to subscribe to the premium business plan
- e. Registered Businesses with the Premium Business plan shall be featured prominently on user searches (map search and standard search) for businesses in the same category, and on user feeds even when users do not follow them.

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- f. Featured Businesses shall be featured in feeds and searches(map search and standard search), as stated above, based on proximity to the user's location

11.Coding Standards

- a. Team members shall be required to provide meaningful comments for each non-trivial line of code
- b. Each code file shall have a heading section giving a short description of the file's functionality, and the main author(s) of the file, and indicate any missing or inconsistent functionality
- c. Any code with limited or inconsistent functionality during the course of the development process shall also be noted as such in explanatory comments besides the code
- d. Any code that adversely affects the functionality of other code shall be commented out until a resolution can be reached
- e. All code shall be logically separated by functionality within files f.

All code shall be logically separated by functionality across files

12.Repository Standards

- a. The project Github repository will have three primary branches: master, development, and testing
- b. Incremental code commits will be made regularly and large infrequent code commits shall be avoided
- c. Commit messages will be required to be descriptive in nature d.
- Dependency lists shall be kept up to date when pushing to any branch of the repository
- e. .gitignore files shall be kept up to date when pushing to any branch of the repository
- f. Frontend code pushed to the testing branch shall be reviewed and tested by the frontend lead when committing and pushing to the master branch g.
- Backend code pushed to the testing branch shall be reviewed and tested by the backend lead when committing and pushing to the master branch h.
- Frontend code pushed to the testing branch shall be tested and verified to be fully functioning on all browsers listed in Section 7 of this document before

committing to the master branch.

- i. Backend code pushed to the testing branch shall be tested and verified to be fully functioning on all browsers listed in Section 7 of this document before committing to the master branch.
- j. The frontend lead retains the right to reject code not up to these coding standards at any point during the review process, but will provide meaningful reasoning when this action is taken

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- k. The backend lead retains the right to reject code not up to these coding standards at any point during the review process, but will provide meaningful reasoning when this action is taken

13. Project and Documentation Standards

- a. Trello will be used as the collaboration tool to keep the project's tasks and team members organized
- b. Documentation shall be written to be comprehensible by people with non-technical backgrounds when possible
- c. Documentation shall be free from any typos or grammatical errors
- d. Project Members shall each read and review each milestone fully before submission
- e. Project Members shall unanimously agree that each milestone reaches the standards set by the group before submission.
- f. Project Members contributions to documentation shall be tracked through Google Docs

14. Coding Environment

- a. The browser preferred to test the website during our development is Google Chrome
- b. Project members shall maintain an Ubuntu 20.04 operating system image via virtual machine or native install to develop and test code.

15. Databases

- a. The preferred cloud database provider for the website shall be Amazon RDS
- b. The preferred RDBMS for the website shall be MySQL
- c. Database storage shall not exceed 20 GB in size per AWS Free Tier Limits
- d. The website database shall be designed to use this allocated storage efficiently as possible
- e. Automatic Database backups shall occur every 7 days

16. Networks

- a. Network connections shall use ISO network standards
- b. Users from across the United States shall be able to connect to and

- access the site
- c. The network routers shall be able to forward messages to anyone in the United States
 - d. Low network latency shall be achieved by hosting the website instance in multiple isolated data centers across multiple availability zones in the western United States

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Section VI: Competitive Analysis

Petfinder.com	<p>Very extensive filtering options in pet search queries</p> <ul style="list-style-type: none"> - By shelter - Proximity - Breed - Etc... <p>Very defined/standardized color scheme</p> <p>Mobile Responsive</p> <p>Ability to search for any kind of pet</p> <p>Ability to ask about pets as a guest or registered user</p>	<p>Somewhat complicated/cluttered interface</p> <p>Illogical placement of some links/elements</p> <ul style="list-style-type: none"> - Some redundant links <p>Intrusive positioning of ads including Petfinder ads</p> <p>Finding/Browsing a specific shelter is difficult</p> <ul style="list-style-type: none"> - Hidden behind menus - UI is much more basic than pet finder <p>No ability to find businesses other than shelters and rescues</p>	<p>Dog/cat breed finder with easy to understand graphics on characteristics</p> <ul style="list-style-type: none"> - Also links to dogs of that breed nearby - Ability to filter/find by characteristics or name <p>Links to sponsor pets on pet profiles</p> <p>Favoriting pet profiles to keep track of them for later</p> <p>Confirm adoption to receive curated tips and content from Petfinder</p>

Facebook.com	<p>Simple home and wall page interface</p> <p>Easy to network with others</p> <p>Simple storage and access of photos</p> <p>Many different types of post options</p>	<p>Navigating from one page to another requires effort to find and access correct links</p> <p>Scrolling back to see old posts is rendered difficult because of infinite scroll</p> <p>The search bar is hard to use -Filtering is unintuitive</p>	<p>Face recognition software to tag friends/family</p> <p>Group pages that many users can be added to - can be public or private</p>
Hashcat	Simple and	No website, only app	Facebook connect to

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	<p>professional design</p> <p>Easy to use and navigate</p> <p>Has a leader board that creates a fun element for competition</p>	<p>When the search icon is clicked, it takes approximately 10 seconds to load.</p> <p>Not able to switch to dark mode</p> <p>No Apple support</p>	<p>link accounts</p> <p>Uses badges to give users achievements</p> <p>Able to use unique notifications that are cat sounds</p>
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Patchpets	<p>Simple, Inoffensive Interface</p> <p>User Submitted Dog Parks + Dog Park Search</p> <p>The ability for businesses to create profiles + Business Directory Search</p> <p>Simple to add dogs to account</p>	<p>No website, only app</p> <p>Confusing distinction between actions that concern human user profile vs your dogs' profiles</p> <p>Can tag users in image posts, but not dogs therefore</p> <p>No way to find images of specific pets you own</p> <p>Dog's profiles are very threadbare in terms of content (only age, breed, name, etc.)</p> <p>Some confusing and inconvenient links/buttons:</p> <ul style="list-style-type: none"> - Clicking profile image directs the user to explore tab - Starting chat directs user to explore tab - view profile button is very small <p>No onboarding Process whatsoever</p>	<p>Apple Maps API Integration</p> <p>Ability to Create Events and share publicly or privately</p>
Petzbe	Show the most liked posts	Only for mobile users	Ability to share posts with others

	<p>Ability to search any topics of posts</p> <p>A section to show the users with the most followers</p> <p>A forum where people can share their ideas/thoughts</p>	<p>Unable to click the 'All Breeds' button (greyed out)</p> <p>Cannot find shelters or businesses</p> <p>Font size is too small</p>	<p>Sniffing (following) someone can keep track of their posts</p>
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Competitive Features Table

						Zooble
Search Function	++	+	+	+	+	++
Find Shelters	+	-	-	+	-	++
Message Users	-	+	+	++	+	+
Message Shelters	++	-	-	+	-	++
Find Businesses	-	-	+	+	-	++
Find Parks	-	-	+	-	-	++
Find Petsitters	-	-	-	-	-	+

Image Posting	+	+	+	++	+	+
Text Posts	+	-	+	+	+	+
User "Reactions"	-	+	+	++	+	+
User Profiles	-	-	+	+	-	+
Pet Profiles	+	+	+	-	+	++
Forums	-	-	-	-	+	++
Maps/Location Integration	-	-	+	+	-	++

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Summary of Competitive Analysis :

We envision Zooble as a website as an amalgamation of many of the features of websites/apps we researched. The first is to use the best features of a pet search tool like Petfinder but extend its functionality. The second is to provide a fully-featured social networking experience like Facebook, but with a focus on our pets. Finally, we intend to focus on pet owners and potential owners just as much as the actual pets, unlike some direct competitors like Petzbe or Patchpets.

We found that the Petfinder search tool was very robust with good filtering options, but only allowed the display of animals up for adoption. Our search tool will allow users to search for businesses, pet sitters, parks, and shelters in addition to animals up for adoption. It will also allow users to search for owned pets in their area to arrange playdates with their owners, or available pet sitters to watch their pets when they are out of town.

Facebook is generally considered the gold standard of social networking in terms of feature set. In general, we want to match the features that we find most relevant to our vision for our app. This includes users being able to post text posts, photos, make comments, browse profiles, and rate businesses. However we will also have a location map that will show locations of businesses and shelters on a map, and not just pages.

The pet-specific social networks we looked at, like Petzbe and Patchpets. We believe that because their focus is centered on pets only, this makes these apps attractive only as novelties in our opinion. Our website intends to foster a community of pet owners with the inclusion of pet owner profiles, and allowing owners to communicate with each other directly through forum threads, posts and messages facilitates the sharing of pet ownership tips or experiences. However, the website will also be designed so current pet ownership is not strictly necessary for users to enjoy and find use of the site, unlike these other pet social networks. The search tool will allow general users to browse shelter profiles as well as the pets at those shelters.

We believe our unique feature is our built in interactive map search functionality that allows users to find businesses, parks, and shelters on a large map provided by the Google Maps API. A map of the desired area requested by the user through the search functionality will be fetched and displayed using the Google Maps API, and then overlays of data from our own database will be displayed. The result will be akin to Google Places, but with more curated and pet focused content that will have more granular and relevant filtering options made possible by the data stored on entities like pets and businesses. For example, a user looking for a Corgi dog to adopt will be able to use the search function to find all Corgis available for adoption in their area in a

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visually pleasing and intuitive way. And a user looking for a pet sitter could quickly search for users available to pet sit in their area. Users will also be able to view a condensed version of the important info listed on profiles within this map search functionality. This integration lends real-world dimension to the networking element of our website, and is intended to provide an engaging and more convenient experience to users.

We believe that our unique integration of social media aspects with pet services and resources across the site mesh well, as it connects pet owners and pet businesses/shelters with each other in a more personal manner, which ultimately can facilitate the exchange of services and information, or the adoption processes.

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Section VII: High-level system architecture and technologies used

Web Server: Nginx

Backend:

- Javascript
 - ExpressJS

Database Service:

Amazon Web Services RDS - MySQL

User Storage:

Amazon S3

Frontend:

Languages:

- Javascript
 - ReactJS Library
 - CSS

Additional Libraries

- Redux (state container)
- JSONWebToken(authentication)
- Axios(make http requests)
- Sequelize (object relational mapper)
- Font-Awesome(Icons)
- Toastify(Notification)

Supported Browsers:

Mobile:

- iOS
 - Chrome : 87.x.x.x, 86.x.x.x
 - Safari: 14.x.x, 13.x.x, 12.x.x
- Android
 - Chrome: 89.x.x.x, 88.x.x.x
 - Samsung Internet: 13.x.x.x, 12.x.x.x

Desktop:

- Windows, Mac, Linux
 - Chrome: 89.x.x.x, 88.x.x.x
 - Safari: 14.x.x.x, 13.x.x.x

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- Firefox: 86.x, 85.x

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Section VIII: Team Contributions

We all pulled together to contribute to milestone 1, starting with our frontend lead Cameron Harte who began with contributing important non-functional/functional requirements. In the non functional requirements, Cameron contributed to the financial Outlook. These were primarily 10c and 10d. In use cases and use case diagrams Cameron worked on the entity 2 and 10 and other entities as well. Overall, Cameron brought his ideas and thoughts to data items/entities, and to our competitive analysis. Our Backend lead Em Powers not only started brainstorming backend architecture in functional requirement sections, but was also the primary author of our Executive Summary, and helped with use case diagram number 5,6,7,11 and the graphics for 8. Em also worked on the competitive analysis, and data items/entities. Our Github administrator and frontend team member Daniel Simpson wrote Section 3 and section 7. He also led the development of use cases, writing actor descriptions 1-6 and 10-12, and use cases 5-10. Daniel also wrote non functional requirements 11-15 and functional requirements 1,5-13, 16-19, and 23-26. He also contributed to the competitive analysis with Em, Wenjie, and Cameron, covering the research of Petfinder.com and the Patchpets app while also writing the competitive analysis summary. He contributed to the executive summary as well. Finally, he read through the document before submission, rewriting/editing most of the sections for clarity and consistency. Sabrina Dang, who is currently working on the frontend team also contributed to the template for milestone 1, getting us started on Section 3 and Section 4. Sabrina also helped with use cases and their diagrams. Wenjie Ye who is also working on the frontend contributed to our use cases, data items/entities, and competitive analysis. Wameedh who is currently

assigned to the backend team, contributed to our functional requirements and main entities. He most notably brought good ideas about how some of our features should be entities, despite being a latecomer to the group after switching teams. As for myself (Edgar), I contributed to the use cases and functional/non functional requirements. This included brainstorming the potential users with different characteristics that may use our application.

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Section IX: Checklist

- ✓ Created use cases
- ✓ Created use case diagrams
- ✓ Team found a time slot to meet outside of the class
- ✓ Github master chosen
- ✓ Team decided and agreed together on using the listed SW tools and deployment server
- ✓ Team ready and able to use the chosen back and front end frameworks and those who need to learn are working on learning and practicing
- ✓ Team lead ensured that all team members read the final M1 and agree/ understand it before submission
- ✓ Github organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.)
- ✓ Competitive features
- ✓ Summary of Competitive Analysis
- ✓ Functional/Non Functional Requirements
- ✓ List of Main Entities

M2V2:

SW Engineering CSC648/848 Spring 2021
“Zooble”
Section 04 Team 2

Team Lead: Edgar Catalan
Team Lead Email: ecatalan@mail.sfsu.edu
Frontend Lead: Cameron Harte
Backend Lead: Em Powers
Additional Members: Daniel Simpson, Wenjie Ye,
Sabrina Dang, Wameedh Mohammed Ali

Milestone 2
Due Date: 04/01/2021

GitHub Repository:
<https://github.com/CSC-648-SFSU/csc648-04-sp21-Team02>

History Version

Milestone/Version	Date
M2 V2	4/5/2021

M2 V1	4/1/2021
M1 V2	3/20/2021
M1 V1	3/5/2021

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Section I: Data Definitions V2

Entities:

1. **General User** - A General User is any user browsing the website, whether registered or unregistered. A General User has the ability to create an Account.
 - a. Registration Info
 - i. A General User shall provide a unique username on sign up
 - ii. A General User shall provide a password on sign up
 - iii. A General User shall provide a valid email address on sign up
 - iv. A General User shall provide a display name on sign up
2. **Account** - An Account is an entity that will be created by the system on user sign-up and will contain user information such as the username, email, and password.
 - a. Active Account: An account that currently has its information and activity stored in the database
 - b. Banned Account: An Account that has been banned by an Admin,
 - c. Deleted Account: An Account that existed in the database at a certain point in time, but the linked user chose to delete it. Their information and activity is no longer stored in the database
3. **Premium Business Account** - A Premium Business Account is a paid Account which Registered Businesses can sign up for that has all the attributes of a regular Account plus additional features below.
 - a. Search Advertising: Registered Businesses with a Premium Business Account will be featured prominently in searches by Registered Pet Owners near them, when General Users search for Registered Businesses that are in the same Business Category

- b. Feed Advertising: Posts of Registered Businesses with a Premium Business Account will be featured prominently in the Feed of Registered Users near them
 - c. Posts Near You Advertising: Posts of Registered Businesses with a Premium Business Account will be featured prominently in the Posts Near You of General Users near them
4. **Registered User** - A Registered User is a General User that has created an Account and can be a Pet Owner, Pet Business, Pet Shelter, or Admin.
 5. **Admin** - An Admin is a Registered User who moderates the site with elevated privileges, reviewing flagged content, removing content not compliant with site terms and conditions, and messaging or banning problematic users.
6. **Registered Business** - A Registered Business is a Registered User who indicates that they're representing a business upon sign up.
 - a. Business Category: A Registered Business chooses Business Categories when they sign up, allowing them to show up in filtered search results
 - b. Business Address: The physical address of a Registered Business
 - c. Business Phone Number: The phone number of a Registered Business
 - d. Average Rating: The average of all the Ratings given to a Registered Business by Registered Owners
 7. **Registered Shelter** - A Registered Shelter is a Registered User who indicates that they're representing a shelter upon sign up.
 - a. A Registered Shelter shall have pets
 - i. Pets owned by Registered Shelters shall be available for adoption by General Users
 - b. Shelter Address: The physical address of a Registered Shelter
 - c. Shelter Phone Number: The phone number of a Registered Shelter
 - d. Average Rating: The average of all the Ratings given to a Registered Shelter by Registered Pet Owners
 8. **Registered Pet Owner** - A Registered Pet Owner is a Registered User who indicates that they're representing a Pet owner upon sign up.
 - a. A Registered Pet Owner shall have pets
 9. **Pet** - A Pet is created when a Registered Pet Owner or Registered Pet Shelter chooses to add a Pet to their Account. A Pet will have identifying attributes about them assigned by their owner, which are displayed in their Profile and filterable when a General User searches through pets.
 - a. Adoptable Pet: A Pet that is owned by a Registered Pet Shelter shall be adoptable and will have an indicator on their Profile picture and show up in the location based search

10. Profile - A Profile is created when a General User creates an Account and will display entity images and information (listed below) and will act as a conduit for users to interact with one another through private Messages and Post/Image interaction.

- a. Display Name: The display name chosen by the General User when they create their Account and intended to be their real first name or in the case of Registered Businesses and Registered Shelters
- b. Profile Picture: The Picture is the image chosen by the Registered User when creating the Profile for the first time or when editing
- c. About Me: The About Me is a short text written by the Registered User when they create a Profile, and contains anything the Registered User wants to include to introduce or provide background for those who view the Profile
- d. Photos: Photos are images uploaded by the Registered User at any point during their use of the website.
 - i. This includes any Photos included in Posts to the Feed and Photos directly added to the Profile during editing
 - ii. Photos can be commented on and liked from
- e. Recent Posts: Recent Posts are a collection of the most recent posts submitted by the Registered User that the Profile belongs to

11. Pet Profile - A Pet Profile is a Profile that displays the information/images associated with a Pet entity by the Registered Pet Owner or Pet Shelter Owner acting as its owner.

- a. Siblings: If a Pet is owned by a Registered Pet Owner, Pet's Siblings represents all the other pets the Registered Pet Owner owns. The Registered Pet Owner can display a selection of the Pet's Siblings on the Profile, with the rest of the pets available through a link to display all Siblings of a Pet in a list format
- b. Housemates: If a Pet is owned by a Registered Pet Shelter, Pet's Housemates represents all the other pets the Registered Pet Shelter owns. The Registered Pet Shelter can display a selection of the Pet's Housemates on the Profile, with the rest of the pets available through a link to display all Housemates of a Pet in a list format

12. Registered Pet Owner Profile - Registered Pet Owner Profiles are entities that display the owner information/images associated with a Registered Pet Owner.

- a. My Pets: Displays Profile Pictures and names of pets owned by a Registered Pet Owner and provides links to their Pet Profiles

13. Registered Business Profile - Registered Business Profiles are entities that display the business information/images associated with a Registered Business.

- a. Business Info: Displays the Address, Phone Number and Business Hours of a Registered Business
 - i. Address: The Address for the business location/office/etc. provided by the Registered Business on sign up to the website, that is verified by the Admin and can be edited at any time, and links to the location on the interactive map search
 - ii. Phone Number: The Phone Number for the business location/office/etc. provided by the Registered Business on sign up to the website, that is verified by the Admin and can be edited at any time
 - iii. Hours: The complete business hours provided by the Registered Business whom the Registered Business Profile belongs to and can be edited at any time
- b. Our Reviews: Displays Review Summaries and display names for most recent reviews written by Registered Pet Owners for the Registered Business that the Profile belongs to. Provides a link to write a Review when viewed by a Registered Pet Owner
 - i. Average Rating: The computed Average Rating calculated from the Ratings provided by Registered Pet Owners
 - ii. Review Preview: The link to the full Review written by user that contains the short Review summary and the name of the user who wrote the Review

14. Registered Shelter Profile - Registered Shelter Profiles are entities that display the business information/images associated with a Registered Shelter, and links to pets sheltered at a Registered Shelter.

- a. Our Pets: Displays the Profile Pictures and names of Pets, with links to their Pet Profiles, selected by the Registered Shelter

15. Posts - Posts are entities created by Registered Users which are viewable by Registered Users, which contain text and/or Photos.

- a. Post Body: The optional longform text written by a Registered User that is viewable by General Users when viewing multiple Posts in a list format and single Posts
- b. Post Photo: The Photo that is added to a Post by a Registered User that is viewable by General Users when viewing multiple Posts in a list format and single Posts
- c. Post Timestamp: The timestamp generated by the system and linked to a post when a Post is made
- d. Post Likes: The Likes associated with a Post, given to a Post by Registered Users

16. Comment - Comments are texts created by Registered Users that are posted as responses/replies to Posts created by Registered Users.

- a. Comment Body: The longform text written by a Registered User that is viewable by General Users when viewing multiple Comments in a list format

17. Photo - Photos are images uploaded by Registered Users and submitted as Posts or used as Profile pictures.

- a. Photos can be in the jpg or png format
- b. Photos can have a max file size of 20 MB

18. Review - Reviews are entities submitted by Registered Pet Owners to record their experiences at/with Pet Shelters, Businesses, and with Registered Users choosing to be Pet Sitters, whether online or in-person, which will be visible through those entity's profiles. Reviews require a Rating to be submitted.

- a. Review Summary: The summary of a review is the short form text summary of the full review written by a Registered Pet Owner that is displayed to other General Users browsing/viewing multiple reviews in a list format
- b. Review Body: The body of a review is the long form text written by a Registered Pet Owner that is displayed to other General Users when they view a single review

19. Rating

- a. Ratings are entities submitted by Registered Pet Owners to quickly record their satisfaction with experiences at/with Pet Shelters, Businesses, and Pet Sitters, whether online or in-person
- b. Ratings make up the Average Rating of a Registered Business that is displayed to General User on a Registered Business's Profile
- c. Ratings make up the Average Rating of a Registered Shelter that is displayed to General User on a Registered Shelter's Profile
- d. Ratings make up the Average Rating of a Registered Pet Sitter that is displayed to Registered Users on a Registered Pet Sitter's Profile

20. Message - A Message will have subject and body and will be sent from

Registered Users of any type to Registered Users of any type.

- a. Message Subject: The short form text summary of the Message's contents written by the Registered User writing the Message and displayed to other Registered Users viewing multiple Messages in a list format and when they view a single Message
- b. Message Body: Long form text written as the content of the Message by a Registered User and displayed to the Registered User viewing a single Message

- c. Deleted Message: A Deleted Message is any Message that a Registered User deletes from their Messages. Deleted Messages will not be visible for the Registered User who deleted the Message but will not affect visibility for the other Registered User

21. Likes - Likes are entities used by Registered Users to demonstrate a reaction to a Registered User's Posts or Comments.

22. Follow - A Registered User can Follow another Registered User to see their Posts on their own Feed.

23. Follows - Follows indicate the Registered Users who a Registered User is following.

24. Followers - Followers indicates the Registered Users who are following a Registered User.

25. Feed - This entity allows a user to view/interact with all the recent Posts of the Accounts they are following.

26. Park - Parks are entities that are created by Registered Pet Owners to represent a real-world park at a given location.

27. Park Profile - Park Profiles are entities that display the park information/images that are edited/uploaded by Registered Pet Owners.

- a. Park Address: The physical address of the Park
- b. Park Reviews: Displays review Summaries and display names for most recent reviews written by Registered Pet Owners for the Park that the Profile belongs to. Provides a link to write a review when viewed by a Registered Pet Owner
 - i. Average Rating: The computed average Rating calculated from the Ratings provided by Registered Pet Owners
 - ii. Review Preview: The link to the full review written by user that contains the short review summary and the name of the user who wrote the review

28. Forum - Forums are a collection of Posts by Registered Users separated by topic, and further separated into user-created Forum Threads.

- a. Topics: The Topic of a forum that corresponds an animal type or breed on the website

29. Forum Thread - Forum threads are created by any user, and are continuous sequences of Posts and replies located in an encompassing forum.

- a. Forum Thread Title: The title of the Forum Thread chosen by the Forum Thread Creator and is displayed to other General Users browsing/viewing multiple Forum Threads in a list format
- b. Forum Thread Starter: The first Forum Thread Post in a Forum Thread written by the Registered User who created the Forum Thread

c. Forum Thread Post: Long form text Posts written by Registered Users in a forum thread

- i. Forum Thread Posts can include an Photo uploaded by the Forum Thread Post creator

30. Flag - A Registered User can flag any content that they find offensive

- a. Flagged Content : Flagged Content is any Photo, Post, Comment, Forum Thread Post, or Forum Thread that a Registered User has flagged
 - i. Flagged Content appears on the Admin Control Panel, where the Admin can take further action, in deleting, banning, and/or messaging the offending Registered User(s)

31. Admin Control Panel - The Admin Control Panel is a view available to the

Admin that shows Flagged Content and Users Pending Approval.

- a. Users Pending Approval: Any Registered Shelter or Registered Business wishing to create an Account for their shelter or business who have not yet been approved

32. Deleted Content - Deleted Content is any content that has been deleted by an

Admin, or created by a Registered User who has deleted their account.

- a. Deleted Post: Deleted Posts and their Comments are not visible to General Users
- b. Deleted Comment: Deleted Comments on any Post are not visible to General Users

33. Banned Content - Banned Content is any content that was previously created by a now-banned Registered User.

- a. Banned Post: Banned Posts and their Comments are not visible to General Users
- b. Banned Photos: Banned Photos and their Comments are not visible to General Users
- c. Banned Forum Threads: Forum Threads made by banned users will be visible, but any forum Posts within the thread made by the banned user will not be

34. Search - The action of searching through website entities that is taken by

General Users.

- a. Standard Search: A standard search allows General Users to search Registered Pet Owners, Registered Businesses, and Registered Pet Shelters, Parks and Pets (Forums, Forum Threads and Posts) in a traditional text-based fashion with filtering and sorting options
- b. Location-Based Search: The Location-Based Search is a search wherein a General User inputs a location, either manually or with the browsers location tracking, to see all the entities (Registered Businesses,

Registered Pet Shelters, and Pets at Registered Pet Shelters) near that location. They can then sort and filter the results based on their needs

35. Updated Review - An Updated Review is an entity submitted by Registered Pet Owners that amends or records a different experience to their original Review. It will be linked to the original Review, and requires a Rating to be submitted.

- a. Updated Review Summary: The summary of an updated review is the short form text summary of the full review written by a Registered Pet Owner that is displayed to other General Users and is connected to the original Review
- b. Updated Review Body: The body of a review is long form text that is displayed to other General Users when the Updated Review is viewed

36. Chat - Chat is a functionality that allows Registered Users to send short informal Messages to each other in real time.

37. Block List - Block List shall belong to a Registered User and shall contain a list of Registered Users that the Registered User does not wish to receive Messages from, or see their activity.

38. Siblings - Siblings are the pets that share at least one parent with each other that are assigned by their owner(Registered Pet Owner or Registered Shelter).

39. Recent Activity - Recent Activity encapsulates the actions taken by a Registered User recently including Posting, Commenting, Liking, and Following.

- a. Recent Activity Links: Users can click on Recent Activity Links (can be Recent Post) to jump to the location where the activity was performed

40. Advertising Analytics - Advertising Analytics is the use of data and tools to help Business Owners to determine the marketing efforts.

41. Advertising Time Slots - An Advertising Time Slot is a period of time that the advertisement will be shown in our application.

42. Friends - Registered Users whose Friend Requests are accepted by a Registered User.

- a. Friend Request: A Request sent by a Registered User to another Registered User that is accepted or declined and decides whether a Registered User becomes a Registered User's Friend

Section II: Functional Requirements

(1-must have; 2 – desired; 3 – opportunistic)

Priority 1:

1. General User
 - 1.1. General Users shall be able to search for Registered Businesses
 - 1.2. General Users shall be able to search for Pets
 - 1.3. General Users shall be able to search for Registered Shelters
 - 1.4. General Users shall be able to view the Pet Profiles of Registered Users
 - 1.5. General Users shall be able to send a Message to Registered Businesses
 - 1.6. General Users shall be able to send a Message to Registered Shelters
 - 1.7. General Users shall be able to receive correspondence from Registered Businesses at an email address provided by them
 - 1.8. General Users shall be able to receive correspondence from Registered Shelter at an email address provided by them
 - 1.9. General Users shall be able to use search filtering
 - 1.10. General Users can choose to share their location
 - 1.11. General Users shall be able to create an Account
2. Account:
 - 2.1. An Account shall be created by a General User of at least 13 years of age
3. Registered User:
 - 3.1. Registered Users shall inherit the functionality given to General Users
 - 3.2. Registered Users shall be able to log in to the website
 - 3.3. Registered Users shall be able to log out of the website
 - 3.4. Registered Users shall have a Profile
 - 3.5. Registered Users shall be able to provide a Profile Picture
 - 3.6. Registered Users shall be able to change their Profile Picture
 - 3.7. Registered Users shall be able to write an About Me
 - 3.8. Registered Users shall be able to edit their About Me
 - 3.9. Registered Users shall be able to post Posts
 - 3.10. Registered Users shall be able to edit their Posts
 - 3.11. Registered Users shall be able to add Photos to their Profile
 - 3.12. Registered Users shall be able to post under their own Display Name
 - 3.13. Registered Users shall be able to follow other Registered Users
 - 3.14. Registered Users shall be able to be followed by other Registered Users
 - 3.15. Registered Users shall be able to search for Registered Pet Owners
 - 3.16. Registered Users shall be able to view the profiles of Registered Pet Owners

- 3.17. Registered Users shall be able to Flag Posts
 - 3.18. Registered Users shall be able to Flag Comments
 - 3.19. Registered Users shall be able to Flag Messages
 - 3.20. Registered Users shall be able to Flag Forum Threads
 - 3.21. Registered Users shall be able to Flag Forum Posts
 - 3.22. Registered Users shall be able to retract their likes.
 - 3.23. Registered Users can follow Registered Users
 - 3.24. Registered Users can unfollow Registered Users
 - 3.25. Registered Users can view the Registered Users who Follow Them
 - 3.26. Registered Users can search the Registered Users that Follows/Following them
4. Admin
- 4.1. Admin shall be able to Delete Photos posted by Registered Users
 - 4.2. Admin shall be able to browse Registered User Profiles
 - 4.3. Admin shall be able to Delete Posts
 - 4.4. Admin shall be able to Delete Comments from Posts
 - 4.5. Admin shall be able to ban Accounts
 - 4.6. Admin shall be able to remove Accounts
 - 4.7. Admin shall be able to reactivate Accounts
 - 4.8. Admin shall be able to Message Registered Users
 - 4.9. Admin shall be able to approve Registered Businesses for use of the site
 - 4.10. Admin shall be able to approve Registered Shelters for use of the site
5. Registered Business
- 5.1. Registered Businesses shall inherit the functionality given to Registered Users
 - 5.2. Business Addresses of Registered Businesses can be viewed by Registered Users
 - 5.3. Business Hours of Registered Businesses can be viewed by Registered Users
 - 5.4. Registered Businesses shall be able to upgrade to a Premium Business Account.
6. Registered Shelter
- 6.1. Registered Shelters shall inherit the functionality given to Registered Users
 - 6.2. Registered Shelters shall be able to add Pets to their Account
 - 6.3. Registered Shelters shall be able to delete Pets from their Account
 - 6.4. Registered Shelters shall be able to edit the Profiles of their Pet(s)

- 6.5. Business Addresses of Registered Shelters can be viewed by Registered Users
 - 6.6. Business Hours of Registered Shelters can be viewed by Registered Users
 - 6.7. Registered Shelters shall be able to change the ownership of their Pets
 - 6.8. Registered Pet Owners shall be able to change Pet's Availability for Adoption
-
- 7. Registered Pet Owner
 - 7.1. Registered Pet Owners shall inherit the functionality given to Registered Users
 - 7.2. Registered Pet Owners shall be able to add Pets to their Account
 - 7.3. Registered Pet Owners shall be able to delete Pets from their Account
 - 7.4. Registered Pet Owners shall be able to edit the Profiles of their Pet(s)
 - 7.5. Registered Pet Owners shall be able to change the ownership of their Pets
-
- 8. Pet
 - 8.1. Pet shall allow General Users to filter pets by age
 - 8.2. Pet shall allow General Users to filter pets by size
 - 8.3. Pet shall allow General Users to filter pets by color
 - 8.4. Pet shall allow General Users to filter pets by breed
 - 8.5. Pet shall allow General Users to filter pets by type
 - 8.6. A Pet's Profile Picture shall be able to be changed by their Owner
-
- 9. Profile
 - 9.1. Profiles shall be able to display a Profile picture
 - 9.2. Profiles shall be able to display Photos posted by the Registered User it belongs to
 - 9.3. Profiles shall be able to display an About Me (biography)
 - 9.4. Profiles shall provide a way for the browsing Registered User to send a private Message to the profile's affiliated Registered User
 - 9.5. Profiles shall display follows.
-
- 10. Pet Profile
 - 10.1. Pet Profiles shall inherit the functionality given to Profiles
 - 10.2. Pet Profiles shall be able to provide a link to the Registered Pet Owner that owns the Pet that the Pet Profile belongs to

- 10.3. Pet Profiles shall be able to provide a link to the Registered Shelter that owns the Pet that the Pet Profile belongs to
 - 10.4. Pet Profiles shall be able to display adoption status
 - 10.5. Pet Profiles shall display if a Pet's owner is Online
- 11. Registered Pet Owner Profile
 - 11.1. Registered Pet Owner profiles shall inherit the functionality given to Profiles
 - 11.2. Registered Pet Owner Profiles shall provide links to Pet Profiles of pets owned by the Registered Pet Owner
- 12. Registered Business Profile
 - 12.1. Registered Business Profiles shall inherit the functionality given to Profiles
 - 12.2. Registered Business Profiles shall be able to provide contact details
 - 12.3. Registered Business Profiles shall be viewable by General Users
- 13. Registered Shelter Profile
 - 13.1. Registered Shelter Profiles shall inherit the functionality given to Profiles
 - 13.2. Registered Shelter Profiles shall be able to provide contact details
 - 13.3. Registered Shelter Profiles shall be viewable by General Users
 - 13.4. Registered Shelter Profiles shall provide links to Pet Profiles of pets housed by the Registered Shelter
- 14. Posts
 - 14.1. Posts shall display the Display Name of the Registered User who posted them
 - 14.2. Posts shall direct Registered Users to the Profile of Registered User who posted them
 - 14.3. Posts shall be able to be edited by the Registered Users who created them
 - 14.4. Posts shall be able to be liked by Registered Users
 - 14.5. Posts shall be able to be commented on by Registered Users
 - 14.6. Posts shall allow General Users to view the time they were posted
 - 14.7. Posts shall allow General Users to view the date they were posted
 - 14.8. Posts shall be able to display the number of likes.
 - 14.9. Posts shall be deleted by the Registered User who posted them
 - 14.10. Posts shall be able to include a Photo
- 15. Comments

- 15.1. Comments shall display the Display Name of the Registered User who posted the comment
 - 15.2. Comments shall direct Registered Users to the Profile of Registered User who posted the comment
 - 15.3. Comments shall be able to be Liked.
 - 15.4. Comments shall be able to display the number of likes.
 - 15.5. Comments shall be able to be deleted by the user who posted them.
 - 15.6. Comments shall be able to be edited by the user who posted them.
 - 15.7. Comments shall allow General Users to view the time they were posted.
 - 15.8. Comments shall allow General Users to view the date they were posted.
16. Messages
 - 16.1. Messages shall be sent from Registered User to Registered User
 - 16.2. Messages shall be viewable by the Registered User it was sent to
 - 16.3. Messages shall be viewable by the Registered User it was sent by
 - 16.4. Messages can be sent from General Users to Registered Shelters
 - 16.5. Messages can be sent from General Users to Registered Businesses
 - 16.6. Messages shall be able to be replied to
 - 16.7. Messages shall allow Registered Users to view the sent time
 - 16.8. Messages shall allow Registered Users to view the Display Name of the Registered User who sent the Message
 - 16.9. Messages shall allow users to provide a Subject
 - 16.10. Messages shall allow users to provide a Body
 - 16.11. Messages shall be deletable by the Registered User who receives them
 - 16.12. Messages shall be deletable by the Registered User who sends them
 17. Likes
 - 17.1. Likes shall be able to be given to Forum Threads by Registered Users
 - 17.2. Likes shall be able to be given to a Forum Post by Registered Users
 18. Follows
 - 18.1. Follows shall provide a way for Registered Users to access the Profile of the Registered Users who they are Following
 19. Followers
 - 19.1. Followers shall provide a way for Registered Users to access the Profile of the Registered Users who they are Following
 20. Feed

- 20.1. Feed shall display the Recent Posts of the Registered Users that a Registered User is Following
 - 20.2. Feed shall allow Registered Users to post Posts
21. Park
- 21.1. Parks shall be able to be created by Registered Users
 - 21.2. Parks shall be able to be edited by Registered User(s)
 - 21.3. Parks shall be searchable by General Users
22. Park Profile
- 22.1. Park Profiles shall display Photos uploaded by Registered Users
 - 22.2. Park Profiles shall display an Address uploaded by a Registered User
 - 22.3. Park Profiles shall display Hours uploaded by a Registered User
 - 22.4. Park Profiles shall display an About section edited by a Registered User
 - 22.5. Park Profiles shall be viewable by General Users
23. Map Search
- 23.1. Map Search shall display the location of Registered Businesses.
 - 23.2. Map Search shall display the location of Registered Shelter
 - 23.3. Map Search shall display the Pets located at Shelters
 - 23.4. Map Search shall display the location of Parks
 - 23.5. Map Search shall allow General Users to search Pets
 - 23.6. Map Search shall allow General Users to search Registered Businesses
 - 23.7. Map Search shall allow General Users to search Registered Shelters
 - 23.8. Map Search shall allow General Users to filter results by Proximity
 - 23.9. Map Search shall allow General Users to filter Pet results by Breed
 - 23.10. Map Search shall allow General Users to filter Pet results by Type
 - 23.11. Map Search shall allow General Users to filter Pet results by Age
 - 23.12. Map Search shall allow General Users to filter Pet results by Color
 - 23.13. Map Search shall allow General Users to filter Pet results by Size
 - 23.14. Map Search shall allow General Users to sort Pet results by Age
 - 23.15. Map Search shall allow General Users to sort Pet results by Pet Account Age
 - 23.16. Map Search shall allow General Users to sort Registered Business results by Proximity
 - 23.17. Map Search shall allow General Users to sort Registered Business results by Category (checkboxes of business categories)
 - 23.18. Map Search shall allow General Users to sort Registered Business results by Average Rating

- 23.19. Map Search shall allow General Users to sort Registered Shelter results by Proximity
 - 23.20. Map Search shall allow General Users to sort Registered Shelter results by Types Of Pets
 - 23.21. Map Search shall allow General Users to sort Registered Shelter results by Average Rating(range of Rating)
 - 23.22. Map Search shall allow General Users to search Pets by Name
 - 23.23. Map Search shall allow General Users to search Pets by Type
 - 23.24. Map Search shall allow General Users to search Pets by Breed
 - 23.25. Map Search shall allow General Users to search Pets by Color
 - 23.26. Map Search shall allow General Users to search Pets by Size
 - 23.27. Map Search shall allow General Users to search Pets by Age
 - 23.28. Map Search shall allow General Users to search Registered Businesses by Name
 - 23.29. Map Search shall allow General Users to search Registered Businesses by Address
 - 23.30. Map Search shall allow General Users to search Registered Businesses by Category
 - 23.31. Map Search shall allow General Users to search Registered Shelters by Name
 - 23.32. Map Search shall allow General Users to search Registered Shelters by Address
 - 23.33. Map Search shall allow General Users to search Registered Shelters by Available Types of Pets
24. Notification
- 24.1. Notifications shall display when a Registered User's Post is Liked
 - 24.2. Notifications shall display when a Registered User's Comment is Liked
 - 24.3. Notifications shall display when a Registered User gains a Follower
 - 24.4. Notifications shall display when a Registered User's Post is Commented on
 - 24.5. Notifications shall display when a Registered User receives a Message
- Priority 2:**
- Registered Pet Owners
- 7.6 Registered Pet Owners shall be able to choose their Pets' Siblings
 - 7.7 Registered Pet Owners shall be able to change a Pet's Availability for Adoption
 - 7.8 Registered Pet Owners shall be able to leave Reviews to Registered Business.

7.9 Registered Pet Owners shall be able to leave Reviews to Registered Shelter.

7.10 Registered Pet Owners shall be able to leave Ratings to Registered Business.

7.11 Registered Pet Owners shall be able to leave Ratings to Registered Shelter.

7.12 Registered Pet Owners shall be able to leave Reviews to Parks.

7.13 Registered Pet Owners shall be able to leave Ratings to Parks.

Pets

8.7 Pets shall be able to be marked as missing Pets by their owners

Profiles

9.6 Profiles shall display recent Posts

Pet Profile

10.6 Pet Profiles shall be able to display Siblings

10.7 Pet Profiles shall display if the Pet is missing

10.8 Pet Profiles of pets adopted from Registered Pet Shelters can link to that Pet Shelter on the Profile

Registered Business Profile

12.4 Registered Business Profiles shall provide a way for Registered Pet Owners to view Registered Business Reviews

12.5 Registered Business Profiles shall provide a way for Registered Pet Owners to view Registered Business Ratings

12.6 Registered Business Profiles shall provide a way for Registered Pet Owners to view a Registered Business's Average Rating

12.7 Registered Business Profiles shall provide a way for Registered Pet Owners to leave Ratings

Registered Shelter Profile

13.5 Registered Shelter Profiles shall provide a way for Registered Pet Owners to view Reviews

13.6 Registered Shelter Profiles shall provide a way for Registered Pet Owners to view Ratings

13.7 Registered Shelter Profiles shall provide a way for Registered Pet Owners to view Registered Business Reviews

13.8 Registered Shelter Profiles shall provide a way for Registered Pet Owners to view their Ratings

13.9 Registered Shelter Profiles shall provide a way for Registered Pet Owners to view their Average Rating

Posts

14.11 A Post's text shall be able to be edited by the Registered Users who created the Post

14.12 Posts shall be able to be shared by Registered Users

Feed

20.3 Feed shall display the most liked Posts of the current day

Park Profiles

22.6 Parks shall display an Average Rating

22.7 Park Profiles shall provide a way for Registered Pet Owners to view Reviews

22.8 Park Profiles shall provide a way for Registered Pet Owners to view Ratings

Reviews

25.1 Reviews shall be editable by the Registered Pet Owners who posted them.

25.2 Reviews shall be provided with a Summary.

25.3 Reviews shall be provided with a Body.

25.4 Reviews shall be able to be viewed by General Users

25.5 Reviews shall display a creation date

25.6 Review shall display the last edited date

25.7 Reviews shall display their Author

25.8 Reviews shall provide a link to their Author's Profile

Ratings

26.1 Ratings shall be able to be edited by the Registered User who gave the Rating

Priority 3:

Registered Users

3.27 Registered Users shall be able to hide Posts on their Feed

3.28 Registered Users shall be able to hide Comments on their Posts

3.29 Registered Users shall be able to retract their flags

3.30 Registered Users shall be able to add Registered Users to their Block List

3.31 Registered Users shall be able to remove Registered Users from their Block List.

3.32 Registered Users shall be able to attach a Photo to their Post

Registered Shelters

- 6.9 Registered Shelters can choose a Pet's Siblings
- 6.10 Registered Shelters shall be able to Post under the name of their Pets.
- 6.11 A Registered Shelter can transfer ownership of their Pets to Registered Pet Owners

Registered Pet Owners

- 7.14 Registered Pet Owners can manually enter the Type of their Pet
- 7.15 Registered Pet Owners can manually enter the Breed of their Pet
- 7.16 A Registered Pet Owners can transfer ownership of their Pets to Registered Pet Owners
- 7.17 Registered Pet Owners can choose a Pet's Siblings
- 7.18 Registered Pet Owners shall be able to Post under the name of their Pets
- 7.19 Registered Pet Owners shall be able to send a Friend Request to other Registered Pet Owners
- 7.20 Registered Pet Owners shall be able to accept Friend Requests
- 7.21 Registered Pet Owners shall be able to decline Friend Requests
- 7.22 Registered Pet Owners shall be able to share their Location with Friends
- 7.23 Registered Pet Owner Profiles shall be able to indicate Pet Sitting availability

Profiles

- 9.7 Profiles shall display the Recent Activity of a Registered User's Followers

Pet Profiles

- 10.9 Pet Profiles shall be able to display the Registered Shelter they were adopted from.

Posts

- 14.13 Posts shall be able to be saved by Registered Users
- 14.14 Posts can display multiple photos.
- 14.15 Posts that are liked shall be able to be viewed by the Registered Users who liked them.

Comments

- 15.9 Comments shall be able to be replied to.

Messages

- 16.13 Messages shall allow the General User to read the display name of the Registered Business who sent them the Message

16.14 Messages shall allow the General User to read the display name of the Registered Shelter who sent them the Message

Followers

19.2 Followers shall allow Registered Users to search through their Followers.

Feed

20.4 Feed shall display the Recent Posts of Registered Business with a Premium Business Account.

Map Search

23.34 Map Search shall display the location of Pets.

Notifications

24.6 Notifications shall display when a Registered User's Forum Post is Liked

Reviews

25.10 Reviews can be updated by the Registered Pet Owner who Posted Them.

Chat

27.1 Chats can be sent from Registered User to Registered User

27.2 Chat shall be viewable by the Registered User it was sent to

27.3 Chat shall be viewable by the Registered User it was sent by

27.4 Chat shall be able to be replied to

27.5 Chat shall allow Registered Users to view the sent time

27.6 Chat shall allow Registered Users to view the Display Name of the Registered User who sent the text

27.7 Chat shall be deletable by the Registered User who receives them

27.8 Chat shall be deletable by the Registered User who sends them

Forums

28.1 Forums shall allow General Users to search through them.

28.2 Forums shall be viewable by General Users.

28.3 Forums shall be searchable by General Users.

28.4 Forums shall be filterable by General Users.

Premium Business Account

- 29.1 A Registered Business with a Premium Business Account shall be able to track Advertising Analytics
- 29.2 A Registered Business with a Premium Business Account shall be able to choose Advertising Time Slots.

Photos

- 30.1 Photos shall allow General Users to download them.

Forum Post

- 31.1 Forum Post shall be able to be liked by Registered Users.

Forum Thread

- 32.1 Forum Threads shall be able to be replied to
- 32.2 Forum Thread Posts shall Display the Name associated with the post.

Posts Near You

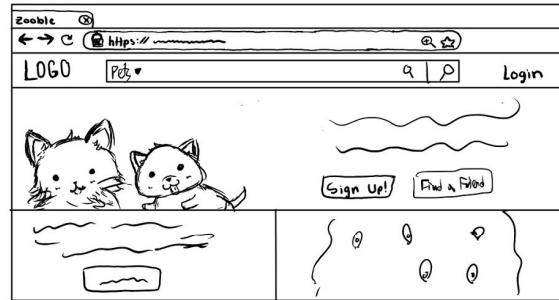
- 33.1 Posts Near You shall display the Recent Posts near the General User's location.

Section III: UI Mockups and Storyboard

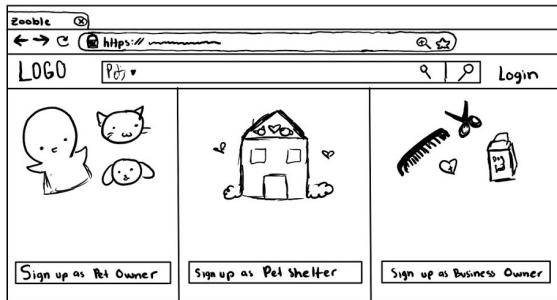
Use Case #1 Storyboard: General User Signs Up to be Registered User



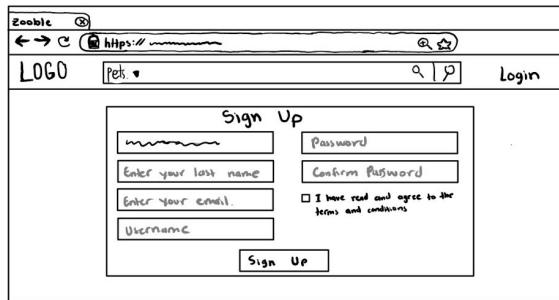
Ian, a senior man, wants to be able to post images of his 22 year old cat named Michael on the internet. He hops onto his computer and finds the pet social media website named Zooble.



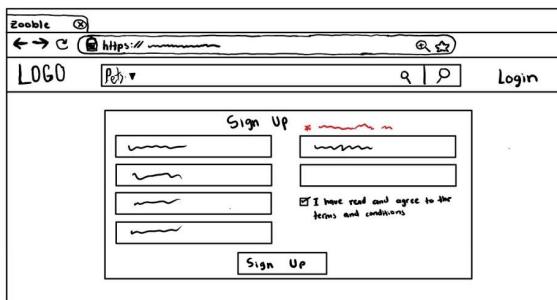
Ian finds himself on the Zooble homepage. He sees the option to sign up. Ian will navigate to the account registration page.



On the registration page Ian has three account creation options to choose from. He chooses to sign up as a pet owner.



Ian starts to enter his personal information in order to create his account.

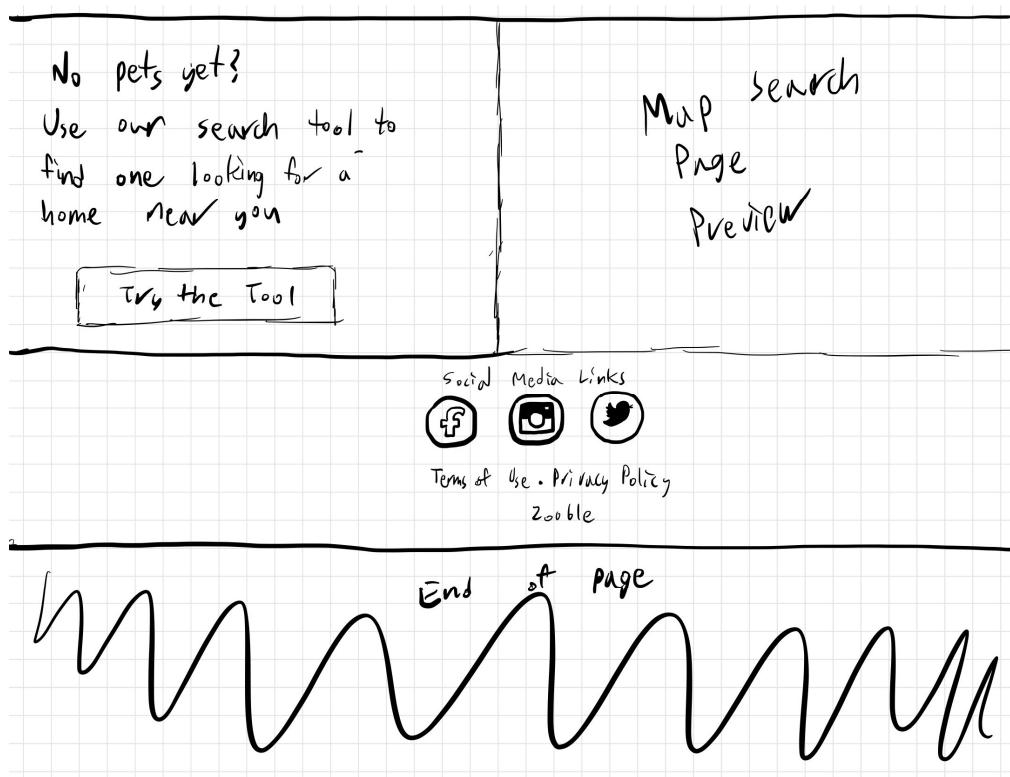
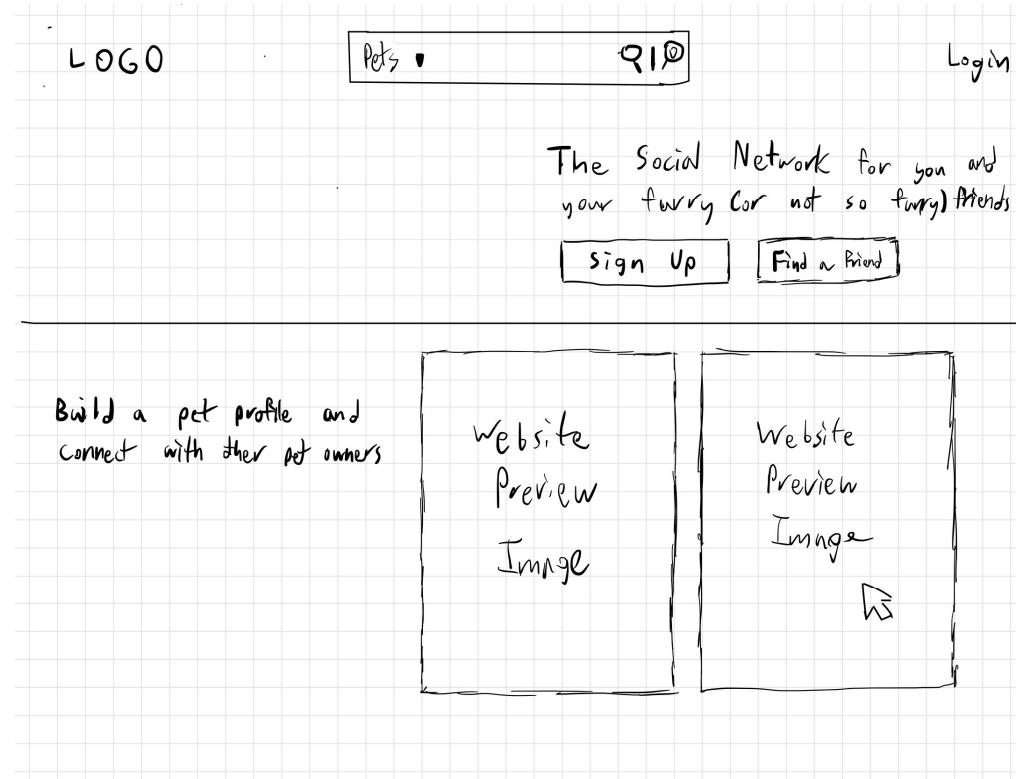


Ian has incorrectly entered the data required. He is still on the registration page and is asked to re-enter the data.



Ian's data was verified and his account was successfully created. He can now login.

Use Case 1 UI Mockups:





Logo ALL 🔍 LOGIN

SIGN UP

EMAIL

USERNAME

PASSWORD

CONFIRM PASSWORD

I HAVE READ & AGREE TO THE TERMS & CONDITIONS

SIGN UP

Logo Pets 🔍 LOGIN

✓

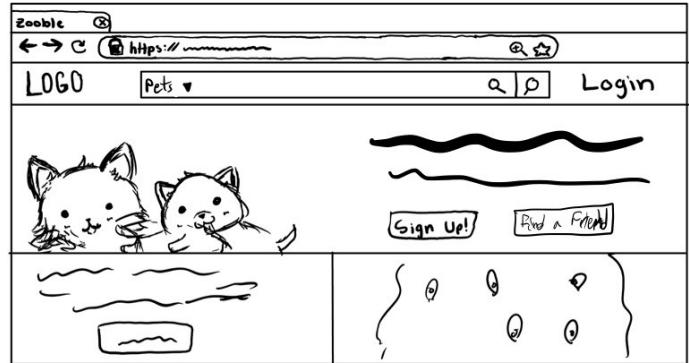
Your Account was created successfully
You can now Log in

Log in

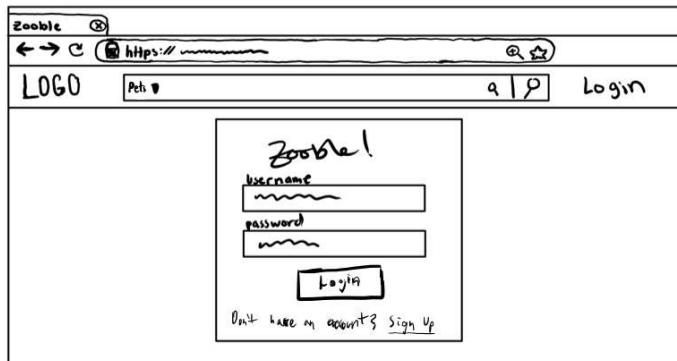
Use Case #2 Storyboard: Registered User Logs in and adds a Pet to their account



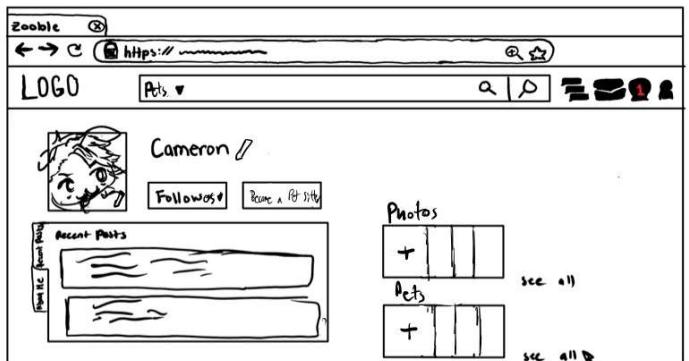
Cameron is a college student who does photography during his free time. He uses his cat Yoshi as a model often. Cameron wants to share his amazing photos on Zoobile since he recently created an account.



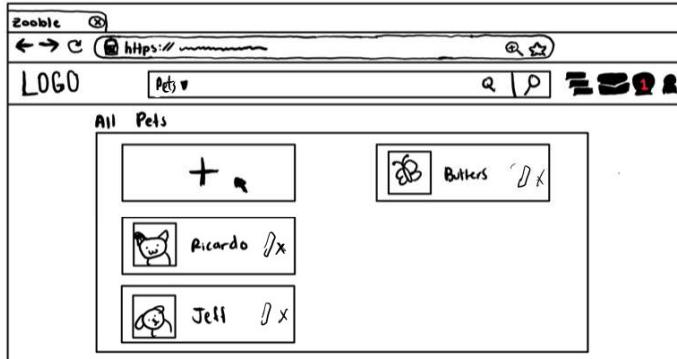
Cameron finds himself on Zoobile and needs to log in.



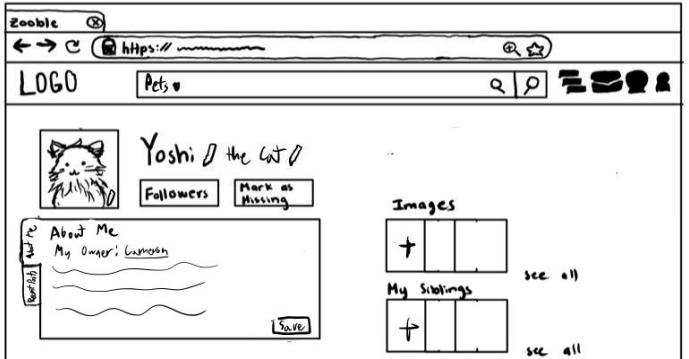
Cameron enters his information and logs on the website.



Cameron has logged in and is on his account page. He wants to add a pet profile for Yoshi. He clicks 'see all' on my siblings.

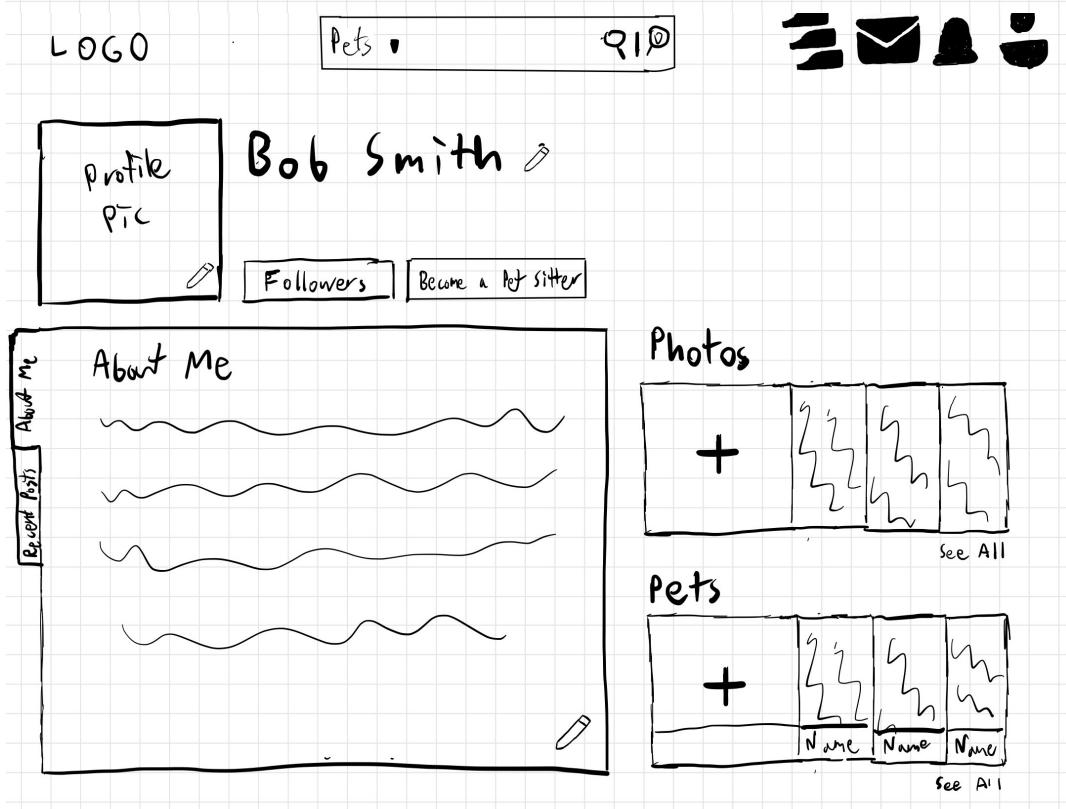
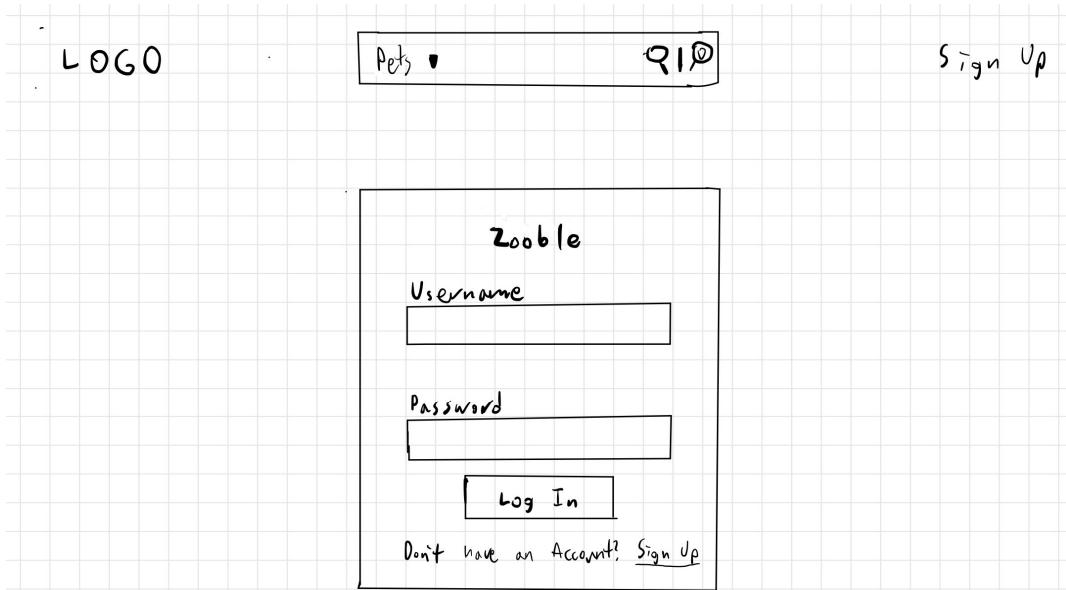


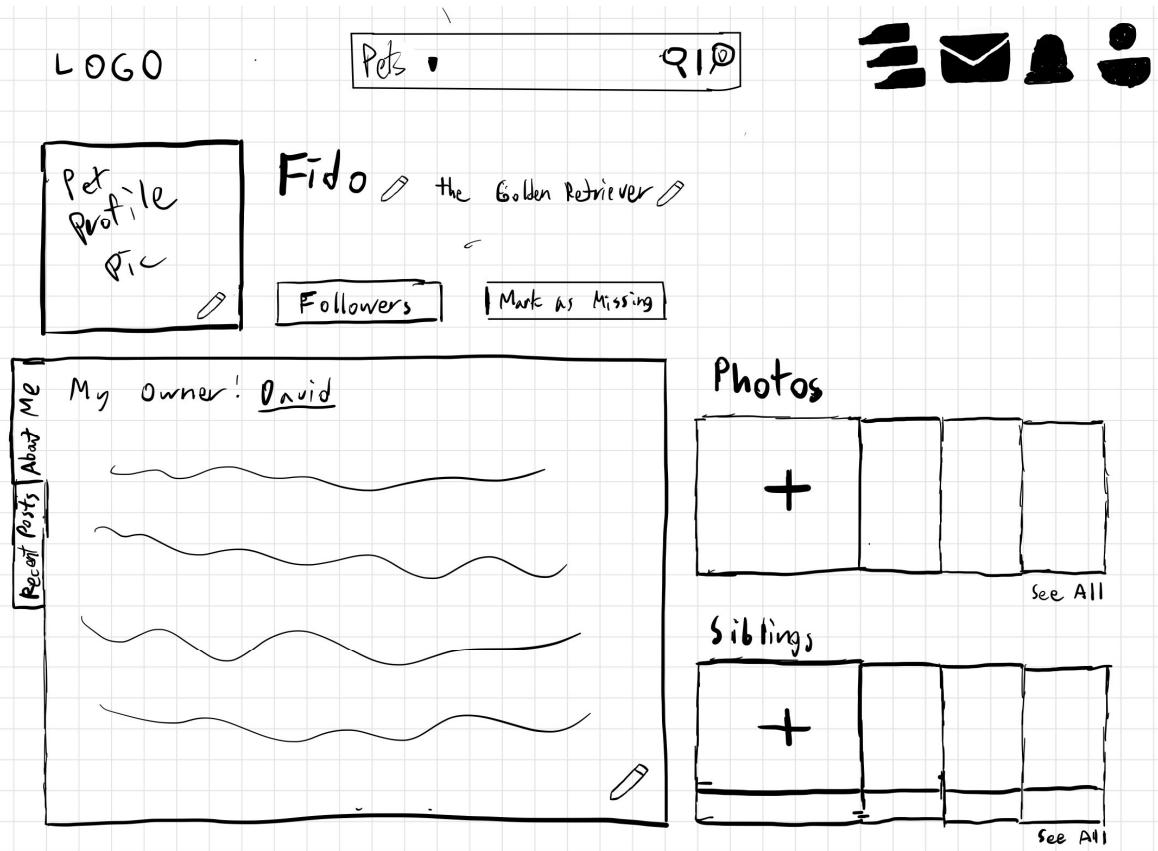
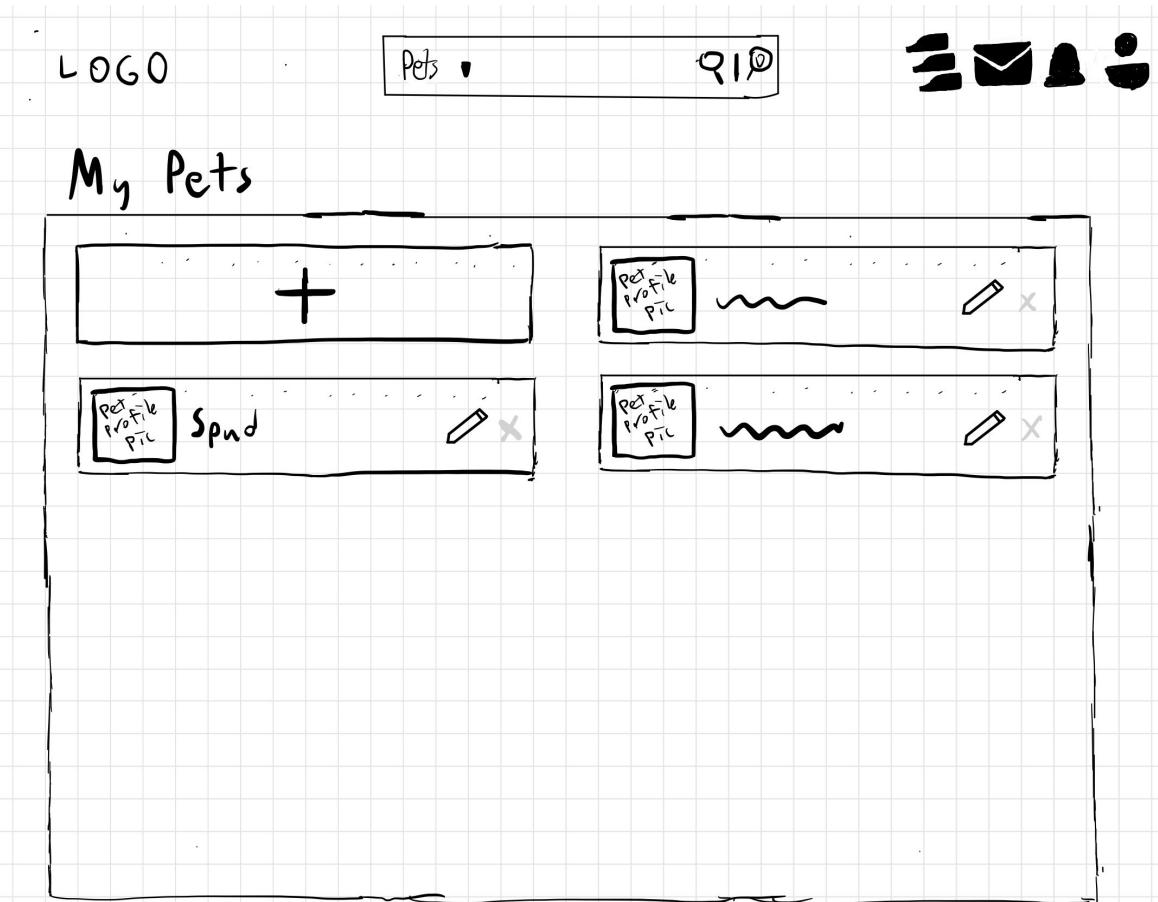
Cameron was directed to the pet profiles page. He figures out how to add a new pet.



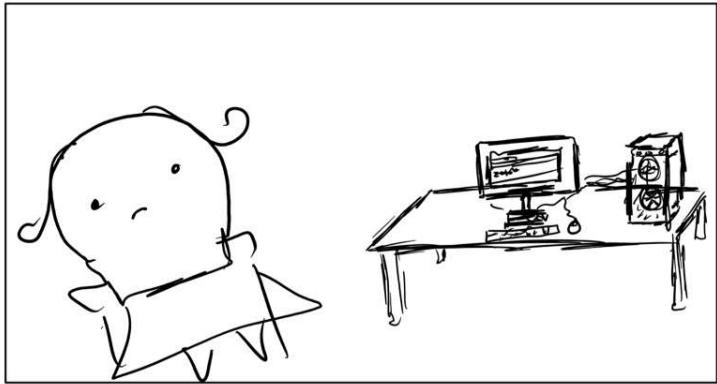
Cameron just needs to add Yoshi's information and click save to add Yoshi on Zoobile.

Use Case 2 UI Mockups:

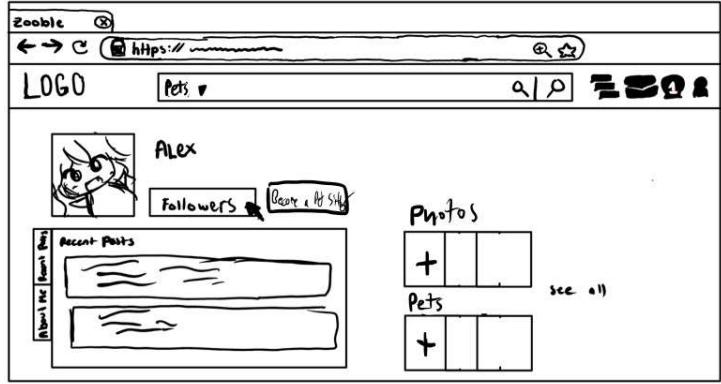




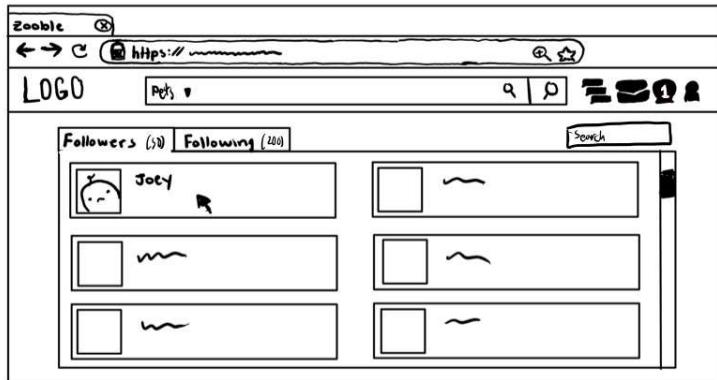
Use Case #3 Storyboard: Registered User Sends a Private Message



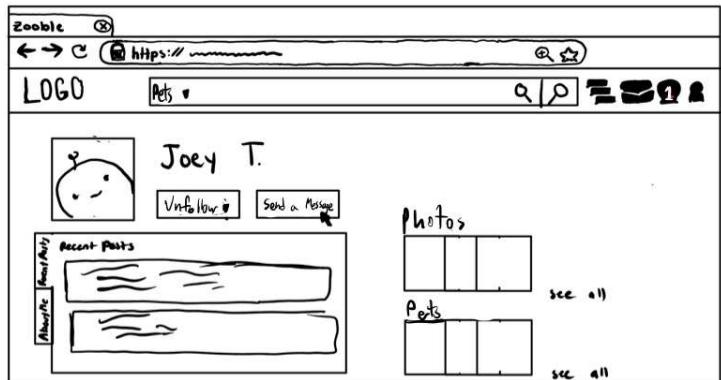
Alex is a new pet owner and wants to message others for meetups and advice. She logs onto Zoobile.



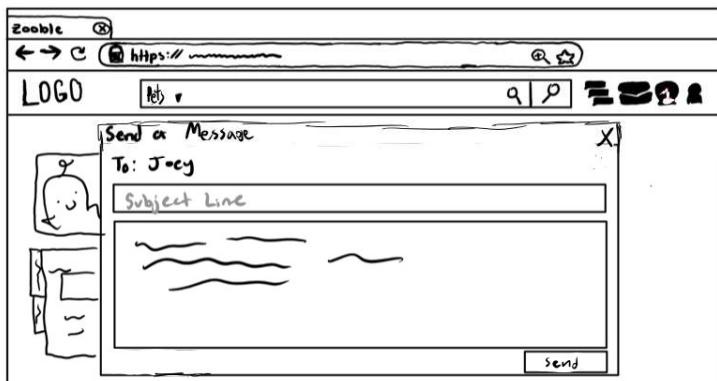
Alex wants to private message Joey on Zoobile. Alex remembers that Joey is one of her followers. Alex needs to find Joey in her list of followers.



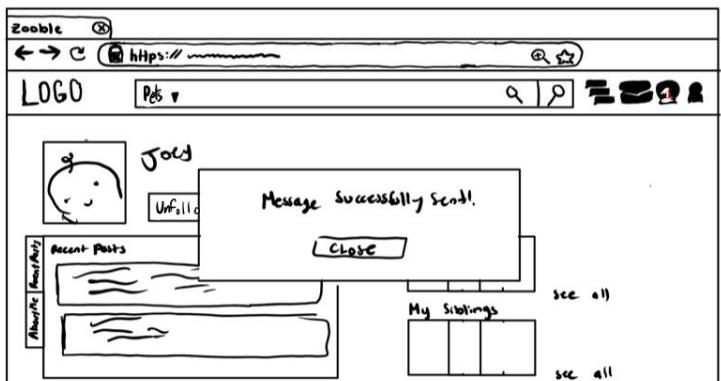
Alex finds Joey's profile by looking through her list of followers.



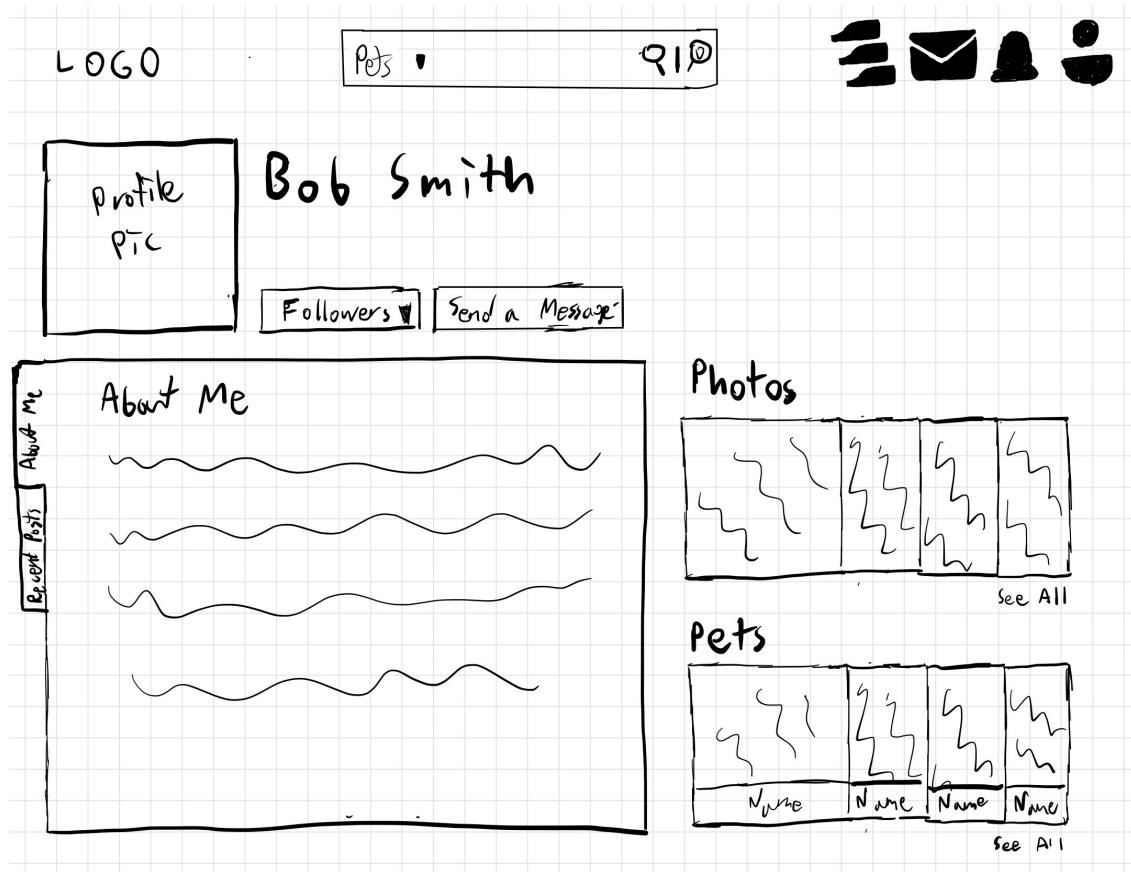
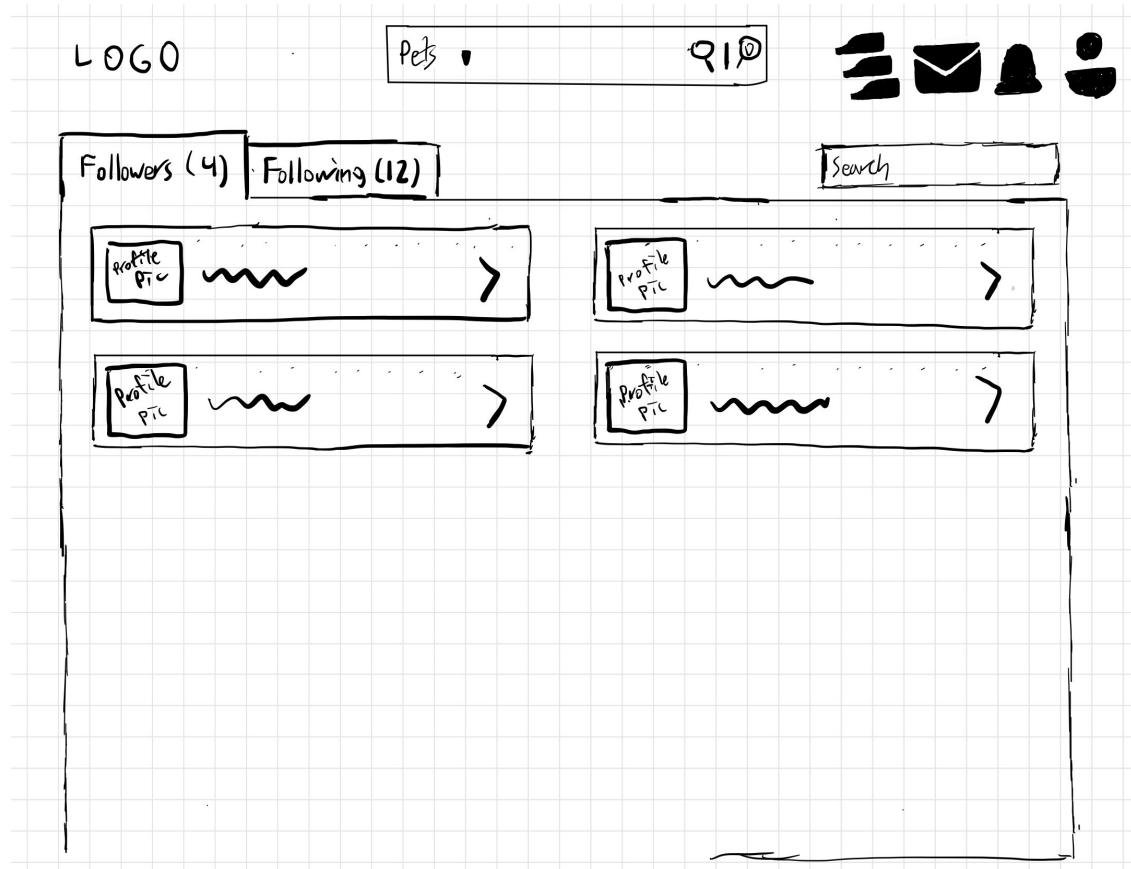
Alex successfully navigated to Joey's profile page. She can now select the option to private message Joey.



A window pops up for Alex to send Joey a message. She fills out the boxes with information and hits send.

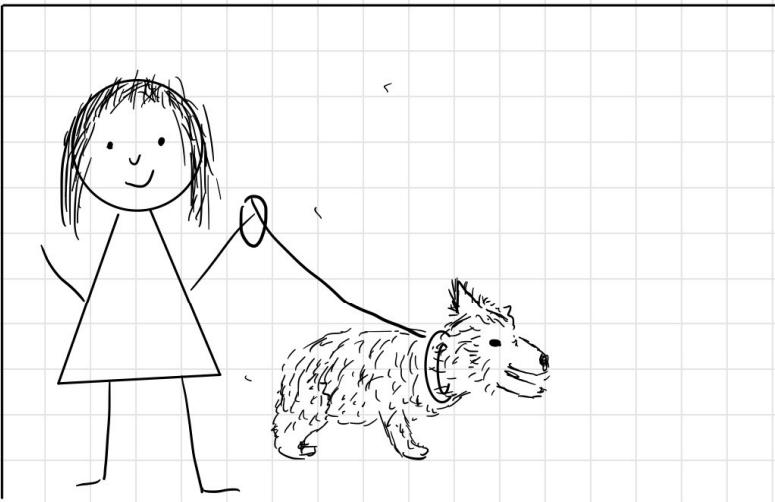


Alex has successfully sent Joey a private message.





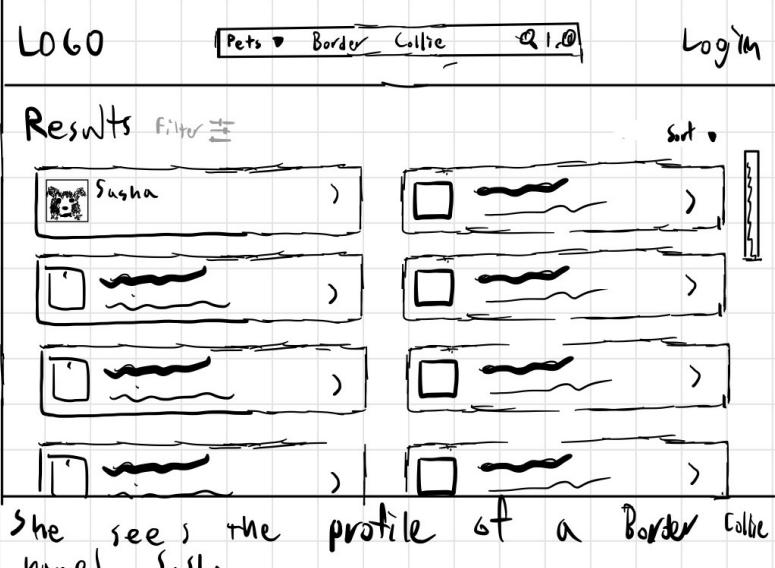
Use Case #4 Storyboards: General User Browses Website



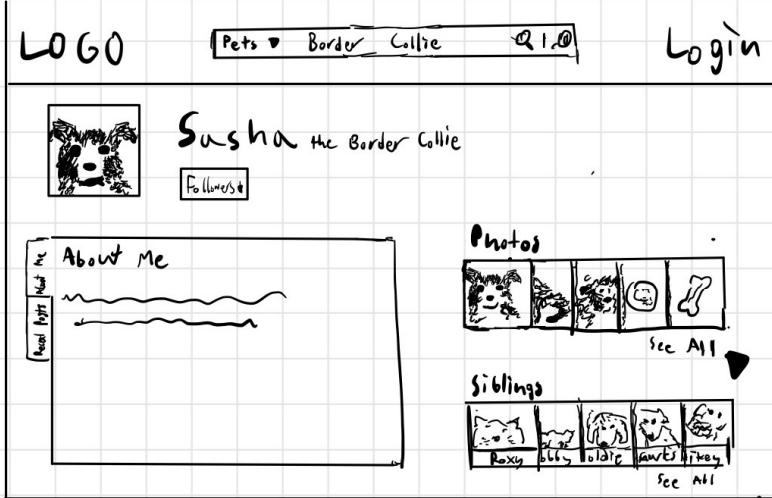
Sarah has heard about a new app called Zooble and wants to explore it



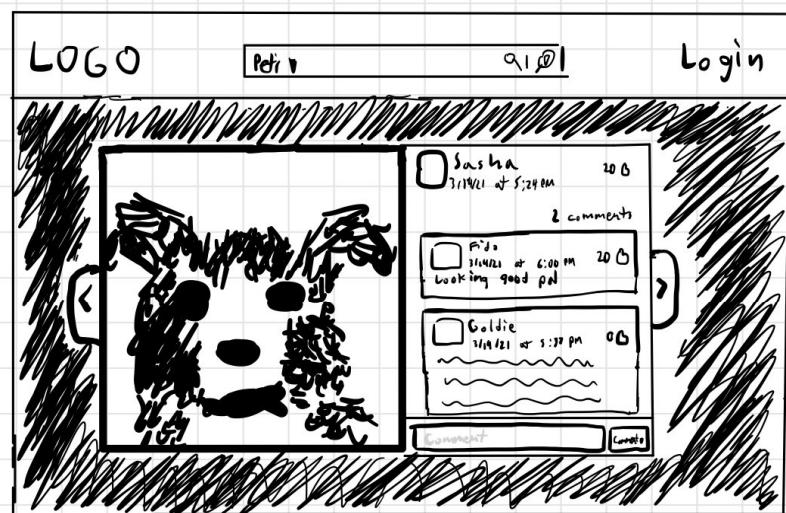
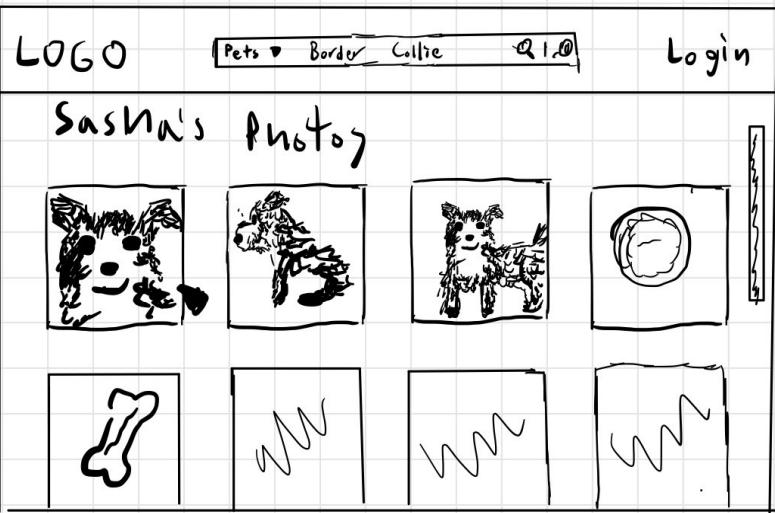
She navigates to the website and uses the search function to search for "Border Collie"



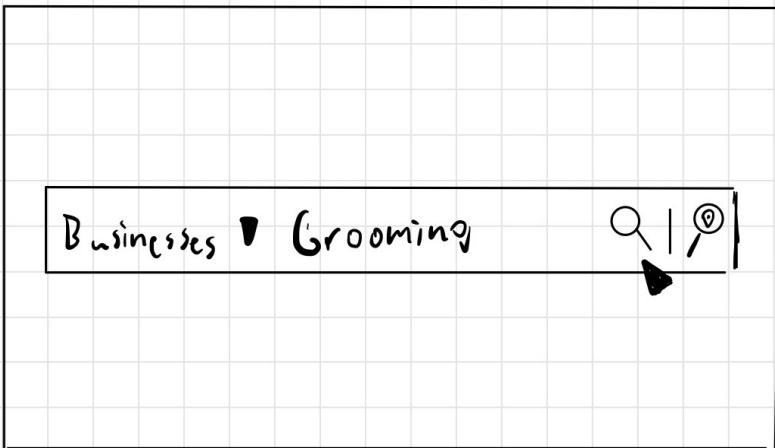
She sees the profile of a Border Collie named Sasha



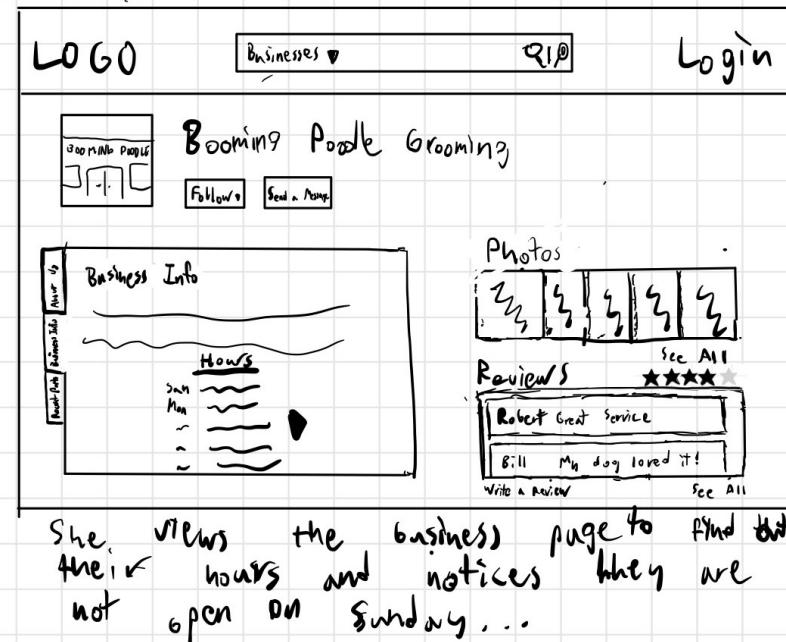
She views her profile that has tons of beautiful images...



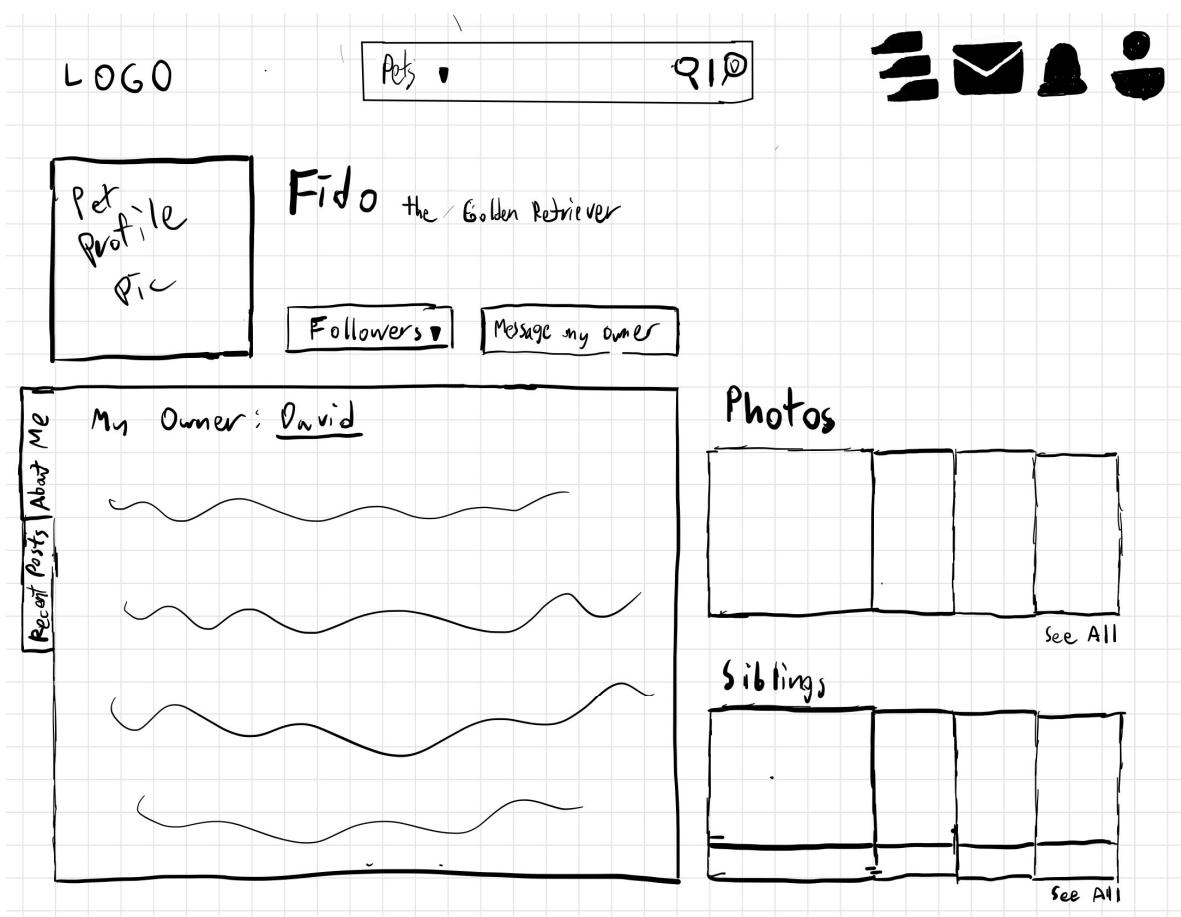
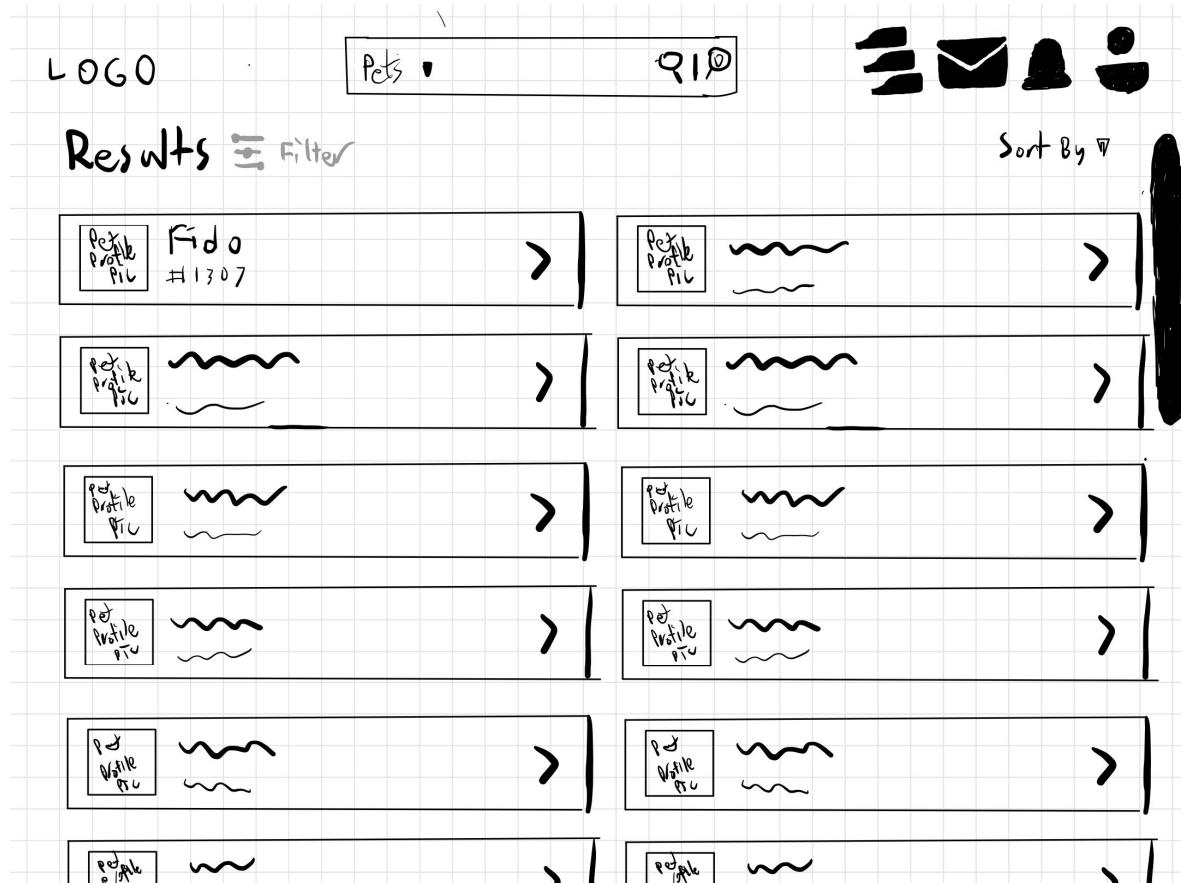
...



Sarah then decides it is time to look for a groomer for her dog. She searches for "Grooming", while instantiating she is looking for businesses.



She views the business page to find out their hours and notices they are not open on Sunday...

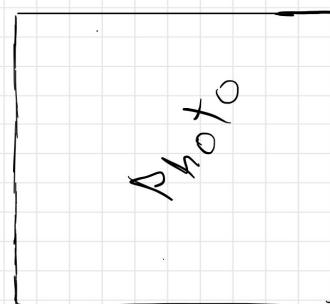
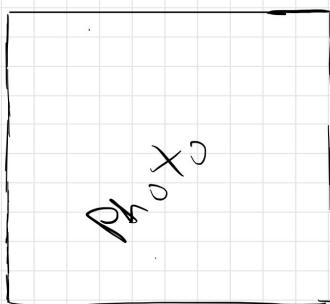
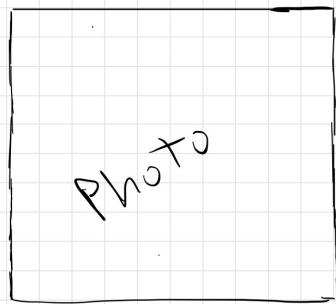
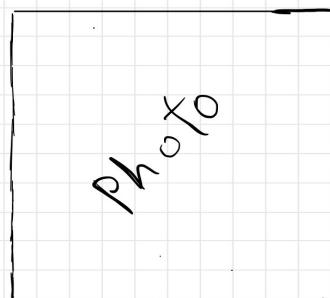
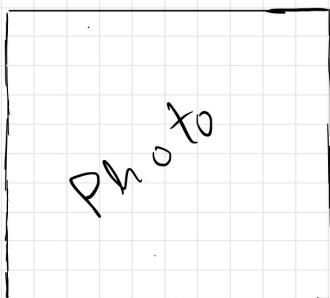
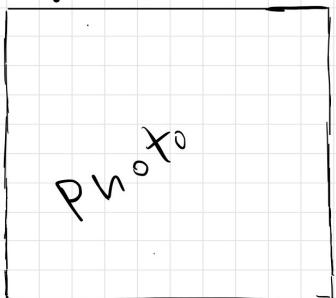


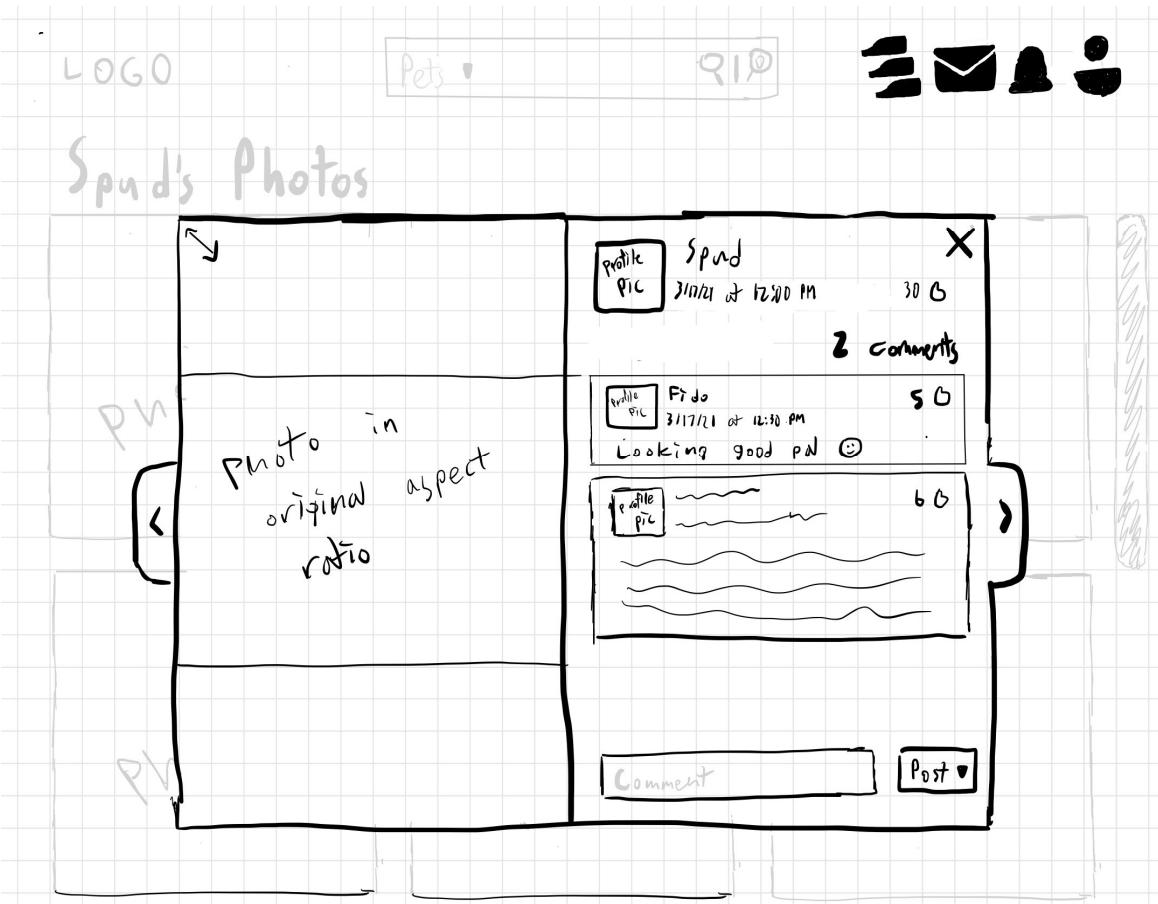
LOGO

Pets • 910



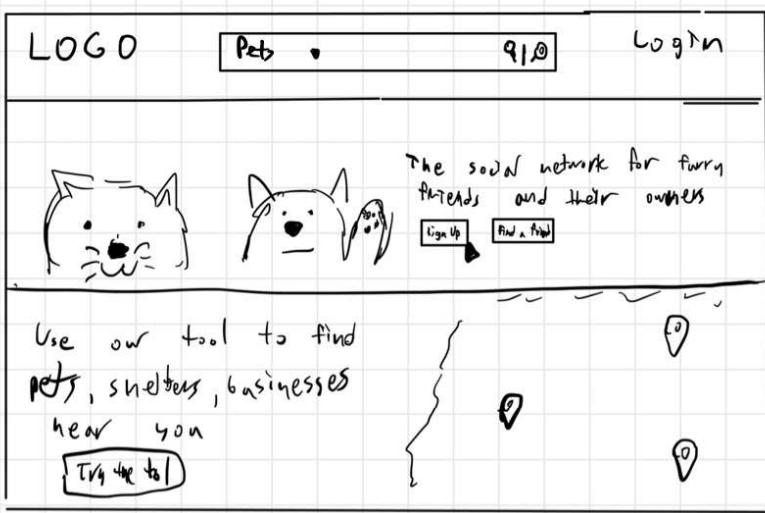
Sund's Photos



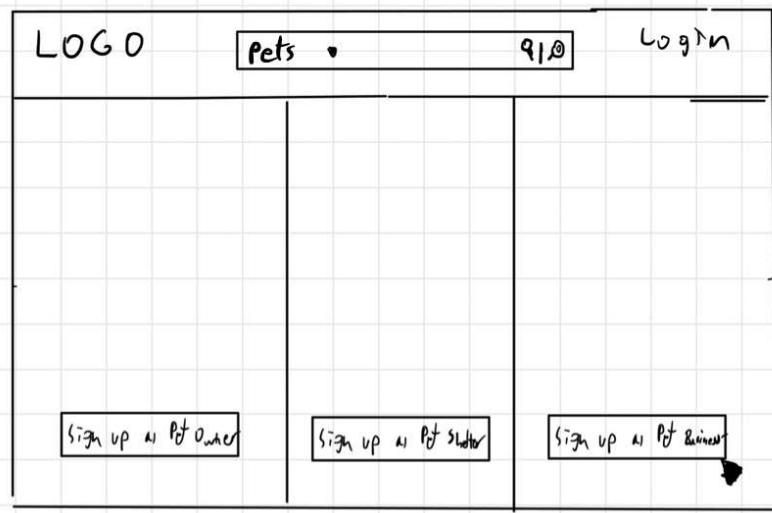




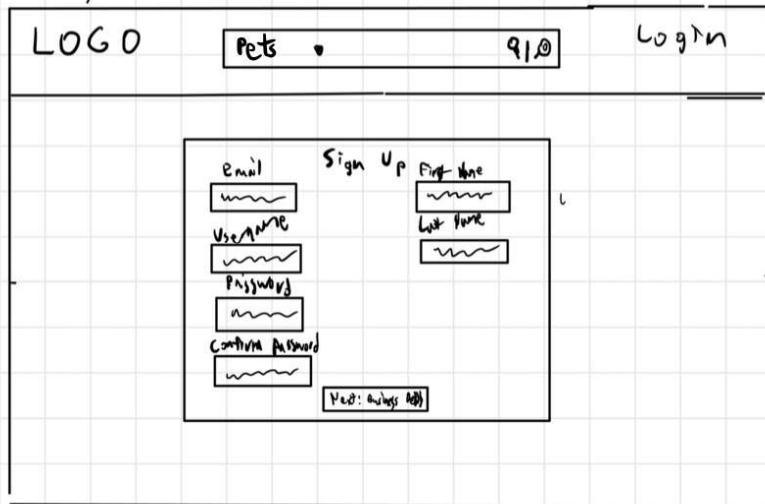
Use Case #5 Storyboard: General User Sets Up Business Account



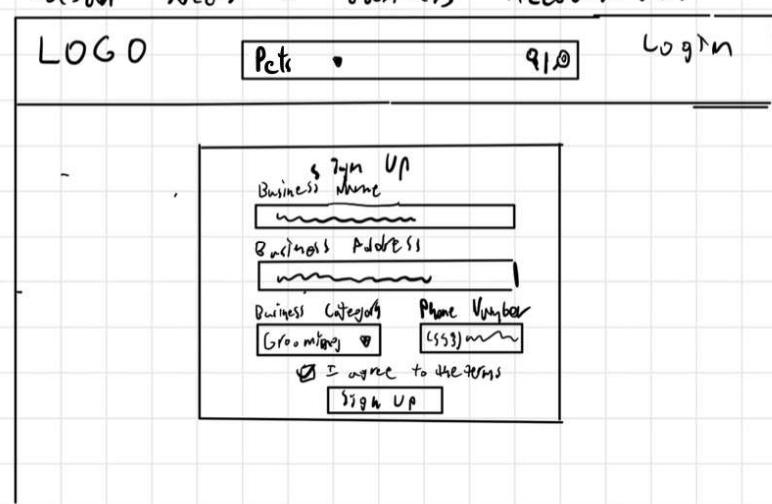
Susan goes to the registration page



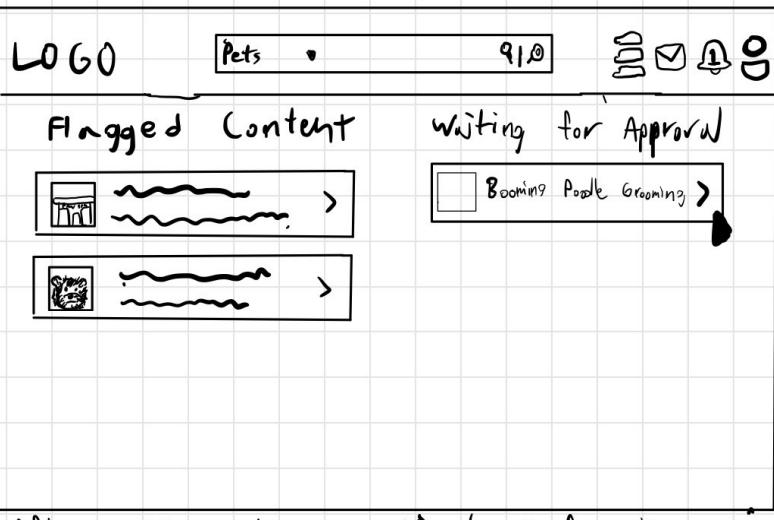
...and chooses what account type he would like to make.
Susan selects a business account...



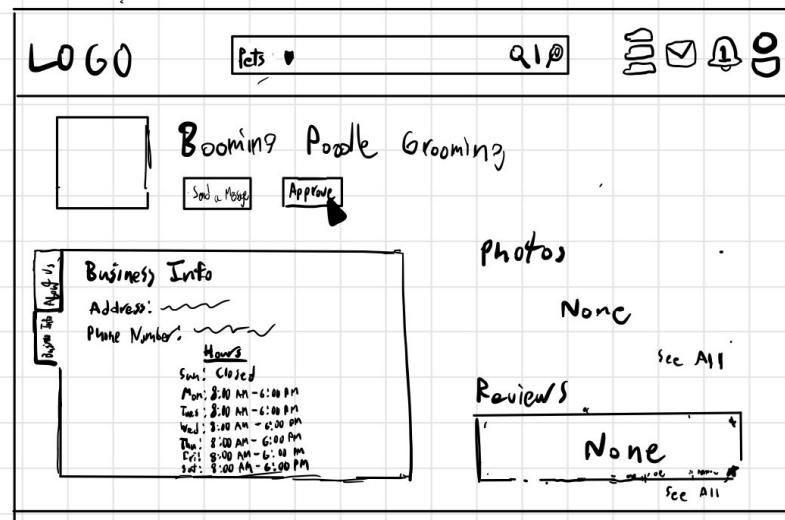
...and creates user login credentials.



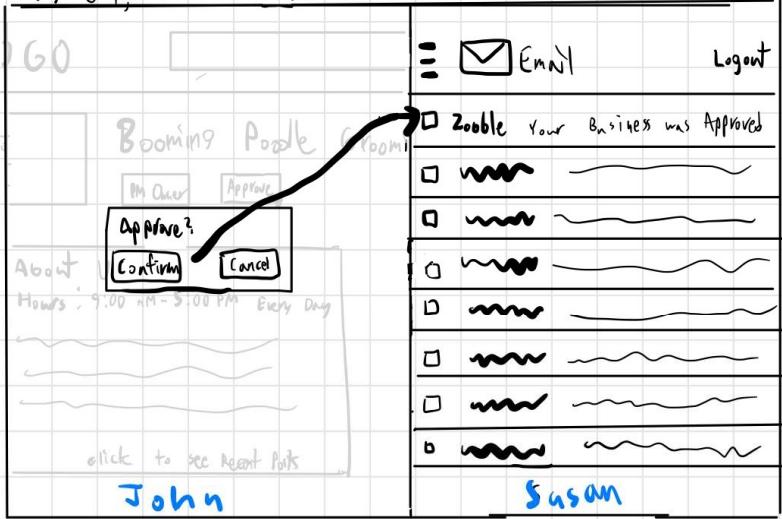
She is asked to add her business information



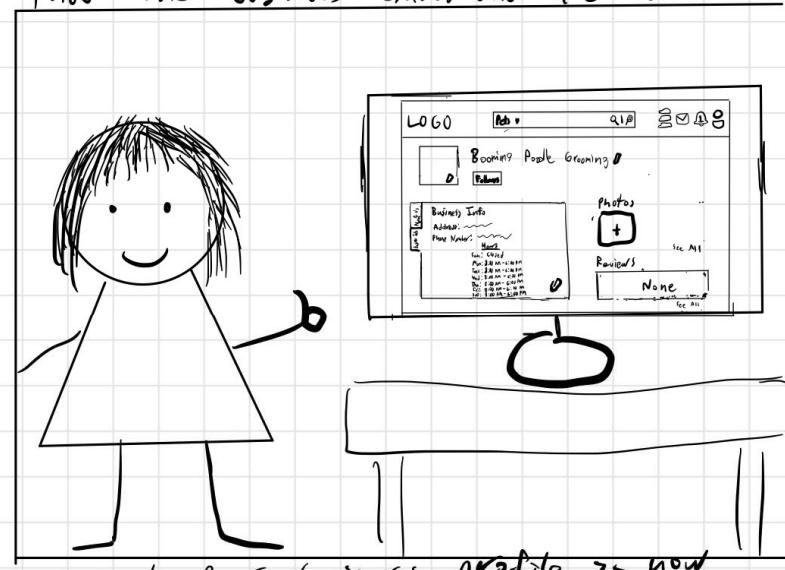
After adding this required information and content in notification history, sent by the system, to John, we now



He reviews the information, verifying that the business exists and the info is accurate



After approving the business, an automated email is sent to Susan by the system



and her business profile is now viewable on the website for all users.

LOGO Pets  910 LOGIN

SIGN UP

EMAIL

USERNAME

PASSWORD

CONF RM PASSWORD

NEXT : BUSINESS DETAILS

LOGO Pets  910 LOGIN

SIGN UP

BUSINESS NAME

BUSINESS ADDRESS

CATEGORIES ✓

PHONE NUMBER

I HAVE READ TERMS & CONDITIONS

LOGO Pets • RIP

Flagged Content

Bad Boys Dog Pound
31/8/21 at 4:18 PM 0 G 5 comments
Chiuhuahuas are Vugly!

Profile Pic Wavy line 0 G 20 comments

Profile Pic Wavy line 0 G 2 comments
Posted min ago

Accounts Pending Approval

Paw Spa >
Prof. Pic

Burghsdale Pet Shelter >
Prof. Pic

LOGO All • RIP

Paw Spa

profile pic X Approve Send a Message

Business Info

Address:	wavy line
Phone Number:	wavy line
<u>Hours</u>	
Sun:	Closed
Mon:	8:00 AM - 6:00 PM
Tues:	wavy line
Wed:	wavy line
Thurs:	wavy line
Fri:	wavy line
Sat:	wavy line

Photos

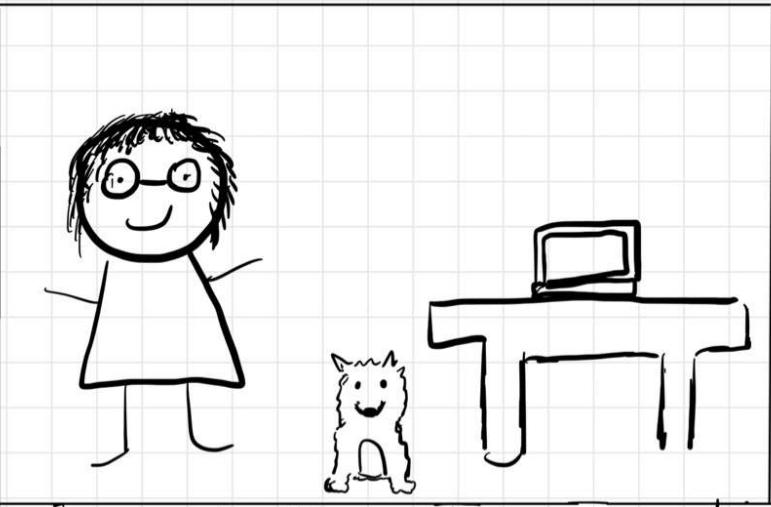
See All

Reviews

No Reviews

See All

Use Case #6 Storyboard: Registered Pet Owner updates Feed and Profile



Mary wants to update her personal profile after creating an account a few weeks ago as a result of getting a new puppy.

About Me
Hi, my name is Mary. Just got a new puppy.

My Images

My Pets

Mary navigates to her own profile page and is able to access and update each field.

Mary navigates to her own profile page and is able to access and update each field.

About Me
Hi, my name is Mary. Proud dog owner.

My Images

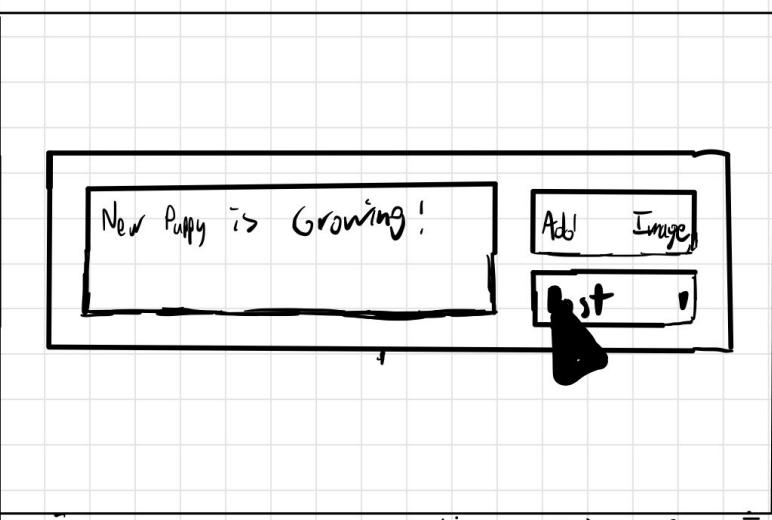
My Pets

Mary then navigates to her feed...

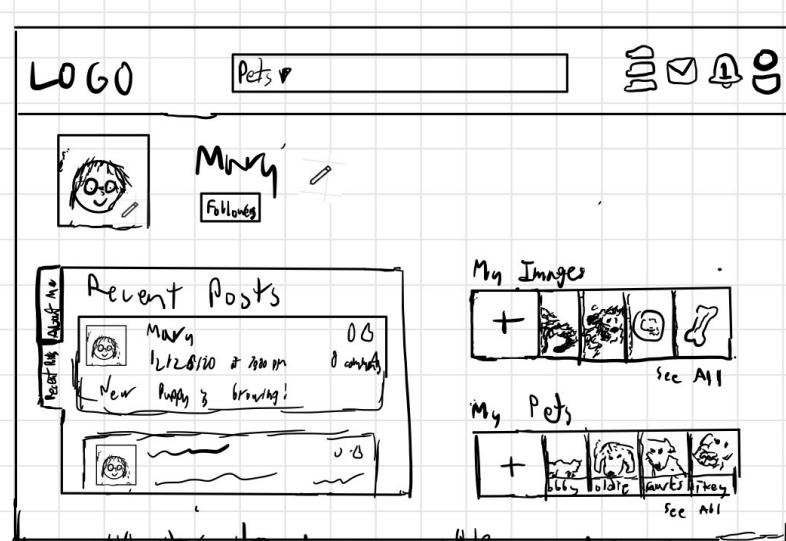
Follower Feed

Posts Near You

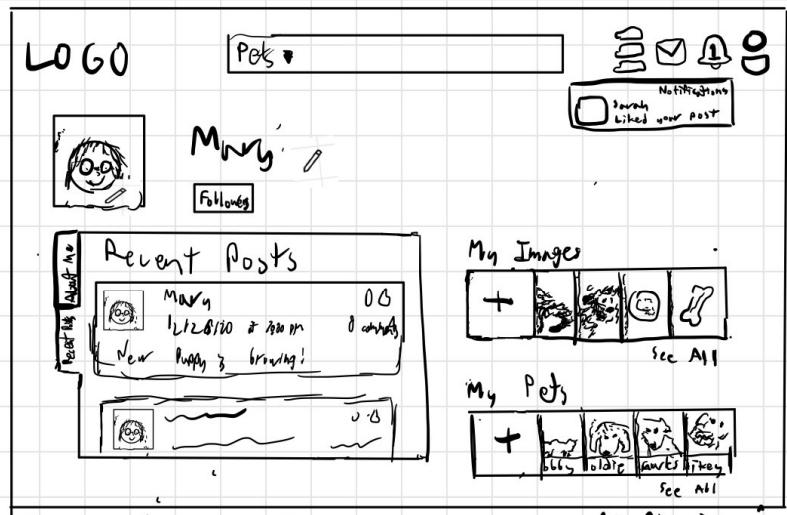
She then navigates to her feed...



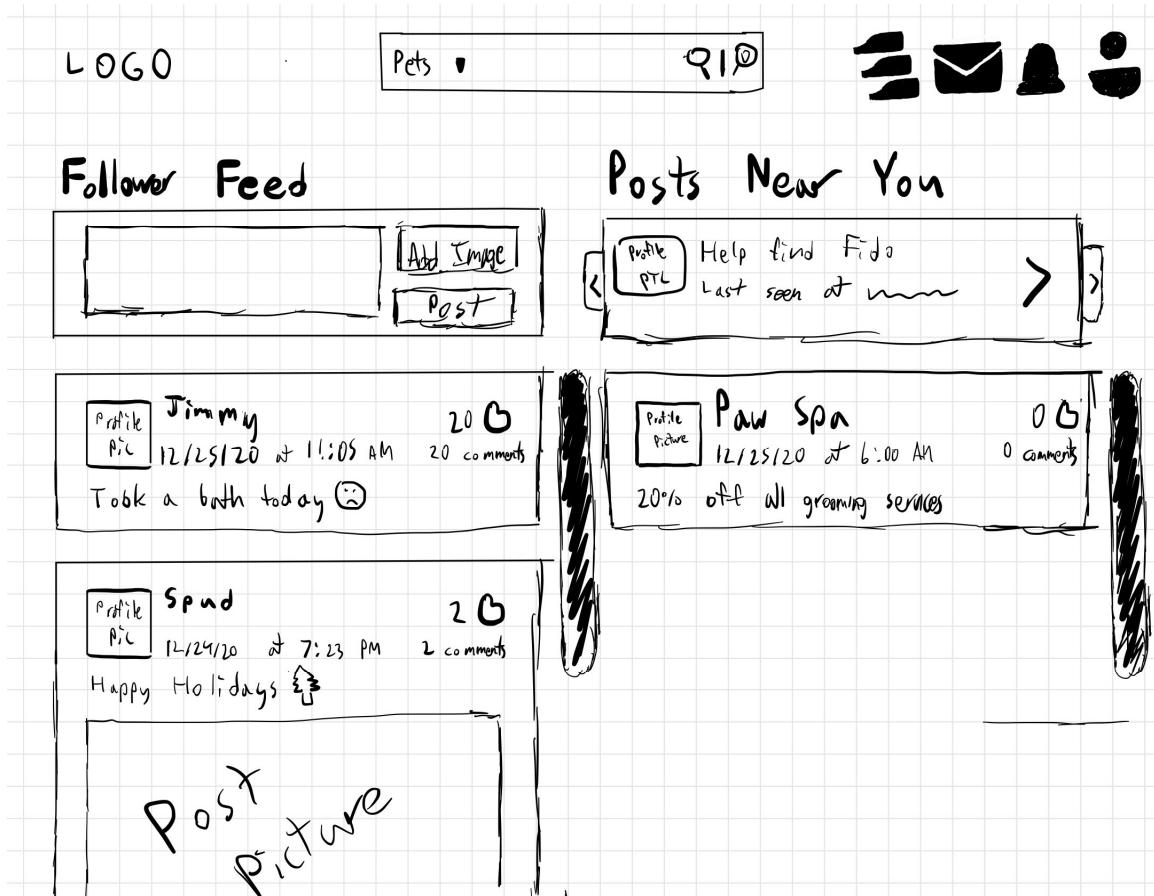
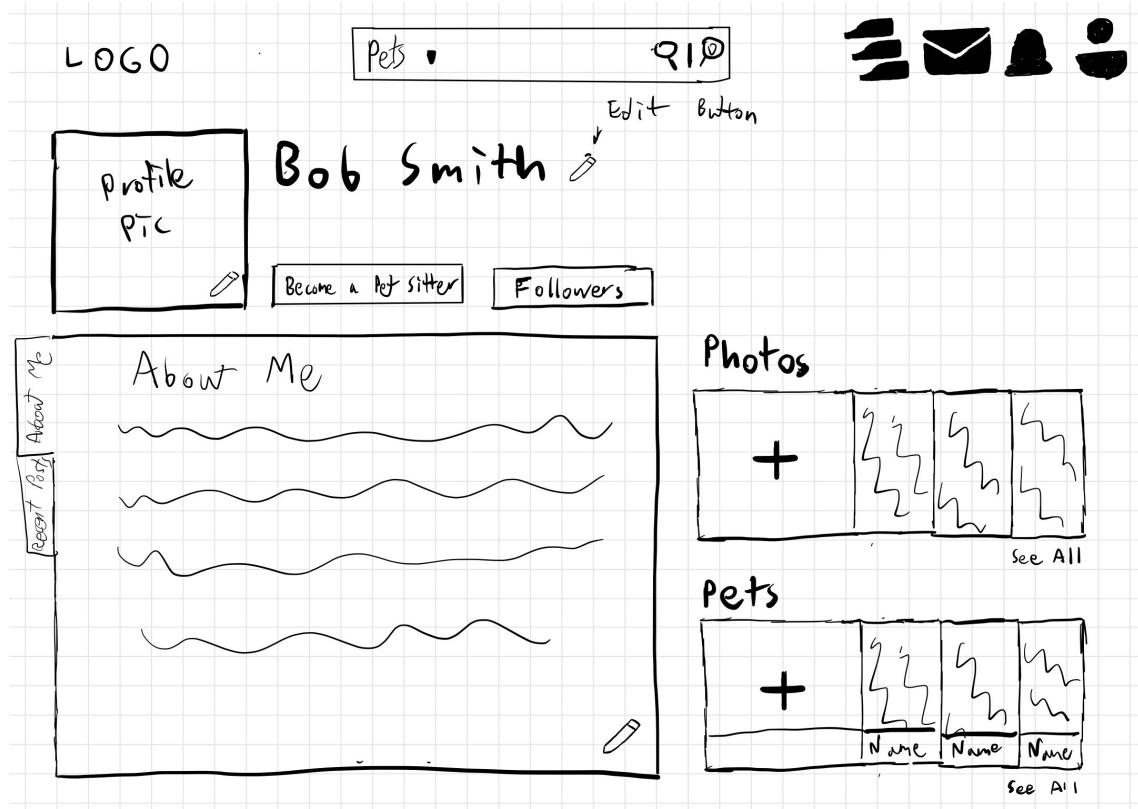
... and posts a quick update for her followers



she navigates to her profile before logging out and sees that the link on the post range now

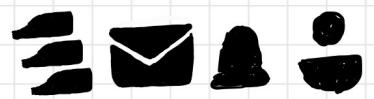


She also receives a notification that Alex has liked her post.



LOGO

Pets • Q1P



Paw Spa

profile pic

Follow • Send a Message

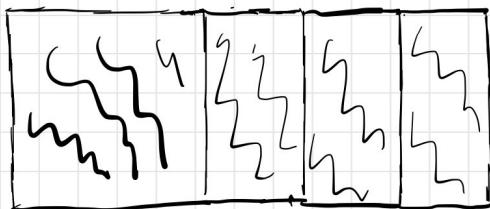
Recent Posts

About Me Business Info Recent Posts

Paw Spa 3/17/20 at 7:00 AM 46 0 comments
20% off all grooming services TODAY ONLY!

Paw Spa 3/17/20 at 10:51 AM 56 0 comments

Click to see About Me

Photos

See All

Reviews

"Great Experience, will be back" - Robert
 "Great Service and People" - Bill
 "~~~~~" - ann

Write a Review

See All

Use Case #7 Storyboard: General User uses Map Search



Sarah is visiting family this weekend. But she needs to find someone to groom and bathe her dirty and unruly Samoyed, Lyla.

The homepage of a website for pet owners. It features a logo, a search bar with the placeholder "All", and a navigation bar with icons for messages, notifications, and user profile. Below the header, a tagline reads "The Social Network for you and your family (or not so furry) friends". Two buttons are present: "Sign up" and "Find a Friend". A main section titled "Build a pet Profile and connect with other pet owners" includes two "Website Preview Image" boxes.

She goes to the website and on the homepage, she sees the search tool

A screenshot of a search interface showing a map with location markers and a results panel on the right. The results panel is titled "Results" and shows a list of businesses, with the first one being "Paw Spa 123 Oak, CA". There are four additional items in the list, each with a small icon next to it.

She searches for the word "spa" and the Paw Spa business profile shows up



Sarah calls the business phone number on the profile to make an appointment and uses the address to make plans to visit their business.

A screenshot of a search interface showing a map with location markers and a results panel on the right. The results panel is titled "Results" and shows a list of locations, with the first one being "Central Park 21 S B st, CA". There are four additional items in the list, each with a small icon next to it.

She also needs to find a dog park to walk her dog in the area that she is visiting. She uses the same search functionality to search for parks.

A screenshot of a search interface showing a map with location markers and a results panel on the right. The results panel is titled "Results" and shows a list of locations under the heading "Parks only". The first item is "Central Park 21 S B st, CA". There are two additional items in the list, each with a small icon next to it.

But this time, she manually enters the address of her parent's house and then filters for parks only. She sees a park that a user in that area added and makes plans to visit it that weekend.



Use Case #8 Storyboard: General User Adopts Pet



Bob is looking for a new dog, and he was recommended to Burgdale pet shelter by his friend.

The Burgdale Pet Shelter homepage. It features a logo of a house with a heart, a search bar, and a login button. Below the logo is a section for 'Followers' with a 'See All' button. To the right, there are sections for 'Pet shelter Images' (with a dog icon) and 'Pets' (with a cat icon), both with 'See All' buttons. A 'Reviews' section shows a five-star rating with a 'See All' button below it. The address 'Address: 123 Oak St, Burgsdale, CA' and phone number '(920)543-4234' are listed, along with operating hours.

Bob follows the link and is able to see their about page, pictures from the shelter.

The 'Pets' page of the Burgdale Pet Shelter website. It has a header with a logo, a search bar, and a login button. Below the header is a section titled 'Pets' with a list of three animals: Rex, Spud, and Goldie. Each animal has a profile picture and a 'View Details' button.

Bob can browse and inquire about specific animals at the shelter.

A modal window titled 'Send a Private message'. It has fields for 'To: Burgdale shelter' and 'Subject'. The message body is empty, indicated by wavy lines. A 'Send' button is at the bottom right.

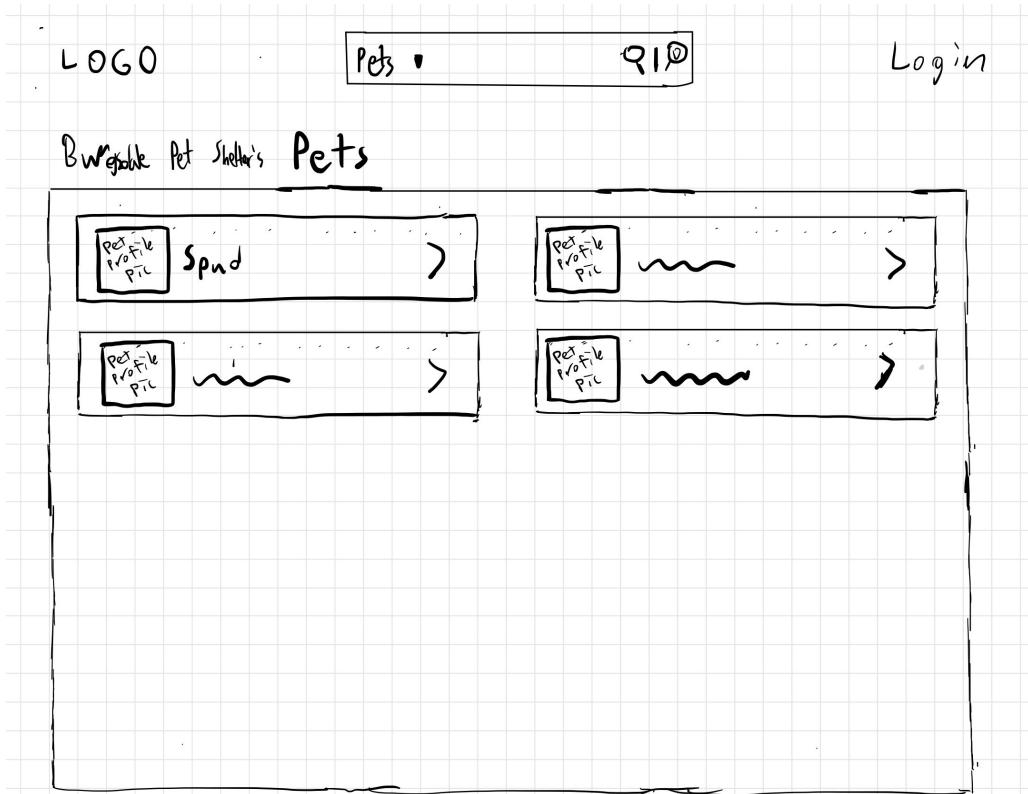
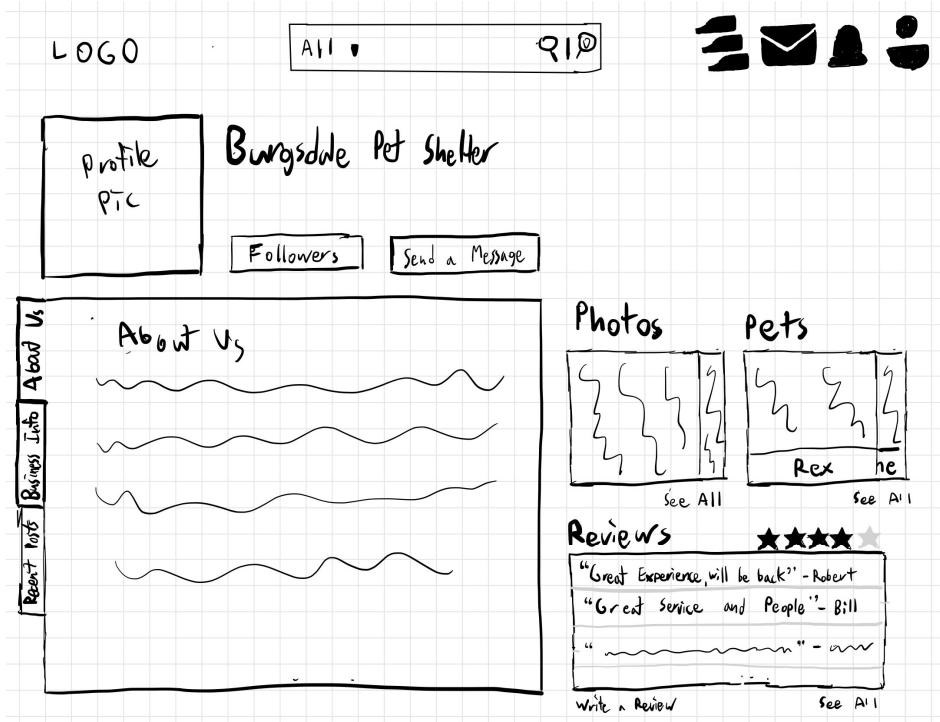
Bob creates an account before writing the review and he sends a Private message to the shelter about a dog named Rex. After a while, the shelter provides more info about the animals to Bob via email.

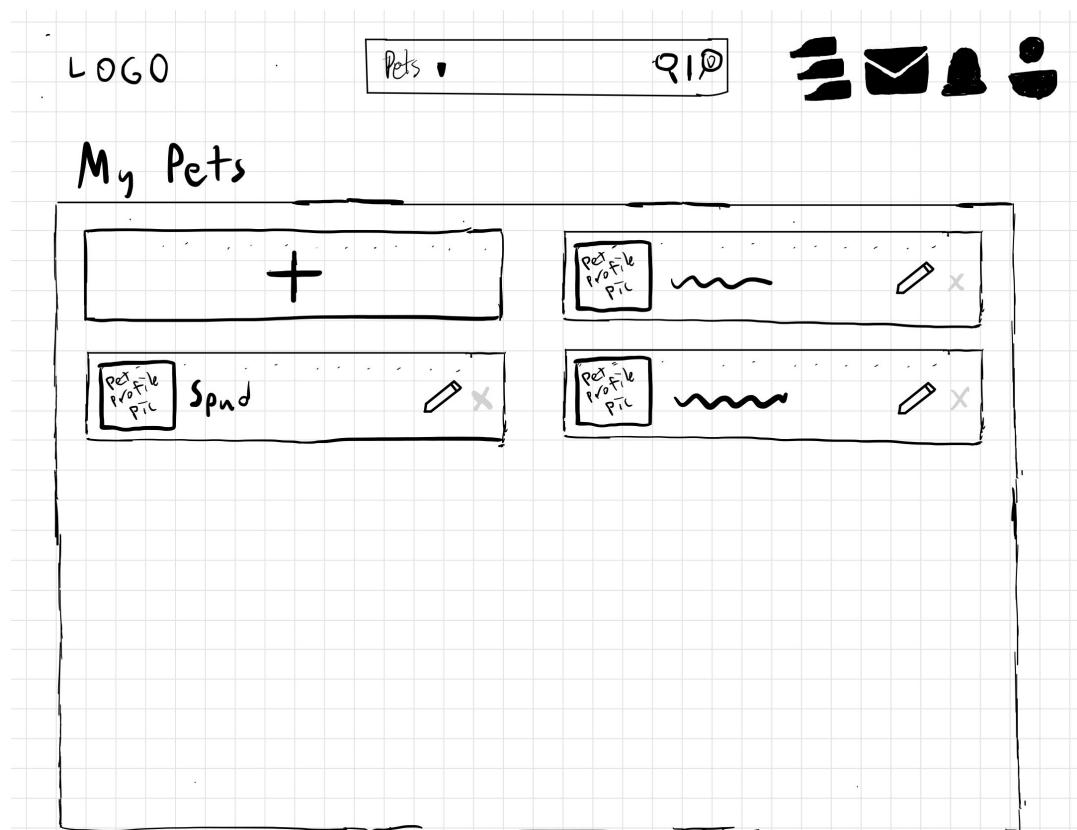
The 'My Pets' page. It has a header with a logo, a search bar, and a login button. Below is a section titled 'My Pets' showing profiles for Rex, Spud, and Goldie. Each profile includes a photo, the pet's name, and a pencil icon indicating edit or delete options.

When Bob eventually chooses a new companion and arranges to adopt Rex, the Shelter deletes Rex's profile from their account.

A modal window titled 'Write a Review'. It has a rating section with five stars and a large text area for the review. A 'Submit' button is at the bottom right.

Bob is so happy with the experience and he writes a five start review to Burgdale pet shelter.





Use Case #9 Storyboard: New Registered Pet Owner searches for training advice



Dave is an excited pet owner who recently got his first dog, Fido, a rambunctious German Shepherd.

Dave sets up a new profile for his new dog.



During the next few weeks, Dave is having trouble training the dog and getting him to behave.

Dave logs back on to the website and searches for other German Shepherds.

Dave sees a pet owner named Joey shown up in the search results, and he is able to go to Joey's profile through the link in the results.

He sees Joey is in online state and he messages him. Unfortunately, Joey doesn't respond.

He sees a pet Owner, Connor, shown in the results and Dave clicks on it.

He sees the link to German Shepard forums available through the profile of Connor's dog, Bobby.

German Shepard Forum

New German Shepard Owners Tips
Tom
Last Post at 3/14/21 at 6:25 PM
Views 13 reply 1

10 things you might not know about German Shepards
DoggieKurger28
Last Post at 3/13/21 at 9:49 PM
Views 209 reply 9

He is able to be taken directly to the German Shepherd forum. Luckily, an experienced German Shepherd owner named Tom had just made a thread with helpful tips for new German Shepherd owners.

New German Shepard Owner Tips

Reply to Paul
Paul
Last Post at 3/14/21 at 6:25 PM
Posted at 3/14/21 at 6:25 PM
Liked 3 reply 1

Thank you so much paul!

Add Image Reply

After reading through the posts in the thread and try Paul's advice, he wants to make a post to thank Paul.

New German Shepard Owner Tips

Make a Post

Paul
Last Post at 3/14/21 at 6:25 PM
Posted at 3/14/21 at 6:25 PM
Liked 3 reply 1

Dave
Thank you so much Paul!
Posted at 3/14/21 at 8:19 PM
Liked 0 reply 0

He posts the reply to the forum.

LOGO

All ▾

Q | Ø



German Shepard Forum

[Make a Thread](#)

New German Shepard Owner Tips

Last Post at 3/14/21 at 6:25 PM

Tom

views 13 reply 2

Fun facts about German Shepard

Last Post at 3/13/21 at 4:45 PM

DoggieKurger28

views 28 reply 4

10 Things you might not know about German Shepard

Last Post at 3/12/21 at 9:17 PM

Luna

views 58 reply 9

< 1 >

LOGO

All ▾

Q | Ø


[Make a Thread](#)

X

Title

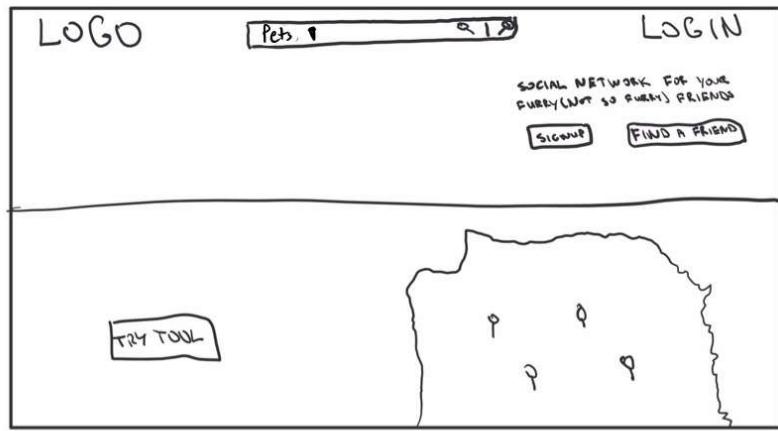
Category

Post

Add Image

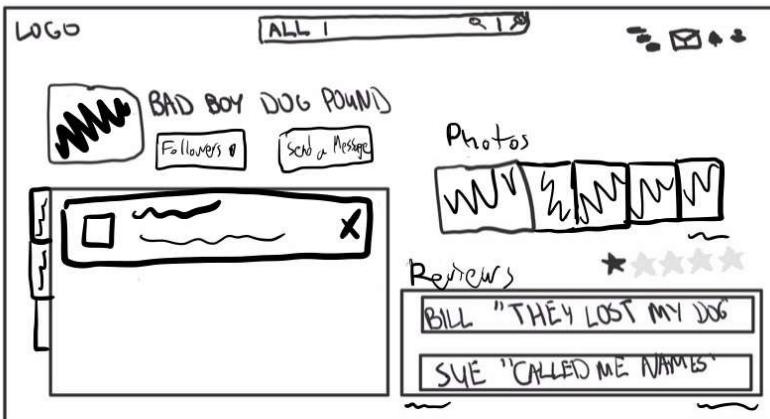
Cancel

Use Case #10 Storyboard: Admin takes action against problematic Registered User

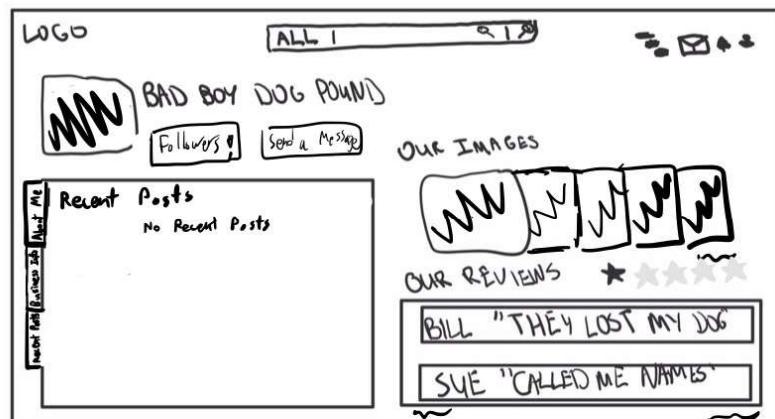


John logs in as an admin to make sure the website is running well

After logging in, John sees that Bad Boy Dog Pound has been flagged by other users



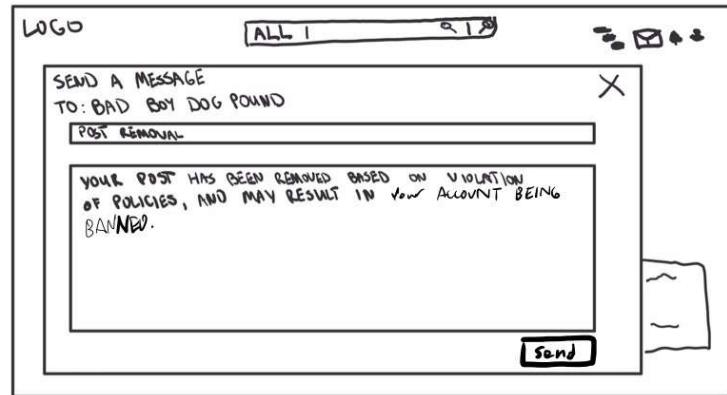
John navigates to the flagged content on Bad Boy Dog Pound



Upon reviewing the flagged content, John deems it to be harmful. The post and associated comments are removed



Checking the ratings of Bad Boy Dog Pound, John notices their rating and reviews are extremely low



JOHN SENDS BAD BOY DOG POUND A PRIVATE MESSAGE ABOUT THE POST REMOVAL AND WARNING OF BEING BANNED



John finishes his admin tasks and logs out

Use Case 10 UI Mockups:

LOGO All Q1P

Paw Spa

profile PIC X Ban User Send a Message

Business Info

Address: ~~~~~
Phone Number: ~~~~~

Hours

Sun: Closed
Mon: 8:00 AM - 6:00 PM
Tue: ~~~~~
Wed: ~~~~~
Thu: ~~~~~
Fri: ~~~~~
Sat: ~~~~~

Photos

See All

Reviews ★★★★☆

"Great Experience, will be back" - Robert
"Great Service and People" - Bill
"~~~~~" - Ann

Write a Review See All

LOGO Pets Q1P

Sort By ▾

Reviews for Paw Spa Filter

Robert "Great Experience, Will be back" ★★★★☆

Bob "My Dog hated it" ★★★★★

~~~~~ ★★★★☆

~~~~~ ★★★★★

Section IV: High Level Database Architecture and Organization

V1

DB organization:

1. Business Rules:

1. General User
 - a. A General User shall be able to be a Registered User
 - b. A General User shall have one unique user id
 - c. A General User shall have one first name
 - d. A General User shall have one last name
 - e. A General User shall have one email
2. Registered User
 - a. A Registered User shall have one unique registered user id
 - b. A Registered User shall have one address.
 - c. A Registered User shall have many pets
3. Registered Pet Owner
 - a. A Registered Pet Owner shall be a Registered User
 - b. A Registered Pet Owner shall have one unique registered pet owner id
4. Registered Business
 - a. A Registered Business shall be a Registered User
 - b. A Registered Business shall have one name
 - c. A Registered Business shall have many Products
5. Registered Shelter
 - a. A Registered Shelter shall be a Registered User
 - b. A Registered Shelter shall have one unique Registered Shelter id
 - c. A Registered Shelter shall have one name
6. Pet
 - a. A Pet shall have one unique pet id
 - b. A Pet shall have one name
 - c. A Pet shall have one age
 - d. A Pet shall have at least one color
 - e. A Pet shall have one size
 - f. A Pet shall have only one owner.
7. Product

- a. A Product shall have one unique product id
 - b. A Product shall have one product name
 - c. A Product shall have one product description
 - d. A Product shall have at least one Category
8. Category
- a. A Category shall belong to many Products
 - b. A Category shall have one unique category id.
 - c. A Category shall have one category name
 - d. A Category shall have one category description
9. Address
- a. An Address shall have one unique address id.
 - b. An Address shall have only one zip code.
 - c. An Address shall have only one address line 1
 - d. An Address shall have only one address line 2
 - e. An Address shall have only one state.
 - f. An Address shall have only one city.
 - g. An Address shall have only one country.
 - h. An Address shall belong to only one Registered User
10. Dog
- a. A Dog is a Pet
 - b. A Dog shall have one unique dog id.
 - c. A Dog shall have at least one Dog Breed.
11. Cat
- a. A Cat is a Pet
 - b. A Cat shall have one unique cat id
 - c. A Cat shall have at least one Cat Breed
12. Other Pet
- a. An Other Pet is a Pet
 - b. An Other Pet shall have one other pet id.
 - c. An Other Pet shall have one type.
13. Age
- a. An Age shall have one unique age id
 - b. An Age shall have one age name
 - c. An Age shall have one age description
 - d. An Age shall belong to many Pets
14. Size
- a. A Size shall have one unique size id
 - b. A Size shall have one size name
 - c. A Size shall have one size description
 - d. A Size shall belong to many Pets

15. Color

- a. A Color shall have one unique color id.
- b. A Color shall have one color name
- c. A Color shall have one hex value.

16. Dog Breed

- a. Dog breed shall have one unique dog breed id.
- b. Dog breed shall have one dog breed forum link.
- c. Dog breed shall have one dog breed name
- d. A Dog breed shall belong to many Dogs

17. Cat breed

- a. A Cat Breed shall have one unique cat breed id.
- b. A Cat Breed shall have one cat breed forum link
- c. A Cat Breed shall have one unique cat breed name
- d. A Cat Breed shall belong to many Cats

18. Type

- a. A Type shall have one unique type id.
- b. A Type shall have one type name.
- c. A Type shall have one type forum link
- d. A Type shall belong to many Other Pets

2. Describe your entities, their attributes, relationship, and domains at the high level.

1. General User(Strong)

- a. User_id: key, numeric
- b. Email: alphanumeric
- c. Full_name: composite, alphanumeric

2. Registered User (Strong)

- a. reg_user_id: key, numeric
- b. address_id: key, numeric
- c. user_id: key, numeric

3. Registered Pet Owner (Strong)

- a. Reg_pet_owner_id: key, numeric
- b. Reg_user_id: key, numeric

4. Registered Business (Strong)

- a. reg_business_id: key, numeric
- b. reg_user_id: key, numeric
- c. name: alphanumeric

5. Registered Shelter (Strong)

- a. reg_shelter_id: key, numeric
- b. reg_user_id: key, numeric
- c. name: alphanumeric

6. Product (Weak)

- a. product_id: key, numeric
- b. product_name: alphanumeric
- c. product_desc: alphanumeric

7. Category(Strong)

- a. category_id: key, numeric
- b. category_name: alphanumeric
- c. category_desc: alphanumeric

8. Address (Weak)

- a. address_id: key, numeric
- b. address_1: alphanumeric
- c. address_2: alphanumeric
- d. zipcode: alphanumeric
- e. city: alphanumeric
- f. state: alphanumeric
- g. country: alphanumeric

9. Pet (Weak)

- a. pet_id: key, numeric
- b. name: alphanumeric
- c. age_id: key, numeric
- d. size_id: key, numeric
- e. reg_user_id: key, numeric

10. Size (Strong)

- a. Size_id: key, numeric
- b. Size_name: alphanumeric
- c. Size_desc: alphanumeric

11. Age (Strong)

- a. age_id: key, numeric
- b. age_name: alphanumeric
- c. age_desc: alphanumeric

12. Dog (Weak)

- a. dog_id: key, numeric
- b. pet_id: key, numeric

13. Dog Breed (Strong)

- a. dog_breed_id: key, numeric
- b. dog_breed_name: alphanumeric
- c. dog_breed_forum_link: alphanumeric

14. Cat (Weak)

- a. cat_id: key, numeric
- b. pet_id: key, numeric

15. Cat Breed (Strong)

- a. cat_breed_id: key, numeric
- b. cat_breed_name: alphanumeric
- c. cat_breed_forum_link: alphanumeric

16. Other Pet (Weak)

- a. other_pet_id: key, numeric
- b. type_id: key, numeric
- c. pet_id: key, numeric

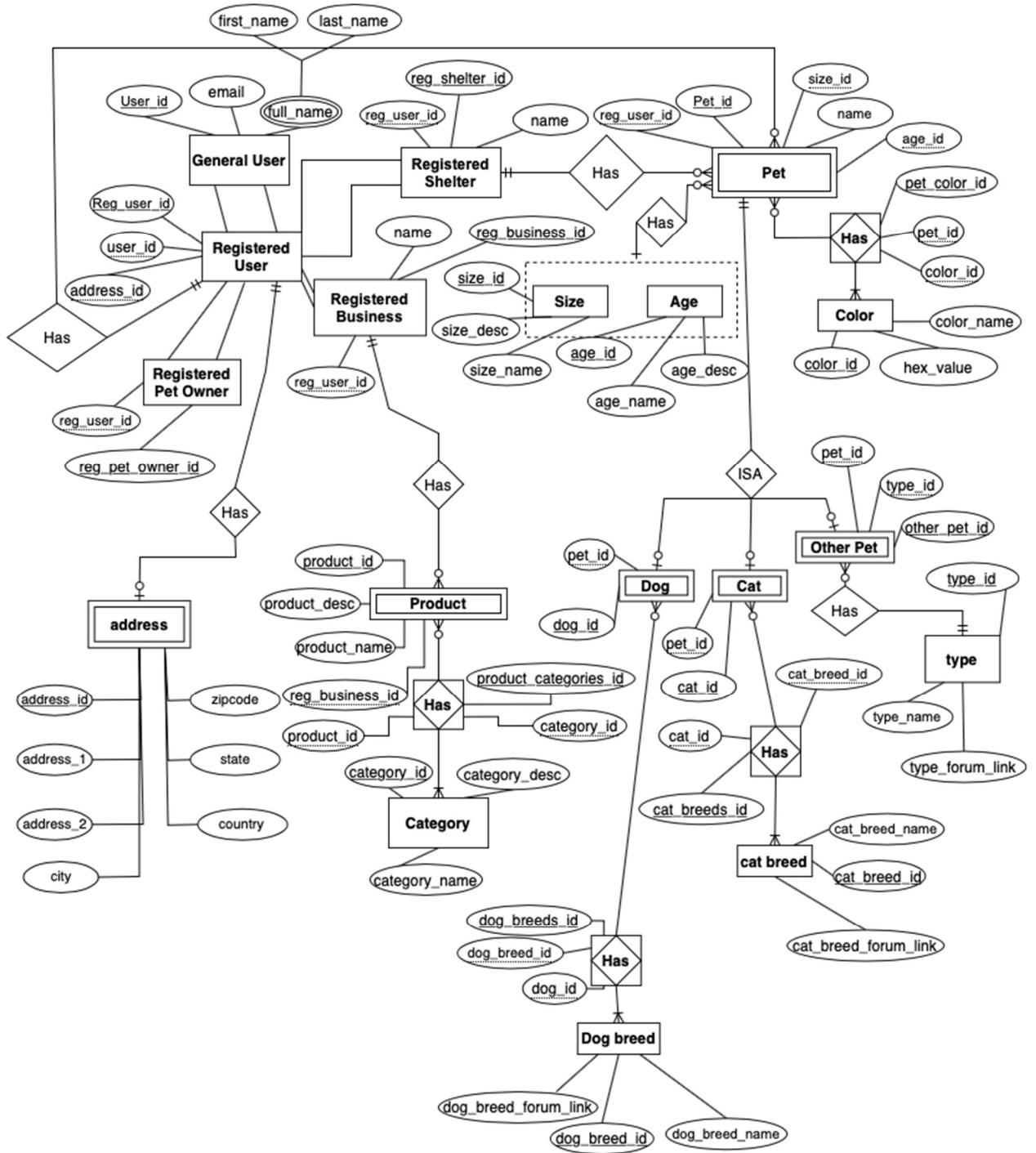
17. Type (Strong)

- a. type_id: key, numeric
- b. type_name: alphanumeric
- c. type_forum_link: alphanumeric

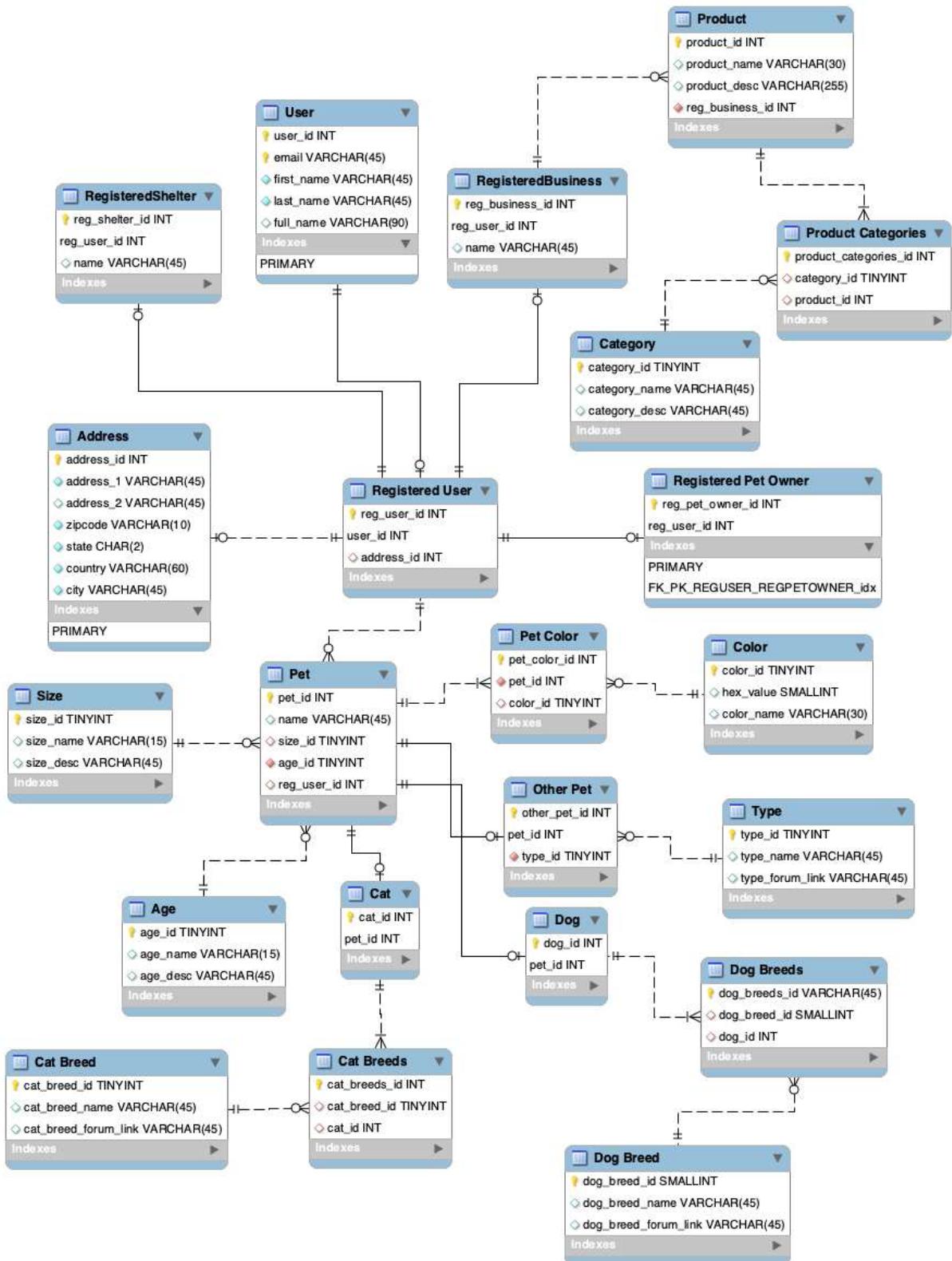
18. Color (Strong)

- a. color_id: key, numeric
- b. color_name: alphanumeric
- c. hex_value: alphanumeric

3. Create an entity relationship diagram (ERD) based on those business rules.



4. Create a database model based on your ERD



DBMS:

We will use MySQLWorkbench as the DBMS, because it has been used by team members in the past, and supports the creation of database models.

Media storage:

All Media Files will be kept in a file system.

Search/filter architecture and implementation:

The user would be able to choose the type of entity they are trying to search, Businesses, Pets and Shelters then they would enter a search term which then show results that could be filtered and sorted based on the user choice.

In order to filter search terms and support autocomplete, we will use SQL's %like command.

The default behavior, when no search term is entered by the user, is all the entities in the chosen search category sorted by proximity.

Search Terms:

Pet Owners:

Businesses:

Name

Address

Category

Pets:

Name

Type

Breed

Color

Size

Age

Shelters:

Name

Address

Available types of pets

Filters:

Businesses:

Category

Pets:

Breed

Type

Age

Color

Size

Shelters:

Available types of pets

Sorting:

Businesses:

Proximity

Average Rating

Shelters:

Proximity

Average Rating

Pets: Age

Pet Account Age

Proximity

Media Storage:

We will be using a file system-based storage system.

Section V: APIs and Main Algorithms

APIS

Location API: The user can type in any location, or use the browser's location tracker to find search results that are sorted by their proximity to them. A static map of the location provided by the user, and its surroundings will be provided by the Google Maps Static Maps API through an API Request, but our database of businesses, shelters, and pets will be overlaid on top of the map. Requests of Static Map Images will cost us \$2 per 1000 requests, but \$200 worth of free credit is available for us to use per month on these API requests.

Authentication API: All aspects of user authentication will be managed - the user will be able to log in, sign up and log out through our own API. When the user tries to login, the credentials they give will be checked against credentials stored in the database. Whether the user is logged in or not and their role/associated account will be stored in our frontend application to allow or deny access to certain pages/actions, and provide them with their account-specific views/info.

Encryption/Decryption API: Passwords will be encrypted using the bcrypt hashing function, when the password is created, and the hash will be stored in the database. When a User tries to login, the given password will be encrypted and compared against the stored hash in the database. We will be using the bcrypt hashing algorithm to encrypt and decrypt passwords, instead of implementing our own, because it is a proven algorithm developed by security professionals.

Payment API: The payment API used in our app will be Stripe. It will be used to process card payments for Premium Business Account Subscriptions. The pricing for use of Stripe's API is 2.9% plus a 30¢ flat fee for every successful card charge.

Geocoding API: We will be using the Google Geocoding API to get the coordinates of addresses that the user inputs for the Map Search feature and also for the business/shelter addresses stored in the database. This will allow us to sort businesses and shelters by distance. We considered using the Google Distance Matrix API to calculate the distance between addresses (inputted and existing in the database), but the cost of doing this compared to using the geocoding API to fetch coordinates once and being able to calculate distance on our side at no cost. Requests of Distance Matrices will cost us \$5 per 1000 elements, but \$200 worth of free credit is available for us to use per month on these API requests.

Algorithms

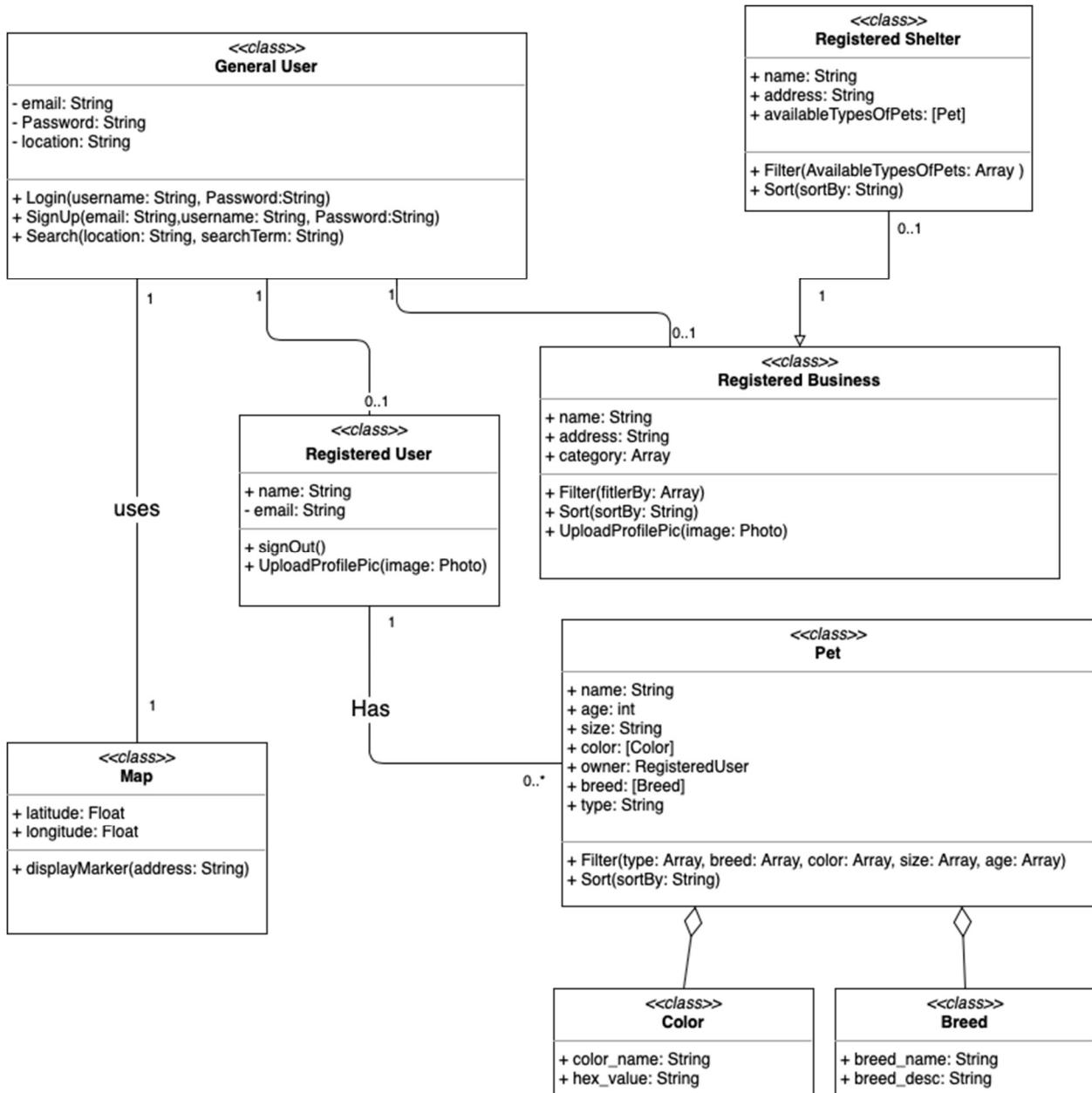
Searching: Users are able to use the website to search for specific entities on the website, including pets, businesses, parks, and shelters. Users will have to choose one of five categories: Users, Businesses, Shelters, Forums, and Pets. Users will be able to search by names/titles, and the names/titles will be displayed in order of how much they match the queried name/title. Exact matches will always appear first, and then matches will be displayed in order of descending character matches up until the point, that we will determine later through testing, that results are no longer relevant. Users will also be able to manually search for terms that will essentially function as a shortcut for applying a filter. While the user is typing, the filters applicable to that category are being searched, and if the query contains a filterable attribute then an autocomplete suggestion is made to the user which will direct them to the search results page with the filter already applied.

Search Sorting: Users would be able to sort their searches in the main three categories: Businesses, Shelters and Pets at Shelters. Businesses, Shelters and Pets at Shelters can be sorted by their proximity to the user. The distance will be determined using the Haversine formula which takes in the coordinates of two locations. The array of search results will be sorted (ascending) in this manner and then is available to display to the user. Businesses and Shelters can also be sorted by their average rating. The average rating of the Businesses matching the query will be calculated when the search request is made by taking the total of all a business's/shelter's star ratings and dividing by the number of ratings given. Then the array of businesses/shelters can be sorted by this average and displayed to the user.

Search Filtering: Users will be able to use filters relevant to each entity they are searching for on the website, which includes being able to filter by business categories, the types of pets a shelter has, and by type/breed of pet. The accounts or profiles that do not have these attributes stored in the database will be filtered out in search results. This will remove irrelevant results which give a better experience.

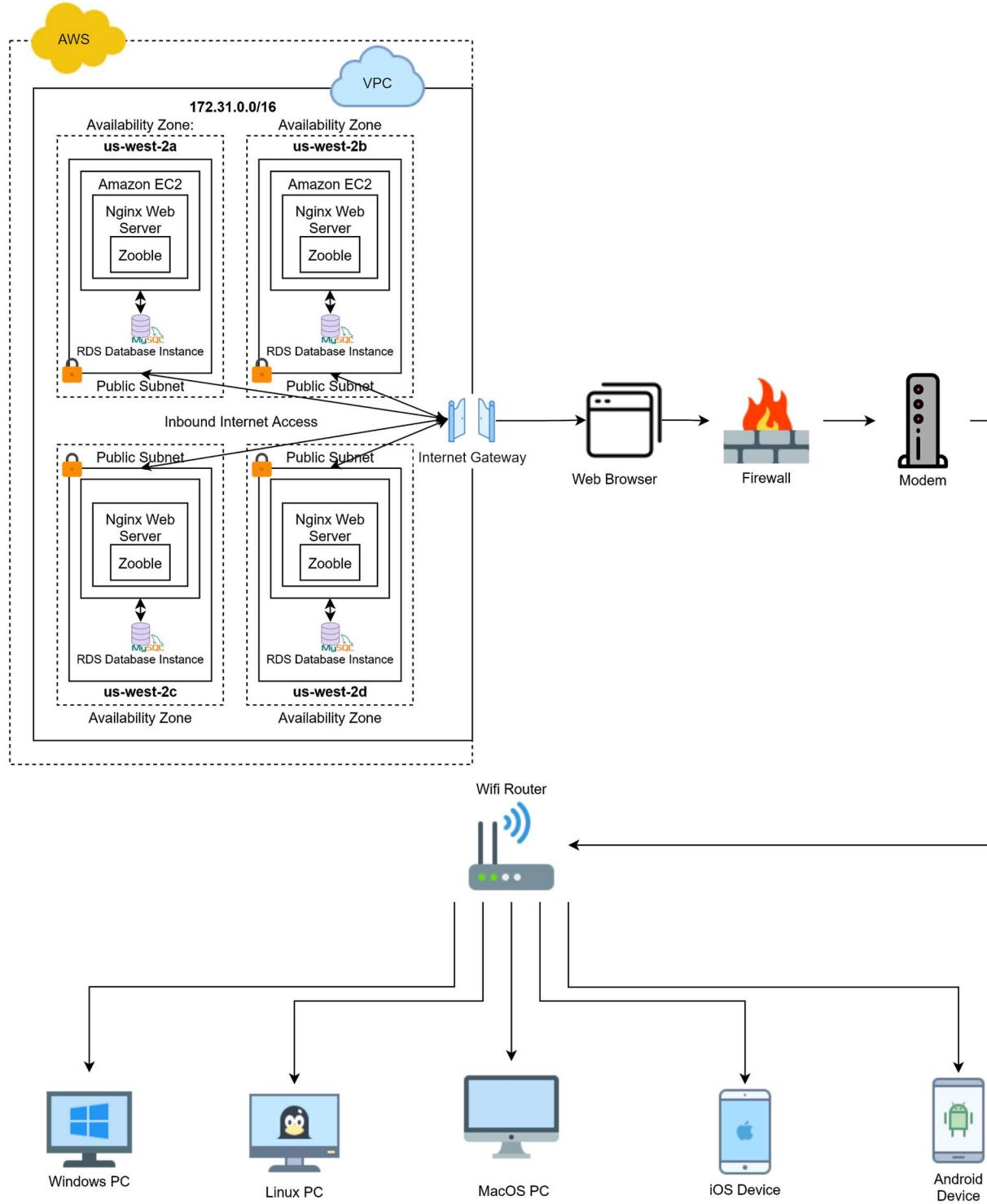
Post Ranking: Order of appearance of Posts in the user's Feed will be determined by a combination of the amount of likes a Post has received and the recency of the post. If a Post is made by a Registered Business or Shelter, Local Businesses and Shelters will be prioritized in Post Ranking. Posts made by a Registered Business signed up for a Premium Business Account will have a static position in a Premium Business Post only section(slideshow) at the top of the Posts Near You Section. Their Posts will also be interspersed in intervals throughout all Registered User's Feeds.

Section VI: UML Diagrams

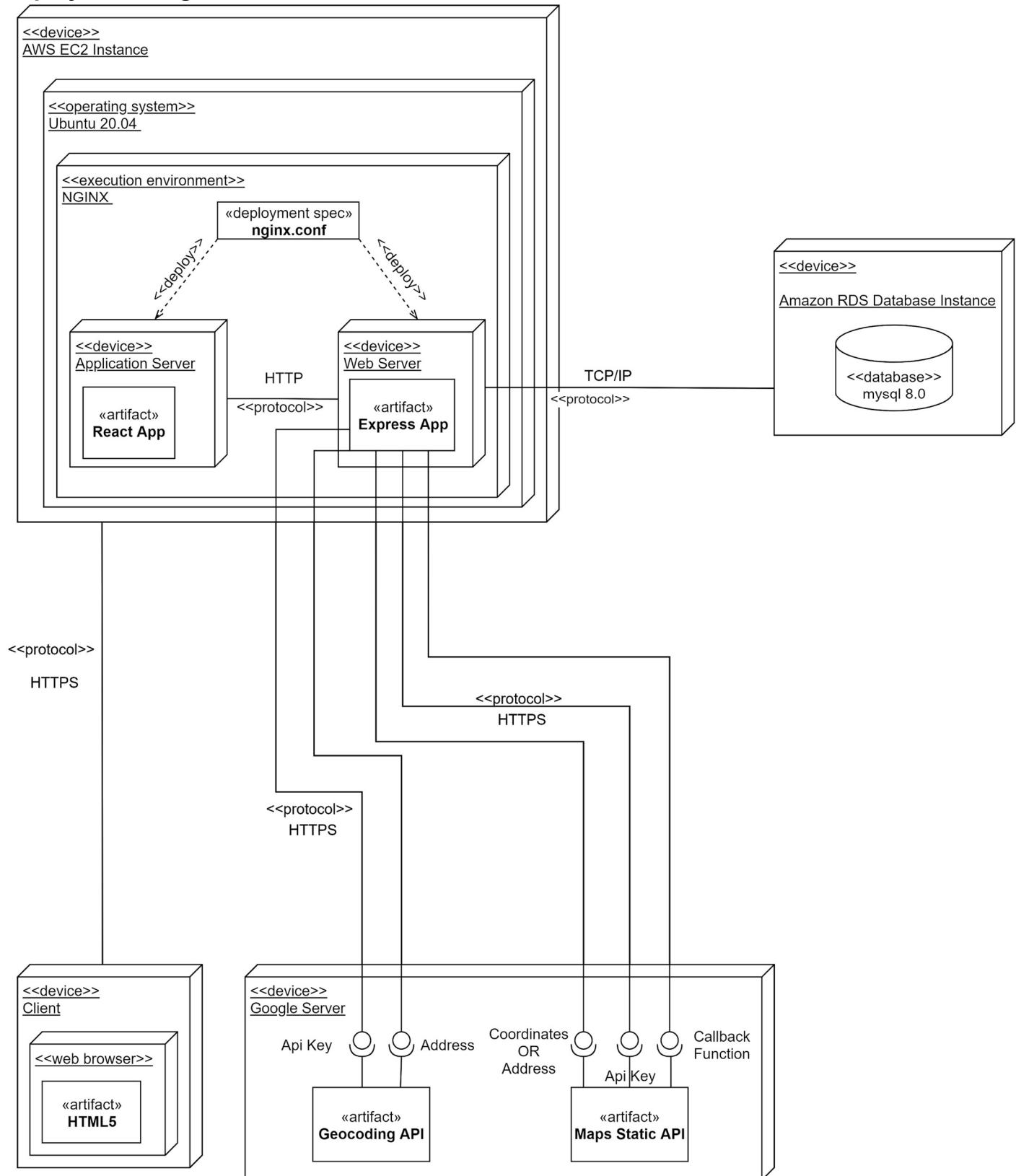


Section VII: Application Network and Deployment Diagrams

Network Diagram:



Deployment Diagram:



Section VIII: Key Risks

Skills Risks:

1. Front end team members are still learning Figma, which is required for work on Milestone 3. We will require that they learn the tool before the next milestone is assigned.
2. Front end team members are still learning React, which is required to work on the vertical prototype and beyond. We will require that they learn the basics before work on the vertical prototype begins.
3. None of us have experience in working with the Google Maps APIs which is going to be used for our unique feature. We will learn how these APIs work and test its functionality in test projects before implementing our unique feature.

Schedule Risks:

1. One member is not available for the whole group meeting as scheduled as it is now. We will try to find meeting times that work for all parties, and if that is not possible then arrange meetings such that team members may not directly interact at all meetings but everyone remains on the same page.
2. All team members only collaborate together on the milestone documents/ when we have meetings all together. This will likely cause us to turn in underdeveloped milestones and this is apparent in version 1 of our Milestone 1 submission. We will try to organize work in a way such that team members can work in smaller groups while keeping the whole group aware of changes or feedback.

Technical Risks:

1. We are not definitively sure if the unique feature's proximity/location based searching and overlaying our own data is feasible with the Google Maps API. We will do more research and testing with the Google Maps API.
2. We are unsure on how to implement a background check feature directly on our website for signing up to be a pet sitter.

Teamwork Risks:

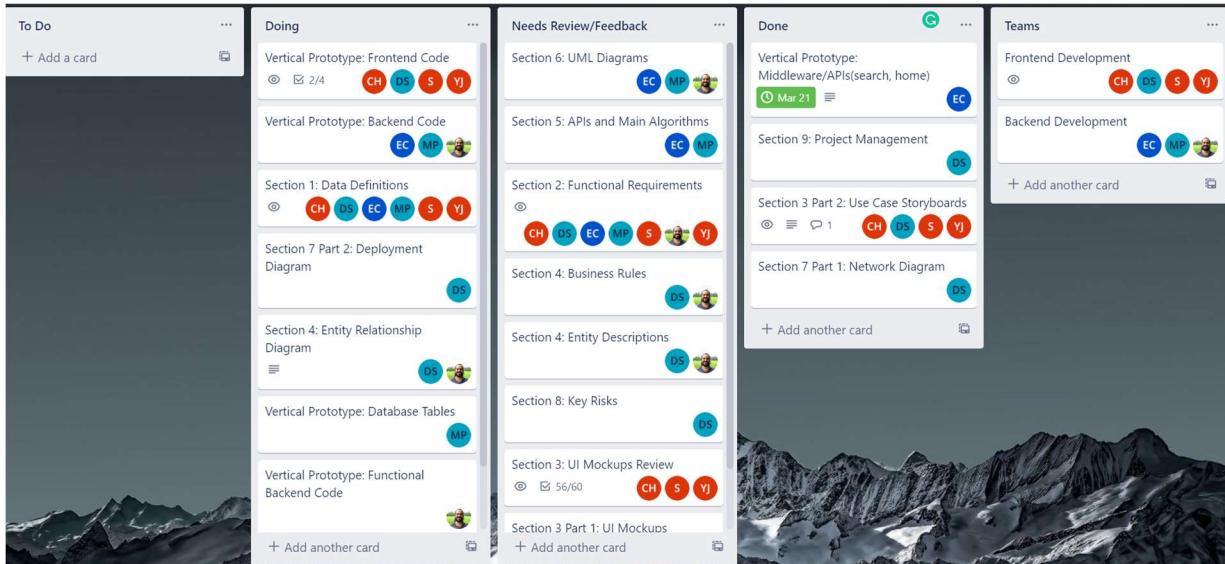
1. Team members staying quiet and not offering feedback at meetings. This leads to mistakes in milestone documents and confusion among team members as to the direction and functionality of the website. We will try to foster an environment of understanding and openness that will make it comfortable for all team members to speak up at meetings with concerns and possible confusion.
2. Team members not reading/reviewing/offering feedback for parts of the document they are not directly writing. This leads to inconsistent formatting, contradictory/redundant content or content that does not consider other content/ideas from other parts of the milestone documents.

Legal/Content Risks

1. If we don't require background checks for pet sitting, there could be safety concerns. We will try to implement background checks if we do end up implementing a pet sitting feature, or we will research other ways to provide peace of mind for pet sitting seekers

Section IX: Project Management

We have been using Trello.com to organize project tasks for Milestone 2. We have a Teams section that clearly defines the team members for each team, and we also have four different categories for our tasks, “To Do”, “Doing”, “Needs Review/Feedback”, and “Done”. “To Do” means tasks that are yet to be started, “Doing” means tasks that are currently being completed, “Needs Review/Feedback” means tasks that are completed but need review/feedback from other team members, and “Done” means tasks that have passed the review/feedback process. Each of these tasks within these categories is assigned to at least one team member so each team member is clear on what tasks they are completing during the course of the milestone. If a task has multiple small subtasks, then checklists are created within these tasks so we have a clear idea on task progress, and to ease confusion we also indicate which team member is working on which subtasks. If hard due dates need to be assigned, we also have been assigning those to tasks. We plan to use Trello for future Milestones and keep the format detailed above, although we intend to be more organized in assigning tasks from the beginning of our work on future Milestones as we finalized this format when we were already well underway on Milestone 2 work.



Section X: Contribution Details

For the team contributions during the completion of Milestone 2, each team member was able to contribute in two ways. One way is in the team meetings, where we all got together and worked on ideas and details for a specific section. The second way of contributing was working in our individual teams, which were the backend and frontend team. I began designing the API routes for the home and search section of our application. I designed two middleware functions. This included routeProtectors to check what user is currently logged in our web application and the getRecentPosts. A middleware function that is processed every time a user logs in and visits the home page. In our backend team meetings I aided in the business rules for the database and the entity descriptions for the database. This included the Posts entity, Likes entity, and Parks entity.

Wameedh was part of our backend team and he conceptualized the algorithms for search filtering and post ranking along with Daniel. In general, he worked with Daniel to author most of section 4. He aided in designing the database tables for the unique feature and contributed the ideas for entries to the database table. He also helped write the business rules and contributed greatly to our search architecture design. He also created the UML Diagram and the diagrams required for Section 4 along with Daniel. Wameedh also contributed to the final formatting of the frontend for the vertical prototype.

Daniel contributed on both backend and frontend concerns, and got us started on the code for the vertical prototype, creating a template that connected from React to Express to our MySQL Instance. The template allowed the other front end team members to contribute UI components, that he assembled together later. For the backend portion Daniel authored most of Section 4 along with Wameedh. He wrote the code to retrieve search results from our database for the vertical prototype along with Wameedh. On the front end team he worked on the navbar, footer, and search bar for our vertical prototype, connecting the search bar to the backend in order to pass in queries and receive search results. He drew storyboards numbers 4,5, and 6, and edited others for consistency, along with drawing a majority of the UI Mockups as well. In our team meetings Daniel led the prioritization of functional requirements in section 2 with the input/contributions of the rest of the team. This includes pet profile, registered business profile, registered pet owner, registered shelter profile, messages, and posts. He was the creator of the Application Network and Deployment Diagrams, and wrote the Key Risks and Project Management sections. He was also the main author of the Data Definitions and handled the deployment of the app onto Amazon Web Services.

Em was our backend lead and she created a preliminary database table design and entities. She organized the backend architecture, contributed to the algorithms for searching and automatic prioritization. She aided in writing the business rules and contributed to the search terms.

Cameron was our Frontend lead and he contributed to section 1 of our documentation by making edits to existing data definitions. This included deleted content, profile, and pets. He worked on section 2 by writing the functional requirements that came from milestone 1. He worked on chat, reviews, feed, and ratings. He also went through with us as a team to make revisions, edits, and change priorities. As the frontend lead, Cameron led the team on creating the UI mockups. He used Adobe Creative Cloud to give feedback to his teammates in the frontend team. He also consistently used Trello to keep track of the order of UI mockups being finished and he used Trello to delegate tasks to each frontend member.

Wenjie was part of the frontend team and in the team meetings, Wenjie worked on section 1 by adding definitions to the entities which helped revise our priority for each entity to our functional requirements. On the frontend team, Wenjie worked on storyboards numbers 7,8, and 9. Wenjie also worked on the UI mockups for his storyboards.

Sabrina was part of our frontend team. On the frontend team Sabrina contributed to site demo 1. For the storyboards Sabrina worked on numbers 1,2,3. She also contributed to the UI mockups for her storyboards. In the team meetings she made edits to the functional requirements in section II and section IV when we needed to revise which priority to give to our functional requirements.

M3V2:

SW Engineering CSC648/848 Spring 2021
“Zooble”
Section 04 Team 2

Team Lead: Edgar Catalan
 Team Lead Email: ecatalan@mail.sfsu.edu
 Frontend Lead: Cameron Harte
 Backend Lead: Em Powers
 Additional Members: Daniel Simpson, Wenjie Ye,
 Sabrina Dang, Wameedh Mohammed Ali

Milestone 3
 Due Date: 04/22/2021

GitHub Repository:
<https://github.com/CSC-648-SFSU/csc648-04-sp21-Team02>

History Version

| Milestone/Version | Date |
|-------------------|------------------|
| M3 V2 | 4/28/2021 |
| M3 V1 | 4/22/2021 |
| M2 V2 | 4/5/2021 |
| M2 V1 | 4/1/2021 |

| | |
|-------|------------------|
| M1 V2 | 3/20/2021 |
| M1 V1 | 3/5/2021 |

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Section I: Data Definitions V3

Entities:

1. **General User** - A General User is any user browsing the website, whether registered or unregistered. A General User has the ability to create an Account.
 - a. Registration Info
 - i. A General User shall provide a unique username on sign up
 - ii. A General User shall provide a password on sign up
 - iii. A General User shall provide a valid email address on sign up
 - iv. A General User shall provide a display name on sign up
2. **Account** - An Account is an entity that will be created by the system on user sign-up and will contain user information such as the username, email, and password.
 - a. Active Account: An account that currently has its information and activity stored in the database
 - b. Banned Account: An Account that has been banned by an Admin,
 - c. Deleted Account: An Account that existed in the database at a certain point in time, but the linked user chose to delete it. Their information and activity is no longer stored in the database
3. **Premium Business Account** - A Premium Business Account is a paid Account that Registered Businesses can sign up for that has all the attributes of a regular Account plus additional features below.
 - a. Search Advertising: Registered Businesses with a Premium Business Account will be featured prominently in searches by Registered Pet Owners near them, when General Users search for Registered Businesses that are in the same Business Category
 - b. Feed Advertising: Posts of Registered Businesses with a Premium Business Account will be featured prominently in the Feed of Registered Users near them

- c. Posts Near You Advertising: Posts of Registered Businesses with a Premium Business Account will be featured prominently in the Posts Near You of General Users near them
- 4. Registered User** - A Registered User is a General User that has created an Account and can be a Pet Owner, Pet Business, Pet Shelter, or Admin.
- 5. Admin** - An Admin is a Registered User who moderates the site with elevated privileges, reviewing flagged content, removing content not compliant with site terms and conditions, and messaging or banning problematic users.
- 6. Registered Business** - A Registered Business is a Registered User who indicates that they're representing a business upon sign up.
- a. Business Category: A Registered Business chooses Business Categories when they sign up, allowing them to show up in filtered search results
 - b. Business Address: The physical address of a Registered Business
 - c. Business Phone Number: The phone number of a Registered Business
 - d. Average Rating: The average of all the Ratings given to a Registered Business by Registered Owners
- 7. Registered Shelter** - A Registered Shelter is a Registered User who indicates that they're representing a shelter upon sign up.
- a. A Registered Shelter shall have pets
 - i. Pets owned by Registered Shelters shall be available for adoption for General Users to see.
 - b. Shelter Address: The physical address of a Registered Shelter
 - c. Shelter Phone Number: The phone number of a Registered Shelter
 - d. Average Rating: The average of all the Ratings given to a Registered Shelter by Registered Pet Owners
 - e. Pet's Siblings: Is a list of an adoptable pet's siblings if available
- 8. Registered Pet Owner** - A Registered Pet Owner is a Registered User who indicates that they're representing a Pet owner upon sign up.
- a. A Registered Pet Owner shall have pets
- 9. Pet** - A Pet is created when a Registered Pet Owner or Registered Pet Shelter chooses to add a Pet to their Account. A Pet will have identifying attributes about them assigned by their owner, which are displayed in their Profile and filterable when a General User searches through pets.
- a. Adoptable Pet: A Pet that is owned by a Registered Pet Shelter shall be adoptable and will have an indicator on its Profile picture and show up in the location based search
- 10. Profile** - A Profile is created when a General User creates an Account and will display entity images and information (listed below) and will act as a conduit for

users to interact with one another through private Messages and Post/Image interaction.

- a. Display Name: The display name chosen by the General User when they create their Account and intended to be their real first name or in the case of Registered Businesses and Registered Shelters
- b. Profile Picture: The Picture is the image chosen by the Registered User when creating the Profile for the first time or when editing
- c. About Me: The About Me is a short text written by the Registered User when they create a Profile, and contains anything the Registered User wants to include to introduce or provide background for those who view the Profile
- d. Photos: Photos are images uploaded by the Registered User at any point during their use of the website.
 - i. This includes any Photos included in Posts to the Feed and Photos directly added to the Profile during editing
 - ii. Photos can be commented on and liked from
- e. Recent Posts: Recent Posts are a collection of the most recent posts submitted by the Registered User that the Profile belongs to
- f. Online Status: Allows Registered Users to see which Registered Users are currently online

11. Pet Profile - A Pet Profile is a Profile that displays the information/images associated with a Pet entity by the Registered Pet Owner or Pet Shelter Owner acting as its owner.

- a. Siblings: If a Pet is owned by a Registered Pet Owner, Pet's Siblings represent all the other pets the Registered Pet Owner owns. The Registered Pet Owner can display a selection of the Pet's Siblings on the Profile, with the rest of the pets available through a link to display all Siblings of a Pet in a list format
- b. Housemates: If a Pet is owned by a Registered Pet Shelter, Pet's Housemates represents all the other pets the Registered Pet Shelter owns. The Registered Pet Shelter can display a selection of the Pet's Housemates on the Profile, with the rest of the pets available through a link to display all Housemates of a Pet in a list format

12. Registered Pet Owner Profile - Registered Pet Owner Profiles are entities that display the owner information/images associated with a Registered Pet Owner.

- a. My Pets: Displays Profile Pictures and names of pets owned by a Registered Pet Owner and provides links to their Pet Profiles

13. Registered Business Profile - Registered Business Profiles are entities that display the business information/images associated with a Registered Business.

- a. Contact Details: Is the Business Info for how users can contact a business

- b. Business Info: Displays the Address, Phone Number, and Business Hours of a Registered Business
 - i. Address: The Address for the business location/office/etc. provided by the Registered Business on sign up to the website, that is verified by the Admin and can be edited at any time, and links to the location on the interactive map search
 - ii. Phone Number: The Phone Number for the business location/office/etc. provided by the Registered Business on sign up to the website, that is verified by the Admin and can be edited at any time
 - iii. Hours: The complete business hours provided by the Registered Business whom the Registered Business Profile belongs to and can be edited at any time
- c. Our Reviews: Displays Review Summaries and displays names for most recent reviews written by Registered Pet Owners for the Registered Business that the Profile belongs to. Provides a link to write a Review when viewed by a Registered Pet Owner
 - i. Average Rating: The computed Average Rating calculated from the Ratings provided by Registered Pet Owners
 - ii. Review Preview: The link to the full Review written by user that contains the short Reviewsummary and the name of the user who wrote the Review

14. Registered Shelter Profile - Registered Shelter Profiles are entities that display the business information/images associated with a Registered Shelter, and links to pets sheltered at a Registered Shelter.

- a. Our Pets: Displays the Profile Pictures and names of Pets, with links to their Pet Profiles, selected by the Registered Shelter
- b. Contact Details: Is the information(phone number, address) on how users can contact a shelter

15. Posts - Posts are entities created by Registered Users that are viewable by Registered Users, containing text and/or Photos.

- a. Post Body: The optional longform text written by a Registered User that is viewable by General Users when viewing multiple Posts in a list format and single Posts
- b. Post Photo: The Photo that is added to a Post by a Registered User that is viewable by General Users when viewing multiple Posts in a list format and single Posts
- c. Post Timestamp: The timestamp generated by the system and linked to a post when a Post is made

- d. Post Likes: The Likes associated with a Post, given to a Post by Registered Users
- 16. Comment** - Comments are texts created by Registered Users that are posted as responses/replies to Posts created by Registered Users.
- a. Comment Body: The longform text written by a Registered User that is viewable by General Users when viewing multiple Comments in a list format
- 17. Photo** - Photos are images uploaded by Registered Users and submitted as Posts or used as Profile pictures.
- a. Photos can be in the jpg or png format
 - b. Photos can have a max file size of 20 MB
- 18. Review** - Reviews are entities submitted by Registered Pet Owners to record their experiences at/with Pet Shelters, Businesses, and with Registered Users choosing to be Pet Sitters, whether online or in-person, which will be visible through those entity's profiles. Reviews require a Rating to be submitted.
- a. Review Summary: The summary of a review is the short form text summary of the full review written by a Registered Pet Owner that is displayed to other General Users browsing/viewing multiple reviews in a list format
 - b. Review Body: The body of a review is the long form text written by a Registered Pet Owner that is displayed to other General Users when they view a single review
- 19. Rating**
- a. Ratings are entities submitted by Registered Pet Owners to quickly record their satisfaction with experiences at/with Pet Shelters, Businesses, and Pet Sitters, whether online or in-person
 - b. Ratings make up the Average Rating of a Registered Business that is displayed to General User on a Registered Business's Profile
 - c. Ratings make up the Average Rating of a Registered Shelter that is displayed to General User on a Registered Shelter's Profile
 - d. Ratings make up the Average Rating of a Registered Pet Sitter that is displayed to Registered Users on a Registered Pet Sitter's Profile
- 20. Message** - A Message will have subject and body and will be sent from Registered Users of any type to Registered Users of any type.
- a. Message Subject: The short form text summary of the Message's contents written by the Registered User writing the Message and displayed to other Registered Users viewing multiple Messages in a list format and when they view a single Message

- b. Message Body: Long form text written as the content of the Message by a Registered User and displayed to the Registered User viewing a single Message
 - c. Deleted Message: A Deleted Message is any Message that a Registered User deletes from their Messages. Deleted Messages will not be visible for the Registered User who deleted the Message but will not affect visibility for the other Registered User
- 21. Likes** - Likes are entities used by Registered Users to demonstrate a reaction to a Registered User's Posts or Comments.
- 22. Follow** - A Registered User can Follow another Registered User to see their Posts on their own Feed.
- 23. Follows** - Follows indicate the Registered Users who a Registered User is following.
- 24. Followers** - Followers indicate the Registered Users who are following a Registered User.
- 25. Feed** - This entity allows a user to view/interact with all the recent Posts of the Accounts they are following.
- 26. Park** - Parks are entities that are created by Registered Pet Owners to represent a real-world park at a given location.
- 27. Park Profile** - Park Profiles are entities that display the park information/images that are edited/uploaded by Registered Pet Owners.
 - a. Park Address: The physical address of the Park
 - b. Park Reviews: Displays review Summaries and displays names for most recent reviews written by Registered Pet Owners for the Park that the Profile belongs to. Provides a link to write a review when viewed by a Registered Pet Owner
 - i. Average Rating: The computed average Rating calculated from the Ratings provided by Registered Pet Owners
 - ii. Review Preview: The link to the full review written by user that contains the short review summary and the name of the user who wrote the review
- 28. Forum** - Forums are a collection of Posts by Registered Users separated by topic, and further separated into user-created Forum Threads.
- a. Topics: The Topic of a forum that corresponds to an animal type or breed on the website
- 29. Forum Thread** - Forum threads are created by any user, and are continuous sequences of Posts and replies located in an encompassing forum.
- a. Forum Thread Title: The title of the Forum Thread chosen by the Forum Thread Creator and is displayed to other General Users browsing/viewing multiple Forum Threads in a list format

- b.** Forum Thread Starter: The first Forum Thread Post in a Forum Thread written by the Registered User who created the Forum Thread
 - c.** Forum Thread Post: Long-form text Posts written by Registered Users in a forum thread
 - i. Forum Thread Posts can include a Photo uploaded by the Forum Thread Post creator
- 30. Flag** - A Registered User can flag any content that they find offensive
- a. Flagged Content: Flagged Content is any Photo, Post, Comment, Forum Thread Post, or Forum Thread that a Registered User has flagged
 - i. Flagged Content appears on the Admin Control Panel, where the Admin can take further action, in deleting, banning, and/or messaging the offending Registered User(s)
- 31. Admin Control Panel** - The Admin Control Panel is a view available to the Admin that shows Flagged Content and Users Pending Approval.
- a. Users Pending Approval: Any Registered Shelter or Registered Business wishing to create an Account for their shelter or business who have not yet been approved
- 32. Deleted Content** - Deleted Content is any content that has been deleted by an Admin, or created by a Registered User who has deleted their account.
- a. Deleted Post: Deleted Posts and their Comments are not visible to General Users
 - b. Deleted Comment: Deleted Comments on any Post are not visible to General Users
- 33. Banned Content** - Banned Content is any content that was previously created by a now-banned Registered User.
- a. Banned Post: Banned Posts and their Comments are not visible to General Users
 - b. Banned Photos: Banned Photos and their Comments are not visible to General Users
 - c. Banned Forum Threads: Forum Threads made by banned users will be visible, but any forum Posts within the thread made by the banned user will not be
- 34. Search** - The action of searching through website entities that are taken by General Users.
- a. Standard Search: A standard search allows General Users to search Registered Pet Owners, Registered Businesses, and Registered Pet Shelters, Parks, and Pets (Forums, Forum Threads, and Posts) in a traditional text-based fashion with filtering and sorting options
 - b. Location-Based Search: The Location-Based Search is a search wherein a General User inputs a location, either manually or with the browser's

location tracking, to see all the entities (Registered Businesses, Registered Pet Shelters, and Pets at Registered Pet Shelters) near that location. They can then sort and filter the results based on their needs

35. Updated Review - An Updated Review is an entity submitted by Registered Pet Owners that amends or records a different experience to their original Review. It will be linked to the original Review and requires a Rating to be submitted.

- a. Updated Review Summary: The summary of an updated review is the short form text summary of the full review written by a Registered Pet Owner that is displayed to other General Users and is connected to the original Review
- b. Updated Review Body: The body of a review is a long-form text that is displayed to other General Users when the Updated Review is viewed

36. Chat - Chat is a functionality that allows Registered Users to send short informal Messages to each other in real-time.

37. Block List - Block List shall belong to a Registered User and shall contain a list of Registered Users that the Registered User does not wish to receive Messages from, or see their activity.

38. Siblings - Siblings are the pets that share at least one parent with each other that are assigned by their owner(Registered Pet Owner or Registered Shelter).

39. Recent Activity - Recent Activity encapsulates the actions taken by a Registered User recently including Posting, Commenting, Liking, and Following.

- a. Recent Activity Links: Users can click on Recent Activity Links (can be Recent Post) to jump to the location where the activity was performed

40. Advertising Analytics - Advertising Analytics is the use of data and tools to help Business Owners to determine the marketing efforts.

41. Advertising Time Slots - An Advertising Time Slot is a period of time that the advertisement will be shown in our application.

42. Friends - Registered Users whose Friend Requests are accepted by a Registered User.

- a. Friend Request: A Request sent by a Registered User to another Registered User that is accepted or declined and decides whether a Registered User becomes a Registered User's Friend

Section II: Functional Requirements V3

Priority 1:

1. General User
 - 1.1. General Users shall be able to search for Registered Users (e.g. businesses, shelters, pet owners)
 - 1.2. General Users shall be able to search for Pets
 - 1.3. General Users shall be able to view the Pet Profiles of Registered Users
 - 1.4. General Users shall be able to use search filtering
 - 1.5. General Users can choose to share their location
 - 1.6. General Users shall be able to create an Account
2. Account:
 - 2.1. An Account shall be created by a General User of at least 13 years of age
3. Registered User:
 - 3.1. Registered Users shall inherit the functionality given to General Users
 - 3.2. Registered Users shall be able to log in to the website
 - 3.3. Registered Users shall be able to log out of the website
 - 3.4. Registered Users shall be able to create a Profile
 - 3.5. Registered Users shall be able to provide a Profile Picture
 - 3.6. Registered Users shall be able to change their Profile Picture
 - 3.7. Registered Users shall be able to write an About Me
 - 3.8. Registered Users shall be able to edit their About Me
 - 3.9. Registered Users shall be able to post Posts
 - 3.10. Registered Users shall be able to edit their Posts
 - 3.11. Registered Users shall be able to add Photos to their Profile
 - 3.12. Registered Users shall be able to post under their own Display Name
 - 3.13. Registered Users shall be able to follow other Registered Users
 - 3.14. Registered Users shall be able to be followed by other Registered Users
 - 3.15. Registered Users shall be able to view the profiles of Registered Users
 - 3.16. Registered Users shall be able to retract their likes.
 - 3.17. Registered Users can follow Registered Users
 - 3.18. Registered Users can unfollow Registered Users
 - 3.19. Registered Users can view the Registered Users who Follow Them

- 3.20. Registered Users can search the Registered Users that Follows/Following them
 - 3.21. Registered Users shall be able to change the ownership of their Pets
 - 3.22. Registered Users shall be able to reset their password
 - 3.23. Registered Users shall be able to stay logged in indefinitely until they manually log out (Remember Me)
-
- 5. Registered Business
 - 5.1. Registered Businesses shall inherit the functionality given to Registered Users
 - 5.2. Business Addresses of Registered Businesses can be viewed by Registered Users
 - 5.3. Business Hours of Registered Businesses can be viewed by Registered Users
 - 5.4. Registered Businesses shall be able to upgrade to a Premium Business Account.
-
- 6. Registered Shelter
 - 6.1. Registered Shelters shall inherit the functionality given to Registered Users
 - 6.2. Registered Shelters shall be able to add Pets to their Account
 - 6.3. Registered Shelters shall be able to delete Pets from their Account
 - 6.4. Registered Shelters shall be able to edit the Profiles of their Pet(s)
 - 6.5. Business Addresses of Registered Shelters can be viewed by Registered Users
 - 6.6. Business Hours of Registered Shelters can be viewed by Registered Users
 - 6.7. Registered Shelters shall be able to change the ownership of their Pets
 - 6.8. Registered Shelters shall be able to change Pet's Availability for Adoption
-
- 7. Registered Pet Owner
 - 7.1. Registered Pet Owners shall inherit the functionality given to Registered Users
 - 7.2. Registered Pet Owners shall be able to add Pets to their Account
 - 7.3. Registered Pet Owners shall be able to delete Pets from their Account
 - 7.4. Registered Pet Owners shall be able to edit the Profiles of their Pet(s)
 - 7.5. Registered Pet Owners shall be able to change the ownership of their Pets

- 7.6. Registered Pet Owners shall be able to change Pet's Availability for Adoption
8. Pet
 - 8.1. Pets shall allow General Users to filter pets by age
 - 8.2. Pets shall allow General Users to filter pets by size
 - 8.3. Pets shall allow General Users to filter pets by color
 - 8.4. Pets shall allow General Users to filter pets by breed
 - 8.5. Pets shall allow General Users to filter pets by type
9. Profile
 - 9.1. Profiles shall be able to display a Profile picture
 - 9.2. Profiles shall be able to display Photos posted by the Registered User it belongs to
 - 9.3. Profiles shall be able to display an About Me (biography)
 - 9.4. Profiles shall provide a way for the browsing Registered User to send a private Message to the profile's affiliated Registered User
 - 9.5. Profiles shall display follows.
 - 9.6. Profile shall display a Registered User's Online Status
10. Pet Profile
 - 10.1. Pet Profile shall inherit the functionality given to Profiles
 - 10.2. Pet Profile shall be able to provide a link to the Registered Pet Owner that owns the Pet that the Pet Profile belongs to
 - 10.3. Pet Profile shall be able to provide a link to the Registered Shelter that owns the Pet that the Pet Profile belongs to
 - 10.4. Pet Profile shall be able to display Pet's Availability for Adoption
 - 10.5. Pet Profile shall display a Pet's Owner's Online Status
 - 10.6. Pet Profile Picture shall be able to be changed by their Owner
 - 10.7. Pet Profile About Me shall be able to be changed by their Owner
11. Registered Pet Owner Profile
 - 11.1. Registered Pet Owner profiles shall inherit the functionality given to Profiles
 - 11.2. Registered Pet Owner Profiles shall provide links to Pet Profiles of pets owned by the Registered Pet Owner
12. Registered Business Profile
 - 12.1. Registered Business Profiles shall inherit the functionality given to Profiles
 - 12.2. Registered Business Profiles shall be able to provide Contact Details
 - 12.3. Registered Business Profiles shall be viewable by General Users

13. Registered Shelter Profile

- 13.1. Registered Shelter Profiles shall inherit the functionality given to Profiles
- 13.2. Registered Shelter Profiles shall be able to provide Contact Details
- 13.3. Registered Shelter Profiles shall be viewable by General Users
- 13.4. Registered Shelter Profiles shall provide links to Pet Profiles of pets housed by the Registered Shelter

14. Posts

- 14.1. Posts shall display the Display Name of the Registered User who posted them
- 14.2. Posts shall direct Registered Users to the Profile of Registered User who posted them
- 14.3. Posts shall be able to be edited after they are posted by the Registered Users who created them
- 14.4. Posts shall be able to be liked by Registered Users
- 14.5. Posts shall be able to be commented on by Registered Users
- 14.6. Posts shall allow General Users to view the time they were posted
- 14.7. Posts shall allow General Users to view the date they were posted
- 14.8. Posts shall be able to display the number of likes.
- 14.9. Posts shall be able to be deleted by the Registered User who posted them
- 14.10. Posts shall be able to include a Photo

15. Comments

- 15.1. Comments shall display the Display Name of the Registered User who posted the comment
- 15.2. Comments shall direct Registered Users to the Profile of Registered User who posted the comment
- 15.3. Comments shall be able to be Liked.
- 15.4. Comments shall be able to display the number of likes.
- 15.5. Comments shall be able to be deleted by the user who posted them.
- 15.6. Comments shall allow General Users to view the time they were posted.
- 15.7. Comments shall allow General Users to view the date they were posted.

16. Messages

- 16.1. Messages shall be sent from Registered User to Registered User
- 16.2. Messages shall be viewable by the Registered User it was sent to
- 16.3. Messages shall be viewable by the Registered User it was sent by
- 16.4. Messages shall be able to be replied to

- 16.5. Messages shall allow Registered Users to view the sent time
 - 16.6. Messages shall allow Registered Users to view the Display Name of the Registered User who sent the Message
 - 16.7. Messages shall allow users to provide a Subject
 - 16.8. Messages shall allow users to provide a Body
-
- 17. Follows
 - 17.1. Follows shall provide a way for Registered Users to access the Profile of the Registered Users who they are Following
-
- 18. Followers
 - 18.1. Followers shall provide a way for Registered Users to access the Profile of the Registered Users who they are Following
-
- 19. Feed
 - 19.1. Feed shall display the Recent Posts of the Registered Users that a Registered User is Following
 - 19.2. Feed shall allow Registered Users to post Posts
 - 19.3. Feed shall display the Recent Posts of Registered Business with a Premium Business Account.
-
- 20. Map Search
 - 20.1. Map Search shall display the location of Registered Businesses.
 - 20.2. Map Search shall display the location of Registered Shelter
 - 20.3. Map Search shall display the Pets located at Shelters
 - 20.4. Map Search shall allow General Users to search Pets
 - 20.5. Map Search shall allow General Users to search Registered Businesses
 - 20.6. Map Search shall allow General Users to search Registered Shelters
 - 20.7. Map Search shall allow General Users to filter results by Proximity
 - 20.8. Map Search shall allow General Users to filter Pet results by Breed
 - 20.9. Map Search shall allow General Users to filter Pet results by Type
 - 20.10. Map Search shall allow General Users to filter Pet results by Age
 - 20.11. Map Search shall allow General Users to filter Pet results by Color
 - 20.12. Map Search shall allow General Users to filter Pet results by Size
 - 20.13. Map Search shall allow General Users to sort Pet results by Age
 - 20.14. Map Search shall allow General Users to sort Pet results by Pet Account Age
 - 20.15. Map Search shall allow General Users to sort Registered Business results by Proximity

- 20.16. Map Search shall allow General Users to sort Registered Business results by Category (checkboxes of business categories)
 - 20.17. Map Search shall allow General Users to sort Registered Shelter results by Proximity
 - 20.18. Map Search shall allow General Users to sort Registered Shelter results by Types Of Pets
 - 20.19. Map Search shall allow General Users to search Pets by Name
 - 20.20. Map Search shall allow General Users to search Pets by Type
 - 20.21. Map Search shall allow General Users to search Pets by Breed
 - 20.22. Map Search shall allow General Users to search Pets by Color
 - 20.23. Map Search shall allow General Users to search Pets by Size
 - 20.24. Map Search shall allow General Users to search Pets by Age
 - 20.25. Map Search shall allow General Users to search Registered Businesses by Name
 - 20.26. Map Search shall allow General Users to search Registered Businesses by Address
 - 20.27. Map Search shall allow General Users to search Registered Businesses by Category
 - 20.28. Map Search shall allow General Users to search Registered Shelters by Name
 - 20.29. Map Search shall allow General Users to search Registered Shelters by Address
 - 20.30. Map Search shall allow General Users to search Registered Shelters by Available Types of Pets
21. Notification
 - 21.1. Notifications shall display when a Registered User receives a Message

Priority 2:

1. General Users
 - 1.1. General Users shall be able to send a Message to Registered Businesses
 - 1.2. General Users shall be able to send a Message to Registered Shelters
 - 1.3. Messages can be sent from General Users to Registered Shelters
 - 1.4. Messages can be sent from General Users to Registered Businesses
 - 1.5.
 - 1.6. General Users shall be able to receive correspondence from Registered Businesses at an email address provided by them
 - 1.7. General Users shall be able to receive correspondence from Registered Shelter at an email address provided by them

- 1.8. General Users can filter for adoptable pets (owned by Shelters)
 - 1.9. General Users shall be able to search followers
 - 1.10. General Users shall be able to filter followers
 - 1.11. General Users shall be able to sort followers
 - 1.12. General Users shall be able to search reviews
 - 1.13. General Users shall be able to filter reviews
 - 1.14. General Users shall be able to sort reviews
 - 1.15. General Users shall be able to search messages
 - 1.16. General Users shall be able to filter messages
 - 1.17. General Users shall be able to sort messages
3. Registered Users
 - 3.1. Registered Users shall be able to Flag Posts
 - 3.2. Registered Users shall be able to Flag Comments
 - 3.3. Registered Users shall be able to Flag Messages
 - 3.4. Registered Users shall be able to attach images to messages
 4. Admin
 - 4.1. Admin shall be able to Delete Photos posted by Registered Users
 - 4.2. Admin shall be able to browse Registered User Profiles
 - 4.3. Admin shall be able to Delete Posts
 - 4.4. Admin shall be able to Delete Comments from Posts
 - 4.5. Admin shall be able to ban Accounts
 - 4.6. Admin shall be able to remove Accounts
 - 4.7. Admin shall be able to reactivate Accounts
 - 4.8. Admin shall be able to Message Registered Users
 - 4.9. Admin shall be able to approve Registered Businesses for use of the site
 - 4.10. Admin shall be able to approve Registered Shelters for use of the site
 7. Registered Pet Owner
 - 7.1. Registered Pet Owners shall be able to leave Reviews to Registered Business
 - 7.2. Registered Pet Owners shall be able to leave Reviews to Registered Shelter.
 - 7.3. Registered Pet Owners shall be able to leave Ratings to Registered Business.
 - 7.4. Registered Pet Owners shall be able to leave Ratings to Registered Shelter.
 - 7.5. Registered Pet Owners shall be able to leave Reviews to Parks.
 - 7.6. Registered Pet Owners shall be able to leave Ratings to Parks.

8. Pets
 - 8.1. Pets shall be able to be marked as missing Pets by their owners
9. Profile
 - 9.1. Profiles shall display recent Posts
10. Pet Profile
 - 10.1. Pet Profiles shall be able to display Siblings
 - 10.2. Pet Profiles shall display if the Pet is missing
12. Registered Business Profile
 - 12.1. Registered Business Profiles shall provide a way for Registered Pet Owners to view Registered Business Reviews
 - 12.2. Registered Business Profiles shall provide a way for Registered Pet Owners to view Registered Business Ratings
 - 12.3. Registered Business Profiles shall provide a way for Registered Pet Owners to view a Registered Business's Average Rating
 - 12.4. Registered Business Profiles shall provide a way for Registered Pet Owners to leave Ratings
13. Registered Shelter Profile
 - 13.1. Registered Shelter Profiles shall provide a way for Registered Pet Owners to view Reviews
 - 13.2. Registered Shelter Profiles shall provide a way for Registered Pet Owners to view Ratings
 - 13.3. Registered Shelter Profiles shall provide a way for Registered Pet Owners to view Registered Business Reviews
 - 13.4. Registered Shelter Profiles shall provide a way for Registered Pet Owners to view their Ratings
 - 13.5. Registered Shelter Profiles shall provide a way for Registered Pet Owners
15. Comments
 - 15.1. Comments shall be able to be edited by the user who posted them
16. Messages
 - 16.1. Messages shall be deletable by the Registered User who receives them
 - 16.2. Messages shall be deletable by the Registered User who sends them
 - 16.3. Message Thread shall be deletable

20. Map Search

- 20.1. Map Search shall display the location of Parks
- 20.2. Map Search shall allow General Users to sort Registered Business results by Average Rating
- 20.3. Map Search shall allow General Users to sort Registered Shelter results by Average Rating

21. Notification

- 21.1. Notifications shall display when a Registered User's Post is Liked
- 21.2. Notifications shall display when a Registered User's Comment is Liked
- 21.3. Notifications shall display when a Registered User gains a Follower
- 21.4. Notifications shall display when a Registered User's Post is Commented on

22. Park

- 22.1. Parks shall be able to be created by Registered Users
- 22.2. Parks shall be able to be edited by Registered User(s)
- 22.3. Parks shall be searchable by General Users
- 22.4. Parks shall display an Average Rating

23. Park Profile

- 23.1. Park Profiles shall provide a way for Registered Pet Owners to view Reviews
- 23.2. Park Profiles shall provide a way for Registered Pet Owners to view Ratings
- 23.3. Park Profiles shall display Photos uploaded by Registered Users
- 23.4. Park Profiles shall display an Address uploaded by a Registered User
- 23.5. Park Profiles shall display Hours uploaded by a Registered User
- 23.6. Park Profiles shall display an About section edited by a Registered User
- 23.7. Park Profiles shall be viewable by General Users

24. Reviews

- 24.1. Reviews shall be editable by the Registered Pet Owners who posted them.
- 24.2. 25.2 Reviews shall be provided with a Summary.
- 24.3. 25.3 Reviews shall be provided with a Body.
- 24.4. Reviews shall be able to be viewed by General Users
- 24.5. Reviews shall display a creation date
- 24.6. Review shall display the last edited date

- 24.7. Reviews shall display their Author
 - 24.8. Reviews shall provide a link to their Author's Profile
25. Ratings
- 25.1. Ratings shall be able to be edited by the Registered User who gave the Rating

Priority 3:

- 3. Registered Users
 - 3.1. Registered Users shall be able to Flag Forum Threads
 - 3.2. Registered Users shall be able to Flag Forum Posts
 - 3.3. Registered Users shall be able to hide Posts on their Feed
 - 3.4. Registered Users shall be able to hide Comments on their Posts
 - 3.5. Registered Users shall be able to retract their flags
 - 3.6. Registered Users shall be able to add Registered Users to their Block List
 - 3.7. Registered Users shall be able to remove Registered Users from their Block List.
 - 3.8. Registered Users shall be able to apply formatting to their posts in forum threads
 - 3.9. Registered Users shall be able to view when a user was last online
 - 3.10. Registered Users shall be able to upload multiple photos at once
- 6. Registered Shelter
 - 6.1. Registered Shelters can choose a Pet's Siblings
 - 6.2. Registered Shelters shall be able to Post under the name of their Pets.
 - 6.3. A Registered Shelter can transfer ownership of their Pets to Registered Pet Owners
- 7. Registered Pet Owners
 - 7.1. Registered Pet Owners can manually enter the Type of their Pet
 - 7.2. Registered Pet Owners can manually enter the Breed of their Pets
 - 7.3. Registered Pet Owners can choose a Pet's Siblings
 - 7.4. Registered Pet Owners shall be able to Post under the name of their Pets
 - 7.5. Registered Pet Owners shall be able to send a Friend Request to other Registered Pet Owners
 - 7.6. Registered Pet Owners shall be able to accept Friend Requests
 - 7.7. Registered Pet Owners shall be able to decline Friend Requests
 - 7.8. Registered Pet Owners shall be able to share their Location with Friends
 - 7.9. Registered Pet Owner Profiles shall be able to indicate Pet Sitting availability

9. Profiles
 - 9.1. Profiles shall display the Recent Activity of a Registered User's Followers
10. Pet Profiles
 - 10.1. Pet Profiles shall be able to display the Registered Shelter they were adopted from
14. Posts
 - 14.1. Posts shall be able to be saved by Registered Users
 - 14.2. Posts can display multiple photos.
 - 14.3. Posts that are liked shall be able to be viewed by the Registered Users who liked them.
 - 14.4. Posts shall be able to be shared by Registered Users
15. Comments
 - 15.1. Comments shall be able to be replied to
16. Messages
 - 16.1. Messages shall allow the General User to read the display name of the Registered Business who sent them the Message
 - 16.2. Messages shall allow the General User to read the display name of the Registered Shelter who sent them the Message
18. Followers
 - 18.1. Followers shall allow Registered Users to search through their Followers
19. Feed
 - 19.1. Feed shall display the most liked Posts of the current day Registered Users
20. Map Search
 - 20.1. Map Search shall display the location of Pets
21. Notifications
 - 21.1. Notifications shall display when a Registered User's Forum Post is Liked
22. Likes
 - 22.1. Likes shall be able to be given to Forum Threads by Registered Users
 - 22.2. Likes shall be able to be given to a Forum Post by Registered Users

23. Reviews

23.1. Reviews can be updated by the Registered Pet Owner who Posted Them.

24. Chat

- 24.1. Chats can be sent from Registered User to Registered User
- 24.2. Chat shall be viewable by the Registered User it was sent to
- 24.3. Chat shall be viewable by the Registered User it was sent by
- 24.4. Chat shall be able to be replied to
- 24.5. Chat shall allow Registered Users to view the sent time
- 24.6. Chat shall allow Registered Users to view the Display Name of the Registered User who sent the text
- 24.7. Chat shall be deletable by the Registered User who receives them
- 24.8. Chat shall be deletable by the Registered User who sends them

25. Forums

- 25.1. Forums shall allow General Users to search through them.
- 25.2. Forums shall be viewable by General Users.
- 25.3. Forums shall be searchable by General Users.
- 25.4. Forums shall be filterable by General Users.

26. Premium Business Account

- 26.1. A Registered Business with a Premium Business Account shall be able to track Advertising Analytics
- 26.2. A Registered Business with a Premium Business Account shall be able to choose Advertising Time Slots.

27. Photos

- 27.1. Photos shall allow General Users to download them.

28. Forum Post

- 28.1. Forum Post shall be able to be liked by Registered Users.

29. Forum Thread

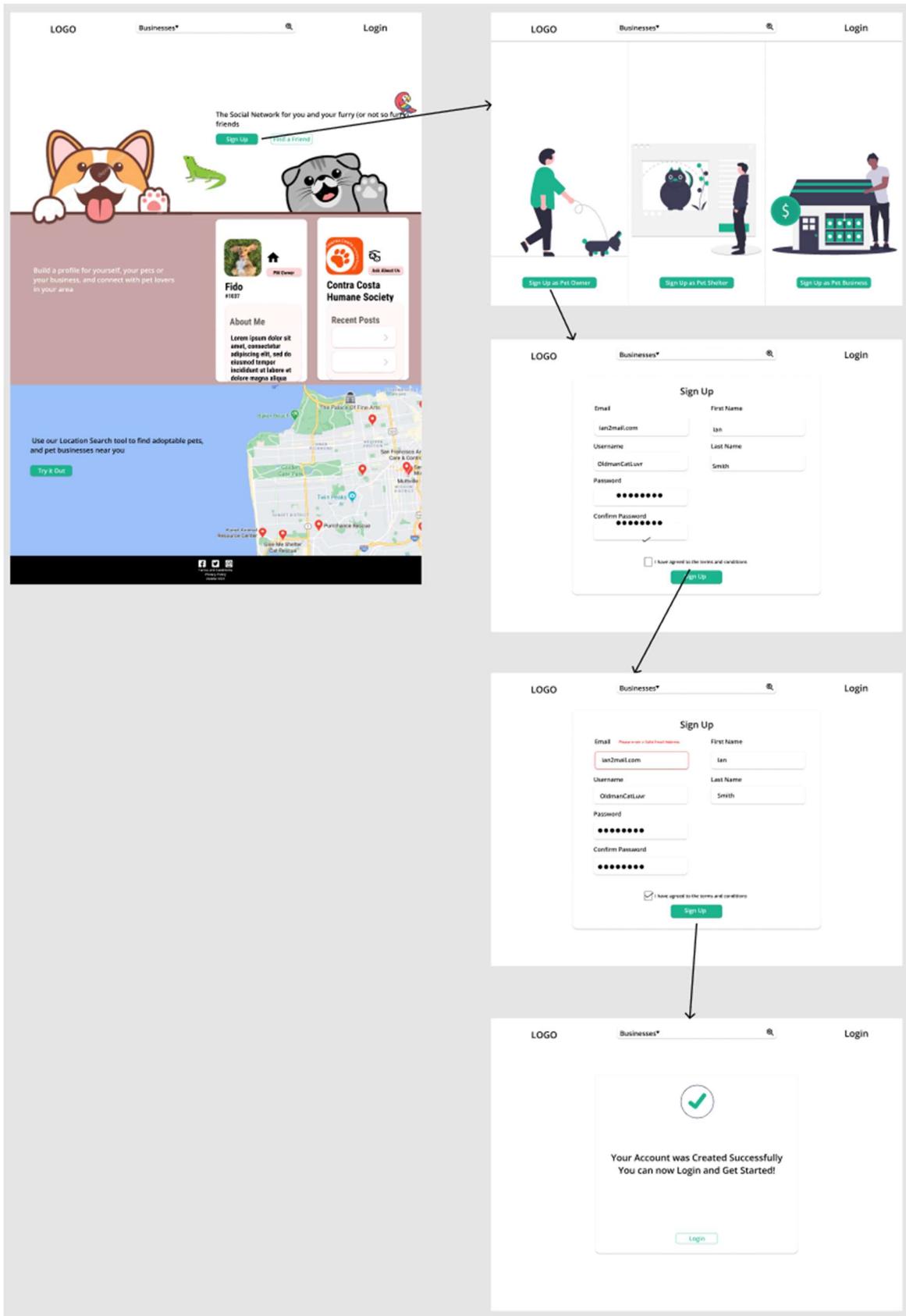
- 29.1. Forum Threads shall be able to be replied to
- 29.2. Forum Thread Posts shall Display the Name associated with the post.

30. Posts Near You

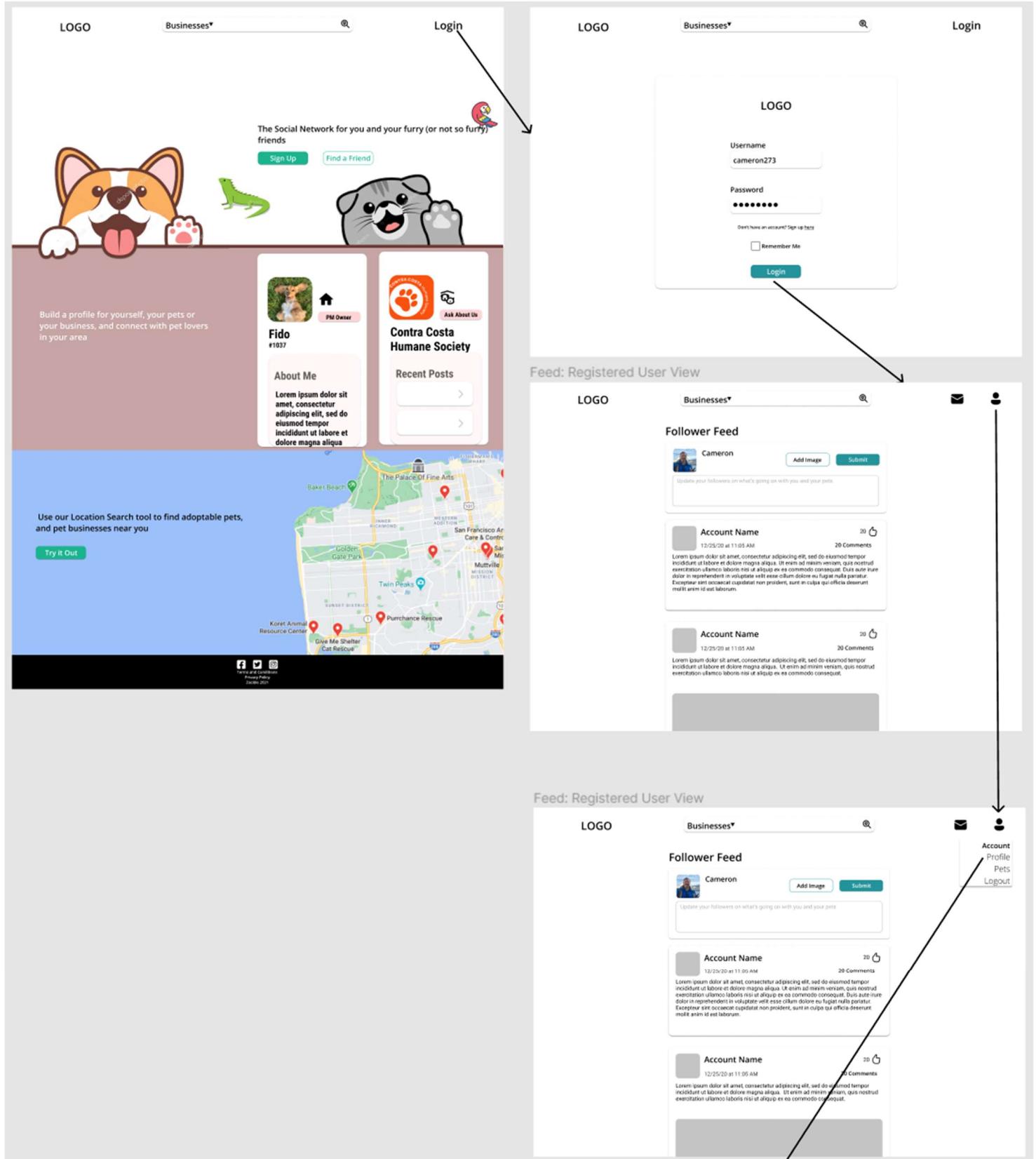
- 30.1. Posts Near You shall display the Recent Posts near the General User's location.

Section III: Wireframes

Use Case 1



Use Case 2 (1 of 9)



Use Case 2 (2 of 9)

Top Screen: Cameron's Profile

- Logo:** LOGO
- Businesses:** Businesses
- User Info:** Cameron (Profile Picture), Followers (button)
- About Me:** Placeholder text (Lorem ipsum...)
- My Photos:** Placeholder (+) and See All/Edit button
- My Pets:** Placeholder (+) and See All/Edit button

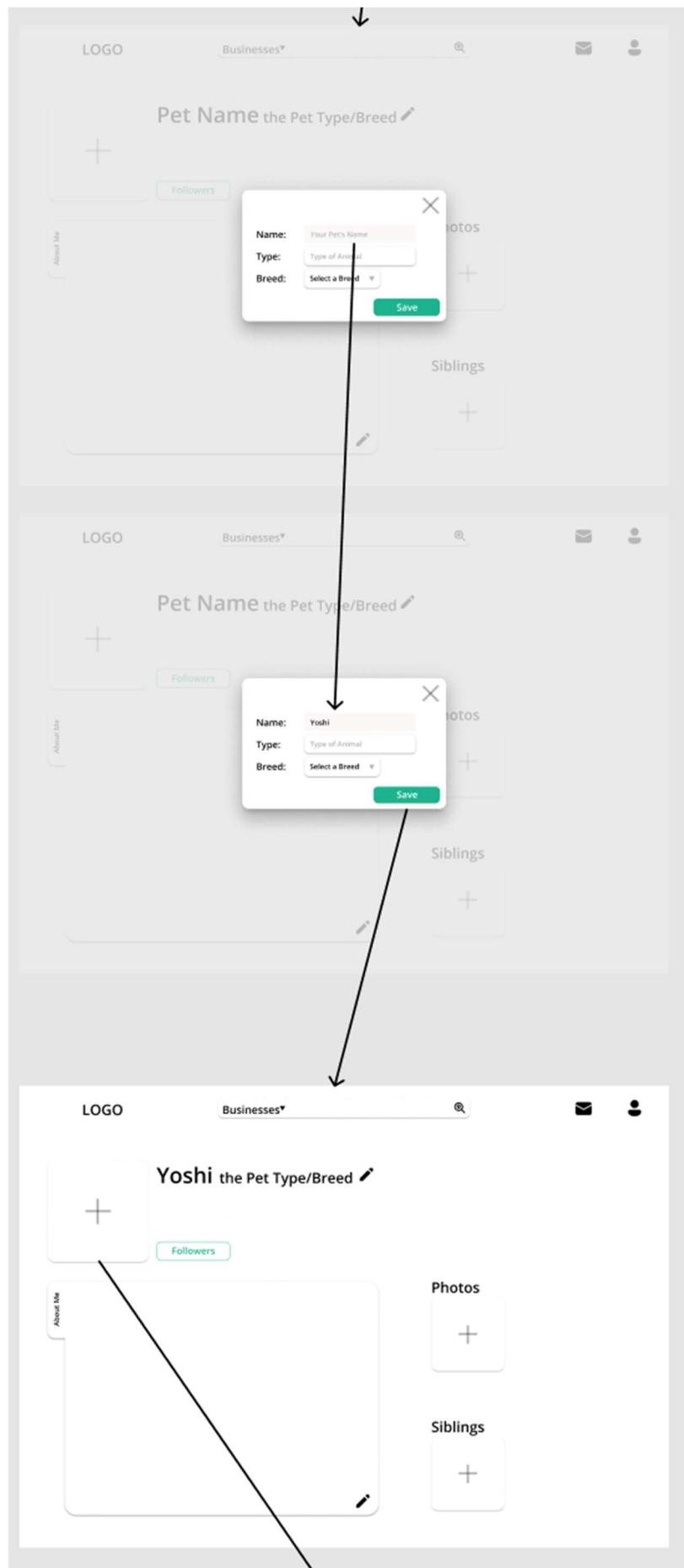
Middle Screen: My Pets

- Logo:** LOGO
- Pets:** Pets
- Action Buttons:** Add (Within a List Format), Navigate to Profile (Within a List Format)
- Pet List:** Six items, each with 'Navigate to Profile (Within a List Format)' and a right arrow.

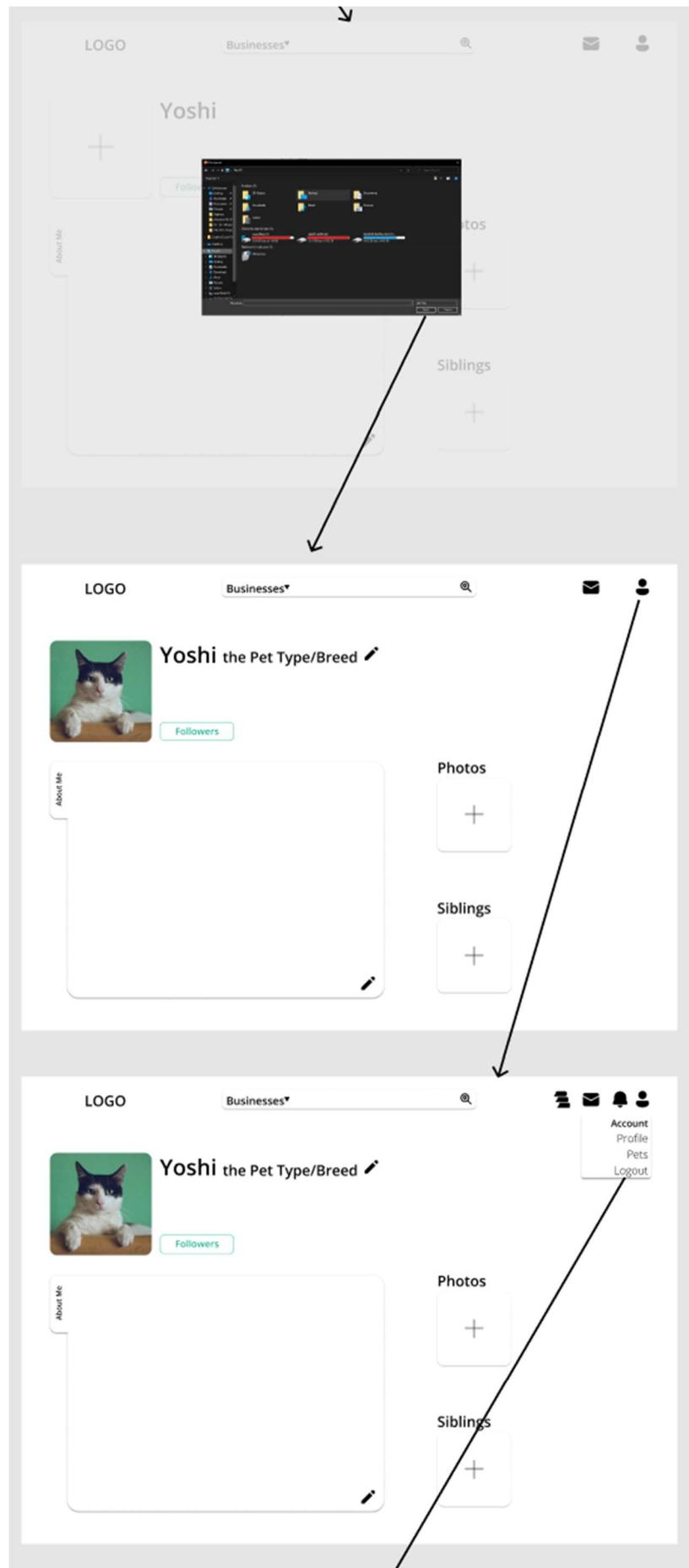
Bottom Screen: Pet Name the Pet Type/Breed

- Logo:** LOGO
- Businesses:** Businesses
- User Info:** Followers (button)
- Form Fields:**
 - Pet Name:** Pet Name the Pet Type/Breed (Input field)
 - Photo:** Placeholder (+)
 - Siblings:** Placeholder (+)

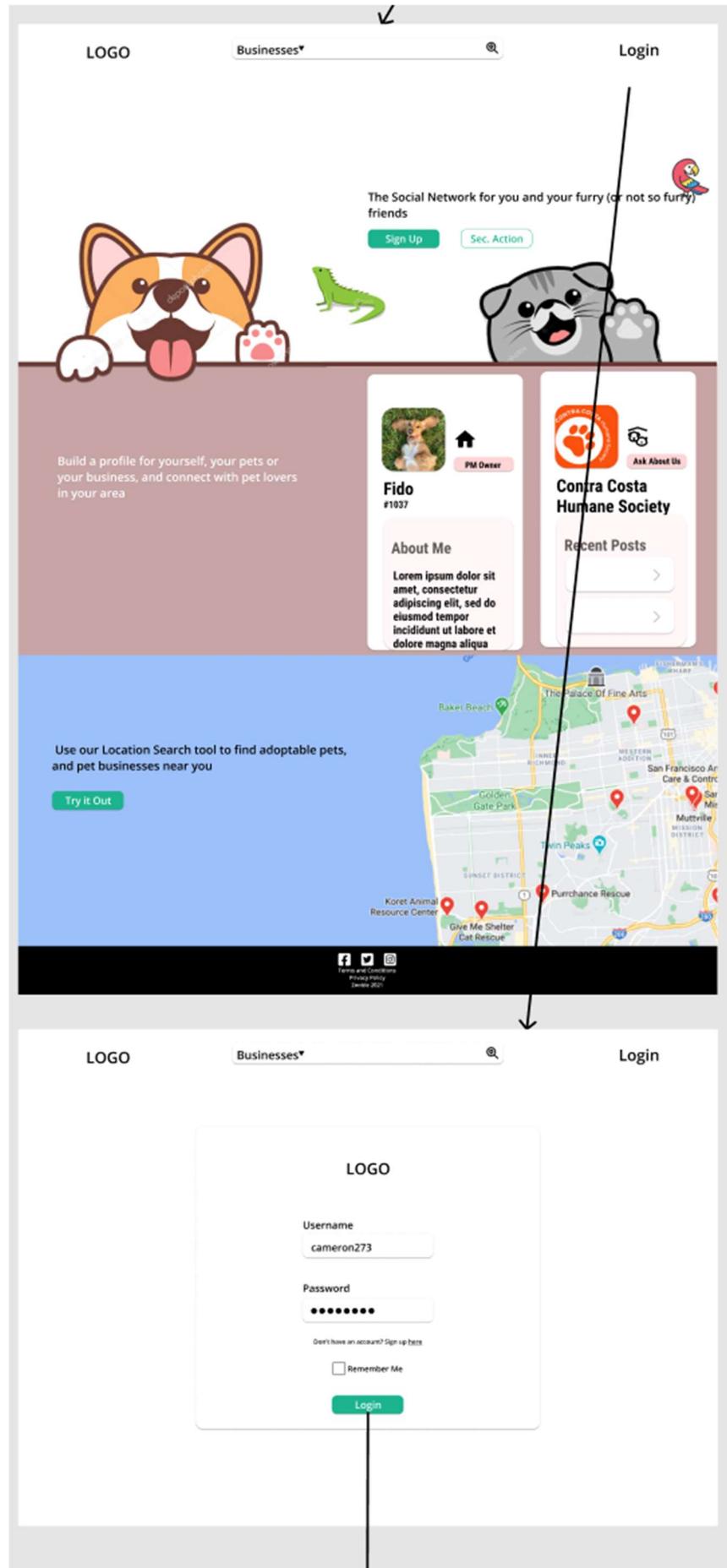
Use Case 2 (3 of 9)



Use Case 2 (4 of 9)



Use Case 2 (5 of 9)



Use Case 2 (6 of 9)

Feed: Registered User View

The diagram illustrates a user interface flow across three screens:

- Top Screen:** Shows a "Follower Feed" with two posts from "Cameron". Each post includes a profile picture, a placeholder name, a timestamp (12/25/20 at 11:05 AM), a comment count (20), and a detailed post content block.
- Middle Screen:** Shows the same "Follower Feed" as the top screen, but with a user profile icon in the top right corner, indicating the user is logged in.
- Bottom Screen:** Shows a "My Pets" section. It features a header "LOGO" and a dropdown menu "Businesses". Below this is a grid of cards for different pets. Each card displays a pet's name (e.g., Yoshi), a small profile picture, and a "Navigate to Profile" button.

Use Case 2 (7 of 9)

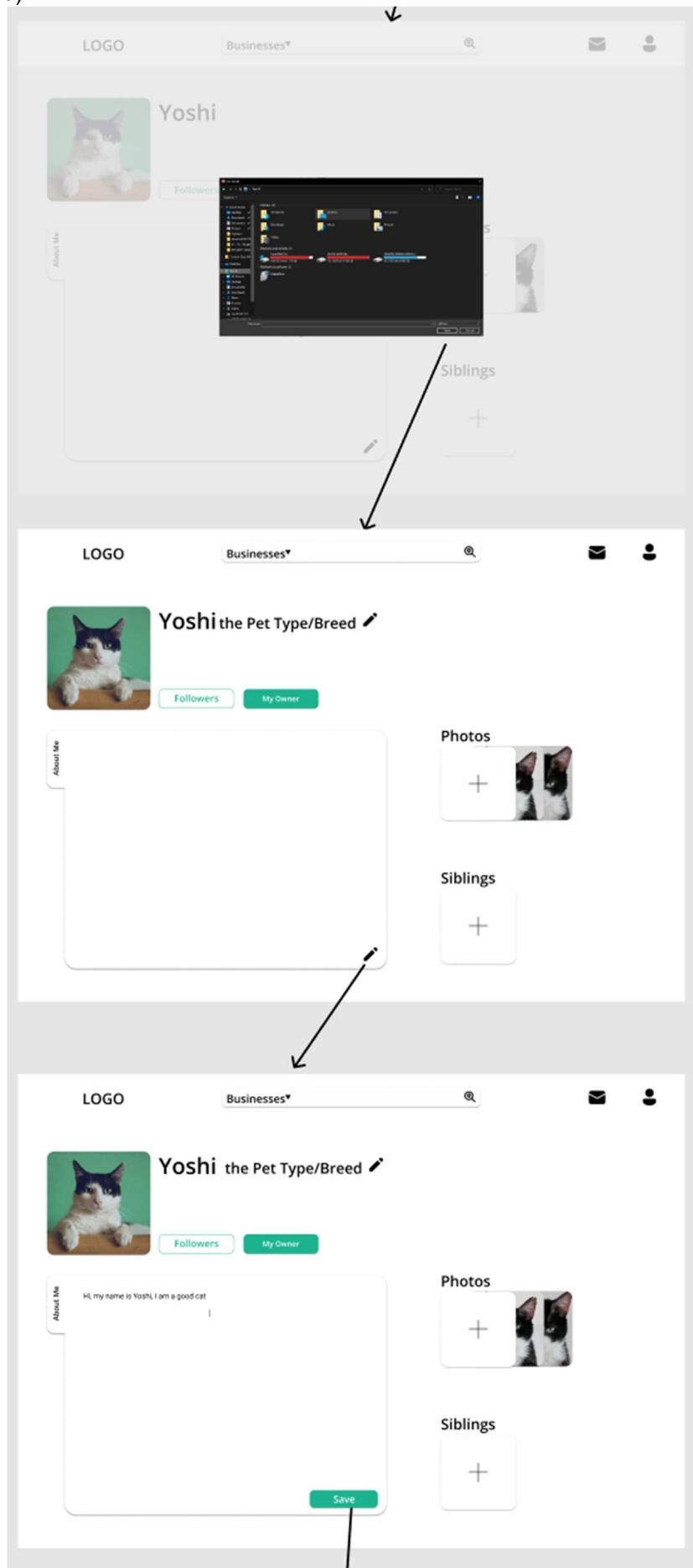
The image consists of three vertically stacked screenshots of a pet profile page, likely from a social media or networking platform. Each screenshot shows a profile card for a cat named 'Yoshi'.

Screenshot 1: Yoshi's profile card. It includes a logo, a photo of Yoshi, the name 'Yoshi the Pet Type/Breed', a 'Followers' button, and a large empty 'About Me' text area with a pencil icon. To the right are buttons for 'Photos' (with a plus sign) and 'Siblings' (with a plus sign). A black arrow points from the 'Siblings' button to the 'Photos' button in the middle screenshot.

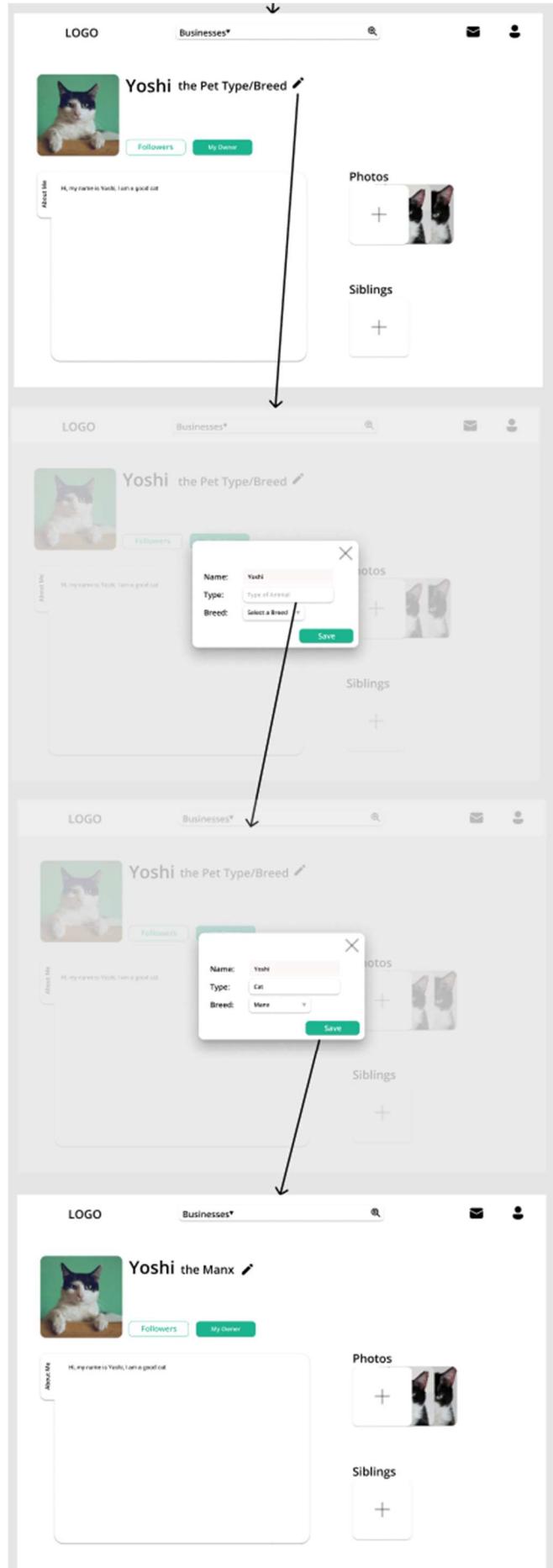
Screenshot 2: Yoshi's profile card after adding a sibling. The 'About Me' area now contains the text 'My Owner: Pet Owner Name'. A screenshot of a file explorer window is overlaid on the 'About Me' area, showing various files and folders. A black arrow points from the 'Siblings' button in the middle screenshot to the 'Photos' button in this screenshot.

Screenshot 3: Yoshi's profile card after adding another sibling. The 'About Me' area is empty again. The 'Followers' button has changed to 'My Owner'. The 'Photos' and 'Siblings' buttons are present on the right.

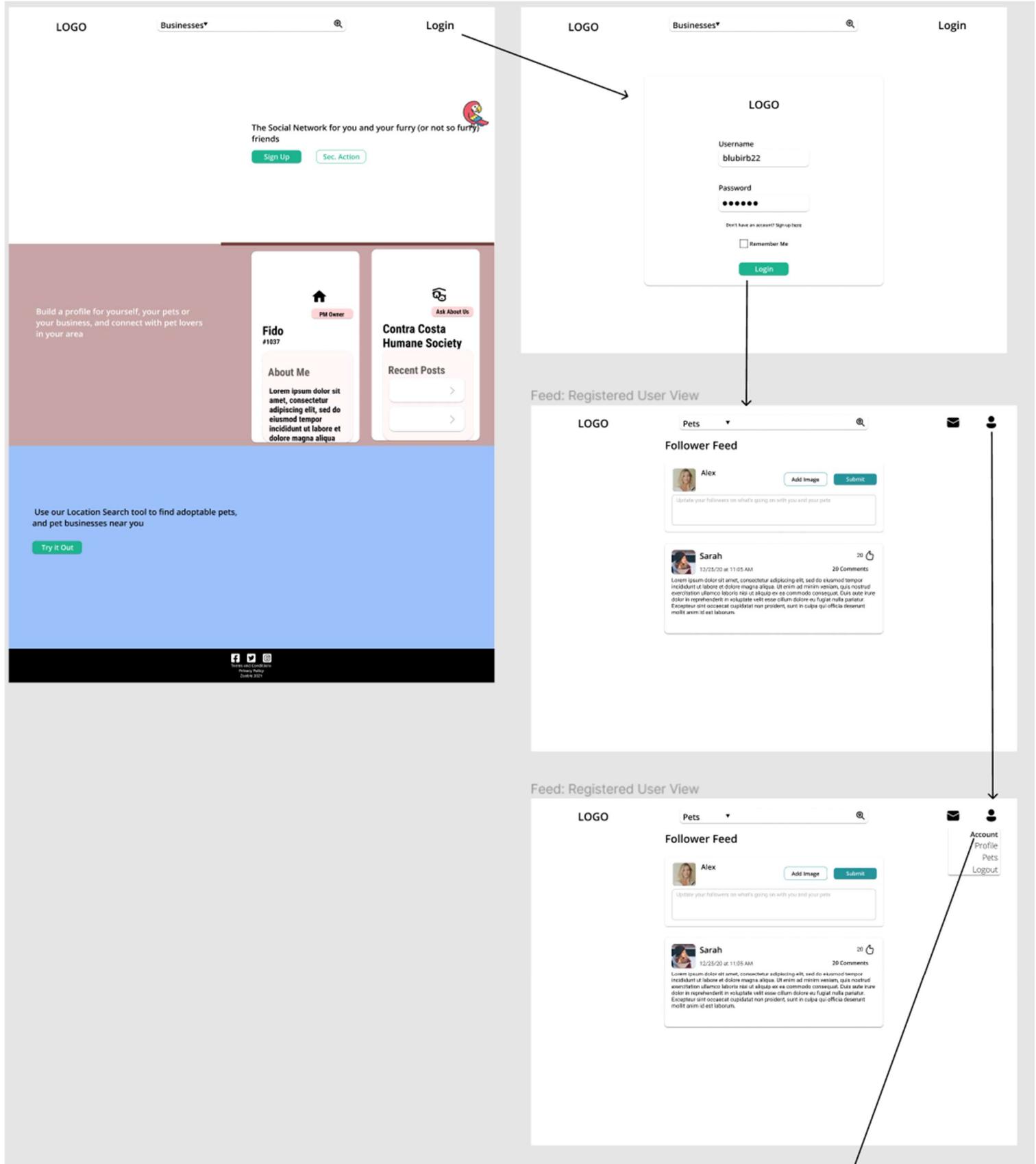
Use Case 2 (8 of 9)



Use Case 2 (9 of 9)



Use Case 3 (1 of 3)



Use Case 3 (2 of 3)

Account: My Followers

The screenshot shows a user profile for 'Alex'. At the top, there's a placeholder for a logo and a dropdown menu for 'Businesses'. Below the profile picture, there are two buttons: 'Followers' and 'Send a Message'. A large text area contains placeholder text about a user's profile. To the right, there are sections for 'My Photos' (with a grid of five images) and 'My Pets' (with a grid of three images labeled 'Moms' and 'ena').

| Followers (56) | | Following (12) | |
|----------------|--------|----------------|---------|
| | Joey | | Sarah |
| | Violet | | Eric |
| | Kevin | | Belinda |
| | Ellie | | Justin |
| | Marcus | | Kayla |

Pet Owner Profile - Joey

This screenshot shows a user profile for 'Joey'. It has a similar layout to the first profile, with a placeholder for a logo, a dropdown for 'Businesses', and buttons for 'Following' and 'Send a Message'. A text area with placeholder text is present. To the right, there are sections for 'My Photos' and 'My Pets'.

| Following (56) | | Followers (12) | |
|----------------|--------|----------------|---------|
| | Joey | | Sarah |
| | Violet | | Eric |
| | Kevin | | Belinda |
| | Ellie | | Justin |
| | Marcus | | Kayla |

Use Case 3 (3 of 3)

Pet Owner Profile - Joey (Sending A Message)

The screenshot shows the Pet Owner Profile for "Joey". At the top, there's a logo, a search bar labeled "Businesses▼", and user icons for envelope and profile. Below the profile picture, the name "Joey" is displayed. A modal window titled "Send a Message" is open, showing the recipient "To: Joey" and a subject line "Subject: [Placeholder]". The message body contains placeholder text: "Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. In dictum non consectetur a erat nam at lectus urna. Ultrices vitae auctor eu augue ut lectus arcu. In ante metus dictum at tempor commodo. Adipiscing vitae proin sagittis nisl. In eu mi bibendum neque. Sociis natoque penatibus et magnis. Aliquam sem et tortor consequat id porta nibh venenatis cras. Elementum nisi quis eleifend quam adipiscing vitae proin sagittis nisl. Placerat duis ultricies lacus sed turpis tincidunt. Ut placerat orci nulla pellentesque dignissim enim sit amet venenatis. Sit amet consectetur adipiscing elit ut aliquam. Lacus vel facilisis volutpat est velit egestas dui id." Below the message area is a "Send" button. To the right of the message window, there are sections for "My Photos" and "My Pets", each with a preview image and a "See All/Edit" link. A vertical arrow points downwards from the message window to the second screenshot.

Pet Owner Profile - Joey (Message Sent)

The screenshot shows the Pet Owner Profile for "Joey" again. The "Following" button is now green, indicating the user is following the profile. The "Send a Message" button is also present. The "About Me" section contains the same placeholder text as the previous screenshot. To the right, the "My Photos" and "My Pets" sections are visible, each with a preview image and a "See All/Edit" link. The "My Pets" section shows a white cat named "Felix" and a smaller image of another pet named "ena". A vertical arrow points upwards from the message window in the first screenshot to this screenshot, indicating the progression of the action.

Use Case 4 (1 of 2)

The Social Network for you and your furry (or not so furry) friends

Sign Up Sec. Action

Build a profile for yourself, your pets or your business, and connect with pet lovers in your area

Fido #1037 PM Owner

About Me

Lore ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua

Contra Costa Humane Society

Ask About Us Recent Posts

Baker Beach The Palace Of Fine Arts INNER RICHMOND WESTERN ADDITION San Francisco Animal Care & Control Muttville MISSION DISTRICT Golden Gate Park Twin Peaks SUNSET DISTRICT Purrchance Rescue Koret Animal Resource Center Give Me Shelter Cat Rescue Try it Out

The Social Network for you and your furry (or not so furry) friends

Sign Up Sec. Action

Build a profile for yourself, your pets or your business, and connect with pet lovers in your area

Fido #1037 PM Owner

About Me

Lore ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua

Contra Costa Humane Society

Ask About Us Recent Posts

Baker Beach The Palace Of Fine Arts INNER RICHMOND WESTERN ADDITION San Francisco Animal Care & Control Muttville MISSION DISTRICT Golden Gate Park Twin Peaks SUNSET DISTRICT Purrchance Rescue Koret Animal Resource Center Give Me Shelter Cat Rescue Try it Out

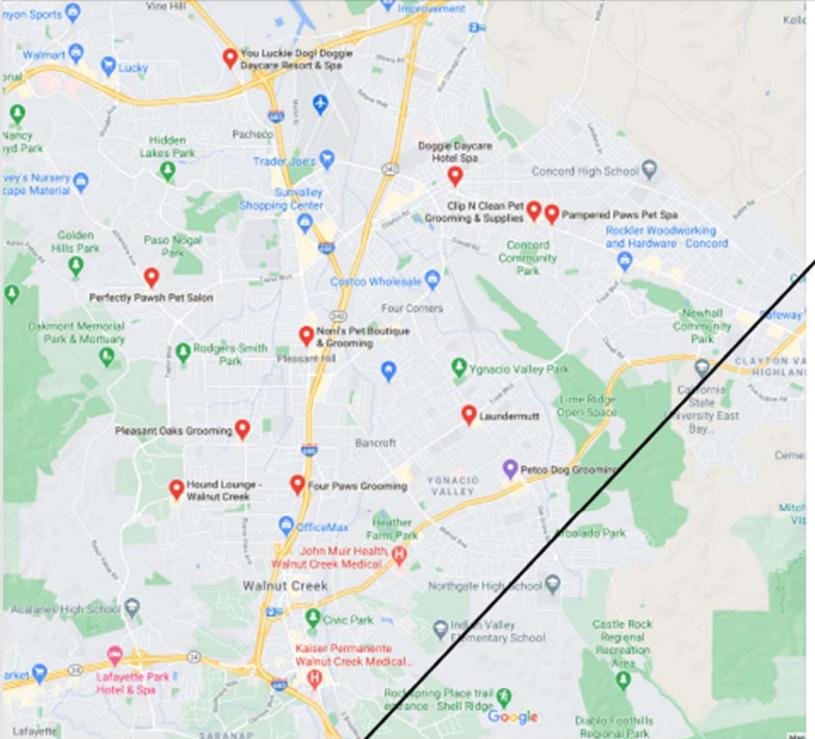
LOGO Businesses* Login

LOGO Pets * Sasha Login

Terms and Conditions Privacy Policy Zookle 2021

Use Case 4 (2 of 3)

↓



Results Filter Sort By

-  **Sasha** >
-  Pet Name >
-  Pet Name >
-  Pet Name >
-  Pet Name >
-  Pet Name >
-  Pet Name >
-  Pet Name >
-  Pet Name >
-  Pet Name >

↑

Pet Profile - Sasha

LOGO
Pets ▾ Sasha
>Login



Sasha

[Followers](#)
[Send a Message](#)

About Me

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. In dictum non consectetur a erat nam at lectus urna. Ultrices vitae auctor eu augue ut lectus arcu. In ante metus dictum at tempor commodo. Adipiscing vitae proin sagittis nisl. In eu mi bibendum neque. Sociis natoque penatibus et magnis. Aliquam sem et tortor consequat id porta nibh venenatis cras. Elementum nisi quis eleifend quam adipiscing vitae proin sagittis nisl. Placerat quis ultricies lacus sed turpis tincidunt. Ut placerat orci nulla pellentesque dignissim enim sit amet venenatis. Sit amet consectetur adipiscing elit ut aliquam. Lacinia vel facilisis volutpat est velit egestas dui id.

My Photos



[See All/Edit](#)

Siblings



Momo ena

[See All/Edit](#)

Use Case 4 (3 of 3)

The image displays three screenshots of a mobile application interface, likely for a pet grooming service named "Booming Poodle Grooming".

Screenshot 1: Pet Profile View Post

- Top navigation bar: LOGO, Pets ▾ Border Collie, Login.
- Section title: Sasha's Photos.
- A grid of 12 small photos showing various dogs, with one photo of a black and white dog highlighted by a red arrow pointing down to the second screenshot.

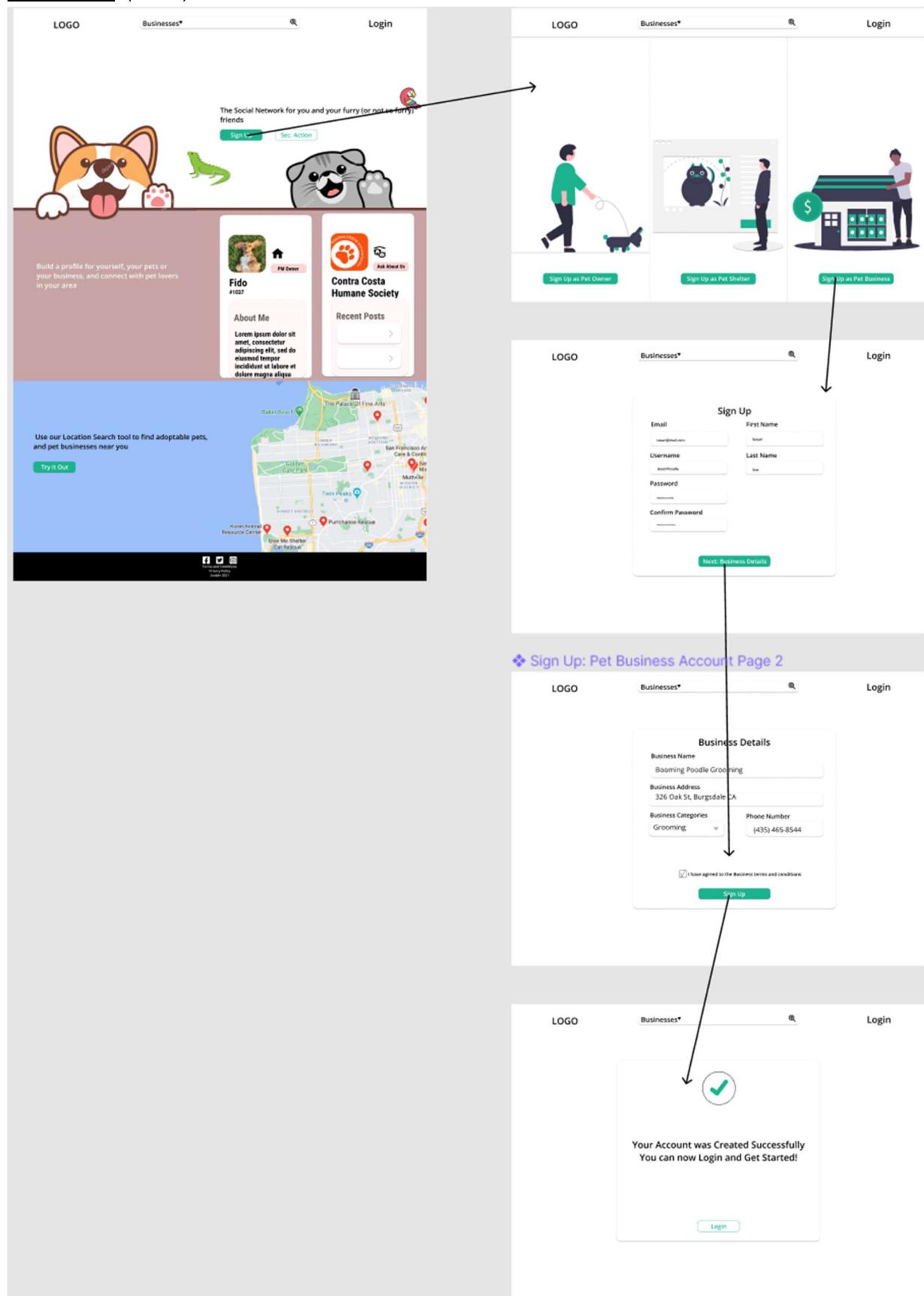
Screenshot 2: Pet Business Profile Self View

- Top navigation bar: LOGO, Businesses ▾ Booming Poodle Grooming, Login.
- Section title: Pet Business Profile: Self View.
- Profile picture of a dog, section title "Booming Poodle Grooming", and two buttons: "Follow" and "Send a Message".
- Business details: Address: 326 Oak St, Burgsdale CA, Phone Number: (435) 465-8544.
- Hours: Sun: Closed, Mon: 12:00 AM - 12:00 AM, Tue: 12:00 AM - 12:00 AM, Wed: 12:00 AM - 12:00 AM, Thu: 12:00 AM - 12:00 AM, Fri: 12:00 AM - 12:00 AM, Sat: Closed.
- Photos: A grid of three photos showing people interacting with dogs, with a red arrow pointing down to the third screenshot.

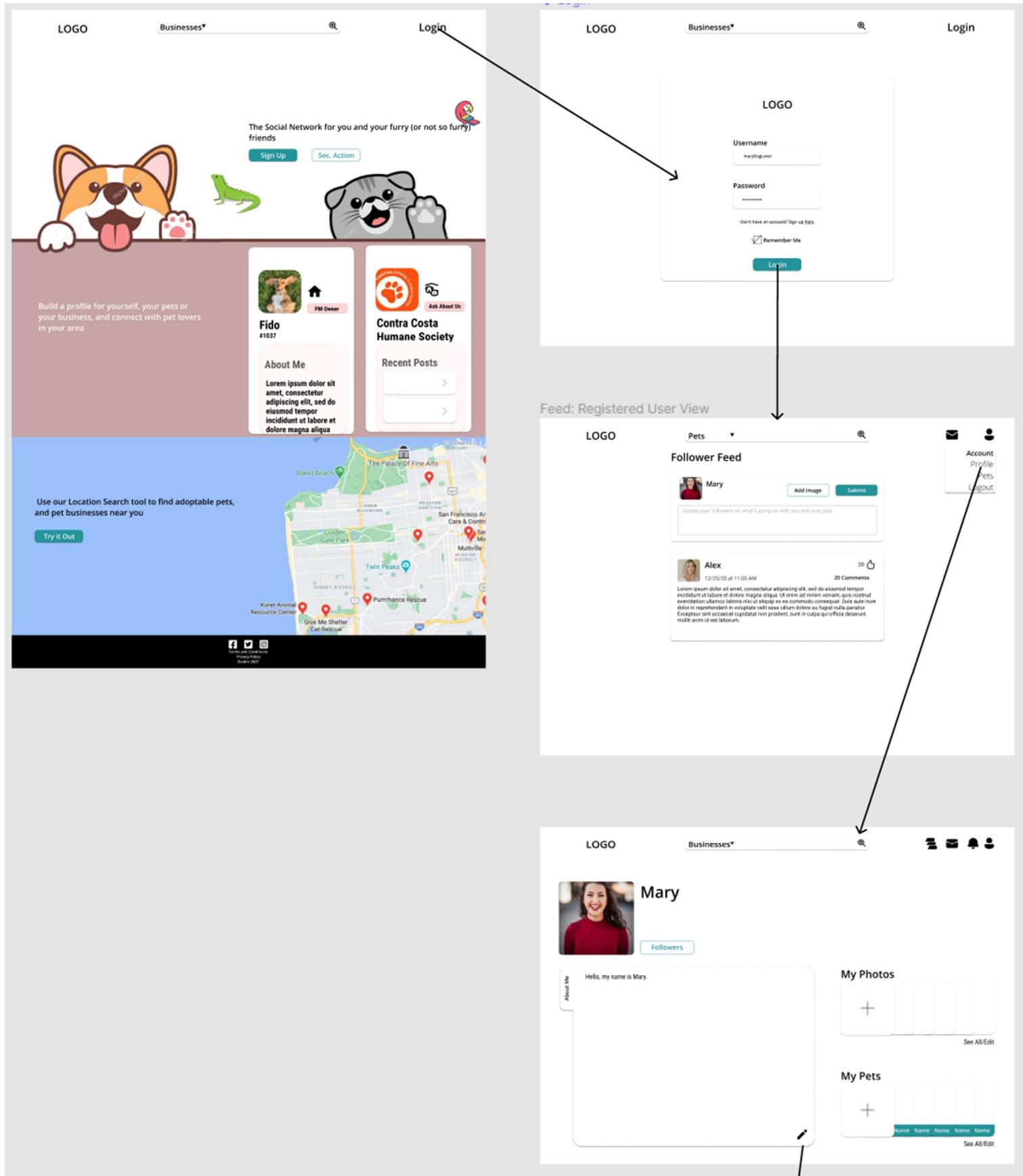
Screenshot 3: Map View

- Top navigation bar: LOGO, Businesses ▾ Booming Poodle Grooming, Login.
- Map showing the location of "Booming Poodle Grooming" at 326 Oak St, Burgsdale CA. The address is highlighted with a red dot.
- Search results sidebar: Results (10), Sort By: Distance, listing multiple entries for "Booming Poodle Grooming" with icons and names.

Use Case 5 (1 of 3)



Use Case 6 (1 of 3)



Use Case 6 (2 of 3)

The image displays two screenshots of a mobile application interface, showing a user profile for "Mary".

Screenshot 1 (Top):

- User Profile:** Shows a profile picture of a woman smiling, the name "Mary", and a "Followers" button.
- About Me:** A text area containing placeholder text: "Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. In dictum non consectetur a erat nam at lectus urna. Ultrices vitae auctor eu augue ut lectus arcu. In ante metus dictum at tempor commodo. Adipiscing vitae proin sagittis nisl. In eu mi bibendum neque. Sociis natoque penatibus et magnis. Aliquam sem et tortor consequat id porta nibh venenatis cras. Elementum nisi quis eleifend quam adipiscing vitae proin sagittis nisl. Placerat duis ultricies lacus sed turpis tincidunt. Ut placerat orci nulla pellentesque dignissim enim sit amet venenatis. Sit amet consectetur adipiscing elit ut aliquam. Lacus vel facilisis volutpat est velit egestas dui id." followed by a "Save" button.
- My Photos:** A section with a plus sign to add photos and a "See All/Edit" button.
- My Pets:** A section with a plus sign to add pets and a "See All/Edit" button.

Screenshot 2 (Bottom):

- User Profile:** Shows the same profile picture, name "Mary", and "Followers" button.
- About Me:** The same "About Me" text area.
- My Photos:** The same "My Photos" section.
- My Pets:** The same "My Pets" section.

Two arrows point from the "Save" button in Screenshot 1 down to the edit pencil icon in the bottom right corner of Screenshot 2, indicating a transition or action flow between the two screens.

Use Case 6 (3 of 3)

LOGO Businesses

Follower Feed

 Mary Add Image Submit

New Puppy is Growing

 Account Name 20 ↗ 20 Comments

12/25/20 at 11:05 AM

LOREM IPSUM DOLOR SIT AMET, CONSECTETUR ADIPISCING ELIT, SED DO EIUSMOD TEMPOR INCIDUNT UT LABORE ET DOLORE MAGNA ALIQUA. UT ENIM AD MINIM VENIAM, QUIS NOSTRUD EXERCITATION ULLAMCO LABORIS NISI UT ALIQUIP EX EA COMMODO CONSEQUAT. DUIS AUTEM IRURE DOLOR IN REPREHENDERIT IN VOLUPTATE VEILT ESSE CILIJUM DOLORE EU FUGIAT NULLA PARIAH. EXCEPTEUR SINT OCCACCAT CUPIDITAT NON PROIDENT, SUNT IN CULPA QUI OFFICIA DESERUNT MOLLIT ANIM ID EST LABORUM.

 Account Name 20 ↗ 20 Comments

12/25/20 at 11:05 AM

LOREM IPSUM DOLOR SIT AMET, CONSECTETUR ADIPISCING ELIT, SED DO EIUSMOD TEMPOR INCIDUNT UT LABORE ET DOLORE MAGNA ALIQUA. UT ENIM AD MINIM VENIAM, QUIS NOSTRUD EXERCITATION ULLAMCO LABORIS NISI UT ALIQUIP EX EA COMMODO CONSEQUAT.

Feed: Registered User View

LOGO Businesses

Follower Feed

 Mary Add Image Submit

Update your followers on what's going on with you and your pets

 Mary 0 ↗ 0 Comments

12/25/20 at 11:05 AM

New Puppy is growing

 Account Name 20 ↗ 20 Comments

12/25/20 at 11:05 AM

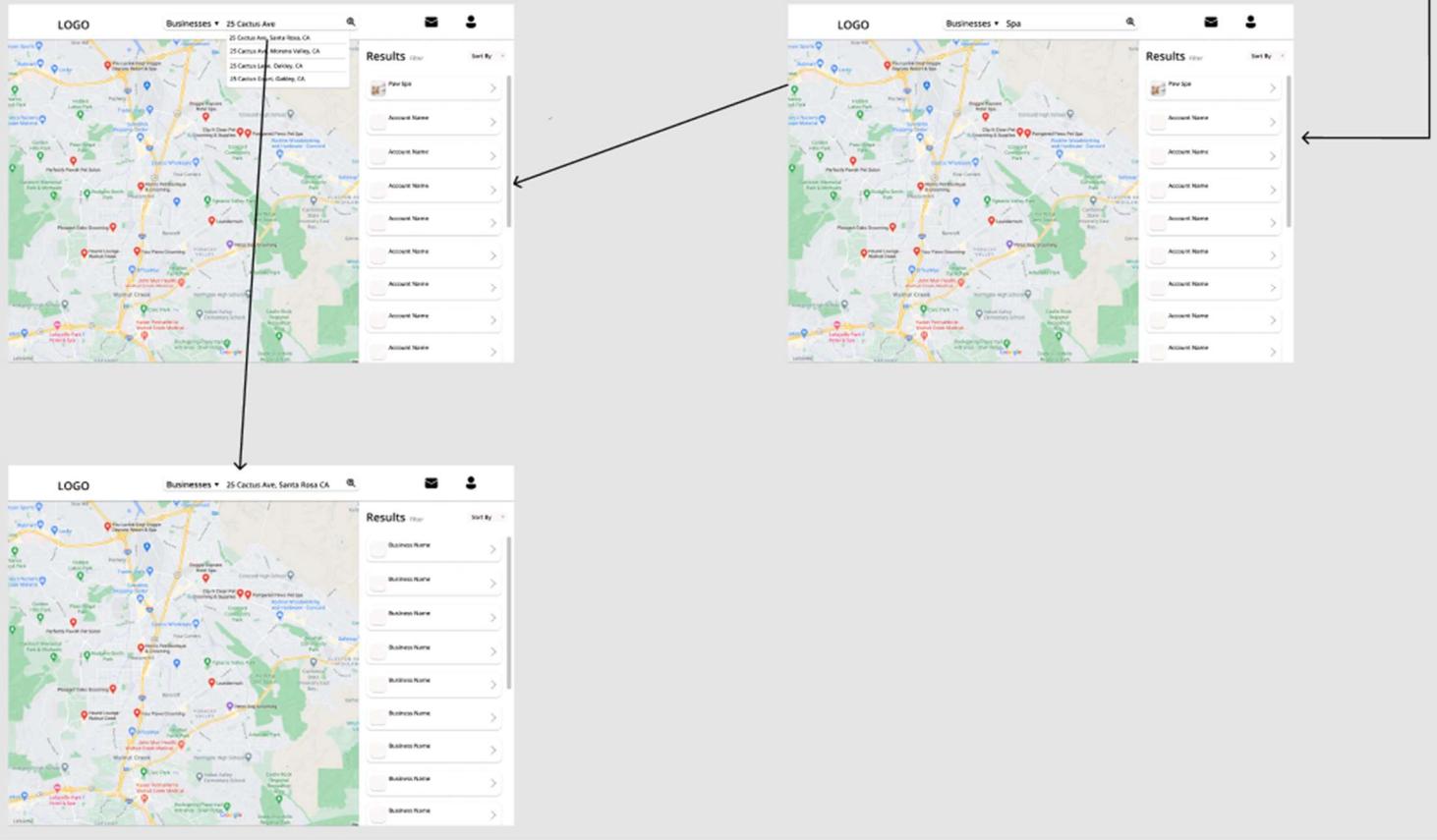
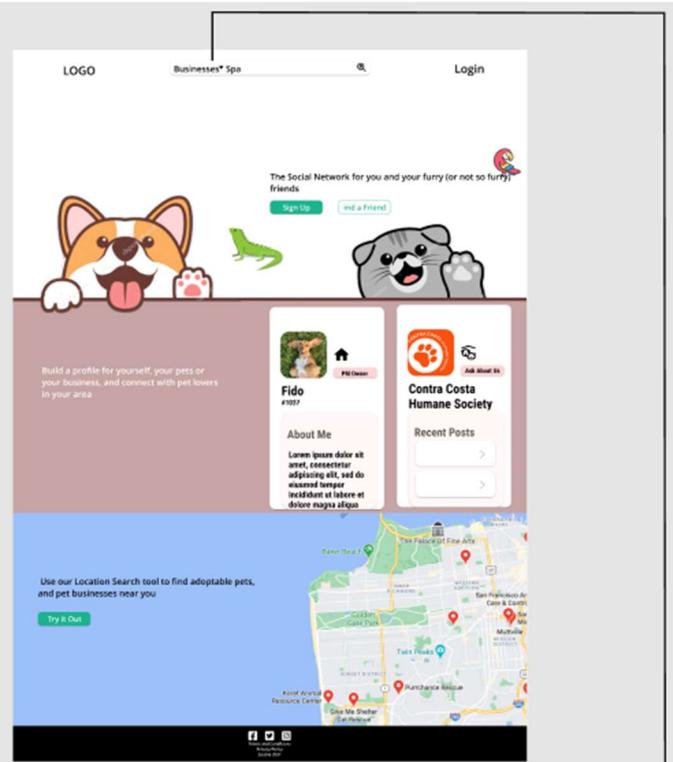
LOREM IPSUM DOLOR SIT AMET, CONSECTETUR ADIPISCING ELIT, SED DO EIUSMOD TEMPOR INCIDUNT UT LABORE ET DOLORE MAGNA ALIQUA. UT ENIM AD MINIM VENIAM, QUIS NOSTRUD EXERCITATION ULLAMCO LABORIS NISI UT ALIQUIP EX EA COMMODO CONSEQUAT. DUIS AUTEM IRURE DOLOR IN REPREHENDERIT IN VOLUPTATE VEILT ESSE CILIJUM DOLORE EU FUGIAT NULLA PARIAH. EXCEPTEUR SINT OCCACCAT CUPIDITAT NON PROIDENT, SUNT IN CULPA QUI OFFICIA DESERUNT MOLLIT ANIM ID EST LABORUM.

 Account Name 20 ↗ 20 Comments

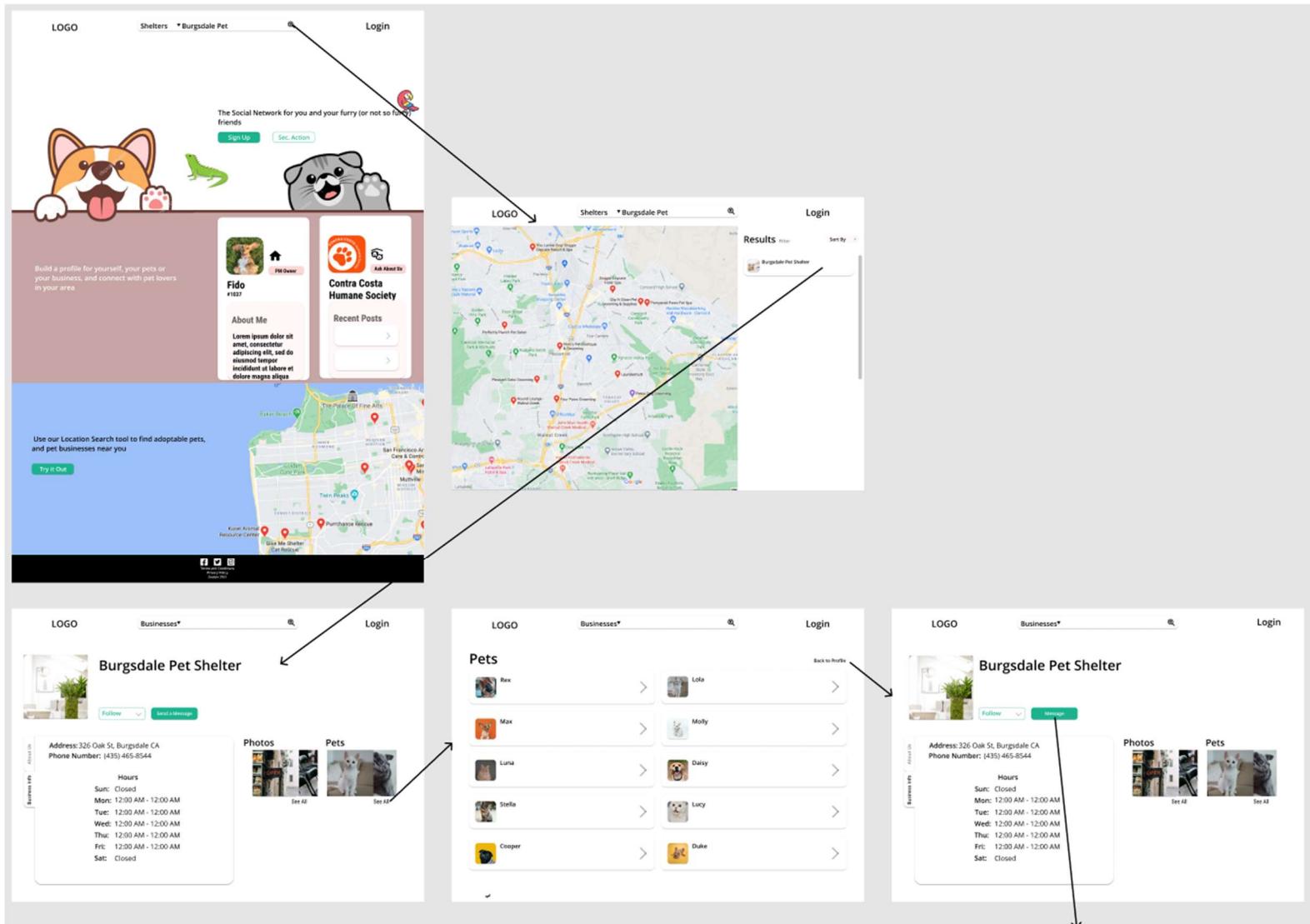
12/25/20 at 11:05 AM

LOREM IPSUM DOLOR SIT AMET, CONSECTETUR ADIPISCING ELIT, SED DO EIUSMOD TEMPOR INCIDUNT UT LABORE ET DOLORE MAGNA ALIQUA. UT ENIM AD MINIM VENIAM, QUIS NOSTRUD EXERCITATION ULLAMCO LABORIS NISI UT ALIQUIP EX EA COMMODO CONSEQUAT.

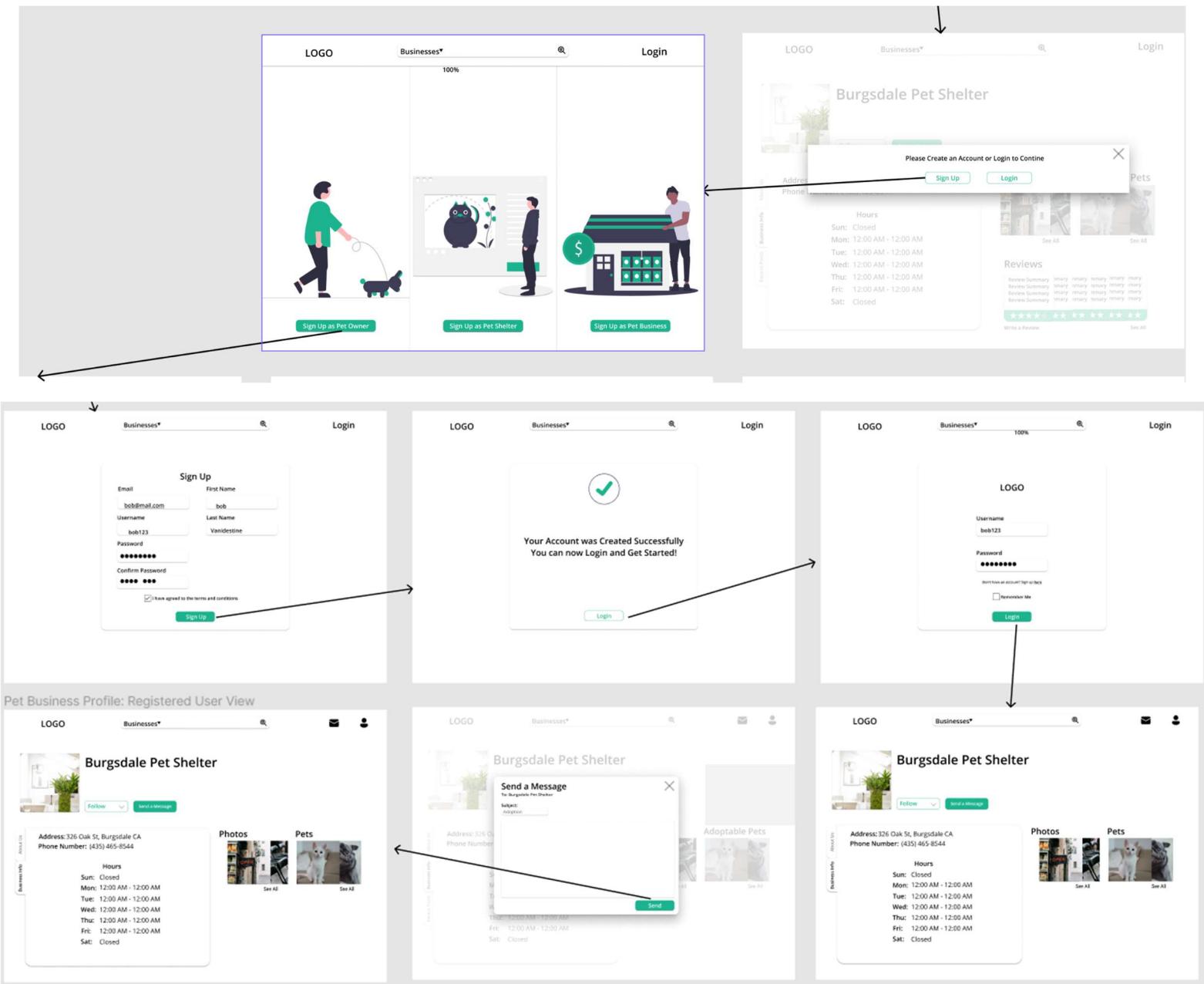
Use Case 7



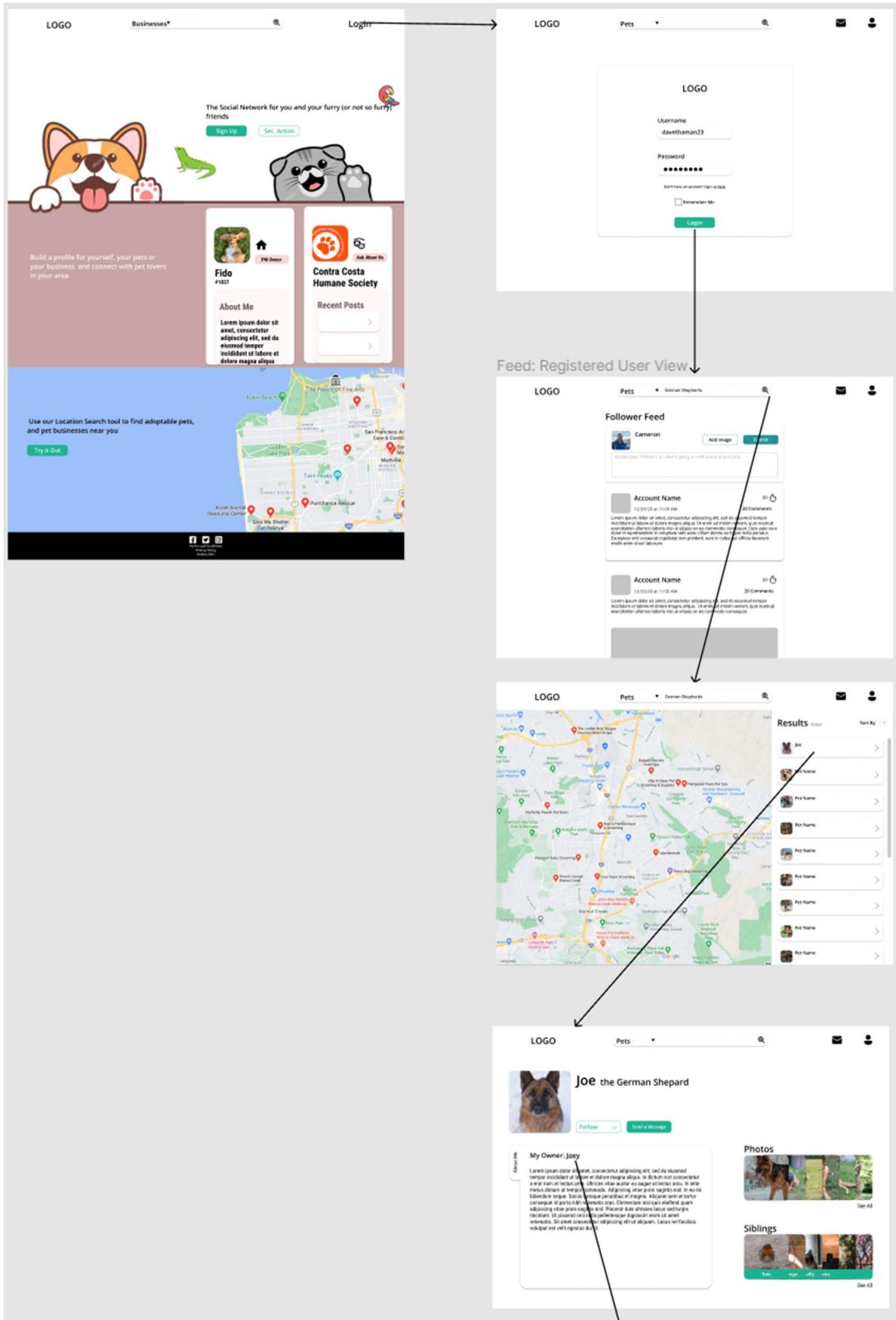
Use Case 8 (1 of 2)



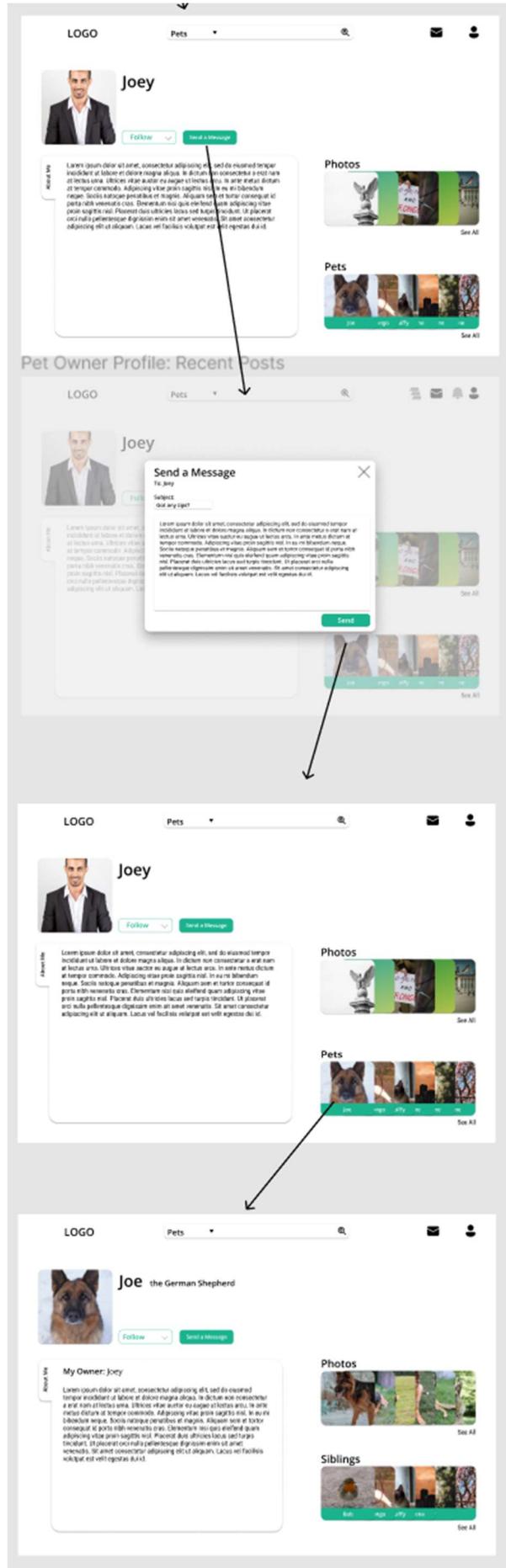
Use Case 8 (2 of 2)



Use Case 9 (1 of 2)



Use Case 9 (2 of 2)



Use Case 10 (1 of 3)

The diagram illustrates a user flow through a pet-related application interface:

- Home Screen:** Shows a cartoon dog and lizard at the top. Below is a call-to-action: "Build a profile for yourself, your pets or your business, and connect with pet lovers in your area". It features a "Sign Up" button and a "Sec. Action" button. A map of San Francisco highlights various locations like Baker Beach, The Palace Of Fine Arts, and Twin Peaks.
- Login Screen:** A modal window titled "Login" appears. It contains fields for "Username" (Fakeemail@email.com) and "Password" (redacted). Below the password field is a link "Don't have an account? Sign up here!". There is also a "Remember Me" checkbox and a "Login" button.
- Admin Control Panel:** Reached via a link from the login screen. It shows a sidebar with "LOGO" and "Pets". The main area displays a list of flagged content items:
 - Bad Boy Dog Pound:** Post by Bad Boy Dog Pound (12/25/20 at 11:05 AM) with 20 comments. Preview: "Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum."
 - Account Name:** Post by Account Name (12/25/20 at 11:05 AM) with 20 comments. Preview: "Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum."
- Business Profile Screen:** Reached via a link from the admin control panel. It shows the profile for "Bad Boy Dog Pound" located at "326 Oak St, Burgsdale CA" with phone number "(435) 465-8544". It lists operating hours: Sun: Closed, Mon: 12:00 AM - 12:00 AM, Tue: 12:00 AM - 12:00 AM, Wed: 12:00 AM - 12:00 AM, Thu: 12:00 AM - 12:00 AM, Fri: 12:00 AM - 12:00 AM, Sat: Closed. It includes sections for "Photos" (with a "See All" link) and "Reviews" (with a "Write a Review" button).

Use Case 10 (2 of 3)

The screenshot shows a list of reviews for a business named "Bad Boy Dog Pound". The reviews are displayed in a grid format. Each review includes the reviewer's name, their comment, and a five-star rating.

| Reviewer Name | Review Summary | Rating |
|---------------|---------------------|--------|
| Bob | This place sucks | ★★★★★ |
| Rick | Lost my dog | ★★★★★ |
| Morty | Blah blah blah | ★★★★★ |
| Susan | NA | ★★★★★ |
| Frank | reviewing reviewing | ★★★★★ |

The screenshot shows the main profile page for "Bad Boy Dog Pound". It includes the business name at the top, a placeholder for a logo, and sections for address, phone number, hours, and reviews.

Address: 326 Oak St, Burgsdale CA
Phone Number: (435) 465-8544

Hours

- Sun:** Closed
- Mon:** 12:00 AM - 12:00 AM
- Tue:** 12:00 AM - 12:00 AM
- Wed:** 12:00 AM - 12:00 AM
- Thu:** 12:00 AM - 12:00 AM
- Fri:** 12:00 AM - 12:00 AM
- Sat:** Closed

Photos

Reviews

Review Summary nmary nmary nmary nmary nmary
 Review Summary nmary nmary nmary nmary nmary
 Review Summary nmary nmary nmary nmary nmary
 Review Summary nmary nmary nmary nmary nmary

★★★★★ ★★★★★ ★★★★★ ★★★★★ ★★★★★

Use Case 10 (3 of 3)

Pet Owner Profile: Send a Message

Pet Owner Name

Send a Message

To: Bad Boy Dog Pound

Subject: Post Removal

Your post has been removed due to violation of policies, and may result in being banned if violations continue.

Send

Flagged Content

Account Name
12/25/20 at 11:05 AM
20 Comments

>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Accounts Awaiting Approval

- Booming Poodle Grooming
- Navigate to Profile (Within a List Format)

LOGO Pets See All

About Me Recent Posts

Unfol...

See All

Account Profile Pets Logout

Section IV: High Level Database Architecture and Organization

V2

Business Rules

1. General User
 - a. A General User shall be able to be a Registered User
 - b. A General User shall have one unique user id
 - c. A General User shall have one first name
 - d. A General User shall have one last name
 - e. A General User shall have one email
2. Registered User
 - a. A Registered User shall have one unique registered user id
 - b. A Registered User shall have one address.
 - c. A Registered User shall have many pets
3. Address
 - a. An Address shall have a unique address id
 - b. An Address shall be associated with one user
 - c. An Address shall have one address line 1
 - d. An Address shall have one address line 2
 - e. An Address shall have one city
 - f. An Address shall have one state
 - g. An Address shall have one zipcode
 - h. An Address shall have one country
4. Business
 - a. A Business shall be owned by one Registered User
 - b. A Business shall have one unique business id
 - c. A Business shall have one name
5. Shelter
 - a. A Shelter shall be a Business
 - b. A Shelter shall have one unique Shelter id
6. Commerce
 - a. A Commerce shall be a Business
 - b. A Commerce shall have one unique commerce id
 - c. A Commerce shall have one Business Type
7. Business Type
 - a. A Business Type shall be associated with many Commerces
 - b. A Business Type shall have one unique business type id
 - c. A Business Type shall have one name

- d. A Business Type shall have one description
8. Pet
- a. A Pet shall have one unique pet id
 - b. A Pet shall have one name
 - c. A Pet shall have one age
 - d. A Pet shall have at least one color
 - e. A Pet shall have one size
 - f. A Pet shall have only one owner.
9. Dog
- a. A Dog is a Pet
 - b. A Dog shall have one unique dog id.
 - c. A Dog shall have at least one Dog Breed.
10. Cat
- a. A Cat is a Pet
 - b. A Cat shall have one unique cat id
 - c. A Cat shall have at least one Cat Breed
11. Other Pet
- a. An Other Pet is a Pet
 - b. An Other Pet shall have one other pet id.
 - c. An Other Pet shall have one type.
12. Age
- a. An Age shall have one unique age id
 - b. An Age shall have one age name
 - c. An Age shall have one age description
 - d. An Age shall belong to many Pets
13. Size
- a. A Size shall have one unique size id
 - b. A Size shall have one size name
 - c. A Size shall have one size description
 - d. A Size shall belong to many Pets
14. Color
- a. A Color shall have one unique color id.
 - b. A Color shall have one color name
 - c. A Color shall have one hex value.
 - d. A Color shall belong many pets
15. Dog Breed
- a. Dog breed shall have one unique dog breed id.
 - b. Dog breed shall have one dog breed forum link.

- c. Dog breed shall have one dog breed name
 - d. A Dog breed shall belong to many Dogs
16. Cat breed
- a. A Cat Breed shall have one unique cat breed id.
 - b. A Cat Breed shall have one cat breed forum link
 - c. A Cat Breed shall have one unique cat breed name
 - d. A Cat Breed shall belong to many Cats
17. Type
- a. A Type shall have one unique type id.
 - b. A Type shall have one type name.
 - c. A Type shall have one type forum link
 - d. A Type shall belong to many Other Pets

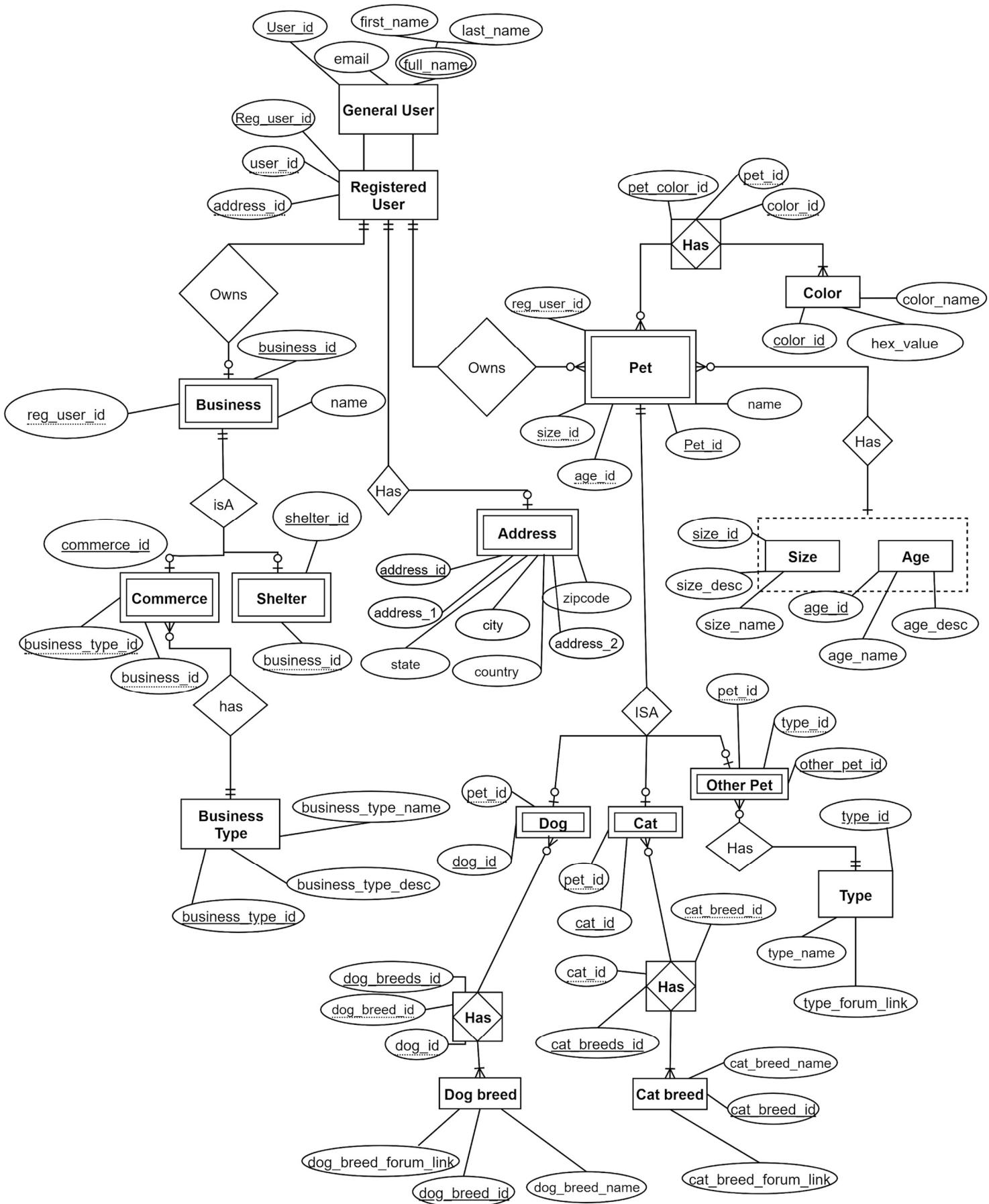
List of Main Entities, Attributes, and Keys

1. General User(Strong)
 - a. user_id: key, numeric
 - b. email: alphanumeric
 - c. first_name: alphanumeric
 - d. last_name: alphanumeric
 - e. full_name: composite, alphanumeric
2. Registered User (Strong)
 - a. reg_user_id: key, numeric
 - b. address_id: key, numeric
 - c. user_id: key, numeric
3. Business (Weak)
 - a. reg_business_id: key, numeric
 - b. reg_user_id: key, numeric
 - c. name: alphanumeric
4. Shelter (Weak)
 - a. shelter_id: key, numeric
 - b. business_id: key, numeric
5. Commerce (Weak)
 - a. commerce_id: key, numeric
 - b. business_type_id: key, numeric
 - c. business_id: key, numeric
6. Business Type(Strong)
 - a. business_type_id: key, numeric
 - b. business_type_name: alphanumeric
 - c. business_type_desc: alphanumeric
7. Address (Weak)

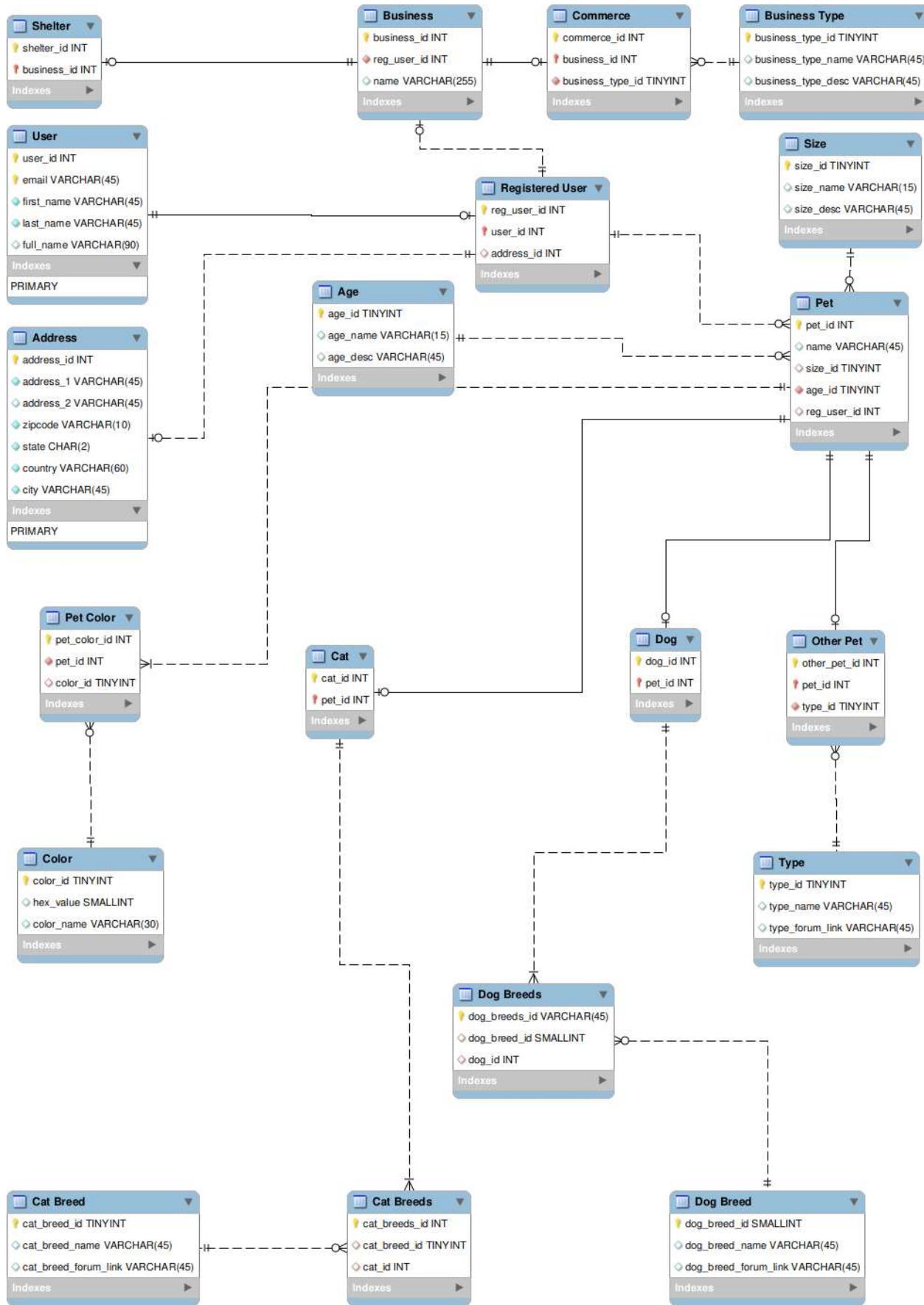
- a. address_id: key, numeric
 - b. address_1: alphanumeric
 - c. address_2: alphanumeric
 - d. zipcode: alphanumeric
 - e. city: alphanumeric
 - f. state: alphanumeric
 - g. country: alphanumeric
8. Pet (Weak)
- a. pet_id: key, numeric
 - b. name: alphanumeric
 - c. age_id: key, numeric
 - d. size_id: key, numeric
 - e. reg_user_id: key, numeric
9. Size (Strong)
- a. Size_id: key, numeric
 - b. Size_name: alphanumeric
 - c. Size_desc: alphanumeric
10. Age (Strong)
- a. age_id: key, numeric
 - b. age_name: alphanumeric
 - c. age_desc: alphanumeric
11. Color (Strong)
- a. color_id: key, numeric
 - b. color_name: alphanumeric
 - c. hex_value: alphanumeric
12. Dog (Weak)
- a. dog_id: key, numeric
 - b. pet_id: key, numeric
13. Dog Breeds (Weak)
- a. dog_breeds_id: key, numeric
 - b. dog_id: key, numeric
 - c. dog_breed_id: key, numeric
14. Dog Breed (Strong)
- a. dog_breed_id: key, numeric
 - b. dog_breed_name: alphanumeric
 - c. dog_breed_forum_link: alphanumeric
15. Cat (Weak)
- a. cat_id: key, numeric
 - b. pet_id: key, numeric
16. Cat Breeds(Weak)

- a. cat_breeds_id: key, numeric
 - b. cat_breed_id: key, numeric
 - c. cat_id: key, numeric
17. Cat Breed (Strong)
- a. cat_breed_id: key, numeric
 - b. cat_breed_name: alphanumeric
 - c. cat_breed_forum_link: alphanumeric
18. Other Pet (Weak)
- a. other_pet_id: key, numeric
 - b. type_id: key, numeric
 - c. pet_id: key, numeric
19. Type (Strong)
- a. type_id: key, numeric
 - b. type_name: alphanumeric
 - c. type_forum_link: alphanumeric

ERD Diagram



EER Diagram



DBMS:

We will use MySQLWorkbench as the DBMS, because it has been used by team members in the past, and supports the creation of database models.

Media storage:

All Media Files will be kept in a file system.

Search/filter architecture and implementation:

The user would be able to choose the type of entity they are trying to search Users, Businesses, Pets and Shelters then they would enter a search term or click a location from the suggestions provided by Google Places Autocomplete. The user is shown results that can be filtered and sorted based on the user choice.

If users are searched for, the map markers indicating location and all other map features will be unavailable for viewing. Pets not owned by businesses and shelters will share this behavior, but will also show up in the same results page with those Pets whose locations are kept.

In order to filter search terms and support autocomplete, we will use SQL's %like command.

By default, entities are sorted by proximity to the user's inputted address, or if a term was inputted, the number of characters matching between search query and result (relevancy)

Search Terms:

Users:

Name
Username

Businesses:

Name
Address
Category

Pets:

Name
Type

Breed
Color
Size
Age

Shelters:

Name
Address
Available types of pets

Filters:

Businesses:

Category

Pets:

Breed
Type
Age
Color
Size

Shelters:

Available types of pets

Sorting:

Businesses:

Proximity
Average Rating

Shelters:

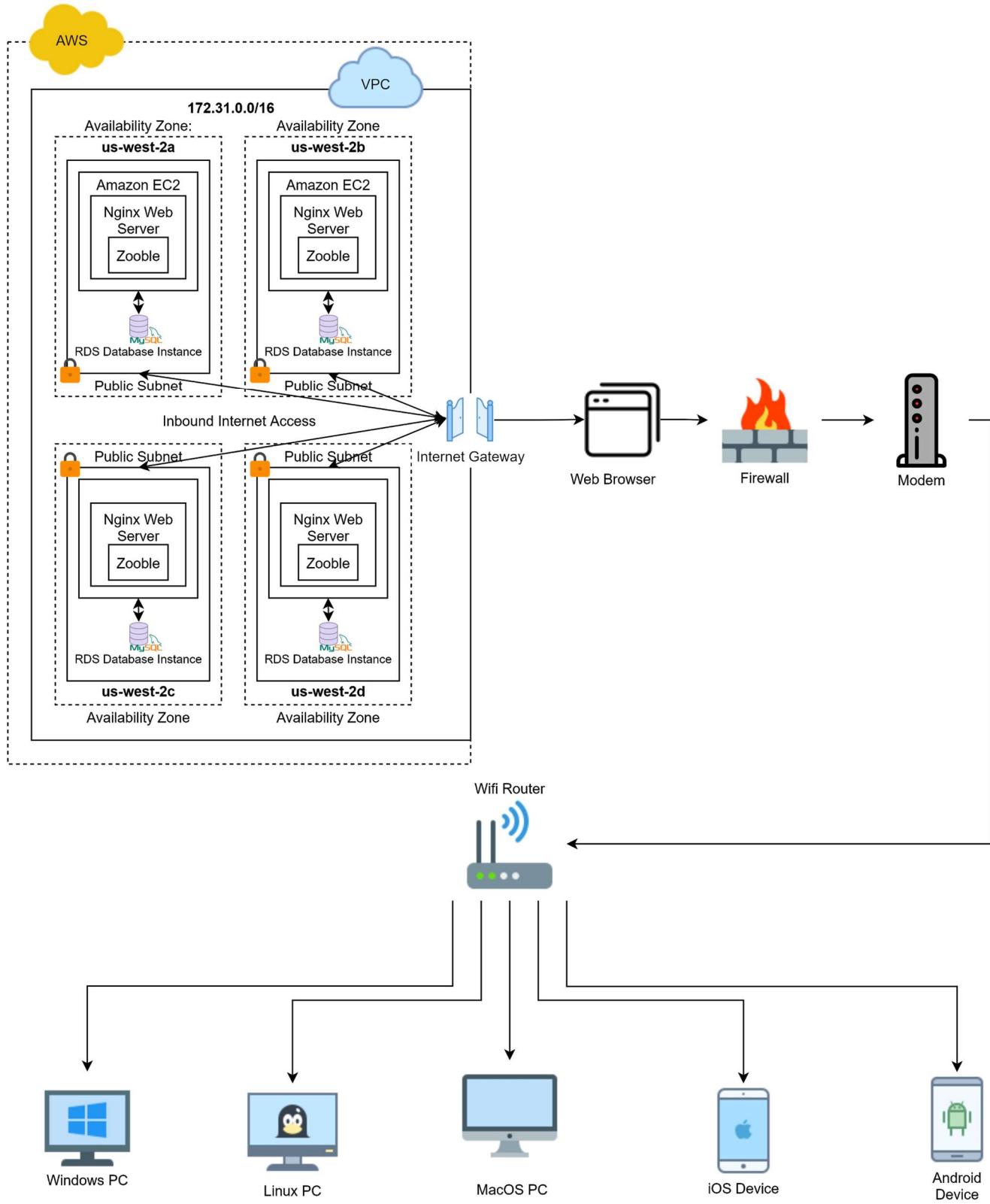
Proximity
Average Rating

Pets: Age
Pet Account Age
Proximity

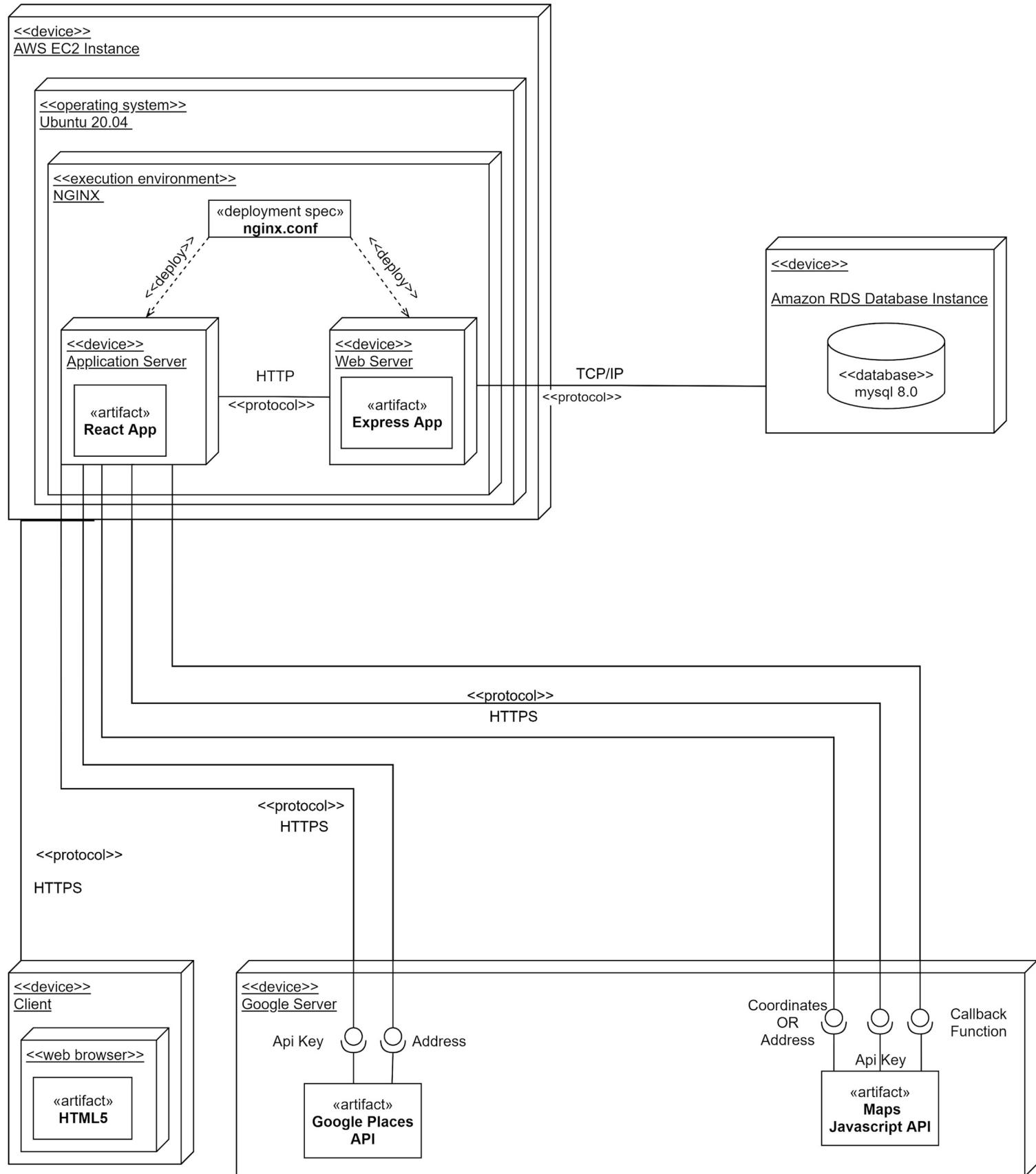
Media Storage: We will be using a file system-based storage system.

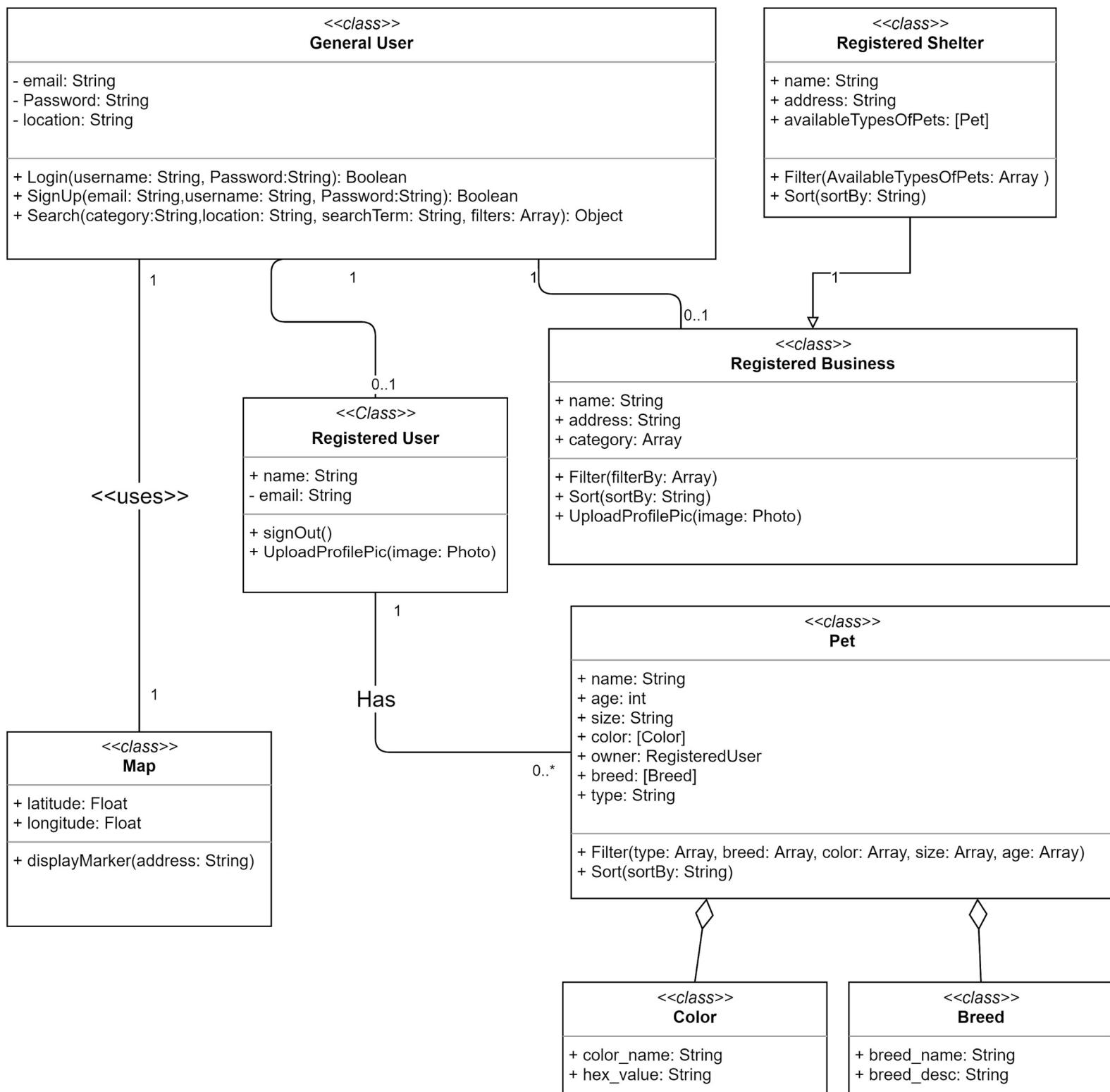
Section V: High Level Diagrams V2

Deployment Diagram:



Deployment Diagram:



UML Diagram:

Section VI: Contribution Details

Starting with the backend team, our backend team lead Em worked on coding the sign up page in the backend. Em also worked on coding and connecting the login page from our backend to the frontend. Wameedh was part of the backend and the frontend team. On the backend, Wameedh worked on the EER he focused on setting up the database model from our ERD and making sure the table relationships matched the foreign keys. Wameedh also worked on revising the Entity Descriptions/Business rules. Wameedh also worked on fixing bugs on the frontend and improving the css style of the site. Our team member Daniel was working on the frontend and backend. On the backend, Daniel worked on revising the Entity Descriptions/Business rules. Worked With Wameedh on improving the ERD by removing unnecessary entities that could potentially waste more space. Daniel was also the github admin where he was in charge of merging into master and pushing to AWS. For the frontend section of this milestone. The frontend lead, Cameron worked on Wireframes for use cases 5,6, and 10. Cameron also worked on the Login, AccountType, Signup, ShelterSignups, BusinessSignUps, and the Footer for the horizontal prototype. Cameron also debugged these components for the frontend. Cameron also updated Trello with the bugs that needed to be fixed before moving on to the next priorities. He created Trello cards for the frontend team to stay on track. He communicated with the backend team to make sure we were completing tasks to finish the horizontal prototype. Cameron also lead the frontend team every Friday by going over the documentation, prototype, and possible implementations. Cameron also made an edit to the document by adding the correct page number on each page of the documentation to match the page numbers in the table of contents. Wenjie is also another contributor to the frontend, he worked on wireframes 7 and 8. Wenjie worked on Profiles, Photos, and Reviews for the horizontal prototype. Wenjie also worked on debugging these components for the frontend. Wenjie also gave great ideas in the frontend meetings when discussing the documentation, prototype, and possible implementations. Sabrina was also a contributor to the frontend team. She worked on wireframes 3 and 4. She worked on the ProfileCard, ExploreUsers, and Followers for the horizontal prototype. Sabrina also debugged these components and kept track of each bug on Trello to keep a clear track of which bugs to fix. Sabrina also worked on the logo for the application and modified the documentation to give the pages the right page number to match the table of contents. Daniel also contributed to the frontend by working on wireframes 1,2, and 9. He worked on MyPets, Messages, Edit Modal, and Pets for the horizontal prototype. Daniel created the frontend and backend trello workspaces to keep both teams on track. Daniel also updated Trello by listing the bugs from the horizontal prototype. He worked with Wameedh to make sure all the pages were responsive. Daniel also made sure both

teams were on track, providing answers to questions in the general team meetings. He also participated greatly going over the documentation, prototype, and possible implementations.

Horizontal Prototype Feedback M3:

- Home page: Good design of the frontend user interface. The frontend is user friendly. Needs an option to return back to the home page
- Search (including search field validation): Gives good search options
- Search results : Shows relevant results when a user searches in the search bar
- Filtering: Needs more filtering when a user enters a search
- Search Details and maps (if applicable) Good user interface but the experience was a bit confusing for the user. Especially when searching for a business when the search bar was set to Pets. This should be more clear and not let the user to figure out what is wrong
- Messaging/contact seller/user (if applicable). Messaging was not required but needs to be added for future Milestones
- Data Upload: Not implemented.
- dashboards (user, admin): Good validation of login and registering. We need an admin page to administrate the application
- UI responsiveness (resize the browser):
- Performance (e.g. display of results list): Performance was well. Each button responded fast.

M4V2:**SW Engineering CSC648/848 Spring 2021****“Zooble”****Section 04 Team 2**

Team Lead: Edgar Catalan

Team Lead Email: ecatalan@mail.sfsu.edu

Frontend Lead: Cameron Harte

Backend Lead: Em Powers

Additional Members: Daniel Simpson, Wenjie Ye,
Sabrina Dang, Wameedh Mohammed Ali

Milestone 4

Due Date: 05/13/2021

GitHub Repository:

<https://github.com/CSC-648-SFSU/csc648-04-sp21-Team02>

History Version

| Milestone/Version | Date |
|-------------------|------------------|
| M4 V1 | 5/13/2021 |
| M3 V2 | 5/3/2021 |
| M3 V1 | 4/22/2021 |
| M2 V2 | 4/5/2021 |
| M2 V1 | 4/1/2021 |

| | |
|-------|------------------|
| M1 V2 | 3/20/2021 |
| M1 V1 | 3/5/2021 |

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Section I: Product Summary

Product Name: Zooble

List of Functional Commitments:

1. General Users
 - a. General Users can search for Registered Users (businesses, shelters, pets, pet owners) and can use their location to find businesses, shelters, and adoptable pets near them.
 - b. General Users can view profiles of Registered Users.
 - c. General Users can create an Account
2. Registered Users
 - a. Registered Users can create a User Profile and profiles for their pets.
 - b. Registered Users can make edits to their profile
 - c. Registered Users can make posts and photo posts to their feed that will be seen by Registered Users following them
 - d. Registered Users can follow other Registered Users and like other Registered User's Posts
3. Registered Business
 - a. Registered Business profile can be viewed by a registered user
 - b. Shall inherit all the functionality of a registered user
4. Registered Shelter
 - a. Registered Shelters can create a Shelter Profile and profiles for pets.
 - b. Shall inherit all the functionality of a registered user
5. Profile
 - a. Can display photos posted by the registered user that owns the profile
 - b. Profiles shall display followers
 - c. Profiles shall display the pets owned by the profile owner
6. Pet Profile
 - a. Pet profiles can be edited by the registered pet owner or registered shelter that owns the pet.
7. Registered Business Profile
 - a. Registered Business Profiles shall inherit the functionality of Profiles
 - b. Registered Business Profiles can provide Business Info (Business Hours, Address, Phone Number)
 - c. Registered Business Profiles can be viewed by all users
 - d. A Registered Business Profile can be edited by the Registered User who created it.

8. Registered Shelter Profile
 - a. Registered Shelter Profiles can provide Business Info (Business Hours, Address, Phone Number)
 - b. Registered Shelters shall display the Pets that reside at the Registered Shelter.
9. Posts
 - a. Posts shall display text and/or images.
 - b. Posts shall be able to be liked by Registered Users.
 - c. Posts can be commented on by Registered Users
10. Comments
 - a. Comments shall display the Display Name of the Registered User who posted the comment
 - b. Comments shall direct Registered Users to the Profile of Registered User who posted the comment
 - c. Comments shall show the time they were posted
11. Messages
 - a. Messages can be sent from a Registered User to another Registered User
 - b. Messages shall allow Registered Users to view the sent time and display name of the user
12. Followers
 - a. Registered Users are able to see a list of Registered Users that they are followed by
13. Following
 - a. Registered Users are able to see a list of the Registered Users that they are following.
14. Search
 - a. Users can search businesses, shelters, pets owned by shelters, and pet owners by display name.
 - b. Users can search for businesses, shelters, and pets owned by shelters by their address.
 - c. Users can search for businesses, shelters, and pets, by business category, available types of pets, and pet type or cat/dog breed respectively
15. Feed
 - a. The Feed shall display the posts of the Registered Users that a Registered User is following
 - b. The Feed shall display posts sorted by time posted by most recent to least recent
16. Map Search

- a. Map Search will display the locations of Registered Businesses, Registered Shelters and adoptable pets.
- b. Map Search will allow users to filter results for Pets, Registered Businesses, and Registered Shelters by their attributes:
 - i. Pet Type, Color, Size, Age, Breed (if cat or dog).
 - ii. Business Type
 - iii. Shelter's available type of pets

17. Notification

- a. Notifications shall appear when a Registered User receives a Message.

Unique Feature:

Our website combines the functionality of a social media website with pet search tools and business directories. Although there are many websites that encapsulate one or even two of these functionalities, our website is the only one that combines all three to create a pet-focussed hub for shelters, businesses, and pet owners to make connections and grow their businesses. However its singular unique feature is a search function that allows Pet Owners to view businesses, shelters, and adoptable pets near them on a map, which is a feature that is completely unique across all competitors.

Website URL:

<https://www.zooble.link>

Section II: Usability Test Plan

1. Map Search:

Test Objectives:

Our unique feature, the Map Search, will be tested on the efficiency and accuracy of searching for Registered Businesses, Pets, Registered Users, and Registered Shelters. The following features of the Map Search will be examined:

Search Results - Are the search results located nearby? Do they include information that is relevant to the users?

Filtering - Do the filters function as expected? Do the filter options provide good functionality?

Sorting - Does sorting sort items as expected? Do sorting options provide good functionality to the user? Is the default sorting option the most useful sorting option available?

Map Display - Does the Map display the correct entities on screen? Does the map display a well-sized radius of results? Does the map provide a useful locational context for the entities displayed on it?

Test Description:

System setup:

User is using a personal computer (PC) or laptop that is capable of running one or more of the following browsers: Chrome: 90.x.x.x, 89.x.x.x, Safari: 14.x.x.x, 13.x.x.x, Firefox: 88.x, 87.x. The user is on the Zooble website homepage.

Starting point:

The starting point for using the Map Search is on the homepage of the website, where the search bar is able to be accessed.

Intended users:

General Users who want to search for a Pet, Business, or Shelter.

URL: <https://www.zooble.link/>

Usability Task Description:

| Task | Description |
|--------------------------------|---|
| Task | Search for a pet, business, shelter, or user |
| Machine State | Home page is displayed, search bar is in default state with no input yet |
| Successful completion criteria | User has navigated to the search results page and the expected search results are displayed |
| Benchmark | Completed in 4 sec |

Usability Test Table:

| Test Case | % Completed | Errors | Comments |
|---------------------|-------------|--------|--|
| Search for Pet | 100 | None | Overlapping the cluster of map markers for pets at shelter is confusing. Should be more clear that the only pets being shown are pets at shelters, and which shelters they are at. |
| Search for Business | 100 | None | Overlapping cluster of map markers for businesses located in same building |
| Search for Shelter | 100 | None | Details about shelters should be shown on search result card (same |

| | | | |
|--|-----|--|--|
| | | | applies for other search categories) |
| Search for Pet Owner | 100 | None | <p>Display of the map next to search results that don't show locations is confusing and unnecessary.</p> <p>Going to next page button should not be available if there are no more results</p> |
| Filtering for a Dog with the Dog breed of Norwich Terrier | 100 | None | |
| Filtering for Cats and Dogs with Breed of 'American Staffordshire Terrier' | 0 | Only Produces search result of Dogs with Breed of 'American Staffordshire Terrier' | <p>Maybe this feature is not necessary as it seems like a very small percentage of users would use it</p> <p>Seems like selecting breed overrides any selection of pet types</p> |

Questionnaire

User 1: X

- Age: 62

User 2: X

- Age: 61

User 3: X

- Age: 31

| | Strongly
disagree | disagree | Neutral | Agree | Strongly
Agree |
|--|----------------------|----------|---------|-------|-------------------|
| 1. The filtering functions of the “Map Search” were easy to use and per my expectations. | | X | XX | | |
| 2. Navigating using the “Map Search” was straightforward and intuitive. | | | | XXX | |
| 3. The search results from the “Map Search” were relevant and accurate. | | | X | XX | |

2. Upload Post:

Test Objectives

The objectives of testing Upload Post are to determine the ability of the feature to handle uploading and displaying information correctly. This is important because this is the starting point for user's interactions with each other as well as business and shelter's opportunity to grow their customer reach. The following features will be examined:

Text Post - Is text able to be inputted into the Post box? When the user chooses to upload the post, does the text display correctly? Are limitations on post length and content imposed by the website enforced?

Image Upload - Is the image being uploaded of the right size? Is there any image pixelation or stretching? Is the image cut off? Does it appear in the feed when successfully uploaded?

Post Display - Does the Post display persistently on the Feed? Does the Post display persistently on the profile of the User who uploaded it? Does the post display properly in the constraints of the post box on the user's computer?

Test Description

System setup:

User is using a personal computer (PC) or laptop that is capable of running one or more of the following browsers:

Chrome: 90.x.x.x, 89.x.x.x,

Safari: 14.x.x.x, 13.x.x.x,

Firefox: 88.x, 87.x. The user is on the Zooble website and has created and logged in to their Registered User account. They have navigated to their Feed Page where they are able to create a post and post it to their feed.

Starting point:

The starting point for making a post is on the Feed page where there is a textbox and button that allows the input of text and an image file to be uploaded and posted.

Intended users:

Registered Users (e.g. Pet Owners, Pet Businesses, Pet Shelters) who want to post information and images on their feed.

URL: <https://www.zooble.link/feed>

Usability Task Description

| Task | Description |
|--------------------------------|---|
| Task | Upload an image |
| Machine State | The Registered User is on the Feed, with a page populated with multiple posts and the create post section |
| Successful completion criteria | User has created a post. The post is able to be viewed on the feed and clicked on to open its modal. |
| Benchmark | Completed in 1 min. |

Usability Test Table

| Test Case | % Completed | Errors | Comments |
|---------------------|--------------------|---------------|---|
| Post Text | 100% | None | One user reported that it wasn't straightforward if he had to add an image or he could add a text only to his post. |
| Upload Image | 100% | None | One user reported that the layout wasn't as straightforward as it should be. |
| Post Image and Text | 100% | None | User is able to successfully post |

| | | | |
|--------------|-----|--|--|
| | | | an image and text. |
| Post Display | 75% | The text post modal window has display issues. | Image Posts and text posts show up fine on the user's feed. The image post modal window looks great. The text post modal window shows up weird and incorrectly. The container box is shrunk because there is no image which distorts the whole modal window. |

Questionnaire

User 1: X

- (Age: 31)

User 2: X

- (Age: 26)

User 3: X

- (Age: 25)

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|-------------------|----------|---------|-------|----------------|
| Finding the "Create a Post" button was straightforward | | | | X | XX |
| The layout of the "Create a Post" page is user-friendly | | X | X | X | |
| I found the "Create a Post" feature to be easy to use and per my expectations | X | | X | X | |

3. Create a pet profile

Test Objectives

The objective of testing Create a Pet Profile is to determine the ability to create a new profile for a pet. We see this as important to test as it is what sets the social media aspect of our site apart from other social media sites. It may be what draws people to the website because of that uniqueness and fun factor . Also it will allow shelters to showcase their pets and create adoption opportunities, which is one of the main purposes of the shelter's account existence.The following features will be examined:

Display Information for Pet - Does the text that is inputted for the Pet name display correctly? If applicable, are you able to choose the right breed of pet? Does the pet correctly link to the right Owner?

Image Upload - Does the image display correctly when chosen as the new Pet Profile image? Does the image upload successfully when selected from the user's computer?

Siblings (Pet Owner) - Does your new Pet Profile that is created display on the Pet Owners My Pets page? Is the new Pet Profile able to be displayed on the Pet Owner Profile?

Housemates (Pet Shelter) - Does your new Pet Profile that is created display on the Pet Shelters My Pets page? Is the new Pet Profile able to be displayed on the Pet Shelters Profile?

Test Description

System setup:

User is using a personal computer (PC) or laptop that is capable of running one or more of the following browsers: Chrome: 90.x.x.x,89.x.x.x, Safari: 14.x.x.x, 13.x.x.x, Firefox: 88.x, 87.x. The user is on the Zooble website and has created and logged in to their Registered User account. They have navigated to their Profile Page, where they are able to access the "Create a Pet Profile" feature.

Starting point:

The starting point for creating a Pet Profile is the My Pets page where they are able to access the button for creating a Pet Profile.

Intended users:

Registered Pet Owners and Registered Shelters who want to upload a profile for a pet.

URL:

<https://www.zooble.link/MyPets>

Usability Task Description

| Task | Description |
|--------------------------------|--|
| Task | Create a profile for a pet |
| Machine State | Modal to enter pet information has just loaded |
| Successful completion criteria | User has created a profile for a pet, and it can be displayed and navigated to |
| Benchmark | Completed in 1 min |

Usability Test Table

| Test Case | % Completed | Errors | Comments |
|--------------------|--------------------|---------------|--|
| Enter Name | 100% | N/A | Text fields were readable and understandable |
| Enter Pet Type | 100% | N/A | Text fields were readable and understandable |
| Enter Pet Color(s) | 100% | N/A | Slight confusion from one tester |

| | | | |
|-----------------|------|-----|---|
| | | | over inputting multiple options/scrolling down |
| Enter Pet Age | 100% | N/A | Text fields were readable and understandable |
| Enter Pet Size | 100% | N/A | Text fields were readable and understandable.

Comment that pet size was not applicable to all types of pets as it is intuitive - i.e. chinchillas. |
| Enter Pet Breed | 100% | N/A | Choices were understandable.
One comment from tester that not all pets were covered - "Other" option |

Questionnaire

User 1: X (Age 63)

User 2: X (Age 54)

User 3: X (Age 20)

| | Strongly disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|-------------------|----------|---------|-------|----------------|
| The layout of the “Create a Pet Profile” page is easy to navigate. | | | | X | XX |
| The different elements of the “Create a Profile” page were well-integrated | | | | XX | X |
| Inputting information into the “Create a Profile” page was straightforward. | | | X | XX | |

4. Send a message

Test Objectives:

We are testing the ability for users to send messages. The “send a messages” function should perform per user expectations. The user should be able to easily compose a message and send it to another user.

Test Description

System setup:

User is using a personal computer (PC) or laptop that is capable of running one or more of the following browsers: Chrome: 90.x.x.x, 89.x.x.x, Safari: 14.x.x.x, 13.x.x.x, Firefox: 88.x, 87.x. The user is on the Zooble website and has created and logged in to their Registered User account. A message is sent to the user before they have logged in

Starting point:

The starting point for Message is on the Feed after login.

Intended users:

Any registered user of any type.

URL:

<https://www.zooble.link/Messages>

Usability Task Description

| Task | Description |
|--------------------------------|--|
| Task | Send a message |
| Machine State | User is logged in and on the messages page |
| Successful completion criteria | User would be able to send a message to another user successfully. |
| Benchmark | Completed in 10 seconds |

Usability Test Table

| Test Case | % Completed | Errors | Comments |
|-----------------------|-------------|--------|---------------------------------|
| Input message subject | 100% | None | The user provided no comments |
| Input message body | 100% | None | The user provided no comments |
| Send message | 100% | None | I like the color of the button! |

Questionnaire

User 1: X

- (Age: 31)

User 2: X

- (Age: 31)

User 3: X

- (Age: 28)

| | Strongly
disagree | disagree | Neutral | Agree | Strongly
Agree |
|---|----------------------|----------|---------|-------|-------------------|
| The layout of the “Send a message” page is easy to navigate. | | | | | XXX |
| The different elements of the “Send a message” page were well-integrated | | | | X | XX |
| Inputting information into the “Send a message” page was straightforward. | | | | | XXX |
| The experience of sending a message matched my expectations. | | X | X | X | |

5. Commenting on a post:

Test Objectives:

Users can comment on other users' posts. The test would check if the process of commenting on a post is working as expected. This needs to be tested as a social media website. Our users should be able to interact and share their thoughts with other users easily. It is also a good candidate for testing because it is a feature that could have multiple users using it at the same time on the same post

Test Description

System setup:

User is using a personal computer (PC) or laptop that is capable of running one or more of the following browsers: Chrome: 90.x.x.x, 89.x.x.x, Safari: 14.x.x.x, 13.x.x.x, Firefox: 88.x, 87.x. The user is on the Zooble website and has created and logged in to their Registered User account. They have navigated to their Feed, where they are able to view posts and use the Comment feature to leave a comment on them.

Starting point:

The starting point is a Post that is displayed on the Feed of the user

Intended users:

Any registered user of any type.

URL:

<https://www.zooble.link/Feed>

Usability Task Description

| Task | Description |
|--------------------------------|--|
| Task | Comment on a post in the "feed" section |
| Machine State | Post is displayed, comment box is open |
| Successful completion criteria | User has drafted and posted a comment on a "feed" post |
| Benchmark | Completed in 15 sec |

Usability Test Table

| Test Case | % Completed | Errors | Comments |
|-----------|-------------|----------------|---|
| Comment | 0% | Not Functional | When trying to post a comment it does not display the comment on the post |

Questionnaire

- User 1: X
 - (Age Range: 25-34)
- User 2: X
 - (Age Range: 18-24)
- User 3: X
 - (Age Range: 18-24)

| | Strongly disagree | disagree | Neutral | Agree | Strongly Agree |
|---|-------------------|----------|---------|-------|----------------|
| Figuring out how to post a comment was easy. | X | | XX | | |
| The layout of the “Comment on a Post” feature was understandable. | | | | XX | X |
| Comments created by the “Comment on a Post” feature were not clearly displayed. | XX | | X | | |

Section III: QA Test Plan

QA Test Plan 1:

- Test Objectives: To test that the website shall support upload of image files under 5 MB of the .jpg image formats
- HW and SW Setup
 - OS: Windows 10 Education Version 10.0.19041 Build 19041
 - Browser: Brave Version 1.24.82 Chromium 90.0.4430.93
 - CPU: AMD Ryzen 7 3700X 8-core Processor 3.60 GHz
 - RAM: 16.0 GB
 - System: 64-bit Operating System, x64-based processor
 - URL: <https://zooble.link/Feed>
- Feature to be Tested: Uploading a photo
- QA Test Plan:

| Test | Test Title | Test Description | Test Input | Expected Correct Output | Test Results (PASS/FAIL) |
|------|------------------------|---|--|---|--------------------------|
| 1 | .jpg upload | Create a post that will upload .jpg image no more than 5 MB | Add text and select .jpg file under 5 MB to upload | The resulting post will be displayed on feed | PASS |
| 2 | .png upload | Create a post that will upload .png | Add text and select .png file to upload | PNG file type will not be accepted | PASS |
| 3 | Greater than 5 MB .jpg | Create a post that will upload .jpg image greater than 5 MB | Add text and select .jpg file larger than 5 MB to upload | .jpg file type will not be accepted due to size | PASS |

QA Test Plan 2:

- Test Objectives: To test the website shall encrypt user passwords
- HW and SW Setup
 - OS: macOS Catalina version 10.15.6
 - Browser: Google Chrome Version 90.0.4430.93
 - RAM: 8 GB 2133 MHz
 - System: 2.3 GHz Dual-Core Intel Core i5
 - URL: <https://zooble.link/signup-page>
- Feature to be Tested: Whether passwords are successfully encrypted in the database and are kept secure throughout the process
- QA Test Plan:

| Test # | Test Title | Test Description | Test Input | Expected Correct Output | Test Results (PASS/FAIL) |
|--------|-------------------------|---|--|---|---------------------------|
| 1 | Browser Vulnerabilities | The URL and HTML of the Signup Page will be checked to see if the original password is visible | first name: Em
last name: Powers
username: Encrypted
email: encrypted@test.com
password: Encrypt9! | The password is obfuscated in the text field and URL | PASS |
| 2 | Query Encryption | The query from the Signup Page containing the password will be checked to see if the password is encrypted. | first name: Em
last name: Powers
username: Encrypted
email: encrypted@test.com
password: Encrypt9! | The password is not human-readable in the page source Javascript query. | PASS |
| 3 | Database Encryption | The database will be checked to ensure that the password is securely | first name: Em
last name: Powers
username: Encrypted | The password appears as a bcrypt hash in the | PASS |

| | | | | | |
|--|--|------------|--|--------------------|--|
| | | encrypted. | email:
encrypted@test.
com
password:
Encrypt9! | MySQL
database. | |
|--|--|------------|--|--------------------|--|

QA Test Plan 3:

- Test Objectives: To test the map search function on the website with 4 seconds
- HW and SW Setup
 - OS: Ubuntu 20.04
 - Browser: Firefox 88.0.1
 - RAM: 16 GB
 - CPU: Intel i5-8265U @ 1.60 GHz
 - System: 64 bit Operating System
 - URL: <https://www.zooble.link/>
- Feature to be Tested: Efficiency of map search
- QA Test Plan:

| Test # | Test Title | Test Description | Test Input | Expected Correct Output | Test Results (PASS/FAIL) |
|--------|-------------|--|--|--|---------------------------|
| 1 | Search | Initiate a Search by providing a display name | Search for the term “Daniel” with the category set to Pet Owners | The two profile search results with the display names of “Daniel” with no markers on map within 4 seconds | Pass |
| 2 | Page Change | Change the page on a search results page with more than 10 results | Search for all businesses(blank search term) with the location set to ‘1465 Dupre Ct Concord CA’

Switch to the second page of the results | 9 Farthest away businesses from 1465 Dupre Ct within the default range of 5 miles and 9 corresponding markers within 4 seconds | Pass |
| 3 | Filtering | Filter Search Results to | Set the Business | 4 Businesses | Pass |

| | | | | | |
|--|--|--|---|---|--|
| | | | Category Filter while viewing the business search results to 'Grooming' | with business category of 'Grooming' within 4 seconds | |
|--|--|--|---|---|--|

QA Test Plan 4:

- Test Objectives: To ensure that users must be authenticated before posting, liking and commenting.
- HW and SW Setup
 - OS: macOS Big Sur version 11.3.1
 - Browser: Microsoft Edge Version 90.0.818.51 (Official build) (64-bit)
 - RAM: 8 GB 1600 MHz DDR3
 - CPU: 1.7 GHz Dual-Core Intel Core i7
 - System: 64 bit Operating System
 - URL: <https://www.zooble.link/Feed>
- Feature to be Tested: Submitting a post, liking a post and commenting on a post.
- QA Test Plan:

| Test # | Test Title | Test Description | Test Input | Expected Correct Output | Test Results (PASS/FAIL) |
|--------|------------|---|--------------------------------------|---------------------------|---------------------------|
| 1 | Posting | Unauthenticated user would try to submit a post on the website. | Some text in the post body. | Post won't be created. | PASS |
| 2 | Liking | Unauthenticated user would try to like a post | Liking a post. | Like won't be accepted | PASS |
| 3 | Commenting | Unauthenticated user would try to comment on a post. | Some text in the comment text input. | Comment won't be accepted | PASS |

QA Test Plan 5:

- Test Objectives: Test when the user searches for a business the results will be ordered based on proximity to the address entered.
- HW and SW Setup
 - OS: Windows 10 Home
 - Browser: Google Chrome Version 90.0.4430.93 (Official Build) (64-bit)
 - RAM: 16.0 GB
 - CPU: Intel(R) Core(TM) i7-7700HQ CPU @ 2.80GHz
 - System: 64-bit operating system, x64-based processor
 - URL: <https://www.zooble.link/MapSearch>
- Feature to be Tested: Accuracy of Map Search Results with
- QA Test Plan:

| Test # | Test Title | Test Description | Test Input | Expected Correct Output | Test Results (PASS/FAIL) |
|--------|--|---|--|---|--|
| 1 | Ordered by distance - with address entered | Test search results ordered by distance with address entered | Address:
1465 Dupre Ct Concord CA"

Selected sort by distance | 9 businesses from 1465 Dupre Ct Concord CA within the default range of 5 miles will be shown on search results | PASS |
| 2 | Ordered by distance - no address entered | Test search results ordered by distance with no address entered | No address entered

Selected sort by distance | User will be asked to use their current location for searching.

If user accepts to use their location for searching:

9 businesses from user's current address within the default range of 5 miles will be shown on search results

If user does not | FAIL:

If the user does not accept the request to use the location then they are not taken to the search results page with no message display of why they were not |

| | | | | | |
|---|--|--|--|--|---|
| | | | | accept the request :

No results will be shown | taken to the page |
| 3 | Ordered by distance - with a business type entered | Test search results ordered by distance with business type and address entered | Type:
Grooming

Address:
1465 Dupre Ct Concord CA

Selected sort by distance | 9 given type of businesses from 1465 Dupre Ct Concord CA within the default range of 5 miles will be shown on search results | FAIL:

Different types of businesses were shown |

Section IV: Code Review

- 1. Coding Style:** We employed several techniques to keep code well organized and well functioning. We have been using the Stroustrup indentation style across our frontend and backend files. For calls to the backend, the backend code itself, and our React hooks we had been using arrow functions, while for all other functions we used the normal function notation.

We utilized CSS modules to organize the styling attributes of our frontend files and also avoid conflicts in styling classes. We used a separate Global CSS file to establish font sizes, font families, and UI Colors.

All React components were written as functions, not as classes, and we relied on hooks to update the UI and perform certain repetitive functionality. We separated our frontend files into separate folders of components and the pages that are made up of components. We put pages that were related to the same section of the site each in their own separate folder. For example, the second page of a form like sign up would go in the same folder as the first page. We held the same philosophy in organizing our smaller components, where all the modals would go in one folder, all the nav elements in another, etc.

We had a few components that were made up of smaller components, but we generally tried to limit this by using our best judgement on whether certain files needed to be components or not. These decisions were usually based on the frequency of their use across the website or how receptive they are to the passing in of data.

We tried to deconstruct props whenever possible to make it more readable for other team members, and to avoid the need for team members to spend time retracing code back to the parent components. We tried to avoid ambiguous variable names whenever possible

On the backend we separated the files into a folder of all routes that separated files by functionality as well as a db.js file to hold the logic in connecting to our database and finally a index.js file with the logic to start the backend server, the application of all the middleware on the app including the session configuration used for authentication, and the use of the all the routers exported from their respective routes.

2. Coding Review

a. Original email of our code sent to Team 4's team lead Danish Siddiqui

From: Sabrina Dang <sdang4@mail.sfsu.edu>
Sent: Wednesday, May 12, 2021 7:50 PM
To: Danish Hassan Siddiqui <dsiddiqui@mail.sfsu.edu>
Subject: Fwd: For the code review

Hello Danish,

Thank you and your team for agreeing to do a code review of our code snippet. Corrections and suggestions are greatly appreciated.

Thank you,
 Sabrina Dang

Get [Outlook for Android](#)

From: Cameron James Harte <charte@mail.sfsu.edu>
Sent: Wednesday, May 12, 2021, 12:43 PM
To: Sabrina Dang
Subject: For the code review

```
import {useState} from 'react'
import Modal from './Modal'
import axios from 'axios'

import styles from './SendMessage.module.css';

function SendMessage({display, onClose, profile}) {
  console.log("SendMessage: ",profile)

  const [sendSuccess, setSendSuccess] = useState(false);

  const [subject, setSubject] = useState('');
  const [body, setBody] = useState('');

  function sendMessage(event){
    event.preventDefault();
    console.log('sendMessage')

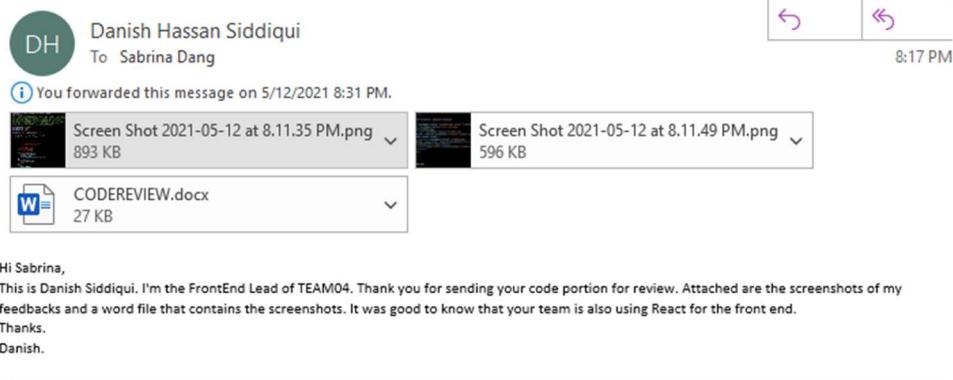
    axios.post("/api/message",{
      messageSubject: subject,
      messageBody: body,
      recipientAccountID: profile.account_id
    })
    .then(response => {
      console.log(response);
      onClose();
    })
    .catch(err =>{
      console.log(err);
      //display Error message e.g: try again
    })
  }

  if(!display) return null
  return (
    <Modal display={display} onClose={onClose}>
      <>
        <h1 className={styles["sendAMessage-header"]}>Send a Message</h1>
        <form className={styles['send-a-message-container']} onSubmit={sendMessage}>
          <input className={styles["sendAMessage-
subject"]} maxLength={78} required placeholder="Subject" value={subject} onChange={(event) =>setSubject(event.target.value)} />
          <textarea className={styles["sendAMessage-
body"]} maxLength={65535} value={body} required placeholder="Write your message here" onChange={(event) =>setBody(event.target.value)} />
          <button type="submit" class={styles["sendAMessage-sendButton"]}>Send</button>
        </form>
      </>
    </Modal>
  )
}

export default SendMessage
```

b. Team 4's Code Review with comments/suggestions

Re: For the code review



```

Code Reviewed By: Danish Siddiqui (_FrontEnd Lead - TEAM04)
Date: 05/12/2021

// Good to see you guys are utilizing the best of React framework. A few things
you are missing here includes the header of the file to define the purpose of the
file, also inline comments are always helpful to follow along the code logic. I
would also suggest to removing all unnecessary console logs, since in the
production site, we never want to print any information out there that's part of
our app. Also, it's good to format the jsx syntax to make it more readable.
Overall, the logic is smartly done using props and styling model.

import {useState} from 'react'
import Modal from './Modal'
import axios from 'axios'

import styles from './SendMessage.module.css';

function SendMessage({display, onClose, profile}) {
  console.log("SendAMessage: ",profile)

  const [sendSuccess, setSendSuccess] = useState(false);

  const [subject, setSubject] = useState('');
  const [body, setBody] = useState('');

  function sendMessage(event){
    event.preventDefault();
    console.log('sendMessage')

    axios.post("/api/message",{
      messageSubject: subject,
      messageBody: body,
      recipientAccountID: profile.account_id
    })
    .then(response => {
      console.log(response);
      onClose();
    })
    .catch(err =>{
      console.log(err);
      //display Error message e.g: try again
    })
  }
}

```

Section V: Self Check on Best Practices for Security

User Passwords: User passwords are encrypted using the bcrypt hashing module before being stored in the Database.

Google API Key: The Google Maps API key will be restricted to access by our website's IP Address and restricted for use with the APIs that are used on our website (Geocoding API, Maps Javascript API, Places API):

Name *
Zooble

Key restrictions

Restrictions help prevent unauthorized use and quota theft. [Learn more ↗](#)

Application restrictions

An application restriction controls which websites, IP addresses, or applications can use your API key. You can set one application restriction per key.

- None
- HTTP referrers (web sites)
- IP addresses (web servers, cron jobs, etc.)
- Android apps
- iOS apps

Accept requests from these server IP addresses

Specify one IPv4 or IPv6 or a subnet using CIDR notation (e.g. 192.168.0.0/22).
Examples: 192.168.0.1, 172.16.0.0/12, 2001:db8::1 or 2001:db8::/64

▼

[ADD AN ITEM](#)

API restrictions

API restrictions specify the enabled APIs that this key can call

- Don't restrict key
This key can call any API
- Restrict key

▼

Selected APIs:

Geocoding API
Maps JavaScript API
Places API

Note: It may take up to 5 minutes for settings to take effect

[SAVE](#)

[CANCEL](#)

Image Storage: We created a function with AWS Lambda which will assist us in image upload by returning a pre-signed URL. As the pre-signed URL allows image upload to occur to our storage bucket on AWS, we need to make sure that the endpoint is only accessible from our website's domain by configuring the Cross-Origin Resource Sharing configuration of the API endpoint:

Access-Control-Allow-Origin

<https://www.zooble.link> X

<https://zooble.link> X

Access-Control-Allow-Methods

GET X

We also need to restrict access to the S3 bucket itself as it contains user images. We allowed it to be accessed only by our website's domain by configuring its Cross-Origin Resource Sharing:

Cross-origin resource sharing (CORS)

The CORS configuration, written in JSON, defines a way for c

```
[
  {
    "AllowedHeaders": [
      "*"
    ],
    "AllowedMethods": [
      "GET",
      "POST",
      "HEAD",
      "PUT",
      "DELETE"
    ],
    "AllowedOrigins": [
      "https://www.zooble.link",
      "https://zooble.link"
    ],
    "ExposeHeaders": []
  }
]
```

Input Data Validation:

We do an initial check that input into an input field does not exceed a certain length, and that it matches the appropriate pattern of characters

```
<input
  type='text'
  placeholder='First name'
  name='fname'
  onChange={e => setFirstName(e.target.value)}
  required
  pattern="[a-zA-Z]"
  maxlength="40"
/>
```

We do more specific validation for items like the password, which needs to meet certain requirements, by using a regular expression and the Javascript test function before inserting into the database,

```
var re = {
  'capital' : /[A-Z]/,
  'digit'   : /[0-9]/,
  'special' : /[!@#$%^&*]/,
  'full'    : /^[A-Za-z0-9!@#$%^&*]{8,}$/,
};

return re.capital .test(password) &&
       re.digit   .test(password) && |
       re.special .test(password) &&
       re.full    .test(password);
```

Because we are taking free text field data that is inputted into the database through queries, in parts of our application, we made sure to include protection against SQL query injection by using placeholders

```
VALUES (?,?,?)` ,[account.insertId, givenUsername, hash]
```

Section VI: Adherence to original Non-functional Specs

1. Performance Requirements (speed, accuracy, latency, delay...):

- a. Page load times for user visible content on all pages shall be kept under 4 seconds on the desktop and mobile browsers **(ON TRACK)**
- b. Time to first byte for all website pages shall be kept under 1.5 seconds on desktop and mobile browsers **(ON TRACK)**
- c. All website pages shall make less than 75 requests on desktop and mobile browsers **(ON TRACK)**
- d. Web page size for all pages shall be kept under 1.5 MB **(ON TRACK)**

2. Security Requirements

- a. User credentials are checked against the database when a user tries to login **(DONE)**
- b. Token in cookie authenticates if a user is logged in order to post, comment, delete, and send messages, or access protected routes. **(ON TRACK)**
- c. Token in cookie authenticates what type of user is logged in to dictate the appearance and mobility **(ON TRACK)**
- d. Passwords are encrypted when stored in the DB and decrypted when necessary, such as to check against login credentials **(DONE)**
- e. All passwords shall be at least 8 characters **(DONE)**
- f. All passwords shall be a mix of upper and lower-case letters and numbers. **(DONE)**
- g. Fault tolerance shall be achieved by hosting the website and database instances in multiple isolated data centers across multiple availability zones in the western United States **(DONE)**
- h. The website database shall be hosted on a private network in Amazon Web Services, and only accessible by the website server **(DONE)**

3. Storage:

- a. An account page description will have a limit of 280 CHAR **(ON TRACK)**
- b. An account username will have a limit of 15 CHAR **(ON TRACK)**
- c. A display name will have a limit of 50 characters **(ON TRACK)**
- d. A post by a user will have a limit of 280 CHAR **(ON TRACK)**
- e. Comments by users will have a limit of 280 CHAR **(ON TRACK)**
- f. Photos shall be compressed for storage purposes **(ON TRACK)**
- g. User uploaded image content shall be uploaded to a secure Amazon S3 storage bucket **(DONE)**
- h. User uploaded image content shall be downloaded from a secure Amazon S3 storage bucket **(DONE)**

4. Privacy (What's collected, how it's used)

- a. The site shall disclose what privacy information it collects from users **(DONE)**
- b. The site shall disclose how users' information is utilized **(DONE)**
- c. The site shall display a Privacy Policy during account creation that outlines the collection and utilization of user data **(DONE)**
- d. A pet owner can choose to share their location with the website to access certain functionality **(DONE)**
- e. A pet owner's location data is not visible/shared to any other user. **(DONE)**
- f. A registered business must provide a business address on sign up but this

- information is not shared with any parties outside of the site (**DONE**)
- g. A registered shelter must provide a business address on sign up but this information is not shared with any parties outside of the site (**DONE**)
- h. Moderators can remove any content from display on the website that is deemed in violation of other user's privacy or safety. (**ON TRACK**)
- i. All users shall be able to delete their account, deleting all linked information from the database (**ON TRACK**)

5. Legal Requirements (Licensing):

- a. Privacy information and intellectual property rights shall be audited (**DONE**)
- b. When users post content to the site, it remains their intellectual property (**DONE**)
- c. The content of the site shall be protected by copyright that prohibits commercial use without permission. Noncommercial use is acceptable (**DONE**)

6. Scalability

- a. The website shall work as intended under the stress of 1, 100, 1,000, and 10,000 users with negligible differences in performance (**ON TRACK**)
- b. The website shall be able to keep pace with an expanding user (**ON TRACK**) base, and will maintain storage space and rapid processing speeds
- c. The website shall be able to keep the time between failures to a minimum under the stress of 1, 100, 1,000, and 10,000 users (**ON TRACK**)
- d. The complexity of database queries shall keep pace with an increasing number of visitors/users (**ON TRACK**)

7. Capability

- a. The website shall work as intended under the stress of up to 10,000 users using the site at once (**ON TRACK**)
- b. The website will be tested and confirmed to have full functionality on:
(ISSUE: May not have time to fully implement and test mobile support)
 - i. Desktop
 - 1. Google Chrome: 90.x.x.x, 89.x.x.x
 - 2. Firefox: 88.x.x, 87.x.x
 - 3. Safari: 14.x, 13.x
 - ii. Mobile
 - 1. Chrome: 90.x.x.x, 89.x.x.x
 - 2. Safari: 14.x, 13.x
 - 3. Samsung Internet Browser: 14.x.x.x, 13.x.x.x

8. Media Content

- a. The website shall support upload of image files of the .jpg image formats (**DONE**)
- b. The website shall support display of user uploaded image files of .jpg image format (**DONE**)

9. Usability

- a. The website shall retain full functionality on mobile, tablet, and

laptop/desktop screen sizes. (**ISSUE: May not have time to make UI completely responsive**)

- b. The website shall be verified to have easily readable text and usable interface elements at mobile screen resolutions from 540 x 960 to 1644 x 3840 (**ISSUE: May not have time to fully implement and test mobile support on the various screen sizes/aspect ratios**)
- c. The website shall be verified to have easily readable text and usable interface elements at desktop screen resolutions from 1024 x 768 to 3840 x 2160 (**ISSUE: May not have time to fully implement and test desktop support on the various screen sizes/aspect ratios**)
- d. The website shall use a simple user interface to reduce user confusion and promote ease of use (**DONE**)
- e. The website shall have an onboarding process that will guide users through the process of creating user profile when they first sign up (**ISSUE: We are going to have informative placeholder messages instead to reduce our workload**)
- f. The website shall have an onboarding process for each page that a user navigates to for the first time (**ISSUE: We are going to have informative placeholder messages instead to reduce our workload**)
- g. The website shall draw inspiration in interface layout from popular social media platforms like Facebook, Instagram and Twitter to accelerate user onboarding (**DONE**)
- h. The website shall have a logical page flow so user navigation is intuitive (**DONE**)
- i. The website shall assist user's productivity on the site by maximizing information displayed on screen (**ISSUE: We decided to go with a philosophy of each page having a specific functionality focus**)
- j. The website shall allow users to modify and delete information on their account (**ON TRACK**)
- k. When icons are used in the site's interface, they will be chosen or designed to be simple for users to understand (**DONE**)

10. Monetization

- a. Registered Users shall be able to create accounts and have a profile displayed on the website for free (**ON TRACK**)
- b. Registered Shelters shall be able to create an account and have a profile displayed on the website for free (**ON TRACK**)
- c. Registered Businesses shall be able to create an account and have a profile displayed on the website for free (**ON TRACK**)
- d. Registered Businesses shall be able to subscribe to the premium business plan (**ISSUE: We are not implementing premium business accounts as a priority 1 feature due to time constraints**)
- e. Registered Businesses with the Premium Business plan shall be featured prominently on user searches (map search and standard search) for businesses in the same category, and on user feeds even when users do not follow them (**ISSUE: We are not implementing**

premium business accounts as a priority 1 feature due to time constraints)

- f. Featured Businesses shall be featured in feeds and searches(map search and standard search), as stated above, based on proximity to the user's location **(ISSUE: We are not implementing premium business accounts as a priority 1 feature due to time constraints)**

11. Coding Standards

- a. Team members shall be required to provide meaningful comments for each non-trivial line of code **(ISSUE:)**
- b. Each code file shall have a heading section giving a short description of the file's functionality, and the main author(s) of the file, and indicate any missing or inconsistent functionality **(ISSUE: Decided this would take time away from other more important tasks)**
- c. Any code with limited or inconsistent functionality during the course of the development process shall also be noted as such in explanatory comments besides the code **(ISSUE: We have instead opted to explain limited functionality of certain components during meetings as it can done more clearly)**
- d. Any code that adversely affects the functionality of other code shall be commented out until a resolution can be reached **(DONE)**
- e. All code shall be logically separated by functionality within files **(ON TRACK)**
- f. All code shall be logically separated by functionality across files **(ON TRACK)**

12. Repository Standards

- a. The project Github repository will have three primary branches: master, development, and testing **(DONE)**
- b. Incremental code commits will be made regularly and large infrequent code commits shall be avoided **(ON TRACK)**
- c. Commit messages will be required to be descriptive in nature **(DONE)**
- d. Dependency lists shall be kept up to date when pushing to any branch of the repository **(DONE)**
- e. .gitignore files shall be kept up to date when pushing to any branch of the repository **(DONE)**
- f. Frontend code pushed to the testing branch shall be reviewed and tested by the frontend lead when committing and pushing to the master branch **(ISSUE: We decided this added unnecessary delay to getting code deployed and updated)**
- g. Backend code pushed to the testing branch shall be reviewed and tested by the backend lead when committing and pushing to the master branch **(ISSUE: We decided this added unnecessary delay to getting code deployed and updated)**
- h. Frontend code pushed to the testing branch shall be tested and verified to be fully functioning on all browsers listed in Section 7 of this document before committing to the master branch. **(ISSUE: We decided this added unnecessary delay to getting code deployed)**

and updated)

- i. Backend code pushed to the testing branch shall be tested and verified to be fully functioning on all browsers listed in Section 7 of this document before committing to the master branch. **(ISSUE: We decided this added unnecessary delay to getting code deployed and updated)**
- j. The frontend lead retains the right to reject code not up to these coding standards at any point during the review process, but will provide meaningful reasoning when this action is taken **(ISSUE: We decided this added unnecessary delay to getting code deployed and updated)**
- k. The backend lead retains the right to reject code not up to these coding standards at any point during the review process, but will provide meaningful reasoning when this action is taken **(ISSUE: We decided this added unnecessary delay to getting code deployed and updated)**

13. Project and Documentation Standards

- a. Trello will be used as the collaboration tool to keep the project's tasks and team members organized **(DONE)**
- b. Documentation shall be written to be comprehensible by people with non-technical backgrounds when possible **(ON TRACK)**
- c. Documentation shall be free from any typos or grammatical errors **(DONE)**
- d. Project Members shall each read and review each milestone fully before submission **(ON TRACK)**
- e. Project Members shall unanimously agree that each milestone reaches the standards set by the group before submission. **(ON TRACK)**
- f. Project Members contributions to documentation shall be tracked through Google Docs **(DONE)**

14. Coding Environment

- a. The browser preferred to test the website during our development is Google Chrome **(ISSUE: We are currently using different browsers to develop on, which can be an advantage because we can see bugs on different platforms)**
- b. Project members shall maintain an Ubuntu 20.04 operating system image via virtual machine or native install to develop and test code **(ISSUE: Some project member's computers do not support Ubuntu or are lacking in the RAM required to run Virtualbox. We came up with a local environment configuration not requiring Ubuntu that replicated the functionality on the server)**

15. Databases

- a. The preferred cloud database provider for the website shall be Amazon RDS **(DONE)**
- b. The preferred RDBMS for the website shall be MySQL **(DONE)**
- c. Database storage shall not exceed 20 GB in size per AWS Free Tier Limits **(ON TRACK)**
- d. The website database shall be designed to use this allocated storage

efficiently as possible (**ISSUE: Deletion of unused image files from storage when users delete their images off the website is not set up yet**)

- e. Automatic Database backups shall occur every 7 days (**DONE**)

16. Networks

- a. Network connections shall use ISO network standards (**ON TRACK**)
- b. Users from across the United States shall be able to connect to and access the site (**DONE**)
- c. The network routers shall be able to forward messages to anyone in the United States (**DONE**)
- d. Low network latency shall be provided for users by hosting the website instance in multiple isolated data centers across multiple availability zones in the western United States (**DONE**)

Section VII: Contribution Details

For this milestone the contributors for the backend team were Wameedh, Daniel, and Em. Wameedh attended backend meetings to discuss the milestone and the backend deadlines and features. Wameedh contributed to all sections of this milestone. Adding to that, He was responsible for QA test plan# 4 and usability test of “Send a Message” feature. Wameedh contributed to editing the user profile, pet ownership, and creating a post, editing post comments, liking a post, and deleting a post. Wameedh also implemented the follow-unfollow user endpoint. Wameedh also helped in the communication process among the team members. He was active in trying to follow up with each team member on their tasks and was there to help when someone needed help. Wameedh made a suggestion that improved the performance of our team which was that the team leads should have a meeting every week where they would update each other on what each team has done and what needs to be done. This suggestion didn't take away from the general meeting but rather improved the overall communication between the frontend and backend teams. Daniel attended weekly backend meetings to discuss milestone and backend deadlines and features. Daniel was responsible for the adherence to the original non-function specs section of this milestone. He contributed to the self-check on best practices for security. He tested the Map Search for our QA test plan. He did the Map Search testing for the Usability test plan. He contributed to the map search for the backend. He also led the backend code review.

Our backend lead Em organized and facilitated weekly backend meetings to discuss milestone and backend deadlines and features. Em was the lead for the component formatting and questionnaires for the Usability Test plan. Em was responsible for testing Create a Pet Profile section of the Usability Test plan. She was responsible for testing password security in the QA test plan. She was responsible for the dynamic pages/profiles backend work and resetting registered users' email in the backend. Our frontend team include Sabrina, Wenjie, Wameedh, and Daniel. The frontend lead Cameron implemented axios calls on the frontend pages and components. Cameron updated the Trello board with new bugs that needed to be fixed while testing and he also created new cards for the frontend team to stay on task. Cameron also contributed to creating Trello cards on the backend board with response and request made with axios calls, this was a suggestion made by Wameedh which also improved the communication between the backend and the frontend teams. Cameron executed the testing for usability uploading a post and QA tests. Cameron also maintained communication with Em the backend lead and continued to lead the frontend team meeting contributions. He also participated in team meetings by reviewing our documentation and implementation details alongside Wameedh. Sabrina implemented axios calls on the frontend pages and components. She created Trello cards on the backend board for the axios calls needed for the frontend. Sabrina also updated the frontend Trello board with new bugs found while testing and she participated in team meetings reviewing the documentation. Sabrina executed the testing for usability commenting on a post and QA tests. Wenjie implemented axios calls on the frontend pages that included the profile page. Created trello cards with bugs being found while he made tests. Wenjie implemented loading UI and handled Redirects. Wenjie executed the testing for QA.

Daniel helped the frontend stay on track and was always available to answer questions or provide help. He implemented axios calls on the frontend pages and components. Created Trello cards for the frontend to stay on track. He stayed in constant communication with the frontend and backend teams to plan out implementations. As for me, the team lead I kept communicating with the Team leads to get an update on our priorities and lead the general team meetings to discuss the future priorities and goals of the project. I did the code reviews for the other team that did our code reviews.

Section IV: Product Screen Shots

Pet Search:

Pets **Cat** Near Current Location Messages Account

Filters Back to Results

Types: Cat

Sizes: Medium

Colors: Black

Age: Adult

Cat Breeds: Slamense

Apply Filters

Business Search:

Businesses **Search Businesses** Near Current Location Messages Account

Filters Back to Results

Categories: Select Business Categories

Distance: Select Preferred Distance

Apply Filters

Shelter Search:

zooble Shelters San Francisco, CA, USA Messages Account ▾

Filters [Back to Results](#)

Available Types of Pets

Distance

Pet Owner Search:

zooble Pet Owners Messages Account ▾

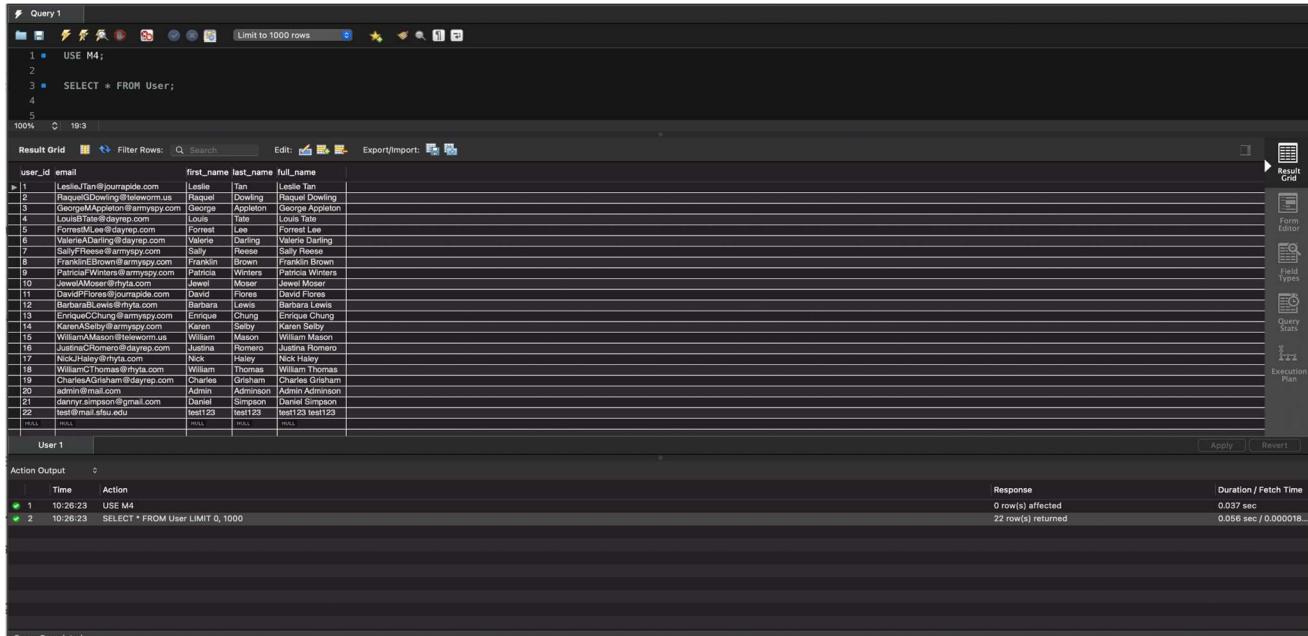
Sort By: Newly Added

Results


Edgar
 "Hello"

Section V: Screenshots of key DB Tables

Users:

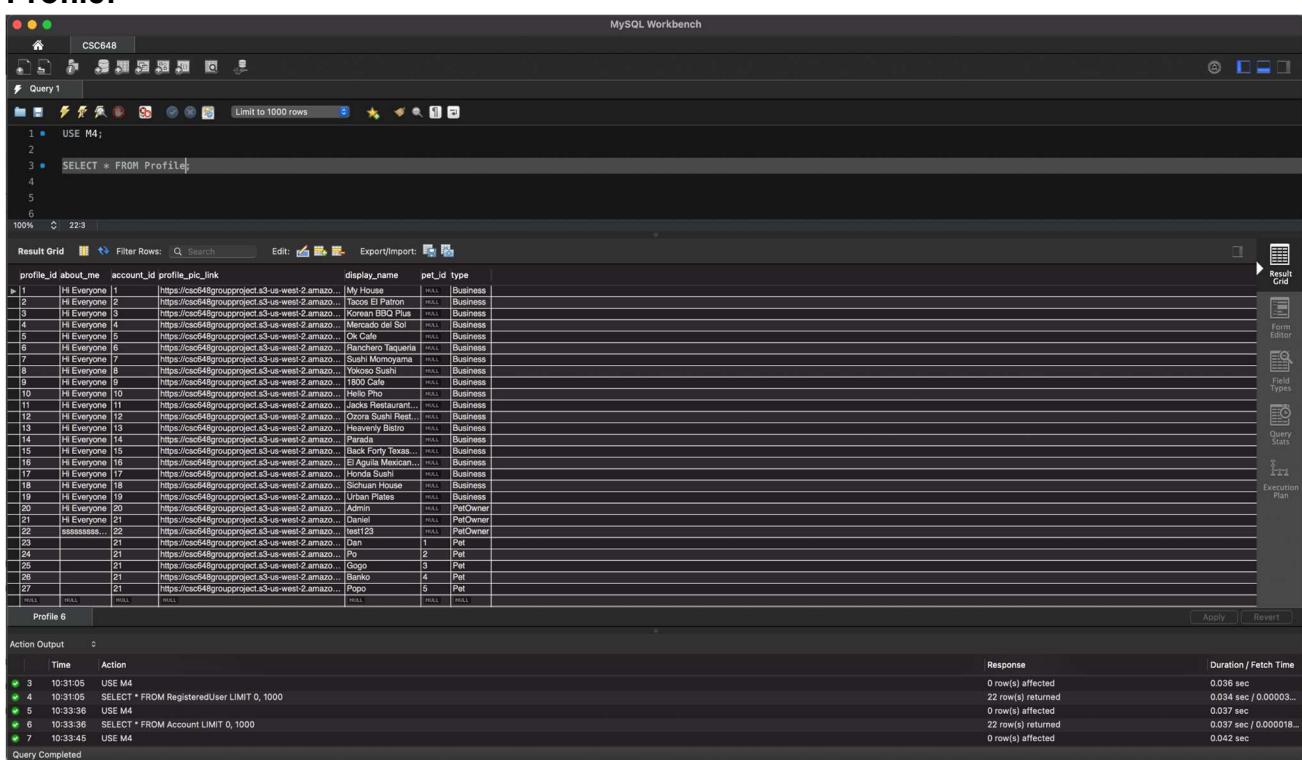


The screenshot shows the MySQL Workbench interface with a query editor and results grid. The query is:

```
1 USE M4;
2
3 SELECT * FROM User;
```

The results grid displays the 'User' table with columns: user_id, email, first_name, last_name, full_name. The data includes rows from 1 to 22, such as Leslie Tan, Russell Dowling, and William Mason.

Profile:



The screenshot shows the MySQL Workbench interface with a query editor and results grid. The query is:

```
1 USE M4;
2
3 SELECT * FROM Profile;
```

The results grid displays the 'Profile' table with columns: profile_id, about_me, account_id, profile_pic_link, display_name, pet_id, type. The data includes rows from 1 to 27, such as My House, Taco El Patron, Korean BBQ Plus, and various restaurants and businesses.

Message:

MySQL Workbench

Administration | Schemas | Query 1 | Message

Limit to 1000 rows

Result Grid | Filter Rows: Search | Edit | Export/Import: | Result Grid | Form Editor | Field Types | Query Stats | Execution Plan

Object Info | Session

Table: Message

Columns:

| message_id | int UN AI PK |
|--------------|--------------|
| subject | varchar(78) |
| body | text |
| sender_id | int UN |
| recipient_id | int UN |
| timestamp | timestamp |
| reply_id | int UN |
| read_flag | tinyint |

Query Completed

Action Output

| Time | Action | Response | Duration / Fetch Time |
|----------|--|--------------------|-------------------------|
| 13:52:36 | SELECT * FROM M4.Account LIMIT 0, 1000 | 23 row(s) returned | 0.045 sec / 0.00003... |
| 13:54:42 | SELECT * FROM M4.Message LIMIT 0, 1000 | 2 row(s) returned | 0.041 sec / 0.000023... |

Pet:

MySQL Workbench

Administration | Schemas | Query 1 | Pet

Limit to 1000 rows

Result Grid | Filter Rows: Search | Edit | Export/Import: | Result Grid | Form Editor | Field Types | Query Stats | Execution Plan

Object Info | Session

Table: Pet

Columns:

| pet_id | int UN AI PK |
|-------------|--------------|
| age_id | tinyint UN |
| size_id | tinyint UN |
| reg_user_id | int UN |
| name | varchar(40) |
| type_id | tinyint UN |

Query Completed

Action Output

| Time | Action | Response | Duration / Fetch Time |
|----------|--|--------------------|-------------------------|
| 13:52:36 | SELECT * FROM M4.Account LIMIT 0, 1000 | 23 row(s) returned | 0.045 sec / 0.00003... |
| 13:54:42 | SELECT * FROM M4.Message LIMIT 0, 1000 | 2 row(s) returned | 0.041 sec / 0.000023... |
| 13:55:03 | SELECT * FROM M4.Pet LIMIT 0, 1000 | 6 row(s) returned | 0.041 sec / 0.000024... |

Post:

The screenshot shows the MySQL Workbench interface with the 'Post' schema selected. A query window displays the results of the SQL command: `SELECT * FROM M4.Post;`. The results show four rows of data with columns: post_id, body, timestamp, like_count, comment_count, reg_user_id, and flag_count.

| post_id | body | timestamp | like_count | comment_count | reg_user_id | flag_count |
|---------|------------------------------------|---------------------|------------|---------------|-------------|------------|
| 2 | sdf | 2021-05-19 16:53:56 | 1 | 0 | 22 | 0 |
| 3 | This is for testing responsiveness | 2021-05-19 16:47:49 | 0 | 0 | 29 | 0 |
| 4 | rhaddijkasif | 2021-05-19 20:34:04 | 0 | 0 | 21 | 0 |

Below the results, the 'Object Info' tab is open, showing the definition of the Post table. The 'Table: Post' section contains the following code:

```

Table: Post
Columns:
  post_id      int(11) unsigned auto_increment primary key
  body          longtext
  timestamp    timestamp
  like_count    int(11)
  comment_count int(11)
  reg_user_id   int(11)
  flag_count    int(11)

```

The 'Action Output' tab shows the execution details for the four rows returned by the query.

Credentials:

The screenshot shows the MySQL Workbench interface with the 'Credentials' table selected from the M4 schema. A query window displays the results of the SQL command: `SELECT * FROM M4.Credentials;`. The results show 21 rows of data with columns: credentials_id, username, password, acct_id, reset_token, and reset_expiry.

| credentials_id | username | password | acct_id | reset_token | reset_expiry |
|----------------|---------------|---|---------|-------------|--------------|
| 1 | Hature | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 1 | | |
| 2 | Deponeow | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 2 | | |
| 3 | Upone1971 | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 3 | | |
| 4 | Doverance | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 4 | | |
| 5 | Nough1987 | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 5 | | |
| 6 | Actionios | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 6 | | |
| 7 | Dinnerready78 | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 7 | | |
| 8 | Hagland | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 8 | | |
| 9 | Brours | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 9 | | |
| 10 | Geopers1940 | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 10 | | |
| 11 | Facticked | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 11 | | |
| 12 | Prather | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 12 | | |
| 13 | Stim1985 | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 13 | | |
| 14 | Faigh1999 | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 14 | | |
| 15 | Hanery | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 15 | | |
| 16 | Hannan20 | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 16 | | |
| 17 | Ellerade1953 | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 17 | | |
| 18 | Doull1950 | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 18 | | |
| 19 | Apkong | NXJRx4tGrkppSithaq5DgDmr18MBh0Bh4q3plkwAbYRL8M0jHXjTWmro | 19 | | |
| 20 | admin | \$2b\$10\$IBQUk2PpXXXXRG1DG/uBe12neZKN5UdJUpxLSCG42BhN67G | 20 | | |
| 21 | babyaced | \$2b\$10\$EgUn8TyisOUXgc3lYIxJ.PoKxYZaYUmkuHHBGJH0zpWdr6 | 21 | | |

Below the results, the 'Object Info' tab is open, showing the definition of the Credentials table. The 'Table: Credentials' section contains the following code:

```

Table: Credentials
Columns:
  credentials_id      int(11) unsigned auto_increment primary key
  username            varchar(50)
  password            char(60)
  acct_id              int(11)
  reset_token          char(16)
  reset_expiry         timestamp

```

The 'Action Output' tab shows the execution details for the 21 rows returned by the query.

Business:

The screenshot shows the MySQL Workbench interface with the 'Business' table selected. The results grid displays 29 rows of business data, including names like Korean BBQ Plus, Mercado del Sol, Ok Cafe, etc., along with their IDs and registration user IDs. The execution plan and timeline details are also visible.

| business_id | name | phone_num | reg_user_id |
|-------------|----------------------|------------|-------------|
| 3 | Korean BBQ Plus | 9256877066 | 3 |
| 4 | Mercado del Sol | 9256877066 | 4 |
| 5 | Ok Cafe | 9258223993 | 5 |
| 6 | Ranchero Taqueria | 9258223993 | 6 |
| 7 | Sushi Momoyama | 9256877066 | 7 |
| 8 | Tokoro Sushi | 9256877066 | 8 |
| 9 | 1800 Oceans | 9256877066 | 9 |
| 10 | Hello Pho | 9256877066 | 10 |
| 11 | Jacks Restaurant... | 9258223993 | 11 |
| 12 | Ozora Sushi Rest... | 9258223993 | 12 |
| 13 | Heavenly Bistro | 9258223993 | 13 |
| 14 | Parada | 9258223993 | 14 |
| 15 | Bella Tony's Texas | 9258223993 | 15 |
| 16 | El Aguila Mexican... | 9258223993 | 16 |
| 17 | Honda Sushi | 9256877066 | 17 |
| 18 | Sichuan House | 9256877066 | 18 |
| 19 | Urban Plates | 9258223993 | 19 |
| HULL | HULL | HULL | HULL |

Address:

The screenshot shows the MySQL Workbench interface with the 'Address' table selected. The results grid displays 20 rows of address data, including addresses like 1465 Dupre Court, Concord, CA, USA, along with their IDs and registration user IDs. The execution plan and timeline details are also visible.

| address_id | address | latitude | longitude | reg_user_id |
|------------|---|-----------|-------------|-------------|
| 1 | 1465 Dupre Court, Concord, CA, USA | 37.943953 | -122.043414 | 1 |
| 2 | 2290 Monument Boulevard, Pleasant Hill, CA, USA | 37.945601 | -122.053702 | 2 |
| 3 | 1450 Monument Boulevard, Concord, CA, USA | 37.951893 | -122.044546 | 3 |
| 4 | 1450 Monument Boulevard, Concord, CA, USA | 37.951893 | -122.044547 | 4 |
| 5 | 1105 Monument Boulevard, Concord, CA, USA | 37.952373 | -122.043430 | 5 |
| 6 | 1099 Regatta Drive, Concord, CA, USA | 37.952299 | -122.044191 | 6 |
| 7 | 1800 Monument Boulevard, Concord, CA, USA | 37.954778 | -122.040195 | 7 |
| 8 | 2380 Monument Boulevard, Pleasant Hill, CA, USA | 37.944844 | -122.056889 | 8 |
| 9 | 1800 Monument Boulevard, Concord, CA, USA | 37.954778 | -122.040196 | 9 |
| 10 | 1701 Monument Boulevard, Concord, CA, USA | 37.955044 | -122.041527 | 10 |
| 11 | 60 Crescent Drive, Pleasant Hill, CA, USA | 37.945698 | -122.061639 | 11 |
| 12 | 785 Oak Grove Road, Concord, CA, USA | 37.956827 | -122.024742 | 12 |
| 13 | 3115 Oak Grove Road, Concord, CA, USA | 37.956827 | -122.024743 | 13 |
| 14 | 7001 Sunset Lane, Walnut Creek, CA, USA | 37.926465 | -122.056212 | 14 |
| 15 | 100 Coggin Drive, Pleasant Hill, CA, USA | 37.932902 | -122.050433 | 15 |
| 16 | 1300 Contra Costa Boulevard, Pleasant Hill, CA, USA | 37.958778 | -122.060638 | 16 |
| 17 | 150 Longbrook Way, Pleasant Hill, CA, USA | 37.958458 | -122.057377 | 17 |
| 18 | 2064 Treat Boulevard, Walnut Creek, CA, USA | 37.929927 | -122.039662 | 18 |
| 19 | 60 Crescent Drive, Pleasant Hill, CA, USA | 37.945698 | -122.061639 | 19 |
| HULL | HULL | HULL | HULL | |

HoursOfOperation:

MySQL Workbench

CSC648 Database Connection

Administration Schemas

Query 1 HoursOfOperation

Limit to 1000 rows

1 SELECT * FROM M4.HoursOfOperation;

Result Grid Filter Rows Search Edit Export/Import Result Grid

| hours_id | sun_open | sun_close | mon_open | mon_close | tue_open | tue_close | wed_open | wed_close | thu_open | thu_close | fri_open | fri_close | sat_open | sat_close | business_id |
|----------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|-------------|
| 3 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 3 |
| 4 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 4 |
| 5 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 5 |
| 6 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 6 |
| 7 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 7 |
| 8 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 8 |
| 9 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 9 |
| 10 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 10 |
| 11 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 11 |
| 12 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 12 |
| 13 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 13 |
| 14 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 14 |
| 15 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 15 |
| 16 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 16 |
| 17 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 17 |
| 18 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 18 |
| 19 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 00:00:00 | 19 |

Action Output

| Time | Action | Response | Duration / Fetch Time |
|------|----------|---|---|
| 8 | 13:57:34 | SELECT * FROM M4.Credentials LIMIT 0, 1000 | 23 row(s) returned
0.037 sec / 0.00002... |
| 9 | 13:59:10 | SELECT * FROM M4.Commerce LIMIT 0, 1000 | 19 row(s) returned
0.041 sec / 0.000028... |
| 10 | 13:59:16 | SELECT * FROM M4.Business LIMIT 0, 1000 | 19 row(s) returned
0.037 sec / 0.000024... |
| 11 | 13:59:43 | SELECT * FROM M4.Address LIMIT 0, 1000 | 19 row(s) returned
0.036 sec / 0.000020... |
| 12 | 14:00:20 | SELECT * FROM M4.Follow LIMIT 0, 1000 | 1 row(s) returned
0.038 sec / 0.000017... |
| 13 | 14:00:40 | SELECT * FROM M4.HoursOfOperation LIMIT 0, 1000 | 19 row(s) returned
0.041 sec / 0.000029... |

Query Completed

Section VI: Task Management System

M3V1 Backend:

The screenshot shows a Trello board titled "M3 Backend". The board has four lists: "To Do", "Doing", "Needs Review/Feedback", and "Done". The "Done" list contains the following cards:

- Section 4.4: EER (Priority: High)
- Section 4: Database Conversion (Priority: Medium)
- Vertical Prototype V2 (Priority: High)
- Section 4.1-4.2: Entity Descriptions + Business Rules (Priority: Medium)
- Section 4: High Level Database Architecture and Organization V2 (Priority: Medium)
- Section 5: High Level Diagrams V2-Network Diagram (Priority: Low)
- Vertical Prototype V2: Login (Priority: Low)
- Section 5: High Level Diagrams V2-Deployment Diagram (Priority: Medium)

A sidebar menu is open on the right, showing options like "About this board", "Change background", "Search cards", "Stickers", "More", "Butler", "Power-Ups", "Custom Fields", and "Activity". The activity feed shows two recent moves by user "edgar catalan": moving "Section 4: High Level Database Architecture and Organization V2" from To Do to Done, and moving "Vertical Prototype V2" from To Do to Done.

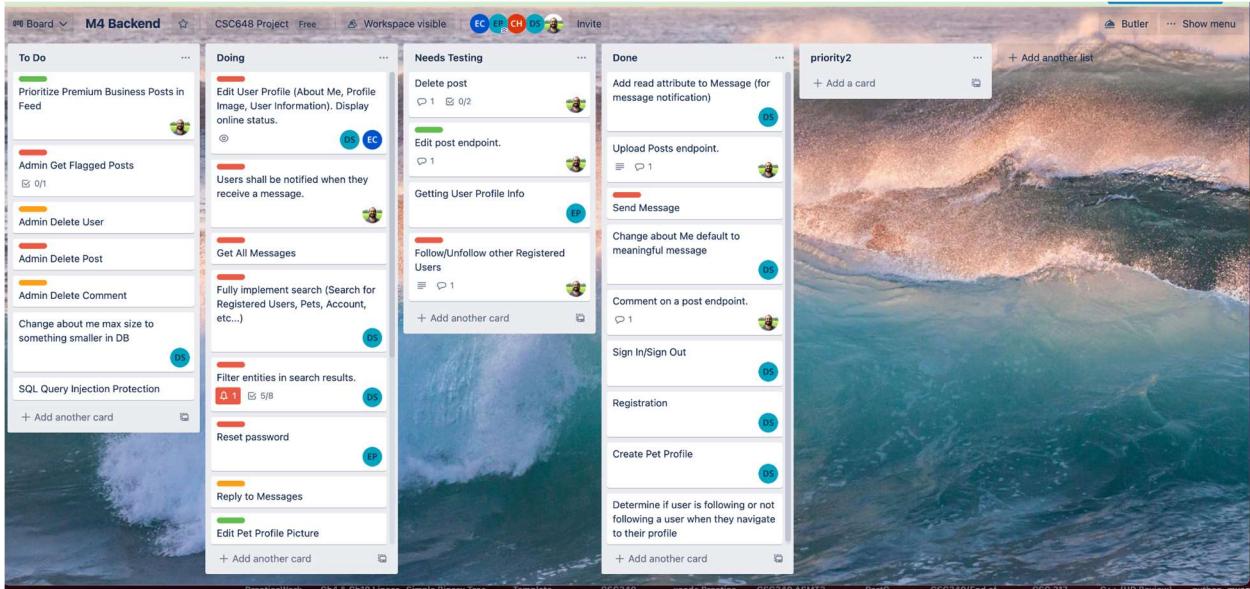
M3V1 Frontend:

The screenshot shows a Trello board titled "M4 Frontend". The board has three lists: "To Do", "Doing", and "Done". The "Done" list contains the following cards:

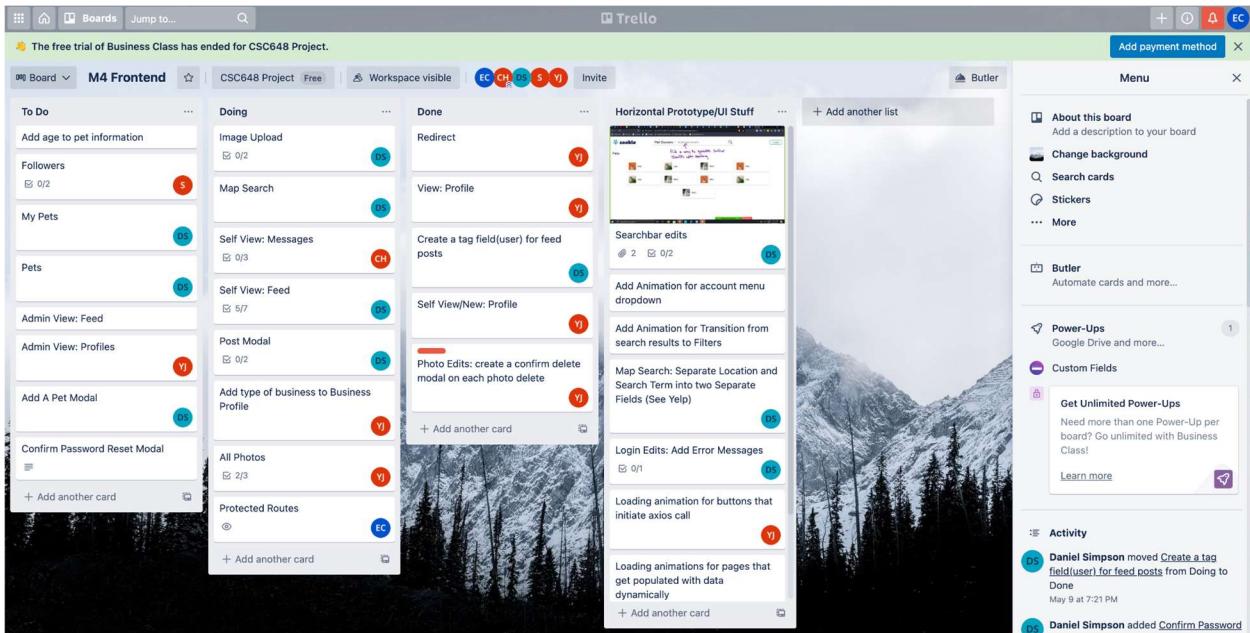
- Image Upload
- Redirect
- View: Profile
- Create a tag field(user) for feed posts
- Add Animation for account menu dropdown
- Add Animation for Transition from search results to Filters
- Map Search: Separate Location and Search Term into two Separate Fields (See Yelp)
- Login Edits: Add Error Messages
- Loading animation for buttons that initiate axios call
- Loading animations for pages that get populated with data dynamically

A sidebar menu is open on the right, showing options like "About this board", "Change background", "Search cards", "Stickers", "More", "Butler", "Power-Ups", "Custom Fields", and "Activity". The activity feed shows two recent moves by user "Daniel Simpson": moving "Create a tag field(user) for feed posts" from Doing to Done, and adding a card for "Confirm Password".

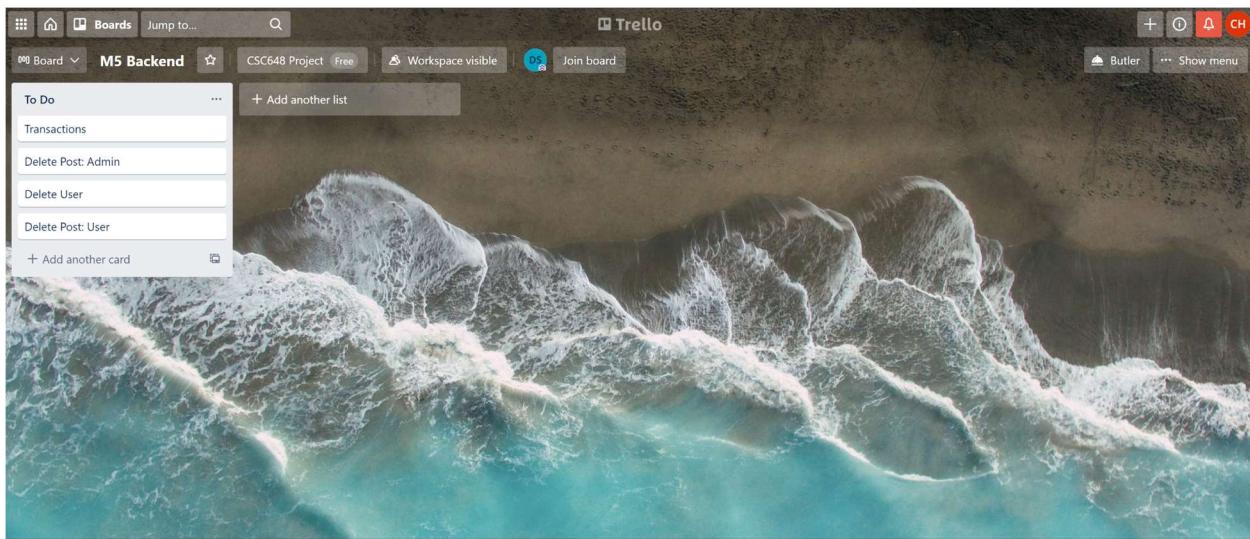
M4V1 Backend:



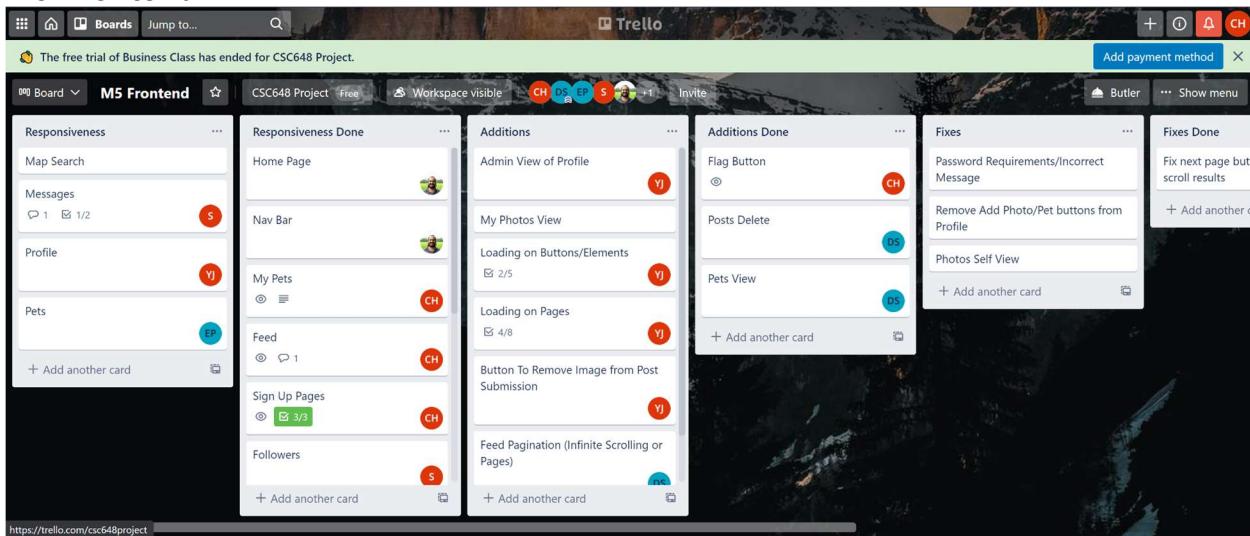
M4V1 Frontend:



M5 Backend:



M5 Frontend:



Section VII: Team Contributions

Em:

Contributions - Em Powers

EP Em Powers
Wed 5/19/2021 10:34 PM
To: Edgar Joel Catalan; Daniel Simpson; Cameron James Harte; Sabrina Dang; Wenjie Ye; Wameedh Mohammed Ali

Contributions/Teamwork:

- Organized, hosted, and facilitated weekly backend team meetings on Sundays.
- Organized and delegated backend tasks to the backend team using Trello to manage who was doing what.
- Contributed to design of backend architecture (database, functionality, APIs).
- Contributed work to every milestone including frontend-focused milestones - authorship of sections on the milestones and working on the backend (such as during Milestone 4).
- Coded the signup and login backend pages, modified Axios functionality on the frontend
- Coded dynamic page linking/data fetching from the database
- Coded password reset (Two frontend files, two backend files) that reset the password of the user when prompted
- Worked on frontend modal responsiveness for the hero container, add a pet, edit pet, and forgot password. Linked forgot password to backend so that it could post the password reset information.

Number of Submissions to Github: 38 (as of Wed 19 2021, 10:34 PM PST)

-Em

WA Wameedh Mohammed Ali
Wed 5/19/2021 10:37 PM
To: Em Powers; Edgar Joel Catalan; Daniel Simpson; Cameron James Harte; Sabrina Dang; Wenjie Ye

Agreed!
Thank you Em for your hard work and being an awesome team member.

Best,
Wameedh

...

Edgar Joel Catalan
Wed 5/19/2021 10:54 PM
To: Wameedh Mohammed Ali

Agreed. Thanks Em

...

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Wameedh:

Contributions - Teamwork

WA Wameedh Mohammed Ali
Thu 5/20/2021 5:11 AM
To: Edgar Joel Catalan; Cameron James Harte; mpowers8@mail.ccsf.edu; Daniel Simpson; Sabrina Dang; Wenjie Ye

Contributions/Teamwork:

- Contributed to the design of backend APIs.
- Contributed to the design of the database architecture (Database requirements, ERD and EER).
- Contributed work to every milestone except milestone zero as I have done that with my old team.
- Developed and contributed to the website APIs/endpoints such as (comments.js, edit-post.js, follow-unfollow-user.js, post.js)
- Worked on the CSS style of the website. I made sure that our main page is responsive across multiple screen sizes and widths.
- Worked on the nav bar responsive layout. I contributed to the CSS so that the navigation bar is consistently responsive across multiple screen sizes and widths.
- Contributed to creating dynamic page the database and the backend.
- Contributed to the frontend homepage by fixing some bugs and helped whenever help is needed.
- Contributed to the UI and UX design of the website.
- I attended our general meetings and the backend meetings as a member of the backend team.
- I helped the team by sharing ideas and suggestions that helped us build the project.

Number of Submissions to GitHub: 180 (as of Thursday 20 2021, 4:53 AM PST)

Edgar Joel Catalan
Thu 5/20/2021 9:02 AM
To: Wameedh Mohammed Ali; Cameron James Harte; mpowers8@mail.ccsf.edu; Daniel Simpson; Sabrina Dang; Wenjie Ye

Agreed. Thanks Wameedh

Get [Outlook for iOS](#)
...

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MP Megan Powers <mpowers8@mail.ccsf.edu>
Thu 5/20/2021 12:02 PM
To: Wameedh Mohammed Ali

Agreed, thank you for your participation and contributions to the development of the product.
...

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CH Cameron James Harte
Thu 5/20/2021 8:40 AM
To: Wameedh Mohammed Ali

Agreed. It was a pleasure working with you Wameedh and best of luck!

-Cameron

...

DS Daniel Simpson
Thu 5/20/2021 11:18 AM
To: Wameedh Mohammed Ali; Edgar Joel Catalan; Cameron James Harte; mpowers8@mail.ccsf.edu +2 others

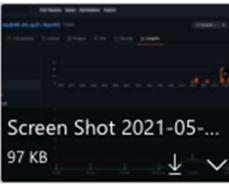


Where are you getting this 180 submissions number from? This is after the merge to master I did this morning.

...

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WA Wameedh Mohammed Ali
Thu 5/20/2021 11:10 AM
To: Daniel Simpson



I got it from this page since you didn't merge the dev on master so I couldn't get to that page you shared, and we needed to submit it today.
In the pic attached it shows the number of commit if you hover over the column, what are these numbers in this page then?

Best,
Wameedh

...

Sabrina:

Contributions/Teamwork - Sabrina

 Sabrina Dang
Thu 5/20/2021 9:20 AM
To: Edgar Joel Catalan; Cameron James Harte; Wameedh Mohammed Ali; Em Powers; Wenjie Ye; Daniel Simpson

Contributions/Teamwork:

- Contributed to the milestone's documentation including the updated versions of each milestone
- Utilized/updated the Trello board goals set by the frontend team
- Attended weekly meetings that were held by the whole team and frontend team
- Worked on the CSS modules for the pages and responsiveness
- Worked on the wireframes/storyboards with the frontend team
- Adhered to the coding standards set up by the team (e.g. file organization, utilization of hooks/components, etc.)
- Tested the site's usability and provided feedback on the QA tests
- Communicated with frontend team lead and team members with issues (e.g. technical, non-technical)

Number of Submissions to GitHub: 19 (as of Wed 20 2021, 9 AM PST)

Best,
Sabrina Dang

 Edgar Joel Catalan
Thu 5/20/2021 9:37 AM
To: Sabrina Dang

Agreed, Thanks Sabrina.

...

[Reply](#) | [Forward](#)

Cameron:

CH Cameron James Harte
Wed 5/19/2021 11:14 PM
To: Edgar Joel Catalan; Em Powers; Daniel Simpson; Wameedh Mohammed Ali; Wenjie Ye; Sabrina Dang

Contributions/Teamwork:

- Hosted weekly frontend team meetings on Friday
- Helped organize and delegate frontend tasks to the frontend Trello boards
- Contributed work to every milestone's documentation
- Contributed to the layout and implementation of frontend
- Reviewed and gave feedback to the frontend team for wireframes and storyboards
- Coded the frontend pages along with the frontend team
- Implemented responsiveness for the majority of our pages
- Created a handful of Axios calls on the frontend to be ready to connect to the backend
- Handled the testing of one of our features for usability and quality insurance.

Number of Submissions to Github: 50 (as of Wed 19 2021, 11 PM PST)

-Cameron

Edgar Joel Catalan
Wed 5/19/2021 11:16 PM
To: Cameron James Harte

Agreed. Thanks Cameron

Wameedh Mohammed Ali
Thu 5/20/2021 4:47 AM
To: Cameron James Harte; Edgar Joel Catalan; Em Powers; Daniel Simpson; Wenjie Ye; Sabrina Dang

Agreed! Thank you, Cameron! it was great working with you, and I appreciate your time and effort that was spend on the project.

Best,
Wameedh

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Wenjie:

Contributions/Teamwork

Wenjie Ye
Thu 5/20/2021 10:18 AM
To: Edgar Joel Catalan; Cameron James Harte; Sabrina Dang; Wameedh Mohammed Ali; Em Powers; Daniel Simpson

Contributions/Teamwork;

- Fixed bugs listed on Trello Bug Board and completed the tasks listed on Trello Frontend Board
- Implemented the majority of the Profile page and the Photo page
- Discussed the issues we had during the web development with our team members and provided solutions to some of the issues
- Handled the responsiveness of the Profile page and the Photo page
- Contributed to the milestone's documentation
- Implemented UI components such as buttons and loaders
- Handled one of our QA tests
- Attended weekly meetings that were held by the whole team and the frontend team
- Worked on the wireframes/storyboards with the frontend team

Number of Submissions to GitHub dev branch: 57 (From April 20, 2021 to May 20, 2021, 10 AM PST)

Edgar Joel Catalan
Thu 5/20/2021 10:22 AM
To: Wenjie Ye

Agreed, thanks Wenjie

...

[Reply](#) | [Forward](#)

Edgar:

Contributions-TeamWork

Edgar Joel Catalan
Thu 5/20/2021 9:59 AM
To: Em Powers; Daniel Simpson; Sabrina Dang; Wenjie Ye; Wameedh Mohammed Ali

Role: Team Lead

- Made and contributed to the Documentation for each milestone
- Assigned deadlines and priorities for each milestone
- Maintained communication with each team leads for backend and frontend
- Lead weekly general meetings
- Assigned tasks for each team member
- Maintained communication with the client for any clarifying questions
- Made the initial Trello board for Milestone 2
- Made important priority decisions based on each milestone
- Introduced the appropriate tech stack for the project
- Made the initial routes for the vertical prototype in the backend
- Made the initial Backend for the project using Express.js
- Made sure everyone in the Team had a voice to make the project as inclusive as possible
- Handled conflicts within team members.

Number of Submissions to GitHub dev branch: 12

WA Wameedh Mohammed Ali
Thu 5/20/2021 11:52 AM
To: Edgar Joel Catalan; Em Powers; Daniel Simpson; Sabrina Dang; Wenjie Ye

Agreed! Thank you, Edgar, for your contributions. It was great to work with you.

Best
Wameedh

...

EP Em Powers
Thu 5/20/2021 12:04 PM
To: Edgar Joel Catalan

Agreed, thank you for both directing the team and contributing to the backend effort, Edgar.

...

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Daniel:

Contributions/Teamwork

 Daniel Simpson
Thu 5/20/2021 12:26 PM
To: Wenjie Ye; Wameedh Mohammed Ali; Edgar Joel Catalan; Cameron James Harte; Sabrina Dang; Em Powers

Operations/Teamwork

- Created initial Figma mockup of website design/functionality
- Leader of brainstorming features/functionality as well as considering feasibility/implementation of certain features
- Lead decisions for feature cuts and other time/workload management tasks
- Managed deployment of website on AWS and other dev ops tasks like DB setup, testing environment setup etc.
- Served as the Github master
- Leader of planning/getting people up to speed during most meetings (frontend + backend)
- Organized Trello Boards + created backend and frontend cards, created Bug Board

Milestones:

- Lead creation of Entity Relationship Diagram, Database Model and UML Diagrams
- Created Deployment and Network Diagrams
- Made other significant contributions (use cases, requirements, testing, etc.) to all milestones detailed in individual milestone team contributions
- Edited work of other team members on milestones for quality assurance/clarity purposes

Code:

- Created all backend code **except** login (edited later), signup (edited later)
- Handled creation of image upload functionality
- Connected most of the backend code to frontend code to create working functionality
- Created all frontend pages **except** followers (edited later), sign-up pages (edited later), profile pages
- Created all frontend components **except** loading and profile related components
- Coded **all of unique feature** (Map Search)
- Helped debug/make styling changes to other team member's code

Number of Submissions made to Github: **309 Commits**

 Edgar Joel Catalan
Thu 5/20/2021 12:35 PM
To: Daniel Simpson

Agreed, thanks Daniel

...

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Section VIII: Post Analysis

As the project comes to the end the team has learned a lot about team management, team work, communication, and new technologies. Everyone's experience with this project was a good one with a handful of learning lessons being taken. The experiences taken from this project was learning how a project is built, managed, developed, and maintained by using different software engineering principles. The team also faced good experiences from this project by contributing to the initial idea of the project now called Zooble. Everyone showed excitement and a willingness to get hands on with the project's functionality and setting up the priorities for the project. This project also allowed many team members to get hands on experience with different technologies and documentation. For example many of us in the team began with little experience with React.js. Once we began the vertical prototype everyone in the frontend contributed to a feature with React. Another technology the team gained experience was with Express.js. A few of the team members had experience with this framework and once the horizontal prototype began everyone in the backend team pitched in on a feature.

Some challenges the team faced as the project progressed was in communication with a feature. If there was a feature not being completed most of the team did not reach out for assistance. An area of improvement we could of done is reaching out to help other team members for the benefit of the project rather than waiting for someone that is shy to reach out for help. Another area of improvement could be setting up a strict time schedule for this class because many team members were taking other classes besides this one. This lead to team members not working on this project which lead to 1 to 3 people working on most of the features. When this occurred one of the teammates accomplished the work but left some teammates with no idea with what was completed. As the team lead I could have done better by catching everyone up in separate meetings by knowing everyone's schedule more in depth. This would have left with me checking in with team mates that didn't understand a feature or how to implement it. However, I did know everyone's schedule but only to meet during general team meetings. Therefore, I could I have better by reaching out to each individual team member to catch them up on a feature.

Another issue we faced as a team was the unbalance of time put into the project by individual teammates. As the 3rd milestone approached, there were a handful of team members working on the project leaving other team members to do other work outside the class or not contributing. This issue began to become more apparent as the semester was coming to an end. This was due to other projects approaching us and not leaving us time to work on this project. To fix this we could have planned more carefully our schedule for this class because this class involved a large amount of time from each member to work on.