

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

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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 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

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
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- 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
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- 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.
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- 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

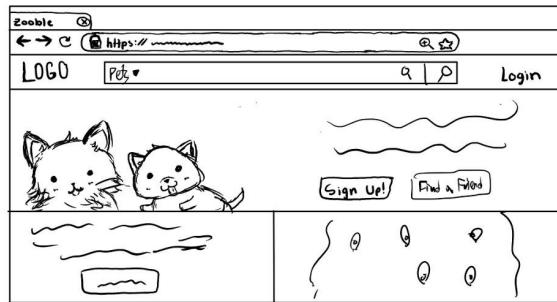
33.1 Posts Near You shall display the Recent Posts near the General User's location.

Section III: UI Mockups and Storyboard

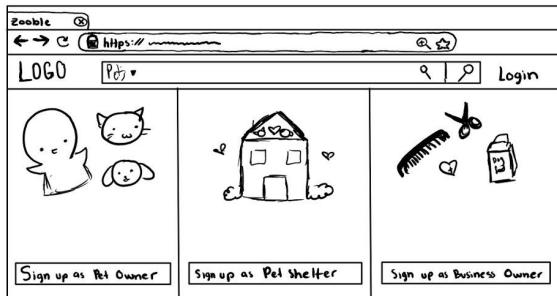
Use Case #1 Storyboard: General User Signs Up to be Registered User



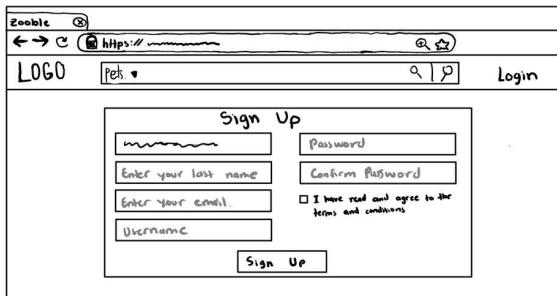
Ian, a senior man, wants to be able to post images of his 22 year old cat named Michael on the internet. He hops onto his computer and finds the pet social media website named Zoobile.



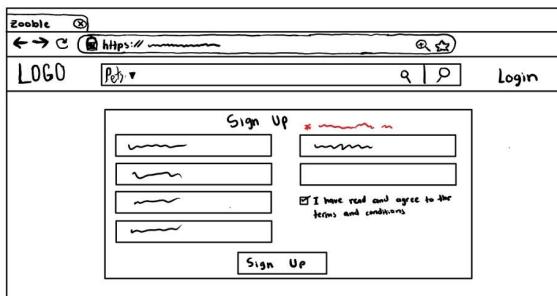
Ian finds himself on the Zoobile homepage. He sees the option to sign up. Ian will navigate to the account registration page.



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.

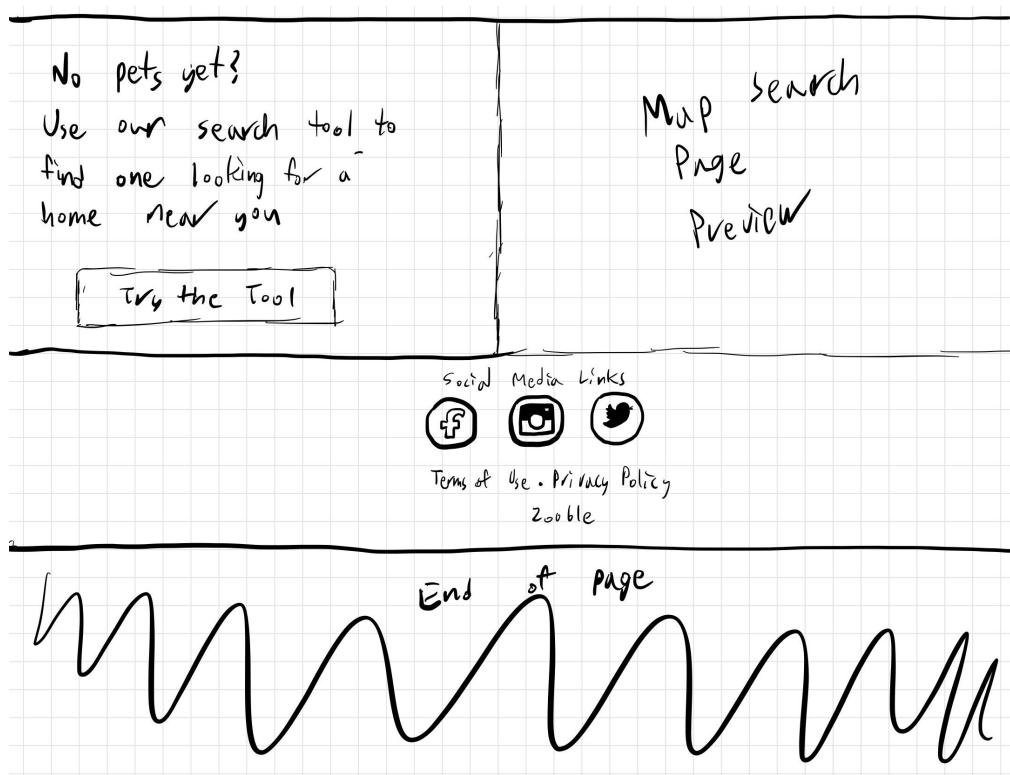
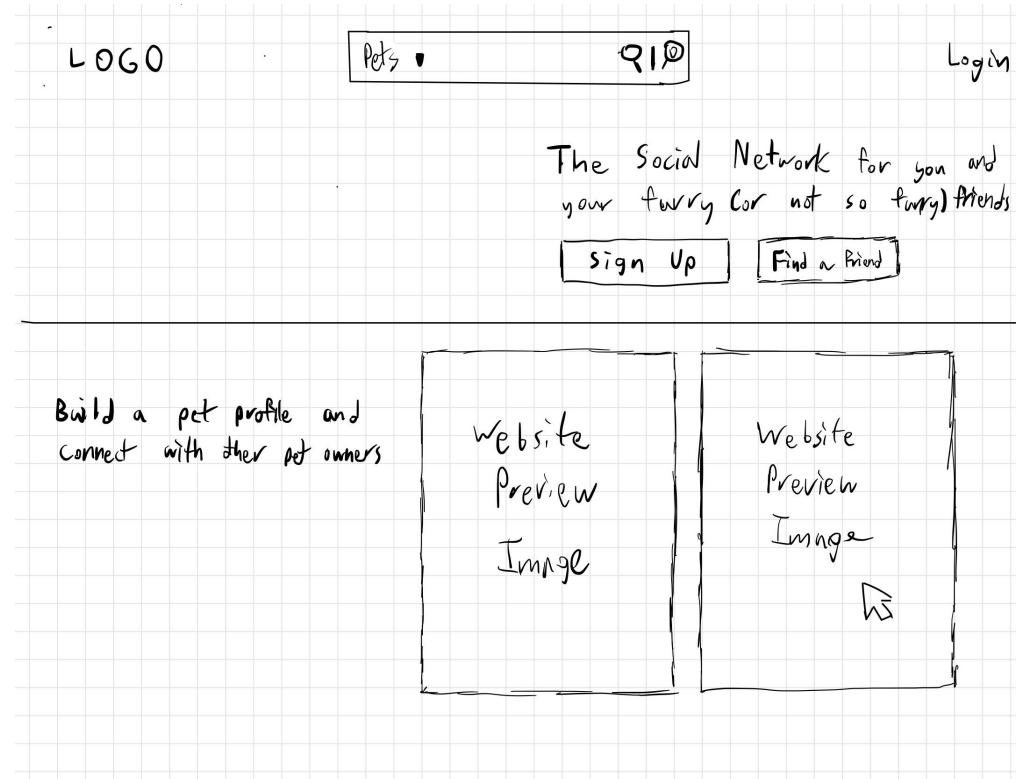


Ian has incorrectly entered the data required. He is still on the registration page and is asked to re-enter the data.



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

Use Case 1 UI Mockups:





Logo

ALL ↗

SIGN UP

EMAIL

USERNAME

PASSWORD

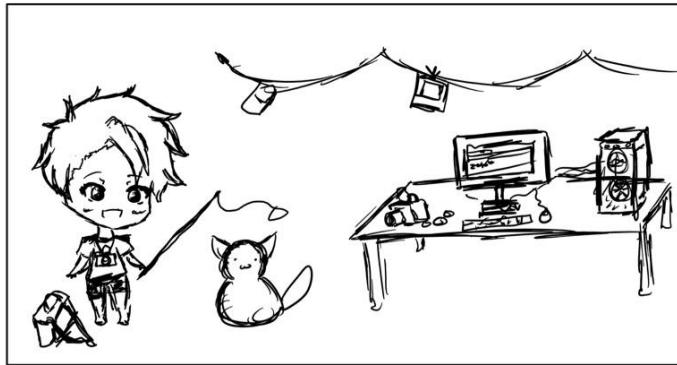
CONF RM. PASSWORD

I HAVE READ & AGREE TO THE TERMS & CONDITIONS

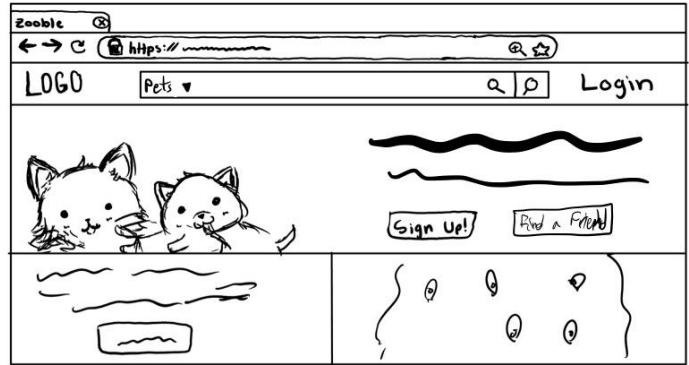
SIGN UP



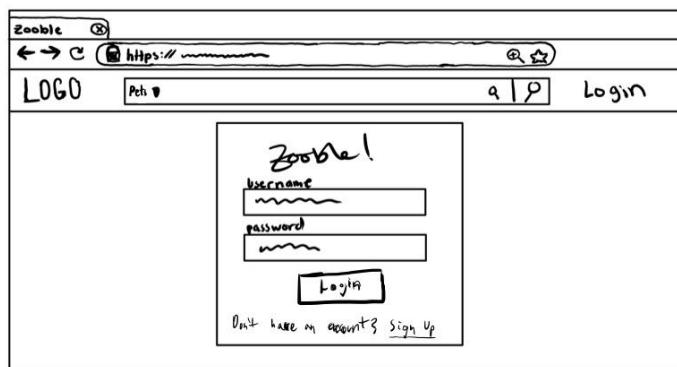
Use Case #2 Storyboard: Registered User Logs in and adds a Pet to their account



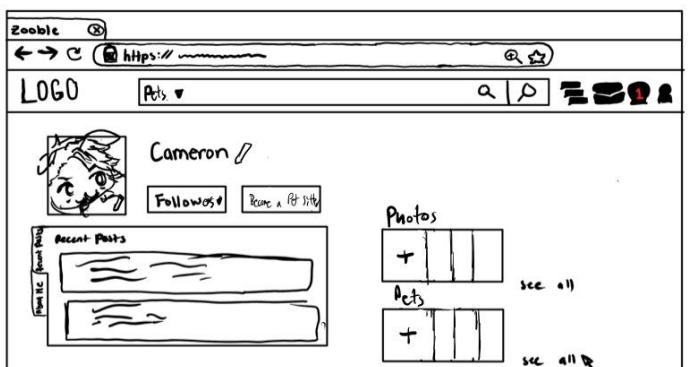
Cameron is a college student who does photography during his free time. He uses his cat Yoshi as a model often. Cameron wants to share his amazing photos on Zooble since he recently created an account.



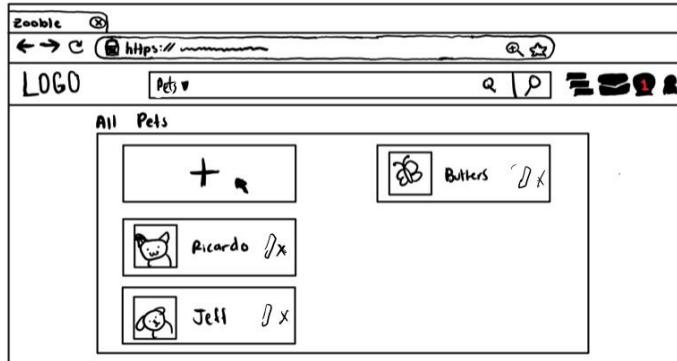
Cameron finds himself on Zooble and needs to log in.



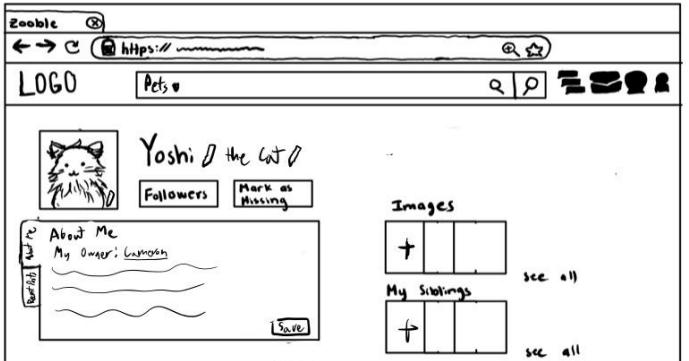
Cameron enters his information and logs on the website.



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.

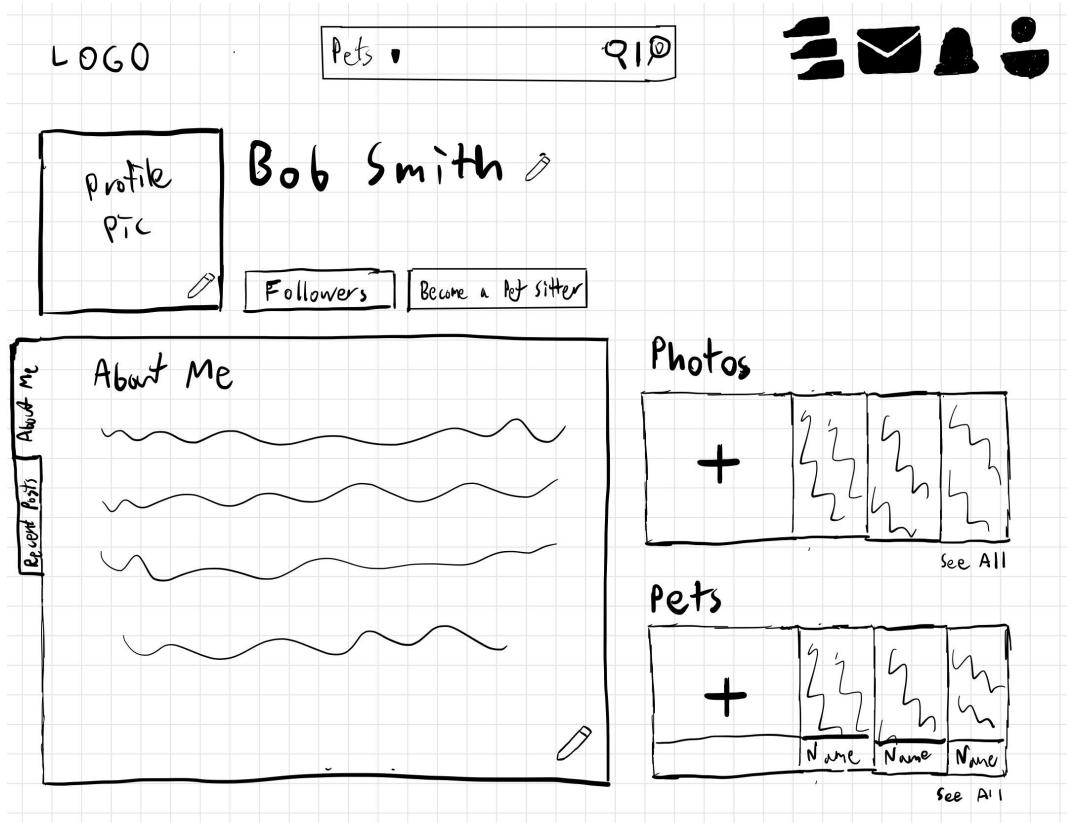
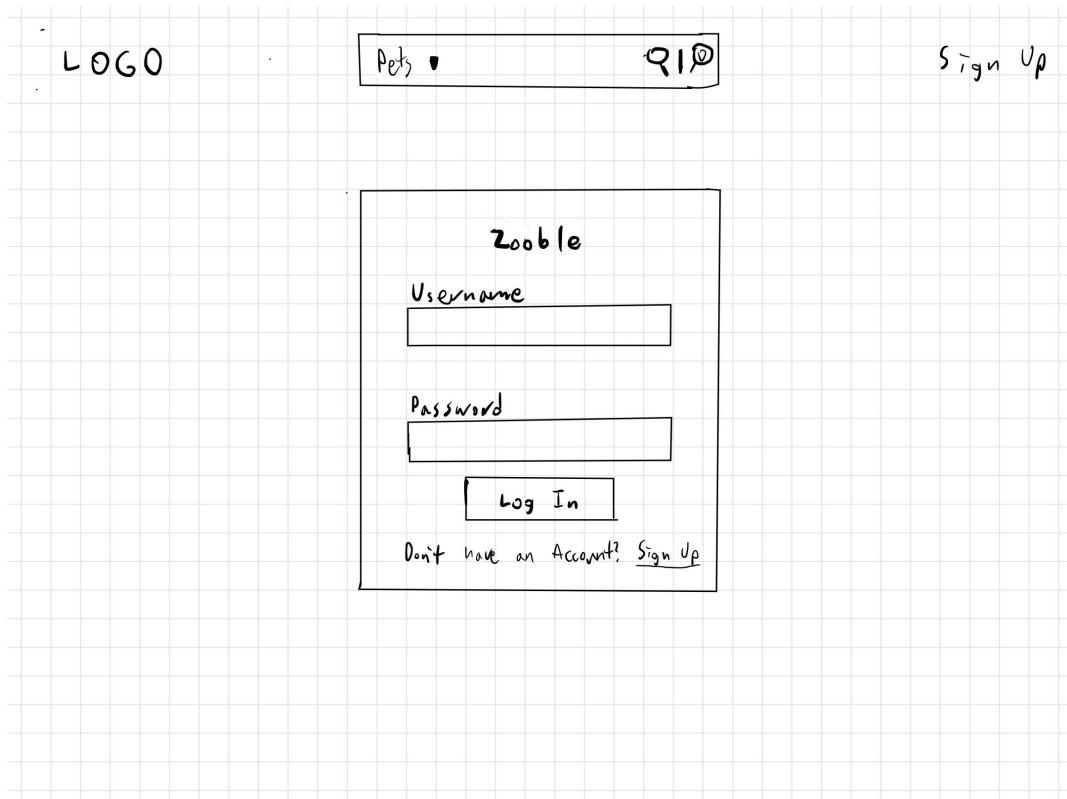


Cameron was directed to the pet profiles page. He figures out how to add a new pet.



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

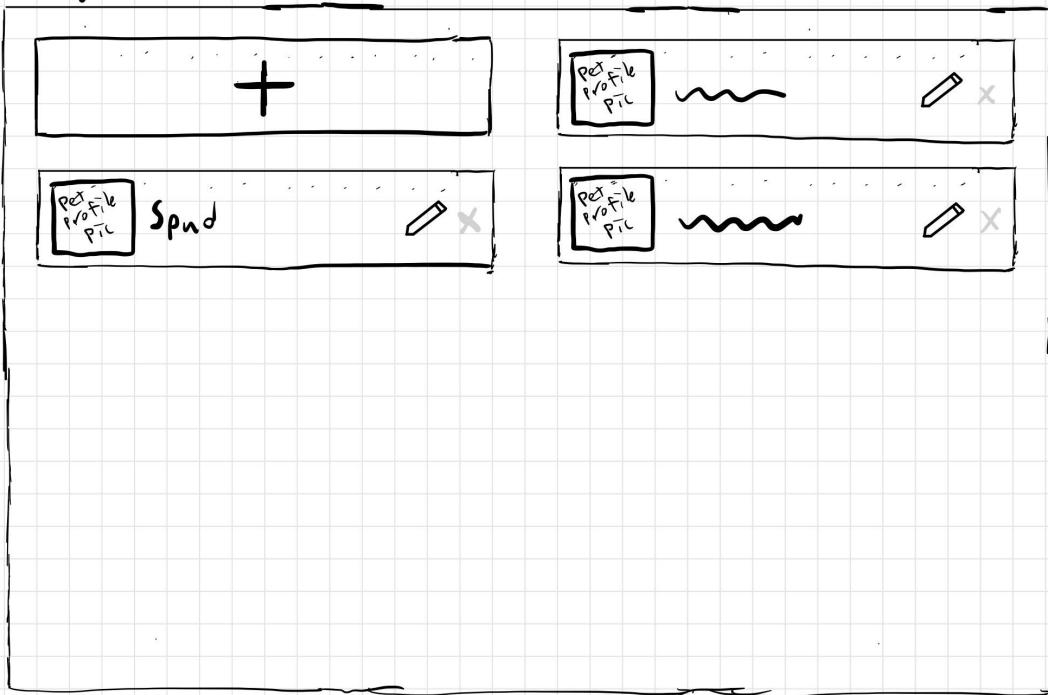
Use Case 2 UI Mockups:



LOGO



My Pets



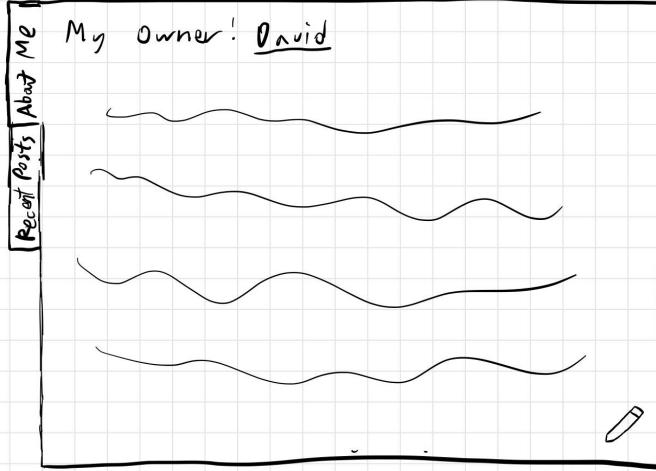
LOGO



Fido ♂ the Golden Retriever ♂

Followers

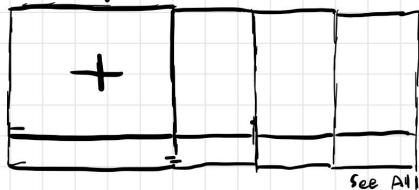
Mark as Missing



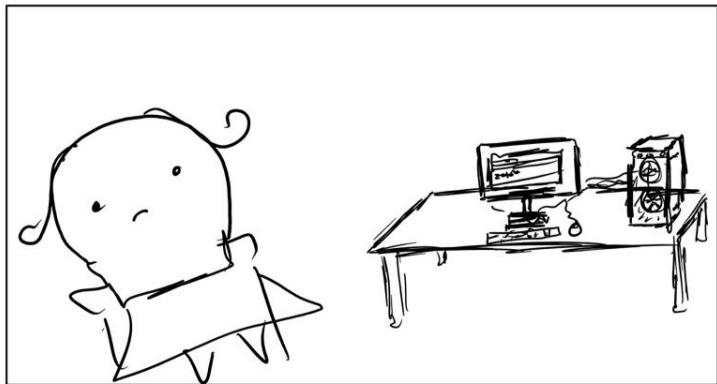
Photos



Siblings



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.

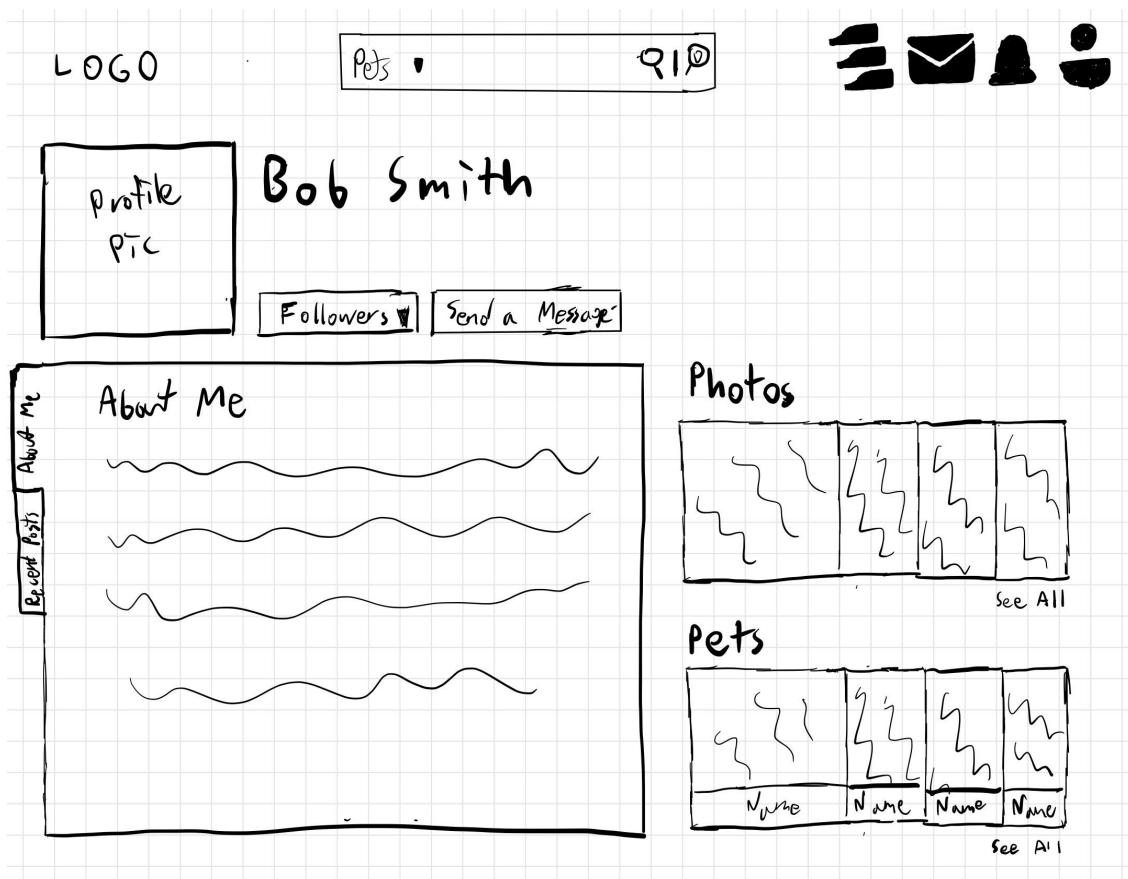
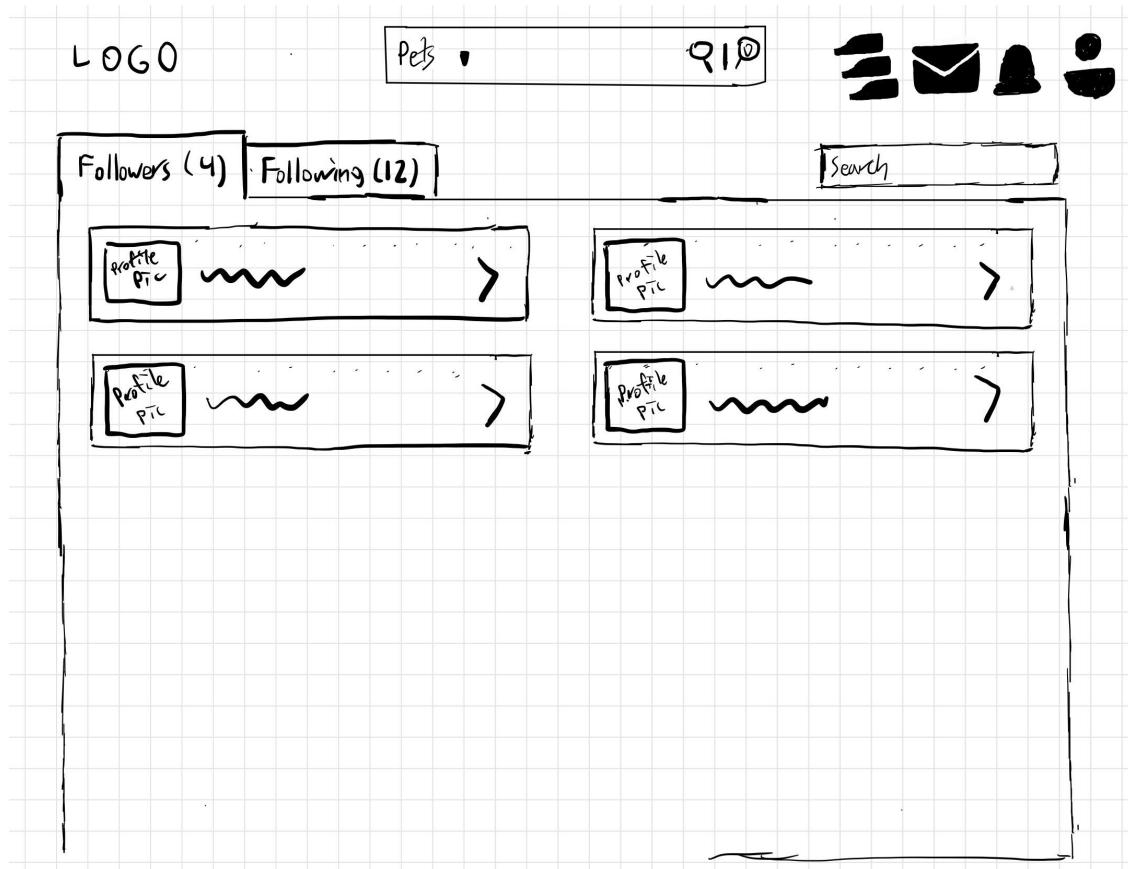
Alex wants to private message Joey on Zoobile. Alex remembers that Joey is one of her followers. Alex needs to find Joey in her list of followers.

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.

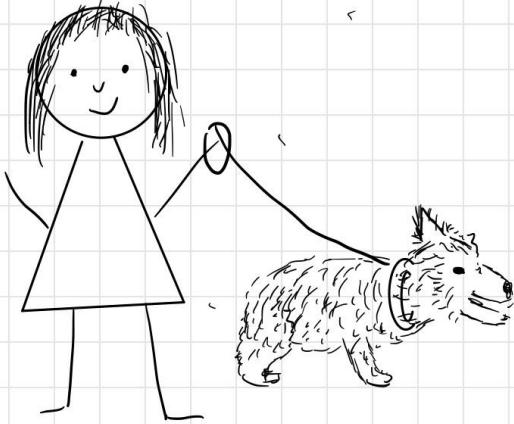
A window pops up for Alex to send Joey a message. She fills out the boxes with information and hits send.

Alex has successfully sent Joey a private message.





Use Case #4 Storyboards: General User Browses Website



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

Pets > Border Collie Q1.0 In Dog Breeds: Border Collie

The social network for furry friends and their owners

Login

Logo

Use our tool to find pets, shelters, businesses near you

Try the tool

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

Results Filter

Sort

Sasha

Profile cards for multiple users, each with a photo, name, and a 'View' button.

She sees the profile of a Border Collie named Sasha

Sasha the Border Collie

Followers

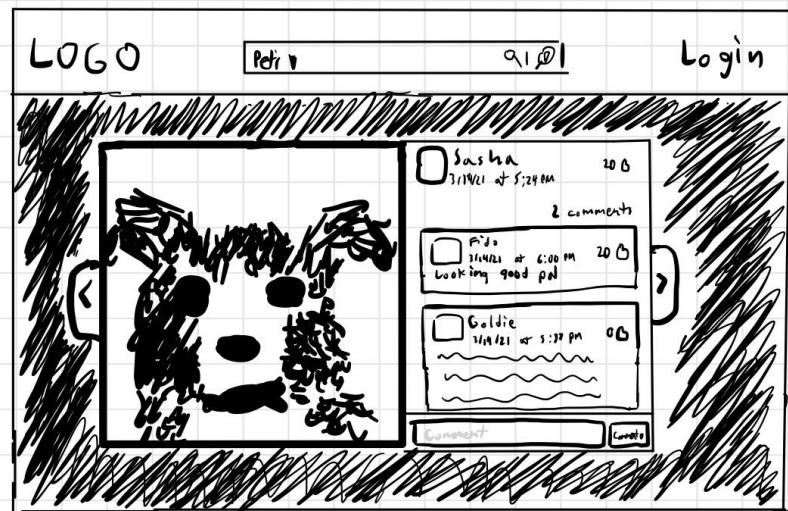
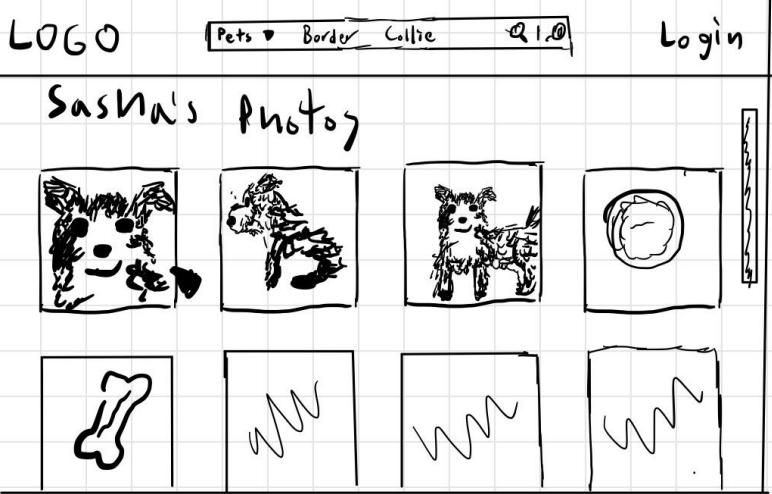
About Me

Photos See All

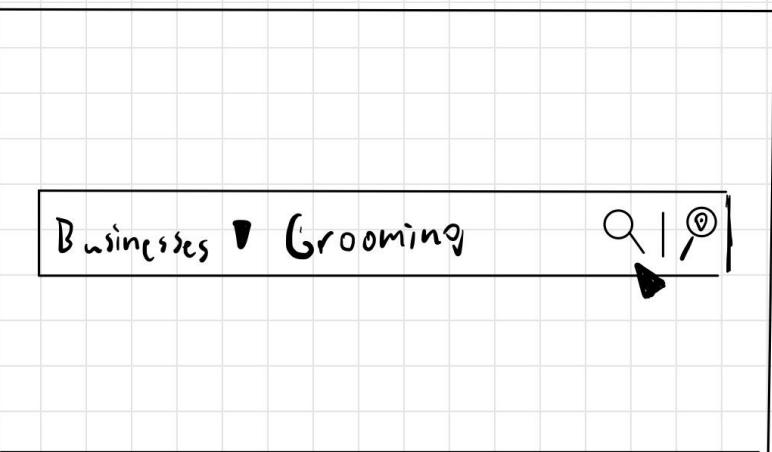
Siblings See All

Profile card for Sasha the Border Collie, showing a photo, follower count, bio, and links to photos and siblings.

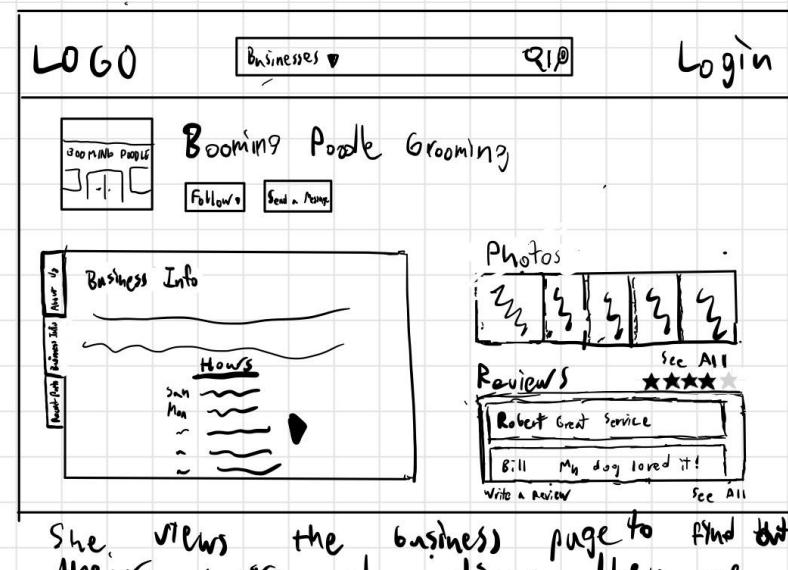
She views her profile that has tons of beautiful images...



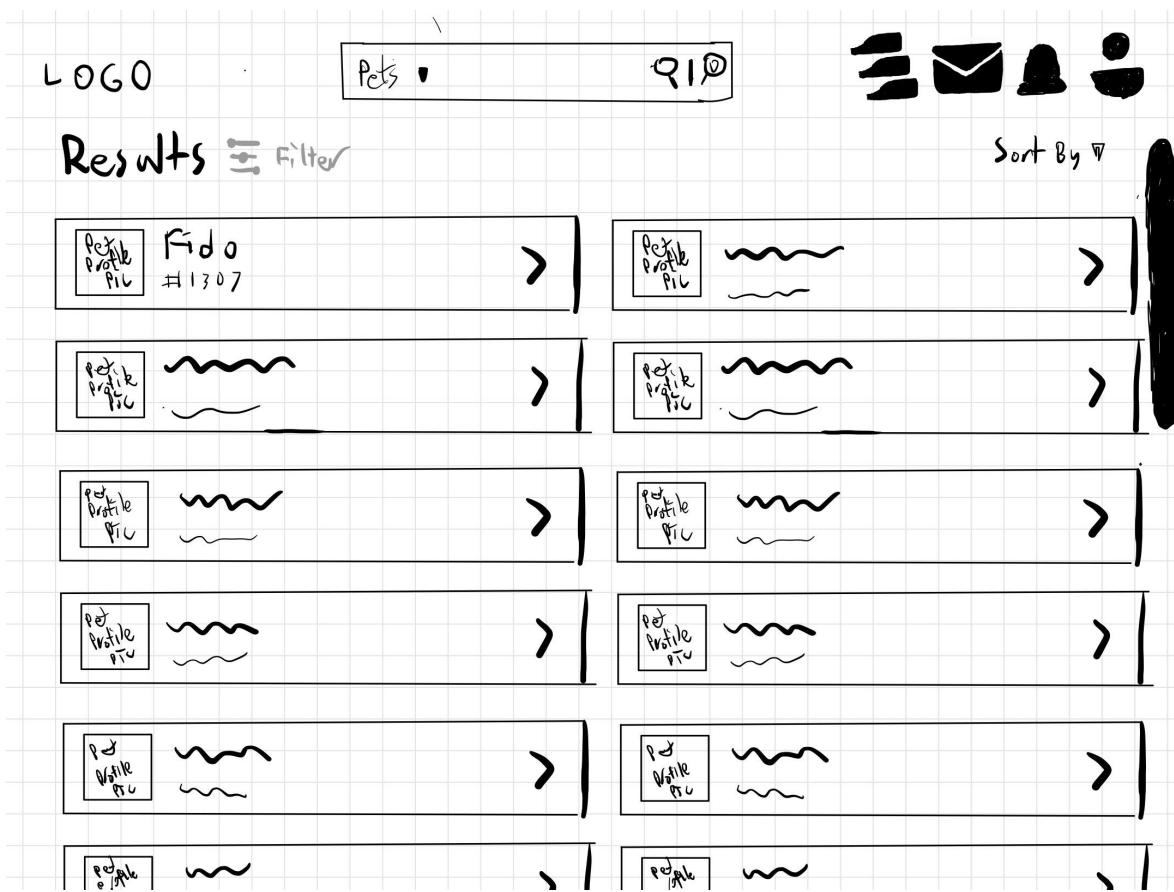
...



Sarah then elects it is time to look for a groomer for her dog. She searches for "Grooming", while instinctively 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 Sort By ▾

Fido the Golden Retriever

The profile page includes a placeholder for a 'Pet Profile Pic', the name 'Fido the Golden Retriever', a 'Followers' button, and a 'Message my owner' button.

Recent Posts About Me

My Owner: David

Photos

See All

Siblings

See All

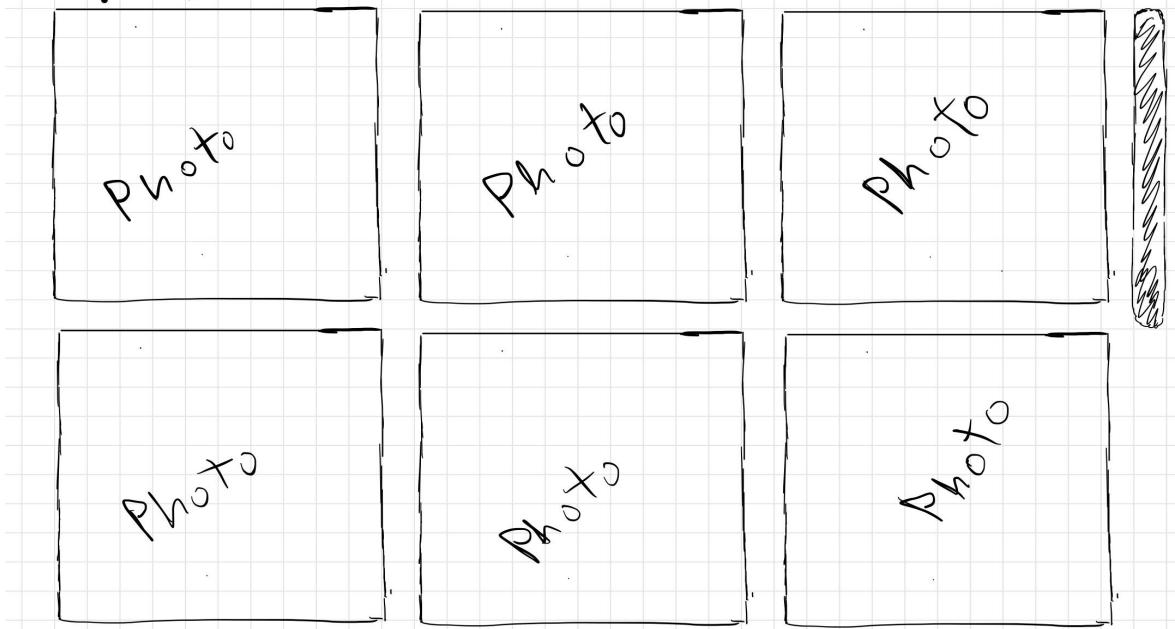
This section shows four wavy lines representing posts from David's timeline, followed by a grid of four photo placeholders labeled 'Photos' and 'See All'. Below this is another grid of four photo placeholders labeled 'Siblings' and 'See All'.

LOGO

Pets • 910



Spud's Photos



LOGO

Pets • 910

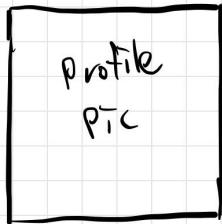


Spud's Photos



LOGO

Dots • 910



Paw Spa

Follow •

Send a Message

>About Business Info Recent Posts

Business Info

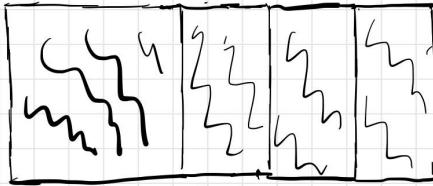
Address: ~~~~~~

Phone Number: ~~~~~~

Hours

Sun: Closed
Mon: 8:00 AM - 6:00 PM
Tues: ~~~~~~
Wed: ~~~~~~
Thurs: ~~~~~~
Fri: ~~~~~~
Sat: ~~~~~~

Photos



See All

Reviews

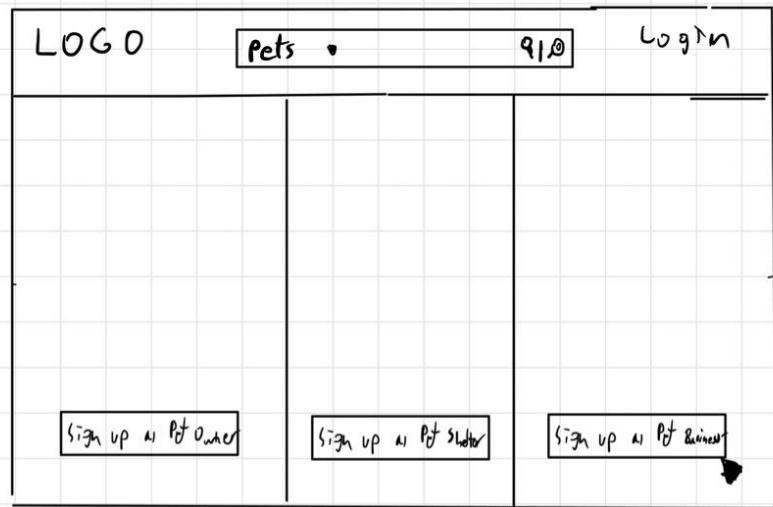
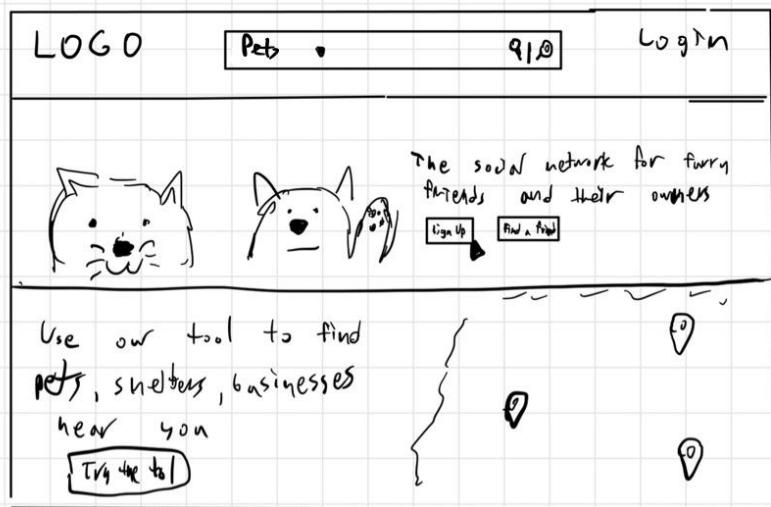


"Great Experience, will be back" - Robert
"Great Service and People" - Bill
"~~~~~" - ann

Write a Review

See All

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



Susan goes to the registration page

LOGO Pets • q10 Login

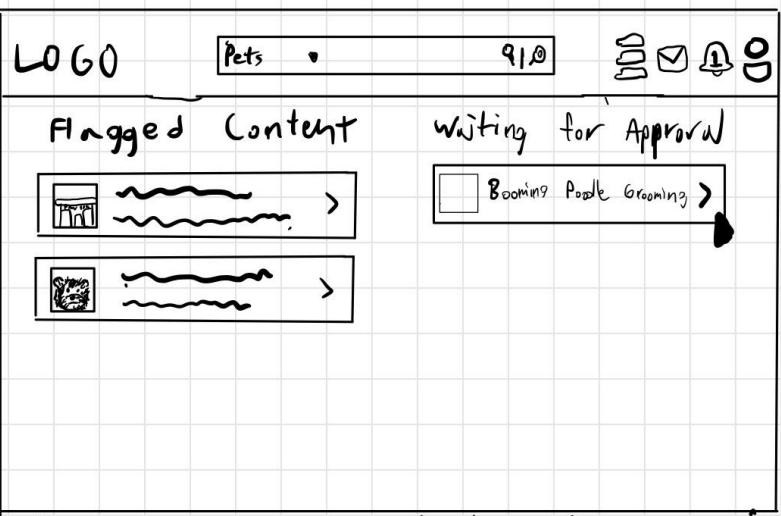
Email Sign Up First Name
User Name Last Name
Password
Confirm Password
Verb: Wings (checkbox)

LOGO Pets • q10 Login

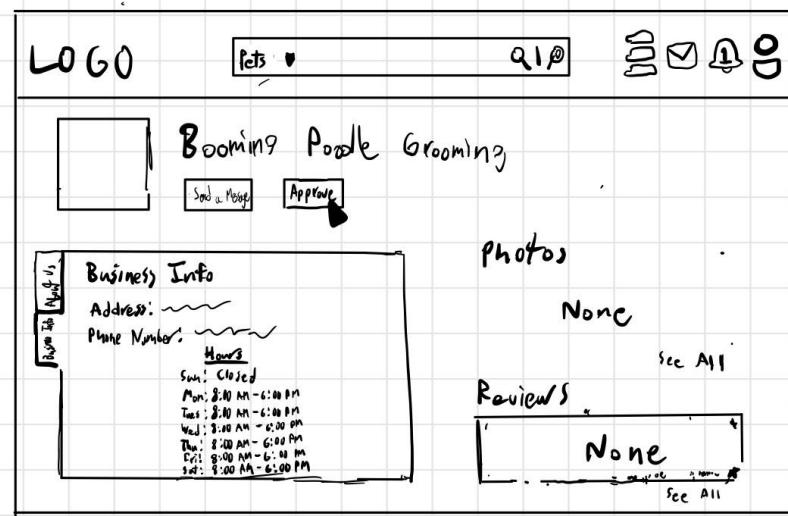
Business Name Sign Up
Business Address
Business Category Phone Number
(Grooming) (555) 555-5555
 I agree to the terms
Sign Up

... and creates user login credentials.

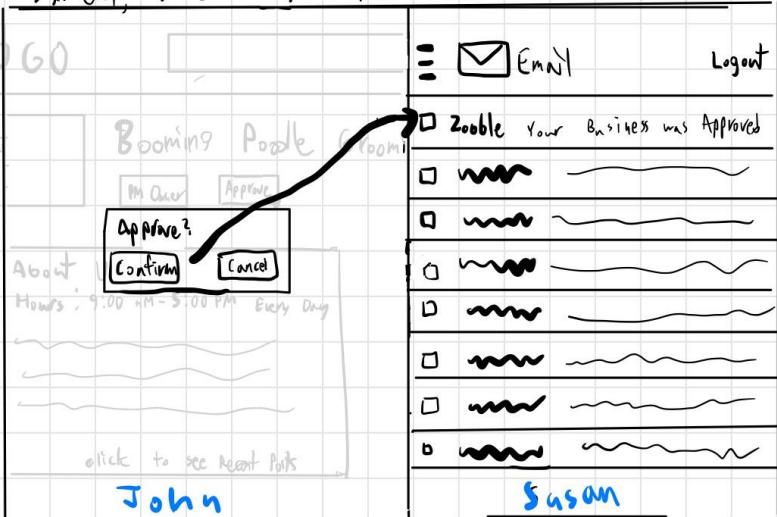
She is then prompted to add her business information



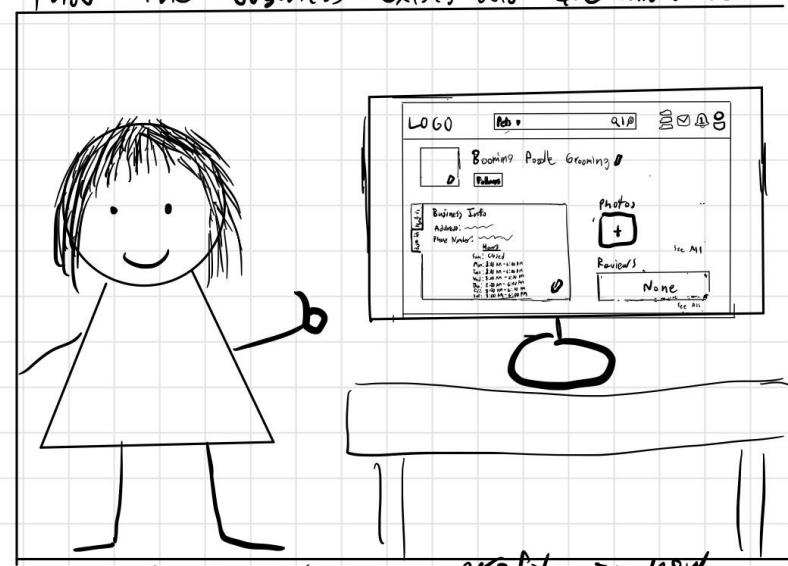
After adding this required information and content in notification, sent by the system, to John, we nominate



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  219 LOGIN

SIGN UP

EMAIL

USERNAME

PASSWORD

CONFIRM PASSWORD

NEXT : BUSINESS DETAILS

LOGO Pets  219 LOGIN

SIGN UP

BUSINESS NAME

BUSINESS ADDRESS

CATEGORIES ✓

PHONE NUMBER

I HAVE READ TERMS & CONDITIONS

SIGNUP

LOGO

Pets • Q1①



Flagged Content

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

0 G 20 comments

0 G 2 comments
Posted 1 min ago

Accounts Pending Approval.

Paw Spa >

Burghdale Pet Shelter >

LOGO

All •

Q1①



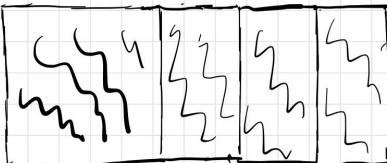
X

Paw Spa

Approve • Send a Message

Business Info
Address:
Phone Number:
Hours
Sun: Closed
Mon: 8:00 AM - 6:00 PM
Tues:
Wed:
Thurs:
Fri:
Sat:

Photos



See All

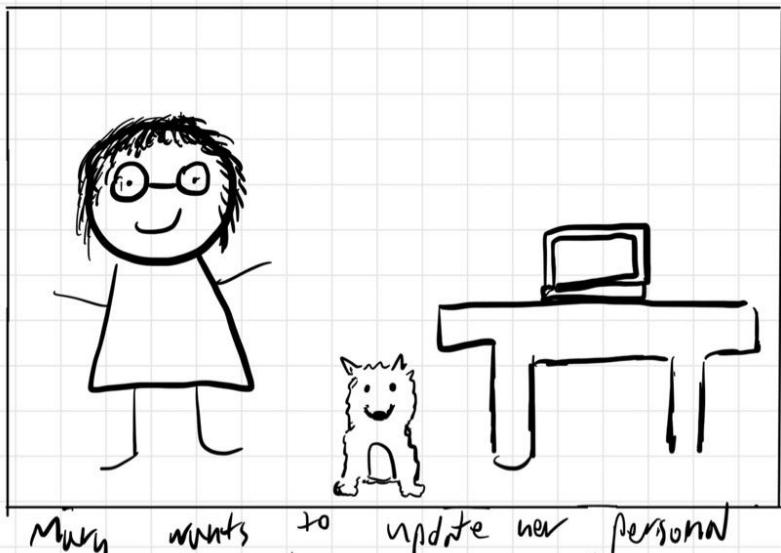
Reviews



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.

LOGO Pets 910

Mary Followers

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

My Images See All

My Pets See All

LOGO Pets 910

Mary Followers

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

My Images See All

My Pets See All

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

LOGO Pets 910

Follower Feed Posts Near You

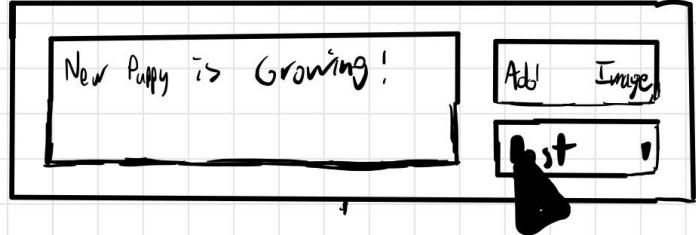
Jimmy 12/25/20 at 11:05 AM 20 G 20 comments Took a bath today

Paw Spa 12/25/20 at 6:00 AM 0 G 0 comments 20% off all grooming services

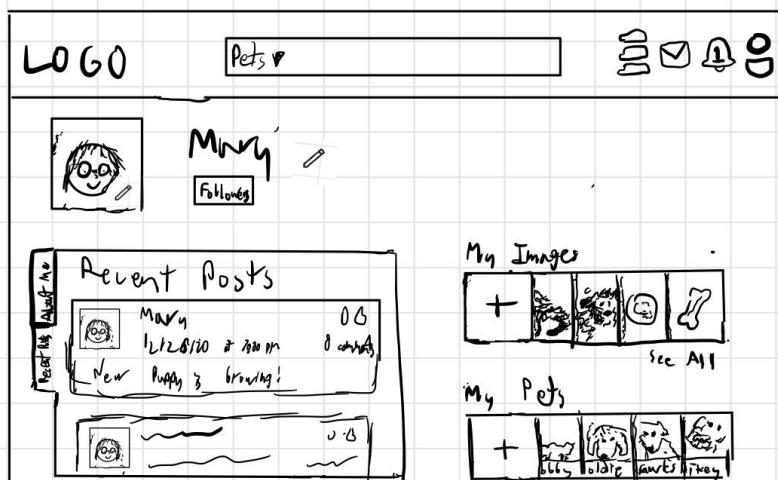
Snow 12/25/20 at 7:23 PM 2 G 2 comments Happy Holidays

Post picture

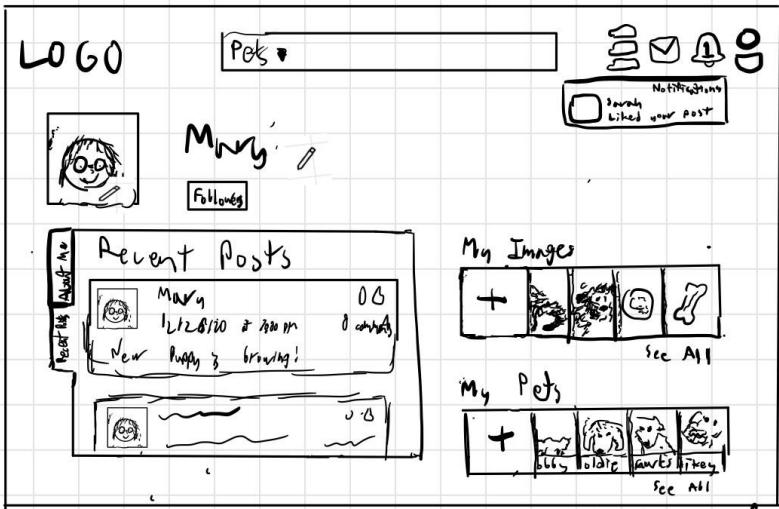
She then navigates to her feed, . . .



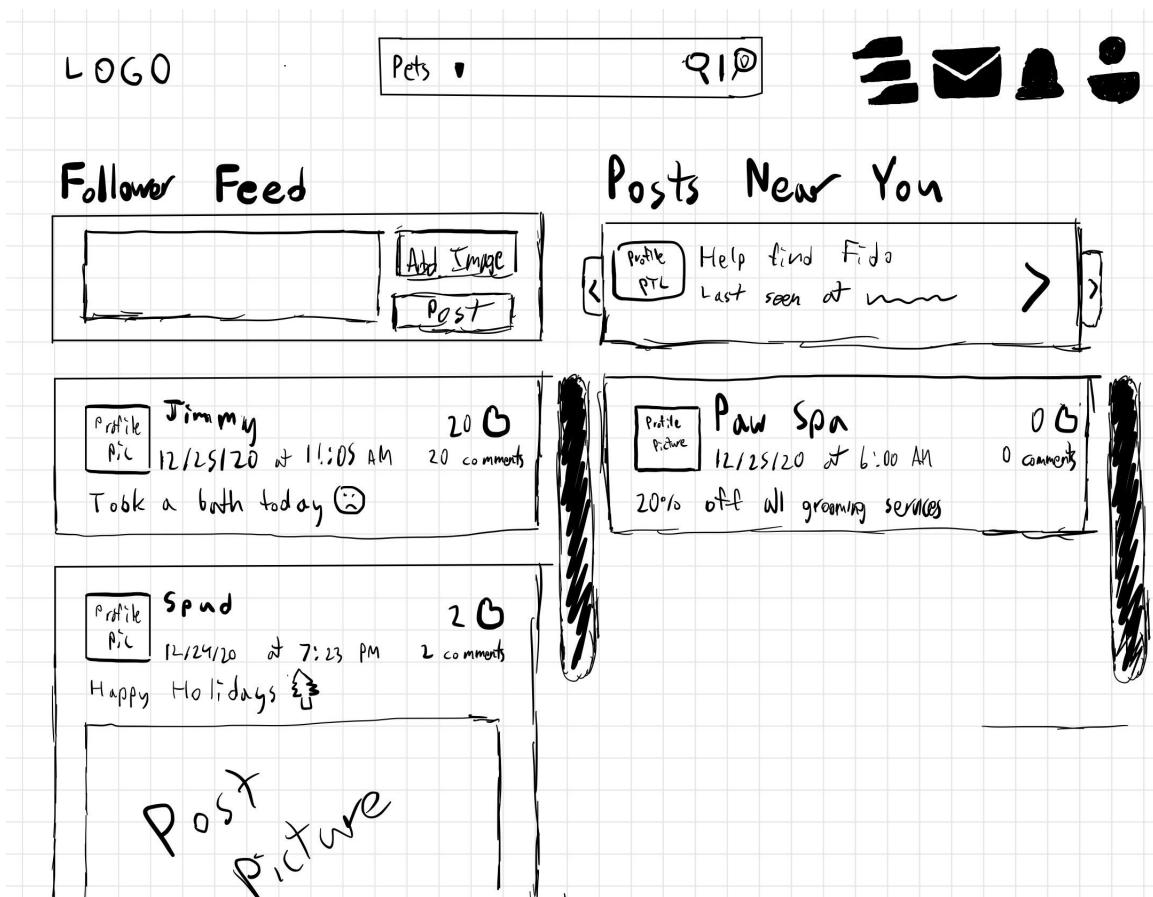
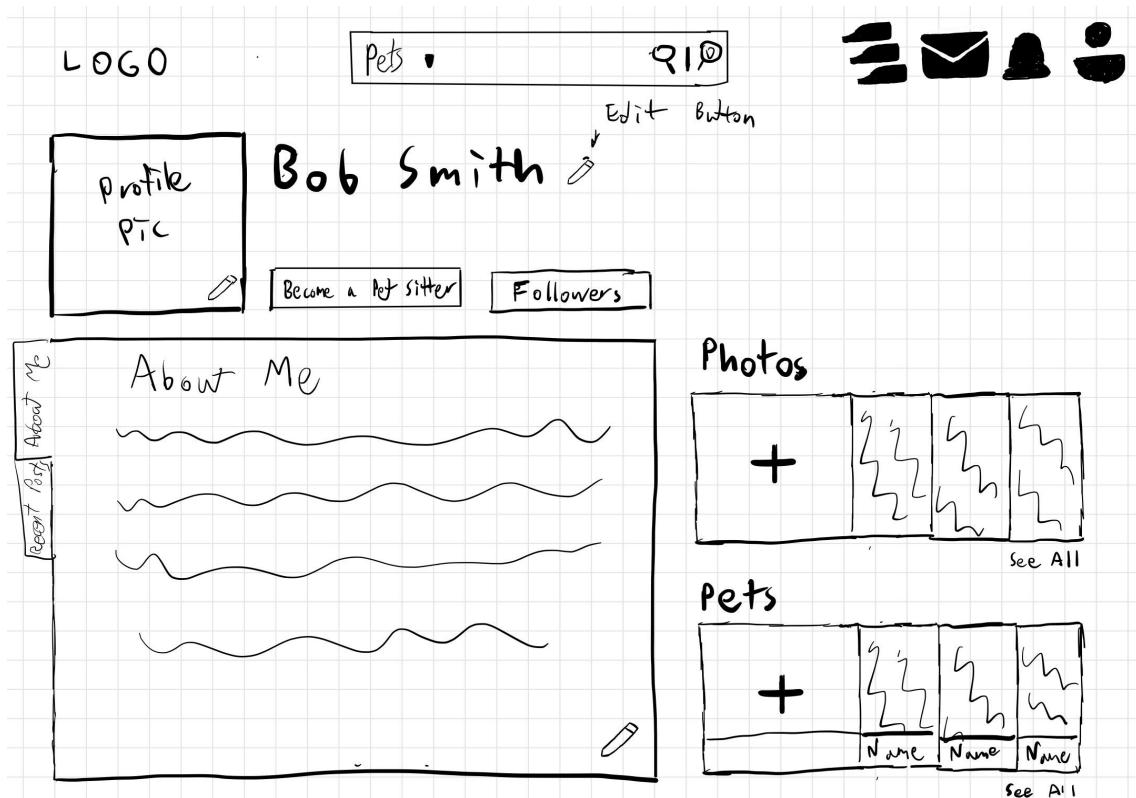
... and posts a quick update for her followers



She navigates to her profile before logging out and sees that the post is now visible.

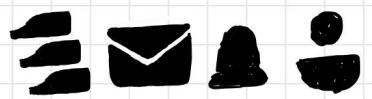


She also receives a notification that Alex has liked her post.



LOGO

Pets • Q10



profile
pic

Paw Spa

Follow Send a Message

Recent Posts

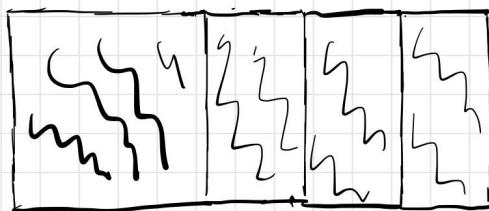
About Me Business Info Recent Posts

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, and social media icons. The main headline reads: "The Social Network for you and your family (or not so furry) friends". Below it are "Sign up" and "Find a Friend" buttons. A large section on the right says "Build a pet Profile and connect with other pet owners" with two "Website Preview Image" boxes.

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

The search interface shows the word "Spa" entered into the search bar. The results panel displays a list of locations, with the top result being "Paw Spa" located at "123 Oak, CA". There are four additional results listed below 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.

The search interface shows the address "21 S B st, CA" entered into the search bar. The results panel displays a list of locations, with the top result being "Central Park" located at "21 S B st, CA". There are four additional results listed below 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.

The search interface shows the address "21 S B st, CA" entered into the search bar. The results panel displays a list of locations under the heading "Parks only", with the top result being "Central Park" located at "21 S B st, CA". There are two additional results listed below 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.

LOGO

Businesses ▾

910



Map



Results

Filter

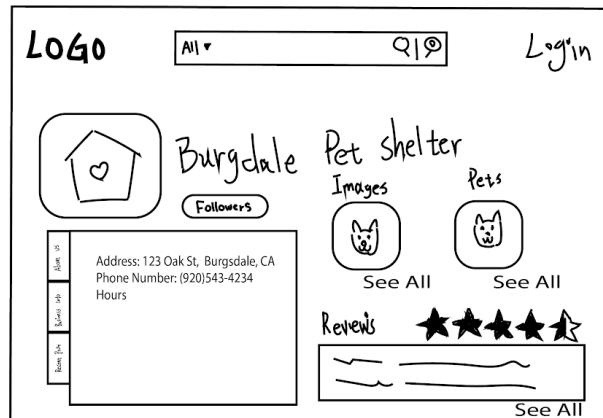
Sort: Proximity ▾

- Paw Spa
123 Oak Dr, Pine, CA
- Wavy line icon
- Wavy line icon
- Wavy line icon
- Wavy line icon

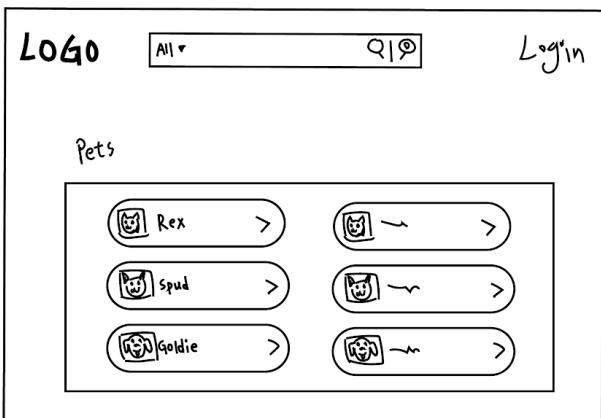
Use Case #8 Storyboard: General User Adopts Pet



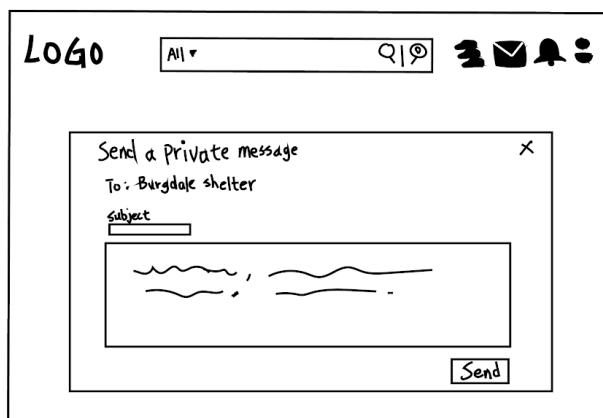
Bob is looking for a new dog, and he was recommended to Burgdale pet shelter by his friend.



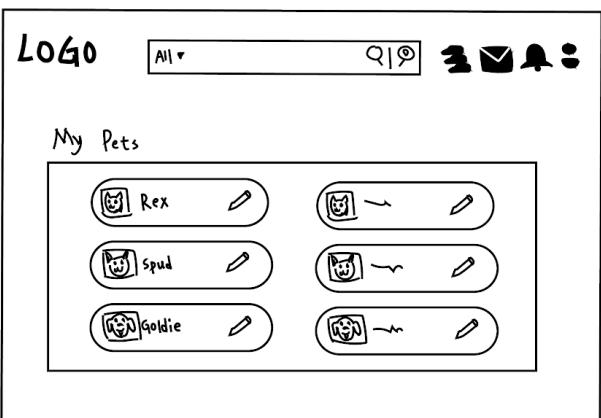
Bob follows the link and is able to see their about page, pictures from the shelter.



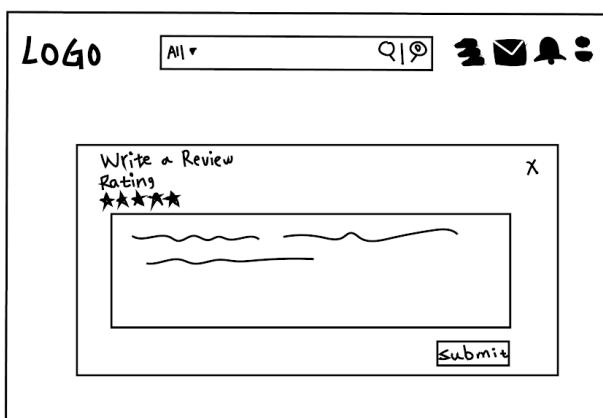
Bob can browse and inquire about specific animals at the shelter.



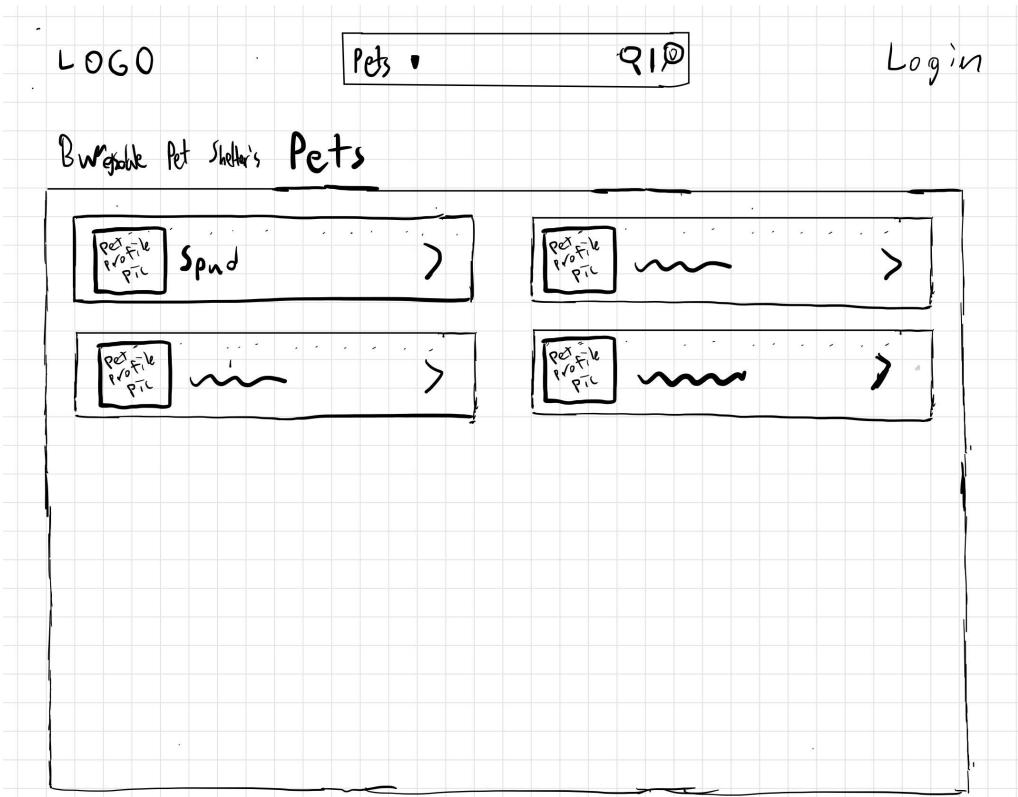
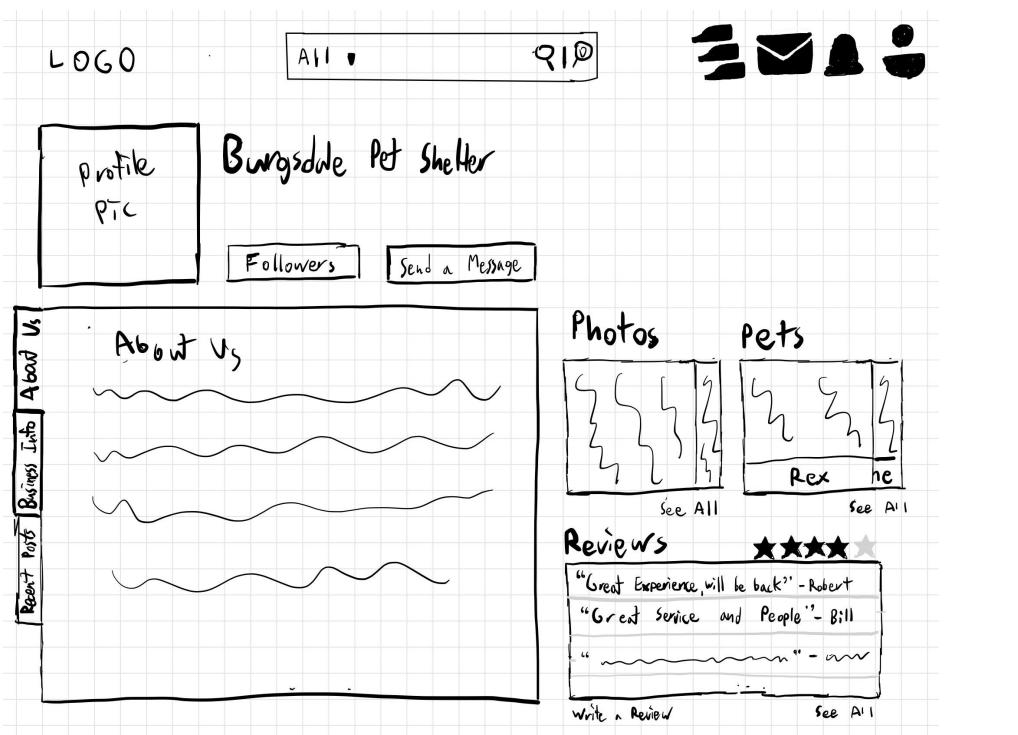
Bob creates an account before writing the review and he sends a Private message to the shelter about a dog named Rex. After a while, the shelter provides more info about the animals to Bob via email.

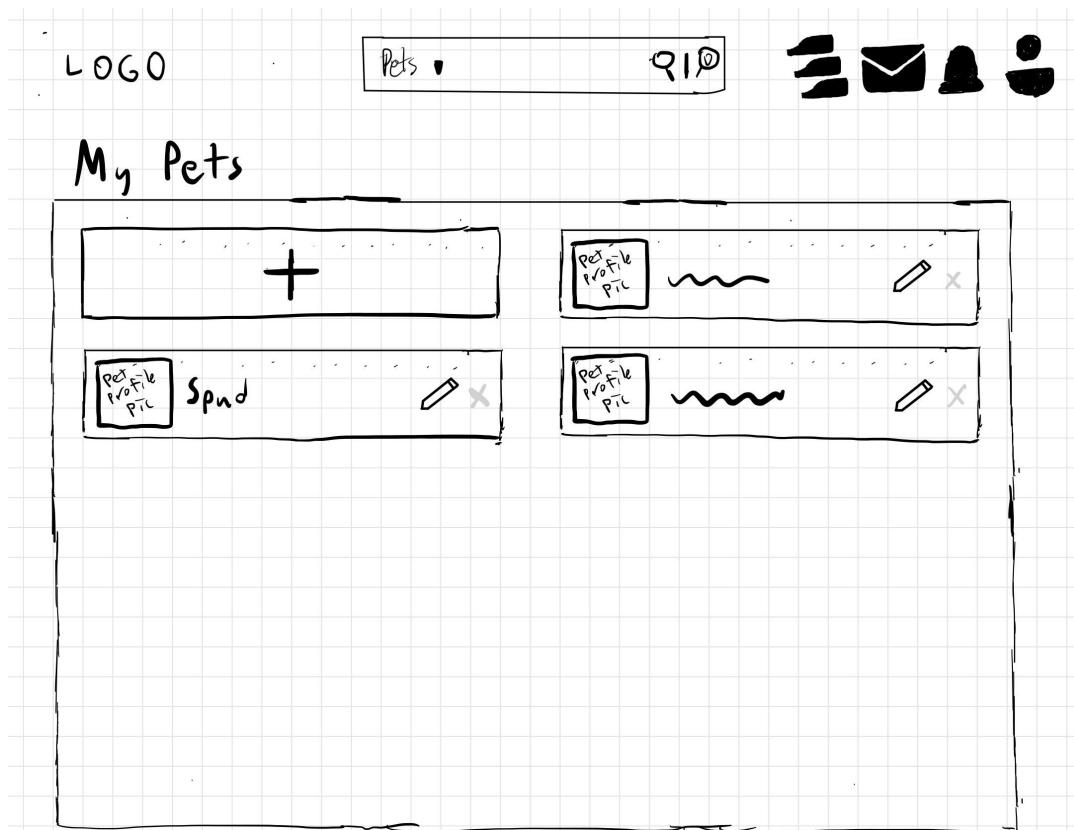


When Bob eventually chooses a new companion and arranges to adopt Rex, the Shelter deletes Rex's profile from their account.

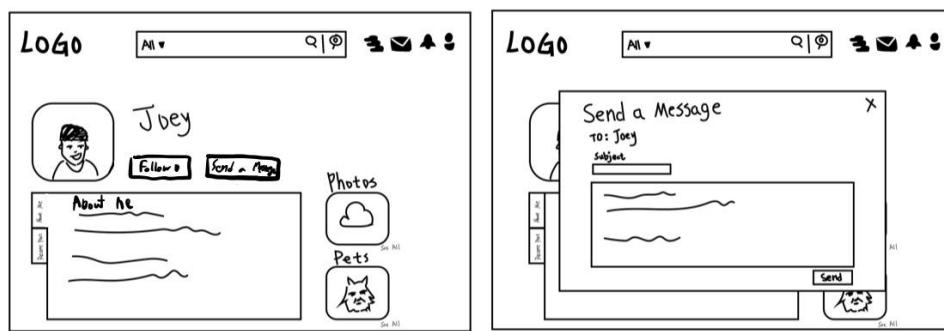
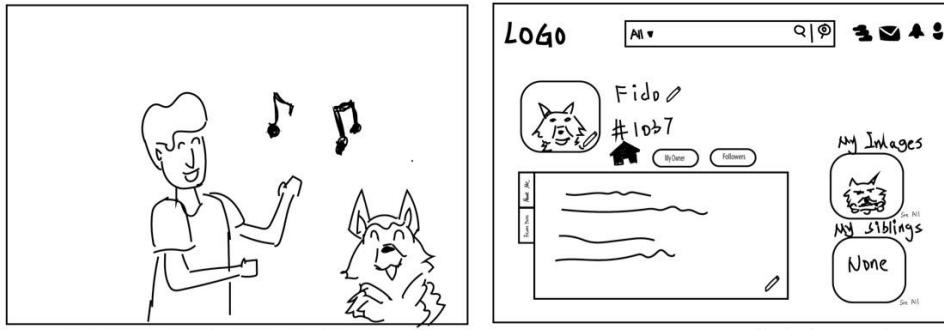


Bob is so happy with the experience and he writes a five start review to Burgdale pet shelter.



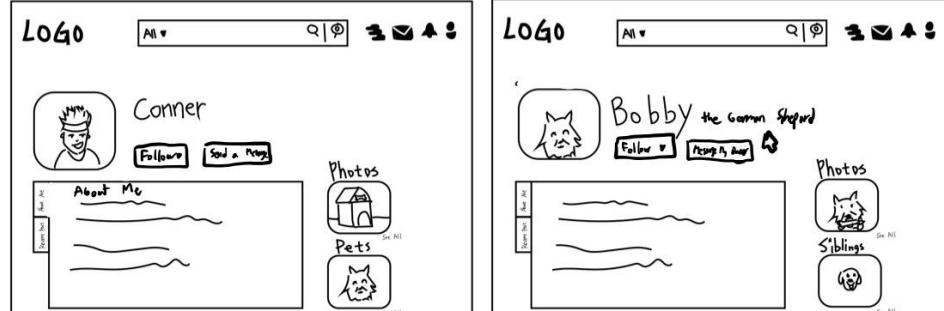


Use Case #9 Storyboard: New Registered Pet Owner searches for training advice



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

LOGO All ▾    

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

LOGO All ▾    

New German Shepard Owner Tips

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

Thank you so much paul!

Add Image Reply

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 try Paul's advice, he wants to make a post to thank Paul.

LOGO All ▾    

New German Shepard Owner Tips

Make a Post

Paul  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

Title

Category

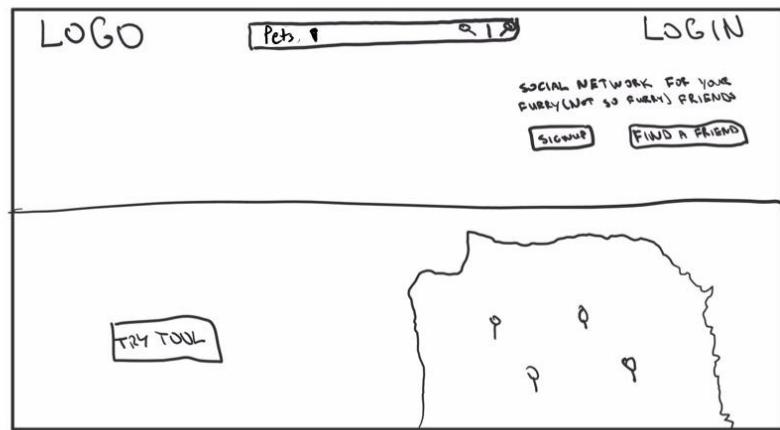
X

Post

Add Image

Cancel

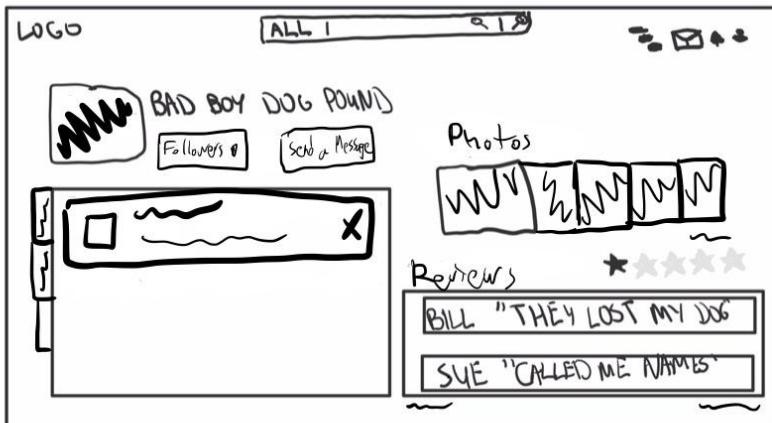
Use Case #10 Storyboard: Admin takes action against problematic Registered User



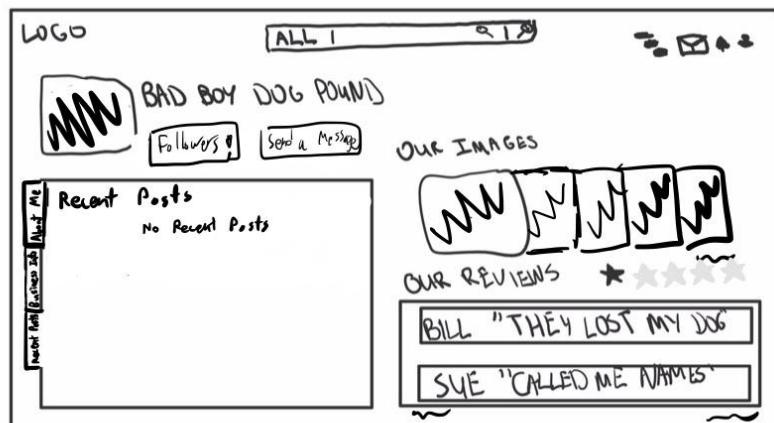
John logs in as an admin to make sure the website is running well



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



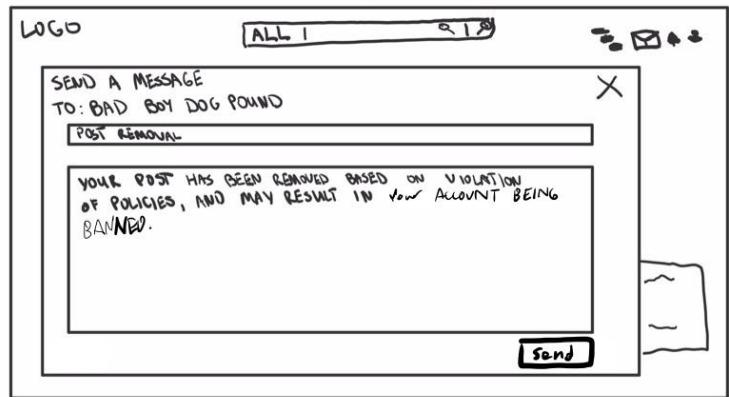
John navigates to the flagged content on Bad Boy Dog Pound



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 Q10

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: ~~~~~
Thur: ~~~~~
Fri: ~~~~~
Sat: ~~~~~

Photos

See All

Reviews ★★★★☆

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

Write a Review See All

LOGO Pets Q10

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

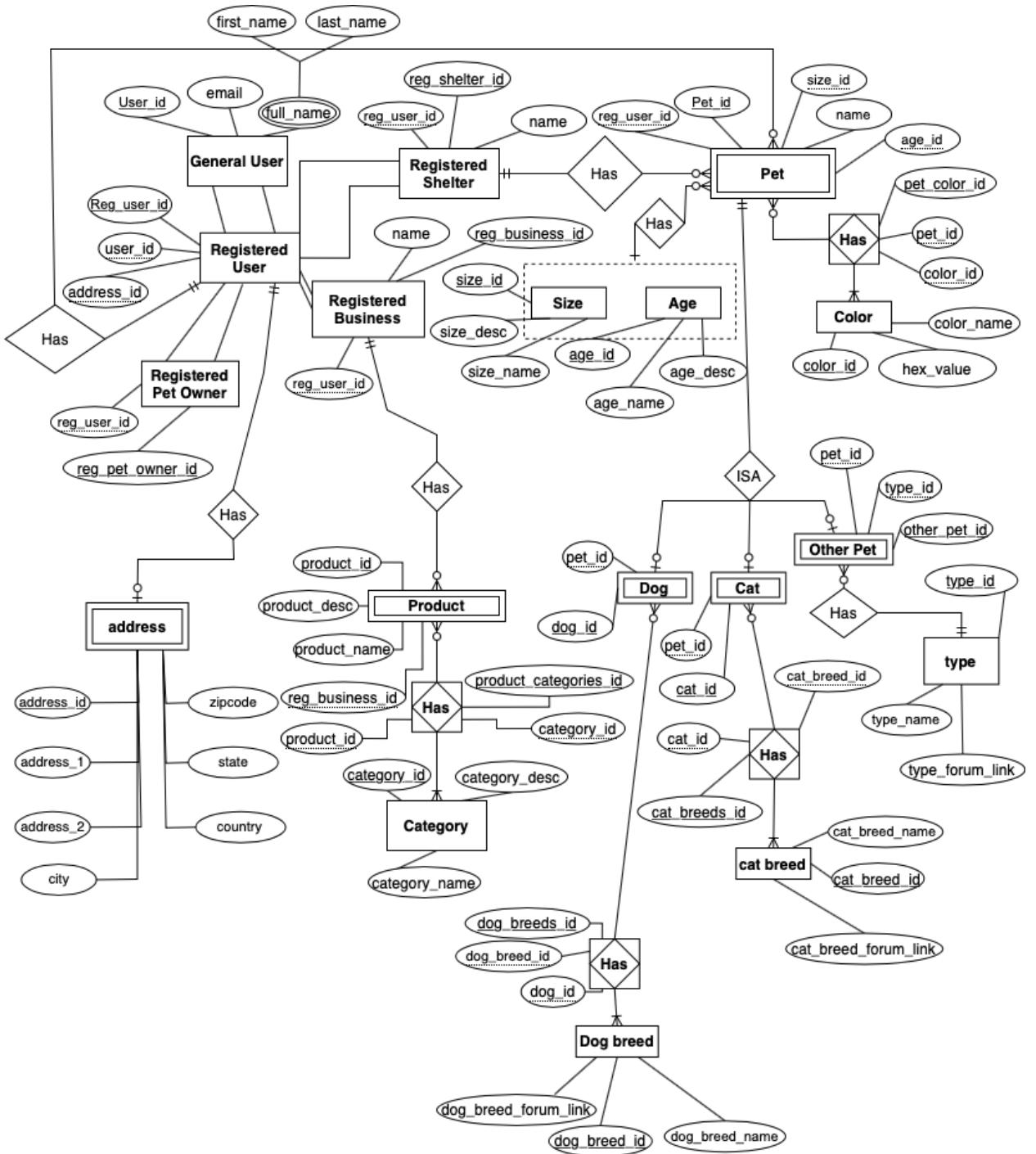
17. Type (Strong)

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

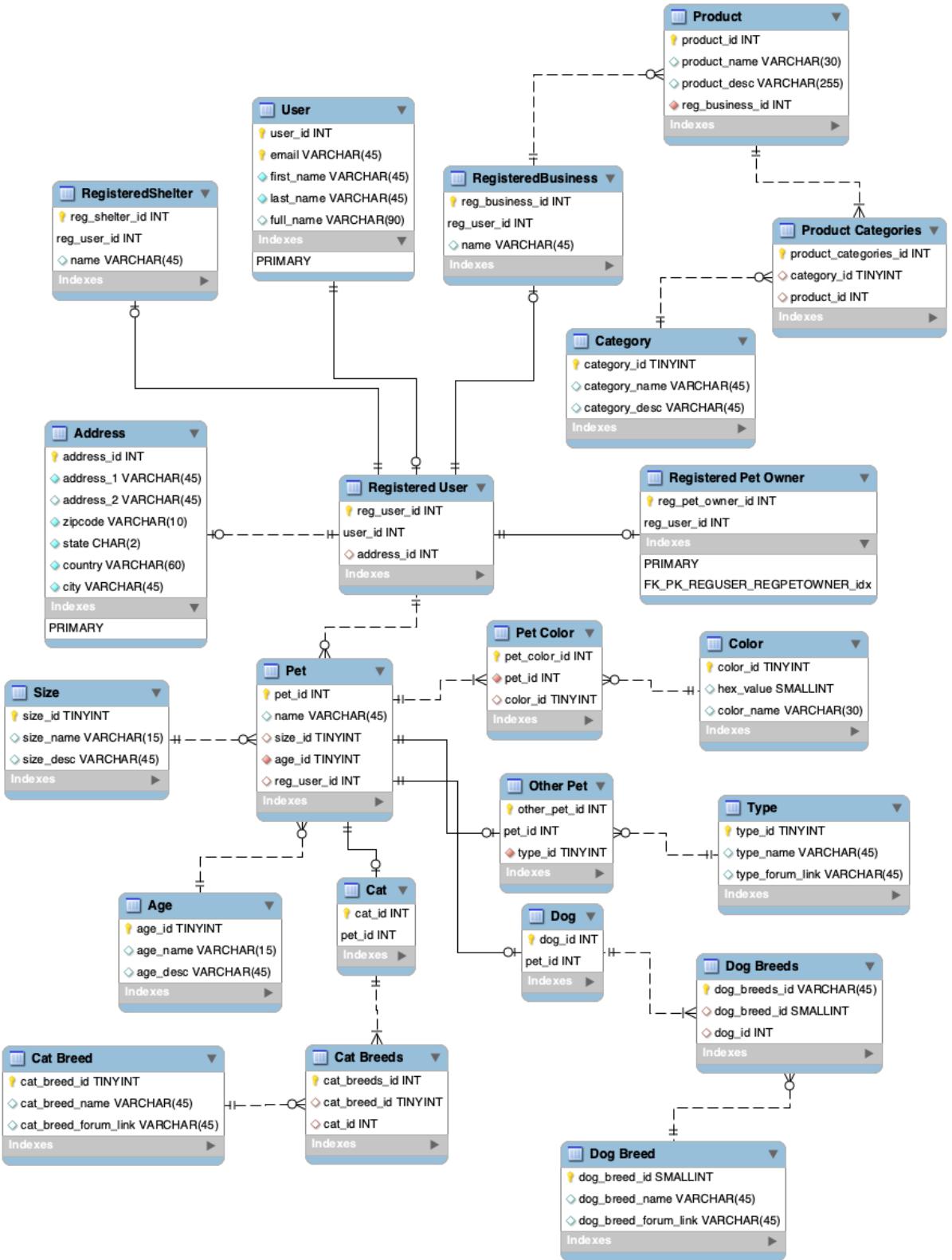
18. Color (Strong)

- 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



5.

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

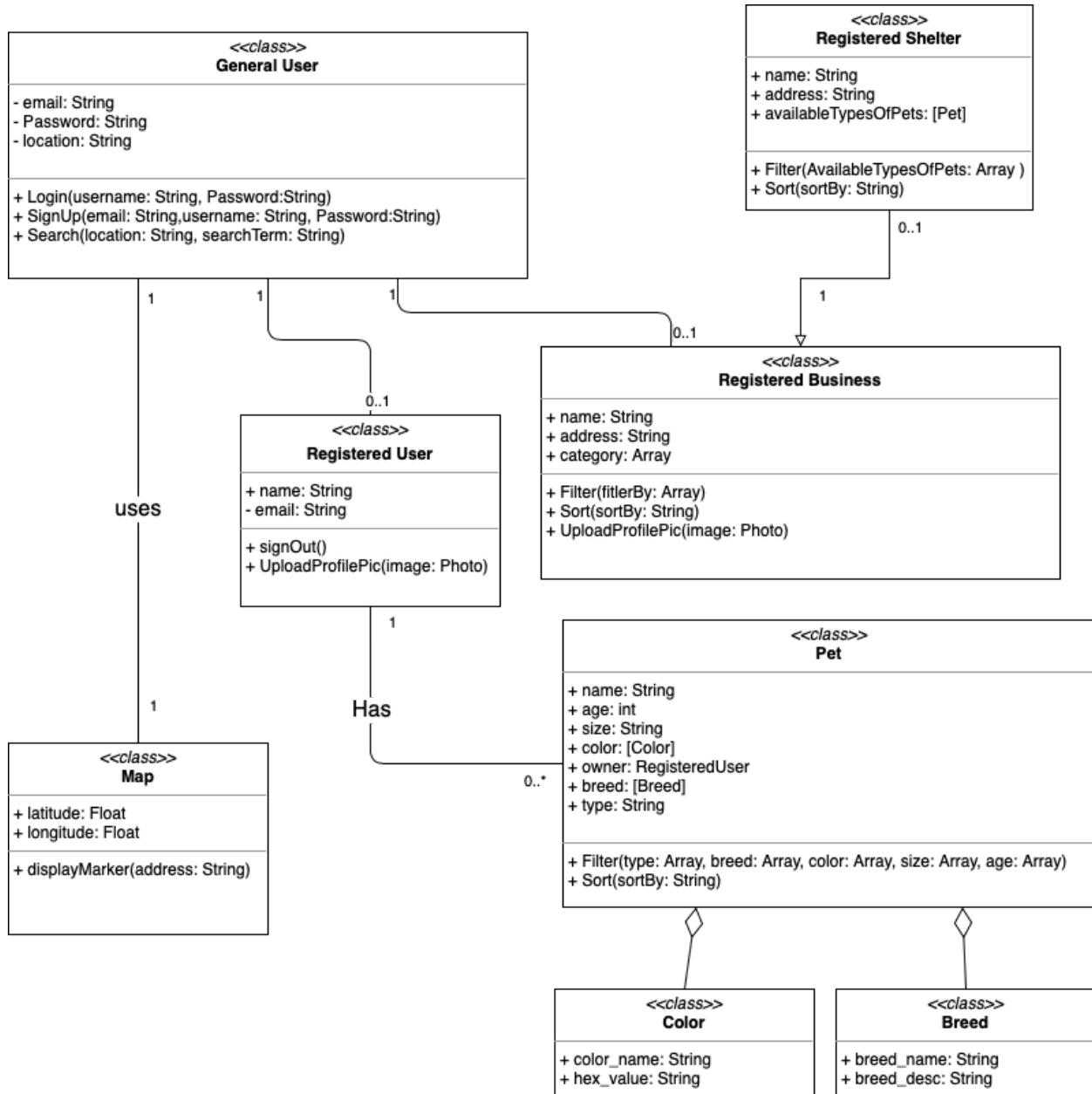
Searching: Users are able to use the website to search for specific entities on the website, including pets, businesses, parks, and shelters. Users will have to choose one of five categories: Users, Businesses, Shelters, Forums, and Pets. Users will be able to search by names/titles, and the names/titles 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.

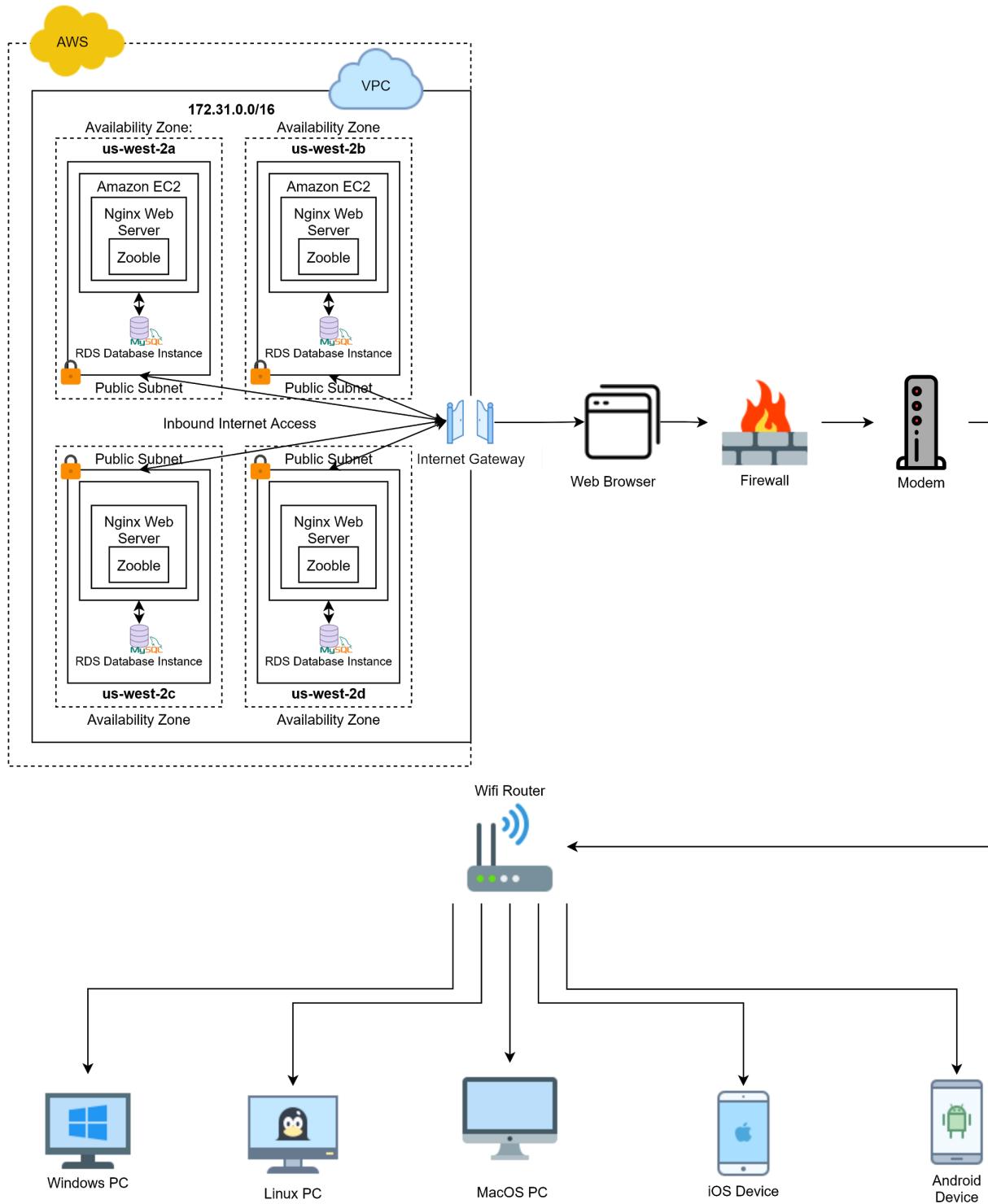
Post Ranking: Order of appearance of Posts in the user's Feed will be determined by a combination of the amount of likes a Post has received and the recency of the post. If a Post is made by a Registered Business or Shelter, Local Businesses and Shelters will be prioritized in Post Ranking. Posts made 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

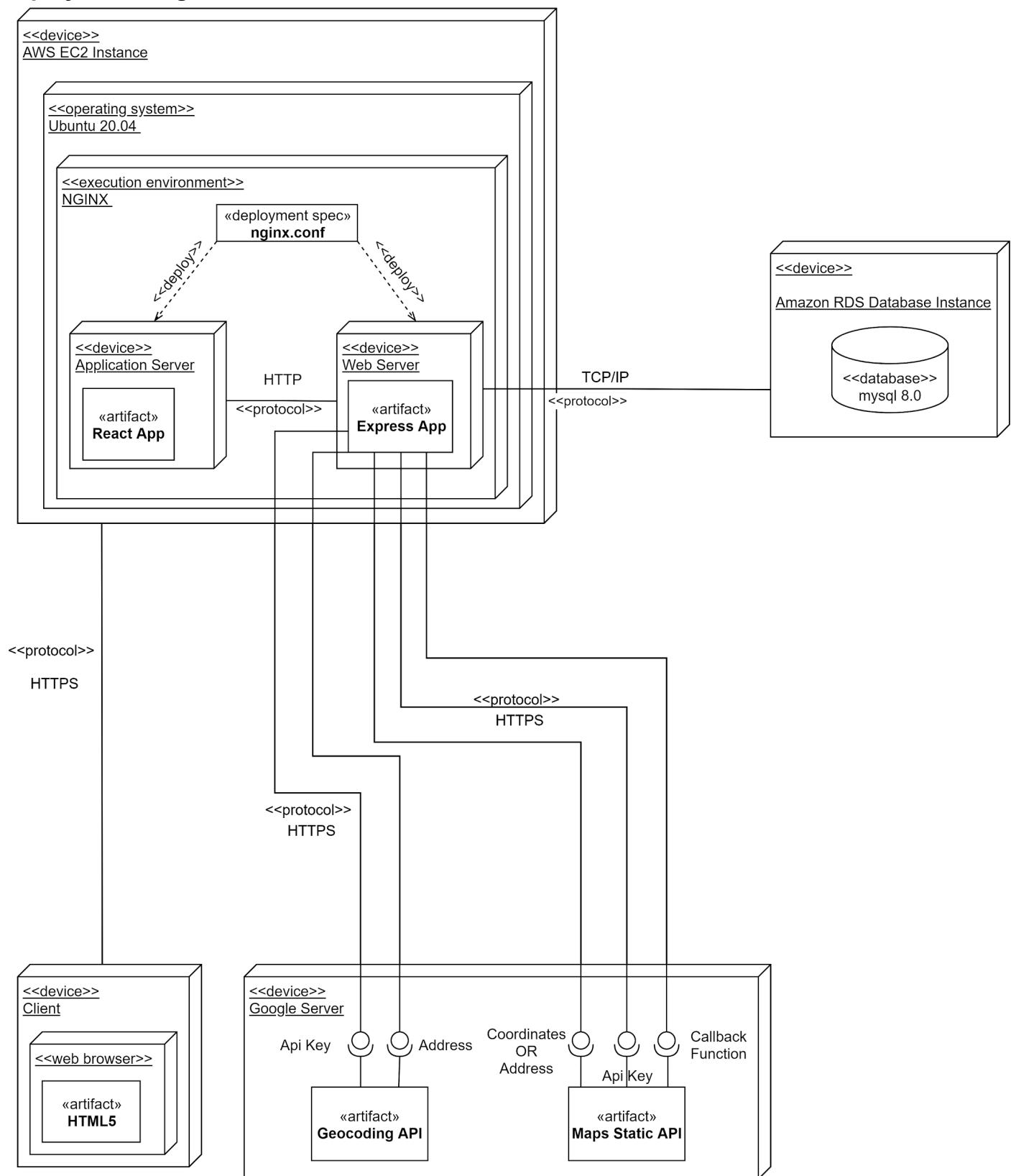


Section VII: Application Network and Deployment Diagrams

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,

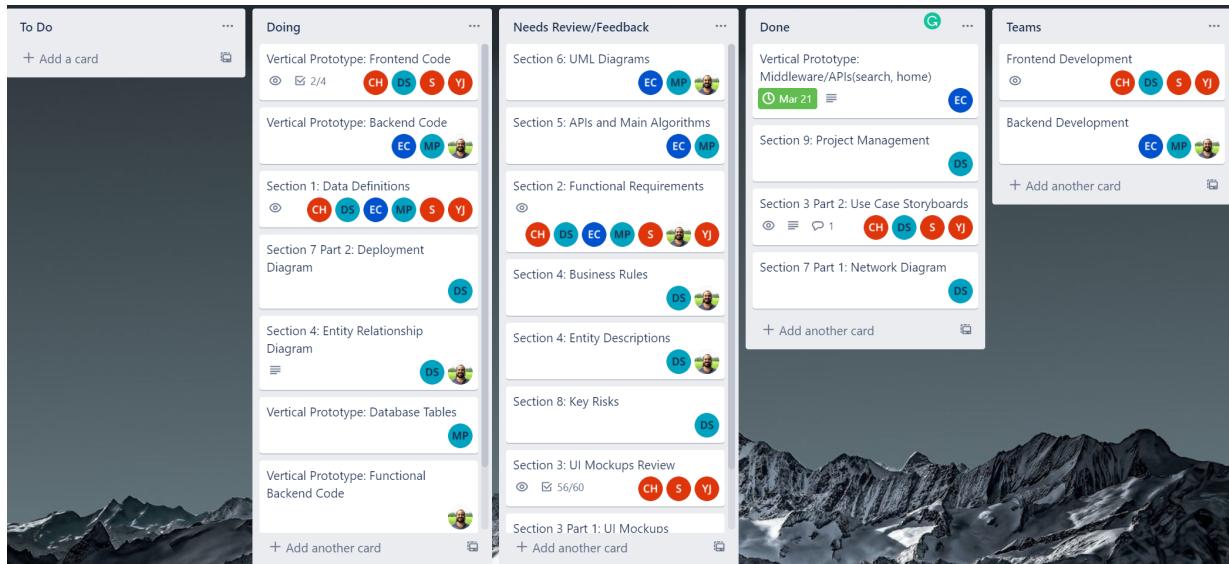
contradictory/redundant content or content that does not consider other content/ideas from other parts of the milestone documents.

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.