POOCH

Manage Pets
Dog Services
Dog Walking
Dog Meetups
Dog Boarding
Dog Records

 Brought to you by:

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Updates to BRD?

None

Updates to Management Plan?

Gantt Chart, Sprint Retrospective, and Sprint Board

Gantt Chart


491A stops
21 22 23 24 25 26 27 28 29 30 31 1 2 3 4 5
Sprint 4
assign
100%
Sprint 4 meeting
100%
Edit Login Page
100%
Edit Signup Page
100%
Edit homepage
100%
Edit user info and do.
100%
Edit Dog boarding
100%
Edit Dog walking
100%
Edit Dog meetups
100%
Edit Dog records
100%
Edit Dog services
100%
Machine Learning da.
100%
End of Sprint #4

How many APIs and servers are there?

One API is currently being used to connect the JSX code to the Firebase server and google API is being used for user signup and login.
2 API's are currently being used.

One server is currently being used to host the web application.

However, we will be using more APIs like yelp API to provide recommendations for nearby dog services.

What type of Object Relational Model (ORM), Object Data Modeling (ODM) library or driver is used in the connection of the database to the server? If there are multiple databases, list at least one. If you cannot tell or this element does not exist in the architecture, please state so.

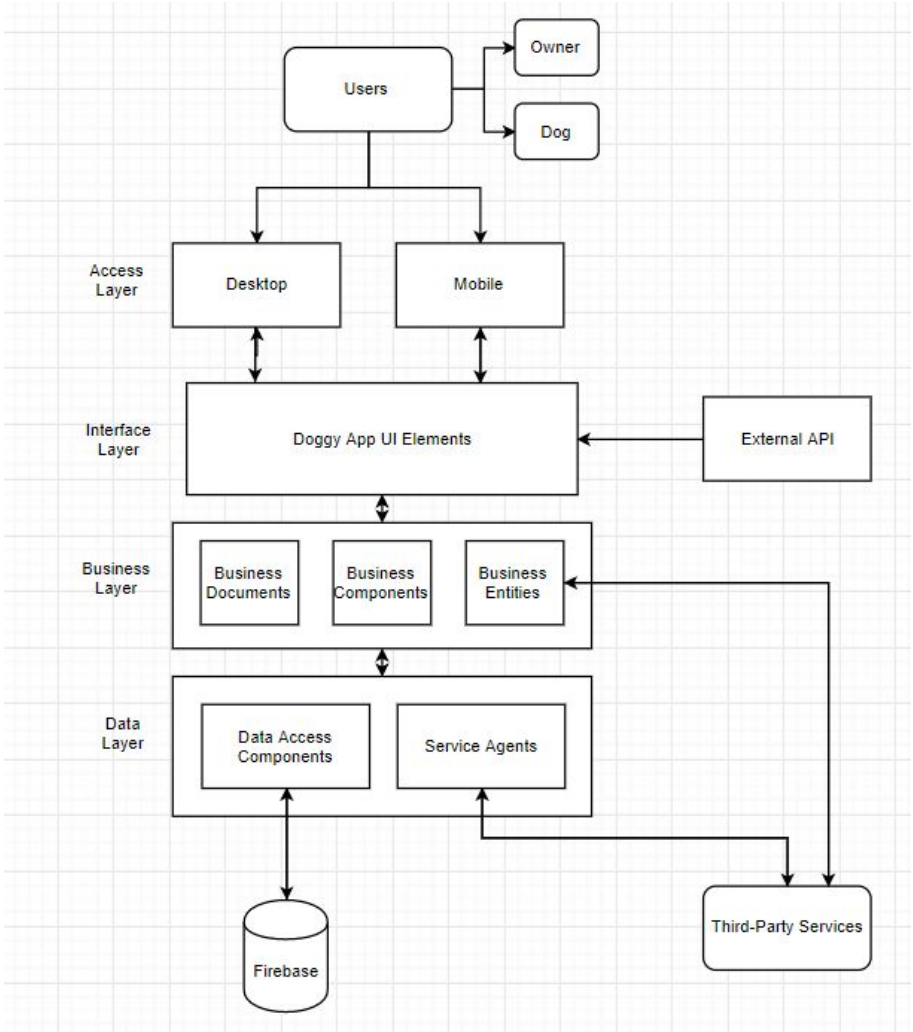
The **Firebase SDK** hosted by NPM is used to connect the database to the server.

Architecture and Major Components

System Component Diagram

LAYERED Architecture approach
4-layer architecture:

1. The access layer
2. The interface layer
3. The business layer
4. The data layer

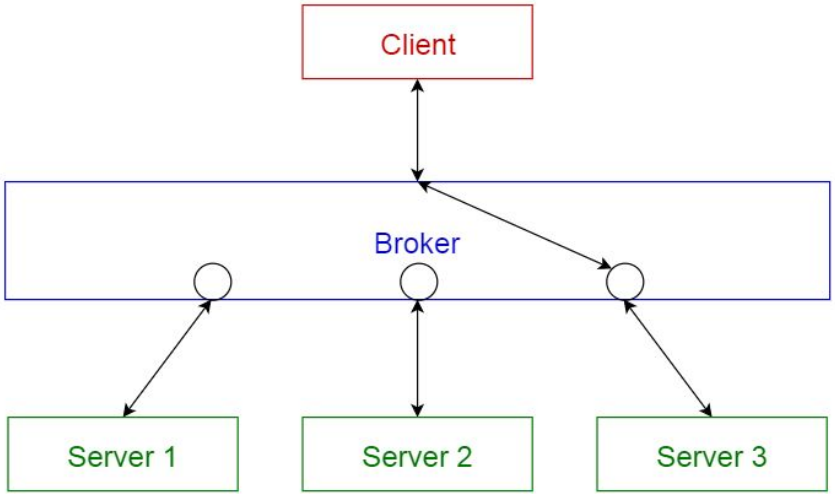


Quality and Quantity Standards

- Layered architecture, so different teams can work on different layers.
- Advantages of layered architecture:
  - Re usage of lower level layers.
  - Layers make standardization easier.
  - Each layer has its own function.
  - Changes made to one layer, does not affect other layers.
  - Addition or modification of functions and modules easier.
- Layered integrated with client-server type of architecture.
  - Divide tasks into smaller units, so services requested can be handled faster.
  - Splitting tasks into smaller threads to faster process a request.

Architectural Alternatives I

BROKER PATTERN



This pattern is used to structure distributed systems with separate components.
A BROKER is responsible for interaction between major components.

Server publishes their capabilities to a broker.
Client requests a service from a broker, broker redirects to the appropriate service.

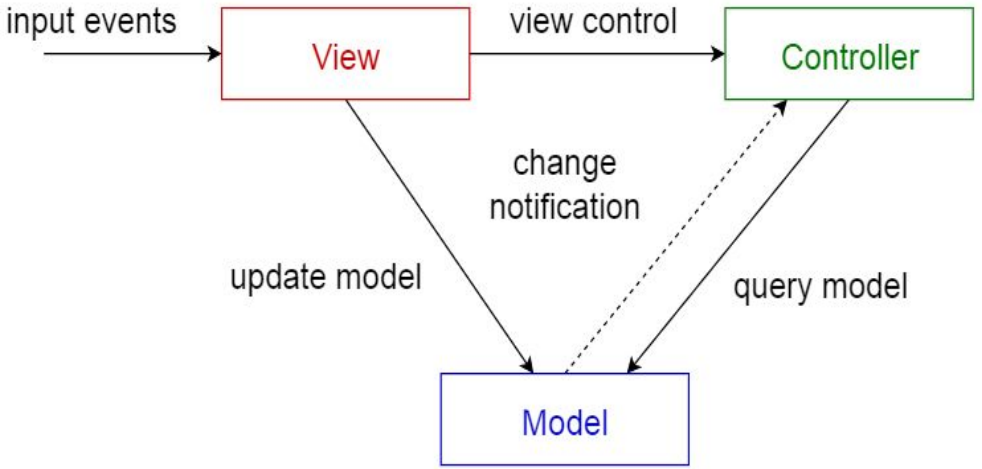
Architectural Alternatives II

MODEL - VIEW - CONTROLLER PATTERN

This model is used when the internal representations of information needs to be kept separate from what is being presented to the user.

Three main parts to the interactive application:

1. **Model:** Contains main functions and data
2. **View:** Displays information to the user
3. **Controller:** Handles user input.



Why not choose these alternatives?

BROKER PATTERN

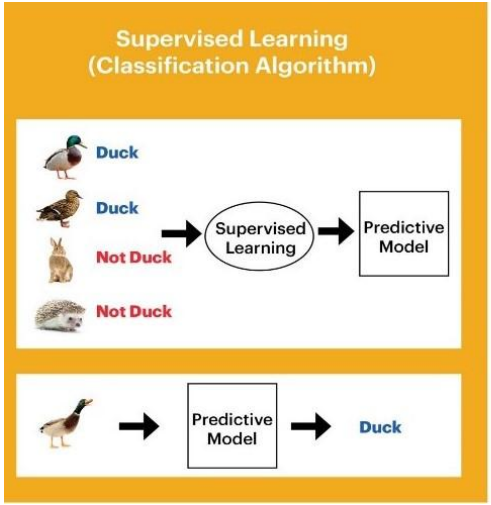
- We do not plan to use multiple instances of servers for different services, thus this pattern would not be the best choice.
- Message broker softwares are Apache ActiveMQ and RabbitMQ - unfamiliarity to these softwares would make it more difficult to work with.

MODEL VIEW CONTROLLER PATTERN

- It works best for web frameworks like Django.
- It increases the complexity of the code, may also lead to unnecessary updates for user actions.
- Considering a lot of features, it is best to not implement this model.

Image Classification

To solve the problem we implement a Machine Learning algorithm that may pose a variety of challenges associated with this task, including viewpoint variation, scale variation, intra-class variation, image deformation, image occlusion, illumination conditions, background clutter etc.



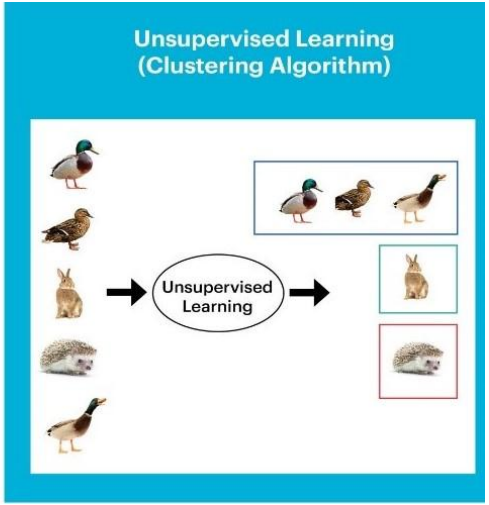
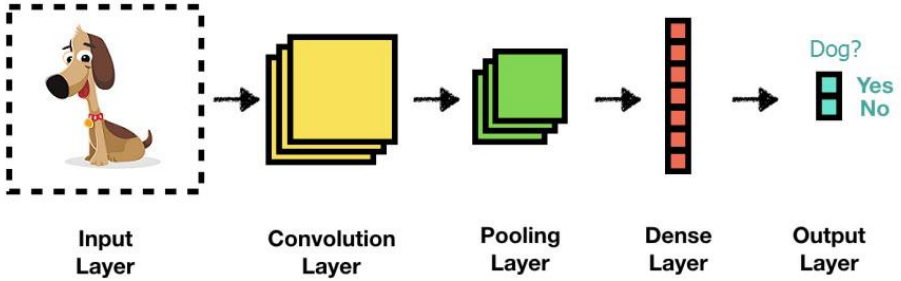


Image Classification Pipeline Steps:

1. Our input is a training dataset that consists of *N* images, each labeled with one of *K* different classes.
2. Then, we use this training set to train a classifier to learn what every one of the classes looks like.
3. In the end, we evaluate the quality of the classifier by asking it to predict labels for a new set of images that it has never seen before. We will then compare the true labels of these images to the ones predicted by the classifier.

Convolutional Neural Networks “CNN”

Convolutional neural networks, which are a clever way to reduce the number of parameters. Instead of dealing with a fully connected network, the CNN approach reuses the same parameter multiple times. The big idea behind CNN models is that a local understanding of an image is good enough. The practical benefit is that having fewer parameters greatly improves the time it takes to learn as well as reduces the amount of data required to train the model.

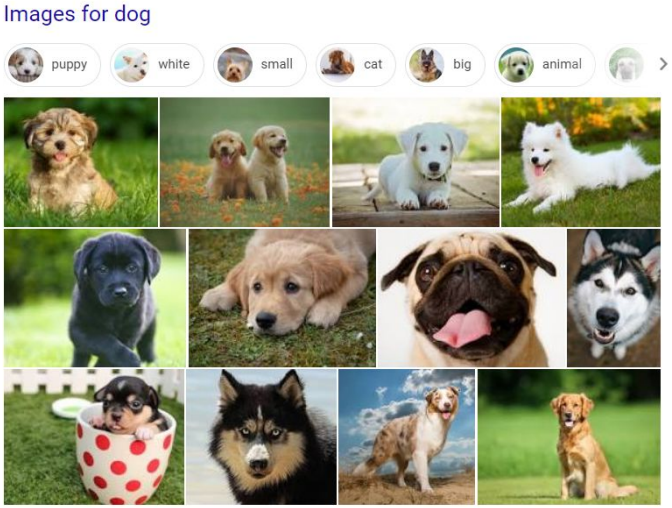


ML Dataset

We will be using **CNN model** for the machine learning aspect of our web application.
Since it is a **supervised model**, our dataset needs to have two variables x and y.
In our case, x would be **images** and y would be the **labels** for those images.

What is the source of the training data?

We plan to gather training data from an **online dataset** which consists of images and labels. The data we acquire would be used to **train** the model so that it can **predict** the outcome.



How does the team plan to deploy the machine learning model?

We are currently planning on deploying the machine learning model as **main server code** in JSX. As this prohibits the team from using the vast array of well-developed Python libraries, we will look into NPM packages that translate Python code into Javascript.

What machine learning deployment architecture alternatives has the team considered?

- Google Vision API
- Firebase Machine Learning Kit
- Python transcompiler

How many total user features are there?

There are currently a total of 10 features offered to the user through our web application.

1. User signup
2. User Login
3. User profile
4. Pet Profile
5. Dog walking
6. Dog boarding
7. Dog meetup
8. Dog services
9. Dog Records
10. Logout

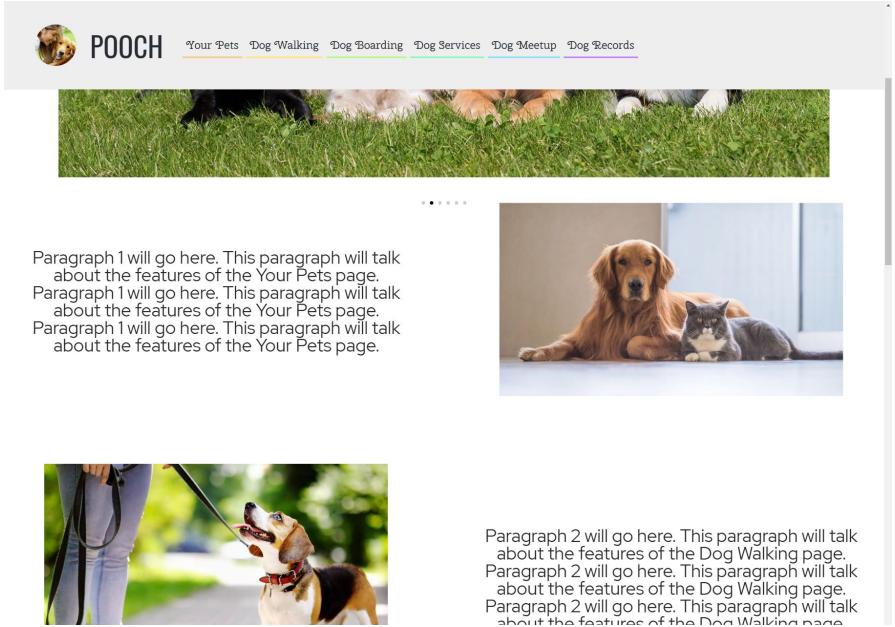
What percentage of user features are essential?

At least 8 user features are required as a bare minimum to ship the product.
(80% are essential)

1. **User signup**
2. **User Login**
3. **User profile**
4. **Pet Profile**
5. **Dog walking**
6. Dog boarding
7. Dog meetup
8. **Dog services**
9. **Dog Records**
10. **Logout**

Which new user story is the most impressive?

- This sprint focused on improving the aesthetic of the web application.
- The user story that improved the look the most was **adding the cascading paragraphs and pictures on the home page**.

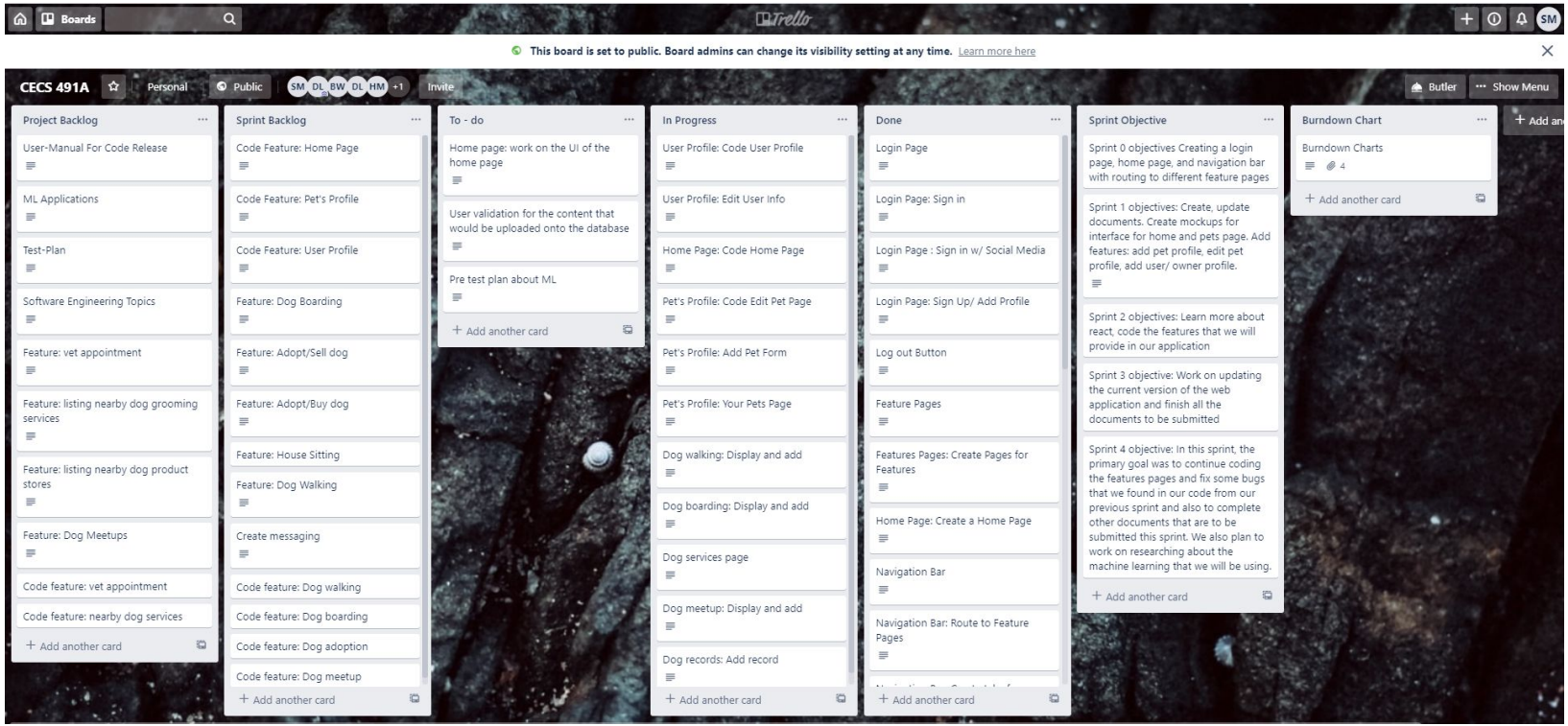


Sprint #4 Summary

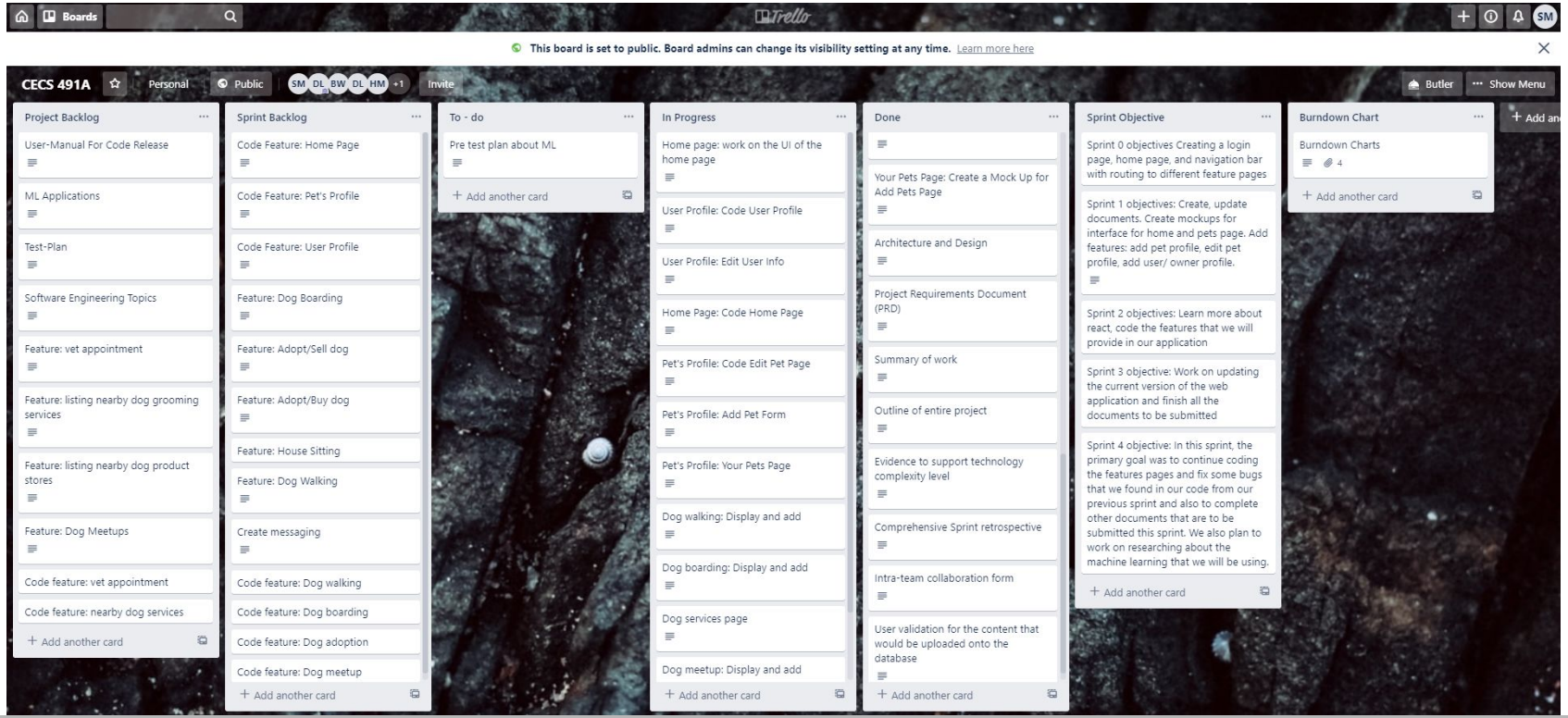
Sprint #4 Goals

- The primary goal of this sprint was to **change the way new users view the site** and **add visual appeal**.
- The secondary goal was to **add new features** and fix some bugs that we found in our code from our previous sprint.
- The third goal was to continue our **research about the machine learning** model that we will be using.

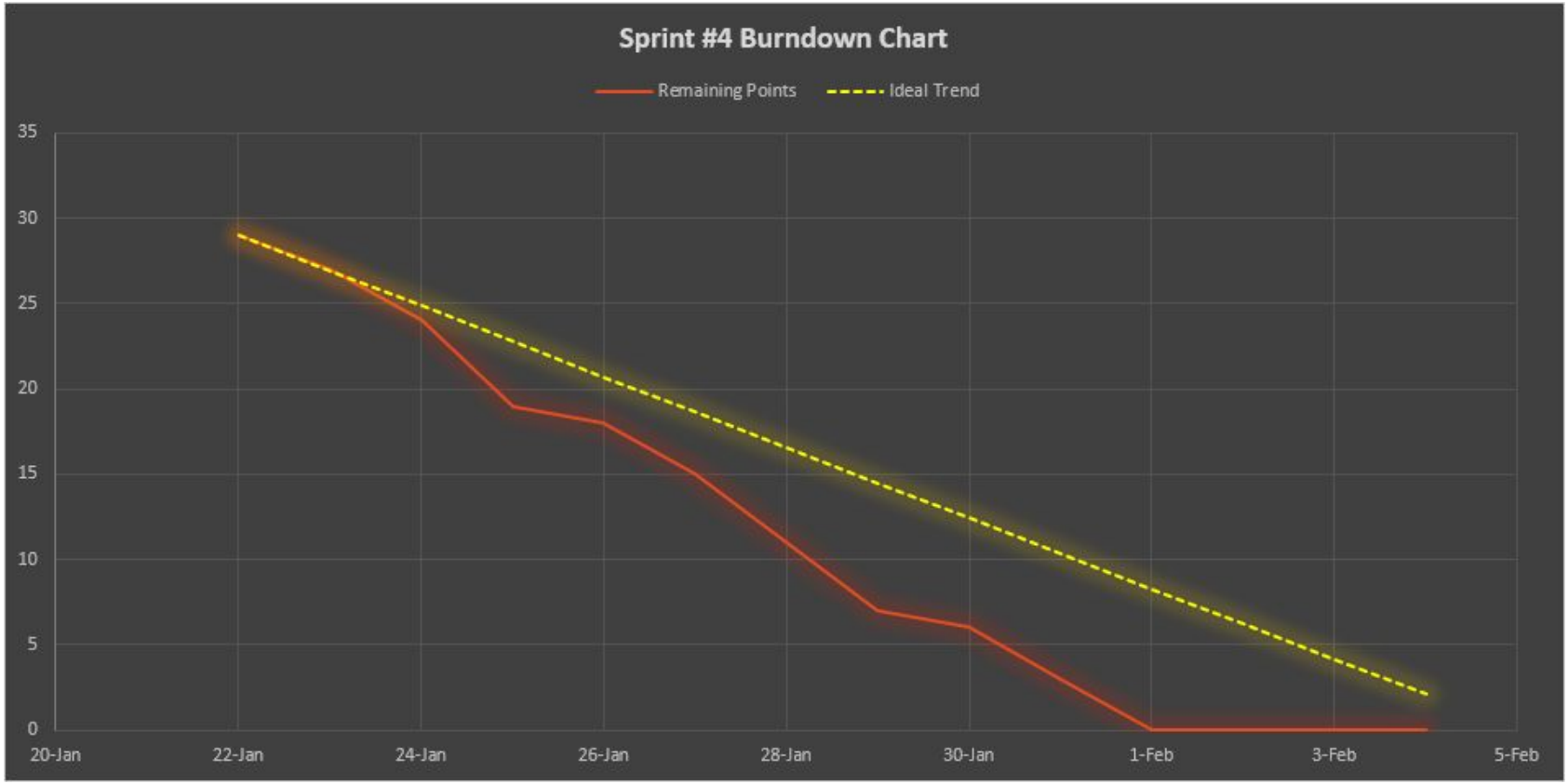
Sprint Board - Trello (Before)



Sprint Board - Trello (After)



BURNDOWN CHART



Sprint #4 Retrospective

Did we meet our sprint goal?

Yes, we finished all the tasks that was planned for this sprint on time.

Sprint Velocity(current)

- ★ **26 points were planned** in this sprint.
- ★ We were able to **complete 26 points** on time.
- ★ Commitment per person every week = 5 hours.
- ★ Team commitment this sprint= 60 hours.

What worked well in the sprint?

The right amount of tasks were assigned in this sprint which could be completed in the given timeframe. There was communication between members for finishing tasks.

What could be improved?

Provide more time for testing the code we wrote. Prioritize the basic features to provide complete functionality to the web application.

Sprint #4 Retrospective (continued..)

How did we decide user stories with the highest priorities?

We decided based on user feedback that the initial presentation of the site was not appealing.

What is the approx. number of In Progress user stories?

There are **7 user stories** in progress.

How did the burndown chart look?

The burndown chart was not linear because most of the progress occured towards the beginning of the sprint. Although we did not work for most of Christmas break, the extra time did help the team plan out sprints #4 and #5.

Code Section

User Stories Released This Sprint

- **Expand the navbar:**
  As a user, I want to see a navbar that is at least twice the current size so that the web application shows less information at once.
  This will also include expanding the size of the elements on the navbar. (effort=1)
- **Add footer:**
  As a user, I want to see a footer on the Homepage that contains links to an About page, FAQ page, social media page, copyright text, terms of use text, and privacy policy text so that the Home page looks professional. (effort=1)
- **Add alternating pictures and paragraphs to home page:**
  As a user, I want to see two columns on the Home page beneath the slideshow so that I can scroll for a long time and still see content.
  The left should start with a paragraph and the right with a picture. The next row will have a picture and then a paragraph and so on. Each paragraph will describe POOCH as a whole or a feature of POOCH and include a shortcut to a different page. (effort=3)
- **Add slideshow to home page:**
  As a user, I want to see a large slideshow on the Home page that has a series of dog pictures so that I see something aesthetically pleasing and eye-catching when I login. (effort=5)
- **Stylize POOCH on the navbar:**
  As a user, I want POOCH to be a larger, nicer font on the navbar so that I never forget what web application I am using.
  The POOCH logo should be removed from the Home page because it is not aesthetically pleasing. (effort=1)
- **Add profile dropdown menu:**
  As a user, I want to be able to left-click on my profile picture in the navbar and have a drop down menu expand beneath it so that I can have quick access to my profile information, set preferences, and logout. (effort=3)

User Stories (continued)

- **Move log out button to profile drop down menu:**
  As a user, I want to be able to log out in the dropdown menu opened when I left-click on my profile picture so that the logout button does not clutter the navbar. The user does not log out very often, so there is no use in displaying it all of the time. (effort=1)
- **Move profile to new page:**
  As a user, I want to view my profile page on a separate page instead of on the Home page so that I do not get confused once I login.
  A user does not edit their profile very often, so there is little use for it to be included on the Home page. (effort=3)
- **Remove images from login page:**
  As a user, I want the dog images on the login page to be removed so that the page is formatted well on all display sizes. (effort=1)
- **Change initial page routing:**
  As a user, when I initially view the website, I want to see the home page instead of the login page. (effort=3)
- **Change navbar drop down list when not signed in:**
  As a user, when I'm not signed in and on the home page, I want the profile picture to be a silhouette and when I click on the silhouette, the dropdown menu displays "Login" and "Signup" as options. (effort=1)
- **Change navbar routing when not signed in:**
  As a user, when I click on the navbar and I'm not signed in, I want to be redirected to the relevant paragraph on the home screen. (effort=3)

How many clicks to reach a certain feature?

We believe on making our application quick and easy to use so it takes **no more than three clicks** to obtain service of each feature provided. If you start at the Login Screen, the number of clicks to reach a certain feature:

Homepage- 1 click
Your Pets- 2 clicks
Dog walking- 2 clicks
Dog Boarding- 2 clicks
Dog Services- 2 clicks
Dog Meetup- 2 clicks
Dog Records- 2 clicks
Logout- 2 clicks

Platform required to experience the released code

Our web application can be accessed through the web page on a laptop or a computer.

Has the code been reviewed?

Yes, a code review was held to determine the quality of the current code release.

Has the code been tested?

Yes, it has been tested.

Released code can be viewed on:

Individual laptops and or phones with an internet connection. It is best viewed on a **1920x1080p screen**.

Did the team hold a Sprint Retrospective?

Yes, the team discussed how the sprint went and what stories for Sprint #5 could be pulled from the current sprint without breaking current features. (none)

Two conclusions of Sprint Retrospective:

1. A substantial amount of time must be invested in the next sprint to work on **machine learning**.
2. **Azure DevOps** was used this sprint for tracking user stories and its usage improved communication. The team is planning on more heavy use of Azure DevOps tools in Sprint #5.

User Manual for the Code Release

Introduction

Welcome to Pooch!

The dog focused petcare web application which plans to become an all-in-one dog service application, for everything related to pets.

Available for all the users, whether it be dog lovers, dog owners, people who wish to adopt dogs, and/or dog service providers.

New Users: Register / Sign Up

- The website is hosted online using Firebase.
- The way users can access our web application is through the link provided on the board and in the previous slides.
- The ways to **sign in** as a NEW USER for our application is either:
    - Sign up directly as a new user.
        - Type in your valid email address and a suitable password to enjoy the features.
    - Sign in using the Google API (an additional feature our application provides)

- Either way the user signs in, it takes the user to the owner profile page.

Existing Users: Log in

- Existing users type in the correct URL.
- The ways to **log in** as a registered USER for our application is either:
    - Log in directly -
        - Type in your registered email address and the correct password to enjoy the features.
    - Log in using the Google API, if your account is validated and identified by Google service.

- Either way the user logs in, it takes the user to the owner profile page.

Home Page

Once the user login to the web application, he/she will be taken to the home page.
User can also go to this page by clicking the **Pooch logo.**

- In this page, the first time user **creates a profile**.
- If the user is not a first time user, then the user's information will be displayed.
- The users can **edit** their personal information in this page.

Your Pets

The user can navigate to this page by clicking the **Your pets** tab in the **Navigation bar.**

- The users can **add** the basic information of their pets by clicking submit button.
- The users can also **view the list of pets** they added to this application in this tab.
- The users can **edit** their pets information in this page.

Dog Walking

The user can access to this page by clicking the **Dog Walking** tab in the **Navigation Bar.**

- The user can search and choose from the **Local Dog Walkers** list as he/she prefers.
- The user can decide on which **Dog Walker** he/she wants and also contact the walker using (phone number) to make an appointment.
- The user can also register as a **verified** dog walker in this page.

Dog Boarding

The user can access to this page by clicking the **Dog Boarding** tab in the **Navigation Bar.**

- The user can search and choose from the **Local Dog Boarders** places as he/she prefers.
- The user can decide which place is more convenience based on its price and other factors.
- The user can also register as a **verified** dog boarder in this page.

Dog Services

The user can access to this page by clicking the **Dog Services** tab in the **Navigation Bar.**

- The user will be able to choose from multiple options of Dog Services:
    - **Local Dog Supply Stores**
    - **Local Dog Grooming Services**
    - **Local Adoption Centers**
    - **Local Vets**
- The user can **search** or **filter** the products and services that best suit them from price, location, and quality

Dog Meetup

The user can access to this page by clicking the **Dog Meetup** tab in the **Navigation Bar.**

- User will be able to **create a post** that is shown in an underneath grid about their meetup
- User will **input fields** related to post consisting of:
    - Date/ Time
    - City, State, Zip Code
    - Description
- User has the option **delete** post by **pressing "X"** next to post they created

Dog Records

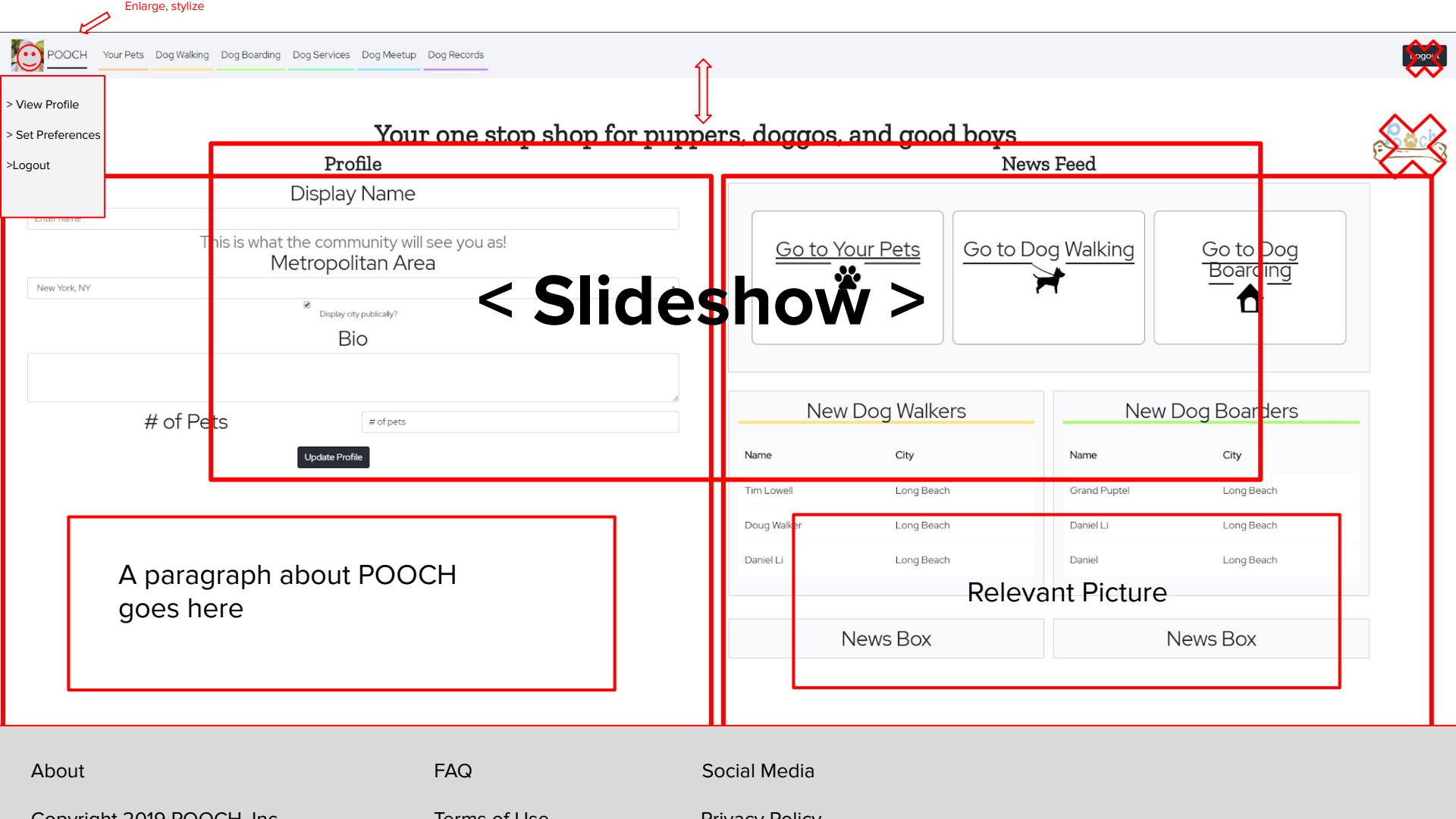
The user can access to this page by clicking the **Dog Records** tab in the **Navigation Bar.**

- User will be able to **Add Documents** by pressing “Add Document”
- User will be able to upload any .docx/ .pdf/ .png, etc. from their computer

Log Out

The user can access to this page by clicking the **“Logout”** in the **Navigation Bar.**

- User will be able to sign out securely by clicking “Logout”
- User will be returned to **Login** page and be prompted to log back in in order to access the web app's features


Enlarge, stylize
POOCH
Your Pets
Dog Walking
Dog Boarding
Dog Services
Dog Meetup
Dog Records
Logout
> View Profile
> Set Preferences
>Logout
Your one stop shop for puppers, doggos, and good boys
Profile
Display Name
This is what the community will see you as!
Metropolitan Area
New York, NY
Display city publically?
Bio
# of Pets
# of pets
Update Profile
< Slideshow >
News Feed
Go to Your Pets
Go to Dog Walking
Go to Dog Boarding
New Dog Walkers
Name
City
Tim Lowell
Long Beach
Doug Walker
Long Beach
Daniel Li
Long Beach
New Dog Boarders
Name
City
Grand Puptel
Long Beach
Daniel Li
Long Beach
Daniel
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URL for Pooch:

https://cecs-491-1934c.firebaseapp.com/

End of Sprint 4 Presentation

POOCH