

**Your one stop for puppers, doggos, and
good bois**

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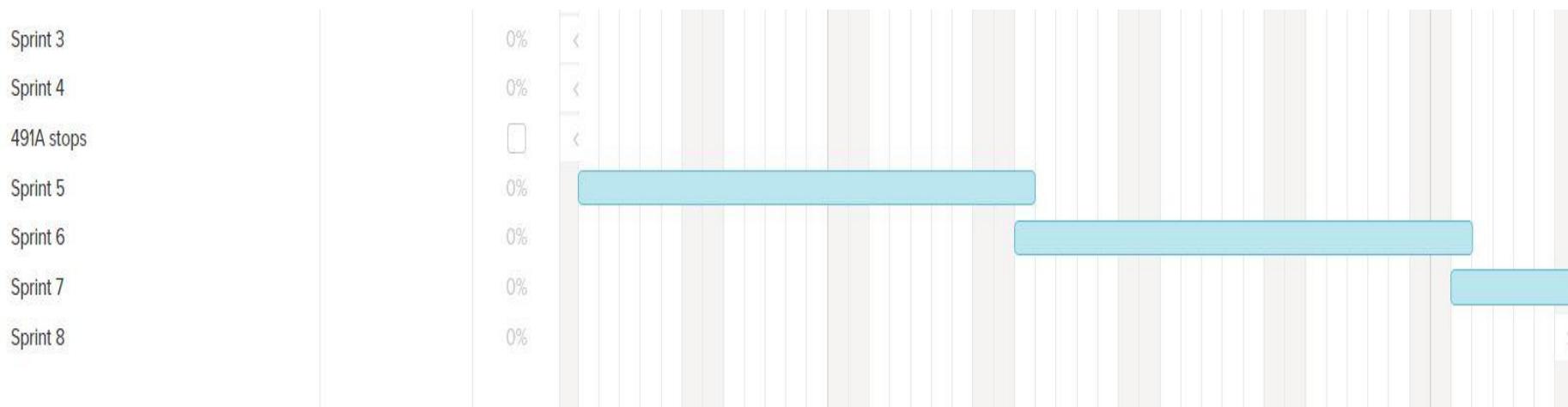
Updates to BRD

We do not have any major updates to the Business Requirements Document this sprint, except the technological innovational depth section in the BRD.

Updates to Management Plan: Gantt Chart



Gantt chart (continued)



How many users story points delivered to the users according to the industry agile process?

160 story points has been delivered to the users until now according to the industry agile process.

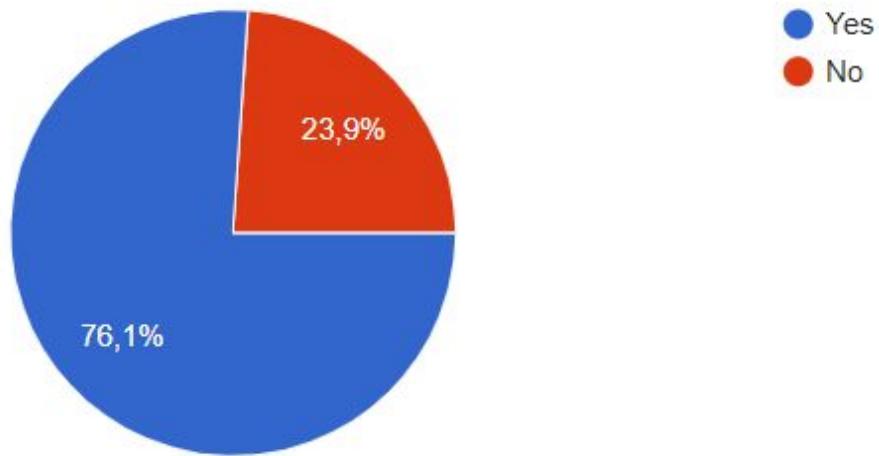
Did the team release code last sprint?

Yes. We released code in the last sprint which provided basic functionality to our web application.

User Feedback for the Pooch 2.0! Home Page

Does the graphics on the home page look appealing?

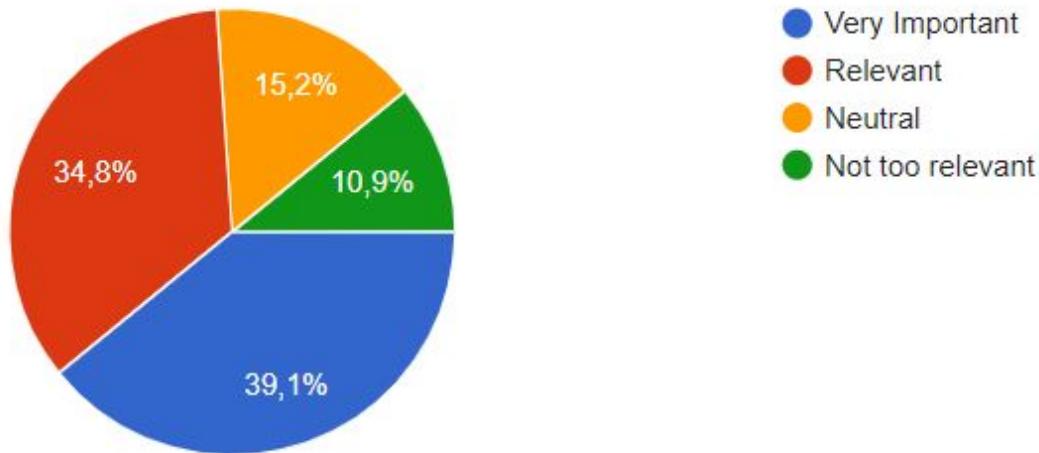
46 réponses



Profile Picture - Nav Bar

Does the profile picture feature gives a better look on the navigation bar?

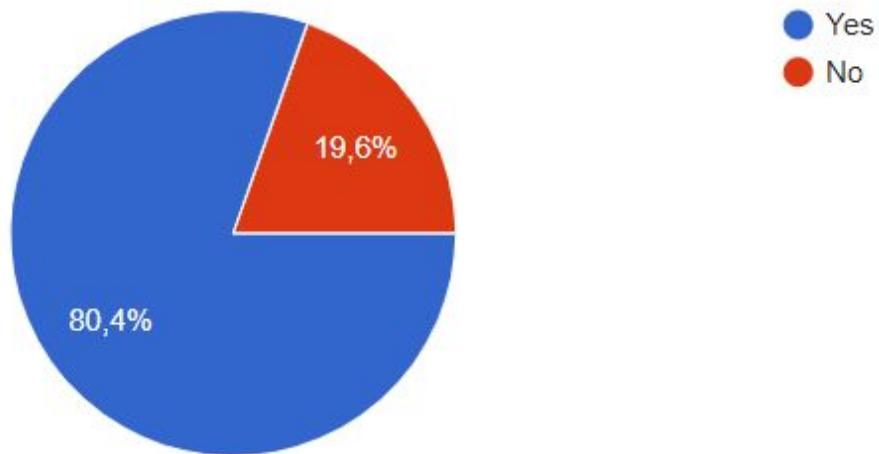
46 réponses



Color-Coded Feature Tabs

Does the color-coded feature tabs look more appealing on the navigation bar?

46 réponses

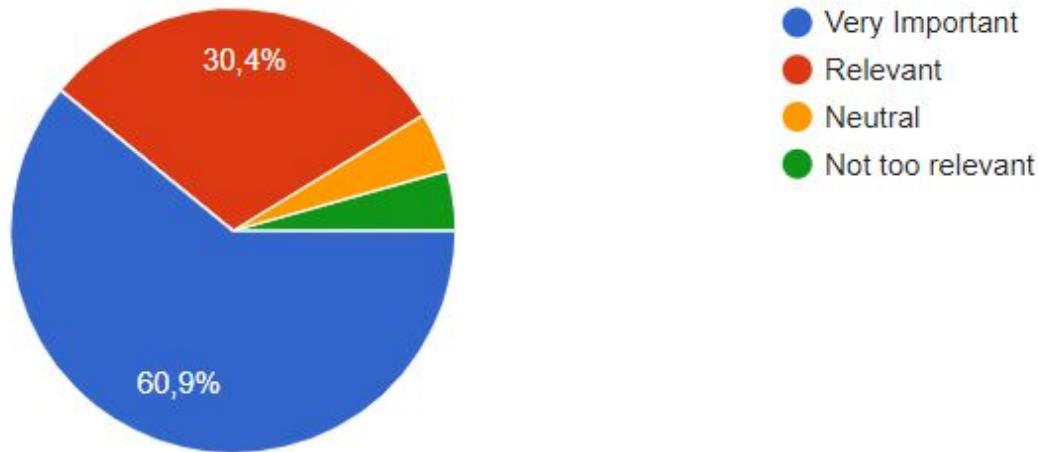


PoP-UP Validation Instructions

Does the pop instructions for the required field on the form useful?



46 réponses



What is the conclusion at this point from user surveys?

Based on the user's feedbacks we can conclude that:

1. User rated “Most Important” feature:
 - a. PoP-UP Validation Instructions.
2. “YES” rated features:
 - a. Home page.
 - b. Color-Coded feature tabs.
3. “Relevant” to “Most Important” rated feature:
 - a. Profile Picture - Nav Bar.

Technological Innovation - ML Aspect

There are more than 340 pure dog breeds; furthermore, let's try and settle on a number of combinations of mixed breeds of doggies.

When meeting a four-legged stranger: what kind of good pup is that?



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.

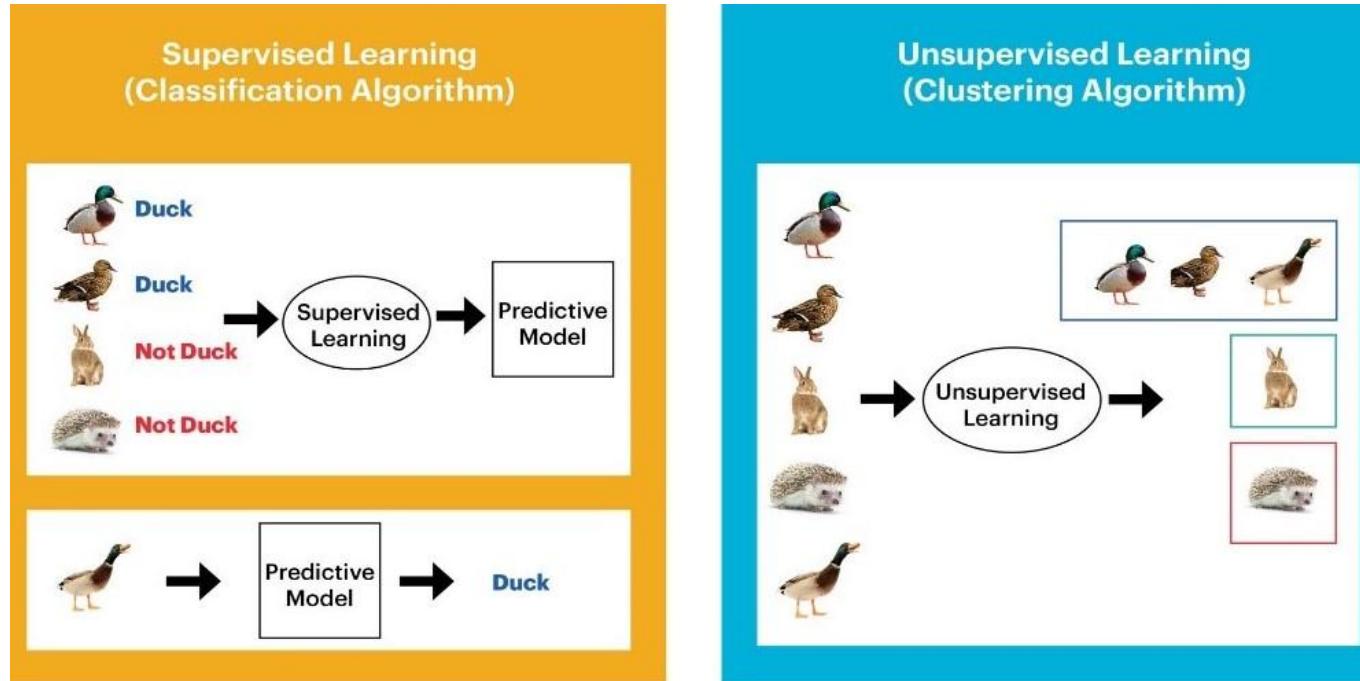
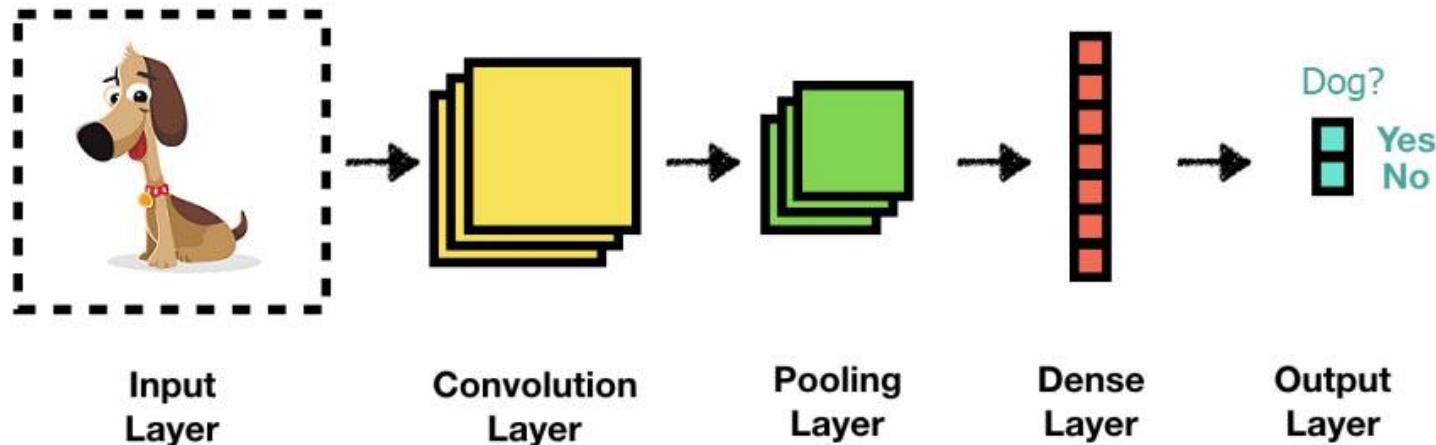


Image Classification Pipeline Steps:

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.

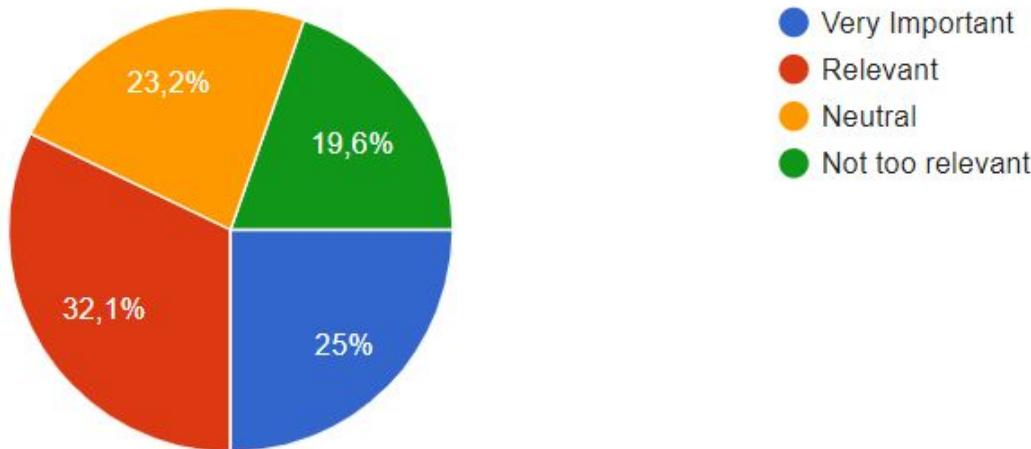


User Feedback for “Attractive Features”

A Dog or Not?

Recognize if the uploaded profile picture is a dog or not?

56 réponses

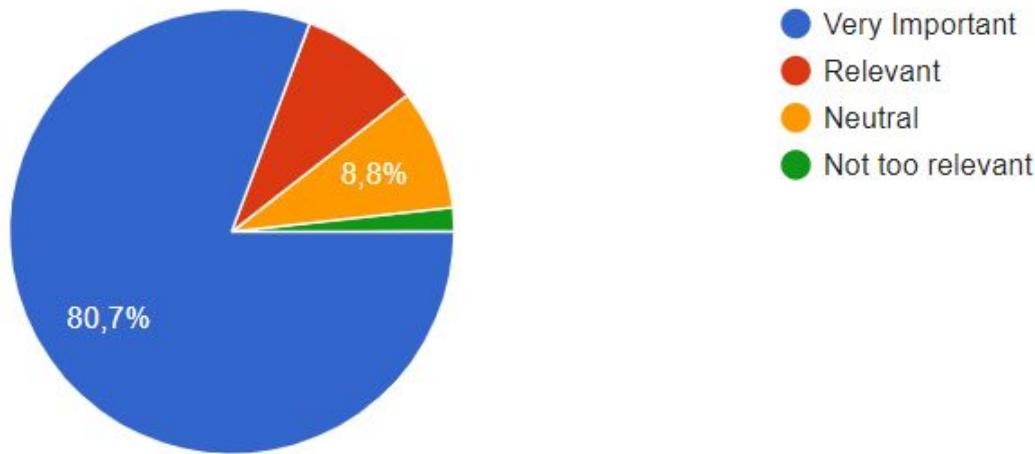


Identify the Breed!

Identify the breed of the uploaded picture.



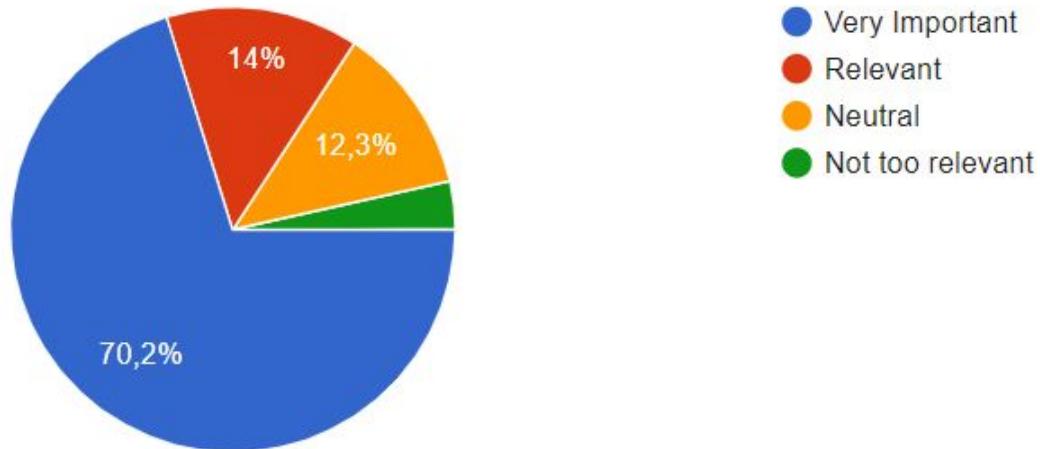
57 réponses



Shazam for Dogs!

Shazam for dogs as an extended feature.

57 réponses

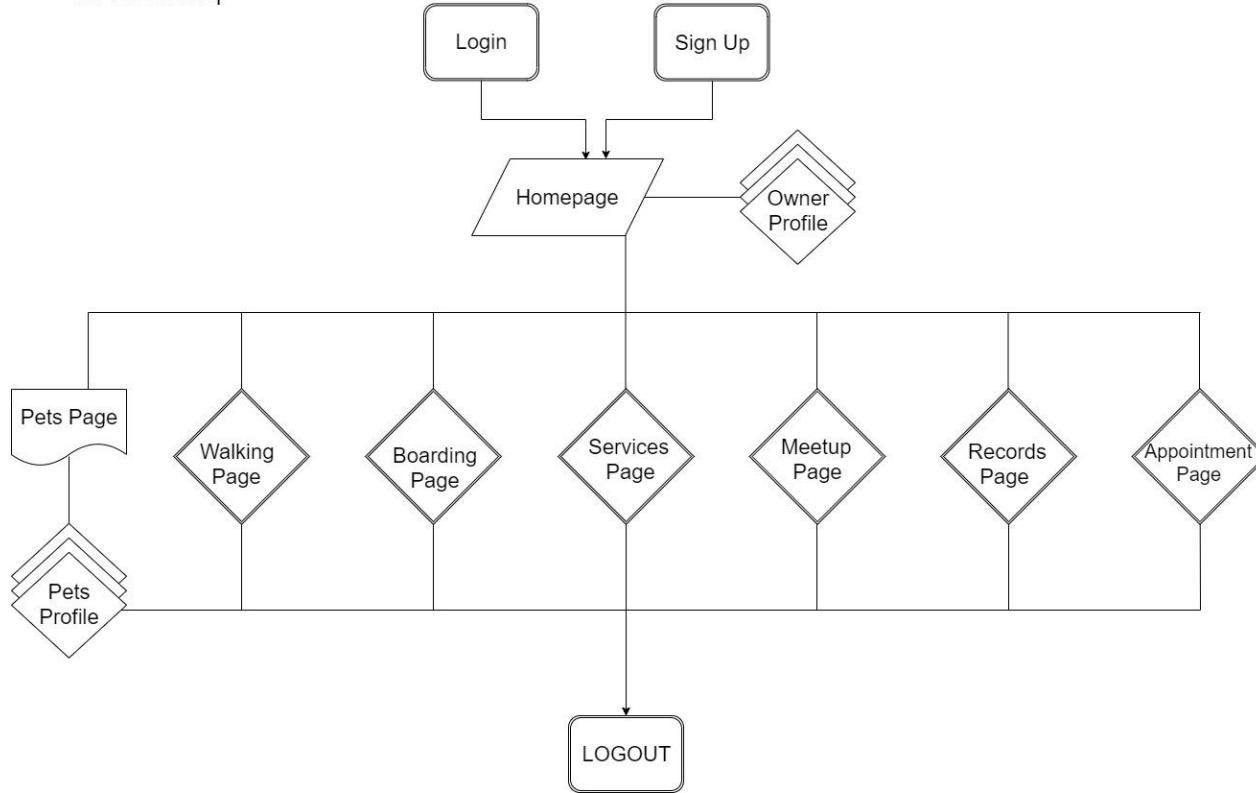


Top three types of User Feedback from User Evaluation?

1. We needed to minimize the number of scammers by implementing data validation.
2. Our users felt the need for the application to be less monochromatic, which led us to the idea of Color-Coded feature tabs.
3. To give the user a more personalized feel we added a profile picture on the Navigation Bar.

PRD-Server Sitemap

Server Sitemap



Users after logging in logs on the home page and then their pets page which would eventually lead them to **any desired feature** page.

No particular map to reach to feature pages and finally, the user can exit the application (the logout page).

PRD- Interfaces

1. User Interface (UI)
 - a. Design emphasis on anticipating what users might need to do and ensuring that the interface elements or features that are easy to access, understand, and utilize. UI connect concepts from visual design, interaction design, and information architecture.
2. Admin Interface
 - a. Back end that is responsible for storing and manipulating data. Once logged in, authors can use the admin interface to set up and develop a project, manage its structure and content, install extensions, and perform other tasks.
3. External API
 - a. Application programming interface, is a way to programmatically interact with a separate software component or resources. We are using Google API for Sign In page and Cloud Vision API for Machine Learning.

Architecture and Design Document

What platform does the released code operate on?

Pooch is running on **Firebase**.



-A real time database and website hosting service, owned by Google, to simplify the backend for web developers. By using Firebase, developers can focus on the UI and application logic, without having to worry about implementing their own security or database rules.

Coding language for the main server?

Node.js is used to code the server-side platform.

- It is asynchronous and event driven.
- Very fast code execution.
- Single threaded but highly scalable
- No buffering

React.js is used to fetch rapidly changing data that needs to be recorded in the database.

Database utilized

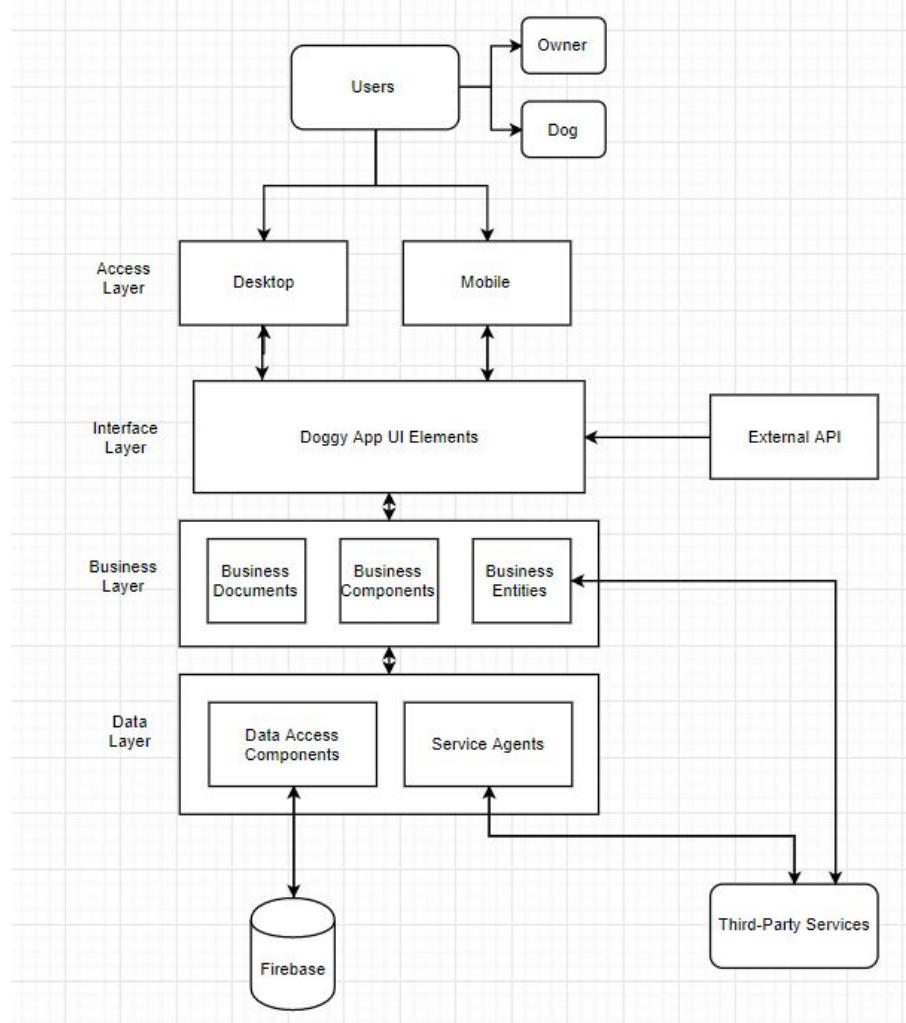
Real-time Database: **cloud-hosted NoSQL database**, where you can store and sync data to all connected clients in real-time.

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

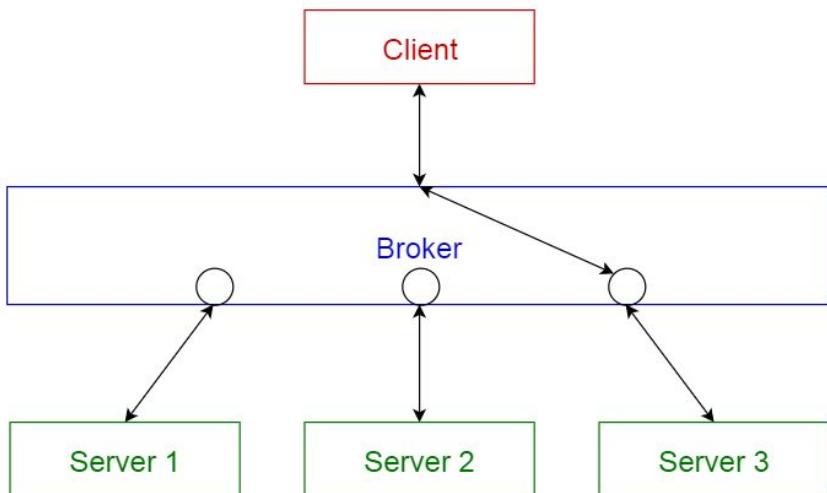


Quality and Quantity Standards

- 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.

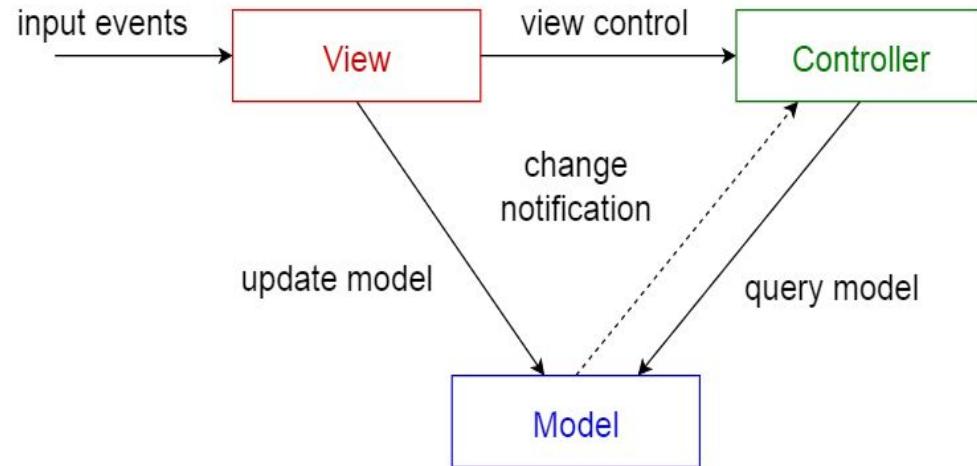
Architectural Alternatives II

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.

Which middleware, driver, object relationship mapping or similar is used in connecting the database to the server?

How did we decide on server choice?

Prominent startup-friendly web app hosting services

- Firebase
- Amazon Web Services
- Microsoft Azure



How did we decide on server choice? (Cont.)

	Firebase	AWS	Azure
Has the team used it before?	X		
Easy to learn?	X		
Is it free to start?	X		
But is it low cost?	X	X	
Does it support NoSQL?	X	X	X
Can it handle large queries?		X	X
Free analytics?	X		
Free machine learning kit?	X		
Follows GDPR?		X	X

Machine Learning and Benefits

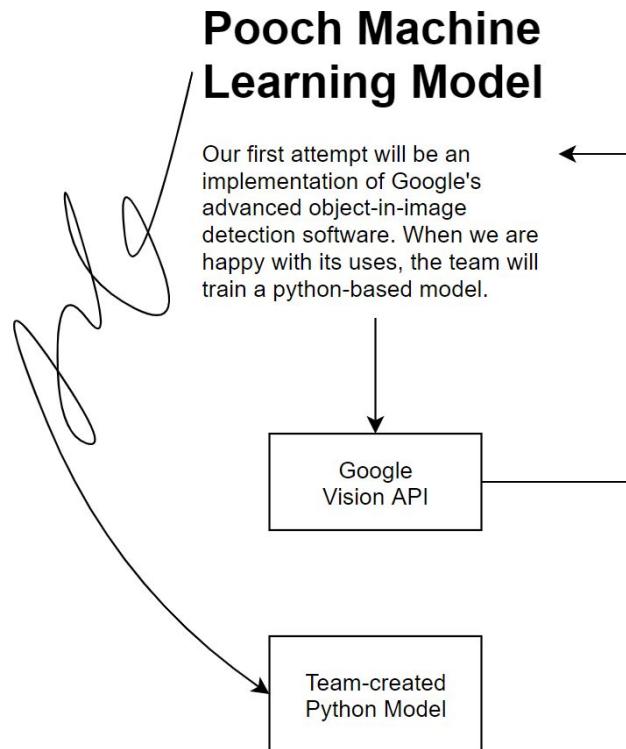
-Pooch will use **Google's Cloud Vision API** to derive information from the images our users upload to the site. This will allow the integration of several security features which would otherwise not be possible for a small project.

- a) Cloud Vision will ensure the profile pictures of owners are people and the profile pictures of dogs are actually dogs. This will reduce instances of troll accounts.
- b) The API will help identify inappropriate content.
- c) Duplicate photos could be detected to catch fake users stealing the profile pictures of other users.

This Cloud Vision API mainly works with the neural networks Machine learning model.

Neural networks are a set of algorithms, modeled loosely after the human brain, that are designed to recognize patterns. They interpret sensory data through a kind of machine perception, labeling or clustering raw input. The patterns they recognize are numerical, contained in vectors, into which all real-world data, be it images, sound, text or time series, must be translated.

Machine Learning - Important Note



How do we intend to connect Machine learning code with the server?

We will be using Firebase ML kit.

We need to integrate the SDK using Gradle or CocoaPods, prepare input data, and apply the ML model to our data.

Firebase provides an option for the users to either use the existing ML models or create a new one and use it.

User Manual for the Code Release

Introduction

Welcome to Pooch 2.0!

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.

Second version available at:

<https://cecs-491-1934c.web.app/>

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:
 - Click on the hyperlink “Don’t have an account?”.
 - Type in your valid email address, a suitable password and confirm password that you previously mentioned to enjoy the features.
 - You can go back to the login page if you wish to login with a different method.
 - 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.
- The right side of the page is a template for news feed to be updated later according to the user profile.
- It is the face of the website and will be feature-rich, displaying almost everything a user needs in a glance.

Navigation bar

- The pages of the web application are visible in the navigation bar located at the top left of the page.
- It has your profile picture at the left most corner to give a personalized experience to the users.

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.
- All the fields needs to be filled in order to submit the form or a pop up would be generated regarding the error in the input field.
- 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,

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

Sprint #3 Summary

Sprint #3 Goals

- ★ Primary objective of this sprint was to continue coding the features pages and fix bugs that we found in our code from our previous sprint and also based on the user feedback from the class and outside sources and also to complete and update all the other documents that are to be submitted this sprint.
- ★ Next objective was to verify and test the released code.



Sprint Board - Trello (Before)

Project Backlog

- User-Manual For Code Release
- ML Applications
- Test-Plan
- Software Engineering Topics
- Feature: Dog Boarding
- Feature: Adopt/Sell dog
- Feature: Adopt/Buy dog
- Feature: House Sitting
- Feature: Dog Walking
- Feature: vet appointment

Sprint Backlog

- Code Feature: Home Page
- Code Feature: Pet's Profile
- Code Feature: User Profile

To - do

- Summary of work
- Outline of entire project
- Evidence to support technology complexity level
- Comprehensive Sprint retrospective
- Intra-team collaboration form

In Progress

- User Profile: Code User Profile
- User Profile: Edit User Info
- Home Page: Code Home Page
- Pet's Profile: Code Edit Pet Page
- Pet's Profile: Add Pet Form
- Pet's Profile: Your Pets Page
- Dog walking: Display and add
- Dog boarding: Display and add
- Dog services page
- Dog meetup: Display and add

Done

- Login Page
- Login Page: Sign in
- Login Page : Sign in w/ Social Media
- Login Page: Sign Up/ Add Profile
- Log out Button
- Feature Pages
- Features Pages: Create Pages for Features
- Home Page: Create a Home Page
- Navigation Bar
- Navigation Bar: Route to Feature

Sprint Objective

- Sprint 0 objectives:** Creating a login page, home page, and navigation bar with routing to different feature pages
- Sprint 1 objectives:** Create, update documents. Create mockups for interface for home and pets page. Add features: add pet profile, edit pet profile, add user/ owner profile.
- Sprint 2 objectives:** Learn more about react, code the features that we will provide in our application

Burndown Chart

- Burndown Charts

+ Add another card

Sprint Board - Trello (After)

Project Backlog

- User-Manual For Code Release
- ML Applications
- Test-Plan
- Software Engineering Topics
- Feature: vet appointment
- Feature: listing nearby dog grooming services
- Feature: listing nearby dog product stores
- Feature: Dog Meetups
- Code feature: vet appointment
- Code feature: nearby dog services

Sprint Backlog

- Code Feature: Home Page
- Code Feature: Pet's Profile
- Code Feature: User Profile
- Feature: Dog Boarding
- Feature: Adopt/Sell dog
- Feature: Adopt/Buy dog
- Feature: House Sitting
- Create messaging
- Code feature: Dog walking
- Code feature: Dog boarding
- Code feature: Dog adoption
- Code feature: Dog meetup

To - do

+ Add a card

In Progress

- User Profile: Code User Profile
- User Profile: Edit User Info
- Home Page: Code Home Page
- Pet's Profile: Code Edit Pet Page
- Pet's Profile: Add Pet Form
- Pet's Profile: Your Pets Page
- Dog walking: Display and add
- Dog boarding: Display and add
- Dog services page
- Dog meetup: Display and add
- Dog records: Add record

Done

- Your Pets Page: Create a Mock Up for Your Pets Page
- Your Pets Page: Create a Mock Up for Add Pets Page
- Architecture and Design
- Project Requirements Document (PRD)
- Summary of work
- Outline of entire project
- Evidence to support technology complexity level
- Comprehensive Sprint retrospective
- Intra-team collaboration form

Sprint Objective

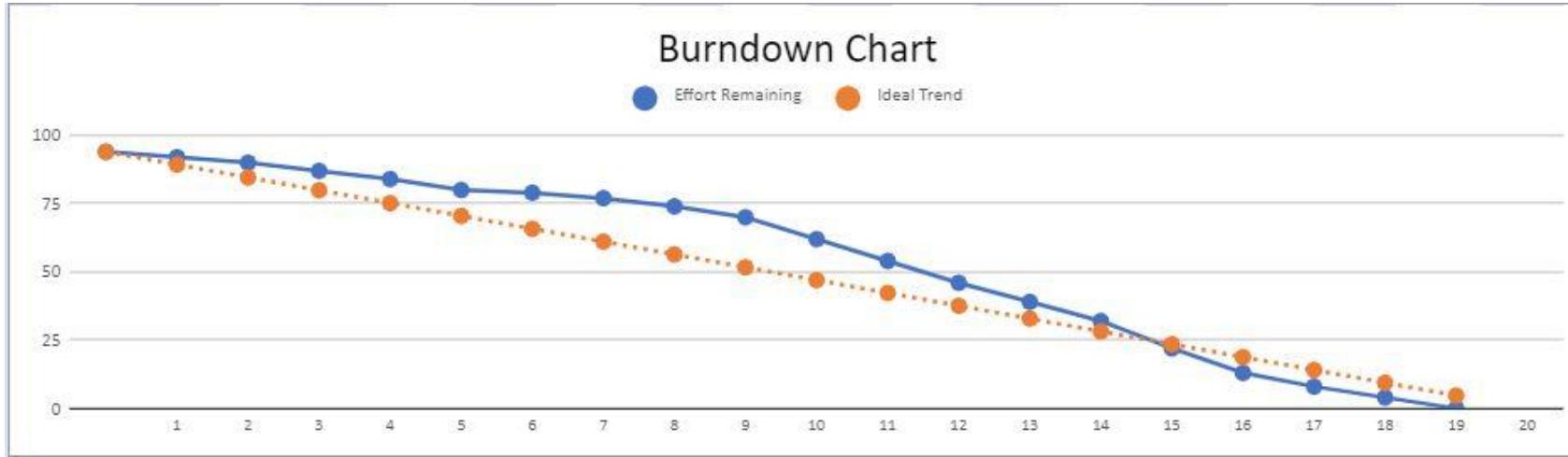
- Sprint 0 objectives:** Creating a login page, home page, and navigation bar with routing to different feature pages
- Sprint 1 objectives:** Create, update documents. Create mockups for interface for home and pets page. Add features: add pet profile, edit pet profile, add user/ owner profile.
- Sprint 2 objectives:** Learn more about react, code the features that we will provide in our application
- Sprint 3 objective:** Work on updating the current version of the web application and finish all the documents to be submitted
- Sprint 4 objective:** In this sprint, the primary goal was to continue coding the features pages and fix some bugs that we found in our code from our previous sprint and also to complete other documents that are to be submitted this sprint.

Burndown Chart

+ Add another card

BURNDOWN

CHART



Sprint #3 Retrospective

Did we meet our sprint goal?

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

Sprint Velocity(current)

- ★ 94 points were planned in this sprint.
- ★ We were able to complete 94 points on time.
- ★ Commitment per person every week = 5 hours.
- ★ Team commitment per sprint= 90 hours.

How did the burndown chart look?

The burndown chart was not exactly linear because some progress was based on user feedback, which took time to collect and review. However, we were able to finish all the tasks.

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.

Verification and testing of the code release

Anyone can check out the web app at the following URL:

<https://cecs-491-1934.c.firebaseio.com/>

Testing and Review

- Unit Testing
- Integration Testing
- Regression Testing
- Review code and create new user stories



Pooch Demo

CODE SECTION

User stories corresponding to the released code

New Users: As a first time user, I want to create an account so that I can use the web application.

Logging In: As a user, I want to login to my profile so that I can access my account.

Navigation: As a user, I want to look at different services offered in the web application on the home screen after I log in so that I can choose the service I want for my dog.

Home Page: As a first time user, I want to create an account so that I can use the web application.

As a user, I want to look at different services offered in the web application on the home screen after I log in so that I can choose the service I want for my dog.

Your Pets: As a user, I want to create a profile for my dogs to save their information.

User stories corresponding to the released code

Dog Walking: As a user, I want to be able to choose the Dog Walking service so that I can let my dog be walked by a dog walker.

Dog Boarding: As a user, I would like to be able to choose a dog boarding service so that I can leave my dog there when I travel.

Dog Services: None

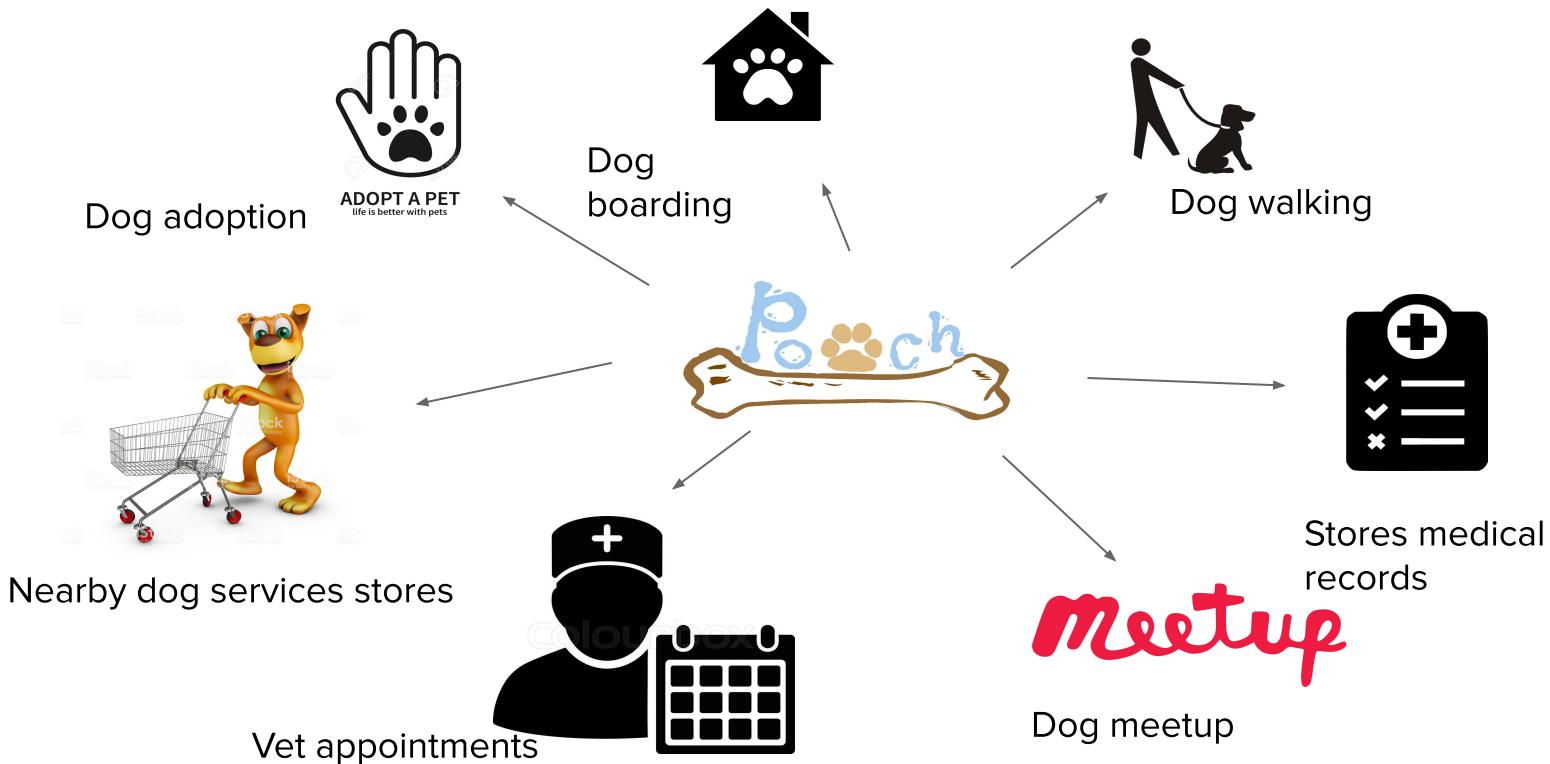
Dog Meetup: As a user, I would like to be able to view all available dog meetups near me.

As a user, I would like to create my own dog meetup and give other people the opportunity to come to mine.

Dog Records: As a user, I would like to be able to upload files of my dog's records

Logout: As a user, I would like to be able to log out of the web application.

Features that our code provides



What platform does the released code operate on?

It works on a web page of a computer.

Can the code operate on your own client device?

Our web application is hosted on Google cloud using firebase. Therefore, anyone can access our web application through the internet using the URL. The users do not have to download the code on their computers to run this web application.

Percentage of intended user story covered

33%

**Has the code
been reviewed?**

Yes

**Has the code
been tested?**

Yes

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

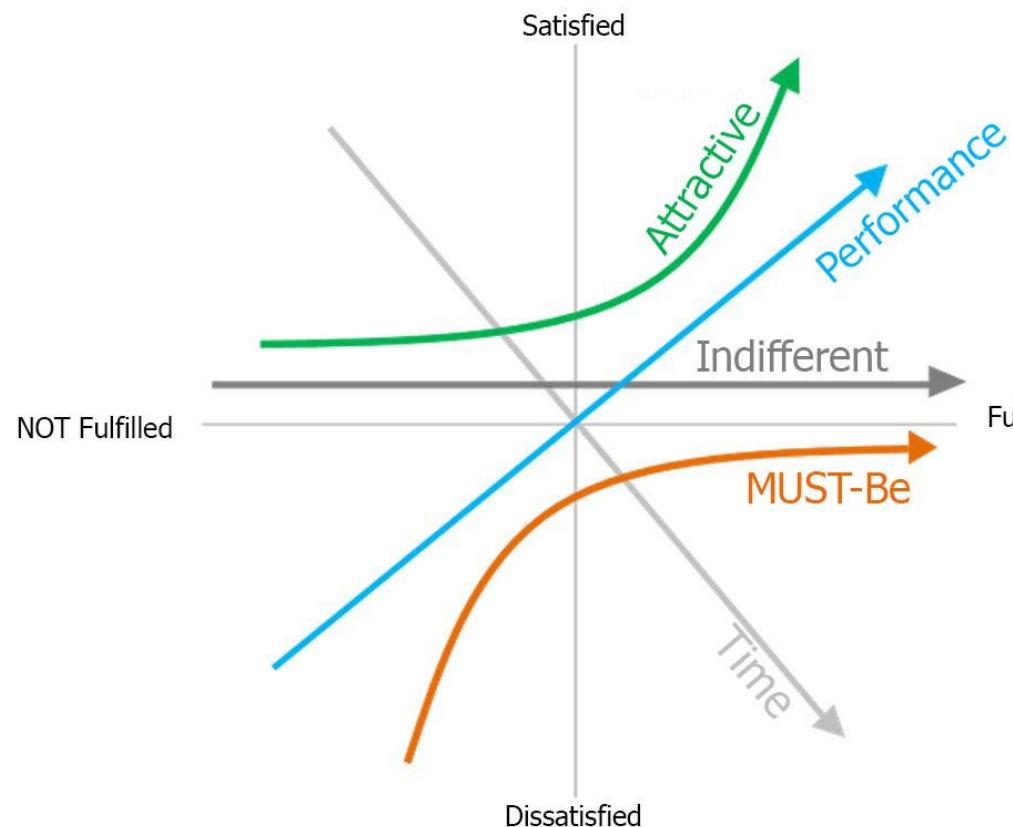
Dog Services- 2 clicks

Dog Meetup- 2 clicks

Dog Records- 2 clicks

Logout- 2 clicks

Kano Model



Code Features:

1. Log in and sign up using Google API.
2. More visually appealing home page with tiny dog graphics.
3. Navigation bar has your profile picture for users' personalised experience.
4. The color coded feature tabs on the navigation bar.
5. The pop up messages on hitting the submit button when an input field on the form is left blank.

Non-Functional Requirements

- 1. Portability:** It needs to be able to move from OS to OS without any problems.
- 2. Integrity:** Privacy of information, such as name, email etc should be kept private.
- 3. Availability:** the system shall present a user with a notification informing them that the system is unavailable.
- 4. Usability:** The new product shall be easy to use by adult members (age 18 to 80) of the public.
- 5. Reliability:** Reliability depends upon how accurate the features of the applications work.
- 6. Maintainability:** The system will not be down for maintenance more than once in a 24-hour period.

Performance Requirements

- The product is based on the **web** and has to run from a **web server**.
- The product shall take **initial load time** and depending on the internet connection and depending on the number of users active on the software.
- **The major performance depend upon the hardware and the system** the application is working on.
- The **performance** may also vary depending on how long it takes to **return a query from the full database**.
- The data entered through the application should be **more secure and even the connection to the database should be secure**.

End of Sprint 3 Presentation