

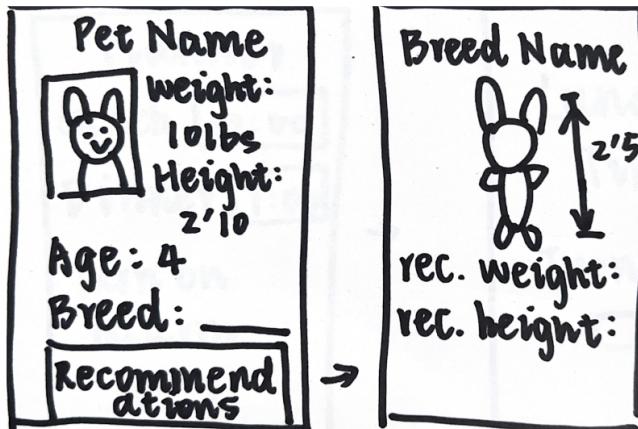
# **Group 13 Final Project Milestone 1**

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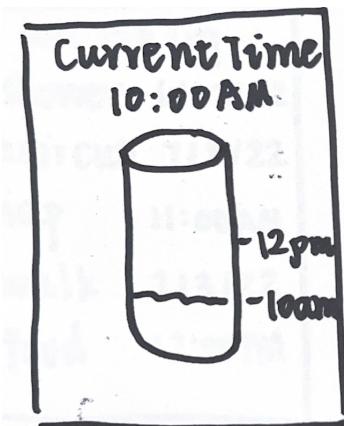
# Brainstorm with Sketches

## Initial Ideas

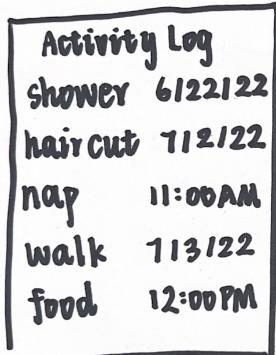
1. An app that keeps track of the weight and height of a pet, and provide the target healthy body measure for reference



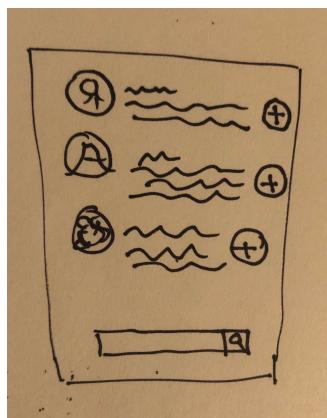
2. A meal time planner for the pet which will alarm when it's time to feed a pet
3. Water intake calculator for people which will remind people to drink water hourly and users can set goal of the amount of water to drink



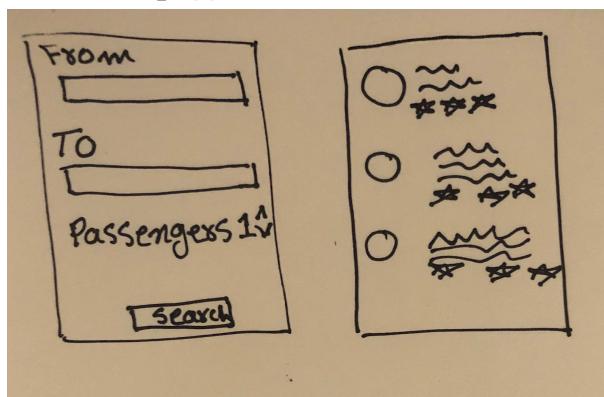
4. A fitness tracker for a pet which calculates the amount of exercises a pet has to do



5. A fitness app that will reward points to people for exercising, and users can use the points to buy things
6. An alarm and reminder app that allows users to customize their alarm and notifications
7. A progress tracker for students working in a group (such as including how many lines of codes each person writes)
8. A time management app that allows users to grow and harvest their favorite plants while stay focused on their work
9. A social media platform that allows highschool students to consult with university students
10. A budgeting app that allows users to input their daily expenses and analyze how users can spend less
11. A dieting app that allows users to keep track of daily calories intake and provide dieting recommendations based on input body measurement and user's goal
12. A fitness app that supports different themes of music for users when exercising
13. An app that provides information about nearby fitness centers and compare between them

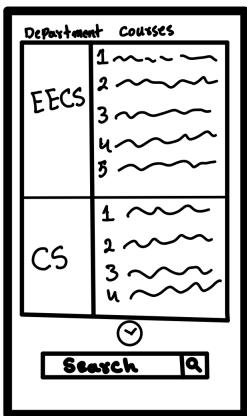


14. A hitchhiking app that allows suburban travelers to share rides



15. A detailed medicine lookup app that is designed for the residents of the USA. It will encourage transparency in the medical industry, and will allow the users
16. A website for the homeless in California that helps them locate resources. The app will be focused to help homeless people to stand on their feets utilizing community and government resources
17. An app that helps farmers to keep track of the growth of the plants, and irrigate the plants as needed to avoid water waste
18. An optimization app that helps the travelers to lower their carbon signature. It would help

users to maintain a green lifestyle  
19. A course discord group searching app for UC Berkeley students



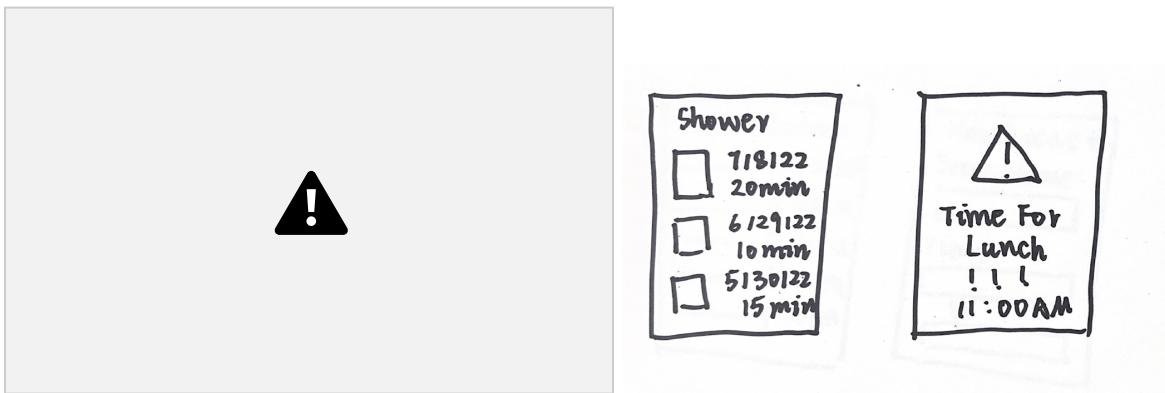
## **Detailing Ideas from Initial Brainstorming**

### Idea 1: Pet tracker

Background: People adopt pets during pandemics and many are neglecting them as we are returning to normal life. However, we should help each owner to be accountable for their pets throughout our daily life.

Some Details:

- Tracks time fed pet, time to walk pet, last baths/shower, growth of pet, change litter box
- Can give daily alerts

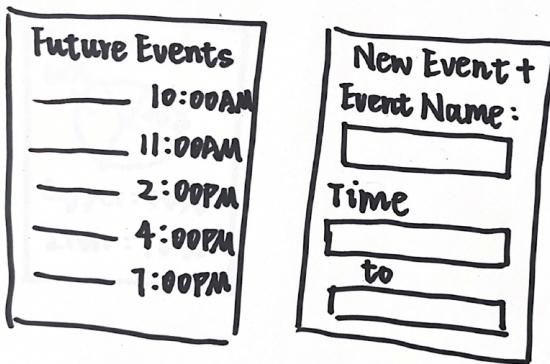


### Idea 2 Topic: Event planning Platform

Background: This event planning app will benefit people to organize events and also there will be a todo list for the people to keep track of their tasks and will save more time for them.

Some Details:

- In app todo list
- Countdown timer which will help people to stay on track
- Have form - input task/event

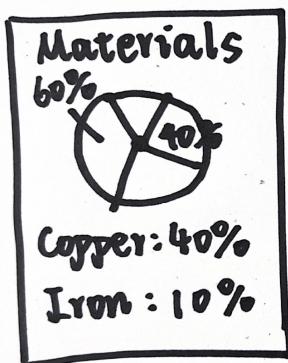


### Idea 3 Topic: Corporate Environmental Footprint

**Background:** A lot of companies will claim they are “sustainable” or doing their best efforts to produce clean and environmentally friendly products. However, greenwashing is “when an organization spends more time and money on marketing itself as environmentally friendly than on actually minimizing its environmental impact”, causing a lot of debate on if corporations are actually sustainable.

**Some Details:**

- Tracks the percentage of different materials the company uses
- Webscrapes companies for mention of sustainability on their website
- Shows a company's carbon footprint, if they are carbon neutral, etc.



### Idea 4: Tennis Partner Finder

**Background:** The app will benefit tennis enthusiasts as it is extremely difficult for most tennis players to find a partner with similar skill level. With the tennis partner finder, users can fit tennis into their busy schedule.

**Some Details:**

- Find players in your area who are ready to practice with you at any time and court.
- Watch training videos for free when you don't have time to practice
- Messaging system to allow players to communicate

### Idea 5: Reading Tracker

Background: A lot of readers have reading goals, especially around New Years. However, many of them often neglect these goals, getting distracted by work, technology, or other hobbies.

Some Details:

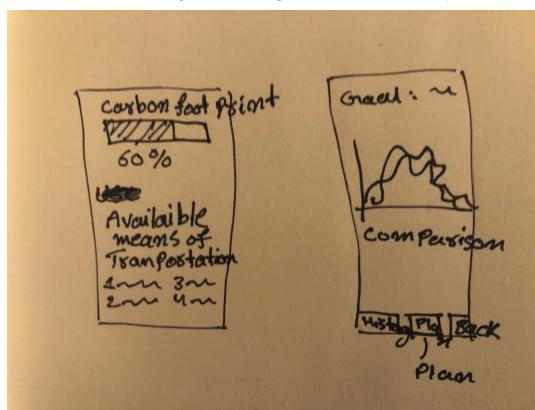
- Has a daily checkbox to see if you read that day (even if it was only 20 pages, the point is to keep reading consistent)
- Tracks your total books read
- Gives book recommendations based on previous readings

### Idea 6: Carbon Signature Optimizer

Background: The traveling industry has evolved rapidly over the years, and it is producing approximately 8% of global carbon emission. This app will help the travelers to use alternate routes and means of transportation to reduce their carbon footprint.

Some Details:

- The user sets a maximum carbon footprint goal, and the app helps to stay below the goal.
- Calculate the carbon footprint of a route, and suggest alternative routes and means of transportation.
- Show a history of daily carbon footprint.



### Idea 7: Resource Locator for Homeless

Background: The number of people losing their jobs and homes has increased drastically in California. San Francisco, despite being the second richest city of the state, hosts a huge population of homeless residents. Despite being numerous government programs, it is hard for the homeless residents to navigate them. This app will be a one stop for navigating through all eligible programs.

Some Details:

- The user will create a basic profile and give some information to determine their eligibility for the government funded programs.
- The app will list all the eligible programs, and detailed step by step application instruction.
- The app will show the history of the application, and whether they have been approved or denied.

### Idea 8: Fitness Competition

**Background:** Most of us need a motive to do something, and what could be a better motive than competing with peers and colleagues. The app will encourage friends, colleagues and peers for a healthy fitness competition. The app will show a leader board and the activities of all other friends.

**Some Details:**

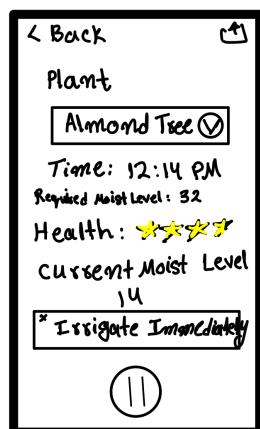
- The users will be allowed to enter their daily food intake.
- The users will be able to enter their daily exercises.
- The app will calculate the calories consumed and the exercises done to calculate the health index.

#### Idea 9: Farmers Assistant App

**Background:** Based on studies farmers waste 40% of the total used by them. This app will enable farmers to track the moisture level, and tell the farmer if irrigation is necessary. The app will communicate with a sensor to detect exact moisture levels, and the farmer enters the species of the plant.

**Some Details:**

- The user inserts the sensor in the ground close to the plant and inserts the name of the plant in the provided box.
- The app calculates the moisture level and based on the irrigation history and botanical data decides whether irrigation is necessary or not.



## Pet Monitoring Ideas Development (Decided and Approved on the Idea)

Pet Idea Development:

- Targeting a Specific Pet vs Broad Range of Pet
  - Cat, Dog, Rabbit, Reptiles, Fish
  - Dog is more common and they are high maintenance, which we can help user to become accountable
- Dogs need to Shower
  - Length since last showers
  - How often a dog need to shower (based on dog type)
  - Home shower vs. Pet Services
- Dogs need to get haircut

- Some need a cut, some don't based on breed
  - Cut done by owner vs. Pet services
- Dogs need to go on a walk and exercise
  - Track when a dog went on a walk (time length, distance)
  - Different breed has diff frequency
- Dogs need to drink/eat
  - Type of food each dog breed can consume
  - Nutrition balances for dogs
- Dogs need to be trained
  - Breaking training into sessions and keeping track of the progress.
- Dogs size can be measured
  - Measure the weight.
  - Measure the length and height, and keep track of the history.
  - Measure the Body Mass Index.
- Dogs age and basic info can be recorded
  - Birthdate, age
  - Breed
  - Vet appointment schedule and history.
- Dogs nap time
- If dogs go to the vet, they might be prescribed a certain medication that they need to take according to a schedule
- Dog Health Checkups
- Barking alert
- Social sharing (fun moments)

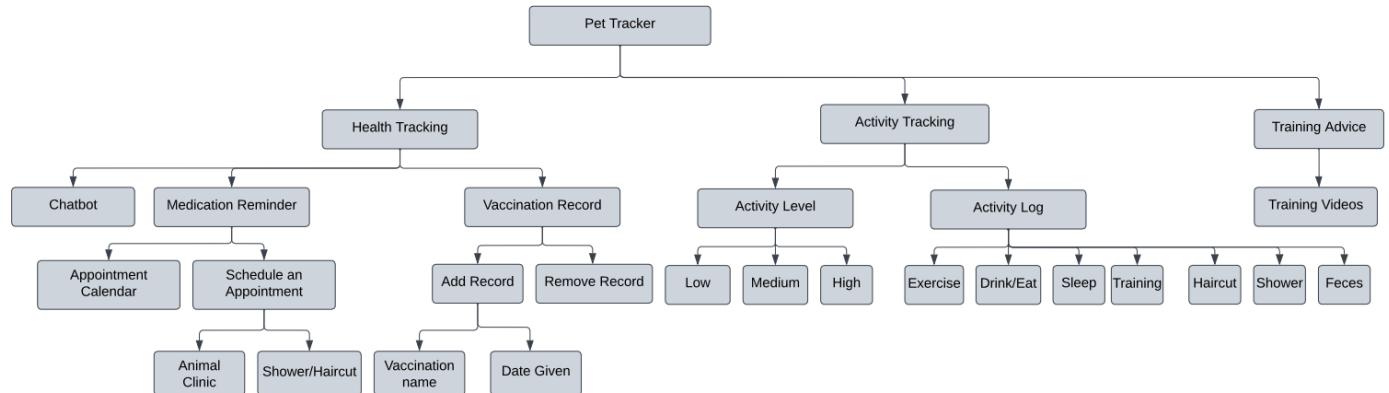
## Pet Monitoring Ideas Refinement

Final Section for Refining Ideas into Three Main Tasks to support Dog Tracking:

- Health:
  - Clinic Checkup Data
  - Medication and Vaccination
  - Hair Cut & Shower
- Activity
  - Eat and Drink
  - Sleep
  - Walk and Training
  - Monitor Dog's activity level
- Training
  - Training Video for owner
  - Training monitoring

# Task Analysis

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One of the main tasks which my app would support is Health Tracking. This will involve a variety of subtasks. Users will be able to set a medication reminder, which will operate automatically once the user has input their pet's medication schedule, reminding them when their pet must be given its required shots, pills, dental care, etc. Through this task, the user may also set an appointment calendar or schedule an appointment with a veterinarian. A separate function under the umbrella of Health Tracking will be a chatbot feature. This seems like a necessary addition, because medical problems can present themselves rapidly and the user may want information immediately, while it may be some time before they can schedule a vet appointment. Another function supporting Health Tracking is the vaccination record, which allows users to add and remove records of their pet's vaccinations.

The second main task my app will support is Activity Tracking. One subtask of Activity Tracking is the activity level. The activity level of the pet will be categorized as low, medium, or high by the app based on information input by the owner into a log. For example, if the owner inputs that their dog walked on only a few occasions and these walks were of short duration, while the dog slept for a large portion of the day, the app would interpret this as indicating a "low" activity level and would inform the owner accordingly. The activity log subtask allows the owner to input information on their pet's exercise, food and water consumption, sleep habits, and training, all of which will be analyzed by the app to adjust the reported activity level.

The third main task the app will support is Training Advice. This will be supported by a search function for training videos, which will allow the user to peruse a broad variety of pet training videos from all over the internet.

# Interview

Who to recruit:

- The target user group: Any dog owner who either owns a dog or whose family owns a dog.
- How will we reach out to target users: We will send out recruiting messages through Slack groups.
- How many people will you reach out to: 3
- Will you perform two 20-min interviews or three 10-min interviews? We will perform three 10-min interviews.

Recruiting Message:

Pat tracker design for dog owners

Hi Everyone! We are two undergraduate students taking CS160, User Interface Design and Development at UC Berkeley. We want to invite you to participate in a remote study about our newly designed pat tracker app.

During this study, we will spend 10 minutes asking questions and the participants will have to give feedback about what is your desired pet app and what features they would like to have the most.

If you are interested in participating, please reply to this message or email [craileliu123@berkeley.edu](mailto:craileliu123@berkeley.edu) or [mko357@berkeley.edu](mailto:mko357@berkeley.edu) with any questions.

Interview Guide:

1. How long have you had your dog?
2. What is the most difficult part of taking care of a dog?
3. If one responsibility (feeding, walking, going to the vet) could be automated, which one would you choose and why? \*highest value
4. How often do you do the following: \*highest value
  - a. Feed your dog
  - b. Walk your dog
  - c. Go to the vet
  - d. Give your dog medication
5. What was the training process like for your dog?
6. If you were to get more pets in the future, is there anything you would do differently?

**Participant 1:** Participant 1 is a rising junior majoring in economics.

1. (1 min) Introduction

Facilitator: Hi, my name is Claire Liu and I'll be conducting your interview today.

2. (1 min) Introduce the project and what we are planning to do today.

Facilitator: I'm asking questions on behalf of a project group for CS160. We're creating a pet tracker app and trying to see what features would be most useful for users. This app would tentatively include a tracker for everyday tasks like feeding, walking, etc. as well as set alarms for giving your pet medications. Do you have any questions before we start?

Participant: No

3. (7 min) Ask questions based on the pet app we designed.

Facilitator: How long have you had your dog?

Participant: About 3 years

Facilitator: What is the most difficult part of taking care of a dog?

Participant: Cleaning up dog's hair is really annoying.

Facilitator: If one responsibility (feeding, walking, going to the vet) could be automated, which one would you choose and why?

Participant: I will choose walking the dog because sometimes it is really late to walk the dog and it is not safe. Also, in the summer it's really hot and difficult to walk the dog in the heat.

Facilitator: How often do you do the following:

- a. Feed your dog
- b. Walk your dog
- c. Go to the vet
- d. Give your dog medication

Participant:

- Feed your dog: twice a day
- Walk your dog: every day
- Go to the vet: once a year
- Give your dog medication: once a year

Facilitator: What was the training process like for your dog?

Participant: I took my dog to take training lessons and the trainer taught my dog some basic stuff.

Facilitator: If you were to get more pets in the future, is there anything you would do differently?

Participant: I want to teach the dog more stuff when the dog is little and also bring the dog outside more to dog's park to hang out with more dogs.

4. (1 min) Thank them for their time and record their responds

**Participant 2:** Participant 2 is a data science student whose family owns a dog.

1. (1 min) Introduction

Facilitator: Hi, my name is Michelle and I'll be conducting your interview today.

2. (1 min) Introduce the project and what we are planning to do today.

Facilitator: I'm asking questions on behalf of a project group for CS160. We're creating a pet tracker app and trying to see what features would be most useful for users. This app would tentatively include a tracker for everyday tasks like feeding, walking, etc. as well as set alarms for giving your pet medications. Do you have any questions before we start?

Participant: Nope.

3. (7 min) Ask questions based on the pet app we designed.

Facilitator: How long have you had your dog?

Participant: I've had my dog since 2014, it's been almost 8 years. We adopted her from a local shelter. When we adopted her she was 3 years old, now she's almost 11.

Facilitator: What is the most difficult part of taking care of a dog?

Participant: Being able to spend time with her, because she's a Shepard and very energetic. She needs to be taken out a lot. We like to go hiking, but a lot of trails are not pet friendly.

Facilitator: If one responsibility (feeding, walking, going to the vet) could be automated, which one would you choose and why?

Participant: Feeding and replenishing water, or other small things that could be forgotten. Would like reminders about appointments.

Facilitator: How often do you do the following:

- e. Feed your dog
- f. Walk your dog
- g. Go to the vet
- h. Give your dog medication

Participant: For feeding, we feed twice a day. Water is based on a need basis. She goes on walks probably 5 times a week. We go to the vet on a need basis. The few times we have taken her to the vet is when she had an ear infection. We got drops to put in her ear.

Facilitator: What was the training process like for your dog?

Participant: She was already potty trained and everything, and fully grown. In terms of getting acclimated, we'd all go out together as a family. She didn't have many issues with getting to know anyone. She's very friendly and likes being around people.

Facilitator: If you were to get more pets in the future, is there anything you would do differently?

Participant: Yeah, walking the dog instead of the dog walking us. Making sure they don't drag the leash. Mostly just like making sure they understand to follow you.

4. (1 min) Thank them for their time and record their responds

**Participant 3:** Participant 3 is a recent graduate whose family owns a dog.

1. (1 min) Introduction

Facilitator: Hi, my name is Michelle and I'll be conducting your interview today.

2. (1 min) Introduce the project and what we are planning to do today.

Facilitator: I'm asking questions on behalf of a project group for CS160. We're creating a pet tracker app and trying to see what features would be most useful for users. This app would tentatively include a tracker for everyday tasks like feeding, walking, etc. as well as set alarms for giving your pet medications. Do you have any questions before we start?

Participant: No.

3. (7 min) Ask questions based on the pet app we designed.

Facilitator: How long have you had your dog?

Participant: I have a cocker-spaniel, my family has had her for 12 years, I lived with her full time for 8 years.

Facilitator: What is the most difficult part of taking care of a dog?

Participant: Making sure you get home in time for her to eat, or take her outside. She's only trained to go outside, and we don't let her go out on her own, so someone has to be with her. She needs to walk twice a day, which is also high demand.

Facilitator: If one responsibility (feeding, walking, going to the vet) could be automated, which one would you choose and why?

Participant: Probably walking, just because it takes up a lot of time.

Facilitator: How often do you do the following:

- i. Feed your dog
- j. Walk your dog
- k. Go to the vet
- l. Give your dog medication

Participant:

- Feed -> Twice a day
- Walk -> Twice a day
- Vet -> Once a year
- Medication -> She eats medication now that she's older. She takes it every few days.

Facilitator: What was the training process like for your dog?

Participant: We took her to obedience classes at PetSmart. She wasn't good at it and didn't really listen. She was easily excitable. After the classes, she knew the basics.

Facilitator: If you were to get more pets in the future, is there anything you would do differently?

Participant: I might allow my dog to get crate trained, so the dog will voluntarily want to be in the crate. This is supposed to be good to acclimate a dog to a new environment.

4. (1 min) Thank them for their time and record their responds

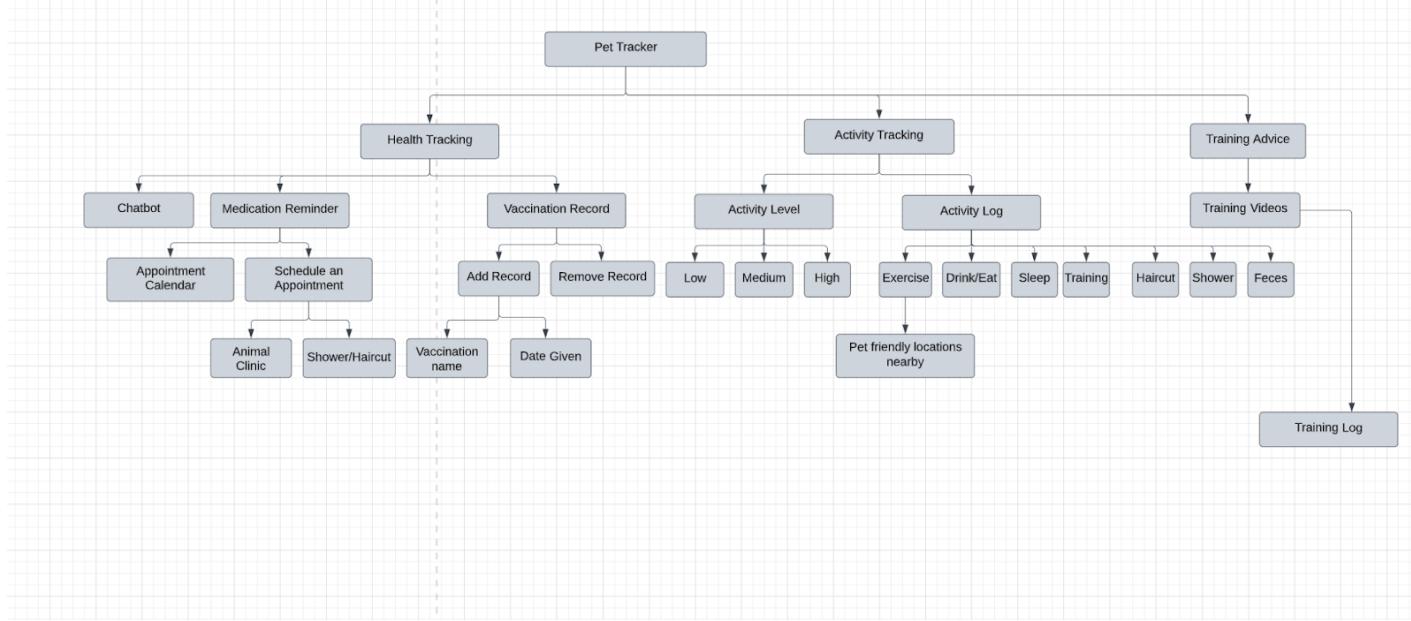
# Synthesis

## Design concepts:

1. Dogs need time outdoors - One of the most important parts of having a dog, we've gathered, is that dogs need to be able to run around and release their energy outdoors. This has inspired us to create a new subsection within our "Activity Log" that includes information for nearby trails and parks that are pet friendly.
2. Scheduling is the most difficult task - It seems like a lot of owners stress that they don't mind doing any of the tasks, it's just difficult to work their schedule around the constant needs of a pet. Thus, we want to add alerts for responsibilities such as vet appointments, haircuts, etc. to help owners keep track of what they need to do and when.
3. It's easier for dogs to learn when they're young - This is a common theme that was present throughout the interviews we did. Thus, it is important that the "Training Advice" section of our app encompasses a wide range of topics, not only basic training, but also how to get your dog to socialize, etc.
4. The responses of our participants showed that there is a wide variety in terms of the tasks which can be annoying or difficult for pet owners and which they would like to be assisted with. For instance, participant 1 takes their dog to training lessons. Participant 2 wants to automate reminders for feeding, providing water, and taking their dog to the vet. Also, they have an issue with finding suitable hiking trails for dogs, since their dog is a Shepard and needs lots of outdoor exercise, but many local hiking trails are not pet-friendly. Participant 3's dog needs regular medication. The task of reminding the user to manage food, water, and medication for their pet can be supported by a calendar/schedule function. It would be useful to pet owners like participant 2 to be able to obtain information on dog-friendly walking locations, such as hiking trails, nearby. The app will have to perform a diverse range of functions to meet these different needs.
5. The participants' pets were of different breeds and ages, and had different major needs. A user whose dog does not have an issue with shedding (as participant 1's does) probably does not need notification and information about grooming and shedding. Likewise, a person who has a smaller and older dog, like participant 3's cocker spaniel, will probably not need to use a function to locate dog-friendly hiking trails like participant 2, who has a Shepherd that is very active. Taking these facts into account, the app should be responsive to the user, providing alerts and information that are relevant to their needs.

## Revised task analysis:

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## Reflection on the Design Process

We completed brainstorming ideas through mimicking the activity of creating stickies on a board. Furthermore, we incorporated the process of iterations into the brainstorming process. Starting out with a layer of initial ideas, we listed them then selected some to dive into details; then we finalized and picked the idea of a pet tracking/monitoring app. Furthermore, brainstorming and sketching helped us through the process of coming up with potential features to include in the solution. The sketches focus on the tasks that we are most interested in. It helps us to think about how the different features can be implemented in a mobile app and how users can interact with the app.

The technique of task analysis was extremely beneficial to organize the ideas into grouping as well as dive deeper into each task in an organized manner. The task analysis allowed us to research and know the details and flow about how certain tasks can be performed. For example, we discovered the activities levels a dog can be classified into as well as listing the numerous activities a dog performs. Doing this activity further allowed us to come up with the various interview questions and structuring them in order to gather and collect the various relevant information.

The interview was really useful in helping us understand our users and their needs. From the interview, we received information about how often users feed their pets, walk their ets, etc. As non-pet owners ourselves, this is really useful information in helping us design our app. Furthermore, users' reflections on how they want to improve as pet owners is also useful to us. User reflection helps us understand how different features should be prioritized and organized within the app. We realized what features (i.e walking, training) need to be expanded on more and which ones (i.e feeding) were generally easy for users to manage.

The most helpful technique was definitely the Observational Interviews & Synthesis formation. The reason we thought it was the most useful is because this aspect of the design process helped us connect with our users. Although our group loves animals, none of us are dog owners, so we don't personally resonate with the difficulties and responsibilities that pet owners have on an everyday basis.

I think all of the activities are extremely helpful and necessary for the design process. However, one thing that we figured wasn't as helpful was getting into details on too many interesting ideas we brainstormed for the final project. I think the necessity to identify one project idea that everyone agrees to proceed with earlier on and shortening the brainstorming process by transforming into focusing more on user, situation, and task analysis as well as low-fidelity sketches can effectively benefit the ideation and design processes.