Group 7

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Project 2 Proposal

App purpose/description

The purpose of this application will be to automatically identify dog breeds from images pulled via social media API (undecided) rather than via manual uploads. The user will authorize the app to access their social media image feed, from which the app will select images containing dogs. The system will then apply a vision model to detect and classify the dog breed present in each image. (the exact implementation status is undecided, one approach is to display available dog images in a scrollable fashion where users may click on it to select it for processing).

After getting the model's outputs we will compare the output data with an existing list of all the dog breeds, and extract the breed with highest confidence. After identifying the correct breed, the application will display breed specific information such as (undecided, ex- size, lifespan, traits etc…). The app aims to provide users with insights about dogs they already have or have encountered in their social media without manual uploads.

The project combines social media integration, image classification via google vision, and knowledge retrieval to deliver a seamless and informative dog-breed identification experience.
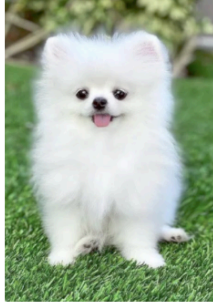
MockUp interfaces - Vanessa

Homepage:

PupFinder

Home   Login

Discover Dog Breeds Instantly

Our AI identifies any dog in your photos and lists key characteristics.

Image information

Breed: Pomeranian

Traits: Energetic and Playful

Origin: Germany/Poland

No more wondering,
"What breed is this dog"

Try it Now

If user selects "Try it Now" or "Login":

PupFinder

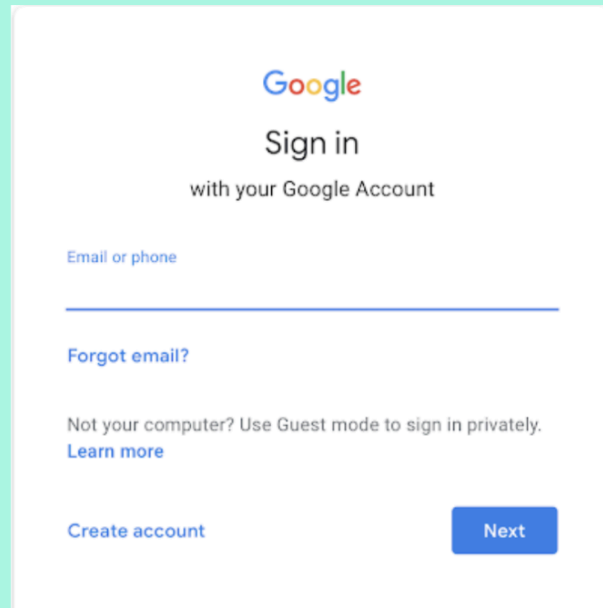Home   Login

Login with Google Photos

Securely sign in to allow us to access your photo library. We'll analyze
photos and generate details using AI.

Sign in with Google

So close to seeing the magic...
Just a click away

After pressing the Google sign in button:

PupFinder

Google

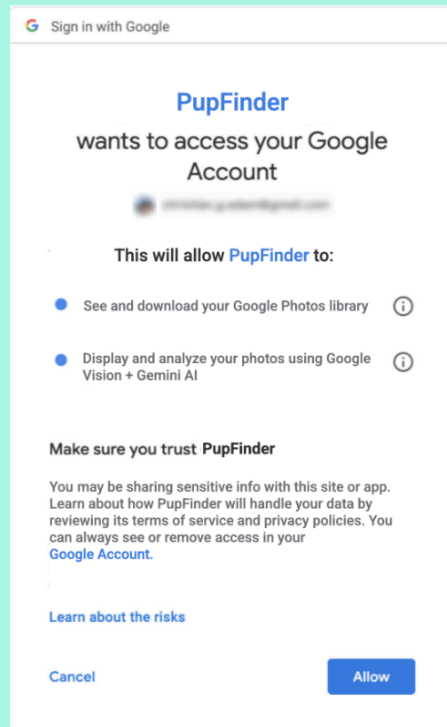Sign in

with your Google Account

Email or phone

Forgot email?

Not your computer? Use Guest mode to sign in privately.
Learn more

Create account   Next

After pressing "Next" and entering password:

PupFinder

Home   Login

G Sign in with Google

PupFinder

wants to access your Google Account

This will allow **PupFinder** to:

- See and download your Google Photos library ⓘ

- Display and analyze your photos using Google Vision + Gemini AI ⓘ

Make sure you trust PupFinder

You may be sharing sensitive info with this site or app. Learn about how PupFinder will handle your data by reviewing its terms of service and privacy policies. You can always see or remove access in your **Google Account.**

Learn about the risks

Cancel   **Allow**

After selecting "Allow":

PupFinder

Welcome

Select a photo and get started

After selecting the top left dog:

Based on the photo you selected:
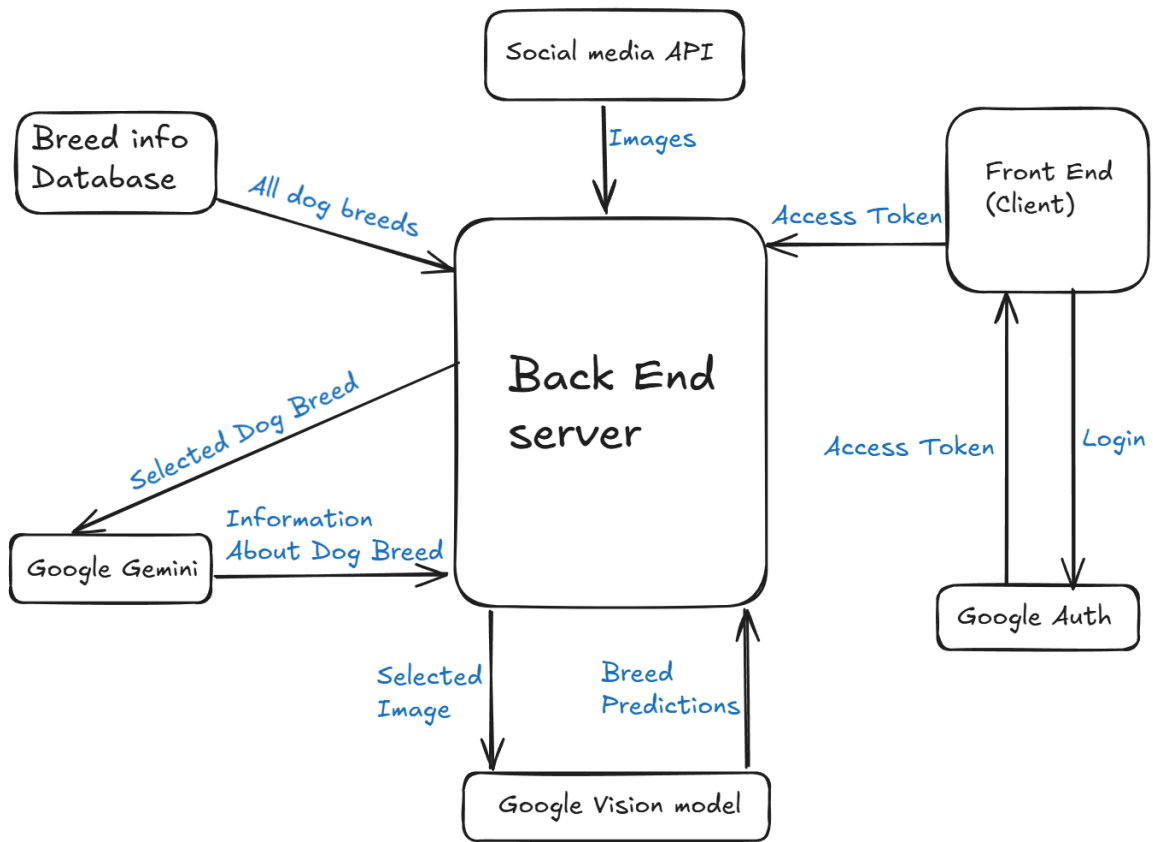

Image information

Breed: Golden Retriever

Traits: Friendly and Loyal

Origin: Scotland

Analyze Another

System Diagram

NOTE - May change as we progress.

Flow of Control Details (steps in processing w/technical details - what you are doing/using)

NOTE - May change as we progress.

Step 1 - User Login And Authorization

1. The user opens the web application in the browser.
2. The user clicks on sign in with google.
3. The front end triggers a Google authorization procedure.
   a. A request is made to access the google photos library api.
4. Authorization code is returned to the frontend.
5. Frontend passes the authorization code to the backend server.
6. The backend server uses the authorization code to access google's library.

Technical details -
The authorization is done via Google OAuth 2.0.
Backend will be done in NodeJS/Express.
Frontend will be done in React.js.

Step 2 - Retrieving and Processing User Photos

1. Backend uses access token to call Google Photos REST API.
2. Each image is checked for the presence of a dog.
3. Fetches images until enough dog images are found to fill up the first page of the gallery.
4. Images above a certain level of confidence are kept.

Step 3 - Dog breed classification and info retrieval

1. The user selects from the displayed dog images.
2. The selected image's data is processed, the dog breed with highest confidence is chosen.
   a. If no breed is classified by the model, the user gets error page "no breed found please try a better image with "
3. The selected image's breed is sent to the Google Gemini model.
4. The request is made for information such as the breed's lifespan.
5. The returned information is displayed to the user in a nice way.

Other Technical details -

The database keeps record of all the dog breeds to compare with the model's outputs and knows what is a breed and what's not a breed.
The front end web app will dynamically create a grid/gallery view where photos are displayed for the user to select.