yodai

KURTARAN-AI

Group: T2443

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- Alphan TULUKCU
- İlhami ULUĞTÜRKKAN

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UI Advisor

Berkay Taşkın

Sr. UX Designer

Overview

1.0 Introduction

2.0 Project Plan and Current Status

3.0 Details of Technological Solutions/Demo

4.0 Challenges and Teamwork

5.0 Attainments and Conclusion

6.0 References

7.0 Q&A

1.0 INTRODUCTION

1.0 Introduction

Did you know that over 70% of shelter animals around the world struggle to find lasting homes, often due to mismatches and incomplete adoption processes [1]?

On top of that, in July 2024, a new law in Turkey mandated the removal of stray animals from public places to shelters, aiming to address public safety concerns [2]. While well-intentioned, this legislation has created a critical challenge for animal welfare organizations, leading to overcrowded shelters and increasing the risk of euthanasia. In response, our project, Kurtaran-AI, in collaboration with Kurtaran Ev —a leading rescue shelter in Istanbul— and Ankara Etimesgut Municipality, introduces an innovative solution to transform the adoption process.

Our Current Partners

Figure 1: Etimesgut Municipality Logo [3]

Figure 2: Kurtaran Ev Association Logo [4]

1.0 Introduction

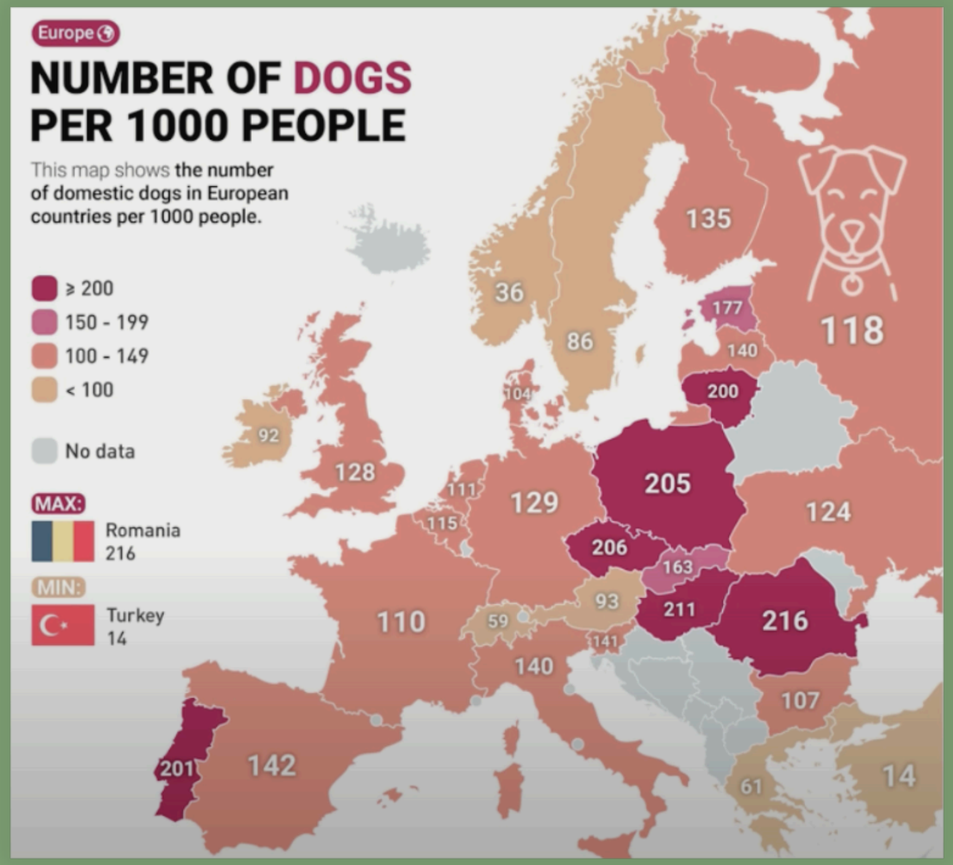


Figure 3: Number of Dogs per 1000 People

Current Problems We Needed to Address In Our Solution Space

01 Overcrowding of Shelter Animals

02 Inefficient Information Sharing

03 Mismatch Between Adopters and Animals

04 High Rates of Re-Abandonment

05 Over-reliance on Manual Processes

06 Inability to Monitor Post-Adoption Success

07 Bias in Animal Listings

08 Lack of Personalized Recommendations

1.0 Introduction

Our Innovation Wheel

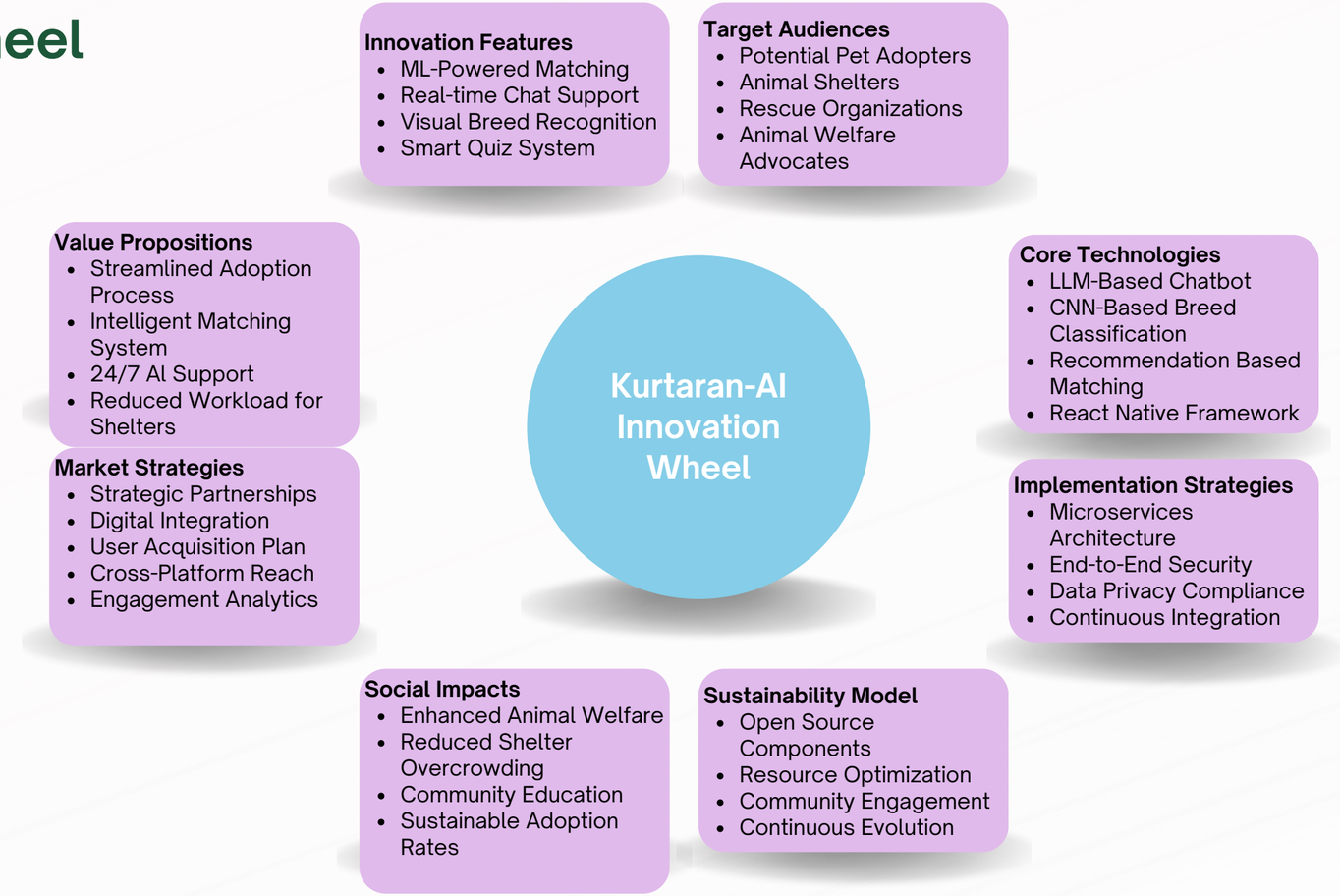


Figure 5: Innovation Wheel

1.0 Introduction

Competitors of the Industry

Feature	Kurtaran-AI	SemtPati	Patievi
Recommendation System	✓		
AI Chatbot	✓		
Adoption Eligibility Quiz	✓		
Pet Chip Support		✓	
Application Tracking	✓		
Multi-city Support	✓		✓
Turkish Language Support	✓	✓	✓
Anyone can create an adoption post		✓	✓

1.0 Introduction

Our Business Model

Target Market:

- Primary Market: Animal shelters and rescue organizations in Turkey, with a pilot partnership with Kurtaran Ev and Etimesgut Municipality.
- Secondary Market: Individual pet adoption facilitators and regional animal welfare non-governmental organizations (NGOs).

Revenue Streams:

- Non-Profit Model:
  - Grants & Sponsorships: Funding from animal welfare organizations, government programs, and NGOs.
  - Donations: Voluntary contributions from individuals and corporations supporting the cause.
  - Collaborations: Partnerships with pet care brands or veterinary services for non-monetary support and cross-promotion.

Cost Structure:

- Development Costs
- Cloud Hosting Costs
- Compliance Costs
- Marketing Costs
- Support and Maintenance Costs

2.0 PROJECT PLAN AND CURRENT STATUS

2.0 Project Plan and Current Status

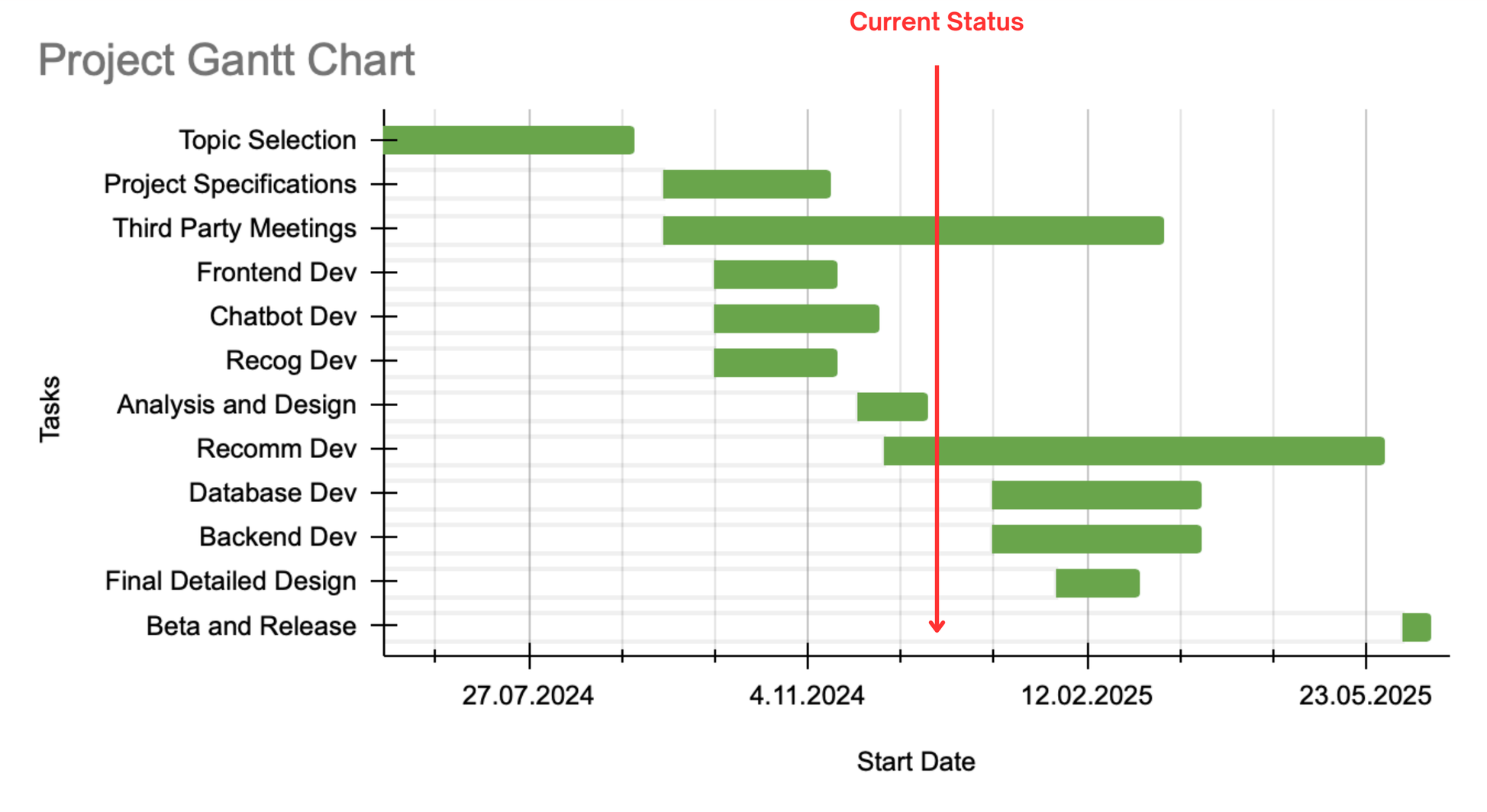


Figure 6: Project Gantt Chart

2.0 Project Plan and Current Status

Development Status Overview

Environment | Completed | Pending

Frontend Development

Environment & Setup
- React Native Framework
- Expo Development Platform
- Local Development Environment

Completed Features
- User Authentication Interface
- Profile Management Interface
- Smart Quiz System Interface
- Adoption Portal Interface
- Wishlist/Application Interface
- Approval Interface
- Chatbot Interface

Pending Tasks
- Backend API Integration
- Production Environment Setup

Image Recognition Module

Environment & Setup
- Python Development Environment
- TensorFlow/PyTorch Framework
- Jupyter Notebook Environment

Completed Features
- Baseline CNN Model
- ResNET Transfer Learning
- MobileNet Transfer Learning
- Image Classification Pipeline

Pending Tasks
- Backend Service Integration
- API Endpoint Development
- Production Model Deployment

LLM-Based Chatbot

Environment & Setup
- LangChain Framework
- LangGraph Architecture
- Local/Google Colab Environment

Completed Features
- Base LLM Integration
- Q&A Pipeline
- Context Management
- Response Generation

Pending Tasks
- Frontend Integration
- Backend API Development
- Production Deployment

Matching Algorithm

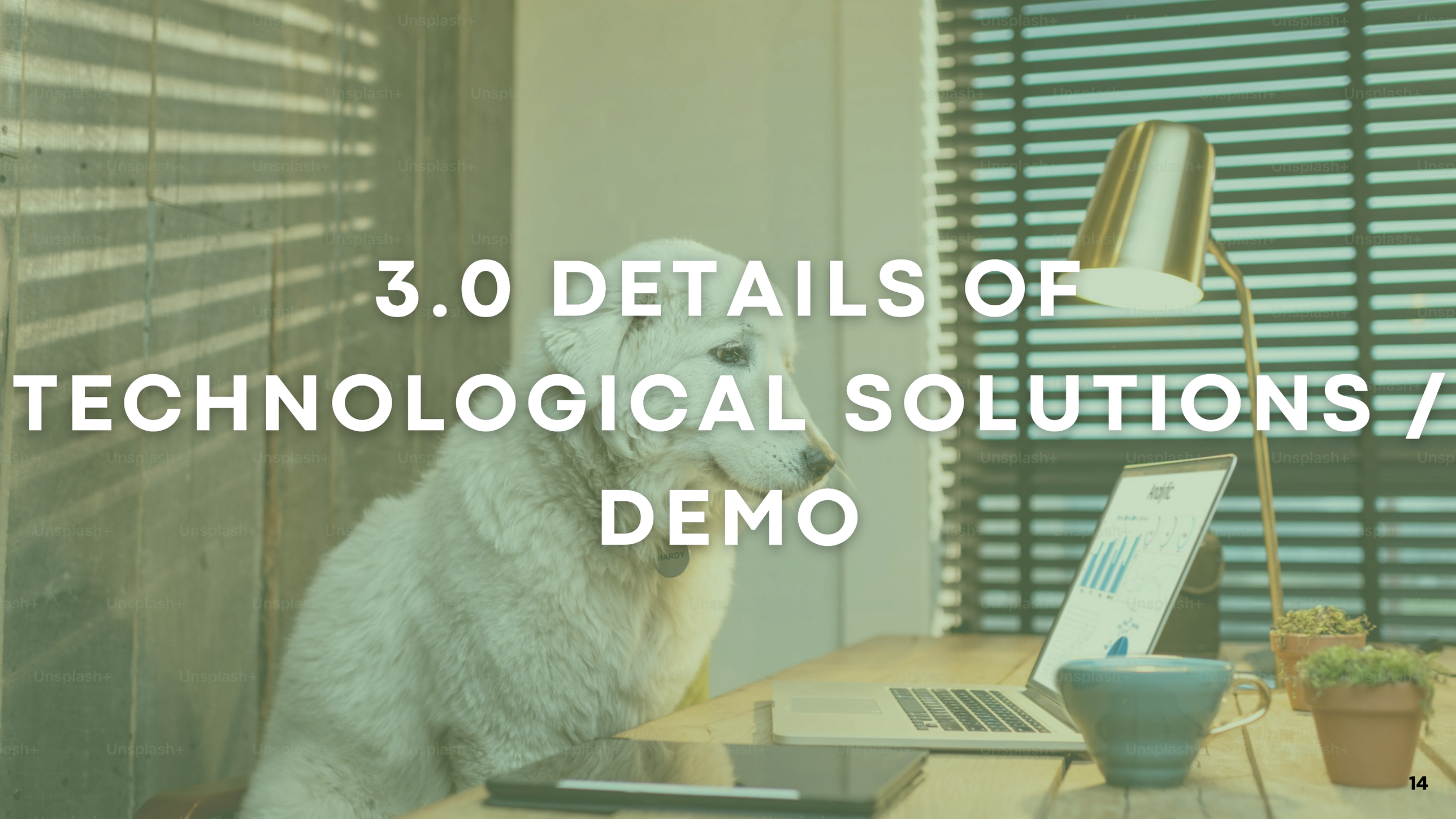
Environment & Setup
- Python Analysis Environment
- Data Processing Pipeline
- Testing Framework

Completed Features
- Dataset Acquisition
- Data Preprocessing
- Initial Algorithm Design

Pending Tasks
- Algorithm Implementation
- Performance Optimization
- Integration with Backend

Infrastructure Planning

Database	Storage	Monitoring	Deployment
PostgreSQL	Firebase/AWS S3	Prometheus	Cloud Services
Planning	Planning	Planning	Planning



3.0 DETAILS OF TECHNOLOGICAL SOLUTIONS / DEMO

3.1 Recommendation System

- The system prioritizes the shelter animals.
- Our dataset contains 278 dog breeds' information.

Actor	Care [0,1]	Energy [0,1]	Trainability [0,1]	Friendly [0,1]
Animal	How much care does the animal need?	How energetic is the animal?	How trainable is the animal?	How outgoing is the animal?
User	Combined value of budget, home alone duration etc.	Combined value of house_type, walk_time, walk_count, etc.	Combined value of animal_fear, sound sensitivity, etc.	Combined value of baby, sound sensitivity, home alone duration, etc

3.1 Recommendation System

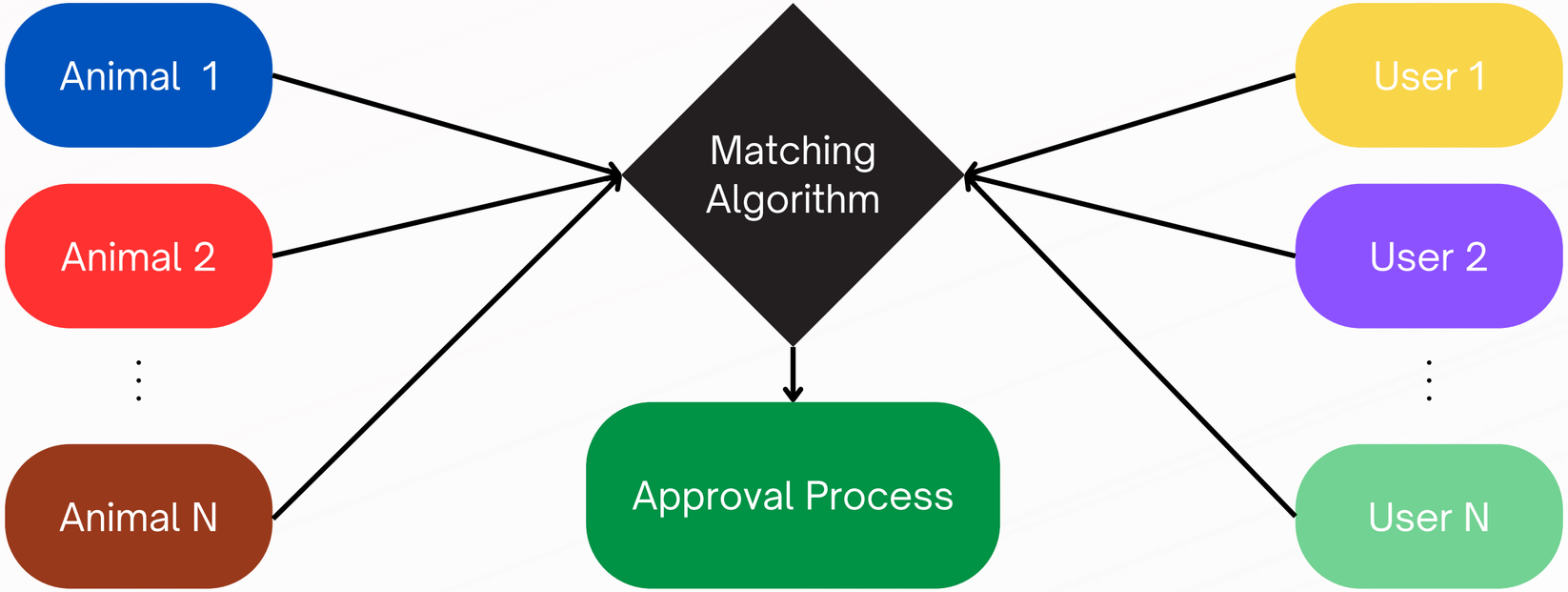
- Snippets from the dog breed dataset [5].

1		description
2	Affenpinscher	The Affen's apish look has been described many ways. They'
3	Afghan Hound	The Afghan Hound is an ancient breed, his whole appearanc
4	Airedale Terrier	The Airedale Terrier is the largest of all terrier breeds. Males s
5	Akita	Akitas are burly, heavy-boned spitz-type dogs of imposing st
6	Alaskan Malamute	The Alaskan Malamute stands 23 to 25 inches at the shoulde
7	American Bulldog	The American Bulldog is a descendant of the English Bulldog
8	American English Coonhound	Standing as high as 26 inches at the shoulder, American Engl
9	American Eskimo Dog	The American Eskimo Dog comes in three sizes—standard, m
10	American Foxhound	American Foxhounds are sleek, rangy hunters known for thei
11	American Hairless Terrier	The American Hairless Terrier stands between 12 to 16 inches
12	American Leopard Hound	The American Leopard Hound is a medium to large size dog
13	American Staffordshire Terrier	AmStaffs are stocky, muscular bull-type terriers standing 17 t
14	American Water Spaniel	American Water Spaniels are muscular midsize gundogs, not

energy_level_value	energy_level_category	trainability_value	trainability_category	demeanor_value	demeanor_category
0.6	Regular Exercise	0.8	Easy Training	1.0	Outgoing
0.8	Energetic	0.2	May be Stubborn	0.2	Aloof/Wary
0.6	Regular Exercise	1.0	Eager to Please	0.8	Friendly
0.8	Energetic	1.0	Eager to Please	0.6	Alert/Responsive
0.8	Energetic	0.4	Independent	0.8	Friendly
0.8	Energetic	0.6	Agreeable	0.6	Alert/Responsive
0.8	Energetic	0.6	Agreeable	0.6	Alert/Responsive
0.8	Energetic	1.0	Eager to Please	1.0	Outgoing
0.8	Energetic	0.4	Independent	0.8	Friendly
0.8	Energetic	1.0	Eager to Please	0.6	Alert/Responsive
0.6	Regular Exercise	0.6	Agreeable	0.6	Alert/Responsive

3.1 Recommendation System

- Recommendation works based on successful adoptions



3.2 User Interface

UI Advisor

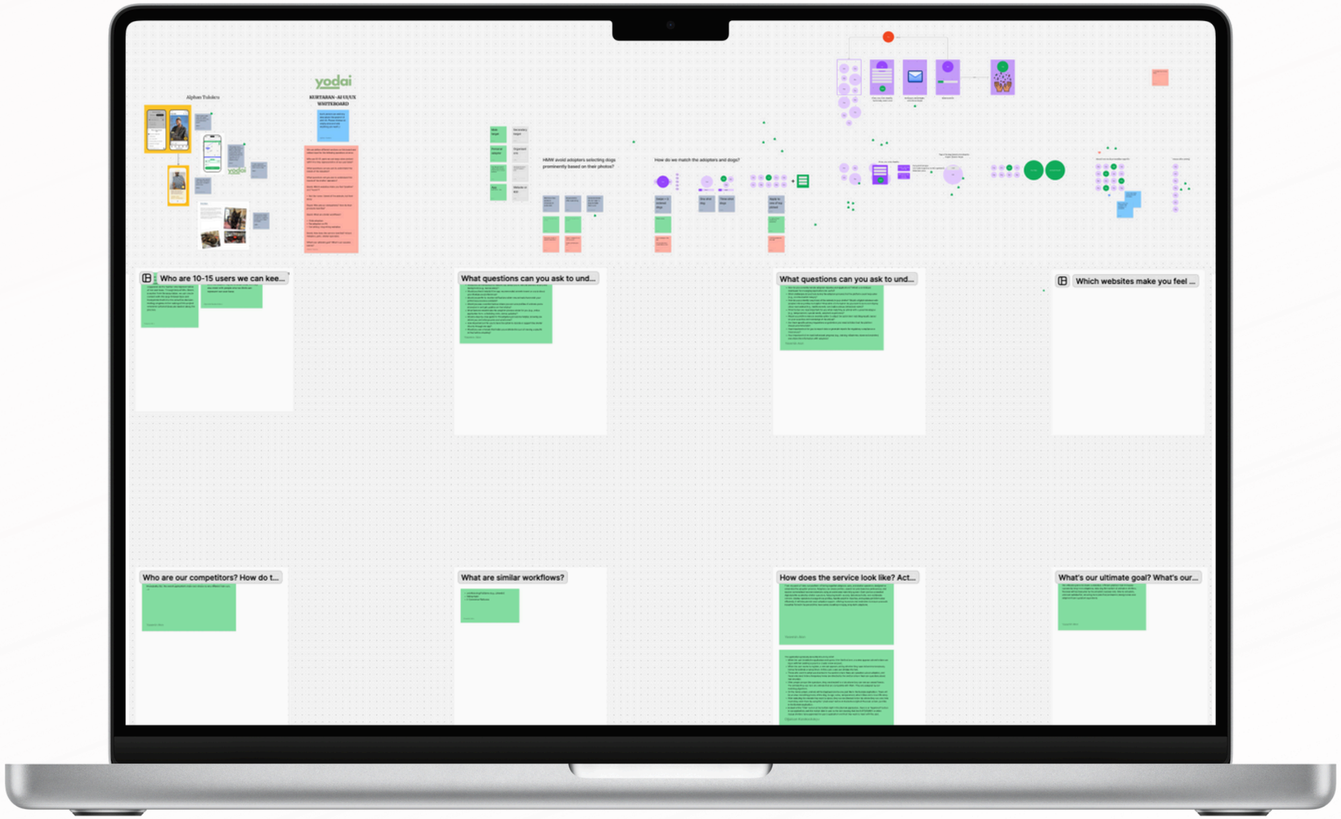
Berkay Taşkın

Sr. UX Designer

- For the UI, we researched the effect of the different design patterns for the Adoption Portal
- We designed some alternative approaches with Berkay Taşkın
- Gathered all ideas in the FigJam Whiteboard

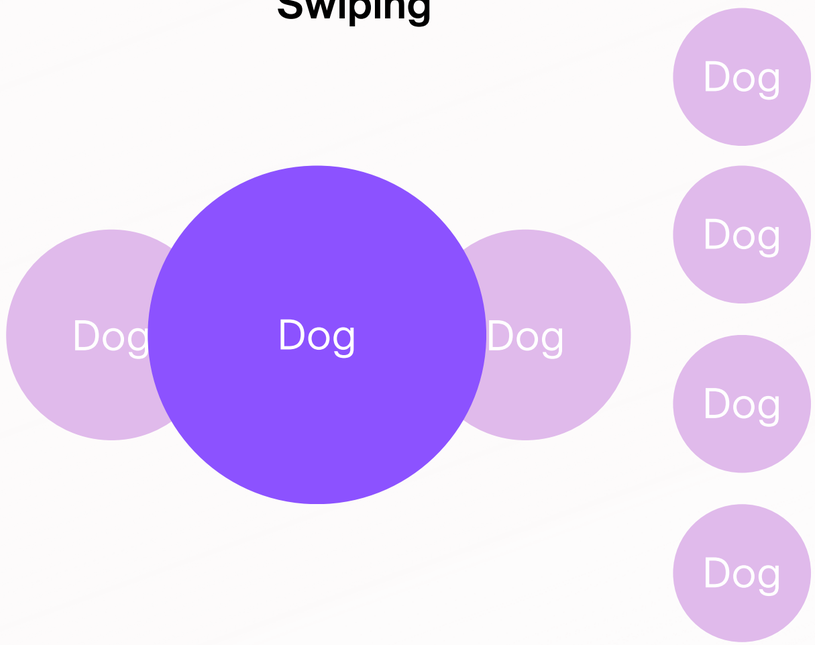
FigJam Whiteboard

- Gathered all ideas in the FigJam Whiteboard
- Two-month phase
- Berkay shares his professional advices.



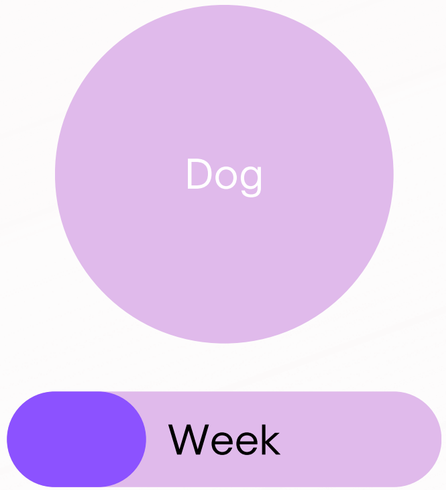
User Interface Ideas

Swiping



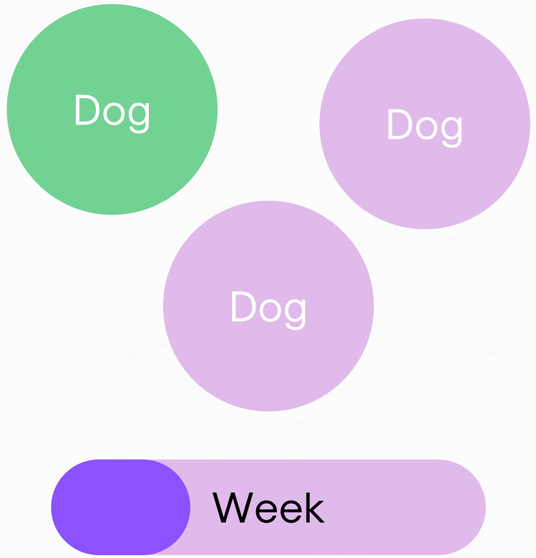
- Swipe +5 ordered dogs
- Familiar with dating apps
- Feeling of missing out-order dogs
- Non first dog match may create disappointment
- **Our current structure**

One-Shot



- One matched animal per day so that users consider and decide carefully.

Three-Shot



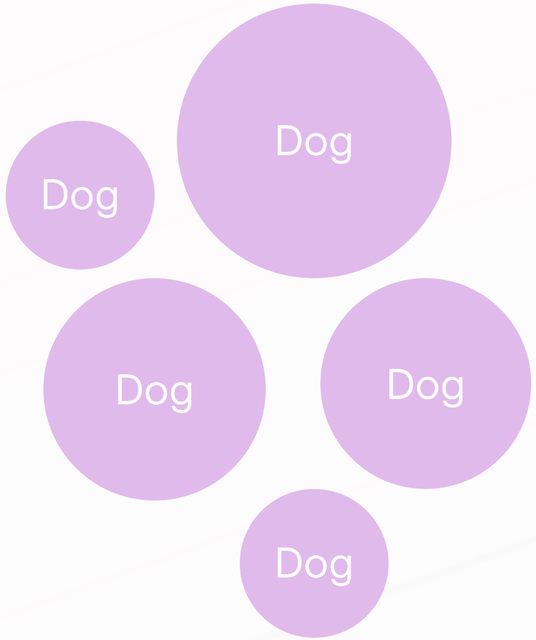
- Three matched animals per day so that users could consider and decide carefully.

User Interface Ideas

Find the Best

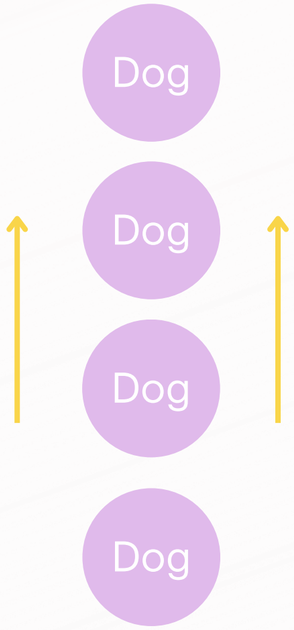
- Apply to one of the top picked
- An application form tailored to the organization

Bubbles



- Bigger bubbles are more matched ones

Choises while moving



- Like a camera film.

3.3 User Experience

UX Advisor

Dilay Sarpay

Service Designer at TU Delft Library

- For the UX, we researched how to satisfy the users' expectations.
- We created some personas, and created a Customer Journey Map with Dilay Sarpay

Customer Journey Map

Scenario: Sena is trying to adopt a pet using the shelter's platform. She looks at the other platforms. She noticed the platform from the social media and friends' suggestions.

	Before	During					
Phases	Awareness	Welcoming			Eligibility		
Steps	Sees an ad on social media for the platform	Visits the shelter website to browse available pets	Sees the general information about the app	Fills the registration inputs	Takes the quiz	Verifies to being eligible to adopt a pet	View her profile
Emotions	Excited	Excited	Excited	Bored	Nervous	Excited	Excited

Customer Journey Map

Scenario: Sena is trying to adopt a pet using the shelter's platform. She looks at the other platforms. She noticed the platform from the social media and friends' suggestions.

	During						
Phases	Genenal Look				Adoption		
Steps	View the pets on the adoption Portal	Looks at the details of the pets: age, location, health etc.	Have questions about the adoption process	Chatting with the Chatbot	Selects animals from the portal (swiped to right)	Reaches the swiping right limit	View her wishlist
Emotions	Excited	Excited	Nervous	Impressed	Excited	Nervous	Excited

Customer Journey Map

Scenario: Sena is trying to adopt a pet using the shelter's platform. She looks at the other platforms. She noticed the platform from the social media and friends' suggestions.

	During						After
Phases	Adoption						Check
Steps	Submits the requests from the wishlist	Get notification for waiting time	Wait around 4-5 days	Received an notification, "congratulations , application approved"	makes an appointment	Meets the sheter and adopts the pet	Keep contact with shelter, asking questions, (45 days)
Emotions	Excited	Excited	Bored	Impressed	Excited	Excited	Happy

DEMO

DEMO

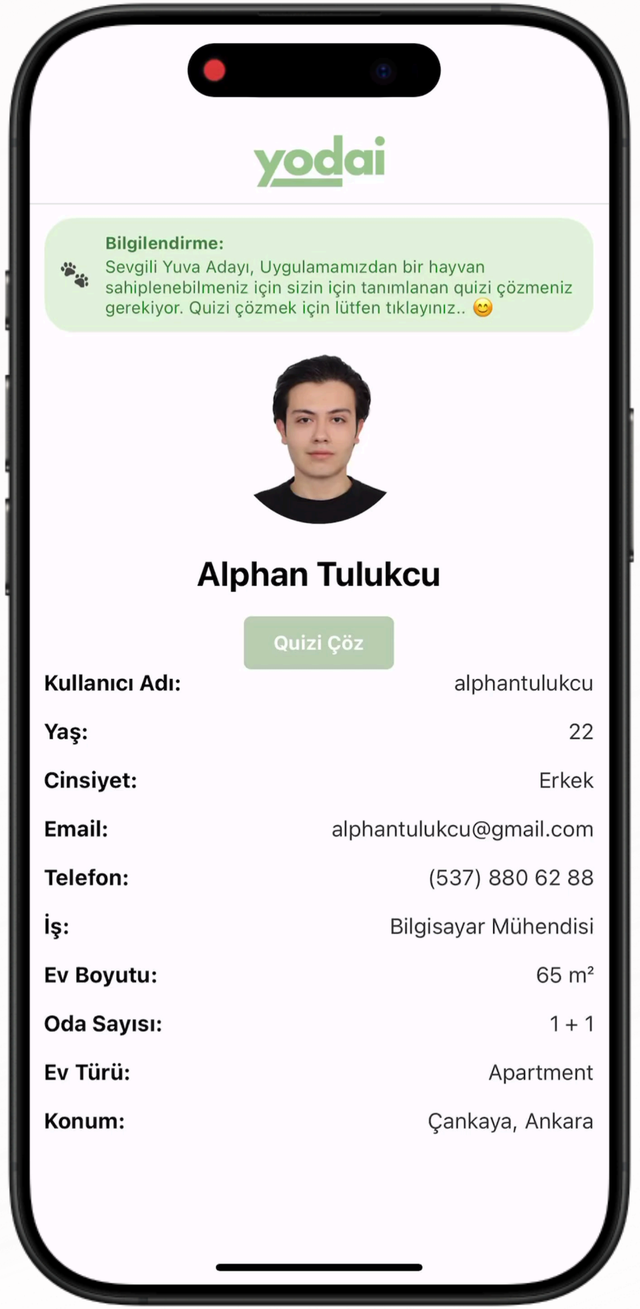
- This demo shows the current state of the project
- Developed with React Native and Expo

Initial Screens

- An introduction slides are seen
- User can login or signup

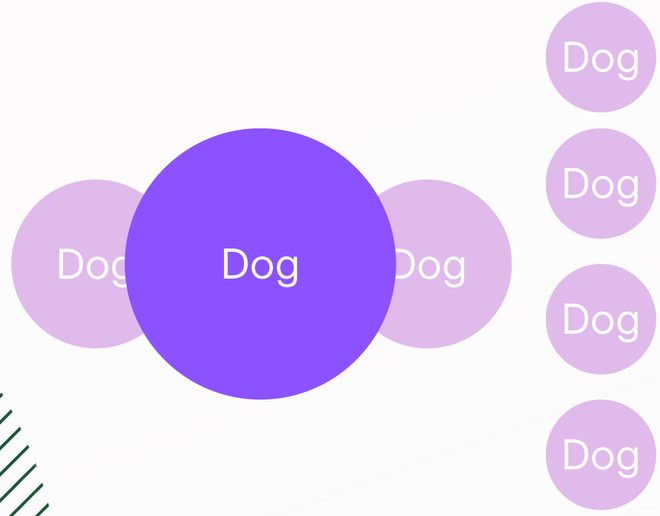
Quiz System/ Profile / Settings

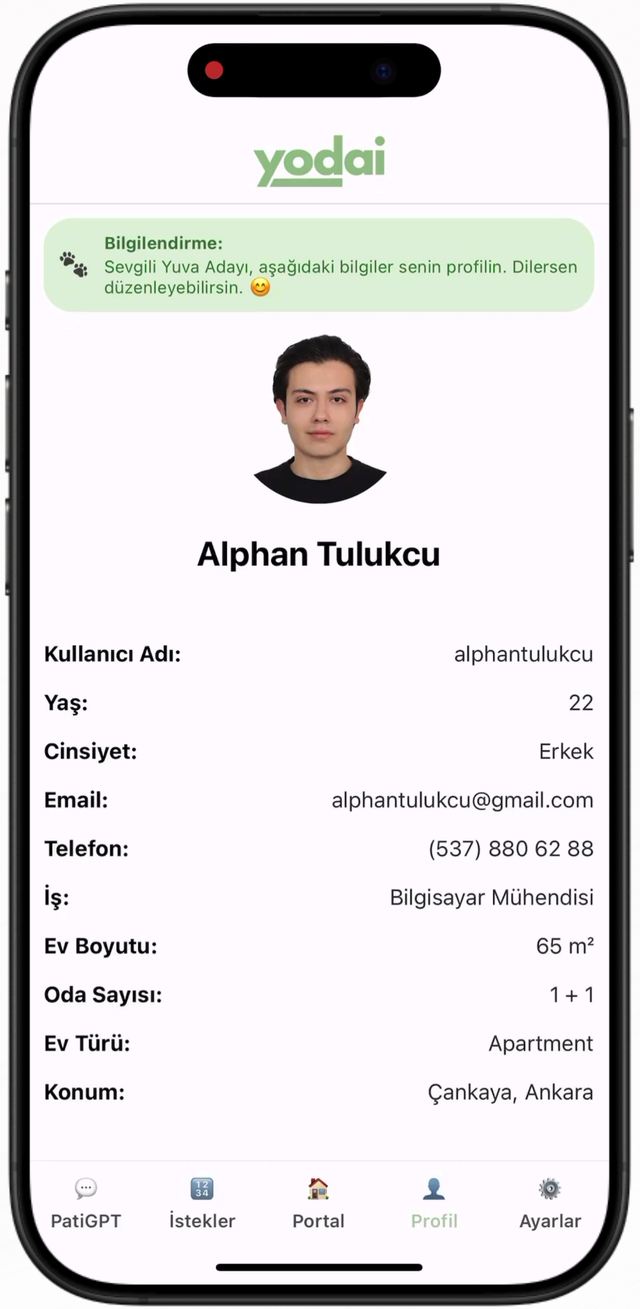
- At first time, user should take a quiz to prove the adoption eligibility
- Only profile can be seen before the quiz.
- After solving the quiz, user can navigate each part.
- In profile, user can see the information, and edit.
- In settings, user can manage the application preferences, and see the about part.



Adoption Portal

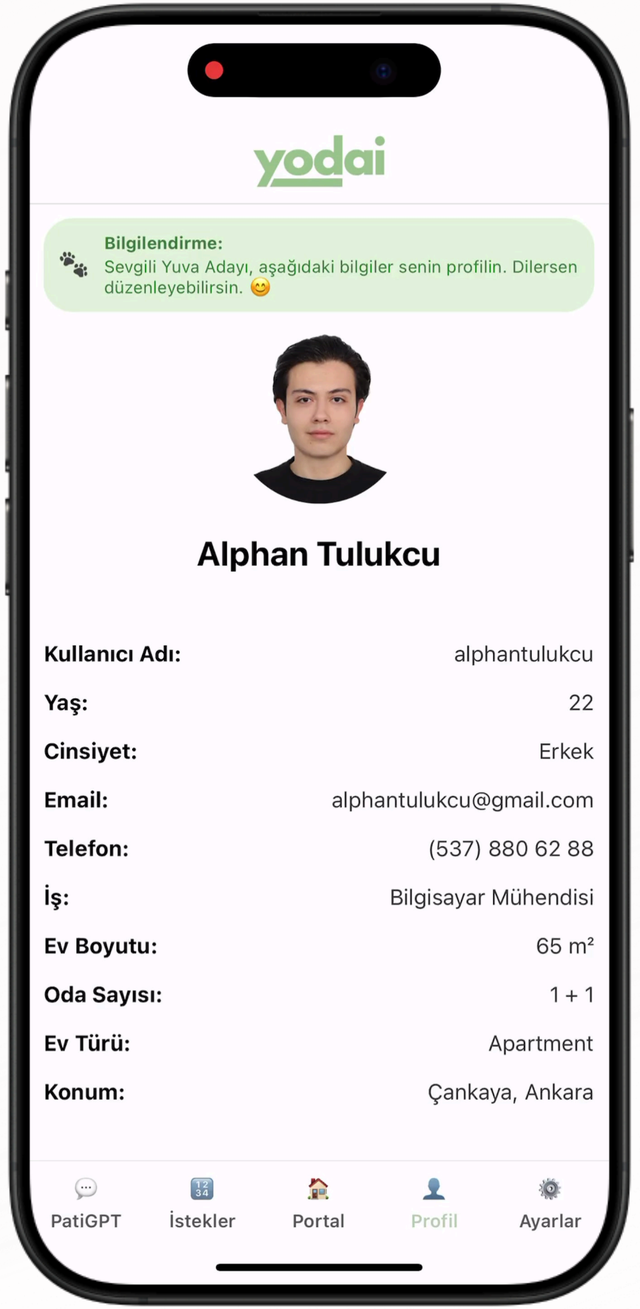
- In current system, “swiping” pattern is used.
- User can see the details
- Swipe left to reject
- Swipe right to add animal to wishlist
- **Swiping Pattern:**





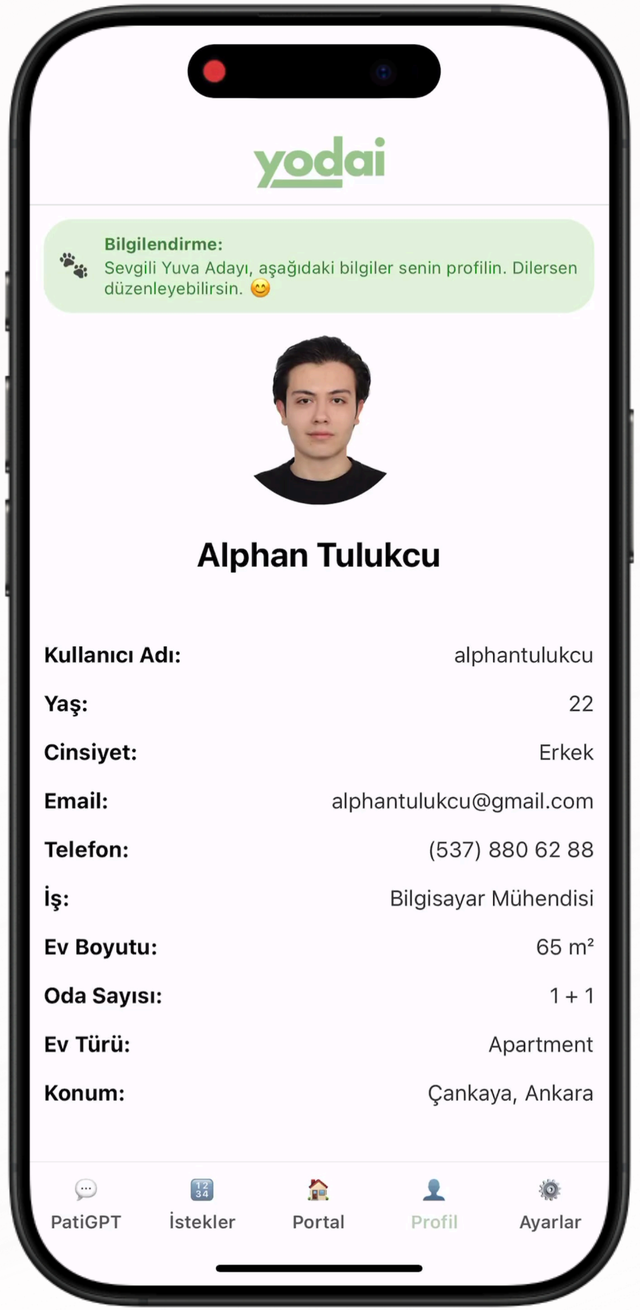
Wishlist/Adoption Application

- In the wishlist, user can manage the swiped animals.
- User can start the application for each animal.



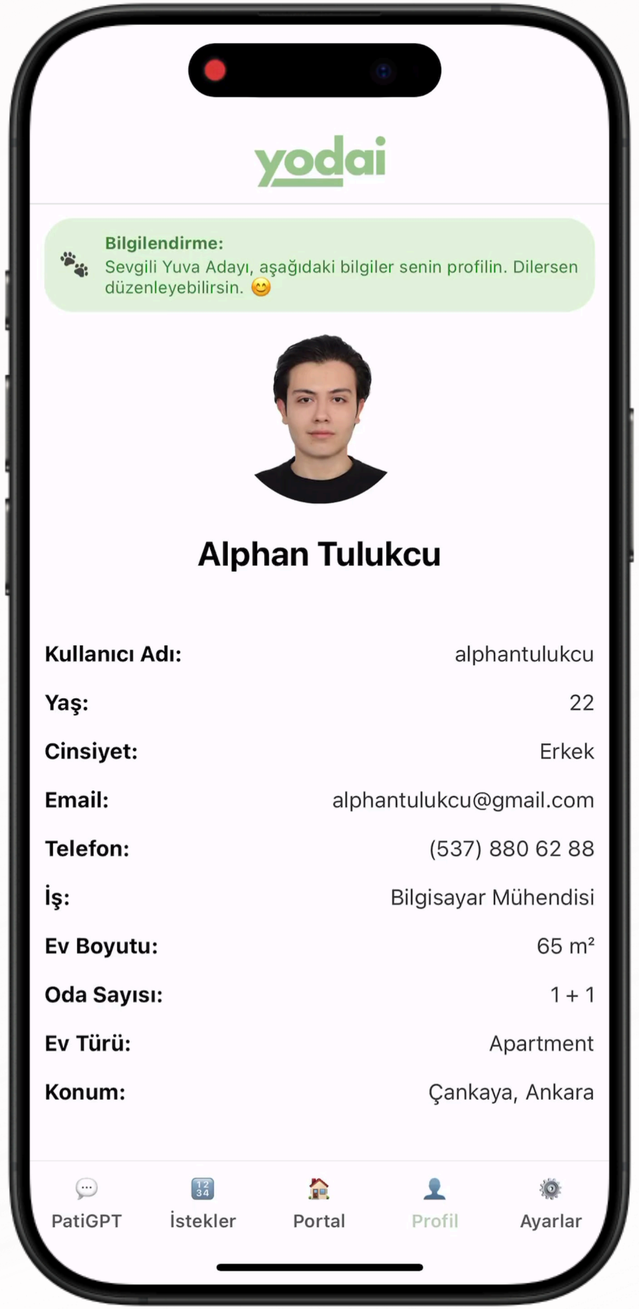
Adoption Approval

- After application, user can monitor the status of the each application.
- If an application is approved, user can monitor the details and choose a meeting date with the shelter.
- **This part will be improved in the later milestones by feedback of the advisors and the shelters.**

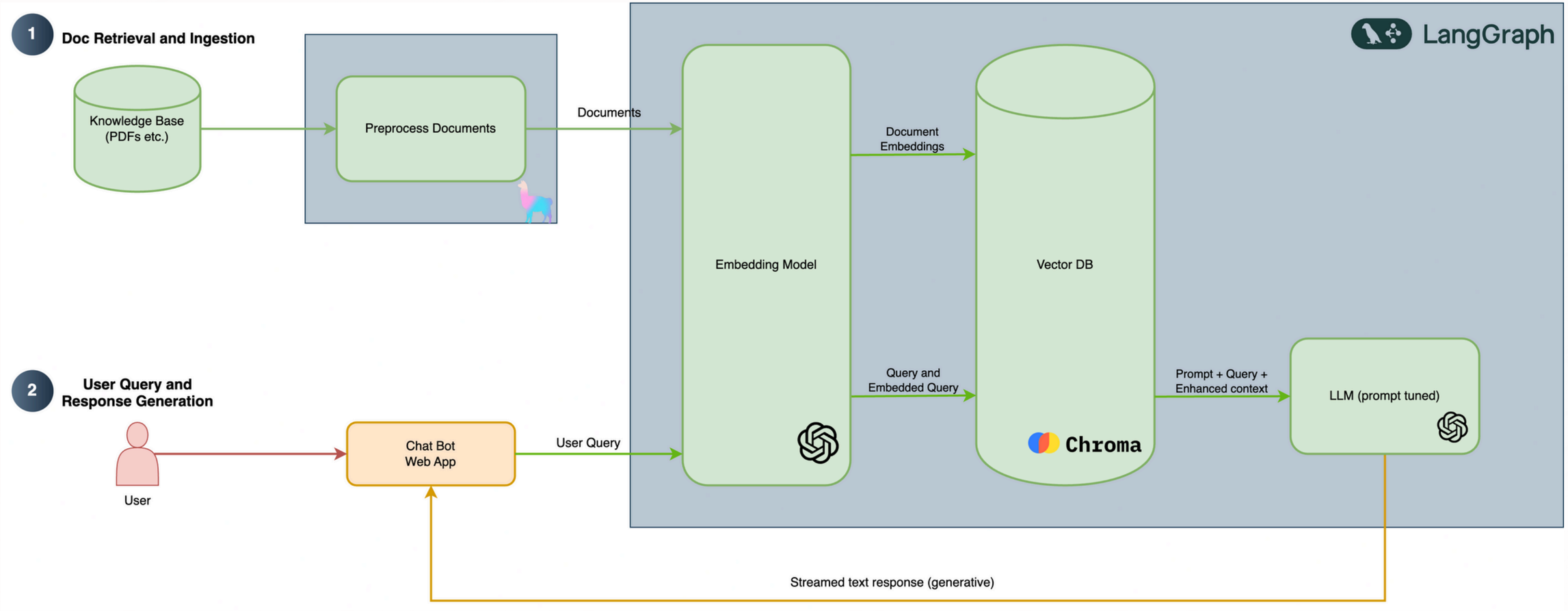


PatiGPT

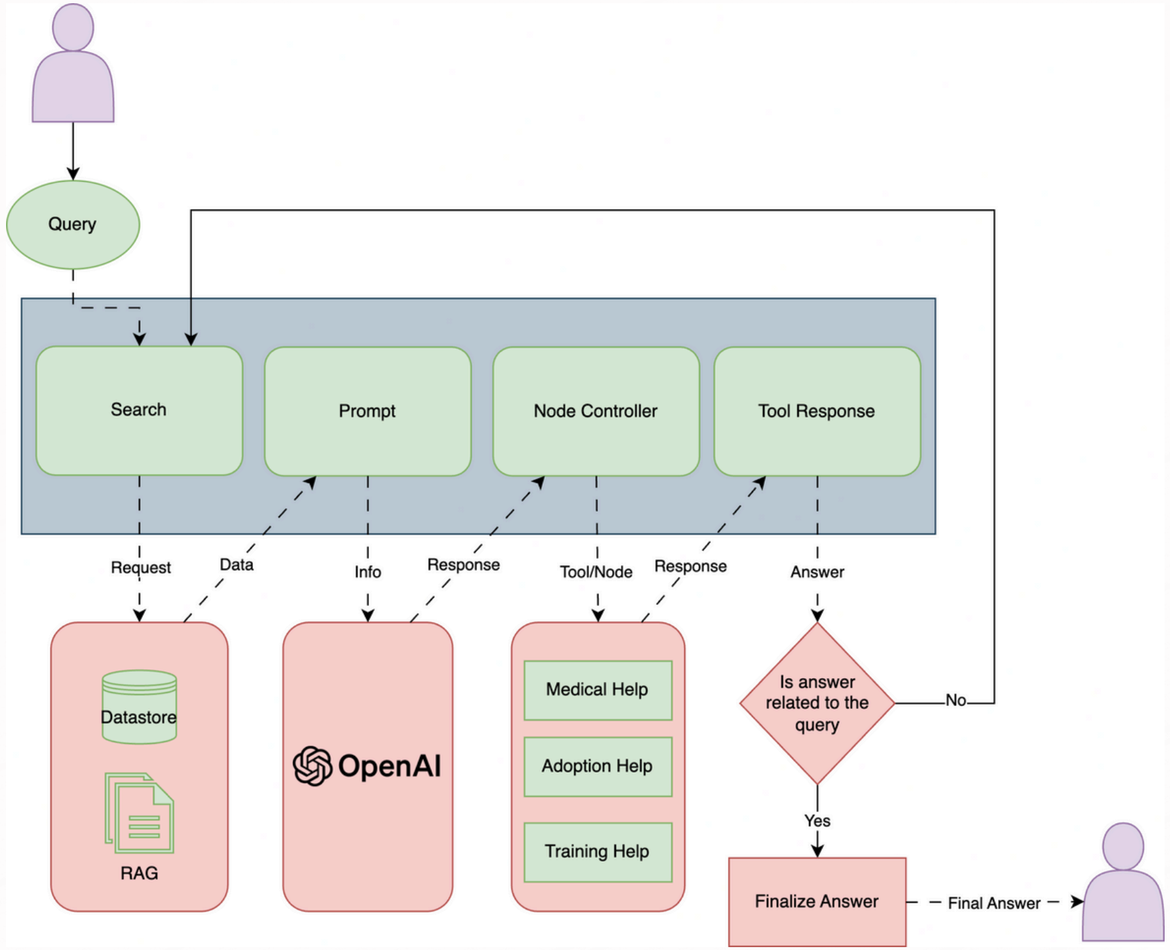
- In the PatiGPT tab, the user will ask questions and get responses from the AI agent powered by ChatGPT.
- Retrieval Augmented Generation (RAG)
- LangGraph



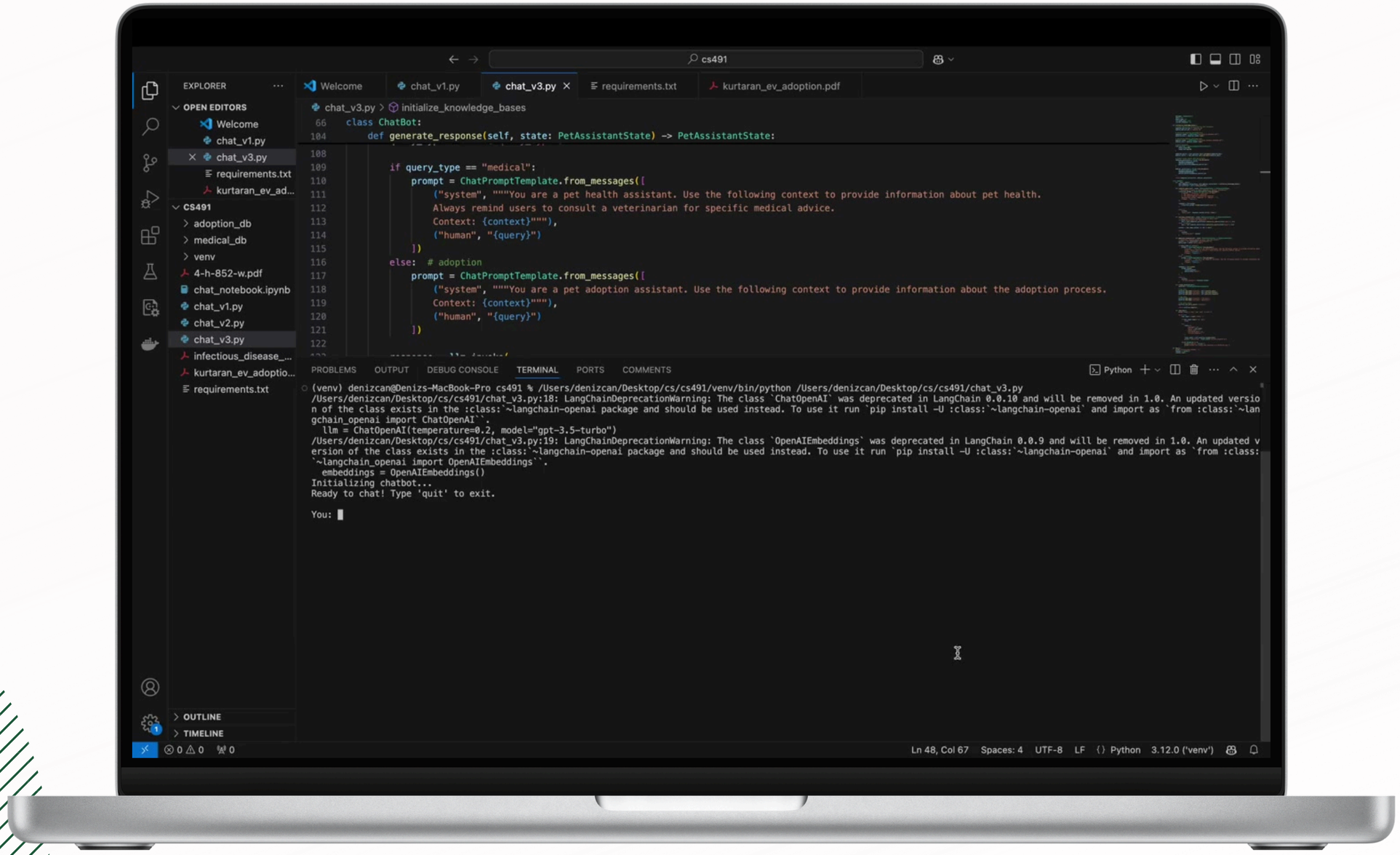
PatiGPT: Backend (RAG)



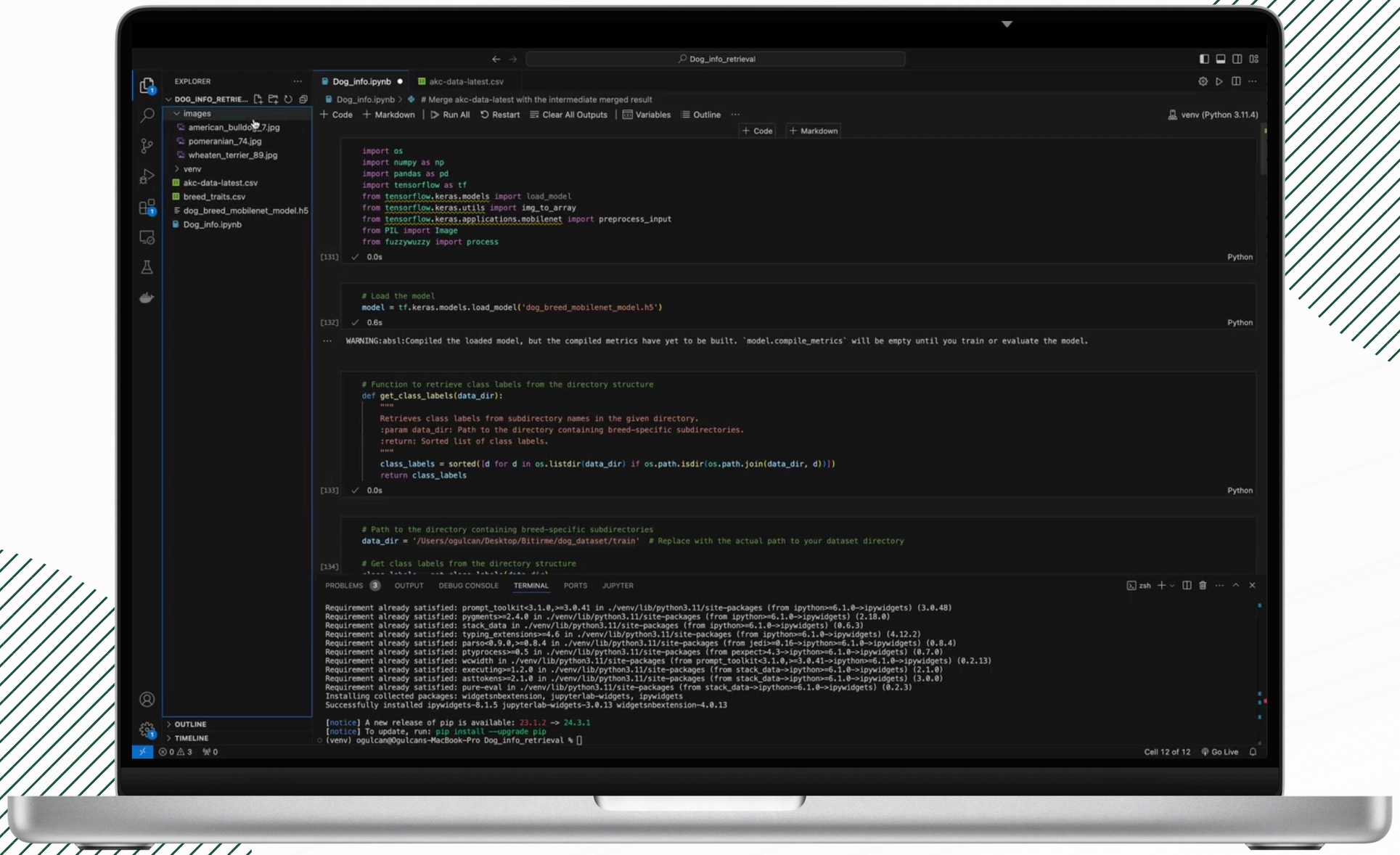
PatiGPT: Backend (LangGraph Workflow)



PatiGPT: Backend



Breed Classification & Info Retrieval



4.0 CHALLENGES AND TEAMWORK

4.0 Challenges and Teamwork

Challenges:

1. Lack of knowledge for adoption
2. Too many meetings for UI/UX and shelter
3. Designing Recommendation System
4. Sensitive issues about the adoption topic
5. Finding new partners (organizations etc.)

4.0 Challenges and Teamwork

Team Achievements:

1. Good task separation
2. Dealing with Etimesgut Municipality
3. Great improvement in case of technical solutions
4. Detailed UI/UX design plans
5. An existing target audience to criticize design and feature ideas.

5.0 ATTAINMENTS AND CONCLUSION

5.0 ATTAINMENTS & CONCLUSION

ATTAINMENTS

1. Arranged meetings with official institutions and presented ourselves.
2. Expanded our network by consulting senior UI designers and engineers around the world.
3. Focused on project management, gaining hands-on experience in planning and executing a project from scratch.
4. Planned and discussed PR strategies, exploring the social aspects of the project through networking and idea exchange.

5.0 ATTAINMENTS & CONCLUSION

CONCLUSION

1. What is the problem we want to solve?
2. Who are we trying to create this solution with?
3. What are our solutions?
4. What is our purpose?

6.0 REFERENCES

6.0 References

[1] AP News, “Turkey plans to regulate a large stray dog population,” [Online]. Available: https://apnews.com/article/turkey-stray-dogs-shelters-animal-rights-66eff47e6a99f21041589c5786d89bcc. [Accessed: Nov. 21, 2024].

[2] BBC Türkçe, “Türkiye’nin sahipsiz köpek sorunu: 4 milyon köpek olduğu tahmin ediliyor,” [Online]. Available: https://www.bbc.com/turkce/articles/crg7y137pjzo. [Accessed: Nov. 21, 2024].

[3] Etimesgut Municipality, "Homepage," [Online]. Available: https://www.etimesgut.bel.tr/. [Accessed: Dec. 21, 2024].

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[5]T. M. Filho, "American Kennel Club Dataset," GitHub repository, https://github.com/tmfilho/akcdata/blob/master/data/akc-data-latest.csv (accessed Dec. 24, 2024).

THANK YOU FOR YOUR ATTENTION!