



# Knight Foundation School of Computing and Information Sciences

## Fall 2024 Senior Design Project

# PetGuardian

Student: Valerie Hernandez  
Instructor/Faculty: Masoud Sadjadi, Florida International University

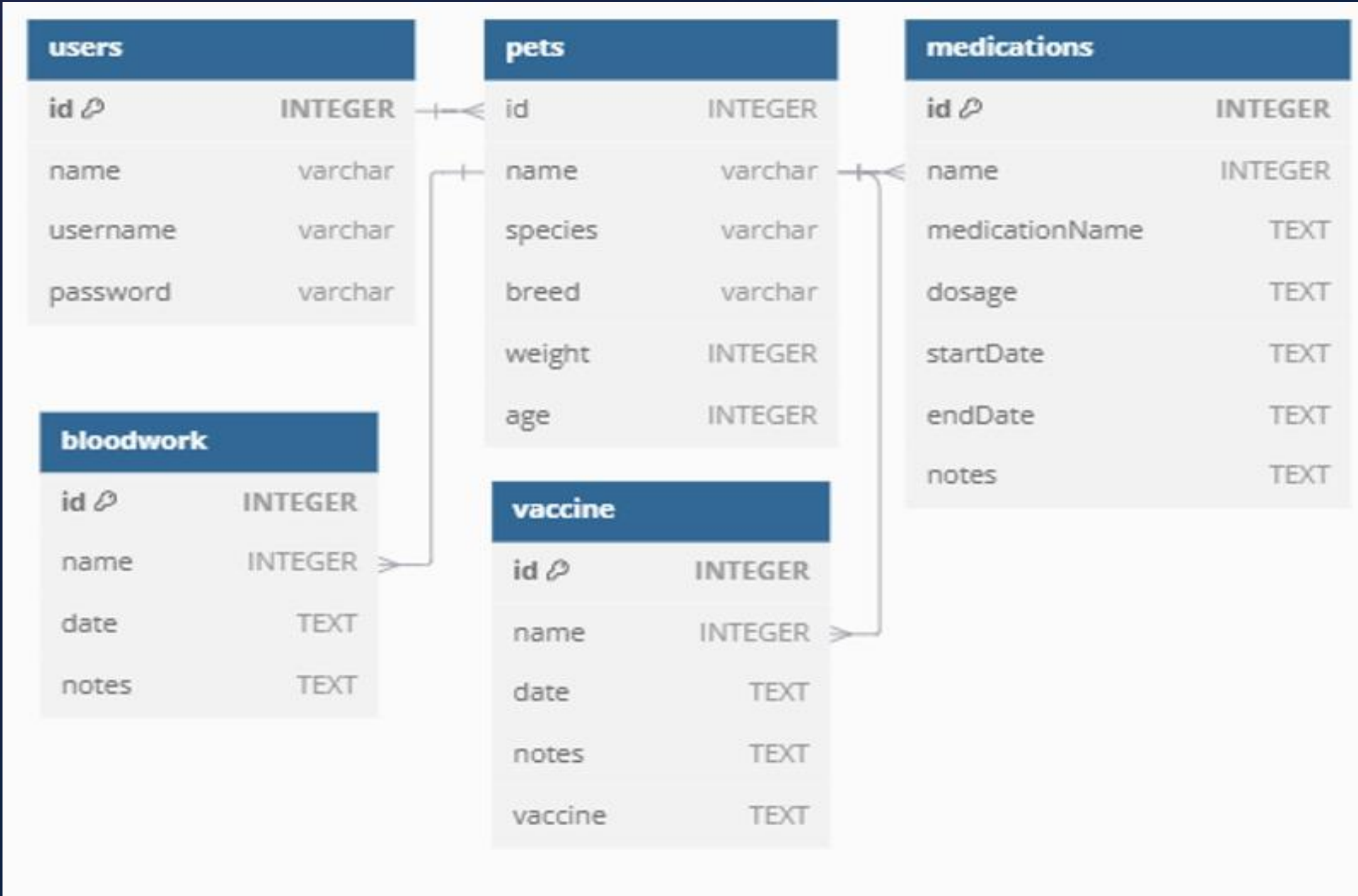


### PROBLEM

Without the proper resources, taking care of a pet's health and wellbeing can be a difficult task. Important information including immunization records, prescription schedules, and bloodwork records are frequently lost or dispersed, which results in missed appointments or treatments. Finding reputable veterinarians is another major obstacle, particularly while traveling or in unfamiliar places. Furthermore, it is frequently difficult for pet owners to find reliable and useful advice on the best ways to take care of their animals. These challenges can jeopardize the health and happiness of pets and cause owners needless stress.

### OBJECT DESIGN

- Express Application (app): Encapsulates routing and server setup.
- Database Object (db): Handles database interactions like creating tables, inserting users, and querying data.



### VERIFICATION

Pet Guardian was thoroughly tested on multiple devices to confirm cross-platform compatibility and responsiveness. We employed Postman to test and validate the API endpoints, and conducted regression testing after each development sprint to ensure that all features remained functional and bug-free.

### REQUIREMENTS

- User Authentication:** A valid username and password are required to log in to the application.
- Internet Connectivity:** A stable Wi-Fi or internet connection is necessary, as the application is web-based.
- Image Upload Capability:** A device with the ability to upload image files (e.g., JPEG, PNG) is required for adding pet pictures.
- Node.js (version 14 or higher)
- SQLite3 database

### IMPLEMENTATION

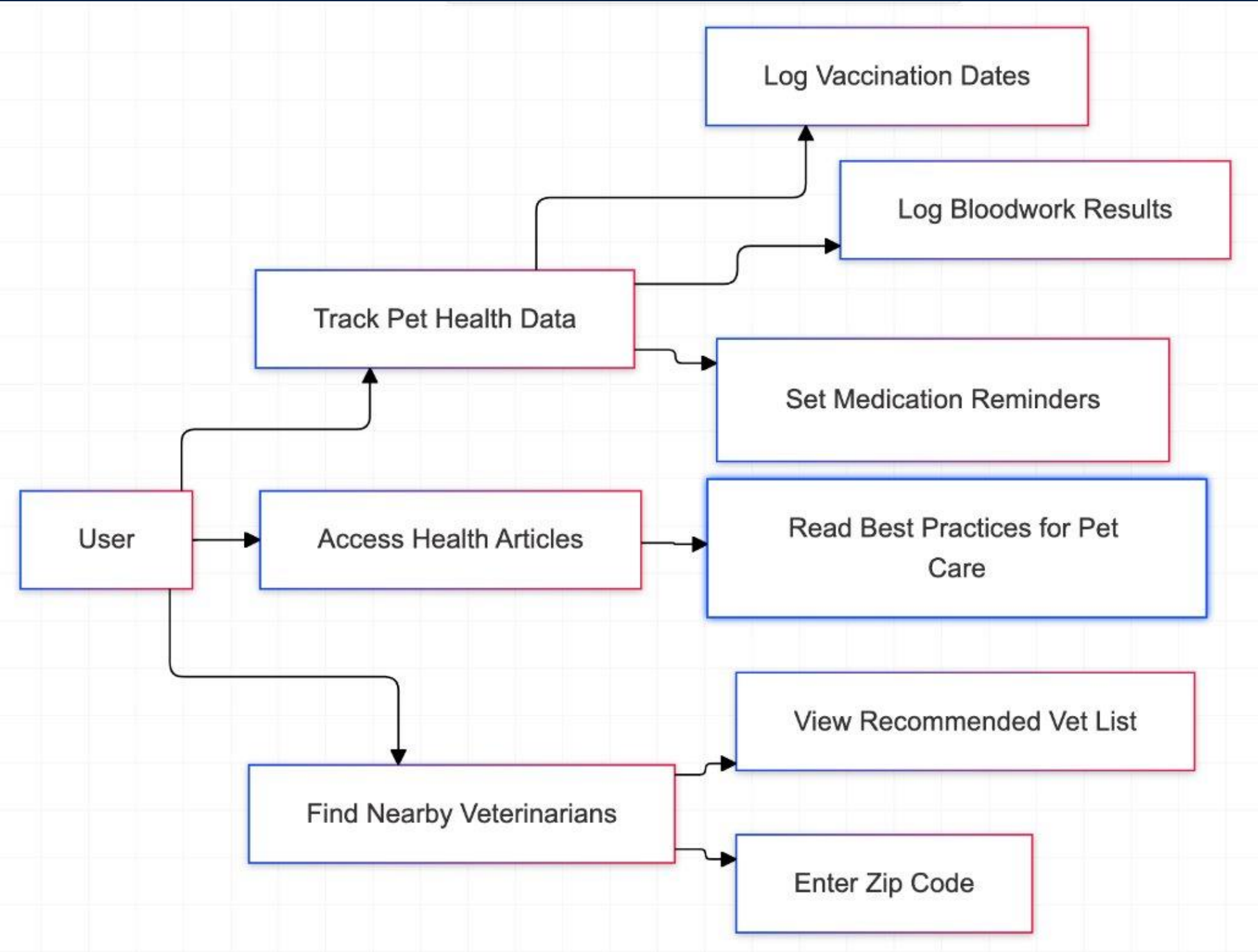
- Developed using React for the front-end, Node.js for the back-end, and SQLite for the database.
- Node.js was used for user authentication, allowing secure logins with a username and password.
- The medical section was built with React, offering an intuitive interface for tracking and displaying pet health information.
- Express was utilized to create API routes, facilitating seamless data exchange between the front-end and the database.
- Features such as uploading pet images and using the vet finder tool (based on the user's zip code) were implemented.

### INDIVIDUAL CONTRIBUTIONS

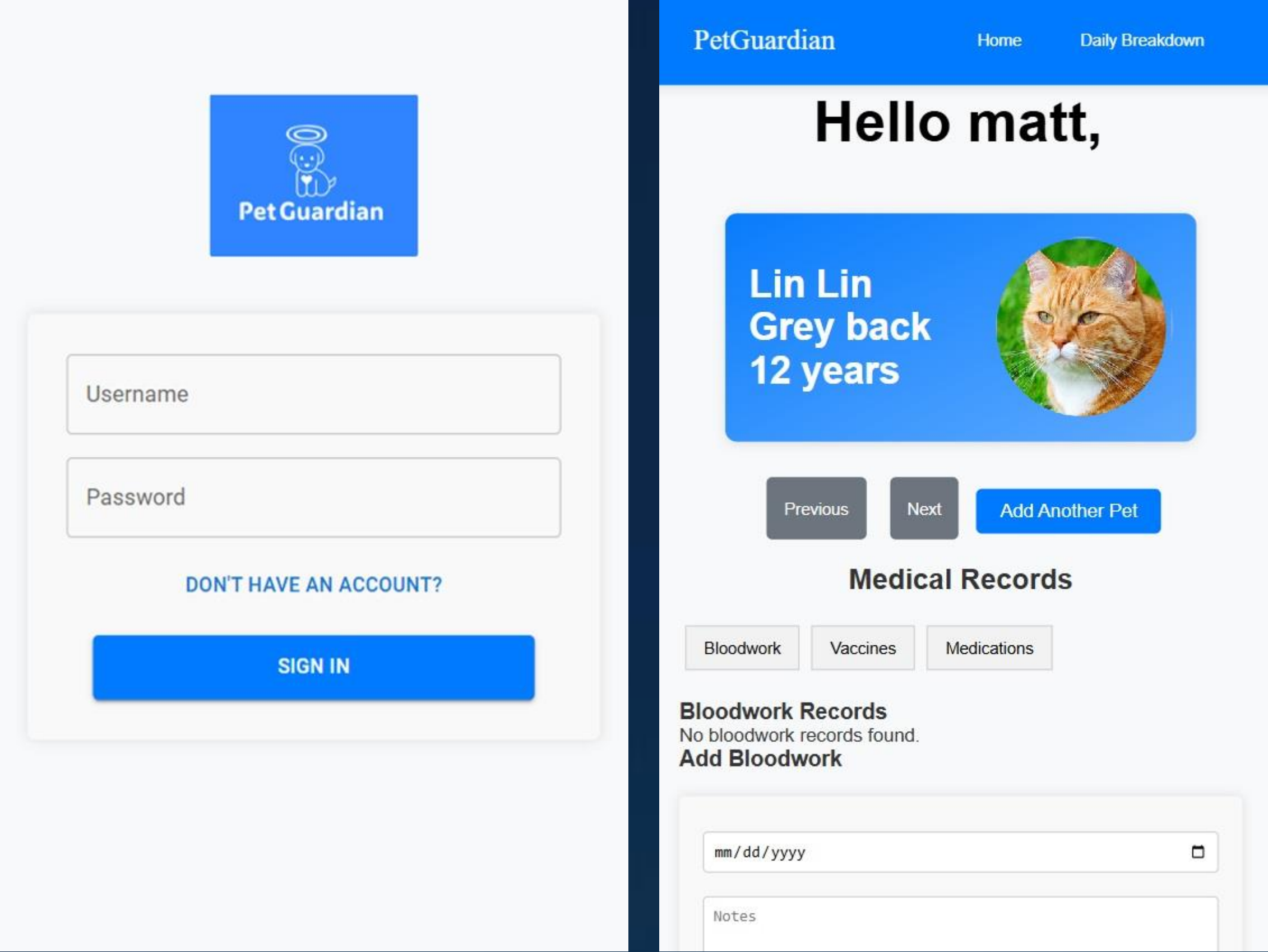
As a member of the PetGuardian team, I took the lead in hosting and facilitating all Scrum meetings and documentation discussions, ensuring the team stayed aligned with our goals and timeline. I actively participated in brainstorming sessions, contributing ideas to enhance features such as the pet health record system and vet finder tool. Additionally, I ran the web application on my own device during development phases to test its functionality, verifying that it operated smoothly without glitches or bugs. My role focused on coordinating team efforts, supporting project documentation, and ensuring the application met user expectations.

### SYSTEM DESIGN

The app uses a React frontend for user interaction, a Node.js backend with Express for API processing and user authentication, and SQLite for storing user and pet data.



### APPLICATION



### SUMMARY

This wellness web application provides a comprehensive solution to simplify pet health management. Users can easily track and update vital information, such as vaccination records, bloodwork results, and medication schedules, all in one place. The integrated vet finder makes locating nearby veterinarians quick and hassle-free, ensuring better access to care. Additionally, the curated article section offers trusted guidance on pet health best practices, empowering owners to make proactive, informed decisions. By addressing common challenges, this application promotes healthier, happier pets and greater confidence for their owners.

### ACKNOWLEDGEMENT

