PetSpace

PROJECT REPORT

4th Year Project ‘PetSpace’
Student: Emma O’Connor
Student Number: C00237292
Submission Date: 17/04/2023

Contents

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1. Introduction

The purpose of this report is to provide the reader with a detailed overview of the completed student project.

This document entails a description of the completed app “PetSpace” along with a technical description.

The UI/UX will be discussed accompanied by screenshots of the system. The database structure along with testing/findings carried out.

The challenges/issues encountered throughout the journey of the project will also be discussed. The Technical and learning outcomes from undertaking this project and finally, a review of the finished project along with a discussion of what changes could have been made to improve the project and what could be done differently.

2. Project Description

The main functionality goal for the PetSpace application was to provide pet owners a simple, straight-forward way of booking an appointment with their vet at anytime throughout the day, edit necessary information about their appointment for the vet to see and to remove their appointment if circumstances permit them to do so; and to track their upcoming appointments. The goals set for the pet owner have been met. They can email their vet without having to book an appointment. When a pet owner books an appointment, they have the option to have an emailed appointment confirmation sent to them. They are able to view their appointment securely on the PetSpace app and edit their pet information.

For Vets, the main functionality was to be able to login to a secure system and view their upcoming appointments for the next week in a structured and simple setting. The goals for the vet side of the application have been met. Vets can log into the system securely and view upcoming appointments, past appointments, create reports for pets and have all of the necessary appointment/pet/owner details in front of them with the touch of a button. The option to delete, update and print this report information is also available for managing pet records. Vets will also be notified when a booking has been made.

3. Technical Description

3.1 Firebase

Google’s Realtime Database ‘Firebase’ was used as the database for this project. It provides authentication and security features making it easier to secure data and ensure only authorized users can access the features of the application. It is also a real-time database – meaning that any changes made to the data within the database are immediately reflected in the application.

Firebase allows for offline-use which ensures that a user’s information will be stored locally on their device if they lose connection. When the connection is re-established, the user’s data will automatically be updated.

3.2 React

PetSpace was developed using React which is a popular cross-platform JavaScript library for building large scalable applications. This framework was chosen because of it’s multi-use/shared code components; allowing for code to be reused within the application easily. React also works well seamlessly with Firebase to allow for developing powerful applications.

3.3 Nodejs

NodeJS is an open-source, cross-platform JavaScript runtime environment. This framework was used because it provides a platform for building server-side logic for web applications using JavaScript.

3.4 API

EmailJS was used within the project for pet owners to have a way of contacting their vet. It is also reused again when a pet owner books an appointment; an email confirming their appointment details are sent to their email and a copy of these details is also sent to the vet.

3.5 Firebase Features

A number of Firebase features were used for this project such as Firebase Authentication and Firebase Hosting service.

3.6 React-Bootstrap Packages

The following packages were used/installed in order to fit the requirement of the project specification and to ensure that the application functioned correctly.

- Buttons, Forms, Cards, Tables, Modals, Containers, Row and Col

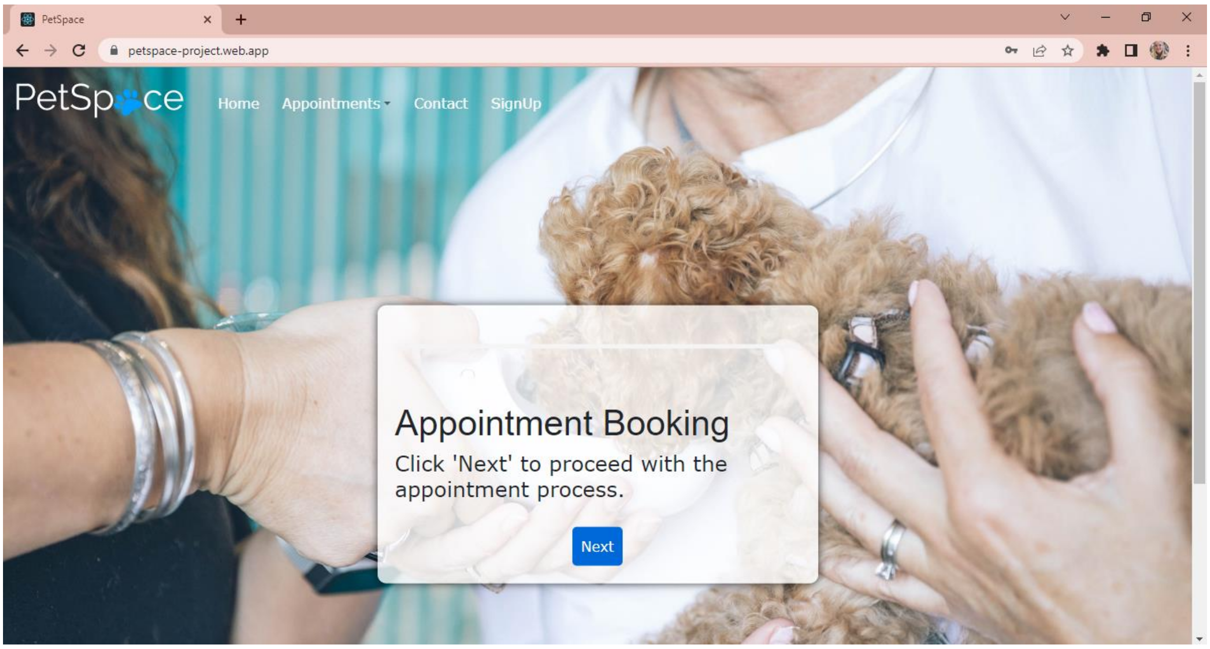
Other packages include react-big-calendar, react-router-dom, moment, dotenv and reactstrap

3.7 GitLab

Gitlab was an essential tool in keeping track of the process along with changes made to the project through regular commits to the repository where the project is stored.

https://gitlab.com/C00237292/petspace-app

3 Final Screens

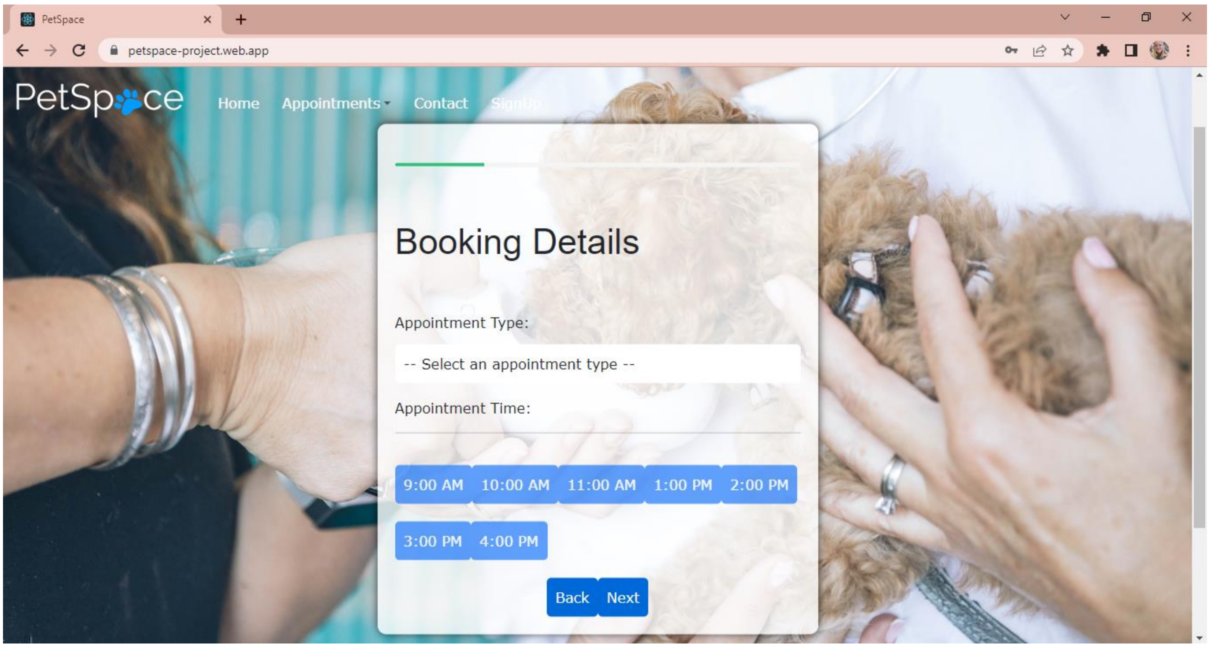


Appointment Booking

Click 'Next' to proceed with the appointment process.

Figure 1 PetSpace home page

App.js defines the main component of a React application and is the root page for PetSpace, which includes several imported components and functions from various external sources. It uses the useState hook to manage the state of a variable called authenticated, which is updated based on the authentication state of a Firebase database. The return statement includes a div with a className of "App" and the Routes component, which defines the routes for the application and the corresponding components to be rendered for each route. The App component is exported as the default export of the file.



Booking Details

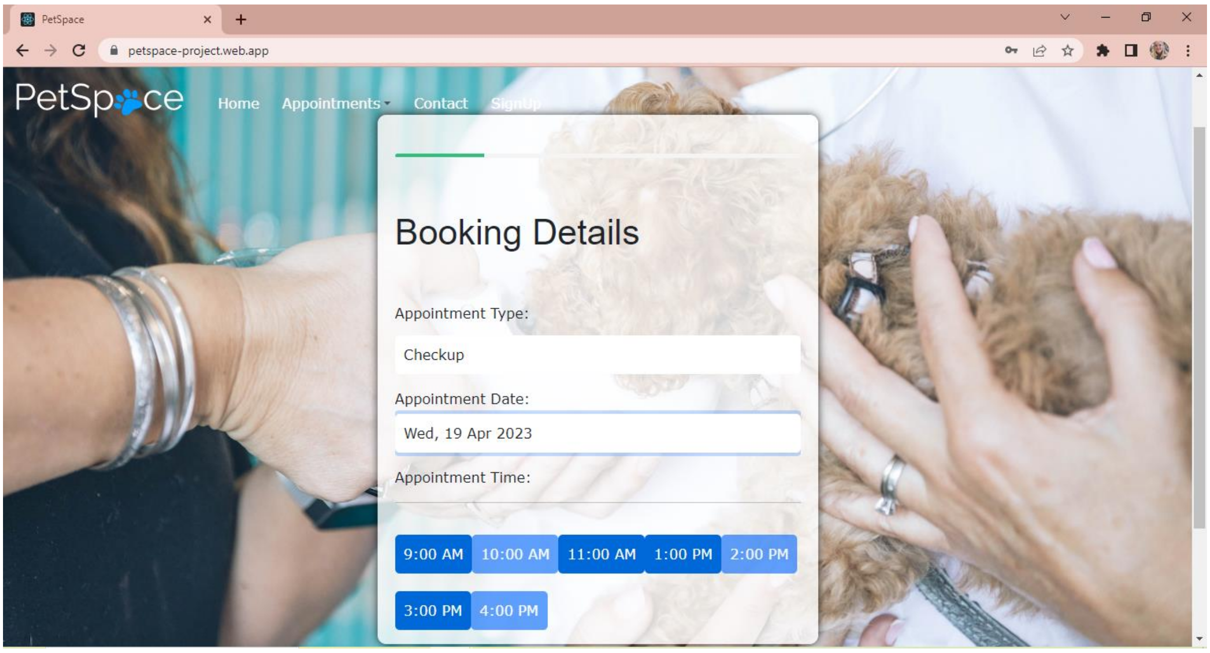
Appointment Type:

-- Select an appointment type --

Appointment Time:

Figure 2 Booking Details Form Step 1

When the user clicks next from the home screen, the booking details screen appears (see Figure 2). This screen contains a form that displays appointment type, date, and time options. It connects to Firebase to retrieve appointment data and displays available dates based on the chosen appointment type. The user can select an appointment type, date, and time slot. The page has functions that handle changes to appointment type, date, and time. It also has a function that calculates available dates based on the selected appointment type and excludes bank holidays and weekends. Once an appointment time is selected (see figure 3), the user can submit the form with the booking details and proceed to the next step.



Booking Details

Appointment Type:

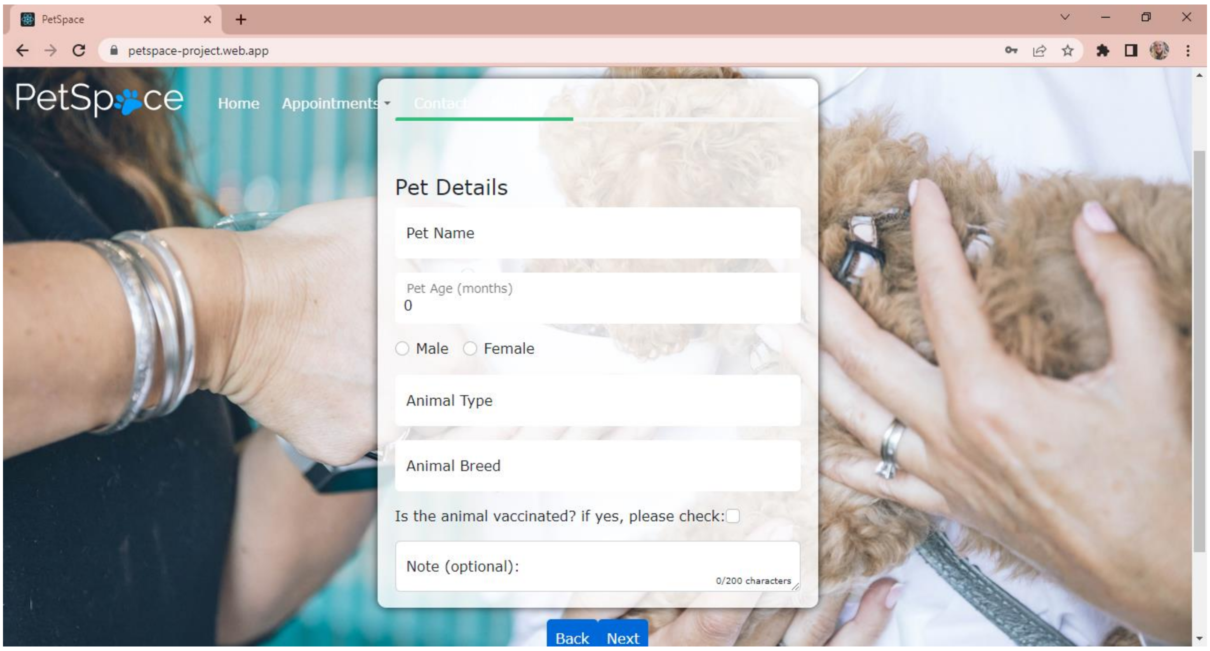
Checkup

Appointment Date:

Wed, 19 Apr 2023

Appointment Time:

Figure 3 Booking Details Form Step 2



Pet Details

Pet Name

Pet Age (months)
0

○ Male ○ Female

Animal Type

Animal Breed

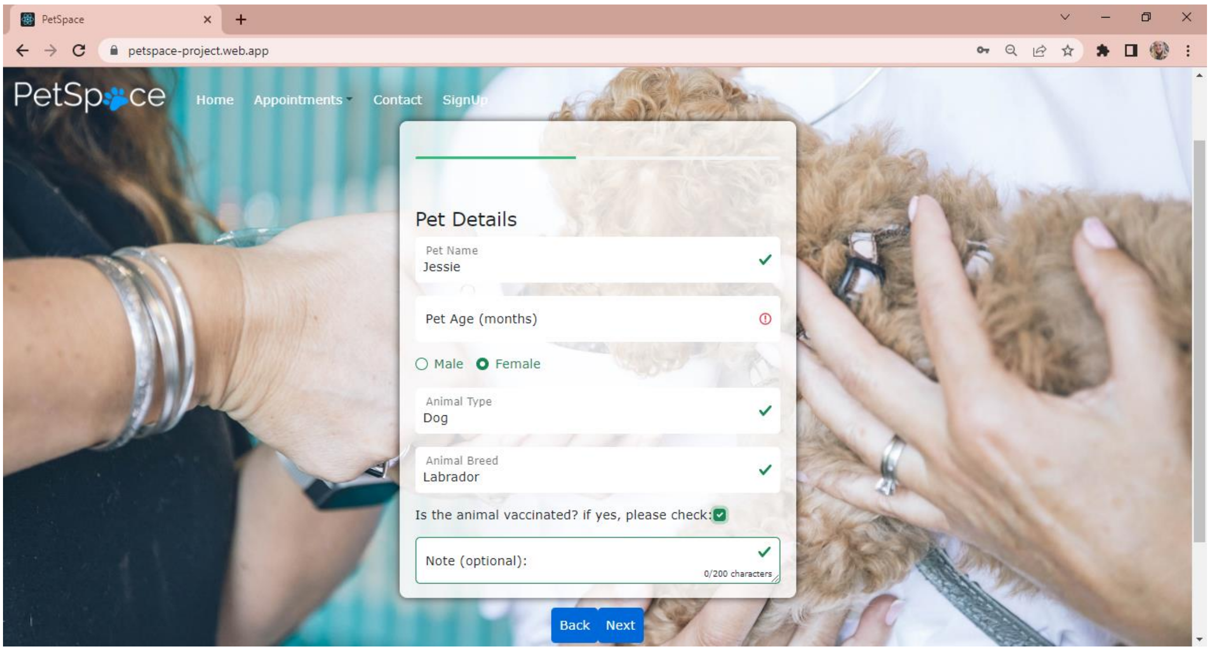
Is the animal vaccinated? if yes, please check: □

Note (optional):

0/200 characters

Figure 4 Pet Details Form Step 1

The user moves to a form with several input fields, labelled with the appropriate information that needs to be entered for their pet's details (see figure 4). The user enters the required information in the input fields, such as their pet's name, age, gender, type, breed, vaccination status, and any notes they want to include. As the user enters the information, the values are updated and validated in real-time, with any errors or missing fields highlighted and prompts provided for additional input if necessary, as can be seen in figure 5. Once all the required fields are filled and validated, the user can proceed to the next step of the booking process.



Pet Details

Pet Name: Jessie ✓

Pet Age (months) ⓘ

○ Male ● Female

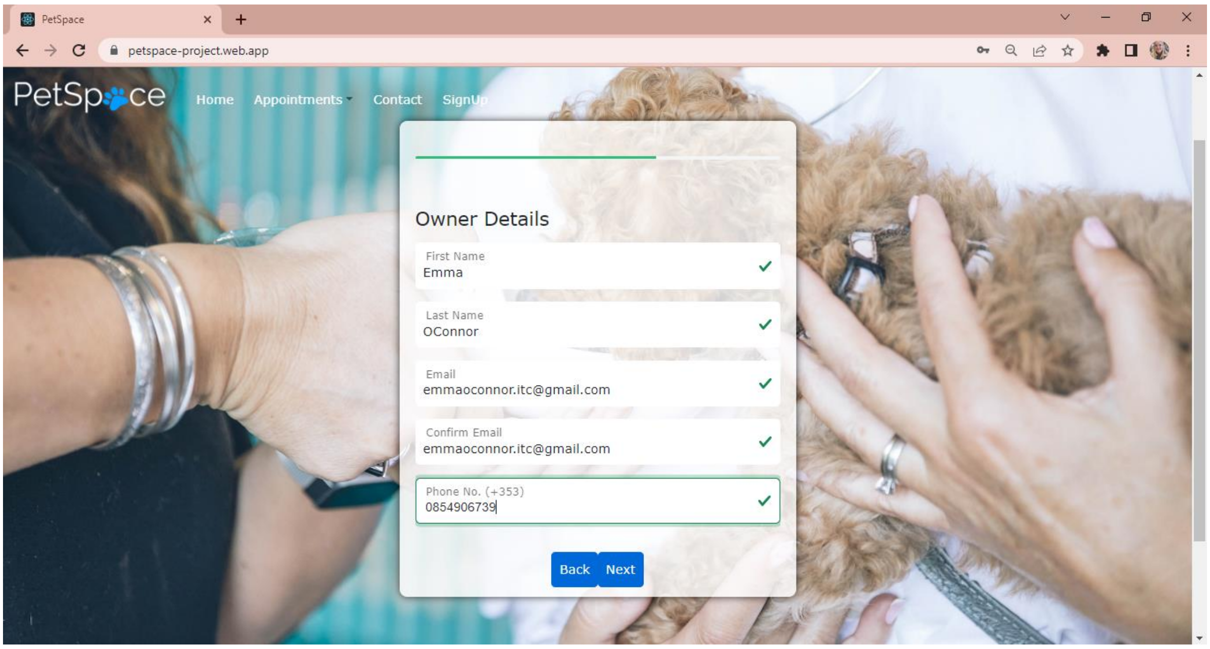
Animal Type: Dog ✓

Animal Breed: Labrador ✓

Is the animal vaccinated? if yes, please check: ☑

Note (optional): ✓ 0/200 characters

Figure 5 Pet Details Form Step 2



Owner Details

First Name: Emma ✓

Last Name: OConnor ✓

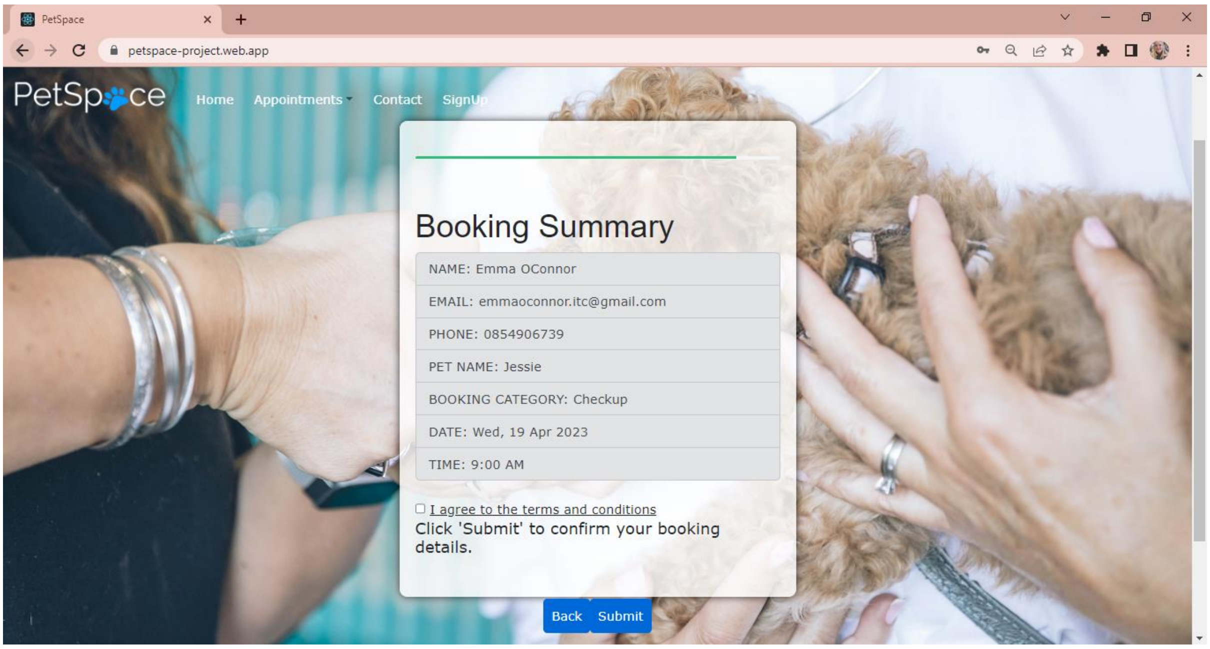
Email: emmaoconnor.itc@gmail.com ✓

Confirm Email: emmaoconnor.itc@gmail.com ✓

Phone No. (+353): 0854906739 ✓

Figure 6 Owner Details Form Step 1

The Pet Owner form (see figure 6) includes fields for the pet owner’s first name, last name, email, confirm email, and phone number. The pet owner needs to fill in all the required fields before they can move to the final step of the form. As they fill in each field, the input is validated in real-time and error messages are displayed if the input is not valid. If the input is valid, the input is marked as valid.



Booking Summary

NAME: Emma OConnor

EMAIL: emmaoconnor.itc@gmail.com

PHONE: 0854906739

PET NAME: Jessie

BOOKING CATEGORY: Checkup

DATE: Wed, 19 Apr 2023

TIME: 9:00 AM

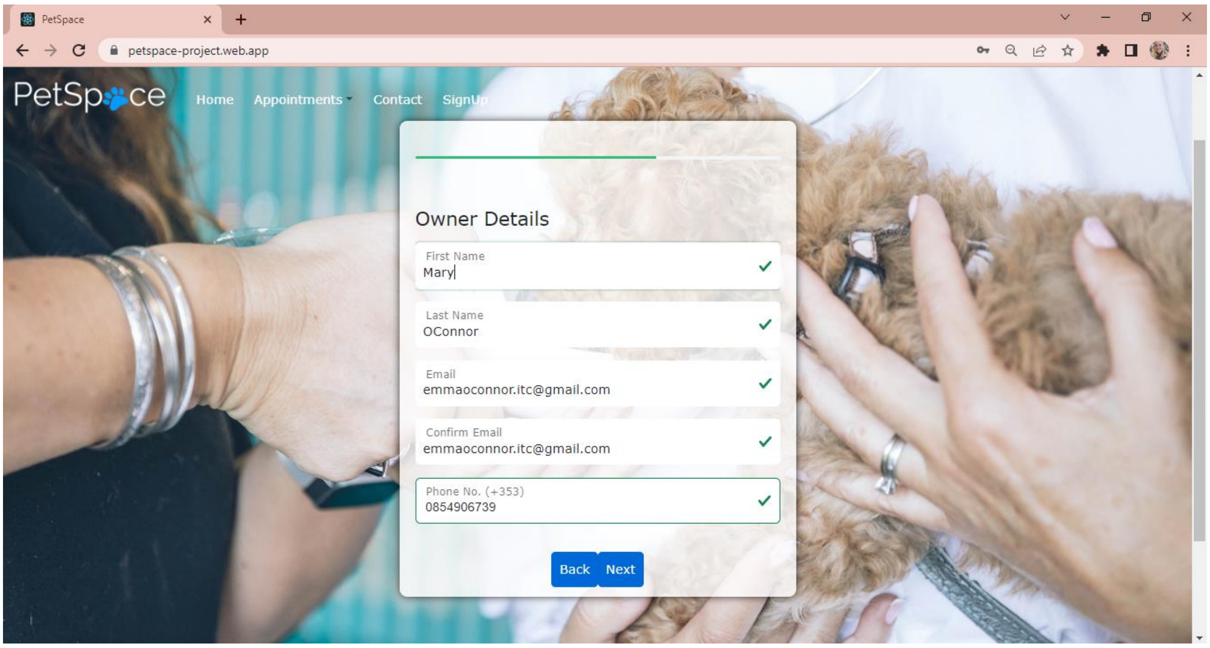
□ I agree to the terms and conditions

Click 'Submit' to confirm your booking details.

Figure 7 Booking Summary Page

Once all the required fields have been filled in with valid input, the Summary (see figure 7) of the information is displayed to the pet owner with their inputted credentials. If any of this information is incorrect, they can move seamlessly through the form to correct it (see figure 8 and 9).

Once the information is correct and the pet owner agrees to the terms and conditions, the pet owner can submit the form by clicking the submit button at the bottom of the page. If any of the required fields are left empty or contain invalid input, an error message will be displayed and the pet owner will need to correct the input before they can submit the form.



Owner Details

First Name: Mary ✓

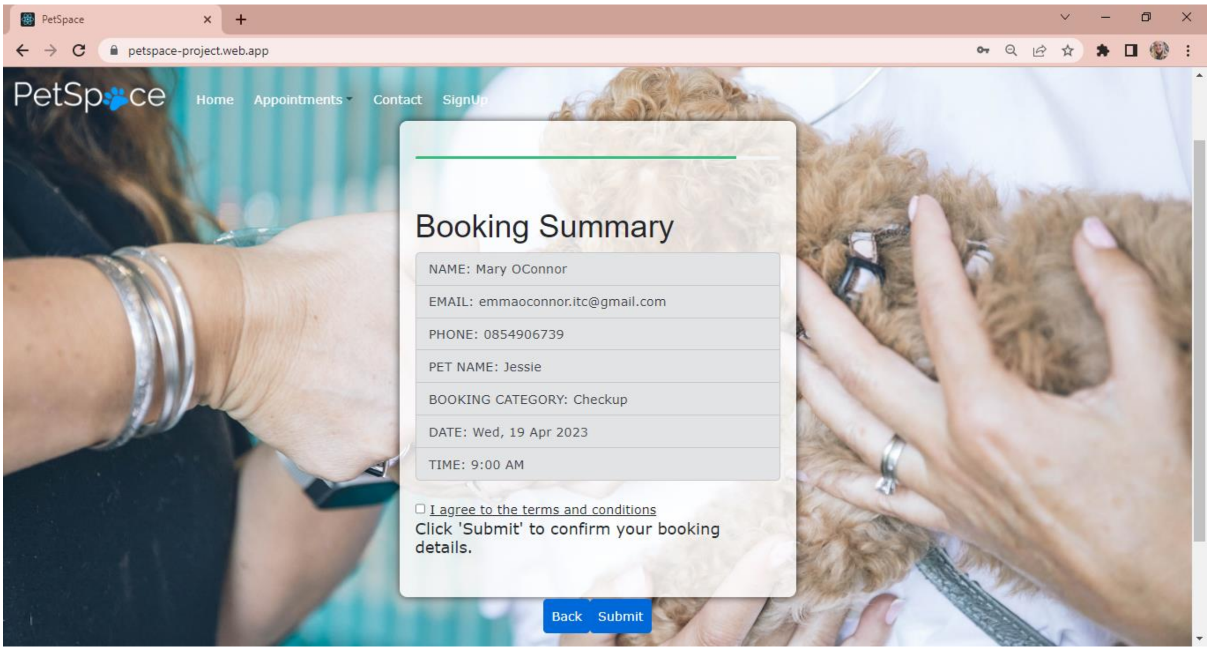
Last Name: OConnor ✓

Email: emmaoconnor.itc@gmail.com ✓

Confirm Email: emmaoconnor.itc@gmail.com ✓

Phone No. (+353): 0854906739 ✓

Figure 8 Correcting Details Part 1



Booking Summary

NAME: Mary OConnor

EMAIL: emmaoconnor.itc@gmail.com

PHONE: 0854906739

PET NAME: Jessie

BOOKING CATEGORY: Checkup

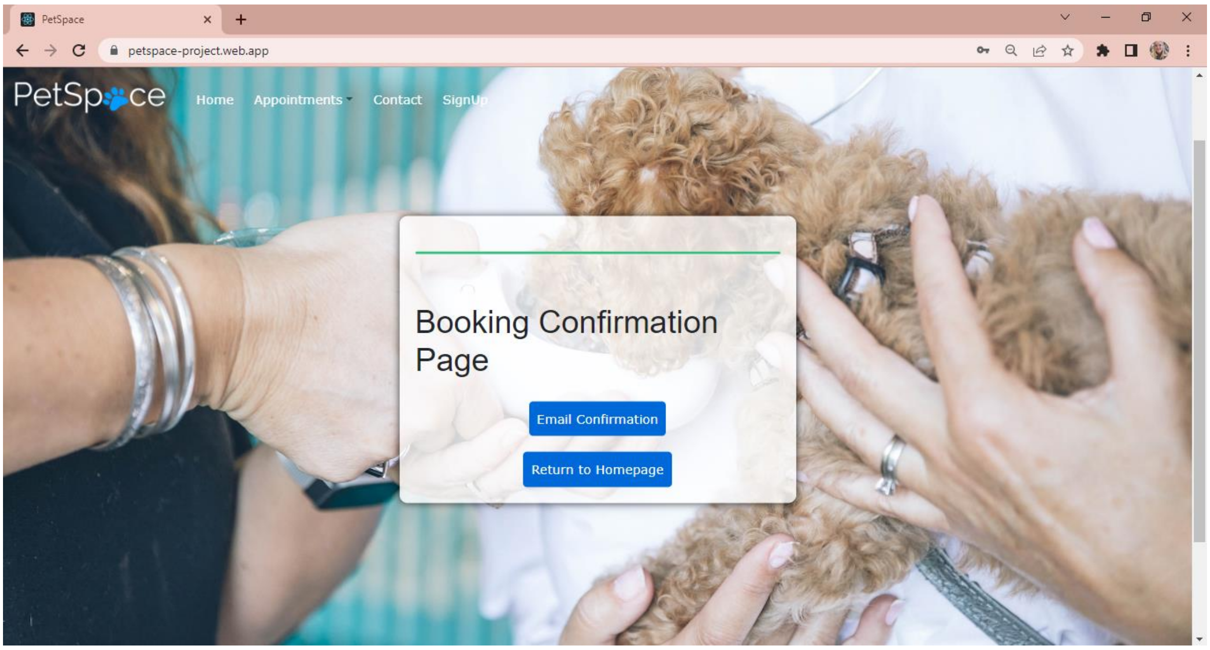
DATE: Wed, 19 Apr 2023

TIME: 9:00 AM

□ I agree to the terms and conditions

Click 'Submit' to confirm your booking details.

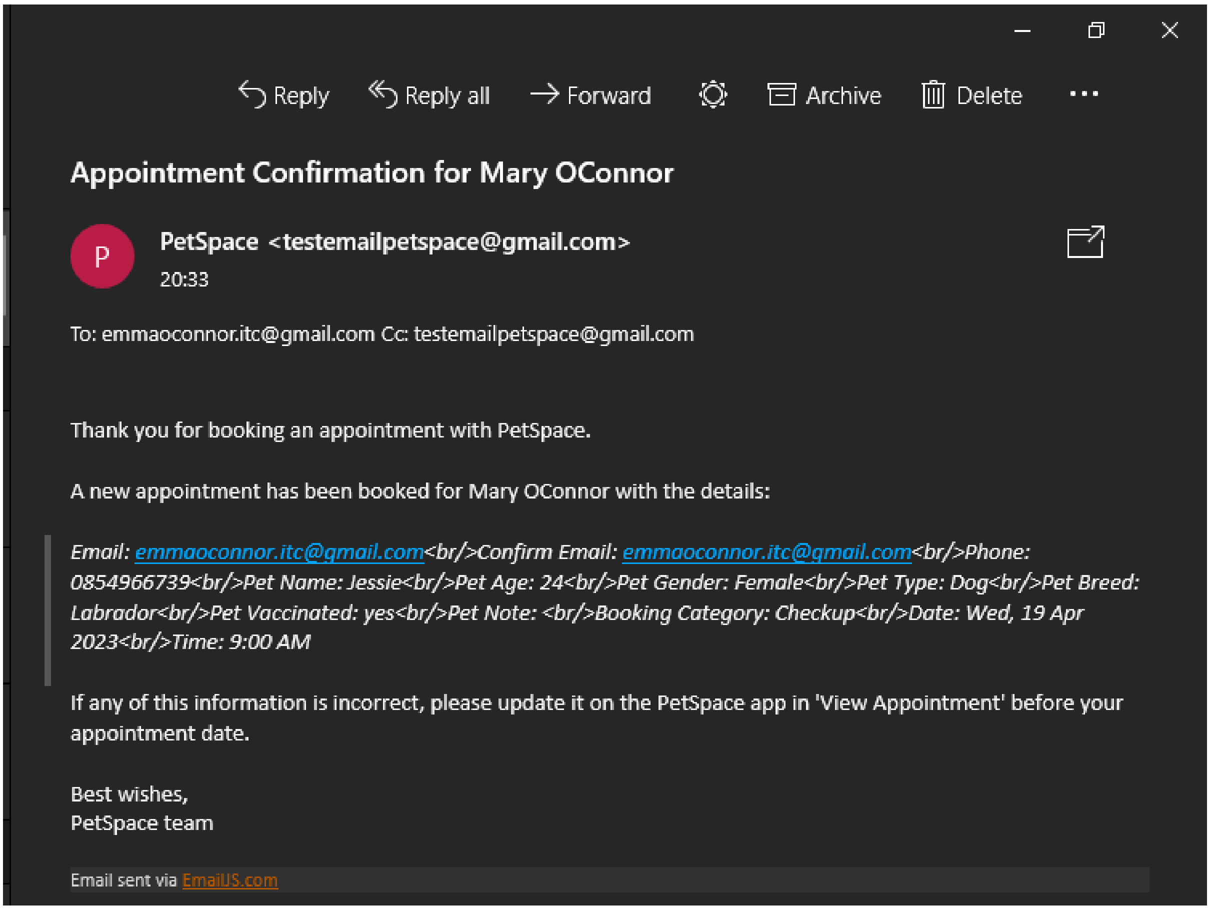
Figure 9 Correcting Details Part 2



Booking Confirmation Page

Figure 10 Booking Confirmation Page

A booking confirmation page is display after submission with two buttons. The components used to handle this page were react-bootstrap's Button component, firebase for data storage, and emailjs for sending emails. When the pet owner clicks the "Email Confirmation" button, it calls the sendEmailHandler function which sends an email to the owner and the booking provider with the booking details (see figure 11). When the owner clicks the "Return to Homepage" button, it redirects them to the homepage of the website. Additionally, the booking details are stored in a Firebase collection called appointments. If an error occurs while storing data, it is logged to the console. Overall, this component provides a simple user interface for booking confirmation and stores the booking information in Firebase.



Appointment Confirmation for Mary OConnor

P PetSpace <testemailpetspace@gmail.com>
20:33

To: emmaoconnor.itc@gmail.com Cc: testemailpetspace@gmail.com

Thank you for booking an appointment with PetSpace.

A new appointment has been booked for Mary OConnor with the details:

Email: emmaoconnor.itc@gmail.com<br/>Confirm Email: emmaoconnor.itc@gmail.com<br/>Phone: 0854966739<br/>Pet Name: Jessie<br/>Pet Age: 24<br/>Pet Gender: Female<br/>Pet Type: Dog<br/>Pet Breed: Labrador<br/>Pet Vaccinated: yes<br/>Pet Note: <br/>Booking Category: Checkup<br/>Date: Wed, 19 Apr 2023<br/>Time: 9:00 AM

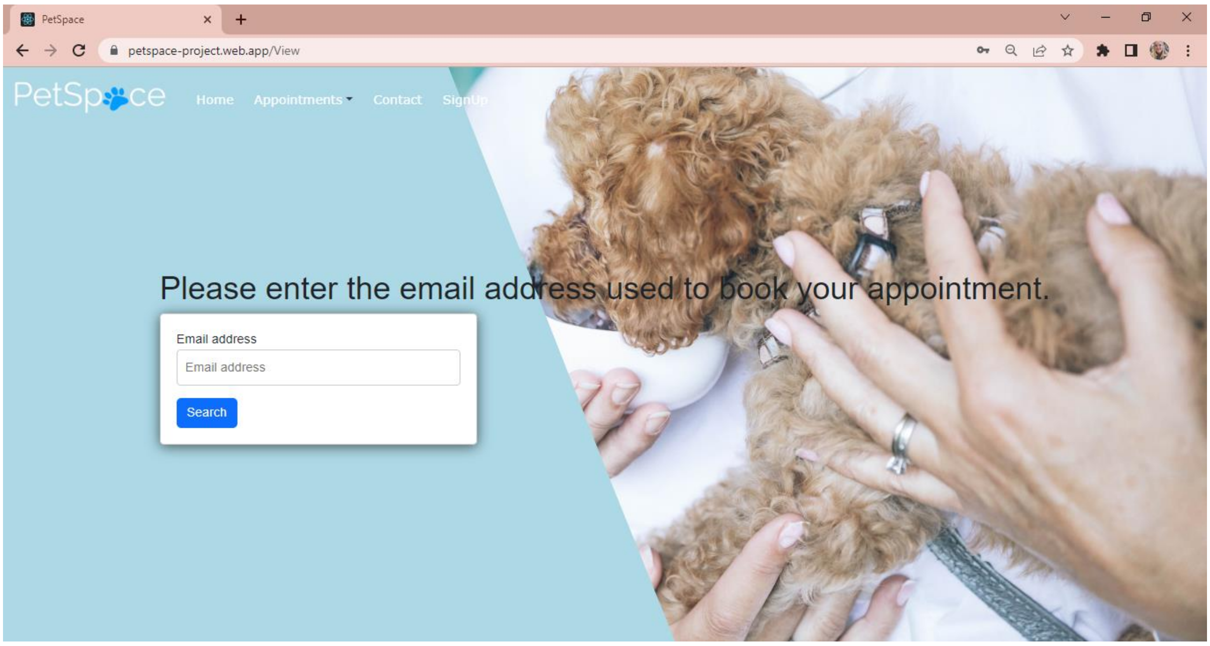
If any of this information is incorrect, please update it on the PetSpace app in 'View Appointment' before your appointment date.

Best wishes,
PetSpace team

Email sent via EmailJS.com

Figure 11 Email Confirmation

Once an appointment has been booked, the pwner can click the "View Appointment" from the dropdown menu that allows users to search for an appointment record by email address (see figure 12). The React Bootstrap library is used to render a form with an input field for email address and a search button. When the search button is clicked, it queries the Firestore database to find the appointment record with the specified email address. If a record is found, it renders the "ViewAppointment" component with the record data. Otherwise, it displays an error message indicating that no record was found (see figure 13). The component also includes a useEffect hook to reset the record state whenever the email input value changes.

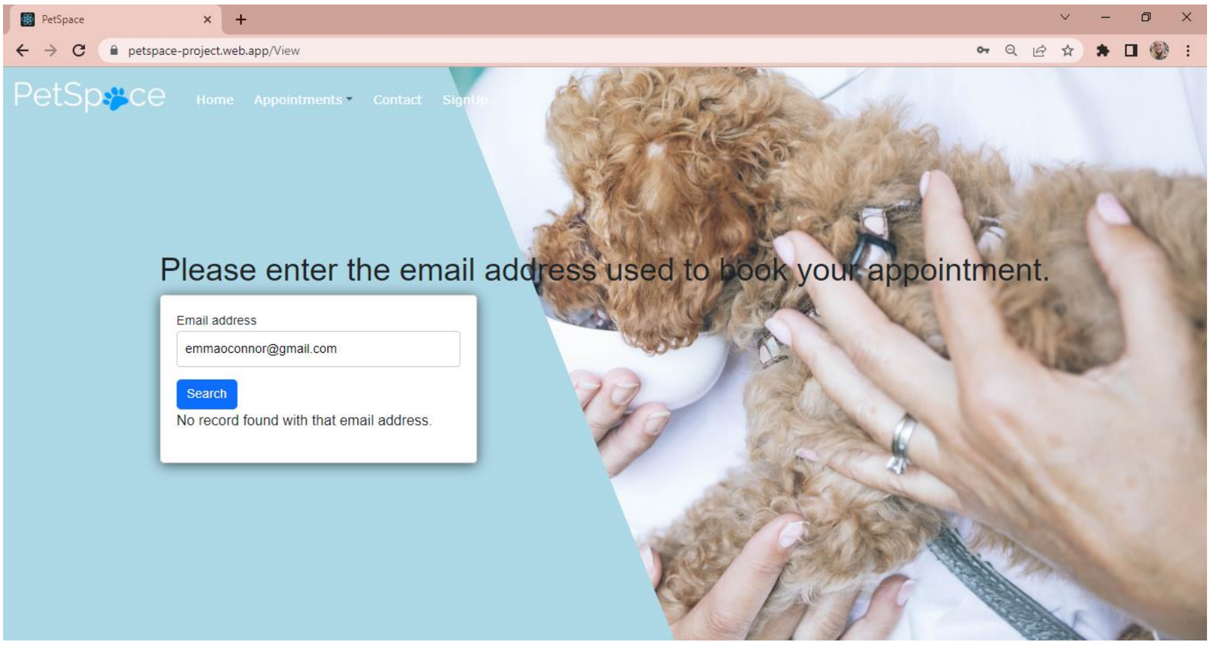


Please enter the email address used to book your appointment.

Email address

Email address

Figure 12 View Appointment Page



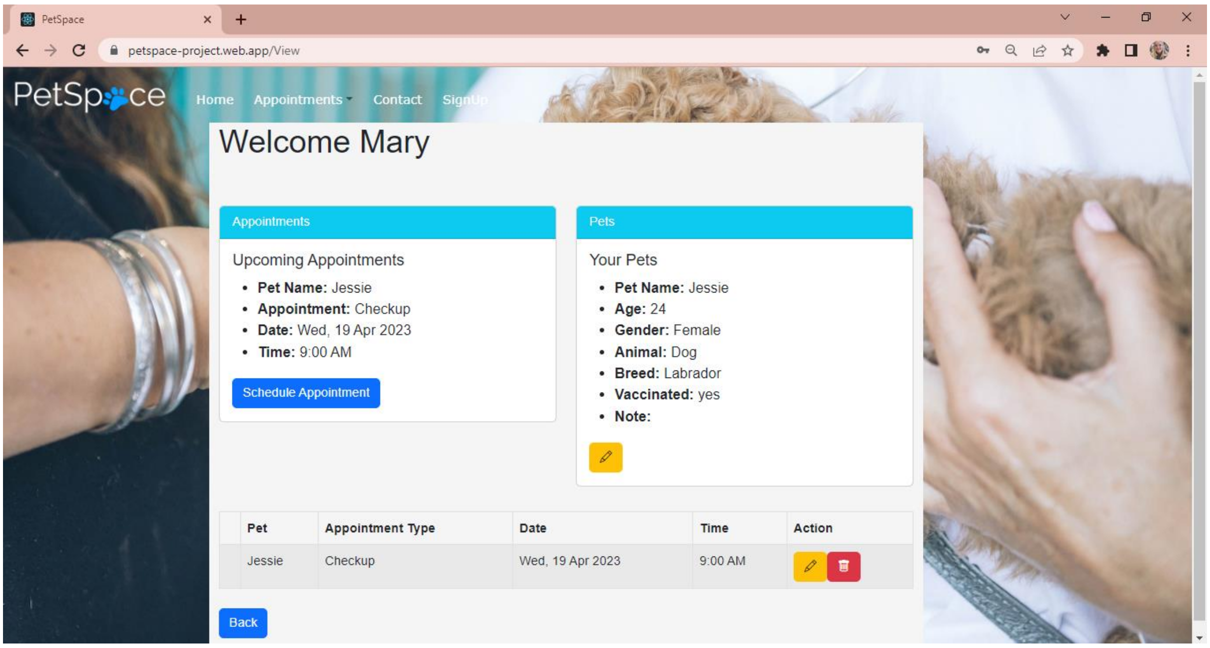
Please enter the email address used to book your appointment.

Email address

emmaoconnor@gmail.com

No record found with that email address.

Figure 13 View Appointment Page with Wrong Credentials Entered.



Welcome Mary

Appointments

Upcoming Appointments

- **Pet Name:** Jessie
- **Appointment:** Checkup
- **Date:** Wed, 19 Apr 2023
- **Time:** 9:00 AM

Schedule Appointment

Pets

Your Pets

- **Pet Name:** Jessie
- **Age:** 24
- **Gender:** Female
- **Animal:** Dog
- **Breed:** Labrador
- **Vaccinated:** yes
- **Note:**

Pet	Appointment Type	Date	Time	Action
Jessie	Checkup	Wed, 19 Apr 2023	9:00 AM	

Back

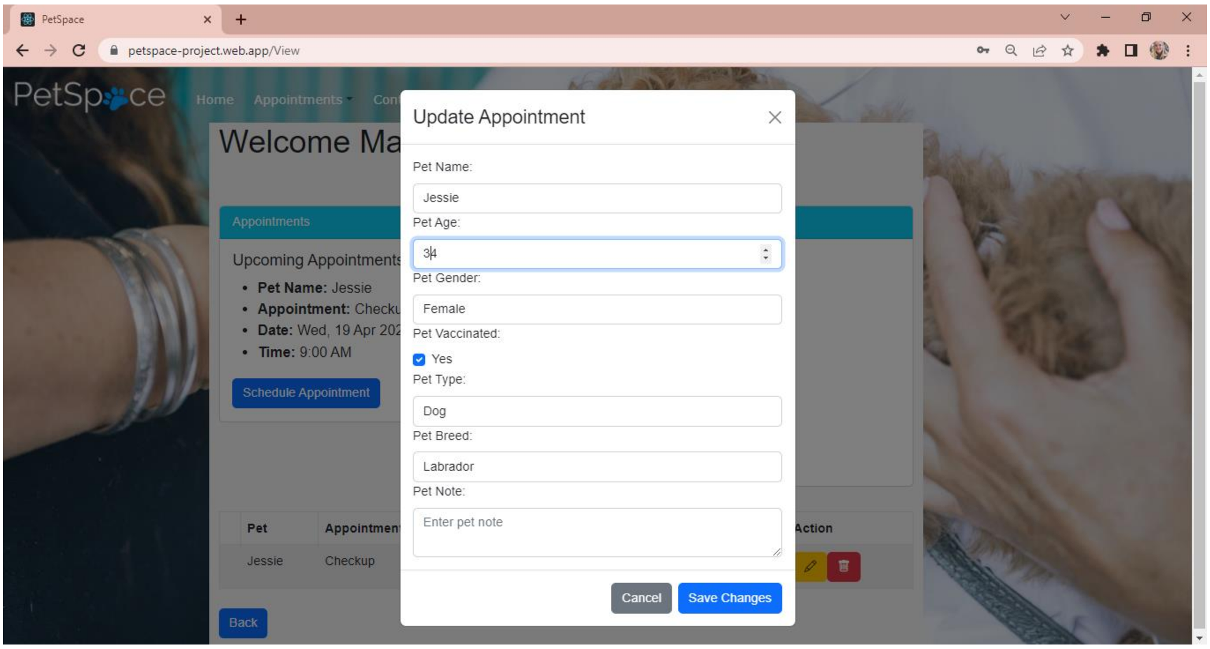
Figure 14 View Appointment Page Successful

If a pet owner is successful in inputting the correct email used to book their appointment, this page (see figure 14) is rendered containing the user's information, including their name, pet information, and appointments. The information is displayed in various elements such as cards, tables, and buttons. There is also an option under the ‘Appointments’ Card to ‘Schedule Appointment’.

The ‘Pet’ modal (figure 15) allows the user to update their pet's information. The modal includes a form with various fields for the owner to input their pet's name, age, gender, vaccination status, type, breed, and notes.

When the owner clicks on the "Back" button, the handleButtonClick function is called and they are returned to the home screen. When the owner clicks on the "Update" button in the modal, the handleCloseModal function is called to close the modal and on successful updating, a green banner is display across the top of the screen to the owner (see figures 15 and 16). The same functionality is used for updating their appointment information (see figures 17 and 18).

When the owner clicks on the "Delete" button in the table, the handleDelete function is called to delete the appointment. The pet owner is prompted if they are sure they wish to delete the appointment in which they can choose to do so or cancel. If they choose to continue with the deletion, another confirmation prompt is displayed to the owner before redirecting them to the home page.



Welcome Ma

Appointments

Upcoming Appointments

- **Pet Name:** Jessie
- **Appointment:** Checku
- **Date:** Wed, 19 Apr 202
- **Time:** 9:00 AM

Schedule Appointment

Pet	Appointmen	Action
Jessie	Checkup	

Update Appointment

Pet Name: Jessie

Pet Age: 34

Pet Gender: Female

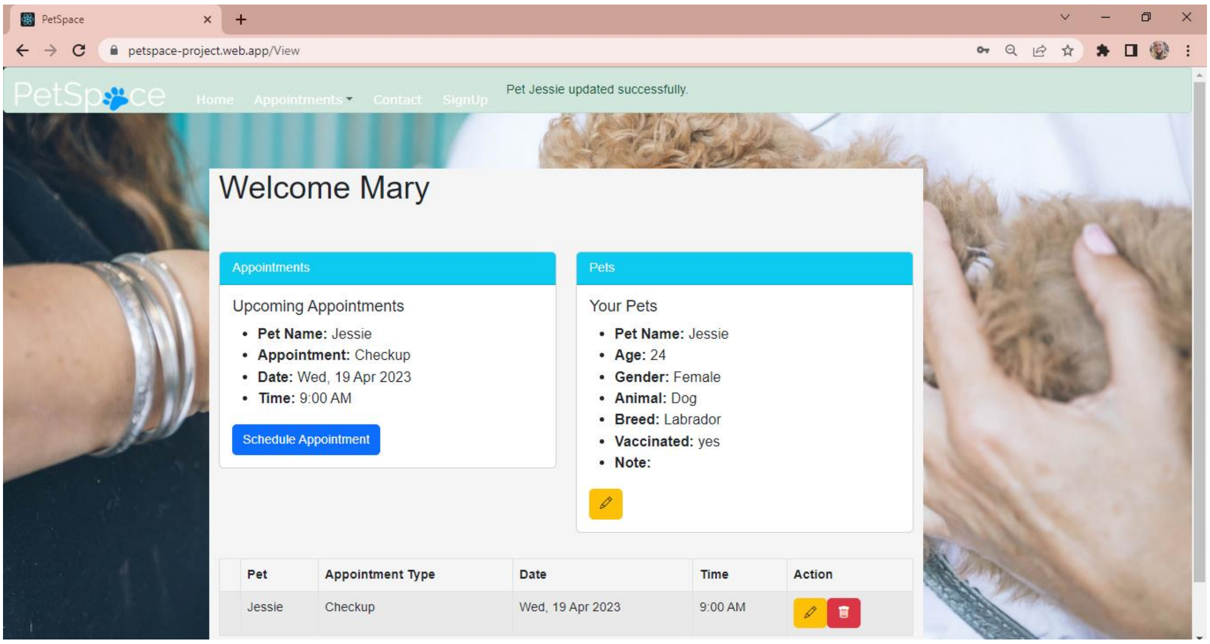
Pet Vaccinated: ☑ Yes

Pet Type: Dog

Pet Breed: Labrador

Pet Note: Enter pet note

Figure 15 Update Pet Functionality



Pet Jessie updated successfully.

Welcome Mary

Appointments

Upcoming Appointments

- **Pet Name:** Jessie
- **Appointment:** Checkup
- **Date:** Wed, 19 Apr 2023
- **Time:** 9:00 AM

Schedule Appointment

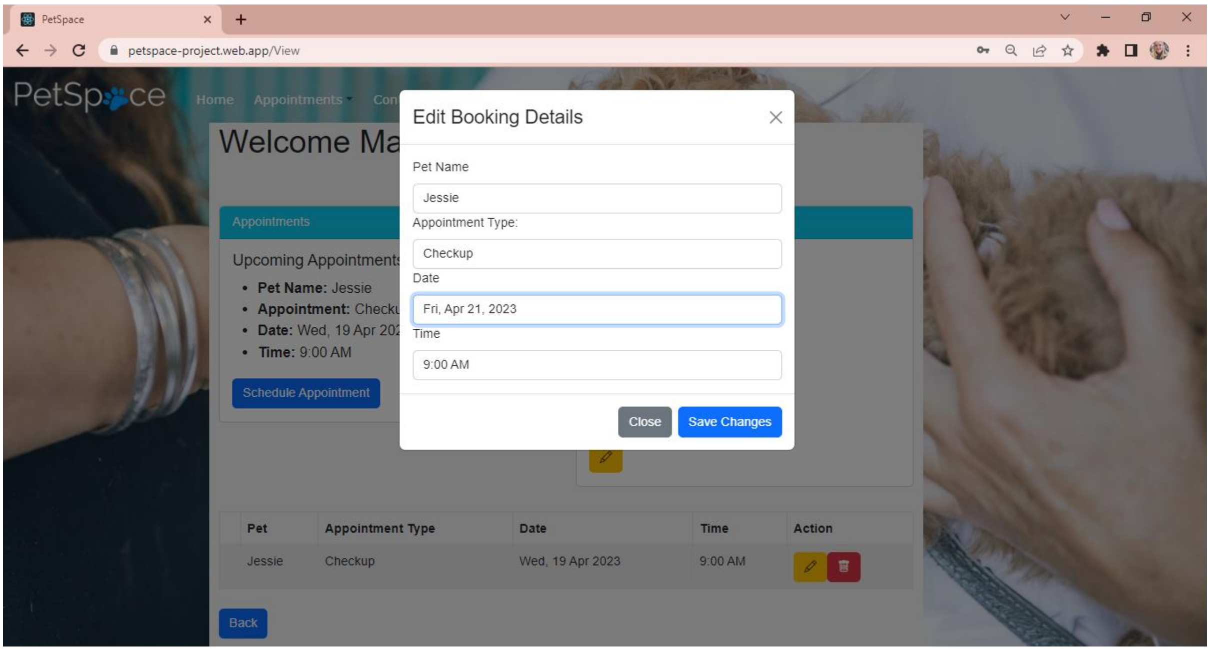
Pets

Your Pets

- **Pet Name:** Jessie
- **Age:** 24
- **Gender:** Female
- **Animal:** Dog
- **Breed:** Labrador
- **Vaccinated:** yes
- **Note:**

Pet	Appointment Type	Date	Time	Action
Jessie	Checkup	Wed, 19 Apr 2023	9:00 AM	

Figure 16 Update Pet Functionality Successful



Welcome Ma

Appointments

Upcoming Appointments

- **Pet Name:** Jessie
- **Appointment:** Checku
- **Date:** Wed, 19 Apr 202
- **Time:** 9:00 AM

Schedule Appointment

Edit Booking Details

Pet Name: Jessie

Appointment Type: Checkup

Date: Fri, Apr 21, 2023

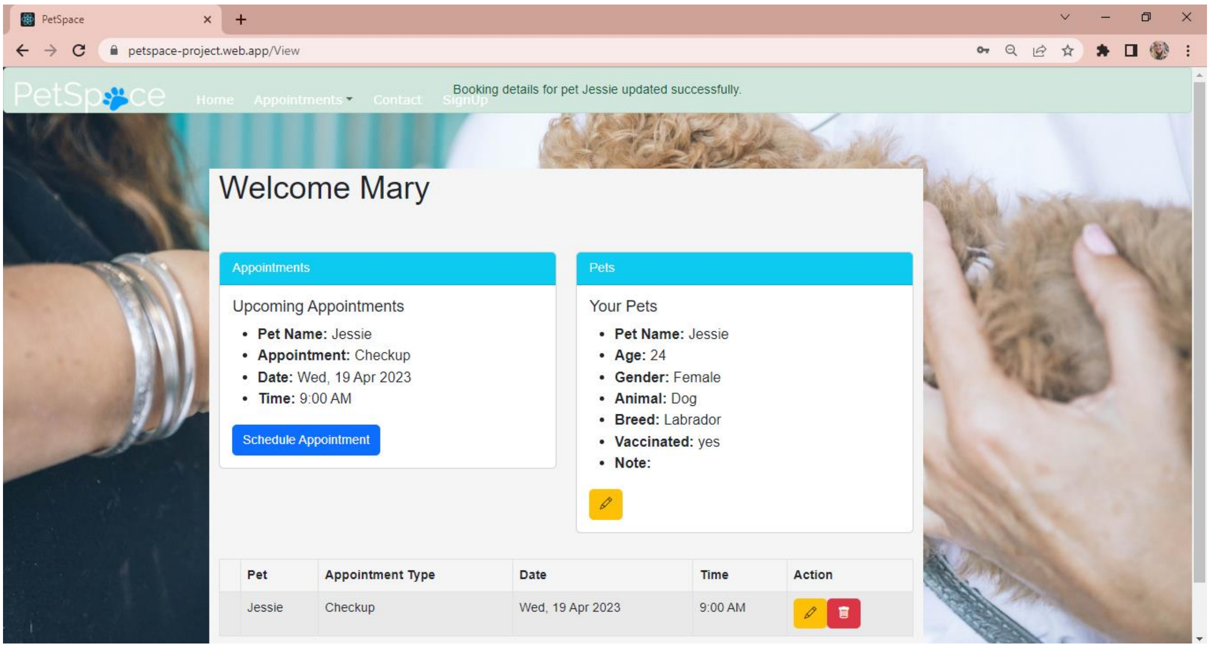
Time: 9:00 AM

Close Save Changes

Pet	Appointment Type	Date	Time	Action
Jessie	Checkup	Wed, 19 Apr 2023	9:00 AM	

Back

Figure 17 Updating Booking Details



Booking details for pet Jessie updated successfully.

Welcome Mary

Appointments

Upcoming Appointments

- **Pet Name:** Jessie
- **Appointment:** Checkup
- **Date:** Wed, 19 Apr 2023
- **Time:** 9:00 AM

Schedule Appointment

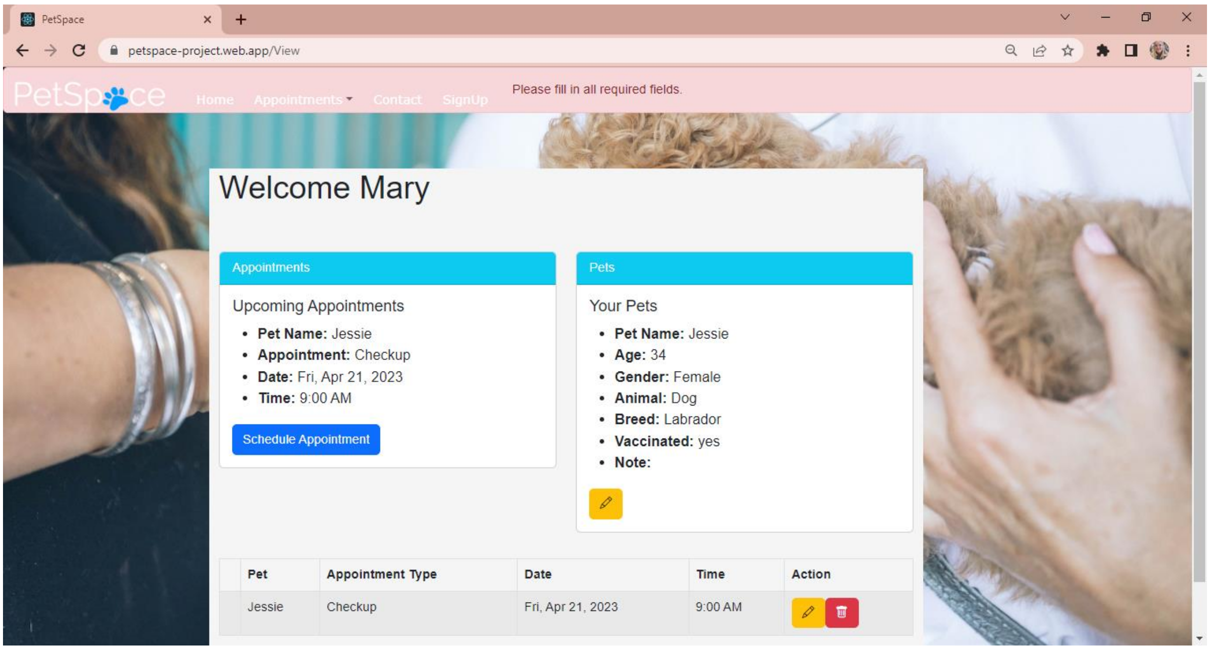
Pets

Your Pets

- **Pet Name:** Jessie
- **Age:** 24
- **Gender:** Female
- **Animal:** Dog
- **Breed:** Labrador
- **Vaccinated:** yes
- **Note:**

Pet	Appointment Type	Date	Time	Action
Jessie	Checkup	Wed, 19 Apr 2023	9:00 AM	

Figure 18 Updated Book Details Successful



Please fill in all required fields.

Welcome Mary

Appointments

Upcoming Appointments

- **Pet Name:** Jessie
- **Appointment:** Checkup
- **Date:** Fri, Apr 21, 2023
- **Time:** 9:00 AM

Schedule Appointment

Pets

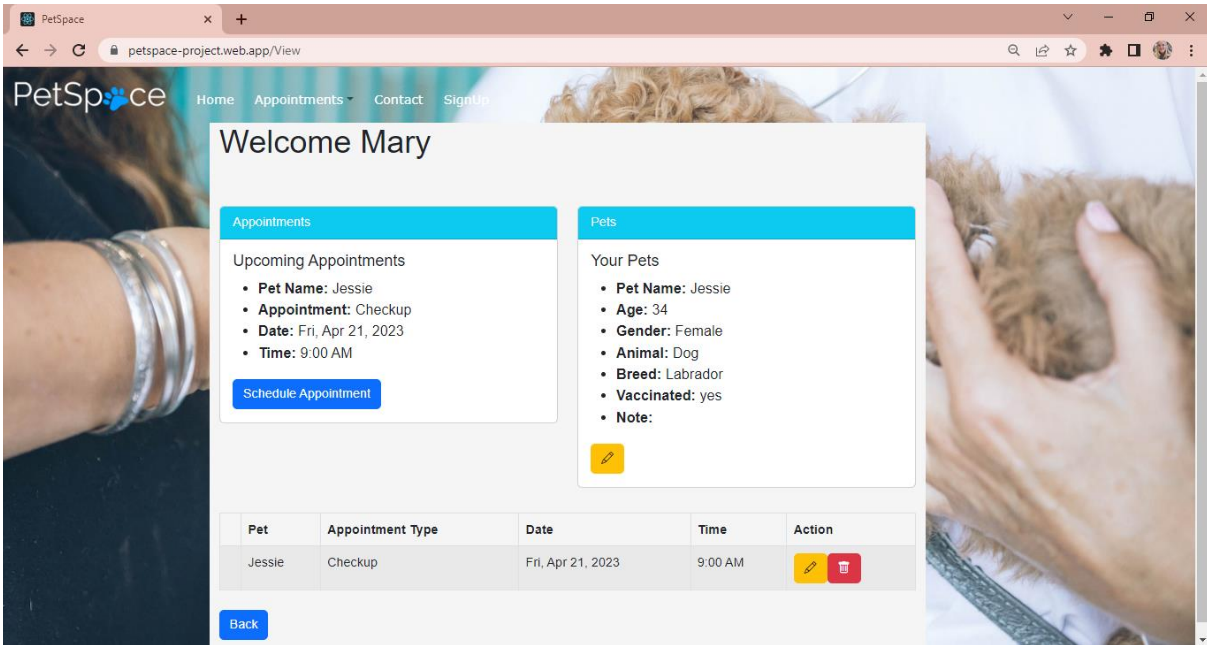
Your Pets

- **Pet Name:** Jessie
- **Age:** 34
- **Gender:** Female
- **Animal:** Dog
- **Breed:** Labrador
- **Vaccinated:** yes
- **Note:**

Pet	Appointment Type	Date	Time	Action
Jessie	Checkup	Fri, Apr 21, 2023	9:00 AM	

Figure 19 Updating Details Unsuccessful

In Figure 19, A red banner is displayed at the top of the screen when the updated details are missing fields/data is incorrect. This functionality is also included when the fields are missing in the updating pet details functionality.



Welcome Mary

Appointments

Upcoming Appointments

- **Pet Name:** Jessie
- **Appointment:** Checkup
- **Date:** Fri, Apr 21, 2023
- **Time:** 9:00 AM

Schedule Appointment

Pets

Your Pets

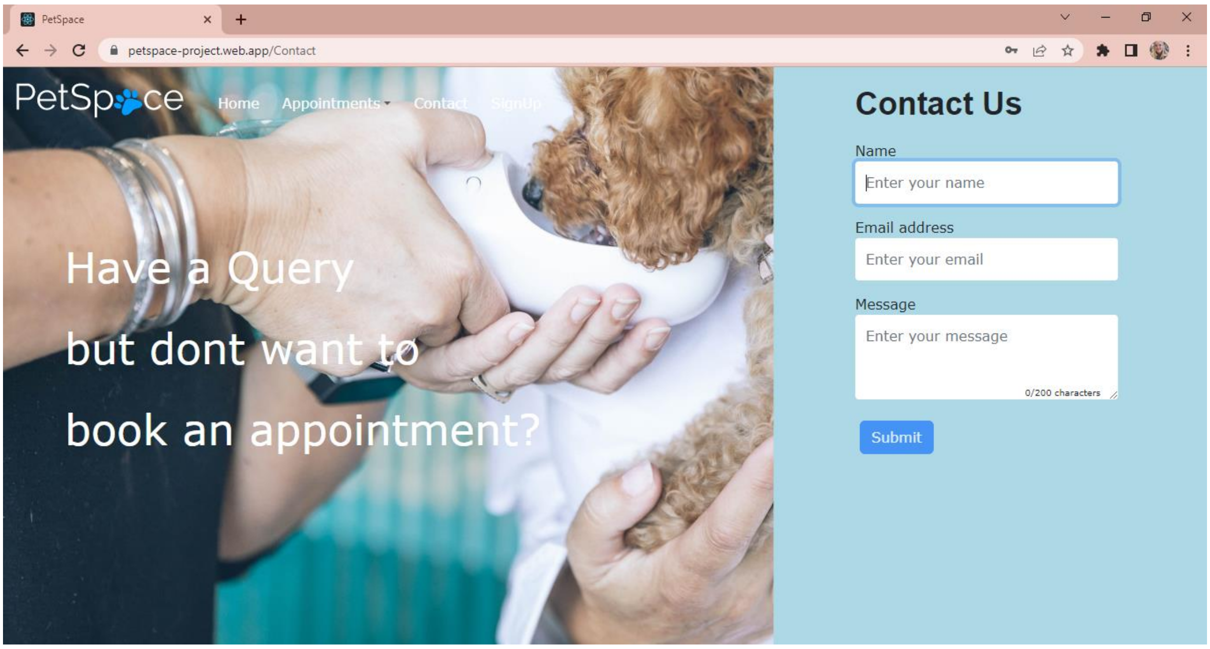
- **Pet Name:** Jessie
- **Age:** 34
- **Gender:** Female
- **Animal:** Dog
- **Breed:** Labrador
- **Vaccinated:** yes
- **Note:**

Pet	Appointment Type	Date	Time	Action
Jessie	Checkup	Fri, Apr 21, 2023	9:00 AM	

Back

Figure 20 Page Updated Successfully

Figure 19 shows the information updated upon reloading of the ‘View’ page.



Have a Query but dont want to book an appointment?

Contact Us

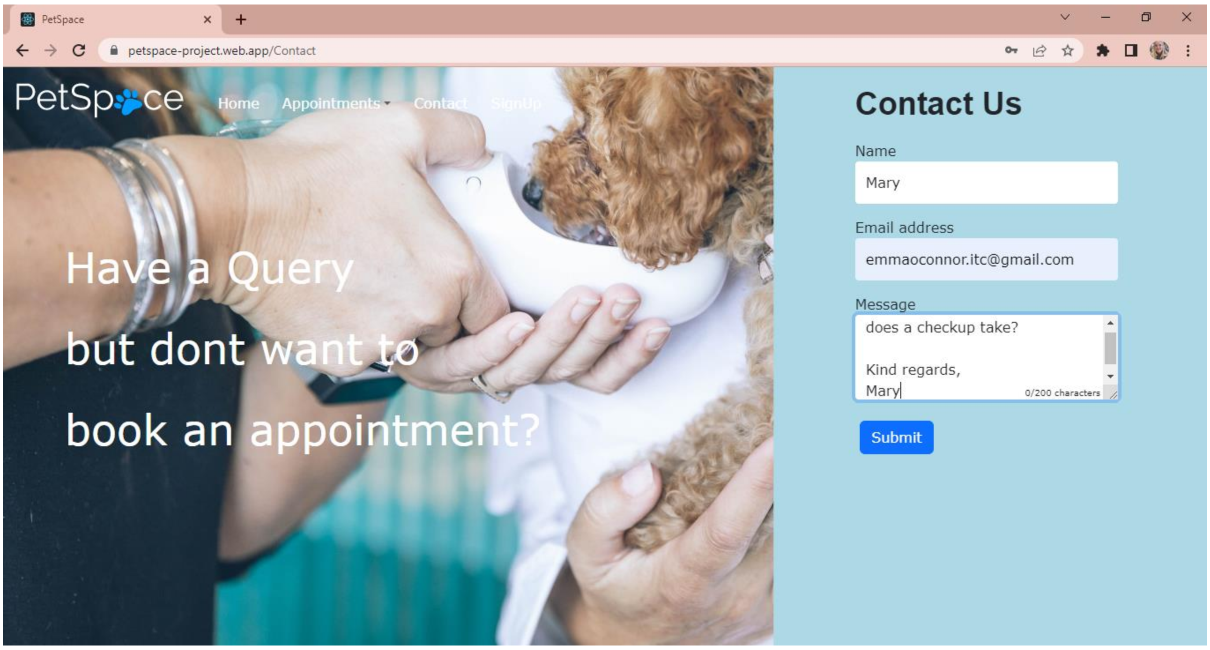
Name: Enter your name

Email address: Enter your email

Message: Enter your message

0/200 characters

Figure 21 Contact Page 1



Have a Query but dont want to book an appointment?

Contact Us

Name: Mary

Email address: emmaoconnor.itc@gmail.com

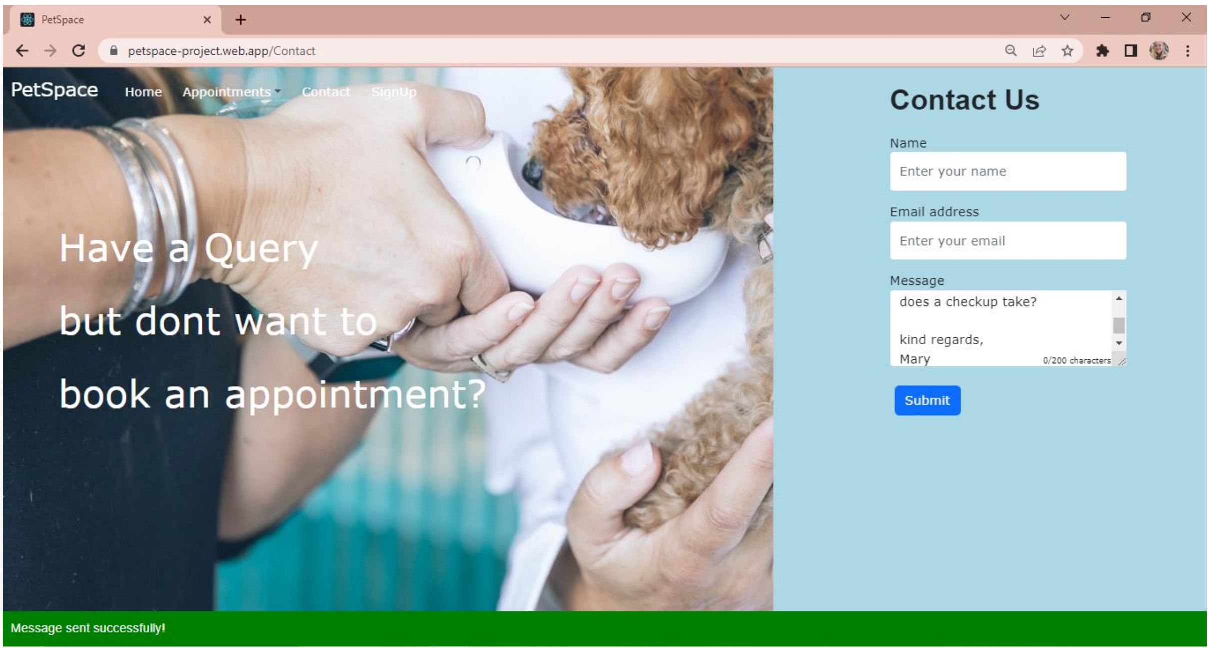
Message: does a checkup take?

Kind regards,
Mary

0/200 characters

Figure 22 Contact Page 2

"Contact" page renders a form for owners to send an email message (see figure 11). It uses the "emailjs" library to handle the sending of emails. The form has three fields: Name, Email, and Message. The submit button will be disabled if any of the fields are empty. When the form is submitted, the "sendEmail" function is called to send the email using the form data. If the email is sent successfully (see figure 22), a success banner is displayed using the "showBanner" state object. The "message" state object is used to display the character count of the message field.



Have a Query

but dont want to

book an appointment?

Contact Us

Name

Enter your name

Email address

Enter your email

Message

does a checkup take?

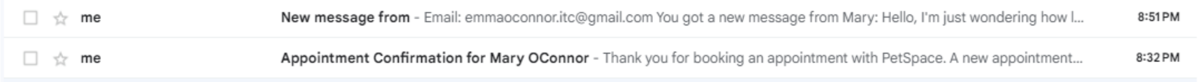
kind regards,
Mary

0/200 characters

Submit

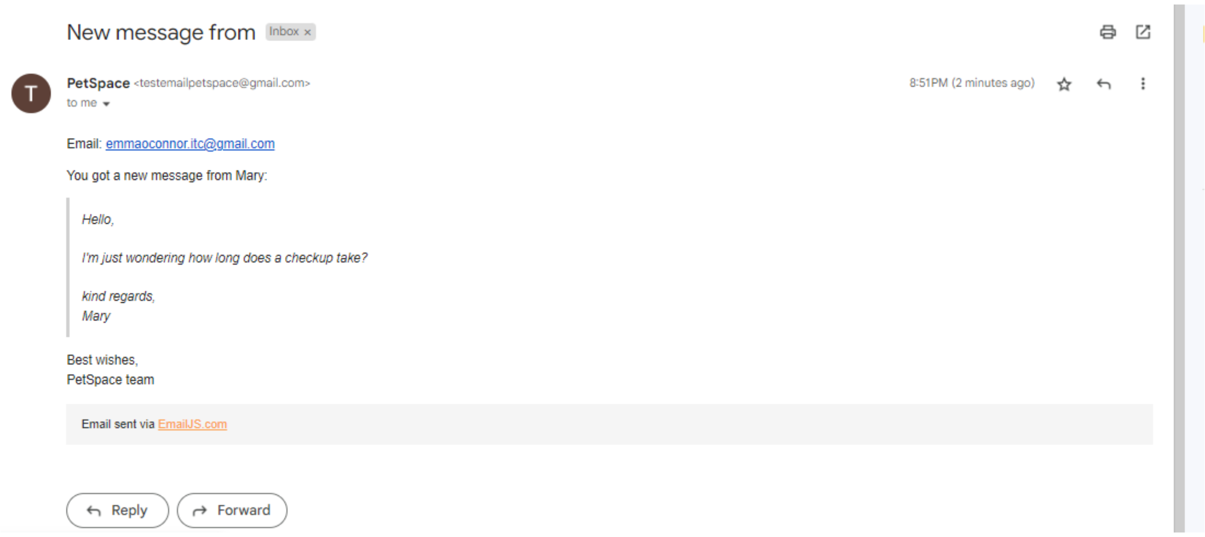
Message sent successfully!

Figure 23 Successful Email Sent



□ ☆	me	**New message from** - Email: emmaoconnor.itc@gmail.com You got a new message from Mary: Hello, I'm just wondering how l...	8:51 PM
□ ☆	me	**Appointment Confirmation for Mary OConnor** - Thank you for booking an appointment with PetSpace. A new appointment...	8:32 PM

Figure 24 Email from Contact page using EmailJS 1



New message from Inbox ×

PetSpace <testemailpetspace@gmail.com>
to me

8:51 PM (2 minutes ago)

Email: emmaoconnor.itc@gmail.com

You got a new message from Mary:

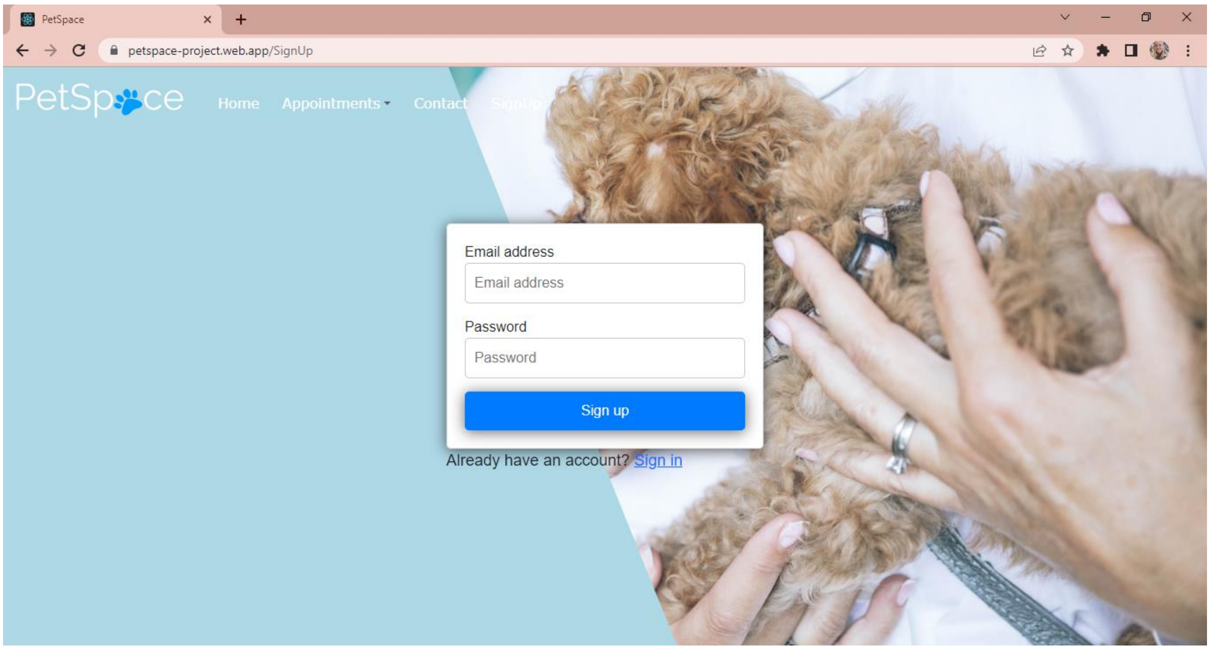
> *Hello,*
>
> *I'm just wondering how long does a checkup take?*
>
> *kind regards,*
> *Mary*

Best wishes,
PetSpace team

Email sent via EmailJS.com

Figure 25 Email from Contact Page using EmailJS 2

Figure 23 and 24 depict the email sent from the Contact page to the Vet.



Email address

Email address

Password

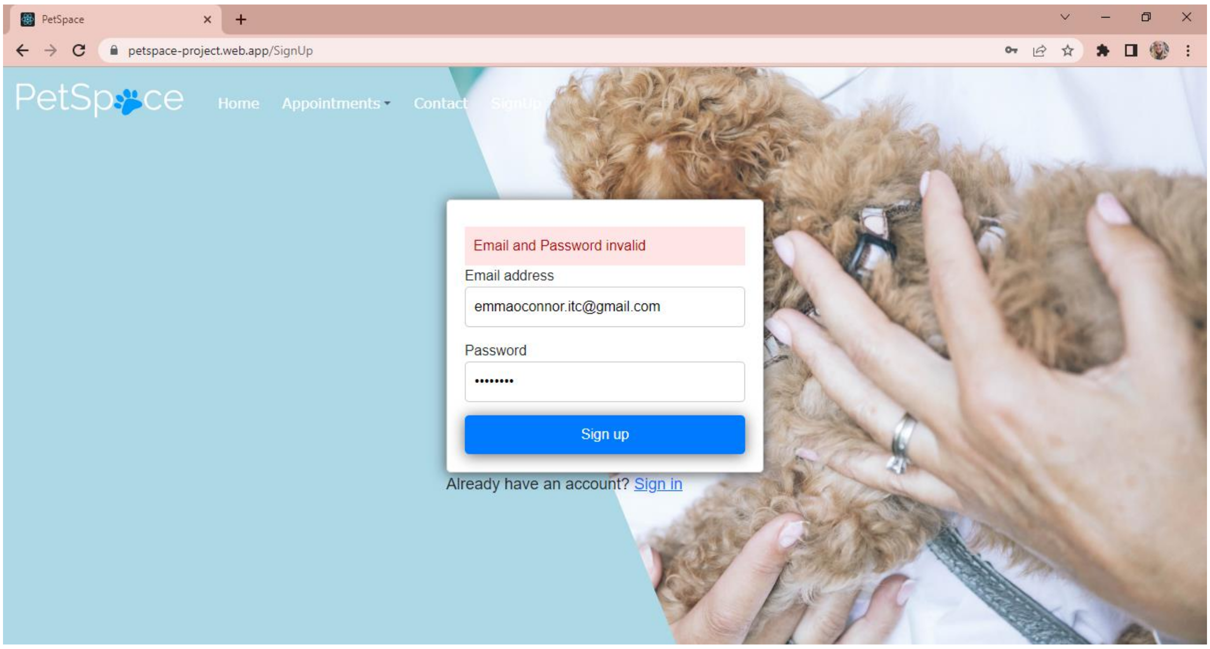
Password

Sign up

Already have an account? Sign in

Figure 26 Signup Page

This is a React functional component that displays a sign-up form (see figure 25). React hooks was used to create and update state variables such as email, password, and userExists. Firebase's Authentication SDK was also imported and uses the createUserWithEmailAndPassword() method to create a new user with the entered email and password. If the user creation is successful, an email verification message is sent to the user and navigates to the login page. If the email already exists, the userExists variable is set to true and an error message is displayed to the user (see figure 26). The form includes two input fields for email and password, with validation and placeholders, and a submit button that triggers the onSubmit() function. The component also includes a link to the login page for users who already have an account (see figure 27).



Email and Password invalid

Email address

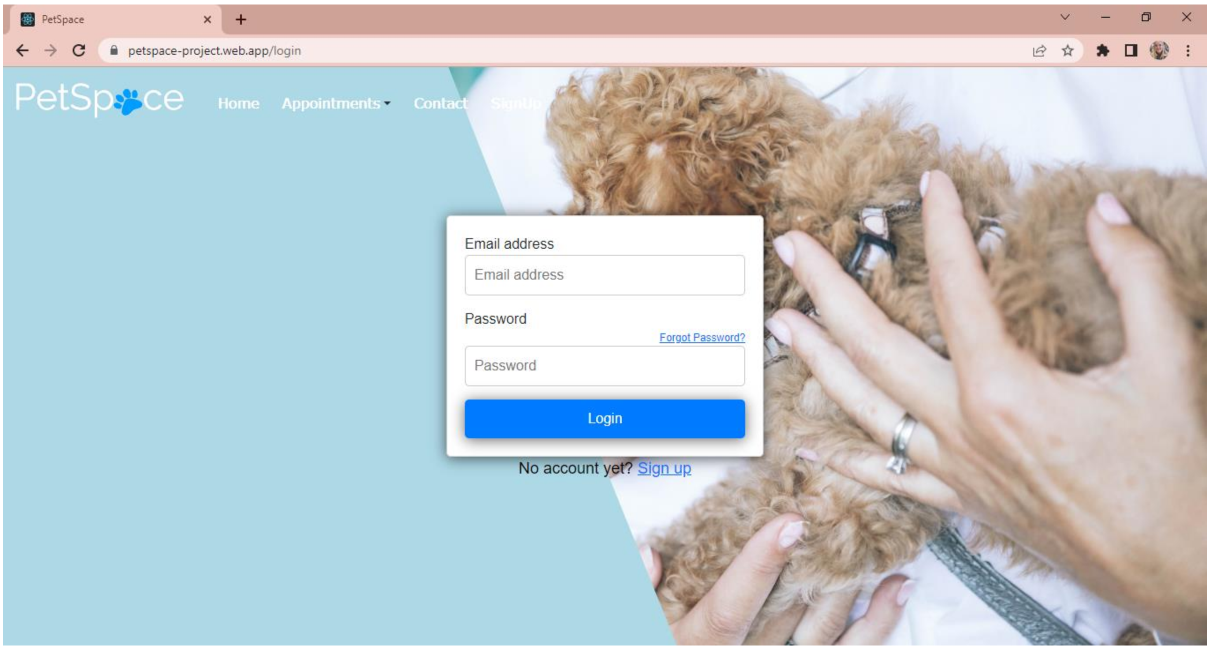
emmaoconnor.itc@gmail.com

Password

••••••••

Already have an account? Sign in

Figure 27 Invalid Credentials on Signup



Email address

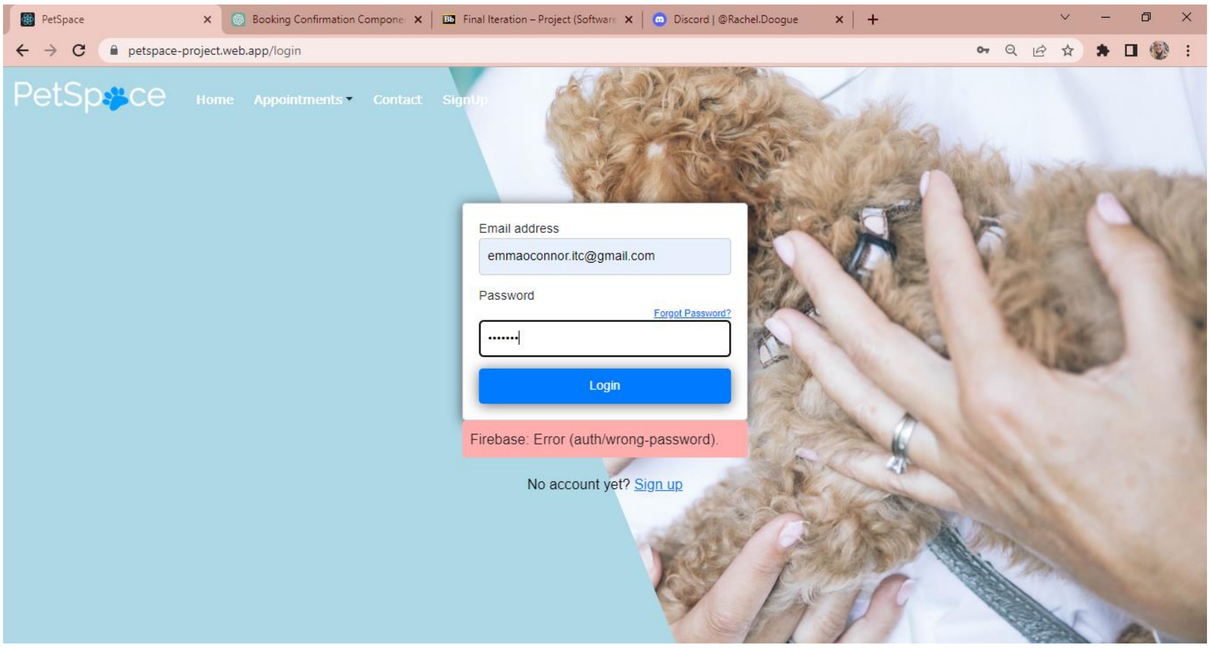
Email address

Password

Password

No account yet? Sign up

Figure 28 Login Page


PetSpace
Booking Confirmation Compone
Final Iteration – Project (Software
Discord | @Rachel.Doogue
petspace-project.web.app/login
PetSpace
Home
Appointments
Contact
SignUp
Forgot Password?
Login

Email address

emmaoconnor.itc@gmail.com

Password

•••••••

Firebase: Error (auth/wrong-password).

No account yet? Sign up

Figure 29 Login Unsuccessful Message

Figure 29 shows a firebase error on failure to authenticate login of the vet.

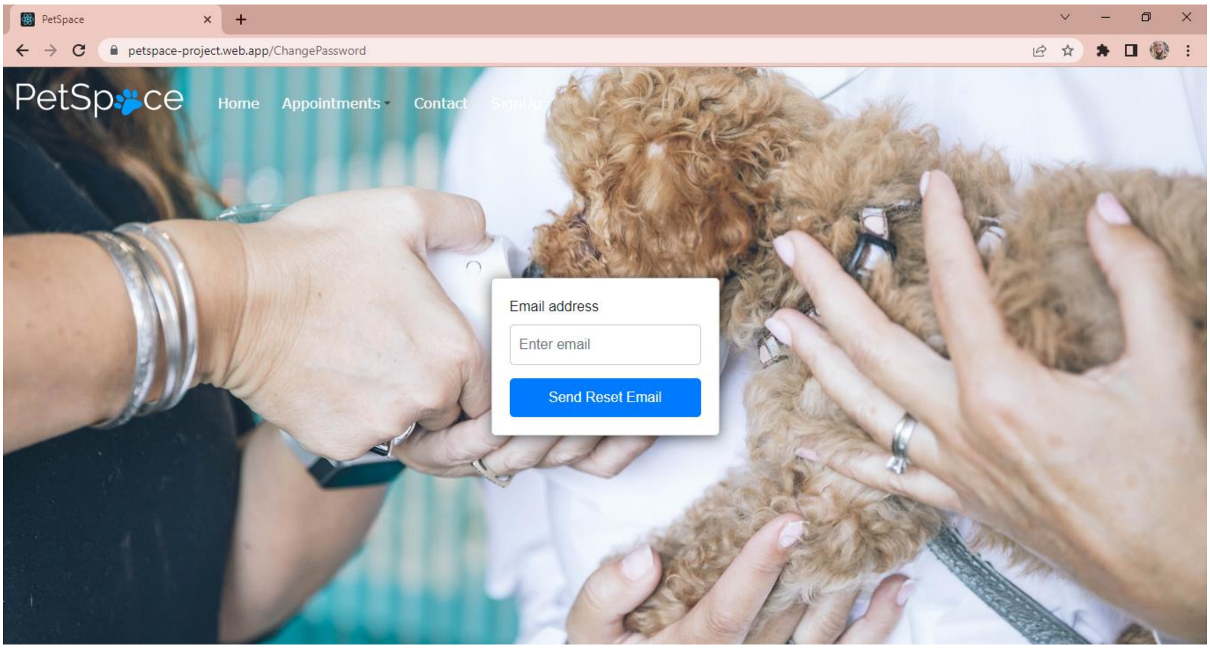
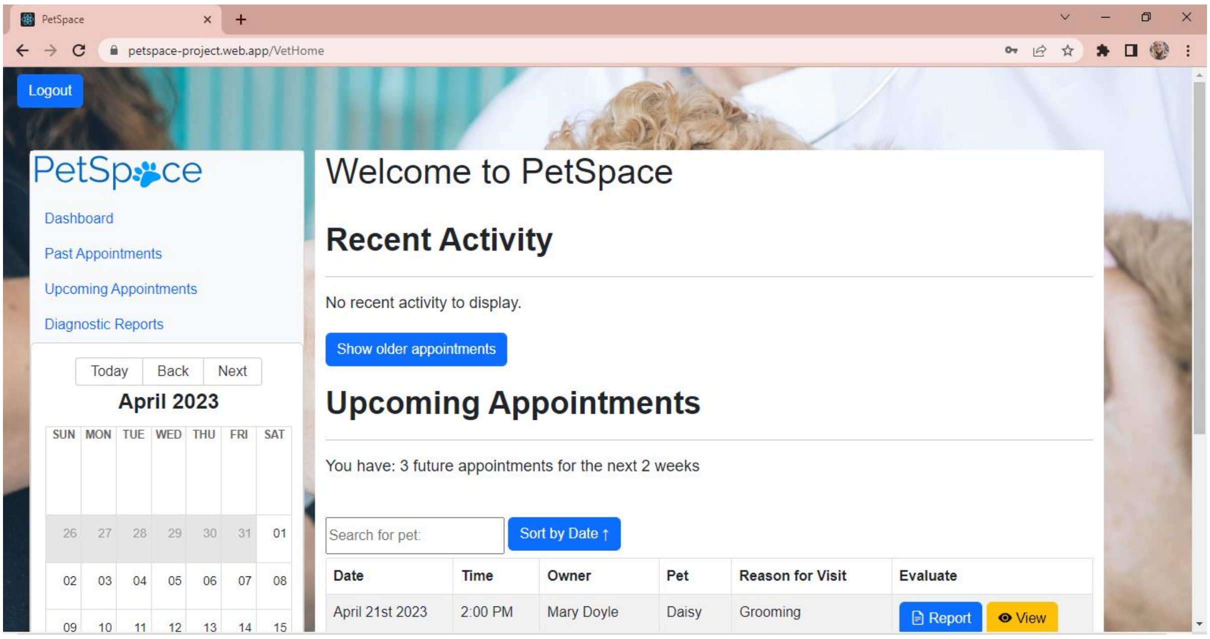


Figure 30 Password Reset

This page allows a vet to reset their password (see figure 28). The React useState hook is used to manage the component state. Four states are created, "email", "error", "message", and "isEmailSent". The "email" state holds the value of the email address entered by the vet. The "error" state holds the error message if an error occurs during the password reset process. The "message" state holds the success message after a password reset email is sent. The "isEmailSent" state holds a boolean value that determines whether a password reset email has been sent or not. There is also a function named "handleChangePassword" in the code that handles the form submission event. It checks if a password reset email has already been sent or not. If a password reset email has not been sent, it sends a password reset email and sets the "message" state. If a password reset email has already been sent, it sets the "error" state. Finally, it renders a login form that contains an email input field and a "Send Reset Email" button. If a password reset email has already been sent, the button is disabled and displays "Reset Email Sent" instead. If an error occurs during the password reset process, it displays an error message. If a password reset email is successfully sent, it displays a success message.



April 2023

SUN	MON	TUE	WED	THU	FRI	SAT
26	27	28	29	30	31	01
02	03	04	05	06	07	08
09	10	11	12	13	14	15

Welcome to PetSpace

Recent Activity

No recent activity to display.

Upcoming Appointments

You have: 3 future appointments for the next 2 weeks

Date	Time	Owner	Pet	Reason for Visit	Evaluate
April 21st 2023	2:00 PM	Mary Doyle	Daisy	Grooming	Report View

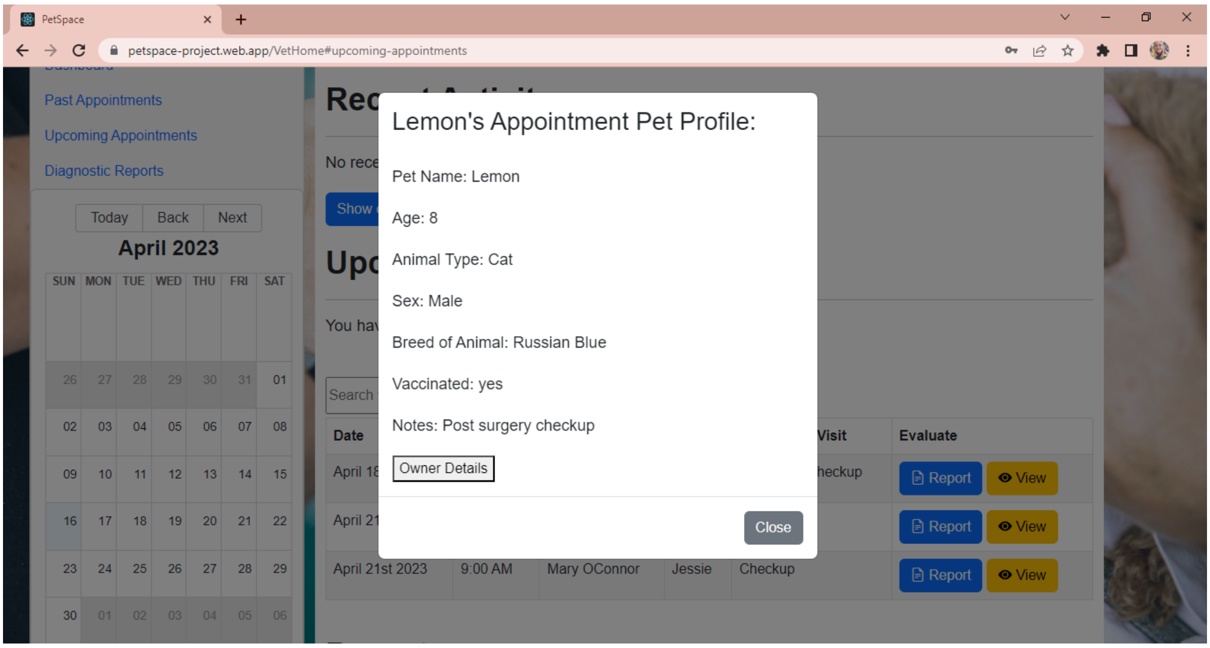
Figure 31 Vet Dashboard

Upon Successful login, the vet’s dashboard page is displayed (see figure 29) to manage their appointments, reports, and pet information. The page has several sections, including Recent Activity, Upcoming Appointments, Search for Pet, Reports, and a table to display appointment information.

The Recent Activity section displays a list of the most recent appointments, with the option to show older appointments. The Upcoming Appointments section displays a summary of the user's upcoming appointments. The Search for Pet section allows the user to search for a specific pet by name. The Reports section displays a table of veterinary reports for the user's pets.

The main table displays appointment information, including the date, time, owner, pet, and reason for visit. It also includes buttons to view and evaluate the pet's condition, as well as a button to generate a report.

The code includes several event handlers to handle user actions, such as searching for a pet, sorting the appointment table, and deleting a report. It uses Bootstrap and React-Bootstrap for styling and components.



Lemon's Appointment Pet Profile:

Pet Name: Lemon

Age: 8

Animal Type: Cat

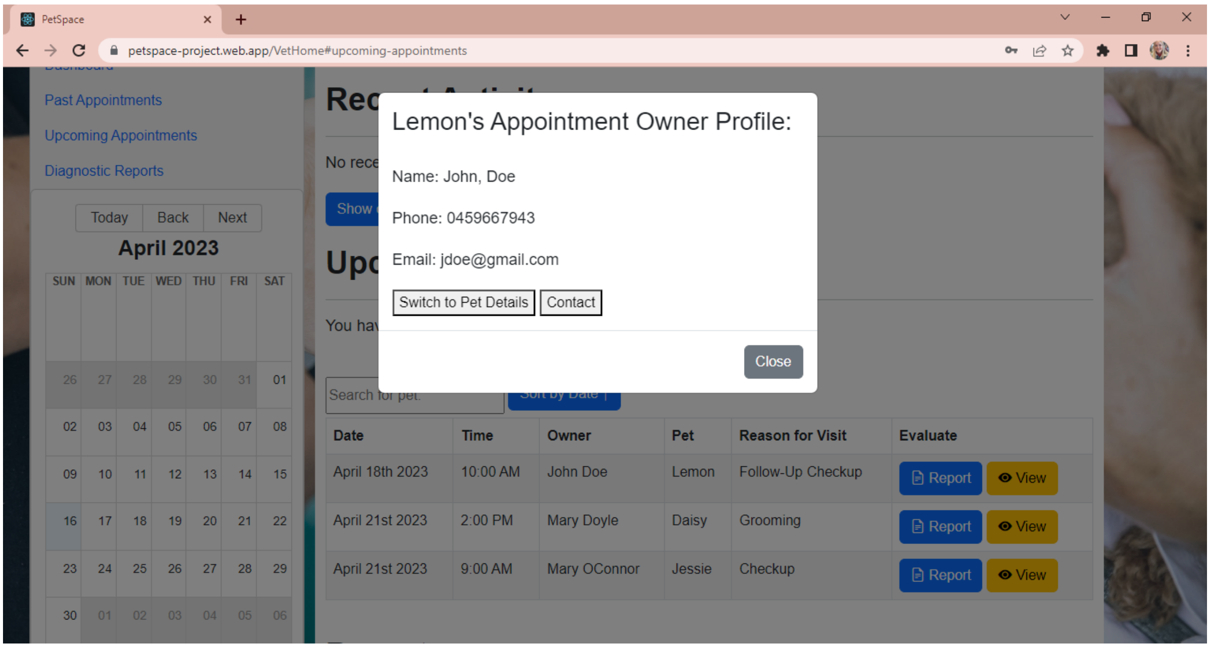
Sex: Male

Breed of Animal: Russian Blue

Vaccinated: yes

Notes: Post surgery checkup

Figure 32 Toggle Pet Owner and Pet view



Lemon's Appointment Owner Profile:

Name: John, Doe

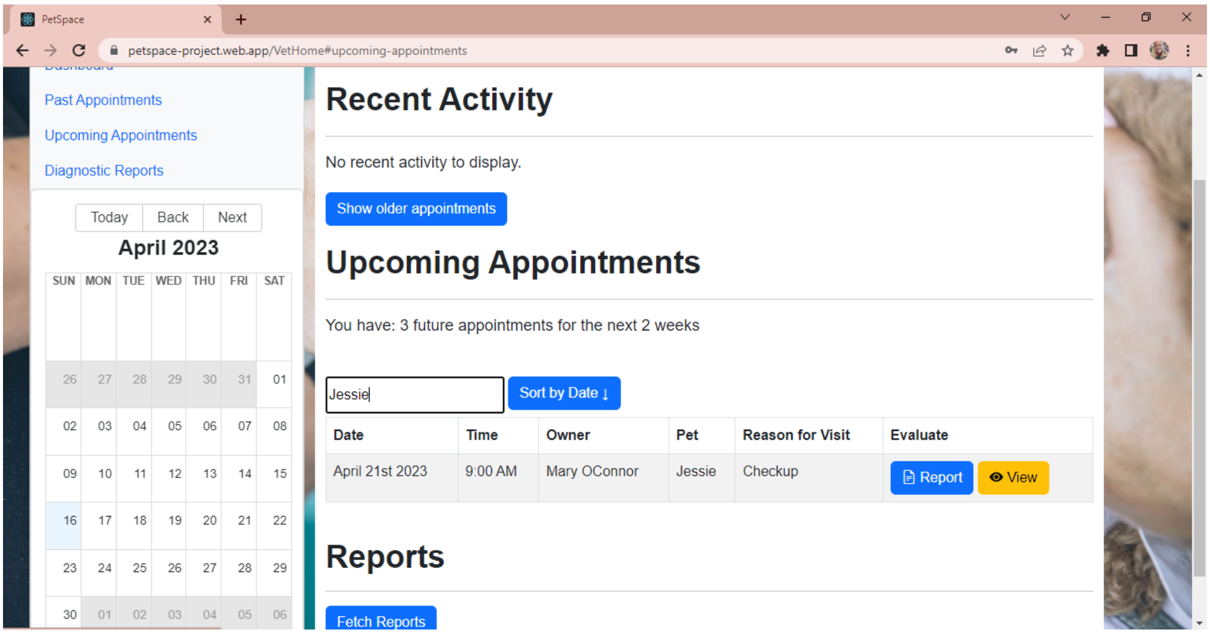
Phone: 0459667943

Email: jdoe@gmail.com

Date	Time	Owner	Pet	Reason for Visit	Evaluate
April 18th 2023	10:00 AM	John Doe	Lemon	Follow-Up Checkup	Report View
April 21st 2023	2:00 PM	Mary Doyle	Daisy	Grooming	Report View
April 21st 2023	9:00 AM	Mary OConnor	Jessie	Checkup	Report View

Figure 33 Toggle Pet Owner and Pet View

The above figures (30 and 31) depict the 'View' button, displaying a modal that contains a toggle button to switch the view between the pet owner and pet credentials. There is also an option to contact the vet by email.



Past Appointments
Upcoming Appointments
Diagnostic Reports

Today | Back | Next

April 2023

SUN	MON	TUE	WED	THU	FRI	SAT
26	27	28	29	30	31	01
02	03	04	05	06	07	08
09	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	01	02	03	04	05	06

Recent Activity

No recent activity to display.

Show older appointments

Upcoming Appointments

You have: 3 future appointments for the next 2 weeks

Jessie | Sort by Date ↓

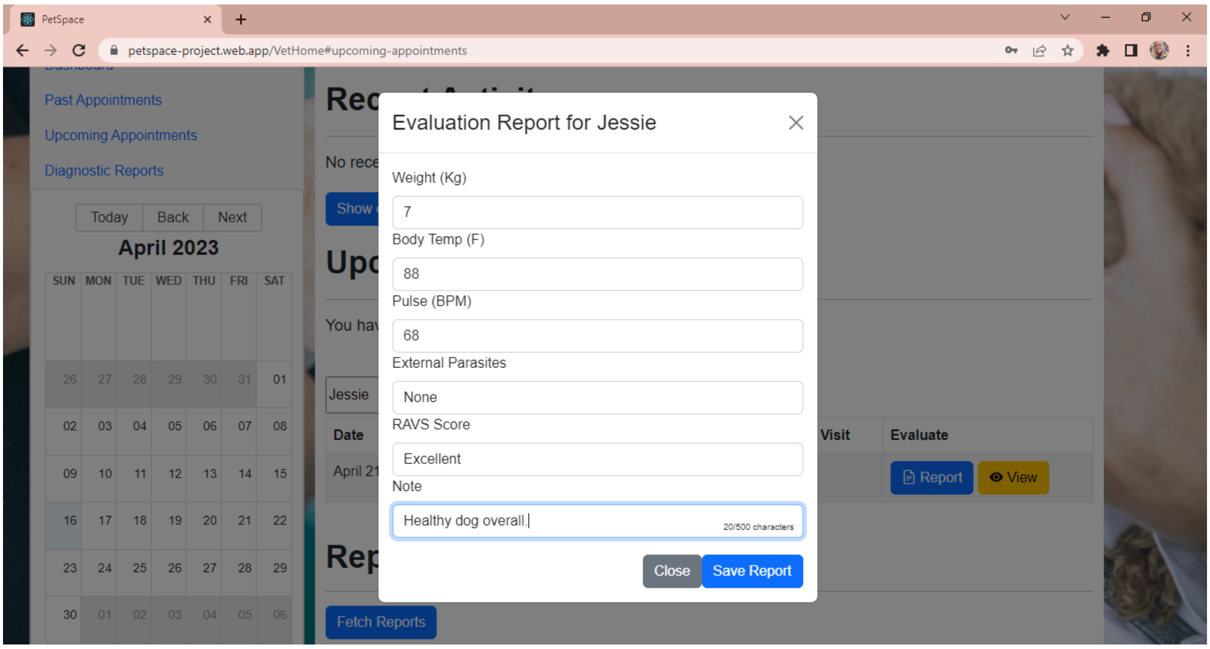
Date	Time	Owner	Pet	Reason for Visit	Evaluate
April 21st 2023	9:00 AM	Mary OConnor	Jessie	Checkup	Report View

Reports

Fetch Reports

Figure 34 Search bar Filter

Figure 32 depicts a filtered search functionality. The search bar filters the appointment by pet name and the ‘Sort by Date’ button switches the appointment view between ascending and descending order.



Evaluation Report for Jessie

Weight (Kg): 7

Body Temp (F): 88

Pulse (BPM): 68

External Parasites: None

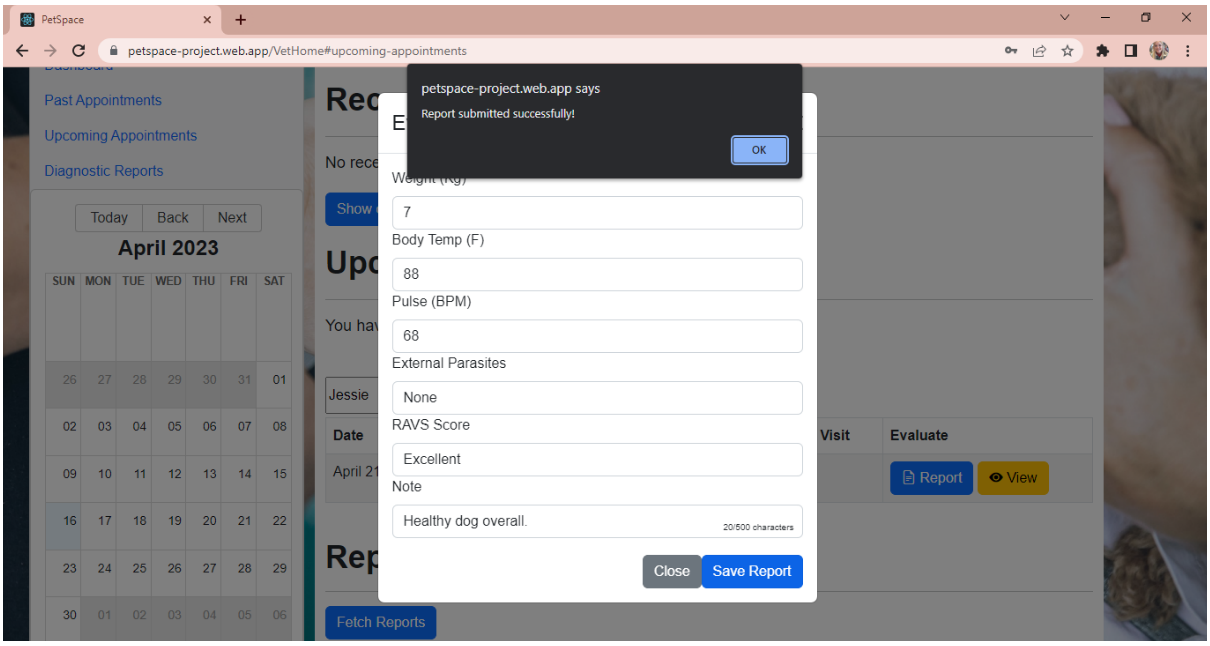
RAVS Score: Excellent

Note: Healthy dog overall

20/500 characters

Figure 35 Create Report

Figure 33 displays an Evaluation Report modal for a chosen pet. Fields include the pet's Weight, Body Temperature, BPM, External Parasites (Lice, Fleas, Mites, None) a RAVS Score (Excellent, Good, Far, Poor, Critical) and a note section. When the vet chooses the 'Save Report' option. A prompt is displayed to the vet stating 'Report Submitted Successfully' (see figure 34) and the report for that pet is created and stored in the 'Reports' database.



petspace-project.web.app says

Report submitted successfully!

OK

Weight (Kg): 7

Body Temp (F): 88

Pulse (BPM): 68

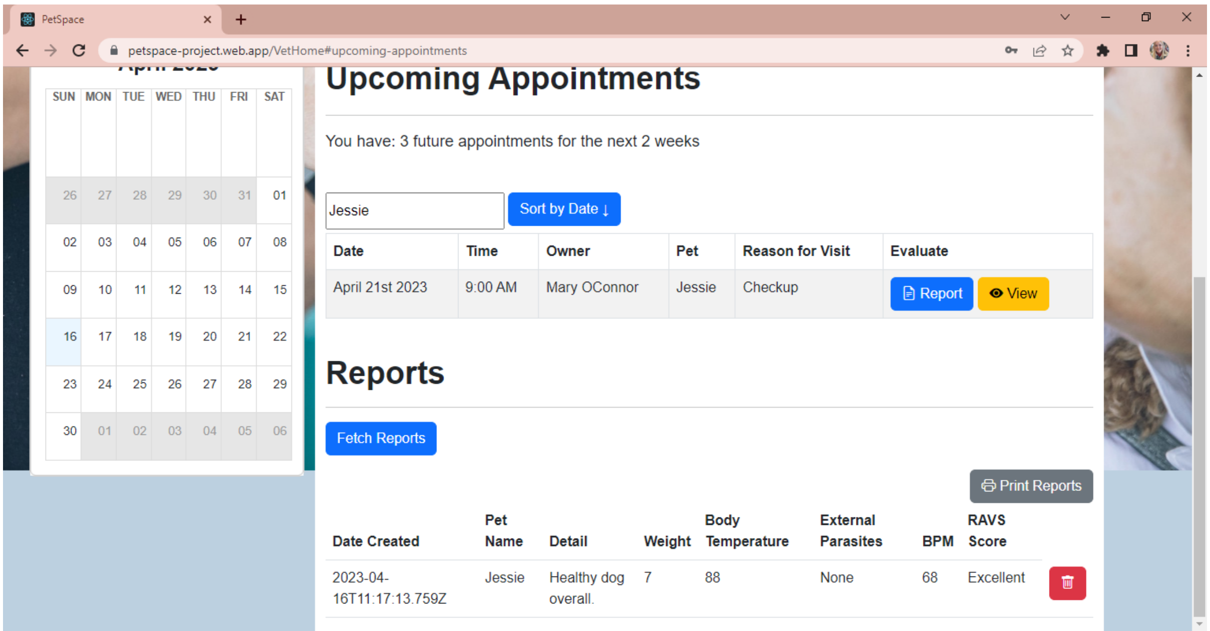
External Parasites: None

RAVS Score: Excellent

Note: Healthy dog overall. 20/500 characters

Close | Save Report

Figure 36 Report Submitted Successfully


PetSpace
petspace-project.web.app/VetHome#upcoming-appointments
SUN MON TUE WED THU FRI SAT

Upcoming Appointments

You have: 3 future appointments for the next 2 weeks

Jessie | Sort by Date ↓

Date	Time	Owner	Pet	Reason for Visit	Evaluate
April 21st 2023	9:00 AM	Mary OConnor	Jessie	Checkup	Report View

Reports

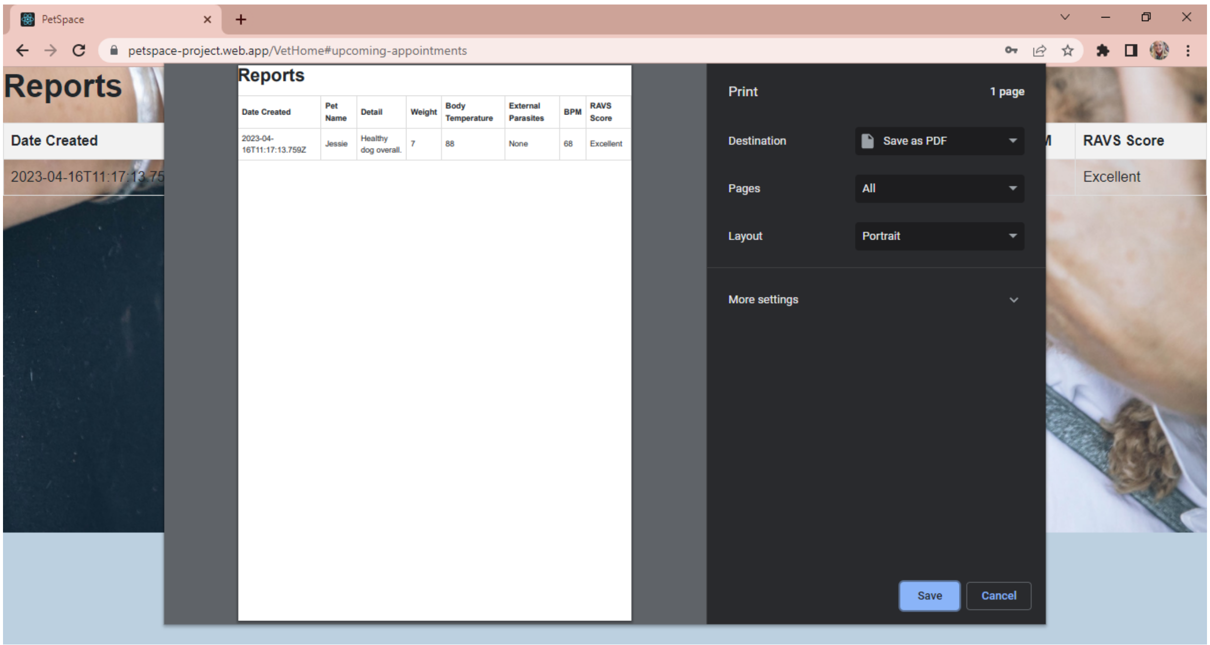
Fetch Reports

Print Reports

Date Created	Pet Name	Detail	Weight	Body Temperature	External Parasites	BPM	RAVS Score	
2023-04-16T11:17:13.759Z	Jessie	Healthy dog overall.	7	88	None	68	Excellent	🗑

Figure 37 View Report

When the vet scrolls down the page, the Reports section is displayed (see figure 35). When the Vet clicks on 'Fetch Reports, the previously created report is retrieved from the database and displayed to the pet with the option to either print (see figure 36) or the delete the report.



Reports

Date Created	Pet Name	Detail	Weight	Body Temperature	External Parasites	BPM	RAVS Score
2023-04-16T11:17:13.759Z	Jessie	Healthy dog overall.	7	88	None	68	Excellent

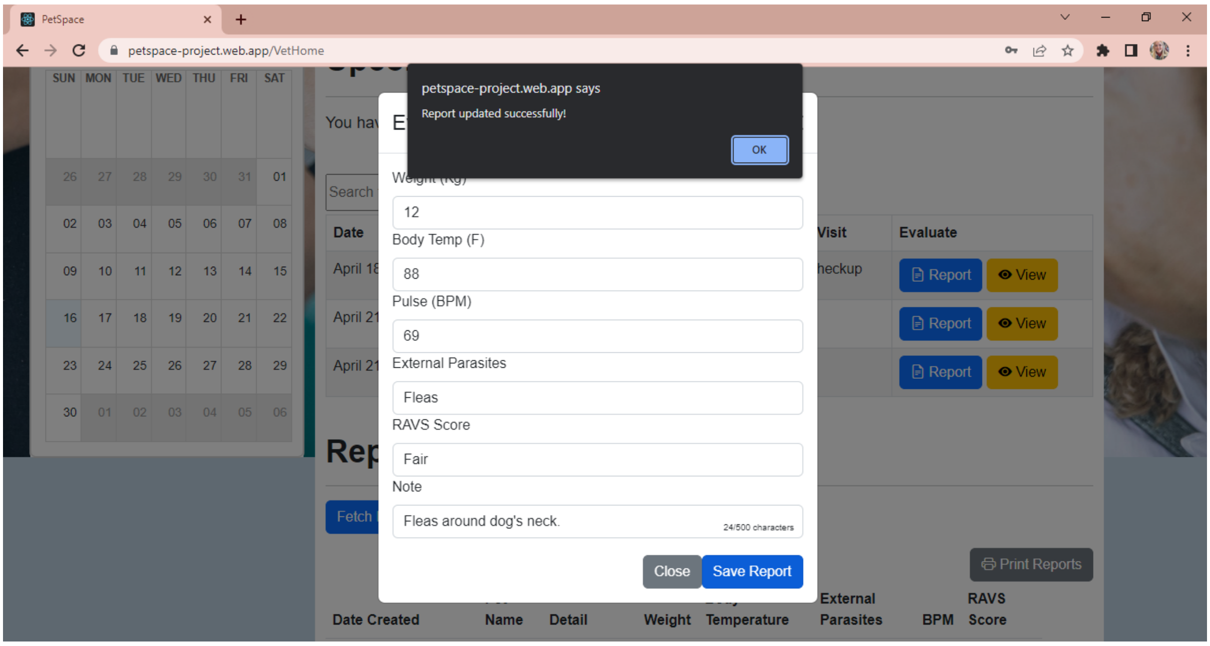
Print 1 page

Destination: Save as PDF

Pages: All

Layout: Portrait

Figure 38 Print Report



petspace-project.web.app says

Report updated successfully!

Weight (Kg): 12

Body Temp (F): 88

Pulse (BPM): 69

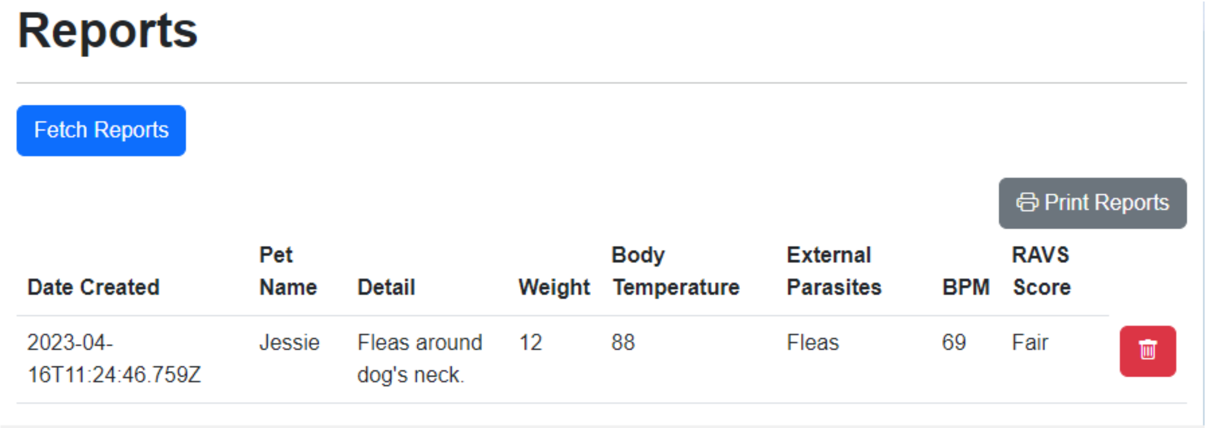
External Parasites: Fleas

RAVS Score: Fair

Note: Fleas around dog's neck. 24/500 characters

Figure 39 Update Report

If a vet wises to update an existing report, they can simply create a new report which will override the existing report as shown in figure 37, when the vet chooses to 'Save Report', the message displayed is altered from 'Report submitted Successfully' to 'Report updated Successfully'.

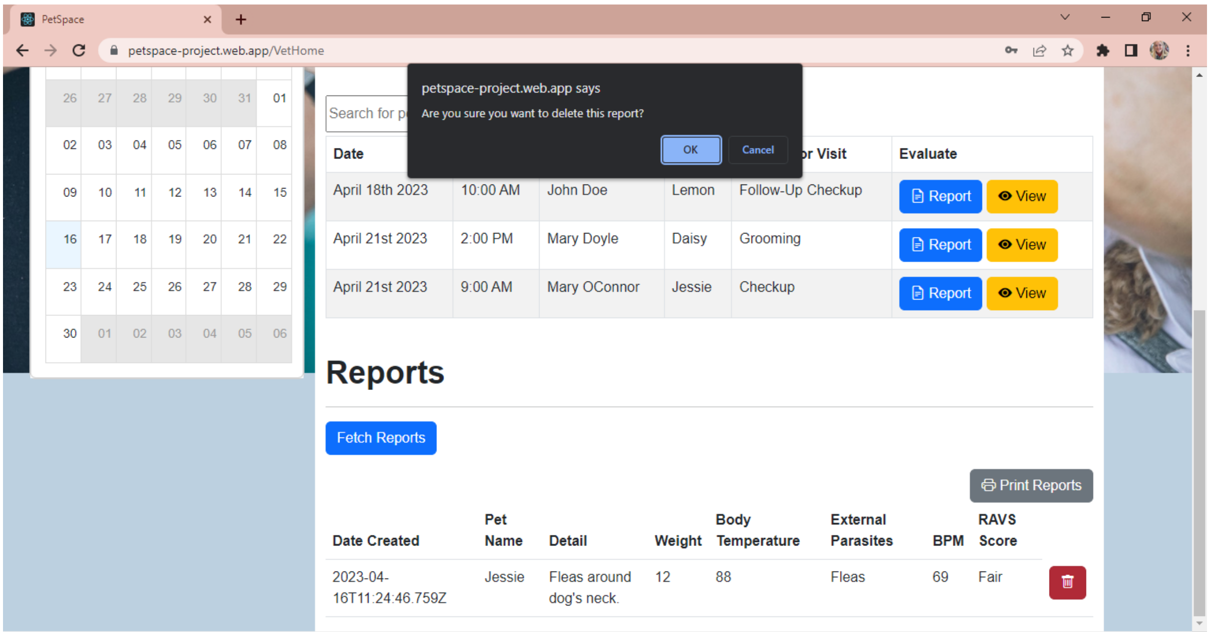


Reports

Date Created	Pet Name	Detail	Weight	Body Temperature	External Parasites	BPM	RAVS Score	
2023-04-16T11:24:46.759Z	Jessie	Fleas around dog's neck.	12	88	Fleas	69	Fair	🗑

Figure 40 Updated Report View

The updated Report View is retrieved when the 'Fetch Reports' button is clicked (see figure 38).



26	27	28	29	30	31	01
02	03	04	05	06	07	08
09	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	01	02	03	04	05	06

petspace-project.web.app says

Are you sure you want to delete this report?

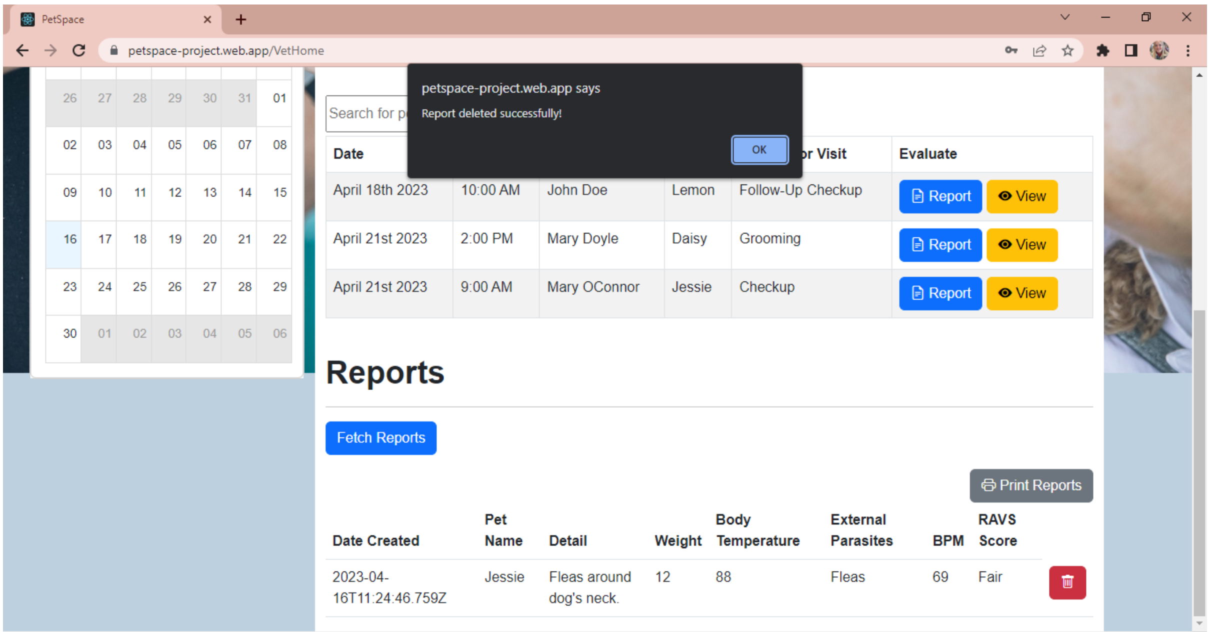
Date				r Visit	Evaluate
April 18th 2023	10:00 AM	John Doe	Lemon	Follow-Up Checkup	Report View
April 21st 2023	2:00 PM	Mary Doyle	Daisy	Grooming	Report View
April 21st 2023	9:00 AM	Mary OConnor	Jessie	Checkup	Report View

Reports

Date Created	Pet Name	Detail	Weight	Body Temperature	External Parasites	BPM	RAVS Score	
2023-04-16T11:24:46.759Z	Jessie	Fleas around dog's neck.	12	88	Fleas	69	Fair	🗑

Figure 41 Delete Report

Figure 39 shows the screen for the vet when they choose to delete a report. A message is displayed to the vet asking "Are you sure you want to delete this report?". If the vet clicks 'Cancel' no changes are made to the report. If the vet clicks 'OK' then the report is deleted and a successful message is displayed to the vet in figure 40.



petspace-project.web.app says

Report deleted successfully!

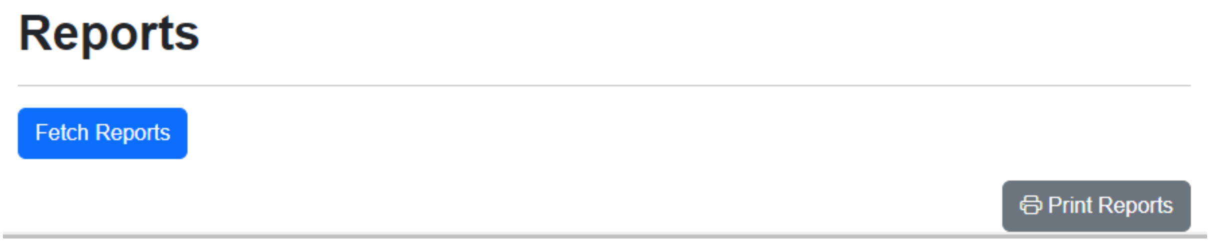
OK

Date				r Visit	Evaluate
April 18th 2023	10:00 AM	John Doe	Lemon	Follow-Up Checkup	Report View
April 21st 2023	2:00 PM	Mary Doyle	Daisy	Grooming	Report View
April 21st 2023	9:00 AM	Mary OConnor	Jessie	Checkup	Report View

Reports

Date Created	Pet Name	Detail	Weight	Body Temperature	External Parasites	BPM	RAVS Score	
2023-04-16T11:24:46.759Z	Jessie	Fleas around dog's neck.	12	88	Fleas	69	Fair	

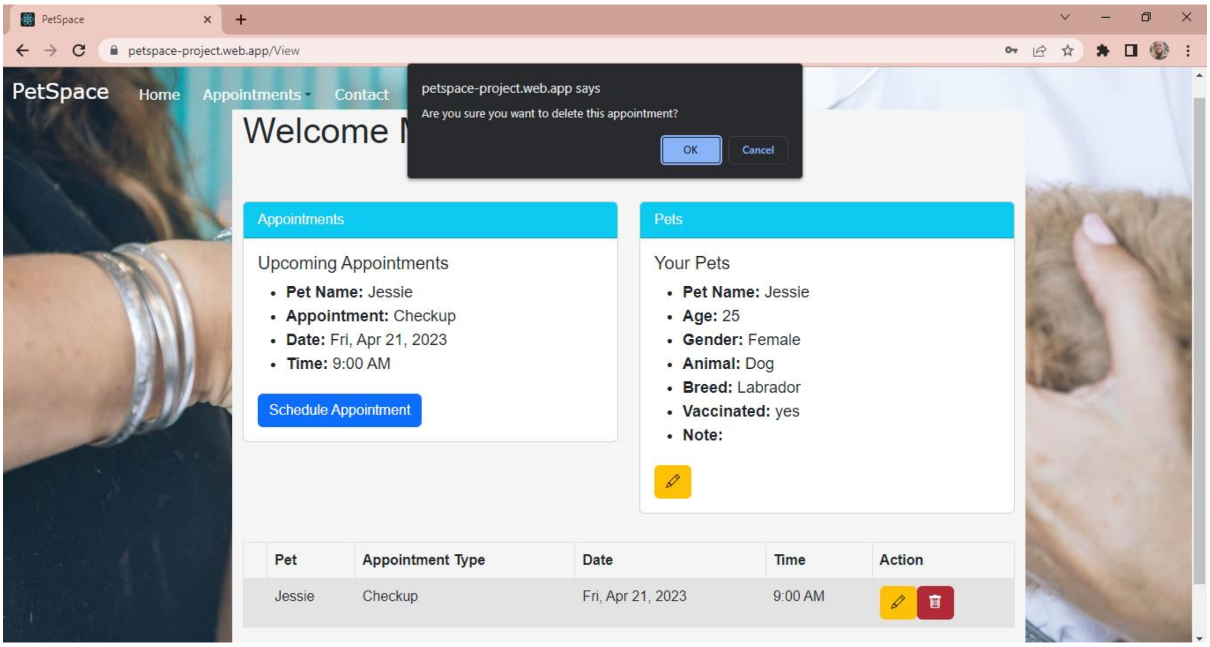
Figure 42 Report Deleted Successfully



Reports

Figure 43 Updated Records after Delete

Figure 41 shows the Reports view is updated when the 'Fetch Reports' button is clicked.



petspace-project.web.app says

Are you sure you want to delete this appointment?

Welcome

Appointments

Upcoming Appointments

- **Pet Name:** Jessie
- **Appointment:** Checkup
- **Date:** Fri, Apr 21, 2023
- **Time:** 9:00 AM

Pets

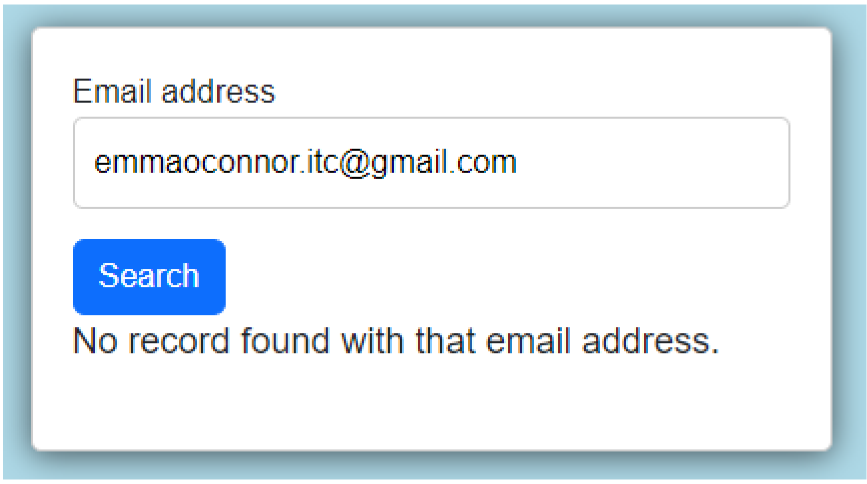
Your Pets

- **Pet Name:** Jessie
- **Age:** 25
- **Gender:** Female
- **Animal:** Dog
- **Breed:** Labrador
- **Vaccinated:** yes
- **Note:**

Pet	Appointment Type	Date	Time	Action
Jessie	Checkup	Fri, Apr 21, 2023	9:00 AM	

Figure 44 Delete Appointment

The pet owner can choose to delete their appointment anytime up to the day of the appointment. When the pet owner chooses the trash icon next to their appointment, The pet owner is prompted if they are sure that they want to delete their appointment. No changes are made to the appointment if the pet owner chooses ‘Cancel’ but if the @OK’ option is chosen, the appointment is removed from the database and the pet owner is returned to the home screen. Figure 43 depicts the pet owner inputting the email they used to book the appointment but it has been deleted.



Email address

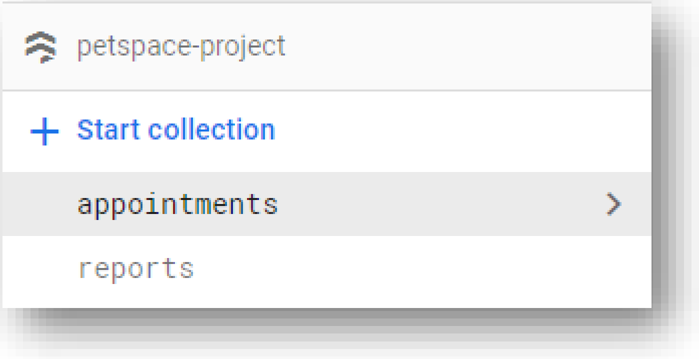
emmaoconnor.itc@gmail.com

No record found with that email address.

Figure 45 No record found after deletion

4 Database Structure

4.1 Appointments

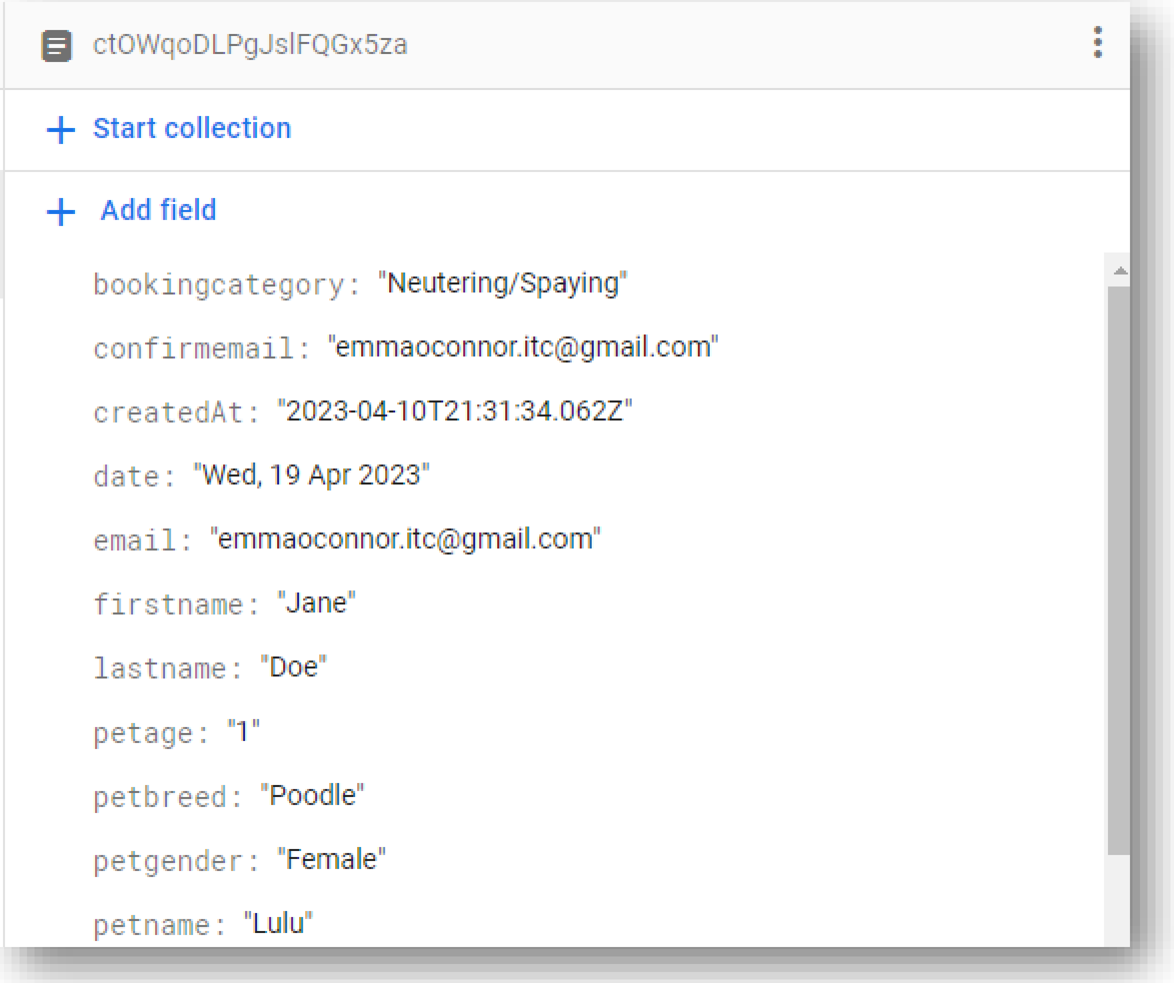


petspace-project

appointments

reports

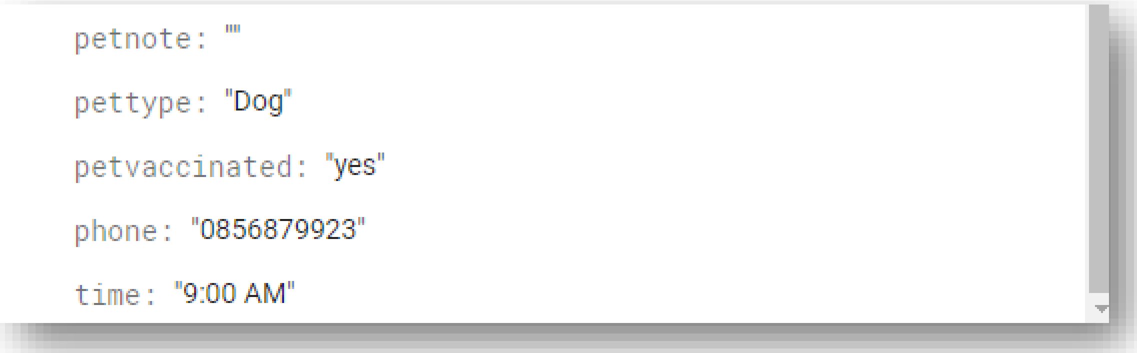
Figure 46 Database Structure 1



ctOWqoDLPgJslFQGx5za

```
bookingcategory: "Neutering/Spaying"
confirmemail: "emmaoconnor.itc@gmail.com"
createdAt: "2023-04-10T21:31:34.062Z"
date: "Wed, 19 Apr 2023"
email: "emmaoconnor.itc@gmail.com"
firstname: "Jane"
lastname: "Doe"
petage: "1"
petbreed: "Poodle"
petgender: "Female"
petname: "Lulu"
```

Figure 47 Database Structure 2



petnote: ""

pettype: "Dog"

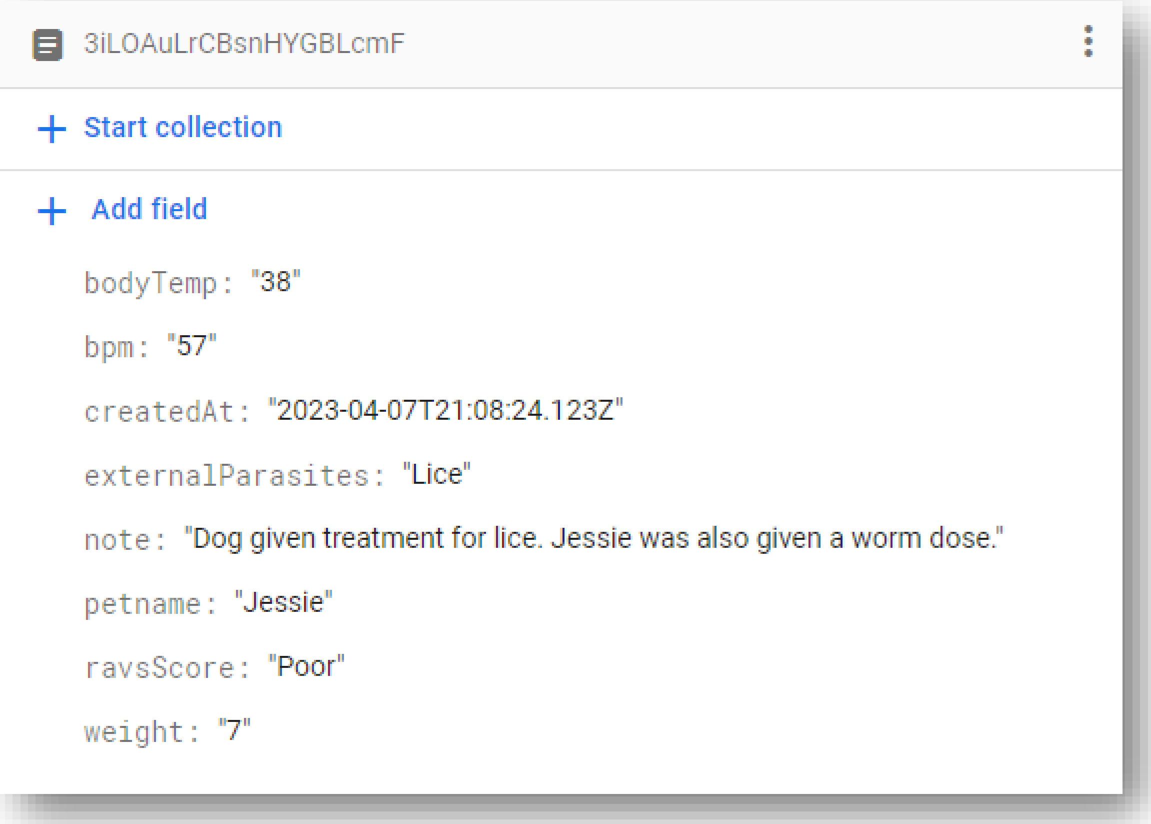
petvaccinated: "yes"

phone: "0856879923"

time: "9:00 AM"

Figure 48 Database Structure 3

4.2 Reports



3iLOAuLrCBsnHYGBLcmF

bodyTemp: "38"

bpm: "57"

createdAt: "2023-04-07T21:08:24.123Z"

externalParasites: "Lice"

note: "Dog given treatment for lice. Jessie was also given a worm dose."

petname: "Jessie"

ravsScore: "Poor"

weight: "7"

Figure 49 Database Structure 4

5 UI/UX Testing

Test Case	Bug	Fix
1	Can go back to login screen after logging in	Firebase authentication testing
2	When user clicks to signup with credentials already stored, nothing happens	Added an error message to display to user that the credentials are invalid
3	When owner deletes record page breaks.	Added a window.location.redirect(“/”) function
4	Back button breaks when owner wants to retreat from viewing appointment	Added a window.location.redirect(“/”) function
5	Page crashes after appointment deleted by pet owner	Fixed by redirecting them to home screen as record cannot be viewed anymore.
6	Update Report crashes	Implemented a merge into the create function so that if a report has already been created, a new report created for that pet will override the existing one. Less code, more sustainable

6 Issues/Challenges

6.1 React

React is a popular JavaScript library for building user interfaces, and it can be a great choice for building complex, dynamic web applications. However, there are some challenges and issues that can arose when using React in this project, especially for developers who are new to the library.

One of the main challenges of using React is the time it can take to learn the basics. While React is designed to be easy to use and learn, it does have a bit of a learning curve, especially for developers who are not already familiar with JavaScript or other web development technologies. 3-6 months was taken to simply learn about React components, JSX syntax, state management, and other key concepts before effectively using React to build the PetSpace application.

Another challenge encountered when using React is understanding which packages and libraries are needed to build a particular feature or functionality. React is designed to be modular, which means that developers can choose to use different packages and libraries to add specific features and functionalities to their applications. However, with so many different options available, it was challenging to know which packages to choose and how to integrate them into the application.

6.2 Stepper Pages, Date and Time Generation

Date generation: Generating dates for pet owners when booking appointments proved to be challenging, especially when trying to exclude weekends and bank holidays. Converting the correct Date to the Firebase format was time-consuming.

Time generation: Similar to date generation, generating available time slots was also challenging. It required complex algorithms to generate a list of available time slots that would not reload the page when one of the buttons was clicked.

Stepper pages: Creating a stepper page system for the application to navigate between the booking form was a tedious task but reduced the code amount, increasing usability for the pet owner.

6.3 Email Service Provider

The initial plan was to use Firebase’s built in email service extension: trigger email but it was unavailable to use as it was only provided to individuals on paid plans. The next option was to find other services such as SendGrid, Nodemailer but these all proved tedious and would not function correctly. EmailJS was a free serverless email provider with an easy to understand signup service. There were multiple tutorials to watch on using the service and this provided beneficial when implementing EmailJS into the PetSpace app.

7 Learning Outcomes

7.1 Technical

7.1.1 React

Developing using the React framework was the biggest learning outcome from this project. As most of the code was developed in JavaScript and there was experience with Angular and Node.js from previous work settings, it was proven to be a great opportunity to improve on skills and develop new ways of developing code. The more time spent coding with React, the more of an understanding was developed and new ways of implementing code to reduce complexity were recognised.

7.1.2 Meeting Deadlines

This project allowed for the work to be developed in an agile way. The project was divided into small sections and weekly meetings were conducted with project supervisors to receive feedback as well as discuss work done, what is being worked on and what is planned to be worked on for the future meeting. The continuous delivery of task aided in the project's improvement and established the benefits of working in an agile way.

7.2 Personal

7.2.1 Time Management

In the PetSpace project, time management was improved in several ways:

Prioritization and balance: One of the main ways time management was improved in the PetSpace project was by prioritizing tasks and creating a balance between working on different modules. This helped ensure that progress was made on each aspect of the project without becoming overwhelmed or burnt out.

Online Kanban boards: The use of online Kanban boards, such as Trello, helped plan out what needed to be done and track progress. This allowed for a better overview of tasks and helped to identify areas that required more attention.

Regular meetings and communication: Regular team meetings and communication helped to ensure that everyone was on the same page and progress was being made. It also allowed for any issues or challenges to be addressed promptly.

Breaking tasks into smaller, manageable pieces: Breaking down larger tasks into smaller, more manageable pieces helped to avoid procrastination and made it easier to tackle each task one step at a time.

Overall, the use of these strategies helped to improve time management in the PetSpace project, ensuring that progress was made consistently and effectively while not taking away study from other modules.

7.2.2 Presentation Skills

Presenting the PetSpace project helped improve presentation skills in several ways. Firstly, presenting the project required clear and concise communication to effectively convey the key aspects of the project. This helped to develop communication skills, such as speaking confidently and articulately, which are essential in many professional settings. Additionally, presenting the project to an audience, whether it be peers or instructors, helped to develop the ability to engage and maintain the audience's attention. It also provided an opportunity to receive feedback and improve on areas that required more attention or clarification.

7.2.3 Academic Writing/Research

The process of researching and writing numerous documents involved in the development of the PetSpace project helped improve academic writing skills by enhancing critical thinking, research and citation, technical writing, and collaboration. Conducting extensive research required analytical skills and developed the ability to find and reference credible sources. Adhering to a specific format, tone, and writing style improved technical writing skills and provided an opportunity to practice adhering to academic writing standards, which improved clarity, organisation, and conciseness in writing. Collaboration and feedback from my supervisor helped to develop the ability to write more effectively and efficiently and ensured that the documentation was of high quality.

8 Project Review

The plan set out for this project was to create a cross-platform application used by both vets and pet owners where pet owners who wish to book/manage an appointment with the vet can do so easily and simply through the PetSpace application. For vets to also login securely to the application and easily manage their booked appointments at the click of a button without the need for pet owners/receptionists to manually book pet appointments over the phone.

The main functionality for the Vet was achieved, vets can securely log into the system and view past appointments, upcoming appointments and manage reports easily. The pet owner functionality goal was also achieved in which a pet owner can book, edit or delete their appointment with their vet and keep track of their appointments by means of confirmation emails.

What makes PetSpace stand out from other applications available on the market is it provides a more convenient and accessible way to book appointments as it can be done anytime and from anywhere, without the need to wait for the vet's receptionist to answer the phone. This is particularly useful for busy pet owners who may not have the time to call during business hours.

PetSpace allows pet owners to edit their pet information and booking information easily. This means that if any changes need to be made to the pet's information, such as a change in age or breed, it can be done quickly and accurately through the application. This eliminates the need to communicate these changes with the vet directly, which saves time and reduces the potential for errors.

Additionally, PetSpace allows pet owners to cancel their appointment if something comes up, providing more flexibility and convenience. By cancelling the appointment through the application, the database is updated immediately. This helps to reduce the risk of missed appointments, as pet owners can cancel and reschedule appointments without the need to call the vet's office directly.

PetSpace also provides a convenient way for vets to create reports and print them easily. By having all appointment information stored in the application, it becomes easier for vets to track and analyse the data, allowing them to identify trends and patterns in the pet's health, behaviour, and overall wellness. This means that vets can spend less time on paperwork and more time on providing quality care for their patients.

Furthermore, using PetSpace allows the appointment to be updated directly in the database for the vet, which ensures that the information is accurate and up-to-date. This eliminates the potential for human error when communicating the appointment details between the vet and the client, which can occur when booking appointments manually. This direct communication between the client and the vet also allows for better coordination and management of appointments, which can help reduce scheduling conflicts and ensure that appointments are attended promptly.

Hosting/deploying the application proved to be seamless due to the integration with Firebase. Firebase allow for hosting of applications with databases that are created through them which proved useful when deploying the application at the end.

A number of aspects were left out of the finished project such as SMS notifications and more in depth booking analysis such as allowing the appointment time become available when an appointment has passed its booking date and mapping the specific time to the date. These aspects were dropped due to time constraints but would be have more time dedicated to the development process if developing project from the start..

If the PetSpace project were to be created again, several improvements could be made to enhance the user experience and the overall functionality of the application. One such improvement would be the inclusion of React Native components such as GPS, which would allow pet owners to easily locate nearby veterinarians.

Another improvement that could be made is the addition of a messaging notification component, which would send reminders and notifications to pet owners' phones regarding upcoming appointments. This would help ensure that pet owners do not miss appointments.

Additionally, developing for IOS would be considered for the app to be accessible to everyone, regardless of their operating system. This would help expand the user base of PetSpace and ensure that more pet owners have access to the application's benefits.

The technologies chosen for this project was the right one. React is a commonly used and popular framework, Firebase is also becoming widely developed with and has many advantages to its use. The project was a success due to these factors but with more time and research, can be developed on further to fully grasp the extent of their power.

Strong advice to be taken when starting a similar project would be not to underestimate the time required in researching and testing out the frameworks before dedicating the project to one. Choose one you are comfortable with and motivated to research thoroughly.

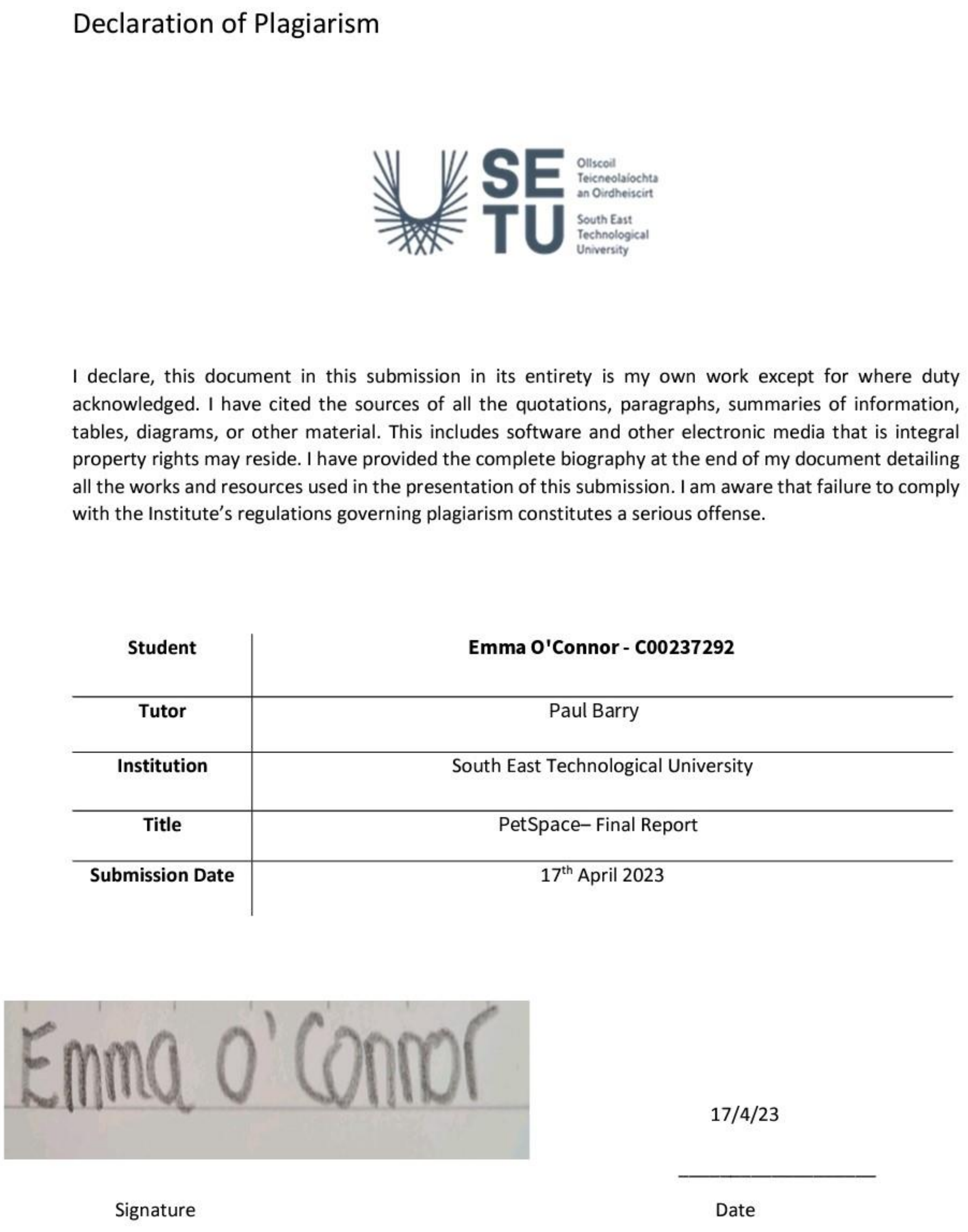
9. Conclusion

In conclusion, the PetSpace application is an innovative and user-friendly booking application that provides pet owners with a convenient way to manage their pet's healthcare needs. By providing an easy-to-use platform for booking appointments, editing pet information, and cancelling appointments, PetSpace helps improve the pet healthcare process and provides more flexibility and convenience for pet owners. The reporting feature also allows vets to track and analyse pet health data, helping them to provide the best possible care for their patients. Overall, PetSpace has the potential to revolutionise the pet healthcare industry by improving communication between pet owners and vets, providing a more efficient way to manage pet health information, and enhancing the overall pet care experience.

10. Acknowledgements

Thank you to the software development lecturers of SETU Carlow for providing feedback on this project and to supervisor Paul Barry for aiding and believing in the potential PetSpace has to offer.

11. Declaration of Plagiarism



Declaration of Plagiarism

I declare, this document in this submission in its entirety is my own work except for where duty acknowledged. I have cited the sources of all the quotations, paragraphs, summaries of information, tables, diagrams, or other material. This includes software and other electronic media that is integral property rights may reside. I have provided the complete biography at the end of my document detailing all the works and resources used in the presentation of this submission. I am aware that failure to comply with the Institute’s regulations governing plagiarism constitutes a serious offense.

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Submission Date	17th April 2023

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17/4/23

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