

PetSpace

---

# FUNCTIONAL SPECIFICATION

---

4th Year Project  
Student: Emma O'Connor  
Student Number: C00237292  
Lecturer: Dr. Paul Barry  
Submission Date: 17/04/2023



## Table of Contents

Table of Figures .....	2
1) Introduction.....	3
2) Application Definition .....	4
3) Target Audience.....	5
4) Context Diagram.....	6
5) Use Case.....	7
6) Brief Use Cases.....	8
7) Detailed Use Cases .....	10
8) FURPS+ .....	23
8.1 Functionality .....	23
8.2 Usability.....	23
8.3 Reliability.....	23
8.4 Performance .....	23
8.5 Supportability.....	24
8.6 + .....	24
9) Conclusion .....	25

## Table of Figures

Figure 1 PetSpace Context Diagram.....	6
Figure 2 PetSpace Use Case Diagram .....	7

## 1) Introduction

The primary functions of “PetSpace” are described in this functional specification document.

This document will include details on the application’s design as well as the target audience for the application. For the purpose of illustrating the data flow inside the application, a context diagram is supplied. A Use Case diagram is supplied to show the project’s functionality and scope, and brief and detailed use cases will give users a detailed understanding of how tasks will be carried out when utilising the program. FURPS+ (Functionality, Usability, Reliability, Performance, Supportability and Security) information on the application will also be provided.

## 2) Application Definition

The “PetSpace” application believes in which the owners of a pet(s) who wish to book a vet appointment, should be able to do so with simplicity and at a time available that suits them. Likewise for the vets, they can log into the application and view their appointments scheduled for that week. They can also create reports based on observation of the pet. It is a beneficial practice that can help organise and narrow down the type of appointments being scheduled for a particular day.

Pet owners can also view, update or delete their upcoming appointments through the application and receive email confirmation of their pet’s appointment.

### 3) Target Audience

There are two users for PetSpace. These are:

- Pet owners
- Vets

The pet owners will have the ability to create and read appointment information for their pet, modify their appointment and if necessary; cancel their appointment.

The vet will use the application in order to keep track of their appointments and to record pet medical information. Medical information could be in the form of instructions, diagnosis reports and/or follow up appointment information that will be stored with the option to print this information.

## 4) Context Diagram

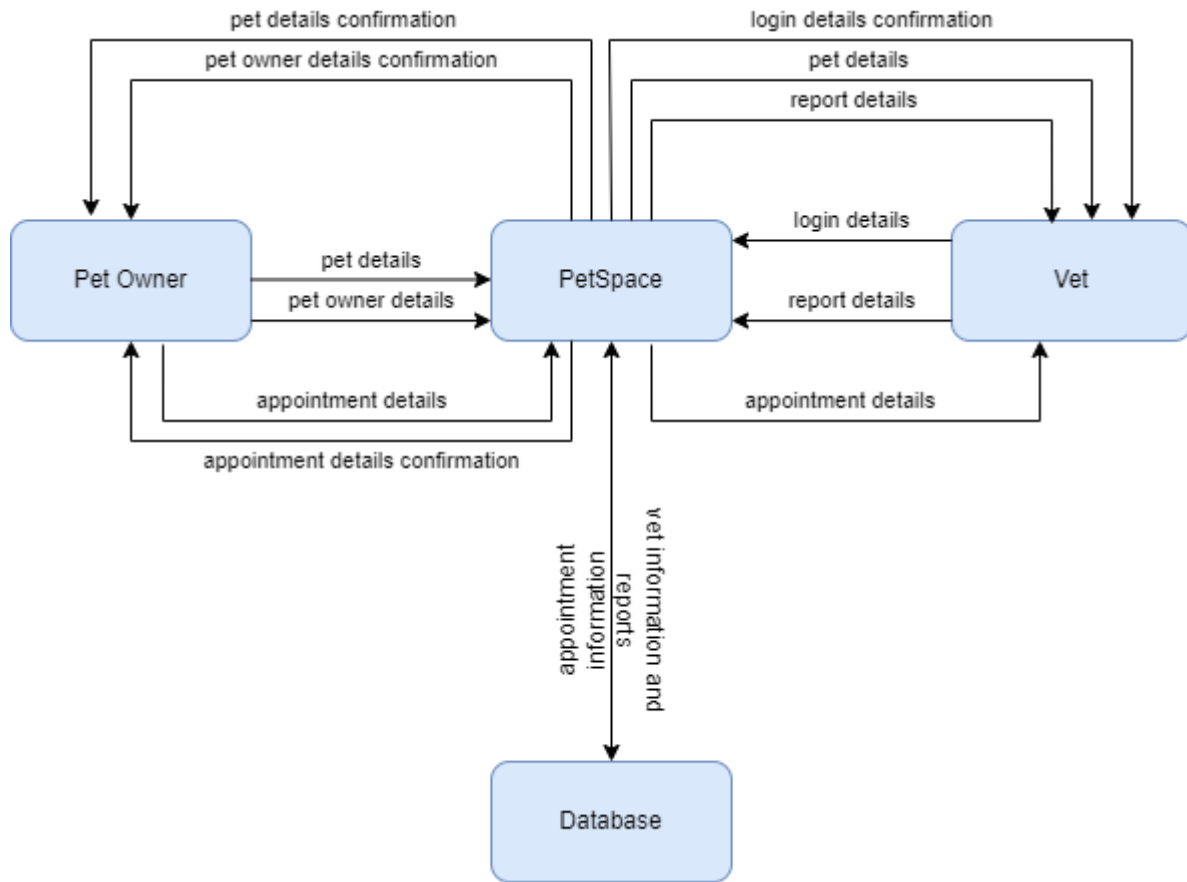


Figure 1 PetSpace Context Diagram

## 5) Use Case

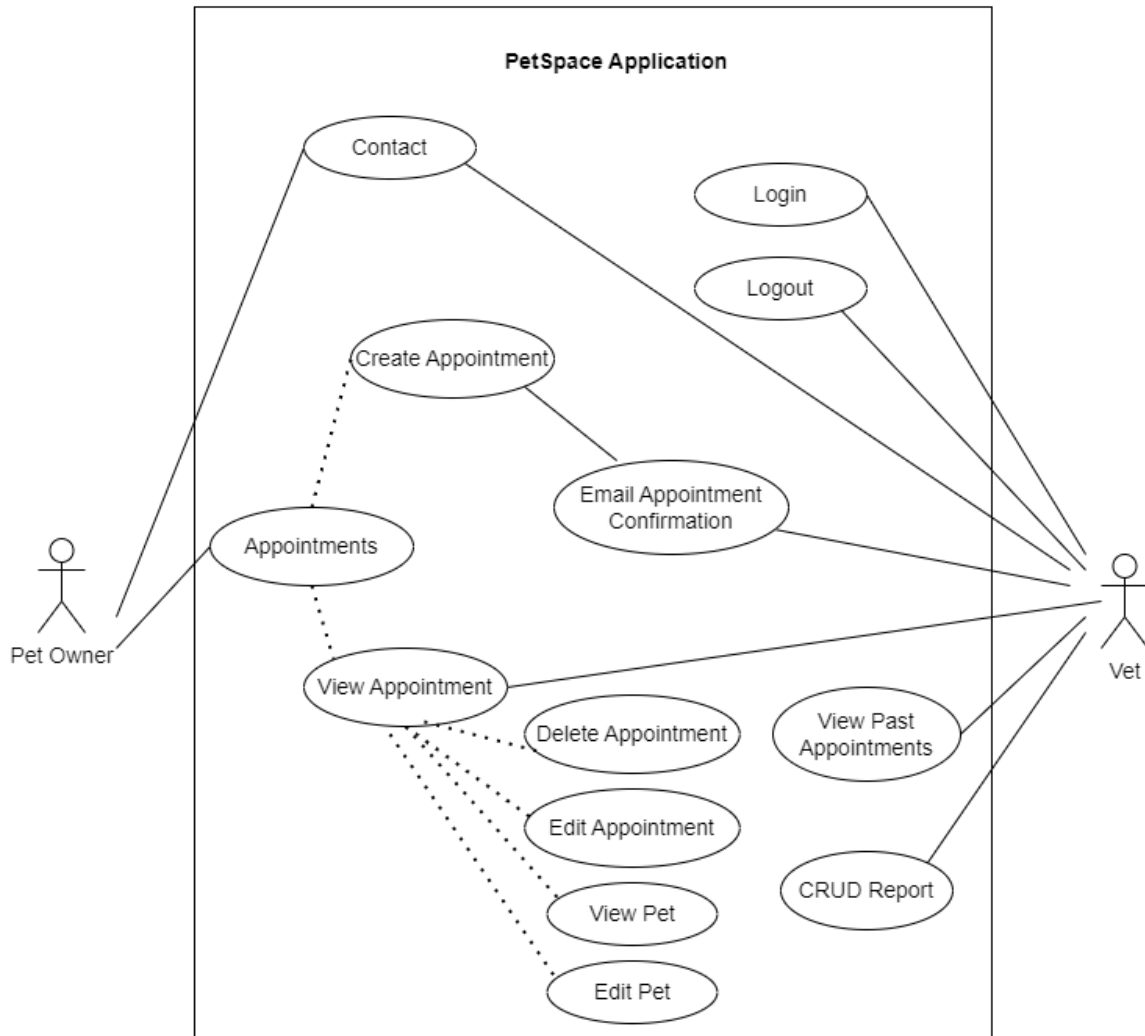


Figure 2 PetSpace Use Case Diagram



## 6) Brief Use Cases

### Create Appointment

**Actor:** Pet Owner

**Description:** This use case begins when a pet owner wishes to create an appointment for their pet. The pet owner can create appointment(s) with their chosen vet practice. The pet owner can select the “date” and “time” option. The use case ends when the pet owner has successfully created an appointment.

### View Appointment

**Actor:** Pet Owner

**Description:** This use case begins when a pet owner wishes to read their appointments for their pet. The use case ends when the pet owner has successfully viewed their pet appointments.

### Edit Appointment

**Actor:** Pet Owner

**Description:** This use case begins when a pet owner wishes to edit their appointments for their pet. The pet owner selects the ‘Edit’ option and modifies the information. The use case ends when the pet owner has successfully edited their pet’s appointment.

### Delete Appointment

**Actor:** Pet Owner

**Description:** This use case begins when a pet owner wishes to delete their appointments for their pet. The pet owner selects the ‘delete’ option. The use case ends when the pet owner has successfully deleted their pet’s appointment.

### Contact

**Actor:** Pet Owner, Vet

**Description:** This use case begins when a pet owner wishes to contact their vet through the Application. The pet owner selects the “Contact” option to view the contact form. The pet owner enters their credentials and clicks ‘submit’. The vet receives an email from the pet owner. The use case ends when the pet owner has successfully contacted their vet practice.

### E-Mail Appointment Confirmation

**Actor:** Pet Owner, Vet

**Description:** This use case begins when a pet owner wishes to e-mail appointment confirmation from ‘PetSpace. The pet owner selects the “Email Appointment Confirmation” option and is emailed information about their appointment. The Vet is emailed a copy of this appointment. The use case ends when the email has been sent.

**View Pet****Actor:** Pet Owner**Description:** This use case begins when a pet owner wishes to view their pet details. The pet owner selects the "View Appointment" option and views the pet the credentials. The use case ends when the pet owner has successfully viewed their pet's information.**Edit Pet****Actor:** Pet Owner**Description:** This use case begins when a pet owner wishes to modify their pet details. The pet owner selects the "Edit" option and edits the credentials. The use case ends when the pet owner has successfully edited their pet's information.**Login****Actor:** Vet**Description:** This use case begins when a vet wishes to log into the application. The vet enters their username and password before selecting the "login" option. The use case ends when the vet has successfully logged in.**CRUD Report****Actor:** Vet**Description:** This use case begins when the vet wishes to create, read or update a report about a specific pet on the application. The use case ends when the vet has successfully completed creating, retrieving or updating the report.**View Appointment****Actor:** Vet, Pet Owner**Description:** This use case begins when the vet wishes to view their upcoming appointments. The vet selects the "View Appointments" option and can retrieve information about the appointments. The use case ends when the vet has successfully viewed the records.**View Past Appointments****Actor:** Vet**Description:** This use case begins when the vet wishes to view past booked appointments. The vet selects the "View Past Appointments" option and view information about the appointment. The use case ends when the vet has successfully viewed past appointments.**Logout****Actor:** Vet**Description:** This use case begins when a vet wishes to logout of the application. The vet selects the "logout" option. The use case ends when the vet has successfully logged out.

## 7) Detailed Use Cases

<b>Use Case Name:</b>	<b>Create Appointment</b>
<b>Actors:</b>	Pet Owner
<b>Pre-conditions:</b>	<ul style="list-style-type: none"> <li>The application displays the 'Book Appointment' option.</li> </ul>
<b>Main Success Scenarios:</b>	<p><b>Create Appointment:</b></p> <ol style="list-style-type: none"> <li>The pet owner selects the 'Book Appointment' option.</li> <li>The pet owner fills in the necessary information.</li> <li>The pet owner selects the 'book' option.</li> <li>The application submits and saves the data to firebase.</li> </ol>
<b>Post-conditions:</b>	The pet owner has successfully booked an appointment for their pet.
<b>Alternative(s):</b>	<p><b>3a. The pet owner selects 'Cancel'</b></p> <ul style="list-style-type: none"> <li>The pet owner does not book the appointment</li> <li>The pet owner is returned to the previous screen.</li> </ul>

<b>Use Case Name:</b>	<b>View Appointment</b>
<b>Actors:</b>	Pet Owner
<b>Pre-conditions:</b>	<b>Create Appointment:</b> <ul style="list-style-type: none"> <li>The application displays the 'booking appointment screen'.</li> </ul>
<b>Main Success Scenarios:</b>	<b>View Appointment:</b> <ol style="list-style-type: none"> <li>The pet owner selects the 'View Appointment' option.</li> <li>The pet owner enters their email and selects 'View Appointment'.</li> <li>The application displays the pet owner's information.</li> </ol>
<b>Post-conditions:</b>	The pet owner successfully views their booking information.
<b>Alternative(s):</b>	<b>3a. The pet owner selects 'Cancel'</b> <ul style="list-style-type: none"> <li>The pet owner does not make any changes.</li> <li>The pet owner is returned to the previous screen.</li> </ul> <b>3a. The pet owner details are incorrect.</b> <ul style="list-style-type: none"> <li>The pet owner enters the wrong credentials.</li> <li>The pet owner cannot view their information.</li> </ul>

<b>Use Case Name:</b>	<b>Edit Appointment</b>
<b>Actors:</b>	Pet Owner
<b>Pre-conditions:</b>	<b>Create Appointment:</b> <ul style="list-style-type: none"> <li>The application displays the 'booking appointment screen'.</li> </ul>
<b>Main Success Scenarios:</b>	<b>Edit Appointment:</b> <ol style="list-style-type: none"> <li>The pet owner selects the 'Edit' option.</li> <li>The pet owner makes the necessary changes to the booking.</li> <li>The pet owner saves their changes.</li> <li>The changes are saved and updated in the database.</li> </ol>
<b>Post-conditions:</b>	The pet owner successfully edits their booking information.
<b>Alternative(s):</b>	<b>3a. The pet owner selects 'Cancel'</b> <ul style="list-style-type: none"> <li>The pet owner does not make any changes.</li> <li>The pet owner is returned to the previous screen.</li> </ul> <b>3a. The pet owner details are incorrect.</b> <ul style="list-style-type: none"> <li>The pet owner enters the wrong credentials.</li> <li>The pet owner cannot view their information.</li> </ul>

<b>Use Case Name:</b>	<b>Delete Appointment</b>
<b>Actors:</b>	Pet Owner
<b>Pre-conditions:</b>	<b>Create Appointment:</b> <ul style="list-style-type: none"> <li>The application displays the 'booking appointment screen'.</li> </ul>
<b>Main Success Scenarios:</b>	<b>Delete Appointment:</b> <ol style="list-style-type: none"> <li>The pet owner selects the 'Delete option.</li> <li>The pet owner is prompted if they are sure they want to delete their appointment.</li> <li>The pet owner selects 'delete'.</li> <li>The Appointment is deleted from the database.</li> </ol>
<b>Post-conditions:</b>	The pet owner successfully deletes their booking information.
<b>Alternative(s):</b>	<b>3a. The pet owner selects 'Cancel'</b> <ul style="list-style-type: none"> <li>The pet owner does not delete the appointment.</li> <li>The pet owner is returned to the previous screen.</li> </ul> <b>The pet owner details are incorrect.</b> <ul style="list-style-type: none"> <li>The pet owner enters the wrong credentials.</li> <li>The pet owner cannot view their information.</li> </ul>

<b>Use Case Name:</b>	<b>Contact</b>
<b>Actors:</b>	Pet Owner, Vet
<b>Pre-conditions:</b>	The pet owner views the 'PetSpace' application.
<b>Main Success Scenarios:</b>	<ol style="list-style-type: none"> <li>1. The pet owner selects the 'Contact' option.</li> <li>2. The pet owner fills in the required credentials.</li> <li>3. The pet owner clicks the 'submit' button.</li> <li>4. The vet receives an email from the pet owner.</li> </ol>
<b>Post-conditions:</b>	The pet owner has successfully contacted the vet. The vet receives an email from the pet owner
<b>Alternative(s):</b>	<p><b>3a. The pet owner selects 'Cancel'</b></p> <ul style="list-style-type: none"> <li>• The pet owner does not submit any data.</li> <li>• The pet owner is returned to the previous screen.</li> </ul>

<b>Use Case Name:</b>	<b>View Pet</b>
<b>Actors:</b>	Pet Owner
<b>Pre-conditions:</b>	<b>Create Appointment:</b> <ul style="list-style-type: none"> <li>The application displays the 'booking appointment screen'.</li> </ul>
<b>Main Success Scenarios:</b>	<b>View Appointment:</b> <ol style="list-style-type: none"> <li>The pet owner selects the 'View Appointment' option.</li> <li>The pet owner enters their email they booked the appointment with.</li> <li>The application displays the pet information.</li> </ol>
<b>Post-conditions:</b>	The pet owner has successfully viewed their pet information.
<b>Alternative(s):</b>	<b>The pet owner selects a different screen</b> <ul style="list-style-type: none"> <li>The pet owner is directed to a screen.</li> </ul> <b>3a. The pet owner details are incorrect.</b> <ul style="list-style-type: none"> <li>The pet owner enters the wrong credentials.</li> <li>The pet owner cannot view their information.</li> </ul>



<b>Use Case Name:</b>	<b>Edit Pet</b>
<b>Actors:</b>	Pet Owner
<b>Pre-conditions:</b>	<b>Create Appointment:</b> <ul style="list-style-type: none"> <li>The application displays the 'booking appointment screen'.</li> </ul>
<b>Main Success Scenarios:</b>	<b>Edit Appointment:</b> <ol style="list-style-type: none"> <li>The pet owner selects the 'View Appointment' option.</li> <li>The pet owner enters their email they booked the appointment with.</li> <li>The application displays the pet information.</li> <li>The pet owner selects the 'edit' option.</li> <li>The pet owner edits the appointment and saves their changes.</li> </ol>
<b>Post-conditions:</b>	The pet owner has successfully edited their pet information.
<b>Alternative(s):</b>	<b>The pet owner selects a different screen</b> <ul style="list-style-type: none"> <li>The pet owner is directed to a screen.</li> </ul> <b>3a. The pet owner details are incorrect.</b> <ul style="list-style-type: none"> <li>The pet owner enters the wrong credentials.</li> <li>The pet owner cannot view/edit their information.</li> </ul>

<b>Use Case Name:</b>	<b>Email Appointment Confirmation</b>
<b>Actors:</b>	Pet Owner, Vet
<b>Pre-conditions:</b>	<b>Create Appointment:</b> <ul style="list-style-type: none"> <li>The application displays the 'booking appointment screen'.</li> <li>The 'email' option is displayed.</li> </ul>
<b>Main Success Scenarios:</b>	<ol style="list-style-type: none"> <li>The pet owner selects the 'Email Appointment Confirmation' option</li> <li>The email is sent to the pet owner and a copy is sent to the vet.</li> </ol>
<b>Post-conditions:</b>	An email of their booking information is successfully sent to them and the vet.
<b>Alternative(s):</b>	<b>1a. The pet owner does not want a copy of the email.</b> <ul style="list-style-type: none"> <li>The pet owner is returned to the home screen.</li> </ul>

<b>Use Case Name:</b>	<b>Login</b>
<b>Actors:</b>	Vet
<b>Pre-conditions:</b>	The application displays the “login” option.
<b>Main Success Scenarios:</b>	<ol style="list-style-type: none"> <li>1 The vet opens the application.</li> <li>2 The application requests the login form requesting the vet’s email and password.</li> <li>3 The vet enters their email and password and selects “login”.</li> <li>4 Upon successful login, the vet is redirected to the application’s home page.</li> </ol>
<b>Post-conditions:</b>	The vet is logged in successfully.
<b>Alternative(s):</b>	<b>4a. Login unsuccessful</b> <ul style="list-style-type: none"> <li>• If the login is unsuccessful, the page will display an error message to the vet.</li> </ul>

Use Case Name:	View Appointment
<b>Actors:</b>	Vet
<b>Pre-conditions:</b>	<ul style="list-style-type: none"> <li>• A vet is logged in</li> <li>• At least one booking has been created.</li> </ul>
<b>Main Success Scenarios:</b>	<ol style="list-style-type: none"> <li>1. The vet selects the 'Dashboard' option.</li> <li>2. The vet views their appointments for the week.</li> </ol>
<b>Post-conditions:</b>	The vet successfully views their appointments.
<b>Alternative(s):</b>	<b>2a. No appointments have been made.</b> <ol style="list-style-type: none"> <li>1. The vet's calendar is clear.</li> </ol>

<b>Use Case Name:</b>	<b>View Past Appointments</b>
<b>Actors:</b>	Vet
<b>Pre-conditions:</b>	<ul style="list-style-type: none"> <li>• A vet is logged in</li> <li>• At least one booking has been created.</li> </ul>
<b>Main Success Scenarios:</b>	<ol style="list-style-type: none"> <li>3. The vet selects the 'Dashboard' option.</li> <li>4. The vet views their past appointments.</li> </ol>
<b>Post-conditions:</b>	The vet successfully views their past appointments.
<b>Alternative(s):</b>	<ol style="list-style-type: none"> <li>2a. <b>No appointments have been made.</b></li> <li>2. The vet's calendar is clear.</li> </ol>

<b>Use Case Name:</b>	<b>CRUD Report</b>
<b>Actors:</b>	Vet
<b>Pre-conditions:</b>	<b>Login:</b> <ul style="list-style-type: none"> <li>• Vet is logged in</li> <li>• The application displays the creation screen.</li> </ul>
<b>Main Success Scenarios:</b>	<b>Create Report:</b> <ol style="list-style-type: none"> <li>1. The vet selects the 'Report' option next to the pet.</li> <li>2. The vet enters the pet information.</li> <li>3. The vet selects the 'Save' option</li> <li>4. The application submits and saves the data.</li> </ol> <b>View Report:</b> <ol style="list-style-type: none"> <li>1 The vet selects the 'View Reports' option.</li> <li>2 The application displays the information.</li> </ol> <b>Edit Report:</b> <ol style="list-style-type: none"> <li>1 The vet selects the 'Edit' option next to the pet.</li> <li>2 The vet makes changes to report.</li> <li>3 The vet submits these changes.</li> <li>4 The application submits and saves the data.</li> </ol>
<b>Post-conditions:</b>	The vet successfully created/viewed/edited a pet's report.
<b>Alternative(s):</b>	<b>3a. The vet selects the 'cancel' button</b> <ul style="list-style-type: none"> <li>• The vet does not make any changes to the pet's report.</li> <li>• The vet is returned to the previous screen.</li> </ul>

<b>Use Case Name:</b>	<b>Logout</b>
<b>Actors:</b>	Vet
<b>Pre-conditions:</b>	A vet is logged in.
<b>Main Success Scenarios:</b>	1. The vet selects the 'logout' option.
<b>Post-conditions:</b>	The vet is successfully logged out.

## 8) FURPS+

The following details the non-functional requirements for the PetSpace application.

### 8.1 Functionality

This encapsulates the application's key characteristics and essential functionality. In the earlier portions of this document, the primary features and functions of the PetSpace application were discussed.

### 8.2 Usability

The user interface, accessibility and responsiveness of the application are included in this section.

- Pet owners who require a vet appointment for their pet, should be able to easily traverse the user interface (UI) design (e.g. background colours should not be too bright/distracting.)
- 90% of the time, vets should be able to establish a profile in less than 2 minutes along with the ability to log into their account within 10 seconds.

### 8.3 Reliability

This speaks to the application's expectations for uptime and how quickly it bounces back from errors. Pet owners should have the ability to contribute details about their pet without having a connection to the internet.

### 8.4 Performance

The efficiency, speed of reaction and data retrieval of the application are all included in this section.

- 90% of the time, the signup/login procedure for vets should take 1 minute.
- 90% of the time, data should be supplied and retrieved in less than 3 seconds.
- The application should permit simultaneous use by multiple users (pet owners and vets).



## 8.5 Supportability

Referring to the application's testability, upkeep and compatibility.

React will be used in the development of the cross-platform application. The following will be supported by the application:

Android (minimum version 4.4 or higher )

Windows (minimum version Windows 10)

## 8.6 +

This section alludes to additional considerations like security.

The application will use Firebase Authentication to give vets a means to log in. In order to increase security, Firebase Authentication also manages sending emails for password resets. Access to the application should only be granted to vets who have registered.

## 9) Conclusion

In conclusion, PetSpace is a cross platform application that is designed to meet the requirements of animal owners who wish to make an appointment for their pet without having to organise an appointment over the phone. It is also designed for vets to easily accommodate and schedule their upcoming appointments for the next two weeks.

The main functionalities of the application for the pet owner include Create Appointment, View Appointment, Edit Appointment, Delete Appointment, View Pet, Edit Pet, Email Appointment Confirmation and Contact.

The main functionalities of the application for the vet include Signup, Login, Logout, View Appointments, View Past Appointments, CRUD Report, an emailed copy of the pet owners appointment and also an option to print the reports.

The non-functional requirements were also discussed above in the for of Functionality, Usability, Reliability, Performance, Supportability and Security.