

**INTEGRATED SMART PET CARE APPOINTMENT SYSTEM WITH
MARKETPLACE AND EDUCATIONAL BLOG**

**BY
LAU JIA PEI**

**A REPORT
SUBMITTED TO
Universiti Tunku Abdul Rahman
in partial fulfillment of the requirements
for the degree of
BACHELOR OF INFORMATION SYSTEMS (HONOURS) (DIGITAL ECONOMY
TECHNOLOGY)
Faculty of Information and Communication Technology
(Kampar Campus)**

FEBRUARY 2026

COPYRIGHT STATEMENT

© 2026 LAU JIA PEI. All rights reserved.

This Final Year Project report is submitted in partial fulfillment of the requirements for the degree of Bachelor of Information Systems (Honours) (Digital Economy Technology) at Universiti Tunku Abdul Rahman (UTAR). This Final Year Project report represents the work of the author, except where due acknowledgment has been made in the text. No part of this Final Year Project report may be reproduced, stored, or transmitted in any form or by any means, whether electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the author or UTAR, in accordance with UTAR's Intellectual Property Policy.

ACKNOWLEDGEMENTS

I would like to express my deepest appreciation to my supervisor, Dr Zanariah binti Zainudin, for her constant support and giving me the opportunity to engage in this project. She has provided insightful feedback during every monitoring session and guidance throughout the development process. Her expertise and advice have been essential in helping me improve my work and overcome challenges along the way.

I am also deeply grateful to my family for their endless support, patience, and understanding. Their encouragement has been a great source of strength and motivation, especially during difficult times.

Lastly, I would like to extend my appreciation to my friends, who have provided help, shared ideas, and given me psychological support throughout this journey. Their contributions and encouragement have played a significant role in the successful completion of this project.

ABSTRACT

This project proposes the development of a Pet Care Experience Platform with the goal of improving interactions between pet owners and groomers. Considering Malaysia's expanding pet ownership, which has resulted in a high demand for professional grooming services, the initiative addresses fundamental issues that pet owners encounter, such as a, limited access to information, and complicated appointment processes.

The website includes educational resources, such as blogs with grooming tips and general pet care guidance, with the goal of helping pet owners, particularly those who are new to pet care. Marketplace for daily pet care products is also implemented to offer a convenient one-stop solution. Therefore, the users can schedule pet care service appointments and simultaneously purchase essential products for pick up. By streamlining the appointment scheduling procedure, the platform improves the user experience and accessibility for both pet owners and service providers.

The suggested system not only aims to improve pet welfare while grooming, but it also helps to promote the pet grooming sector by providing a user-friendly interface that encourages consumer involvement and loyalty. Overall, this project represents an enormous milestone toward upgrading pet grooming services and meeting the changing needs of Malaysian pet owners.

Area of Study: Web-based System Development, User Experience Design

Keywords: Pet grooming system, Online appointment booking, Pet care platform, Marketplace integration, User experience

TABLE OF CONTENTS

INTEGRATED SMART PET CARE APPOINTMENT SYSTEM WITH MARKETPLACE AND EDUCATIONAL BLOG	i
COPYRIGHT STATEMENT	ii
ACKNOWLEDGEMENTS	iii
ABSTRACT	iv
TABLE OF CONTENTS	v
LIST OF FIGURES	ix
LIST OF TABLES	xii
LIST OF SYMBOLS	xiv
LIST OF ABBREVIATIONS	xv
CHAPTER 1 INTRODUCTION	1
1.1 Problem Statement and Motivation	1
1.1.1 Lack of efficient and transparent appointment booking system	3
1.1.2 Absence of integrated marketplace for daily pet care products and services	3
1.1.3 Limited access to reliable pet care information and guidance	4
1.2 Project Objectives	5
1.2.1 To develop a streamlined online appointment booking system	5
1.2.2 To integrate an online marketplace modul	5
1.2.3 To provide accessible pet knowledge through educational blog	6
1.3 Project Scope and Direction	7
1.4 Project Contributions	9
1.5 Report Organization	10

CHAPTER 2 LITERATURE REVIEW	12
2.1 Existing System in Pet Care Industry	12
2.1.1 Pet Grooming Hotel	12
2.1.2 Petsman	14
2.1.3 Pet Lovers Centre	16
2.2 Proposed Solution	18
2.3 Comparison Between Similar System	20
 CHAPTER 3 SYSTEM METHODOLOGY/APPROACH	 22
3.1 Agile Methodology	22
3.2 Timeline	24
 CHAPTER 4 SYSTEM DESIGN	 27
4.1 System Block Diagram	27
4.2 ERD Diagram	29
4.3 Use Case Diagram	31
4.4 Use Case Description	33
4.4.1 User Perspective – Register	33
4.4.2 All Roles Perspective – Login	34
4.4.3 All Roles Perspective - Logout	35
4.4.4 User Perspective – Manage Profile	36
4.4.5 User Perspective – Browse Services and Timeslots	37
4.4.6 User Perspective – Book Appointment	38
4.4.7 User Perspective – View Appointment History	39
4.4.8 User Perspective – Browse Marketplace and Product Details	40
4.4.9 User Perspective – Manage Cart	41
4.4.10 User Perspective – Checkout/Place Order	42
4.4.11 User Perspective – View Order	43
4.4.12 User Perspective – Cancel Order	44
4.4.13 User Perspective – Read Blog	45
4.4.14 User Perspective – Like/Comment/Reply Blog	46
4.4.15 User Perspective – Manage Pets	47

4.4.16 Groomer Perspective – Manage Groomer Profile	48
4.4.17 Groomer Perspective – Manage Schedule	49
4.4.18 Groomer Perspective – Review Appointments	50
4.4.19 Groomer Perspective – Update Grooming Status	51
4.4.20 Staff and Admin Perspective – Manage Products	52
4.4.21 Staff and Admin Perspective – Manage Order	53
4.4.22 Staff Perspective - Manage Blogs	54
4.4.23 Admin Perspective – View Dashboard	55
4.4.24 Admin Perspective – Manage Users	56
4.4.25 Admin Perspective – Manage Service Prices	57
4.5 Flowchart	58
4.6 Activity Diagram	60
4.6.1 Register	60
4.6.2 Login	62
4.6.3 AI Chatbot	64
4.6.4 Appointment Booking	66
4.6.5 Groomer Appointment Review	68
4.6.6 Grooming Service	70
4.6.7 Marketplace Order	72
4.6.8 Pet Profile Management	74
4.6.9 Feedback and Rating	76
4.6.10 Blog Interaction	78
4.6.11 Blog Management	80
CHAPTER 5 SYSTEM IMPLEMENTATION	82
5.1 Hardware Setup	82
5.2 Software Setup	83
5.3 Setting and Configuration	85
5.4 System Operation	88
5.4.1 Website Main Page	88
5.4.2 User Page	92
5.4.3 Groomer Page	125

5.4.4	Staff Page	133
5.4.5	Admin Page	141
5.5	Implementation Issues and Challenges	148
5.5.1	API Integration Challenge	148
5.5.2	Email and SMTP Configuration	148
5.5.3	Appointment Scheduling Conflicts	148
CHAPTER 6	SYSTEM EVALUATION AND DISCUSSION	149
6.1	Testing Setup and Result	149
6.1.1	User Site	149
6.1.2	Groomer Site	152
6.1.3	Staff Site	154
6.1.4	Admin Site	156
6.2	Project Challenges	158
6.2.1	AI Chatbot Limitations	158
6.2.2	Data Consistency and Real-Time Updates	158
6.2.3	User Adoption and Learning Curve	158
6.3	Objectives Evaluation	159
6.3.1	Streamlined Pet Grooming Appointment Booking System	159
6.3.2	Integrated Marketplace for Pet Care Products	159
6.3.3	Educational Blog and AI Chatbot for User Support	159
CHAPTER 7	CONCLUSION AND RECOMMENDATION	161
7.1	Conclusion	161
7.2	Recommendation	163
REFERENCES		164
POSTER		166

LIST OF FIGURES

Figure Number	Title	Page
Figure 2.1	Pet Grooming Hotel	12
Figure 2.2	Petsman	14
Figure 2.3	Pet Lovers Centre	16
Figure 3.1	Agile Methodology	22
Figure 4.1	System Block Diagram	27
Figure 4.2	ERD Diagram	29
Figure 4.3	Use Case Diagram	31
Figure 4.5	Flowchart	58
Figure 4.6.1	User Register Activity Diagram	60
Figure 4.6.2	User Login Activity Diagram	62
Figure 4.6.3	AI Chatbot Activity Diagram	64
Figure 4.6.4	Appointment Booking Activity Diagram	66
Figure 4.6.5	Appointment Review Activity Diagram	68
Figure 4.6.6	Grooming Service Activity Diagram	70
Figure 4.6.7	Marketplace Order Activity Diagram	72
Figure 4.6.8	Pet Profile Management Activity Diagram	74
Figure 4.6.9	Feedback and Rating Activity Diagram	76
Figure 4.6.10	Blog Interaction Activity Diagram	78
Figure 4.6.11	Blog Management Activity Diagram	80
Figure 5.3.1	XAMPP Server Setup	85
Figure 5.3.2	Application Setting	85
Figure 5.3.3	Database Configuration	86
Figure 5.3.4	Database Migration	86
Figure 5.3.5	Database Seeding	87
Figure 5.3.6	Email/SMTP Configuration	87
Figure 5.3.7	Gemini API Configuration	87
Figure 5.4.1.1	Webpage Main Page	89
Figure 5.4.1.2	User Registration Page	91

Figure 5.4.1.3	User Login Page	91
Figure 5.4.2.3	User Main Page	92
Figure 5.4.2.4	Services Appointment Page	93
Figure 5.4.2.5	Appointment for Pet 1	94
Figure 5.4.2.6	Appointment for Pet 2	94
Figure 5.4.2.7	Appointment Summary	96
Figure 5.4.2.8	Appointment Confirmation Email	97
Figure 5.4.2.9	Appointment Approved Email	97
Figure 5.4.2.10	Appointment Rejection Email	98
Figure 5.4.2.11	Grooming Process Live Tracking	99
Figure 5.4.2.12	Grooming Process Live Tracking	99
Figure 5.4.2.13	Marketplace Page	101
Figure 5.4.2.14	Out of Stock Product Card	101
Figure 5.4.2.15	Product Details	103
Figure 5.4.2.16	Out of Stock Product Details	103
Figure 5.4.2.17	My Cart	105
Figure 5.4.2.18	Cart Summary	106
Figure 5.4.2.19	My Order	107
Figure 5.4.2.20	Order Confirmation Email	108
Figure 5.4.2.21	Order Ready for Collection Reminder Email	109
Figure 5.4.2.22	Blog Page	110
Figure 5.4.2.23	Blog Post	111
Figure 5.4.2.24	Blog Comment and Likes	112
Figure 5.4.2.25	Comment Deletion	113
Figure 5.4.2.26	Groomer Profile	114
Figure 5.4.2.27	Groomer Certification	115
Figure 5.4.2.28	User Profile	116
Figure 5.4.2.29	Account Setting – Personal Information	118
Figure 5.4.2.30	Account Setting – Security	118
Figure 5.4.2.31	Appointment History	119
Figure 5.4.2.32	Upcoming Appointment	119
Figure 5.4.2.33	Add New Pet	120

Figure 5.4.2.34	Edit Pet Profile	121
Figure 5.4.2.35	Pet Profile Deletion	122
Figure 5.4.2.36	AI Chatbot	123
Figure 5.4.2.37	Interaction with AI Chatbot in English	123
Figure 5.4.2.38	Interaction with AI Chatbot in Bahasa Malaysia	124
Figure 5.4.2.39	Interaction with AI Chatbot in Mandarin	124
Figure 5.4.3.1	Groomer Main Page	125
Figure 5.4.3.2	Appointment Details	126
Figure 5.4.3.2	Appointment Management	127
Figure 5.4.3.3	Appointment Approval	128
Figure 5.4.3.4	Appointment Rejection	128
Figure 5.4.3.5	Groomer Profile Management	130
Figure 5.4.3.6	Schedule Management	131
Figure 5.4.3.7	Account Setting	131
Figure 5.4.4.1	Staff Main Page	133
Figure 5.4.4.2	Product Management	134
Figure 5.4.4.3	Add New Product	135
Figure 5.4.4.4	Edit Product	135
Figure 5.4.4.5	Order Management	136
Figure 5.4.4.6	Order Details	137
Figure 5.4.4.7	Blog Management	138
Figure 5.4.4.8	Create Blog Post	139
Figure 5.4.4.9	Edit Blog Post	139
Figure 5.4.4.10	Account Setting	140
Figure 5.4.5.1	Admin Dashboard	141
Figure 5.4.5.2	User Management	142
Figure 5.4.5.3	Create New User	143
Figure 5.4.5.4	Product Management	144
Figure 5.4.5.5	Order Management	145
Figure 5.4.5.6	Appointment Management	146
Figure 5.4.5.7	Service Price Management	147
Figure 5.4.5.8	Admin Account Setting	147

LIST OF TABLES

Table Number	Title	Page
Table 2.1	Previous System Comparison	20
Table 3.2	Timeline for FYP1 and FYP2	24
Table 4.4.1	Register Use Case Description	33
Table 4.4.2	Login Use Case Description	34
Table 4.4.3	Logout Use Case Description	35
Table 4.4.4	Manage Profile Use Case Description	36
Table 4.4.5	Browse Services and Timeslots Use Case Description	37
Table 4.4.6	Book Appointment Use Case Description	38
Table 4.4.7	View Appointment History Use Case Description	39
Table 4.4.8	Browse Marketplace and Product Details Use Case Description	40
Table 4.4.9	Manage Cart Use Case Description	41
Table 4.4.10	Place Order/ Checkout Use Case Description	42
Table 4.4.11	View Order Use Case Description	43
Table 4.4.12	Cancel Order Use Case Description	44
Table 4.4.13	Read Blog Use Case Description	45
Table 4.4.14	Like/Comment/Reply Blog Use Case Description	46
Table 4.4.15	Manage Pets Use Case Description	47
Table 4.4.16	Manage Groomer Profile Use Case Description	48
Table 4.4.17	Manage Schedule Use Case Description	49
Table 4.4.18	Review Appointments Use Case Description	50
Table 4.4.19	Update Grooming Status Use Case Description	51
Table 4.4.20	Manage Products Use Case Description	52
Table 4.4.21	Manage Order Use Case Description	53
Table 4.4.22	Manage Blogs Use Case Description	54
Table 4.4.23	View Dashboard Use Case Description	55
Table 4.4.24	Manage Users Use Case Description	56
Table 4.4.25	Manage Service Prices Use Case Description	57

Table 5.1	Hardware Specifications	82
Table 5.2	Software Specifications	83
Table 6.1.1	Test Case for User Site	149
Table 6.1.2	Test Case for Groomer Site	152
Table 6.1.3	Test Case for Staff Site	154
Table 6.1.4	Test Case for Admin Site	156

LIST OF SYMBOLS

LIST OF ABBREVIATIONS

<i>AI</i>	Artificial Intelligence
<i>FAQs</i>	Frequently Asked Questions
<i>ERD</i>	Entity Relationship Diagram
<i>EN</i>	English
<i>MS</i>	Bahasa Malaysia
<i>ZH</i>	Mandarin

Chapter 1

Introduction

Pet industry in Malaysia has experienced significant growth in recent years. According to a survey by Rakuten Insight, three out of five individuals in Asia own pets which includes not only cats and dogs, but also other exotic species [1]. In Malaysia 24.7% of individuals owned one pet, 26.4% own multiple pets while 26.2% currently do not own a pet but expressed interested in having pet [2]. This trend led to high demand for pet-related services because of owners' desire for companionship, stress relief, and security.

Nowadays, pet care has become an essential service beyond basics feed and shelter. Among all aspects of pet care, pet grooming plays a crucial role in maintaining pets' overall hygiene, health, and comfort. A grooming session involves bathing to clean the skin and coat, brushing to remove loose fur and prevent matting, nail trimming to avoid discomfort or injury, and ear cleaning to reduce the risk of infections. These practices can effectively prevent health issues that impact pets' health such as skin infections, parasite infestations, and nail disorders. Moreover, grooming brings significant emotional benefits, which positively influences their behaviour and reduces stress levels [3].

In addition, pet styling has grown in popularity among owners who wish to enhance their pets' appearance and individuality. Pet styling includes customized haircuts, precise coat trimming, and breed-specific designs that highlight the unique identity of different breeds. This services not only improve aesthetics but also serve practical purposes such as improving coat manageability, reducing shedding, and keeping pets cool in Malaysia's warm and humid climate [4].

Furthermore, pet spa treatments merging luxury and wellness component of modern pet care. These treatments often combine relaxing techniques and beneficial outcomes. Herbal baths utilize organic ingredients with calming and healing features, while paw massages increase circulation and relieve muscle stress. Coat conditioning treatments retain moisture and improve fur texture, while specialized flea cures using natural herbal methods that are not harmful to

the pet skin [5]. These spa experiences improve pets' mental state and also physical health by addressing issues like poor circulation, dry skin, and parasite infestations.

Grooming, styling, and spa treatments evolved into pet life have demonstrated the market that prioritizes hygiene, aesthetics, and wellness pets. It reflects pet owners' rising expectations to pets not just being well-fed but also tidy, stylish, and treated for long-term health and happiness.

In information system era, digital solutions should be effectively integrated into this sector to meet rising customer expectations and improve service efficiency. However, many pets grooming businesses especially SMEs still rely on manual booking method which contribute to fragmented communication and limited-service transparency. Therefore, this project is aimed to develop a web-based pet care management system that integrates appointment scheduling, real-time service tracking, marketplace features, and intelligent support to enhance user experience as well as operational efficiency.

1.1 Problem Statement and Motivation

The growth of pet ownership in Malaysia has led to greater demand for professional grooming services, since these services provide essential benefit such as improved hygiene, health and comfort for pets [5]. Nevertheless, some critical challenges continue to hinder a satisfactory experience for both pet owners and grooming service providers in developing pet grooming industry.

1.1.1 Lack of efficient and transparent appointment booking system

A major issue is the lack of streamlined and efficient appointment booking system. A lot of grooming service centres still apply manual booking methods like phone calls or social media messaging. These approaches lack of real-time coordination which easily cause scheduling conflicts, duplicate bookings, and poor communication between both parties. Thus, both parties involved may experience inconvenience, delays, and reduced service efficiency.

Additionally, pet owners may experience anxiety due to unclear grooming sessions duration. Grooming session can last for one hour or longer depending on the pet size and specific requirements. So, most of the owners are unable to accurately estimate the time required for grooming process. The lack of clarity may disrupt their personal schedule, especially where there are no updates during grooming process. As a result, this uncertainty can reduce customers' confidence toward the services.

1.1.2 Absence of integrated marketplace for daily pet care products and services

Another challenge is the absence of integrated marketplace for daily pet care products and services. Typically, many grooming service centres operate independently from product sales platforms. So, customers have to purchase pet care products from separate online stores or physical shops. This fragmented approach create inconvenience because users need to switch between multiple platforms to fulfil pet care needs.

From business perspective, they had miss opportunities for additional revenue and customer engagement due to separated operation. When services and product are managed on different platform, service providers will find it difficult to promote relevant products during or after service sessions. This limits cross-selling opportunities and reduces customer retention because the lack of encouragement for repeat interaction within single platform.

1.1.3 Limited access to reliable pet care information and guidance

Furthermore, limited access to reliable pet care guidance and education generate a significant problem. Many pet owners lack sufficient knowledge about proper grooming techniques and general pet care, that affect them to make informed decisions when selecting services and products. Therefore, it could reduce awareness about importance of regular grooming and specific pet needs, ultimately impacting the health and well-being of their animals.

These challenges not only impact pet health and customer satisfaction but also limit the growth potential of the pet care industry. To improve the experience of all parties involved, these problems must be addressed with innovative, accessible, and user-friendly solutions.

1.2 Project Objectives

The primary objective of this project is to strengthen the overall pet grooming experience for both pet owners and service providers by navigating current industry constraints. With a growing requirement in the pet care industry, the project's goal is to provide a platform that bridges the gap between service providers and customers by promoting better transparency, efficiency, and trust.

1.2.1 To develop a streamlined online appointment booking system

Firstly, this objective aim to design and implement an efficient and user-friendly appointment scheduling system that allows pet owners to view available grooming time slots, select their preferred date and time, as well as make appointment confirmation. Before appointment, the system sends automated email reminders to reduce missed appointments and enhance overall convenience.

In addition, the system will include real-time status updates to improve transparency. There are six stages grooming progress pipeline (Booked, Confirmed, Check-in, In progress, Ready for pickup, Collected) create high level of visibility. This feature ensures the pet owners stay informed during grooming processed so they can easily manage their time. This objective contributes to deliver a smooth service experience to pet owners.

1.2.2 To integrate an online marketplace module

Secondly, this objective focuses on incorporating an e-commerce section within the pet care management system to meet everyday needs of pet owners. The platform will offer a wide range of essential pet care products like pet foods, pet accessories, health care products, and toys. Every product will be listing well along with images, descriptions, and prices that help users to make sound decision.

By combining booking system with an online store, the platform aims to become a seamless and convenient one-stop solution. It enhances user convenience and encourages consistent pet care practices. From business perspective, there are additional revenue opportunities for grooming service providers. It also allow customer engagement by keeping users within a single ecosystem.

1.2.3 To provide accessible pet knowledge through educational blog

Thirdly, the project will include a blog section to provide accessible and reliable pet care knowledge. The blog post featuring a wide range education articles, such as grooming tips, breed-specific care recommendations, seasonal care guides, product usage advice, and general health-related content. Resources uploaded would be valuable for inexperienced pet owners who may lack sufficient knowledge about proper grooming routines, product selection, or recognizing signs of health issues in their pets.

Blog pages that provide accurate and practical content can serve as trusted sources to support pet owner in making informed decisions regarding pets' hygiene, comfort and well-being. Furthermore, the comment and reply features ensure the interaction between users and admin. This feature strongly encourage knowledge sharing and active user engagement within the platform.

1.3 Project Scope and Direction

The scope of this project covers the design and development of a **web-based pet care management system** with integrated features to enhance the overall user experience. Different functions will be developed for four types of users which are pet owners (users), administrator (admin), staffs, and groomers. The main functions include **online appointment management, integrated marketplace for pet products, educational blog for pet care sharing**. The system will also implement additional features for more comprehensive services such as automated reminders and AI chatbot support.

From the **pet owner (user) perspective**, the system provides complete and convenient pet care service journey. Users can register and log in, browse available grooming services, view detailed groomer profiles. Pet profiles are created and linked for future appointments because it recorded pet grooming history as reference. User can make appointments based on real-time availability. The user will receive automated email reminder and view their appointment history. To enhance transparency, users can track real-time grooming progress, such as appointment booked, pet check-in, grooming in progress, ready for collection, and pet collected. An AI-powered chatbot is implemented to assist users with FAQs in multiple languages, including English, Bahasa Malaysia, and Chinese.

From the **groomer perspective**, the system provides a dedicated dashboard to view daily grooming operations and service delivery. An interactive calendar is built for groomer to organize their schedule and read through all service details such as pets' information and requirements stated by pet owners for advanced preparation. The system includes a structured progress pipeline for groomer to update real-time status for transparency. In addition, the groomer able to manage their time availability. They are allowed to set time slots themselves based on workload and complexity. Furthermore, they can maintain and update profiles that including experience, specialties, and certifications which helps to build trust.

From the **staff perspective**, the system will function as an operational coordination platform that supports daily business management and workflow. Staff are responsible for managing marketplace products, processing customer orders, and maintaining blog content. They must ensure that product listings are accurate, inventory is update, and order fulfilment is handled smoothly. In addition, staff oversee the blog posts to interact with user comments and replies.

From the **administrator perspective**, the system gives centralized control to ensure smooth platform and business operation. Administrator has ability to handle account creation, role assignment, and access control. Admin can create account for staff and groomer so they can access to respective webpage. In admin dashboard, there are data visualizations such as appointment trends, revenue performance, service distribution, product sales, and groomer workload analysis. Those insights help admin to make sound decision and business planning.

1.4 Contributions

This project contributes a fully functional web-based platform that benefit a variety of users. Pet owners, service providers, staff, and administrators get benefits in ways of improve operational efficiency and user experience. The system is intended to improve daily use for each group by giving clear functions and useful features.

Firstly, the system introduces a streamlined and centralized appointment booking method with real-time availability and structured workflow management. This inclusion enables pet owners to schedule and manage appointments efficiently without reply on manual communication methods. Pet owners can always stay informed throughout the grooming process and reducing uncertainty.

Secondly, the project combines appointment system with an online marketplace for users to access both services and products within single system. This approach enhances users' convenience while creating additional business opportunities for service providers.

Thirdly, the system provides accessible and reliable pet care knowledge through educational blog post. The blog serves as a trusted source of information to help pet owners to make informed decisions. This features particularly beneficial for inexperienced pet owners who has lack of proper guidance on take care pets.

1.5 Report Organization

This report is organized into seven chapters, describing proposed web-based pet care system from different aspect. The structure of the report is designed to provide a clear and systematic understanding of the entire project. Each chapter explaining the development process, system design, and overall contribution of the project.

Chapter 1 represents the background of the project, problem statements, research objectives, project scope and direction, project contributions, and the overall structure of the report. It establishes the motivation and context for the development of the system. This chapter provides an overview of the report structure to understand the organization of the document.

Chapter 2 demonstrates the reviews and analyses of existing systems. This chapter identifies the limitations in current solutions and highlights the research gaps addressed by this project. These findings justify the need for developing a more integrated and efficient system.

Chapter 3 describes the development approaches and techniques used in this project. It includes system development methodology, system architecture, and modelling tools such as use case diagrams and activity diagrams to illustrate system workflows.

Chapter 4 presents the overall system design, including system architecture, module structure, database schema, and technology stack. It explains how different components of the systems interact and how data flows within the platform. This helps ensure that the system design is scalable, organized, and efficient.

Chapter 5 shows the development and implementation of the system including environment setup, tools and technologies used, and the implementation of key modules such as appointment management, real-time tracking, marketplace, blog, and chatbot features. It demonstrates how the system design is translated into actual functional components.

Chapter 6 evaluates the performance and functionality of the system through testing and analysis. It includes test result, system validation, and discussion on how well the system meets

the research objectives and user requirements. This chapter ensures that the system is reliable and performs as expected

Chapter 7 summarizes the overall project that highlighting key findings and contributions. It also provides recommendations for future improvements and potential enhancements to further develop the system. It emphasizes the potential for future development and continuous improvement of the system.

Chapter 2

Literature Review

2.1 Existing System in Pet Care Industry

Several pet care centres have integrated related appointment system to enhance customer convenience and service efficiency. For example, Pet Grooming Hotel [6], Petsman [7], and Pet Lovers Centre [8] offer web-based platforms that can be accessed online. These websites provide valuable insight into numerous strengths and limitations of current implementations. By analysing these aspects, there are significant opportunities for improvement in developing more comprehensive and user-friendly pet-related web-based applications that meet the needs of both pet owners and service providers.

2.1.1 Pet Grooming Hotel

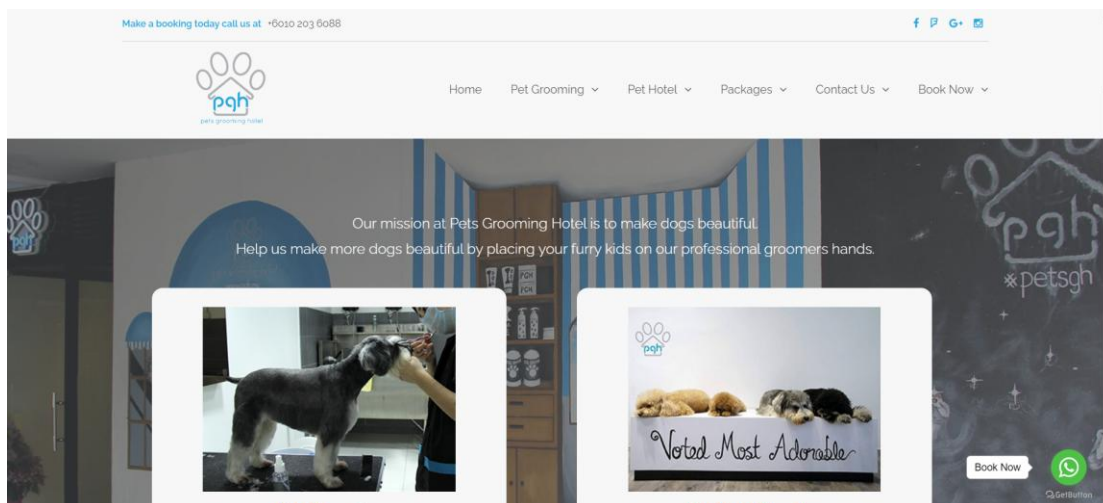


Figure 2.1 Pet Grooming Hotel.

The Pet Grooming Hotel (PGH.my) is an online platform designed to provide pet grooming services and assist pet owners with information and reservation. It has several strong features that make it appealing to customers, but it also has notable limitations that can affect efficiency and user satisfaction.

One of the strengths is the integration of customer feedback and reviews. Pet owners are allowed to share their experiences to create a transparency and build trust in the services

provided. So, potential customer can assess the quality of services by reading actual user reviews provided. This features not only helps pet owners for decision making but also allows Pet Grooming Hotel to maintain high service standards since the feedback is visible to the public. Continuous feedback can act as a quality control tool that pushing the business to improve based on the real user experiences.

Another key strength of Pet Grooming Hotel is it use utilizes GPS API to assist customers in locating grooming facilities and guiding them to the destination effortlessly. This function offers real-time mapping and turns-by-turn directions that allowing customers to reach the shop without delays or misunderstanding. This feature simplifying the navigation process, resulting in improved accessibility and convenience that led to better client experience.

However, there limitations that hinder the service efficiency of Pet Grooming Hotel. One limitation is the integration of WhatsApp as the main communication tool. While WhatsApp is effective for customer engagement, but customer support is not available for 24/7. The insufficient availability can cause delays in responding to inquiries and booking confirmations, especially for customers who require quick assistance. As an example, pet owners who would like to book an appointment quickly before a busy weekend, but they may take a long time to response and lead to missed opportunities. As a result, there is a chance that losing potential customers to competitors who provide fast communication system. Implementing automated chatbot or a details FAQ page could reduce part of communication problems.

Moreover, the website does not display the available grooming appointment slots will create confusion and inconvenience for users. It creates difficulty for customers to view time slots, so they must reach customer supports to confirm slot availability. This process adds unnecessary steps and delays the booking process. Lack of slot visibility can cause in duplicate booking or miscommunication about appointment times. This limitation would affect seamless scheduling experience and dissatisfaction among customers.

2.1.2 Petsman

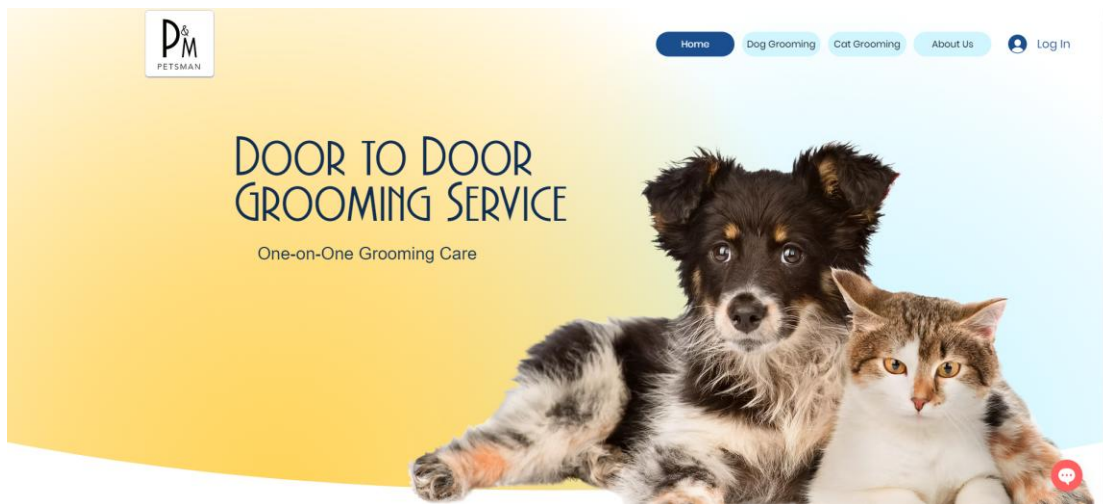


Figure 2.2 Petsman

The Petsman website is an online platform for pet grooming services in Malaysia. It is intended to connect pet owners with grooming services and includes features to facilitate service booking and customer communication. The website offers several advantages that boost client confidence and engagement, but it also has some drawbacks that impact user experience and convenience.

The Petsman website demonstrates some key strengths that enhance the user experience. WhatsApp is integrated in the websites to enhance user engagement and communication. This feature allows customers to make specific inquiries, discuss grooming requirements, and booking grooming slot. Familiarity of WhatsApp encourages direct communication between pet owners and grooming services. If customers do not receive a response, there is another option is to make a phone call since phone number is provided. However, some clients might expect a fast answer, if the response takes too long on both channels, it may influence their trust and booking selections.

Furthermore, the website contains a video that describes the grooming space and facilities. This visual information is an effective way to increase client trust and familiarity by providing an online tour of the area. It guarantees pet owners about the safety and quality of the facilities which encouraging them to pay for services confidently.

On the other hand, this website does not provide additional details about the services, though price lists are included. Some crucial information such as specialized grooming process, benefits for various pet breeds or add-on options brings limited data for potential client. This lack of detail may confuse new customers who want to understand the value of each service.

Additionally, the log-in interface on a website is typically intended for data recording process or appointment tracking. However, it lacks functionality and meaningful tied to user accounts. This unnecessary step adds complexity without providing value to the user experience. It would be more practical and relevant for users if the log-in experience were improved to incorporate helpful elements like customized service recommendations, appointment monitoring, and individualized pet profiles.

2.1.3 Pet Lovers Centre

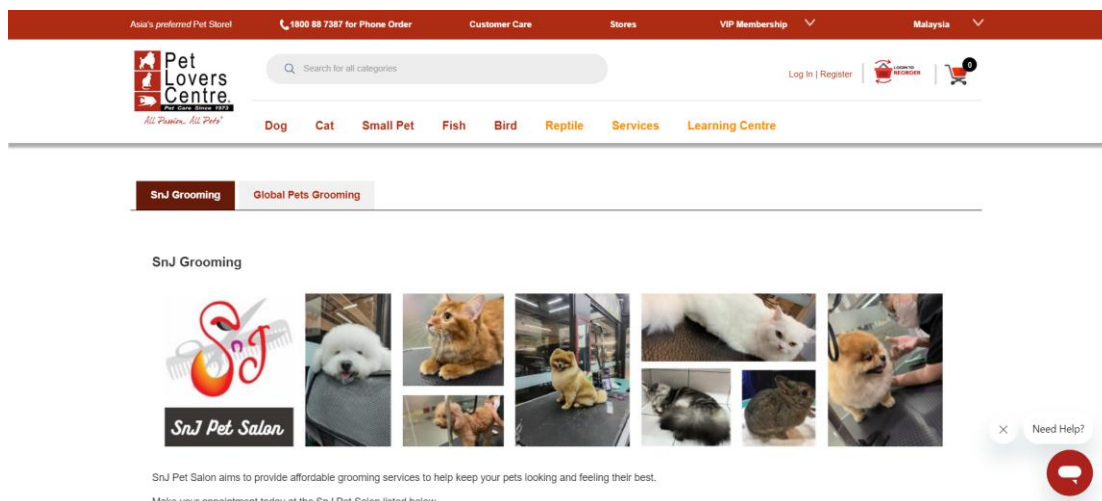


Figure 2.3 Pet Lovers Centre

Website of Pet Lover Centre included some strengths that enhance the user experience that help to growth their business. The website provides a deep explanation with tools used and function of each service to ensure the customers' expectation. So, the customers may have an expectation after sending their pet for grooming session. Trust and confidence can be built through allowing pet owners to make informed decisions based on pets' requirements.

Besides, the integration of real-time customer service is integrated for users to get immediate assistance with inquiries or issues when they are having issues or questions. Quick replies also prevent frustration, especially in urgent cases where pet owners need information quickly like checking for grooming slot availability. High responsiveness created loyalty and satisfaction to customers.

Nevertheless, the chaotic and inconsistent design of website is difficult to navigate the user to the selected section. Poor organization often distract website visitors and limiting their ability to access essential information quickly and efficiently. In digital era, most of the users expect quick and seamless access to information. A messy website not only affects usability and reflects badly on the organization's professionalism. A cleaner interface and more intuitive layout will greatly enhance the usage.

In addition, it lacks wider educational resources and extra information that users could utilize while the website describes about services. For instance, some relevant articles, guidance, or

instructions on pet grooming and care can be included to assist pet owners, particularly newcomers who may lack of appropriate knowledge. Content expanding would make the website more informative and engaging.

Lastly, there is a lack of openness in some components, such as clear pricing, grooming techniques, and availability of time slot when appointment making. The customers who require clarity and accountability may be hesitant for booking due to a lack of information. Providing the data readily would reduce concerns about the services, encourage making reservations, and emphasize the company's accountability.

2.2 Proposed Solutions

The proposed web-based pet care appointment system aims to address the issues and constraints encountered in existing platforms to offer more comprehensive experience for both pet owners and service providers. The system will incorporate multiple elements to ensure efficiency, transparency, and customer satisfaction.

To begin with, the system will feature a streamlined appointment booking module that shows available time slots directly. Compared to other platforms that require consumers to confirm availability via WhatsApp or customer service, the approach featured enables immediate scheduling with no delays. Each appointment will include service options including grooming, styling, or spa treatments, as well as estimated completion times based on pet size. To add on, automated email reminders will help to reduce missed appointments. This improves time management for both pet owners and service providers, while also removing the possibility of repeat bookings or confusion.

To address the issue of limited information on current websites, the system will include a blog section where administrators can post articles and guidelines on pet care, health suggestions, seasonal care, and breed-specific guidance. This resource can assist inexperienced pet owners to gain confidence in managing their pets' daily requirements. Besides, the users are allowed to respond to blog by leaving comments and asking questions which encourages communication and active engagement.

Customer support in established platforms is often limited to working hours or depends on WhatsApp responses, which may not fast enough for urgent cases. Thus, the proposed system will add an AI-powered chatbot that is available all the time. The chatbot can answer FAQs, assist with booking appointments, guide users through services, and provide instant responses about products or grooming processes. This feature able to reduces dependency on human staff which can effectively improves response speed and ensures customer satisfaction even outside business hours. For complex issues, the chatbot can redirect the conversation to admin for further assistance.

Moreover, the system will include an e-commerce feature that allow the service providers and admins to sell essential pet care products such as grooming tools, food, toys, shampoos, and

accessories. Each product will label with detailed descriptions, pricing, and user reviews to help customers in making informed decisions. By combining service booking and product purchasing on one platform, the system creates a one-stop solution that increases convenience for customers while generating additional income for service providers.

The system enables users to build profiles for their dogs with personal information to enhance customization. The pet profile may contain breed, size, age, illnesses, and grooming history. Service providers can go through the information provided to give specialized services, such as selecting the best grooming procedures or recommending appropriate goods for the pet.

Many existing systems possess poorly designed interface that confuses the users and reduces efficiency. The proposed system would include a clean, modern, and intuitive design that clearly organizes information. The homepage will make it easy to access important services like booking, the product marketplace, and blogs. The interface will best fit both desktop and mobile devices for simple navigation. A professional and user-friendly design able to build trust, reduces inconvenience, and encourages subsequent visits.

2.3 Comparison Between Similar System

Functionalities	Pet Grooming Hotel	Petsman	Pet Lover Centre	Proposed Solution
Real-time Online Booking	✗	✗	✗	✓
Grooming Progress Status Tracking	✗	✗	✗	✓
Automated Email Notifications	✗	✗	✗	✓
AI Chatbot	✗	✗	✓	✓
Multilingual Support for AI (EN, MS, ZH)	✗	✗	✗	✓
Price Listing	✓	✓	✗	✓
FAQs	✗	✗	✗	✓
GPS API	✓	✗	✗	✓
Customer Feedback and Reviews	✓	✗	✗	✓
Educational Blog	✗	✗	✗	✓
Marketplace	✗	✗	✓	✓
Pet Profile	✗	✗	✗	✓
Groomer Profile and Rating	✗	✗	✗	✓

Role Based Access	Not Specific	No Specific	No Specific	
Data Visualization	Not Specific	No Specific	No Specific	

Table 2.1 Previous System Comparison

Chapter 3

System Methodology/Approach

3.1 Agile Methodology

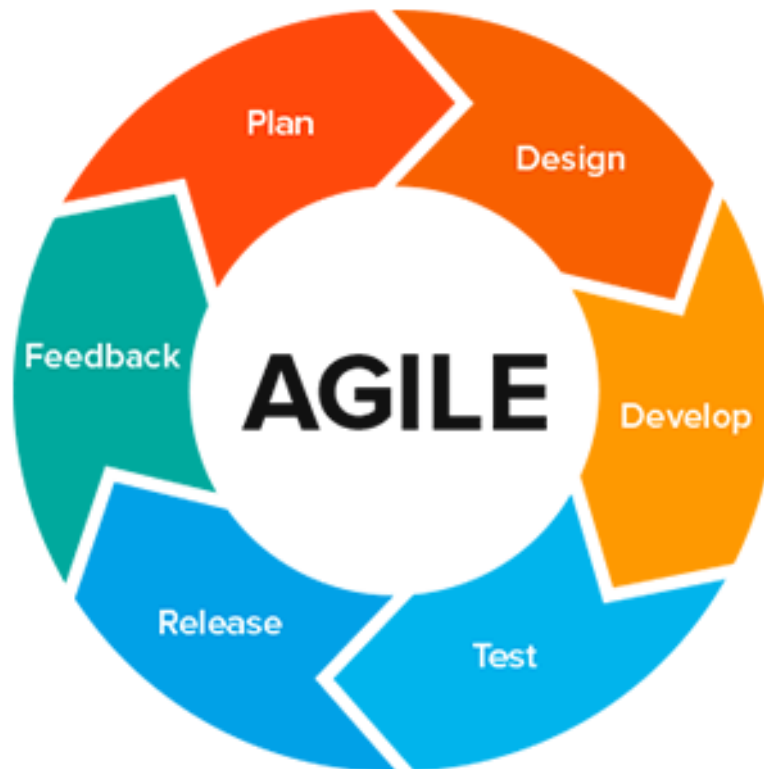


Figure 3.1: Agile Methodology

The Agile methodology is an ideal choice for developing a pet care system because of its flexibility, iterative nature and emphasis on user-focused design. Agile enables developers to design, test, and deliver specified features progressively by splitting the project into smaller pieces and making it more manageable [10]. Throughout the development process, this method guarantees that features like appointment scheduling with visible time slots, educational blog, AI chatbot, marketplace, and personalized user and pet profiles are continuously enhanced.

Agile is especially well-suited for developing a system that fulfills the requirements of pet owners and grooming service providers because it places a strong emphasis on user feedback and collaboration. The developers can get feedback, prioritize tasks, and modify features in

response to changing needs or preferences by regularly engaging with clients [9]. For instance, users could ask for extra features like better real-time updates or customized pet profiles, which can be easily added in later versions without interfering with the development schedule.

Additionally, the developers can react swiftly to shifts in customer expectations or market trends because of Agile's flexibility. This is crucial in the pet grooming sector, since the needs of every customer may vary. Agile also promotes transparency through regular meetings to ensure clients are informed about the project's progress and upcoming changes.

Furthermore, Agile involves quality assurance and continuous testing at every development stage to ensure high-quality outcomes [11]. This is particularly important for features like real-time updates which require high accuracy and dependability. Agile helps to speed up development progress by emphasizing the early and frequent delivery of functional components.

Overall, Agile's iterative, audience-focused, and adaptable framework makes it an appropriate methodology for developing a feature-rich pet grooming system that satisfies user expectations while providing a smooth and dependable experience.

3.2 Timeline

Task	Period													
	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14
Final Year Project 1 (FYP1)														
Chapter 1: Project Background														
Introduction														
Problem Statement and Motivation														
Project Objectives														
Project Scope and Direction														
Project Contribution														
Report Organization														
Chapter 2: Literature Review														
Analysis on Existing Pet Care System														
Proposed Solutions														
Comparison between Similar System														
Chapter 3: Methodology and System Design														
Define Methodology														
Determine System Hardware and Software														
ERD Diagram														
Use Case Diagram														
Activity Diagram														
Timeline														
Wireframe														
Chapter 4: Preliminary Work														
Implementation														
Testing and Integration														
Finalise FYP1 Report														
FYP1 Report Submission														
FYP1 Demonstration														
Final Year Project 2 (FYP2)														
Chapter 1: Project Background														
Introduction														

Problem Statement and Motivation														
Project Objectives														
Project Scope and Direction														
Project Contribution														
Report Organization														
Chapter 2: Literature Review														
Analysis on Existing Pet Care System														
Proposed Solutions														
Comparison between Similar System														
Chapter 3: Methodology and Approach														
Define Methodology														
Timeline														
Chapter 4: System Design														
ERD Diagram														
UML Diagram														
Use Case Diagram														
Use Case Description														
Activity Diagram														
Flowchart														
Chapter 5: System Implementation														
Hardware Setup														
Software Setup														
Setting and Configuration														
System Operation														
Implementation Issues and Challenges														
Chapter 6: System Evaluation and Discussion														
Testing Setup														
Test Result														
Project Challenges														
Objectives Evaluation														
Chapter 7: Conclusion														

Conclusion and Recommendation														
Conclusion														
Recommendation														
Finalize FYP2 Report														
FYP2 Report Submission														
FYP2 Demonstration														

Table 3.2 Timeline for FYP1 and FYP2

Chapter 4

System Design

4.1 System Block Diagram

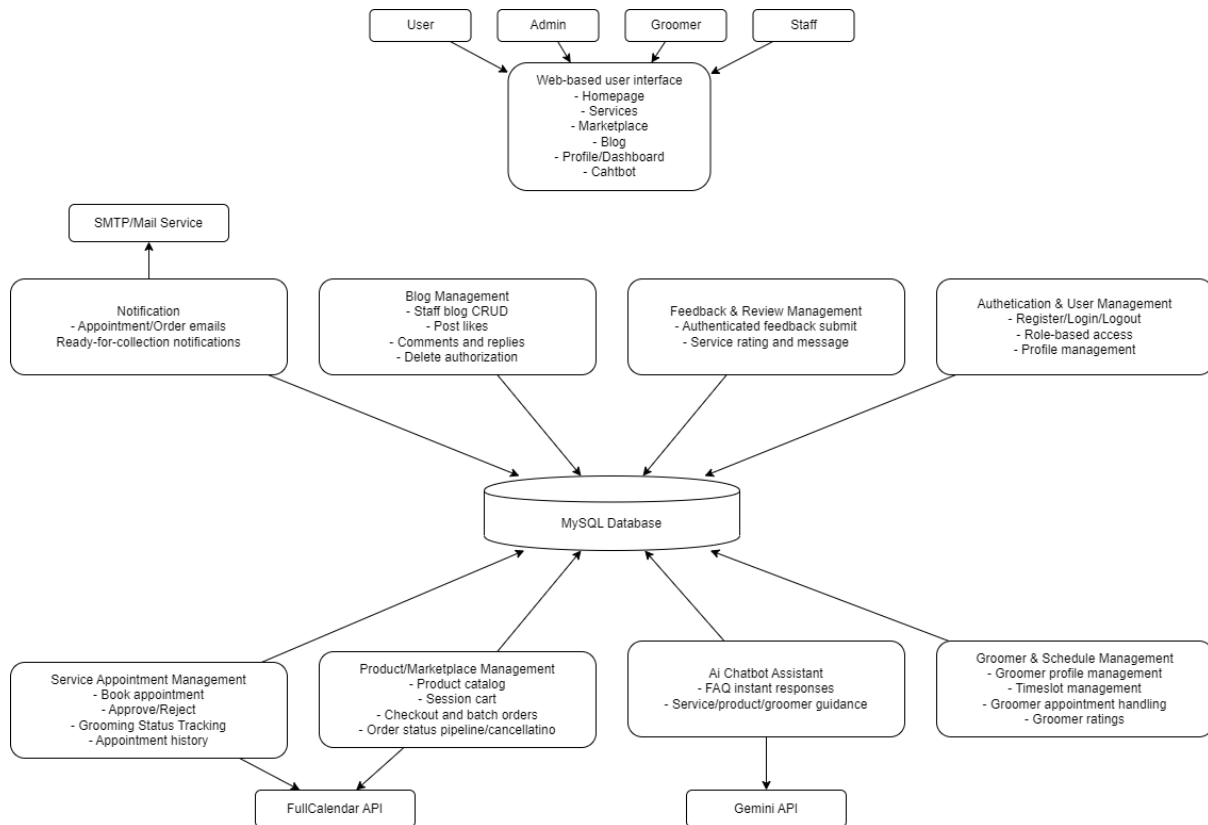


Figure 4.1 System Block Diagram

Figure 4.1 presents the system block diagram of the proposed pet care system from three-layer, presentation layer, application layer, and data layer.

At the top level, the **presentation layer** operates as the entry gateway to the system through the provision of four different types of user accounts namely, the users (also known as customers), groomers, staff, and administrator. Each roles have a specialized interface that suits their functions. The function of the users includes managing pet profiles, looking for services and products offered, monitoring the status of ongoing appointments in real time, and reading blogs. The responsibility of the groomer involves the management of time slots and appointment updates. In addition, the staff performs the task of managing the inventory,

processing orders, and managing blog entries. The administrators are the highest level of users who manage users, products, and orders.

The **application layer** acts as the core of the system, as it receives all the requests from the presentation layer and transform into functional operations. This layer is responsible for processing the user requests using different modules. First, there is the Appointment and FullCalendar module that focuses on scheduling and ensuring data integrity to make sure appointments are not overlapping. It also gives the real-time visualization of available timeslots, making the booking process easier for users and efficient for grooming. There is the Marketplace module that manage entire order process from creating carts to final orders process. Moreover, this system offers an AI chatbot via Gemini API, which helps users answer questions regarding services and products. Finally, another feature of the application layer is the Blog module, which allows staff to publish useful information and communicate through comments and likes.

The **data layer** ensures system reliability, consistency, and data integrity. It is based on a MySQL database where data is logically arranged as entities and well-defined relationships. The main entity in the system is Users, which is connected to other tables like Pets, Appointments, and Orders using relational mapping. In this way, all transactions made by users are recorded along with the actual users and pets involved. The system also has several integrations that improve its functionality. For example, FullCalendar is integrate into the system, enabling real-time synchronization between the user interface and database tables such as GroomerTimeSlots and Appointments. Another integration included is Gemini API, which allows for conversations with intelligent response delivery. An SMTP service is added to facilitate automated communication with the user regarding their appointments and orders.

Overall, the system block diagram illustrates a well-structured architecture where each layer works cohesively to deliver a responsive, intelligent, and user-centric pet grooming platform.

4.2 ERD Diagram

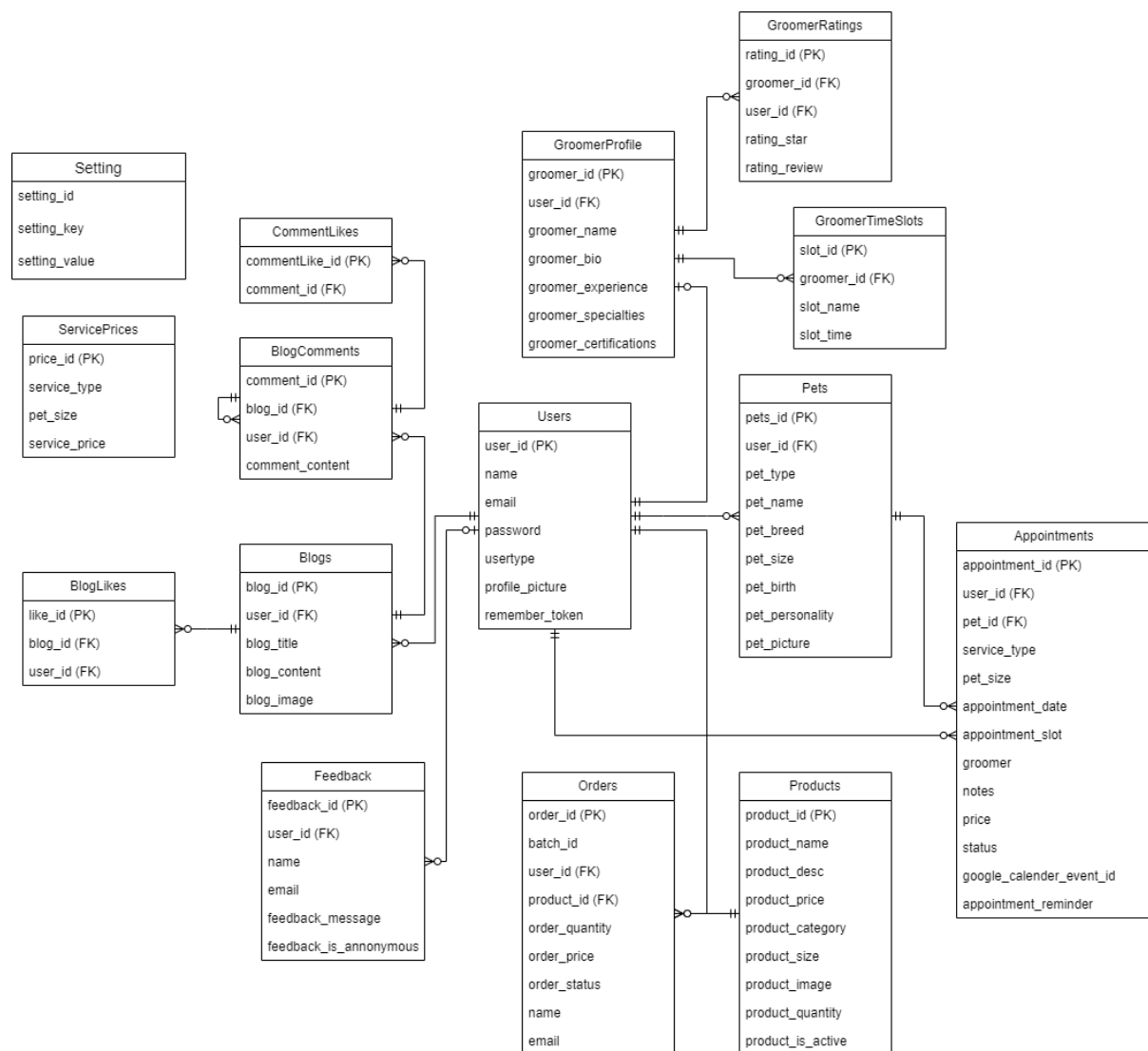


Figure 4.2 ERD Diagram

The Entity Relationship Diagram (ERD) illustrates the logical structure of the database and defines the interaction between data entities and proposed pet care system. The system adopts a highly relational database model to ensure data consistency, integrity, and efficient data retrieval across all functional modules.

The central part of the ERD model is the **Users Table**. It serves as the central hub connecting all major system activities. One user can have multiple pets, thus forming the one-to-many association between the **Users** and the **Pets Table**. In addition, users might serve as groomers, hence creating the one-to-one optional association with the **GroomerProfiles Table**. Users

also linked to the **Feedbacks Table** to post multiple feedback for various services offered to them.

The appointment management subsystem is based on the **Appointments table**. The Appointments table is a bridge table for joining users, pets, and groomers. In particular, each appointment is related to only one user and one pet, while one groomer may be responsible for several appointments. Thus, the many-to-one relationship will help prevent any errors related to ambiguous ownership of the appointment.

In the marketplace module, the **Orders Table** connects users with purchased products. The user may have multiple orders, but each product in the **Products Table** can appear in several orders. It makes for a many-to-many relationship that can be fixed by the order system itself. In that way, it ensures proper record keeping for each item purchased, the number of purchases, and other transactions.

The blog module encourages user engagement through content interaction. In the system, users can create multiple blog posts stored in the **Blogs Table**. Each blog can have multiple associated comments and likes which managed through the **BlogComments Table** and **BlogLikes Table** respectively.

4.3 Use Case Diagram

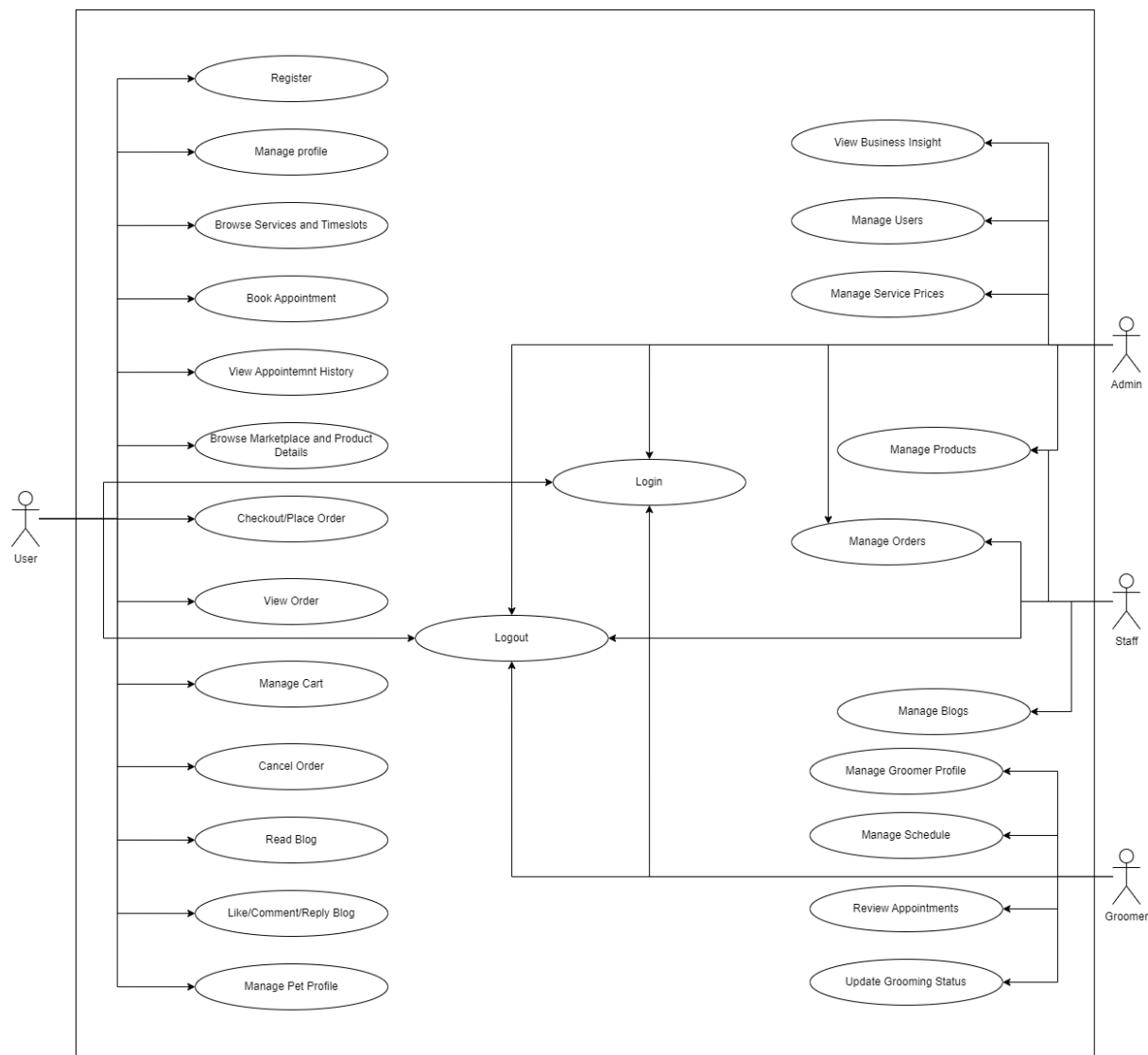


Figure 4.3 Use Case Diagram

The Use Case Diagram defines the functional scope of the proposed pet care system by illustrating the interactions between different actors and the system's core functionalities. It establishes the system boundary and highlights how each actor engages with the platform to achieve specific goals.

The **Customer (User)** is the primary external actor and represents the main target user group of the system. Customers interact with the platform to manage pet profiles, book grooming appointments, purchase pet-related products, read through blog posts and provide ratings or

feedback for groomers. Their interaction flow is designed to support a seamless journey from registration to service consumption and post-service evaluation.

The **Groomer** acts as a service provider within the system. Groomers have access to appointment-related functionalities, allowing them to view their schedules, manage availability, and update grooming progress in real time. Their role ensures that service delivery is properly tracked and communicated to customers.

The **Staff** serves as an internal operational actor responsible for maintaining the platform's daily operations. Their primary responsibilities include managing product inventory, fulfilling customer orders, and creating or maintaining blog content. This role ensures that both the marketplace and content sections of the system remain up-to-date and functional.

The **Admin** is the highest-level actor with full system access and control. In addition to performing similar tasks as staff, administrators are responsible for managing user accounts, configuring service prices, and monitoring system analytics. This role ensures proper governance, system configuration, and overall platform integrity.

4.4 Use Case Description

4.4.1 User Perspective – Register

Name: Register
Description: To allow a new user to create an account in the system
Actor: User
Type Include/Extend: -
Pre-condition: User does not have an account
Basic Flow: 1. User clicks on “Register” 2. System displays registration form 3. User enters required name, email, and password 4. System validates input 5. System creates account
Exception Flow: 1. Name and email address have existed in database 2. Incorrect or invalid input 3. Required field is missing
Post Condition: 1. New user account is successfully created 2. New user data stored in database

Table 4.4.1 Register Use Case Description

4.4.2 All Roles Perspective – Login

Name: Login
Description: To allow all system users to access the system based on their role
Actor: User, Groomer, Staff, Admin
Type Include/Extend: Included by all secured use cases
Pre-condition: Valid account exists
Basic Flow: 1. Actor clicks “Login” button 2. System display login form 3. Actor enters email and password 4. System verifies credentials 5. System identifies user role 6. System redirects to role-based dashboard
Exception Flow: 1. Invalid credentials 2. Invalid account
Post Condition: 1. Actor successfully authenticated 2. Actor redirected to the appropriate dashboard.

Table 4.4.2 Login Use Case Description

4.4.3 All Roles Perspective - Logout

Name: Logout
Description: To allow users to securely exit the system
Actor: User, Groomer, Staff, Admin
Type Include/Extend: -
Pre-condition: User is logged in
Basic Flow: 1. Actor clicks “Logout” 2. System terminates current session 3. System redirects to login page or main page
Post Condition: 1. Actor is logged out 2. Current session is securely terminated

Table 4.4.3 Logout Use Case Description

4.4.4 User Perspective – Manage Profile

Name: Manage Profile
Description: To allow user to view and update personal profile information
Actor: User
Type Include/Extend: Login
Pre-condition: User is logged in
Basic Flow: 1. User clicks “Profile” 2. System displays existing profile details 3. User clicks “Setting” icon to edit profile information 4. System validates the updated details 5. System saves the changes
Alternate Flow: When user views profile without making changes: 1. No update on user profile
Exception Flow: 1. Invalid or incomplete profile details
Post Condition: 1. User profile information is successfully updated or displayed

Table 4.4.4 Manage Profile Use Case Description

4.4.5 User Perspective – Browse Services and Timeslots

Name: Browse Service and Timeslots
Description: To allow user to view grooming services and available appointment timeslot
Actor: User
Type Include/Extend: Book Appointment
Pre-condition: Grooming services and timeslots are available in the system
Basic Flow: 1. User clicks “Service” 2. System displays grooming services and other related information 3. User selects a groomer 4. System displays available timeslots of selected groomer
Alternate Flow: When user browses services without selecting a groomer: 1. No timeslot displayed
Exception Flow: 1. No available timeslot found
Post Condition: 1. Available services and timeslots are successfully displayed to the user

Table 4.4.5 Browse Services and Timeslots Use Case Description

4.4.6 User Perspective – Book Appointment

Name: Book Appointment
Description: To allow user to book an appointment
Actor: User
Type Include/Extend: Login, Browse Services and Timeslots, Manage Pets
Pre-condition: User is logged in
Basic Flow: 1. User clicks “Book Your Service” 2. System displays appointment form with available services and timeslots 3. User selects pet, service, groomer, date, and timeslot 4. System validates timeslot availability and displays total price 5. User confirms booking 6. System creates appointment record
Alternate Flow: When user has no pet profile: 1. User manually enter pet information or create pet profile 2. User enters pet name, pet type, pet size, and date of birth to create pet profile 3. Pet information successfully saved into database
Exception Flow: 1. Selected timeslot is unavailable 2. Booking data is invalid
Post Condition: New appointment record is created with “Pending” status

Table 4.4.6 Book Appointment Use Case Description

4.4.7 User Perspective – View Appointment History

Name: View Appointment History
Description: To allow user to view past, current, and upcoming appointment records
Actor: User
Type Include/Extend: Login
Pre-condition: User is logged in
Basic Flow: 1. User clicks “Appointment History” and “Upcoming Appointments” 2. System retrieves appointment records 3. System displays appointment details and status
Exception Flow: When user do not make appointment before: 1. No record exists
Post Condition: Appointment records are successfully retrieved and displayed

Table 4.4.7 View Appointment History Use Case Description

4.4.8 User Perspective – Browse Marketplace and Product Details

Name: Browse Marketplace and Product Details
Description: To allow user to browse pet products and view product details
Actor: User
Type Include/Extend: -
Pre-condition: product records exist in the system
Basic Flow: 1. User clicks “Marketplace” 2. System displays products list 3. User selects a product 4. System displays product details
Alternate Flow: When user searches or filters products: 1. User enters keyword to search or selects a filter option 2. System validates the search or filter input 3. System displays matching product results
Exception Flow: 1. Product is unavailable or deleted 2. System displays an unavailable product message
Post Condition: 1. Product details are successfully displayed to the user

Table 4.4.8 Browse Marketplace and Product Details Use Case Description

4.4.9 User Perspective – Manage Cart

Name: Manage Cart
Description: To allow user to add, update, or remove products in cart
Actor: User
Type Include/Extend: Browse Marketplace and Product details
Pre-condition: User selects a product
Basic Flow: 1. User adds product to cart 2. System stores selected product in cart 3. System calculates cart total and displays total price 4. User updates quantity or removes item 5. System recalculates cart total and displays total price
Post Condition: Cart items and total amount are successfully updated

Table 4.4.9 Manage Cart Use Case Description

4.4.10 User Perspective – Checkout/Place Order

Name: Checkout/Place Order
Description: To allow user to place an order for selected products
Actor: User
Type Include/Extend: Login, Manage cart
Pre-condition: User is logged in and cart contains at least one product
Basic Flow: 1. User clicks “Place Order” from my cart 2. System displays cart summary 3. User review and confirms order details 4. User clicks “Confirm Order” 5. System validates order 6. System creates order record
Alternate: User returns to cart to update items: 1. User closes cart summary page 2. User edits cart item or quantity 3. System updates cart details 4. User proceeds to checkout again
Exception Flow: 1. Cart is empty
Post Condition: 1. Order is successfully created and stored in the system 2. Product stock is updated

Table 4.4.10 Place Order/ Checkout Use Case Description

4.4.11 User Perspective – View Order

Name: View Order
Description: To allow user to view order details and order status
Actor: User
Type Include/Extend: Login, Checkout/Place Order
Pre-condition: User is logged in and has placed an order
Basic Flow: 1. User clicks “My Order” 2. System retrieves user order records 3. System displays order details and status
Exception Flow: 1. No order record exists
Post Condition: 1. Order details are successfully retrieved and displayed

Table 4.4.11 View Order Use Case Description

4.4.12 User Perspective – Cancel Order

Name: Cancel Order
Description: To allow user to cancel an order
Actor: User
Type Include/Extend: View Order
Pre-condition: User is logged in and order is not completed
Basic Flow: 1. User opens “My Order” 2. System retrieves order records 3. User clicks “Cancel Order” 4. System asks for confirmation 5. User confirms cancellation 6. System updates order status
Exception Flow: 1. Order is processed or completed
Post Condition: 1. Order status updated to “Cancelled”

Table 4.4.12 Cancel Order Use Case Description

4.4.13 User Perspective – Read Blog

Name: Read Blog
Description: To allow user to read published pet care blog posts
Actor: User
Type Include/Extend: -
Pre-condition: At least one blog post has been published
Basic Flow: 1. User clicks “Blog” 2. System displays published blog posts 3. User selects a blog post 4. System displays full blog content
Exception Flow: 1. No blog post is available
Post Condition: 1. Selected blog content is successfully displayed

Table 4.4.13 Read Blog Use Case Description

4.4.14 User Perspective – Like/Comment/Reply Blog

Name: Like/Comment/Reply Blog
Description: To allow user to interact
Actor: User
Type Include/Extend: Login, Read Blog
Pre-condition: User is logged in and blog post exists
Basic Flow: 1. User opens a blog post 2. User clicks like, writes comment, or replies to comment 3. System validates the interaction 4. System saves the interaction 5. Like, comment, and reply is displayed on the blog post
Alternate Flow: User removes like: 1. User clicks the like icon again 2. System removes the like 3. Like count is updated User deletes comment: 1. User clicks “Delete” 2. System removes the comment
Exception Flow: 1. Empty comment submitted
Post Condition: 1. User interaction (like, comment, or reply) is successfully created, updated, or removed

Table 4.4.14 Like/Comment/Reply Blog Use Case Description

4.4.15 User Perspective – Manage Pets

Name: Manage Pet Profile
Description: To allow user to create, view, update, or delete pet profiles
Actor: User
Type Include/Extend: Login
Pre-condition: User is logged in
Basic Flow: 1. User clicks “Add Pet” or selects edit option 2. System displays pet form or existing pet details 3. User enters or updates pet information 4. User submits the form 5. System validates the input 6. System saves or updates pet profile
Alternate Flow: User deletes pet profile: 1. User clicks delete 2. System confirms deletion 3. System removes the pet profile
Exception Flow: 1. Required pet details are missing 2. Invalid input format
Post Condition: 1. Pet profile is successfully created, updated, deleted, and displayed in the system

Table 4.4.15 Manage Pets Use Case Description

4.4.16 Groomer Perspective – Manage Groomer Profile

Name: Manage Groomer Profile
Description: To allow groomer to manage professional profile details
Actor: Groomer
Type Include/Extended: Login
Pre-condition: Groomer is logged in
Basic Flow: 1. Groomer clicks “Groomer Profile” 2. System displays existing groomer profile 3. Groomer updates profile details 4. System validates updated details 5. System saves changes
Exception Flow: 1. Invalid or incomplete profile details 2. Invalid input
Post Condition: 1. Groomer profile is successfully updated and displayed and visible to users

Table 4.4.16 Manage Groomer Profile Use Case Description

4.4.17 Groomer Perspective – Manage Schedule

Name: Manage Schedule
Description: To allow groomer to manage available appointment timeslots
Actor: Groomer
Type Include/Extended: Login
Pre-condition: Groomer is logged in
Basic Flow: 1. Groomer clicks “My Schedule” 2. System displays current schedule and timeslots 3. Groomer selects start time and end time 4. Groomer saves the selected timeslot 5. System records the new timeslot
Alternated Flow: Groomer deletes existing timeslot: 1. Groomer clicks delete 2. System confirms deletion 3. System removes the timeslots
Exception Flow: 1. Selected time overlaps with existing timeslot 2. Invalid time input
Post Condition: 1. Groomer schedule and available timeslots are successfully updated and displayed

Table 4.4.17 Manage Schedule Use Case Description

4.4.18 Groomer Perspective – Review Appointments

Name: Review Appointments
Description: To allow groomer to review, approve, reject appointment requests
Actor: Groomer
Type Include/Extended: Login, Manage Schedule
Pre-condition: Groomer is logged in and pending appointment exists
Basic Flow: 1. Groomer clicks “Appointment” 2. System displays pending appointment 3. Groomer reviews pet, service, note/requirement, and timeslot details 4. Groomer approves or rejects the appointment
Alternate Flow: Groomer adjust price: 1. Groomer enters new amount 2. Groomer provides a reason 3. System updates adjusted price and send notification to user 4. Groomer proceeds to approve
Exception Flow: 1. No appointment exists 2. Appointment is no longer available
Post Condition: Appointment status is updated to “Confirmed” or “Rejected”

Table 4.4.18 Review Appointments Use Case Description

4.4.19 Groomer Perspective – Update Grooming Status

Name: Update Grooming Status
Description: To allow groomer to update grooming progress in real time
Actor: Groomer
Type Include/Extended: Login, Review Appointment
Pre-condition: Groomer is logged in and appointment is approved
Basic Flow: 1. System displayed approved appointments in dashboard 2. Groomer updates status 3. System saves updated grooming status 4. User can view the updated progress
Post Condition: Grooming status is successfully updated and visible to the user

Table 4.4.19 Update Grooming Status Use Case Description

4.4.20 Staff and Admin Perspective – Manage Products

Name: Manage Products
Description: To allow staff and Admin to add, edit, delete, and update product record
Actor: Staff, Admin
Type Include/Extended: Login
Pre-condition: Staff and Admin is logged in
Basic Flow: 1. Staff and Admin clicks “Products” 2. System displays product list 3. Staff and Admin add new product or update product details 4. System validates product data 5. System saves product record
Alternate Flow: Staff and Admin delete product: 1. Staff and Admin select delete option 2. System confirm deletion 3. System remove product
Exception Flow: 1. Invalid data input
Post Condition: 1. Product record is successfully created, updated, or deleted

Table 4.4.20 Manage Products Use Case Description

4.4.21 Staff and Admin Perspective – Manage Order

Name: Manage Order
Description: To allow Staff and Admin to process customer order and update order status
Actor: Staff, Admin
Type Include/Extended: Login
Pre-condition: Staff and Admin are logged in and order exists
Basic Flow: 1. Staff and Admin clicks “Orders” 2. System displays customer order list 3. Staff and Admin select an order 4. Staff and Admin reviews order details 5. Staff and Admin updates order status 6. System saves updated order status
Post Condition: Order status is successfully updated and visible to the user

Table 4.4.21 Manage Order Use Case Description

4.4.22 Staff Perspective - Manage Blogs

Name: Manage Blogs
Description: To allow staff to create, update, or delete blog posts
Actor: Staff
Type Include/Extended: Login
Pre-condition: Staff is logged in
Basic Flow: 1. Staff clicks “Blogs” 2. System displays blog list 3. Staff creates, update, or delete blog post 4. Staff enters title, content, and image 5. System validates and saves blog content
Alternate Flow: Blog saved as draft: 1. Staff create blog post 2. Staff clicks “Save as draft” 3. System saves the status 4. Draft blog post is not visible to user
Exception Flow: 1. Invalid input format 2. Missing title, or content
Post Condition: 1. Blog post is successfully created, updated, deleted, and published 2. Blog post is visible to user

Table 4.4.22 Manage Blogs Use Case Description

4.4.23 Admin Perspective – View Dashboard

Name: View Dashboard
Description: To allow admin to view overall system summary
Actor: Admin
Type Include/Extended: login
Pre-condition: Admin is logged in
Basic Flow: 1. Admin logs into the system 2. System retrieves system summary data 3. System displays users, products, orders, and service-related summary
Exception Flow: 1. System fails to retrieve data
Post Condition: Admin dashboard information is successfully displayed

Table 4.4.23 View Dashboard Use Case Description

4.4.24 Admin Perspective – Manage Users

Name: Manage Users
Description: To allow admin to manage user accounts and roles
Actor: Admin
Type Include/Extended: Login, View Dashboard
Pre-condition: Admin is logged in
Basic Flow: 1. Admin clicks “Users” 2. System displays user list 3. Admin selects a user account 4. Admin views, edits, or deletes the account 5. System updates user record
Alternate Flow: Admin creates a user account: 1. Admin click “Add New User” 2. System displays form for account creation 3. Admin enters account information and selects user role 4. System records new account in database
Post Condition: 1. User account is successfully created, updated, or deleted

Table 4.4.24 Manage Users Use Case Description

4.4.25 Admin Perspective – Manage Service Prices

Name: Manage Service Prices
Description: To allow admin to configure grooming service pricing
Actor: Admin
Type Include/Extended: Login
Pre-condition: Admin is logged in
Basic Flow: 1. Admin clicks “Service prices” 2. System displays current service price list 3. Admin updates price based on service and pet size 4. System validates price value 5. System saves new price configuration
Exception Flow: 1. Invalid price value entered
Post Condition: 1. Service price is successfully updated and visible to user

Table 4.4.25 Manage Service Prices Use Case Description

4.5 Flowchart

The flowchart shows the overall flow of user journey. It illustrates how users move from one feature to another. It helps to understand the big picture of how the system works.

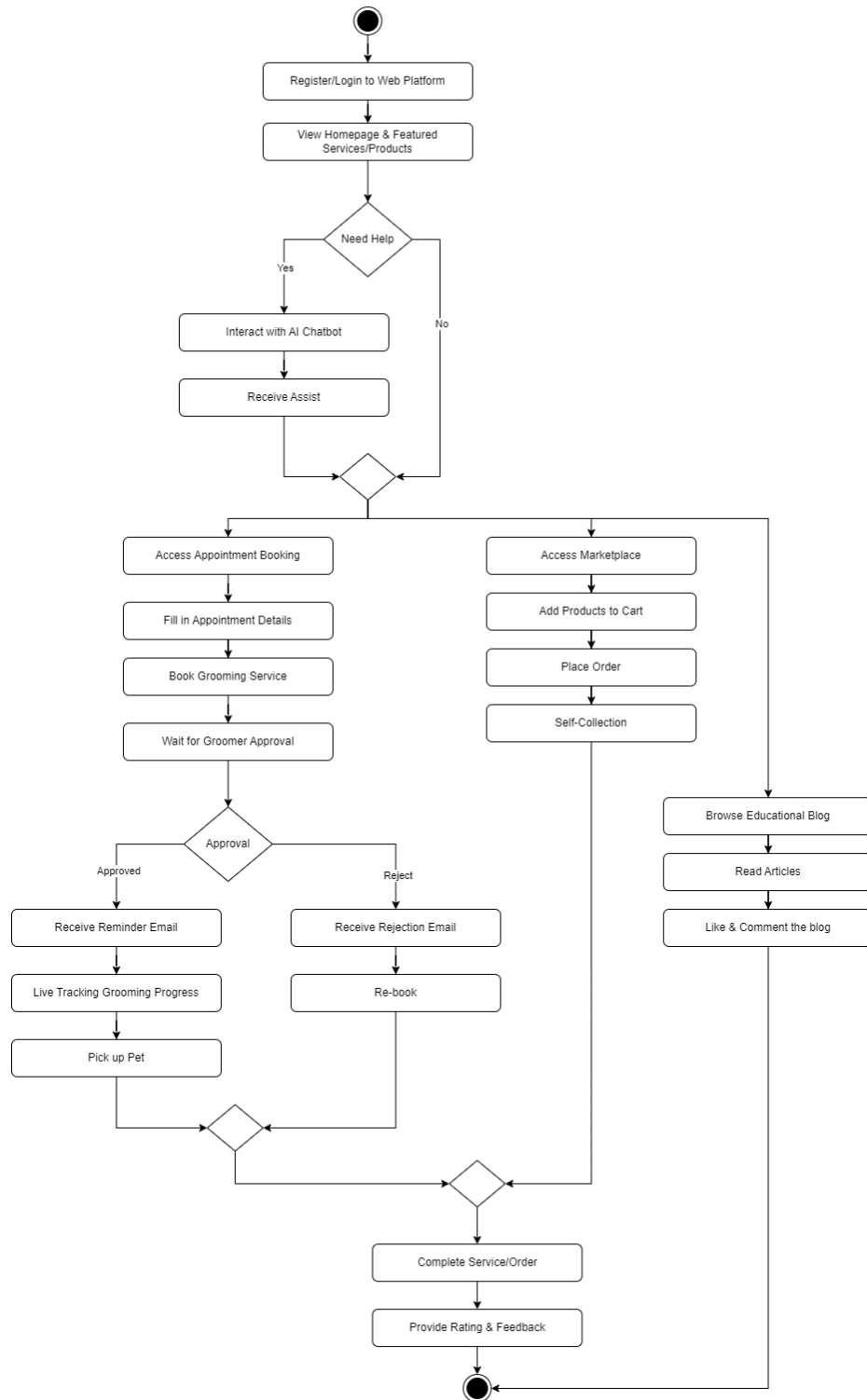


Figure 4.5 Flowchart

To begin, the user registers or logs into the web platform, followed by accessing the homepage. Homepage displays key information about the platform along with a chatbot icon. If users need assistance, they can opt to interact with the AI chatbot for guidance.

After accessing the homepage, users can navigate through three main functional sections which are appointment booking, marketplace, and blog.

In the appointment booking flow, the user accesses the booking section, fills in appointment details, and submits booking form. After submitting the grooming request, the system will wait for groomer's response. If the groomer accepts the booking request, the user will receive a confirmation email and is able to track the grooming progress in real time. If the appointment is rejected the user will receives a rejection notification and user is required to rebook the service.

In the marketplace flow, the user can browse for products, adds products to the cart, and places an order. The process ends with a self-collection step, where the user collects the purchased products.

In the blog section, the user browses educational content, read articles. Other than read, user is able to interacts by liking or commenting on blog posts. This feature enhances user engagement and provides useful pet care information.

All activities end up in the last phase, when user completes their transaction or order. The user may optionally provide rating and feedback. This marks the end of the process indicating the completion of user's experience on the website.

4.6 Activity Diagram

Activity diagram illustrates the step-by-step workflow of a specific process in the system. It focuses on how tasks are performed, including actions, decisions, and interactions between users and the system. It helps to visualize the logic of a process.

4.6.1 Register

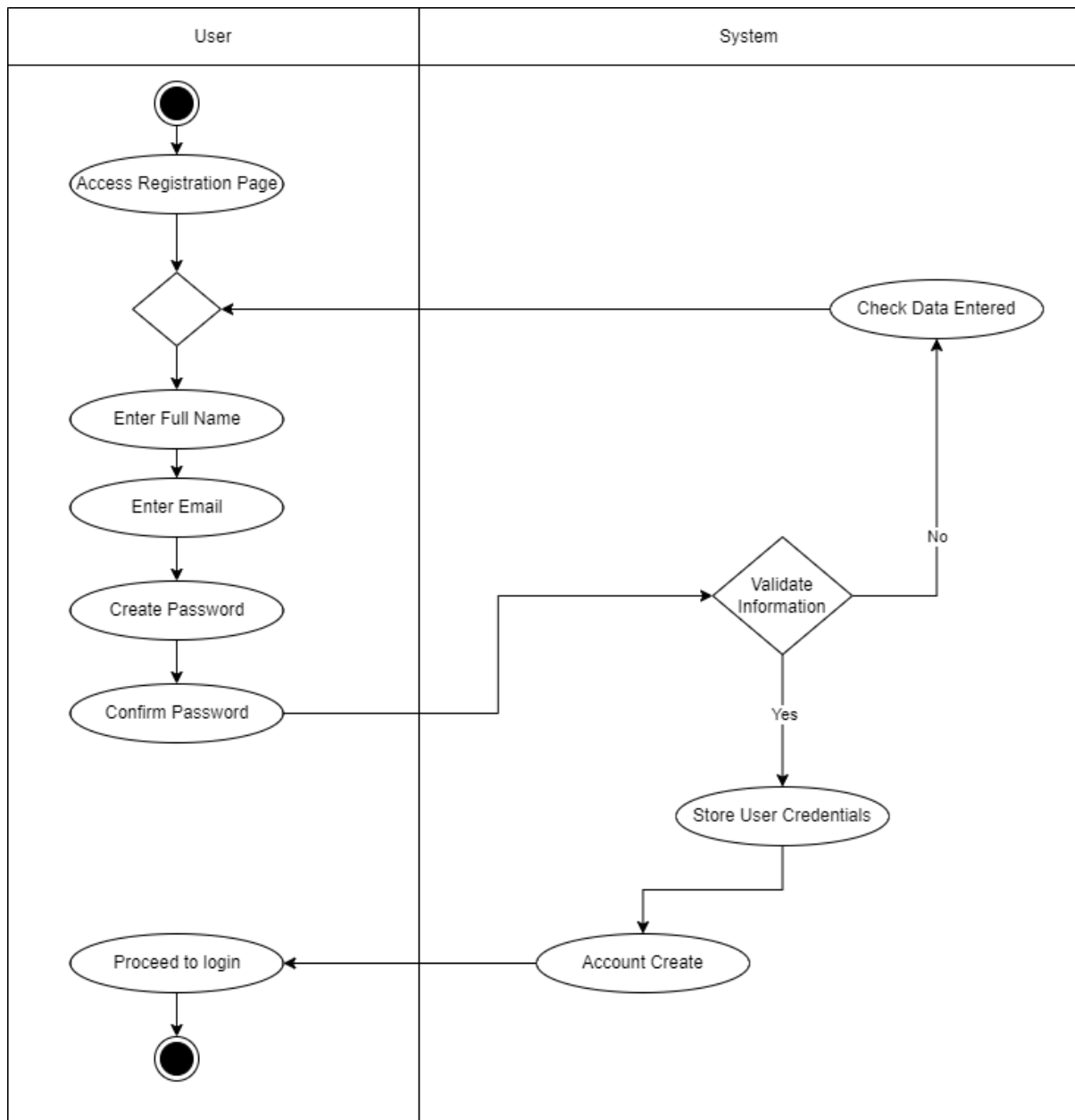


Figure 4.6.1 User Register Activity Diagram

Figure 4.6.1 shows the activity flow of the registration process. User must have an account to access the website features such as making appointments, purchasing products, and accessing blog post.

The process begins with registration page. The user has to provide necessary information, including name, email address, password, and password confirmation. So, the system can recognize each individual and protect their account from any unauthorized access. Once the user submits the registration form, the system will perform validation to ensure all required fields are filled and information entered meets the system's requirement. For example, the system matching the password with password confirmation and validate email format. If the validation fails, the system prompts the user back to original stage and display appropriate error message assisting user to re-enter correct input.

If the validation is successful, the system proceeds to store the user credentials securely in the database. It ensures the information is properly recorded and protected for future authentication. After data stored, the system verifies the account has been successfully created. The system displays a successful registration message and automatically redirects the user to the homepage.

4.6.2 Login

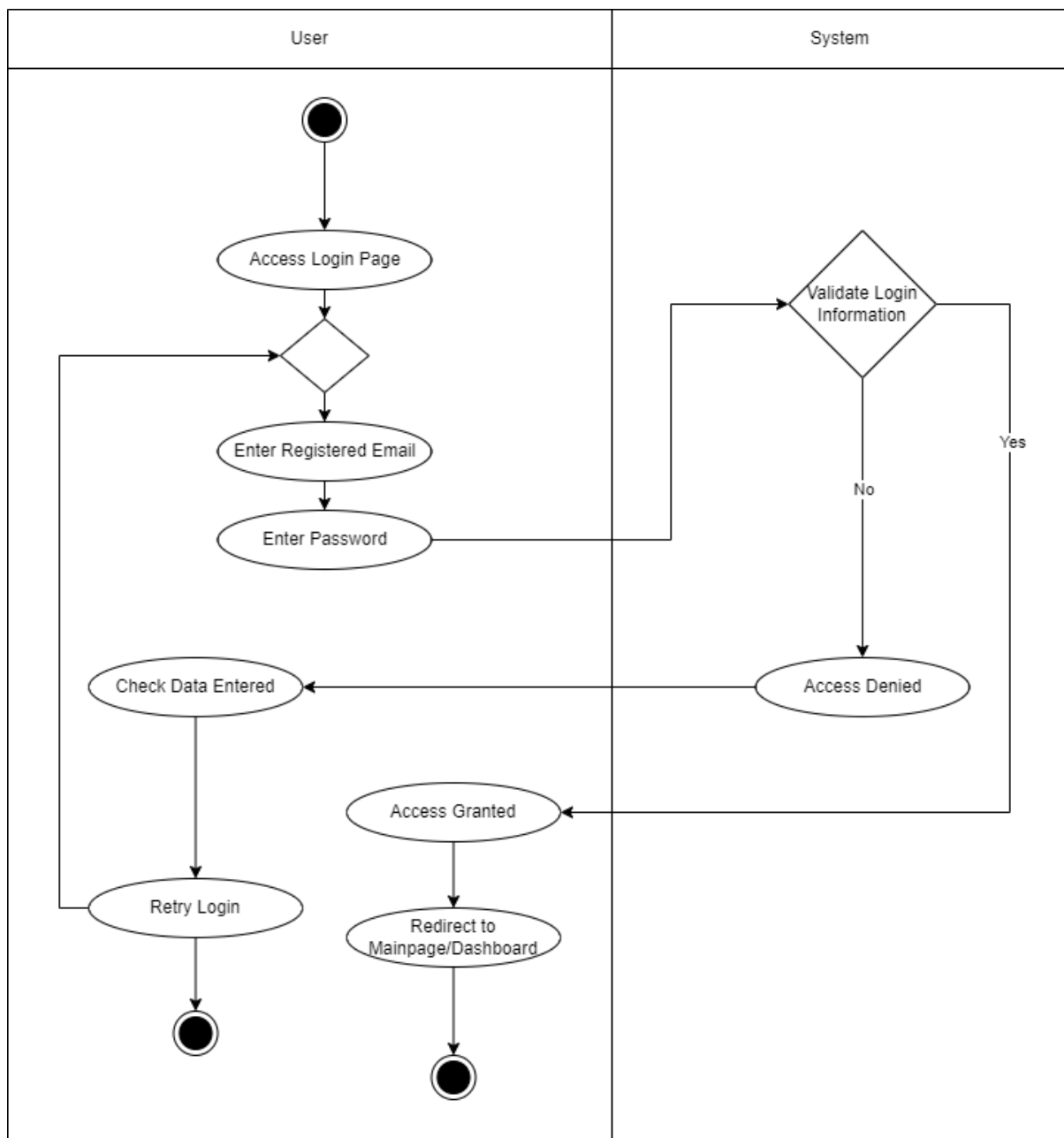


Figure 4.6.2 User Login Activity Diagram

Figure 4.6.2 illustrates the activity flow of the login process. The login function allows registered users to access the system securely and utilize the website features.

The process begins with login page. The user is required to enter registered email address and password. When the user submits the login credentials, the system performs a validation to identify the input in correct format and matches the user records in database. If the validation fails, the system denies access and prompts the user to check the entered information. The user is allowed to retry the login process by re-entering the correct credentials.

If the validation is successful, the system grants access to the user and identifies the user's role such as normal user, groomer, staff, or admin. Based on the identified role, the system redirects the user to the appropriate page or dashboard.

4.6.3 AI Chatbot

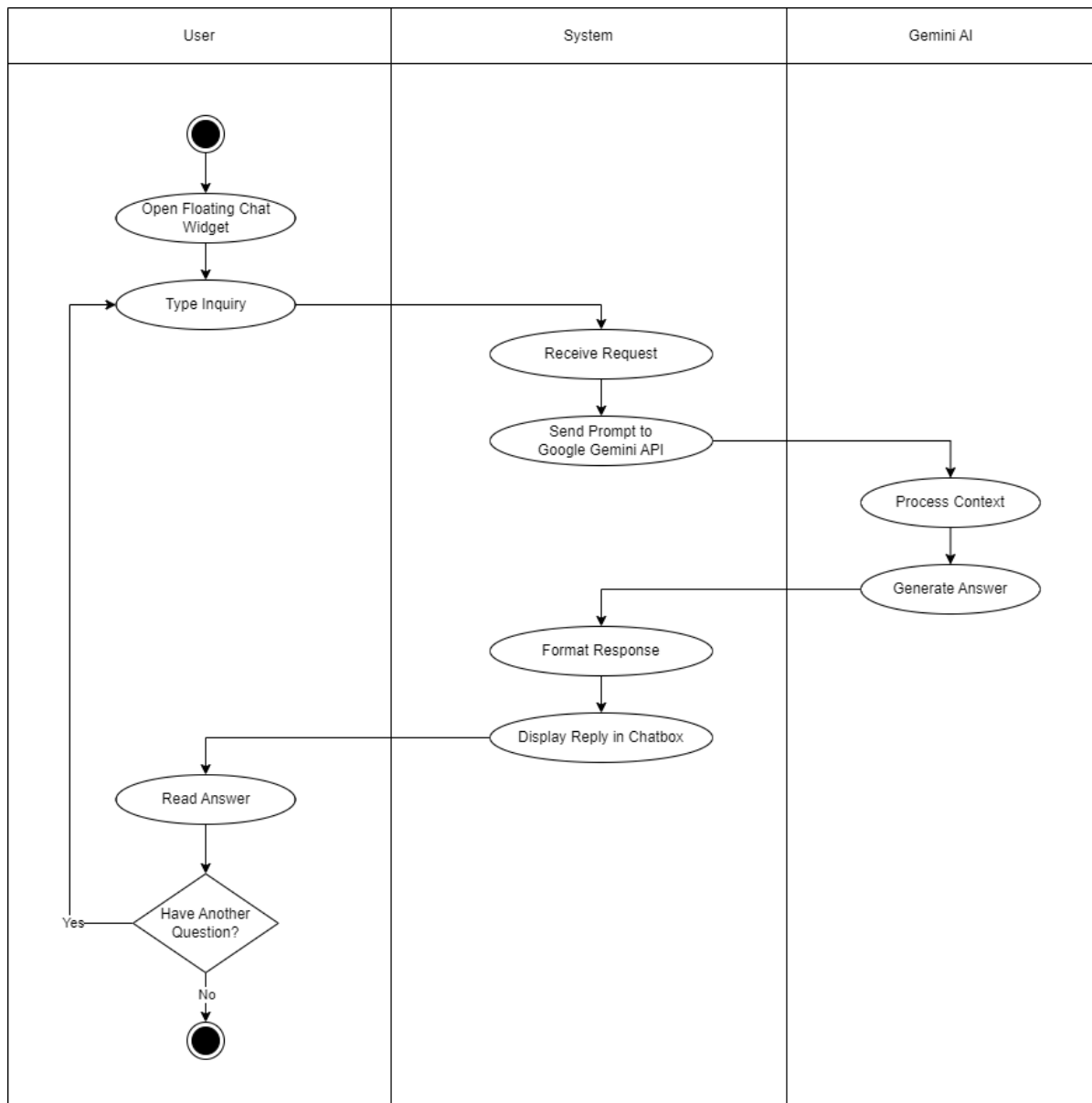


Figure 4.6.3 AI Chatbot Activity Diagram

Figure 4.6.3 illustrates the activity flow of the AI chatbot interaction within the system. This feature allows users to get real-time assistance by communicating with the integrated Gemini AI.

The process begins when the user opens the floating chat widget and asks for inquiry. The inquiry is sent to the system. The system will receive the request and forwards to the Google Gemini API for processing. Gemini AI processes the context of the inquiry and generates an appropriate response based on the given input with desired language. When response is generated, Gemini AI sent the response back to the system. The system will format the response into readable structure and display in chatbot interface. After reviewing the response, the user can decide whether to continue the interaction. If the user has another question, the process repeats from the inquiry step. Otherwise, the interaction ends.

4.6.4 Appointment Booking

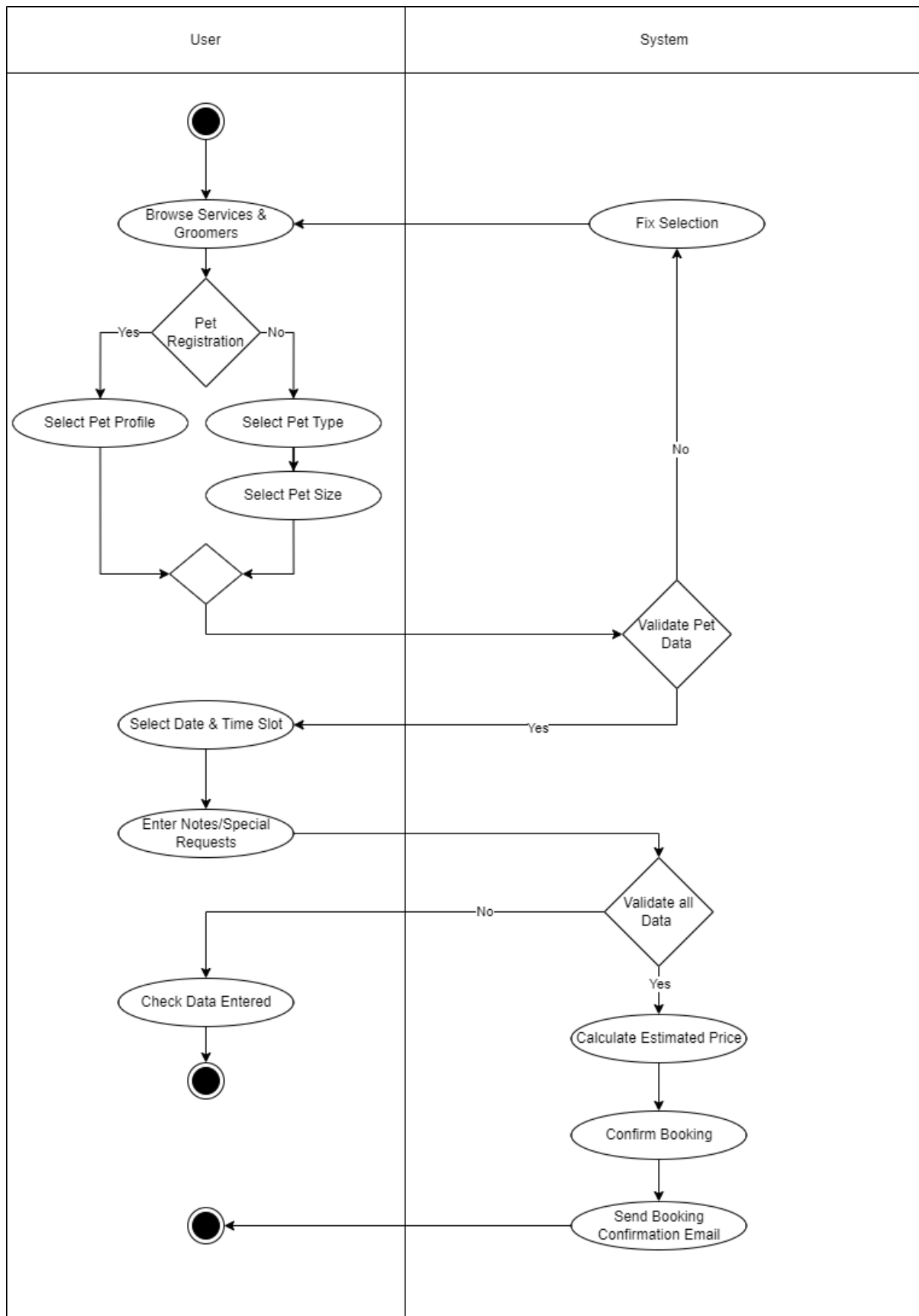


Figure 4.6.4 Appointment Booking Activity Diagram

Figure 4.6.4 illustrates the activity flow of the appointment booking process within the system. This feature allows users to book grooming services with their desired groomer and preferred time.

The process begins when the user visit “Service” page to browses available services. The system will first request the user to select pet from pet list which refers to registered pet. If there is registered pet, the user can directly select from the list. So, the system can retrieve past appointment records to identify booking patterns and automatically fill in the booking information, including selected service, and preferred groomer.

If no pet is registered, the user needs to manually select the pet type, pet size, service, and preferred groomer. The system validates pet data entered. If validation fails, the system prompts the user to fix the selection. If the validation is successful, the user can proceed to select the date and time slot. The user can optionally enter notes or special requests to groomer. Then, the system validates all entered data again. And also ensuring the time slot selected is not crash with the groomer’s schedule. If the validation fails, the user is required to check and correct the entered information. If all data is valid, the system calculates and displays the estimated price based on selected service and pet details. The user can proceed to confirm booking. After confirmation, the system sends a booking confirmation email to the user.

4.6.5 Groomer Appointment Review

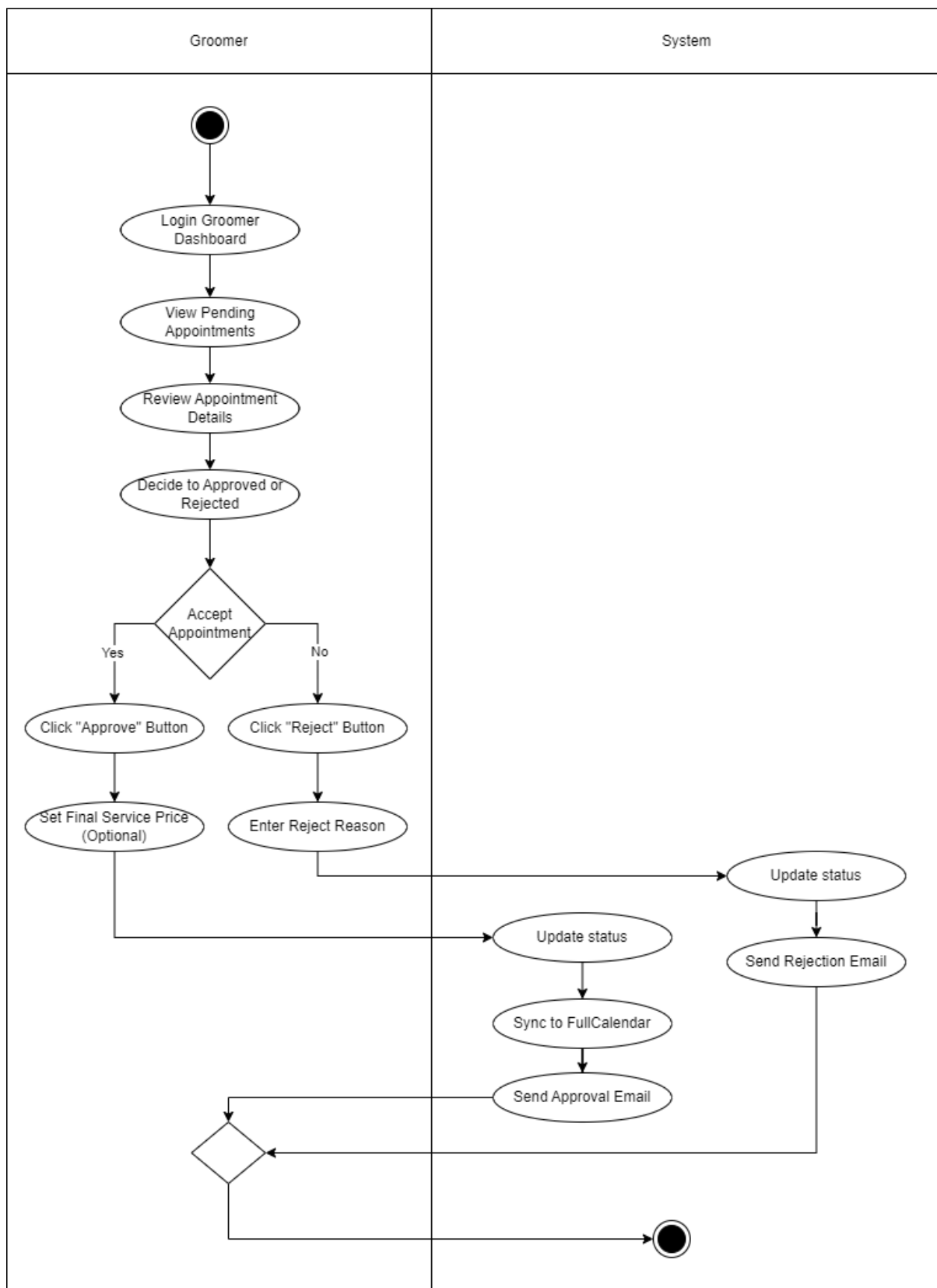


Figure 4.6.5 Appointment Review Activity Diagram

Figure 4.6.5 illustrates the activity flow of the groomer appointment review process. This feature allows groomers to decide whether to approve or reject appointment requests.

The process begins when the user is verified as groomer and logs into the groomer dashboard. The groomer views the pending appointment list and selects an appointment to review. It shows the appointment details, such as pet information, selected service, notes, and requested time slot. After reviewing the details, the groomer can decide to approve or reject the appointment. if the groomer wants to approve the appointment, they can optionally set the final service price but have to identify price adjustment reason. Then, the groomer can click “Approve” to accept the appointment request. The appointment status is updated to “Booked”. The system marked appointment date and time in FullCalendar and send email notification to user. If the groomer rejects the appointment by clicking “Reject” button and enter rejection reason the system sends a rejection email to users for inform.

4.6.6 Grooming Service

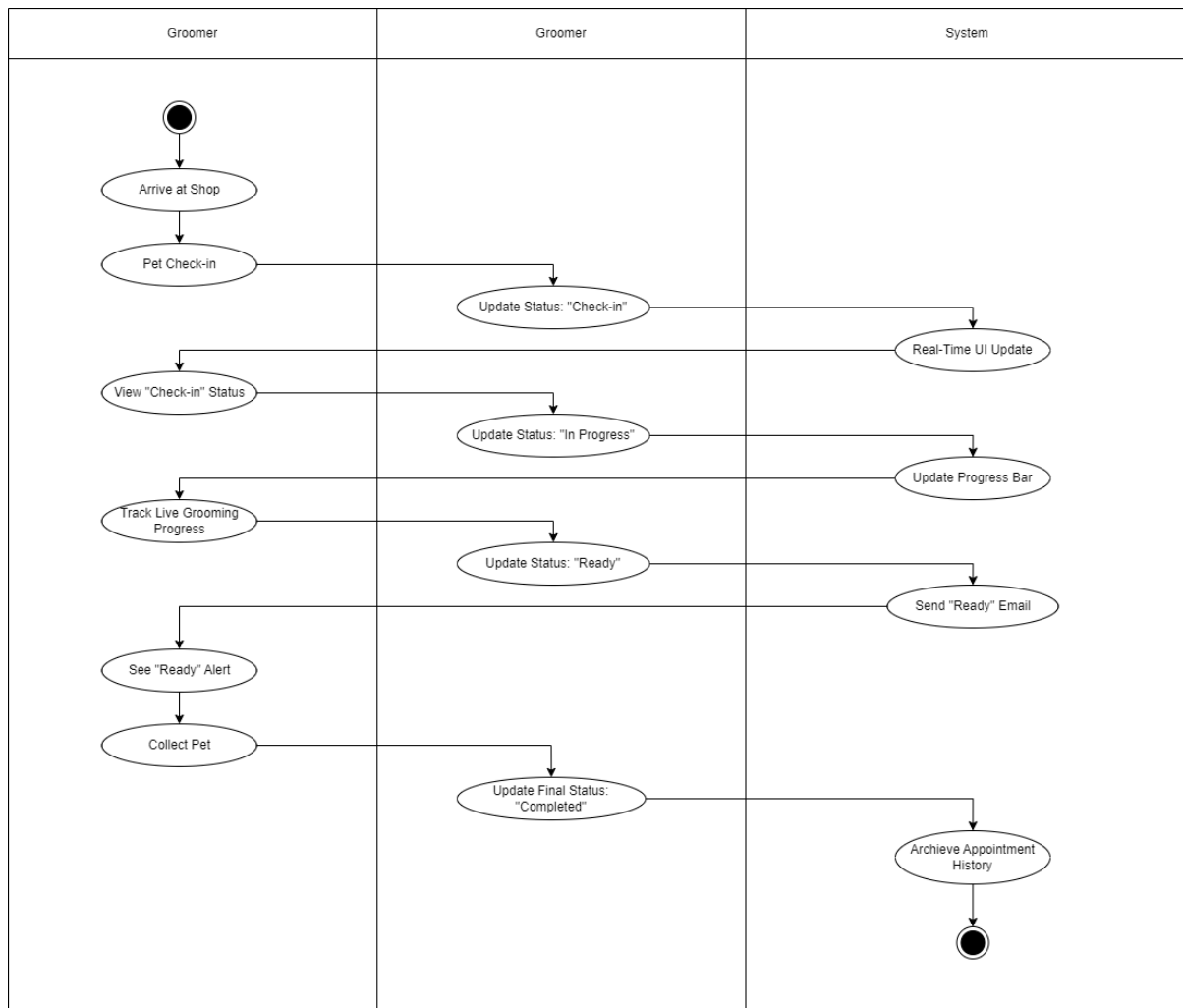


Figure 4.6.6 Grooming Service Activity Diagram

Figure 4.6.6 illustrates the activity flow of the grooming service process. This feature allows groomers to update grooming progress while users can track the service in real time.

The process starts when the groomer handles pet check-in. The groomer receives the pet from owner and updates the real time status to “Check-in”. The system reflects the groomer update for user to view it. When the grooming session starts, the groomer updates the status to “In Progress”. The system updates the progress bar accordingly, so the user can track the live progress. Once the grooming is completed, the groomer updates status to “Ready”. The system first updates the progress bar and sends a notification email to inform user about the end of grooming. So, the user can proceed to collection of pets. Once the pet is collected, indicate complete of whole grooming process. The groomer updates the final status to “Completed”. The system archives the appointment into the appointment history.

4.6.7 Marketplace Order

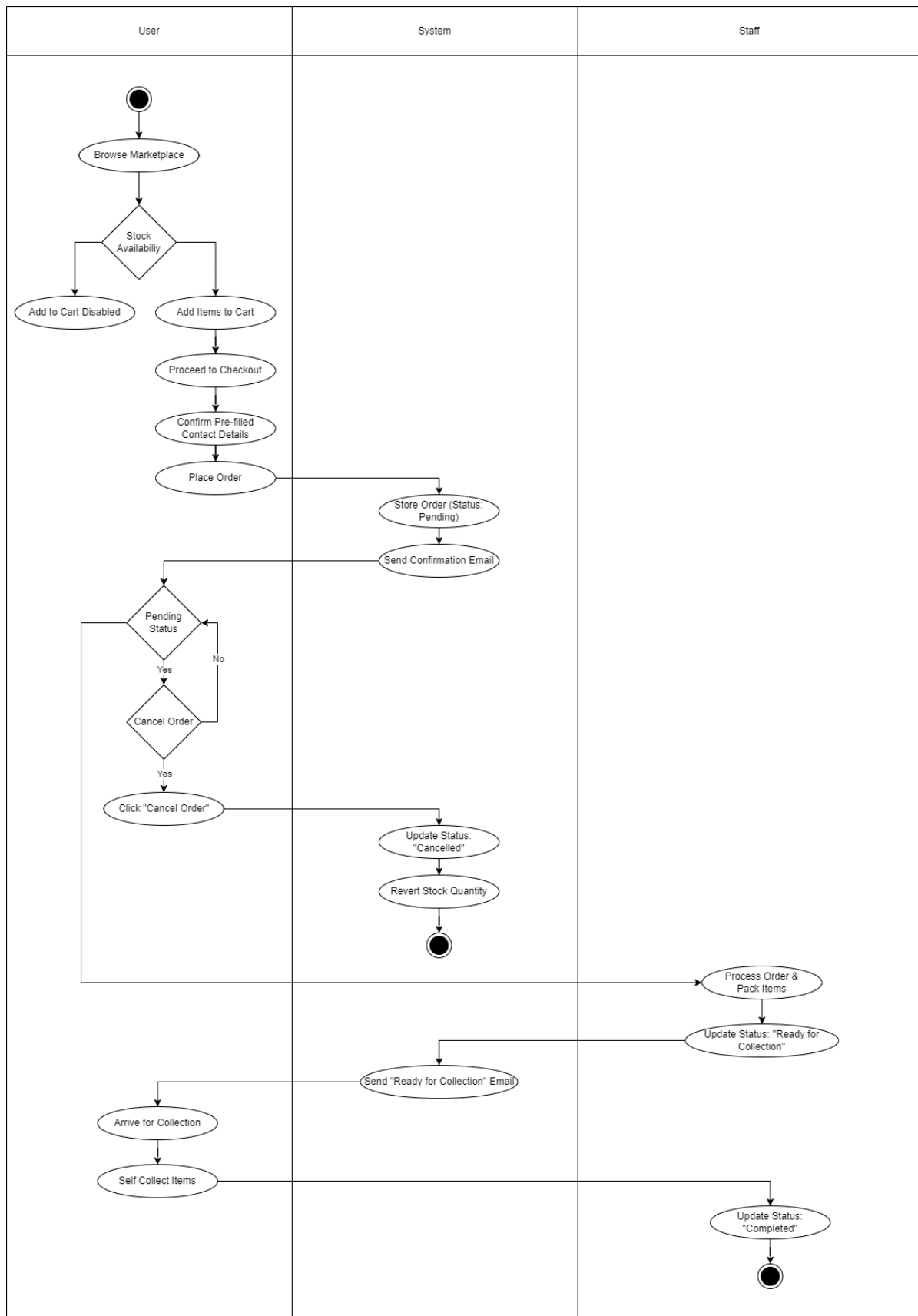


Figure 4.6.7 Marketplace Order Activity Diagram

Figure 4.6.7 illustrates the activity flow of the marketplace order process. This feature allows users to browse products, place orders, and collect items, while staff handle order processing.

The process begins when the user browses the marketplace. The system checks product stock availability. If the item is in stock, the user can add it to the cart. If not, the add-to-cart function is disabled and showed “Out of Stock”. The user proceeds to checkout by clicking “Place Order”. An order summary form prompted with pre-filled contact details. The user review the displayed information then places the order. The system stores the order with a “Pending” status and sends a confirmation email to the user. At this stage, the user has the option to cancel the order before the status update to “Ready for Collection”.

If the user chooses to cancel order, the system updates the order status to “Cancelled” and reverts the stock quantity. If the order is not cancelled, the staff processes to pack the order. After done packing, the staff updates the status to “Ready for Collection”, and the system sends notification email to the user. Thus, the user collects the items with provided order ID. After the items are collected, the system updates the final status to “Completed”, marking the end of the order process.

4.6.8 Pet Profile Management

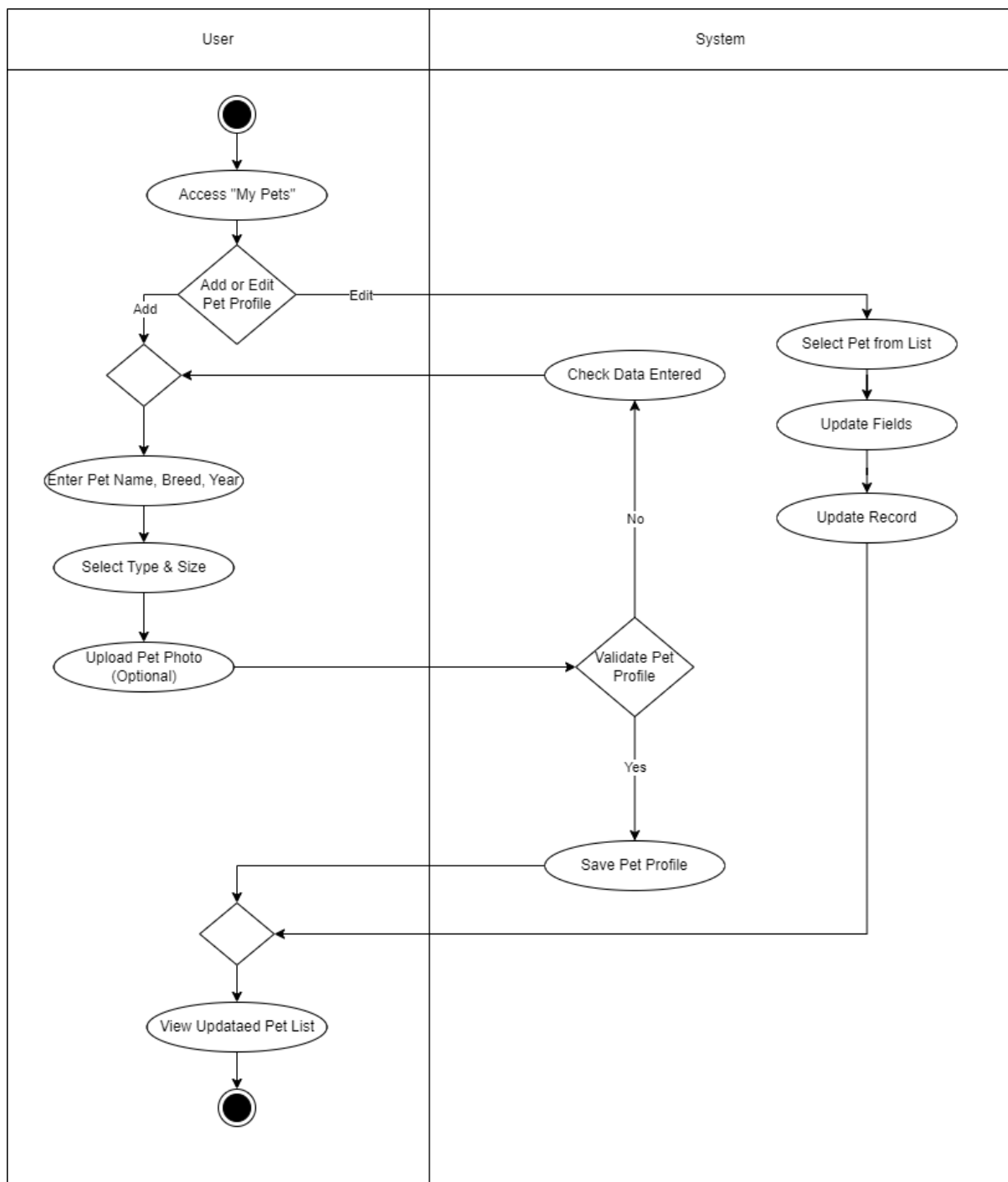


Figure 4.6.8 Pet Profile Management Activity Diagram

Figure 4.6.8 illustrates the activity flow of the manage pet profile process. This feature allows users to add or edit their pet information for future booking.

The process begins with the user accessing the “My Pets” section. The user can choose to add a new pet profile or edit an existing pet profile. If the user wants to add a new pet, the user enters pet details such as name, breed, year, type, and size, and upload a pet photo optionally. The system validates the entered pet information. If validation fails, the system prompts the user to check and correct the entered data. If the validation is successful, the system saves the pet profile.

If the user wants to edit an existing pet profile, the system displays registered pets. The user selects a pet from the list and updates the necessary fields. The system updates the record accordingly.

4.6.9 Feedback and Rating

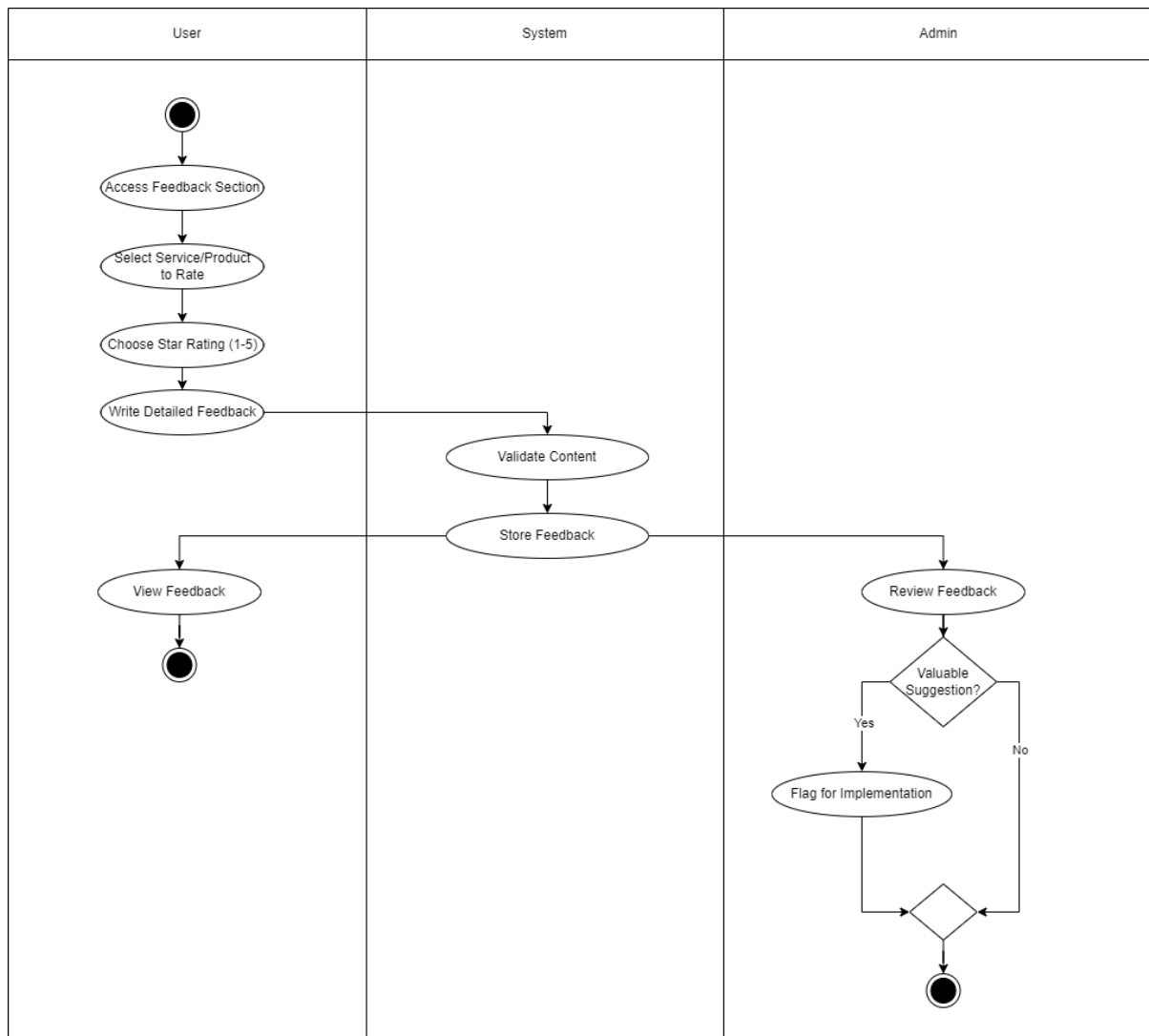


Figure 4.6.9 Feedback and Rating Activity Diagram

Figure 4.6.9 illustrates the activity flow of the feedback and rating process. This feature allows users to provide feedback and rating for services or products, while the admin reviews the feedback for improvement purposes.

The process begins when the users access the feedback section. The user selects a service or product to rate. There is star rating for user to choose and write detailed feedback. The system validates the all field is filled. If the validation is successful, the system stores the feedback in the database. The user is able to view the submitted feedback. Admin can access the feedback section and review the submitted feedback. Admin can evaluate the value of the feedback and may enhance operations or make improvement based on the suggestion provided.

4.6.10 Blog Interaction

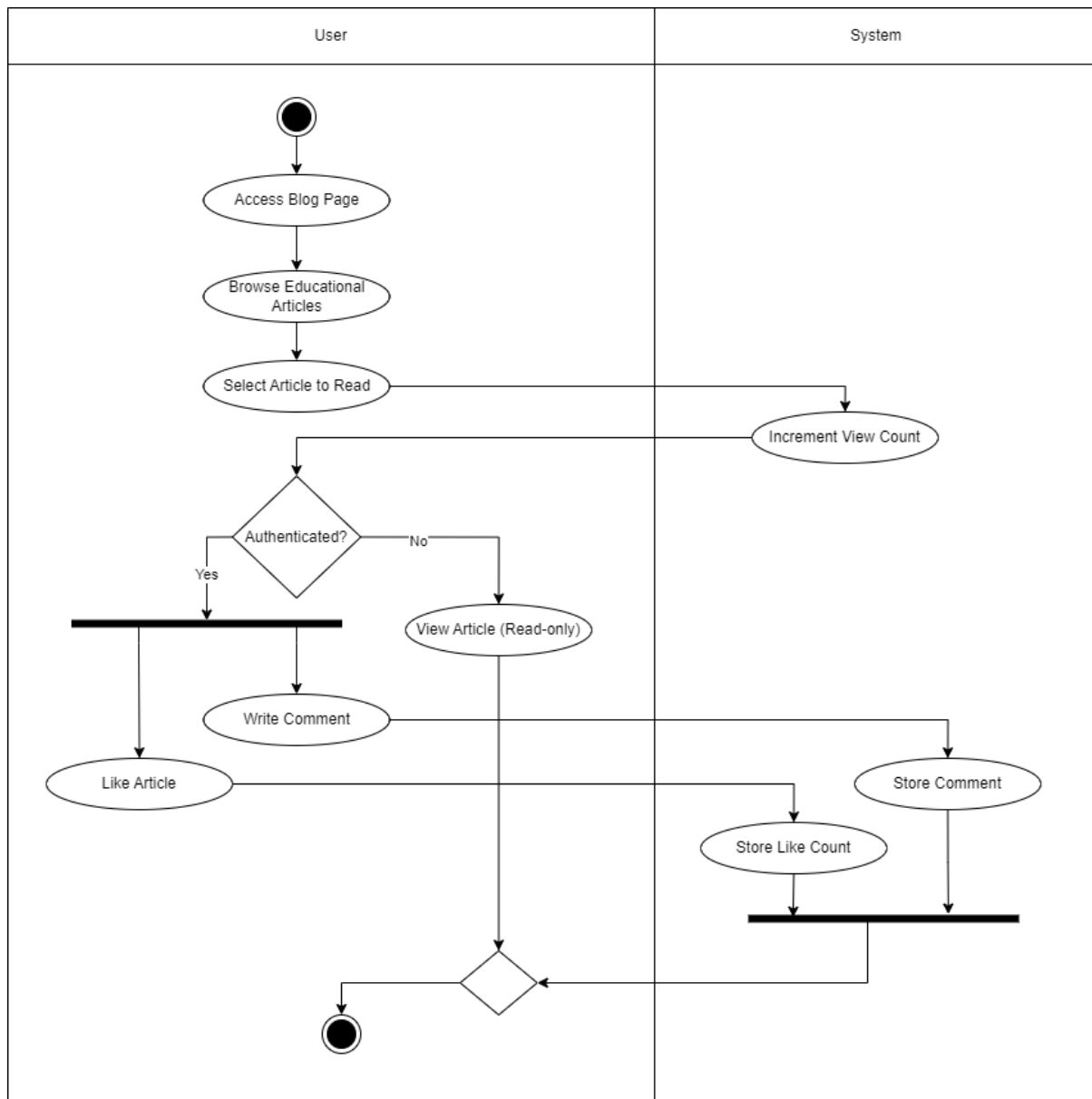


Figure 4.6.10 Blog Interaction Activity Diagram

Figure 4.6.10 illustrates the activity flow of the blog interaction process. This feature allows users to browse and read educational articles, as well as interact through likes and comments.

The process begins when the user accesses the blog page and browses the available educational articles. The user selects an article to read, and the system record the view count. The system validates the user authentication. If the user is not logged in, the user can view the article only and no other action can be done. If the user is authenticated, the user is allowed to interact with the article by like and comment. The system stores like count and comment in the database and displays on blog post.

4.6.11 Blog Management

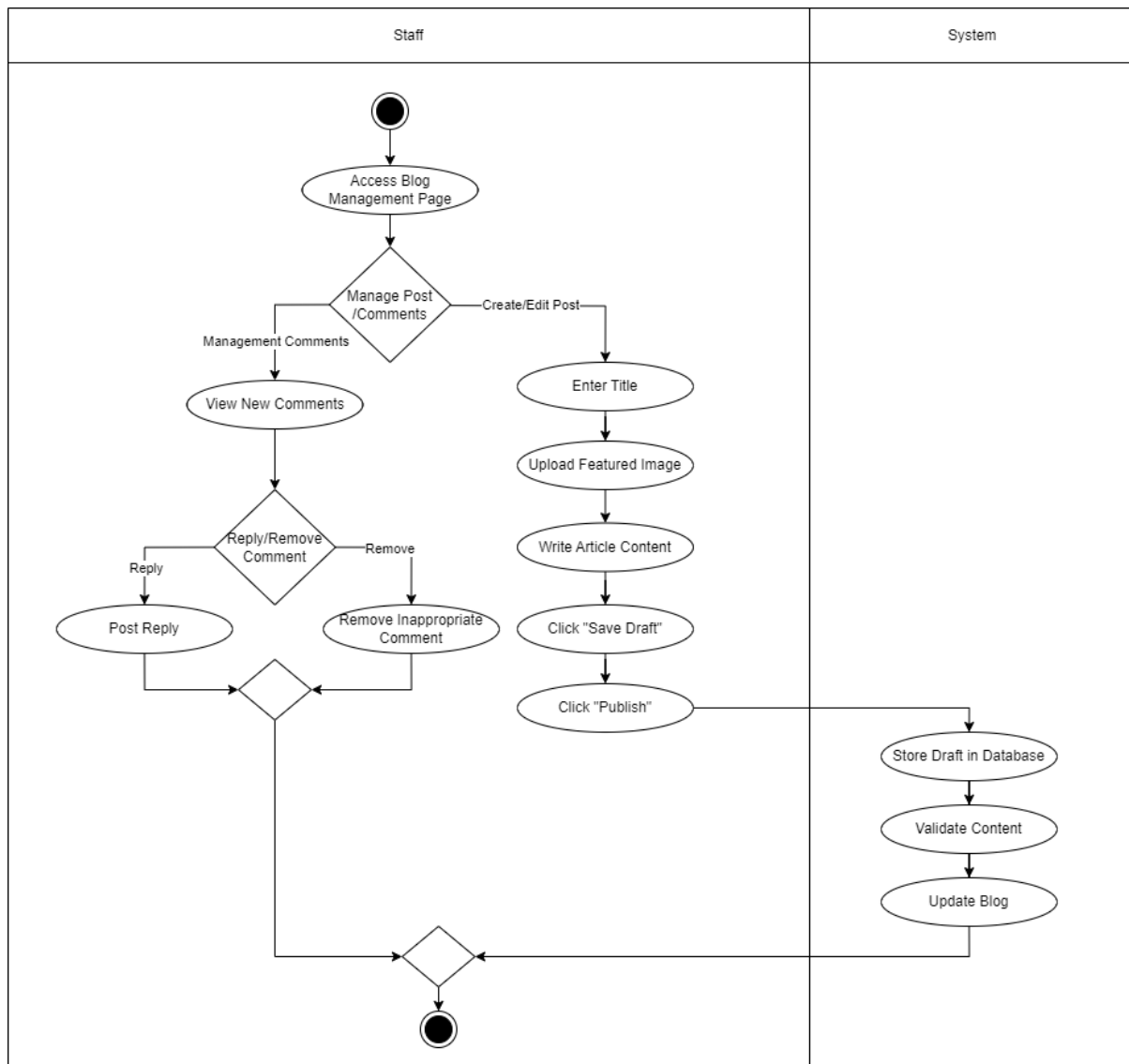


Figure 4.6.11 Blog Management Activity Diagram

Figure 4.6.11 illustrates the activity flow of the blog management process. This feature allows staff to manage blog posts and moderate user comments.

The process begins when the staff accesses the blog management page. The staff can choose to manage post or comments. If the staff chooses to manage comments, the staff views new comments submitted by users. The staff can decide to reply comments or remove inappropriate comments. Inappropriate comments remove by staff will no longer exist in database.

If the staff wants to create, the staff clicks “Add New Post” to enter the article title, upload features image, and writes the article content. The staff can choose to save the post as draft or publish it. If “Save as Draft” is selected, the system stores the draft in the database and is invisible to user. If “Published” is selected, the system validates the content and updates the blog.

Chapter 5

System Implementation

5.1 Hardware Setup

Description	Specifications
Laptop Model	Asus Vivobook pro 15
Processor	Intel Core i5-11300H
Graphic Card	Intel Iris X ^e Graphics
Memory	8GB DDR4 RAM
Storage	512GB M.2 NVMe PCIe 3.0 SSD
Input Device	Mouse and Keyboard

Table 5.1 Hardware Specifications

The system was developed and tested using an **ASUS VivoBook Pro 15** laptop that provides sufficient performance for web application development and system testing.

The laptop is equipped with an **Intel Core i5-11300H** processor. It delivers reliable processing power for handling backend operations such as running Laravel framework. Managing server requests and executing database queries efficiently. **Intel Iris Xe Graphics** helps render the user interface and increase frontend operations performance. Developing the proposed system requires at least 8GB of RAM. **8GB DDR4 RAM** able to perform multitasking, including editing code, managing code server, operating with the browser without any issue. The laptop includes a **512GB M.2 NVMe PCIe 3.0 SSD** allows quick access to data and improved loading performance of software. Additionally, standard input devices of mouse and keyboard improve productivity during the development process. All the hardware setup is sufficient to support the development, testing, and execution of the proposed system.

5.2 Software Setup

Description	Software
Operating System	Window 11
Web Browser	Google Chrome
IDE/Code Editor	Visual Studio Code
Front-end	HTML, CSS, JavaScript. Bootstrap
Back-end	PHP, Laravel
Database	MySQL
Package Manager	Composer (PHP), npm (JavaScript)
API Integration	Google Gemini API, FullCalendar.js, Chart.js

Table 5.2 Software Specifications

The system is developed using a combination of modern web development technologies to ensure functionality, scalability, and ease of maintenance.

The development environment is based on **Window 11** which provide stable platform for running development tools and web services. For coding, Visual Studio Code serves as primary code editor. It is lightweight and supports many useful extensions. The system is tested and accessed using **Google Chrome** browser because of powerful developer tools for debugging and performance testing.

The frontend of the system is built using **HTML, CSS, JavaScript, and Bootstrap**. These technologies are used to design a responsive and user-friendly interface. It ensures the system looks clean and works well on different devices. The backend is built using **PHP with the Laravel framework**. Laravel helps to organize code structure and provides useful features such as routing, authentication, and database handling. The system utilizes **MySQL** to store important data. This includes information about users, pets, appointments, orders, blogs, and feedback. It ensures that all data is well organized and easy to manage.

Dependencies are managed using **Composer** for PHP packages and **npm** for frontend libraries. This makes development smooth and keeps all the necessary components up to date. Some external applications have been applied. **Google Gemini API** is used for the AI chatbot. It helps users to get instant answers on inquiry. **FullCalendar.js** is used to manage appointment

schedules. It provides a clear visual of booked time slot. **Chart.js** is used in admin dashboard to display data. It visualizes core business information such as sales and appointment trends. All software setup is to ensure all components work smoothly and provide good user experience.

5.3 System Setting and Configuration

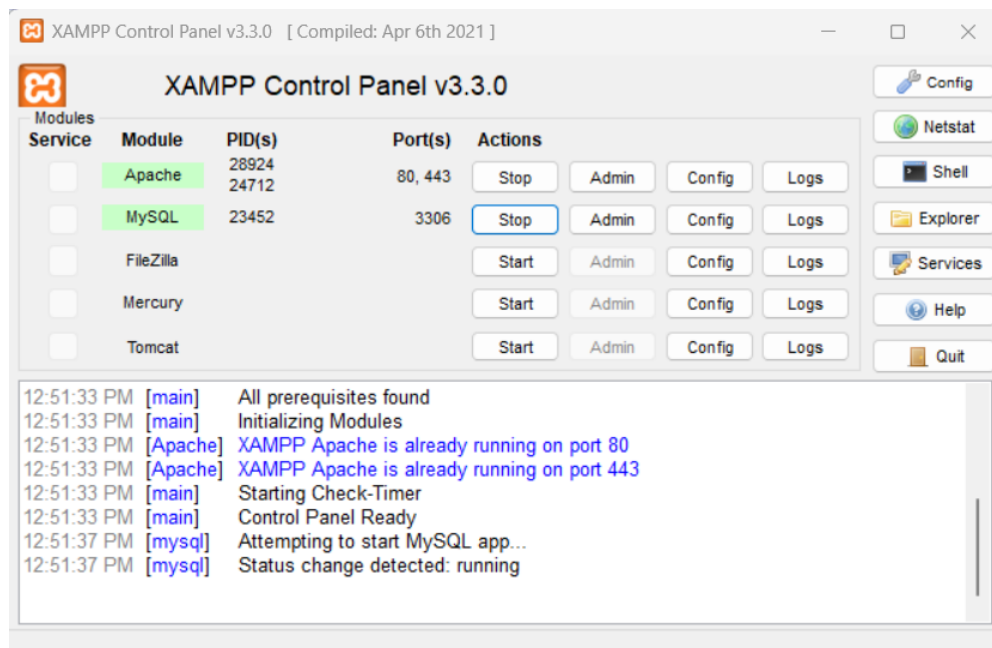


Figure 5.3.1 XAMPP Server Setup

Figure 5.3.1 shows the XAMPP Control Panel used to run the system locally. Apache and MySQL modules are started to enable the web server and database services. Apache host the Laravel application, while MySQL manage the system database. This setup allows the system to access localhost environment to perform development and testing.

```
APP_NAME="Fluffy Tails"
APP_ENV=local
APP_KEY=base64:MGPBkjyIfblw+Uu1ATe6oVQ3xHYZ96GebTW60+ybD7A=
APP_DEBUG=true
APP_URL=http://localhost/fluffyTails_fyp1/public
```

Figure 5.3.2 Application Setting

Figure 5.3.2 illustrates the application configuration in “.env” file. It defines the system setting includes application name, environment type, application key, debug mode, and application URL. It ensures Laravel runs correctly in local development environment and supports debugging.

```
DB_CONNECTION=mysql
DB_HOST=127.0.0.1
DB_PORT=3306
DB_DATABASE=fluffy_tails
DB_USERNAME=root
DB_PASSWORD=
```

Figure 5.3.3 Database Configuration

Figure 5.3.3 shows the database configuration in the “.env” file. It includes database connection type, host port, database name, and password. Laravel system connect to the MySQL database and perform operations with this setting. All data such as users, pets, appointments, orders, and other system modules are stored and retrieved inside securely.

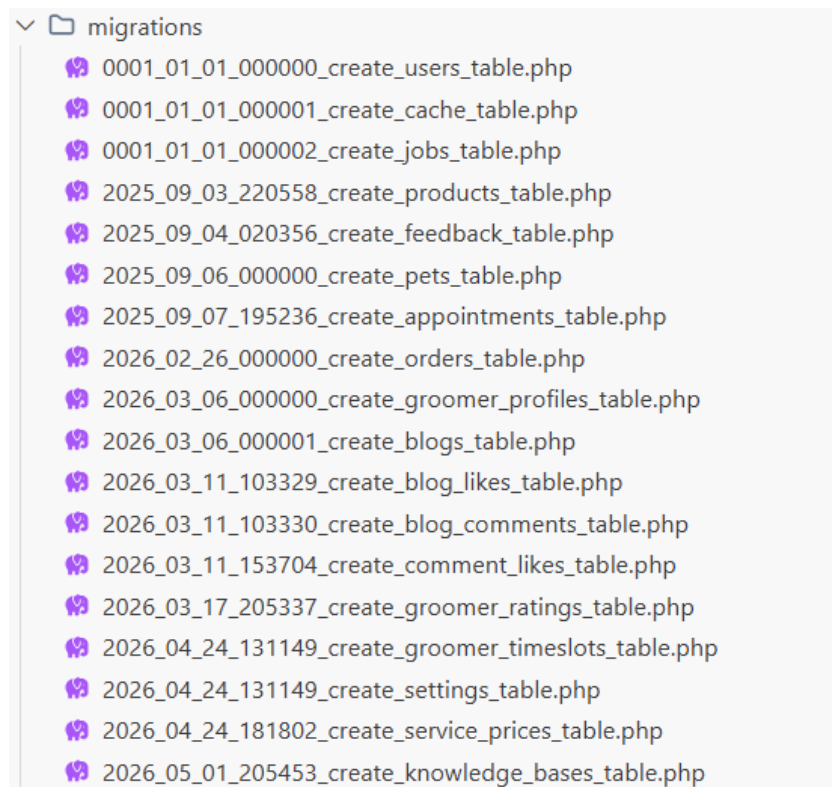


Figure 5.3.4 Database Migration

Figure 5.3.4 presents the migration files used to define the database structure. Migrations are responsible to define the database schema, including creating tables and establishing relationships between different entities in the system. This ensures the database structure is consistent and easy to manage during development.

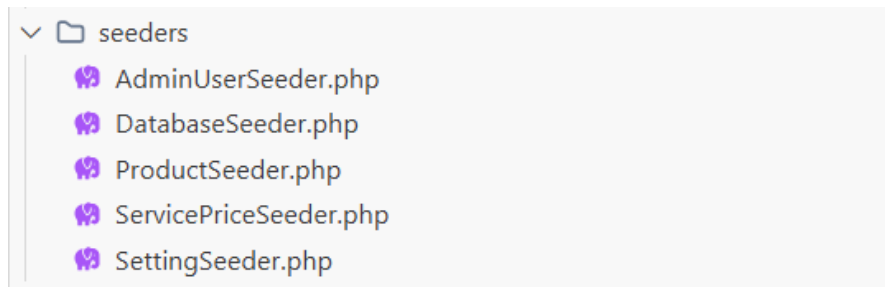


Figure 5.3.5 Database Seeding

Figure 5.3.5 shows the seeder files used to insert initial data into the database. Seeder used to populate database with initial or sample data, such as admin accounts, product information, and service pricing. It helps to prepare the system for testing and ensures all required data is available during execution.

```
MAIL_MAILER=smtp
MAIL_SCHEME=null
MAIL_HOST=smtp.gmail.com
MAIL_PORT=587
MAIL_USERNAME="jiapei915@lutar.my"
MAIL_PASSWORD="lualjmbvoafvxxwt"
MAIL_ENCRYPTION=tls
MAIL_FROM_ADDRESS="jiapei915@lutar.my"
MAIL_FROM_NAME="Fluffy Tails Grooming"
```

Figure 5.3.6 Email/SMTP Configuration

Figure 5.3.6 illustrates the email configuration in “.env” file. It allow the system to send automated emails. These emails include appointment confirmations, rejection notifications, and order updates. So, the user is always informed about system activities in real time.

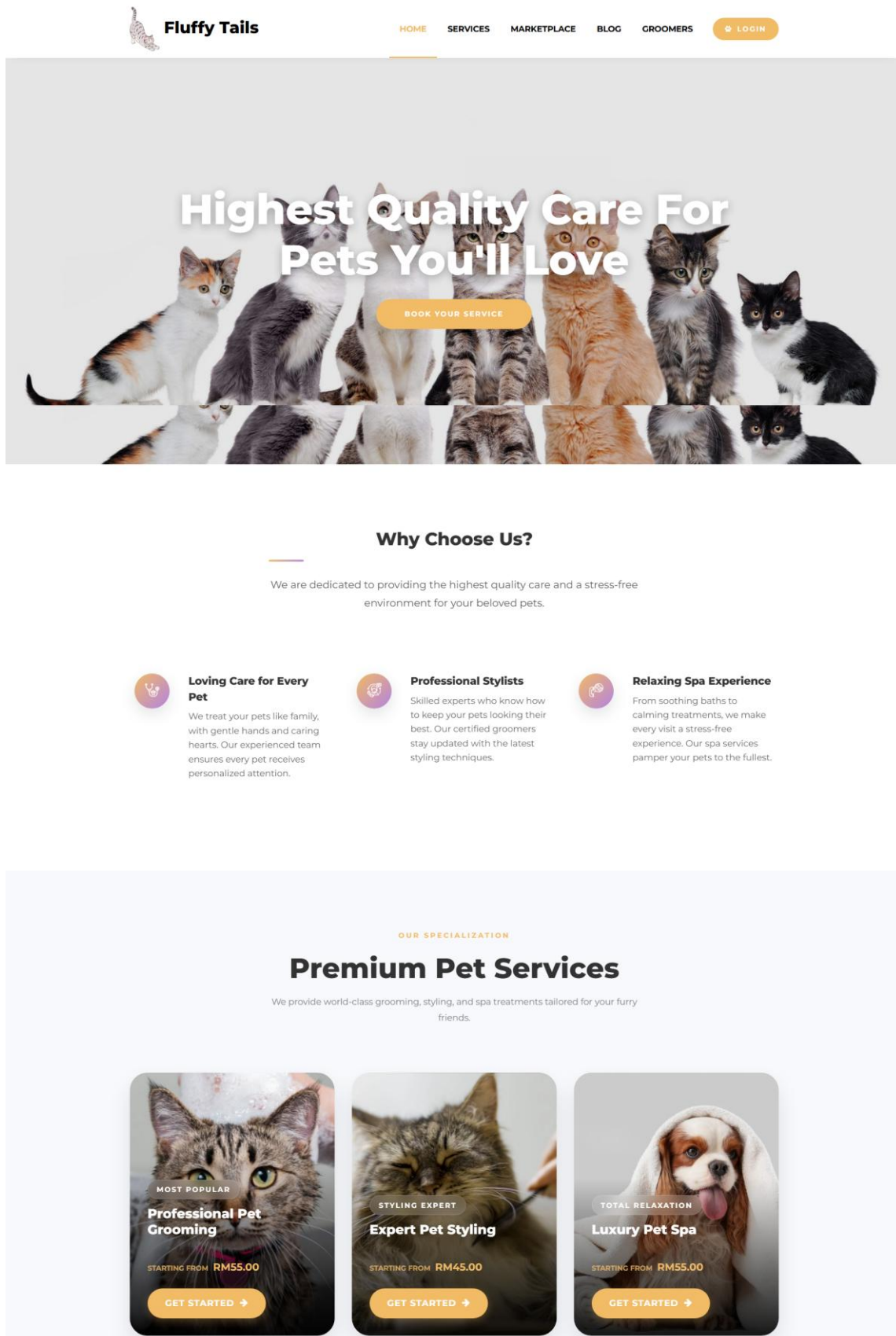
```
GEMINI_API_KEY="AIzaSyBUJl3K4cRFqrHnu-yV-9vuZWxgg_BjnQ"
```

Figure 5.3.7 Gemini API Configuration

Figure 5.3.7 shows the configuration of Gemini API key in the “.env” file. This API is sued to support AI chatbot featured in the system. API key connect the system and Gemini service to process user inquiries and generate response dynamically. This enhances user experience by provide real-time assistance.

5.4 System Operation

5.4.1 Website Main Page



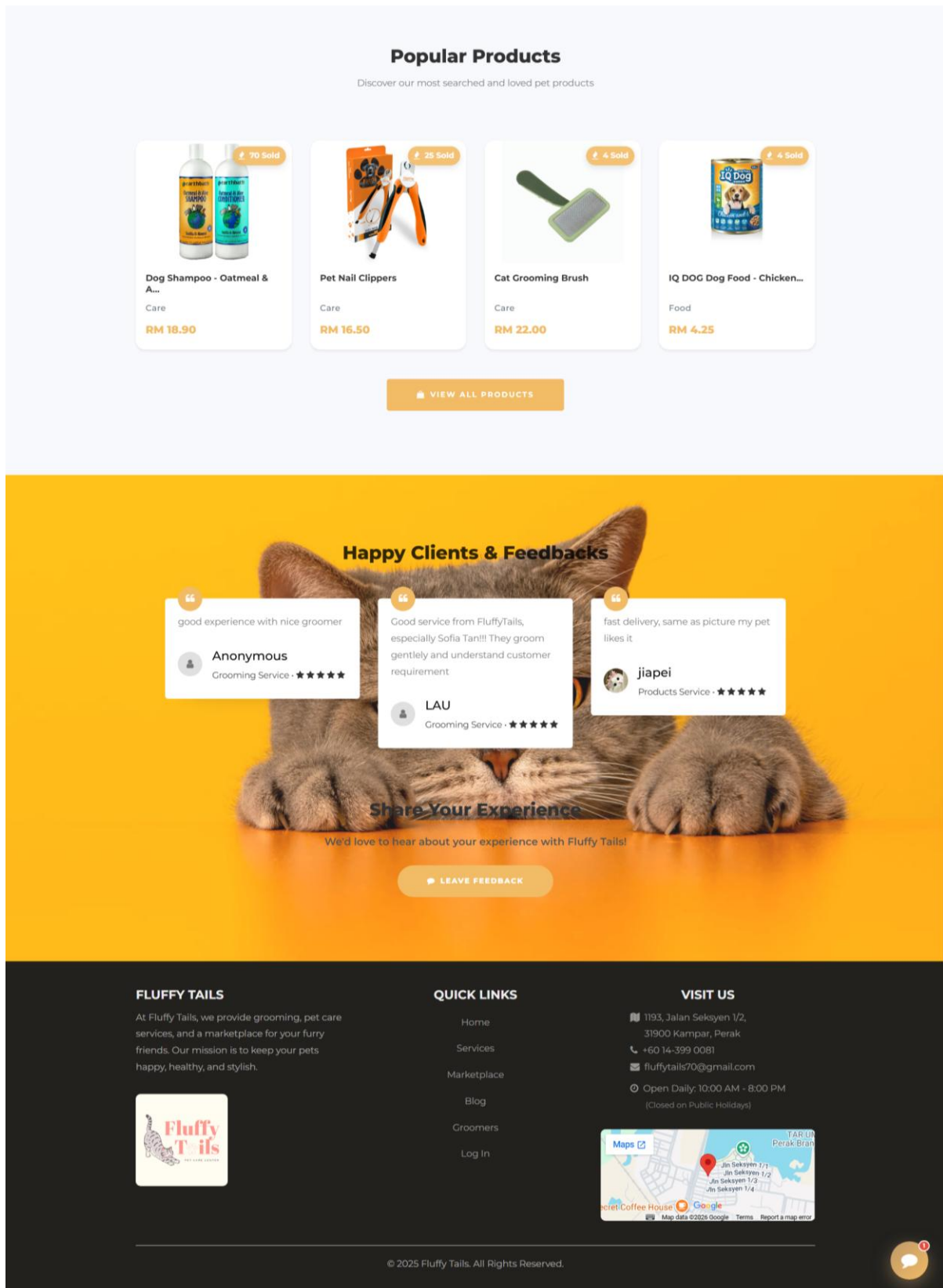


Figure 5.4.1.1 Webpage Main Page

Figure above demonstrates the homepage of proposed pet care system. Homepage is the entry point of the Fluffy Tails website, where users can navigate to different system modules. There is a navigation bar on the top of page to provide access to main modules. It is linked to Home, Services, Marketplace, Blog, Groomers, and Login. So, the user can access to different sections quickly and smoothly.

The first section of the homepage is a hero banner with the headline. It shows a pet image to attracts user and includes a “Book Your Service” button. By clicking the button, the user is directed to appointment booking module. The body of homepage highlight the key advantages of the platform. This section helps to build trust and informs users about service quality. Following section is “Popular Products” showing the best seller within the platform. A “View All Products” button is implemented below “Popular Products” for user to navigate to marketplace. The last section of homepage includes a “Happy Client & Feedbacks”. It displays customer reviews and ratings to platform’s services and products. User can easily leave feedback using “Leave Feedback” button.

At the bottom part, there is a footer that share across all modules. The footer provides additional information such as business description, navigation links, and contact details. it also includes a map location and operating hours to help users find the business easily.

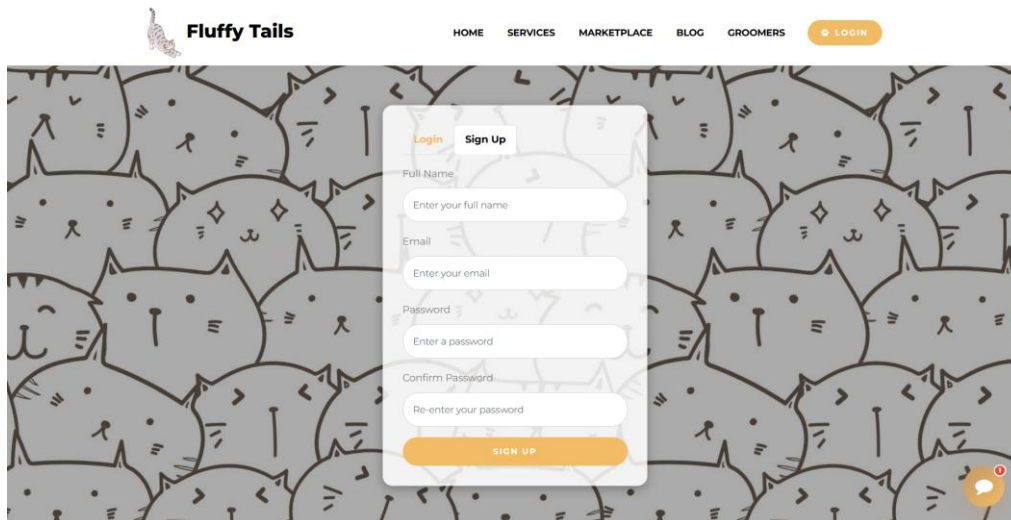
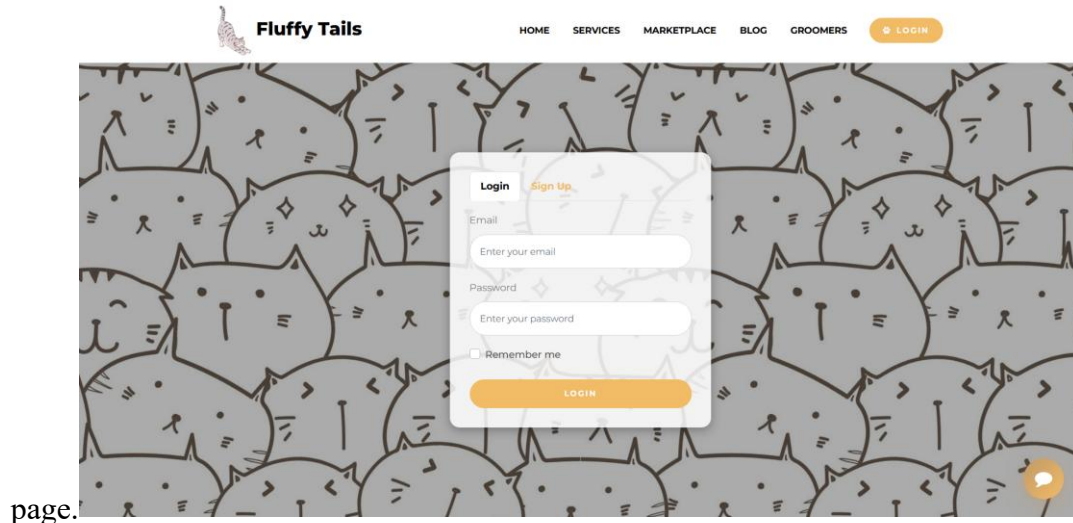


Figure 5.4.1.2 User Registration Page

If a user does not have an account to log in, they need to register a new account in “Sign Up” section. The user is required to enter their full name, email address, password, and password confirmation. The system validates all data entered which email must follow a valid format, and the password must match the password confirmation. Once the registration process is completed successfully, the system creates the account and redirects the user to the home



page.

Figure 5.4.1.3 User Login Page

When user click “Login” button, it navigates user to login page and required user to enter registered email and password. Then the system validates the credentials entered to match the database history. After successful log in, the system prompt user to appropriate based on their role.

5.4.2 User Page

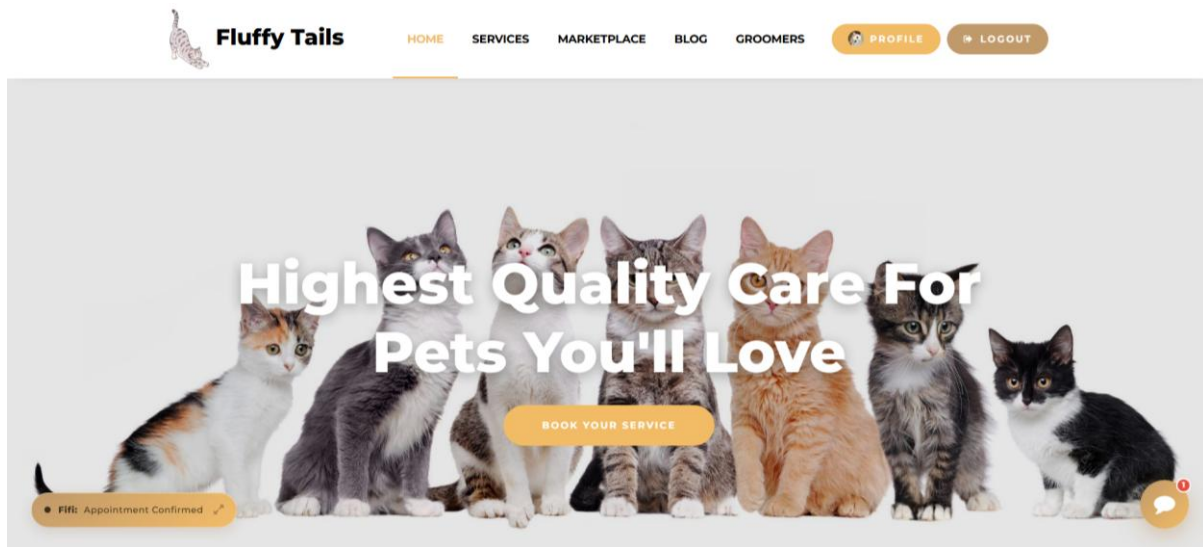


Figure 5.4.2.3 User Main Page

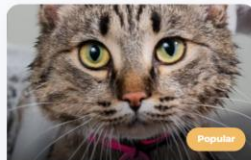
After user is log in with the existing account, a “Profile” button will appear on the navigation bar. The user can access this section to manage their account information. The “Login” button is replaced by “Logout” button for user to terminate the session.



PROFESSIONAL CARE

Services & Pricing

From grooming and styling to luxury spa treatments, we offer expert care tailored to your pet's specific needs and size.



Popular

Pet Grooming

Fresh, clean, and healthy care for your pet with our professional grooming team.

Small	RM 55
Medium	RM 75
Large	RM 120
Giant	RM 180



Premium

Pet Styling

Stylish cuts to show off your pet's charm and keep them looking their absolute best.

Small	RM 50
Medium	RM 70
Large	RM 110
Giant	RM 160



Relax

Pet Spa

Relaxing spa treatments for total pampering and a stress-free experience.

Small	RM 45
Medium	RM 60
Large	RM 100
Giant	RM 130

Book Your Pet's Appointment

Select one or more services for your furry friend

Pet 1

Select Your Pet

-- Choose a pet to auto-fill --

Pet Type

Dog

1. Choose Services



Pet Grooming



Pet Styling



Pet Spa

2. Selected Pet Size

Select size

3. Preferred Groomer

Select groomer

4. Date

dd/mm/yyyy



5. Time Slot

Select a date and groomer f

Notes (optional)

+ ADD ANOTHER PET

Booking Summary

Select services and pet size to see estimated total.

Total: RM 0.00

SUBMIT BOOKING

Final price may vary based on actual pet condition.

Figure 5.4.2.4 Services Appointment Page

In service module, it provides detailed information about available grooming services and allows user to make appointment directly.

The first section of the page displays the types and pricing of the services. Each service presented in card layout for user to compare the price based on the pet size. After viewing the service available and pricing, the user can go through “Book Your Pet’s Appointment”, to book an appointment.

The booking process starts with selecting a pet. User can choose a pet from registered pet list to auto-fill the pet information. If no pet is selected, users can manually choose pet type and size. Then, user required to select service needed and preferred groomer. The system updates the available timeslot based on groomer selected. An optional notes section is provided for user to submit special requests or instructions to groomer. If users want to book services for multiple pets for the service, they can click “Add Another Pet” for another booking entry. Since, each appointment session is assigned to one pet only.

On the right side, a booking summary panel is displayed. It shows the selected services and calculates the estimated total price based on the user’s selection. Once all required information is filled, the user can click the “Submit Booking” proceed to booking process.

Appointment Summary

Please confirm your booking details

Fifi

LARGE

Services: **Pet Grooming**

Groomer: **Sofia Tan**

Date: **May 3, 2026**

Time: **10:40 AM - 11:30 AM**

Subtotal: **RM 120.00**

Bubu

MEDIUM

Services: **Pet Grooming, Pet Styling**

Groomer: **Sofia Tan**

Date: **May 15, 2026**

Time: **03:15 PM - 03:45 PM**

Subtotal: **RM 145.00**

Total Amount:

RM 265.00

Edit

CONFIRM BOOK

Figure 5.4.2.7 Appointment Summary

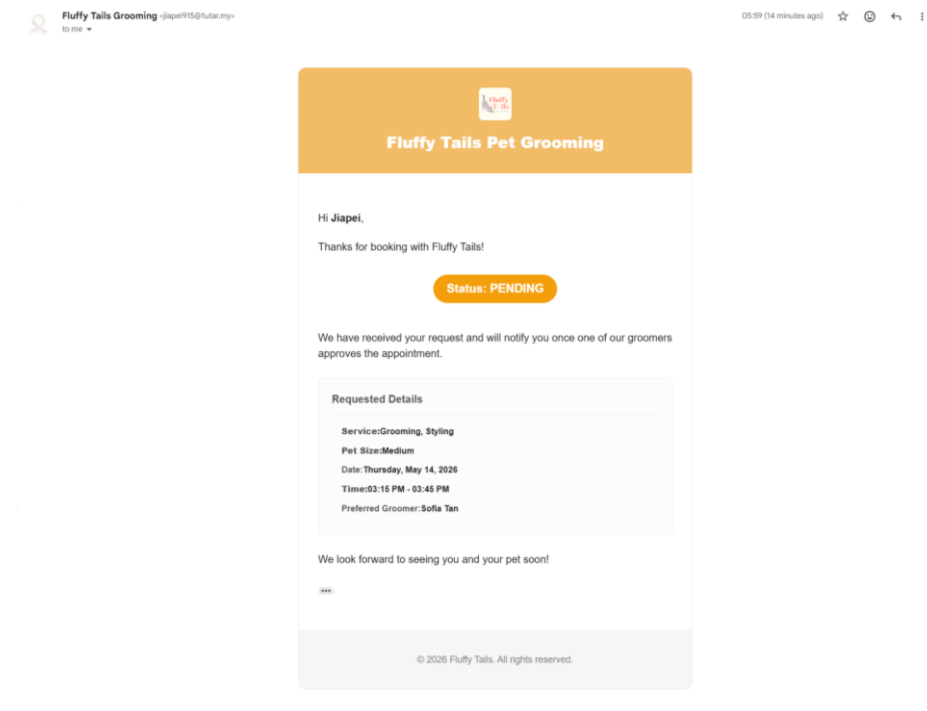


Figure 5.4.2.8 Appointment Confirmation Email

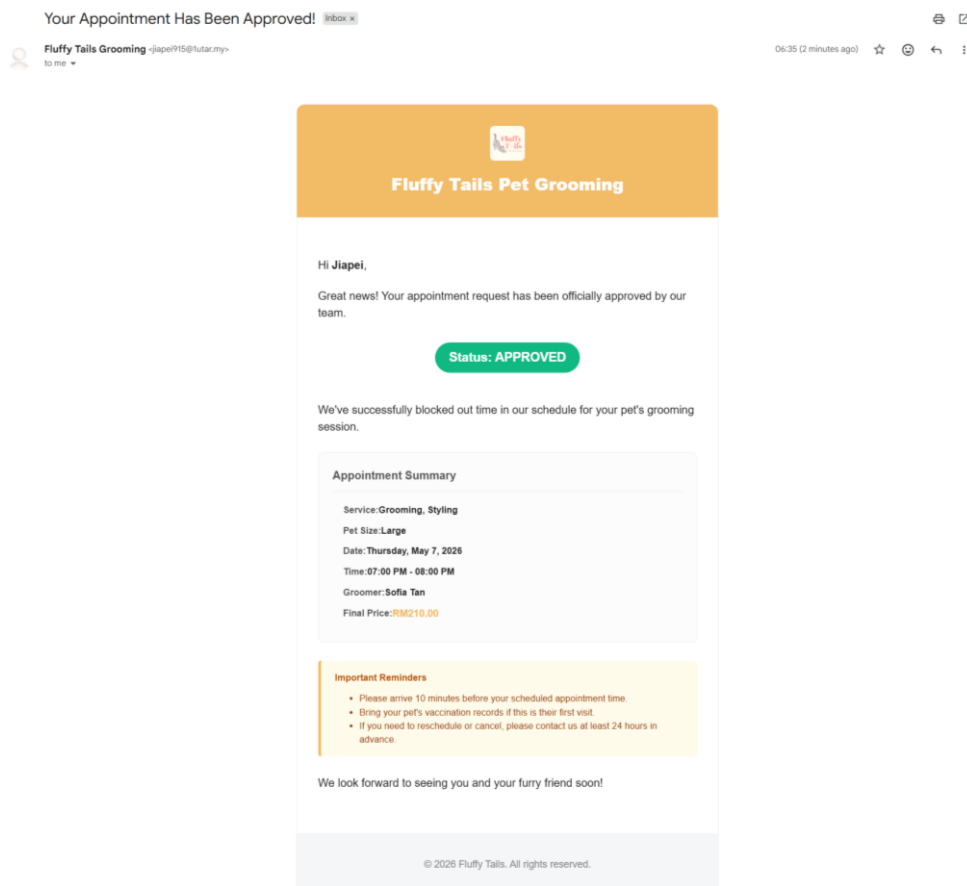


Figure 5.4.2.9 Appointment Approved Email

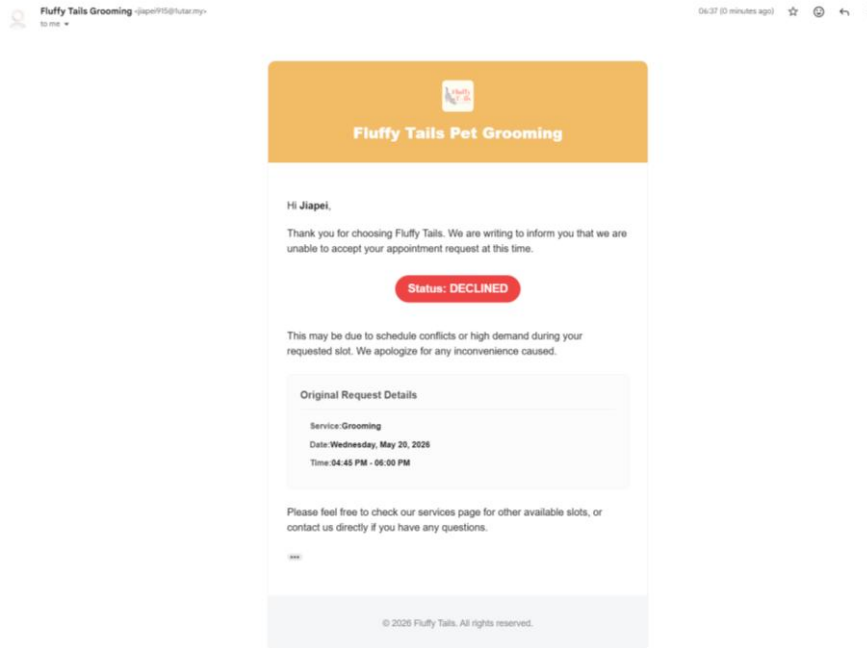


Figure 5.4.2.10 Appointment Rejection Email

After clicking “Submit Booking” button, the system an appointment summary pop-up for user to review the booking details. If all the information is correct, the user can proceed to confirm booking and wait for groomer approval. The system sends a confirmation email to user when the appointment successfully submitted to the groomer. Both approved or rejection email will be sent based on groomer’s decision.

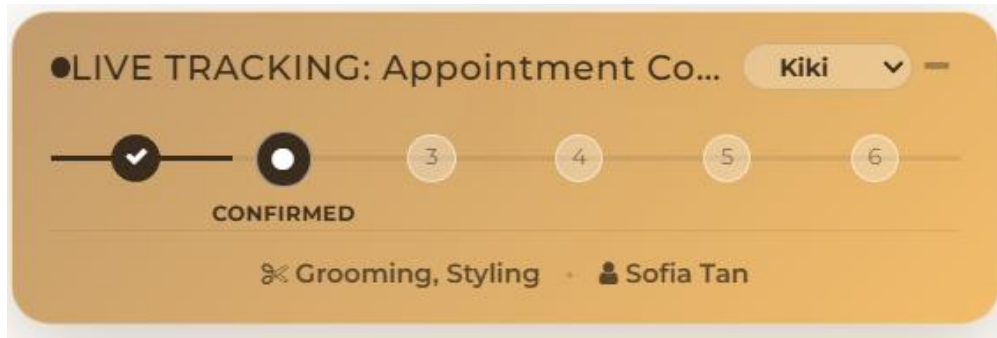


Figure 5.4.2.11 Grooming Process Live Tracking



Figure 5.4.2.12 Grooming Process Live Tracking

After the appointment is approved by groomer, it displayed the grooming status at the left bottom of the website. The system displays the current the current appointment status with a progress bar. Each stage of the grooming process is represented step-by-step, such as “Confirmed”, followed by subsequent stages until completion. The current stage is highlighted to show progress clearly. The system also displays the selected service and assigned groomer for the appointment. For multiple appointments, the user is allowed to use dropdown menu to select which pet’s progress to view. In addition, a compact status indicator is shown to notify users of the latest update, such as “Appointment Confirmed”. This helps users stay informed without needing to check the full details page.



Q What are you looking for?

SEARCH

All Categories

Min Price

Max Price

ESSENTIALS MARKETPLACE

Pet Products

Discover the finest selection of food, accessories, and toys curated for your pet's happiness and well-being.



Care

DOGIT Training Pad Holder

RM 63.90

Stock: 8

BUY NOW

ADD TO CART



Care

PETS JOURNEY Basic Pet Training Pads - L

RM 20.00

Stock: 6

BUY NOW

ADD TO CART



Care

PETS JOURNEY Basic Pet Training Pads - M

RM 20.00

Stock: 8

BUY NOW

ADD TO CART



Care

PETS JOURNEY Basic Pet Training Pads - S

RM 20.00

Stock: 8

BUY NOW

ADD TO CART



Care

PUAINTA Anti-mite And Antibacterial Spray

RM 40.50

Stock: 5

BUY NOW

ADD TO CART



Care

DR.PETS Bella Signora (ph) Natural Germs Buster Perfumed Pet Shampoo

RM 16.90

Stock: 8

BUY NOW

ADD TO CART



Health

DOGGYMAN Healthy Soft Sasami Jerky Dog Snack

RM 20.80

Stock: 10

BUY NOW

ADD TO CART



Health

BRIT Care Cat Grain Free Hair Care Healthy & Shiny Coat Dry Cat Food

RM 168.00

Stock: 5

BUY NOW

ADD TO CART



Health

BRIT Care Cat Grain Free Hair Care Healthy & Shiny Coat Dry Cat Food

RM 53.00

Stock: 3

BUY NOW

ADD TO CART

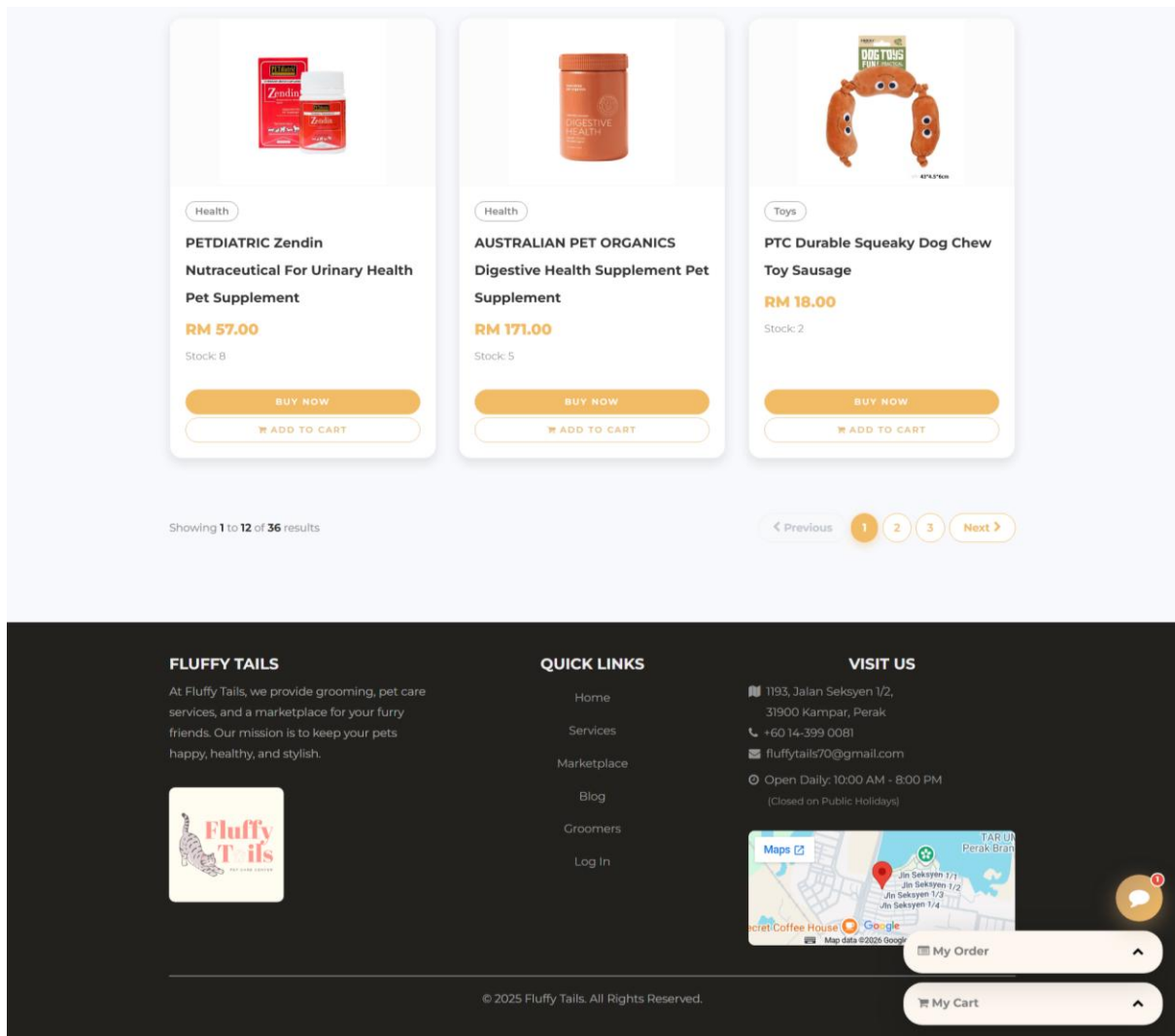


Figure 5.4.2.13 Marketplace Page

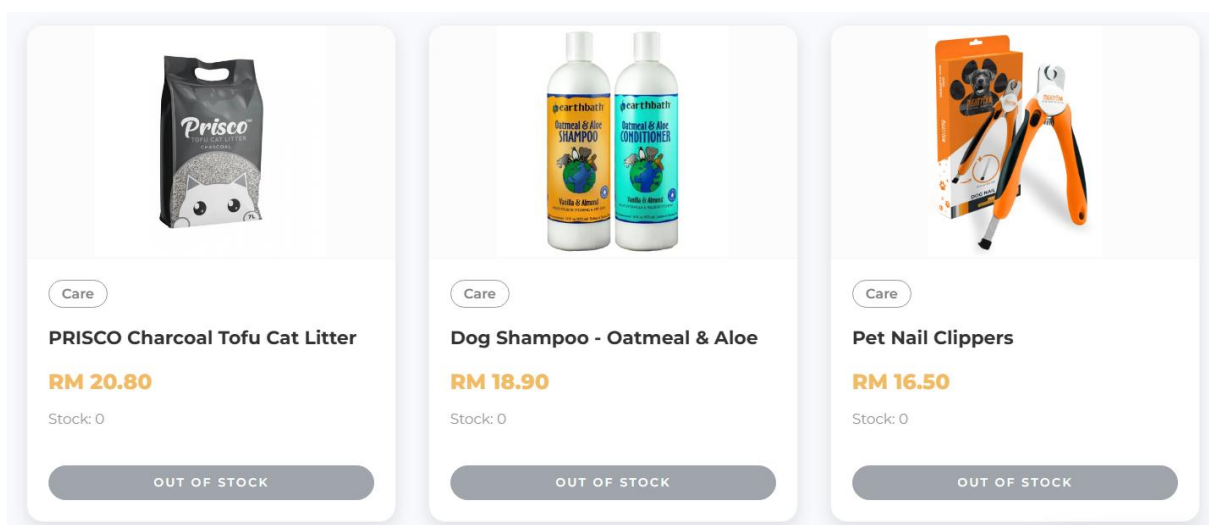


Figure 5.4.2.14 Out of Stock Product Card

Marketplace page displays all the items available in the platform. The users allow to use search bar to look for desired product based on keyword. A category filter function is provided to allow users to browse product by category. The users can use filter function to search for a product within a specific price range.

All products are displayed in a card layout with “Buy Now” and “Add to Cart” button. User can product details by clicking on product car. If user want to skip product detail view and direct add an item to cart can directly click “Add to Cart” button. For direct purchase, user can click the “Buy Now” button. Then, the system will prompt an order summary for user to place order on certain item.

The system also displays stock availability for each product. If the product is out of stock, the “Add to Cart” button will be replaced with “Out of Stock”. Therefore, user is not able to add unavailable item into cart. Out of stock item is placed at the end of product list since they are not available for purchase but it still visible to user. Out of stock product kept visible to avoid confusing user into thinking that the product is no longer sold on platform.

Related Products



Dog Shampoo - Oatmeal & Aloe
RM 18.90



Cat Grooming Brush
RM 22.00



Pet Nail Clippers
RM 16.50



DR.PETS Bella Signora (ph) Natural...
RM 16.90



PRISCO Charcoal Tofu Cat Litter
RM 20.80



PETS JOURNEY Basic Pet Training Pads - L

Care

RM 20.00

In Stock (6 available)

Quantity

- 1 +

Maximum 6 items available for pickup.

ADD TO CART

BUY NOW

In-store pickup only. We'll notify you when it's ready!

Product Overview

Pets Journey Basic Pet Training Pads are built with six layers to provide optimal absorbency and leak protection. The top layer features non-woven fabric and water-absorbing paper, while the high-absorbent resin (90-120ml per gram) ensures fast moisture capture. The middle layers include fluff pulp for added absorption, and the bottom layers feature lower water-absorbing paper and a PE film to prevent leaks. These pads come in four sizes—S, M, L, and XL—making them perfect for pets of all sizes. Ideal for house training and keeping your home clean and dry. SIZE GUIDE: S: 33x45cm M: 45x60cm L: 60x60cm XL: 60x90cm

Product Specification

General info		Pickup details
Category	Care	✓ Click & Collect in 24-48 hours
Size / Weight	40PCS	✓ Notification sent via Email
Unit Price	RM 20.00	✓ Please show order ID at front desk
Stock Status	6 Available	✓ Collection available during business hours

Figure 5.4.2.15 Product Details



PETS JOURNEY Basic Pet Training Pads - XL

Care

RM 20.00

Out of Stock

OUT OF STOCK

Product Overview

Pets Journey Basic Pet Training Pads are built with six layers to provide optimal absorbency and leak protection. The top layer features non-woven fabric and water-absorbing paper, while the high-absorbent resin (90-120ml per gram) ensures fast moisture capture. The middle layers include fluff pulp for added absorption, and the bottom layers feature lower water-absorbing paper and a PE film to prevent leaks. These pads come in four sizes—S, M, L, and XL—making them perfect for pets of all sizes. Ideal for house training and keeping your home clean and dry. SIZE GUIDE: S: 33x45cm M: 45x60cm L: 60x60cm XL: 60x90cm

Figure 5.4.2.16 Out of Stock Product Details

By clicking the product card or “Buy Now” button, this interface will appear showing the complete information about the selected product. The product image and product name is display on the top section, followed by category, and price.

If the product is available, the stock status will be displayed in green colour with number of items available. So, the user is allowed to proceed with “Add to Cart” or “Buy Now” button. The system limits the quantity based on the available stock to prevent over-ordering. If the product is out of stock, the stock status will be shown as “Out of Stock” in red colour. In this case, the “Add to Cart” or “Buy Now” buttons will be replaced with an inactive “Out of Stock” button to prevent users from making invalid purchase.

A “Product Overview” section is provided to describe the product details, including its features and usage. Below that, a “Product Specification” section displays structured information such as category, size or weight, unit price, and stock status. The page also includes a “Related Products” section on the side to suggest similar items, allowing users to explore other available products.

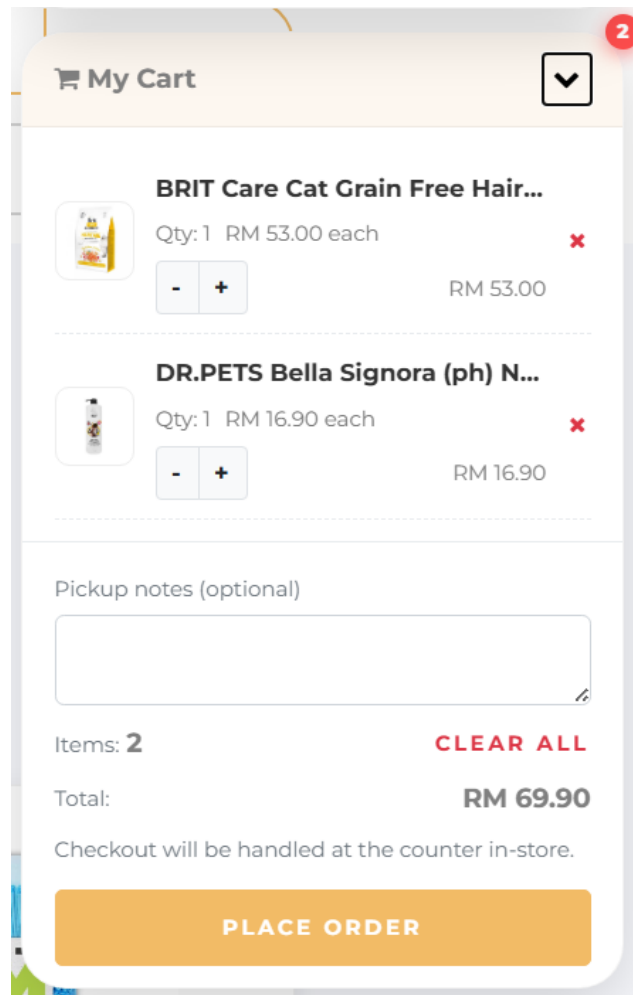


Figure 5.4.2.17 My Cart

“My Cart” pop-up panel allows users to review selected products before placing an order. All selected items are listed with product image, product name, quantity, and price. Users can increase or decrease the quantity using the “+” and “-” buttons. If the user wants to remove an item, they can click the “X” button beside the product. A “Pickup notes” section is provided for users to enter optional instructions related to their order. This allows users to provide additional information for staff during order preparation. Below the item list, the system displays the total number of items and the total price. A “Clear All” button is available to remove all items from the cart at once. After reviewing all items in cart, the user can click the “Place Order” button to proceed with the order. The system will process the order and move to the next step.

The image shows a 'Place Order' pop-up window. It is divided into two main sections: 'Cart Summary' on the left and 'Your Details' on the right. The 'Cart Summary' section lists two items: 'BRIT Care Cat Grain Free Hair Care Healthy & Shiny Coat Dry Cat Food' with a quantity of 1 and a price of RM 53.00, and 'DR.PETS Bella Signora (ph) Natural Germs Buster Perfumed Pet Shampoo' with a quantity of 1 and a price of RM 16.90. The total amount is displayed as RM 69.90. A note states: 'Orders are for in-store pickup only. You will be notified when your order is ready.' The 'Your Details' section contains input fields for 'Full Name' (pre-filled with 'Jiapei'), 'Email' (pre-filled with 'jiapei915@gmail.com'), 'Phone (optional)', and 'Pickup / Contact Notes (optional)' (with a placeholder text 'Any special instructions for your order or pickup.'). At the bottom right, there are two buttons: 'CANCEL' and 'CONFIRM ORDER'.

Cart Summary	
BRIT Care Cat Grain Free Hair Care Healthy & Shiny Coat Dry Cat Food	RM 53.00
Qty: 1 - RM 53.00 each	
DR.PETS Bella Signora (ph) Natural Germs Buster Perfumed Pet Shampoo	RM 16.90
Qty: 1 - RM 16.90 each	
Total:	RM 69.90

Orders are for in-store pickup only. You will be notified when your order is ready.

Your Details

Full Name: Jiapei

Email: jiapei915@gmail.com

Phone (optional):

Pickup / Contact Notes (optional): Any special instructions for your order or pickup.

CANCEL **CONFIRM ORDER**

Figure 5.4.2.18 Cart Summary

After clicking the “Place Order” button, the system displays a “Place Order” pop-up for the user to review and confirm the order details. This pop-up shows all selected products with product name, quantity, and price. The total amount is displayed clearly. On the right side, the user system is pre-fill the user details based on user profile. The user needs to check all the information before checkout. After reviewing all information, the user can click “confirm Order” button to complete the order process. If user decides not to proceed, they can click “Cancel” button to close the pop up.

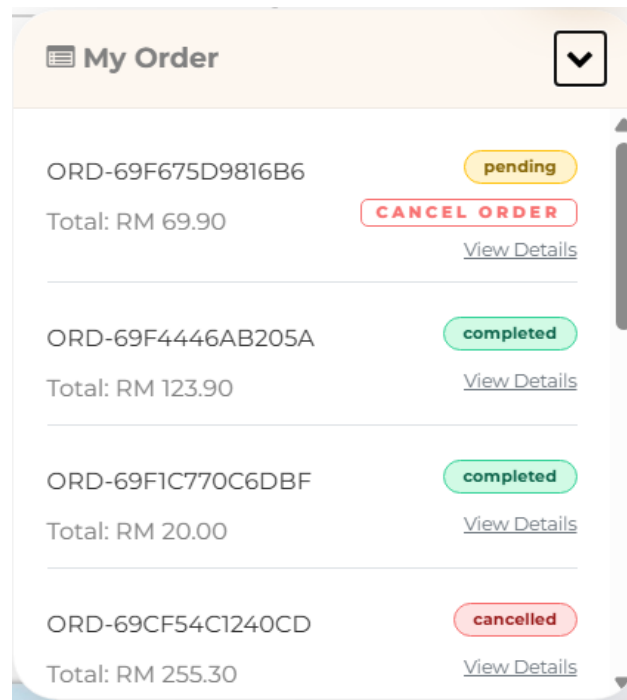


Figure 5.4.2.19 My Order

“My Order” display all orders placed and allow the user to track it. Each order is displayed with its order ID, total amount, and status. The system uses different status labels such as “Pending”, “Ready to Pack”, “Packing”, “Ready for Collection”, “Completed”, and “Cancelled” to indicate the progress. From “Pending”, “Ready to Pack”, to “Packing” status, the user is allowed to click “Cancel Order” to cancel the order. Once the order is cancelled, the system updates the status to “Cancelled” and prevents further processing. To view more information, users can click the “View Details” to check order details.

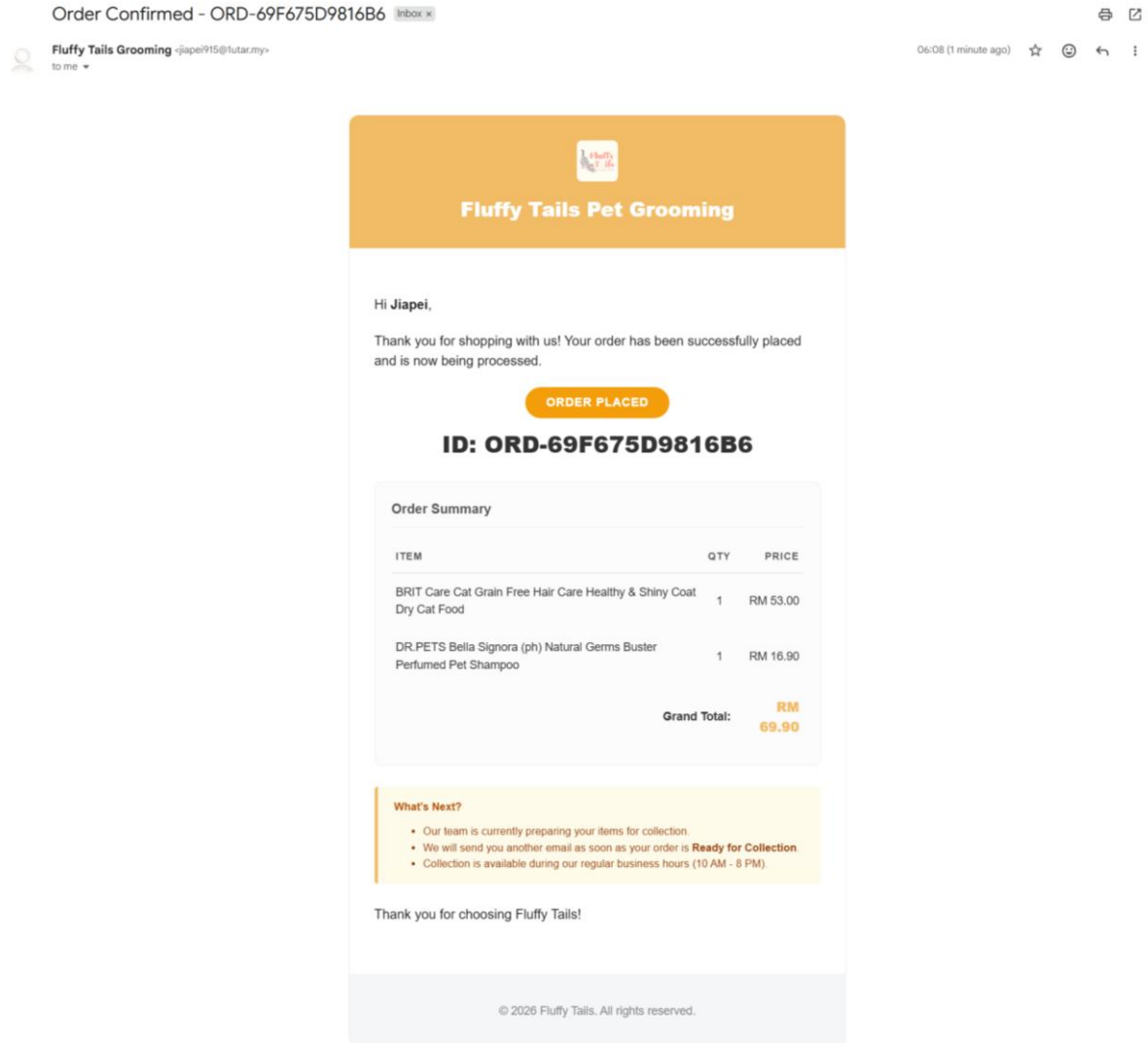


Figure 5.4.2.20 Order Confirmation Email

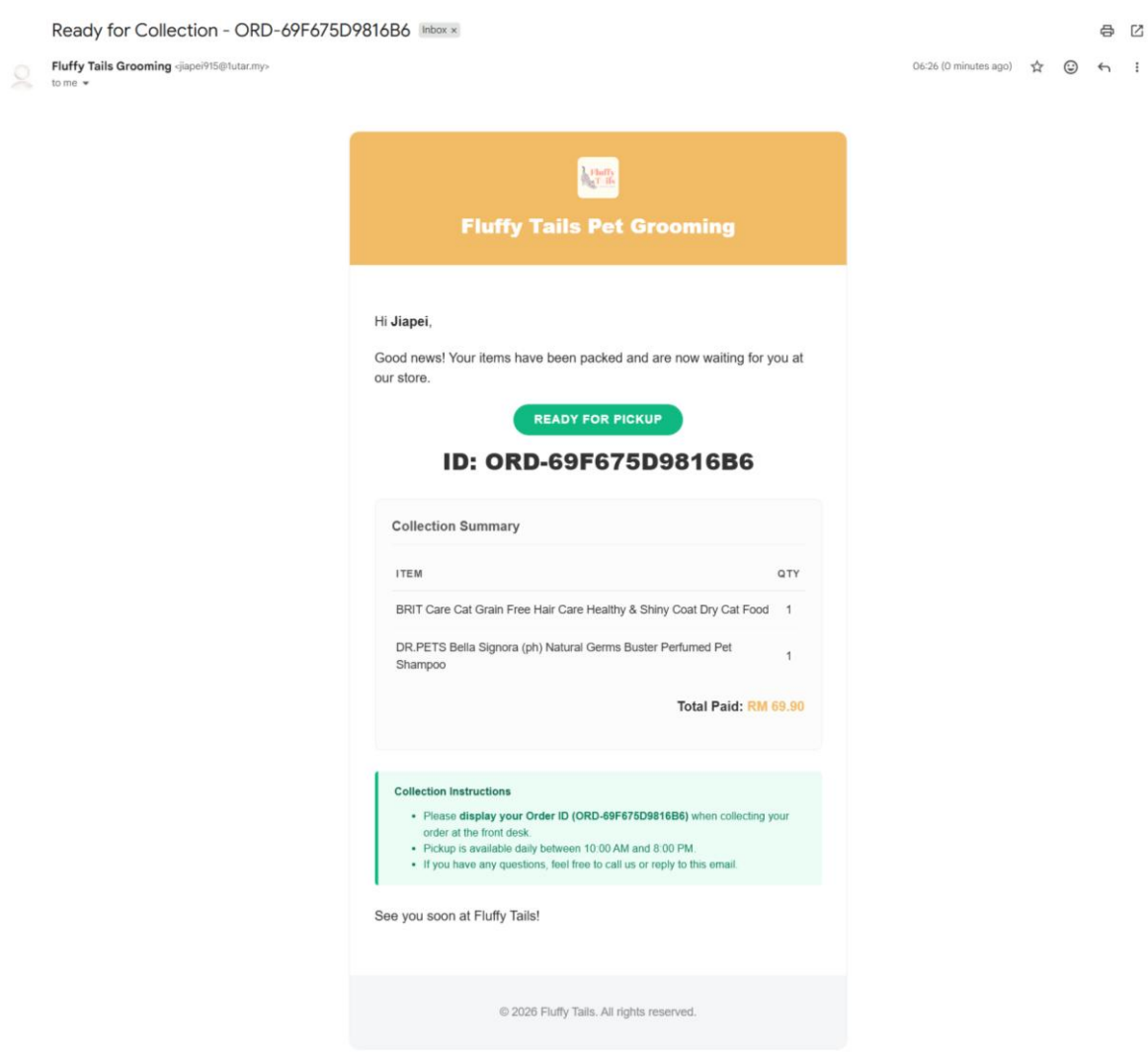


Figure 5.4.2.21 Order Ready for Collection Reminder Email

After the user confirms the order, the system sends a confirmation email notify about the order has been successfully place. The email includes all information about that order, such as order ID, item details, and total amount. Once the order has been prepared by the staff, the system sends another email to inform user to collect order. This email includes order ID and collection instructions to guide the user during pick up process.

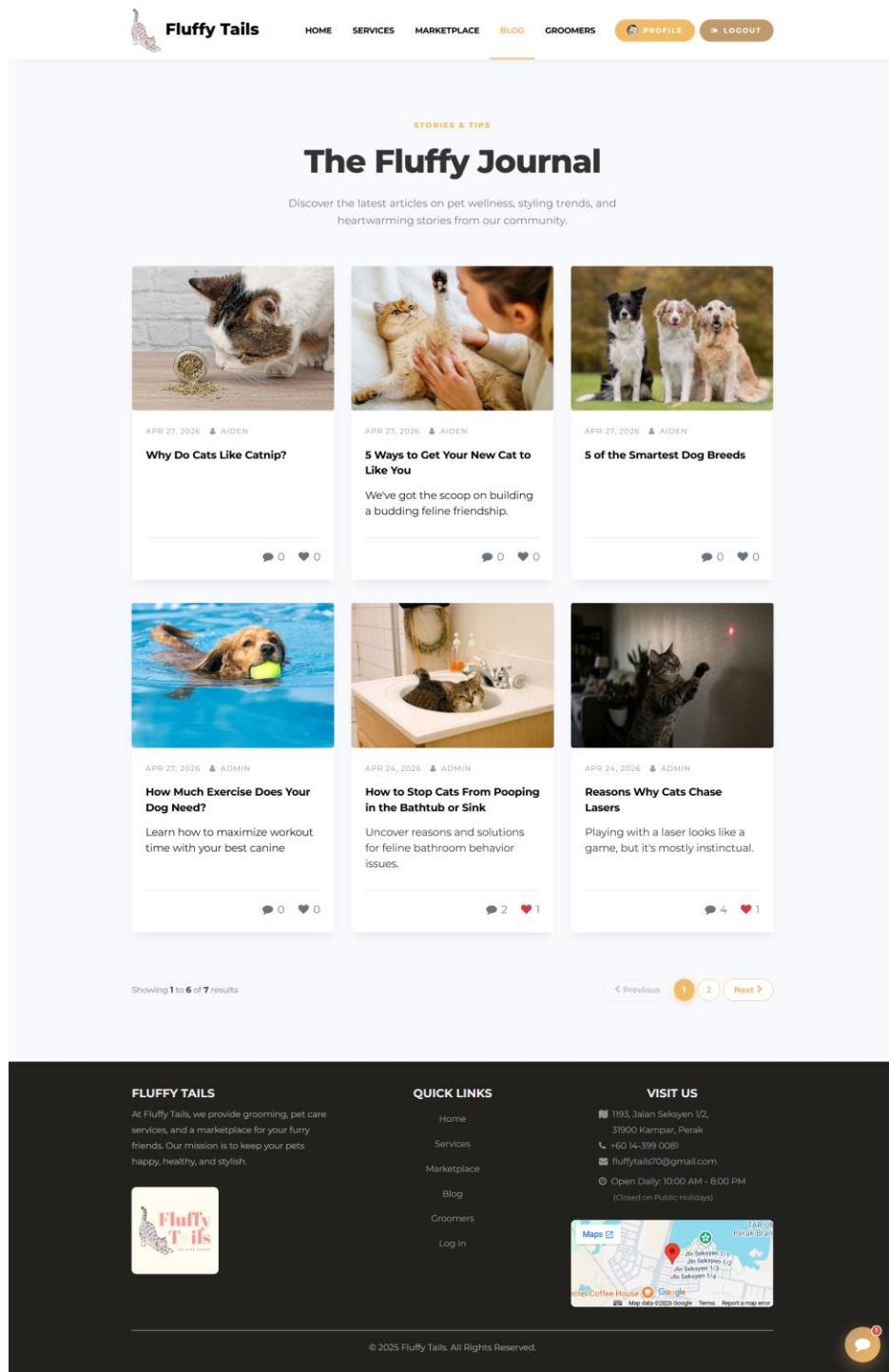


Figure 5.4.2.22 Blog Page

The blog page displays educational article for users to read and explore. All articles presented in card layout with image, published date, author name, article title, and short description for user to have quick understand about each article. Users can click on any article card to view the full content. At the bottom of each card, like and comment count are displayed to indicate interaction.



MAY 11, 2024
BY ADMIN

Can Cats Eat Pumpkin? This Vet Says Yes

Whether it's spooky season, Thanksgiving, or just another day at home, you might be tempted to give your cat a little bit of pumpkin. But can cats eat pumpkin? In most cases, the answer is "yes!"

Find out more about how you can safely share pumpkin with your cat.

Is Pumpkin Safe for Cats?

As long as it's plain, pumpkin is safe for cats and offers several health benefits. Be mindful of portion sizes and the type of pumpkin you give your cat.

Health Benefits of Pumpkin for Cats

When prepared and fed to cats correctly, pumpkin can help with:

- Gastrointestinal upset:** Plain pumpkin can be a good source of moisture and fiber for cats experiencing gastrointestinal difficulty.
- Constipation:** Canned pumpkin, which has a higher moisture content, is a good option for cats with mild constipation.
- Diarrhea:** On the other hand, the fiber content of canned pumpkin also helps to bulk stools during episodes of diarrhea.
- Hairballs:** Pumpkin may also be beneficial for cats who are prone to hairballs. Pumpkin can help move the hair through the gastrointestinal tract.
- Weight loss:** Because pumpkin is low in calories, it may also be a good treat option for cats who are obese or need to lose weight.

How to Feed Pumpkin to Cats

You can feed your cat cooked pumpkin, or you can use plain canned or pureed pumpkin from the store. You should introduce pumpkin slowly to your cat, starting with a bite or two. Adult cats can start with 1 teaspoon twice daily. If your cat takes a liking to the orange stuff, you can slowly increase the amount up to 1 tablespoon twice daily.

Stick to feeding your cat the flesh or fruit of the pumpkin. The stem, leaves, skin, and whole seeds could become choking hazards or cause blockages in the stomach or intestines.

If you plan to cook your own pumpkin, you can steam or roast the pumpkin flesh. Do not add spices, salt, or oils to the pumpkin. Alternatively, you can feed your cat canned pumpkin puree by mixing it into the cat's food.

Precautions and Considerations

Here are a few things to look out for or avoid when feeding pumpkin to your cat.

Too Much Pumpkin

Keep in mind 90% of your cat's daily caloric intake needs to come from their well-balanced, nutritionally complete diet that meets guidelines set by the Association of American Feed Control Officials (AAFCO). Feeding too much pumpkin can throw off the balance of your cat's diet. Pumpkin has a low caloric content, so it's unlikely to contribute to obesity, but it still shouldn't account for the bulk of your cat's diet.

Added Ingredients

Pumpkin pie filling and canned pumpkin filling that has added spices aren't good for your cat. If your cat is given this type of pumpkin, they could experience vomiting, diarrhea, stomach pain, and loss of appetite. Additionally, some spices, like clove, can be toxic for cats.

Food Allergies

Some cats may be allergic to pumpkin, with signs including itchy skin, skin rashes, vomiting, and/or diarrhea. Stomach upset can happen if the food is introduced too quickly, so a slow introduction is recommended. If your cat develops skin issues after eating pumpkin, stop feeding pumpkin and consult with your veterinarian.

Raw Pumpkin

Additionally, raw pumpkin that's been sitting out for a spell may contain bacterial organisms that could upset your cat's gastrointestinal tract. Cooking the pumpkin or choosing canned pumpkin helps prevent both infection and choking. Cooking can also make this fruit (yes, pumpkin is technically a fruit) more digestible.

It's always a good idea to consult with your veterinarian before making changes to your cat's diet.

Other Safe Fruits and Veggies for Cats

If your cat tires of pumpkin, here is a short list of other cat-safe fruits and veggies to share with your feline.

- Strawberries
- Apples
- Blueberries
- Cranberries
- Raspberries
- Blackberries
- Mangos
- Carrots
- Green beans
- Celery
- Green bell peppers
- Zucchini
- Broccoli

Recent Post


Why Do Cats Like Catnip?
Apr 27, 2024


5 Ways to Get Your New Cat to Like You We...
Apr 27, 2024


5 of the Smartest Dog Breeds
Apr 27, 2024


How Much Exercise Does Your Dog Need? Let's...
Apr 27, 2024

Figure 5.4.2.23 Blog Post

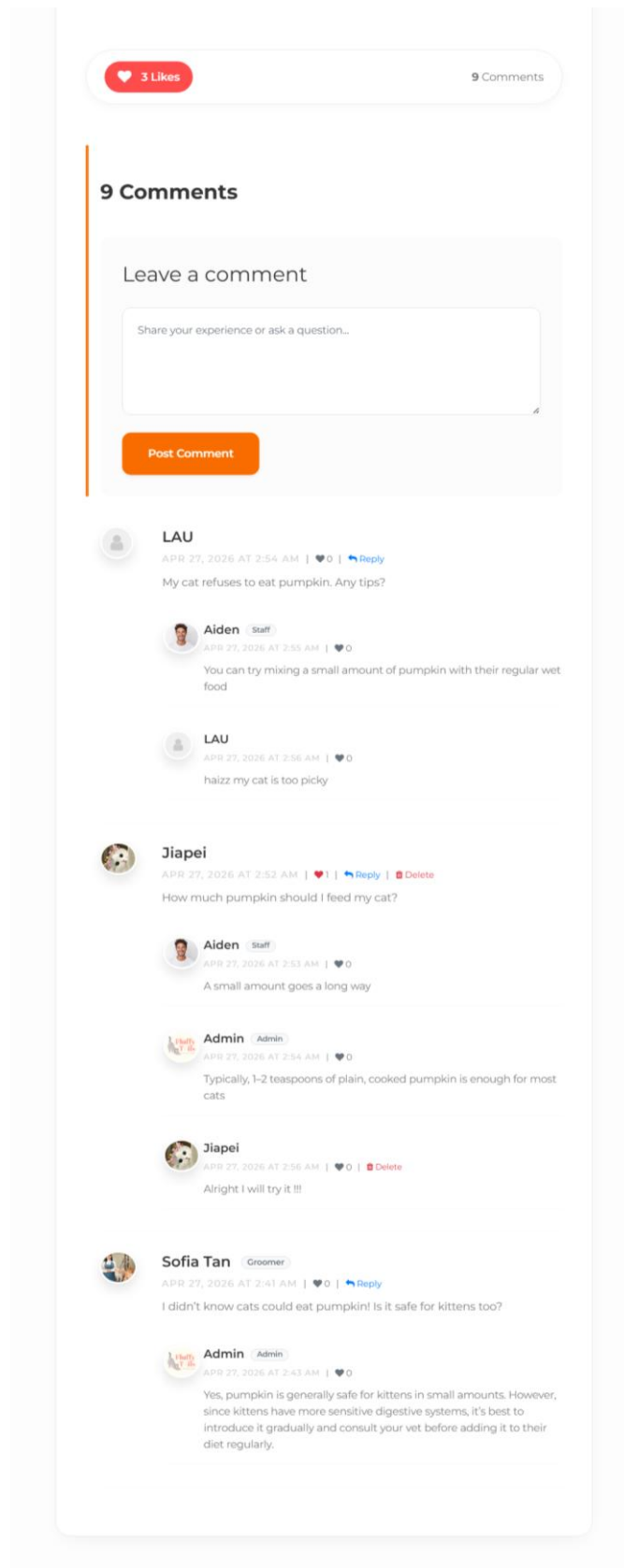


Figure 5.4.2.24 Blog Comment and Likes

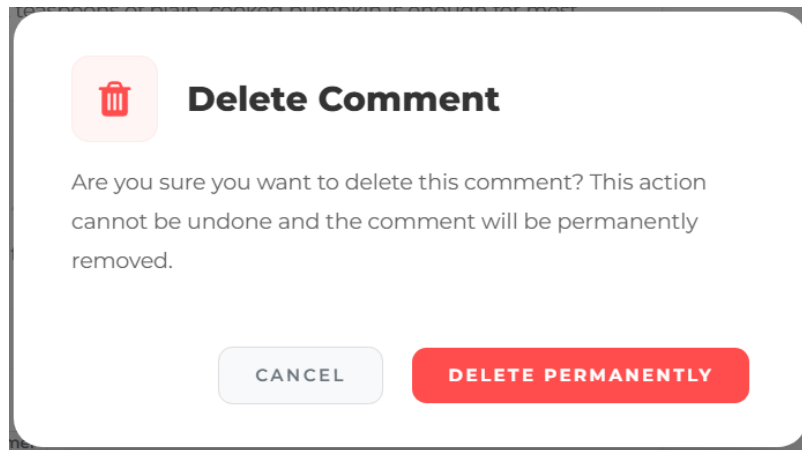


Figure 5.4.2.25 Comment Deletion

By clicking on an article from blog page, the system displays the full blog details interface. It shows the complete content of the selected article. At the top section, the article image, publishing date, and author name are displayed, followed by the article title. Below that, the full article content is presented in a structured format with headings and paragraphs, allowing users to read the information clearly. On the right side, a “Recent Post” section is provided. It displays a list of other available articles, allowing users to navigate and explore more content easily.

After content section, there is a interaction section. Users can like the article by clicking “Likes” button and clicking again to remove like. Users are allowed to interact by posting comments and replying to existing comments. A “Leave a comment” section is provided, where users can enter their message and click the “Post Comment” button to submit their feedback or questions. The system also allows users to like comments and delete their own comments. When users choose to delete their comments, the system displays a confirmation pop-up to avoid accidental deletion. If the user clicks “Cancel”, the action will be stopped, and the comment will remain unchanged. If the user clicks “Delete Permanently”, the system will remove the comment from the database.



EXPERT PET CARE

Meet Our Stylists

Our certified professional groomers are dedicated to providing the highest level of care and style for your furry family members.



Sofia Tan

5+ YEARS OF EXPERIENCE

★ Breed-specific grooming

★ Stress-free grooming

★ Hygiene and coat care

A passionate and certified pet groomer with over 5 years of experience in handling both cats and dogs. Skilled in breed-specific grooming and ensuring pets feel calm and comfortable throughout the session.

BOOK NOW

★ 5.0 (1)

CREDENTIALS

Certified Pet Groomer (CPG) · Animal Handling Training · Pet First Aid Certification

VIEW CERTIFICATES



Phoebe Lim

3+ YEARS OF EXPERIENCE

★ Gentle pet handling

★ Basic grooming & hygiene care

★ Comfort-focused grooming approach

A caring pet groomer passionate about creating a calm, positive experience for both cats and dogs. Skilled in gentle handling, basic grooming, and coat care, with a strong focus on hygiene and pet comfort. Dedicated to making every grooming session stress-free and pleasant.

BOOK NOW

★ 0.0 (0)

CREDENTIALS

Certified Basic Pet Grooming Course · Animal Safety Awareness Certification · Pet Hygiene & Coat Care Workshop Completion

FLUFFY TAILS

At Fluffy Tails, we provide grooming, pet care services, and a marketplace for your furry friends. Our mission is to keep your pets happy, healthy, and stylish.



QUICK LINKS

Home

Services

Marketplace

Blog

Groomers

Log In

VISIT US

1193, Jalan Seksyen 1/2,

31900 Kampar, Perak

+60 14-399 0081

fluffytails70@gmail.com

Open Daily: 10:00 AM - 8:00 PM

(Closed on Public Holidays)

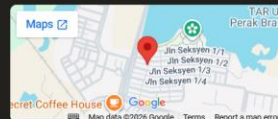


Figure 5.4.2.26 Groomer Profile



Figure 5.4.2.27 Groomer Certification

The Groomers page displays a list of professional pet groomers available in the system. It allows users to view groomer profiles and choose their preferred groomer for appointment booking. Each groomer is presented in a card layout with their profile image, name, and years of experience. The page also highlights the groomer's specialties, such as grooming skills and service focus. A short introduction is provided to describe the groomer's experience and approach. Users can click the "Book Now" button to select the groomer for appointment booking. A rating score is also shown to reflect user feedback and performance. Below the profile, the groomer's credentials and certifications are displayed. This helps users understand the qualifications and professionalism of each groomer. In addition, users can click the "View Certificates" button to see detailed certification documents. The system will display a pop-up showing the groomer's certificates, allowing users to verify their qualifications.

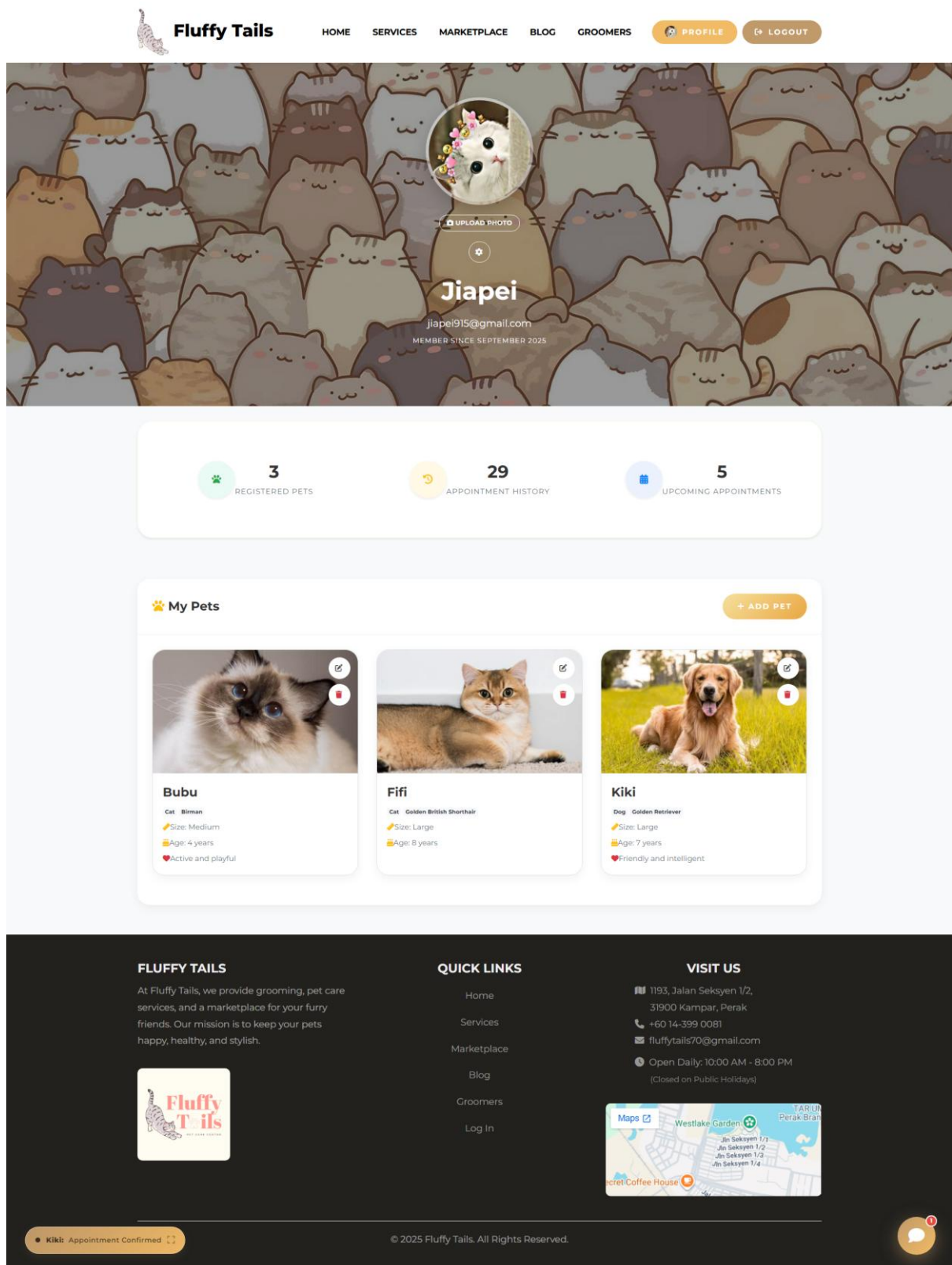


Figure 5.4.2.28 User Profile

The profile page allows user to manage their personal information and pet records. At the top section, the user's profile information is displayed, including profile picture, name, and email address. Then, a summary section of key information such as the number of registered pets, appointment history, and upcoming appointments is provided. "My Pets" section displays all registered pets in a card layout. Each pet card shows the pet's image, name, type, breed, size, and age. Users can manage their pets by editing or deleting the pet profile using the action buttons provided on each card. An "Add Pet" button is available for user to register a new pet profile. This information is important for booking appointments, as pet details can be reused during the booking process.

Account Settings [Close]

Personal Info | Security

FULL NAME

EMAIL ADDRESS

UPDATE PROFILE

MEMBER SINCE SEPTEMBER 2025

Figure 5.4.2.29 Account Setting – Personal Information

Account Settings [Close]

Personal Info | **Security**

FULL NAME

EMAIL ADDRESS

UPDATE PROFILE

MEMBER SINCE SEPTEMBER 2025

Figure 5.4.2.30 Account Setting – Security

By clicking the setting icon, the account setting pop-up is displayed for user to manage personal information and security settings. This interface is divided into two sections, which are “Personal Info” and “Security”. In the “Personal Info” section, users can view and update their basic information such as full name and email address. After making changes, users can click the “Update Profile” button to save the updated information. The “Security” section is provided for users to manage account security, such as updating their password. A close button is provided at the top right corner to allow users to exit the pop-up at any time.

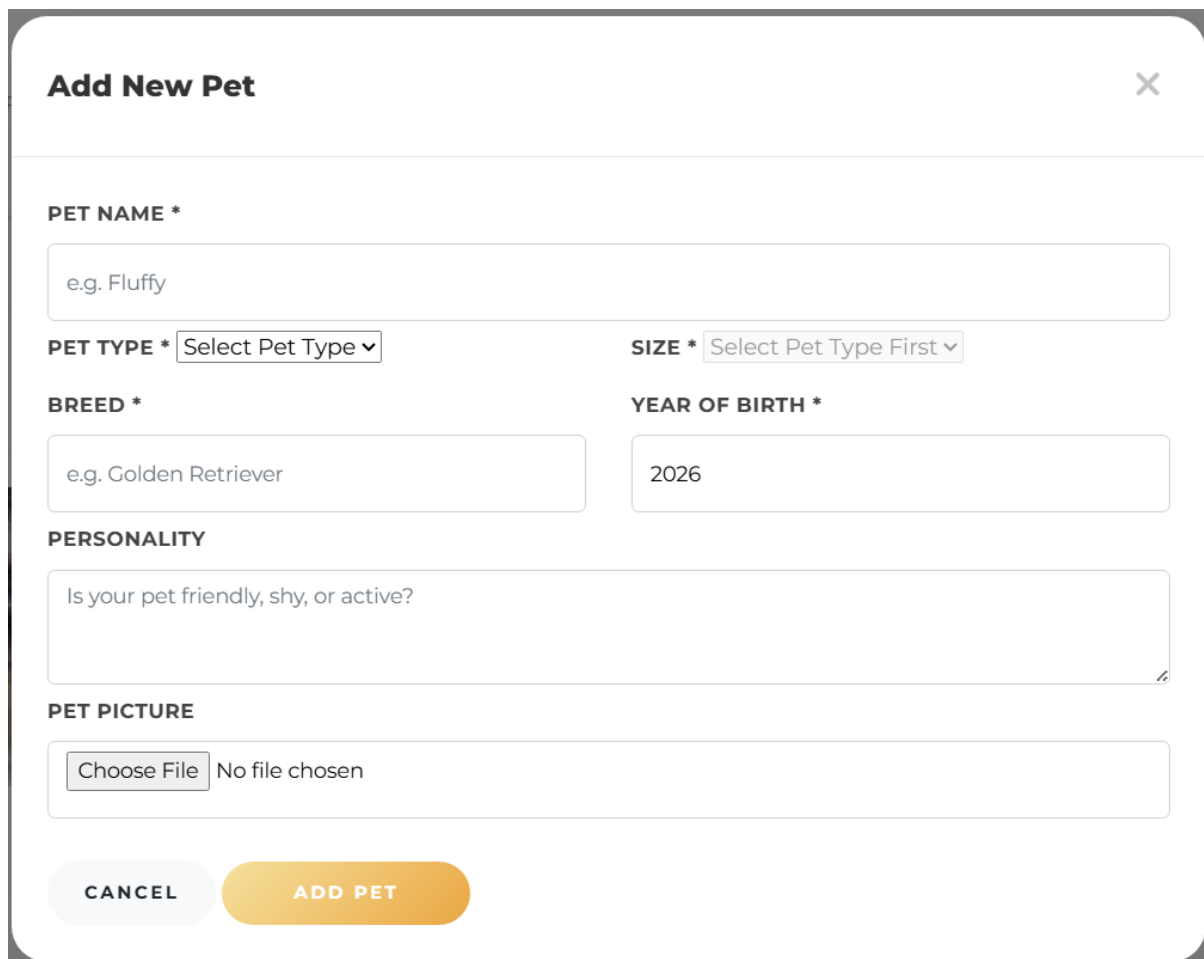
My Appointment History						
All History Upcoming (5)						
Service	Pet	Date & Time	Groomer	Price	Status	Grooming Progress
Grooming Large Pet	 Fifi	21 May 2026 04:45 PM - 06:00 PM	Sofia Tan	RM 120.00	REJECTED	N/A
Grooming, styling Medium Pet	 Bubu	16 May 2026 03:15 PM - 03:45 PM	Sofia Tan	RM 145.00	PENDING	N/A
Grooming, styling Medium Pet	 Bubu	15 May 2026 03:15 PM - 03:45 PM	Sofia Tan	RM 145.00	APPROVED	Appointment Confirmed
Grooming, styling Large Pet	 Kiki	08 May 2026 07:00 PM - 08:00 PM	Sofia Tan	RM 210.00	REJECTED	N/A
Grooming, styling Large Pet	 Kiki	08 May 2026 07:00 PM - 08:00 PM	Sofia Tan	RM 210.00	APPROVED	Appointment Confirmed
Grooming, styling	 Bubu	07 May 2026	Sofia Tan	RM 145.00	PENDING	N/A

Figure 5.4.2.31 Appointment History

My Appointment History				
All History Upcoming (5)				
Service	Pet	Date & Time	Groomer	Status
Grooming, styling	 Bubu	16 May 2026 03:15 PM - 03:45 PM	Sofia Tan	PENDING
Grooming, styling	 Bubu	15 May 2026 03:15 PM - 03:45 PM	Sofia Tan	APPROVED
Grooming, styling	 Kiki	08 May 2026 07:00 PM - 08:00 PM	Sofia Tan	APPROVED
Grooming, styling	 Bubu	07 May 2026 03:15 PM - 03:45 PM	Sofia Tan	PENDING
Grooming	 Fifi	03 May 2026 07:00 PM - 08:00 PM	Sofia Tan	APPROVED

Figure 5.4.2.32 Upcoming Appointment

“My Appointment History” pop-up allows users to view and track all appointment records in the system. At the top section, two tabs are provided, which are “All History” and “Upcoming”. The “All History” tab displays all past and current appointments, while the “Upcoming” tab shows only future scheduled appointments. All appointments are displayed in a table format. Each record includes service type, pet name, date and time, assigned groomer, price, and current status. The system uses different status labels such as “Pending”, “Approved”, and “Rejected” to indicate the booking status. For approved appointments, a grooming progress indicator displayed to shows the current stage of the appointment, such as “Appointment Confirmed”. For appointments that have not approved or have been rejected, the grooming progress section will display as “N/A”, indicating that no progress is available.

A screenshot of a web form titled "Add New Pet" with a close button (X) in the top right corner. The form contains several input fields: "PET NAME *" with a placeholder "e.g. Fluffy"; "PET TYPE *" with a dropdown menu "Select Pet Type"; "SIZE *" with a dropdown menu "Select Pet Type First"; "BREED *" with a placeholder "e.g. Golden Retriever"; "YEAR OF BIRTH *" with a placeholder "2026"; "PERSONALITY" with a text area containing the question "Is your pet friendly, shy, or active?"; and "PET PICTURE" with a file upload button "Choose File" and the text "No file chosen". At the bottom, there are two buttons: "CANCEL" and "ADD PET".

Add New Pet

PET NAME *

e.g. Fluffy

PET TYPE * Select Pet Type ▾

SIZE * Select Pet Type First ▾

BREED *

e.g. Golden Retriever

YEAR OF BIRTH *

2026

PERSONALITY

Is your pet friendly, shy, or active?

PET PICTURE

Choose File No file chosen

CANCEL **ADD PET**

Figure 5.4.2.33 Add New Pet

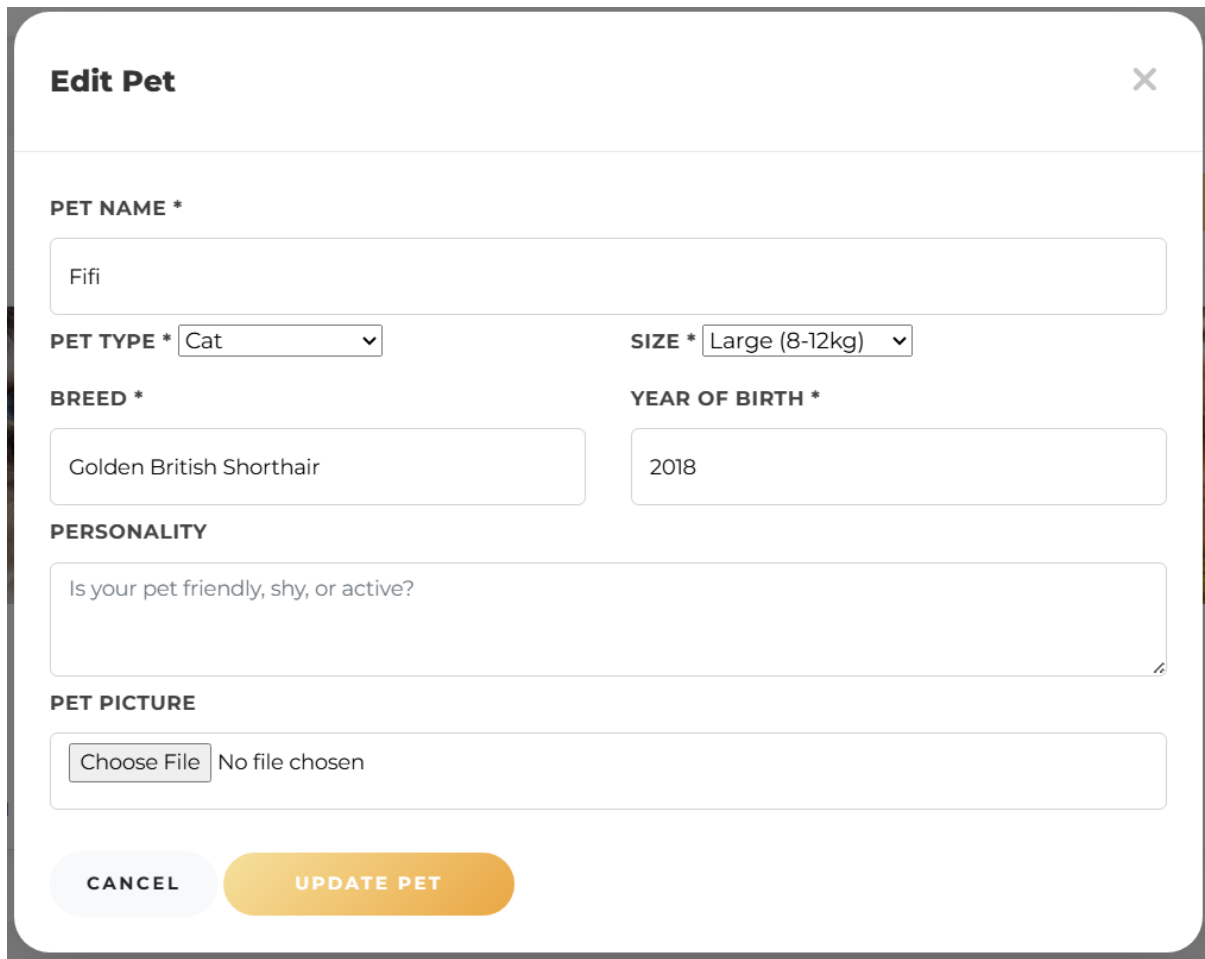
The image shows a mobile application interface for editing a pet's profile. At the top, there is a header bar with the title "Edit Pet" on the left and a close icon (an 'X') on the right. Below the header, the form is organized into several sections. The first section is "PET NAME *" with a text input field containing the name "Fifi". The second section contains two dropdown menus: "PET TYPE *" set to "Cat" and "SIZE *" set to "Large (8-12kg)". The third section has two more dropdown menus: "BREED *" set to "Golden British Shorthair" and "YEAR OF BIRTH *" set to "2018". Below these is a "PERSONALITY" section with a text area containing the prompt "Is your pet friendly, shy, or active?". The next section is "PET PICTURE", which features a file upload interface with a "Choose File" button and the text "No file chosen". At the bottom of the form, there are two buttons: a light gray "CANCEL" button and an orange "UPDATE PET" button.

Figure 5.4.2.34 Edit Pet Profile

“Add New Pet” and “Edit Pet” pop-up interfaces allow users to manage their pet information. By clicking “Add Pet” button user a “Add New Pet” section is displayed. Users are required to enter important details such as pet name, pet type, size, breed, and year of birth. These fields help the system identify the pet and are used during the appointment booking process. An optional “Personality” field is provided for users to describe their pet’s behavior, such as friendly or active. Users can also upload a pet picture to personalize the pet profile. After entering all required information, users can click the “Add Pet” button to save the new pet profile.

By clicking edit icon on pet profile card, an “Edit Pet” section is displayed. In “Edit Pet” section, users can update existing pet information. All details saved previously are displayed and can be modified. After making changes, users can click the “Update Pet” button to save the updated information.

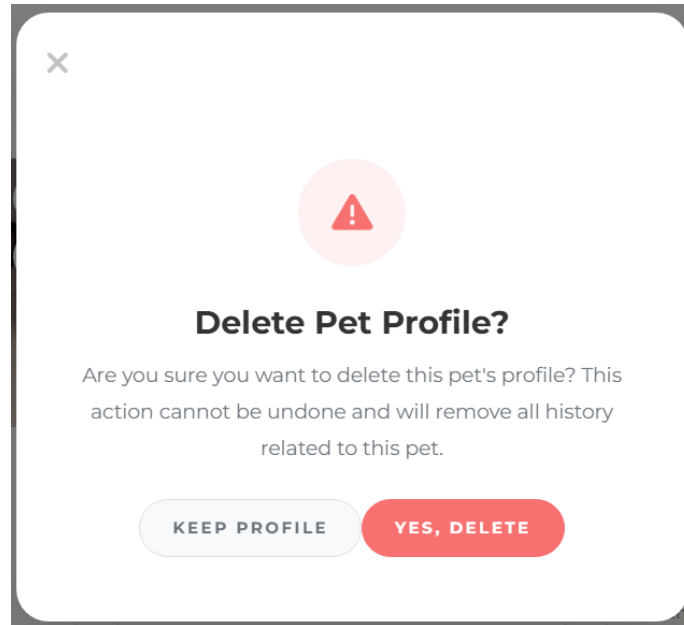


Figure 5.4.2.35 Pet Profile Deletion

If the user wants to delete a pet profile, they can click on trash icon on the pet profile card. After clicking the icon, a confirmation pop-up will appear to avoid accidental delete. Once the user chooses “Yes, Delete” button, the system will remove the pet profile from the database and no longer displayed in user’s profile. If the user selects “Keep Profile”, the action will be cancelled, and no changes will be made.

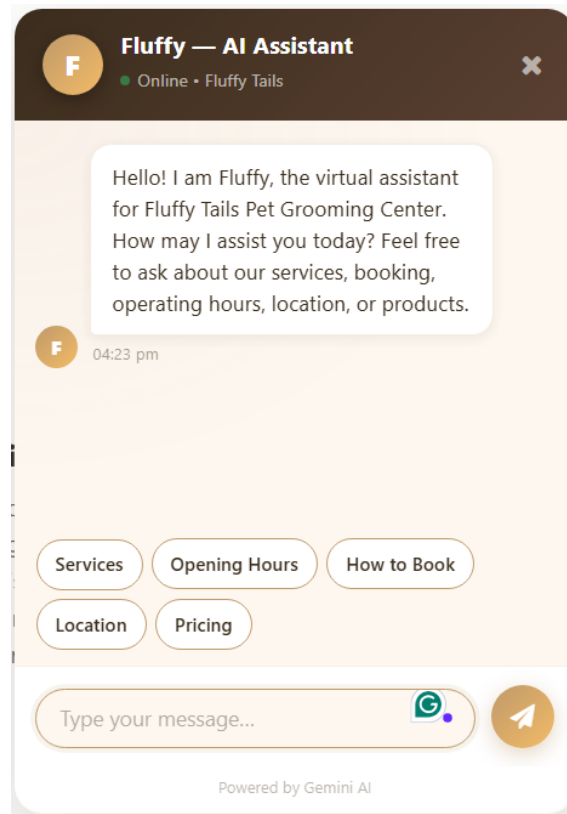


Figure 5.4.2.36 AI Chatbot

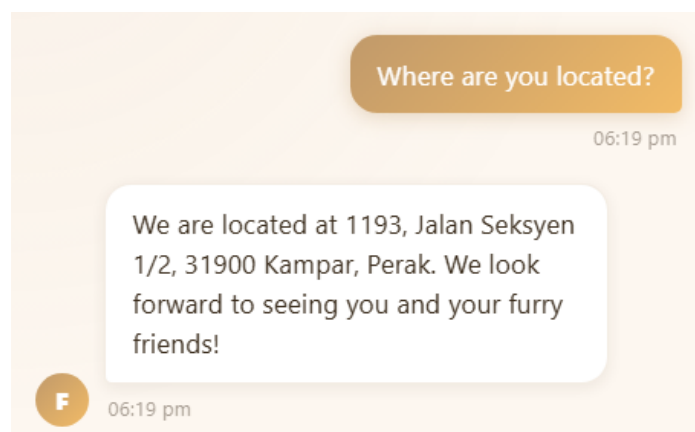


Figure 5.4.2.37 Interaction with AI Chatbot in English

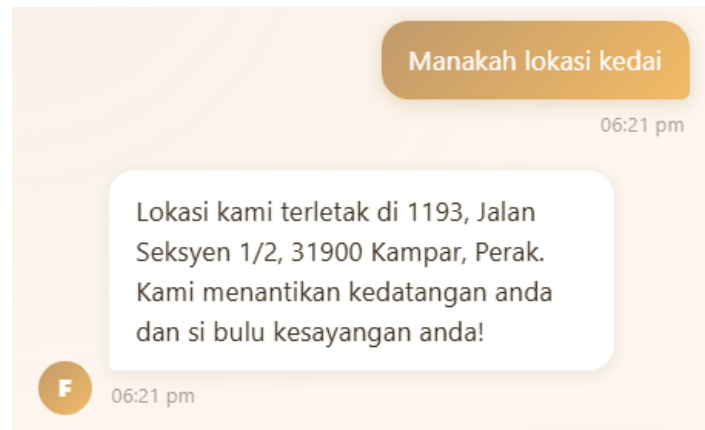


Figure 5.4.2.38 Interaction with AI Chatbot in Bahasa Malaysia



Figure 5.4.2.39 Interaction with AI Chatbot in Mandarin

To interact with the AI chatbot, the user needs to click on the chat icon floating panel. It appeared in every module of the platform. When user clicked it, the assistant greets the user and provides quick suggestion buttons such as “Services”, “Operating Hours”, “How to Book”, “Location”, and “Pricing”. These are FAQs, so the user can ask the general questions without typing. However, the user also allows to type their own questions if does not appear in the suggestion. The Gemini API will browse through the system to answer the questions. This chatbot supported 3 languages which are English, Bahasa Malaysia, and Mandarin. AI chatbot would answer the questions based on the language that user input. If the question cannot be answering the system will prompt an error message and required, the user to reach the customer service.

5.4.3 Groomer Page

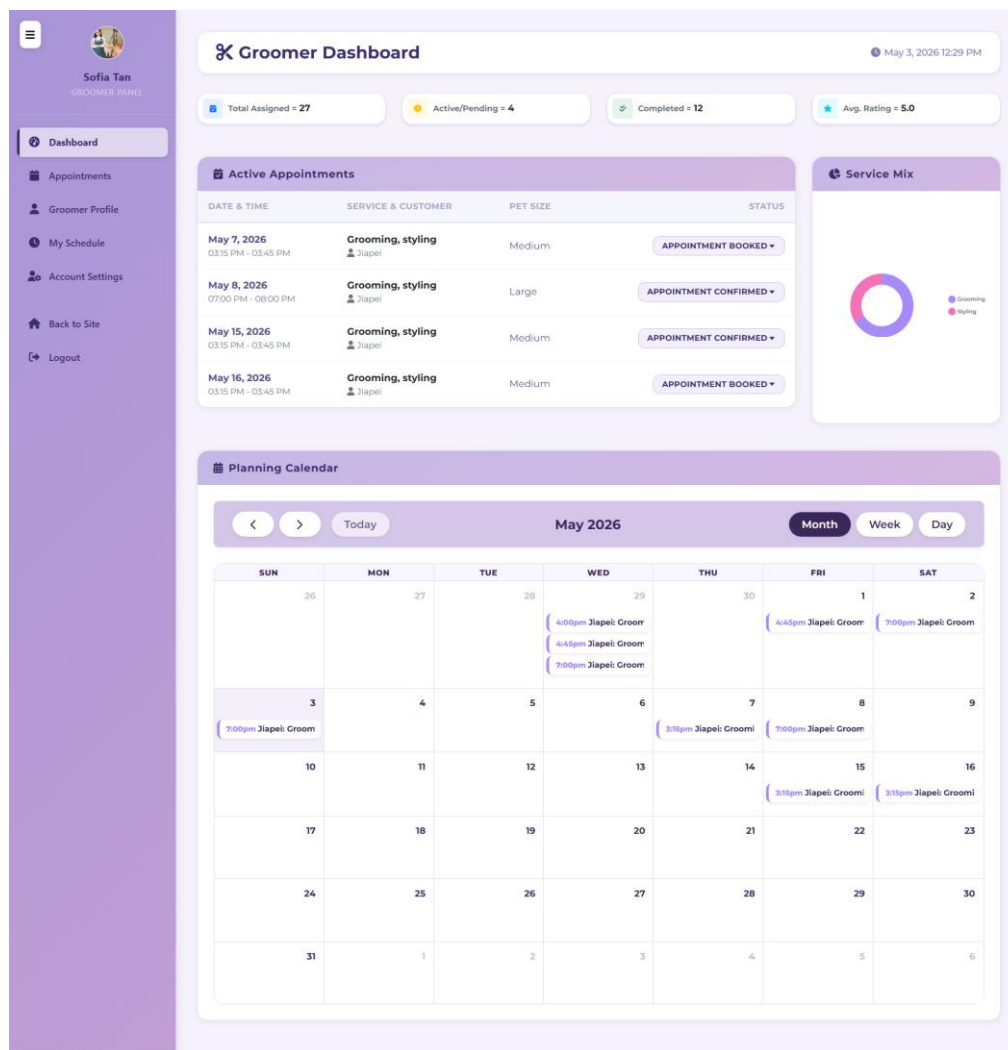


Figure 5.4.3.1 Groomer Main Page

The Groomer Dashboard provides an overview of all grooming activities and helps groomers manage their appointments efficiently. At the top section, summary cards are displayed to show key information such as total assigned appointments, active or pending appointments, completed appointments, and average rating. Below that, an “Active Appointments” section is provided. It displays a list of upcoming appointments with details such as date and time, selected service, customer name, pet size, and status. Groomers can view and manage grooming status from this section. On the right side, a “Service Mix” chart is displayed to view the services performed. This helps groomers understand the distribution of their services. A “Planning Calendar” is also included to show all scheduled appointments in a calendar view. Groomers can navigate between different dates and view appointments in monthly, weekly, or daily format.

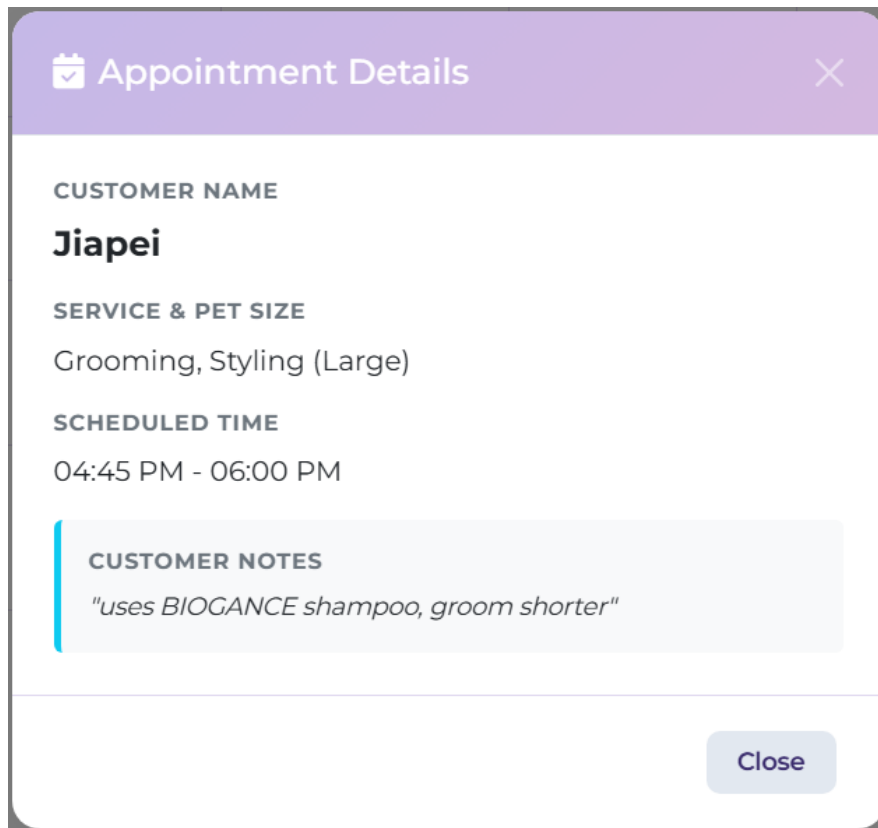


Figure 5.4.3.2 Appointment Details

A pop-up is triggered when the groomer clicks on an appointment from the calendar. It displayed all the appointment information such as customer name, selected service and pet size, and scheduled time. “Customer Notes” is included for groomers to view special instructions or requests.

Sofia Tan

GROOMER PANEL

Dashboard

Appointments

Groomer Profile

My Schedule

Account Settings

Back to Site

Logout

Appointment Management

20 Total Appointments

Search by customer name, service, or groomer...

All Pending Approved Rejected

Recent Appointments

DATE & TIME	CUSTOMER	SERVICE DETAILS	STATUS	ACTIONS
May 21, 2026 04:45 PM - 06:00 PM	Jiapei jiapei915@gmail.com	Grooming Size: Large	Rejected	No actions
May 16, 2026 03:15 PM - 03:45 PM	Jiapei jiapei915@gmail.com	Grooming, styling Size: Medium	Pending	☒ ☐
May 15, 2026 03:15 PM - 03:45 PM	Jiapei jiapei915@gmail.com	Grooming, styling Size: Medium	Approved	No actions
May 8, 2026 07:00 PM - 08:00 PM	Jiapei jiapei915@gmail.com	Grooming, styling Size: Large	Rejected	No actions
May 8, 2026 07:00 PM - 08:00 PM	Jiapei jiapei915@gmail.com	Grooming, styling Size: Large	Approved	No actions
May 7, 2026 03:15 PM - 03:45 PM	Jiapei jiapei915@gmail.com	Grooming, styling Size: Medium	Pending	☒ ☐
May 3, 2026 07:00 PM - 08:00 PM	Jiapei jiapei915@gmail.com	Grooming Size: Large	Approved	No actions
May 3, 2026 10:40 AM - 11:30 AM	Jiapei jiapei915@gmail.com	Grooming, styling Size: Large	Rejected	No actions
May 3, 2026 10:40 AM - 11:30 AM	Jiapei jiapei915@gmail.com	Grooming Size: Large	Rejected	No actions
May 2, 2026 07:00 PM - 08:00 PM	Jiapei jiapei915@gmail.com	Grooming Size: Large	Approved	No actions
May 2, 2026 07:00 PM - 08:00 PM	Jiapei jiapei915@gmail.com	Grooming Size: Large	Rejected	No actions
May 1, 2026 04:45 PM - 06:00 PM	Jiapei jiapei915@gmail.com	Grooming Size: Large	Approved	No actions
Apr 30, 2026 07:00 PM - 08:00 PM	Jiapei jiapei915@gmail.com	Grooming, spa Size: Large	Rejected	No actions
Apr 30, 2026 07:00 PM - 08:00 PM	Jiapei jiapei915@gmail.com	Grooming, spa Size: Large	Rejected	No actions
Apr 29, 2026 04:00 PM - 04:30 PM	Jiapei jiapei915@gmail.com	Grooming, styling Size: Large "uses flea shampoo"	Approved	No actions
Apr 29, 2026 04:45 PM - 06:00 PM	Jiapei jiapei915@gmail.com	Grooming, styling Size: Large "uses BIOGANCE shampoo, groom shorter"	Approved	No actions
Apr 29, 2026 07:00 PM - 08:00 PM	Jiapei jiapei915@gmail.com	Grooming, styling Size: Large	Approved	No actions
Apr 28, 2026 02:30 PM - 03:00 PM	LAU jiapei915@lutar.my	Grooming, styling Size: Medium	Rejected	No actions
Apr 28, 2026 03:15 PM - 03:45 PM	LAU jiapei915@lutar.my	Grooming Size: Small	Rejected	No actions
Apr 28, 2026 04:45 PM - 06:00 PM	Jiapei jiapei915@gmail.com	Grooming Size: Large	Rejected	No actions

Showing 1 to 20 of 27 results

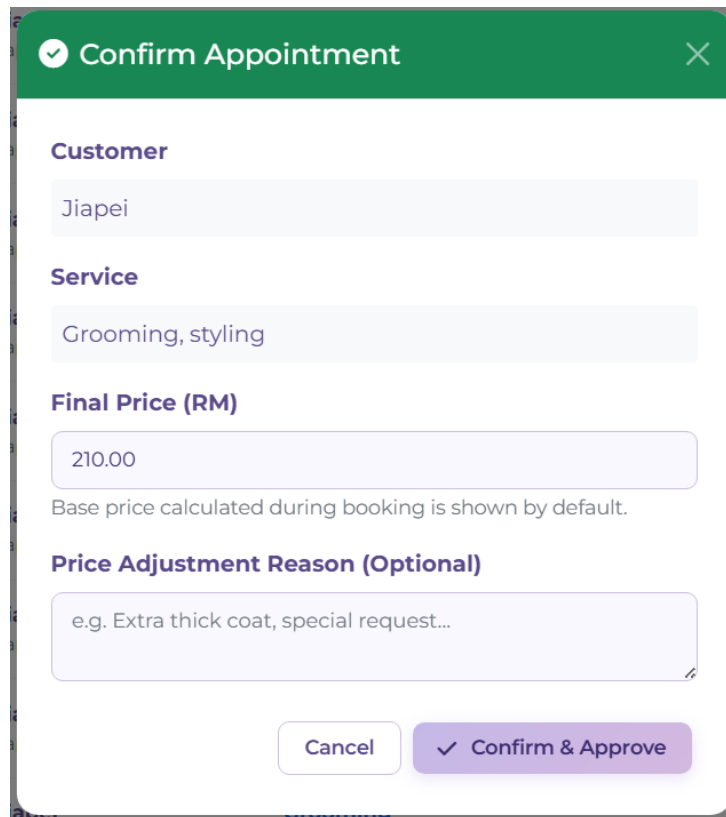
Previous

1

2

Next

Figure 5.4.3.2 Appointment Management



Confirm Appointment

Customer
Jiapei

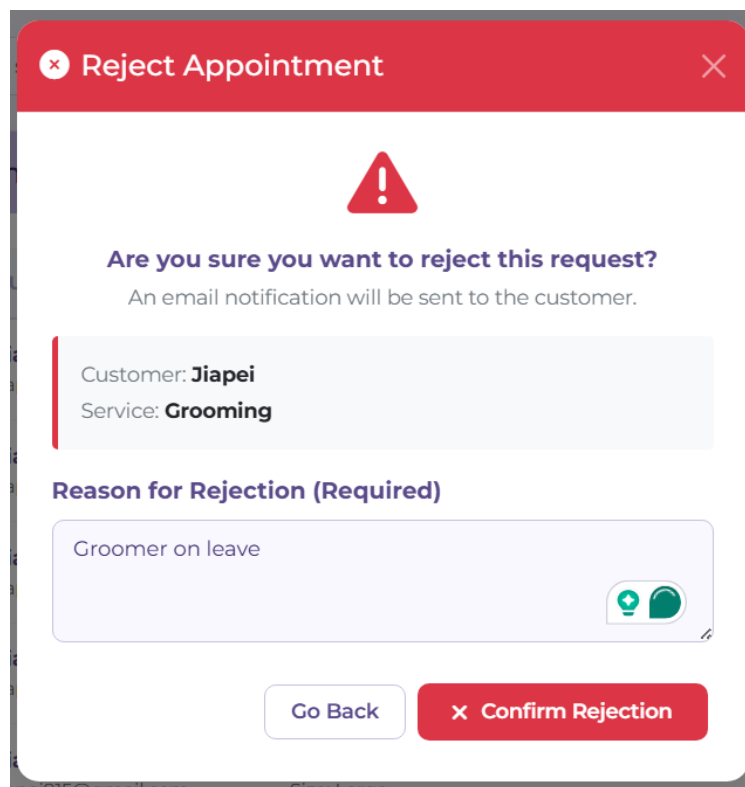
Service
Grooming, styling

Final Price (RM)
210.00
Base price calculated during booking is shown by default.

Price Adjustment Reason (Optional)
e.g. Extra thick coat, special request...

Cancel ✓ Confirm & Approve

Figure 5.4.3.3 Appointment Approval



Reject Appointment

!

Are you sure you want to reject this request?
An email notification will be sent to the customer.

Customer: **Jiapei**
Service: **Grooming**

Reason for Rejection (Required)
Groomer on leave

Go Back ✕ Confirm Rejection

Figure 5.4.3.4 Appointment Rejection

Appointment page shows all appointments and allows groomers to manage incoming appointment requests. At the top section, a search bar and filter options are provided. Groomers able to search appointments based on customer name or service, and filter by status such as “All”, “Pending”, “Approved”, and “Rejected”.

All appointments are displayed in table format with appointment date time, customer details, selected service, status. For appointment with “Pending” status, action buttons is provided for groomer to approve and reject the appointment request. Groomer can click “√” button to approve the appointment. It displays a confirmation pop-up to view appointment details and adjust the final price. The groomer must fill in reason for price adjustment to adjust the final price. After confirming, the system updates the status to “Approved” and sends notification email to the user.

If the groomer chooses to reject an appointment, a rejection pop-up will appear. The groomer is required to provide a reason for rejection before confirming. Once submitted, the system updates the status to “Rejected” and sends a notification email to inform about rejection.

Figure 5.4.3.5 Groomer Profile Management

This section is to manage the groomer profile that will be displayed to the user. The groomer required to enter display name, and year of experience, A “Bio” section is provided for groomers to describe their background, skills, and grooming approach. The “Specialties” field allows groomers to list their key skills, such as breed-specific grooming, stress-free grooming, and so on. In the “Credentials & Training” section, groomers can enter their certifications and training details. In addition, a “Professional Certificates” section is provided where groomers can upload certificate images. The system allows multiple certificates to be uploaded, helping to verify the groomer’s qualifications. After updating the information, the groomer can click the “Update Stylist Profile” button to save the changes.

Selected Pet Size	Time	Actions
Small & Medium	10:05 AM - 10:35 AM	[Delete]
Large	10:40 AM - 11:30 AM	[Delete]
Giant	11:45 AM - 01:00 PM	[Delete]
Small & Medium	02:30 PM - 03:00 PM	[Delete]
Small & Medium	03:15 PM - 03:45 PM	[Delete]
Small & Medium	04:00 PM - 04:30 PM	[Delete]
Large	04:45 PM - 06:00 PM	[Delete]
Small & Medium & Large & Giant	07:00 PM - 08:00 PM	[Delete]

Figure 5.4.3.6 Schedule Management

In “My Schedule”, the groomer can set their own time slots based on their preference. In “Add Timeslot” section, the groomer is able to choose the start time and end time for each slot. For each timeslot, the groomer can choose which pet size that willing to accept. When all required fields are filled, the groomer can click the “Add Timeslot” button to create a new available timeslot. The system then checks the availability of the selected timeslot to time conflict. If there is no conflict, the system will add the timeslot to the “My Daily Timeslots” section and it will be visible to user when booking an appointment for them to select.

Figure 5.4.3.7 Account Setting

The account setting section allow users to manage their profile information, including full name and email address. They can also upload or change their profile picture. If the users want to change the password, they are required to enter current password and provide a new password. The system ensures the new password and password confirmation match before updating.

This interface shared between the staff and the admin account. Therefore, all users have the functionality to manage account setting.

5.4.4 Staff Page

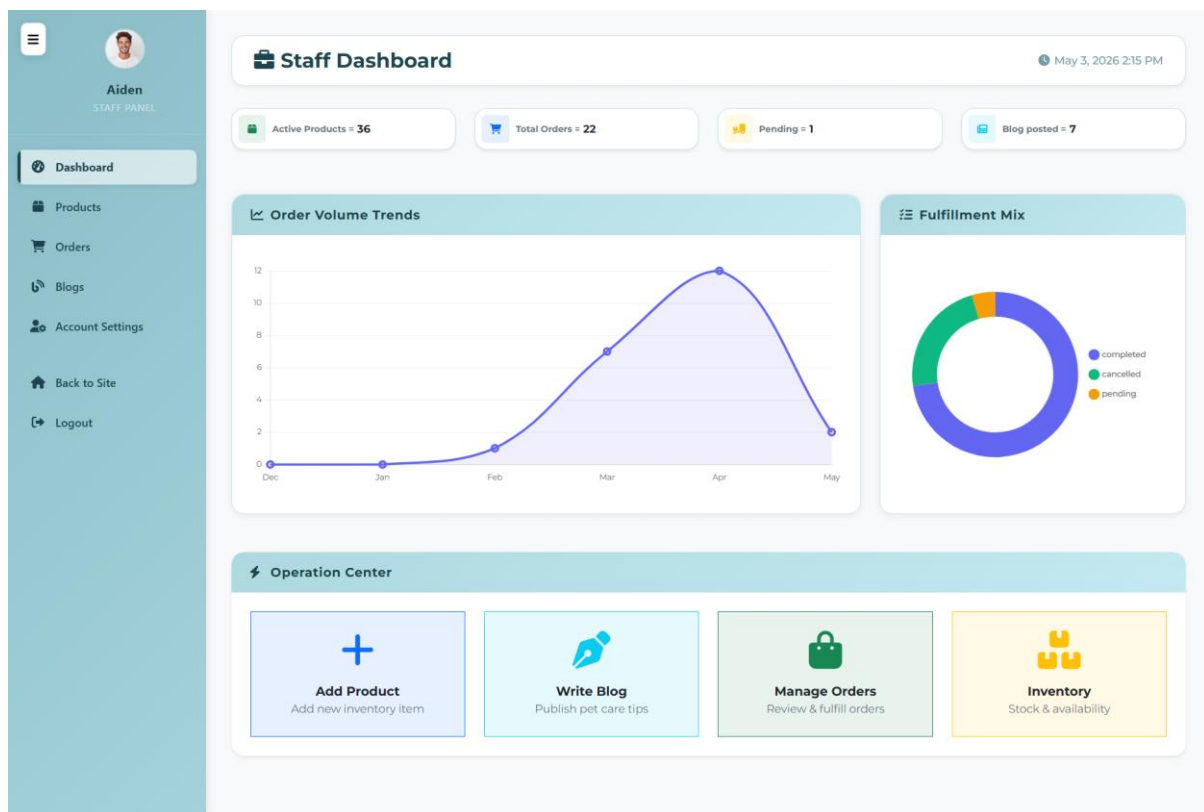


Figure 5.4.4.1 Staff Main Page

Staff dashboards provide an overview of system activities for managing daily operations. At the top section, key summary information is displayed, such as total active products, total orders, pending orders, and total blog posts. A data insights section is included, so the staff is able to view the order and distribution of order status. At the bottom section, an operation center is provided for quick access to key tasks. The staff can perform them such as adding new products, writing blog posts, managing orders, and checking inventory with just a click.

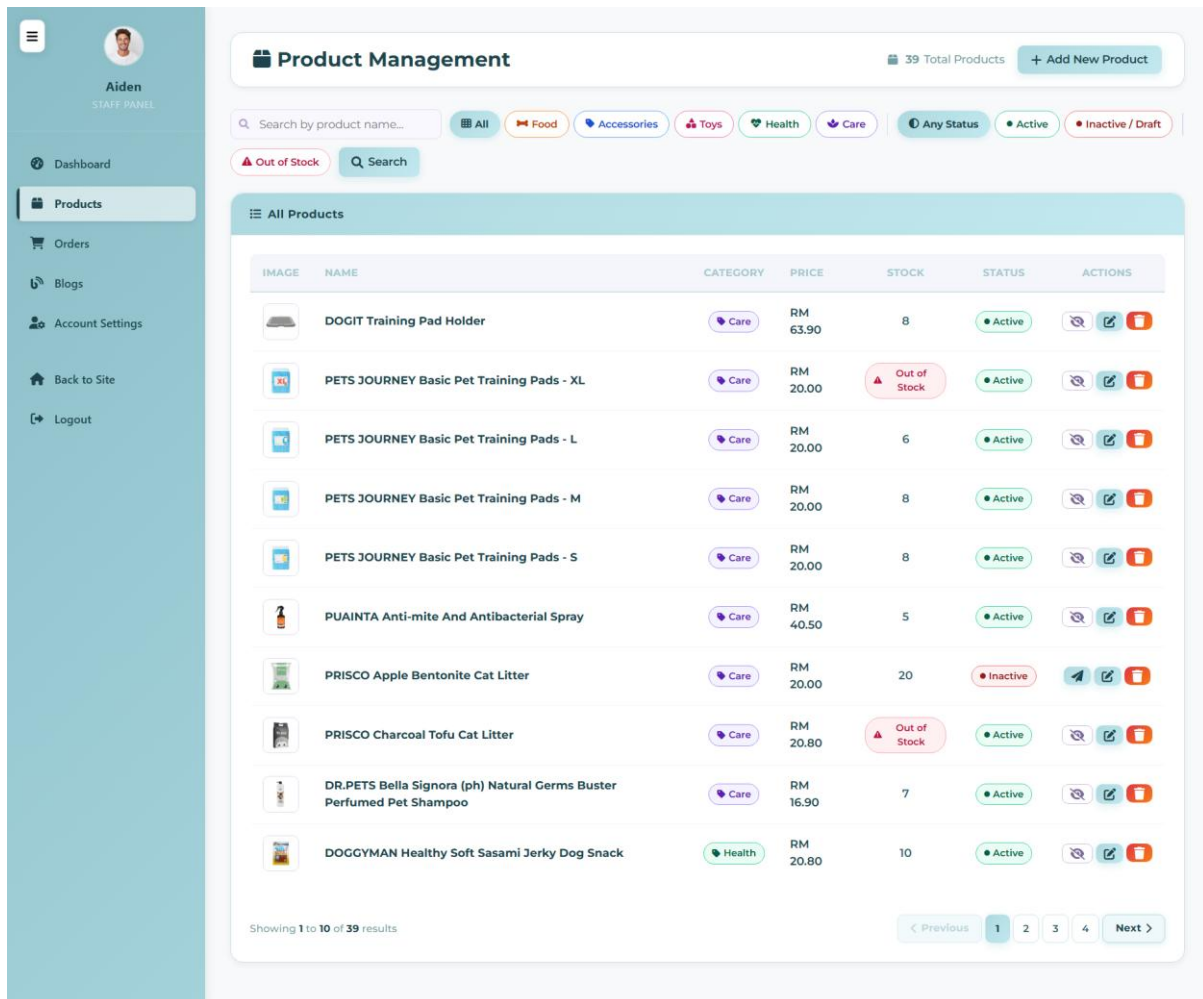


Figure 5.4.4.2 Product Management

This section is for staff to perform product management. At the top section, a search bar and filtering options are provided to help staff to find product quickly based on product name, category, or status. Staff can also filter products based on category such as food, accessories, toys, health, and care. The staff can add new product item uses “Add New Products” button. The main section of this page displays all products in a table format, including product image, name, category, price, stock, and status. The system shows the stock quantity. If a product is out of stock, the system will indicate an “Out of Stock” label to alert the staff. In the action column, staff can perform operations such as viewing, editing, or deleting a product.

Figure 5.4.4.3 Add New Product

Figure 5.4.4.4 Edit Product

After clicking “Add New Product” button, the staff will prompt to the interface. Staff are required to enter product details such as product name, description, price, stock quantity, and category. Staff can also upload product image for visual presentation. There is a size field for staff to fill in if applicable.

If the staff want to edit a product, they can click the edit icon beside the trash. An Edit Product interface appeared with existing product information. Staff can update all details as needed. At the bottom section, “Save as Draft” and “Publish Product” actions button are provided. This allows staff to save the product for later editing or make it available to users immediately.

This interface is also shared between Admin. As the business operator, the Admin has access to manage product information and inventory to maintain product availability and stock levels.

Aiden

STAFF PANEL

Dashboard

Products

Orders

Blogs

Account Settings

Back to Site

Logout

Order Management

22 Total Orders

Search by customer name or em...

All

Pending

Packing

Ready

Completed

Cancelled

Search

Orders

#	PLACED AT	CUSTOMER	ITEMS	TOTAL (RM)	STATUS	ACTION
ORD-69F675D9816B6	May 3, 2026 6:08 AM	Jiapei jiapei915@gmail.com	2 items	RM 69.90	Pending	View
ORD-69F4446AB205A	May 1, 2026 2:12 PM	Jiapei jiapei915@gmail.com	4 items	RM 123.90	Completed	View
ORD-69FICE9371A7C	Apr 29, 2026 5:25 PM	LAU jiapei915@lutar.my	1 item	RM 16.90	Completed	View
ORD-69FICE01DB210	Apr 29, 2026 5:23 PM	LAU jiapei915@lutar.my	1 item	RM 20.00	Completed	View
ORD-69FICCD5B574A	Apr 29, 2026 5:18 PM	LAU jiapei915@lutar.my	1 item	RM 20.00	Completed	View
ORD-69FICB557E45B	Apr 29, 2026 5:11 PM	LAU jiapei915@lutar.my	3 items	RM 50.00	Completed	View
ORD-69FIC770C6DBF	Apr 29, 2026 4:55 PM	Jiapei jiapei915@gmail.com	1 item	RM 20.00	Completed	View
ORD-69FIC0FFE6241	Apr 29, 2026 4:27 PM	LAU jiapei915@lutar.my	1 item	RM 33.00	Completed	View
ORD-69F1BF9F875BF	Apr 29, 2026 4:21 PM	LAU jiapei915@lutar.my	1 item	RM 120.30	Completed	View
ORD-69F1BD0EBBAA	Apr 29, 2026 4:10 PM	LAU jiapei915@lutar.my	1 item	RM 112.00	Completed	View

Showing 1 to 10 of 22 results

[Previous](#)
[1](#)
[2](#)
[3](#)
[Next](#)

Figure 5.4.4.5 Order Management

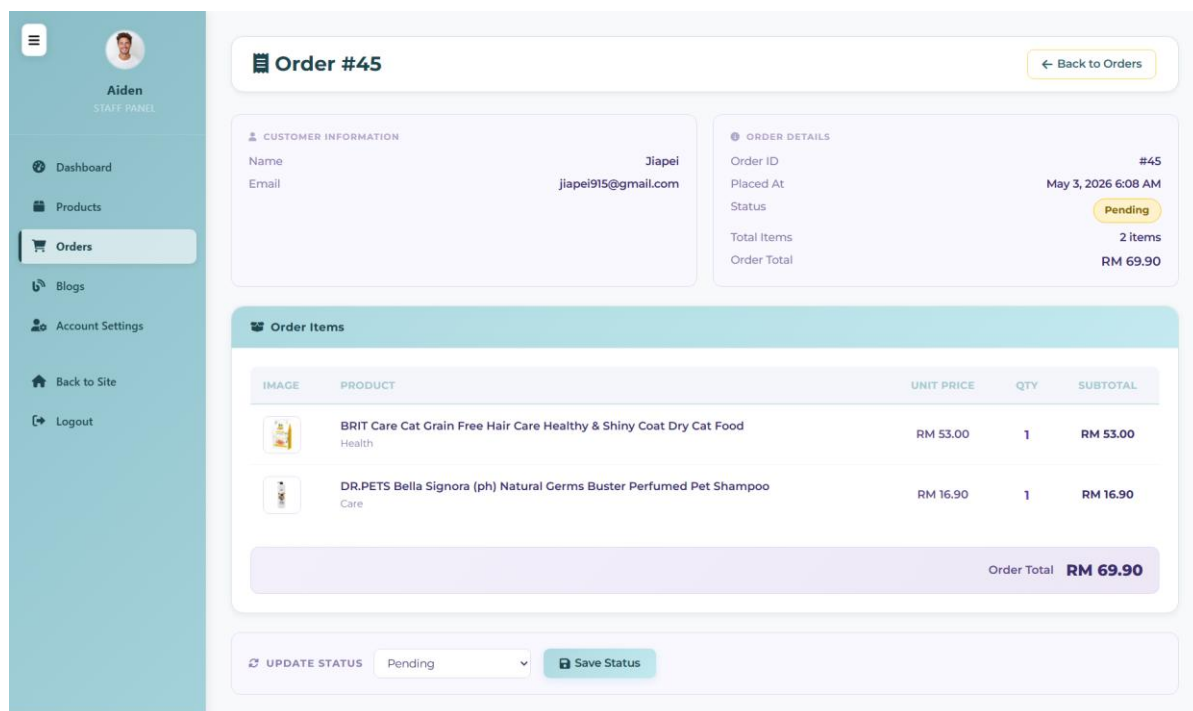


Figure 5.4.4.6 Order Details

The Order Management section allows staff to manage and monitor all customer orders. At the top section, a search bar and filter options are provided to find orders quickly based on customer name, email, or order status. Staff can track orders by status, such as “Pending”, “Packing”, “Ready for Collection”, “Completed”, and “Cancelled”. The main section displays all orders in a table format, including order ID, placed date and time, customer information, number of items, total price, and order. During collection process, the staff need to match the Order ID provided by customer and give the correct order item. In the action column, a “View” button is provided for each order.

After clicking “View” button, the system will display the Order Details interface for the selected order. It shows more detailed information about the order. At the top section, it displays customer information and order details. In the middle section, the ordered items are listed in a table format. Each item includes product image, product name, unit price, quantity, and subtotal. The total amount of the order is calculated and displayed at the bottom of the list. The staff have to pack the order based on the order items shown. At the bottom section, an update status function is provided. The staff can change the order status, such as “Pending”, “Packing”, “Ready for Collection”, “Completed”, or “Cancelled” and click the “Save Status”

button to update the order progress. The progress update is visible to user, and the system will send an email when the order is ready for collection.

The Order Management interface is also shared with Admin role. It is because Admin has the access to manage both products and orders to monitor order flow as well as verify transaction.

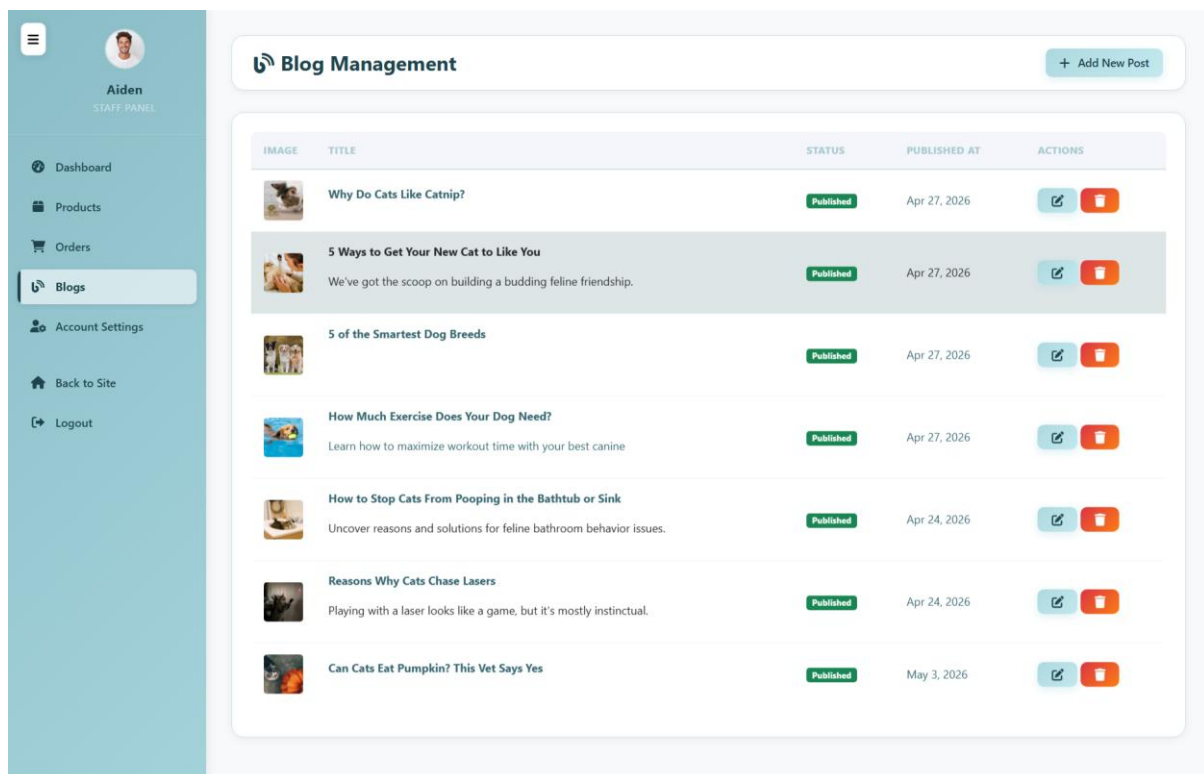


Figure 5.4.4.7 Blog Management

This section is for staff to perform blog management. The staff can add new blog post uses “Add New Posts” button. The main section of this page displays all blog posts in a table format, including blog image, title, status, and published date. In the actions column, staff can perform operations such as editing or deleting a blog post by clicking the respective icons.

After clicking “Add New Post” button, the staff will prompt to the interface. Staff are required to enter the blog title and content using the text editor provided. The editor allows staff to format the content, such as adding headings, bold text, and lists for better readability. Staff can also upload product image for visual presentation. At the bottom section, “Save as Draft” and “Create” actions button are provided. This allows staff to save the blog post for later editing or make publish as visible to user.

If the staff want to edit a blog post, they can click the edit icon from Blog Management section. An Edit Blog interface appeared with existing title, image, and content. Staff can update the information as needed and click the “Save Changes” button to apply all updates.

The screenshot displays the 'Account Settings' page for a user named Aiden. On the left is a teal sidebar with a menu containing 'Dashboard', 'Products', 'Orders', 'Blogs', 'Account Settings' (highlighted), 'Back to Site', and 'Logout'. The main content area has a light blue header 'Account Settings' with a user icon. Below this are three sections: 'Profile Information' with input fields for 'Full Name' (containing 'Aiden') and 'Email Address' (containing 'aiden223@gmail.com'), an 'Update Profile' button, and 'Change Password' with fields for 'Current Password', 'New Password', and 'Confirm New', plus a 'Change Password' button. To the right is a 'Profile Picture' section showing a circular profile picture of a man, an 'Upload Photo' button, and the text 'Format: JPG, PNG, GIF'.

Figure 5.4.4.10 Account Setting

This Account Settings interface is also shared with the groomer and admin roles, providing the same functionality for managing profile information, profile picture, and password settings.

5.4.5 Admin Page

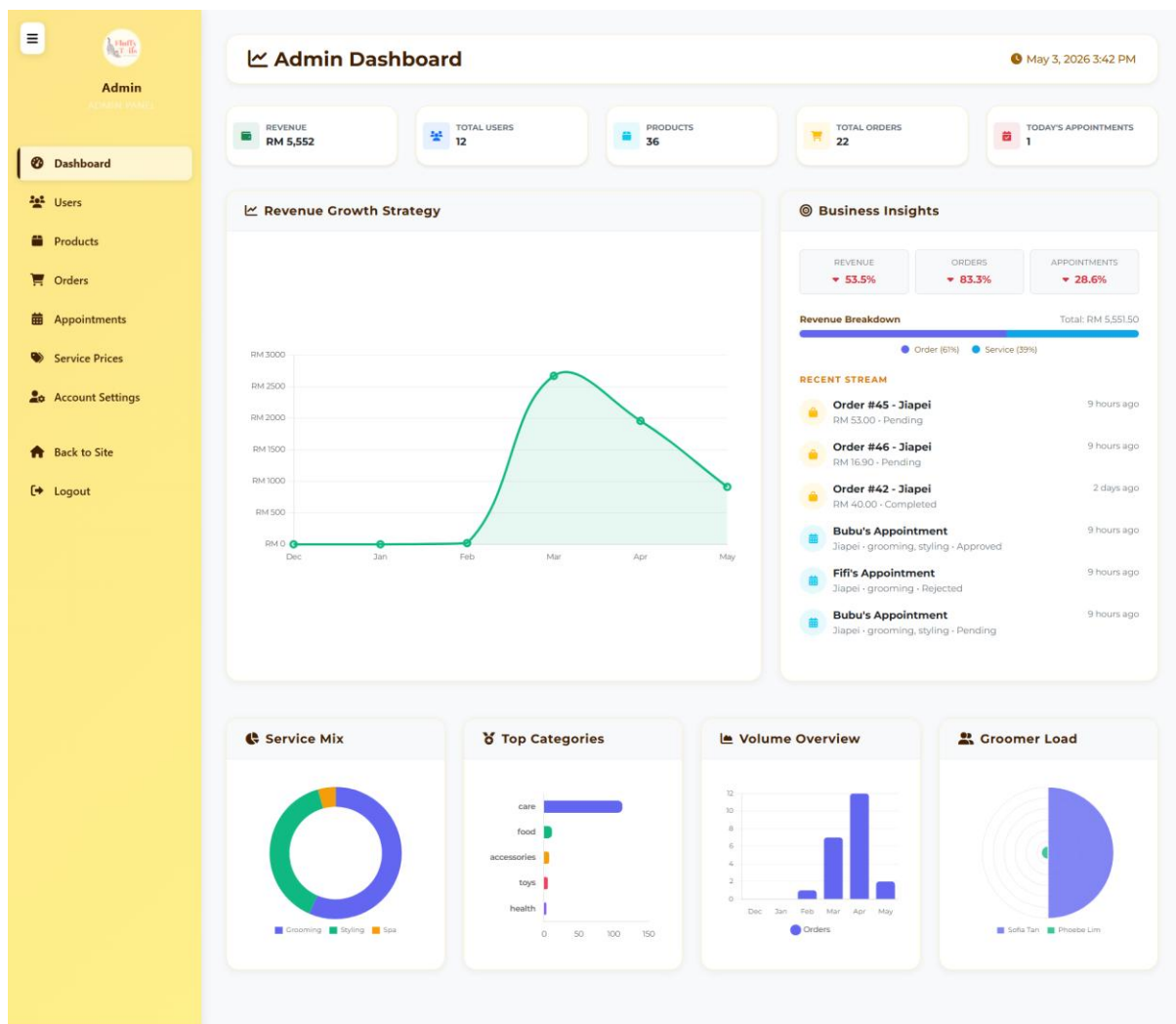


Figure 5.4.5.1 Admin Dashboard

Admin Dashboard provides an overview of overall system performance and business activities. A key summary information is displayed, including total revenue, total users, total products, total orders and today's appointments. A data insights section is included to visualize business performance. The "Revenue Growth Strategy" chart shows the trend of revenue over time, helping the admin to monitor financial performance. On the right side, the "Business Insights" panel provides quick indicators such as revenue change, order change, and appointment change, along with recent activity updates. At the bottom section, additional analytical charts are provided, such as service mix, top product categories, order revenue overview, and groomer workload. These visualizations help the admin to analyse service distribution, popular categories, order trends, and staff workload effectively.

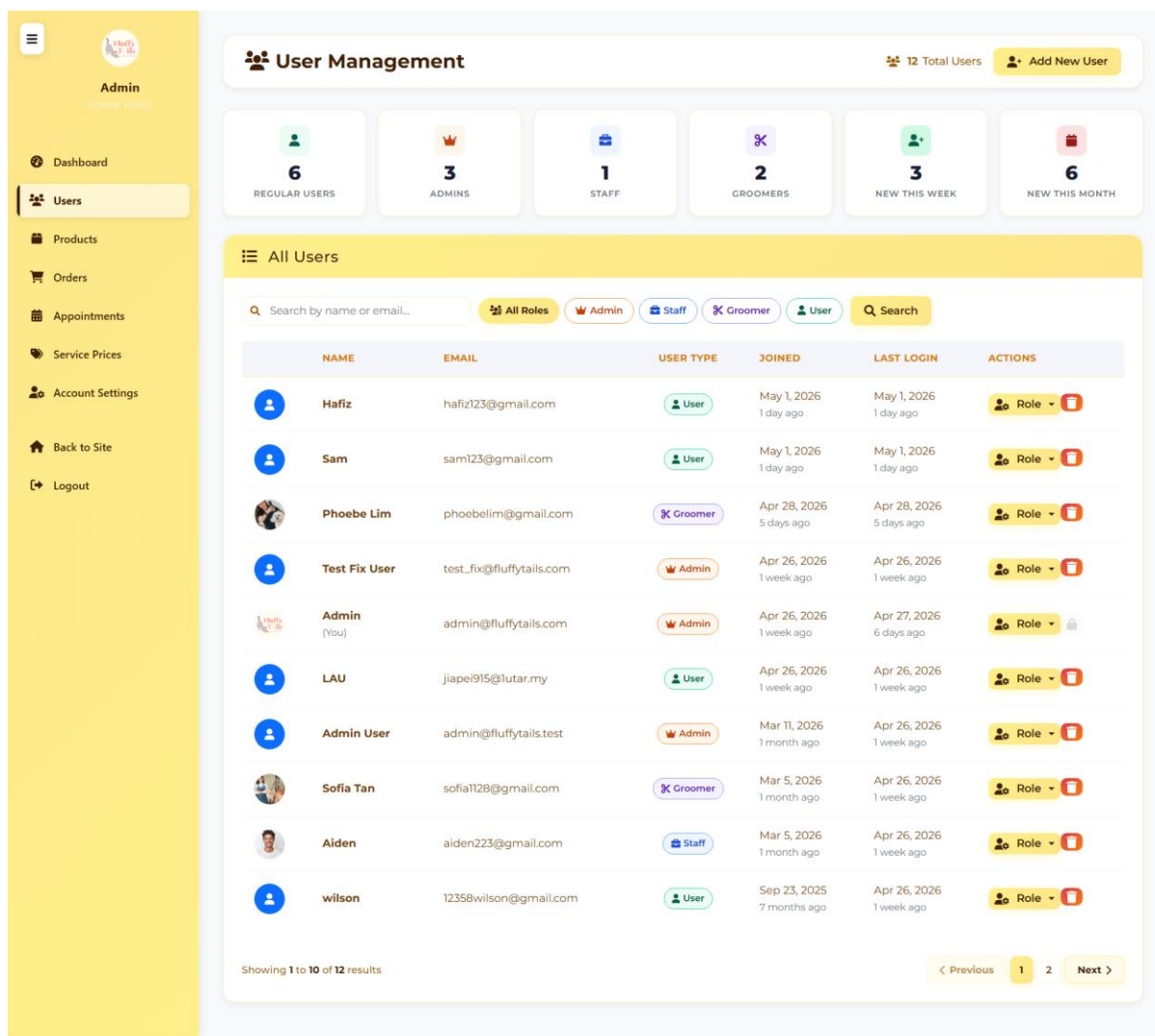


Figure 5.4.5.2 User Management

User Management allows the admin to manage all user accounts. At the top section, summary information is displayed, including total number of regular users, admins, staff, groomers, as well as newly registered users within the week and month. A search bar and filter options are provided to find users efficiently based on name, email, or user role. The admin can filter users by roles such as Admin, Staff, Groomer, and User. The main section displays all users in a table format, including user's name, email, user type, joined date, and last login. In action column, the admin is able to assign and update user roles and removing user accounts if necessary. The "Add New User" button is provided to for admin to create new user accounts directly.

The screenshot displays the 'Create New User' form within an admin dashboard. On the left, a yellow sidebar contains navigation links: Dashboard, Users (highlighted), Products, Orders, Appointments, Service Prices, Account Settings, Back to Site, and Logout. The main content area has a header with a user icon and the title 'Create New User' with a subtitle 'Fill in the details below to add a new account.' The form is divided into three sections: 'ACCOUNT INFORMATION' with fields for 'Full Name' (placeholder: e.g. Jane Smith) and 'Email Address' (placeholder: e.g. jane@example.com); 'SET PASSWORD' with 'Password' (placeholder: Min. 8 characters) and 'Confirm Password' (placeholder: Repeat password) fields; and 'ASSIGN ROLE' with four buttons: 'User' (green), 'Admin' (orange), 'Staff' (blue), and 'Groomer' (purple). At the bottom, there are 'Back' and 'Create User' buttons.

Figure 5.4.5.3 Create New User

After clicking the “Create New User”, the admin is to creation interface. The admin needs to fill in the user details such as full name and email address. A “Set Password” section is provided where the admin needs to enter a password and confirm the password. The system ensures that the password meets the minimum requirement and that both password fields match before proceeding. In the “Assign Role” section, the admin can select the user role, such as User, Admin, Staff, or Groomer. Each role has different access levels within the system. After filling in all required information, the admin can click the “Create User” button to add the new account into the system.

Admin

Admin Panel

Dashboard

Users

Products

Orders

Appointments

Service Prices

Account Settings

Back to Site

Logout

Product Management

39 Total Products + Add New Product

Search by product name...

All Food Accessories Toys Health Care

Any Status Active Inactive / Draft

Out of Stock Search

All Products

IMAGE	NAME	CATEGORY	PRICE	STOCK	STATUS	ACTIONS
	DOGIT Training Pad Holder	Care	RM 63.90	8	Active	
	PETS JOURNEY Basic Pet Training Pads - XL	Care	RM 20.00	Out of Stock	Active	
	PETS JOURNEY Basic Pet Training Pads - L	Care	RM 20.00	6	Active	
	PETS JOURNEY Basic Pet Training Pads - M	Care	RM 20.00	8	Active	
	PETS JOURNEY Basic Pet Training Pads - S	Care	RM 20.00	8	Active	
	PUAINTA Anti-mite And Antibacterial Spray	Care	RM 40.50	5	Active	
	PRISCO Apple Bentonite Cat Litter	Care	RM 20.00	20	Inactive	
	PRISCO Charcoal Tofu Cat Litter	Care	RM 20.80	Out of Stock	Active	
	DR.PETS Bella Signora (ph) Natural Germs Buster Perfumed Pet Shampoo	Care	RM 16.90	7	Active	
	DOGGYMAN Healthy Soft Sasami Jerky Dog Snack	Health	RM 20.80	10	Active	

Showing 1 to 10 of 39 results

< Previous

1

2

3

4

Next >

Figure 5.4.5.4 Product Management

Admin

Admin Panel

Dashboard

Users

Products

Orders

Appointments

Service Prices

Account Settings

Back to Site

Logout

Order Management

22 Total Orders

Search by customer name or em...

All

Pending

Packing

Ready

Completed

Cancelled

Search

Orders

#	PLACED AT	CUSTOMER	ITEMS	TOTAL (RM)	STATUS	ACTION
ORD-69F675D9816B6	May 3, 2026 6:08 AM	Jiapei jiapei915@gmail.com	2 items	RM 69.90	Pending	View
ORD-69F4446AB205A	May 1, 2026 2:12 PM	Jiapei jiapei915@gmail.com	4 items	RM 123.90	Completed	View
ORD-69FICE9371A7C	Apr 29, 2026 5:25 PM	LAU jiapei915@lutar.my	1 item	RM 16.90	Completed	View
ORD-69FICE01DB210	Apr 29, 2026 5:23 PM	LAU jiapei915@lutar.my	1 item	RM 20.00	Completed	View
ORD-69FICCD5B574A	Apr 29, 2026 5:18 PM	LAU jiapei915@lutar.my	1 item	RM 20.00	Completed	View
ORD-69FICB557E45B	Apr 29, 2026 5:11 PM	LAU jiapei915@lutar.my	3 items	RM 50.00	Completed	View
ORD-69FIC770C6DBF	Apr 29, 2026 4:55 PM	Jiapei jiapei915@gmail.com	1 item	RM 20.00	Completed	View
ORD-69FICOFFE6241	Apr 29, 2026 4:27 PM	LAU jiapei915@lutar.my	1 item	RM 33.00	Completed	View
ORD-69F1BF9F875BF	Apr 29, 2026 4:21 PM	LAU jiapei915@lutar.my	1 item	RM 120.30	Completed	View
ORD-69F1BD0EBBAA	Apr 29, 2026 4:10 PM	LAU jiapei915@lutar.my	1 item	RM 112.00	Completed	View

Showing 1 to 10 of 22 results

[Previous](#)
[1](#)
[2](#)
[3](#)
[Next](#)

Figure 5.4.5.5 Order Management

Service	Size	Price (RM)
Grooming Pricing	SMALL	55.00
	MEDIUM	75.00
	LARGE	120.00
	GIANT	180.00
Styling Pricing	SMALL	50.00
	MEDIUM	70.00
	LARGE	110.00
	GIANT	160.00
Spa Pricing	SMALL	45.00
	MEDIUM	60.00
	LARGE	100.00
	GIANT	130.00

Figure 5.4.5.7 Service Price Management

The Service Price Management section allows the admin to manage and update pricing for different grooming services based on pet size. The pricing is categorized into Grooming, Styling, and Spa service. The admin can modify the price values directly in the input fields. After updating the pricing, the admin can click the “Save Changes” button to apply the updates.

Figure 5.4.5.8 Admin Account Setting

This Account Settings interface uses the same interface and functionality as previously explained Account Settings section.

5.5 Implementation Issues and Challenges

5.5.1 API Integration Challenge

One of the challenges in this project is integrate the Google Gemini API for chatbot feature. In the beginning, the AI chatbot only able to respond based on predefined prompts. When the user asks questions out of the scope, the AI could not handle it properly. In addition, some errors occurred during the testing such as invalid API requests and unstable responses.

These issues required adjustments in the structure of the prompt and user input toward API. Error handling mechanisms is implemented to manage failed requests and prevent system crash. After refinement, the chatbot able to answer more questions and accurate.

5.5.2 Email and SMTP Configuration

Another challenge was configuring the email notification system. The system requires automated emails for appointment confirmations, rejections, and order updates. During setup, issues such as authentication failure and “Access blocked” errors occurred when connecting to the email service.

These issues were caused by incorrect configuration and security restrictions from the email provider. The problem was resolved by correctly configuring SMTP settings and using application-specific passwords instead of regular login credentials. After proper setup, the system was able to send emails successfully and ensure users receive timely notifications.

5.5.3 Appointment Scheduling Conflicts

Manage appointment booking can be another critical challenge. The system must ensure that no two appointments are booked for the same groomer at the same time. Initially, the user can freely choose a time slot, so it led to overlapping.

To solve this issue, validation logic is implemented to check the selected time slot with existing appointments. The system must ensure that only available time slots can be selected by users. In addition, when there is multiple pet booking appointment, the system must ensure smooth and accurate booking flow. This is because time slots can easily overlap if the system does not update availability in real time. Thus, the system needs to update time slot availability to prevent conflicts and accurate scheduling.

Chapter 6

System Evaluation and Discussion

6.1 Testing Setup and Test Result

6.1.1 User Site

No	Test Action	Test Result	Status
1	Register with valid email	Account is successfully created and user to login	PASS
2	Register with registered email	Registration failed and message indicating email has been registered is shown	PASS
3	Login with registered credentials	Login successfully and redirected to user home page	PASS
4	Login with incorrect credentials	Login failed and message indicating incorrect email or password is shown	PASS
5	Change password with correct current password and matching new password	Password successfully updated and user can log in with new password	PASS
6	Change password with incorrect current password	Password update failed and error message is displayed	PASS
7	Change password with non-matching new password and confirmation	Password update failed and validation message is shown	PASS
8	View user profile	Profile information is displayed correctly	PASS
9	Update account information	Profile updated successfully	PASS
10	Add new pet profile	Pet profile successfully created and displayed	PASS
11	Edit pet profile	Pet information updated successfully	PASS
12	Delete pet profile	Pet profile removed after confirmation	PASS

13	Book appointment with valid input	Appointment created and confirmation email sent	PASS
14	Book appointment with unavailable timeslot	Booking failed and error message displayed	PASS
15	View appointment status	Appointment status displayed correctly	PASS
16	View live grooming progress	Progress bar updates based on groomer status	PASS
17	View appointment history	Appointment records displayed correctly	PASS
18	Add product to cart	Product successfully added to cart	PASS
19	Update product quantity in cart	Quantity updated and total recalculated correctly	PASS
20	Remove product from cart	Product removed successfully	PASS
21	Clear all items in cart	All items removed from cart	PASS
22	Enter pickup notes	Notes saved and displayed correctly	PASS
23	Place order with valid details	Order creates with “Pending” status	PASS
24	Place order with empty cart	Order cannot be placed	PASS
25	View order confirmation email	Email with order details is received	PASS
26	Receive order confirmation email	Email with order details is received	PASS
27	View order list	All orders displayed with correct status	PASS
28	Cancel order before “Ready to Collection” status	Order status updated to “Cancelled”	PASS
29	Cancel order in “Ready for Collection” status	Cancel action is restricted	PASS
30	Receive “Ready for Collection” email	Notification email is received when order is ready	PASS
31	View blog post	Blog content displayed correctly	PASS
32	Open blog post	Full blog content displayed correctly	PASS

33	Like blog post	Like count increases	PASS
34	Unlike blog post	Like is removed successfully	PASS
35	Post comment on blog	Comment successfully posted	PASS
36	Reply to comment	Reply successfully display under comment	PASS
37	Delete own comment	Comment removed after confirmation	PASS
38	Interact with chatbot using quick buttons	Relevant predefined responses displayed	PASS
39	Ask customer question to chatbot	System generates appropriate response	PASS
40	Ask unsupported question to chatbot	Error message prompts user to contact support	PASS
41	Ask questions in English, Bahasa Malaysia, and Mandarin	Chatbot response correctly in the same language used by the user	PASS

Table 6.1.1 Test Case for User Site

6.1.2 Groomer Site

No	Test Action	Test Result	Status
1	Log in with groomer account	Login successful and redirected to groomer dashboard	PASS
2	View groomer dashboard	Total appointments, active appointments, completed appointments, rating, calendar, and service chart are displayed	PASS
3	Update groomer profile	Groomer profile information is updated and visible to users	PASS
4	Upload groomer certificate	Certificate image is uploaded and displayed successfully	PASS
5	Add valid timeslot	Timeslot is created and displayed in daily timeslot list	PASS
6	Add overlapping timeslot	System rejects the timeslot and shows conflict message	PASS
7	Delete timeslot	Timeslot is removed successfully	PASS
8	View appointment list	Appointment records are displayed correctly	PASS
9	Filter appointment by status	Filtered appointment records are displayed	PASS
10	Approve pending appointment	Appointment status is updated to “Approved” and approval email is sent to user	PASS
11	Reject pending appointment with reason	Appointment status is updated to “Rejected” and rejection email is sent to user	PASS
12	Approve appointment with adjusted price	Final price and adjustment reason are saved successfully	PASS
13	Update grooming status to “Check-in”	User live tracking updates to “Check-in”	PASS

14	Update grooming status to “In Progress”	User live tracking progress bar updates correctly	PASS
15	Update grooming status to “Ready”	User live tracking updates and ready notification is sent	PASS

Table 6.1.2 Test Case for Groomer Site

6.1.3 Staff Site

No	Test Action	Test Result	Status
1	Log in with staff account	Login successful and redirected to staff dashboard	PASS
2	View staff dashboard	Product, order, pending order, blog, chart, and operation center information are displayed	PASS
3	Search product by name	Related product records are displayed	PASS
4	Filter product by category	Products are filtered based on selected category	PASS
5	Add new product with valid input	Product is created and saved successfully	PASS
6	Save product as draft	Product is saved as draft and not displayed to users	PASS
7	Edit product details	Product information is updated successfully	PASS
8	Delete product	Product is removed from product list	PASS
9	Update product stock quantity	Stock quantity is updated successfully	PASS
10	View order list	Customer orders are displayed correctly	PASS
11	Search order by customer name or email	Related order records are displayed	PASS
12	Filter order by status	Orders are filtered based on selected status	PASS
13	View order details	Customer information, order items, quantity, and total amount are displayed	PASS
14	Update order status to “Packing”	Order status is updated and visible to user	PASS
15	Update order status to “Ready for Collection”	Order status is updated and ready collection email is sent to user	PASS

16	Update order status to “Completed”	Order status is updated to completed	PASS
17	Create new blog post	Blog post is created successfully	PASS
18	Save blog post as draft	Blog post is saved as draft and not visible to users	PASS
19	Publish blog post	Blog post is published and visible to users	PASS
20	Edit blog post	Blog content is updated successfully	PASS
21	Delete blog post	Blog post is removed successfully	PASS
22	Update staff profile information	Staff account information is updated successfully	PASS
23	Change password with matching new password	Password is updated successfully	PASS

Table 6.1.3 Test Case for Staff Site

6.1.4 Admin Site

No	Test Action	Test Result	Status
1	Log in with admin account	Login successful and redirected to admin dashboard	PASS
2	View admin dashboard	Revenue, users, products, orders, appointments, and charts are displayed correctly	PASS
3	View business insights	Revenue breakdown, recent stream, service mix, categories, and groomer load are displayed	PASS
4	Search user by name or email	Related user records are displayed	PASS
5	Filter user by role	Users are filtered based on selected role	PASS
6	Create new user account	New user account is created successfully	PASS
7	Assign user role	User role is assigned correctly	PASS
8	Update user role	User role is updated successfully	PASS
9	Delete user account	User account is removed from the system	PASS
10	Manage products	Admin can add, edit, delete, and update products successfully	PASS
11	Manage orders	Admin can view order details and update order status successfully	PASS
12	Manage appointments	Admin can view and monitor appointment records successfully	PASS
13	Update grooming service price	Grooming price is updated and reflected in service page	PASS
14	Update styling service price	Styling price is updated and reflected in service page	PASS
15	Update spa service price	Spa price is updated and reflected in service page	PASS

16	Enter invalid service price	System rejects invalid price and shows validation message	PASS
17	Update admin profile information	Admin account information is updated successfully	PASS
18	Change password with correct current password	Password is updated successfully	PASS
19	Change password with unmatched confirmation	Password update failed and validation message is shown	PASS

Table 6.1.4 Test Case for Admin Site

6.2 Project Challenges

6.2.1 AI Chatbot Limitations

AI chatbot implemented in the system enhance the user interaction without the need of manpower. But it still has limitations in understanding complex or highly specific queries. Sometimes the API could generate too general, or irrelevant answer, In addition, the response time may vary depending on API processing speed and network conditions. This may affect user satisfaction when immediate responses are expected.

6.2.2 Data Consistency and Real-Time Updates

The system highly depends on real time updates, especially for appointment modules. It is difficult to ensure real time data synchronization is always updated. For example, appointment availability, order status, and grooming progress must be updated instantly to reflect accurate information to users. Any delay in updating data may lead to confusion because the user could not get the accurate data on time. Maintaining data consistency across all modules is critical for system reliability.

6.2.3 User Adoption and Learning Curve

Although the system is designed to be user-friendly, some users may still need time to adapt to the system, especially those who are not familiar with digital systems. Features implemented may require extra guidance or demonstration to users to understand the workflow in every module. Therefore, user education and interface improvements are necessary to enhance usability. This challenge highlights the importance of intuitive design, clear instructions, and potential onboarding support to improve user experience and adoption rate.

6.3 Objectives Evaluation

6.3.1 Streamlined Pet Grooming Appointment Booking System

The first objective of this project is to develop a streamlined online appointment system for pet grooming. Based on the system implementation, this objective has been successfully achieved.

The booking process is well structured and easy to work, which improves the overall user experience. The system ensures the time slot availability is based on real time update to reduce the possibility of overlapping appointments. In addition, the system provides automated email notifications to inform users about appointment confirmation and updates. It can highly prevent missed appointments and improve convenience. Furthermore, a real-time grooming progress tracking feature is implemented. A progress monitoring pipeline with grooming status, such as “Booked”, “Confirmed”, “Check-in”, “In Progress”, “Ready for Pickup”, and “Collected” is displayed. So, the users are always informed about their pet’s grooming process and manage their time more effectively. Therefore, this objective has been successfully achieved by providing a smooth and transparent appointment booking experience.

6.3.2 Integrated Marketplace for Pet Care Products

The second objectives of this project is to integrate an online marketplace module into the appointment system. The system testing indicates this objective has been successfully implemented.

The system included a marketplace for users to browse pet care products and place order with desired product. The system provides order status tracking for user to monitor their order progress. By integrating the marketplace with the appointment system, the platform becomes a one-stop solution for users. Therefore, this objective has been successfully achieved by improving user convenience and supporting business operations.

6.3.3 Educational Blog and AI Chatbot for User Support

The third objective of this project is to provide accessible pet care knowledge through educational blog. Based on the system implementation, this objective has been successfully achieved.

The content is presented in a clear and structured format that is easy for users to understand. It help users to make better decisions when taking care of their pets. In addition, users can interact with the blog through features such as likes, comments, and replies. This allows them to share opinions, ask questions, and engage with other users or administrators. The blog serves as a helpful knowledge source and enhances user engagement within the platfrom.

Chapter 7

Conclusion and Recommendation

7.1 Conclusion

In conclusion, the proposed system has successfully integrated appointment booking, marketplace, and educational blogs into a single platform. The system is able to solve the problems identified earlier such as inefficient booking process, lack of service transparency, and limited access to pet care information.

From user perspective, the system provides a smooth and convenient experience. Users are able to book grooming appointments, select their preferred groomer and timeslot, and track grooming progress through different status stages. This helps users to better manage their time and stay informed about their pet condition. In addition, users can purchase pet care products through the marketplace module. The process from browsing, adding to cart, and placing orders is simple and clear. Users are also able to track their order status and receive email notifications when the order is ready. The blog module also provides useful pet care knowledge. Users can read articles, like, comment, and interact with the content. This helps users gain a better understanding of pet care and make better decisions.

From groomer perspective, the system supports their daily appointment workflow in a practical way. They can set their own available timeslots based on their working schedule, which helps them plan their day and avoid overbooking. When a booking request comes in, groomers can review the details and decide whether to accept or reject it. After confirming the appointment, they can update the grooming progress step by step, such as “Check-in”, “In Progress”, and “Ready for Pickup”. These updates are shown to users in real time, allowing users to follow the progress without needing to ask for updates manually.

From staff perspective, the system focuses on product and order management. Staff are responsible for maintaining accurate product information, including adding new items, updating descriptions, adjusting prices, and managing stock availability. This ensures that users always see correct and up-to-date information. Staff also process orders by reviewing order details and updating the order status step by step, such as “Packing”, “Ready for Collection”, and “Completed”. This structured workflow helps reduce mistakes and ensures that the correct

items are prepared. In addition, staff manage the blog by creating and updating articles, which keeps the platform active and informative.

From admin perspective, the system provides overall control of the platform. Admin can manage users by assigning roles such as customer, staff, and groomer, ensuring each user has the correct access. They can also monitor appointments, manage products and orders, and update service pricing when needed. The dashboard provides a clear overview of system activities such as total users, orders, and appointments, allowing admin to monitor performance and make better decisions.

Based on the system evaluation results, all major functional modules are able to operate according to the intended requirements. Testing shows that the system functions correctly across different roles, including users, groomers, staff, and admin. In addition, the modules are well integrated, such as the connection between appointment booking and groomer scheduling, as well as order placement and order status tracking. This shows that the system is not only a booking platform but also a complete management system that supports both user experience and internal operations.

Overall, all project objectives have been successfully achieved. The system provides a complete solution that improves user experience, service transparency, and operational efficiency.

7.2 Recommendation

Although the system has achieved its objectives, there are still several improvements that can be considered to further enhance its functionality and overall user experience.

Firstly, the system can be improved by integrating an online payment feature. Currently, users need to complete payment manually during collection, which can sometimes be inconvenient and take extra time. By adding online payment options such as e-wallets or online banking, users can make payments directly when booking appointments or placing orders. This makes the whole process faster and more convenient. It also reduces the chances of payment errors and allows users to keep track of their payment records easily. From the business side, it helps improve payment tracking and reduces reliance on manual cash handling.

Secondly, the system can be extended into a mobile application. While the current system is accessible through a web browser, having a mobile app would make it easier for users to access the platform anytime and anywhere. Most users are more comfortable using mobile apps, so this can improve overall engagement. With a mobile application, users can receive real-time notifications such as appointment reminders, grooming progress updates, and order status alerts. This ensures that users stay updated without needing to check the system manually. In addition, a mobile app can provide smoother and more responsive user experience.

Lastly, the appointment management system can be further improved by adding more flexible features. For example, a rescheduling function can be introduced to allow users to change their appointment date or time without needing to cancel and book again. This makes the system more user-friendly, especially when users have unexpected changes in their schedule. In addition, the reminder feature can be enhanced by sending notifications closer to the appointment time, which helps reduce missed appointments. From the system side, these improvements also help groomers manage their schedule more efficiently and reduce empty time slots.

REFERENCES

- [1] Rakuten Insight, “Pet ownership in Asia,” *Rakuten Insight*, Feb. 27, 2021. <https://insight.rakuten.com/pet-ownership-in-asia/>
- [2] Standard Insights. “A Closer Look at Pet Ownership in Malaysia.” *Standard Insights*, 17 May 2023, standard-insights.com/insights/pet-ownership-in-malaysia/.
- [3] <https://www.facebook.com/boonuuofficial>. “The Benefits of Regular Pet Grooming Services.” *Boonuu*, 17 Dec. 2024, boonuu.com/my/blog/the-benefits-of-regular-pet-grooming-services/. Accessed 12 Sept. 2025.
- [4] Nazri, Muhammad, et al. “ASSESSING the STATUS of PET OWNERSHIP in the COMMUNITY of PUTRAJAYA.” *MALAYSIAN JOURNAL of VETERINARY RESEARCH*, vol. 10, no. 1, 2019, pp. 61–71, www.dvs.gov.my/dvs/resources/user_16/MJVR%20Vol10.%20No.1/MJVR-V10N1-p61-71.pdf.
- [5] “Effective Flea Control - Wallan Vet Hospital.” *Wallan Vet Hospital*, 24 Oct. 2023, wallanvet.com.au/vet-service/effective-flea-control/. Accessed 12 Sept. 2025.
- [6] “PGH - Pets Grooming Hotel,” *PGH - Pets Grooming Hotel*, Jan. 15, 2015. <https://www.pgh.my/>
- [7] “Home | Petsman.my | Grooming In Truck,” *Petsman*. <https://www.petsman.my/>
- [8] “Pet Grooming | Pet Lovers Centre Malaysia,” *Petloverscentre.com.my*, 2019. <https://www.petloverscentre.com.my/grooming-centres?srsltid=AfmBOoo8OcAGSx48ozaBpoXwwdx0rul01JR7hO4q-zuLEmYPPzpvYULu> (accessed Dec. 06, 2024).
- [9] <https://www.scrumexpert.com/author/scrumxp>. “Integrating User Feedback into Agile Processes for Continuous Improvement.” *Scrum Agile Project Management Expert*, 6 Nov.

2024, www.scrumexpert.com/knowledge/integrating-user-feedback-into-agile-processes-for-continuous-improvement/.

[10] F. K. Y. Chan and J. Y. L. Thong, "Acceptance of agile methodologies: A critical review and conceptual framework," *Decision Support Systems*, vol. 46, no. 4, pp. 803–814, Mar. 2019, doi: <https://doi.org/10.1016/j.dss.2008.11.009>.

[11] G. Kumar, P. Kumar Bhatia, and G. Jambheshwar, "Impact of Agile Methodology on Software Development Process," *International Journal of Computer Technology and Electronics Engineering (IJCTEE)*, vol. 2, no. 4, 2012, Available: https://www.researchgate.net/profile/Gaurav-Kumar-175/publication/255707851_Impact_of_Agile_Methodology_on_Software_Development_Process/links/00b49520489442e12d000000/Impact-of-Agile-Methodology-on-Software-Development-Process.pdf

Fluffy Tails

INTEGRATED SMART PET CARE APPOINTMENT SYSTEM WITH MARKETPLACE AND EDUCATIONAL BLOG

INTRODUCTION

This project is to develop a Pet Grooming Experience Platform that enables pet owners to book grooming appointments online, purchase pet products, and access pet care information within a single platform. The system provides a convenient and integrated solution that improves service accessibility, supports grooming operations, and enhances the overall experience for pet owners in Malaysia.



OBJECTIVES

- To develop a streamline online appointment booking system
- To integrate a marketplace module for daily pet care products
- To support pet care education through an integrated blog

AGILE METHODOLOGY

- 1st Phase: Planning
- 2nd Phase: Analysis
- 3rd Phase: Design
- 4th Phase: Implementing
- 5th Phase: Testing and Integration

OUR SERVICES

- Appointment Service
- Grooming Progress Tacking
- Marketplace
- Education Blog
- Automated Email Reminder
- Live Chat Support
- Google Map API



CONCLUSION

The Pet Grooming Experience Platform enhances the connection between pet owners and groomers by providing a convenient, informative, and user-friendly system. It improves service efficiency, simplifies the appointment process, and supports the growth of the grooming industry in Malaysia.