FURHUB: AN ONLINE PLATFORM FOR PET GROOMING

APPOINTMENTS AND SERVICES

A Proposal

Presented to the Faculty

of the College of Computer Studies

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APPROVAL SHEET

This research project, entitled "FurHub: An Online Platform for Pet Grooming Appointments and Services," prepared and submitted by Jun-del Patuasic and group, in partial fulfillment of the requirements for CC-Rescom31, has been examined and is hereby recommended for approval.

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Lastly, we thank our team members for their dedication, collaboration, and hard work in bringing this project to life. Together, we turned an idea into a meaningful endeavor aimed at improving pet grooming services and experiences.

To everyone who played a part in this study, directly or indirectly, we are sincerely grateful.

The Researchers

Dedication

This research study, FurHub: An Online Platform for Pet Grooming Appointments and Services, is lovingly dedicated to the following:

To our parents and families, for your unwavering love, encouragement, and sacrifices that have motivated us to persevere and achieve our goals.

To the pet owners and service providers, who inspired this study with your needs and aspirations, and for whom this platform is designed to bring convenience and better services.

To our adviser and mentors, whose guidance and support have been invaluable throughout this journey.

To our friends and classmates, for your companionship and words of encouragement, which have fueled our determination to complete this study.

Above all, we dedicate this work to the pets who bring endless joy and companionship to our lives, reminding us of the importance of care and connection in everything we do. This is for all of you.

The Researchers

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CHAPTER I

INTRODUCTION

Rationale of the study

Despite the growth in the pet grooming industry, many pet owners still struggle to find and book trustworthy groomers due to limitations in existing online platforms. Current platforms often focus primarily on large grooming businesses or individual professionals, which restricts the range of options available and raises costs, particularly disadvantaging smaller service providers. Additionally, these platforms frequently suffer from limited-service listings, and inadequate data privacy and security measures, failing to meet the diverse needs of users effectively.

A new online platform seeks to address these issues by offering a user-friendly solution designed to enhance both convenience and choice. This platform will include a broad range of options, from luxury salons to independent groomers, catering to various needs and budgets. It will feature real-time location services and a streamlined booking process to improve user experience. Emphasizing modern encryption and secure registration practices, the platform will also prioritize data privacy and security to build trust and ensure the protection of sensitive information.

By overcoming the limitations of current platforms, this solution aims to improve overall user satisfaction and support a wider array of grooming service providers. The enhanced visibility for smaller and independent businesses will foster a more competitive market and provide pet owners with better choices and services. This comprehensive approach will not only address existing gaps but also establish the platform as a reliable and innovative option in the pet grooming industry.

Objective of the Study

General

To build an accessible digital solution for pet owners to easily find and schedule grooming appointments with vetted professionals, providing a streamlined process for both customers and service providers to manage bookings and ensure high-quality pet care.

Specific

To design an easy-to-use online platform that enables pet owners to schedule grooming appointments quickly, with options to choose specific dates, times, and preferred groomers. Additionally, pet owners can select between in-house service, where the groomer comes to their home, or in-store service at a grooming facility, providing flexibility and convenience.

1. To create a system that allows grooming businesses to manage and update their service offerings, including pricing, descriptions, availability, and promotions, ensuring that customers receive up-to-date information.

2. We want to make the booking process as smooth as possible by integrating real-time location services. This feature will help users find the nearest grooming options, saving them time and effort.

3. Protecting user information is a top priority for us. We will implement robust data privacy and security measures to ensure that pet owners can trust the platform with their personal details.

4. Measure the satisfaction levels of pet owners using FurHub, focusing on aspects such as user interface, service variety, and overall experience.

Scope of the Study

The study will explore how FurHub can improve the process of finding and booking pet grooming services in Cebu City by offering pet owners flexibility in choosing between in-house and in-store services, with a focus on user convenience and service quality. It will evaluate the user experience, including ease of navigation, booking process efficiency, and overall satisfaction. Additionally, the study will assess the benefits for pet groomers, such as better appointment management, increased client reach, and business growth opportunities. The research will also examine the effectiveness of integrating key features like real-time availability, customer reviews, and secure payment options, and will identify existing gaps in the pet grooming market that FurHub aims to address.

Limitations of the Study

The platform's services will initially be limited to Cebu City, with availability in other regions dependent on forming new partnerships with grooming services. Only grooming businesses that have partnered with FurHub will be listed on the platform,

excluding non-partnered services. Users will also need a reliable internet connection and a compatible device, such as a smartphone, tablet, or computer, to effectively use the platform. The study assumes that pet owners and groomers have a certain level of digital literacy, meaning limited access to technology or reluctance to adopt online systems could affect the platform's success. Additionally, since the research will focus on Cebu City, the findings may not fully apply to other areas with different market dynamics.

Significance of the Study

The pet grooming industry has seen significant growth, driven by the increasing number of pet owners who prioritize the well-being and grooming of their pets. However, despite this growth, pet owners often face challenges in finding convenient and reliable grooming services. Traditional methods of booking, such as phone calls, physical visits, or using generic scheduling tools, can be time-consuming and inefficient. FurHub aims to address these challenges by providing an online platform that streamlines the process of booking pet grooming appointments, making it more accessible and efficient for both pet owners and grooming service providers.

The primary objective of this research is to build an accessible digital solution for pet owners to easily find and schedule grooming appointments with vetted professionals, providing a streamlined process for both customers and service providers to manage bookings and ensure high-quality pet care.

The significance of this study lies in its potential to contribute to the pet grooming industry by introducing a digital innovation that could set new standards for service delivery. By integrating features such as real-time availability, customer reviews, and secure payment options, FurHub could establish a new benchmark for convenience, reliability, and transparency in the industry. This study will also provide valuable insights into the needs and preferences of both pet owners and groomers, which can inform future developments and improvements in the sector.

FurHub has the potential to offer numerous practical benefits to stakeholders in the pet grooming industry. For pet owners, it simplifies the process of finding and booking grooming services, saving time and effort while providing peace of mind through verified reviews and secure transactions. For groomers, the platform offers an

efficient way to manage appointments, attract new clients, and grow their businesses. The study's findings could guide the implementation of similar platforms in other service industries, showcasing the broader applicability of digital solutions in improving service delivery.

This study sets the stage for future research by providing a foundational understanding of how digital platforms like FurHub can transform the pet grooming industry. It creates opportunities to investigate the wider effects of technology on pet care, like how grooming services might be combined with veterinary treatment, pet sitting, and training. Building on these results, future studies might examine how these platforms affect industry standards, business scalability, and customer loyalty over the long run.

The societal impact of FurHub extends beyond the pet grooming industry. By making grooming services more accessible and convenient, the platform can contribute to the overall well-being of pets, which is increasingly recognized as an important aspect of responsible pet ownership. Furthermore, FurHub can empower small business owners in the grooming industry by providing them with tools to compete more effectively in the digital age, thus supporting local economies and fostering entrepreneurship.

In conclusion, the significance of the study on FurHub lies in its potential to transform the pet grooming industry by introducing a digital platform that addresses existing challenges and creates opportunities for both pet owners and groomers. The study's findings will not only contribute to the advancement of the field but also offer practical solutions that can enhance service delivery, support business growth, and positively impact society. By providing a comprehensive analysis of FurHub's potential, this study aims to pave the way for future innovations in the pet grooming industry and beyond.

Definition of Terms

Pet Grooming Services – A variety of care services offered to pets, including bathing, haircuts, nail trimming, ear cleaning, and specialized treatments for pet hygiene and appearance.

Online Platform – A digital tool or website that facilitates interactions between users (pet owners) and service providers (grooming businesses), enabling them to book appointments, make payments, and access grooming services.

Vetted Professionals – Groomers or grooming businesses that have been verified for their credentials, experience, and service quality before being listed on FurHub.

Appointment Scheduling – The system within FurHub that allows users to book specific dates and times for grooming services through an easy-to-use interface.

Pet Profiles – User-created profiles for pets that store important information such as grooming history, health details, and personal preferences, allowing for personalized grooming services.

Real-Time Availability – A feature in FurHub that displays the current open time slots of groomers, allowing pet owners to book appointments at their convenience without delays.

User Interface (UI) – The layout and design of the FurHub platform that allows users (pet owners and groomers) to navigate and interact with the system seamlessly across devices like smartphones, tablets, and desktops.

Digital Literacy – The level of comfort and skill pet owners and grooming businesses have with using online tools, which may affect how effectively they can use FurHub.

CHAPTER II

REVIEW OF RELATED LITERATURE AND STUDIES

In this chapter, the researchers review related literature and studies that form the foundation for FurHub. By examining existing research, the goal is to identify insights and gaps in the field of online pet grooming services and customer engagement, which will guide the development of the platform.

Review of Related Literature

As we review the literature, it's clear that both local and international studies have advanced online platforms for service industries, especially pet grooming. However, challenges remain, motivating our research to improve the functionality and user experience of platforms like FurHub.

Local Literature

According to Tonreyes (2020), pet grooming is an important practice that plays a major contribution to the health of the companion animals. It goes beyond aesthetics, because it plays an important role in avoiding different health problems. Grooming assists with removing debris, dirt and loose hair from pets' coats which can prevent skin irritations and infections. Regular grooming not only improves the appearance of pets but also helps prevent health issues and can reveal signs of possible illness or injury. In addition, brushing creates healthy blood circulation and spreads the natural oils throughout the hair therefore making pets coat shiny and healthy. Unfortunately, many pet owners experience limitations in obtaining grooming services, particularly those from the underprivileged and less-accessible communities.

The increasing integration of technology in the pet care industry is transforming how pet owners access grooming services. A study highlighted that online platforms significantly enhance customer convenience by allowing for easy booking and access to a variety of grooming options, which is particularly beneficial in urban settings where time is limited (Salvador et al., 2022). This shift not only caters to the rising demand for pet grooming services but also fosters a more organized and efficient approach to pet care management, aligning with broader trends in e-commerce and service delivery in the Philippines. Furthermore, these platforms can facilitate better communication between

groomers and pet owners, allowing for personalized services tailored to each pet's needs. To enhance these services, it would be beneficial to incorporate features such as appointment reminders, real-time updates on service status, and loyalty programs to encourage repeat business embracing continuous technological improvements can significantly elevate customer experience and operational efficiency in the pet grooming sector.

Peña (2023) explores the rise of "pet parenting" in the Philippines, noting that pet owners are investing more time and resources into ensuring their pets' well-being. With many owners struggling to find reliable, convenient grooming services, platforms like FurHub provide a solution by streamlining the booking process. Furthermore, FurHub's features, such as real-time scheduling options and user reviews, empower pet owners by offering transparency and flexibility in managing their pets' grooming needs. This support for customer satisfaction and ease of access underscores FurHub's relevance in addressing the concerns of Filipino pet parents.

Pet grooming plays a crucial role in maintaining the health of pets by preventing skin issues and improving their appearance (Tonreyes, 2020). Yet many pet parents, particularly those living in remote locations, struggle to reach grooming facilities. According to Salvador et al. (2022), online platforms simplify the process of scheduling grooming appointments for pet owners, particularly in urban areas. These platforms also enhance communication between groomers and pet owners by offering helpful tools such as reminders and updates. With the increasing number of Filipinos considering their pets as part of their family, services like FurHub are making it easier for pet owners to discover trustworthy grooming services, increasing convenience for them (Peña, 2023).

Foreign Literature

The study by Aizawa et al. (2021) discusses the significance of online platforms in enhancing user experience in the pet care sector, particularly focusing on the functionality and usability of such services. The authors emphasize that user-friendly interfaces and streamlined booking processes are crucial for attracting and retaining customers in the competitive pet grooming market. They argue that by integrating features such as user reviews and personalized recommendations, platforms can foster

greater trust and satisfaction among pet owners, ultimately leading to improved service utilization and loyalty. Additionally, to further enhance the platform, it would be beneficial to incorporate features like real-time availability tracking and tailored service suggestions based on previous user interactions. By focusing on these elements, FurHub can improve user engagement and ensure that pet owners have a seamless experience in managing their grooming appointments, thereby increasing customer satisfaction and loyalty.

The research by Omer et al. (2023) explores the impact of digital platforms on service delivery in the pet grooming industry, emphasizing how these platforms enhance operational efficiency and customer satisfaction. The authors note that features such as online appointment scheduling and digital payment options significantly reduce wait times and improve the user experience for pet owners. Furthermore, this study highlights the importance of data analytics in understanding customer preferences, which can lead to more personalized services and better engagement. By incorporating analytics to track user behavior and preferences, FurHub can tailor its offerings to enhance user satisfaction further. Additionally, ensuring a seamless booking and payment process will not only streamline operations but also build trust and loyalty among pet owners, ultimately contributing to the platform's success.

Internationally, mobile pet grooming services have seen significant growth, especially in developed markets where convenience is highly valued. Groomarts (2023) discusses how mobile grooming services address the need for flexibility and convenience by allowing pet owners to schedule appointments at their convenience. FurHub's potential to integrate mobile grooming services into its platform is a critical factor in its success, as it offers users not only access to stationary grooming salons but also mobile services that can cater to customers' homes or workplaces. This strategy enhances FurHub's versatility and appeals to a wider demographic of pet owners.

Aizawa et al. (2021) emphasize the importance of online platforms in enhancing the user experience of pet grooming. Having interfaces that are easy to use and simple booking processes can help to attract and keep customers, and adding elements like reviews and real-time availability tracking may improve platforms such as FurHub.

Omer et al. (2023) state that digital platforms enhance effectiveness and client happiness through the facilitation of online scheduling and payments, resulting in decreased wait times. Moreover, mobile grooming services are gaining popularity (Groomarts, 2023) due to their flexibility. Including these mobile features on FurHub may increase convenience for grooming services and bring in a larger client base.

Review of Related Studies

To contextualize FurHub's innovations, the researchers reviewed six studies on online service platforms in pet grooming and customer interaction. These studies are analyzed for relevance to FurHub's goals and compared in the Comparative Matrix below. The following are the local and foreign studies:

Local Studies

Mr.Paws

Mr. Paws is an urban pet care platform that focuses on convenience through easy online booking, community involvement, and grooming, daycare, and pet supplies. On the other hand, our platform has a real-time location-based system that makes it simple for pet owners to find grooming services in their area from specific groomers and retailers. This creative strategy increases accessibility, highlights lesser-known service providers, and expands pet owners' options, which in turn increases market visibility for all service providers. Augmented reality (AR) previews for grooming styles, a transparent rating and review system, a loyalty rewards program, automated grooming reminders, and a community forum for pet owners to exchange advice and experiences are all potential ways to improve the user experience.

PetExpress

Pet Express is the largest pet supply superstore in the country, providing a wide range of products for dogs and cats, along with in-store grooming, veterinary services, and pet boarding. In contrast, FurHub offers an innovative online platform for booking grooming services, allowing pet owners to choose between in-house or in-store options. With a chat feature for direct communication with groomers, FurHub provides a personalized experience and connects professional groomers with clients, enhancing convenience beyond traditional pet stores.

PAWSITIVE GROOMING LLC

Pawsitive Grooming is a well-established digital platform in the Philippines that offers pet grooming services, allowing users to book appointments, view service details, and read reviews. Its features, however, are rather simple, with an emphasis on service listings and conventional booking capabilities rather than sophisticated tools like real-time availability tracking or extensive customer relationship management. FurHub aims to enhance the user experience by providing a more feature-rich and intuitive interface, including real-time groomer availability, personalized service recommendations, detailed groomer profiles with ratings, and automated scheduling, billing, and customer management, filling operational efficiency gaps seen in simpler platforms like Pawsitive Grooming.

Mr. Paws is a pet care platform that simplifies the process for pet owners to schedule grooming services online and discover nearby grooming facilities through a real-time location function. Pet Express is the biggest store for pet supplies with a wide range of products and in-store services, although it lacks the online functionalities offered by FurHub.Pawsitive Grooming LLC in the Philippines specializes in basic grooming services; however, it does not offer advanced features such as real-time availability or customer management. FurHub fills the voids in pet grooming through a user-friendly platform that includes real-time availability, personalized recommendations, and automated scheduling. Pet owners can schedule grooming appointments online, select from in-home or in-store services, and communicate directly with groomers through a chat feature.

Foreign Studies

THE PAWFFICE

The Pawffice offers a holistic pet care experience, combining grooming, play, and rest in a park-like setting to promote pets' physical, emotional, and cognitive well-being. It focuses on in-person services, customizing care to each pet's needs. In contrast, FurHub is an innovative online platform that simplifies pet grooming by offering easy scheduling and location-based booking with various service providers. While The Pawffice emphasizes physical spaces, FurHub prioritizes online convenience, using user

reviews, data privacy, and analytics to tailor service recommendations, making it a flexible and reliable option for managing grooming needs.

OhMyPet

OhMyPet Grooming offers luxury, at-home pet care services, including grooming, training, and veterinary care, with a focus on reducing travel stress and separation anxiety. Customers can easily book via phone or online, and pets enjoy personalized treatments like trendy hairstyles and custom clothing. In contrast, FurHub is an online platform designed for convenience, allowing users to find and book grooming services or professional groomers in their area. It features options for in-house or in-store grooming, with added benefits like chat communication with groomers before booking. While OhMyPet emphasizes high-end, at-home care, FurHub focuses on providing a tech-enabled, flexible platform for pet owners to choose grooming services based on their preferences.

Cutie Dogs Ltd

Cutie Dogs Ltd is a dog grooming and training school located in Birmingham, UK. Established in 2007, it offers a range of grooming services and training courses, while our platform offers several advantages over Cutie Dogs Ltd, primarily due to its nature as an online platform. One major benefit is accessibility and convenience, as FurHub allows pet owners to schedule grooming appointments anytime, anywhere, without needing to physically visit or call a salon. This saves time and offers more flexibility for users. Additionally, FurHub's digital platform enables it to serve a wider geographical area, allowing pet owners to access multiple grooming providers in different locations.

The Pawffice offers a full pet care experience, including grooming, playtime, and relaxation in a unique park-like environment. On the other hand, FurHub is a digital platform that streamlines pet grooming by offering simple scheduling and booking based on location. OhMyPet provides high-quality grooming and training services at home to alleviate the stress of traveling, while FurHub enables pet owners to schedule appointments close by, at home, or at a store, and communicate directly with groomers. In Birmingham, Cutie Dogs Ltd offers grooming and training like FurHub, but does not offer the same ease of booking appointments and variety of providers.

Furhub

A proposed study seeks to create "FurHub," an intuitive online platform for pet grooming services that aims to streamline the booking process for pet owners. The platform includes key features to enhance user experience:

- Location-Based Groomer Search: Allows users to find and book nearby grooming services based on their current location.

- In-App Chat Functionality: Enables direct communication between pet owners and groomers for inquiries and service customization before booking.

- Gesture-Based Booking: Enables users to book grooming services effortlessly with simple hand gestures for quick navigation.

- In-House and In-Store Grooming Options: Provides customers the choice to select either in-house or in-store grooming services based on their convenience.

CHAPTER III

DESIGN AND METHODOLOGY

Research Design

Method

The research for "FurHub: An Online Platform for Pet Grooming Appointments and Services" employs a mixed-methods approach, combining qualitative and quantitative techniques to address user needs effectively. Focused on Cebu City, the study uses surveys, interviews, and prototype testing to gather insights from pet owners and grooming service providers.

Surveys will collect data on pet owners' preferences, such as in-house or in-store grooming, chat support, and desired features, providing a broad understanding of user priorities. Semi-structured interviews with grooming service providers will explore their expectations, usability concerns, and requirements to ensure the platform meets their needs.

Prototype testing will allow participants to interact with the platform's features, such as booking and navigation, and provide feedback to improve usability and functionality.

Quantitative survey data will be statistically analyzed to identify trends and feature preferences, while qualitative data from interviews and testing will undergo thematic analysis to uncover user expectations and challenges. These insights will guide platform development, ensuring a functional and user-friendly design.

Ethical considerations, including informed consent, data privacy, and confidentiality, will be strictly upheld to protect participants' information.

This approach ensures FurHub meets the needs of Cebu City's pet grooming community, fostering convenience and satisfaction for users and service providers alike.

Flow of the Study

Figure 1: Flow of the Study

Research Instrument

For the FurHub study, a survey questionnaire will be developed using Google Forms as the primary research instrument to collect data from pet owners and grooming service providers. The questionnaire will include a mix of question types, such as Likert scale questions to assess user satisfaction with platform features like ease of use and service availability, dichotomous to determine basic preferences, such as in-house vs. in-store grooming services, multiple-choice questions to explore grooming habits and preferences, and open-ended questions to gather qualitative feedback on suggested features or improvements for the platform. This mixed-method approach will provide a comprehensive understanding of user experiences and preferences, allowing for valuable insights to enhance the FurHub platform.

Research Respondents

The study will focus on two main groups of respondents: Pet Owners and Grooming Service Providers in Cebu City. Pet Owners, who currently own pets or may own them in the future, will share their experiences, preferences, and challenges with booking grooming services. This group will provide insights into their expectations for a digital platform like FurHub, helping to identify key features that would make the

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platform easy to use and effective for booking appointments, managing pricing, and ensuring convenience.

The second group, Grooming Service Providers, includes grooming shops and professional groomers in Cebu City who may join the FurHub platform. They will provide feedback on their current booking systems, highlighting challenges they face with managing appointments and customer interactions. Their input will help assess the practicality of using FurHub as an alternative to traditional booking methods. By gathering insights from both pet owners and service providers, the study will identify the most important features for FurHub, ensuring it meets the needs of both users and service providers and offers a seamless booking experience.

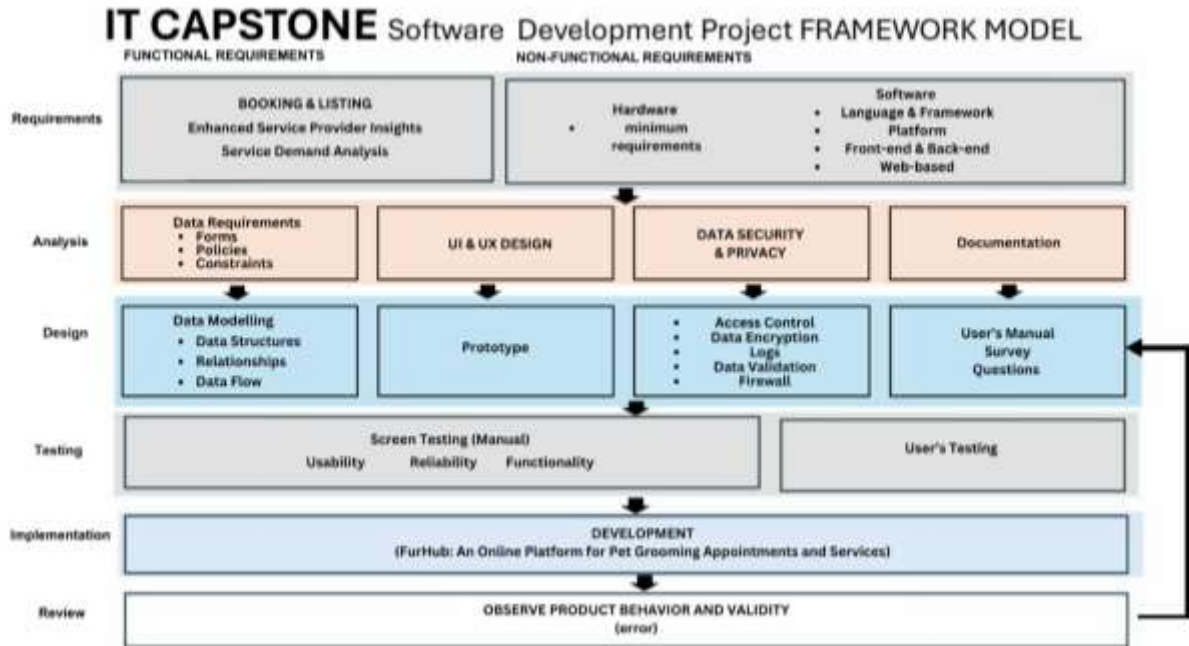**Research Instrument**

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Research Procedure

Data Gathering

In the FurHub study, data will be gathered through a structured survey questionnaire distributed to both pet owners and grooming service providers. The survey will be conducted online using Google Forms to ensure easy access and convenience for participants. The questionnaire will include a combination of Likert scale questions, multiple-choice questions, dichotomous questions, and open-ended questions. These will collect quantitative data on user satisfaction, service preferences, and platform usage, as well as qualitative insights on potential improvements. The survey will be distributed through email, social

media, and relevant online groups to reach a broad audience in Cebu City. Responses will be analyzed to identify trends, preferences, and areas for enhancement, providing valuable feedback to refine the FurHub platform and ensure it meets the needs of users.

Treatment of the Data

In the FurHub study, data will be treated by analyzing both numbers and feedback. The answers from the Likert scale, multiple-choice, and Yes/No questions will be summarized using simple statistics, like percentages and average scores, to see trends in user satisfaction and preferences. Open-ended answers will be reviewed for common themes and suggestions for improving the platform. The results will be used to understand what users like, what needs improvement, and what new features they want, helping to make FurHub better for its users.

Ethical Considerations

In the FurHub study, ethical considerations will be a priority to ensure the protection of participants' rights and privacy. All respondents will be informed about the purpose of the study, the voluntary nature of their participation, and their right to withdraw at any time without penalty. Informed consent will be obtained from all participants before they complete the survey. Personal data collected, such as names or contact details, will be kept confidential and used only for the purposes of this study. The data will be anonymized to prevent identification of individual responses, and all findings will be presented in aggregate form. Participants will also be assured that their feedback will not be shared with third parties and will only be used to improve the FurHub platform.

Software Engineering Methodology

Given the dynamic nature of the pet services industry and the need to adapt to user feedback and market trends, an Agile software engineering methodology is the best fit for the development of FurHub. Agile's iterative approach ensures that the platform evolves over time based on real-time user feedback, technological advancements, and business needs.
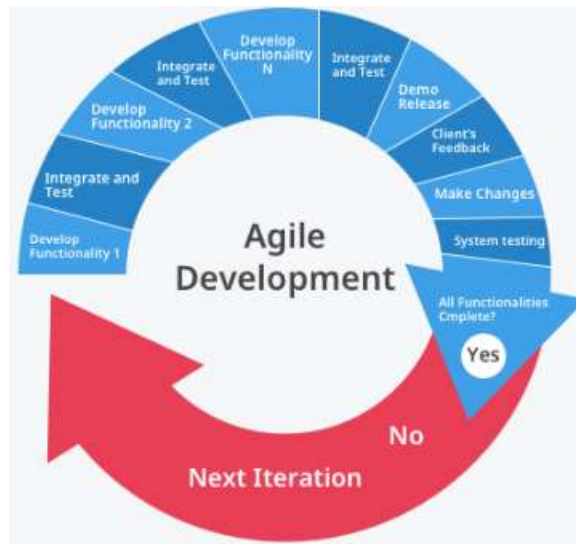
Figure 1: Agile Development

Requirements Gathering and Analysis (Iteration 0)

In this phase, the team will work closely with pet owners, professional groomers, and stakeholders to gather detailed requirements and define the core features of FurHub. Key activities will include:

- **Stakeholder Interviews**: Engage with pet owners and groomers to understand their needs for an online booking platform.
- **Market Research**: Survey existing platforms to identify best practices and gaps in the market.
- **Define User Stories**: Write user stories for core features, such as booking services, chat functionality, and search filters for groomers.
- **Establish Clear Objectives**: Focus on user satisfaction, ease of use, and efficient service booking.

Deliverables:

- **Requirements Document**: Outlining both functional and non-functional requirements.
- **Initial System Architecture**: Defining technology stack and integration points.
- **User Stories & Epics**: Initial list of core features and user goals.

System Design (Iteration 1)

The system design phase will focus on laying out the core architecture of FurHub. The design will ensure that each component is modular and scalable. Key design components will include:

- **User Interface (UI) Design**: Create wireframes and mockups for pet owners and groomers.
- **Backend Architecture**: Design a scalable backend to handle user registrations, booking requests, and real-time communication.
- **Database Design**: Develop the database schema to store user information, service providers, and booking details.
- **API Design**: Define APIs for integrating various platform components, including search and chat features.

Deliverables:

- **System Architecture Diagrams**: Visual representation of the platform's overall structure.
- **UI/UX Design**: Mockups and wireframes for user interfaces.
- **Database Schema**: Defined structure for storing platform data.
- **API Specifications**: Documentation for communication between frontend and backend components.

Iterative Development & Implementation (Multiple Iterations)

In this phase, the team will break the development into smaller, manageable iterations, each focused on specific features or improvements. Key activities will include:

- **Frontend Development**: Implement the user interface for both pet owners and groomers (e.g., booking interface, user profiles, search filters).
- **Backend Development**: Build and integrate backend services, including user authentication, booking management, and chat functionality.
- **Feature Integration**: Implement features like service filtering, in-house/in-store service selection, and real-time chat.
- **Continuous Testing**: Test individual components after each iteration to ensure functionality.

Deliverables:

- **Functional Software Modules**: Working frontend and backend features.

- **User Stories Completed**: Core functionality like account registration, service booking, and chat.
- **Integration Tests**: Ensuring components work together seamlessly (e.g., chat, booking, and user registration).

Testing and Quality Assurance (Iteration 1 and Ongoing)

Testing is critical to ensure the system meets all requirements and functions smoothly. The following types of testing will be performed:

- **Unit Testing**: Verify that individual components (e.g., booking logic, chat features) work as expected.
- **Integration Testing**: Ensure smooth communication between the frontend, backend, and external APIs.
- **Usability Testing**: Validate that the user interfaces are intuitive and easy to navigate for both pet owners and groomers.
- **Performance Testing**: Assess how the system handles traffic, particularly during peak times when many users might book grooming services.
- **Security Testing**: Ensure that user data (e.g., payment information, personal details) is secure and protected.

Deliverables:

- **Test Cases and Results**: Documented results for all testing phases.
- **Bug Reports and Fixes**: List of issues identified and resolved during testing.
- **Performance Metrics**: Insights into how the platform performs under load and user activity.

Deployment and Evaluation (Iteration 2 and beyond)

Once the system is fully developed and tested, it will be deployed in phases to ensure a smooth rollout. The deployment will be followed by constant monitoring and updates based on user feedback and system performance. Key activities will include:

- **Pilot Deployment**: Launch FurHub in a limited geographical area (e.g., Cebu City) to test real-world performance.
- **Data Collection**: Monitor system performance, gather feedback from pet owners and groomers, and track user interactions.
- **User Feedback**: Collect feedback to refine the platform's features and usability.

- **Ongoing Maintenance**: Continuously update the platform based on new requirements, performance data, and user feedback.

Deliverables:

- **Pilot System Deployed**: FurHub launched in a test market (e.g., Cebu City).
- **User Feedback Reports**: Gathered insights from initial users on platform usability and features.
- **Evaluation Reports**: Assessment of the system's performance, user satisfaction, and areas for improvement.

Post-Deployment Iterations (Ongoing)

After the initial deployment, the platform will undergo continuous iterations based on real-time feedback, market trends, and technological advancements. This phase will include:

- **New Feature Development**: Add new features based on user demand (e.g., new grooming services, payment integration).
- **System Optimization**: Improve performance, enhance scalability, and reduce bugs based on real-world use.
- **Expanded Geographical Coverage**: Roll out FurHub to new regions based on the success of the pilot deployment.

Deliverables:

- **New Feature Releases**: Additional functionalities like advanced search filters, payment integration, etc.
- **System Updates**: Optimizations and bug fixes based on ongoing user feedback.

By following this Agile methodology, FurHub can remain flexible, responsive to user needs, and capable of adapting to changing technological landscapes while meeting the core objectives of providing a convenient and reliable pet grooming platform.

Planning Conception Initiation Phase

The Planning, Conception, and Initiation Phase marks the start of the FurHub project. This phase focuses on identifying the project's purpose, goals, and initial requirements. It involves brainstorming ideas, conducting feasibility studies, and defining the scope to ensure a clear and structured foundation for the platform's development.

Business Model Canvas

Key Partners	Key Activities	Key Resources
Grooming Service Providers: Independent groomers and grooming businesses.	Developing and maintaining the FurHub platform.	**Technology Infrastructure:** Servers, databases, and software development tools for the platform.
Veterinary Clinics and Pet Shops: Referrals and partnerships for cross-promotion.	Ensuring secure and user-friendly interactions for both customers and service providers.	**Development Team:** Engineers, designers, and testers to build and maintain the platform.
Technology Providers: Cloud hosting and payment gateway providers.	Implementing a robust location-based search and booking system.	**Support Staff:** Customer service representatives to assist users and service providers.
Local Pet Organizations: Collaboration to promote responsible pet ownership and grooming awareness.	Moderating service provider credentials to ensure quality and trust.	**Marketing Team:** To promote FurHub and attract users and service providers.
Animal Welfare Groups: Support and partnership to enhance pet care and service credibility.	Providing customer support and resolving issues efficiently.	

Value Propositions	Customer Segments	Channels
Easily find and book grooming services or professional groomers near their location.	**Pet Owners** looking for convenient, trustworthy grooming services for their pets.	**Website is the p**rimary interface for users to access FurHub services.
Choose between in-house and in-store grooming services based on their preferences.	Professional pet groomers or grooming businesses with valid credentials seeking to reach a broader audience.	Platforms like Facebook, Instagram, and Twitter to engage with users and promote services.
Communicate directly with groomers via an integrated chat feature to address questions and receive personalized service.		Collaborations with local grooming businesses to onboard providers and promote the platform.
Use location-based features to find grooming services or groomers near their area quickly and conveniently.		

Customer Relationships	Revenue Streams	Cost Structure
Personal Assistance: Support staff is available to assist users with inquiries or issues.	**Subscription Fees:** Monthly or annual fees from grooming service providers for registering on the platform.	**Platform Development and Maintenance:** Costs related to creating and improving the platform.

Self-Service: Easy-to-use tools for booking, managing appointments, and accessing information independently.	**Service Booking Fees:** A small commission on every successful booking made through the platform.	**Marketing and Advertising:** Expenses for online and offline promotions.
Community Engagement: Building a trusted community through verified reviews and ratings.	**Advertisements:** Optional paid promotions for service providers to highlight their business or offers on the platform.	**Customer Support:** Salaries for support staff and tools to assist users.
Proactive Communication: Sending reminders, updates, and tailored recommendations to users.		**Operational Costs:** Hosting, database management, and other recurring expenses.
Trust and Safety: Ensuring verified groomer credentials and secure platform usage.		

Table 1

Program Workflow

The program workflow of FurHub outlines the steps that pet owners and groomers take to successfully use the platform. This workflow guides each user through the process of registering, booking grooming services, and providing feedback, ensuring that their experience is efficient and seamless.

For pet owners, the process starts with registration or login. After setting up their profile, they can search for grooming services based on location, type, ratings, and other filters. Once they find a suitable groomer, they select the service type (in-house or in-

store) and schedule a convenient time. Pet owners can adjust the appointment details and communicate with the groomer via the chat system. After confirming, they receive notifications and reminders. Following the service, they can rate and leave feedback on the grooming session.

For groomers, the process starts with registration and login, during which they must provide their business credentials, such as certifications or professional qualifications, for verification by the platform's admin team. Once verified, they can manage their profile, detailing services, pricing, and availability. When pet owners request appointments, groomers receive the details and can accept or reject based on their availability. After confirming the appointment, the groomer prepares for the service and updates the status once completed. They can then view feedback and ratings from the pet owner, helping them improve their services. Providing business credentials during registration builds trust and ensures that groomers are qualified professionals.

The program workflow of FurHub facilitates a smooth, transparent process for both pet owners and groomers. It ensures that pet owners can easily find and book services, while groomers can efficiently manage their appointments and maintain high service standards. The system's features, such as the chat system and feedback mechanism, foster communication, trust, and a positive user experience for all parties involved.
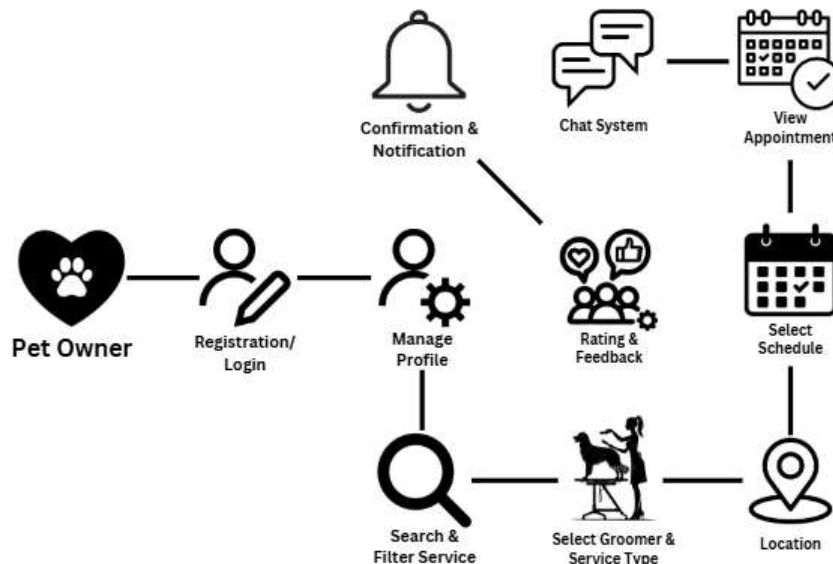
Figure 1: Pet Owner Program Workflow
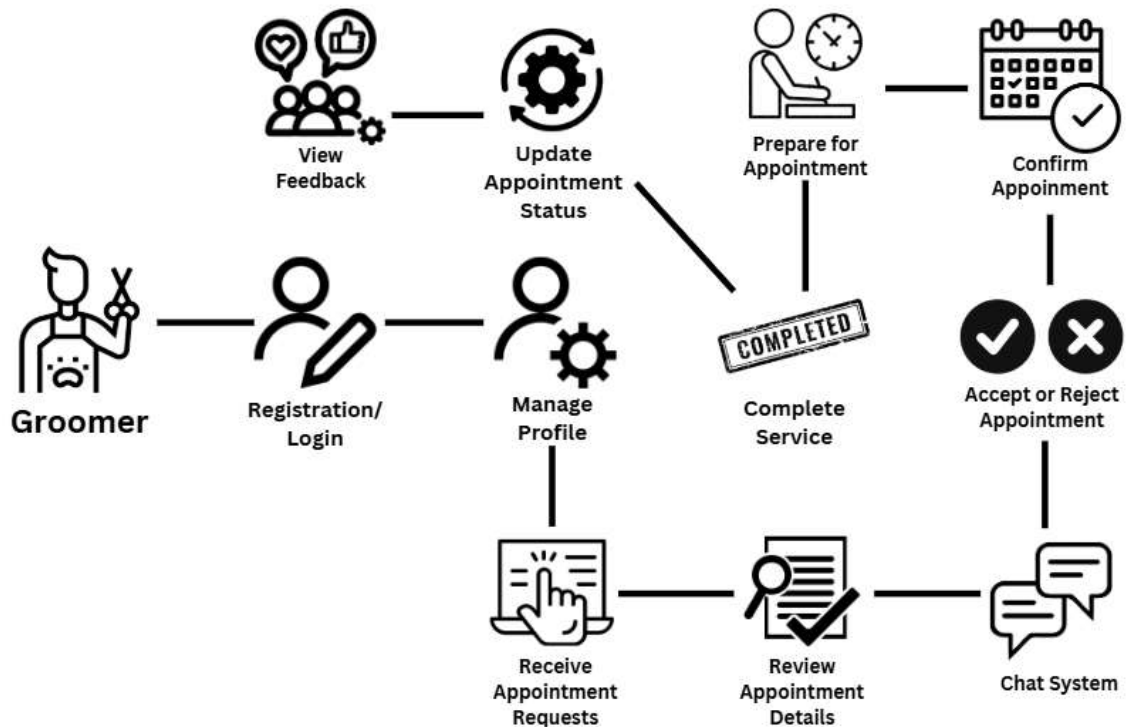
Figure 2: Groomer Program Workflow

Validation Board

The Validation Board is a tool from Lean Startup methodology that helps entrepreneurs test their ideas before investing significant resources. It helps confirm if the problem is real and if the proposed solution meets the target audience's needs. The process involves two stages: validating the problem and then testing the solution.

The researchers conducted a survey and interviews with both pet owners and grooming service providers to validate their assumptions about FurHub. A total of 8 participants were interviewed, and 2 additional participants completed the survey.

For **Stage 1 and 2**, the survey participants were from various cities and backgrounds, while the interviewees were pet owners specifically looking for grooming services in Cebu City. The validation methods provided valuable feedback, confirming the demand for such a platform and encouraging the researchers to move forward with the study due to the positive responses received.

Validation 1 Process

   The Researcher conducted the survey last November. The survey questionnaires were given to pet owner and groomer service provider (validation 1).

Start Name	Furhub: An Online Platform for Pet Grooming Appointments and Services
Customer Segment	Pet owners in Cebu City.
Hypothesis	Pet owners in Cebu City find it challenging to locate and book reliable grooming services conveniently.
Experiment (Method)	Online Survey
Success Metrics	50% positive responses from pet owners expressing interest in such a platform.
Result	70% of the respondents agreed that it is hard to find the pet grooming service.
Action	Plan

Start Name	Furhub: An Online Platform for Pet Grooming Appointments and Services
Customer Segment	Professional pet groomers and grooming service providers in Cebu City.
Hypothesis	Professional pet groomers and grooming service shops lack a centralized platform to attract more clients.
Experiment (Method)	Online Survey
Success Metrics	50% positive responses from service providers willing to join the platform.
Result	70% of the respondents agreed that it is hard to find the pet grooming service.

Action	Plan

Table 1: Validation 1 Process

Validation 2 Solution

The Researcher conducted the survey in December. We have a question: provide the outsider the validation 2 conduct of outsider users.

Start Name	Furhub: An Online Platform for Pet Grooming Appointments and Services
Customer Segment	Outsider
Hypothesis	FurHub will be an online platform allowing pet owners to book grooming services near their location. It includes features like: • A chat box for pre-booking inquiries. • Options for in-house or in-store grooming.
Experiment (Method)	Online Survey
Success Metric	80%
Result	70% of the respondents agreed that it is hard to find the boarding house
Action	Plan

Table 2: Validation 2 Solution

Business Roadmap

The FurHub business roadmap outlines key steps for launching and growing the platform. It begins with market research and feature development, followed by testing and a launch in Cebu City. The roadmap focuses on user acquisition, feedback, and scaling to other regions, ensuring the platform evolves to meet growing demand.
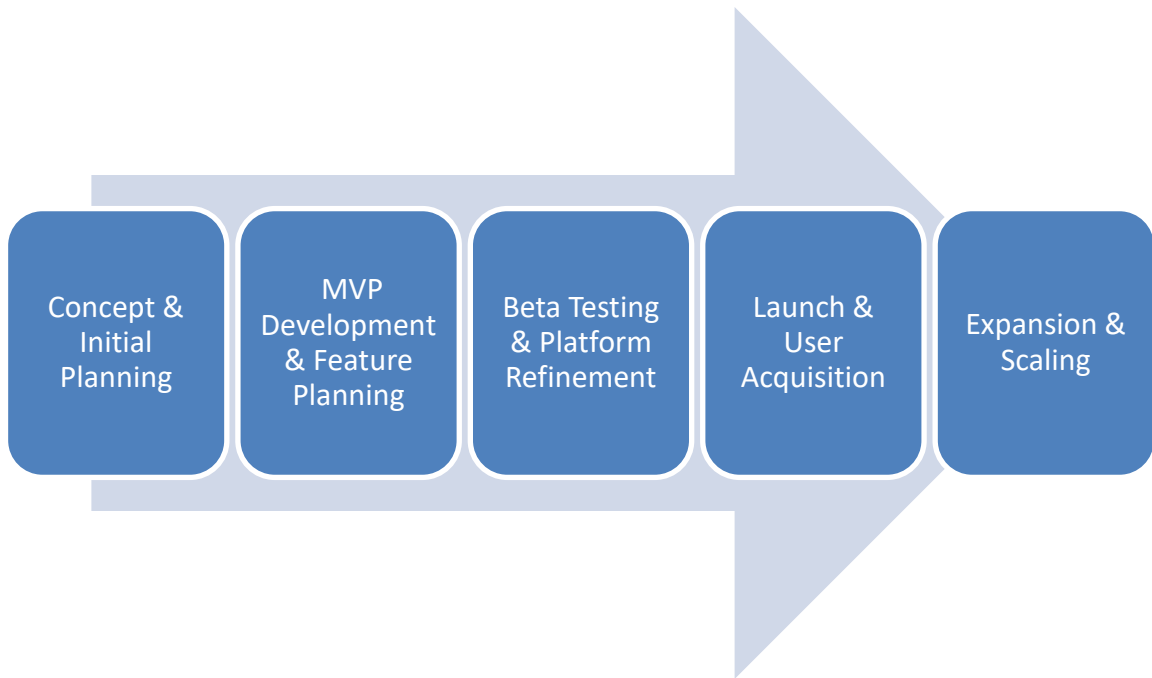
Figure 1: Business Roadmap

Functional Decomposition Diagram

The Functional Decomposition Diagram (FDD) for FurHub outlines the platform's key functionalities and their subcomponents, providing a clear structure for its features. FurHub is designed to streamline the process of finding and booking pet grooming services by organizing its main functions, such as user management, service search and booking, communication tools, groomer business features, and platform administration. This diagram serves as a foundational guide for understanding and implementing the platform's core functionalities.
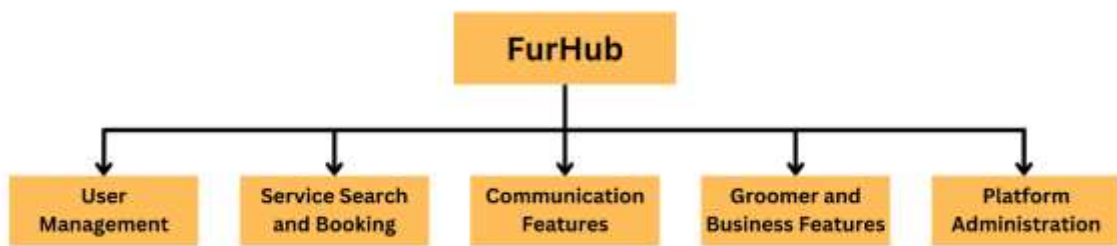
Figure 1: FurHub Functionality
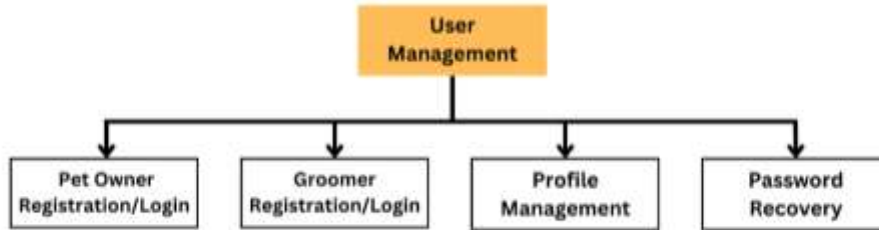
Figure 2: User Managements Functionality
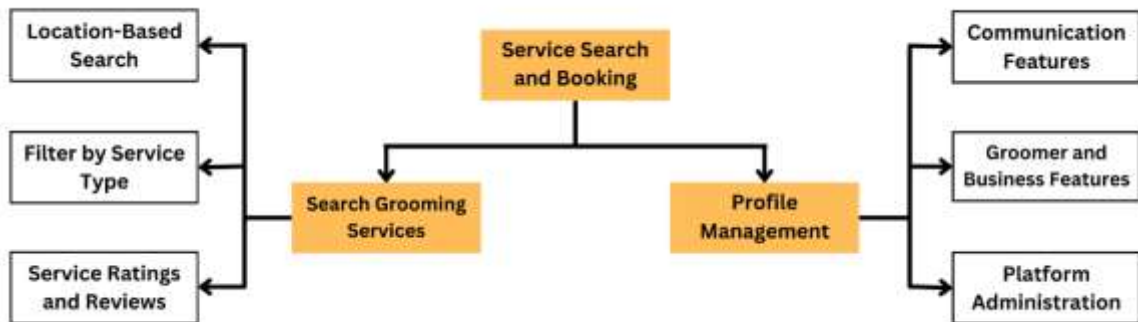
Figure 3: Service Search and Booking Functionality
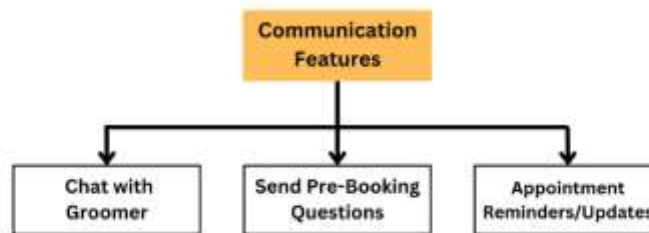
Figure 4: Communication Functionality
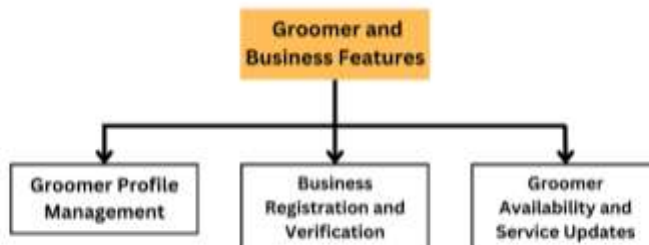
Figure 5: Groomer and Business Features Functionality

Figure 6: Platform Administration Functionality

Gantt Chart

Project *Gantt Chart Schedule*

Task	ASSIGNED TO	PRECEDENCE	DURATION (IN DAYS)	CRITICAL PATH
User Registration & Login (10)	CUTANDA			✓
Admin (5)	RIVAS	User Registration & Login		✓
Service Listing & Search (10)	LAZAGA	User Registration & Login		✓
Groomer Validation Module (10)	CUTANDA	User Registration & Login		✓
Booking & Scheduling (20)	PATUASIC	Service Listing & Search		✓
Notification System (5)	PARAN	Booking & Scheduling		
Chat System (10)	RIVAS	Booking & Scheduling		
Review & Rating (10)	DAMPOR	Booking & Scheduling		

Figure 1: Gantt Chart

Analysis-Design Phase

During the Analysis-Design Phase, the concepts for FurHub will be transformed into structured plans and preliminary designs. This phase involves defining the platform's requirements and translating them into system components using tools such as use case diagrams, database designs, and system models. The aim is to create a clear and functional blueprint that guides the development process, ensuring the platform aligns with user needs and expectations.

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Use Case Diagram

       The use case diagram for FurHub highlights the interactions between users and the platform's key features. It shows how pet owners and service providers engage with functionalities like booking grooming appointments, choosing service options, and using the chat feature, providing a clear overview of the system's scope
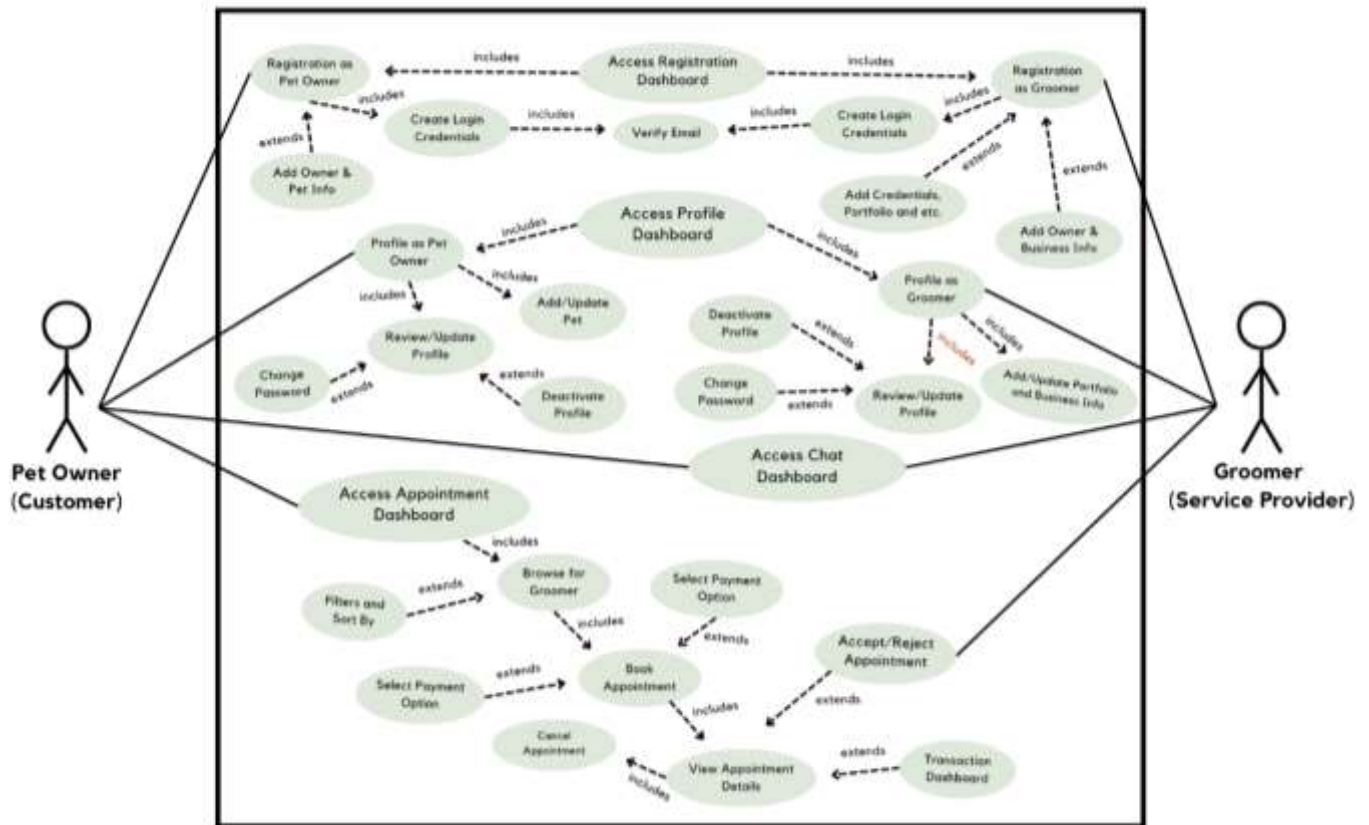
Figure 1: Use Case Diagram of FurHub

Database Design

       The database design for FurHub outlines the structure and organization of data essential for the platform's functionality. It defines tables, relationships, and data flow to support key features such as user registration, appointment scheduling, service options, and chat interactions. This design ensures efficient data management and seamless user experiences.

Entity- Relationship Diagram

       The Entity-Relationship Diagram (ERD) for FurHub provides a visual representation of the database structure, outlining the entities, their attributes, and

relationships. It ensures data is stored and managed efficiently to support the platform's functionalities.

Core Entities and Their Roles:

1. **User Entity**: Stores user information, including credentials and contact details. Users can book appointments, chat with service providers, and leave feedback.

2. **Pet Entity**: Represents the pets owned by users, with details such as type, breed, and special notes. Each pet is linked to its owner (User).

3. **Service Provider Entity**: Contains details about groomers or businesses offering services. Providers can list multiple services and interact with users via chat.

4. **Service Entity**: Lists the grooming services, including descriptions, prices, and durations. Each service is tied to a provider and linked to appointments.

5. **Appointment Entity**: Tracks grooming session bookings, linking users, pets, and services with details like date, time, and status.

6. **Chat Entity**: Facilitates communication between users and service providers, storing messages and timestamps for each conversation.

7. **Feedback Entity**: Allows users to review and rate service providers, enhancing transparency and service quality.

Key Relationships:

- **User to Pet**: One user can own multiple pets (one-to-many).
- **Service Provider to Service**: A provider can offer multiple services (one-to-many).
- **User to Appointment**: A user can book multiple appointments (one-to-many).
- **Service to Appointment**: A service can be included in multiple appointments (one-to-many).
- **Pet to Appointment**: A pet can be part of multiple appointments (one-to-many).
- **User to Chat**: A user can have multiple chats with providers (one-to-many).
- **Service Provider to Chat**: Providers can chat with multiple users (one-to-many).
- **User to Feedback**: A user can leave multiple feedback entries (one-to-many).
- **Service Provider to Feedback**: Providers can receive feedback from multiple users (one-to-many).

This ERD ensures that the FurHub platform's database is well-organized, supporting seamless user interactions and efficient data management for grooming appointments and services.

CHAT
PK	CHAT_ID	INT IDENTITY(1,1)
FK1	USER_ID	INT
FK2	PROVIDER_ID	INT
	MESSAGE_CONTENT	TEXT
	TIMESTAMP	DATETIME

USER
PK	USER_ID	INT IDENTITY(1,1)
	FULLNAME	VARCHAR(255)
	EMAIL	VARCHAR(255)
	PASSWORD	VARCHAR(255)
	PHONE_NUMBER	VARCHAR(20)
	USER_TYPE	VARCHAR(50)
	ADDRESS	

PET
PK	PET_ID	INT IDENTITY(1,1)
	FK USER_ID	INT
	PET_NAME	VARCHAR(100)
	PET_TYPE	VARCHAR(50)
	BREED	VARCHAR(100)
	AGE	INT
	SPECIAL_NOTES	TEXT

SERVICE_PROVIDER
PK	PROVIDER_ID	INT IDENTITY(1,1)
	BUSINESS_NAME	VARCHAR(255)
	ADDRESS	TEXT
	PHONE_NUMBER	VARCHAR(20)
	EMAIL	VARCHAR(255)
	CREDENTIALS	TEXT

APPOINTMENT
PK	APPOINTMENT_ID	INT IDENTITY(1,1)
FK1	USER_ID	INT
FK2	SERVICE_ID	INT
FK3	PET_ID	
	DATETIME	DATETIME
	STATUS	VARCHAR(50)

SERVICE
PK	SERVICE_ID	INT IDENTITY(1,1)
	FK PROVIDER_ID	INT
	SERVICE_NAME	VARCHAR(255)
	DESCRIPTION	TEXT
	PRICE	MONEY
	DURATION	TIME

FEEDBACK
PK	FEEDBACK_ID	INT IDENTITY(1,1)
FK1	USER_ID	INT
FK2	PROVIDER_ID	INT
	RATING	TINYINT
	COMMENTS	TEXT
	DATE	DATE

Figure 1: Entity Relationship Diagram
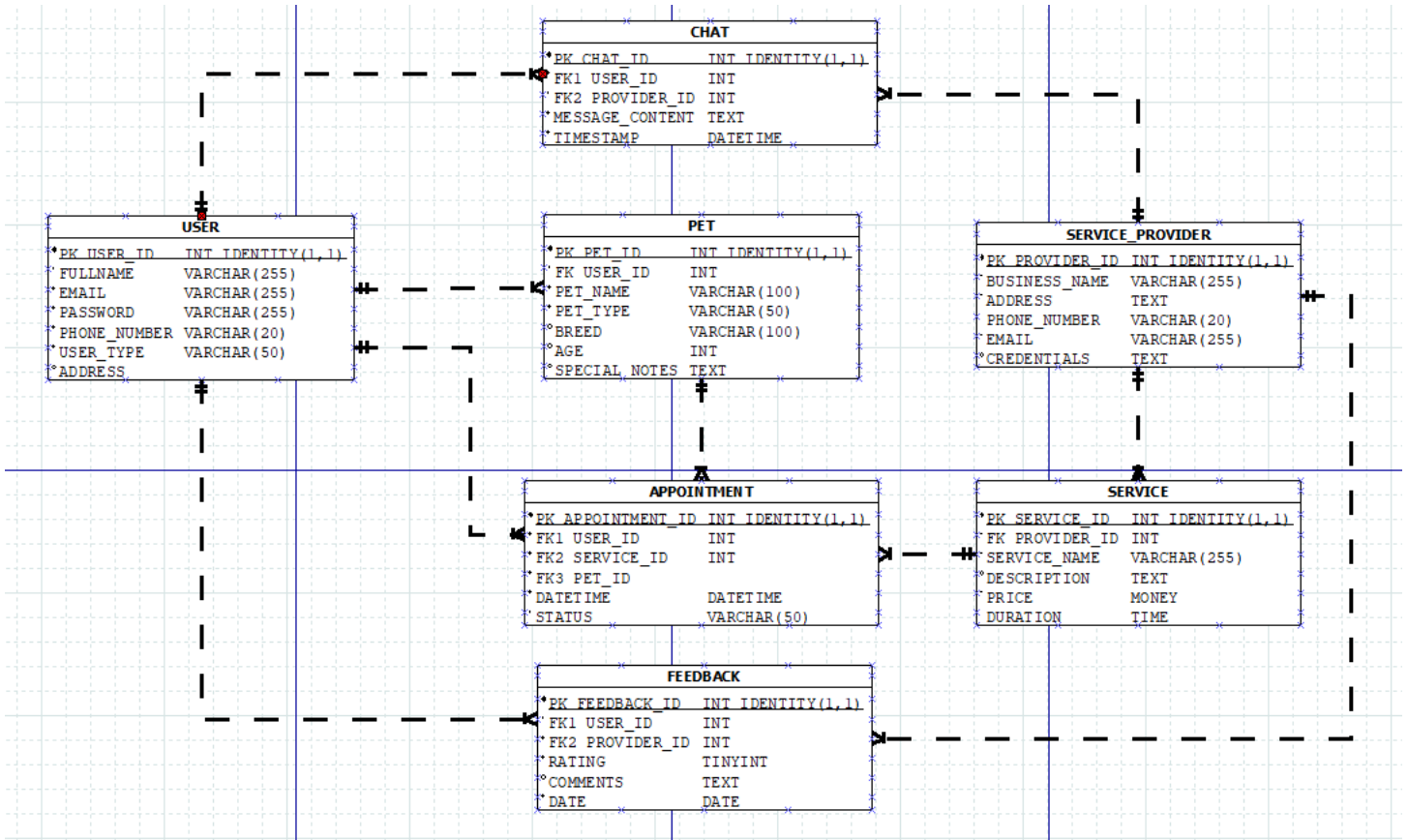
Data Dictionary

The Data Dictionary for FurHub provides a detailed description of the database's structure, including the entities, attributes, data types, and relationships. It serves as a reference guide to ensure accurate data organization and management. This document helps developers and stakeholders understand how data is stored, retrieved, and used within the FurHub platform.

TABLE NAME	ATTRIBUTE NAME	CONTENTS	DATA TYPE	FORMAT	REQUIRED	PK or FK	PK REFERENCED TABLE
USER	USER_ID	user id	INT IDENTITY(1,1)	99999999	Y	PK	
	FULLNAME	fullname	VARCHAR(255)	Xxxxxxxx	Y		
	PASSWORD	password	VARCHAR(255)	Xxxxxxxx	Y		
	EMAIL	email	VARCHAR(255)	example@gmail.com	Y		
	PHONE_NUMBER	phone number	VARCHAR(20)	Xxxxxxxx	Y		
	USER_TYPE	user type	VARCHAR(50)	Xxxxxxxx	Y		
	ADDRESS	address	TEXT		N		

Table 1: User Table

TABLE NAME	ATTRIBUTE NAME	CONTENTS	DATA TYPE	FORMAT	REQUIRED	PK or FK	PK REFERENCED TABLE
PET	PET_ID	pet id	INT IDENTITY(1,1)	99999999	Y	PK	
	USER_ID	user id	INT	99999999	Y	FK	USER
	PET_NAME	pet name	VARCHAR(100)	Xxxxxxxx	Y		
	PET_TYPE	pet type	VARCHAR(50)	Xxxxxxxx	Y		
	BREED	breed	VARCHAR(100)	Xxxxxxxx	N		
	AGE	age	INT	99999999	N		
	SPECIAL_NOTES	special notes	TEXT		N		

Table 2: Pet Table

TABLE NAME	ATTRIBUTE NAME	CONTENTS	DATA TYPE	FORMAT	REQUIRED	PK or FK	PK REFERENCED TABLE
CHAT	CHAT_ID	chat id	INT IDENTITY(1,1)	99999999	Y	PK	
	USER_ID	user id	INT	99999999	Y	FK1	USER
	PROVIDER_ID	provider id	INT	99999999	Y	FK2	SERVICE_PROVIDER
	MESSAGE_CONTENT	message content	TEXT		Y		
	TIMESTAMP	time	DATETIME	yyyy-mm-dd	Y		

Table 3: Chat Table

TABLE NAME	ATTRIBUTE NAME	CONTENTS	DATA TYPE	FORMAT	REQUIRED	PK or FK	PK REFERENCED TABLE
SERVICE	SERVICE_ID	service id	INT IDENTITY(1,1)	99999999	Y	PK	
	PROVIDER_ID	provider id	INT	99999999	Y	FK	SERVICE_PROVIDER
	SERVICE_NAME	service name	VARCHAR(255)	Xxxxxxxx	Y		
	DESCRIPTOIN	desc	TEXT		N		
	PRICE	price	MONEY	9,999,999,99	Y		
	DURATION	duration	TIME	0:00	Y		

Table 4: Service Table

TABLE NAME	ATTRIBUTE NAME	CONTENTS	DATA TYPE	FORMAT	REQUIRED	PK or FK	PK REFERENCED TABLE
SERVICE_PROVIDER	PROVIDER_ID	provider id	INT IDENTITY(1,1)	99999999	Y	PK	
	BUSINESS_NAME	business name	VARCHAR(255)	Xxxxxxxx	Y		
	ADDRESS	address	TEXT		Y		
	PHONE_NUMBER	phone number	VARCHAR(20)	Xxxxxxxx	Y		
	EMAIL	email	VARCHAR(255)	example@gmail.com	Y		
	CREDENTIALS	credentials	TEXT		N		

Table 5: Service Provider Table

TABLE NAME	ATTRIBUTE NAME	CONTENTS	DATA TYPE	FORMAT	REQUIRED	PK or FK	PK REFERENCED TABLE
APPOINTMENT	APPOINTMENT_ID	appointment id	INT IDENTITY(1,1)	99999999	Y	PK	
	USER_ID	user id	INT	99999999	Y	FK1	USER
	SERVICE_ID	service id	INT	99999999	Y	FK2	SERVICE
	PET_ID	pet id	INT	99999999	Y	FK3	PET
	DATETIME	date time	DATETIME	yyyy-mm-dd	Y		
	STATUS	status	VARCHAR(50)	Xxxxxxxx	Y		

Table 6: Appointment Table

TABLE NAME	ATTRIBUTE NAME	CONTENTS	DATA TYPE	FORMAT	REQUIRED	PK or FK	PK REFERENCED TABLE
FEEDBACK	FEEDBACK_ID	feedback id	INT IDENTITY(1,1)	99999999	Y	PK	
	USER_ID	user id	INT	99999999	Y	FK1	USER
	PROVIDER_ID	provider id	INT	99999999	Y	FK2	SERVICE_PROVIDER
	RATING	rating	TINYINT	99999	Y		
	COMMENTS	comments	TEXT		N		
	DATE	date	DATETIME	yyyy-mm-dd	Y		

Table 7: Feedback Table

Network Design

Network design is the process of planning a computer network's infrastructure to ensure efficient data flow and communication. It involves selecting devices, assigning IP addresses, and determining cable structures. A network diagram serves as the blueprint for implementation, illustrating the network's layout and configuration.

Network Model

The network model is a flexible database design that represents objects and their relationships in a way that can adapt to different scenarios. Its schema is typically viewed as a graph, where relationships are represented by arcs and object types are nodes, making it distinct in structure.

The network design of the proposed system, shown in the diagram below, visually represents how network components, links, and nodes should be configured. It manages the entire network, serving as a central hub for software and data connections. Additionally, it controls network resources and responds to user requests.
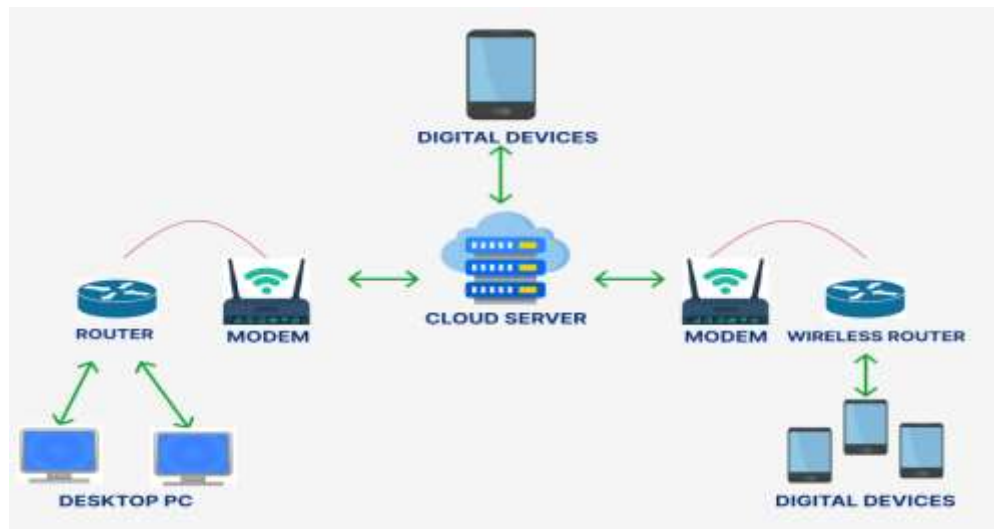
Figure 1: Network Model

Network Topology

The FurHub platform utilizes a star topology, where each node is connected to a central hub via a dedicated communication link. The central hub acts as a server, managing and controlling the entire network.

In this configuration, endpoints communicate by sending requests to the central hub, which forwards messages to the appropriate destination. This setup ensures that failures affect only the impacted device, making it easy to identify and resolve issues. Adding new devices is straightforward, and the topology supports fast data transfer, simplifying network maintenance and management.
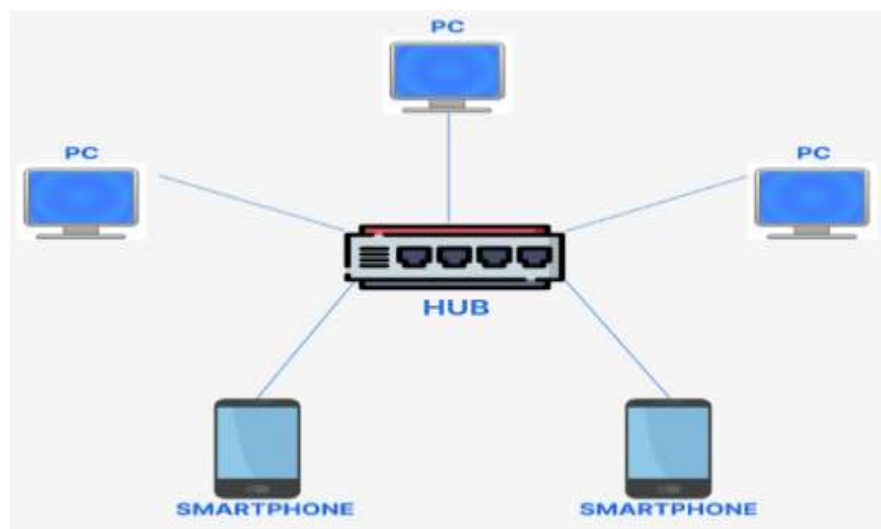

Figure 1: Network Topology

Development/Construction/Build Phase

The development phase for FurHub involves building the system based on its hardware and software specifications, technology stack diagram, and a list of core features. Once the planning phase is complete, the development process can begin. In this phase, personnel will be assigned tasks such as attracting new customers, managing the web platform, and promoting grooming services through online bookings. The focus is on implementing the necessary technologies, ensuring the system's functionality, and preparing it for launch.

Technology Stack

During the development phase of FurHub, the technology stack will be outlined, including the selection of programming languages, frameworks, and tools. A list of core modules will be created, covering features such as user registration, booking system, and chat functionality. These modules will be integrated and tested independently to ensure they function properly. The construction and testing processes will be iterative, with continuous improvements and adjustments made as the system is built and refined.

HTML, CSS, JavaScript
React.js or Angular
Python
Django
MySQL

Table 1: Technology Stack Diagram

Software Specification

The software product will meet the following minimum requirements:

Operating System	Web Browser	Tools
Windows 7 or latest	Google Chrome Version 6.3.2 Mozilla Firefox 37.0	MySQL, HTML, JavaScript, CSS

Table 1: Software Specification

Hardware Specification

The minimum hardware requirements for the full functionality of the FurHub application are as follows:

Server

The server must be able to run essential software development tools (e.g., Apache, MySQL, PHP, and SQLite). It should have the following specifications:

Name	Specification
Processor	Intel Core i3 2GHz or higher
RAM	2GB or higher
Hard Disk	120GB or higher
Network	Internet connection

Table 1: Server Hardware Specification

Client

The client device specifications needed for users to fully execute the application are as follows:

Name	Specification
Processor	Intel Core i3 or newer
RAM	2GB or higher
Hard Disk	120GB or higher
Network	Internet connection

Table 2: Client Hardware Specification

Program Specification

The program specification includes the following modules that must be developed to meet the objectives of the FurHub study:

User Registration and Login
Search for Grooming Services

Booking System for Grooming Appointments
In-house or In-store Grooming Selection
Real-time Chat Feature
Service Provider Registration
Customer Feedback and Ratings
Admin Dashboard for Managing Users and Services

Table 1: List of Modules

Users will need a computer or mobile device with internet access to use the system.
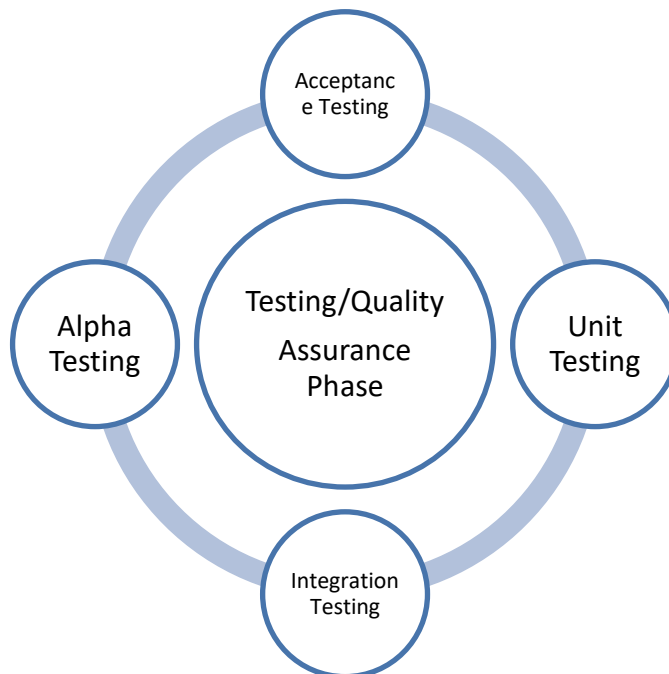
Testing Plan

Figure 1: Testing/Quality Assurance Model

Unit Testing

Unit testing is a crucial phase in software development that focuses on testing individual components or functions of a system in isolation. The goal is to ensure that each part of the system works as expected before combining them into a larger application. By identifying and fixing bugs early in the development process, unit testing helps improve the reliability and quality of the software, making it easier to maintain and scale.

Test Case ID	Unit Test	Description	Expected Result	Actual Result	Remarks
TC001	User Registration Form	Test if the user registration form accepts valid data (username, email, password).	User is registered successfully with valid credentials.	As Expected	**PASSED**
TC002	User Login	Verify that the login process correctly authenticates the user with valid credentials.	User is logged in successfully.	As Expected	**PASSED**
TC003	Service Booking Form	Test if the service booking form loads and displays available grooming services.	Service options are displayed, and user can select one.	As Expected	**PASSED**
TC004	Groomer Profile Creation	Test the groomer profile creation form (name, service type, and availability).	Groomer profile is created with valid data, stored correctly.	As Expected	**PASSED**
TC005	Chat Feature	Test chat functionality between customer and groomer.	Messages are sent/received in real-time.	As Expected	**PASSED**
TC006	Service Type Selection	Test if users can select between in-house or in-store grooming services.	User can successfully choose service type and proceed to booking.	As Expected	**PASSED**
TC007	Form Validation (User Email)	Test email validation in registration/login forms.	Error message for invalid email format.	As Expected	**PASSED**
TC008	Password Recovery Flow	Test password recovery process.	User receives password recovery email and can reset password.	As Expected	**PASSED**

TC009	UI Responsivenes s	Verify the website's responsiveness across different devices.		Website layout adjusts correctly on mobile, tablet, and desktop devices.		As Expected	**PASSED**
TC010	Form Error Handling	Test for error messages when required fields are missing or incorrect.		Appropriate error message displayed for missing/incorrect fields.		As Expected	**PASSED**

Table 1: Unit Testing

Integration Testing

Integration testing for FurHub ensures that the platform's modules, such as customer profiles, groomer profiles, service booking, chat, and location services, work seamlessly together. This testing validates that data flows correctly, features function as expected, and users can interact effectively within the platform. The following test cases outline the integration processes and expected outcomes.

Test Case ID	Module 1	Integration Process	Module 2	Pre-condition	Expected Outcome	Result	Remarks
TC_00 1	Custome r Profile	Customer registers and logs in to the platform	Groomi ng Services	Customer has valid credentials and internet access	Customer should be able to register and log in successfully to access grooming services	As Expected	**PASSED**
TC_00 2	Groome r Profile	Groomer registers their service availability	Custome r Profile	Groomer has valid credentials and active services to offer	Groomer details should be visible and available for customers to select and book	As Expected	**PASSED**

TC_003	Service Booking	Customer selects grooming service and books	Groomer Profile	Customer is logged in and selects a valid groomer and service	Booking should be successfully recorded and confirmation sent to customer and groomer	As Expected	**PASSED**
TC_004	Chat Feature	Customer and groomer use chat feature before booking	Grooming Services	Both customer and groomer have active accounts	Customer and groomer should be able to exchange messages in real-time	As Expected	**PASSED**
TC_005	Location Service	Customer searches for nearby grooming services	Grooming Services	Customer has location enabled and internet access	Grooming services nearby should appear with options to book based on proximity	As Expected	**PASSED**

Table 1: Integration Testing

Alpha Testing

Alpha testing for FurHub focuses on evaluating the platform's core features and performance to ensure a smooth user experience. This phase involves testing key areas such as functionality, security, performance, compatibility, and user support. The goal is to identify and resolve any issues before the platform is released to a larger audience, ensuring that it meets the needs of users and operates reliably.

Test Criteria	Poor	Fair	Good	Very Good
Performance (The platform loads quickly and runs smoothly)				

Security (The platform ensures the safety of user data and protects against breaches)				
Functionality (The core features of the platform work as intended, such as booking and search)				
Cross-Platform Compatibility (The platform works consistently across various devices and browsers)				
User Support and Help (The platform offers adequate support and clear guidance for users encountering issues)				

Table 1: Alpha Testing

Acceptance Testing

Table 1: Acceptance Testing

Implementation/Deployment Phase

Planning and Design

- Finalize platform design with wireframes and database schema.
- Design workflows for booking and chat features.

Frontend Development

- Create user-friendly interfaces for registration, booking, and chat.
- Optimize for mobile and desktop use.

Backend Development

- Develop user authentication, booking system, and chat APIs.
- Ensure scalability and security.

Database Development

- Structure tables for users, services, and bookings.
- Optimize data access and implement backup mechanisms.

Testing and Integration

- Conduct unit, integration, and usability testing.
- Verify security and data protection.

Documentation and Handover

- Create user guides and system documentation.
- Prepare training materials for administrators.

CHAPTER IV

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

This chapter presents and interprets the data collected for FurHub: An Online Platform for Pet Grooming Appointments and Services. Following Best and Khan (2006), data is organized and displayed using tables, charts, and thematic coding to reveal key trends and patterns. These insights focus on pet owners' preferences, challenges in booking grooming services, and the usability of the proposed platform.

As Patton (2002) and Creswell (2013) highlight, interpretation adds depth by uncovering underlying reasons for trends, linking results to research questions, and addressing the study's objectives. The findings will evaluate how FurHub meets user needs and enhances convenience through features like chat functionality and in-house or in-store service options. This ensures the study's relevance and practical applicability for users in Cebu City.

Demographic Information

Age:

The bar chart shows that most FurHub survey respondents are between 18 and 34 years old, with 25% aged 18-24 and 35% aged 25-34. Smaller groups are in the 35-44 (20%), 45-54 (10%), and 55+ (5%) age ranges. Only 5% of respondents are under 18, indicating that FurHub is most likely to appeal to young adults.
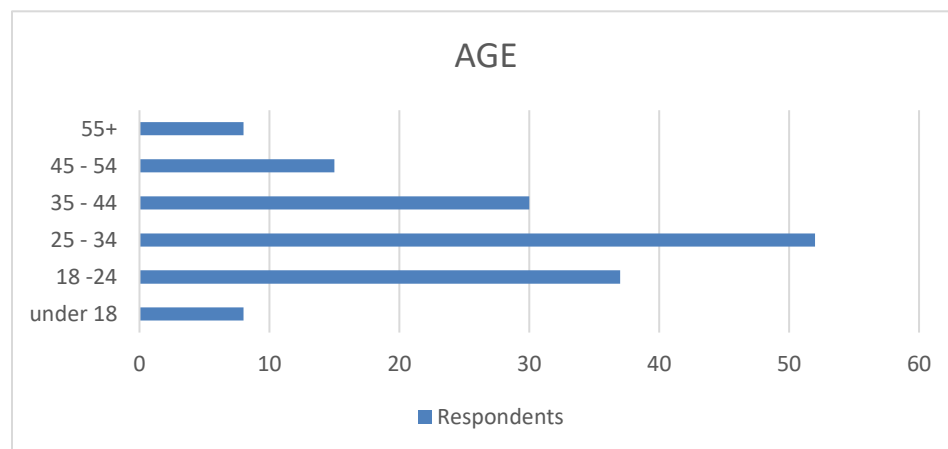

Figure 1: Age Analysis

Pet Ownership:

The pie chart shows that 80% of respondents are dog owners (120 respondents), 15% are cat owners (22 respondents), and 5% own other pets (8 respondents). This indicates that FurHub should mainly cater to dog owners while also serving cat and other pet owners.
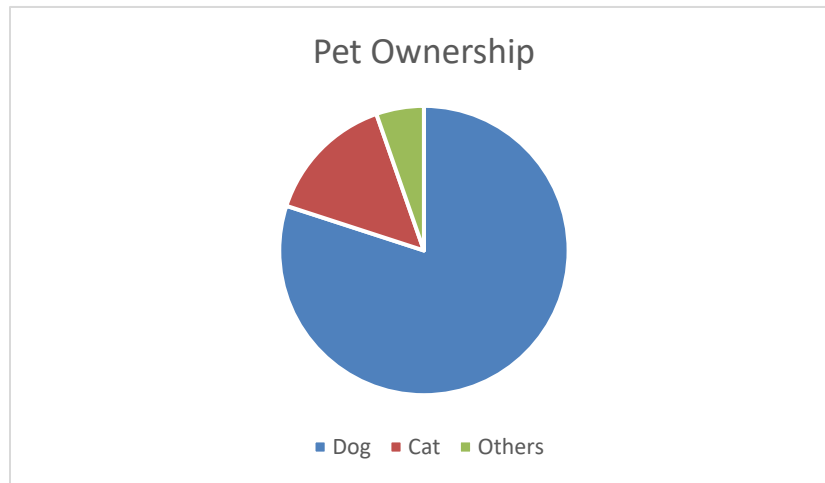

Figure 2: Pet Ownership Analysis

Frequency of Grooming Services:

The bar chart shows that 35% of respondents groom their pets monthly (52 respondents), 30% every three months (45 respondents), 25% only, when necessary (38 respondents), and 10% weekly (15 respondents). This highlights that most pet owners prefer monthly grooming services.
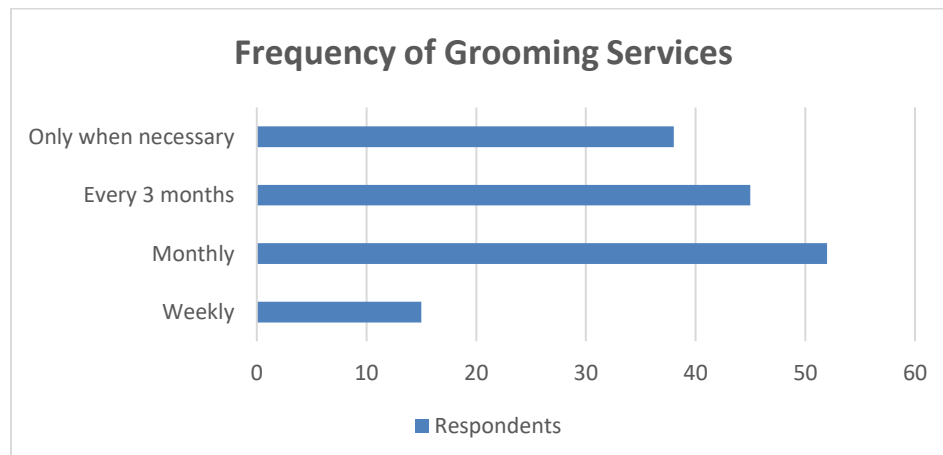

Figure 3: Frequency of Grooming Service Analysis

Methods for Finding a Groomer:

The survey results on methods for finding a groomer can be represented by a bar chart. The chart shows that 45% of respondents (67 participants) find groomers through online searches, 30% (45 respondents) rely on recommendations from friends or family, 15% (22 respondents) use social media, and 10% (15 respondents) find groomers through other methods like flyers or ads. This highlights that online searches are the most popular method for finding a groomer.
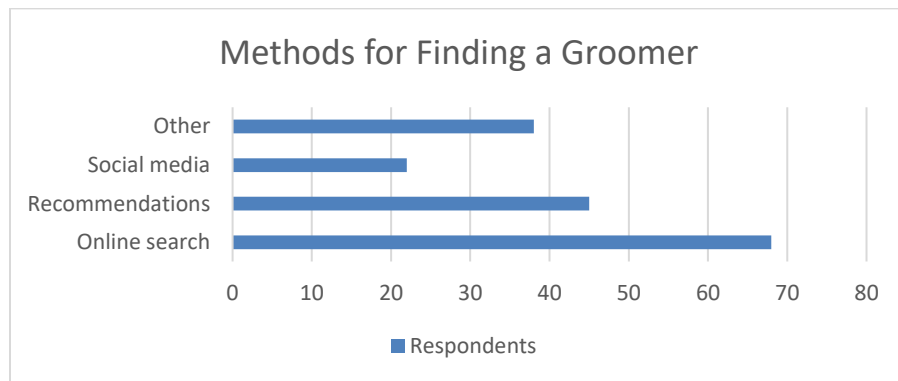

Figure 4: Methods for Finding a Groomer Analysis

Experience with Online Booking Platforms:

The survey results on experience with online booking platforms can be represented by a pie chart. The chart shows that 60% of respondents (90 participants) have used online platforms to book pet grooming services, while 40% (60 respondents) have not. This indicates a strong familiarity with digital booking options among the respondents.
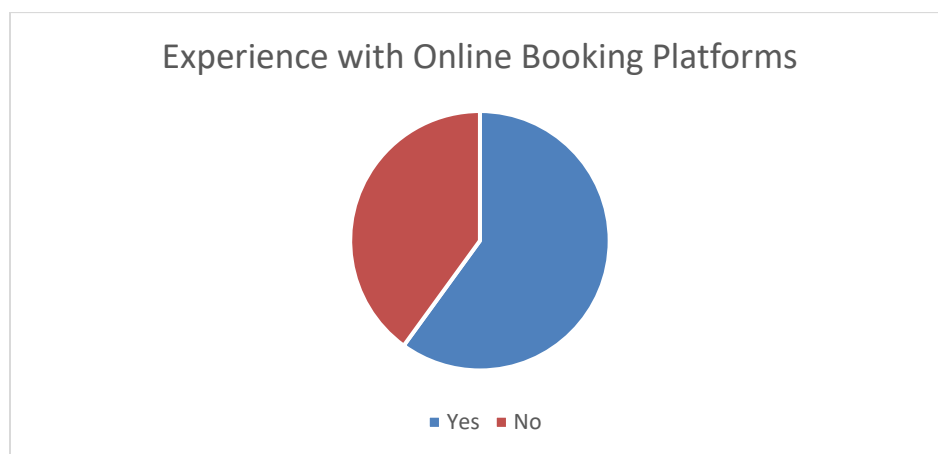

Figure 5: Experience with Online Booking Platforms Analysis

Preferred Features in an Online Grooming Platform:

The survey results on preferred features in an online grooming platform can be represented by a bar chart. The chart shows that 90% of respondents (135 participants) value an easy booking process, 85% (128 respondents) want access to nearby groomers, 80% (120 respondents) prefer service reviews and ratings, and 70% (105 respondents) look for price comparison features. This highlights that the most important features for users are ease of booking and availability of nearby groomers.
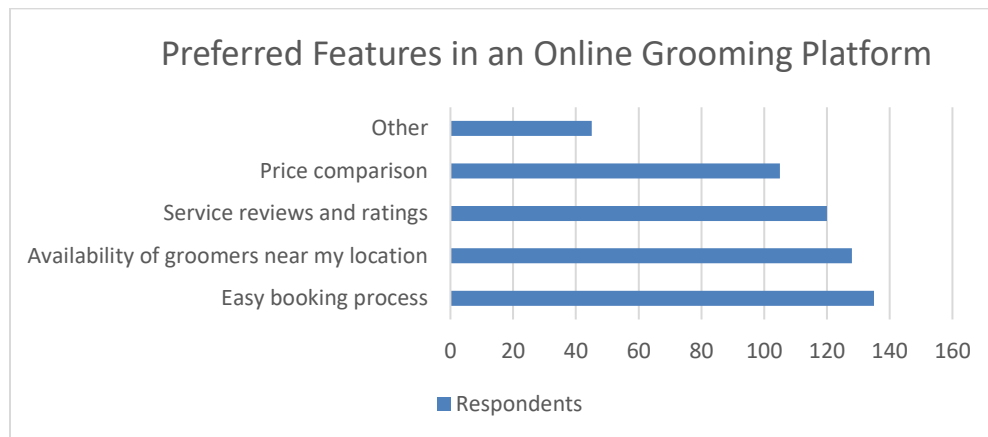

Figure 6: Preferred Features in an Online Grooming Platform Analysis

Preferences for Grooming Services:

The survey results on preferences for grooming services can be represented by a pie chart. The chart shows that 40% of respondents (60 participants) prefer in-house grooming services, 35% (52 respondents) prefer in-store grooming, and 25% (38 respondents) have no preference. This indicates a slight preference for in-house grooming services among respondents.
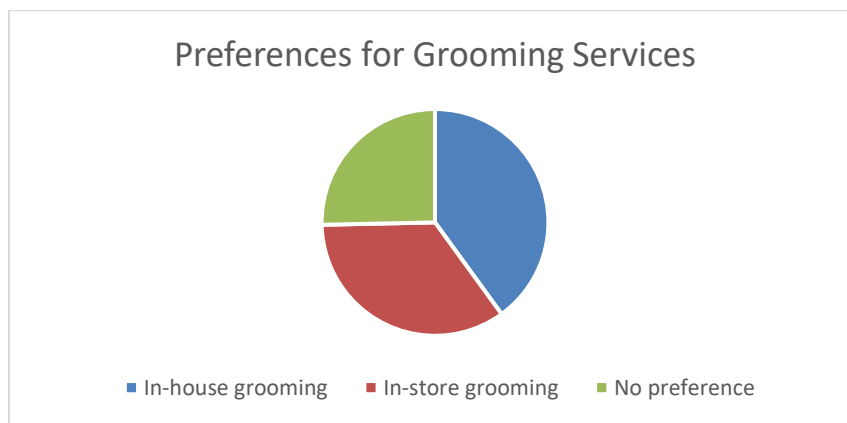

Figure 7: Preferences for Grooming Services Analysis

Interest in Chat Feature for Communication with Groomers:

        The survey results on interest in a chat feature for communication with groomers can be represented by a pie chart. The chart shows that 70% of respondents (105 participants) expressed interest in using a chat feature to communicate with groomers before booking, while 30% (45 respondents) did not. This indicates a strong interest in having a direct communication option with groomers through the platform.
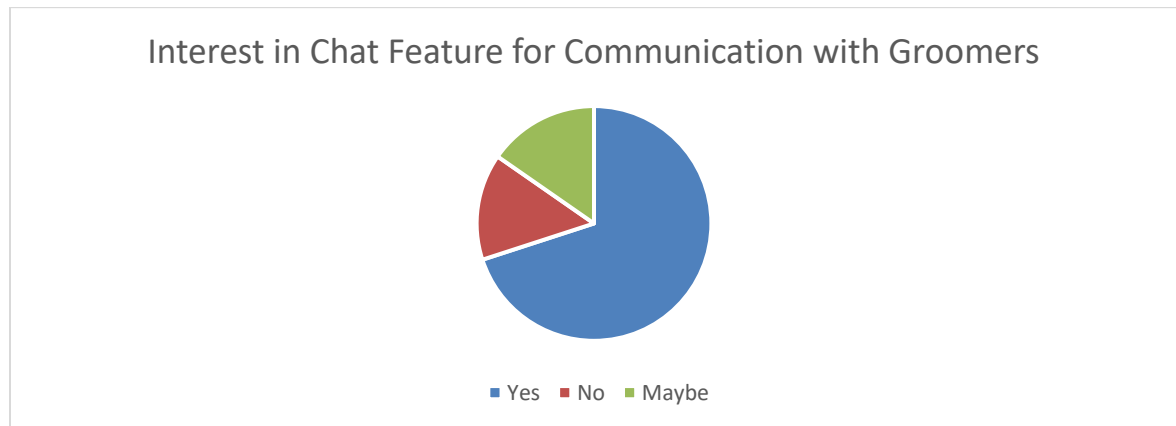
Figure 8: Interest in Chat Feature for Communication with Groomers Analysis

Likelihood of Using FurHub for Booking Grooming Services:

        The survey results on the likelihood of using FurHub for booking grooming services can be represented by a pie chart. The chart shows that 45% of respondents (67 participants) are very likely to use FurHub, 30% (45 respondents) are likely to use it, and 25% (38 respondents) are unlikely to use the platform. This suggests a strong potential user base for FurHub, with a significant number of respondents showing interest in using it for booking grooming services.

Figure 9: Likelihood of Using FurHub for Booking Grooming Services Analysis

Conclusion

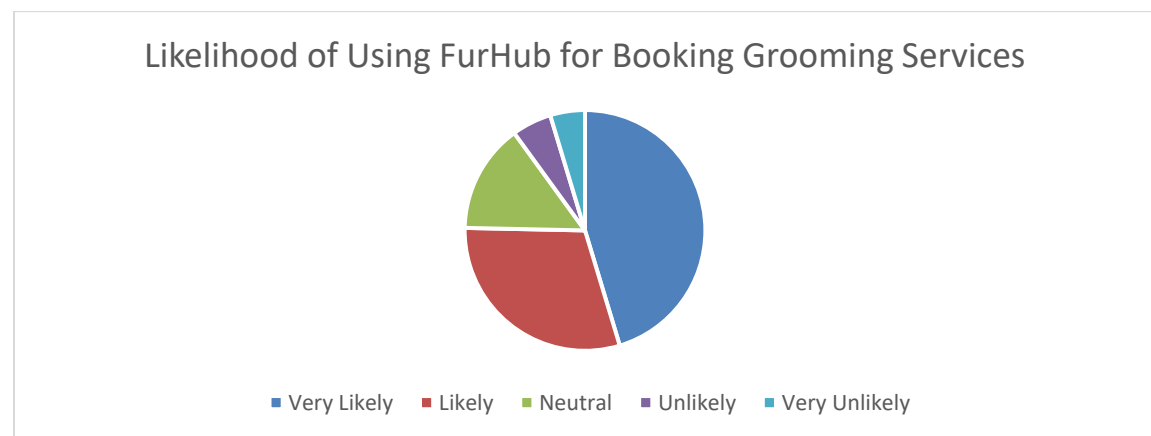The survey conducted for the FurHub platform has provided valuable insights into the preferences and behaviors of potential users. The findings show that the majority of respondents are between the ages of 18 and 34, which suggests that young adults are the primary target demographic for FurHub. Additionally, the survey revealed that most respondents are dog owners, with a smaller proportion owning cats and other types of pets. This indicates that FurHub should prioritize services for dog owners but also offer options for cat and other pet owners to cater to a broader audience.

In terms of grooming preferences, most respondents prefer regular grooming services, with the majority opting for monthly grooming. This highlights a strong demand for consistent grooming options, which FurHub can meet by offering convenient scheduling options. Moreover, the survey indicated that a significant number of participants are familiar with online booking platforms, with 60% having used such platforms before. This suggests that FurHub should focus on creating a user-friendly, efficient online booking system to align with user expectations.

The survey also highlighted the most important features respondents would like to see in an online grooming platform. These include an easy booking process, the ability to find nearby groomers, service reviews and ratings, and price comparison features. Another key finding was the strong interest in a chat feature, with 70% of respondents expressing a desire to communicate directly with groomers before booking a service. This shows a clear demand for personalized interaction and better communication between customers and service providers.

Lastly, the survey revealed a high likelihood of users being interested in using FurHub, with 75% of respondents expressing that they are likely to use the platform for booking grooming services. This indicates strong potential for FurHub to attract and retain users, provided it meets their needs and expectations.

Recommendations

To ensure the successful implementation and sustainability of FurHub, the following recommendations are provided. These focus on enhancing user experience, platform reliability, and long-term scalability.

1. User-Centered Design: Prioritize ease of use and regularly gather feedback to improve features like chat and booking.
2. Quality Assurance: Conduct thorough testing to ensure seamless functionality and address technical issues.
3. Security and Privacy: Implement robust data protection measures to build user trust.
4. Stakeholder Collaboration: Partner with local groomers to enhance platform reliability and relevance.
5. Feature Development: Regularly update the platform with new features based on user feedback and market trends.
6. Marketing Strategies: Use social media and local events to promote FurHub in Cebu City.
7. Gradual Expansion: Expand to other cities after successful implementation in Cebu City.
8. Training and Support: Train service providers on platform use and establish a responsive customer support system.
9. Continuous Monitoring: Track platform performance and make improvements based on data and feedback.

By implementing these recommendations, FurHub can effectively address the needs of pet owners and service providers, ensuring its success as a user-friendly and scalable platform for pet grooming services.

Translational Research

FurHub aims to establish a user-centric platform to meet the needs of pet owners and professional groomers, enhancing the pet grooming experience through an all-in-one appointment scheduling and service selection solution. This project translates research insights into practice by implementing a platform that addresses gaps in accessibility, convenience, and communication for pet grooming services in Cebu City. The platform's development considers potential challenges and emphasizes the need for a flexible, adaptive implementation process.

While the initial framework for the FurHub platform is in place, the project team recognizes that achieving full-scale implementation will require iterative improvements over time. Throughout this process, the team will focus on several critical areas of development and refinement:

Refinement of Policy and Design: To ensure seamless functionality and a positive user experience, FurHub's platform structure and operational policies must be clearly documented and consistently updated. The development team, guided by existing literature on user experience design and software usability, will create protocols for regular updates, service provider verification, and system security. Additionally, the team will ensure that the platform's features—such as chat functionality and service location filtering—align with user needs. Ongoing training will be provided to the team to stay informed about best practices and technical advancements.

Implementing a Sustainable Testing Phase: Translational research requires a comprehensive pilot phase to identify and resolve potential obstacles. Regular testing with real users, including pet owners and grooming service providers, will provide valuable insights and ensure that the platform meets expectations. The team will remain adaptable to user feedback, addressing unforeseen challenges and making necessary adjustments without discouragement, even if significant revisions are needed.

Scaling to Full Implementation: After an effective testing phase, the goal will be to launch FurHub on a larger scale within one year. By this stage, all staff should be well-versed in platform policies and operational protocols to support sustainable scaling. The team will explore opportunities to expand the platform's reach to other regions, ensuring the same level of service quality and accessibility.

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https://www.petexpress.com.ph/

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Transmittal Letter

December 13, 2024

Dear Respondents,

Greetings!

We are Jun-del Patuasic and a group of third-year students from the University of Cebu - Main Campus. As part of our research project for CC-Rescom31, we are conducting a study titled "FurHub: An Online Platform for Pet Grooming Appointments and Services."

The goal of our study is to explore the convenience and preferences of pet owners in booking grooming services and to understand how a platform like FurHub can enhance the pet grooming experience. Your insights and feedback will be vital in helping us understand the needs of pet owners and grooming service providers, and contribute to the development of a more user-friendly and efficient platform.

We kindly ask for your time and effort in completing the attached questionnaire. Your responses are important to the success of this study. Participation is completely voluntary, and all responses will remain confidential. We deeply appreciate your honest and thoughtful responses.

Thank you for your help and support in making this project a success.

Respectfully yours,

JUN-DEL PATUASIC

Research Group Leader

Noted by:

NONITO O. ODJINAR   **NEIL A. BASABE, MIT**

Adviser/ Program Research Coordinator   Dead, CCS

Dear respondents,

We are conducting a survey to better understand the needs and preferences of pet owners regarding pet grooming services. Your responses will help us improve FurHub, an online platform that connects pet owners with grooming services. Please take a few minutes to complete this questionnaire. Your answers will remain confidential.

The Researchers

Direction: Please answer the following questions. Put a check mark on the box of your answer.

Section 1: General Information

1. **How old are you?**
   - o   Under 18
   - o   18-24
   - o   25-34
   - o   35-44
   - o   45-54
   - o   55+

2. **What type of pet do you own?**
   - o   Dog
   - o   Cat
   - o   Other (Please specify): _____

3. **How often do you need grooming services for your pet?**
   - o   Weekly
   - o   Monthly
   - o   Every 3 months
   - o   Only when necessary

Section 2: Pet Grooming Services

4. **How do you typically find a pet groomer?**
   - o   Online search (e.g., Google)
   - o   Recommendations from friends/family

- o Social media
- o Other (Please specify): _____

5. **Have you ever used an online platform to book pet grooming services?**
   - o Yes
   - o No

6. **If yes, what features did you find most useful in that platform?** (Select all that apply)
   - o Easy booking process
   - o Availability of groomers near my location
   - o Service reviews and ratings
   - o Price comparison
   - o Other (Please specify): _____

7. **Would you prefer a platform that allows you to choose between in-house or in-store grooming services?**
   - o Yes
   - o No
   - o No preference

8. **How important is the following feature for you when choosing a grooming service?** (Rate from 1 to 5, where 1 = Not important, 5 = Very important)
   - o **Location of the groomer**: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5
   - o **Pricing transparency**: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5
   - o **Availability of appointment slots**: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5
   - o **Reviews and ratings from other customers**: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5
   - o **Professional credentials of the groomer**: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5

Section 3: FurHub Features

9. **Would you find it helpful if FurHub offered a chat feature for direct communication with groomers before booking an appointment?**
   - o Yes
   - o No
   - o Maybe

10. **How likely are you to use FurHub if it allows you to book grooming services online easily?**

- o Very likely
- o Likely
- o Neutral
- o Unlikely
- o Very unlikely

11. **What other features would you like to see in FurHub?**

- o Loyalty programs or discounts
- o Pet grooming tips or tutorials
- o Pet profile and grooming history
- o Other (Please specify): _____

Section 4: Final Thoughts

12. **Do you have any additional comments or suggestions for FurHub?**

_____

_____

_____

_____

_____

NONITO O. ODJINAR

ADVISER