PROJECT PROPOSAL

1. Introduction

1.1. Domain Description

These days, the majority of people have pets. According to the latest research, 67% (85 million) of American homes include a pet. But due to the fast pace of urban life, it's a difficult job for pet owners to have a look at every aspect of their pets' lives. Having a pet is a huge responsibility. When pet owners are travelling or migrating, they might come up with a dilemma: what should they do for their pets? And it's challenging to find a pet caretaker right away. They mostly have problems with selling their pets and consulting a veterinarian. And if a pet owner wants to go for a vacation with their pets ,it's not easy to find a pet friendly place or a hotel for them. In addition, one of the main problems encountered by people nowadays is the lack of online and digitalized facilities and services available for their pets.

PetAssure is a system that provides almost all of the pet care services finding a pet caretaker, which has two functionalities, finding a boarding place or a pet sitter for a specific time period; consulting a veterinarian regarding any health care issues; pet grooming service, pet selling, adopting, and pet crossing services. Through our website, users can easily get access to the above-mentioned functionalities. We are mainly focusing on 3 categories: cats, dogs, and birds. This project's expected results are that it will make a difference in society regarding the health care of pets and will promote and raise awareness about online pet care services.

1.2. Problem Domain

In Sri Lanka there are few websites which provide pet care services ,but most of them are focused on one service.Mostly they are providing pet food or veterinarian services .
These days most people are searching for online , digitalized facilities and services available for their pets but they can't get all these from one website .Still there's no platform provided for the all these services like veterinarian service, finding a pet sitter or a boarding place ,finding a pet friendly place for their pets and finding a groomer for pet grooming .

1.3. Current Solution

There are few websites which try to provide these facilities .
1.Pet Care Sri Lanka - this provides vet and pet clinic services ,boarding kennels and pet cafes .They featured some pet shops as well.
But this website is not user friendly and the website was not well maintained .

2.Sri Lanka Pet Boarding, Sitting, Grooming | Petbacker®-This website provides most of the services .But those are available for foreign countries .
Sri Lankans can get access for pet boarding ,sitting and grooming only.

1.4. Limitations of the Current Solution

- Less transparency .
- Websites are not well maintained.
- Most of the services are not available in Sri Lanka.
- Less User Friendliness.
- Vulnerable to scams.
- Discourages users from adopting,crossing and selling animals.
- Waste of time searching for relevant organisations.

1.5. Proposed Solution

We are proposing a proper user friendly web based platform for all pet owners and for the service providers.The system provides a convenient platform for both the parties to carry out processes.

What clients (pet owners)can get from our websites,

1. Can announce adoption and easily can find a pet adopter.
2. Can make a post about selling your pet and easily can find a buyer.
3. Can find the best matches for pet crossing.
4. Finding a pet sitter or a pet boarding place .
5. Finding a pet groomer and make an appointment.
6. Finding a veterinarian or can find a veterinarian who provides free consultation during emergency periods.
7. Can find pet friendly places (hotels).

All service providers can provide their information and can provide details regarding their appointments through our website.
We are encouraging people to adopt pets and give those pets proper care .And all these services are at their fingertips ,it will be easier for owners to take care of their loving pets .

1.6. Objectives of project

- To create opportunities for pet lovers to get pet care service for their pets when they go out of station.
- To make a platform for pet lovers to buy their pets as they wish.
- To give a good home to the homeless stray dogs and cats and connect them with good-hearted people through pet adoption services.
- To give proper guidance and vet service to beginners who adopt or buy a pet.

1.7. Project Goal

- Our goal is to be a pet care and service website, where pet owners can find boarding, grooming, and veterinary services for their pets through our websites. Pet lovers can find these services. And if they want any services, they have to login and can book those services through our website. (Our website can get a percentage commission through the payment gateway). Overall, what we need is to create a connection between pet owners and pet lovers and pet care services. So, all the parties can benefit from each other.

1.8. Assumptions

1.9. Constraints

1.10. Limitations

1.11. Scope

1.11.1. Users

- Client
- Pet care takers.
- Veterinarian.
- pet grooming service.
- Admin.

1.11.2. In-scope

- Pet owners, pet sitters,pet boarding service supplires ,pet groomers ,veterinarians, hotel details supplires can register on the website and create their accounts.
- Hotels which allow pets to stay in their hotels can put advertisements on our website.
- Pet owners can get Pet sitters,pet boarding service, when they have to go on trips or tours.
- Veterinary services that
    - Schedule appointments with your veterinarian.
    - Get free consultant services when clients needed.

- Pet grooming service which allows users to find saloons and grooming competitions.
- Payment facility through a payment gateway.
- Pet owners who are willing to migrate can send their pets to safe boarding until they are back.
- Through our website, pet owners can discover further about accommodations/hotels and attractions that welcome pets.

1.11.3. Out of scope

- Managing transportation of animals to their destination.
- Developing the website as mobile responsive.

2. Feasibility Study

2.1. Social Feasibility

We did a social analysis to check the productivity of implementing the system. For that we asked the following questions.

- Do you have a pet?
- What kind of pet?
- How long do you spend with your pet?
- What are the struggles you have to face while taking care of a pet?
- How do you manage your pet when you're going on trips?
- How often do you take pets to the vet?
- Do you love to adopt them?
- Do you love to cuddle with someone's pet?
- How long would you love to play with them?

- Have you heard about pet grooming?
- The percentage of having a pet is 59.3% So the below questionnaire is associated with a sample population of 59.3% pet owners and 40.7% of people who doesn't own a pet.
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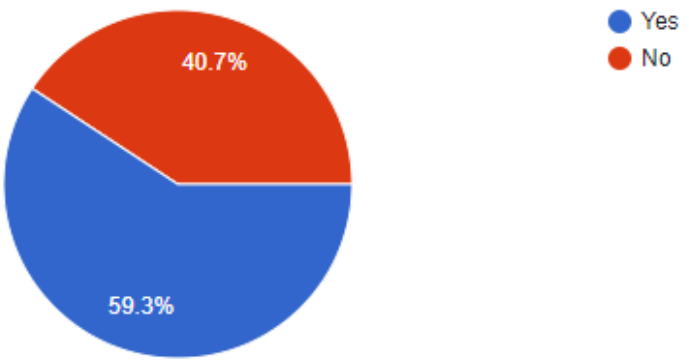
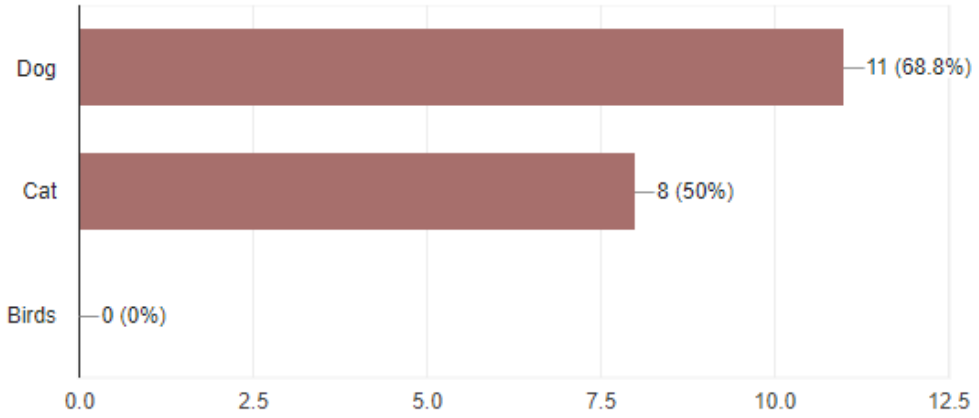
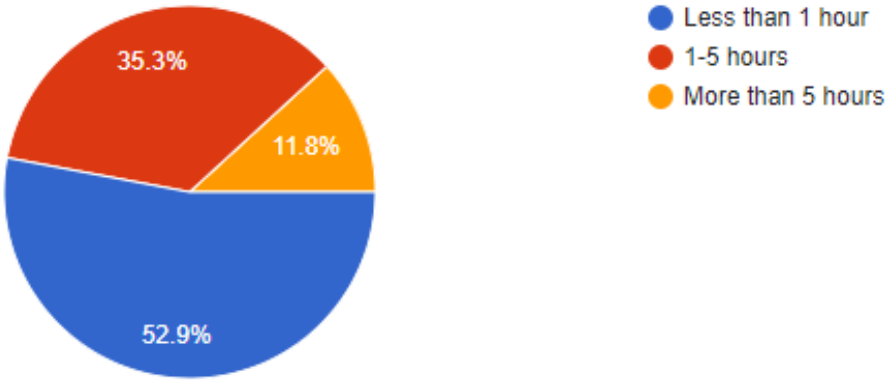


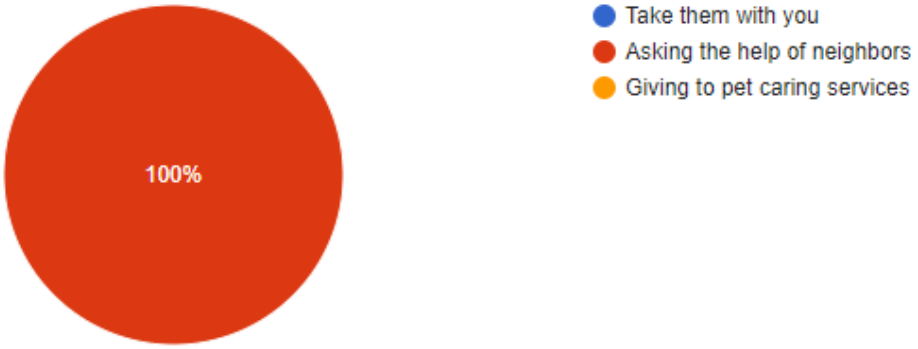
Most of the pet owners in our targeted group own dogs. Because of that, our system is mostly oriented toward dog owners. But this doesn't mean that the system is only for dog owners

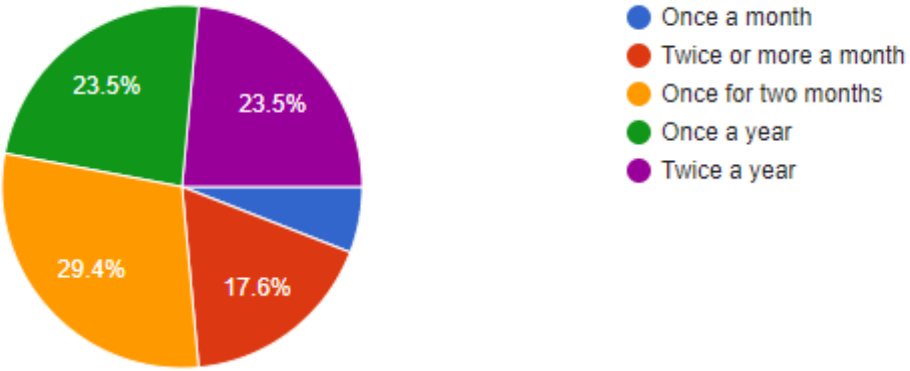


Most pet owners spend about 1 hour with their pets. With the busy schedule of the owners, they do not have much time to spend with their pets. Through our system, we provide pet caretakers to spend time with pets and take care of them.



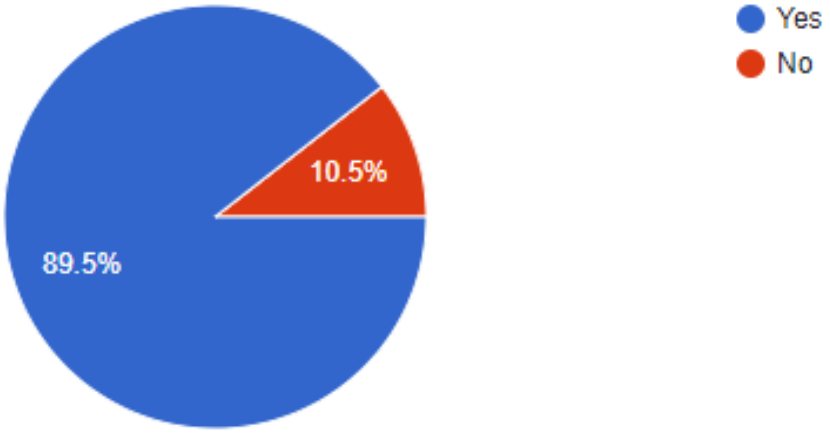
All the pet owners who participated in our feasibility study ask for the help of their neighbors when they have to go out. This might be because they don't have another choice. But if we provide them with some more choices, they would rather go for them.



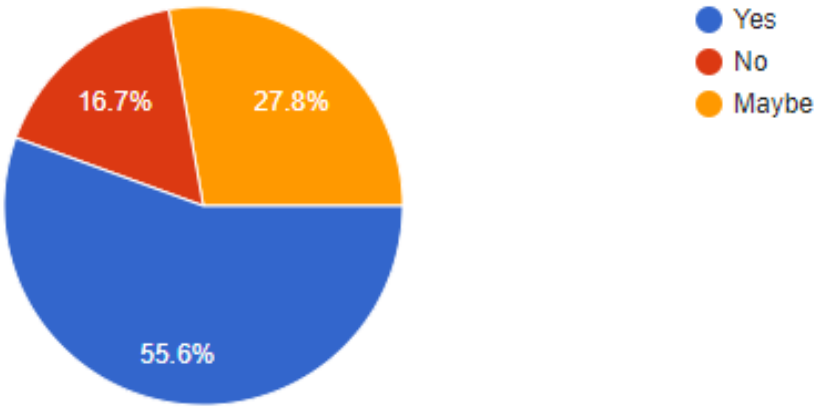


Those pet owners take their pets to the vet a few times a year. It seems the difficulty in traveling and channeling might cause this. So according to our system, we have made this easy. The owner can book an appointment with a vet according to their choice and the pet transport service takes care of the transporting difficulties.

We asked the people who don't have pets in society whether they would like to adopt a pet. Most of them like to adopt. We have made adoption easier in our system. It won't take much time to search and find the pet they like to adopt from our system.



And also the people who don't like to adopt a pet, like to cuddle with pets. Therefore we hope to provide a service to cuddle with pets even if they don't own a pet.



2.2. Operational Feasibility

Operational feasibility is the measure of how well a proposed system solves the problems and takes advantage of the opportunities identified during scope definition and how it satisfies the requirements identified in the requirements analysis phase of system development.

Using our system, Problems that pet owners and pet lovers frequently encounter are explored, along with relevant opportunities to demonstrate how the system's requirements can be met.

Consequently, some of the concerns of pet owners are,

- An inability to spend a significant amount of money on counseling, other veterinary services.
- Finding a single location that offers all veterinary, counseling, pet sitting, grooming, and pet-purchasing services is challenging.
- Trust problems exist in pet boarding facilities.

The development of answers to the aforementioned issues for pet owners and pet lovers who experience challenges will be extremely beneficial to the PetAssure system. Therefore we consider this project operationally feasible.

2.3. Technical Feasibility

Technical feasibility assessment is based on an outline design of system requirements to determine whether it has the technical expertise to handle the completion of the project.

Multiple technologies in their most recent iterations will be used to develop the proposed system's design, implementation, and operation..

- Versioning Control - Git-Hub
- Programming languages - PHP - used as the server-side scripting language for Database, session Tracking, and so on. , JavaScript
- Markup languages - HTML5 -used for web page designing

- Style Sheet Languages - CSS3 - used for describing the presentation of web pages
- Database Management System - MySQL - used for web development
- Documentation Maintaining - Google Drive
- Payment Gateway Sandbox - PayHere
- Designing tools - Draw.io, Bizagi - used for Depicting diagrams
- Project Management Tools - Jira
- Editors - Visual Studio Code - used as the source code editor and so on.
- Communication: WhatsApp, zoom

According to the Gantt Chart for the project's timeline, the project's planned schedule of 11 months is sufficient because the workload will be shared among four members and the project's scope is quite manageable within the suggested timeline.

All members of the team have prior experience working with relevant technologies, such as CSS, HTML, and JavaScript when it comes to development, but there are still some technologies that we need to learn more about. We intend to learn both independently and in groups as we work on the development. We can therefore conclude that we can develop this system with the resources we have based on our technical feasibility.

2.4. Legal & Ethical Feasibility

- User identity is verified at the registration while they sign-up to the website, and their details will be stored securely in the system.
- The system has the necessary safeguards to protect user privacy and personal information.
- Email addresses and phone numbers belonging to users won't be made public without their permission. Only the online advance payment option, which calls for proper permission, will require users to submit data to outside parties (third parties). Every transaction will be made through a secure connection with reliable, standardized payment processors.
- The application is built in compliance with the license of the open-source software technologies that are used.

2.5. Economic Feasibility

In order to work on this system, we have to care and think about the economical aspect of implementing the project as university students. So the costs and fees for the implementation should be considered.

1. Planning Stage

At this stage, the cost is allocated only for the papers and documentation. So that cost is bearable for university students.

2. Analyzing stage

Analyzing stage is basically, finding how the planned system practically works in society. This consists of research and gathering details. Applications and software used for this are free or open source.

3. Designing Stage

During the designing stage, the applications, and software used are free and open source. Therefore at this stage, the cost of the project is non considerable.

4. Implementation Stage

This stage includes the hosting charges. The domain we hope to have is “petassure.lk”. The domain booking cost will have to bear.

5. Maintenance Cost

This is basically for the hosting charges and renewal of the hosting license.

2.6. Schedule Feasibility

The project spans a duration of 1 year, The development team is made up of four people, and to finish the project on time we have thought to distribute the man hours among our four members. Each team member will put in a minimum of 672 hours of work, totaling 2688 hours of work to finish the system by the deadline.

Estimated man hours for the project,

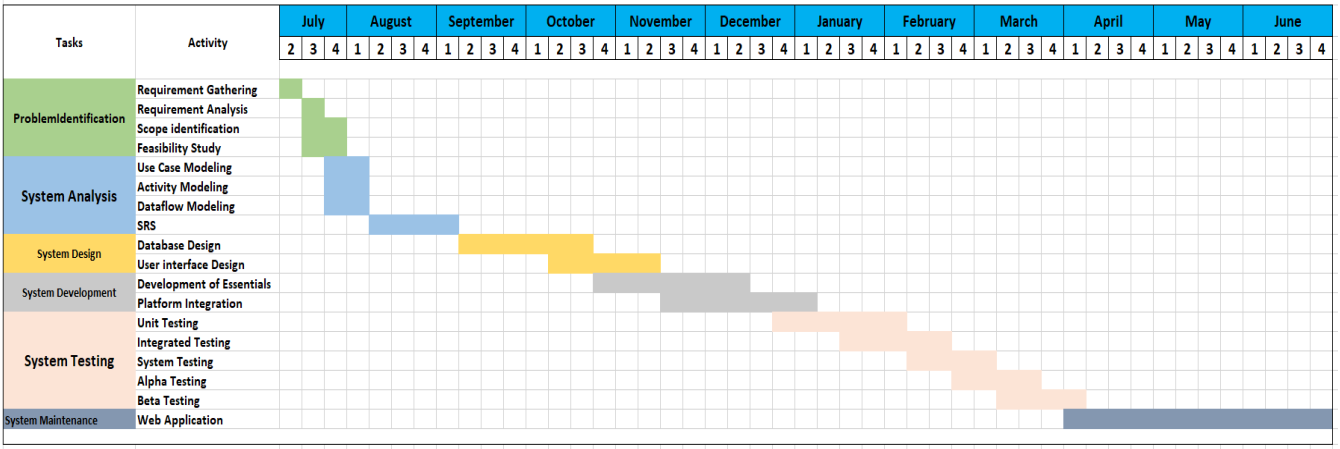
Working hours per week for a member = 14 hours

Number of group members = 4

Number of weeks = 48

Total man hours = 14 * 4 * 48 hours = 2688 hours

A Gantt chart (Page No:) is created to visualize the project's timeline and highlight the intended and required deadlines, All the development procedures and times have already been planned and are attached as a Gannt chart since we expect to conclude this project within a year, and we will be able to do so by June 2023.



3. Requirements

3.1. Stakeholders

- Client
- Pet Sitters.
- Pet boarding service suppliers
- Veterinarian.
- pet grooming service suppliers.
- Admin.

3.2. Use Case Diagram

3.3. Use Case Narratives

3.4. Functional Requirements

There are 6 types of users for our system

- Client
- Pet Sitters.

- Pet boarding service suppliers
- Veterinarian.
- pet grooming service suppliers.
- Admin.

All users of our system can login and logout (People can login to our system using a registration process and a verification process). And they will be able to customize their profiles and change their passwords.

1.Client

- Shall be able to get a pet caretaker.
- Shall be able to get grooming service.
- Shall be able to consult a veterinarian.
- Shall be able to sell,buy and adopt pets.
- Shall be able to use pet crossing service.
- Shall be able to book appointments.
- Shall be able to cancel appointments.
- Shall be able to check appointments.
- Shall be able to make payments.
- Shall be able to use chat functionality.
- Shall be able to post advertisements regarding pet selling, and crossing.
- Shall be able to request the admin to delete the account.

2.Pet care takers.

Pet care takers can be divided into two functionalities.

2.1.Shelter caretakers.

- Shall be able to add, delete, update shelter(cage) availability.
- Shall be able to check appointments.
- Shall be able to cancel appointments.
- Shall be able to use chat functionality.
- Shall be able to request the admin to delete the account.

2.2.Pet sitters.

- Shall be able to add, delete, update slots.
- Shall be able to check appointments.
- Shall be able to cancel appointments.
- Shall be able to request the admin to delete the account.
- Shall be able to use chat functionality.

3.Veterinarian.

- Shall be able to add, delete, update slots.
- Shall be able to check appointments.
- Shall be able to cancel appointments.
- Shall be able to use chat functionality.
- Shall be able to request the admin to delete the account.
- Shall be able to use chat functionality.

4.Pet grooming service.

- Shall be able to add, delete, update slots.
- Shall be able to check appointments.
- Shall be able to cancel appointments.
- Shall be able to request the admin to delete the account.
- Shall be able to use chat functionality.

5.Admin.

- Shall be able to verify users.
- Shall be able to manage accounts.
- Shall be able to delete accounts on request.

3.5. Quality Attributes

3.5.1. Availability

As our system is a web-based application, the availability of the system is high with time and the area. We try our best to make sure the services are provided within 24 hours while considering the availability of service providers.

3.5.2. Testability

We tend to test the system with a selected group of pet lovers in the university and develop the system with their feedback.

3.5.3. Usability

The interface of the PetAssure is very user-friendly and doesn’t need much technical experience to use it.

- Navigation path is very clear for all.
- Search option is given for easy access.
- Menu and submenus are clearly titled with an icon.

3.5.4. Reliability and performance

A computer system must be trustworthy and consistently deliver reliable results.

- The information of users will be safeguarded in our system.
- Sensitive information won't be disclosed to outside parties, and only people with permission will have access to user information.
- Any request will receive a quicker response. A suitable progress indicator must be present when an asynchronous task is being carried out.
- Information of the users is protected.
- No third-party access to the database of user details.
- All logins are authorized.
- Payment details are privacy protected.

3.5.5. Security

The logging procedure will be protected. Users must use their unique username and password to log in to the system; otherwise, access will be denied. User logins will be used to verify users.

- There is a security policy for passwords in our PetAssure system.
- Since registration is required for full functionality, our system is not accessible to visitors.
- Secured payment methods will be used for online transactions.

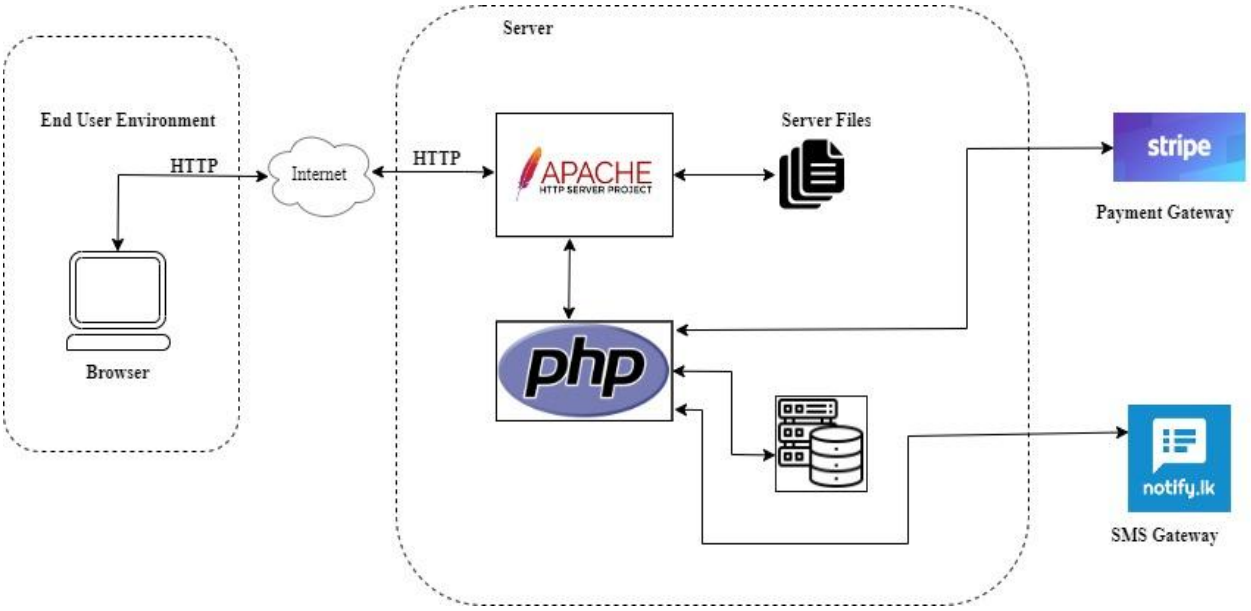
3.5.6. User Friendliness

Our system is simpler and faster, and it is more user-friendly the more the user comprehends how to use it.

- Users won't need lengthy instructions or manuals to use the system; all it takes is a few clicks. The software is extendable and customizable to achieve this.
- The user can customize the application to suit their needs.
  Instead of seeing IT-oriented words and concepts, users can see familiar ones.

4. Proposed System's Architecture

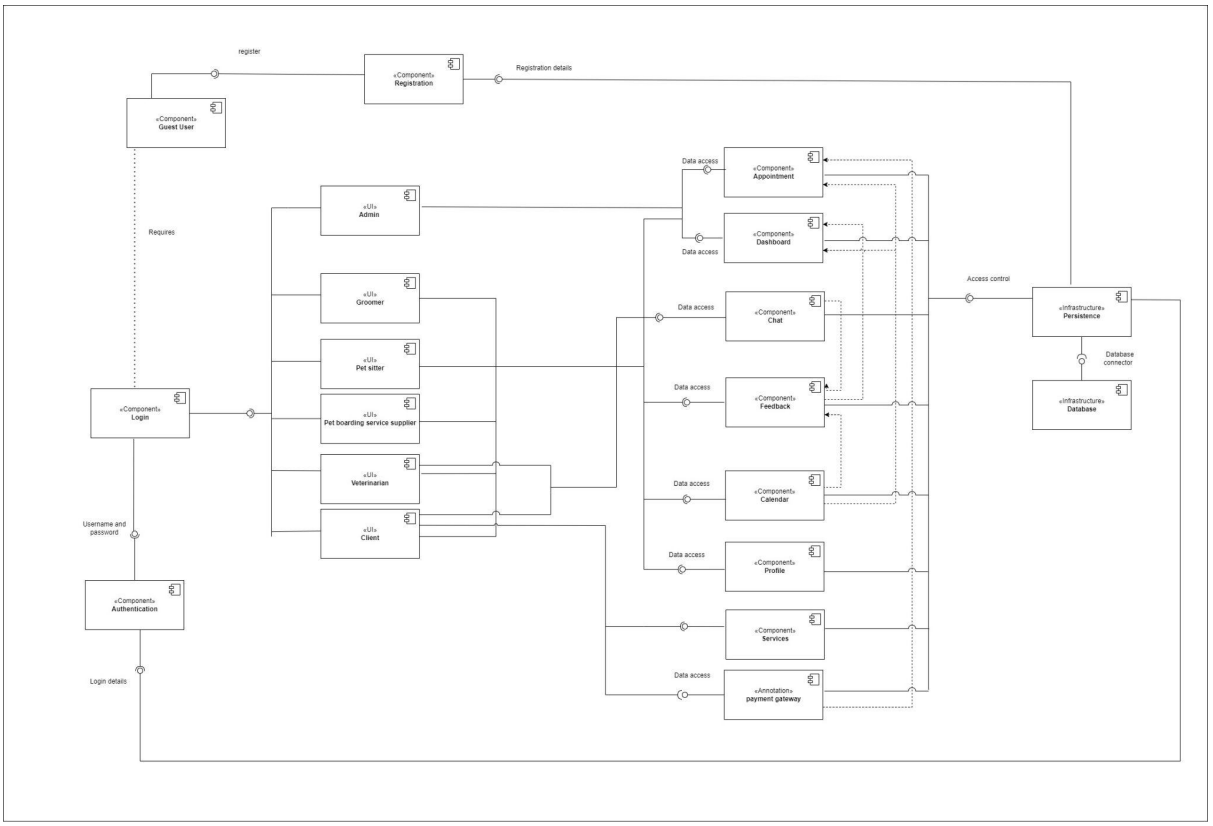
4.1. High-Level Architecture



4.2. System Architectural Structure

4.3. System Components

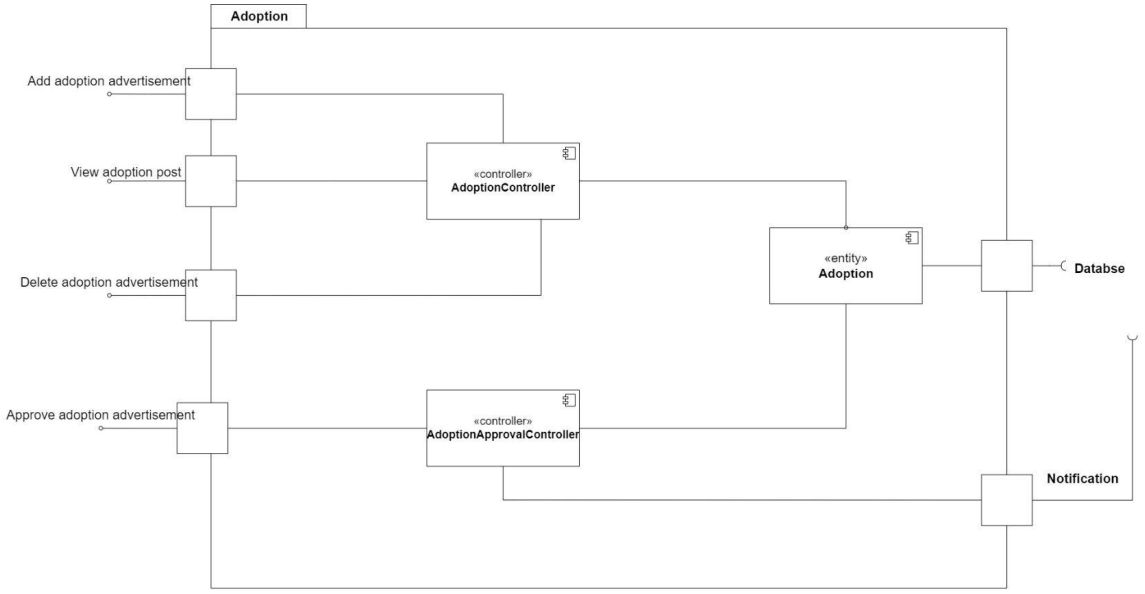
4.3.1. Component Diagram



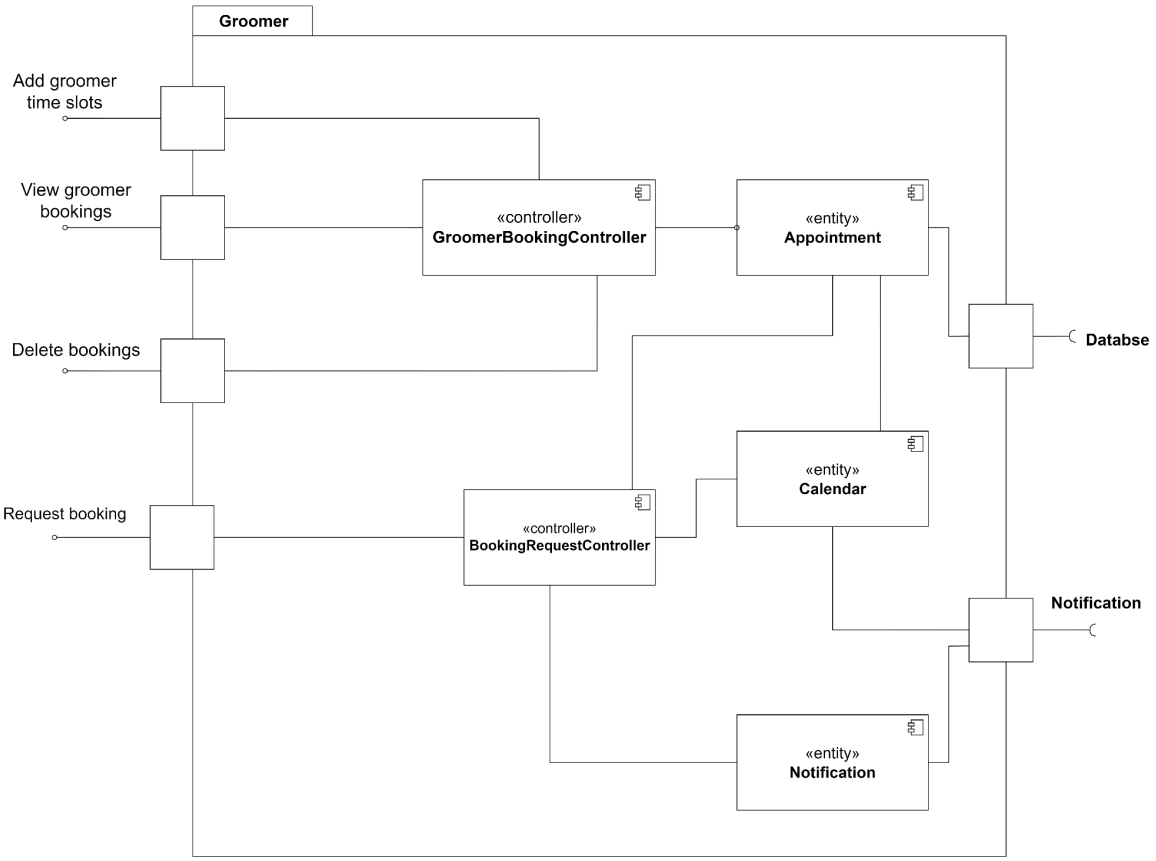
4.3.2. Component Description

Component	Functionality
Login	Allow users to access their account. Provide an interface to enter user credentials.
Authentication	Validate user details.
Appointment	Allows to book time slots.
Dashboard	Allows users to check the progress of actions
Notifications	Provide follow-up of appointments Remind the upcoming events
Calendar	Shows all the appointments
Feedback	Provide the ability to complement and complain. Provide reviews to service providers.
Payment Gateway	Accept and process payments. Refund payments.
Registration	Allows new users to access the services.

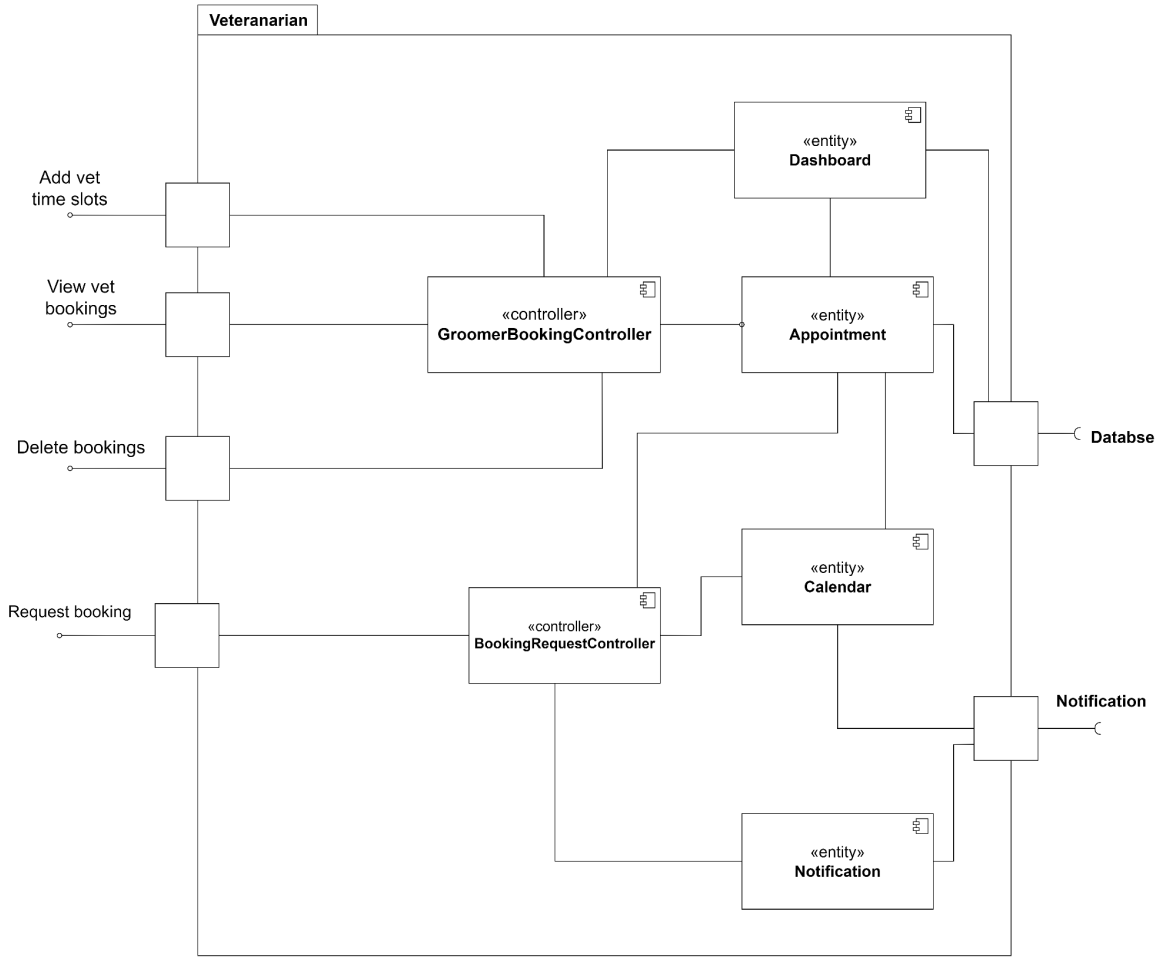
Boarding Component



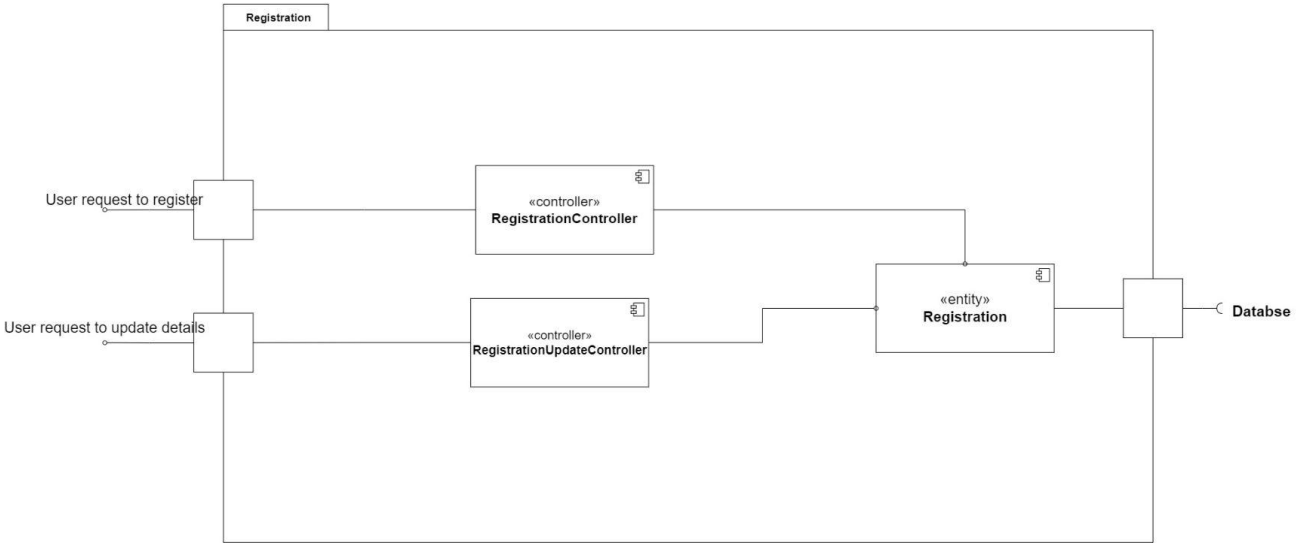
Groomer Component



Veterinarian Component



Registration Component



5. System's Design

5.1. Class Diagram
5.2. Entity Relationship Diagram
5.3. Sequence Diagrams
5.4. State Transition Diagrams
5.5. Activity Diagrams

6. User Interface Flow Diagram using wireframes