Inception Phase Specification

CIS 320-01

Team: Ladybirds

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Version 3.0

Revision History

Date	Version	Description	Author
16/02/2025	1.0	Vision Document First Draft	Ladybirds
09/03/2025	2.0	Vision Document Second Draft	Ladybirds
23/03/2025	3.0	Inception Phase Specification	Ladybirds

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1. System Request: Pets4Life

Pets4Life needs an interactive website that will provide a Customer Service Hub, Volunteer Management System, and Clinic Management System, while integrating an automated database and a secure payment/donation system. The main goal for this website is to create an efficient, user-friendly platform that centralizes resources for pet-related services, making it easy for volunteers, donors, and pet owners to access information and participate. Key sections will include Live Chat, Volunteer Registration, Event Calendar, Donation Management, Pet Information, and an integrated Payment System.

Project Sponsor: Project Lead and Point of Contact

- Dr. Zara Hatami: Zahra.Hatami@louisville.edu, 502-852-4679

Business Need: Project Reasoning

- New platform for managing volunteers, donations, & pet services.
- Need for a centralized website to streamline processes.
- User-friendly design for volunteers, donors, & pet owners.

Business Requirement: Capabilities for the Website

- Live chat for inquiries and frequently asked questions (FAQs).
- Volunteer registration and event management system.
- Secure payment and donation system.
- Centralized pet information and event calendar.

Business Value: How Will This Enhance the Organization?

- Increases donation efficiency with a secure system.
- Improves accessibility and customer experience.
- Simplifies volunteer coordination.
- Reduces administrative burden.

Special Issues/Constraints: Issues Relating to Implementation and Design

- Non-profit budget

- Deadline: 04/21/2025

2. Vision (Small Project)

2.1 Introduction

The purpose of this document is to research, analyze, decide, and define the high-level business needs, requirements, and features of the Pets4Life database redesign. This will focus on the capabilities of users, why these users access the website, and why the needs exist in this aspect. This document will also focus on the integration of databases for the client and employees on the back end, with easy-to-use integration in accordance with volunteers, pop-up events, clinic appointments, pet supplies, and other business aspects. The details of how the Pets4Life system will fulfill these needs and requirement are detailed in the content and supplementary specifications below.

2.2 Positioning

2.2.1 Problem Statement

The problem of	- Low integration of Airtable, WordPress, calendar, and other paper forms used for clinics and Pet pop-ups. - User interface is hard to use on the front-end and disorganized in processes pertaining to volunteer-signups and donations. - Low capabilities of providing fast information for those using Pets4Life services.
affects	- Dr. Lisa Keehner (President) - Connie Hunt (Treasurer) - Cindy Reinhart (Secretary) - Karen Crompton Gaskin (Director) - Rich Smith (Director) - Karen Mujica (Executive Director) - Volunteers for Pets4Life - People in 40210 area code who cannot afford pet care

the impact of which is	- Excessive time is spent on sorting through documents, information, payments, and other ports of information on at least five different apps and websites.
	- Hard-to use interface drives people away from the non-profit and confuses those who are unsure of what they can provide for their pet, such as emergency services.
	- The lack of timely information for people with pets who are in a serious condition.
a successful solution would be	- The addition of a fully integrated WordPress website with Airtable and Stripe with website conversational forms to decrease the use of paper forms in pet pop-ups and clinics.
	- Easy-to-use interface with easy access FAQs and chatbot for harder to answer questions integrated into a website with simple navigation to needed places such as donation, volunteering, and others.
	- Timely information for those who require it.

2.2.2 Product Position Statement

For	Karen Mujica and her team of employees and volunteers
Who	Are currently not able to provide and efficient and timely pet care service and clinic to those in the 40210-area code who cannot afford pet care
The (product name)	Is a WordPress Website, Airtable, and Stripe
That	Will allow Pets4Life to provide a timely, efficient, and productive business for those working the services and those requiring them.
Unlike	Pets4Life's current WordPress website, Airtable, and use of payment systems, such as Venmo, PayPal, CashApp, and others.
Our product	Will provide clients in need in the 40210-area code with the needed clinic appointments, animal resources, and other services depending on what they need. It will also provide the necessary documents and information for those who want to donate and sign up to volunteer.

2.3 Stakeholder and User Descriptions

Currently, Pets4Life's website and back-end integration lacks the resources to be truly efficient for those in need for Pets4Life resources. This, therefore, creates an inefficient and hard-to-use website for those who are in need. Karen Mujica and her other board members and employees would like a newer system built from the old remnants of what she currently has with low-code opportunities, so the employees of Pets4Life can easily manage and scale WordPress, Airtable, and others, as their business continues to grow. This newer system should also be affordable with their non-profit budget and grants, especially if the choice is made to focus on more than just the 40210-zip code. Our goal is to provide Pets4Life with an all-access website for users to easily navigate and access in a timely manner and efficiently, whether the users are pet owners, donators, or volunteers. We also want to ensure the affordability of the plugins, calendar apps, payment systems, and others, to ensure Pets4Life will continue to be able to afford them, while also having the option to scale up as necessary to continuously provide pet resources for those in need.

2.3.1 Stakeholder Summary

Name	Description	Responsibilities
Karen Mujica	Executive Director of Pets4Life Louisville	- Ensure the system supports Pets4Life's long-term and short-term goals, specifically within the 40210 area and others. - Record and document necessary paperwork for the pop-up events, clinic appointments, and other check-in appointments within Airtable that had been integrated through WordPress and Stripe.

		- Ability to petition for non-profit funding and the resources to receive the necessary donations for company resources. - Monitoring the amount of people who are capable of accessing Pets4Life's resources and clinic opportunities.

2.3.2   User Summary

Name	Description	Responsibilities	Stakeholder
Pet Owner	Those who will be navigating the website with intentions of finding information about pet resources and clinics.	- Access and schedule appointments for pets correctly and with the correct information. - Correctly contact Pets4Life and their team depending on the services needed. - Provide feedback in survey form from the services they were provided.	Those in charge of customer service, Karen Mujica, and others on the board for Pets4Life.
Name	Description	Responsibilities	Stakeholder
Volunteer	Those who will be navigating the website with	- Correctly sign up for volunteer opportunities and	Karen Mujica and others who sit on the board.

	intentions of finding information about volunteer opportunities and resources.	shifts for Pets4Life events and clinic opportunities. - Correctly show up to assigned volunteer time and easily access their shift information.	
Name	**Description**	**Responsibilities**	**Stakeholder**
Donator	Those will be navigating the website with intentions of finding resources of how to donate and how to sponsor a pet.	- Correctly access website with intent to donate to Pets4Life specifically. - Access the website also with some intent to sponsor a pet and ensuring the information is input correctly.	Karen Mujica and others on the board.

2.4   User Environment

As of right now, users of Pets4Life's website are unable to access the website in a timely manner to find resources, donation opportunities, and volunteer options, when necessary. Our team's goal is to provide these people, especially the affected pet owners in the 40210-area code, with an efficient and effective website to find the correct calendar events, pet resources, pet information, volunteer opportunities, and donation information. Users will be able to select from the selection bar what resource they require, and then navigate to the correct information for such

resources. This could include a calendar sign-up for volunteers, a sponsor a pet or general donation option for donators, or a schedule of events and information on what a pet owner needs for their animal. Users will also be able to pay for donations, appointments, and other resources through the website using Stripe. All forms being filled out and used will be processed and integrated through a Conversational Forms WordPress plugin that will ensure accuracy and accessibility.

2.4.1 Summary of Key Stakeholder or User Needs

Need	Priority	Concerns	Current Solution	Proposed Solutions
Integrated database and calendar use.	High	Current system is clunky, inefficient, and uses extra time that could be spent doing other things then organizing the business information before being able to analyze.	Using Airtable and Sign-Up Genius that someone goes in and regularly updates depending on pet pop-ups and volunteers.	Using WordPress plugins that directly integrate to Airtable and Amelia, the proposed calendar app, to ensure efficiency and effectives with easy access calendar information and does not have to be constantly updated.
Need	Priority	Concerns	Current Solution	Proposed Solutions

Need	Priority	Concerns	Current Solution	Proposed Solutions
Central Payment System for Donations and Deposits for Events.	High	Current payment system is not just one payment system, but many working together that must be updated regularly to stay current.	Current solution is offering as many payment options as needed, such as PayPal, Venmo, and Cash App, and then documenting and integrating after the finished payment.	The proposed solution includes a centralized payment system, Stripe, that also has the options to integrate with apps such as Venmo, Cash App, and others. This centralizes all payments with the correct documentation with them. This will also centralize and divide the donation portion.

Chatbot for Frequently Asked Questions	Medium	Currently, the client does not have a feature that tells people who are requiring Pets4Life resources if their issues is something out of their wheelhouse. This could involve things such as emergencies that Pets4Life cannot handle.	There is no current solution for this other than contacting someone in customer service, and they are not 24/7.	Our group's proposed solution includes adding a WordPress plugin chatbot that will focus on frequently asked questions and has the ability to ticket certain instances where the company can help but would require service from a customer service representative. This chatbot would also have the ability to highlight when something is not in Pets4Life's services.
Need	**Priority**	**Concerns**	**Current Solution**	**Proposed Solutions**

Volunteer Management	Low	Other than just the calendar for volunteer management, there is also not a centralized form for volunteers who would like to join the Pets4Life family. This is inefficient and time consuming.	The current solution is having two separate forms and buttons for volunteers depending on long-term or short-term, and then contacting them directly for volunteer opportunities after signing up with Sign-Up Genius.	The proposed solution is to automate the volunteer forms with a WordPress plugin that will directly integrate into a calendar for volunteers and events. This would centralize the need for volunteer forms and automate the process.
Need	**Priority**	**Concerns**	**Current Solution**	**Proposed Solutions**

Scheduling Automation	High	Appointment scheduling at the moment is currently not an effective method, as some features are necessary, and some aren't in the current process.	Appointment scheduling currently uses Calendly, which then has to be manually added into Airtable and recorded.	The proposed solution is to use Amelia, a WordPress plugin that will automate the appointment scheduling directly in the website and therefore should integrate with Airtable.

2.5   Alternatives and Competition

The alternatives to our proposed solution will include Zapier, an automation site that fully integrates many websites and databases. This would link the website and the Airtable database together, which is what the client likes and prefers, especially since the platform is low-code for beginners. This, however, would introduce yet another platform for Pets4Life to manage and integrate, which could be managed by WordPress plugins that are already integrated into the website.

Another alternative could include the use of Jira Service Management, which is a platform that the client currently uses for help desk management and frequently asked questions. This is in place of a proposed chatbot currently and therefore could be managed manually without too much issue. However, this system would not be automated like a chatbot and would include some type of manually additions or updates.

PlanHero is another current competitor for our proposed solution of Amelia, a WordPress Calendar plugin that integrates directly with the website and databases. Similarly, PlanHero is another scheduling app that is advertised towards organizations like non-profits and provides more low-code options and easy to understand scheduling for those on the front and back end. However, PlanHero is yet another individual platform that would have to integrate into WordPress and Airtable, when Amelia is already produced in WordPress and can easily attach to Airtable.

Another alternative is WP Forms Lite, with the Conversational Forms add-on that would replace our original plan of integrating Amelia within WordPress. Conversational Forms would adapt and change depending on the requirements for the pet owner and what service they would need and then integrate into another calendar. This could be cheaper for the client, but the integration goals would probably not be achieved as efficiently with this solution.

2.6   Product Overview

2.6.1   Product Perspective

Our team's Pets4Life solution is not an independent system, but an enhancement of the existing system, designed to increase operational efficiency by providing a centralized and integrated solution for key functions, such as volunteer management, appointment scheduling, donation tracking, and customer support. The current system relies on multiple disconnected tools, such as Google Sheets, Airtable, Zapier, Sign-Up Genius, and various forms of communication such as phone, email, Facebook, Instagram, and more. Our proposed system aims to eliminate unnecessary inefficiencies by reducing the current heavy reliance on multiple tools, which in turn will streamline workflows, and minimize manual work. By building upon the current system, we believe that it will create a seamless transition for administrators and users. By reworking and consolidating the operations, the overall functionality of the system will improve and the reworked system will create a more efficient, user-friendly experience for all stakeholders involved.

2.6.2   Assumptions and Dependencies
Assumptions

When building this improved system, there are several key assumptions that must be considered to ensure the system is successful. Our first assumption is that WordPress remains as the core CMS platform. Our proposed enhancements are all based on WordPress plugins and ways to enhance the original site. If Pets4Life ends up using a different CMS than WordPress, then a complete reworking of the system plans would likely be necessary. Our next assumption is that the staff can manage the improved system with minimal training. We designed this system

with ease of use in mind which eliminates the need for extensive staff training on the system. Should there need to be a heavier level of training, then alterations may need to be made. The next assumption is that the automation will reduce manual data entry. The proposed product features will automatically record data, such as volunteer hours, appointments, and donations. The next assumption is that users will actively interact with the improved system. Users will accept the new system and recognize its benefits, preferring this system over alternative methods. Users will interact with the new features and find them simple and efficient. The next assumption is that the automated information sent to users will improve user engagement. Users will read and act on automated notifications, making it an efficient way of getting the necessary information to them. Our final assumption is that the budget will be large enough to cover the expenses of hosting costs, as well as whatever plugin costs are needed.

Dependencies

Our Pets4Life system relies on several external tools and services to function properly and those are their dependencies. The first dependency in the system we designed is that the internet connection and the system will be accessible and reliable. The success of this system depends on whether or not it can remain up and running. If users are trying to access the site and there are interruptions or downtime, issues can arise. The next dependency is that payment through Stripe and PayPal will remain functional and secure. We are under the assumption that Stripe and PayPal will be able to deliver efficient and secure ways to make transactions. If this changes, then the payment management system used will need to be revised.

The next dependency is that the plugins chosen are fully compatible with WordPress and hosting environment. This means that future WordPress updates will not impact plugin functionality, plugin developers will continue maintaining and updating the plugins to ensure their security and remove bugs, and the chosen plugins will not impact the overall performance of the site. The next dependency identified is that integration tools will be functional. Some automation may rely on integration tools like Integrately or Zapier to connect WordPress with Airtable. If these integrations experience failures, delays, or changes, manual intervention may be required. The final dependency we identified was that user data remains secure and private.

The system will handle volunteer information, donor payments, and appointment records, requiring that all users' personal information remains secure and private.

2.7 Product Features

There are four parts of the current system that we are focusing on when it comes to enhancing the overall system, these include:

1. **Customer Support/Chatbot**

Current System: Currently, there are multiple channels where inquiries are being sent through, making it overwhelming and difficult to answer them all accurately and in a timely manner. This system also lacks any form of frequently asked questions, which results in users needing to reach out to the staff, where they must manually give answers to repetitive questions such as clinic dates, available services, and donation options. This only wastes the user and the staff's time, taking valuable time away from other aspects of the organization that might need more focus. With there being no system to track these inquiry requests, some urgent inquiries get lost or result in delayed responses.

Proposed System: By using the WPBot plugin available for WordPress, administrators can create a list of predefined responses that the chatbot can deliver based on user inputs. This allows for users to get quick and easy responses to their common questions. Should users be trying to locate where to sign up for an event or schedule an appointment, the chatbot can pull up the form for them using the ChatBot Conversational Forms plugin. This saves the user time that would have been spent searching for the form on the site and makes the overall process more efficient. In the case that the chatbot is not able to address and solve the issue, a support ticket can then be made through the bot and will get sent to a staff member for a follow up. These support tickets are then tracked and organized for Pets4Life so that staff members know which questions need urgent answers. Implementing this chatbot will reduce the workload on staff by automating responses to common questions and provide instant assistance to users, improving their overall experience. It also ensures that urgent inquiries are escalated and organized, preventing missed

requests or delayed responses.

2. Volunteer Management

Current System: Volunteer management in the current system is through Sign-Up Genius, which tends to lack a structured tracking system for hours and those who attend the events. In order to record the data that comes with the volunteer management, administration has to manually log them into Google Sheets, which is not only time-consuming but is also more prone to errors. With the current system, there is no clear way for volunteers to be notified of the events they have, whether there are cancellations, or any further information they may require.

Proposed Solution: Considering these challenges, our team suggests using the Wired Impact Volunteer Management plugin. This plugin is easily integrated into WordPress, allowing for a more integrated set up and a dedicated volunteer registration system within the platform itself. By using this plugin, users are able to sign up to volunteer directly through the website, eliminating the need for a third-party application like Sign-Up Genius. Tracking data will also become simpler, as it will allow administrators to automatically track hours. The plugin also allows for one-time volunteering or flexible volunteering, which can be extremely useful for the client when trying to find long term volunteers. Automated reminders and notifications will be sent to both the administrators and the volunteers so that both are aware of the event planned. With the calendar feature, volunteers are able to look through upcoming events and choose the one best for them.

3. Event Scheduling

Current System: For event scheduling, Calendly is currently used, which results in appointment data having to be manually exported into Airtable. This is a time-consuming and altogether ineffective option. When it comes to deposits for appointments, they must be manually processed, which only increases the client's workload and makes it difficult to track the financial transactions. Along with this, there are no automated responses sent to both the administrator and

the user, which increases the number of no-shows.

Proposed Solution: In order to make event scheduling more effective, our team proposes the use of Amelia scheduling plugin which can be integrated with the WordPress site and can automate the appointment scheduling. Users will be able to receive confirmations and reminders on their appointments to ensure that they are fully aware of the necessary information in order to make the appointment, which can result in a decrease in no-shows. Additionally, Amelia allows for payments and deposits to be dealt with directly through the system, which will reduce the number of errors and scattered payment records.

4. Donations and Sponsor-a-Pet

Current System: There are currently two ways to get to the donation button on the Pets4Life site itself. One is by scrolling down on the home page and either scanning the large QR code or clicking the small donate button. The other is to go to the Sponsor-a-Pet page, which can be found under the Ways to Help drop down menu. However, the donation buttons found on the website are small and visually unappealing, making them easy to overlook. Donations are also processed through multiple platforms, including PayPal, Venmo, and Facebook Fundraisers, making it difficult to track all financial data in one centralized system. The lack of a structured donation tracking system results in staff having to manually enter information into Google Sheets and Airtable. This increases the chances of errors in the data inputting as well as consumes unnecessary time from staff members. While the Sponsor-a-Pet page mentions that donors will receive email notifications once their contribution helps a pet, it is unclear whether this process is automated or manually managed by staff. If staff must manually track sponsorships and send donor notifications, this adds to the administrative workload and increases the potential for delays or missed updates. The lack of automation in donor tracking makes it harder to engage donors consistently and maintain accurate records.

Proposed System: The new system will streamline donations by integrating the PayPal and Stripe Donation plugin into the Pets4Life website, reducing the need for manual tracking across

multiple platforms like Venmo and Facebook Fundraisers. While platforms like Venmo and Facebook Fundraisers can still be available and used for making donations, they will be supplementary, with the website serving as the primary donation hub. This will result in better tracking and transparency. The Sponsor-a-Pet page will allow donors to choose a specific service to support, with their contributions automatically recorded and updated in real-time. To boost engagement and donor contribution, larger, more noticeable donation buttons with calls to action will be placed on the page and in the dedicated donation page. Donors will receive instant receipts, thank-you emails, and updates on how their contributions are making an impact, and if the pro version of the plugin is chosen, they will also have the option to set up recurring donations for long-term support. By centralizing and automating the donation process, Pets4Life will reduce staff workload, improve donor retention, and create a more efficient and understandable fundraising system, while still allowing external platforms to contribute where it is beneficial.

2.8 Other Product Requirements

Since the site will handle sensitive user information, SSL encryption (HTTPS) will be required to ensure secure data transmission. The system will be built on WordPress and requires a hosting environment that supports PHP 7.4+ and MySQL 5.7+ for plugin compatibility and security. In order for the system to maintain reliable performance, the hosting server should have at least 2GB of RAM, a fast multi-core processor, and SSD-based storage. Since the system is a .org and will be hosted on an independent WordPress site, a reliable web-hosting service will be required to manage uptime and performance.

The system should maintain fast response times and high availability, even in the case of increased traffic. Performance standards include a 99.99% uptime, page load times of three seconds or less, and real-time data synchronization for appointments, donations, and volunteer records. The system should also contain a fault tolerance, so the system can handle unexpected errors without crashing, ensuring smooth recovery if any failure occurs.

The system must be compatible with various devices like laptops, PCs, mobile phones, and tablets, and must be fully responsive and optimized for various screen sizes and resolutions in order to deliver smooth performance. The system must also be accessible by using common

browsers like Chrome, Firefox, Safari, and Microsoft Edge. To support underserved communities, the site should function well, even with weaker internet connections, which can be done by using compressed images, caching, and fast-loading pages to reduce data usage.

There are a few constraints when it comes to the system we are proposing. The system must operate within WordPress, using only approved and high-quality plugins to maintain security and stability while ensuring minimal staff training is needed. The hosting service chosen must support the required PHP and MySQL versions in order for the plugins to be functional. The payment processing fees and policies will be dependent on Stripe and PayPal and the system must meet PCI-DSS standards for data security. Key dependencies include PayPal and Stripe Donation for payments, Amelia for scheduling, Wired Impact for volunteer management, a WordPress Chatbot for customer support, and a reliable web hosting provider.

Should the staff and administration need assistance when implementing the enhanced system, documents are available online that can inform them on the various plugins and how to work them. If they run into further issues with WordPress, then contacting the WordPress help desk is another viable option should more information be needed.

Our Pets4Life system prioritizes security, automation, and performance to ensure a seamless user experience. Secure SSL encryption is a high-priority feature that protects sensitive user data, ensuring safe transactions and user privacy with little implementation effort and low risk. Automated donation processing is another critical feature, reducing manual workload for staff and improving efficiency will take a bit more effort as well as come with a bit more risk. Similarly, another high priority aspect that comes with about the same effort and risk as the automated donations is the automated volunteer tracking. This streamlines event coordination and automatically logs volunteer hours, saving staff time and increasing overall efficiency. To maintain system stability and long-term functionality, WordPress plugin compatibility is another essential factor making it a high priority. Ensuring that all features integrate smoothly while maintaining security and performance can be a lot of work and come with quite a bit of risk as well, which is why there should be constant maintenance and monitoring on plugins to avoid any failures

2.9   References

The document resources and references are as follows:

-   Pets4Life Louisville

-   **Secure Payment System**

    o   PayPal & Stripe Donation Plugin

    o   Stripe

-   **Volunteer Management**

    o   Wired Impact Volunteer Management Plugin

-   **Event Scheduling**

    o   WP Amelia

        ▪   Petcare Event Scheduling Demo with Amelia

    o   Planhero

    o   WPForms Lite

        ▪   WPForms Conversational Forms

-   **Chatbot**

    o   Chatbot for WordPress

        ▪   Conversational Forms

-   **Other Product Requirements**

    o   WPBeginner - WordPress Server Requirements

    o   Website Load Time Speed Statistics

    o   Reasonable Website Uptime

    o   Web Performance Optimization

2.10   Feasibility Analysis

2.10.1 Narrative Analysis

Pets4Life is dedicated to promoting pet retention by offering affordable veterinary care and essential resources to underserved communities. However, the organization's current operational framework is fragmented, relying on disparate tools such as Google Sheets, Airtable,

Zapier, and WordPress. This lack of integration leads to excessive manual work in scheduling, volunteer management, donation tracking, and customer support. Additionally, donations are processed through multiple platforms, including Venmo, PayPal, and Facebook, complicating financial tracking and increasing the potential for errors.

Communication inefficiencies further exacerbate these challenges. Assistance requests arrive via emails, phone calls, text messages, and social media, making it difficult for staff to manage and prioritize responses effectively. Volunteers currently register through Sign-Up Genius, a platform that includes advertisements and lacks robust tracking features. Moreover, volunteer hours are manually logged in Google Sheets, adding to the administrative burden and reducing overall efficiency.

To overcome these obstacles, Pets4Life requires a centralized digital solution that integrates key functions, minimizes manual processes, and enhances operational efficiency.

2.10.2 Technical Feasibility

The proposed solution will consolidate volunteer coordination, event scheduling, donations, and customer support into a single, user-friendly platform. This platform will feature a "Petcare Hub" to manage client requests efficiently, integrating a chatbot and ticketing system to handle frequently asked questions while escalating complex inquiries as needed.

For donation processing, Stripe will serve as the primary payment system. It provides secure financial tracking and supports various payment methods, including credit cards, Google Pay, and Apple Pay. This will be implemented using the PayPal and Stripe Donation plugin.

To automate scheduling and event management, we have chosen Amelia over PlanHero after a detailed comparison of their features and alignment with the client's requirements. Amelia meets all client requirements by allowing for the collection of additional information from users before booking through custom questions. It supports upfront deposit payments to confirm bookings and enables multiple appointments to be scheduled efficiently for large clinic events.

Additionally, volunteer management will be streamlined through a free WordPress plugin tailored for nonprofit organizations. The Wired Impact Volunteer Management plugin was chosen for its structured volunteer sign-ups, tracking, and engagement features. The system will incorporate a Live Chatbot plugin (WordPress Chatbot), which will be integrated to handle

common inquiries, reducing staff workload and improving response time. WPBot will handle automated customer support through predefined responses, while Conversational Forms will integrate interactive forms into chatbot interactions for efficient user input.

The proposed system builds upon Pets4Life's existing WordPress infrastructure, ensuring seamless integration and compatibility. The selected plugins—Stripe, Amelia, Wired Impact Volunteer Management, and a Chatbot—enhance the system's functionality while keeping Pets4Life's workflow streamlined. Ensuring long-term plugin support and regular updates will be a priority to prevent potential disruptions.

2.10.3 Economic Feasibility

The financial sustainability of this solution is a key consideration. By leveraging WordPress as the foundation, Pets4Life avoids the high costs associated with migrating to a new platform, making the project cost-effective. The primary expenses will be Stripe's transaction fees and the Amelia Pro plan, which costs $184 per year. This investment provides critical features such as recurring appointments and deposit management, ensuring that scheduling operations remain efficient. Amelia frequently offers promotional discounts, which can lower expenses by up to 50%, further reducing financial strain.

The long-term economic impact of this system extends beyond software costs. By automating manual processes, Pets4Life will reduce administrative overhead, freeing up staff time for mission-driven activities rather than repetitive tasks. A more structured financial tracking system will also enhance transparency in donation management, minimizing errors and improving accountability.

A cost-benefit analysis reveals that the current annual technology expenses for Pets4Life amount to $806, which includes WordPress and web hosting at $84 per year, Airtable for two users at $288 per year, Zapier at $254 per year, and PlanHero at $180 per year. With the implementation of the new system, the projected annual costs will increase slightly to $810, accounting for the Amelia Pro Plan at $184 per year, replacing PlanHero, and maintaining the other existing tools. Additionally, Stripe transaction fees of 2.9% plus $0.30 per transaction will apply. Automating tasks, such as scheduling, donation processing, and volunteer management, will significantly reduce inefficiencies. The new system will also help boost donor engagement,

leading to potential increases in funding. Overall, the investment in an integrated digital solution is expected to yield a strong return by enhancing financial stability, improving operational efficiency, and fostering growth for Pets4Life.

Reference Appendix A for detailed NPV Analysis Calculations

2.10.4 Organizational Feasibility

The implementation of this system will lead to significant operational benefits, reducing manual data entry, streamlining communication, and enhancing efficiency in donation processing. The automated chatbot will decrease staff workload by handling common inquiries, improving overall customer service.

Since the new system is built on a familiar WordPress platform, existing staff will require minimal training to adapt to the new workflow. Volunteers, donors, and community members will benefit from an intuitive platform that simplifies interactions and engagement. Pets4Life's team will be able to focus more on expanding outreach programs and strengthening community partnerships instead of managing fragmented systems.

3. Process Models

The As-Is model is a representation of the current system in place that lacks efficient integration and organization of information. In the As-Is system, Ways to Help contains a multitude of information that makes it difficult for users to know where to navigate for their particular need. Instead, in the proposed To-Be system, we aim to improve on the user experience through a new navigation bar that highlights individual product features with subcategories, rather than grouping them under one big category. While the current As-Is system places donations, sponsoring a pet, and volunteering, all under Ways to Help, the To-Be system will separate these into simpler sections. The To-Be model focuses on a new chatbot, a system for event scheduling for clients and administrators, a new payment platform, an inclusive volunteer platform, and lastly, an About Us page.

The new system will have several features that the current Pets4Life site does not have. With the introduction of a chatbot, users will be able to receive real-time help for any pet questions they have. This replaces the current system of questions being asked from many

different platforms that become too fragmented for the Pets4Life team to maintain. Furthermore, a new platform for event scheduling will make it easier for clients to book in a few clicks and for administrators to maintain necessary information into their database through an integrated process. This reduces the manual load for Pets4Life. Clients will then be able to directly pay on this platform through an integrated plugin that allows payments to be made online or on-site. This will consolidate payments into one inclusive platform. A dedicated volunteer system is also made to reduce the fragmentation of information there was before. Lastly, the About Us will be carried over from the current system and continue to highlight the goals of Pets4Life. The new platforms align with the System Request's needs and requirements and aim to create an inclusive and streamlined platform that supports internal operations and user engagement.

3.1 As-Is: Information System
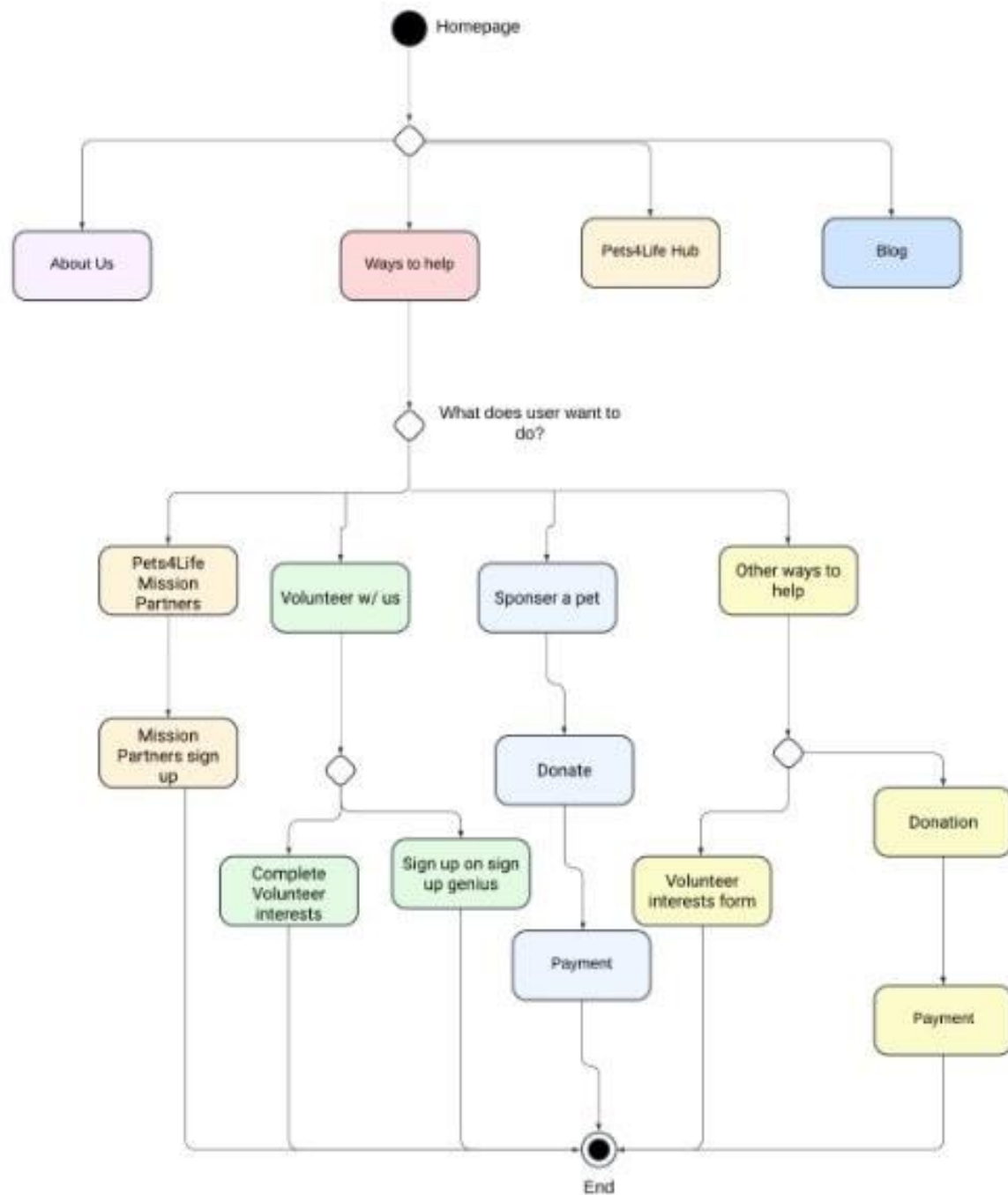
3.2 **To-Be: Information System**
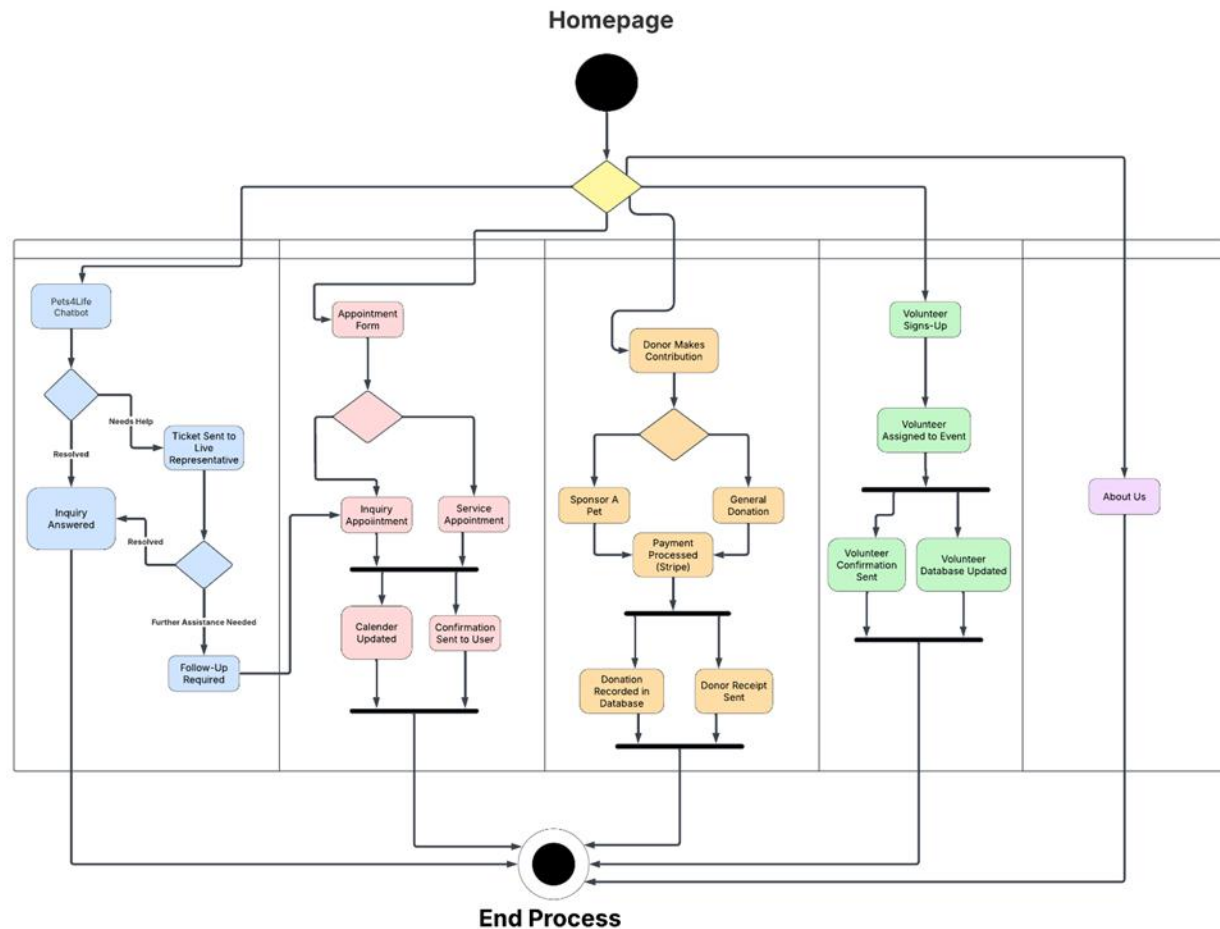
4. System Requirements

In the execution of this project, it is important to keep note of the key features and requirements that must be implemented for the utmost success. These system requirements are split into functional and non-functional and defined by the goals outlined in both the Systems Request and Vision Document. Functional requirements will define specific behaviors and functions the system must have in order to meet our client's objectives. Non-functional requirements will then address what the system should do, addressing aspects such as performance, security, and usability. Below, these requirements are organized in a hierarchy based on prioritized product features and based on high-level requirements of the system.

4.1 Functional Requirements

4.1.1 Chatbot Requirements

ID: SR001 - The Chatbot will allow generate automated responses to frequently asked questions.

ID: SR002 - The Chatbot will allow users to create support tickets and send them to an escalation system for further assistance.

ID: SR003 - The Chatbot will allow a facilitation of user needs through a conversational interface.

ID: SR004 - The Chatbot will allow administrators to manage a list of predefined responses.

4.1.2 Volunteer Management Requirements

ID: SR005 - The Volunteer Management system will allow users to sign up for volunteering opportunities directly through the website.

ID: SR006 - The Volunteer Management system will allow users to update their availability if changes arise.

ID: SR007 - The Volunteer Management system will allow the tracking and integration of volunteer hours automatically into the Airtable database.

ID: SR008 - The Volunteer Management system will allow volunteers to have the options for one-time or flexible volunteering options.

ID: SR009 - The Volunteer Management system will allow administrators to send reminders and notifications for upcoming events to volunteers.

4.1.3 Event Scheduling Requirements

ID: SR010 - The Event Scheduling system will allow the event coordinator to schedule a new event by inputting relevant details, such as date, time, location, and description.

ID: SR011 - The Event Scheduling system will allow the event coordinator to modify existing

event details as needed.

ID: SR012 - The Event Scheduling system will allow clients access to a list of scheduled events and their relevant details, such as date, time, location, and description.

ID: SR013 - The Event Scheduling system will allow users to register for events.

ID: SR014 - The Event Scheduling system will allow the event coordinator to send confirmations and reminders regarding scheduled events

ID: SR015 - The Event Scheduling system will allow users the option to pay for events securely online or in person.

ID: SR016 - The Event Scheduling system will allow users to cancel events if circumstances arise.

ID: SR017 - The Event Scheduling will allow for refunds to be made if an event is cancelled, or a client can no longer come.

ID: SR018 - The Event Scheduling system will allow users to join the waitlist if needed.

ID: SR019 - The Event Scheduling system will allow for administrators to be accept or deny users from the waitlist.

4.1.4   Sponsor a Pet Requirements

ID: SR020 - The Sponsor a Pet system will allow users access to the options for various ways they can help through donating.

ID: SR021 - The Sponsor a Pet system will allow users to sponsor a specific pet through Stripe.

ID: SR022 - The Sponsor a Pet system will allow users to make a general donation through Stripe.

ID: SR023 - The Sponsor a Pet system will allow for the recording and updating of contributions in real-time in the database.

ID: SR024 - The Sponsor a Pet system will allow for immediate receipts and thank-you emails to

be sent to donors upon completing a donation.

ID: SR025 - The Sponsor a Pet system will display success stories from donations to engage donors.

ID: SR026 - The Sponsor a Pet system will allow users to choose recurring donations.

ID: SR027 - The Sponsor a Pet system will allow for enhanced user visibility of donation options through prominent placement on relevant pages.

4.2   Nonfunctional Requirements

ID: SR028 - The content management system will allow for a user-friendly interface that is easy to navigate for all users.

ID: SR029 - The content management system will allow for a responsive and optimal performing environment.

ID: SR030 - The content management system will allow for an optimized experience for mobile devices as well, ensuring consistent accessibility for all users viewing the website.

ID: SR031 - The content management system will allow for secure, private, and protected data.

ID: SR032 - The chatbot will allow for real-time assistance to be provided to users efficiently.

5.   Use Cases

From the system requirements, we identified 27 use cases that defined the project scope and illustrated how users interact with the system to complete tasks. Each use case consists of its identifiable number, a name, the primary actor, a brief description, and the risk level. A use case is a formal way of representing how the business system interacts with its environment, illustrating how activities are performed by users in this system. Each use case is triggered by its primary actor and thus written in the primary actor's perspective. In the 'Risk Analysis' section

below, the guidelines for determining each risk level are entailed. The use cases are also ordered by prioritization order of product features.

5.1   Use Case Scenarios

Use Case 1: Ask Pet Care Questions

Primary Actor: Client

Description: Client can ask the chatbot pet care related questions and receive automated responses.

Risk Level: Low

Use Case 2: Create Ticket for Further Help

Primary Actor: Client

Description: Clients can escalate chatbot inquiries by creating a ticket that gets sent to a representative.

Risk Level: High

Use Case 3: Create List of Predefined Responses

Primary Actor: Administrator

Description: The administrator can create a list of predefined chatbot responses for common inquiries.

Risk Level: Low

Use Case 4: Update Predefined Responses

Primary Actor: Administrator

Description: The administrator can update chatbot responses to ensure accurate and up-to-date information is being provided.

Risk Level: Low

Use Case 5: Create an Event

Primary Actor: Administrator

Description: Administrator can create a new event by entering details, such as date, time, location, and description.

Risk Level: High

Use Case 6: Manage Existing Events

Primary Actor: Administrator

Description: Administrator can update event details, such as date, time, location, and description.

Risk Level: High

Use Case 7: View Scheduled Events

Primary Actor: Client

Description: Clients can view the list of scheduled events, including the relevant details, such as date, time, location, and description.

Risk Level: High

Use Case 8: Register for Event

Primary Actor: Client

Description: Clients can register for a scheduled event by selecting an available event and completing all the necessary steps.

Risk Level: High

Use Case 9: Join the Waitlist

Primary Actor: Client

Description: Clients can join the waitlist if registration for desired event is full.

Risk Level: High

Use Case 10: Accept or Deny Waitlisted Clients

Primary Actor: Administrator

Description: Administrators can manually add accepted waitlisted clients to events past its booking limit if time permits for this event.

Risk Level: Low

Use Case 11: Cancel Event Registration

Primary Actor: Client

Description: Clients can cancel their event registration due to unforeseen circumstances.

Risk Level: High

Use Case 12: Refund Payments

Primary Actor: Administrator

Description: Administrators refund payments if client had to cancel event but already paid.

Risk Level: High

Use Case 13: Send Event Confirmations and Reminders

Primary Actor: Administrator

Description: The administrator will set the plugin to send event confirmations following registration and reminders until the event occurs.

Risk Level: Low

Use Case 14: Process Event Payments

Primary Actor: Administrator

Description: Clients can choose to pay upfront through a secure system or in person at the event.

Risk Level: High

Use Case 15: Sign Up to Volunteer

Primary Actor: User (Volunteer)

Description: Clients can register to volunteer directly through the website by providing contact information and selecting from the available opportunities.

Risk Level: Low

Use Case 16: Modify Volunteer Availability

Primary Actor: User (Volunteer)

Description: Volunteers can update and modify availability for specific events.

Risk Level: Low

Use Case 17: Choose Volunteer Type

Primary Actor: User (Volunteer)

Description: Volunteers can choose between one-time or flexible volunteering options based on their availability.

Risk Level: Low

Use Case 18: Track Volunteer Hours

Primary Actor: Administrator

Description: Administrators have an automatic and integrated system to track volunteer hours into the Airtable database for record-keeping.

Risk Level: Low

Use Case 19: Send Volunteer Reminders and Notifications

Primary Actor: Administrator

Description: The system will send automated reminders and notifications to volunteers with event details, such as date, time, and location.

Risk Level: Low

Use Case 20: Manage Volunteer Information

Primary Actor: Administrator

Description: Administrators can manage, organize, and update volunteer data efficiently.

Risk Level: Low

Use Case 21: View Sponsorship Options

Primary Actor: User (Donor)

Description: Users can view the options of sponsoring a specific pet or donating a general amount to cover a service

Risk Level: Low

Use Case 22: Make a General Donation

Primary Actor: User (Donor)

Description: Users can make a general, secure donation through the integrated PayPal or Stripe plugin, which will go towards funding a specific service.

Risk Level: High

Use Case 23: Sponsor a Specific Pet

Primary Actor: User (Donor)

Description: Users can make secure donations for a specific pet through the integrated PayPal or Stripe plugin.

Risk Level: High

Use Case 24: Record Donations in Real-Time

Primary Actor: Administrator

Description: Contributions are automatically recorded and updated in real-time within the Airtable database.

Risk Level: High

Use Case 25: Send Instant Receipts and Thank-You Emails

Primary Actor: Administrator

Description: The system will send an instant receipt and thank-you emails to donors upon completing the donation.

Risk Level: Low

Use Case 26: Display Donation Impact Updates

Primary Actor: Administrator

Description: Administrators can update website with real-time updates of success stories from donations to engage donors.

Risk Level: Low

Use Case 27: Set Up Recurring Donations

Primary Actor: User (Donor)

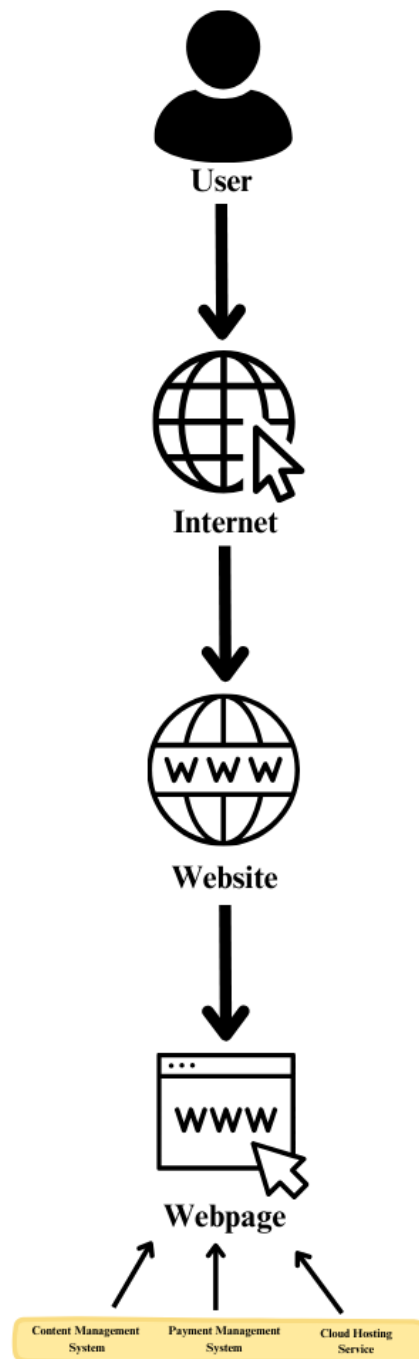*Description:* Users can choose to make recurring donations, specifying the frequency and amount.

Risk Level: Low

5.2 Trace Matrix

Ladybirds - Trace Matrix.xlsx

6. Initial Architecture Considerations

When we started working on the Pets4Life system redesign, our initial idea was to create a unified system by bringing together tools like WordPress, Airtable, and Stripe. The main aim was to streamline their processes, combining volunteer sign-ups, clinic schedules, and donation management into one straightforward platform.

At first, we simply considered WordPress as the main site and integrating Airtable for data and Stripe for payments. However, after analyzing how the system would need to grow and how easy it would be for their team and volunteers to use, we decided to change our direction. We opted to focus more on low-code solutions, making it simpler for the organization to run the system without needing deep technical expertise.

The final setup keeps WordPress at the core, but we've significantly improved the connection with Airtable and Stripe. This is designed to give a better experience to pet owners using their services, volunteers signing up for events, and donors supporting the cause. By building a more organized and user-friendly system, Pets4Life now has a solid, adaptable platform that will allow them to operate effectively and expand in the future.

6.1   Initial Design View

11.1 Initial Design View

6.2   Realistic View

11.2 Initial Design View
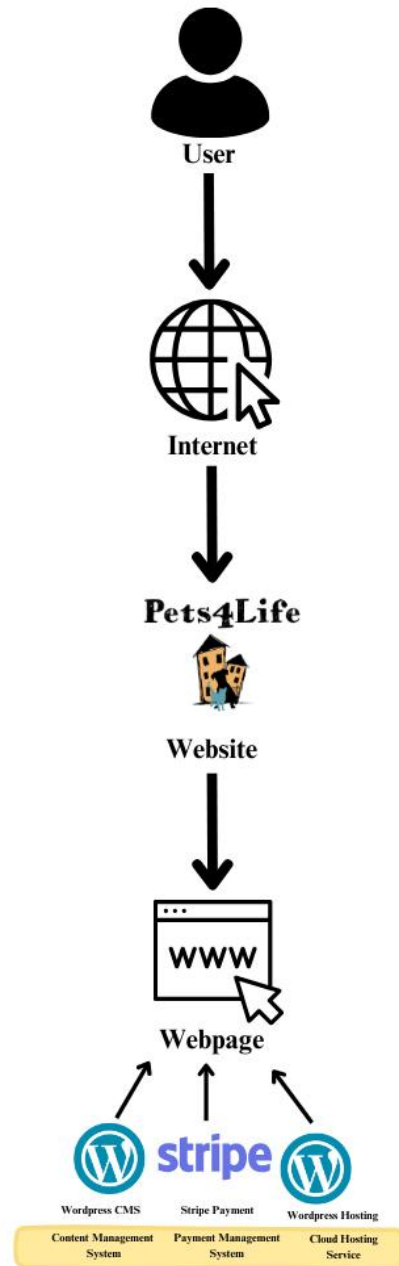
7.   Risk Analysis

The determination of use cases specifically are as follows:

High Risk

- Extremely sensitive information requiring extreme security

- Employs extreme company dependency

- Events that require immediate/frequent attention

Low Risk:

- Only includes semi-specific to general information

- Company is not directly or wholeheartedly dependent on function

The risk of each product feature and purchase was evaluated based on company dependency and the need for data addition, alteration, and removal. The company dependency was evaluated based on how Pets4Life's executive board and operational-level employees would still be able to operate if the function of the specific feature was lost. This could be extremely risky and therefore effective in damaging the process of Pets4Life in certain situations, and therefore could, in some situations, halt all production, events, and clinic operations.

As for data dependency, most operations for the business will be automated, but the process of data and its correctness is crucial for the business to have integrity within their clinical operations and receival of donations. In the event of a data collapse, or if the automation fails, then the process of data recording will turn manual and therefore will be losing crucial time that could be spent on other important business processes.

Throughout these processes, our selected Customer Management System (CMS), WordPress, and Payment management system (PMS), Stripe, and relational database management system (RDBMS), Airtable, will help mitigate these risks. However, it is also crucial to think about the case in which these systems could fail and therefore how much it could affect the system of Pets4Life. Risk will also be fully addressed during all iterations of the elaboration phase as we continually build a prototype and reassess the risk of the use cases and make changes from the reassessment.

7.1 High Risk Cases

- The use and integration of Stripe for donations and clinic down payments

- The full integration of WordPress Plug-ins for extreme business needs

- Event access and scheduling for pet owners

- Schedule access for potential volunteer opportunities

- Management of clinic appointments through an administrative lens

- Management of tickets that were sent and received through WordPress chatbot

- Management of donations through the Stripe PMS and acceptance of them

7.2 Low Risk Cases

- Automated clinic and event reminders and notifications

- Frequently asked questions through the WordPress Chatbot

- Viewing all content on in each website tab through the ribbon

- Viewing and selection of a pet through the "Sponsor a Pet" tab

- Management of volunteers through an administrative lens

8. Team Charter

This charter outlines our team's division of work, mutual goals, and strategies for achieving them. It details how we communicate through meetings, how we finalize decisions as a group, and where key project documentation is held. As the Ladybirds, we all share the same desire to fulfill the business needs of Pets4Life and provide them with an all-inclusive platform that can manage volunteers effectively, centralize documentation and payments, and serve as an information hub for users to refer to as necessary. We plan to achieve these goals through implementing a new system for volunteer management, a chatbot, an interactive calendar of events, and a section to sponsor a pet with secure payment methods offered. These features will be integrated into a seamless, automated platform for easy access by all users. With the successful implementation of our proposal, our client's site will have an enhanced system with a user-friendly experience that meets the organization's needs and drives growth.

Our team has decided to divide work according to our strong suits and preferences, with each member naturally gravitating towards one of the roles in the systems development life cycle. Prior to submitting project deliverables, we meet on a call to discuss the overall components. Once we come to a consensus on key points each part should include, we divide the work into specific parts based on such preferences and where members feel the most well-informed. Despite the division of work, we maintain a system of feedback and collaboration,

where we encourage other members to look over our work and suggest needed changes. This allows for us to prevent one person from being confined to one thing, but rather making this a team collaboration as intended with transparency throughout.

To foster team collaboration and ensure all voices are heard in each and every part of the project, our team has decided to conduct synchronous meetings as we deem necessary. These meetings are decided as we discuss in or after class where our status is as a team. If we agree that a team meeting is needed, we plan a time in the group chat we have established on iMessage that was created when our group was initially formed. We agreed this would be the most efficient way to reach any of us and best used for quick updates, and thus it was chosen. Our calls are then conducted through a Microsoft Teams link that is sent to our emails. This platform will only be used for verbal communication. In these meetings, we come to a mutual understanding of where we are in the process and make decisions as necessary. Our team communication is based off of the promotion of open communication and sharing of all ideas. We talk through ideas together, allowing for all to have their voices heard and reflected in the mutual decision we make. While ideas will mostly be communicated to each other when we see each other in person, they will be elaborated on through a meeting as necessary. By allowing each team member to focus on tasks that align with their strengths while also providing input on other aspects of the project, we will deliver the most optimal product to our client. The diverse skill sets and perspectives that we each offer are necessary for such a project, making this process the most ideal. Lastly, for project sponsor inquiries, we agreed to reach out in class, during office hours, or via email – whichever is the most efficient at the time. With any questions for our client, our client informed us they could be reached through their email linked in their presentation.

When it comes to making decisions, we discuss the choices during meetings. From there, we elaborate on the pros and cons of each one to come to a final decision. By weighing out each option, we gain a full understanding of the potential value it could provide to Pets4Life. While we aim to plan meetings at a time when everyone can attend, if members cannot make it and a decision had to urgently be made, they will agree with the consensus. Additionally, they will follow up on information and decisions they missed through the meeting notes in the shared Word document and a general summary that we send in the group chat. If any conflicts were to arise, we will address the issue as a whole team and vote on a mutual decision that pertains to all

sides. If the situation escalates, we will ask our project sponsor to act as a mediator until a common decision can be made.

We utilize a common Word document distributed through email, where we will share ideas of what we need for project deliverables. This document serves as a brainstorming document and place to store any resources we deemed important in decision making. For new documents pertaining to project deliverables, a new Word document is shared through email. Each member will then directly place their part onto that document as they finish. This ensures organization and accessibility for all team members.

In conclusion, as the Ladybirds, our objective is to develop an all-inclusive platform to manage volunteers, centralize documentation and payments, provide a customer service hub, schedule for events. This will be done through specific plugins picked through careful research. Despite the division of labor based on our strengths, we prioritize feedback and transparency throughout, using iMessage for quick messages, Microsoft Teams for discussions, and in-person meetings when possible. Decisions are collectively made by weighing out pros and cons, and absent members agree with the consensus as documented in meeting notes. Conflicts, if any, are resolved through whole team discussions, or if needed, mediation with the project sponsor. Our documentation is through Word documents shared through email. By leveraging strengths, open communication, and teamwork, a seamless and efficient platform that meets our client's needs will be made. With clear decision-making processes and a commitment to transparency, we are well prepared to achieve our shared goals. Our strong foundation for productive teamwork and success will lead to the development of an efficient and effective system.

9.   Gantt Chart

Our team utilized this Gantt chart as a tool to plan, schedule, and track tasks and activities throughout the project. By visually mapping out project milestones and required deliverables, we were able to effectively monitor progress. The chart includes key details, such as the task ID, task name, start date, end date, duration (days), who was responsible for completing each task, and any dependencies. The accompanying spreadsheet and Gant chart outline project tasks for two iterations: I2 and I3. By breaking down each deliverable for the phase into multiple tasks, we streamlined the overall process, ensuring that critical tasks and dependencies were clearly

identified. This approach also helped highlight collaboration points and the team members responsible for each component.

In the spreadsheet, the current iteration (I2) is marked in light blue, with corresponding blue bars in the Gantt chart. The next iteration (I3) is indicated in light orange on the spreadsheet, with matching bars on the Gantt chart. The successful completion of these tasks is essential for I3. Dependencies within I3 are visually represented with arrows and are as follows:

- Task ID0302 (Use Case Diagram) has a dependency on Task ID0301 (Use Cases).
- Task ID0304 (Use Case Prototype Version 1) has dependencies on Tasks ID0301 (Use Cases) and ID0302 (Use Case Diagram).

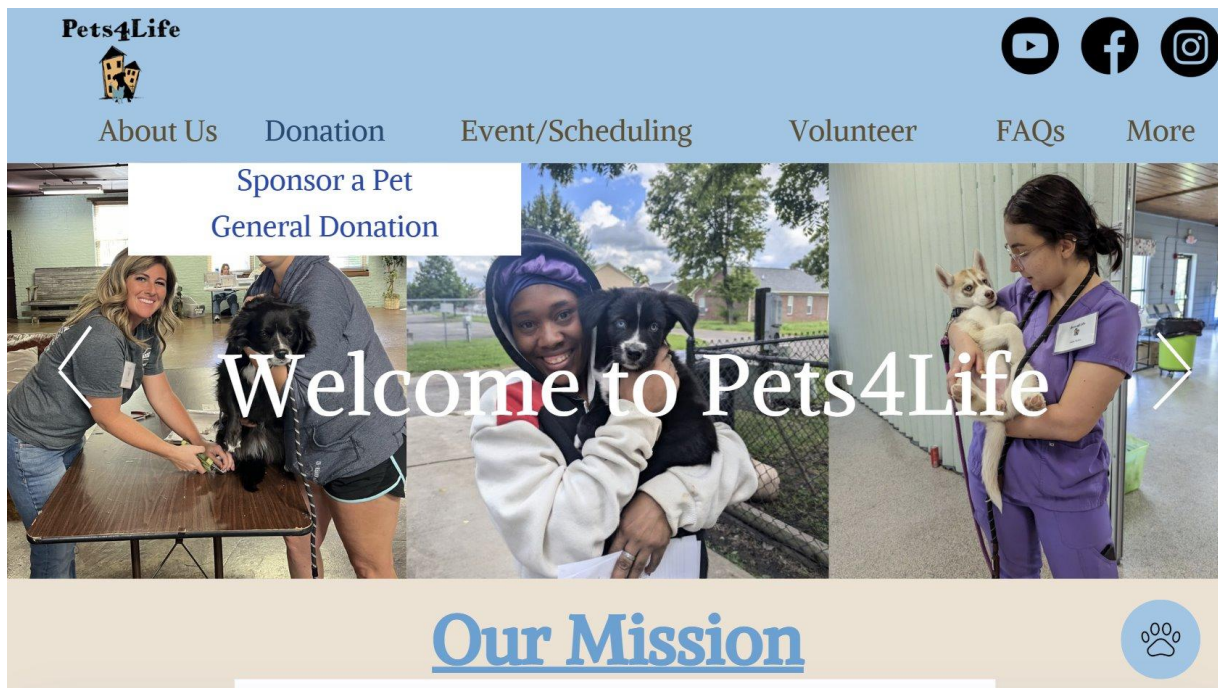| Task ID	Task Name	Start Date	End Date	Duration (Days)	Task Responsibility	Dependencies
ID0200	I2 Document Compliation	2/17/25	3/9/25	21	Helen Le, Jawharah Mused, Fatin Nuur, Maddy Schroth, and Sara Alshimary	None
ID0201	Vision Document	2/17/25	2/25/25	8	Helen Le, Jawharah Mused, Fatin Nuur, Maddy Schroth, and Sara Alshimary	None
ID0202	Feasability Analysis	2/17/25	3/9/25	21	Helen Le and Jawharah Mused	ID0201
ID0203	System Requirements	2/25/25	2/28/25	3	Sara Alshimary	ID0201,ID0202
ID0204	Use Cases	2/17/25	3/9/25	21	Helen Le, Jawharah Mused, Fatin Nuur, Maddy Schroth, and Sara Alshimary	ID0201,ID0203
ID0205	Architecture Considerations	3/3/25	3/4/25	2	Fatin Nuur	ID0201, ID0204
ID0206	Risk Analysis	2/27/25	3/2/25	3	Maddy Schroth	ID0201,ID0204, ID0205
ID0207	Gantt Chart	3/1/25	3/9/25	9	Sara Alshimary, Fatin Nuur	None
ID0208	Inception Phase Prototype	2/27/25	3/2/25	3	Maddy Schroth	ID0201
ID0300	I3 Document Compliation	3/10/25	4/6/25	27	Helen Le, Jawharah Mused, Fatin Nuur, Maddy Schroth, and Sara Alshimary	None
ID0301	Use Cases	3/15/25	3/30/25	15	Helen Le, Jawharah Mused, Fatin Nuur, Maddy Schroth, and Sara Alshimary	None
ID0302	Use Case Diagram	3/20/25	4/2/25	13	Helen Le, Jawharah Mused, Fatin Nuur, Maddy Schroth, and Sara Alshimary	ID0301
ID0303	Gantt Chart	3/27/25	4/6/25	10	Sara Alshimary, Fatin Nuur	None
ID0304	Use: Case Prototype Version 1	3/27/25	4/6/25	10	Helen Le, Jawharah Mused, Fatin Nuur, Maddy Schroth, and Sara Alshimary	ID0301,ID0302
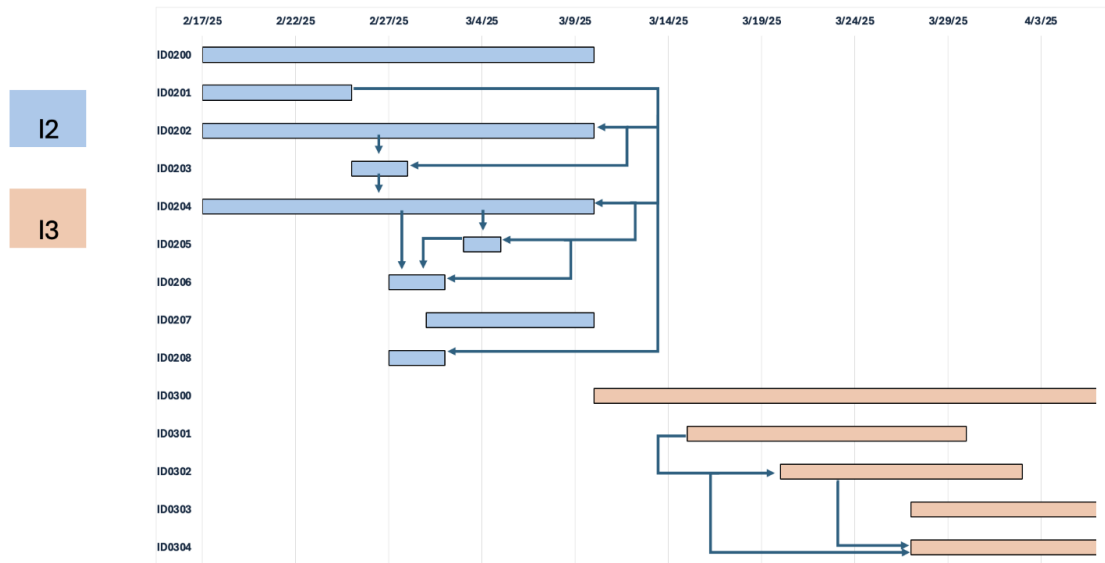
10. Inception Phase Prototype

Below is a high-level prototype that depicts our idea of what we intend for this system to look like on the user-end. In doing so, it is able to represent the process flows of our To-Be Models and represent the process flows of our To-Be process model. It starts with the landing page, which is what users will first be faced with when accessing Pets4Life. It also represents how when a tab in the navigation bar is highlighted, like the Donation tab, it displays various subtabs, which in this case are Donations and Sponsor a Pet. Next is the Chatbot view which gives a simple demo of how the chatbot would respond to a user's question. A key feature is how the paw-print icon is in the bottom right whenever viewing to ensure users can access the chatbot and know of it from anywhere on the site. We then have the Sponsor a Pet page which is a continuation program from the original Pets4Life system. With each pet's picture is what the pet needs, and there will be a large donation button to encourage users to take action. Lastly, we have the general donation page, which describes ways to help other than through sponsoring a pet. While the system will be built on WordPress, we created this prototype through Canva as it required minimal programming and no database implementation. This is a simple start to the vast system we intend for Pets4Life to have. Creating this prototype put into a visualization what we view the future of Pets4Life and their system to be and how it will function.

10.1 Landing Page

10.2 Chatbot View

10.3   Sponsor A Pet Page

10.4   General Donation Page

Appendix A

A.1   NPV Analysis

The Net Present Value (NPV) analysis was conducted to evaluate the long-term financial sustainability of the Pets4Life website proposal. By analyzing projected revenues and expenses over a five-year period, discounted to their present value, this assessment provides a clear financial outlook for the organization. The results will help guide strategic decision-making regarding spending levels, operational growth, and investment in new resources while ensuring the nonprofit remains financially stable.

Pets4Life, as a nonprofit organization, relies primarily on grant funding, program revenue, and donations to support its mission. The implementation of an automated system is expected to increase donor engagement, improve financial tracking, and optimize operational efficiency, ultimately leading to a more sustainable funding structure. Given the varying levels of potential investment, three different spending scenarios were developed: Conservative, Moderate, and Heavy Spending. These scenarios provide different outlooks based on varying levels of funding growth, cost increases, and resource allocation.

The Conservative Spending model assumes a minimal increase in funding and operational costs. Revenue is projected to grow at a modest 2% annually, reflecting a steady but cautious approach to donor engagement. Costs, including staffing, software subscriptions, and sheltering expenses, also rise at a controlled rate, ensuring that financial sustainability is prioritized over expansion.

The Moderate Spending model takes a more balanced approach, assuming a 5% annual growth rate for revenue, which aligns with national economic trends and expected increases in grant funding and donations due to enhanced automation. Expenses also rise at a moderate rate, allowing for increased investment in staffing, sheltering, and veterinary services while maintaining financial stability.

The Heavy Spending model assumes a 10% annual increase in revenue, driven by aggressive donor outreach and program expansion. In this model, operational costs rise significantly to accommodate expanded services, additional staffing, and the introduction of a

mobile veterinary unit. This approach prioritizes impact and growth but requires strong financial management to ensure sustainability.

To ensure realistic financial projections, this analysis assumed a 3% inflation rate, a 5% NPV discount rate, and a final discount rate of 1.94%. These values were selected based on national economic trends and nonprofit financial standards. The 3% inflation rate was applied to cost projections to reflect the average U.S. national inflation rate over time. Inflation impacts the cost of goods and services, staffing salaries, and operational expenses, making it a crucial factor in long-term financial planning. This rate aligns with historical inflation trends and ensures that cost projections remain realistic.

The NPV discount rate was set at 5%, which is a standard rate for nonprofit organizations. Unlike for-profit businesses that use higher discount rates (typically around 10%) to reflect investment risks and expected returns, nonprofits operate with a focus on financial stability rather than profit maximization. A 5% rate is commonly used in nonprofit financial planning because it accounts for the lower cost of capital and the stable nature of grant funding and donations.

Revenue in this analysis was divided between grant contributions and program revenue, which includes donations and service fees. Grants account for approximately 78.2% of total revenue, with donations and program income making up the remaining 21.8%. The implementation of an automated system is expected to increase online donations by improving transparency, streamlining transactions, and enhancing donor engagement. This projected increase was reflected in the 5% revenue growth assumption under the Moderate Spending model and the 10% growth assumption in the Heavy Spending model.

Additionally, the client has indicated that additional funds will be allocated to staffing, pet sheltering and supplies, veterinary services, and a mobile veterinary vehicle. These investments were incorporated into the Moderate and Heavy Spending models, reflecting the increased resources required to expand community outreach and improve animal care services. The Heavy Spending model, in particular, accounts for the purchase and operational costs of a mobile veterinary unit, which represents a major investment aimed at extending the organization's reach to underserved areas.

The NPV analysis confirms that all three spending scenarios result in a positive net

present value, indicating that the investment in automation and operational expansion is financially viable. While the Conservative Spending model ensures stability, it does not provide room for significant growth. The Moderate Spending model presents the most balanced approach, allowing for sustainable expansion without overextending financial resources. The Heavy Spending model, while maximizing impact, requires a strong commitment to securing increased funding to support long-term sustainability.

Overall, this analysis provides Pets4Life with a comprehensive financial outlook, allowing the organization to make informed decisions regarding investment in automation, staffing, and expanded services. By selecting the appropriate spending model, the organization can optimize its impact.

NPV Analysis

A.2   NPV Analysis Spreadsheet

Year	%	1	2	3	4	5
Yearly Revenue	%	127,850	132,964	138,283	143,814	149,566
Grant Contributions	78.20%	100,000	104,000	108,160	112,486	116,986
Regular Programming	21.78%	27,850	28,964	30,123	31,327	32,581
Total Revenue	100%	127,850	132,964	138,283	143,814	149,566

Year	1	2	3	4	5
Costs	Year 1	Year 2	Year 3	Year 3	Year 5
WordPress & Hosting	84	84	84	84	84
Airtable	288	288	288	288	288
Zapier	254	254	254	254	254
Amelia Pro	184	184	184	184	184
PROPOSAL COST	810	810	810	810	810
regular programming expenses	24,811	25,555	26,322	27,112	27,925
petcare hub expenses	102,000	105,060	108,212	111,458	114,802
total cost	127,621	131,425	135,344	139,380	143,537

Year	1	2	3	4	5	Total
NPV Calculations						0
PV Revenue	121761.9	120602.27	119453.67	118316.02	117189.2	597323.07
PV Cost	121543.81	119206.65	116915.05	114668.11	112464.92	584798.54
Yearly NPV	218.09524	1395.619	2538.6201	3647.9112	4724.2861	12524.532
Cumulative NPV	218.09524	1613.7143	4152.3344	7800.2455	12524.532	

moderate spending 5%

Year	%	1	2	3	4	5
Yearly Revenue	%	127,850	136,800	146,375	156,621	167,586
Grant Contributions	78.20%	100,000	107,000	114,490	122,504	131,080
Regular Programming	21.78%	27,850	29,800	31,885	34117.448	36505.669

Year	1	2	3	4	5
Costs	Year 1	Year 2	Year 3	Year 3	Year 5
WordPress & Hosting	84	84	84	84	84
Airtable	288	288	288	288	288
Zapier	254	254	254	254	254
Amelia Pro	184	184	184	184	184
regular programming expenses	24,811	24,812	24,813	24,814	24,815
petcare hub expenses	102,000	107,100	112,455	118,078	123,982
total	127,621	132,722	138,078	143,702	149,607

Year	1	2	3	4	5	Total
NPV Calculations						0
PV Revenue	121761.9	131337.41	141786.39	153191.27	165642.36	713719.34
PV Cost	121543.81	116955.65	112550.94	108355.93	104360.65	563766.97
Yearly NPV	218.09524	14381.769	29235.45	44835.34	61281.716	149952.37
Cumulative NPV	218.09524	14599.864	43835.314	88670.654	149952.37	

INFLATION RATE	3%
NPV DISCOUNT	5%
FINAL DISCOUNT	1.94%